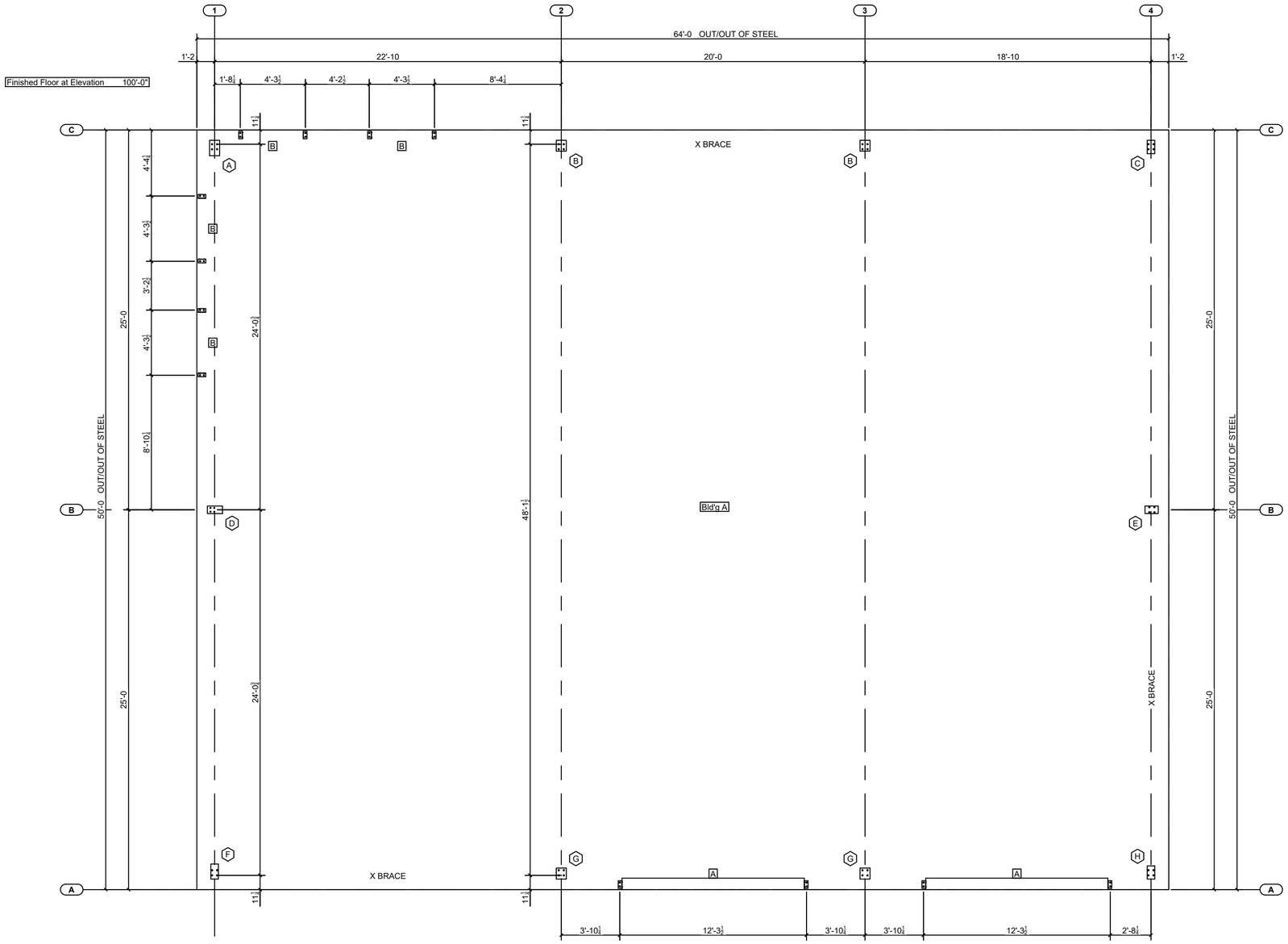
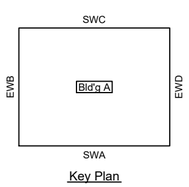


Anchor Rod Setting Plan

FRAMED OPENING SCHEDULE			
MARK	DESCRIPTION	DETAIL	QUAN.
A	12'-0" X 20'-0" FRAMED OPENING	1	2
B	4'-0" X 4'-6" FRAMED OPENING	2	4

ANCHOR RODS TO BE DESIGNED BY FOUNDATION ENGINEER USING DIAMETERS SHOWN IN THIS TABLE.	
ANCHOR ROD DESCRIPTION	QUANTITY
3/4" Ø DIAMETER X	36
5/8" Ø DIAMETER X	28



Key Plan

Anchor Rod Drawings

1) This drawing is for anchor rod placement only and is not foundation design.
2) Foundation must be square and level with all anchor rods true in size, location, and projection.
3) Projection shown must be held to keep threads clear of finished concrete.
4) This structural design data includes magnitude and location of design loads and support conditions, material properties, and type and size of major structural members necessary to show compliance with the Order Documents at the time of this issue. Any change to building loads or dimensions may change structural member sizes and locations shown. This structural design data will be superseded and voided by any future mailing.
5) Anchor rod size as noted on the drawings has been determined by shear and tension at the bottom of the base plate. The length of the anchor rod and method of load transfer to the foundation are to be determined by the foundation engineer. Anchor rods are not provided by the metal building manufacturer.
6) Anchor rods are ASTM F1554 Gr. 36 material unless noted otherwise.
7) 3000 psi concrete compressive strength (f'c) is assumed for the purpose of column base plate design unless otherwise noted.

Anuradha Khanna

ANURADHA KHANNA
License No. 6201310835
Jul 24 2026
LICENSED PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Anuradha Khanna, P.E. on the date and/or time stamp shown using a digital signature. Printed copies of this document are not considered signed and sealed and the signature must be verified by a 3rd Party Certificate Authority on any electronic copy.

Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

METALLIC BUILDING SYSTEMS
Part of the Cornerstone Building Brands Family

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

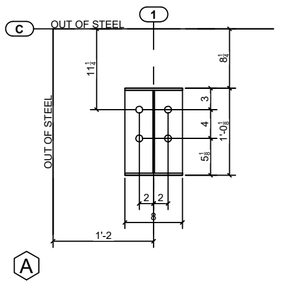
Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
☐ *Issued For Approval (Not For Construction)*
☐ *Issued For Permit*
☒ *Issued For Construction*

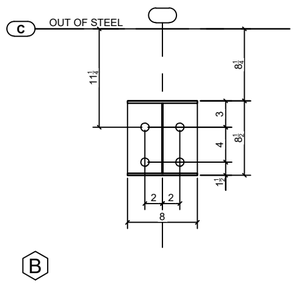
Scale: NOT TO SCALE
Drawn by: LSG 6/17/26
Checked by: SYH 6/19/26
Project Engineer: MTS
Job Number: 21-B-63283
Sheet Number: F1 of 3

The engineer whose seal appears hereon is employed by or is contracted to provide engineering services for the manufacturer, Cornerstone Building Brands or one of its affiliates, for the materials described herein. Said seal or certification is limited to the products designed and manufactured by manufacturer only. The undersigned engineer is not the overall engineer of record for this project.

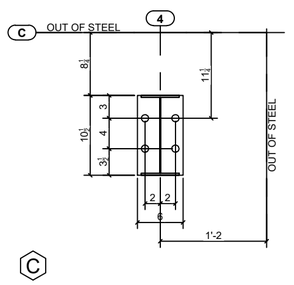
ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835



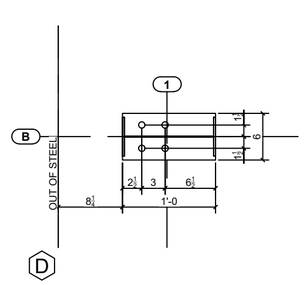
BASE PLATE SIZE = 8"W x 12 ½"L x ¾" THICK
ANCHOR ROD SIZE = 2" DIA. (F1554 GR.36)
ANCHOR ROD PROJECTION = 3"
BOTTOM OF BASE PLATE ELEVATION = 99'-6"
(ANCHOR BOLTS, NUTS AND WASHERS NOT BY MBM)



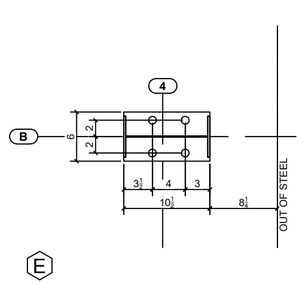
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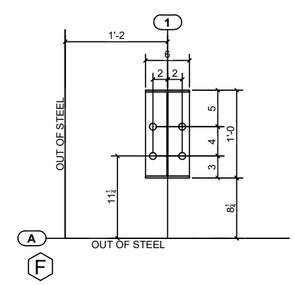
BASE PLATE SIZE = 6"W x 10 ½"L x ¾" THICK
ANCHOR ROD SIZE = 2" DIA. (F1554 GR.36)
ANCHOR ROD PROJECTION = 3"
BOTTOM OF BASE PLATE ELEVATION = 99'-6"
(ANCHOR BOLTS, NUTS AND WASHERS NOT BY MBM)



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(ANCHOR BOLTS, NUTS AND WASHERS NOT BY MBM)



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ANCHOR ROD SIZE = 2" DIA. (F1554 GR.36)
ANCHOR ROD PROJECTION = 3"
BOTTOM OF BASE PLATE ELEVATION = 99'-6"
(ANCHOR BOLTS, NUTS AND WASHERS NOT BY MBM)



BASE PLATE SIZE = 6"W x 12"L x ¾" THICK
ANCHOR ROD SIZE = 2" DIA. (F1554 GR.36)
ANCHOR ROD PROJECTION = 3"
BOTTOM OF BASE PLATE ELEVATION = 99'-6"
(ANCHOR BOLTS, NUTS AND WASHERS NOT BY MBM)

BASE PLATE SIZE = 8"W x 8 ½"L x ¾" THICK
ANCHOR ROD SIZE = 2" DIA. (F1554 GR.36)
ANCHOR ROD PROJECTION = 3"
BOTTOM OF BASE PLATE ELEVATION = 99'-6"
(ANCHOR BOLTS, NUTS AND WASHERS NOT BY MBM)

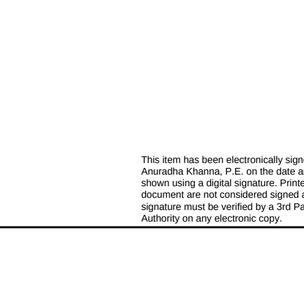
BASE PLATE SIZE = 6"W x 10 ½"L x ¾" THICK
ANCHOR ROD SIZE = 2" DIA. (F1554 GR.36)
ANCHOR ROD PROJECTION = 3"
BOTTOM OF BASE PLATE ELEVATION = 99'-6"
(ANCHOR BOLTS, NUTS AND WASHERS NOT BY MBM)

ANCHOR ROD SIZE = 1" DIA. (F1554 GR.55)
ANCHOR ROD PROJECTION = 2"
BOTTOM OF BASE PLATE ELEVATION = 100'-0"
(ANCHOR BOLTS, NUTS AND WASHERS NOT BY MBM)

AISC Code Of Standard Practice Tolerances For Setting Anchor Rods

Anchor Rod Setting Tolerances

Base Plate And Anchor Rod



FRAMED OPENING RAMP DETAIL
OPTIONAL

Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
☐ Issued For Approval (Not For Construction)
☐ Issued For Permit
☒ Issued For Construction

Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	MTS
Job Number:	21-B-63283
Sheet Number:	F2 of 3

The engineer whose seal appears hereon is employed by or is contracted to provide engineering services for the manufacturer, Cornerstone Building Brands or one of its affiliates, for the materials described herein. Said seal or certification is limited to the products designed and manufactured by manufacturer only. The undersigned engineer is not the overall engineer of record for this project.

ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835

Anuradha Khanna

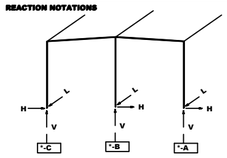
ANURADHA KHANNA
LICENSED PROFESSIONAL ENGINEER
License No. 6201310835
Jun 22, 2026

This item has been electronically signed and sealed by Anuradha Khanna, P.E. on the date and/or time stamp shown using a digital signature. Printed copies of this document are not considered signed and sealed and the signature must be verified by a 3rd Party Certificate Authority on any electronic copy.

FRAME ID #3 | USER NAME:MTSanchez | DATE:06/10/26 | PAGE:3-3
ms1 50./23.875/12.583 20./1 | JOB NAME:63283A | FILE:frame_1.fra

SUPPORT REACTIONS FOR EACH LOAD GROUP
*LOCATION: Gridlines: 1
NOTES:(1) All reactions are in kips and kip-ft. TIME:11:49:10
(2) The seismic overstrength factor (Omega) is not included in the "RBDWEQ" and "RBUPEQ" Load Group reactions.
Seismic "BASE-ONLY" combination reactions include an overstrength factor of: 2.500
(3) Primary wind load cases are not concurrent.
(4) X-bracing reactions (RBPULW and RBUPEQ) are combined with LWL and LEQ groups only.

REACTION NOTATIONS



LOAD GROUP REACTION TABLE GRIDLINES * = 1

COLUMN	*-C			*-A			*-B		
LOAD GROUP	H	V	L	H	V	L	H	V	L
DL	0.0	1.1	-0.0	-0.0	0.9	-0.0	0.0	1.5	-0.0
COLL	0.1	0.7	-0.0	-0.1	0.7	-0.0	-0.0	1.7	-0.0
SNOW	0.3	2.9	-0.0	-0.3	2.9	-0.0	-0.0	6.8	-0.0
LL	0.3	2.9	-0.0	-0.3	2.9	-0.0	-0.0	6.8	-0.0
RBDWEQ	-0.0	-0.0	0.0	0.0	0.7	-0.0	-0.0	-0.0	-0.0
EQ	-0.2	-0.2	-0.0	-0.1	0.1	-0.0	-0.0	0.1	-0.2
RBUPEQ	0.0	0.0	-0.0	-0.0	-0.7	-0.6	0.0	-0.0	-0.0
WL1	-4.3	-7.4	-0.0	-3.7	-1.1	-0.0	-0.0	-7.7	-0.0
WL2	-5.3	-5.7	-0.0	-2.6	0.6	-0.0	-0.0	-5.2	-0.0
WL3	-4.2	-0.2	-0.0	3.7	-6.5	-0.0	0.0	-9.5	-0.0
WL4	3.2	1.5	-0.0	4.8	-4.8	-0.0	0.0	-7.0	-0.0
LWL1	2.0	-5.4	2.5	-1.7	-3.3	-0.0	-0.0	-7.5	-5.2
RBUPLW	0.1	0.1	-0.0	-0.1	-6.3	-5.8	0.0	-0.1	-0.0
LWL2	1.7	-3.4	2.5	-1.9	-5.4	-0.0	-0.0	-7.4	-5.2
LWL3	0.9	-3.7	-2.9	-0.6	-1.6	-0.0	0.0	-5.0	5.2
LWL4	0.6	-1.6	-2.9	-0.9	-3.7	-0.0	0.0	-4.9	5.2
SBAL	0.2	2.0	-0.0	-0.2	2.0	-0.0	-0.0	4.8	-0.0
RS	0.1	0.4	-0.0	-0.1	2.4	-0.0	0.0	4.0	-0.0

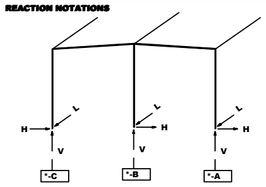
LOAD GROUP DESCRIPTION

DL	:	Roof Dead Load
COLL	:	Roof Collateral Load
SNOW	:	Roof Snow Load
LL	:	Roof Live Load
RBDWEQ	:	Downward Acting Rod Brace Load from Long. Seismic
EQ	:	Lateral Seismic Load [parallel to plane of frame]
RBUPEQ	:	Upward Acting Rod Brace Load from Long. Seismic
WL1	:	Wind from Left to Right with +GCpi
WL2	:	Wind from Left to Right with -GCpi
WL3	:	Wind from Right to Left with +GCpi
WL4	:	Wind from Right to Left with -GCpi
LWL1	:	Windward Corner Left with +GCpi
RBUPLW	:	Upward Acting Rod Brace Load from Long. Wind
LWL2	:	Windward Corner Right with +GCpi
LWL3	:	Windward Corner Left with -GCpi
LWL4	:	Windward Corner Right with -GCpi
SBAL	:	Code Calculated Balanced Roof Snow Load
RS	:	Unbalanced Right Roof Snow Load

FRAME ID #3 | USER NAME:MTSanchez | DATE:06/10/26 | PAGE:3-4
ms1 50./23.875/12.583 20./1 | JOB NAME:63283A | FILE:frame_1.fra

SUPPORT REACTIONS FOR EACH LOAD GROUP
*LOCATION: Gridlines: 1
NOTES:(1) All reactions are in kips and kip-ft. TIME:11:49:10
(2) The seismic overstrength factor (Omega) is not included in the "RBDWEQ" and "RBUPEQ" Load Group reactions.
Seismic "BASE-ONLY" combination reactions include an overstrength factor of: 2.500
(3) Primary wind load cases are not concurrent.
(4) X-bracing reactions (RBPULW and RBUPEQ) are combined with LWL and LEQ groups only.

REACTION NOTATIONS



LOAD GROUP REACTION TABLE GRIDLINES * = 1

COLUMN	*-C			*-A			*-B		
LOAD GROUP	H	V	L	H	V	L	H	V	L
LS	0.1	2.4	-0.0	-0.1	0.4	-0.0	-0.0	4.0	-0.0
RBDWLW	-0.0	-0.0	-0.0	0.0	6.3	-0.0	-0.0	-0.0	-0.0

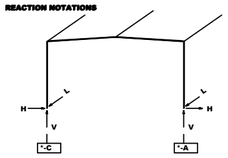
LOAD GROUP DESCRIPTION

LS	:	Unbalanced Left Roof Snow Load
RBDWLW	:	Downward Acting Rod Brace Load from Long. Wind

FRAME ID #2 | USER NAME:MTSanchez | DATE:06/10/26 | PAGE:2-3
cs 50./23.875/21.417 20./11 | JOB NAME:63283A | FILE:frames_2-3.fra

SUPPORT REACTIONS FOR EACH LOAD GROUP
*LOCATION: Gridlines: 2 3
NOTES:(1) All reactions are in kips and kip-ft. TIME:12:05:25
(2) The seismic overstrength factor (Omega) is not included in the "RBDWEQ" and "RBUPEQ" Load Group reactions.
Seismic "BASE-ONLY" combination reactions include an overstrength factor of: 2.500
(3) Primary wind load cases are not concurrent.
(4) X-bracing reactions (RBPULW and RBUPEQ) are combined with LWL and LEQ groups only.

REACTION NOTATIONS



LOAD GROUP REACTION TABLE GRIDLINES * = 2 3

COLUMN	*-C			*-A		
LOAD GROUP	H	V	L	H	V	L
DL	0.5	2.2	-0.0	-0.5	2.3	-0.0
COLL	0.7	2.7	-0.0	-0.7	2.7	-0.0
SNOW	2.8	10.7	-0.0	-2.8	10.7	-0.0
LL	2.8	10.7	-0.0	-2.8	10.7	-0.0
RBDWEQ	-0.0	0.8	-0.0	0.0	0.7	-0.0
EQ	-0.2	-0.2	-0.0	-0.2	0.2	-0.0
RBUPEQ	0.0	-0.8	-0.6	-0.0	-0.7	-0.6
WL1	-6.2	-13.4	-0.0	-2.8	-6.6	-0.0
WL2	-7.1	-8.4	-0.0	-1.9	-1.5	-0.0
WL3	2.6	-6.5	-0.0	6.4	-13.5	-0.0
WL4	1.8	-1.5	-0.0	7.3	-8.4	-0.0
LWL1	1.3	-11.0	-0.0	-1.0	-9.0	-0.0
RBUPLW	0.1	-7.2	-5.8	-0.1	-6.3	-5.8
LWL2	1.0	-9.0	-0.0	-1.3	-11.1	-0.0
LWL3	0.5	-6.0	-0.0	-0.2	-3.9	-0.0
LWL4	0.2	-3.9	-0.0	-0.5	-6.0	-0.0
SBAL	1.9	7.5	-0.0	-1.9	7.5	-0.0
RS	1.6	4.2	-0.0	-1.6	7.6	-0.0

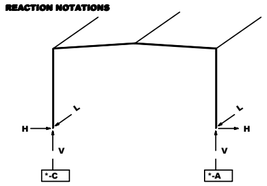
LOAD GROUP DESCRIPTION

DL	:	Roof Dead Load
COLL	:	Roof Collateral Load
SNOW	:	Roof Snow Load
LL	:	Roof Live Load
RBDWEQ	:	Downward Acting Rod Brace Load from Long. Seismic
EQ	:	Lateral Seismic Load [parallel to plane of frame]
RBUPEQ	:	Upward Acting Rod Brace Load from Long. Seismic
WL1	:	Wind from Left to Right with +GCpi
WL2	:	Wind from Left to Right with -GCpi
WL3	:	Wind from Right to Left with +GCpi
WL4	:	Wind from Right to Left with -GCpi
LWL1	:	Windward Corner Left with +GCpi
RBUPLW	:	Upward Acting Rod Brace Load from Long. Wind
LWL2	:	Windward Corner Right with +GCpi
LWL3	:	Windward Corner Left with -GCpi
LWL4	:	Windward Corner Right with -GCpi
SBAL	:	Code Calculated Balanced Roof Snow Load
RS	:	Unbalanced Right Roof Snow Load

FRAME ID #2 | USER NAME:MTSanchez | DATE:06/10/26 | PAGE:2-4
cs 50./23.875/21.417 20./11 | JOB NAME:63283A | FILE:frames_2-3.fra

SUPPORT REACTIONS FOR EACH LOAD GROUP
*LOCATION: Gridlines: 2 3
NOTES:(1) All reactions are in kips and kip-ft. TIME:12:05:25
(2) The seismic overstrength factor (Omega) is not included in the "RBDWEQ" and "RBUPEQ" Load Group reactions.
Seismic "BASE-ONLY" combination reactions include an overstrength factor of: 2.500
(3) Primary wind load cases are not concurrent.
(4) X-bracing reactions (RBPULW and RBUPEQ) are combined with LWL and LEQ groups only.

REACTION NOTATIONS



LOAD GROUP REACTION TABLE GRIDLINES * = 2 3

COLUMN	*-C			*-A		
LOAD GROUP	H	V	L	H	V	L
LS	1.6	7.5	-0.0	-1.6	4.2	-0.0
RBDWLW	-0.0	7.2	-0.0	0.0	6.3	-0.0

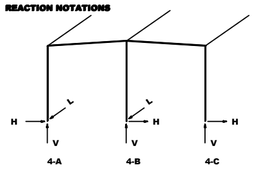
LOAD GROUP DESCRIPTION

LS	:	Unbalanced Left Roof Snow Load
RBDWLW	:	Downward Acting Rod Brace Load from Long. Wind

FRAME DESCRIPTION: Endwall EWD | USER NAME:MTSanche | DATE:06/09/26 | PAGE:EW-2
PATH: R:\jobs\Active\Eng\21-B-63283\ver01-mtsanchez\BLDG-A\run01\ | JOB NAME:63283A | FILE:REW4BLDG1

SUPPORT REACTIONS FOR EACH LOAD GROUP
NOTE: All reactions are in kips and kip-ft. TIME:16:33:48

REACTION NOTATIONS



LOAD GROUP REACTION TABLE

COLUMN	4-A			4-B			4-C		
LOAD GROUP	H	V	L	H	V	L	H	V	L
D	0.0	0.8	0.	0.	1.2	0.0	0.0	0.8	0.
C	0.0	0.7	0.	0.	1.3	0.0	0.0	0.7	0.
L	0.1	2.8	0.	0.	5.0	0.0	-0.1	2.8	0.
S	0.1	2.8	0.	0.	5.0	0.0	-0.1	2.8	0.
SBAL	0.0	1.9	0.	0.	3.5	0.0	0.0	1.9	0.
SUR	0.0	2.3	0.	0.	3.0	0.0	0.0	0.6	0.
SUL	0.0	0.6	0.	0.	3.0	0.0	0.0	2.3	0.
W+	-0.1	-6.6	3.1	0.	-11.5	6.5	0.1	-6.6	0.
W-	-0.1	-6.6	-3.6	0.	-11.5	-7.2	0.1	-6.6	0.
WR	-0.1	-3.5	0.	3.2	-14.6	0.0	0.1	-6.6	0.
WL	-3.3	-5.9	0.	0.	-8.2	0.0	0.1	-6.6	0.
E+	0.	0.	0.0	0.	0.	0.1	0.	0.	0.
E-	0.	0.	0.0	0.	0.	-0.1	0.	0.	0.
ER	0.	0.2	0.	0.2	-0.2	0.	0.	0.	0.
EL	-0.2	-0.2	0.	0.	0.2	0.	0.	0.	0.

LOAD GROUP DESCRIPTION

D	:	Dead load
C	:	Collateral load
L	:	Live load
S	:	Uniform snow load
SBAL	:	Balanced roof snow
SUR	:	Unbalanced snow - Wind from right to left
SUL	:	Unbalanced snow - Wind from left to right
W+	:	Wind load as an inward acting pressure
W-	:	Wind load as an outward acting suction
WR	:	Wind force from the right
WL	:	Wind force from the left
E+	:	Seismic force acting inward
E-	:	Seismic force acting outward
ER	:	Seismic force from right
EL	:	Seismic force from left

NOTES

1) THE REACTIONS PROVIDED ARE BASED ON THE ORDER DOCUMENTS AT THE TIME OF MAILING. ANY CHANGES TO BUILDING LOADS OR DIMENSIONS MAY CHANGE THE REACTIONS. THE REACTIONS WILL BE SUPERSEDED AND VOIDED BY ANY FUTURE MAILING.
2) THE REACTIONS PROVIDED HAVE BEEN CREATED WITH THE FOLLOWING LAYOUT (UNLESS NOTED OTHERWISE).
a) A REACTION TABLE IS PROVIDED WITH THE REACTIONS FOR EACH LOAD GROUP.
b) RIGID FRAMES
(1) SEE NOTE 3.
c) ENDWALLS
(1) SEE NOTE 3.
d) X-BRACING
(1) X-BRACING REACTIONS ARE INCLUDED IN VALUES SHOWN IN THE REACTION TABLES.
(2) FOR IBC AND UBC BASED BUILDING CODES, WHEN X-BRACING IS PRESENT IN THE SIDEWALL, INDIVIDUAL LONGITUDINAL SEISMIC LOADS (RBUPEQ, RBDWEQ, E+, E- AND LEQ) DO NOT INCLUDE THE AMPLIFICATION FACTOR, W.
(3) FOR IBC AND UBC BASED BUILDING CODES, WHEN X-BRACING IS PRESENT IN THE ENDWALL, INDIVIDUAL TRANSVERSE SEISMIC LOADS (EL & ER) DO NOT INCLUDE THE AMPLIFICATION FACTOR, W.
e) THE METAL BUILDING MANUFACTURER IS RESPONSIBLE ONLY FOR THE PORTION OF THE ANCHOR ROD DESIGN PERTAINING TO THE TRANSFER OF FORCES BETWEEN THE BASE PLATE BEARING AND THE ANCHOR ROD'S SHEAR AND TENSION. THE METAL BUILDING MANUFACTURER IS NOT RESPONSIBLE FOR THE ANCHOR ROD EMBEDMENT FOR TRANSFER OF FORCES TO THE FOUNDATION. THE METAL BUILDING MANUFACTURER DOES NOT DESIGN AND IS NOT RESPONSIBLE FOR THE DESIGN, MATERIAL, AND CONSTRUCTION OF THE FOUNDATION EMBEDMENTS. THE END USE CUSTOMER SHALL ASSURE THAT ADEQUATE PROVISIONS ARE MADE TO THE FOUNDATION DESIGN FOR LOADS IMPOSED BY COLUMN REACTIONS OF THE BUILDING, OTHER IMPOSED LOADS, AND BEARING CAPACITY OF THE SOIL AND OTHER CONDITIONS OF THE BUILDING SITE. IT IS RECOMMENDED THAT THE ANCHORAGE AND FOUNDATION OF THE BUILDING BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER COMPETENT IN THE DESIGN OF SUCH STRUCTURES.
i.(REF. APPENDIX A3 OF THE MBMA METAL BUILDING SYSTEMS MANUAL.)
f) ANCHOR RODS ARE ASTM F1554 GR. 36 MATERIAL UNLESS NOTED OTHERWISE ON THE ANCHOR ROD LAYOUT DRAWING.
3) REACTIONS ARE PROVIDED AS UN-FACTORED FOR EACH LOAD GROUP APPLIED TO THE COLUMN. THE FACTORS APPLIED TO LOAD GROUPS FOR THE STEEL COLUMN DESIGN MAY BE DIFFERENT THAN THE FACTORS USED IN THE FOUNDATION DESIGN. THE FOUNDATION ENGINEER SHALL APPLY THE APPROPRIATE LOAD FACTORS AND COMBINE THE REACTIONS IN ACCORDANCE WITH THE BUILDING CODE AND DESIGN SPECIFICATIONS FOR PROPER FOUNDATION DESIGN.
a) FOR PROJECTS USING ULTIMATE DESIGN WIND SPEEDS SUCH AS 2012 IBC, 2015 IBC, OR FLORIDA BUILDING CODE, THE WIND LOAD REACTIONS ARE AT A STRENGTH LEVEL WITH A LOAD FACTOR OF 1.0.
b) FOR IBC CODES, THE SEISMIC REACTIONS PROVIDED ARE AT A STRENGTH LEVEL WITH A LOAD FACTOR OF 1.0, AND DO NOT CONTAIN THE RHO FACTOR.
THE MANUFACTURER DOES NOT PROVIDE "MAXIMUM" LOAD COMBINATION REACTIONS. HOWEVER, THE INDIVIDUAL LOAD REACTIONS PROVIDED MAY BE USED BY THE FOUNDATION ENGINEER TO DETERMINE THE APPLICABLE LOAD COMBINATIONS FOR HIS/HER DESIGN PROCEDURES AND ALLOW FOR AN ECONOMICAL FOUNDATION DESIGN.

Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
☐ Issued For Approval (Not For Construction)
☒ Issued For Construction
☐ Issued For Permit

Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	MTS
Job Number:	21-B-63283
Sheet Number:	F3 of 3

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ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835

Anuradha Khanna

ANURADHA KHANNA
License No. 6201310835
June 23, 2026
LICENSED PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Anuradha Khanna, P.E. on the date and/or time stamp shown using a digital signature. Printed copies of this document are not considered signed and sealed and the signature must be verified by a 3rd Party Certificate Authority on any electronic copy.

Builder/Contractor Responsibilities

Drawing Validity- These drawings, supporting structural calculations and design certification are based on the order documents as of the date of these drawings. These documents describe the material supplied by the manufacturer as of the date of these drawings. Any changes to the order documents after the date on these drawings may void these drawings, supporting structural calculations and design certification. The Builder/Contractor is responsible for notifying the building authority of all changes to the order documents which result in changes to the drawings, supporting structural calculations and design certification.

Builder Acceptance of Drawings- Approval of the manufacturer's drawings and design data affirms that the manufacturer has correctly interpreted and applied the requirements of the order documents and constitutes Builder/Contractor acceptance of the manufacturer's interpretations of the order documents and standard product specifications, including its design, fabrication and quality criteria standards and tolerances. (AISC COSP June 2016 Section 4.4.1)

Code Official Approval - It is the responsibility of the Builder/Contractor to ensure that all project plans and specifications comply with the applicable requirements of any governing building authority. The Builder/Contractor is responsible for securing all required approvals and permits from the appropriate agency as required.

Building Erection - The Builder/Contractor is responsible for all erection of the steel and associated work in compliance with the Metal Building Manufacturers drawings. Temporary supports, such as temporary guys, braces, false work or other elements required for erection will be determined, furnished and installed by the erector (AISC COSP June 2016 Section 7.10.3).

Discrepancies - Where discrepancies exist between the Metal Building plans and plans for other trades, the Metal Building plans will govern. (AISC COSP June 2016 Section 3.3)

Materials by Others - All interface and compatibility of any materials not furnished by the manufacturer are the responsibility of and to be coordinated by the Builder/Contractor or A/E firm. Unless specific design criteria concerning any interface between materials if furnished as a part of the order documents, the manufacturers assumptions will govern.

Modification of the Metal Building from Plans - The Metal Building supplied by the manufacturer has been designed according to the Building Code and specifications and the loads shown on this drawing. Modification of the building configuration, such as removing wall panels or braces, from that shown on these plans could affect the structural integrity of the building. The Metal Building Manufacturer or a Licensed Structural Engineer should be consulted prior to making any changes to the building configuration shown on these drawings. The Metal Building Manufacturer will assume no responsibility for any loads applied to the building not indicated on these drawings.

Foundation Design - The Metal Building Manufacturer is not responsible for the design, materials and workmanship of the foundation. Anchor rod plans prepared by the manufacturer are intended to show only location, diameter and projection of the anchor rods required to attach the Metal Building System to the foundation. It is the responsibility of the end customer to ensure that adequate provisions are made for specifying rod embedment, bearing values, tie rods and or other associated items embedded in the concrete foundation, as well as foundation design for the loads imposed by the Metal Building System, other imposed loads, and the bearing capacity of the soil and other conditions of the building site. (MBMA 06 Sections 3.2.2 and A3)

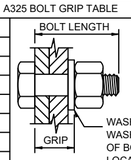
Shimming - In accordance with Section 6.10 of Chapter 4 Common Industry Practices in the Metal Building Systems Manual, shimming is a normal part of erection and is not subject to claim.

Building Descriptions			
Building ID	Width	Length	Height
Building A	50'-0	64'-0	23'-10 ½

Download panel installation manuals from:
www.CBBmanuals.com

Descargue los manuales de instalación del panel desde:
www.CBBmanuals.com

½" DIA. A325 BOLT GRIP TABLE	
GRIP	LENGTH
0 TO 9/16"	1 1/4" F.T.
Over 9/16" TO 1 1/16"	1 3/4" F.T.
Over 1 1/16" TO 1 5/16"	2"
Over 1 5/16" TO 1 9/16"	2 1/4"
Over 1 9/16" TO 1 13/16"	2 1/2"
Over 1 13/16" TO 2 1/16"	2 3/4"
LOCATIONS OF BOLTS LONGER THAN 2 3/4" NOTED ON ERECTION DRAWINGS	
F.T. DENOTES FULLY THREADED	



NOTE: FULL THREAD ENGAGEMENT IS DEEMED TO HAVE BEEN MET WHEN THE END OF THE BOLT IS FLUSH WITH THE FACE OF THE NUT.

WASHER REQUIRED ONLY WHEN SPECIFIED. WASHER MAY BE LOCATED UNDER HEAD OF BOLT, UNDER NUT, OR AT BOTH AT LOCATIONS NOTED ON ERECTION DRAWINGS. ADD 5/32" FOR EACH WASHER TO MATERIAL THICKNESS TO DETERMINE GRIP.

METALLIC BUILDING SYSTEMS
Part of the **Cornerstone Building Brands** Family
Sales: 866.800.6353
metallic.com

DESIGN CRITERIA

```
Building Code ....................: 2021 MICHIGAN
Building Risk Category ...........: Normal (Risk Category II)
Roof Dead Load
     Superimposed ................: 2.40 psf
     Collateral ..................: 5.00 psf
     (5.00 psf Other)
Roof Live Load ...................: 20.00 psf no reduction

Snow
     Ground Snow Load (Pg) ......: 20.00 psf
     Snow Importance Factor (I) ..: 1.00
     Snow Exposure Factor (Ce) ..: 1.00
     Thermal Factor (Ct) ........: 1.00
     Slope Factor (Cs) ..........: 1.00
     Sloped Roof Snow (Ps) ......: 14.00 psf
     Minimum Roof Snow Load (Pm) : 20.00 psf

Wind
     Ultimate Wind Speed (Vult) .: 115 mph
     Nominal Wind Speed (Vasd) ..: 89 mph (IBC section 1609.3.1)
     Serviceability Wind Speed ..: 75 mph
     Ground Elevation Factor ....: 0.98 (645 ft ASL)
     Wind Exposure Category .....: C
     Exposure Coefficient (MWFRS): 0.936
     Enclosure Classification ...: Enclosed Building
     Internal Pressure Coef (GCpi): 0.18/-0.18
     Unfactored Wall Loads for components not provided by building manufacturer
     Zone 5 Areas (within 5.00' of corner) : 28.42 psf pressure -37.89 psf suction
     Zone 4 Areas (away from corners)      : 28.42 psf pressure -30.79 psf suction
     These values are the maximum values required based on a 10 sq ft area.
     Components with larger areas may have lower wind loads.

Seismic
     Seismic Importance Factor (Ie): 1.00
     Seismic Design Category ....: B
     Soil Site Class ............: D Stiff Soil (Default)
     Ss .........................: 0.104 g         Sds ...: 0.111 g
     S1 .........................: 0.046 g         Sd1 ...: 0.074 g
     Analysis Procedure .........: Equivalent Lateral Force
     Column Line                   All
     Basic Force Resisting System  H
     Response Modification Coefficient (R)  3.00
     Seismic Response Coefficient (Cs)      0.04
     Design Base Shear in kips (V)          1.28
     Basic Structural System (from ASCE 7-16 Table 12.2-1)
     H  - Steel System not Specifically Detailed for Seismic Resistance
```

DEFLECTION CRITERIA

The material supplied by the manufacturer has been designed with the following minimum deflection criteria. The actual deflection may be less depending on actual load and actual member length.

BUILDING DEFLECTION LIMITS .....: BLDG-A

Roof Limits	Rafters	Purlins	Panels
Live: L/	180	150	60
Snow: L/	180	180	60
Serviceability Wind: L/	180	180	60
Total Gravity: L/	120	120	60
Total Uplift: L/	N/A	N/A	60

Frame Limits	Sidesway
Live: H/	60
Snow: H/	60
Serviceability Wind: H/	60
Seismic Drift: H/	40
Total Gravity: H/	60
Service Seismic: H/	40

Wall Limits	Limit
Total Wind Panels: L/	60
Total Wind Girts: L/	90
Total Wind EW Columns: L/	120

The Service Seismic limit as shown here is at service level loads.

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field.services@cornerstone-bb.com

PROJECT NOTES

Material properties of steel bar, plate, and sheet used in the fabrication of built-up structural framing members conform to ASTM A529, ASTM A572, or ASTM A1011 with 55 ksi min. yield, except flanges wider than 12" and thicker than 3/8", all flanges thicker than 1", and all webs thicker than 3/8" are 50 ksi min. yield. Rod X-bracing conforms to ASTM A529 or ASTM A572 with 50 ksi min. yield. Cable X-bracing conforms to ASTM A475 7 Strand Extra High-Strength grade. Hot rolled structural shapes conform to ASTM A992, ASTM A529, or ASTM A572 with 50 ksi min. yield. Hot rolled angles, other than flange braces, conform to ASTM A36 minimum. Round and rectangular HSS conforms to ASTM A500 Grade B. Cold-formed steel secondary framing Members conform to ASTM A1011 or ASTM A653 Grade 55 with 55 ksi min. yield. For Canada, material properties conform to CAN/CSA G40.20/G40.21 or equivalent.

Unless otherwise noted, special inspection of fabricated items is not required. Per IBC section 1704.2.5.1, fabricator is approved to perform such work without special inspection through maintenance of IAS AC 472 certification MB-136.

All bolted joints with A325 Type 1 bolts are specified as snug-tightened joints in accordance with the most recent edition of the RCSC Specification for Structural Joints Using ASTM A325 or A490 Bolts. Pre-tensioning methods, including turn-of-nut, calibrated wrench, twist-off-type tension-control bolts or direct-tension-indicator are NOT required. Installation inspection requirements for Snug Tight Bolts (Specification for Structural Joints Section 9.1) is suggested.

Design criteria as noted is as given within order documents and is applied in general accordance with the applicable provisions of the model code and/or specification indicated. Neither the metal building manufacturer nor the certifying engineer declares or attests that the loads as designated are proper for local provisions that may apply or for site specific parameters. The design criteria is supplied by the builder, project owner, or an Architect and/or Engineer of Record for the overall construction project.

This metal building system is designed as an Enclosed Building. Exterior and/or operable components including, but not limited to, doors, windows, vents, etc. ("Components") must be designed to withstand the required component and cladding wind pressures specified by the building code. In order to maintain the metal building system's Enclosed Building condition, all Components shall be closed when wind velocities reach half the designed wind load for the metal building system as shown on the drawings and design criteria documentation. Failure to maintain the metal building system's Enclosed Building condition will violate and void all warranties and certifications applicable to the material supplied by the metal building manufacturer.

Framed openings, walk doors, and open areas shall be located in the bay and elevation as shown in the erection drawings. The cutting or removal of girts shown on the erection drawings due to the addition of framed openings, walk doors, or open areas not shown may void the design certifications supplied by the metal building manufacturer.

Using 8.1 x 6.3125 eave gutter with 4 x 5 downspouts, the roof drainage system has been designed using the method outlined in the MBMA Metal Building Systems Manual. Downspout locations have not been located on these drawings. The downspouts are to be placed on the building sidewalls at a spacing not to exceed 64 feet with the first downspout from both ends of the gutter run within 32 feet of the end. Downspout spacing that does not exceed the maximum spacing will be in compliance with the building code. The gutter and downspout system as provided by the manufacturer is designed to accommodate 5.86 in/hr rainfall intensity.

Drawing Index	
Page	Description
F1	Anchor Rod Setting Plan
F2	Anchor Rod Details
F3	Reactions
E1	Cover Sheet
E2	Primary Steel
E3	Roof Framing
E4	Roof Sheeting RPA & RPC
E5	Sidewall Framing Sheeting SWA
E6	Sidewall Framing Sheeting SWC
E7	Endwall Framing Sheeting EWB
E8	Endwall Framing Sheeting EWD
E9	Cross Section at Frame Line 1
E10	Cross Section at Frame Line 2
E11	Cross Section at Frame Line 3
E12	Connection Detail
R1-R3	Erection Guide
R4-R15	Construction Drawings

Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

☐ Issued For Approval (Not For Construction)
☐ Issued For Permit
☒ Issued For Construction

Drawing Status:

Scale: NOT TO SCALE
Drawn by: LSG 6/17/26
Checked by: SYH 6/19/26
Project Engineer: MTS
Job Number: 21-B-63283
Sheet Number: E1 of 12

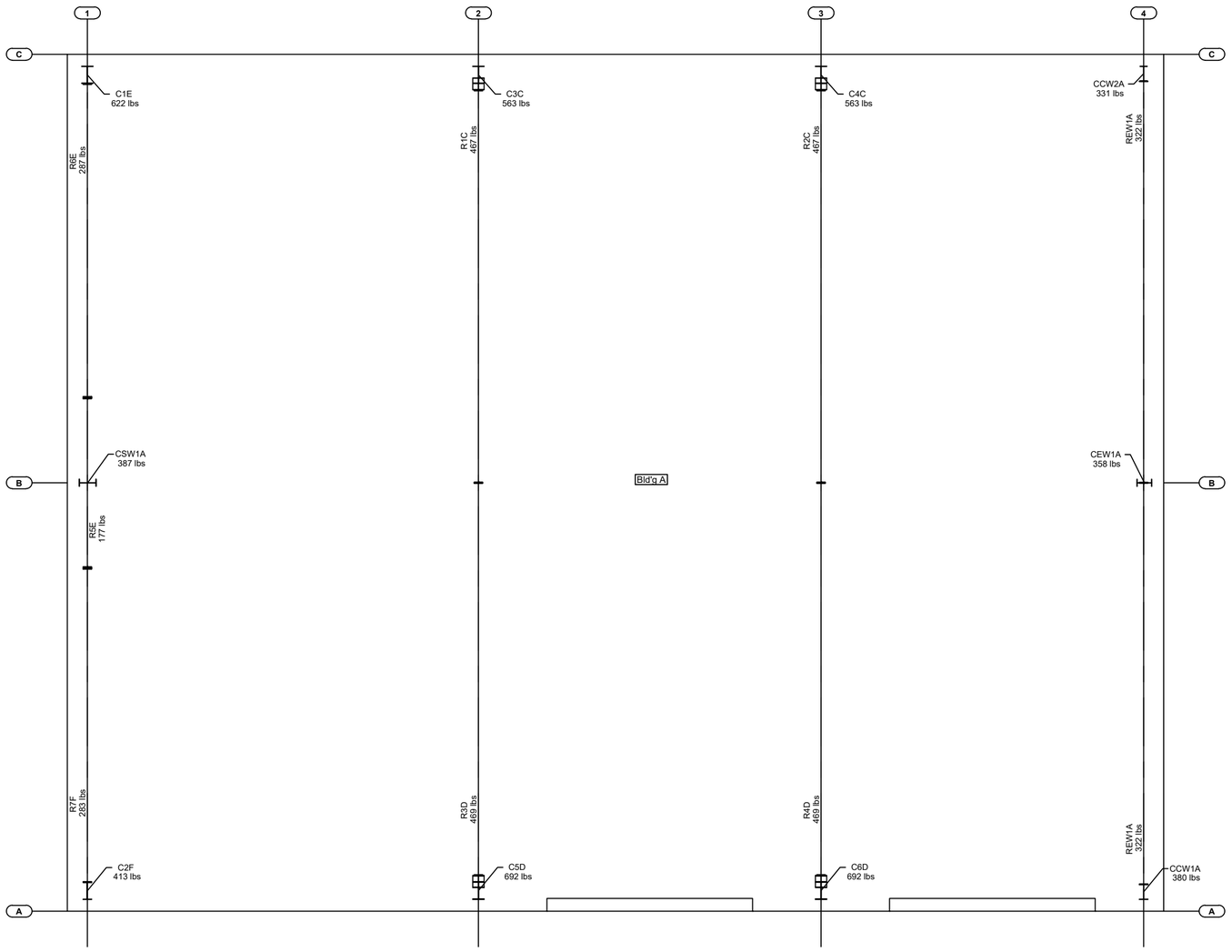
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MICHIGAN P.E. 6201310835

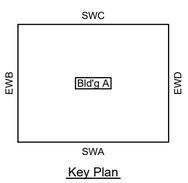
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ANURADHA KHANNA
LICENSED PROFESSIONAL ENGINEER
License No.
Jun 23, 2026
6201310835

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Primary Steel



Key Plan

Revision	Date	By	Ck'd	Description

Cornerstone Building Brands
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Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST E
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

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Drawn by: LSG 6/17/26
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Sheet Number: E2 of 12

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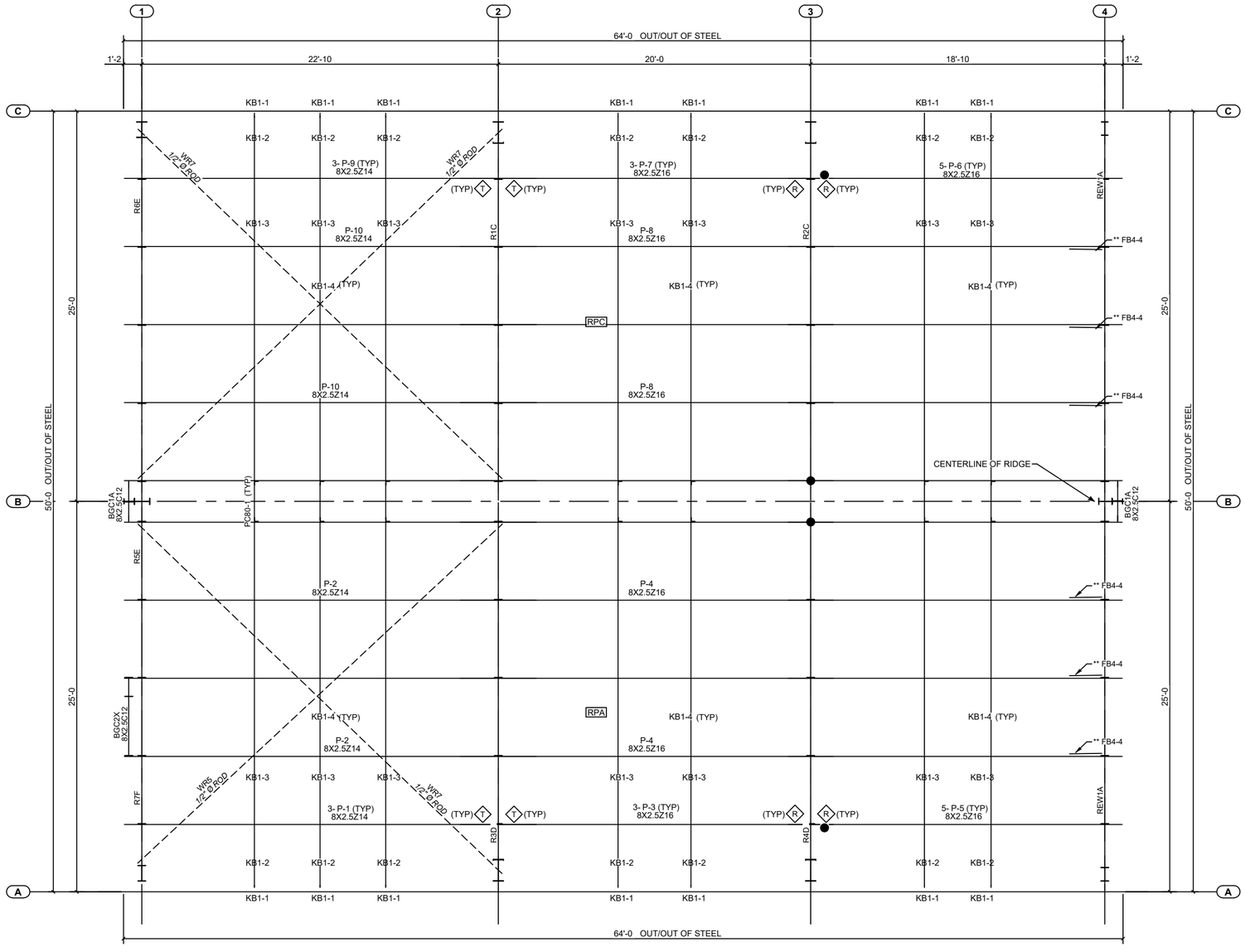
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Anuradha Khanna

KHANNA
Jun 24 2026
PROFESSIONAL ENGINEER

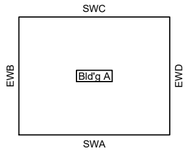
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● — DENOTES: CLIP LOCATION
SC90 AT 8" PURLINS
SC92 AT 10" PURLINS
SC94 AT 12" PURLINS



Roof Framing

ZEE SECTION LAP TABLE			
SYMBOL	LAP LENGTH	SYMBOL	LAP LENGTH
Q	-0'-0 1/4"	T	2'-5 3/4"
S	0'-3 3/4"	V	3'-1 3/4"
R	1'-5 3/4"	REFER TO CF01122	



Key Plan

** DENOTES: CLIPS AT FLANGE BRACE
CL196 & CL199 AT 8" PURLINS/GIRTS
CL197 & CL199 AT 10" PURLINS/GIRTS
CL198 & CL199 AT 12" PURLINS/GIRTS

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Cornerstone Building Brands
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8100 MELVILLE ST
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Sheet Number:	E3 of 12

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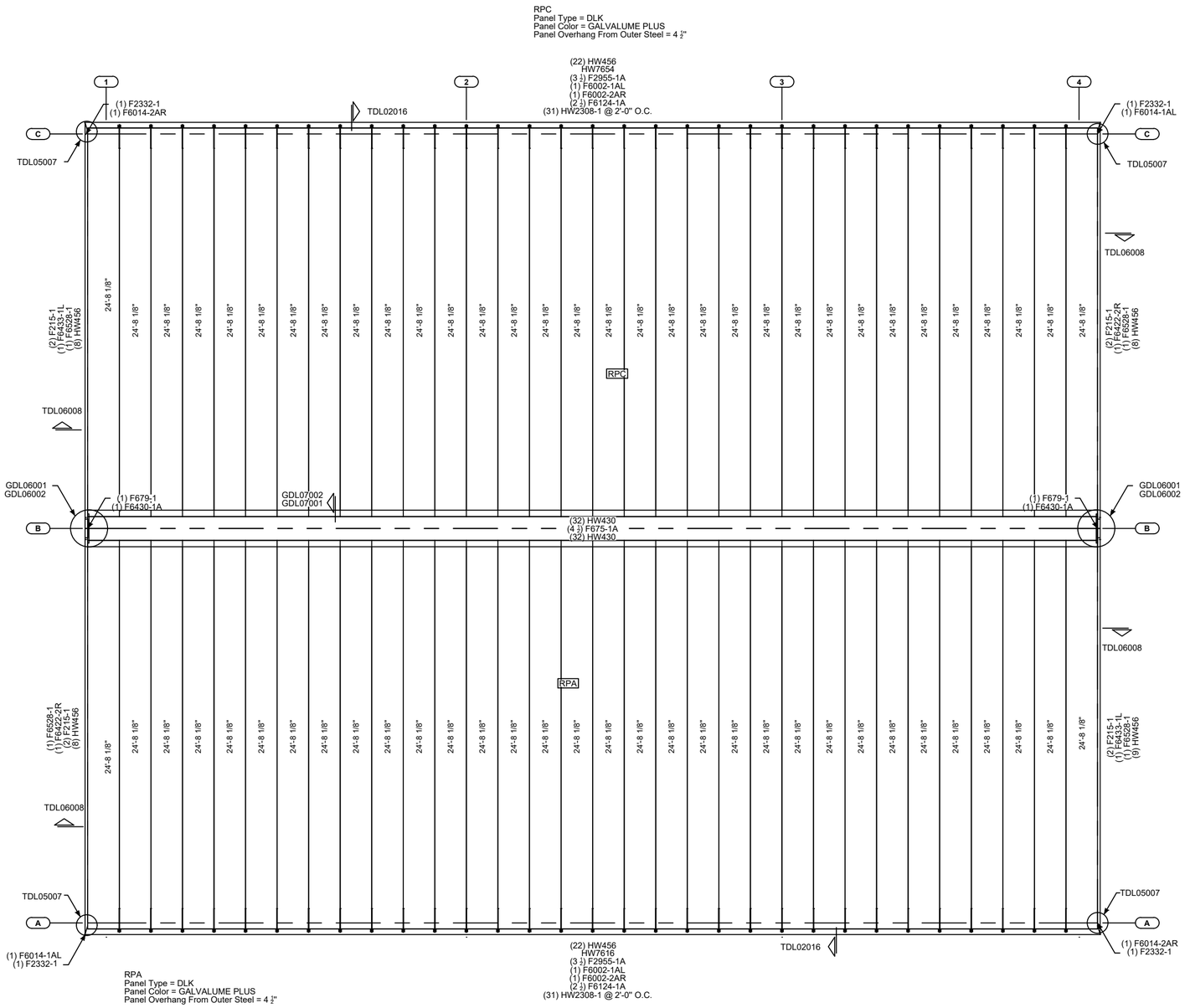
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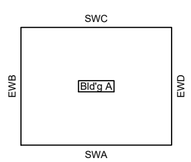
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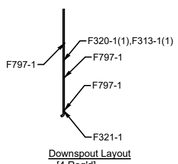
Weathertightness Warranty Qualifications

1. All roof penetrations (Pipes, Lighting Rods, Etc.) are excluded from the Weathertightness Warranty without prior approval by Weathertightness Department. Pipe penetrations must be flashed with EPDM rubber boot jacks and approved by Bldg. Mfr. to be included in the WTW.
2. Snow Guards and Solar Collector attachment is excluded from the Weathertightness Warranty without prior written approval, and must be an aluminum or stainless steel non-piercing clamp type mechanism.
3. Light Transmitting Panels are excluded from the Weathertightness Warranty.
4. Ridge ventilators are excluded from the Weathertightness Warranty.
5. Built up roof areas or tie-ins are excluded from the Weathertightness Warranty.
6. Internal gutters are excluded from the Weathertightness Warranty without prior approval by Weathertightness Department.
7. Turn-down facades are excluded from the Weathertightness Warranty.
8. Parapet cap, backer panels and counter flashing are excluded from the Weathertightness Warranty.
9. Roof curbs must be fully welded 5052-H32 aluminum 0.080 minimum or stainless steel and be pre-approved by Bldg. Mfr. to be included in the Weathertightness Warranty.
10. A Standard-III Weathertightness Warranty requires a Bldg. Mfr. certified roof installer on the roof during installation of the entire roof system.
11. A Single Source Weathertightness Warranty requires a Bldg. Mfr. certified roof installer on the roof during installation of the entire roof system. Inspections by Bldg. Mfr. are required at start-up, mid-point and final. The Builder / Installer is responsible to request roof inspections a minimum of (2) weeks in advance.
12. **Non-compliance with warranty requirements can result in Bldg. Mfr.'s inability to issue a Weathertightness Warranty.**





Key Plan



Downspout Layout
[4 Req'd]
BUILDING "A"

Roof Sheeting RPA & RPC

Revision	Date	By	Ck'd	Description

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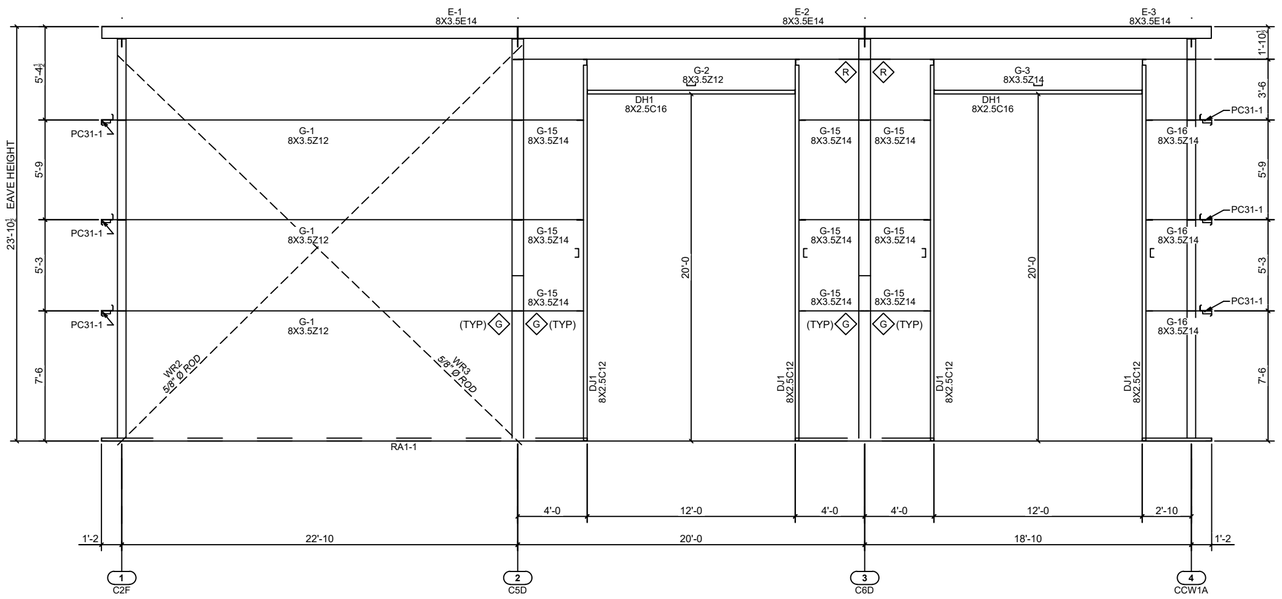
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MICHIGAN P.E. 6201310835

Anuradha Khanna

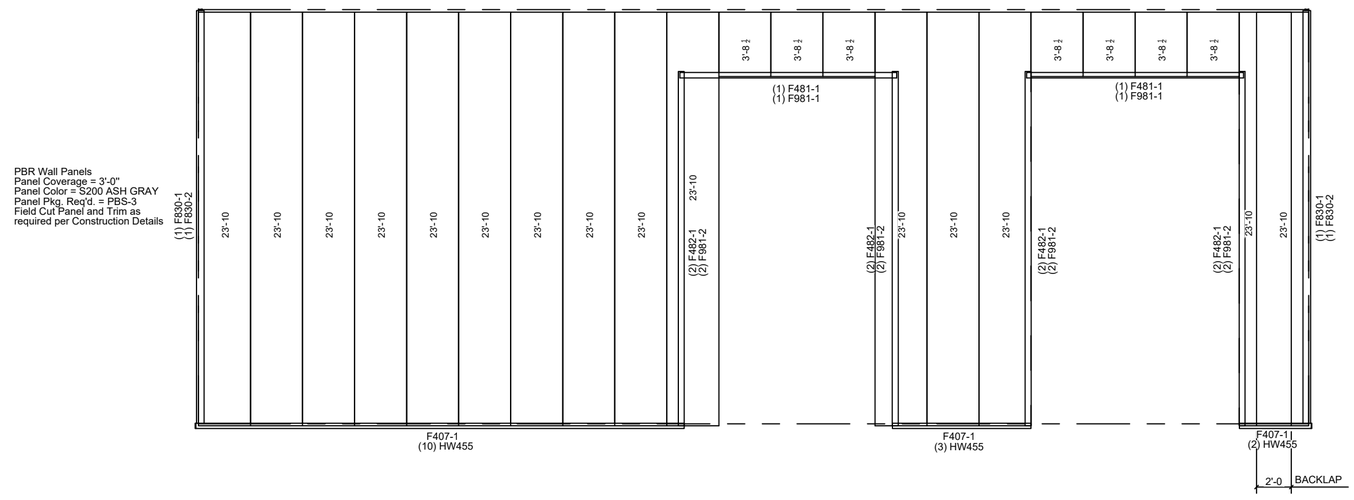
ANURADHA KHANNA
LICENSED PROFESSIONAL ENGINEER
License No. 6201310835
Jun 21, 2026

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PBR Wall Panel Fasteners
#178 member fasteners are to be used for panel to secondary attachment in lieu of #17A shown on the R Drawings
#4 lap fasteners are to be used for panel to panel end panel to trim attachment in lieu of #4A shown on the R Drawings

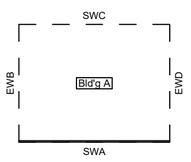


Sidewall Framing SWA at Grid Line A



Sidewall Sheeting SWA

ZEE SECTION LAP TABLE			
SYMBOL	LAP LENGTH	SYMBOL	LAP LENGTH
G	-0'-0 1/4"	T	2'-5 3/4"
S	0'-3 3/4"	V	3'-1 3/4"
R	1'-5 3/4"	REFER TO CF01122	



Key Plan

Revision	Date	By	Ck'd	Description

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
☐ Issued For Approval (Not For Construction)
☒ Issued For Permit
☒ Issued For Construction

Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	MTS
Job Number:	21-B-63283
Sheet Number:	E5 of 12

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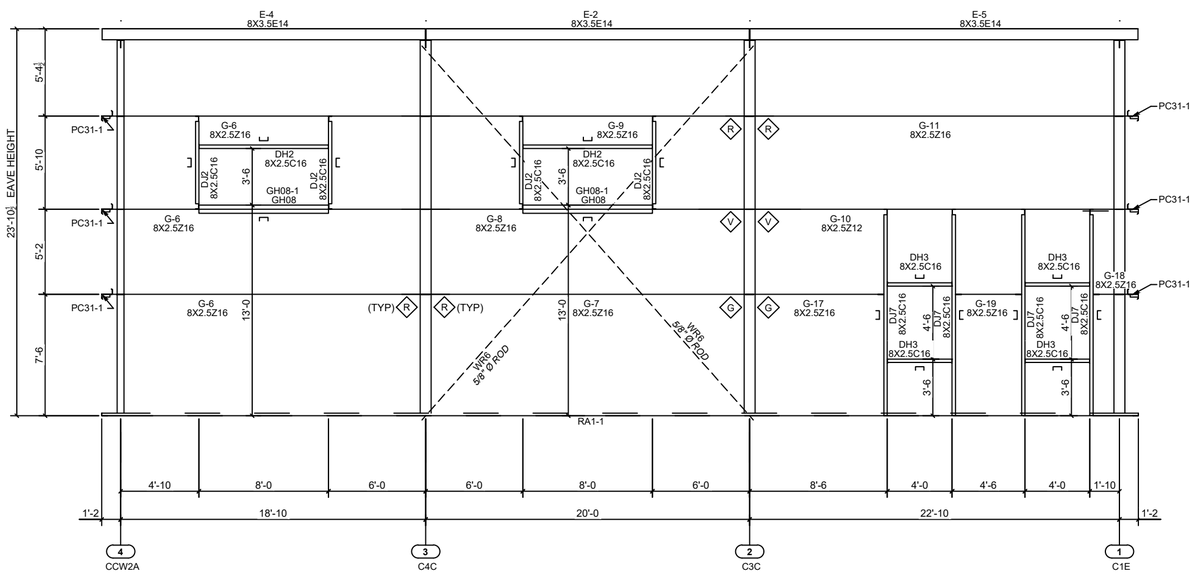
ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835

Anuradha Khanna

ANURADHA KHANNA
LICENSED PROFESSIONAL ENGINEER
License No. 6201310835
Jun 24, 2026

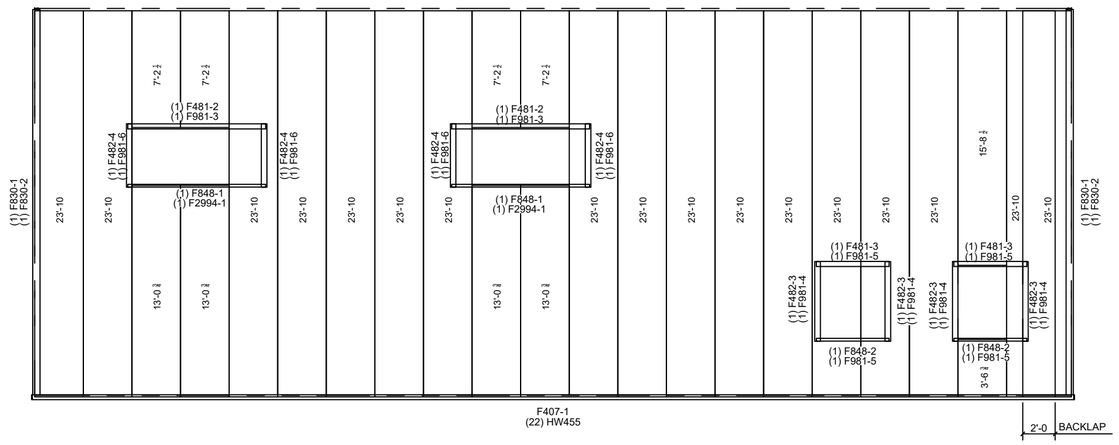
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PBR Wall Panel Fasteners
#7B member fasteners are to be used for panel to secondary attachment in lieu of #7A shown on the R Drawings
#4 lap fasteners are to be used for panel to panel and panel to trim attachment in lieu of #4A shown on the R Drawings



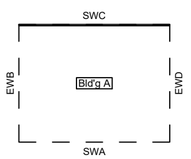
Sidewall Framing SWC at Grid Line C

PBR Wall Panels
Panel Coverage = 3'-0"
Panel Color = S200 ASH GRAY
Panel Pkg. Req'd. = PBS-4
Field Cut Panel and Trim as required per Construction Details



Sidewall Sheeting SWC

ZEE SECTION LAP TABLE			
SYMBOL	LAP LENGTH	SYMBOL	LAP LENGTH
G	-0'-0 1/4"	T	2'-5 3/4"
S	0'-3 3/4"	V	3'-1 3/4"
R	1'-5 3/4"	REFER TO CF01122	



Key Plan

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Revision	Date	Description	By	Ck'd

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
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☐ Issued For Permit
☒ Issued For Construction

Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	MTS
Job Number:	21-B-63283
Sheet Number:	E6 of 12

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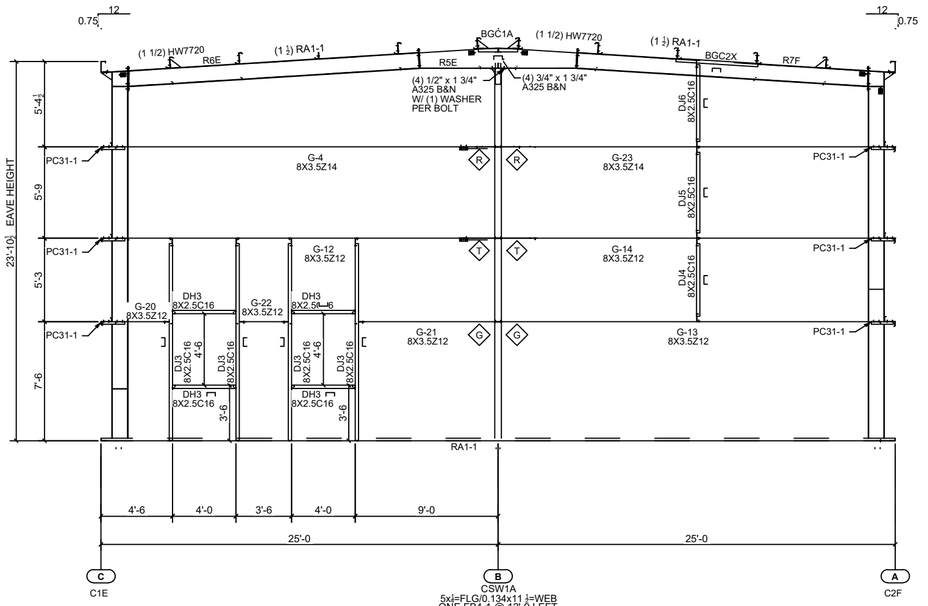
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MICHIGAN P.E. 6201310835

Anuradha Khanna

ANURADHA KHANNA
License No. 6201310835
LICENSED PROFESSIONAL ENGINEER
Jun 24, 2026

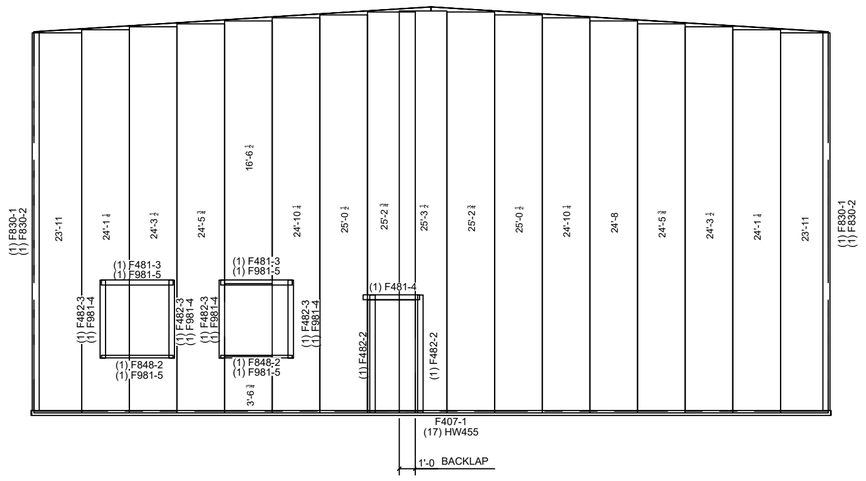
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PBR Wall Panel Fasteners
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#4 lap fasteners are to be used for panel to panel and panel to trim attachment in lieu of #4A shown on the R Drawings



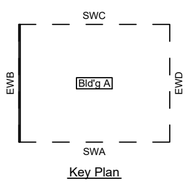
Endwall Framing EWB at Grid Line 1

PBR Wall Panels
Panel Coverage = 3'-0"
Panel Color = S200 ASH GRAY
Panel Pkg. Req'd. = PBS-1
Field Cut Panel and Trim as required per Construction Details



Endwall Sheeting EWB

ZEE SECTION LAP TABLE			
SYMBOL	LAP LENGTH	SYMBOL	LAP LENGTH
G	-0'-0 1/4"	T	2'-5 3/4"
S	0'-3 3/4"	V	3'-1 3/4"
R	1'-5 3/4"	REFER TO CF01122	



Key Plan

Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

METALLIC BUILDING SYSTEMS — Part of the Cornerstone Building Brands Family

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
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☐ Issued For Permit
☒ Issued For Construction

Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	MTS
Job Number:	21-B-63283
Sheet Number:	E7 of 12

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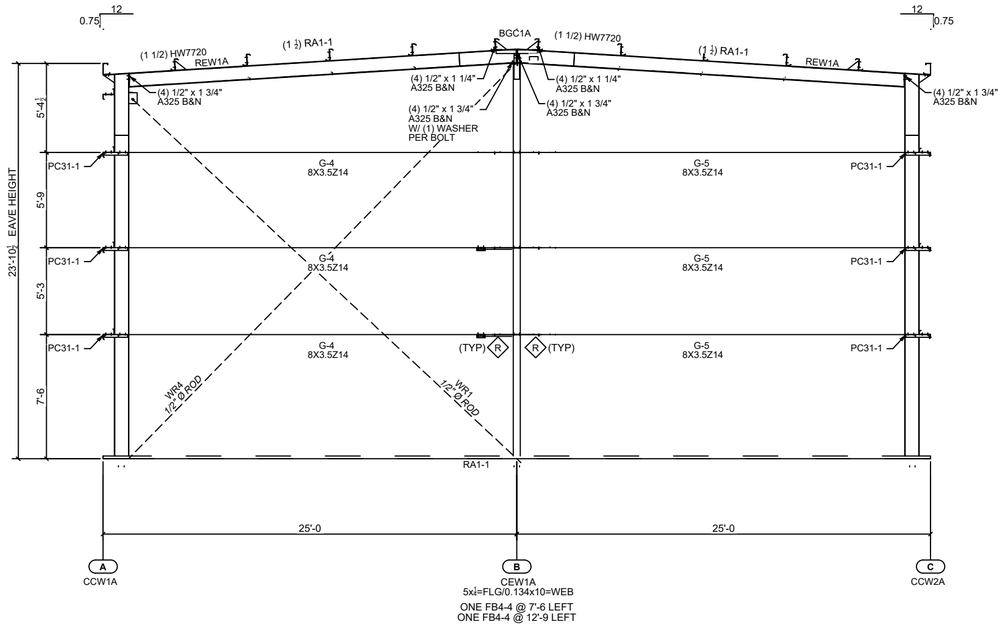
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MICHIGAN P.E. 6201310835

Anuradha Khanna

ANURADHA KHANNA
LICENSED PROFESSIONAL ENGINEER
License No. 6201310835
Jun 24, 2026

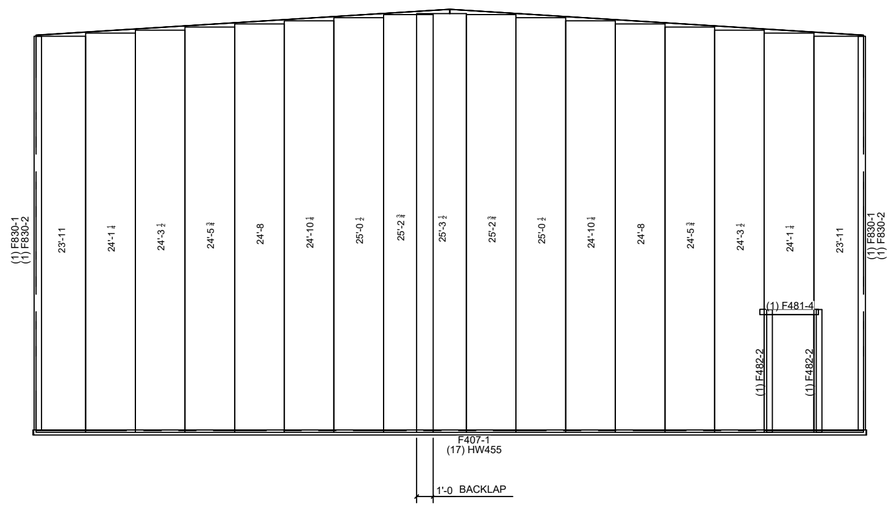
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PBR Wall Panel Fasteners
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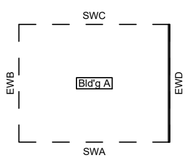
Endwall Framing EWD at Grid Line 4

PBR Wall Panels
Panel Coverage = 3'-0"
Panel Color = S200 ASH GRAY
Panel Pkg. Req'd. = PBS-2
Field Cut Panel and Trim as required per Construction Details



Endwall Sheeting EWD

ZEE SECTION LAP TABLE			
SYMBOL	LAP LENGTH	SYMBOL	LAP LENGTH
G	-0'-0 1/4"	T	2'-5 3/4"
S	0'-3 3/4"	V	3'-1 3/4"
R	1'-5 3/4"	REFER TO CF01122	



Key Plan

Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

☒ Issued For Construction
☐ Issued For Permit
☐ Issued For Approval (Not For Construction)
Drawing Status:

Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	MTS
Job Number:	21-B-63283
Sheet Number:	E8 of 12

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MICHIGAN P.E. 6201310835

Anuradha Khanna

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License No. 6201310835
LICENSED PROFESSIONAL ENGINEER
Jun 24, 2026

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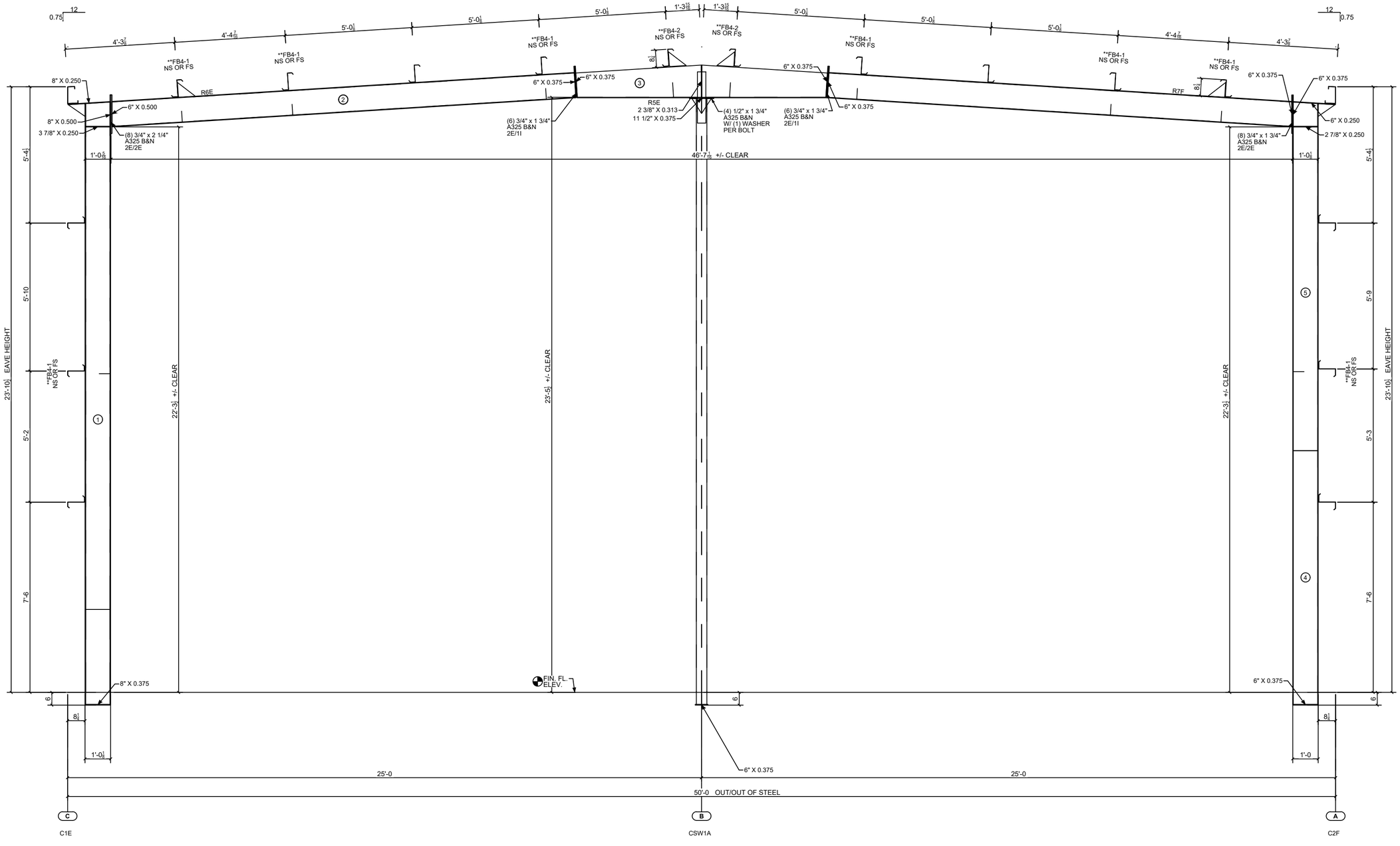
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GENERAL NOTES
FRAME CLEARANCES SHOWN ARE APPROXIMATE AND MAY VARY DUE TO CONDITIONS (DEFLECTION).

VERTICAL CLEARANCE DIMENSIONS ARE FROM FINISHED FLOOR REFERENCE ELEVATION.

APPROXIMATE MEMBER WEIGHTS	
PART MARK	WEIGHT
R5E	176
R6E	287
R7F	282
C1E	622
C2F	413
CSW1A	387



PRIMARY BUILT-UP MEMBER SIZES							
MARK	OUTSIDE FLG THICK	OUTSIDE FLG WIDTH	INSIDE FLG THICK	INSIDE FLG WIDTH	WEB THICK	WEB START DEPTH	WEB END DEPTH
1	0.3125	8"	0.3125	8"	0.1850	11.5000	11.5000
2	0.2500	5"	0.2500	5"	0.1340	11.5000	11.5000
3	0.2500	5"	0.2500	5"	0.1340	11.5234	15.2500
4	0.2500	6"	0.2500	6"	0.1340	11.5000	11.5000
5	0.2500	6"	0.2500	6"	0.1560	11.5000	11.5000

Cross Section at Frame Line 1

** DENOTES: CLIPS AT FLANGE BRACE
CL196 & CL199 AT 8" PURLINS/GIRTS
CL197 & CL199 AT 10" PURLINS/GIRTS
CL198 & CL199 AT 12" PURLINS/GIRTS

Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
☐ Issued For Approval (Not For Construction)
☒ Issued For Construction
☐ Issued For Permit

Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	MTS
Job Number:	21-B-63283
Sheet Number:	E9 of 12

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ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835

Anuradha Khanna

ANURADHA KHANNA
License No. 6201310835
June 23, 2026
LICENSED PROFESSIONAL ENGINEER

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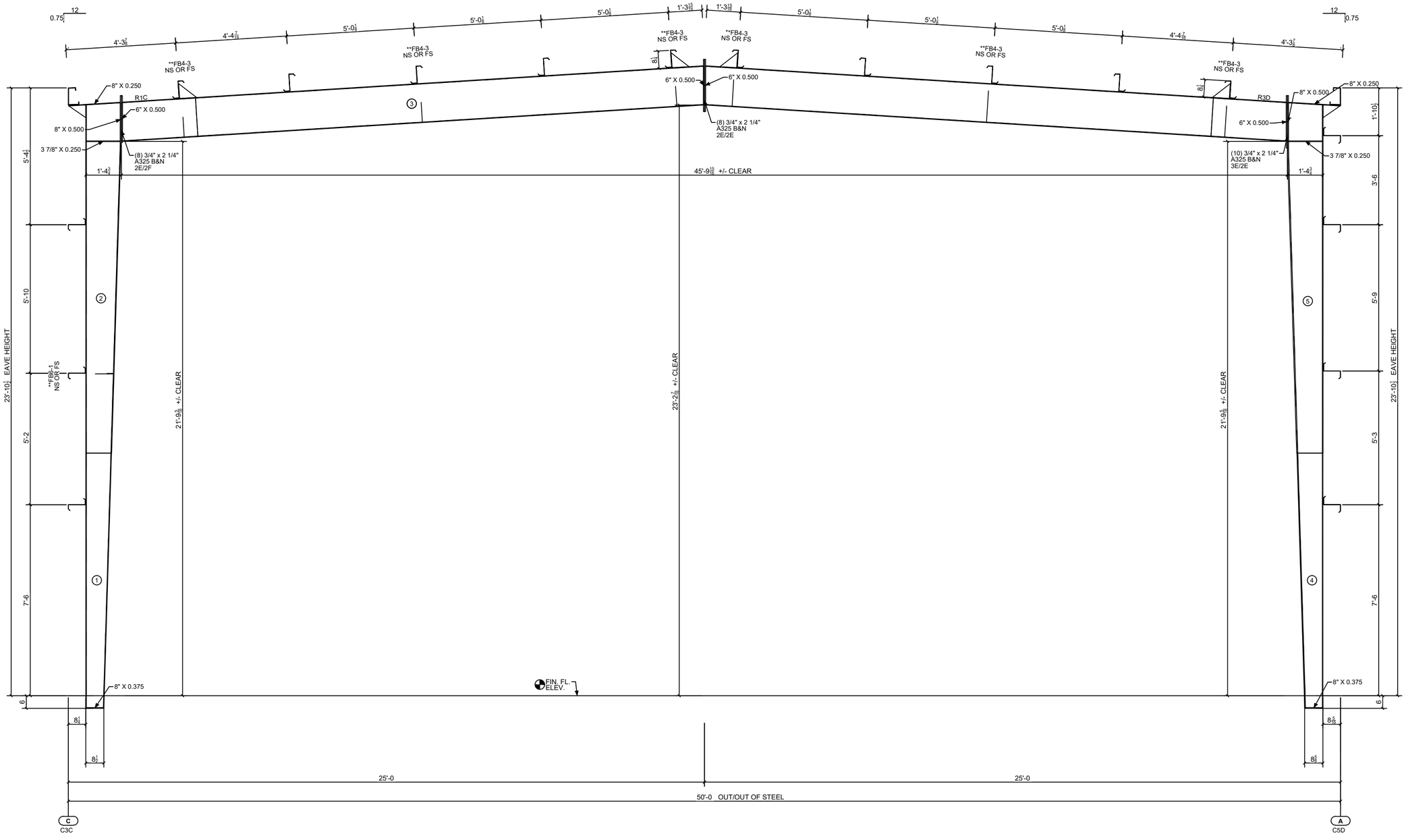
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active\eng\21-B-63283\ver01-mtsanchez\BLDG-A\Drftg\x02R (06/10/26 12:05:25)

GENERAL NOTES
FRAME CLEARANCES SHOWN ARE APPROXIMATE AND MAY VARY DUE TO CONDITIONS (DEFLECTION).

VERTICAL CLEARANCE DIMENSIONS ARE FROM FINISHED FLOOR REFERENCE ELEVATION.

APPROXIMATE MEMBER WEIGHTS	
PART MARK	WEIGHT
R1C	465
R3D	467
C3C	563
C5D	692



PRIMARY BUILT-UP MEMBER SIZES							
MARK	OUTSIDE FLG		INSIDE FLG		WEB		
	THICK	WIDTH	THICK	WIDTH	THICK	START DEPTH	END DEPTH
①	0.2500	8"	0.2500	8"	0.1340	8.0000	11.6106
②	0.2500	8"	0.3125	8"	0.1850	11.6106	16.0000
③	0.2500	5"	0.2500	5"	0.1560	18.0000	18.0000
④	0.2500	8"	0.3750	8"	0.1560	8.0000	11.6465
⑤	0.3125	8"	0.5000	8"	0.1850	11.6465	16.0000

Cross Section at Frame Line 2

** DENOTES: CLIPS AT FLANGE BRACE
CL196 & CL199 AT 8" PURLINS/GIRTS
CL197 & CL199 AT 10" PURLINS/GIRTS
CL198 & CL199 AT 12" PURLINS/GIRTS

Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
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Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	MTS
Job Number:	21-B-63283
Sheet Number:	E10 of 12

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MICHIGAN P.E. 6201310835

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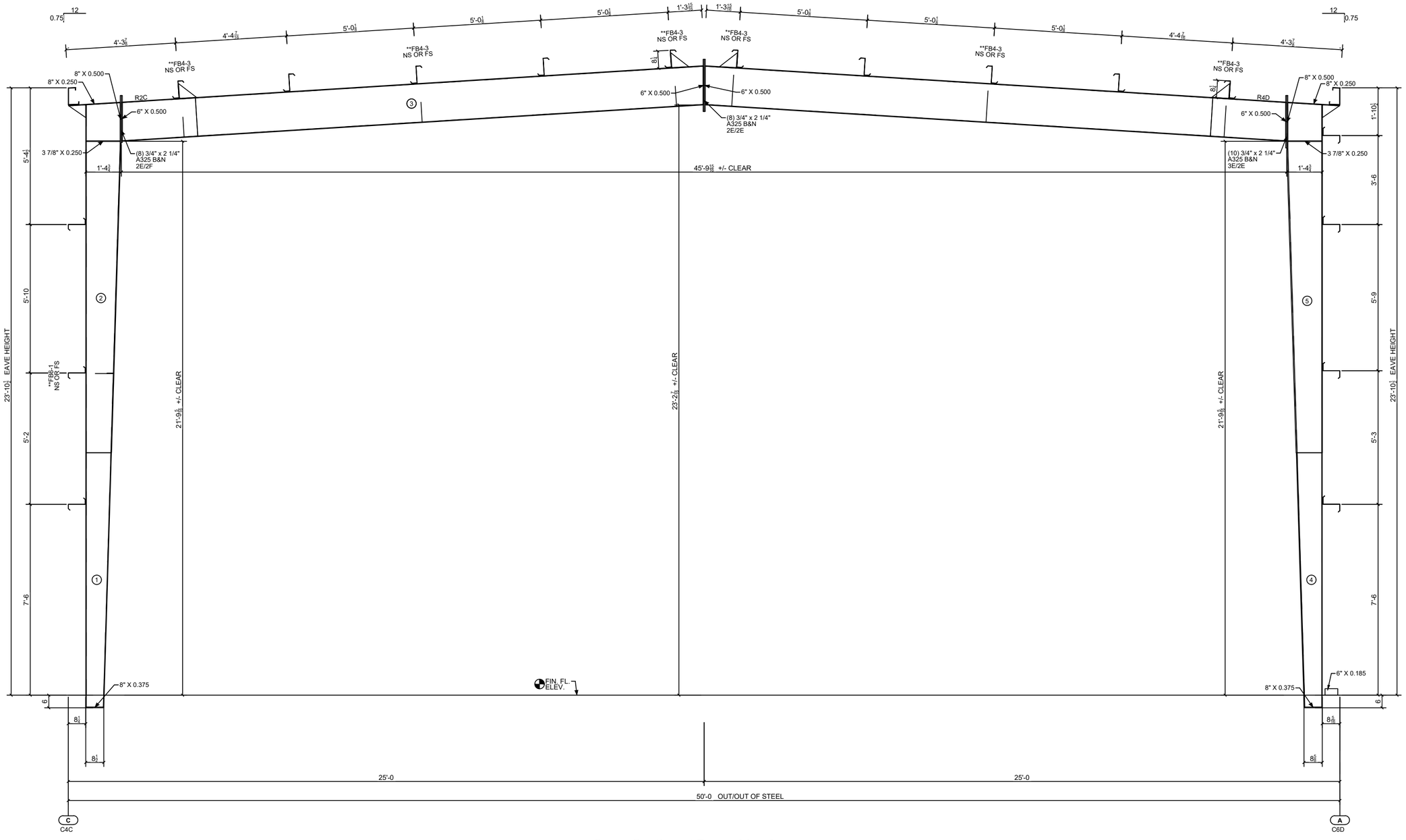
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active\eng\21-B-63283\ver01-mtsanchez\BLDG-A\Drftg\x02R (06/10/26 12:05:25)

GENERAL NOTES
FRAME CLEARANCES SHOWN ARE APPROXIMATE AND MAY VARY DUE TO CONDITIONS (DEFLECTION).

VERTICAL CLEARANCE DIMENSIONS ARE FROM FINISHED FLOOR REFERENCE ELEVATION.

APPROXIMATE MEMBER WEIGHTS	
PART MARK	WEIGHT
R2C	465
R4D	467
C4C	563
C6D	692



Cross Section at Frame Line 3

PRIMARY BUILT-UP MEMBER SIZES							
MARK	OUTSIDE FLG THICK	OUTSIDE FLG WIDTH	INSIDE FLG THICK	INSIDE FLG WIDTH	WEB THICK	WEB START DEPTH	WEB END DEPTH
①	0.2500	8"	0.2500	8"	0.1340	8.0000	11.6106
②	0.2500	8"	0.3125	8"	0.1850	11.6106	16.0000
③	0.2500	5"	0.2500	5"	0.1560	18.0000	18.0000
④	0.2500	8"	0.3750	8"	0.1560	8.0000	11.6465
⑤	0.3125	8"	0.5000	8"	0.1850	11.6465	16.0000

** DENOTES: CLIPS AT FLANGE BRACE
CL196 & CL199 AT 8" PURLINS/GIRTS
CL197 & CL199 AT 10" PURLINS/GIRTS
CL198 & CL199 AT 12" PURLINS/GIRTS

Revision	Date	By	Ck'd	Description

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

METALLIC BUILDING SYSTEMS
Part of the Cornerstone Building Brands Family

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
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Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	MTS
Job Number:	21-B-63283
Sheet Number:	E11 of 12

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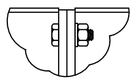
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MICHIGAN P.E. 6201310835

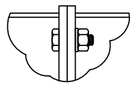
Anuradha Khanna

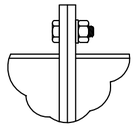
ANURADHA KHANNA
License No. 6201310835
LICENSED PROFESSIONAL ENGINEER
June 23, 2026

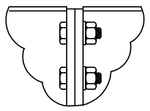
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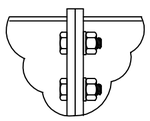
CONNECTION CODES
(FOR TOP AND BOTTOM BOLT PATTERN)

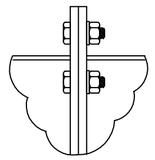

CONNECTION 1B, 1I OR 1P

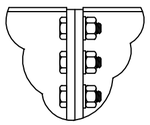

CONNECTION 1F

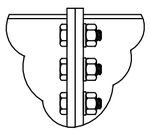

CONNECTION 1E

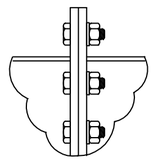

CONNECTION 2B, 2I OR 2P

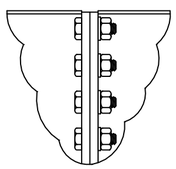

CONNECTION 2F

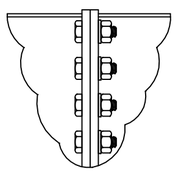

CONNECTION 2E

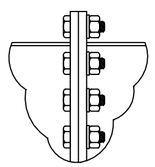

CONNECTION 3B, 3I OR 3P

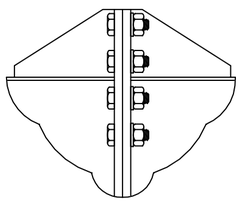

CONNECTION 3F


CONNECTION 3E


CONNECTION 4B, 4I OR 4P


CONNECTION 4F


CONNECTION 4E


CONNECTION 4X

4 E /2 E H
- CONNECTION DESIGNATION
  - BLANK = STANDARD CONNECTION
  - H = HEAVY CONNECTION
- BOTTOM CONNECTION CODE
- BOTTOM QUANTITY OF BOLT ROWS
- CONNECTION DESIGNATION
  - BLANK = STANDARD CONNECTION
  - H = HEAVY CONNECTION
- TOP CONNECTION CODE
- TOP QUANTITY OF BOLT ROWS

CONNECTION CODE FORMAT

CONNECTION CODE DESCRIPTION

B = THIS DESCRIPTION CODE IS USED TO DEFINE SHEAR CONNECTIONS. BOLTS ARE LOCATED INSIDE THE TOP FLANGE AND CONNECTION PLATE IS RECESSED 1/8" BELOW THE TOP FLANGE. CONNECTION PLATE LENGTH MUST BE A MINIMUM OF HALF THE RAFTER WEB DEPTH AND SHALL NOT EXCEED THE RAFTER TOTAL DEPTH.

E = THIS DESCRIPTION CODE IS USED TO DEFINE MOMENT CONNECTIONS. BOLTS ARE LOCATED WITH ONE SET OUTSIDE THE TOP OR BOTTOM FLANGE AND THE REMAINING SETS ARE LOCATED INSIDE THE TOP OR BOTTOM FLANGE.

F = THIS DESCRIPTION CODE IS USED TO DEFINE MOMENT CONNECTIONS. BOLTS ARE LOCATED INSIDE THE TOP OR BOTTOM FLANGE AND CONNECTION PLATE PROJECTS 1/2" BEYOND THE TOP OR BOTTOM FLANGE.

I = THIS DESCRIPTION CODE IS USED TO DEFINE MOMENT CONNECTIONS. BOLTS ARE LOCATED INSIDE THE TOP OR BOTTOM FLANGE AND CONNECTION PLATE IS RECESSED 1/8" BELOW THE TOP OR BOTTOM FLANGE.

P = THIS DESCRIPTION CODE IS USED TO DEFINE SHEAR CONNECTIONS. BOLTS ARE LOCATED INSIDE THE TOP FLANGE AND CONNECTION PLATE IS RECESSED 1/8" BELOW THE TOP FLANGE. CONNECTION PLATE LENGTH MUST BE A MINIMUM OF HALF THE RAFTER WEB DEPTH AND SHALL NOT EXCEED THE RAFTER TOTAL DEPTH.

4X = THIS DESCRIPTION CODE IS USED TO DEFINE MOMENT CONNECTIONS. BOLTS ARE LOCATED WITH TWO SETS EACH SIDE OF THE TOP OR BOTTOM FLANGE WITH A GUSSET PLATE OUTSIDE THE TOP AND BOTTOM FLANGE OR COLUMN CAP PLATE.

CONNECTION BOLT DATA

NAME	DESCRIPTION FOR A325 BOLT DIMENSIONS		A325 CONNECTION BOLT DIMENSIONS					
D	DIAMETER OF THE BOLT		1/2"	3/4"	7/8"	1"	1 1/4"	1 1/2"
HD	BOLT HOLE DIAMETER		9/16"	13/16"	15/16"	1 1/16"	1 5/16"	1 9/16"
G	BOLT GAUGE		2 1/2"	3"	4"	3 1/2"	4"	5 1/2"
	MAX. WEB THICKNESS (Max. 5/16" Fillet Weld) WITHOUT WASHER		1"	1 1/8"	1 7/8"	1 1/4"	1 3/8"	2 1/8"
	MAX. WEB THICKNESS (Max. 5/16" Fillet Weld) WITH WASHER		3/4"	7/8"	1 5/8"	7/8"	7/8"	1 7/8"
HG	HEAVY CONN. BOLT GAUGE		N/A	2 1/4"	2 5/8"	3"	3 3/4"	4"
S	NORMAL BOLT SPACING		2 1/2"	3"	3 1/4"	3 1/2"	4"	4 1/2"
BSMIN	MINIMUM SPACING BETWEEN TOP & BOTTOM SETS OF BOLTS		1 1/2"	2 1/4"	2 5/8"	3"	3 3/4"	4"
BSMAX	MAXIMUM BOLT SPACING BETWEEN TOP AND BOTTOM SETS OF BOLTS ON CONNECTION PLATES		2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"
	SPLICE BOLT SPACING (NOT TO EXCEED 2'-0")		1/2 BSMAX (±1/16") WHEN BSMAX = 2'-0 1/16" TO 4'-0 1/3 BSMAX (±1/16") WHEN BSMAX = 4'-0 1/16" TO 6'-0 1/4 BSMAX (±1/16") WHEN BSMAX = 6'-0 1/16" TO 8'-0					
BFCD	MINIMUM BOLT-TO-FLANGE CLEARANCE AT OUT OF NUT SEE BOLT AT FLANGE DETAIL		1 1/2"	1 3/4"	1 7/8"	2 1/4"	2 1/2"	2 3/4"
PF	MINIMUM BOLT-TO-FLANGE CLEARANCE AT CONNECTION PLATE SEE BOLT AT FLANGE DETAIL		(BFCD + RNWT) PF INSIDE OF FLANGE IS INCREASED BASED ON THE YT & YB VALUE. PF FOR CONNECTION B, F, I AND P ARE THE SAME AS USED ON CONNECTION E					
NWT	NUT AND WASHER THICKNESS		SEE BOLT AT FLANGE DETAIL. NUT THICKNESS IS EQUAL TO THE BOLT DIAMETER AND .15625" WASHER THICKNESS IS USED EVEN IF A WASHER IS NOT REQUIRED.					
RNWT	RISE ON NUT AND WASHER THICKNESS							
TT	THICKNESS TOP FLANGE		REFER TO FRAME CROSS SECTION DRAWING FOR LARGEST FLANGE THICKNESS EITHER SIDE OF THE CONNECTION.					
TB	THICKNESS BOTTOM FLANGE							
YT	BOLT SPACING TOP (ROUND UP TO NEXT 1/2", MIN = S)		3" + TT	3 1/2" + TT	3 3/4" + TT	4 1/2" + TT	5" + TT	5 1/2" + TT
YB	BOLT SPACING BOTTOM (ROUND UP TO NEXT 1/2", MIN = S)		or TB Sloped	or TB Sloped	or TB Sloped	or TB Sloped	or TB Sloped	or TB Sloped
EED(E)	MINIMUM END EDGE DIMENSION		1 1/4"	1 1/4"	1 1/2"	1 3/4"	2 1/4"	2 5/8"
EED(S)	MINIMUM SIDE EDGE DIMENSION		3/4"	1"	1 1/8"	1 1/4"	1 5/8"	2 1/4"
EEDK	END EDGE DIMENSION AT KNEE CONNECTION		1 3/8"	1 3/8"	1 5/8"	1 7/8"	2 3/8"	2 3/4"
BCWM	MINIMUM BOLT CLEARANCE FROM A FLANGE OR WEB WELD	WITHOUT WASHER	7/16"	5/8"	3/4"	13/16"	1"	1 3/8"
		WITH HARDENED WASHER	9/16"	3/4"	7/8"	1"	1 1/4"	1 1/2"
WCSM	MINIMUM WIDTH OF CONNECTION PLATE (Standard Connection)		5"	6"	8"	8"	10"	12"
WCHM	MINIMUM WIDTH OF CONNECTION PLATE (Heavy Connection)		N/A	10"	12"	12"	16"	18"
TCMIN	MINIMUM THICKNESS OF CONNECTION PLATE		1/4"	3/8"	7/16"	1/2"	5/8"	1"

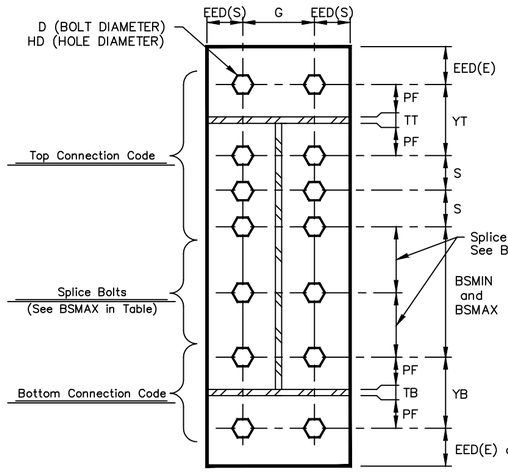
Frame Documentation
A325 Connection Bolt Details

Page 05-12-10
Date Mar '24 Rev. 06

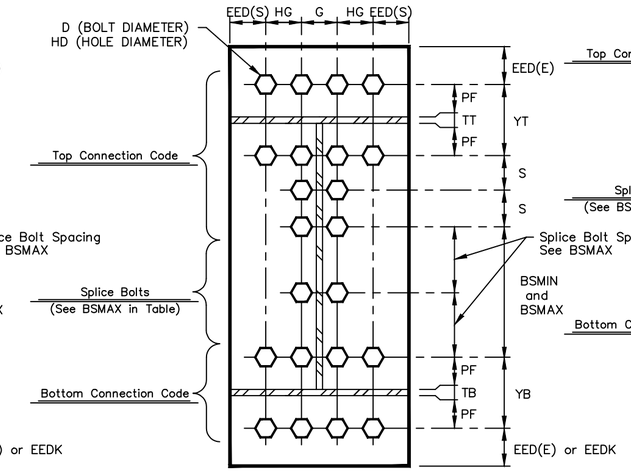
B 4E/2EH
- Connection Code (See "Connection Code Format" on this drawing)
- Connection Location

CROSS SECTION CONNECTION CODE KEY
(AS SHOWN AT CONNECTIONS ON FRAME CROSS SECTION DRAWINGS)

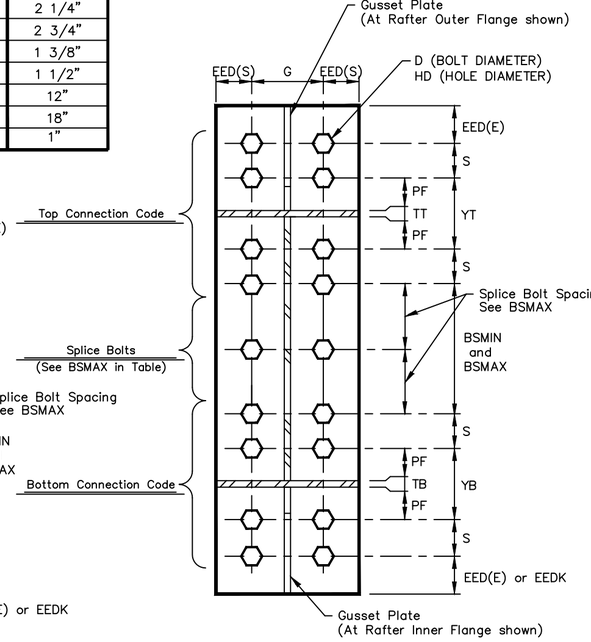
Flange Brace Material Schedule	
Part Mark	Material
FB4_	L 2" x 2" x 14 Ga.
FB5_	L 2" x 2" x 14 Ga.
FB6_	L 2" x 2" x 1/8"
FB7_	L 2 1/2" x 2 1/2" x 3/16"



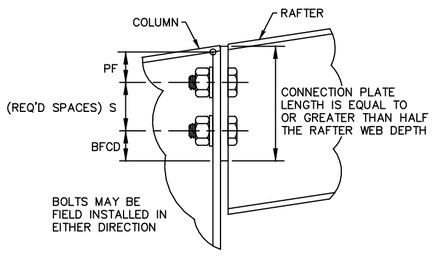
STANDARD CONNECTION DESIGNATION
(CODE 4E/2E SHOWN)



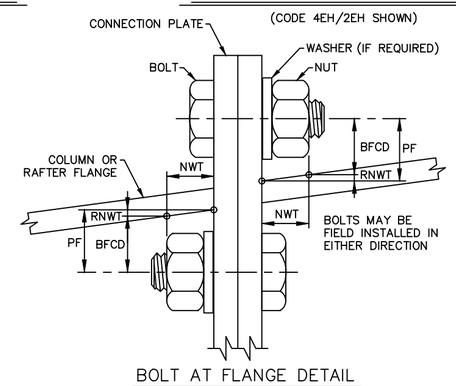
HEAVY CONNECTION DESIGNATION
(CODE 4EH/2EH SHOWN)



4X CONNECTION DESIGNATION
(CODE 4X/4X SHOWN)



CONNECTION B & P
(Low Side Shown, High Side Similar)



BOLT AT FLANGE DETAIL
(Top Flange Shown, Bottom Flange Similar)

Revision	Date	By	Ck'd	Description

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
☐ Issued For Approval (Not For Construction)
☐ Issued For Permit
☒ Issued For Construction

Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	MTS
Job Number:	21-B-63283
Sheet Number:	E12 of 12

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ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835

Anuradha Khanna
ANURADHA KHANNA
License No. 6201310835
LICENSED PROFESSIONAL ENGINEER
Jun 27, 2026

This item has been electronically signed and sealed by Anuradha Khanna, P.E. on the date and/or time stamp shown using a digital signature. Printed copies of this document are not considered signed and sealed and the signature must be verified by a 3rd Party Certificate Authority on any electronic copy.

Field Service Procedures

In Order To Give You Prompt Services And Keep Problems To A Minimum, Please Handle Any Shortages Or Back Charges In The Following Manner:

1. Carefully Check Your Packing List While Unloading.
2. Mark Any Items Which Appear To Be Missing And Notify The Field Service Department At The Number Shown In The Title Block As Soon As Possible. Calling Someone Else Could Delay The Proper Response.

INITIAL CLAIM:
In The Event Of An Error, The Customer Must Promptly Make A Written Or Verbal "Initial Claim" to The Manufacturer For The Correction Of Design, Drafting, Bill Of Materials Or Fabrication Error.
The "Initial Claim" Includes:

1. Description Of The Nature And Extent Of The Errors, Including Quantities.
2. Description Of The Nature And Extent Of Proposed Corrective Work, Including Estimated Man-Hours.
3. Materials To Be Purchased From Other Than the Manufacturer, Including Estimated Quantities and Cost.
4. Maximum Total Cost Of Proposed Corrective Work And Materials To Be Purchased From Other Than The Manufacturer.

SHORT MATERIALS:
Immediately Upon Delivery Of Materials, Quantities Are To Be Verified By The Customer Against Quantities That Are Billed On The Shipping Documents. Neither The Manufacturer Nor The Carrier Is Responsible For Material Shortages Against The Quantities Billed On The Shipping Documents If Such Shortages Are Not Noted On The Shipping Documents When The Material Is Delivered And Acknowledged By The Carrier's Agent. If The Carrier Is The Manufacturer, Claims For Shortages Are To Be Made By The Customer To The Common Carrier. If The Material Quantities Received Are Correct According To The Quantities Billed On The Shipping Documents, But Are Less Than The Quantities Ordered Or The Quantities That Are Necessary To Complete The Metal Building According To The Order Documents, Claim Is To Be Made To The Manufacturer.

DAMAGED OR DEFECTIVE MATERIAL:
Damaged Or Defective Material, Regardless Of The Degree Of Damage, Must be Noted On The Shipping Documents By The Customer And Acknowledged By The Carrier's Agent. The Manufacturer Is Not Responsible For Material Damaged In Unloading Of Packages Or Nested Materials, Including, But Not Limited To: Fasteners, Sheet Metal, "C" And "Z" Sections And Covering Panels That Become Wet And/Or Damaged By Water While In The Possession Of Others. Packaged Or Nested Material That Become Wet In Transit Must Be Unpacked, Unstacked And Dried By The Customer. If The Carrier Is The Manufacturer, The Customer Must Make Claim For Damaged Directly To The Manufacturer. If The Carrier Is A Common Carrier, The Customer Must Make The Claim For Damage To The Common Carrier. The Manufacturer Is Not Liable For Any Claim Whatsoever Including, But Not Limited To Labor Charges Of Consequential Damages Resulting From Customer's Use Of Damaged Or Defective Materials That Can Be Detected By Visual Inspection.

EXCESSIVE MATERIAL:
The Manufacturer Reserves The Right To Recover Any Material Delivered In Excess Of Those Required By The Order Documents.

OIL CANNING IS NOT A CAUSE FOR REJECTION

Authorization For Corrective Work

Normal Erection Operations Include The Correction Of Minor Misfits By Amounts Of Reaming, Chipping, Welding Or Cutting And The Drawing Of Elements Into Line Through The Use Of Drift Pins. Errors That Cannot Be Corrected By The Foregoing Means Or Which Require Major Changes In The Member Configuration Should Be Reported Immediately To The Owner And The Fabricator By The Erector, To Enable Whoever Is Responsible Either To Correct The Error Or Approve The Most Efficient And Economical Method Of Correction To Be Used By Others. (AISC 303-10, Section 7.14). If The Error Is The Fault Of The Manufacturer An "Authorization For Corrective Work" Must Be Issued In Writing By The Manufacturer To Authorize The Corrective Work At A Cost Not To Exceed The Maximum Total Cost Set Forth. Alternative Corrective Work Other Than That Proposed In The "Initial Claim" May Be Directed By The Manufacturer In The "Authorization Of Corrective Work". Only The Field Service Department May Authorize Corrective Work.

FINAL CLAIM:
The "Final Claim" In Writing Must Be Forwarded By The Customer To The Manufacturer Within (10) Days Of The Completion Of The Corrective Work Authorized By The Manufacturer.

THE "FINAL CLAIM" MUST INCLUDE:

1. Actual Number Of Man-Hours By Dated Of Direct Labor Use On Corrective Work And Actual Hourly Rate Of Pay.
2. Taxes And Insurance On Total Actual Direct Labor.
3. Other Direct Costs On Actual Direct Labor.
4. Cost Of Materials (Not Minor Supplies) Authorized By The Manufacturer To Be Purchased From Other Than The Manufacturer, Including Copies Of Paid Invoices.
5. Total Actual Direct Cost Of Corrective Work (Sum Of 1, 2, 3, And 4). The "Final Claims Are Credited To The Customer By The Manufacturer In The Amount Not To Exceed The Lesser Of The Maximum Total Cost Set Forth In The "Authorization For Corrective Work" Or The Total Direct Cost Of Corrective Work.

** IMPORTANT NOTE **
Cost Of Equipment (Rental Or Depreciation), Small Tools, Supervision, Overhead And Profit Are Not Subjected To Claims.

SHIPMENT ARRIVAL TIME:
Every Effort Will Be Made To See That The Carrier Arrives At The Jobsite On The Requested Hour. Manufacturer Makes No Warranty And Accepts No Responsibility For Costs Associated With A Shipment Not Arriving At The Requested Time Unless A Separate Agreement Has Been Made In Writing For A Guaranteed Arrival Time.

Unloading, Handling And Storage

STRUCTURAL:
A Great Amount Of Time And Trouble Can Be Saved If The Building Parts Are Unloaded At The Building Site According To A Pre-Arranged Plan. Proper Location And Handling Of Components Will Eliminate Unnecessary Handling.

NOTE:
Piece Marks Are Stenciled On The Primary Structural Members At The Lower End, 1'-0" From The End. Inspect All Shipments Prior To Releasing The Tie-downs For Loads That May Have Shifted During Transit.

REMEMBER SAFETY FIRST:
Blocking Under Columns And Rafters Protect The Splice Plates And The Slab From Damage During The Unloading Process. It Also Facilitates The Placing Of Slings And Cables Around Members For Later Lifting And Allows Members To Be Bolted Together Into Sub-assemblies While On The Ground. Extra Care Should Always Be Exercised In The Unloading Operation To Prevent Injuries From Handling Steel And To Prevent Damage To Materials And The Concrete Slab. If Water Is Allowed To Remain For Extended Periods In Bundles Of Primed Parts Such As Girts, Purlins, Etc., The Pigment Will Fade And The Paint Will Gradually Soften Reducing Its Bond To The Steel. Therefore, Upon Receipt Of A Job, All Bundles Of Primed Parts Should Be Stored At An Angle To Allow Any Trapped Water To Drain Away And Permit Air Circulation For Drying. Puddles Of Water Should Not Be Allowed To Collect And Remain On Columns Or Rafters For Same Reason.

The Coat Of Shop Primer Is Intended To Protect The Steel Framing Only For A Short Period Of Exposure To Ordinary Atmospheric Conditions. The Coat Of Shop Primer Does Not Provide The Uniformity Of Appearance, Or The Durability And Corrosion Resistance Of A Field Applied Finish Coat Of Paint Over Shop Primer.

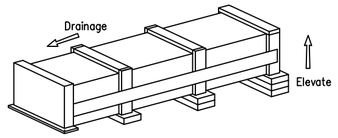
Roof And Wall Panels

Manufacturer's Roof And Wall Panels Include Color Coated, Galvalume, And Galvanized, Provide Excellent Service Under Widely Varied Conditions. All Unloading And Erection Personnel Should Fully Understand That These Panels Are Quality Merchandise, Which Merits Cautious Care And Handling.

UNDER NO CIRCUMSTANCES SHOULD PANELS BE HANDLED ROUGHLY
Packages Of Sheets Should Be Lifted Off The Truck With Extreme Care Taken To Ensure That No Damage Occurs To Ends Of The Sheets Or to Side Ribs. The Packages Should Be Stored Off The Ground Sufficiently High To Allow Air Circulation Underneath The Packages. This Avoids Ground Moisture And Deters People From Walking On The Packages. One End Of The Package Should Be Elevated To Encourage Drainage In Case Of Rain. The Manufacturer Exercises Caution During Fabrication An Shipping Operations To Ensure That All Panel Stock Is Kept Dry. However Due To Climatic Conditions, Water Formed By Condensation Of Humid Air Become Trapped Between Sheets. Water Can Also Be Trapped Between The Stacked Sheets When Exposed To Rain. This May Discoloration Caused By Trapped Moisture. The Stain Is Usually Superficial And Has Little Effect On The Appearance Or Service Life Of The Panels As Long As It Not Permitted To Remain On The Panel. However, Moisture In Contact With The Surface Of The panel Over An Extended Period Can Severely Attack The Finish And Reduce The Effective Service Life. See R1-07 Titled "Damage From Condensation Or Trapped Water".

CAUTION:
Care Should Always Be Taken When Walking On Panels. Use Safety Lines And Net When Necessary. Panels Are Slippery, Wipe Dry Any Moisture Or Surface Material That Has Puddle From Bundles Stored On A Slope. Dew, Frost, Or Other Forms Of Moisture Greatly Increase The Slipperiness Of The Panels. Always Assume Panel Surface Is Slippery And Act Accordingly. Never Walk Of Step On Skylights Or Translucent Panels.

Use Wood Blocking To Elevate And Slope The Panels In A Manner That Allows Moisture To Drain. Wood Blocking Placed Between Bundles Will Provide Additional Air Circulation. When Handling Or Uncrating The Panels, Lift Rather Than Slide Them Apart. Burred Edges May Scratch The Coated Surfaces When Sheets Are Slid Over One Another. Never Allow Panels To Be Walked On While On The Ground.



Roof And Wall Panel Damage During Construction

The Quality Of Workmanship In Steel Construction Practices And Handling Methods Used During The Construction Of The Metal Building Can Significantly Affect The Appearance And Performance Of The Building Panels. Panel Damage During Construction Can Be The Result Of Faulty Installation Methods And/or Carelessness.

Overdriven Fasteners Cause Indentations Or Shallow Pockets In The Panel Around The Fastener Head. Rain Water Or Condensation Moisture Combined With Atmospheric Pollutants (principally Sulfur Dioxides) And Dirt Particles Collect In These Pockets. The Combination Of Pollutants And Water Creates Acid Solutions That Will Cause Corrosion Damage To The Panel And Fastener. Rain May Wash Some Pollutants Away, But Moisture In Form Of High Humidity Can Keep These Areas Wet And Continue The Problem. Overdriving The Fastener Also Forces The Sealing Washer From Under The Head Creating A Leak At This Point. Proper Torque Adjustment Of The Screw Gun Or Preferably The Use Of A Depth Gauge Will Eliminate The Problem Of Overdriven Fasteners.

It Is Extremely Important That All Drill Shavings From The Installation Of Panel Fasteners And Fillings From The Saw Cutting Of Panels Be Removed From The Panel Surface. Corrosion Can Occur In A Matter Of Hours When These Shavings Or Fillings Are Not Removed And Are In Contact With Water Or Condensed Moisture. When Panels Are Pre-Drilled Or Cut In The Stack Prior To Erection All Shavings Must Be Cleaned From Both Sides Of The Panel To Prevent Corrosion Of The Panel By These Particles. It Is Imperative That The Roof Be Swept Clean At Least Daily And Certainly At Job Completion. The Final Cleaning Of The Roof Should Be Done Prior To Installing The Gutter So That The Shavings Are Not Deposited Into The Gutter And Left To Corrode. Any Other Foreign Objects Or Debris Left By Construction Personnel Should Also Be Removed From The Roof During The Erection Of The Roof And The Installation Of Such Equipment As Air Condition Units, Etc..

Personnel Walking On The Panel Can Cause Damage. Workmen Should Step Or Walk In The Broad Flat Areas Of The Panel And Avoid Stepping On The Panel Ends And Edges Which Can Be Bent By Careless Handling. If This Damage Is Severe, The Edges Must Be Straighten Prior To Erection Since The Appearance And/or Weather Tightness Of The Panel Could Be Affected. Dragging One Panel Across Another Can Cut Or Abrade The Coating Causing Unsightly Marks On The Panel Surface.

Attempts To Erect Panels During Windy Conditions Should Be Avoided To Prevent Damage And Of Safety Considerations.

Leaving Dirt Piled Against The Exterior Wall Panels At The Foundation Will Cause Panel Damage. This Dirt May Be Wet Or At Least Contain Some Moisture. Mud May Have Splashed Onto The Wall During Construction. Corrosion Damage May Occur Where This Dirt Or Mud Contacts The Panel. In Areas Where Lime Stabilization Of The Soil Is Required, Corrosion Damage From The Soil's Content Will Be Accelerated And Most Likely Be Severe. All Dirt Must Be Removed From The Panel Walls At The Time Of Completion Of Work. Pre-Painted Panels May Require Touch-up If The Coating Has Been Damaged During Handling Or Erection.

The Appearance Of The Building May Be Affected If Damaged Spots Or Scratches Are Located In Highly Visible Places Such As Around Doors, Windows, Etc.. If Damage Is Extensive Then Replacement Of The Entire Panel Should Be Considered.

Types Of Finishes

SHOP PRIMED STEEL:
All Structural Members Of The Metal Building System Not Fabricated Of Corrosion Resistant Material Or Protected By A Corrosion Resistant Coating Are Painted With One Coat Of Shop Primer Meeting The Performance Requirements Of SSPC Paint Specification No.15. The Coat Of Shop Primer Is Intended To Protect The Steel Framing For Only A Short Period Of Exposure To Ordinary Atmospheric Conditions. Shop Primed Steel Which Is Stored In The Field Pending Erection Should Be Kept Free Of The Ground And So Positioned As To Minimize Water Holding Pockets, Dust, Mud And Other Contamination Of The Primer Film. Repairs Of Damaged To Primed Surfaces And/Or Removal Of Foreign Material Due To Improper Field Storage Or Site Conditions Are Not The Responsibility Of The Manufacturer. The Manufacturer Is Not Responsible For Deterioration Of The Shop Coat Of Primer Or Corrosion That May Result From Exposure To Atmospheric And Environmental Conditions, Nor The Compatibility Of The Primer To Any Field Applied Coating. Minor Abrasions To The Shop Coat (Including Galvanizing) Caused By Handling, Loading, Shipping, Unloading And Erection After Painting Or Galvanizing Are Unavoidable. (MBMA 2012, Chapter IV 4.2.4).

GALVALUME:
Galvalume Is The Trade Name For A Patented Steel Sheet And Coil Product Having A Coating Of Corrosion Resistant Aluminum-Zinc Alloy. The Mixture Is Balanced To Obtain The Coating That Retains The Corrosion Resistance And Heat Reflectivity Of Aluminum And Galvanic Protection Of Zinc. The Best Properties Of Both Aluminum And Zinc Are Combined In This Coating And Offer Added Service Life For The Building.

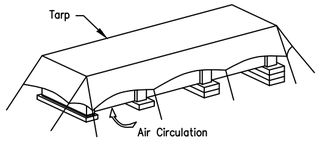
Pre-Painted:
Using Galvalume Steel As A Substrate, Pre-Painted Steel Is Given An Additional Rust Inhibitor Primer Coat. This Primer Coat Further Increases The Corrosion Resistance. These Coatings Are Applied To The Exterior Surface Of The Panels And A Wash Coat Designed Only For Interior Use, Is Applied On The Opposite Side. Galvalume And Pre-Painted Steel Can Give Excellent Service For Many Years If A Few Rules Concerning Their Care And Maintenance Are Observed. All Of These Finishes Are Equally Subject To Damage And Corrosion When Care Is Not Provided.

PAINT AND COATING MAINTENANCE:
Remove Smudge Marks From Bare Galvalume:
Formula 409 Has Proven To Be Somewhat Effective. Lightly Rub With A Clean Cloth And Rinse With Water. Do Not Rub More Than Required To Remove Smudge Marks. No Product Will Remove All Smudge Marks.
Remove Rust Stains:
Soft Scrub Without Bleach Has Proven To be Somewhat Effective. Rub With A Soft Cloth And Rinse With Water. Do Not Rub More Than Required To Remove Stain. No Product Will Completely Remove Rust Stains.
To Touch-Up Scratches In Paint (Not Bare Metal):
Clean Area To Be Painted With Mild Detergent. Rinse Thoroughly And Dry. Using A Small Artist's Brush, Lightly Apply A Minimal Amount Of Color Matched Touch-Up Pain Required To Fill/Cover The Scratch. Contact The Building Manufacturer For Assistance With Ordering/Purchasing Touch-Up Paint As Needed.

Damage From Condensation Or Trapped Water

It Is Extremely Important That The Panels Be Monitored For Evidence Or Trapped Water Or Moisture Condensation While Awaiting Erection. High Humidity Conditions With Temperature Cycling Will Cause Condensation Between Panels Within The Bundle. Condensation Can Occur Frequently Near The Sea Coast Or Other Large Bodies Of Water.

If Jobsite Covers Are Used, They Should Be Tied Away From The Bundle At Corners To Allow Air Circulation Around The Bundle. This Will Help Prevent Moisture Evaporating From The Ground Or Building Floor From Condensing On The Panels. Plastic Or Other Impermeable Covers Are Not Recommended. Immediate Action Is Required If The Panels Are Found To Be Wet From Any Cause. The Bundles Must Be Opened And Each Panel Un-Stacked And Thoroughly Dried On Both Sides. Re-Stacking The Panel At A Slight Angle To Each Other To Prevent Nesting Will Allow Air Circulation And Assist In Keeping The Panel Dry. In Severe Conditions Large Fans Can Be Used To Circulate Air Between The Un-Stacked Panels And Accelerate Drying. Damage To The panel Coating Occurs When Panels Become Wet And Are Allowed To stay wet. damage Can Occur To Nested Panels Within 24 to 48 Hours. This Damage Shows Corrosion And Discoloration Of The Panel Surface And Is Commonly Called Wet Storage. Stain, Zinc Oxidation, Or "White Rust".



A Softening Of The Paint Film Can Occur With Pre-Painted Steel Under Wet Storage Conditions And The Durability Of The Panel Finish Substantially Decrease. Bare Galvanized And Galvalume Panels React More Quickly To Surface Oxidation Since They Lack The Additional Protection Of Paint. Zinc Coated Or Galvalume Panels Under Normal Exposure Form A Zinc Aluminum Oxide Film On Their Surface Allowing A Slow Oxidation Process Called "Weathering" To Occur That Inhibits Further Corrosion. In Nested Bundles Constant Contact Of The Panels With Condensed Or Trapped Water Prevents This Weathering Process.

Rapid Oxidation Of The Zinc or Zinc Aluminum Coating Can Now Occur And May Lead To "Red Rust" In A Short Time. If Discoloration Or Stains Are Minor A Household Cleaner Of The Type Used On Porcelain Sinks And Bathtubs May Be Used To Remove Stains. Wire Brushing Or Abrasive Materials Should be Avoided Since Scratching Or Removal Of The Coating Could Occur. Panel With Significant Damage Should Be Replaced By The Buyer Prior To Erection.

Safety Commitment

The Builder/Contractor Is Responsible For Applying And Observing All Pertinent Safety Rules And OSHA Standards As Applicable.

The Building Manufacturer Has A Commitment To Manufacture Quality Building Components That Can Be Safely Erected. However The Safety Commitment And Job Site Practices Of The Erector Are Beyond The Control Of The Building Manufacturer.

It Is Strongly Recommended That Safe Working Conditions And Accident Prevention Practices Be The Top Priority Of Any Job Site.

Local, State And Federal Safety And health Standards, Whether Standard Statuary Or Customary, Should Always Be Followed To Help Ensure Worker Safety.

Make Sure All Employees Know The Safest And Most Productive Way Of Erecting A Building. Emergency Procedures Should Be Known To All Employees. Daily Meetings Highlighting Safety Procedures Are Also Recommended. The Use Of Hard Hats, Rubber Sole Shoes For Roof Work, Proper Equipment For Handling Material And Safety Nets Where Applicable Are Recommended
.
For The Purposes Of Determining Lift Requirements, No Bundle Supplied By The Manufacturer Will Exceed 4,000 Pounds. For Further Information Also reference The Bill Of Materials For Individual Member Weights Of Structural Members. If Additional Information Is Required Contact The Field Service Department.

ICE AND SNOW REMOVAL:
Excessive Ice And Snow Removal Should Be Removed From The Roof Immediately To Prevent Damage To Roof And Possible Collapse. Do Not Use Metal Tools To remove The Ice Or Snow As This Can Damage The Paint And/Or Galvalume Coatings. Also Be Careful Around Pipes And Flashing's.
Be Extremely Careful If Your Roof Has Light Transmitting Panels. These Panels Will Not Support A Person's Weight And Will Be Difficult Or Impossible To See If They Are Covered With Ice Or Snow. See MBMA Low-Rise Building Systems Manual, Appendix A8 For Details On Snow Removal Procedures. These Procedures Should Commence When Half Of The Design Roof Snow Load Is Realized.

DEBRIS REMOVAL:
Any Foreign Debris Such As Sawdust,Dirt, Leaves, Animal Droppings, Etc. Will Cause Corrosion Of The Roof, Gutters, Trim, Etc. If Left On The Building Surface For A Long Enough Time. The Roof Should Be Periodically Inspected For Such Conditions And If Found, They Should Be Rectified In A Manner Consistent With These Roof Maintenance Guidelines. Never Allow Treated Lumber Or Concrete/Mortar/Grout To Come In Contact With Roof Panels, Especially Galvalume For Extended Periods Of Time.

PERIODIC INSPECTION:
All High-Strength Shall Be Periodically Be Inspected For Tightness. Particularly In Crane Buildings And After Seismic Or Wind Activity. The Crane Manufacturer Will Specify A Minimum Period But It Should Not Exceed Two Years.

DRAINAGE:

1. Keep Roof Free Of Debris And Keep Debris Out Of Gutter To Allow Water Quickly Drain From The Roof.
2. Do Not Use Wood Blocking To Hold Equipment Off The Panel Seams. This Blocks The Flow Of Water And Hold Moisture.
3. Do Not Allow Rooftop AC Units Or Evaporative Coolers To Drain Onto The Roof.
4. Anything That Traps Or Holds Moisture On A Roof Will Cause Premature Corrosion.

Roof Maintenance Guidelines

1. Inspect Roof For Damage After Heavy Storms.

2. Inspect And Reseal As Necessary All Roof Curbs And Other Penetrations With Urethane Sealant.

3. Always Get Manufacturer Approval Before Making Any Modifications To The Roof.

4. Repaint Any Areas That Are Susceptible To Rust As Required.

5. When Performing Roof Maintenance, Always Take The Following Precautions:
   a. Use Fall Protection And Other Safety Protection As Required.
   b. Do Not Walk On Roof Flashing Such As Gutter, Rake, Hip Or Ridge Flash.
   c. Do Not Walk On Light Transmitting Panels (LTP's). They Will Not Support A Person's Weight.
   d. Guard All LTP's And Roof Openings.
   e. Step Only In The Panel Flat Directly On Or In Close Proximity To A Supporting Roof Structural.

6. After Other Trades Have Been On The Roof For Any Reason, Inspect The Roof For Damage Caused By Workers Including Chemical Or Solvent Spills, Scratches In The Paint Or Galvalume Coating, Excessive Foot Traffic And Punctures. Make Sure That All Debris Or Scrap Left Behind By Workers Is Removed From The Roof Immediately. Avoid Using Cutoff Saws And Welding Equipment Over The Roof. The Roof Must Adequately Protected.

FOOT TRAFFIC:
Keep Foot Traffic To A Minimum. Heavy Foot Traffic Can Cause Ponding On Low Pitched Roofs. This Is Particularly True Just Upslope From The Eave And At Endlaps.
Always Walk In The Flat Of The Panel Near A Supporting Roof Structural. Do Not Walk On Trim Or In Gutters.
On Bare Galvalume Roofs, Excessive Foot Traffic May Cause Black Burnish Marks. If Regular Foot Traffic Is Planned For A Roof, Provisions Should Be Made For A Properly Designed And Installed Walkway System. In Order To Limit Access To The Roof, Roof Hatches Or Access Ladders Should Be Locked At All Times. A Sign Posted At The Access Site Stating That Only Authorized Personnel Are Allowed On The Roof. In Addition A Log Book Should Be Kept Of All Visits To The Roof And The Reason For Such Visits.

DISSIMILAR METALS:
Never Allow Your Roof To Come In Contact With, Or Water Runoff From Any Dissimilar Metal Including But Not Limited To:
Copper, Lead Or Graphite, This Includes Copper And Arsenic Salts Used In Treated Lumber, Calcium Used In Concrete, Mortar And Grout.

Never Step On Light Transmitting Panels (LTP's) Or Unattended Roof Panels



Panels May Collapse
If Not Properly Secured

Roof Panels Must Be Completely Attached To The Purlins And To Panels On Either Side Before They Can Be A Safe Walking Surface. Light Transmitting Panels LTP's) Translucent Panels Can Never Be Considered As A Walking Surface.

Partially Attached Or Unattached Panels Should Never Be Walked On!

Do Not:

1. Step On Rib At Edge Of Panel.

2. Step Near Crease In Rib At Edge Of Panel.

3. Step Within 5 Feet Of Edge On Unsecured Panel.

A Single Roof Panel Must Never Be Used As A Work Platform. An OSHA Approved Runway Should Be Used For Work Platforms. (Consult OSHA Safety And Health Regulations For The Construction Industry). Safety First!

Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
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DETROIT MI 48209 US

Issued For Construction
Issued For Permit
Issued For Approval (Not For Construction)

METALLIC BUILDING SYSTEMS — Part of the Cornerstone Building Brands Family

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:

Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	
Job Number:	21-B-63283
Sheet Number:	R1 of 15

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MICHIGAN P.E. 6201310835

Anuradha Khanna

ANURADHA KHANNA
License No. 6201310835
June 2026
LICENSED PROFESSIONAL ENGINEER

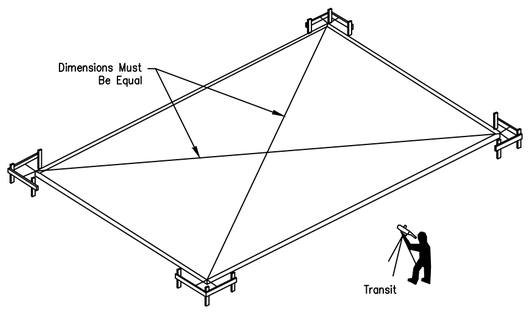
This item has been electronically signed and sealed by Anuradha Khanna, P.E. on the date and/or time stamp shown using a digital signature. Printed copies of this document are not considered signed and sealed and the signature must be verified by a 3rd Party Certificate Authority on any electronic copy.

Erection Guide

Page	R1
Date	Rev
Jul '25	08

Building Anchorage

1. To Determine That The Foundation Is Square, Measure Diagonal Dimensions To Be Sure They Are Of Equal Length.
2. To Determine That The Foundation Is Level, Set Up A Transit Or Level And Use A Level Rod To Obtain The Elevation At All Columns.
3. Carefully Check The Location Of All Anchor Rods Against The Anchor Rod Setting Plan Furnished By The Manufacturer. All Dimensions Must Be Identical To Assure A Proper Start-up.

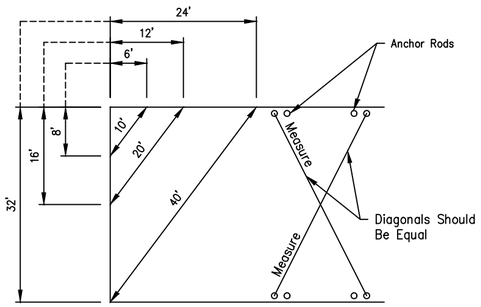


Pre-Erection Notes:

The Following Notes, Procedures And Suggested Recommendations Are Important Parts Of The Pre-Erection Process.

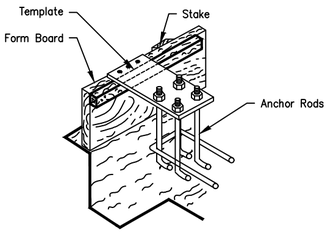
1.) Prior To The Time The Erection Crew Arrives, A Responsible Person Should Check The Job Site For Foundation Readiness, Square, And Accuracy And Anchor Rod Size And Location.

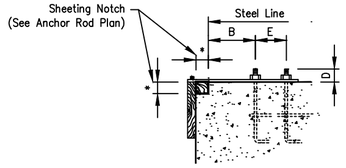
The Drawing Shown Below Indicates A Method Which May Be Used To Check The Foundation And Bolts For Square.



Measure Along Adjacent Sides Of Foundation Using A Pair Of Dimensions Shown. If The Diagonal Distance Between These Points Is As Noted, The Corner Is Square. Diagonal Measurements Between Opposite Anchor Rods Will Indicate If These Bolts Are Set Square.

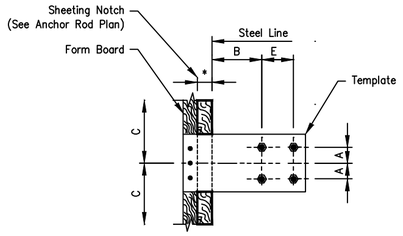
It Is Extremely Important That Anchor Rods Are Placed Accurately And In Accordance With The Anchor Rod Setting Plan. All Anchor Rods Should Be Held In Place With A Template Or Similar Means, So That They Will Remain Plumb And In Correct Location During The Placement Of The Concrete. A Final Check Should Be Made After Completion Of The Concrete Work And Prior To The Steel Installation. This Will Allow Necessary Corrections To Be Made Before Costly Installation Labor And Equipment Arrives.





Sheeting Notch Shown But May Not Be Required (See Anchor Rod Plan)

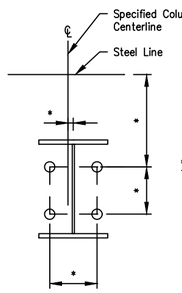
Projection Of Anchor Rods (D) Given On Anchor Rod Plan



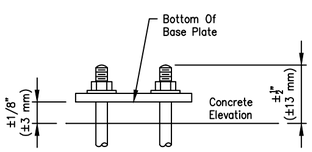
Dimensions A, B, And C Given On Anchor Rod Plan

AISC Code Of Standard Practice For Steel Building And Bridges Tolerances For Setting Anchor Rods

Anchor Rod Diameter, Inches (mm)	*Horizontal Variation, Inches (mm)
¾" and ⅞" (19 And 22 mm)	¼" (6 mm)
1", 1¼", 1½" (25, 31, 38 mm)	⅜" (10 mm)
1¾", 2", 2¼" (44, 50, 63 mm)	½" (13 mm)



ANCHOR ROD SETTING TOLERANCES



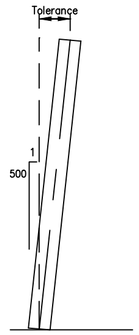
BASE PLATE AND ANCHOR ROD TOLERANCES

* Horizontal Variations Vary Depending On Anchor Rod Diameter. See Above

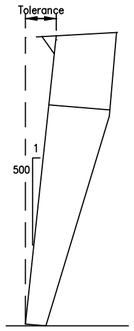
Erection Tolerances

ERECTION BRACING:
It Is The Responsibility Of The Erector To Determine, Furnish And Install All Temporary Supports Such As Temporary Guys, Beams, Falsework, Cribbing, Or Other Elements Required For The Erection Operation (In Accordance With Section 7.10.3 Of ANSI/AISC 303, Code Of Standard Practice For Steel Building And Bridges).

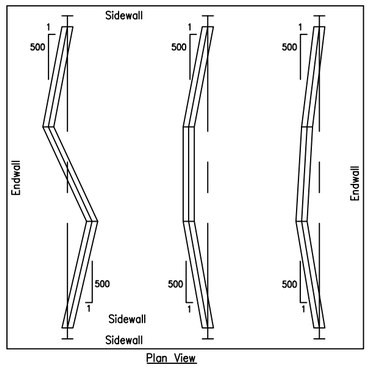
COLUMN ALIGNMENT TOLERANCES



Height	Tolerance (±) H/500
10'	1/4"
12'	5/16"
15'	3/8"
20'	1/2"
25'	5/8"
30'	3/4"
45'	1 1/16"
60'	1 7/16"

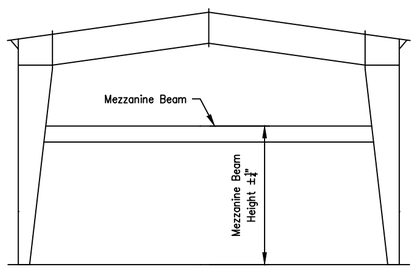


ALIGNMENT TOLERANCE FOR MEMBERS WITH FIELD SPLICES



Plan View

MEZZANINE BEAM HEIGHT TOLERANCE



General Erection Notes

1.) All Structural Framing Members, Purlins, Girts, Clips, Flange Braces, Bolts, Bracing Systems, Roof And Wall Panels, Etc. Must Be Installed As Shown On Erection Drawings.

2.) It Is Extremely Important, Especially During Construction, That Panels At The Eaves, Rakes And Ridges Be Kept Secure.

Panel Cautions And Notes

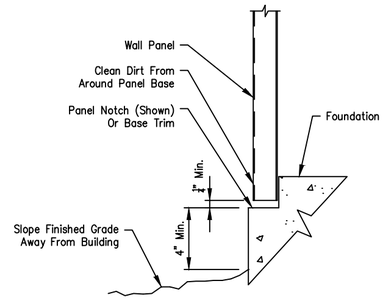
To Minimize Potential Of Corrosive Action At The Bottom Edge Of Wall Panels, The Contractor Must Assure That The Following Procedures Are Followed:

1.) The Concrete Foundation Should Be Cured For A Minimum Of Seven (7) Days Before Wall Panels Are Installed. (Uncured Concrete Is Highly Alkaline And Metal Panels Can Undergo Varying Degrees Of Corrosive Attack When In Direct Contact With The Concrete.) After The First Week Of The Curing Cycle, The Reaction Between Metallic Coatings On Steel And The Concrete Is Essentially Halted.

2.) Top Of Finish Grade At Building To Be A Minimum Of Four (4) Inches Below Bottom Of Panel.

3.) Finish Grade Is To Slope Away From Building To Ensure Proper Drainage.

4.) Upon Completion Of Finish Grading, All Dirt Is To Be Cleaned From Around Base Of Wall Panel Where It May Have Collected In Panel Notch Or On Base Trim.



Fastener Installation

Correct Fastener Installation Is One Of The Most Critical Steps When Installing Roof/Wall Panels. Drive The Fastener In Until It Is Tight And The Washer Is Firmly Seated. Do Not Overdrive Fasteners.
A Slight Extrusion Of Neoprene Around The Washer Is A Good Visual Tightness Check. Always Use The Proper Tool To Install Fasteners. A Fastener Driver (Screw Gun) With A RPM Of 1700–2000 Should Be Used For Self-Drilling Screws. A 500–600 RPM Fastener Driver Should Be Used For Self-Tapping Screws. Discard Worn Sockets, These Can Cause The Fastener To Wobble During Installation.

Note: Always Remove Metal Filings From Surface Of Panels At The End Of Each Work Period. Rusting Filings Can Destroy The Paint Finish And Void Any Warranty.



Correct Compression Of Sealing Washer



Too Tight Compression Of Sealing Washer



Too Loose Compression Of Sealing Washer

Tape And Tube Sealant

Proper Tape And Tube Sealant Application Is Critical To The Weather Tightness Of A Building. Tape Sealant Should Not Be Stretched When Installed. Apply Only To Clean, Dry Surfaces. Keep Only Enough Sealants On The Roof That Can Be Installed In A Day. During Warm Weather, Store Sealants In A Cool Dry Place. During Cold Weather (below 60°) Sealants Must Be Kept Warm (60°–90°) Until Application. After Tape Sealant Has Been Applied, Keep Protective Paper In Place Until Panel Is Ready To Be Installed.

Important Note

All Details, Recommendations And Suggestions Contained In This Erection Guide Of This Drawings Set Are For General Guidelines Only, And Not Meant To Be All-inclusive. Industry Accepted Installation Practices With Regard To All Areas Not Specifically Discussed In This Section Should Be Followed. Only Experienced, Knowledgeable Installers Familiar With Accepted Practices Should Be Used To Assure A Quality Project.

It Is Emphasized That The Manufacturer Is Only A Manufacturer Of Metal Building Components And Is Not Engaged In The Installation Of Its Products. Opinions Expressed By The Manufacturer About Installation Practices Noted In The Erection Guide Are Intended To Represent Only A Guide. Both The Quality And Safety Of Installation And The Ultimate Customer Satisfaction With The Completed Building Are Determined By The Experience, Expertise, And Skills Of The Installation Crews, As Well As The Equipment Available For Handling The Materials. Actual Installation Operations, Techniques And Site Conditions Are Beyond The Manufacturers Control.

This item has been electronically signed and sealed by Anuradha Khanna, P.E. on the date and/or time stamp shown using a digital signature. Printed copies of this document are not considered signed and sealed and the signature must be verified by a 3rd Party Certificate Authority on any electronic copy.

Anuradha Khanna

ANURADHA KHANNA
License No. 6201310835
Jun 24 2026
LICENSED PROFESSIONAL ENGINEER

Revision	Date	Description	By	Ck'd

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Project Name & Location:
CROWN ENTERPRISES LLC
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DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

☒ Issued For Construction
☐ Issued For Permit
☐ Issued For Approval (Not For Construction)
Drawing Status:

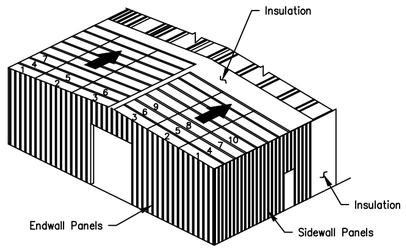
Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	
Job Number:	21-B-63283
Sheet Number:	R2 of 15

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ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835

PBR Roof Panels

For PBR Roofs With Ridge Panels, It Is Recommended That Both Sides Of The Ridge Be Sheeted Simultaneously. This Will Keep The Insulation Covered For The Maximum Amount Of Time And The Panel Ribs Can Be Kept In Proper Alignment For The Ridge Panel. This Is Critical On The PBR Panels So That The Ridge Caps Can Be Properly Installed. Check For Proper Coverage As The Sheeting Progresses.



Install The First Run Of Roof Panels Across The Building From Eave To Eave Or Eave To Ridge. To Allow Proper Installation Of The Rake Trim, The Starting Location For The First Panel Must Be As Shown In The Rake Details Included With The Erection Drawings. When The First Run Is Properly Located And Aligned With The Correct Endlaps And Eave Overhangs, Fasten To Purlins. Roof Panels Should Be Installed So That The Sidelap Is In A Direction Away From Prevailing Wind. Refer To Appropriate Lap Details Included With The Erection Drawings.

Install Remaining Roof Insulation And Panels. To Avoid Accumulative Error Due To Panel Coverage Gain Or Loss, Properly Align Each Panel Before It Is Fastened. Occasional Checks Should Be Made To Ensure That Correct Panel Coverage Is Maintained. Special Attention Should Be Given To Fastener, Sealant and Closure Requirements. Refer To Details Included With The Erection Drawings.

At Finishing End Of Roof, The Last panels May Require Field Modification For Installation Of Rake Trim. Refer To Rake Details Included With The Erection Drawings. DO NOT BACK LAP THROUGH FASTENED ROOF PANELS.

NOTE: Roof Types And Installation Requirements Will Vary. Refer To The Appropriate Details For Specific Panel Used.

IMPORTANT: Loose Fasteners, Blind Rivets, Drill shavings, Etc.. Must Be Removed From The Roof To Guard Against Corrosion.

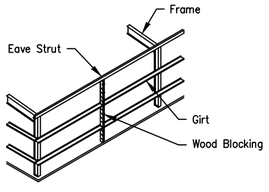
Wall Panels

Proper Horizontal And Vertical Alignment Of Supporting Structure (Girts Or Other Framing) Is The Responsibility Of The Installer. Failure To Align The Secondary members Properly Prior To Wall Installation Can Have A Direct Impact On The Final Appearance And Performance Of The Installed Wall System For Which The Metal Building Manufacturer Is Not Responsible.

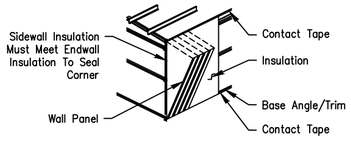
Before Installing Wall Panels, The Girts Must Be Aligned To A Level Position So That There Is No Visible Sag. This Should Be Done Directly Ahead Of Panel Installation.

Girt Leveling May Be Accomplished By Standing A Section Of Gable Angle Vertically Against The Outside Girt Flanges At Approximate Mid-bay Location. When Girts Are Level, Attach The Girt Flanges To The Angle With Vise Grip Pliers Or Temporary Screws. Wood Blocking Cut To Fit The Spaces May Also Be Used For Alignment.

Note:
Temporary Girt Blocking Is Not Recommended On Concealed Fastener Panels. The Removal Of The Blocks After Panel Installation Can Cause Oil Canning.



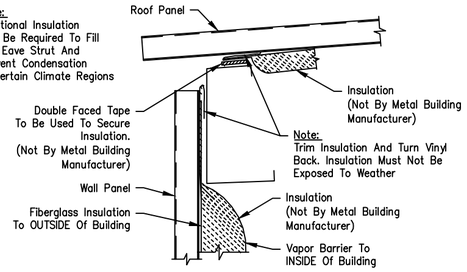
Note:
Wall Panel Type And Installation Details Will Vary. Refer To The Erection Drawings And Details For The Specific Panel Used For Your Building.



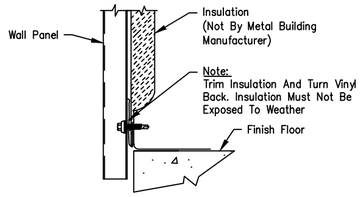
If Walls Are To Be Insulated With Blanket Insulation Over Girt Girt Flanges, Base And Eave, Place A Continuous Run Of Contact Tape Along The Eave Strut And Base Member.

Note:
At The Base, Cut Off The Insulation A Minimum Of ⅜" Above The Bottom Of The Wall Panel. This Will Prevent The Insulation From Hanging Below The Wall Panel And Wicking Moisture.

Note:
Additional Insulation May Be Required To Fill The Eave Strut And Prevent Condensation In Certain Climate Regions



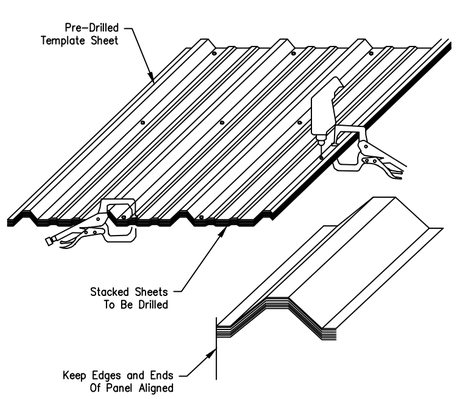
Eave Detail
(See Erection Drawings)



Base Detail
(See Erection Drawings)

Sidewall Panels Should Be Installed So That The Panel Sidelap Is In A Direction Away From The Prevailing Wind. Refer To Appropriate Lap Detail Included With Erection Drawings.)

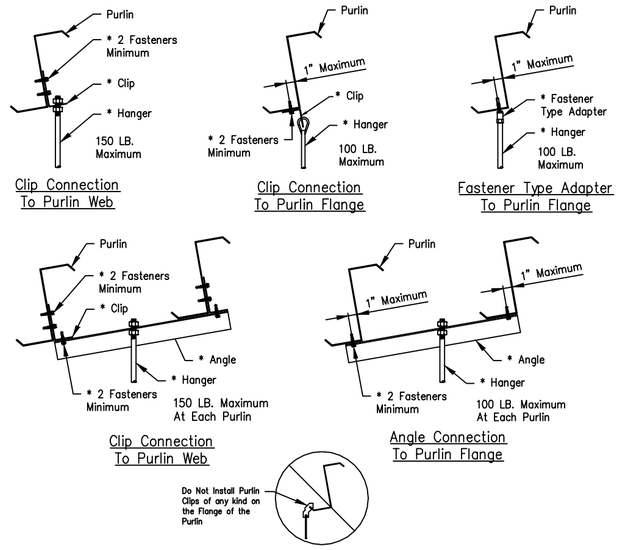
Note:
Check Periodically To Ensure That All Panels Are Aligned And Plumb.



Screw Alignment Panel
(Through Fastened Panel Only)

Note:
After Drilling Panels, It Is Important To Clean Metal Filings Off All Panel Surfaces, Including Between Panels That Are Not Installed That Day, To Avoid Rust Stains.

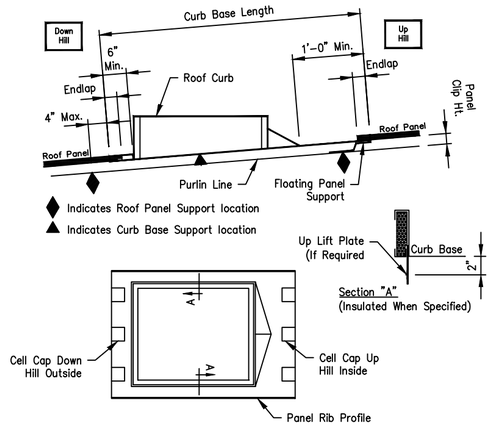
Suggested Method Of Purlin Attachment For Building Accessories



* Denotes Material Not Provided By Metal Building Manufacturer.

The Total Hanger Load Shall Not Exceed The Design Collateral Load For The Building. Example:
5'-0 (Purlin Spacing) X 5'-0 (Hanger Spacing) X 6 PSF (collateral Load) = 150 Lbs.
See Cover Sheet For Design Collateral Load For This Building.
Note: If The Building Is Designed For 0 PSF Collateral Load, Then Adding Any Suspended System (i.e. Duct Work, Piping, Lights, Ceilings, Etc.) Will Correspondingly Reduce The Design Live Load.

Roof Curbs When Not Supplied By Building Manufacturer



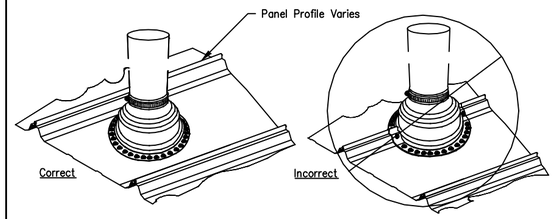
The Curb Details Shown Illustrate The Building Manufacturers Recommended Curb Style And Installation Method. It Is The Erector/Installer's Responsibility To Provide The Proper Curb Style And Install Them In Accordance With The Procedures Established By These Details. Failure By The Erector/Installer To Follow These Recommendations May Result In The Curbs Damaging The Roof System Or Excluded From Warranties.

All Roof Curbs To Be:
1. .080 Aluminum Or 18 Ga. Stainless Steel (No Galvalume® Or Galvanized).
2. Panel Rib To Panel Rib (No Flat Skirt Or Lay-Over Curbs).
3. Installed With Down Hill End Over Panel And Up Hill End Under Panel Application For Water Flow At Panel Splice.
4. Up Lift Prevention For Clip Applied Roof Systems Are Required If:
   a. Wind Loads Exceed 110 MPH.
   b. Curb Base Crosses A Purlin.
5. Supported on (4) Sides By Primary Or Secondary Framing.
6. Maximum Single Curb Weight Recommended Is 1500 Lbs.

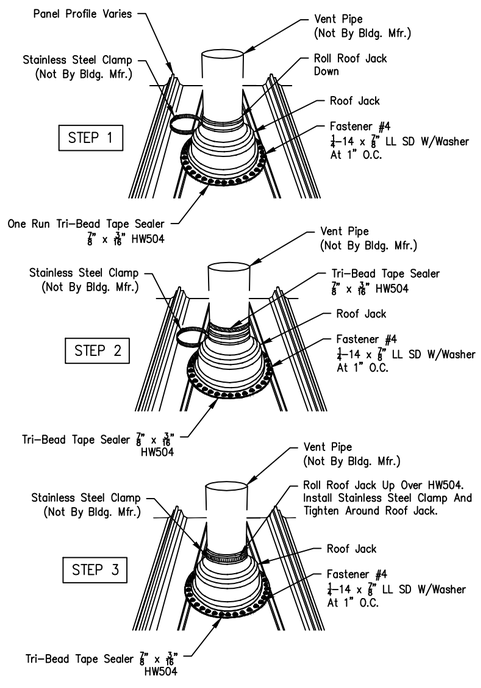
Roof Jack Installation when Not Supplied By Building Manufacturer

General Installation Notes

- Do Not Use Galvanized Roof Jacks, Lead Hats, Or Other Residential Grade Roof Jacks. These Roof Jacks Do Not Have 20 Year Service Life And In Case Of Lead Hats Will Cause Galvanic Corrosion Of The Roof Panel.
- Use EPDM Rubber Roof Jacks With An Integral Aluminum Band Bonded Into The Perimeter Of The Base. EPDM Roof Jacks Have A Temperature Range From −65℉ To 212℉. Use Silicone Roof Jacks For High Temperatures. Silicone Roof Jacks Have A Temperature Range Of −100℉ To 437℉.
- Retrofit Roof Jacks Are Available For Applications In Which The Top Of The Pipe Is Inaccessible, Eliminating The Possibility Of Sliding The Roof Jack Over The Top Of The Pipe.
- Do Not Use Tube Sealant To Seal The Roof Jack To The Roof Panels. Use Roll Tape Sealer Between The Roof Jack And The Roof Panel And Attach The Roof Jack To The Roof Panel With Fastener #4 ½ − 14 X ⅞" LL SD W/washer At 1" O.C. Around The Base Of The Roof Jack. See Table Below For Quantities.
- Trim The Top Of The Roof Jack To Fit Over The Pipe, Roll Down The Roof Jack Over The Pipe And Apply Tape Sealer For The Perimeter Of The Roof Jack Base Between The Roof Jack And The Roof Panel. Apply Tape Sealer Around The Pipe And Install A Stainless Steel Clamp (Not By Bldg. Mfr.) Over The Top Of The Roof Jack And Firmly Tighten To Form A Secure Compression Seal.
- If The Pipe Diameter Is So Large To Block The Flow Of Water Down The Roof Panel, A Flat Base Roof Curb Must Be Installed Into The Roof And The Roof Jack Will Be Sealed To The Curb. A Two Piece Curb May Be Required When The Top Of The Pipe Is Inaccessible.
- In Northern Climates, The Pipe Penetration Should Be Protected From Moving Ice Or Snow With A Snow Retention System Immediately Up Slope From The Pipe.



Install Pipe In Center To Allow Base Of Roof Jack To Lay Flat on Panel. Cannot Encompass More Than 75% Of Panel.



Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

☐ Issued For Approval (Not For Construction)
☒ Issued For Construction
☐ Issued For Permit

Drawing Status:

Scale:	NOT TO SCALE	
Drawn by:	LSG	6/17/26
Checked by:	SYH	6/19/26
Project Engineer:		
Job Number:	21-B-63283	
Sheet Number:	R3 of 15	

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ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835

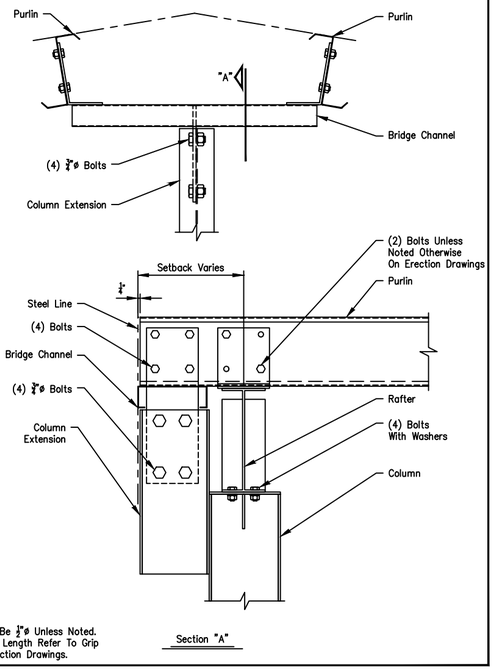
Anuradha Khanna

ANURADHA KHANNA
LICENSED PROFESSIONAL ENGINEER
License No. 6201310835
Jun 24, 2026

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Rigid Bearing Frame Endwall - Load Bearing Column - Outside Column Extension to Bridge Channel Between Peak Purlins - Bypass

Page EF08362 | Date Feb '26 | Rev 01

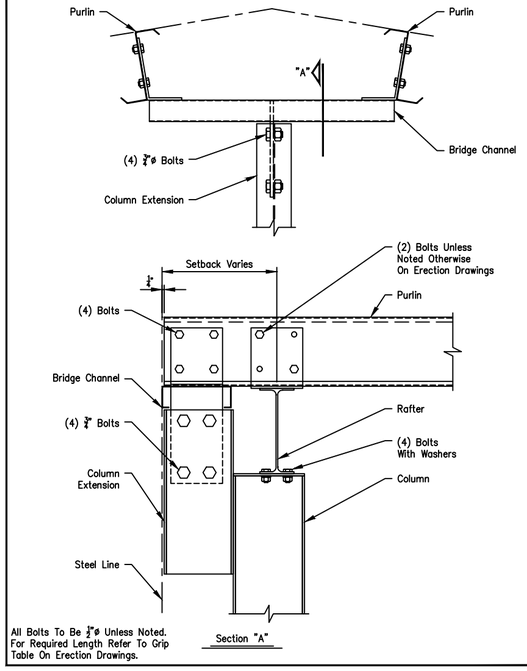


All Bolts To Be ¾"ø Unless Noted. For Required Length Refer To Grip Table On Erection Drawings.

Section "A"

Bearing Frame Endwall - Outside Column Extension to Bridge Channel Between Peak Purlins (Symmetrical) - Bypass

Page EF07332 | Date Mar '15 | Rev 00

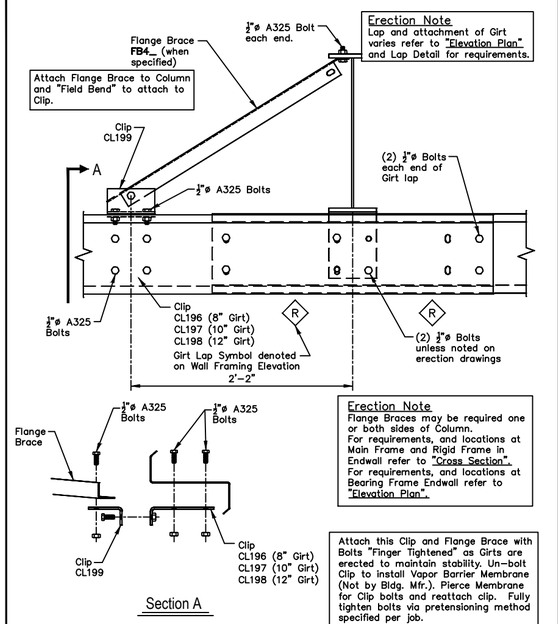


All Bolts To Be ¾"ø Unless Noted. For Required Length Refer To Grip Table On Erection Drawings.

Section "A"

By-Pass Girt to Column - Concealed Nut Connection - Flange Brace FB4_

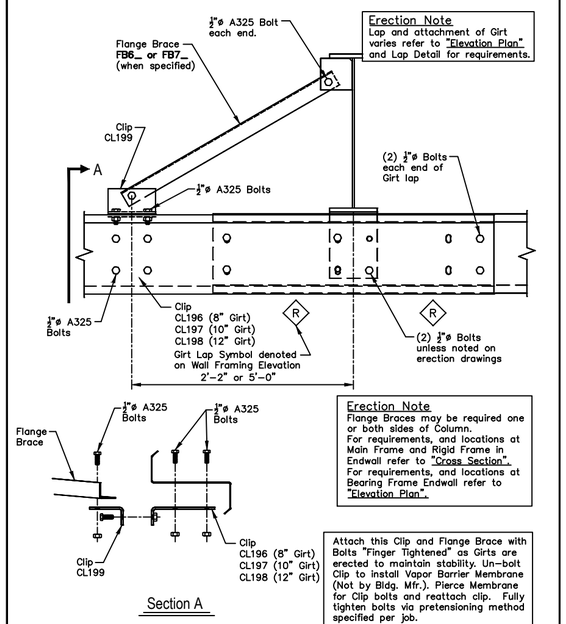
Page CF01126 | Date May '19 | Rev 04



Section A

By-Pass Girt to Column - Concealed Nut Connection Flange Brace FB6_ or FB7_

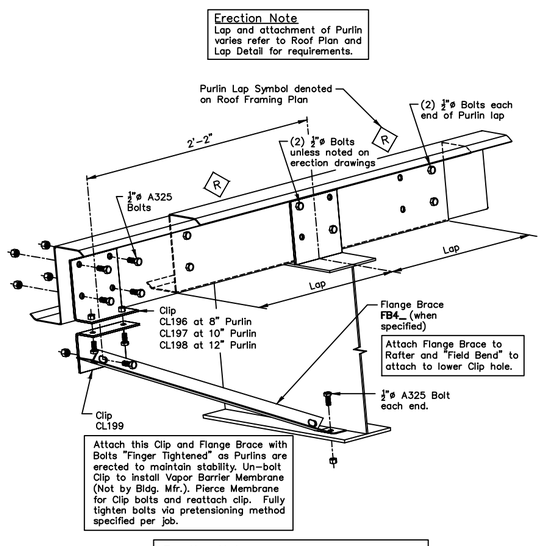
Page CF01129 | Date May '19 | Rev 04



Section A

Purlin to Rafter - Concealed Nut Connection - Flange Brace FB4_

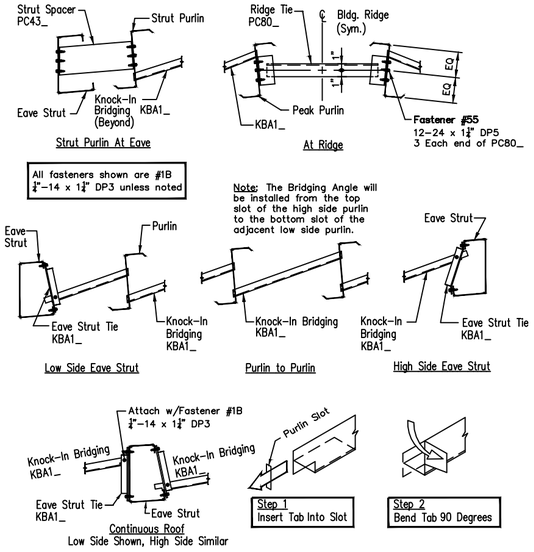
Page CF02038 | Date May '19 | Rev 03



Erection Note
Flange Braces may be required one or both sides of Rafter.
For requirements, and locations at Main Frame and Rigid Frame in Endwall refer to "Cross Section".
For requirements, and locations at Bearing Frame Endwall refer to "Roof Plan".

Knock-In Bridging Installation - Less Than 3:12 Single Row

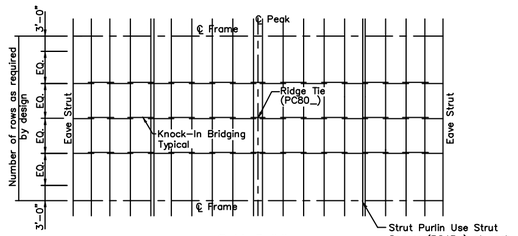
Page KB01001 | Date May '19 | Rev 03



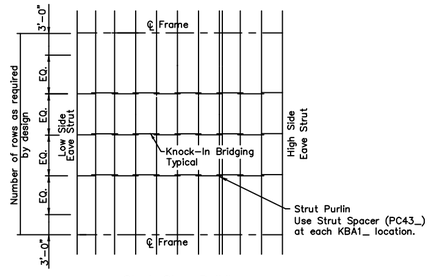
Note: The bridging must be inserted into the pre-punched slot in the Purlin as shown in Step 1 and the tab bent side ways for proper installation Step 2. The process must be complete for the bridging to function as designed.

Knock-In Bridging Roof Layout - Single Row

Page KB01006 | Date Apr '20 | Rev 04



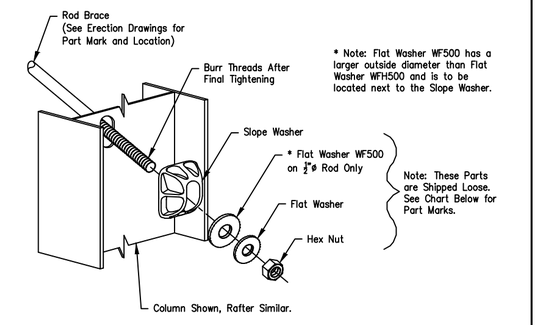
Gable Building

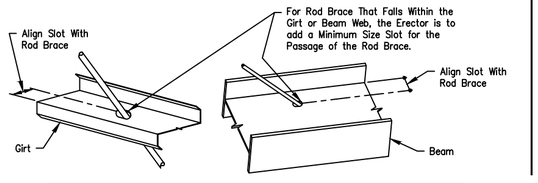


Single Slope Building

Rod Brace Attachment at Web

Page PF04101 | Date Nov '25 | Rev 04





Part Marks for Rod Brace Assembly					
Rod Brace Diameter	Rod Brace	Slope Washer	* Flat Washer	Flat Washer	Hex Nut
½"ø	WR08___	WS110	* WF500	WFH500	HSN500
⅝"ø	WR10___	WS110	None	WFH625	HSN625
¾"ø	WR12___	WS120	None	WFH750	HSN750
⅞"ø	WR14___	WS120	None	WFH875	HSN875
1"ø	WR16___	WS130	None	WFH1000	HSN1000

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Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
☐ Issued For Approval (Not For Construction)
☒ Issued For Construction
☐ Issued For Permit

Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	
Job Number:	21-B-63283
Sheet Number:	R4 of 15

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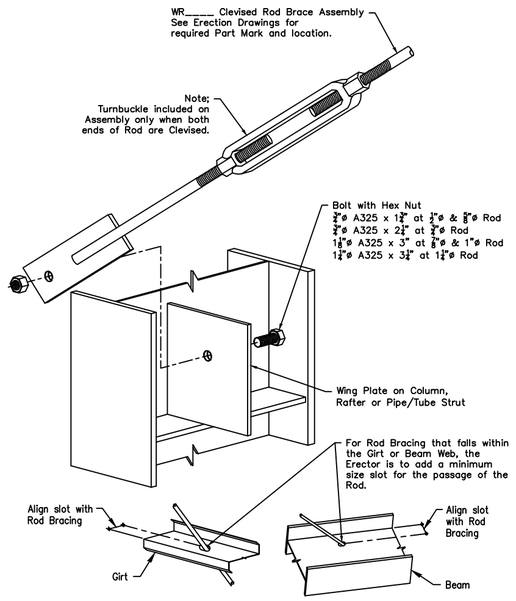
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MICHIGAN P.E. 6201310835

Anuradha Khanna

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License No. 6201310835
June 23, 2026
LICENSED PROFESSIONAL ENGINEER

Single Clevised Rod Brace attachment

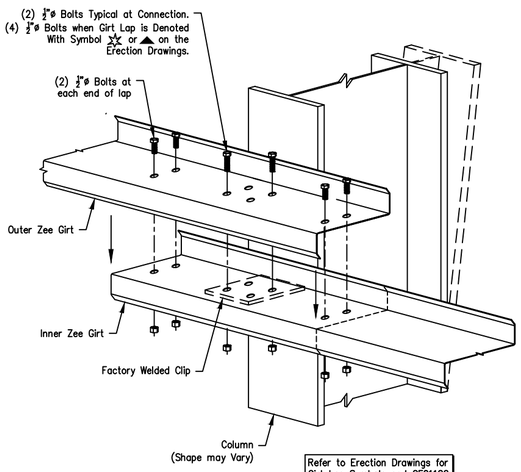
Page PF04113 | Date Nov '25 | Rev 05



ERECTION NOTE: DETAIL SHOWN AT COLUMN AND IS SIMILAR AT RAFTER OR PIPE/TUBE STRUT.

Girt Connection At Bypass Column

Page CF01120 | Date May '23 | Rev 03

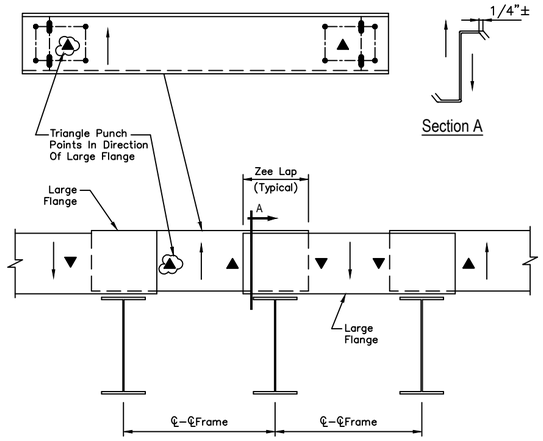


Refer to Erection Drawings for Girt Lap Symbols and CF01122 for Lap Symbols and Lengths.

All Bolts to be ½"ø Unless Noted.
For Required Length Refer to Grip Table on Erection Drawings.

Bypass Zee Installation

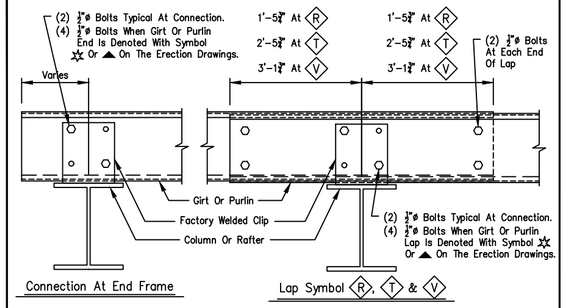
Page CF01121 | Date Apr '19 | Rev 01

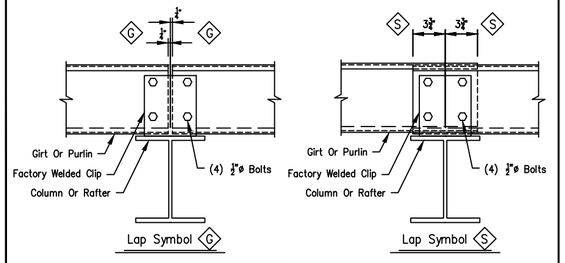


The large leg of the Zee must be alternated from top to bottom in order to nest the member correctly. A triangle has been added to the end of the Zee near the connection holes, that will point to the large leg of the member.

Girt And Purlin Connection At Bypass Column And Rafter

Page CF01122 | Date May '23 | Rev 04





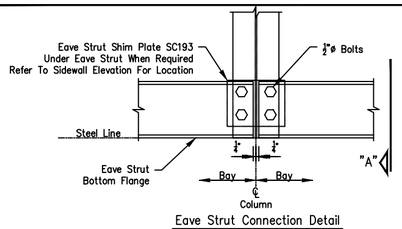
ZEE SECTION LAP TABLE			
SYMBOL	LAP LENGTH	SYMBOL	LAP LENGTH
G	0'-0"	T	2'-5½"
S	0'-3½"	V	3'-1½"
R	1'-5½"		

Refer to Erection Drawings for Lap Symbol at Girt and Purlin Connection.

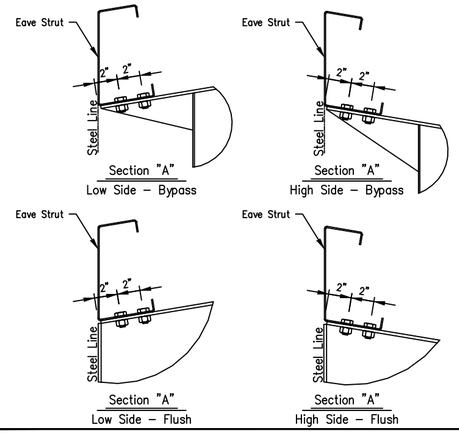
All Bolts to be ½"ø Unless Noted.
For Required Length Refer to Grip Table on Erection Drawings.

Eave Strut Connection
Flush / Bypass Column - Interior Bay Column - Roof Slope 4 ½:12 Or Less

Page CF02030 | Date Sep '17 | Rev 02

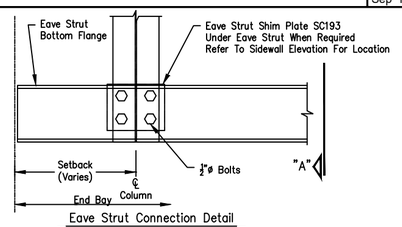


Eave Strut Connection Detail
Flush / Bypass Column – Interior Bay Column

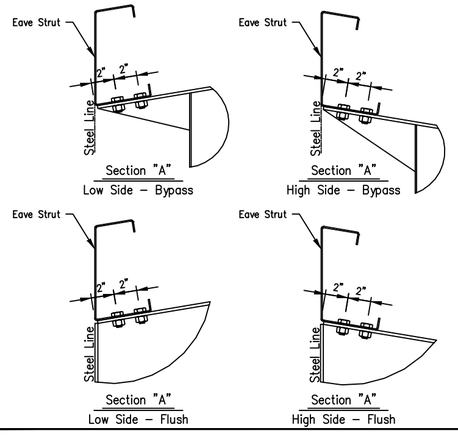


Eave Strut Connection
Flush / Bypass Column - End Bay Column - Roof Slope 4 ½:12 Or Less

Page CF02033 | Date Sep '17 | Rev 04

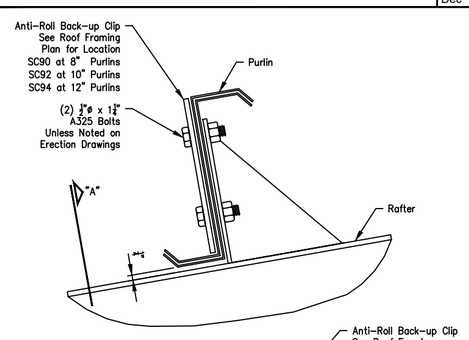


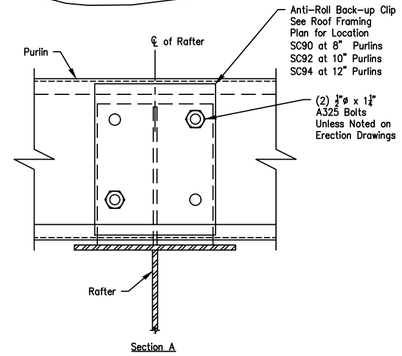
Eave Strut Connection Detail
Flush / Bypass Column – End Bay Column



Purlin with Anti-Roll Back-up Clip at Rafter

Page CF02035 | Date Dec '14 | Rev 04

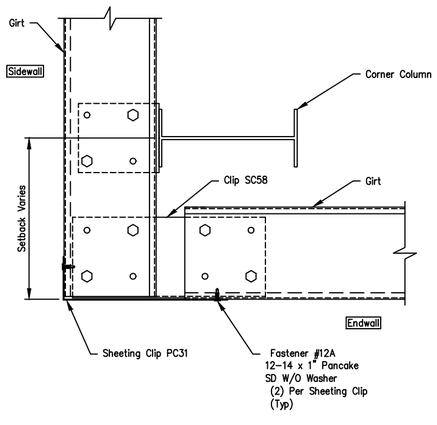




Section A

8" Sidewall Zee Girts and 8" Endwall Zee Girts at Bypass Corner Column with Variable Frame Setback

Page EF03500 | Date Jan '16 | Rev 01



All Bolts To Be ½"ø Unless Noted.
For Required Length Refer To Grip Table On Erection Drawings.

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Anuradha Khanna

ANURADHA KHANNA
License No. 6201310835
June 23, 2026
LICENSED PROFESSIONAL ENGINEER

Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
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Houston, TX 77040
cornerstonebuildingbrands.com

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8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
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12225 STEPHENS
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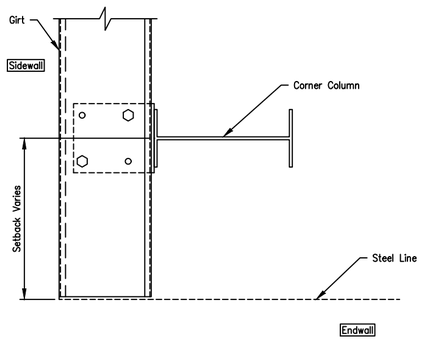
Scale: NOT TO SCALE
Drawn by: LSG 6/17/26
Checked by: SYH 6/19/26
Project Engineer:
Job Number: 21-B-63283
Sheet Number: R5 of 15

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ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835

8" Sidewall Girts and Non-Aligned Girts or Open Endwall at Bypass Corner Column with Variable Frame Setback

Page EF03503 | Date Jan '16 | Rev 01



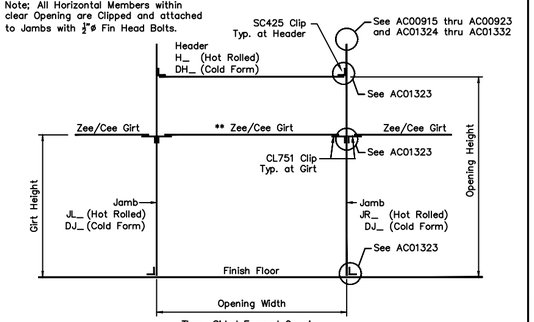
Note:
Zee Girt Shown
Cee Girt Similar

All Bolts To Be ¾"ø Unless Noted.
For Required Length Refer To Grip Table On Erection Drawings.

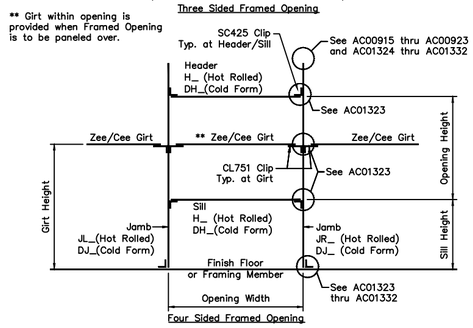
Bolted Clips - Framed Opening Connections - Cold Form and Hot Rolled Cee - Three and Four Sided Openings

Page AC01320 | Date May '19 | Rev 03

Note: All Horizontal Members within clear Opening are Clipped and attached to Jambs with ¾"ø Fin Head Bolts.

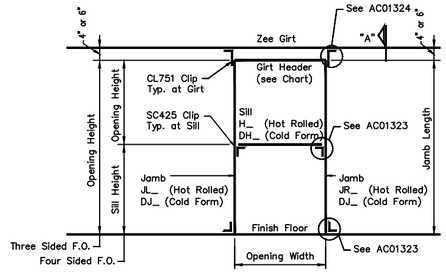


** Girt within opening is provided when Framed Opening is to be paneled over.



Bolted Clips - Framed Opening Connections - Three and Four Sided Openings - Girt Header

Page AC01322 | Date Apr '20 | Rev 05



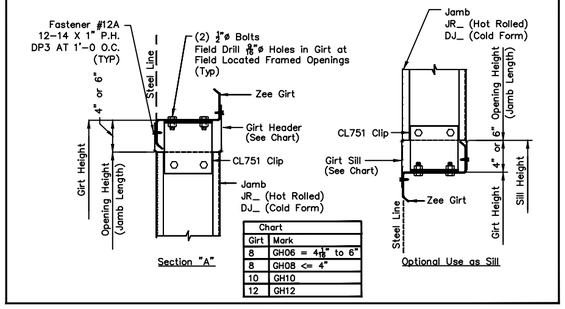
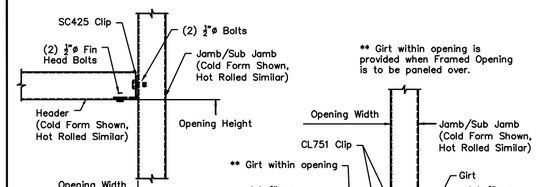


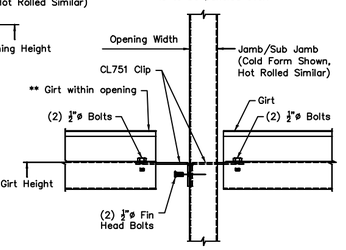
Chart	
Girt	Mark
8	GH06 = 4 1/16" to 6"
8	GH08 <= 4"
10	GH10
12	GH12

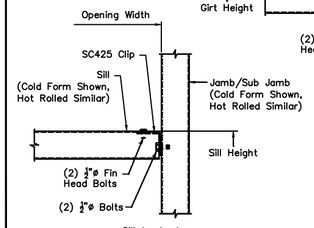
Bolted Clips - Framed Opening Connections - Cold Form and Hot Rolled Base, Girt, Header, and Sill to Jamb

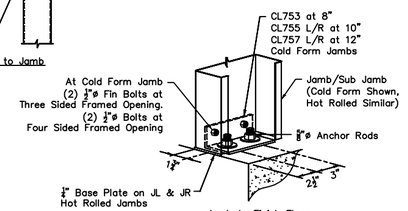
Page AC01323 | Date May '19 | Rev 03



** Girt within opening is provided when Framed Opening is to be paneled over.

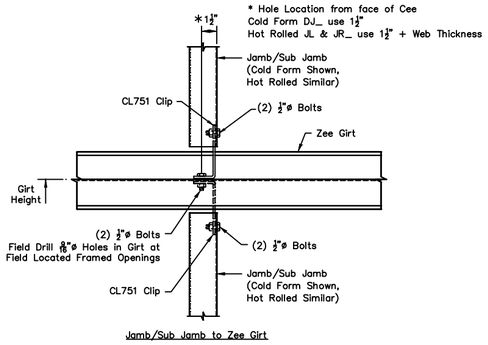




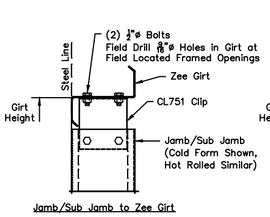


Bolted Clips - Framed Opening Connections - Cold Form and Hot Rolled Jamb/Sub Jamb to Zee Girt

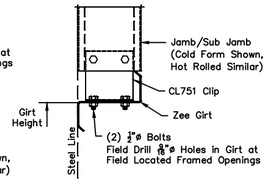
Page AC01324 | Date May '19 | Rev 01



Jamb/Sub Jamb to Zee Girt



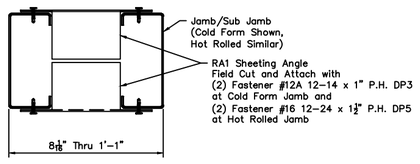
Jamb/Sub Jamb to Zee Girt

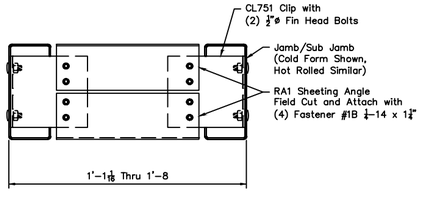


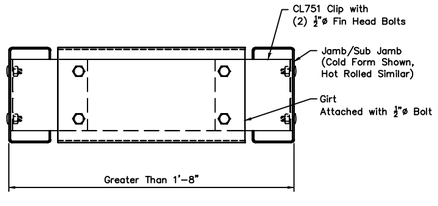
Jamb/Sub Jamb to Zee Girt

Bolted Clips - Framed Opening Connections - Cold Form and Hot Rolled Cee - Framing Between Jambs - Short Girt

Page AC01333 | Date Feb '26 | Rev 04

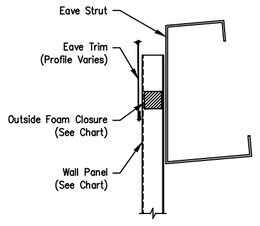




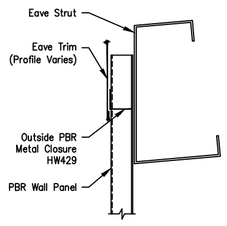


Single Skin Wall Panel Outside Closure Requirements at Eave

Page GD06002 | Date Jun '23 | Rev 03



Detail at Foam Closure
(Low Eave Shown High Eave Similar)



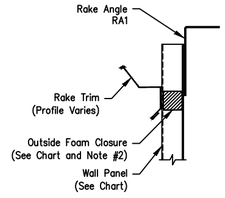
Detail at Optional Metal Closure
For PBR Panel Only
(Low Eave Shown High Eave Similar)

Note:
Foam Closures Are Required When Job Requires Air Infiltration Or Sealed Wall Requirements, See GD16002.

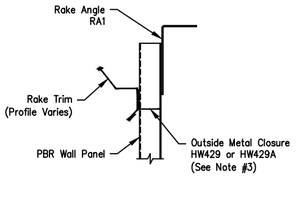
Wall Panel	Foam Closure
PBR	HW456
AVP	HW465
PBU	HW460
NuWall	HW424
PBC	HW462
PBD	HW463
ShadowRib	HW412
Designer Series (Fluted Only)	HW4037
RBR (Reverse Rolled PBR)	HW455
RBU (Reverse Rolled PBU)	HW459
7.2	HW461

Single Skin Wall Panel Outside Closure Requirements at Rake

Page GD06003 | Date Jun '23 | Rev 03

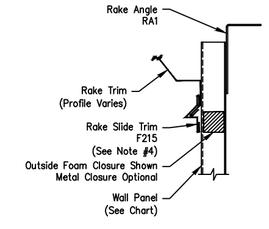


Detail at Foam Closure



Detail at Optional Metal Closure
For PBR Panel Only

Notes:
1. Outside Panel Closures are Required at all Sheeted Endwalls.
2. PBR Wall Panel Outside Foam Closures HW456 Required for Roof Slope 4:12 or Less and HW422 for Roof Slope Greater Than 4:12. Field Form/Notch HW422 to Panel Profile.
3. PBR Wall Panel Outside Metal Closure HW429 for Roof Slope 0 :12 Thru 1½ :12 and HW429A for Roof Slope Greater Than 3½ :12 Thru 4½ :12.
4. Rake Slide Trim Required for All Standing Seam Roofs and at Screw Down Roof Runs Greater Than 100'–0"
5. Foam Closures are Required when Job Requires Air Infiltration or Sealed Wall Requirements, See GD16002.



Detail at Rake Slide Trim

Wall Panel	Foam Closure
PBR	HW456/HW422
AVP	HW465
PBU	HW460
NuWall	HW424
PBC	HW462
PBD	HW463
ShadowRib	HW412
Designer Series (Fluted Only)	HW4037
RBR (Reverse Rolled PBR)	HW455
RBU (Reverse Rolled PBU)	HW459
7.2	HW461

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Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

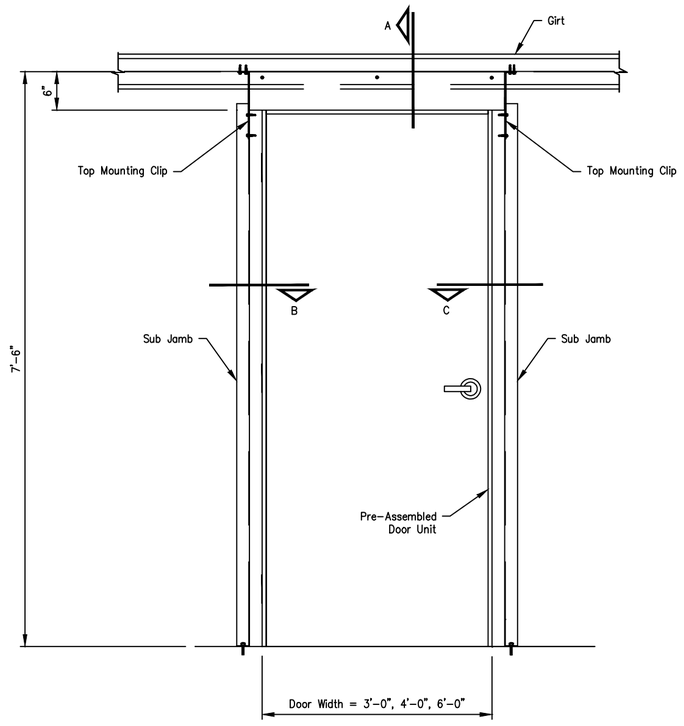
Drawing Status:
☐ Issued For Approval (Not For Construction)
☐ Issued For Permit
☒ Issued For Construction

Scale: NOT TO SCALE
Drawn by: LSG 6/17/26
Checked by: SYH 6/19/26
Project Engineer:
Job Number: 21-B-63283
Sheet Number: R6 of 15

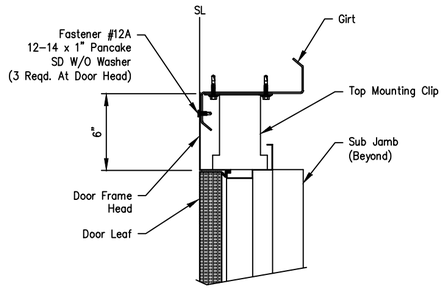
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MICHIGAN P.E. 6201310835

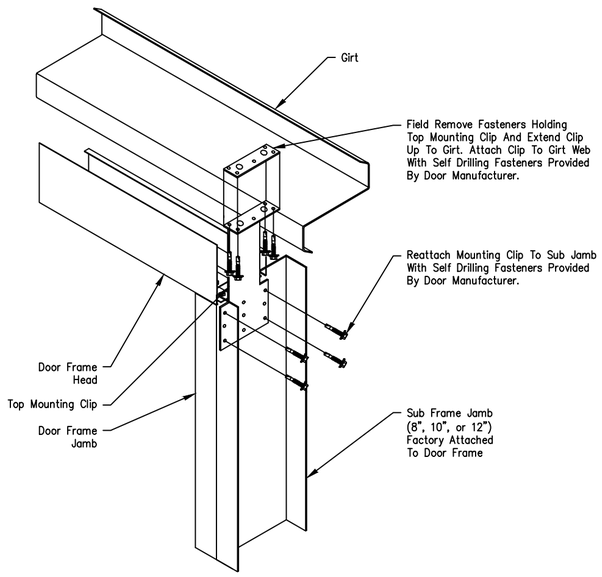
ANURADHA KHANNA
License No. 6201310835
June 2026
LICENSED PROFESSIONAL ENGINEER



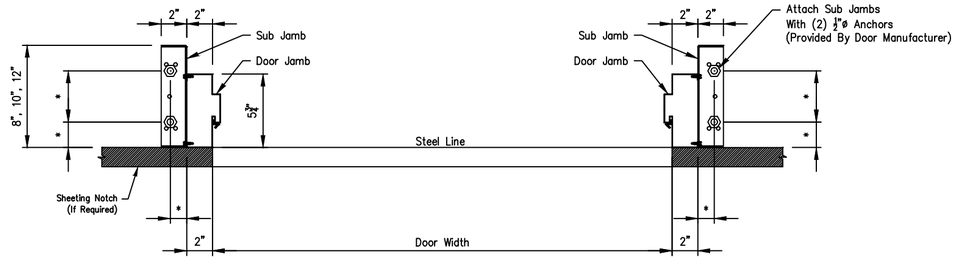
Door Elevation



Section A



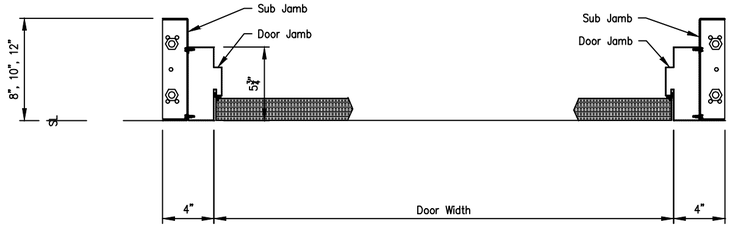
Door Jamb Connection To Girt Isometric



* Anchor Placement To Match Sub Jamb Base Dimensions As Determined By Door Manufacturer.

The Adequacy Of The ½"ø Base Anchor Is Not The Responsibility Of The Building Manufacturer.
The Adequacy Of These Base Anchors Should Be Determined By A Qualified Foundation Engineer.

Pre-Assembled Door Anchor Placement



Section B Section C

Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
☐ Issued For Approval (Not For Construction)
☒ Issued For Construction
☐ Issued For Permit

Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	
Job Number:	21-B-63283
Sheet Number:	R7 of 15

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MICHIGAN P.E. 6201310835

Anuradha Khanna

ANURADHA KHANNA
License No. 6201310835
June 22, 2026
LICENSED PROFESSIONAL ENGINEER

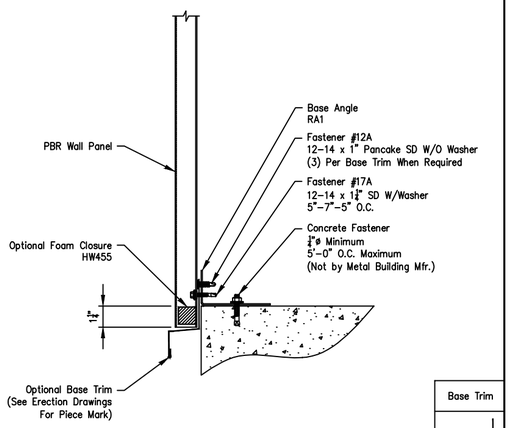
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Pre-Assembled Door - Girt At 7'-6" Without Low Girt

Page	
AC05250	
Date	Rev
Jul '25	01

PBR Wall Panel
Base Angle Without Panel Recess

Page PW02101 | Date Apr '18 | Rev 02

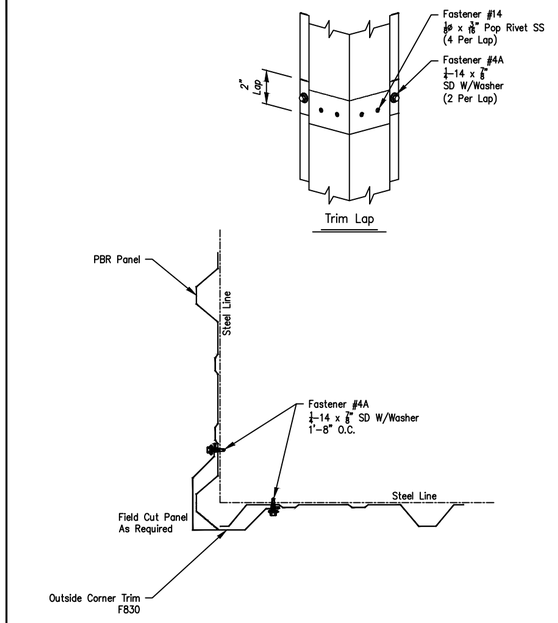


Base Trim
F406
F407
F408

Wall panel must be held off of base trim a minimum of ¼" to prevent bottom of wall panel from rusting.

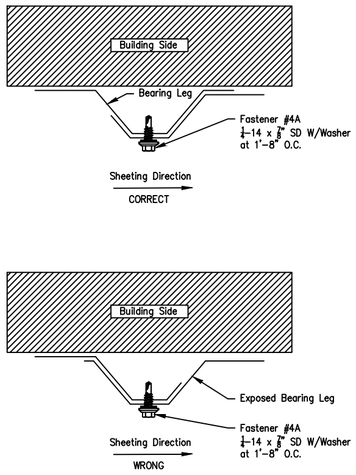
PBR Wall Panel
Outside Corner - On Module

Page PW03001 | Date Apr '19 | Rev 08



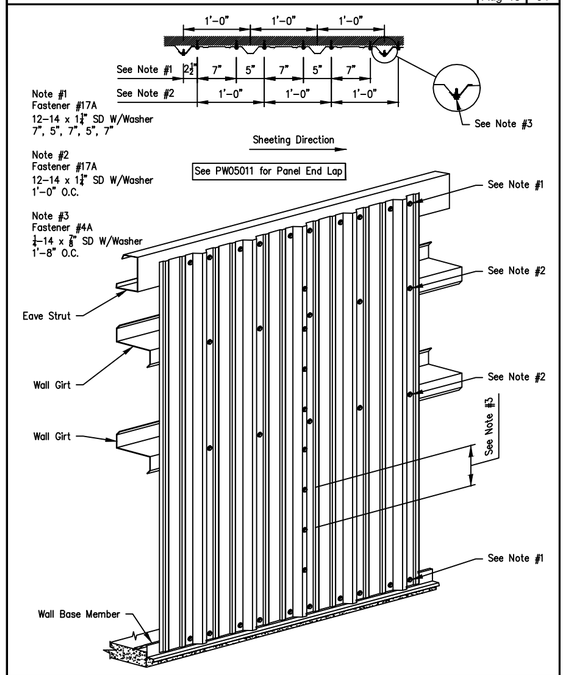
PBR Wall Panel
Panel Side Lap

Page PW05002 | Date Mar '19 | Rev 03



PBR Wall Panel
Fastener Location

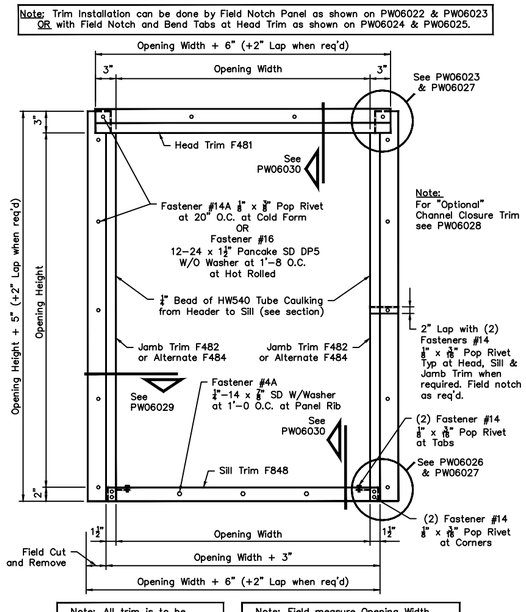
Page PW05003 | Date Aug '15 | Rev 04



PBR Wall Panel - Four Sided Framed Opening - Trim Installation with Field Notch Panel at Head Trim

Page PW06022 | Date Mar '20 | Rev 05

Note: Trim Installation can be done by Field Notch Panel as shown on PW06022 & PW06023 OR with Field Notch and Bend Tabs at Head Trim as shown on PW06024 & PW06025.



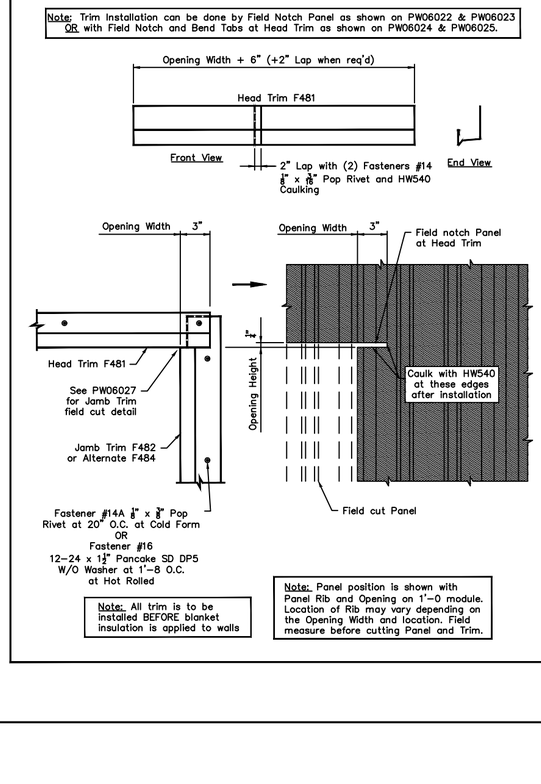
Note: All trim is to be installed BEFORE blanket insulation is applied to walls.

Note: Field measure Opening Width and Height before making field cuts and adjust cut dimensions accordingly.

PBR Wall Panel - Four Sided Framed Opening
Field Notch Panel at Head Trim

Page PW06023 | Date Mar '20 | Rev 05

Note: Trim Installation can be done by Field Notch Panel as shown on PW06022 & PW06023 OR with Field Notch and Bend Tabs at Head Trim as shown on PW06024 & PW06025.



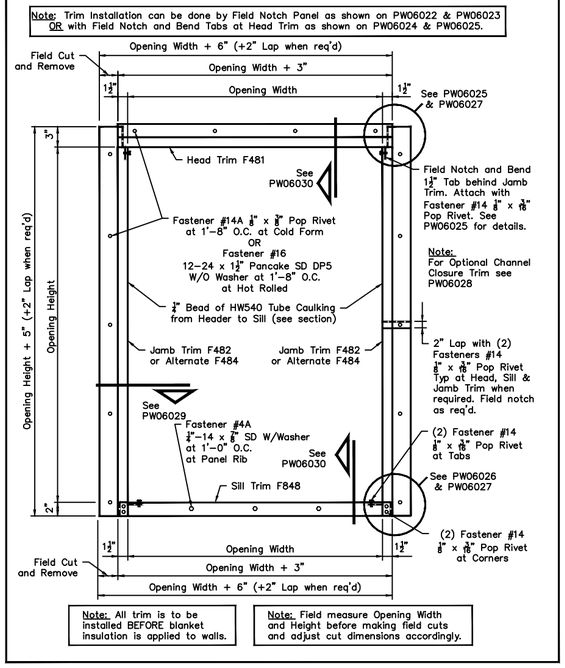
Note: All trim is to be installed BEFORE blanket insulation is applied to walls

Note: Panel position is shown with Panel Rib and Opening on 1'-0 module. Location of Rib may vary depending on the Opening Width and location. Field measure before cutting Panel and Trim.

PBR Wall Panel - Four Sided Framed Opening
Trim Installation With Field Notch and Bend Tabs at Head Trim

Page PW06024 | Date Mar '20 | Rev 06

Note: Trim Installation can be done by Field Notch Panel as shown on PW06022 & PW06023 OR with Field Notch and Bend Tabs at Head Trim as shown on PW06024 & PW06025.



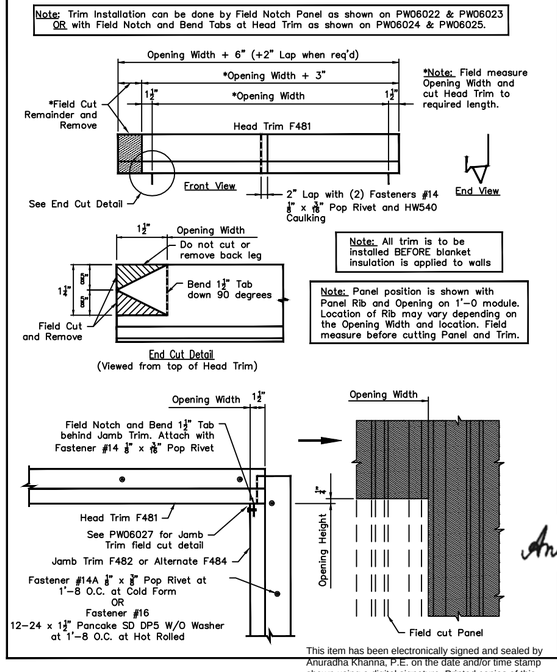
Note: All trim is to be installed BEFORE blanket insulation is applied to walls.

Note: Field measure Opening Width and Height before making field cuts and adjust cut dimensions accordingly.

PBR Wall Panel - Four Sided Framed Opening - Field Notch and Bend Tabs at Head Trim

Page PW06025 | Date Mar '20 | Rev 05

Note: Trim Installation can be done by Field Notch Panel as shown on PW06022 & PW06023 OR with Field Notch and Bend Tabs at Head Trim as shown on PW06024 & PW06025.



Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
☐ Issued For Approval (Not For Construction)
☐ Issued For Permit
☒ Issued For Construction

Revision	Date	Description	By	Ck'd

Scale: NOT TO SCALE
Drawn by: LSG 6/17/26
Checked by: SYH 6/19/26
Project Engineer:
Job Number: 21-B-63283
Sheet Number: R8 of 15

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MICHIGAN P.E. 6201310835

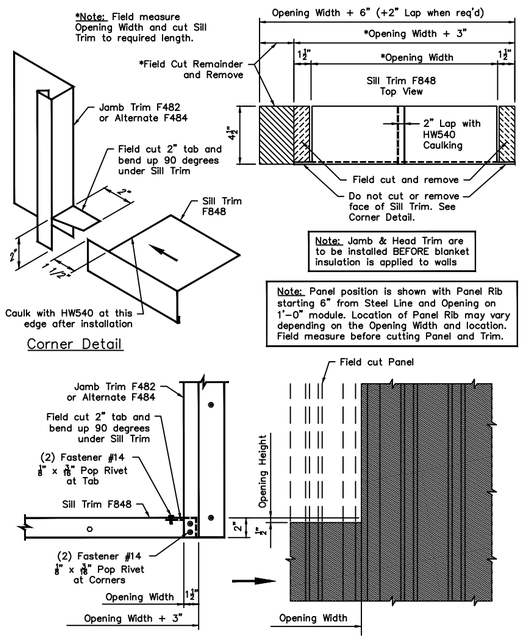
Anuradha Khanna

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License No. 6201310835
June 2026
LICENSED PROFESSIONAL ENGINEER

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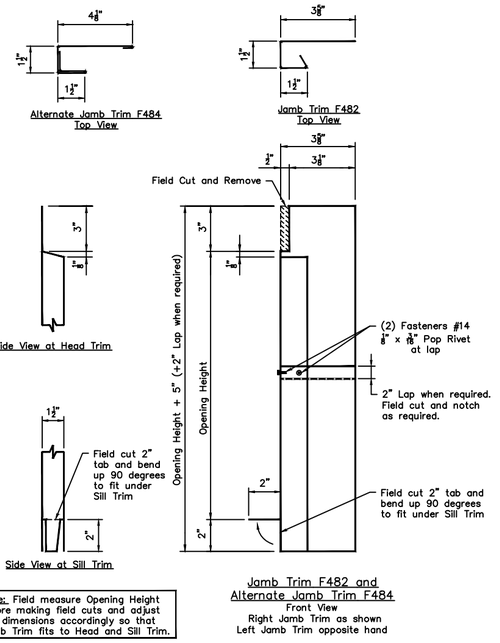
PBR Wall Panel - Four Sided Framed Opening
Sill Trim Installation

Page PW06026 | Date Mar '20 | Rev 04



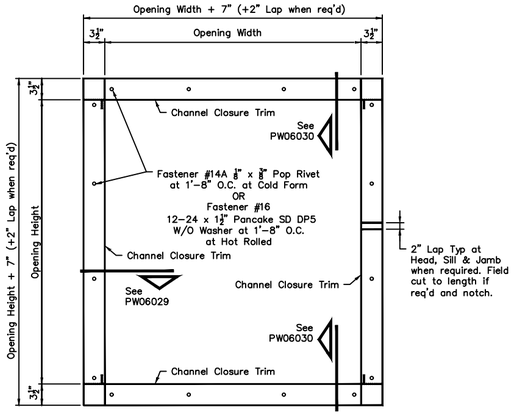
PBR Wall Panel - Four Sided Framed Opening
Jamb Trim Field Cut Details

Page PW06027 | Date Mar '20 | Rev 04



PBR Wall Panel - Four Sided Framed Opening
Optional Channel Closure Trim

Page PW06028 | Date Sep '16 | Rev 04



Optional Channel Closure Trim Piece Mark

F981	– 8" Member	F2993	– 10 1/4" Member
F2994	– 8 1/4" Member	F169	– 12" Member
F982	– 10" Member	F2995	– 12 1/4" Member

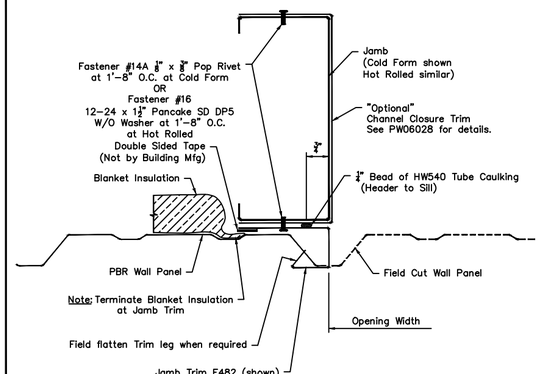
Note: All trim is to be installed BEFORE blanket insulation is applied to walls.

Note: Field measure Opening Width and Height before making field cuts and adjust cut dimensions accordingly.

Note: The interior leg of the Channel Closure Trim is to be oriented (±1/8") to match the interior leg of the Header or Jamb.

PBR Wall Panel - Four Sided Framed Opening - Jamb Trim Installation

Page PW06029 | Date Mar '20 | Rev 05

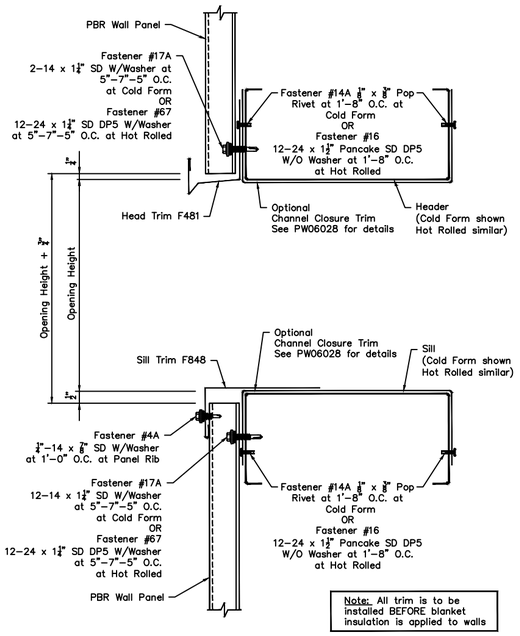


Note: All trim is to be installed BEFORE blanket insulation is applied to walls.

Note: Panel position is shown with Panel Rib and Opening on 1'-0" module. Location of Rib may vary depending on the Opening Width and location. Field measure before cutting Panel and Trim.

PBR Wall Panel - Four Sided Framed Opening
Head and Sill Trim Installation

Page PW06030 | Date Sep '16 | Rev 02

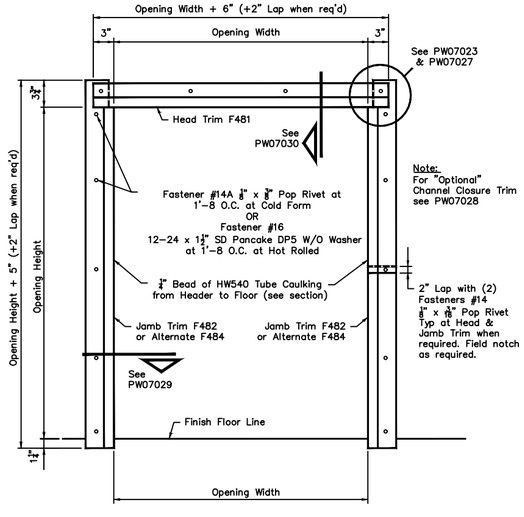


Note: All trim is to be installed BEFORE blanket insulation is applied to walls

PBR Wall Panel - Three Sided Framed Opening - Trim Installation with Field Notch Panel at Head Trim

Page PW07022 | Date Mar '20 | Rev 05

Note: Trim Installation can be done by Field Notch Panel as shown on PW07022 & PW07023 OR with Field Notch and Bend Tabs at Head Trim as shown on PW07024 & PW07025.



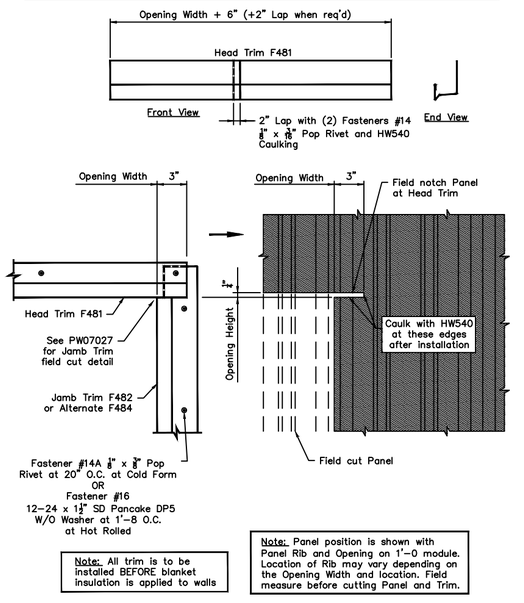
Note: All trim is to be installed BEFORE blanket insulation is applied to walls.

Note: Field measure Opening Width and Height before making field cuts and adjust cut dimensions accordingly.

PBR Wall Panel - Three Sided Framed Opening
Field Notch Panel at Head Trim

Page PW07023 | Date Mar '20 | Rev 05

Note: Trim Installation can be done by Field Notch Panel as shown on PW07022 & PW07023 OR with Field Notch and Bend Tabs at Head Trim as shown on PW07024 & PW07025.



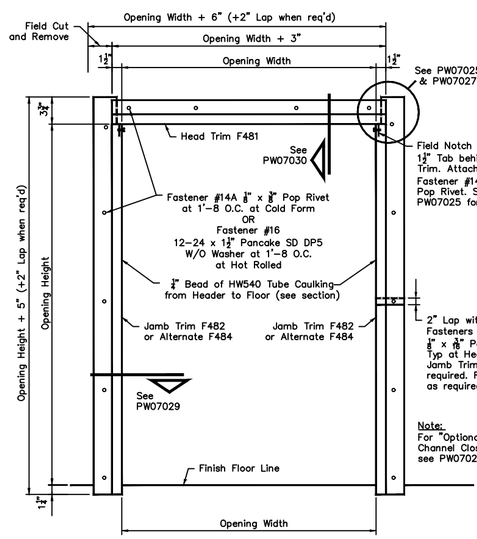
Note: All trim is to be installed BEFORE blanket insulation is applied to walls

Note: Panel position is shown with Panel Rib and Opening on 1'-0 module. Location of Rib may vary depending on the Opening Width and location. Field measure before cutting Panel and Trim.

PBR Wall Panel - Three Sided Framed Opening - Trim Installation with Field Notch and Bend Tabs at Head Trim

Page PW07024 | Date Mar '20 | Rev 05

Note: Trim Installation can be done by Field Notch Panel as shown on PW07022 & PW07023 OR with Field Notch and Bend Tabs at Head Trim as shown on PW07024 & PW07025.



Note: All trim is to be installed BEFORE blanket insulation is applied to walls.

Note: Field measure Opening Width and Height before making field cuts and adjust cut dimensions accordingly.

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Anuradha Khanna

ANURADHA KHANNA
License No. 6201310835
June 30, 2026
LICENSED PROFESSIONAL ENGINEER

Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
☐ Issued For Approval (Not For Construction)
☒ Issued For Construction
☐ Issued For Permit

Scale:	NOT TO SCALE
Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	
Job Number:	21-B-63283
Sheet Number:	R9 of 15

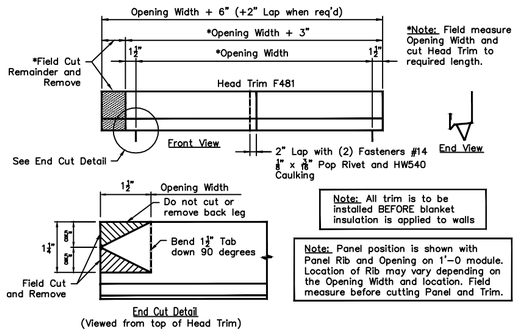
The engineer whose seal appears hereon is employed by or is contracted to provide engineering services for the manufacturer, Cornerstone Building Brands or one of its affiliates, for the materials described herein. Said seal or certification is limited to the products designed and manufactured by manufacturer only. The undersigned engineer is not the overall engineer of record for this project.

ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835

PBR Wall Panel - Three Sided Framed Opening - Field Notch and Bend Tabs at Head Trim

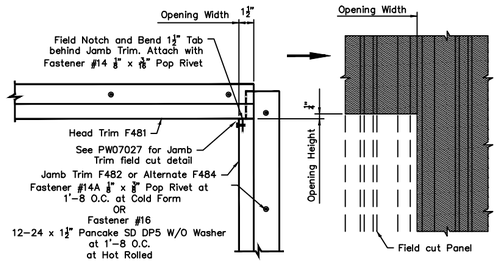
Page PW07025 | Date Mar '20 | Rev 05

Note: Trim Installation can be done by Field Notch Panel as shown on PW07022 & PW07023 OR with Field Notch and Bend Tabs at Head Trim as shown on PW07024 & PW07025.



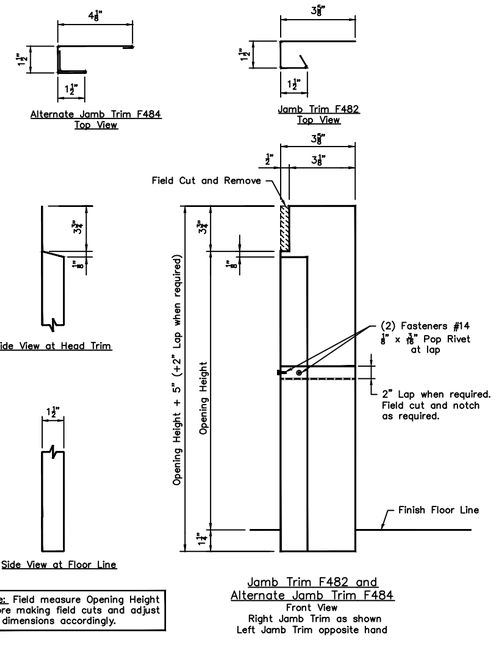
Note: All trim is to be installed BEFORE blanket insulation is applied to walls

Note: Panel position is shown with Panel Rib and Opening on 1'-0 module. Location of Rib may vary depending on the Opening Width and location. Field measure before cutting Panel and Trim.



PBR Wall Panel - Three Sided Framed Opening Jamb Trim Field Cut Details

Page PW07027 | Date Mar '20 | Rev 04

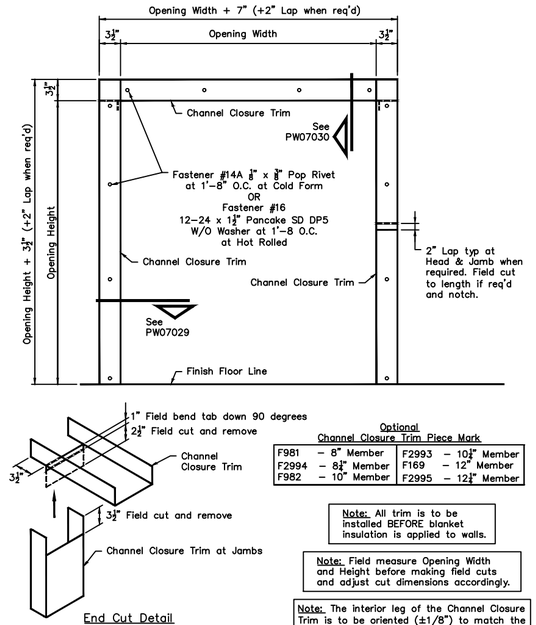


Note: Field measure Opening Height before making field cuts and adjust cut dimensions accordingly.

Jamb Trim F482 and Alternate Jamb Trim F484
Front View
Right Jamb Trim as shown
Left Jamb Trim opposite hand

PBR Wall Panel - Three Sided Framed Opening "Optional" Channel Closure Trim

Page PW07028 | Date May '19 | Rev 04



Optional Channel Closure Trim Piece Mark

F981	– 8" Member	F2993	– 10⅝" Member
F2994	– 8⅝" Member	F169	– 12" Member
F982	– 10" Member	F2995	– 12⅝" Member

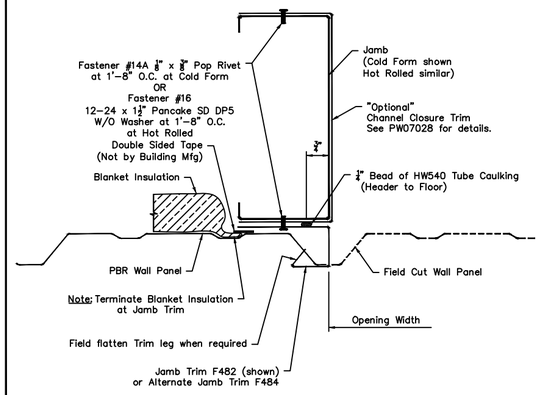
Note: All trim is to be installed BEFORE blanket insulation is applied to walls.

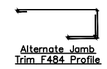
Note: Field measure Opening Width and Height before making field cuts and adjust cut dimensions accordingly.

Note: The interior leg of the Channel Closure Trim is to be oriented (±1/8") to match the interior leg of the Header or Jamb.

PBR Wall Panel - Three Sided Framed Opening - Jamb Trim Installation

Page PW07029 | Date Mar '20 | Rev 05



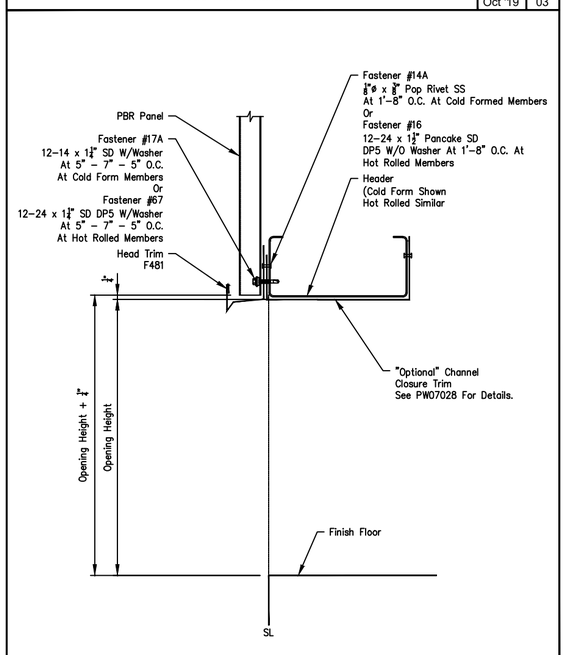


Note: All trim is to be installed BEFORE blanket insulation is applied to walls.

Note: Panel position is shown with Panel Rib and Opening on 1'-0" module. Location of Rib may vary depending on the Opening Width and location. Field measure before cutting Panel and Trim.

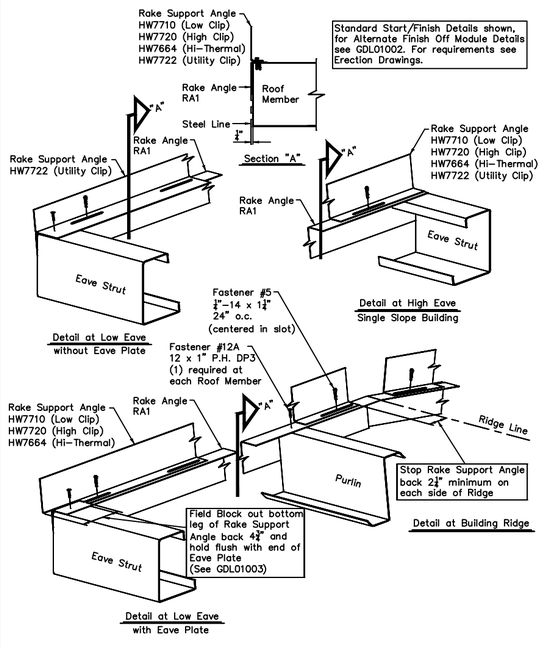
PBR Wall Panel - Three Sided Framed Opening Head Trim Installation

Page PW07030 | Date Oct '19 | Rev 03



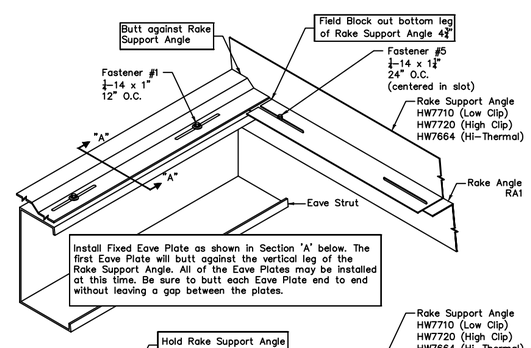
Double-Lok / Ultra-Dek - Fixed Eave Rake Support at Building Rake - Start / Finish

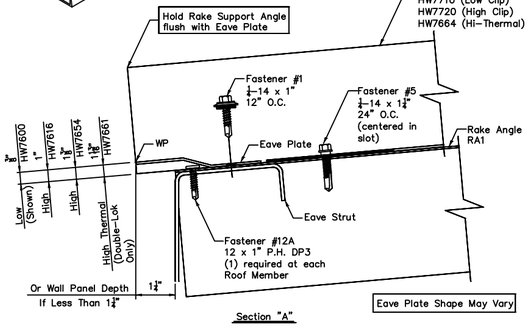
Page GDL01001 | Date May '19 | Rev 02



Double-Lok / Ultra-Dek - Fixed Eave Plate

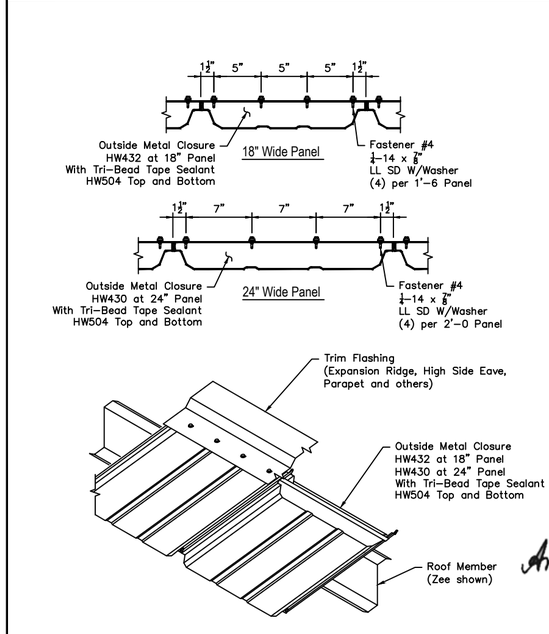
Page GDL01003 | Date Jan '23 | Rev 03





DoubleLok / UltraDek Fastener Spacing at Trim to Outside Metal Closure

Page GDL01010 | Date Apr '18 | Rev 02



Cornerstone Building Brands
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cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
☐ Issued For Approval (Not For Construction)
☐ Issued For Permit
☒ Issued For Construction

Revision	Date	Description	By	Ck'd

Scale: NOT TO SCALE
Drawn by: LSG 6/17/26
Checked by: SYH 6/19/26
Project Engineer:
Job Number: 21-B-63283
Sheet Number: R10 of 15

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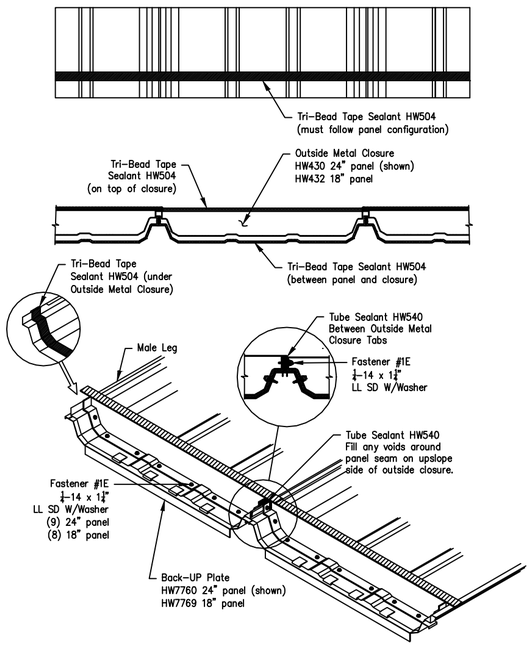
ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835

Anuradha Khanna
ANURADHA KHANNA
License No. 6201310835
June 23, 2026
LICENSED PROFESSIONAL ENGINEER

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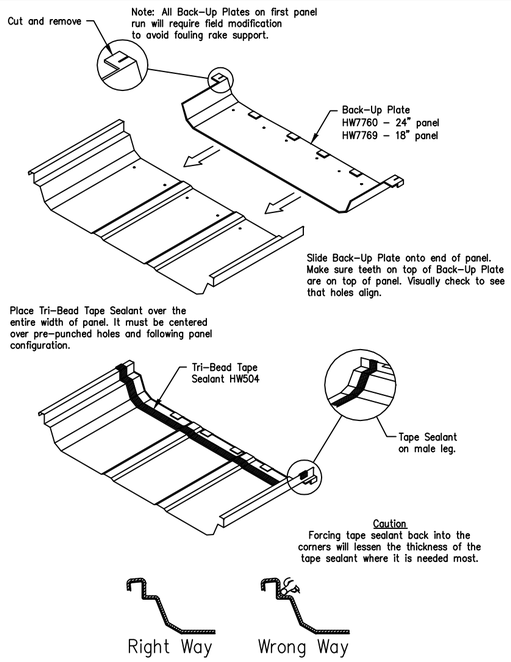
DoubleLok / UltraDek Outside Closure

Page GDL01011 | Date Apr '18 | Rev 01



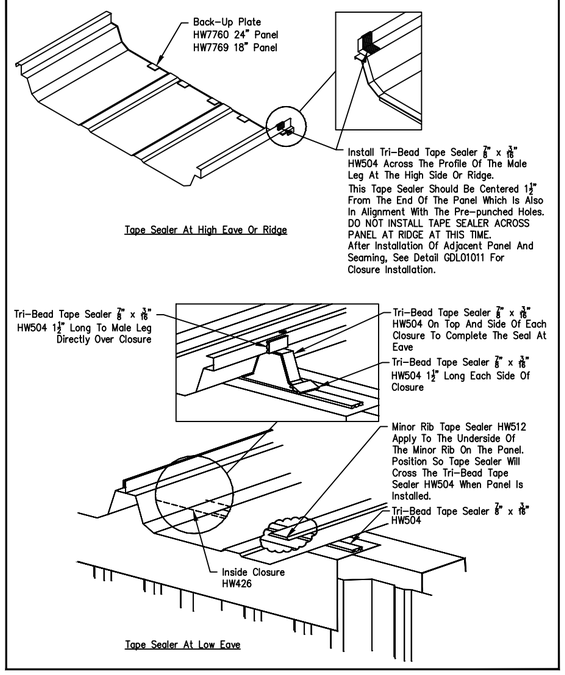
DoubleLok / UltraDek Sealant at End Lap

Page GDL01012 | Date Apr '18 | Rev 01



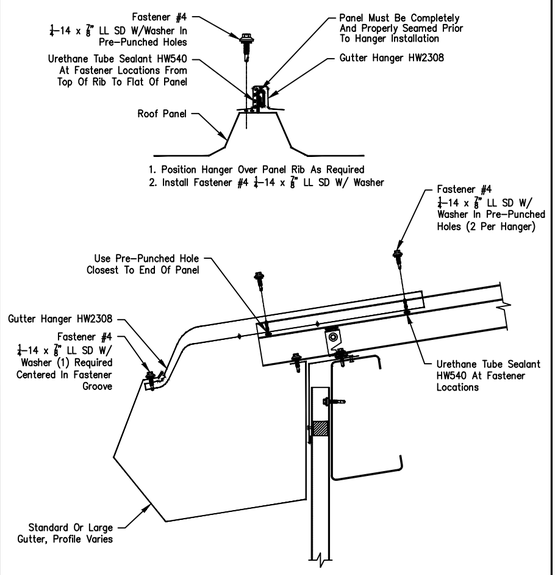
Double-Lok / Ultra-Dek Roof Tape Sealer At High Eave / Ridge And Low Eave

Page GDL02040 | Date Oct '20 | Rev 03



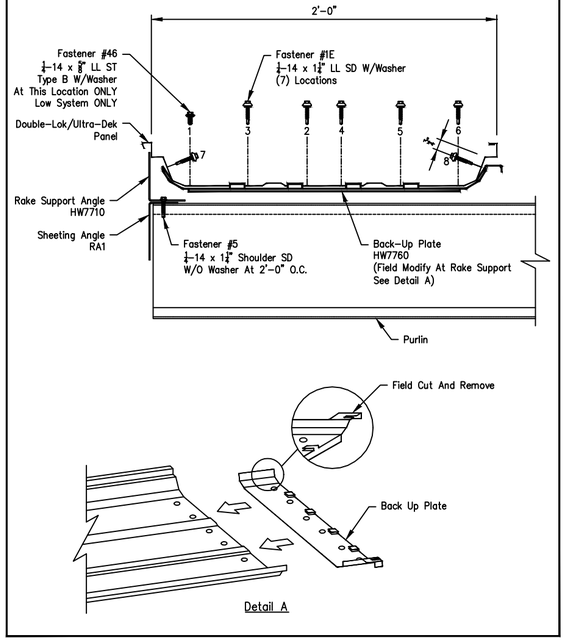
Double-Lok / Ultra-Dek Roof - Northern Standard And Northern Large Gutter Gutter Hanger Installation Detail

Page GDL05002 | Date Apr '19 | Rev 01



Detail At Double-Lok / Ultra-Dek Rake - Low System Only Fastener #46 At Back Up Plate

Page GDL05023 | Date Sep '17 | Rev 02



Detail A

Double-Lok Panel Clip - Cold Formed / Long Bay Purlin / Bar Joist General Information

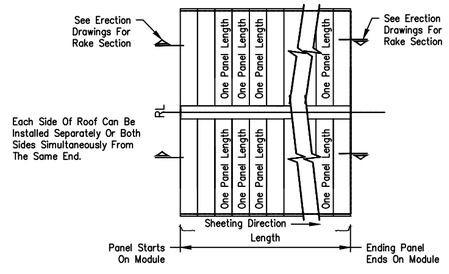
Page GDL05030 | Date May '26 | Rev 02

	Recommended Insulation/Thermal Spacer Thickness Application
Low 2" Sliding Panel Clip HW2122	Maximum 4" Thick Over Purlins Without Thermal Spacers 8" Thermal Spacer Without Insulation
High 2" Sliding Panel Clip HW2124	Maximum 3" Thick Over Purlins With 1" Thermal Spacers 3½" To A Maximum 4" Thick Over Purlins With 8" Thermal Spacers Maximum 6" Thick Over Purlins With 8" Thermal Spacers Maximum 8" Thick Over Purlins Without Thermal Spacers
Low 4" Sliding Panel Clip HW2126	Maximum 4" Thick Over Purlins Without Thermal Spacers 8" Thermal Spacer Without Insulation
High 4" Sliding Panel Clip HW2128	Maximum 3" Thick Over Purlins With 1" Thermal Spacers 3½" To A Maximum 4" Thick Over Purlins With 8" Thermal Spacers Maximum 6" Thick Over Purlins With 8" Thermal Spacers Maximum 8" Thick Over Purlins Without Thermal Spacers
Hi-Thermal Sliding Panel Clip HW2129	Maximum 6" Thick Over Purlins With 1" Thermal Spacers Maximum 8" Thick Over Purlins With 8" Thermal Spacers Maximum 9" Thick Over Purlins With 8" Thermal Spacers Maximum 10" Thick Over Purlins Without Thermal Spacers

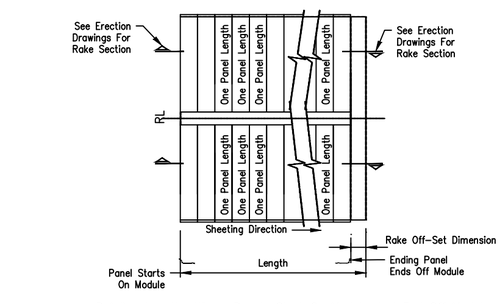
Panel Clip Fastener	Insulation Thickness	Material Thickness	Panel Clip Fastener	Insulation Thickness	Material Thickness
Fastener #1F ¼-14 x 1½" SD W/Washer	Max. 10"	Less Than 1/4"	Fastener #69 12-24 x 1½" SD DP5 W/Washer	Max. 10"	Greater Than Or Equal To 1/4" Max. 1/2"

Double-Lok / Ultra-Dek - Sheeting Layout Gable Building - One Panel Length

Page GDL05040 | Date Nov '17 | Rev 01



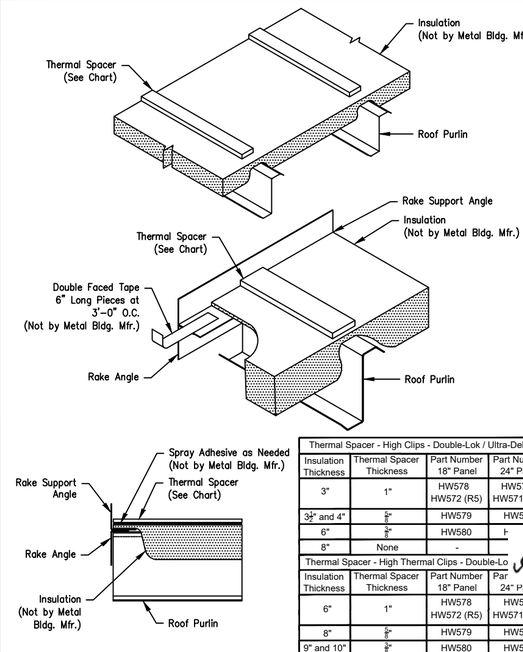
Building Lengths Where Panels Start And End On Module



Building Lengths Where Panels Start On Module And End Off Module

Thermal Spacer Installation - Zee Purlins Double-Lok / Ultra-Dek - High Clip System

Page GDL05055 | Date Dec '16 | Rev 01



Thermal Spacer - High Clips - Double-Lok / Ultra-Dek			
Insulation Thickness	Thermal Spacer Thickness	Part Number 18" Panel	Part Number 24" Panel
3"	1"	HW578 HW572 (R5)	HW575 HW571 (R5)
3½" and 4"	8"	HW579	HW576
6"	8"	HW580	
8"	None	-	

Thermal Spacer - High Thermal Clips - Double-Lo			
Insulation Thickness	Thermal Spacer Thickness	Part Number 18" Panel	Par 24" Panel
6"	1"	HW578 HW572 (R5)	HW575 HW571 (R5)
8"	8"	HW579	HW576
9" and 10"	8"	HW580	HW577

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Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
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Project Engineer:
Job Number: 21-B-63283
Sheet Number: R11 of 15

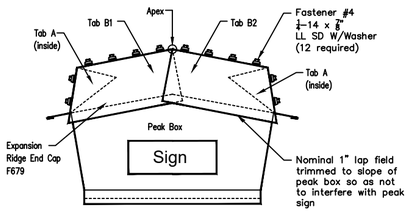
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ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835

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License No. 6201310835
June 30, 2026
LICENSED PROFESSIONAL ENGINEER

Double-Lok / Ultra-Dek Expansion Ridge - End Cap Assembly

Page GDL06001 | Date Jun '20 | Rev 03

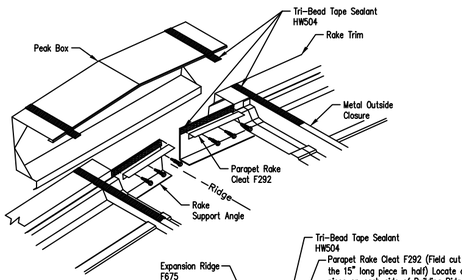


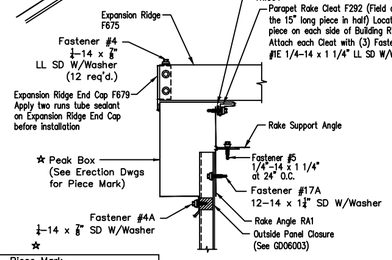
Expansion Ridge End Cap Assembly

1. Apply (2) runs of tube sealant along vertical and horizontal surfaces of expansion end cap.
2. Place end cap inside expansion ridge flashing, allowing the end cap to conform to the ridge flashing profile. Do not deform the top of the ridge by exerting too much pressure.
3. Make sure tab is even with, but not resting on top of the peak box. Tab "A" must be able to pivot in front of the peak box because of panel contraction.
4. Using a screwdriver, insert the blade in the apex of tab "B1" and "B2", and twist the blade enough to cause tab "B1" to spread slightly away from tab "B2".
5. Secure the end cap to the ridge flashing with (12) Fastener #4 1/4"-14 X 7/8" as shown.

Double-Lok / Ultra-Dek - Expansion Ridge End Cap

Page GDL06002 | Date Jun '21 | Rev 09





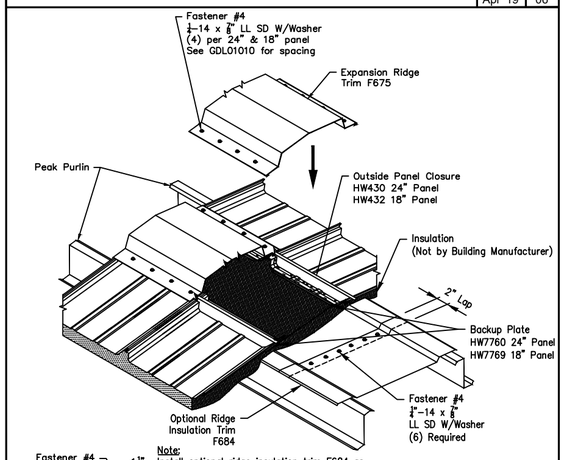
☆

Piece Mark				
Trim Profile	Southern Standard	Southern Large	Northern Standard	Northern Large
Cascading	F1503	F1567	F1634	F1722
Classic	F758	F4144	F379	F1020
Contoured	F2203	F2267	F2334	F2422
Signature	F420	F3844	F377	F1014
Edgecraft	F6228	F6229	F6430	F6431
Sculptured	F7102	F7105	F7114	F7117

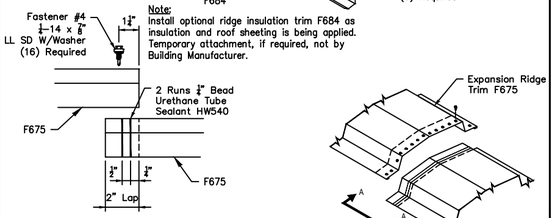
Flashing profile may vary dependent upon project order. Attachment as illustrated are applicable for all profiles.

Double-Lok / Ultra-Dek Expansion Ridge

Page GDL07001 | Date Apr '19 | Rev 06



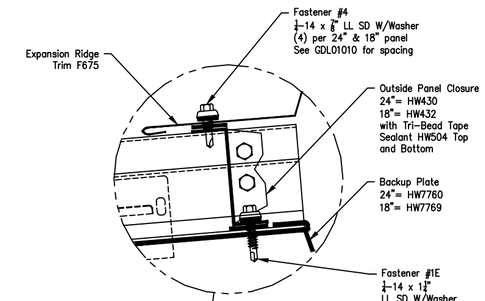
Note:
Install optional ridge insulation trim F684 as insulation and roof sheeting is being applied. Temporary attachment, if required, not by Building Manufacturer.

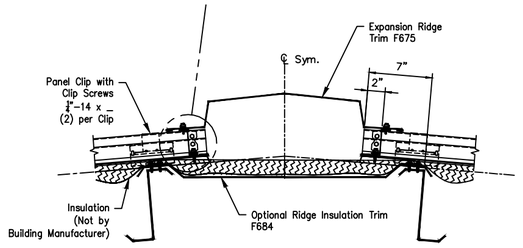


Section A-A

Double-Lok / Ultra-Dek Expansion Ridge

Page GDL07002 | Date Apr '18 | Rev 07

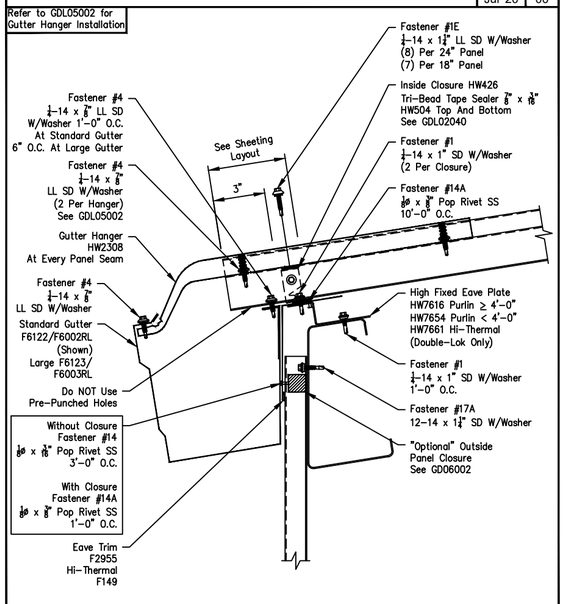




Note:
See GDL01011 and GDL01012 for outside closure and sealants installation information.

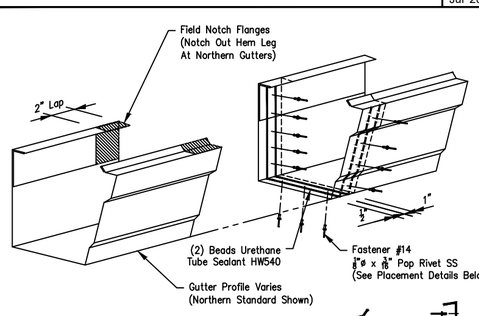
Double-Lok / Ultra-Dek - Edgecraft Northern Standard And Northern Large Gutter - Fixed High Or Hi-Thermal Eave Plate - Sheeted Wall

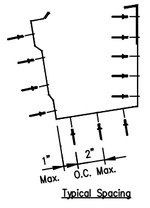
Page TDL02016 | Date Jul '20 | Rev 00



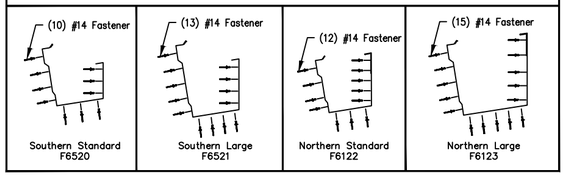
Double-Lok / Ultra-Dek Edgecraft Eave Gutter End Lap Installation

Page TDL05002 | Date Jul '20 | Rev 00



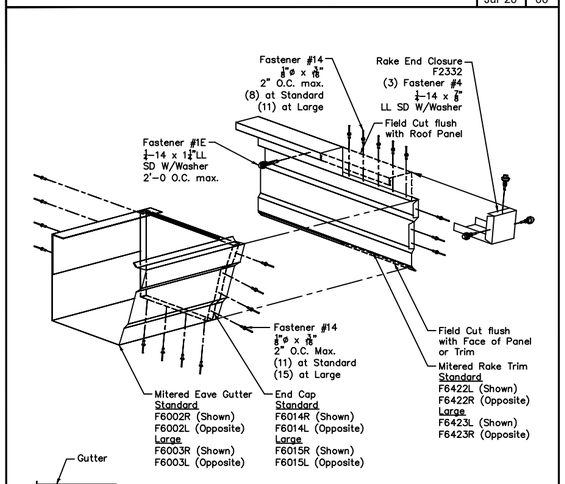


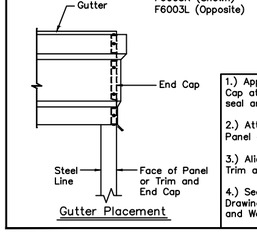
Typical Spacing



Double-Lok / Ultra-Dek - Northern Standard And Northern Large Edgecraft Low Eave Rake Corner With Eave Gutter - 1 1/4" Wall Panel

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Gutter Placement

1.) Apply Tube Sealant to End Cap bottom and side tabs. Install Cap at end of Gutter as required. Inspect after installing and seal any gaps with Tube Sealant.

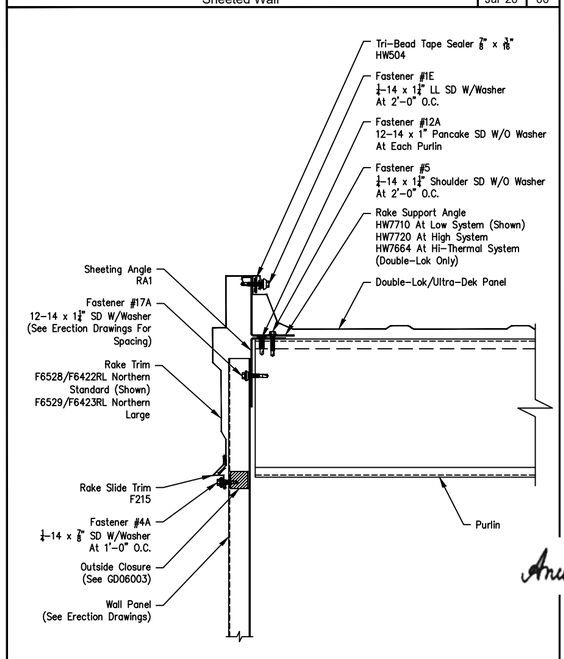
2.) Attach Eave Gutter to Roof Panel locating end past face of Panel or Trim as required. (See Gutter Placement)

3.) Align edges of Eave Gutter and Rake Trim and attach Rake Trim as shown. Apply Tube Sealant along edges to seal.

4.) See Eave and Rake Construction Details included with Erection Drawings for attachment of Eave Gutter and Rake Trim to Roof and Walls.

Double-Lok / Ultra-Dek - Rake Section Northern Standard And Northern Large Edgecraft Trim Sheeted Wall

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DETROIT MI 48209 US

Customer:
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12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
☐ Issued For Approval (Not For Construction)
☐ Issued For Permit
☒ Issued For Construction

Revision	Date	Description	By	Ck'd

Scale: NOT TO SCALE
Drawn by: LSG 6/17/26
Checked by: SYH 6/19/26
Project Engineer:
Job Number: 21-B-63283
Sheet Number: R12 of 15

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ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835

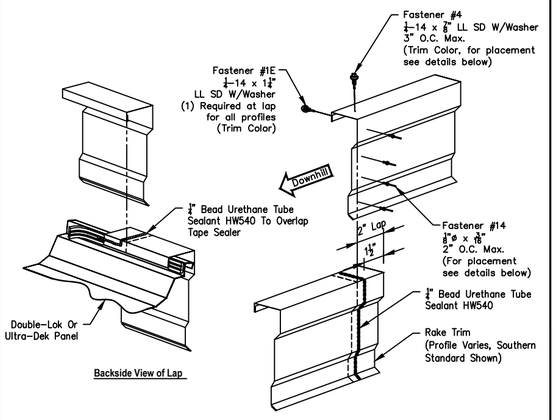
Anuradha Khanna

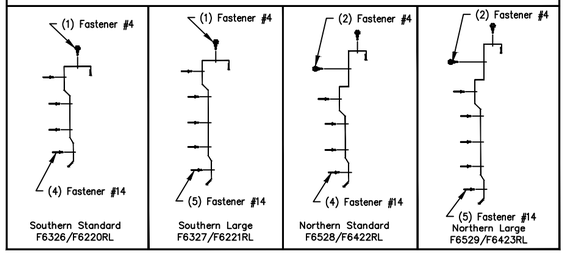
ANURADHA KHANNA
License No. 6201310835
June 23, 2026
LICENSED PROFESSIONAL ENGINEER

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Double-Lok / Ultra-Dek - Edgecraft Rake Trim End Lap Installation
1¼" Wall Panel

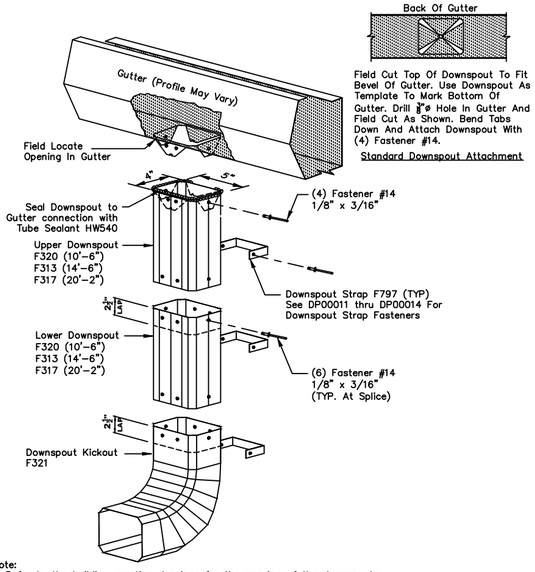
Page TDL06009 | Date Jul '20 | Rev 00





Roll Form Downspout Layout 4" x 5"

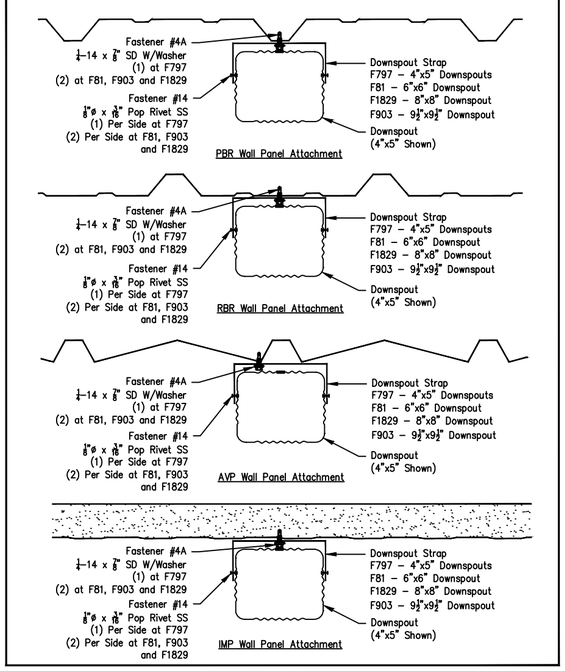
Page DP00001 | Date Oct '25 | Rev 06



Note:
1. Refer to the building erection drawings for the spacing of the downspouts.
2. Locate all downspouts over a panel major rib if possible.
3. A field splice is required for eave heights greater than 21'-0". Always measure the required length starting at the swaged end. After cutting to length, insert the swaged end of the cut downspout into the top of the lower downspout.
4. Downspout straps F797 are Located at the bottom of a downspout, below a splice, and at mid point of downspout longer than 10'-6". See DP00011 thru DP00014 for downspout strap fasteners.

Downspout Strap Attachment
PBR, RBR, AVP & IMP Fully Sheeted Wall

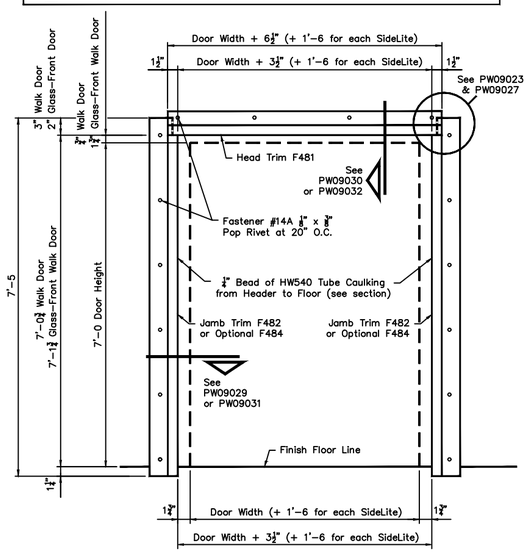
Page DP00011 | Date Oct '25 | Rev 05



PBR Wall Panel - Walk Door & Glass-Front Walk Door - Trim Installation
with Field Notch Panel at Head Trim

Page PW09022 | Date Mar '20 | Rev 03

Note: Trim Installation can be done by Field Notch Panel as shown on PW09022 & PW09023 OR with Field Notch and Bend Tabs at Head Trim as shown on PW09024 & PW09025.



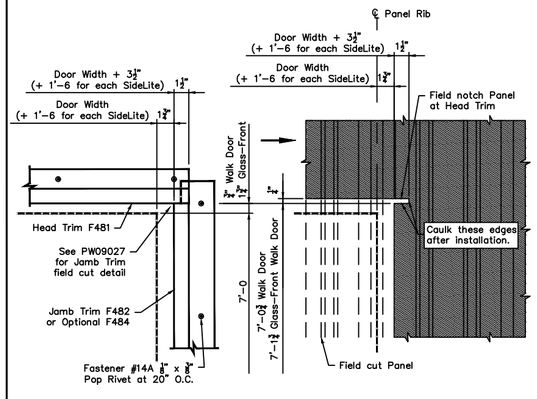
Note: All trim is to be installed BEFORE blanket insulation is applied to walls.

Note: Field measure Door Width and Height before making field cuts and adjust cut dimensions accordingly.

PBR Wall Panel - Walk Door And Glass-Front Walk Door
Field Notch Panel at Head Trim

Page PW09023 | Date Mar '20 | Rev 02

Note: Trim Installation can be done by Field Notch Panel as shown on PW09022 & PW09023 OR with Field Notch and Bend Tabs at Head Trim as shown on PW09024 & PW09025.



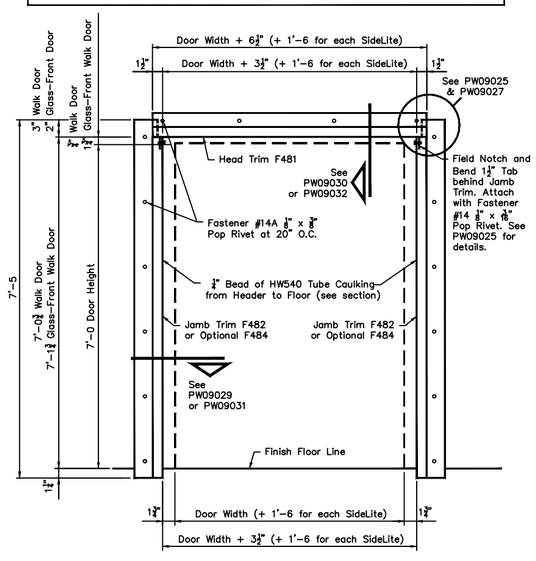
Note: All trim is to be installed BEFORE blanket insulation is applied to walls.

Note: Panel position is shown with Panel Rib and Door on 1'-0 module. Location of Rib may vary depending on the Door Width and location. Field measure before cutting Panel and Trim.

PBR Wall Panel - Walk Door & Glass-Front Walk Door - Trim Installation
with Field Notch and Bend Tabs at Head Trim

Page PW09024 | Date Mar '20 | Rev 03

Note: Trim Installation can be done by Field Notch Panel as shown on PW09022 & PW09023 OR with Field Notch and Bend Tabs at Head Trim as shown on PW09024 & PW09025.



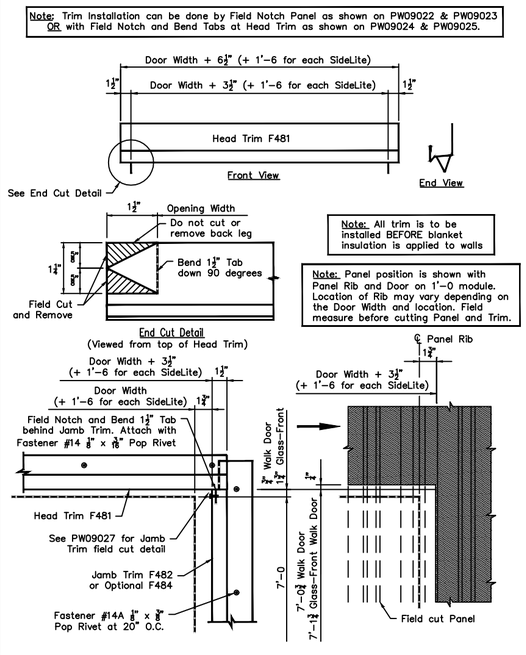
Note: All trim is to be installed BEFORE blanket insulation is applied to walls.

Note: Field measure Door Width and Height before making field cuts and adjust cut dimensions accordingly.

PBR Wall Panel - Walk Door And Glass-Front Walk Door - Field Notch and
Bend Tabs at Head Trim

Page PW09025 | Date Mar '20 | Rev 02

Note: Trim Installation can be done by Field Notch Panel as shown on PW09022 & PW09023 OR with Field Notch and Bend Tabs at Head Trim as shown on PW09024 & PW09025.

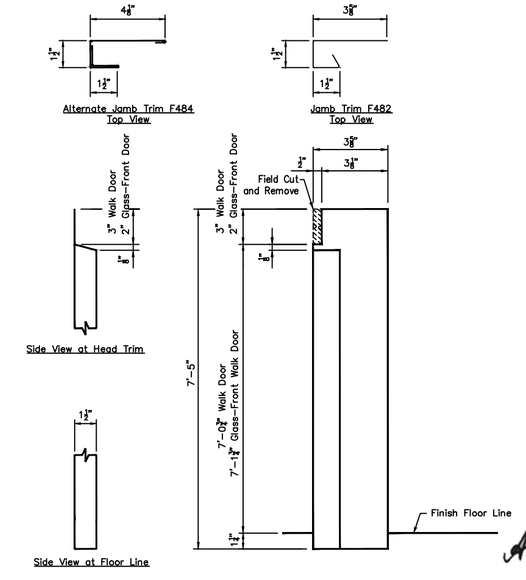


Note: All trim is to be installed BEFORE blanket insulation is applied to walls

Note: Panel position is shown with Panel Rib and Door on 1'-0 module. Location of Rib may vary depending on the Door Width and location. Field measure before cutting Panel and Trim.

PBR Wall Panel - Walk Door And Glass-Front Walk Door
Jamb Trim Field Cut Details

Page PW09027 | Date Mar '20 | Rev 03



Note: Field measure Door Height before making field cuts and adjust cut dimensions accordingly so that Jamb Trim fits to Head Trim & at 1½" below Finish Floor Line.

Jamb Trim F482 and Alternate Jamb Trim F484
Front View
Right Jamb Trim as shown
Left Jamb Trim opposite hand

Ck'd	By	Description	Date	Revision

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Project Name & Location:
CROWN ENTERPRISES LLC
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WARREN MI 48089 US

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Drawn by:	LSG 6/17/26
Checked by:	SYH 6/19/26
Project Engineer:	
Job Number:	21-B-63283
Sheet Number:	R13 of 15

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ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835

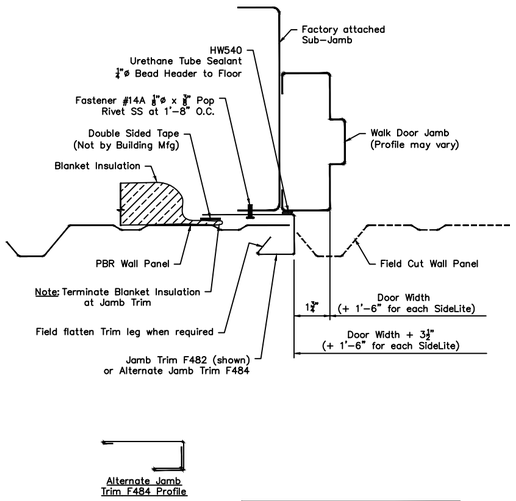
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PBR Wall Panel - Pre-Assembled Walk Door & Glass-Front Walk Door Jamb Trim Installation

Page PW09029 | Date Mar '20 | Rev 05

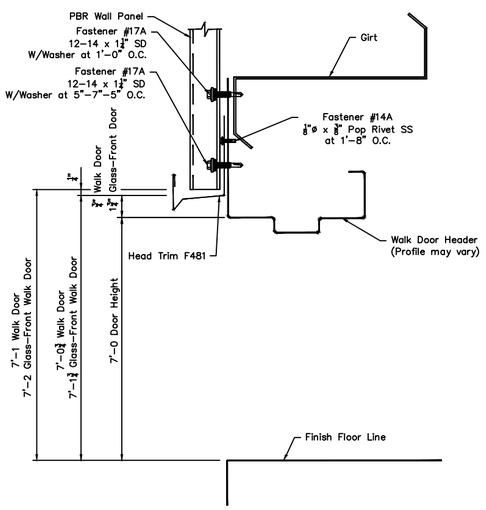


Note: All trim is to be installed BEFORE blanket insulation is applied to walls.

Note: Panel position is shown with Panel Rib and Door on 1'-0" module. Location of Rib may vary depending on the Door Width and location. Field measure before cutting Panel and Trim.

PBR Wall Panel - Pre-Assembled Walk Door And Glass-Front Walk Door Head Trim Installation

Page PW09030 | Date May '19 | Rev 03



Note: All trim is to be installed BEFORE blanket insulation is applied to walls.

Perimeter Trim Reference — Double-Lok / Ultra-Dek — Edgecraft Northern Standard Trim

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	Gutter	Gutter Lap	Gutter Cap	Expansion Cover/Cap	Gutter Hanger
	F6122 – F6002RL	2" Lap	F6014RL	F6006/F6010	HW2308
	Fastener #4 ¼-14 x ⅞" LL SD W/Washer 1'-0" O.C. Roof Color	4'-4" Tube Sealant (12) Fastener #14 Trim Color	2'-2" Tube Sealant (12) Fastener #14 Trim Color	(9) Fastener #14 Trim Color	(2) Fastener #4 ¼-14 x ⅞" LL SD W/Washer Roof Color (1) Fastener #4 ¼-14 x ⅞" LL SD W/Washer Trim Color 5" Tube Sealant
12" Wall Panel	Rake	Rake Lap	Rake Cap (On Mod)	Rake Cap (Off Mod)	Peak Box
	F6528 – F6422RL	2" Lap	F2332/F6024RL	F2337RL/F6024RL	F6430
	Fastener #1E ¼-14 x 1" LL SD W/Washer 2'-0" O.C. Trim Color	1'-4" Tube Sealant (4) Fastener #14 (2) Fastener #4 ¼-14 x ⅞" LL SD W/Washer Trim Color	1'-6" Tube Sealant (6) Fastener #14 Trim Color	9" Tube Sealant (6) Fastener #14 (3) Fastener #4 Trim Color (2) Fastener #1 1'-7" Tape Sealant	(3) Fastener #4A ¼-14 x ⅞" SD W/Washer Trim Color
12" Wall Panel	High Side	High Side Lap	Outside Corner	Inside Corner	Expansion Cover
	F6540 – F6482RL	2" Lap	Right as Shown	Field Work	High Side – F6507
	Fastener #4 ¼-14 x ⅞" LL SD W/Washer See GDL01010 for Spacing Fastener #4A ¼-14 x ⅞" SD W/Washer 1'-0" O.C. Trim Color	2'-5" Tube Sealant (11) Fastener #14 (3) Fastener #4 ¼-14 x ⅞" LL SD W/Washer Trim Color	2'-8" Tube Sealant (5) Fastener #14 (3) Fastener #4 ¼-14 x ⅞" LL SD W/Washer Trim Color	2'-8" Tube Sealant (3) Fastener #14 (3) Fastener #4 ¼-14 x ⅞" LL SD W/Washer Trim Color	7'-4" HW507 Tape Sealer (11) Fastener #14 (3) Fastener #4 ¼-14 x ⅞" LL SD W/Washer Trim Color
	Mitered Rake / Mitered Gutter	Rake / Gutter	Gutter / Gutter	Gutter / Gutter	
	Outside Corner	Inside Corner	Outside Corner	Inside Corner	
	Right as shown	Field Work	Field Work	Field Work	
	2'-8" Tube Sealant (20) Fastener #14 (3) Fastener #4 ¼-14 x ⅞" LL SD W/Washer Trim Color	2'-8" Tube Sealant (12) Fastener #14 Trim Color	2'-8" Tube Sealant (12) Fastener #14 Trim Color	2'-8" Tube Sealant (12) Fastener #14 Trim Color	

Perimeter Trim Reference — Double-Lok / Ultra-Dek — Edgecraft Trim Fastener and Sealants

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	Eave Box Trim	Eave Trim Lap	Eave Box End Cap	Panel Clip	Closure (24")
	F6475	2" Lap	F6476RL	Varies	HW430
	Fastener #4 ¼-14 x ⅞" LL SD W/Washer 4" O.C. Roof Color Fastener #4A ¼-14 x ⅞" SD W/Washer 1'-0" O.C. Trim Color	(5) Fastener #14 1'-0" Tube Sealant	(6) Fastener #14 1'-4" Tube Sealant	Panel Clip Screw (2) Per Clip	(9) Fastener #1E ¼-14 x 1¼" LL SD W/Washer Per Panel 4'-8" Tape Sealant
	Rake Trim End Closure	Slip Joint End	Ridge Flashing	Ridge Closure	Closure (18")
	F2337_L/R	F2805	F675	F679	HW432
	2'-6" Tape Sealant (2) Fastener #1 Trim Color	(4) Fastener #14 Trim Color	Fastener #4 ¼-14 x ⅞" LL SD W/Washer (See GDL01010 for spacing) (18) Per Lap Trim Color 5"-8" Tube Sealant	4'-0" Tube Sealant (12) Fastener #4 ¼-14 x ⅞" LL SD W/Washer Trim Color	(8) Fastener #1E ¼-14 x 1¼" LL SD W/Washer Per Panel 4'-2" Tape Sealant
	Floating Simple Eave	Flat Eave Trim	Parapet High Side	Transverse Joint	
	F2952	F2955 = Standard F149 = Hi-Thermal	F326	F270	
	9" Tube Sealant Fastener #4A ¼-14 x 7" SD W/Washer 1'-0 O.C. (2) Fastener #14 per 2" Lap Trim Color	9" Tube Sealant for F2955 10" Tube Sealant for F149 (2) #14 per 2" Lap #14 3'-0" o.c w/out Closure #14A 1'-0" o.c. w/Closure Trim Color	2'-8" Tube Sealant (2) Fastener #14 & (5) #4 1/4-14 x ⅞" LL SD W/Washer per Lap Fastener #4 1/4-14 x ⅞" LL SD W/Washer 1'-0" O.C Trim Color	1'-0" Tube Sealant (2) Fastener #4 (1) Fastener #1E ¼-14 x 1¼" LL SD W/Washer per 2" Lap Fastener #1E 2'-0" o.c. Roof Color	
	Termination Trim	Parapet Rake Trim	Rake Cleat Trim	Rake Slide Trim	Back-up Plate
	F121	F300	F292	F215	
	1'-0" Tube Sealant (3) Fastener #4 ¼-14 x ⅞" LL SD W/Washer (1) Fastener #1E ¼-14 x 1¼" LL SD W/Washer per 2" Lap Trim Color	2'-0" Tube Sealant (2) Fastener #14A (2) Fastener #4 ¼-14 x ⅞" LL SD W/Washer per 2" Lap Roof Color	4" Tube Sealant (1) Fastener #1E ¼-14 x 1¼" LL SD W/Washer per 2" Lap Roof Color	Fastener #4A ¼-14 x ⅞" SD W/Washer 1'-0" O.C. Trim Color	2'-0" WIDE HW7760 1'-6" WIDE HW7769

Fasteners

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Fastener #14	Fastener #14A	Fastener #24
1/8" x 3/16" Pop Rivet Stainless Steel	1/8" x 3/8" Pop Rivet Stainless Steel	8 x 5/8" Nibbed Driller
Fastener #35	Fastener #43L	Fastener #44L
#14 x 1 1/8" O.D. Bonded Washer	L.T.P. Member Screw (Long Life) 1/4"-14 x 1 1/4" 5/16" Hex Washer Head W/ 1 1/8" O.D. Washer	L.T.P. Stitch Screw (Long Life) 1/4"-14 x 7/8" 5/16" Hex Washer Head W/ 1 1/8" O.D. Washer
Fastener #226	Fastener #228	Fastener #271
3/16" x 9/16" Closed End Rivet	10 x 1/2" Grommet Washer	8-18 x 1/2" Trim Screw
Fastener HW399		
#6 x 1" Rubber Grommet 1/4" Hex Head w/ Washer		

Note: Refer to bill of materials for specific job requirements.

Tape Sealer And Tube Sealant

Page G000005 | Date Feb '24 | Rev 07

TRI-BEAD TAPE SEALER 1/8" X 3/8" X 25'-0"	FLAT TAPE SEALER HW507 3/32" X 1/2" X 50'-0"	TAPE SEALER – SWAGED HW515 3/16" X 2¼" X 6" 6" BattenLok HS SuperLok
TRIPLE BEAD TAPE SEALER HW502 3/16" X 2½" X 20'-0"	FLAT TAPE SEALER HW506 3/32" X 1" X 45'-0"	
URETHANE TUBE SEALANT HW540 (White) HW541 (Gray) HW542 (Bronze) Note: 25'-0" per Tube at 1/4" Bead	TAPE SEALER MINOR RIB HW512 4" 7/32" X 1⅜" X 4"	NON-SKINNING BUTYL TUBE (VAPOR SEALANT) IMP7100 (WHITE) 12'-6" per Tube at 3/8" Bead HW549 (WHITE) 25'-0" per Tube at 1/4" Bead
DEKSTRIP 7" WIDE = HW5227 DEKSTRIP 9" WIDE = HW5228 DEKSTRIP 12" WIDE = HW5229 DEKSTRIP 18" WIDE = HW5226 COLOR = Gray SCREWS 2" O.C. MAX. PERIMETER TAPE SEALER BOTH SIDES URETHANE TUBE SEALANT HW540 EACH END TERMINATION STRIP HW5305 EACH END (1" Wide x 4'-0" Long Alum.)	2" WIDE X 24 GA. STRAPPING • FL471 – 100'-0" Roll Galvalume Plus Only • FL569 – 500'-0" Roll Galvalume Plus or White Wash Coat	FLEXIBLE MEMBRANE (EPDM) 16" or 24" • HW520 – 16" x 50'-0" Roll • HW521 – 24" x 50'-0" Roll NOTE: Refer to bill of materials for specific job requirements

PBR, PBU, AVP, RBR And RBU Panel Fasteners

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Wall Fasteners	Roof Fasteners Long Life (Optional at Wall)	
Member Screw Fastener #17A 12-14 x 1½" ⅝" Hex Washer Head w/washer	Member Screw Fastener #3 12-14 x 1½" ⅝" Hex Washer Head w/washer	
Member Screw Optional Fastener #17B 12-14 x 1½" ⅝" Hex Washer Head w/washer	Member Screw Optional Fastener #3A 12-14 x 1½" ⅝" Hex Washer Head w/washer	
Member Screw Optional Fastener #28 12-14 x 2" ⅝" Hex Washer Head w/washer	Member Screw Optional Fastener #58 12-14 x 2" ⅝" Hex Washer Head w/washer	
Stitch Screw Fastener #4A ¼-14 x ⅞" ⅝" Hex Washer Head w/washer	Stitch Screw Fastener #4 ¼-14 x ⅞" ⅝" Hex Washer Head w/washer	

NOTE: Refer to bill of materials for specific job requirements

Fasteners — BattenLok HS / SuperLok and Double-Lok / Ultra-Dek

Page G000007 | Date May '26 | Rev 10

Structural Fastener (Fixed) Fastener #1 ¼-14 x 1" ⅝" Hex Washer Head w/ Washer	Roof Member Screw Long Life Fastener #1E ¼-14 x 1½" ⅝" Hex Washer Head w/ Washer	Roof Stitch Screw Long Life Fastener #4 ¼-14 x ⅞" ⅝" Hex Washer Head w/ Washer
Structural Fastener (Floating) Fastener #5 ¼-14 x 1½" Shoulder DP2 ⅝" Hex Washer Head	Double-Lok/Ultra-Dek Panel Clip Screw 10" Max Insulation DL 8" Max Insulation UD Fastener #1F ¼-14 x 1½" Driller ⅝" Hex Washer Head w/ Washer	Double-Lok/Ultra-Dek Panel Clip Screw 10" Max Insulation DL 8" Max Insulation UD Fastener #69 12-24 x 1½" DP5 ⅝" Hex Washer Head w/ Washer
BattenLok HS/SuperLok Panel Clip Screw 6" Max Insulation Fastener #142 ¼-14 x 1½" Driller ⅝" Hex Washer Head	BattenLok HS/SuperLok Panel Clip Screw 6" Max Insulation Fastener #70 12-24 x 1½" DP5 ⅝" Hex Washer Head	
	NOTE: Refer to bill of materials for specific job requirements	

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ANURADHA KHANNA — License No. 6201310835 — June 2026 — LICENSED PROFESSIONAL ENGINEER

Revision	Date	By	Ck'd	Description

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cornerstonebuildingbrands.com

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12225 STEPHENS
WARREN MI 48089 US

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Job Number: 21-B-63283
Sheet Number: R14 of 15

The engineer whose seal appears hereon is employed by or is contracted to provide engineering services for the manufacturer, Cornerstone Building Brands or one of its affiliates, for the materials described herein. Said seal or certification is limited to the products designed and manufactured by manufacturer only. The undersigned engineer is not the overall engineer of record for this project.

ANURADHA KHANNA, P.E.
MICHIGAN P.E. 6201310835

Various Fasteners

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Fastener #17
12–14 x 1" SD W/Washer
$\frac{5}{16}$" Hex Head



Fastener #38
$\frac{1}{4}$–14 x $\frac{7}{8}$" SD W/O Washer
$\frac{5}{16}$" Hex Head



Fastener #12A
12–14 x 1" Pancake SD W/O Washer



Fastener #55
12–24 x $1\frac{1}{4}$" SD DP5 W/O Washer
$\frac{5}{16}$" Hex Head



Fastener #70
12–24 x $1\frac{1}{2}$" SD DP5 W/O Washer
$\frac{5}{16}$" Hex Head



Fastener #142
$\frac{1}{4}$–14 x $1\frac{1}{2}$" SD W/O Washer
$\frac{5}{16}$" Hex Head



Fastener #76
12–14 x 2" SD W/O Washer
$\frac{5}{16}$" Hex Head



Fastener #61
12–14 x $1\frac{1}{2}$" SD W/O Washer
$\frac{5}{16}$" Hex Head



Fastener #118
$\frac{1}{4}$–14 x $1\frac{1}{2}$" SD W/O Washer
$\frac{5}{16}$" Hex Head



Fastener #16
12–24 x $1\frac{1}{2}$" Pancake SD DP5 W/O Washer



NOTE:
Refer to Bill of Materials for Specific job Requirements

Fastener #46
$\frac{1}{4}$–14 x $\frac{7}{8}$" LL ST Type B W/Washer
$\frac{5}{16}$" Hex Head



Revision	Date	Description	By	Ck'd

Cornerstone Building Brands
13105 Northwest Freeway, Suite 500
Houston, TX 77040
cornerstonebuildingbrands.com

Project Name & Location:
CROWN ENTERPRISES LLC
8100 MELVILLE ST
DETROIT MI 48209 US

Customer:
CROWN ENTERPRISES
12225 STEPHENS
WARREN MI 48089 US

Drawing Status:
☐ Issued For Approval (Not For Construction)
☒ Issued For Construction
☐ Issued For Permit

Scale:	NOT TO SCALE	
Drawn by:	LSG	6/17/26
Checked by:	SYH	6/19/26
Project Engineer:		
Job Number:	21-B-63283	
Sheet Number:	R15 of 15	

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Anuradha Khanna

ANURADHA KHANNA
License No. 6201310835
June 23, 2026
LICENSED PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Anuradha Khanna, P.E. on the date and/or time stamp shown using a digital signature. Printed copies of this document are not considered signed and sealed and the signature must be verified by a 3rd Party Certificate Authority on any electronic copy.