

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 code of standard practice Sept 86 Section 4.2.1) (Mar 05 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.

Builder is responsible for State, Federal and OSHA safety compliance – The Builder/Contractor is responsible for applying and observing all pertinent safety rules and regulations and OSHA standards as applicable.

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 Code of Standard Practice Sept 86 Section 7.9.1) (Mar 05 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 Code of Standard Practice Sept 86 Section 3.3) (Mar 05 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.

Correction of Errors – Normal erection operations include the correction of minor misfits by moderate amounts of reaming, chipping, welding or cutting and the drawing of elements into line through the use of drift pins. Errors which cannot be corrected by the foregoing means or which require major changes in the member configuration should be reported immediately to the owner and fabricator by the erector, to enable whoever is responsible either to correct the error or to approve the most efficient and economical method of correction to be used by others. (AISC Code of Standard Practice Sept 86 Section 7.12)(Mar 05 Section 7.14)

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.

Safety Commitment – The Metal 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 is the top priority of any job site. Local, State and Federal safety and health standards, whether standard statutory or customary, should always be followed to help ensure worker safety. Make certain all employees know the safest and most productive way to erect 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 purposes of determining lift requirements, no bundles supplied by the manufacturer will exceed 4000 lbs. For further information also reference the bill of materials for individual member weights of other structural members. If additional information is required contact the customer service department.

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)

Dissimilar Materials – Never allow your roof to come in contact with, or water runoff from, any dissimilar metal including but not limited to: Copper and Arsenic Salts used in treated lumber, Calcium used in concrete, mortar and grout.

Debris Removal – Any foreign debris such as sawdust, dirt, animal droppings, etc. will cause corrosion of the roof, gutters, trim, etc. if left on building surfaces for a long enough time. The roof should be periodically inspected for such conditions and if found, they should be removed.

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. All surfaces to receive shop primer are cleaned of loose rust, loose mill scale and other foreign matter by using, as a minimum, the hand tool cleaning method SSPC-SP2 (Steel Structures Painting Council) prior to painting. 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 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 damage 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. Touch-up of these minor abrasions is the responsibility of the End Customer (MBMA 06 IV 4.2.4)

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, ASTM A1011 SS, or ASTM A1011 HSLAS with a minimum yield point of 50 ksi. Material properties of hot rolled structural shapes conform to ASTM A992, ASTM A529, or ASTM A572 with a minimum specified yield point of 50 ksi. Hot rolled angles, or other than flange braces, conform to ASTM 36 minimum. Hollow structural shaped conform to ASTM A500 grade b, minimum yield point is 42 ksi for round HSS and 46 ksi for rectangular HSS. Material properties of cold form light gage steel members conform to the requirements of ASTM A1011 SS Grade 55 or ASTM A1011 HSLAS Class 1 Grade 55, with a minimum yield point of 55 ksi.

All bolt joints with A325 Type 1 bolts are specified as snug-tightened joints, unless noted otherwise, in accordance with the "Specification for Structural Joints using ASTM A325 or A490 bolts, June 30, 2004". Pretensioning methods, including turn-of-nut and calibrated wrench are not required unless noted otherwise.

The manufacturer does not assume any responsibility for the erection nor field supervision of the structure and or any special inspections (including inspection of the high strength bolts or field welds) as required during erection. The coordination and the costs associated for setting up and Special Inspections are the responsibility of the Erector, Owner, Architect, or Engineer of Record.

Design is based upon the more severe loading of either the roof snow load or the roof live load.

Loads, as noted, are given within order documents and are applied in general accordance with the applicable provisions of the model code and/or specification indicated. Neither the manufacture nor the certifying engineer declares or attests that the loads as designated are proper for the local provisions that may apply or for site specific parameters. The manufacturer's Engineer's certification is limited to design loads supplied by an Architect and/or engineer of record for the overall construction project.

This project is designed using manufacture's standard serviceability standards. Generally this means that all stresses and deflections are within typical performance limits for normal occupancy and standard metal building products. If special requirements for deflections and vibrations must be adhered to, then they must be clearly stated in the contract documents.

X-bracing (if applicable) is to be installed to a taut condition with all slack removed. Do not tighten beyond this state.

The design collateral load has been uniformly applied to the design of the building. Hanging loads are to be attached to the purlin web. This may not be appropriate for heavily concentrated loads. Any attached load in excess of 150 pounds shall be accounted for by special design performed by a licensed engineer using concentrated loads and may require separate support members within the roof system.

This metal building system is designed as enclosed. All exterior components (i.e. doors, windows, vents, etc.) must be designed to withstand the specified wind loading for the design of components and cladding in accordance with the specified building code. Doors are to be closed when a maximum of 50% of design wind velocity is reached.

DESIGN LOADING

THIS STRUCTURE IS DESIGNED UTILIZING THE LOADS INDICATED AND APPLIED AS REQUIRED BY:

IBC 12

THE BUILDER IS TO CONFIRM THAT THESE LOADS COMPLY WITH THE REQUIREMENTS OF THE LOCAL BUILDING DEPARTMENT.

FRAME / ROOF DEAD LOAD
SUPERIMPOSED 2.000 PSF
COLLATERAL (LIGHTS) 0.5 PSF

FRAME / ROOF LIVE LOAD 12 /20.00 PSF

RISK CATEGORY II – Normal

SNOW LOAD
GROUND SNOW LOAD (Pg) 10.000PSF

SNOW LOAD IMPORTANCE FACTOR (I_s) 1.0000

FLAT ROOF SNOW LOAD (P_f) 7 PSF (AS PER CODE)

MIN ROOF SNOW LOAD (P_r) 10 PSF (AS PER DESIGN)

SNOW EXPOSURE FACTOR (C_e) 1.0

THERMAL FACTOR (C_t) 1.00

WIND LOAD
ULTIMATE WIND SPEED 115 MPH

NOMINAL WIND SPEED (v_{asd}) 89 MPH (IBC SECTION 1609.3.1)

WIND EXPOSURE CATEGORY B

TOPOGRAPHICAL FACTOR 1.0

INTERNAL PRESSURE COEFFICIENT (G_{cpi}) 0.18 /-0.18

ZONE 4, COMPONENT WIND LOAD ≤ 10FT²

21.756 PSF PRESSURE -23.569 PSF SUCTION

ZONE 5, COMPONENT WIND LOAD < 10FT²

21.756 PSF PRESSURE -28.953 PSF SUCTION

ZONES PER ASCE 7-10; FIG. 30.4-1

ZONES PRESSURES SHOWN ARE UN-FACTORED

RAIN INTENSITY
5-MINUTE DURATION, 5-YEAR RECURRENCE (I_r) 6.0000 IN/HOUR

SEISMIC LOAD
SEISMIC IMPORTANCE FACTOR (I_e) 1.00

S_s 0.4180 S_{ds} 0.4084

S₁ 0.1230 S_{p1} 0.1893

SITE CLASS D

SEISMIC DESIGN CATEGORY C

ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE

	TRANSVERSE	LONGITUDINAL FRONT	LONGITUDINAL BACK
BASIC FORCE RESISTING SYSTEM*	H	H	H

RESPONSE MODIFICATION COEFFICIENT(R)	3	3	3
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SYSTEM OVER-STRENGTH FACTOR(Q _s)	3.0000	3.0000	3.0000
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SEISMIC RESPONSE COEFFICIENT(C _s)	0.136	0.136	0.136
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BLDG DESIGN BASE SHEAR (V)	3.78 (k)	3.77 (k)	
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THE TRANSVERSE DIRECTION IS PARALLEL TO THE RIGID FRAMES

THE LONGITUDINAL DIRECTION IS PERPENDICULAR TO THE RIGID FRAMES

BASIC FORCE RESISTING SYSTEM*	
C4. STEEL ORDINARY MOMENT FRAME	
B3. STEEL ORDINARY CONCENTRIC BRACED FRAMES	
H. STRUCTURAL STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE	
G2. INVERTED PENDULUM SYSTEMS	
CANTILEVERED COLUMN SYSTEMS	

DRAWING INDEX

ISSUE	PAGE	DESCRIPTION
1	C1	COVER SHEET
2	F1	ANCHOR BOLT PLAN
2	F2	ANCHOR BOLT REACTIONS
2	F3	ANCHOR BOLT DETAILS
1	E1	ROOF FRAMING PLAN
1	E2	FRONT SIDEWALL
1	E3	BACK SIDEWALL
1	E4	LEFT ENDWALL
1	E5	RIGHT ENDWALL
1	E6	FRAME CROSS SECTION
1	DET1-10	STANDARD DETAILS
1	R1-R8	INSTALLATION SHEETS

DRAWING STATUS

FOR APPROVAL
THESE DRAWINGS, BEING FOR APPROVAL, ARE BY DEFINITION NOT FINAL, AND ARE FOR CONCEPTUAL REPRESENTATION ONLY. THEIR PURPOSE IS TO CONFIRM PROPER INTERPRETATION OF THE PROJECT DOCUMENTS. ONLY DRAWINGS ISSUED "FOR ERECTOR INSTALLATION" CAN BE CONSIDERED AS COMPLETE.

FOR CONSTRUCTION PERMIT
THESE DRAWINGS, BEING FOR PERMIT, ARE BY DEFINITION NOT FINAL. ONLY DRAWINGS ISSUED "FOR ERECTOR INSTALLATION" CAN BE CONSIDERED AS COMPLETE.

FOR ERECTOR INSTALLATION
FINAL DRAWINGS FOR CONSTRUCTION.

ENGINEERING SEAL

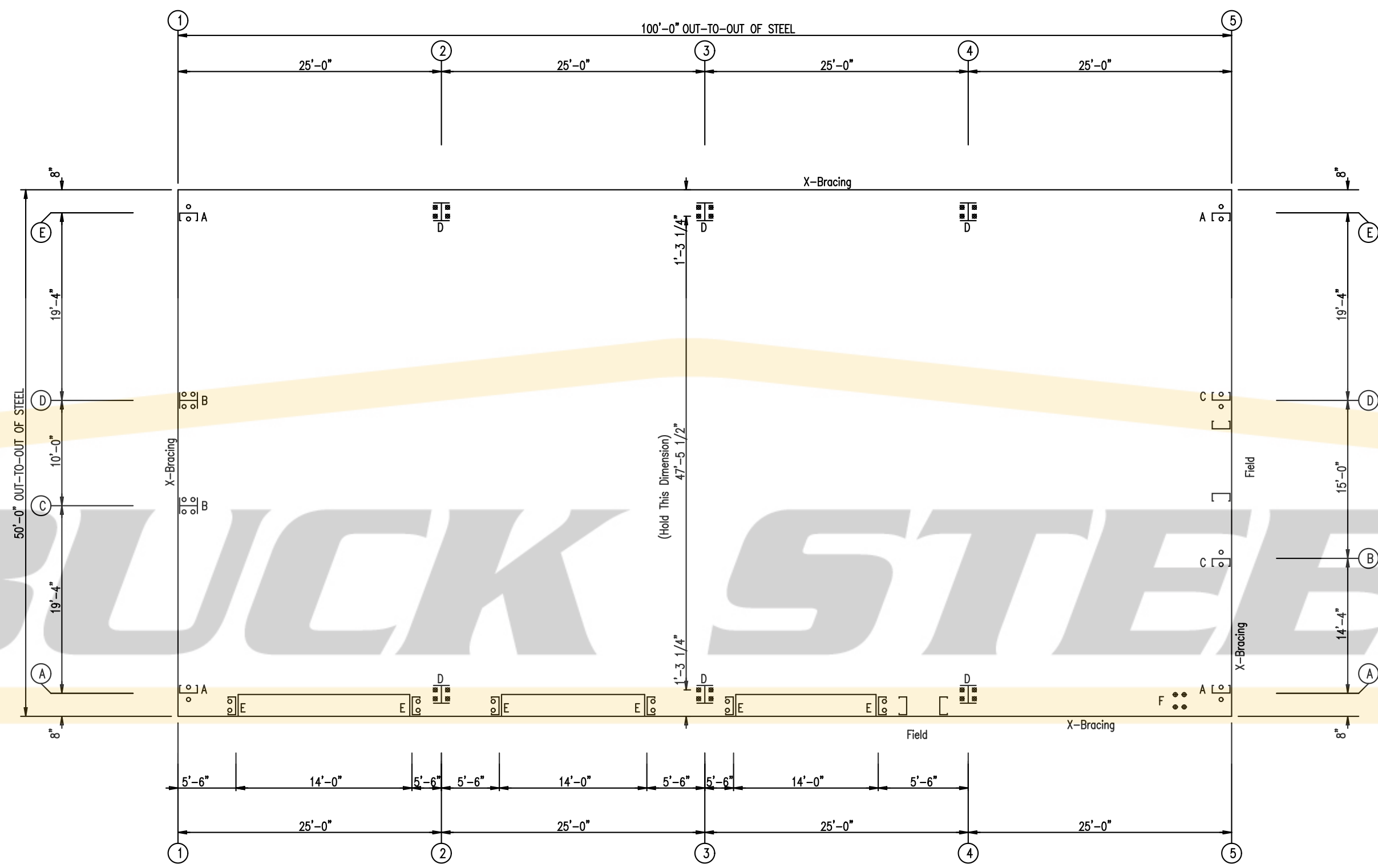
THIS CERTIFICATION COVERS PARTS MANUFACTURED AND DELIVERED BY THE MANUFACTURER ONLY, AND EXCLUDES PARTS SUCH AS DOORS, WINDOWS, FOUNDATION DESIGN AND ERECTION OF THE BUILDING.

THESE DRAWINGS AND THE METAL BUILDING SYSTEM THEY REPRESENT ARE THE PRODUCT OF AN AFFILIATE OF NCI GROUP, INC. – 10943 N. SAM HOUSTON PARKWAY W., HOUSTON, TX 77064. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON IS EMPLOYED BY AN AFFILIATE OF NCI GROUP, INC. AND IS NOT THE ENGINEER-OF-RECORD FOR THE OVERALL PROJECT.

BUILDING SIZE: 50'-0" x 100'-0" x 17'-0" 1.0:12

ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
0	8/30/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

- Dia= 5/8"
- ⊗ Dia= 3/4"
- ⊕ Dia=1"



ANCHOR BOLT PLAN

ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
0	7/10/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	8/30/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL
2	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

SAMPLE - NOT FOR CONSTRUCTION

GENERAL 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. REACTIONS ARE PROVIDED AS UN-FACTORED FOR EACH LOAD GROUP APPLIED TO THE COLUMN. THE FOUNDATION ENGINEER WILL APPLY THE APPROPRIATE LOAD FACTORS AND COMBINE THE REACTIONS IN ACCORDANCE WITH THE BUILDING CODE AND DESIGN SPECIFICATIONS TO DETERMINE BEARING PRESSURES AND CONCRETE DESIGN. THE FACTORS APPLIED TO LOAD GROUPS FOR THE STEEL COLUMN DESIGN MAY BE DIFFERENT THAN THE FACTORS USED IN THE FOUNDATION DESIGN.
3. 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.
4. THE METAL BUILDING MANUFACTURER IS RESPONSIBLE FOR THE DESIGN OF THE ANCHOR BOLT DIAMETER ONLY TO PERMIT THE TRANSFER OF FORCES BETWEEN THE BASE PLATE AND THE ANCHOR BOLT IN SHEAR, BEARING AND TENSION, BUT IS NOT RESPONSIBLE FOR THE ANCHOR BOLT 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 SHOULD ASSURE HIMSELF THAT ADEQUATE PROVISIONS ARE MADE IN 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 EXPERIENCED IN THE DESIGN OF SUCH STRUCTURES, (SECTION A3 MBMA 2006 METAL BUILDING SYSTEMS MANUAL).
5. BOTTOM OF ALL BASE PLATES ARE AT THE SAME ELEVATION. (UNLESS NOTED)
6. ANCHOR RODS ARE ASTM F1554 GRADE 36 MATERIAL UNLESS NOTED OTHERWISE.

ENDWALL COLUMN:

BASIC COLUMN REACTIONS (k)

Frm Line	Col Line	Dead Vert	Collat Vert	Live Vert	Snow Vert	Wind_Left1 Horz	Wind_Right1 Horz	Wind_Left2 Horz	Wind_Right2 Horz	Wind Press Horz
1	E	0.3	0.1	2.2	0.8	0.0	-2.4	0.0	-1.6	0.0
1	D	0.7	0.1	4.1	1.4	1.7	-7.9	0.0	0.7	1.9
1	C	0.7	0.1	4.1	1.4	0.0	0.7	1.7	-7.9	0.0
1	A	0.3	0.1	2.2	0.8	0.0	-1.6	0.0	-2.4	0.0

Frm Line	Col Line	Wind Suct Horz	Wind_Long1 Horz	Wind_Long2 Horz	Seis_Left Horz	Seis_Right Horz	-MIN_SNOW-- Horz	E1UNB_SL_L-- Horz
1	E	0.0	0.0	-2.5	0.0	0.0	0.0	1.1
1	D	2.4	0.0	-4.5	0.2	-1.0	0.0	2.1
1	C	2.4	0.0	-2.8	0.0	1.0	0.0	2.1
1	A	1.6	0.0	-1.5	0.0	0.0	0.0	1.1

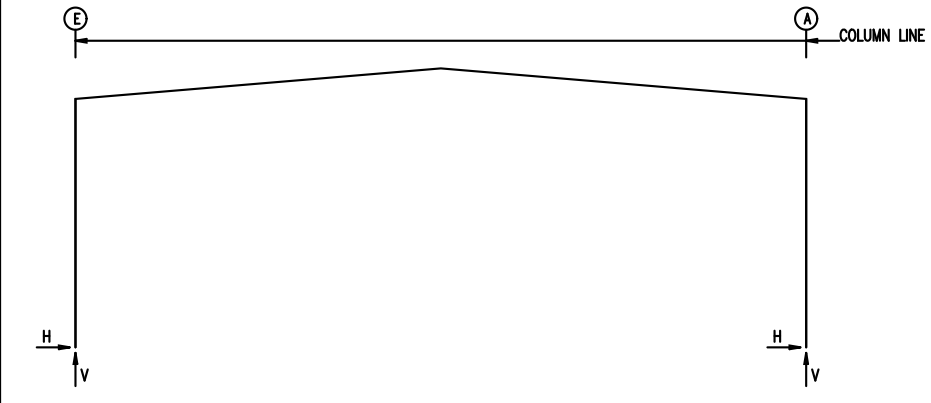
Frm Line	Col Line	E1UNB_SL_R-- Horz	Wind Suct Horz	Wind_Long1 Horz	Wind_Long2 Horz	Seis_Left Horz	Seis_Right Horz	Seis_Long Horz	-MIN_SNOW-- Horz
1	E	0.0	0.0	-1.5	0.2	-1.4	0.6	-0.7	-1.9
1	D	0.0	0.0	-4.7	0.0	-1.9	0.0	0.7	0.0
1	C	0.0	0.0	-3.6	0.0	-5.4	0.0	0.0	0.0
1	A	0.0	0.0	-1.4	0.0	-2.4	0.0	0.0	0.0

Frm Line	Col Line	Dead Vert	Collat Vert	Live Vert	Snow Vert	Wind_Left1 Horz	Wind_Right1 Horz	Wind_Left2 Horz	Wind_Right2 Horz	Wind Press Horz
5	A	0.3	0.0	1.7	0.6	1.7	-3.8	0.0	1.0	1.9
5	B	0.5	0.1	3.8	1.3	0.0	-2.4	1.7	-4.3	0.0
5	D	0.7	0.1	5.1	1.8	0.0	-3.4	0.0	-5.5	0.0
5	E	0.3	0.1	2.2	0.8	0.0	-1.5	0.0	-2.4	0.0

Frm Line	Col Line	Wind Suct Horz	Wind_Long1 Horz	Wind_Long2 Horz	Seis_Left Horz	Seis_Right Horz	Seis_Long Horz	-MIN_SNOW-- Horz
5	A	0.0	0.0	-1.5	0.2	-1.4	0.6	-0.7
5	B	2.4	0.2	-4.7	0.0	-1.9	0.0	0.7
5	D	2.9	0.0	-3.6	0.0	-5.4	0.0	0.0
5	E	0.0	0.0	-1.4	0.0	-2.4	0.0	0.0

Frm Line	Col Line	E2UNB_SL_L-- Horz	E2UNB_SL_R-- Horz
5	A	0.0	0.5
5	B	0.0	2.0
5	D	0.0	0.9
5	E	0.0	0.2

FRAME LINES: 2 3 4



RIGID FRAME: ANCHOR BOLTS & BASE PLATES

Frm Line	Col Line	Anc_Bolt Qty	Anc_Bolt Dia	Base_Plate Width	Base_Plate Length	Thick	Grout (in)
2*	E	4	0.750	6.000	9.500	0.375	0.0
2*	A	4	0.750	6.000	9.500	0.375	0.0

2* Frame lines: 2 3 4

RIGID FRAME: BASIC COLUMN REACTIONS (k)

Frame Line	Column Line	Dead Horz	Collateral Horz	Live Horz	Snow Horz	Wind_Left1 Horz	Wind_Right1 Horz
2*	E	0.7	1.8	0.1	0.3	3.5	7.5
2*	A	-0.7	1.8	-0.1	0.3	-3.5	7.5

Frame Line	Column Line	Wind_Left2 Horz	Wind_Right2 Horz	Wind_Long1 Horz	Wind_Long2 Horz	Seismic_Left Horz	Seismic_Right Horz
2*	E	-6.9	-6.7	0.3	-2.1	-1.3	-11.9
2*	A	-0.3	-2.1	6.9	-6.7	1.7	-10.1

Frame Line	Column Line	Seismic_Long Horz	-MIN_SNOW-- Horz	F1UNB_SL_L-- Horz	F1UNB_SL_R-- Horz
2*	E	0.0	-1.1	2.9	6.2
2*	A	0.0	-1.1	-2.9	6.2

2* Frame lines: 2 3 4

NOTES FOR REACTIONS

BUILDING REACTIONS ARE BASED ON THE FOLLOWING BUILDING DATA:

- WIDTH (FT) = 50
- LENGTH (FT) = 100
- EAVE HEIGHT (FT) = 17 / 17
- ROOF SLOPE (rise/12) = 1.0:12 / 1.0:12
- DEAD LOAD (psf) = 2,000
- COLLATERAL LOAD (psf) = 0.5
- ROOF LIVE LOAD (psf) = 20.00
- FRAME LIVE LOAD (psf) = 12
- FLAT ROOF SNOW LOAD (psf) = 7.00 (AS PER CODE)
- MIN ROOF SNOW LOAD (psf) = 10.00 (USED IN DESIGN)
- GROUND SNOW LOAD (psf) = 10,000
- WIND SPEED (MPH) = 115
- WIND CODE = IBC 12
- EXPOSURE = B
- CLOSED/OPEN = Closed
- IMPORTANCE - WIND = 1.00
- IMPORTANCE - SEISMIC = 1.00
- SEISMIC ZONE = C
- NOMINAL WIND SPEED (vasd) = 89 MPH (IBC SECTION 1609.3.1)

BUILDING BRACING REACTIONS

Loc	Wall Line	Col Line	Reactions in plane of wall ± Reactions(k)	Panel Shear (lb/ft)
L_EW	1	D,C	Bracing, see EW reactions	
F_SW	A	4,5	3.4 * 1.9 *	
R_EW	5	A,B	Bracing, see EW reactions	
B_SW	E	4,3	3.4 * 1.9 *	

*See RF reactions table for vertical and horizontal reactions in plane of the rigid frame.

ENDWALL COLUMN: ANCHOR BOLTS & BASE PLATES

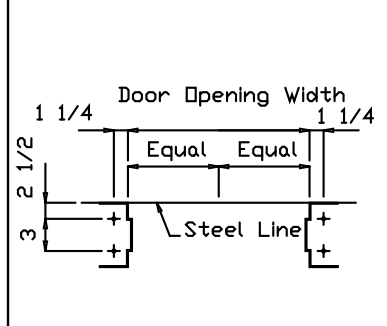
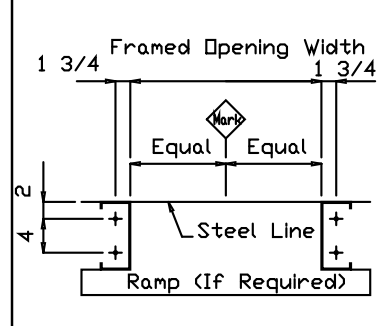
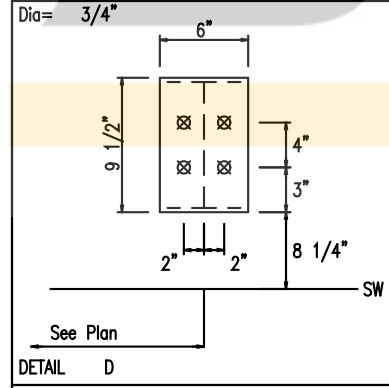
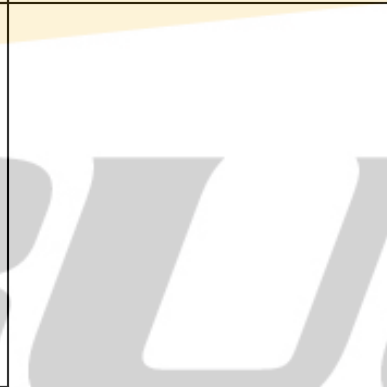
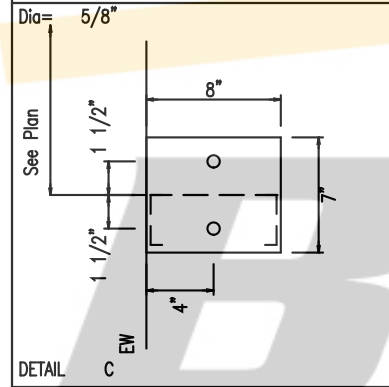
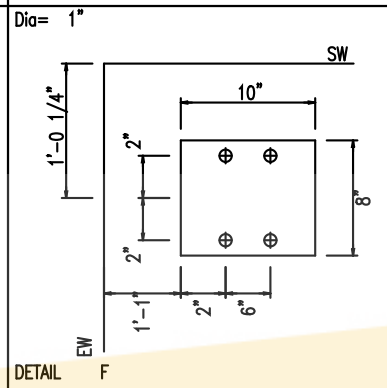
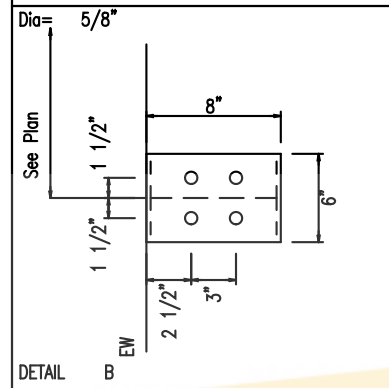
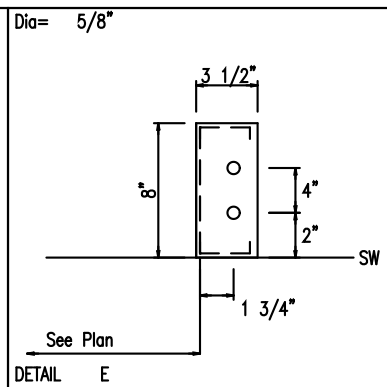
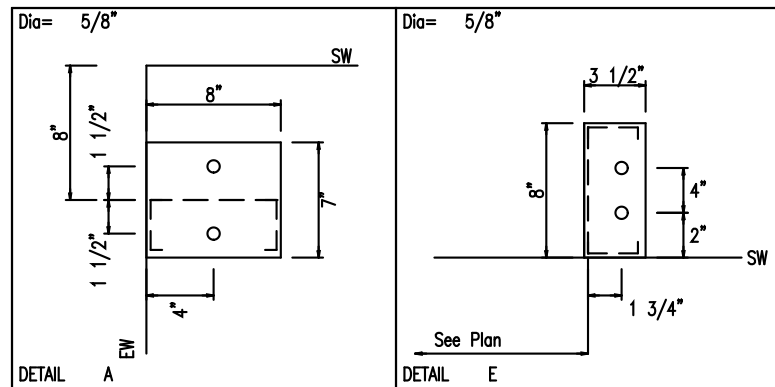
Frm Line	Col Line	Anc_Bolt Qty	Anc_Bolt Dia	Base_Plate Width	Base_Plate Length	Thick	Grout (in)
1	E	2	0.625	7.000	8.000	0.250	0.0
1	D	4	0.625	6.000	8.000	0.375	0.0
1	C	4	0.625	6.000	8.000	0.375	0.0
1	A	2	0.625	7.000	8.000	0.250	0.0
5	A	2	0.625	7.000	8.000	0.250	0.0
5	B	2	0.625	7.000	8.000	0.250	0.0
5	D	2	0.625	7.000	8.000	0.250	0.0
5	E	2	0.625	7.000	8.000	0.250	0.0

ANCHOR BOLT SUMMARY

Qty	Locate	Dia (in)	Type	Proj (in)
○ 12	Jamb	5/8"	F1554	2.00
○ 20	Endwall	5/8"	F1554	2.00
⊗ 24	Frame	3/4"	F1554	2.50
⊕ 4	WindBent	1"	F1554	3.00

ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
0	7/10/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	8/30/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL
2	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

SAMPLE - NOT FOR CONSTRUCTION



AR Dia 5/8"

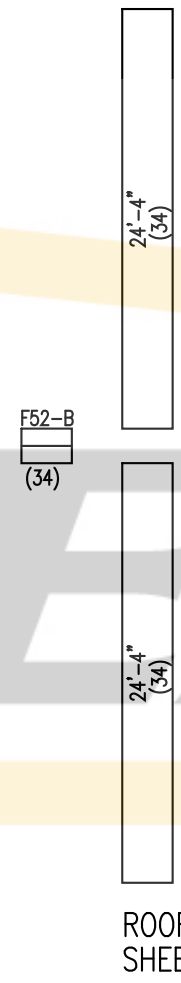
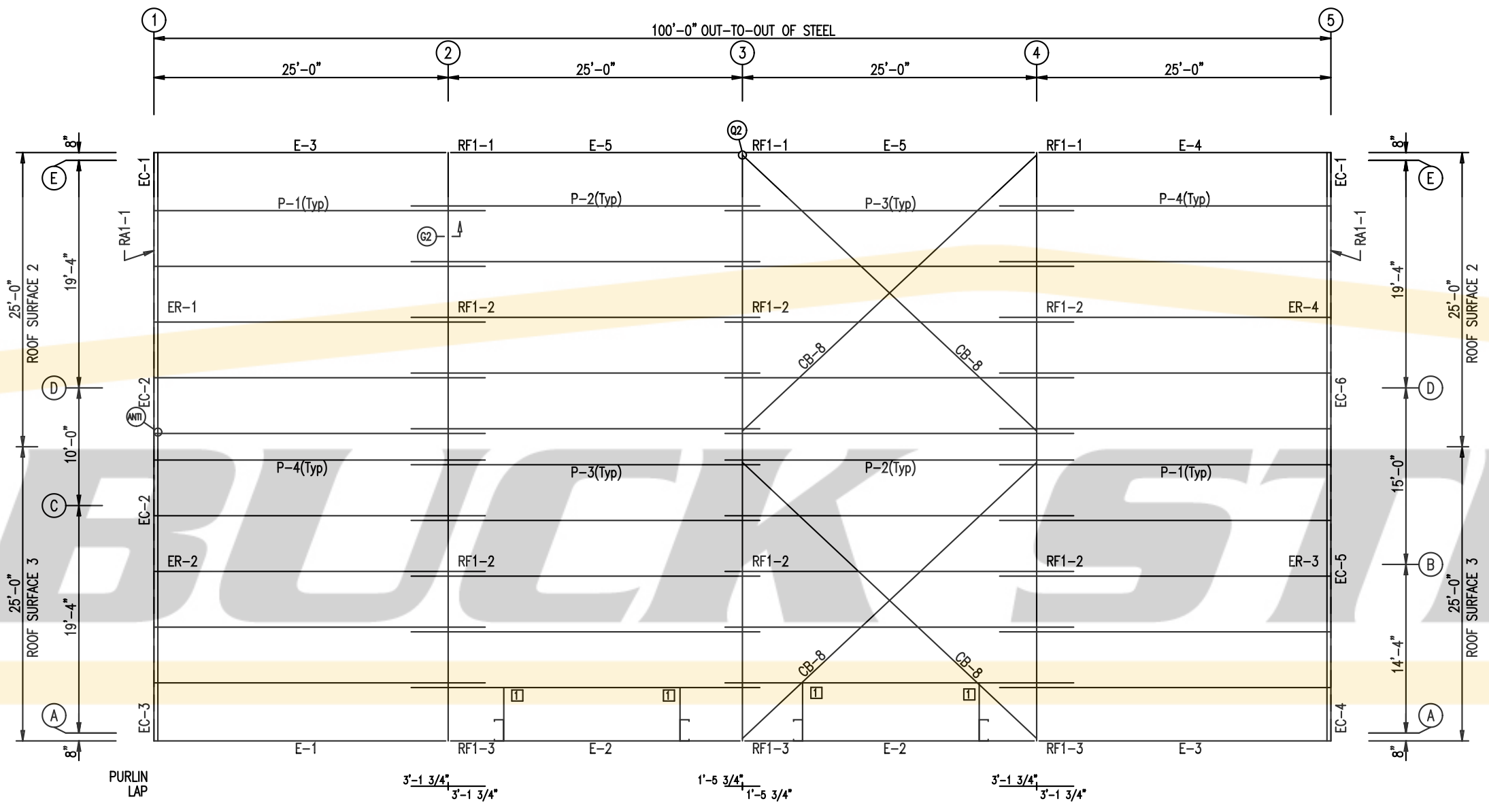
AR Dia 1/2"

ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
0	7/10/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	8/30/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL
2	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

SAMPLE - NOT FOR CONSTRUCTION

MEMBER TABLE		
ROOF PLAN		
MARK	PART	LENGTH
P-1	8X25Z14	28'-1 1/2"
P-2	8X25Z14	29'-7 1/2"
P-3	8X25Z14	29'-7 1/2"
P-4	8X25Z14	28'-1 1/2"
E-1	8ES1L14	24'-11 1/2"
E-2	8ES1L14	24'-11 1/2"
E-3	8ES1L14	24'-11 1/2"
E-4	8ES1L14	24'-11 1/2"
E-5	8ES1L14	24'-11 1/2"
CB-8	1/4" CABLE	34'-3"

CONNECTION PLATES	
ROOF	
ID	MARK/PART
1	DB-1



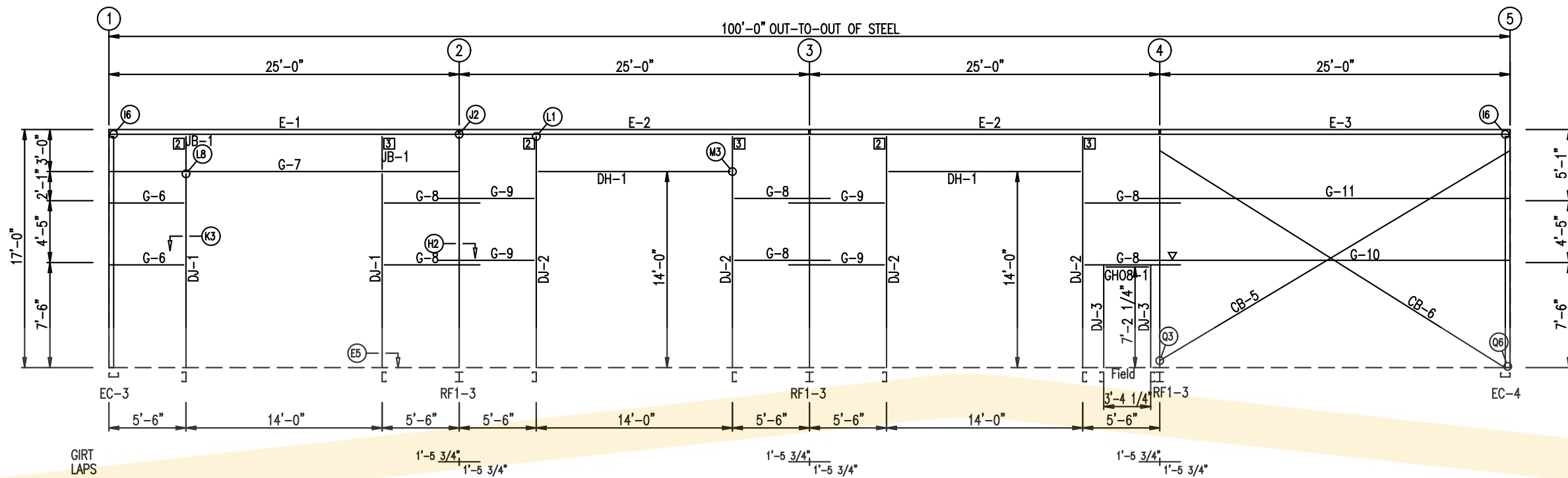
ROOF FRAMING PLAN

ROOF SHEETING
 PANELS: 26 Gauge PBR Galvalume

- GENERAL NOTES:
1. INSTALL ALL PURLIN AND FLANGE BRACES (FB) AS SHOWN.
 2. ROOF PANEL PROVIDES STRUCTURAL STABILITY TO THE BUILDING.
 3. STRUT PURLINS, IF PROVIDED, MUST BE INSTALLED AND FASTENED TO ROOF SHEETING PER "PBR" PANEL ROOF DETAIL.
 4. DO NOT ADD ANY ADDITIONAL ROOF OPENINGS WITHOUT BUILDING MANUFACTURER APPROVAL OR PROFESSIONAL ENGINEER APPROVAL.
 5. DO NOT STACK SHEET BUNDLES ON ROOF. ONLY RAISE INDIVIDUAL SHEETS AS NEEDED.
 6. AFTER INSTALLATION, WIPE ALL PANELS CLEAN OF METAL SHAVINGS CAUSED BY DRILLING.

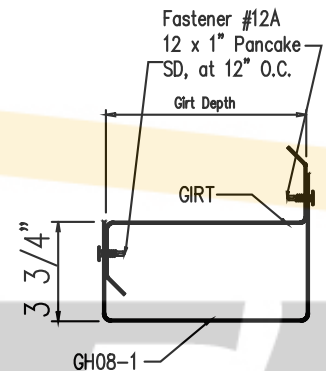
ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
0	8/30/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

SAMPLE - NOT FOR CONSTRUCTION

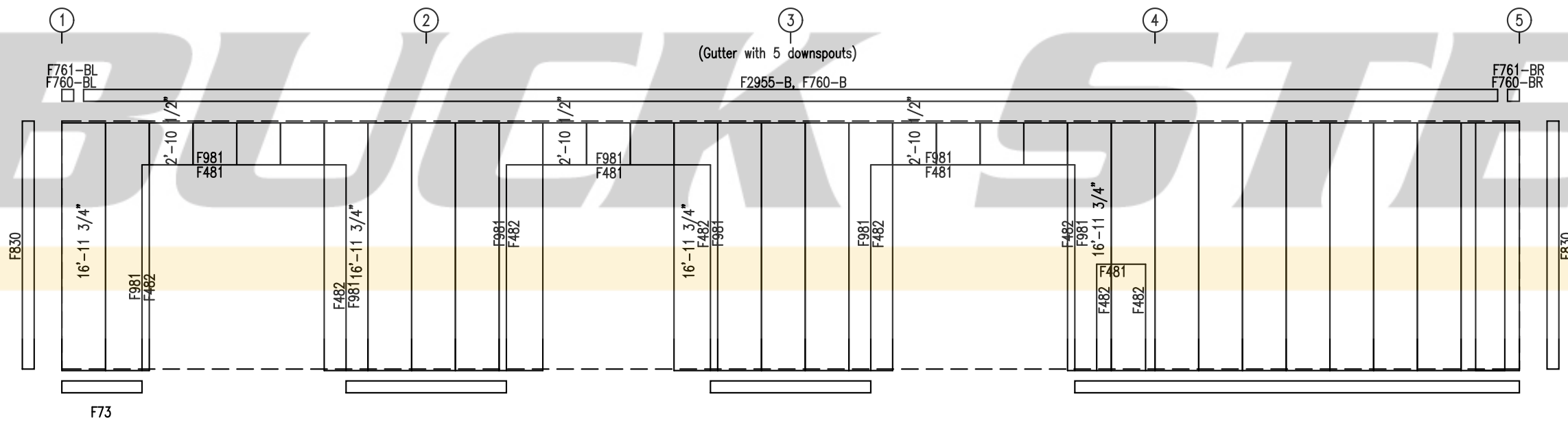


MEMBER TABLE		
FRAME LINE A		
MARK	PART	LENGTH
DJ-1	8F35C12	14'-0"
DJ-2	8F35C12	16'-3 1/2"
DJ-3	8F25C16	7'-6"
DH-1	8F25C16	14'-0"
GH08-1	GH08-1	3'-4 1/4"
E-1	8ES1L14	24'-11 1/2"
E-2	8ES1L14	24'-11 1/2"
E-3	8ES1L14	24'-11 1/2"
G-6	8X25Z16	5'-2"
G-7	8X25C16	24'-11 1/2"
G-8	8X25Z16	6'-8"
G-9	8X25Z16	6'-8"
G-10	8X25Z14	26'-5 1/2"
G-11	8X25Z16	26'-5 1/2"
CB-5	1/2" DIA. ROD	29'-10"
CB-6	1/2" DIA. ROD	28'-6"
JB-1	8F35C12	2'-0 3/4"

CONNECTION PLATES		
FRAME LINE A		
ID	MARK/PART	
2	SC584 L	
3	SC584 R	



SIDEWALL FRAMING: FRAME LINE A



SIDEWALL SHEETING & TRIM: FRAME LINE A

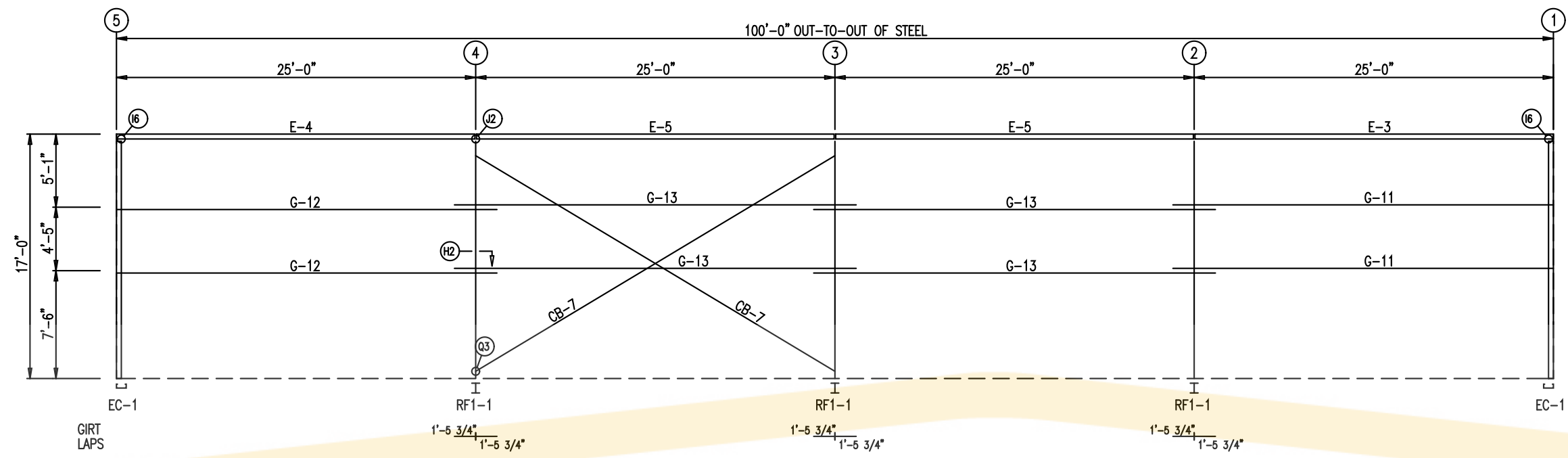
PANELS: 26 Gauge PBR - Fern Green

ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
0	8/30/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

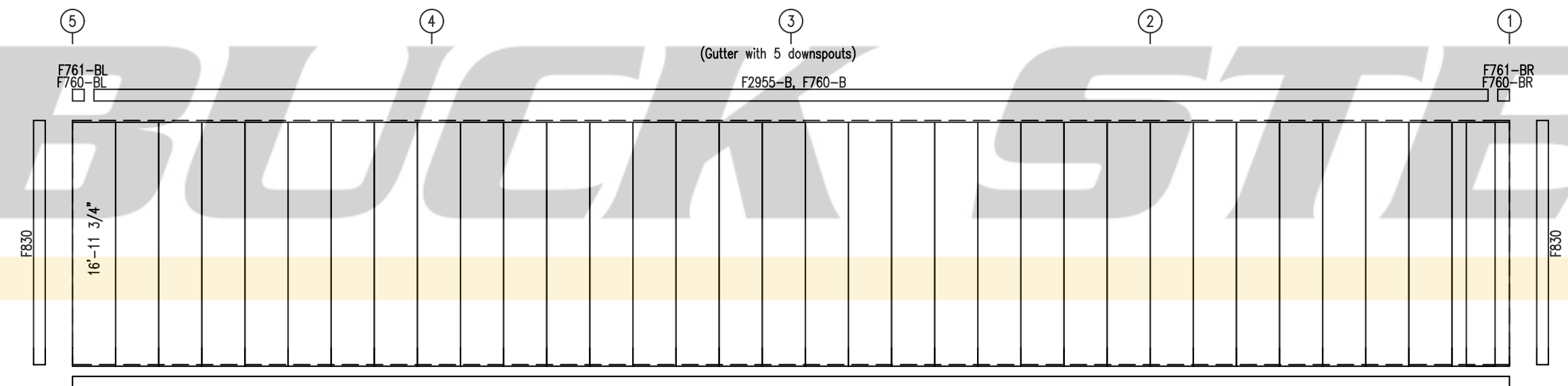
GENERAL NOTES:
 1. INSTALL ALL GIRTS AND FLANGE BRACES (FB) AS SHOWN.
 2. WALL PANEL PROVIDES STRUCTURAL STABILITY TO THE BUILDING.
 3. OTHER THAN FOR WALK DOORS AND WINDOWS SHOWN ON THE CONTRACT, DO NOT ADD ADDITIONAL WALL OPENINGS WITHOUT APPROVAL OF BUILDING MANUFACTURER OR PROFESSIONAL ENGINEER.
 4. AFTER INSTALLATION, WIPE ALL PANELS CLEAN OF METAL SHAVINGS CAUSED BY DRILLING.

SAMPLE - NOT FOR CONSTRUCTION

MEMBER TABLE		
FRAME LINE E		
MARK	PART	LENGTH
E-3	8ES1L14	24'-11 1/2"
E-4	8ES1L14	24'-11 1/2"
E-5	8ES1L14	24'-11 1/2"
G-11	8X25Z16	26'-5 1/2"
G-12	8X25Z16	26'-5 1/2"
G-13	8X25Z16	27'-11 1/2"
CB-7	1/2" DIA. ROD	29'-11"



SIDEWALL FRAMING: FRAME LINE E



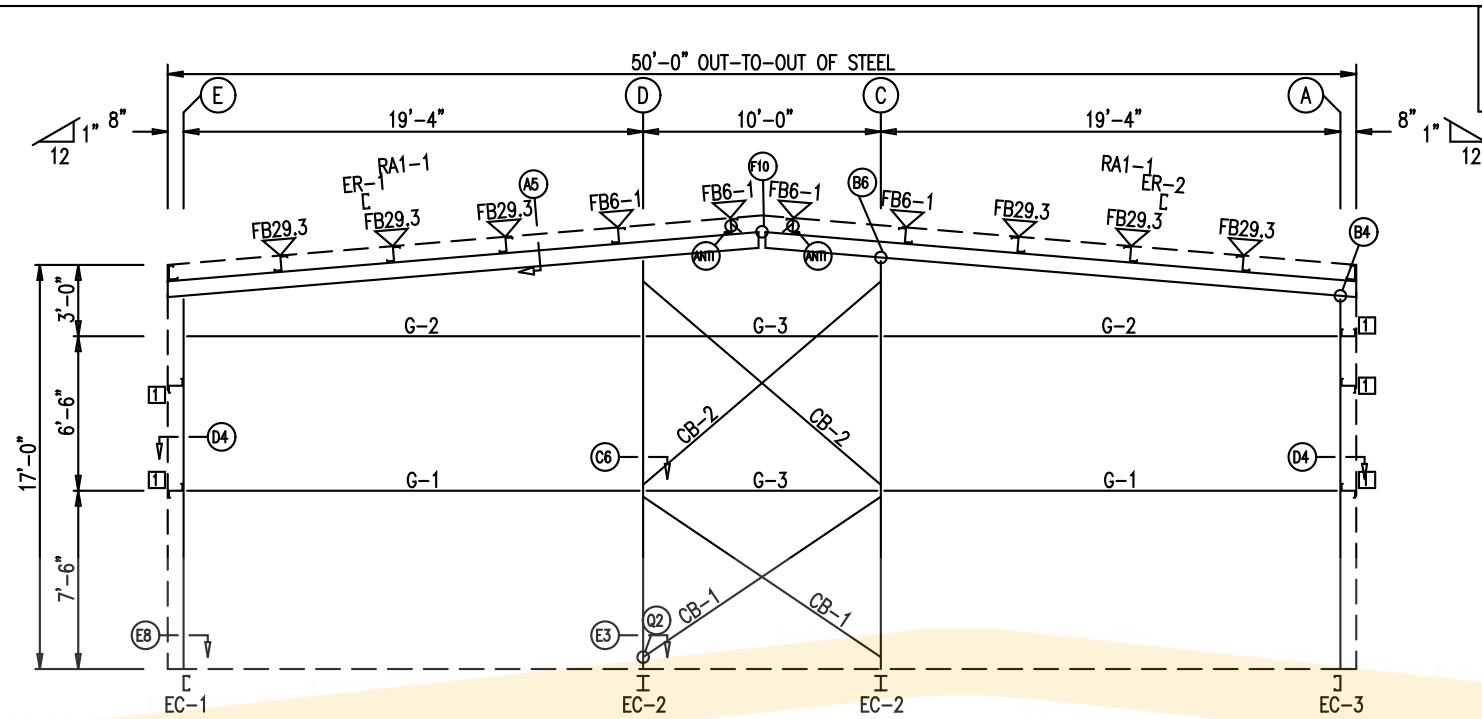
SIDEWALL SHEETING & TRIM: FRAME LINE E

PANELS: 26 Gauge PBR - Fern Green

ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
0	8/30/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

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 2. WALL PANEL PROVIDES STRUCTURAL STABILITY TO THE BUILDING.
 3. OTHER THAN FOR WALK DOORS AND WINDOWS SHOWN ON THE CONTRACT, DO NOT ADD ADDITIONAL WALL OPENINGS WITHOUT APPROVAL OF BUILDING MANUFACTURER OR PROFESSIONAL ENGINEER.
 4. AFTER INSTALLATION, WIPE ALL PANELS CLEAN OF METAL SHAVINGS CAUSED BY DRILLING.

SAMPLE - NOT FOR CONSTRUCTION



BEARING FRAME ONLY!
 WASHER TO BE USED AT ENDWALL COLUMN TO ENDWALL RAFTER CONNECTION. USE ONE WASHER ON COLUMN SIDE. WASHER NOT NEEDED ON CLIP SIDE.

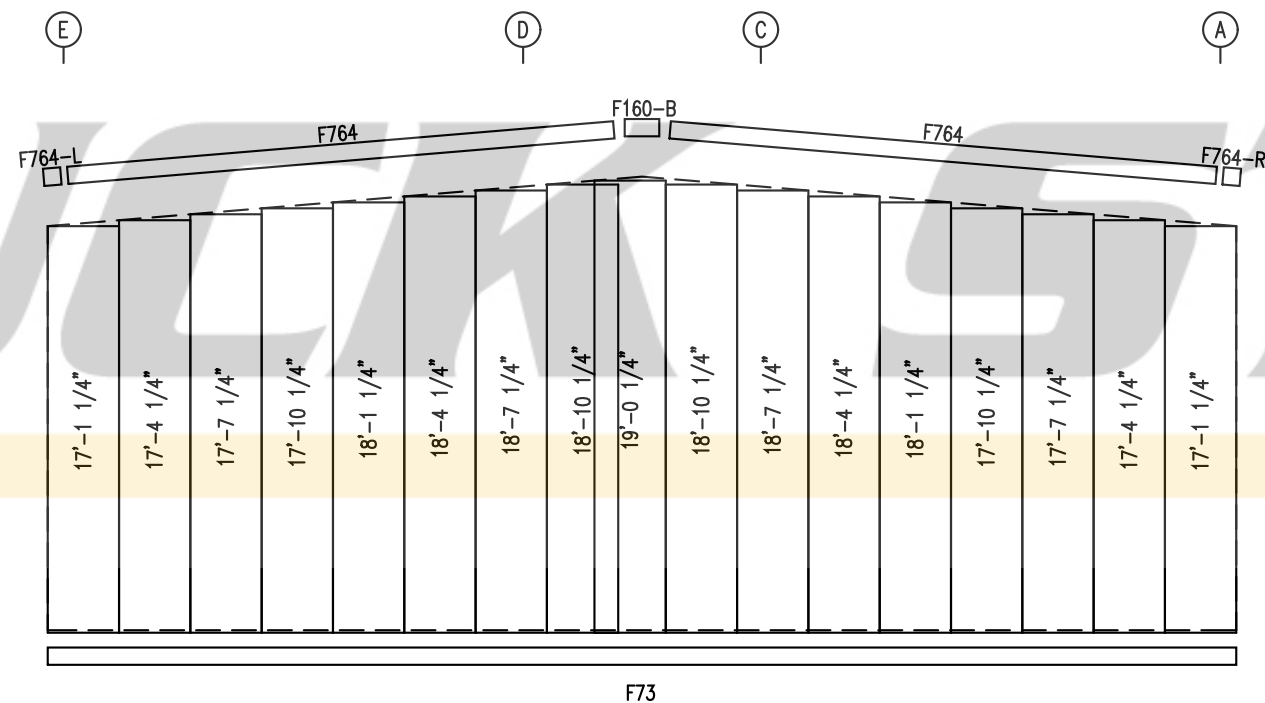
BOLT TABLE FRAME LINE 1				
LOCATION	QUAN	TYPE	DIA	LENGTH
ER-1/ER-2	4	A325	5/8"	1 3/4"
Columns/Raf	4	A325	1/2"	1 1/4"

MEMBER TABLE FRAME LINE 1		
MARK	PART	LENGTH
EC-1	8F25C14	15'-7 3/8"
EC-2	W8X10	17'-2 11/16"
EC-3	8F25C14	15'-7 3/8"
ER-1	8F35C12	25'-0 13/16"
ER-2	8F35C12	25'-0 13/16"
G-1	8X25Z13	18'-8"
G-2	8X25Z14	18'-8"
G-3	8X25Z16	9'-4"
CB-1	1/4" CABLE	12'-7"
CB-2	1/4" CABLE	13'-9"

FLANGE BRACE TABLE FRAME LINE 1		
▽ ID	PART	LENGTH
FB29.3	L2X2X1/4G	2'-5 1/4"
FB6-1	L2X2X1/8"	2'-5 1/4"

CONNECTION PLATES FRAME LINE 1	
□ ID	MARK/PART
1	SC-5

ENDWALL FRAMING: FRAME LINE 1

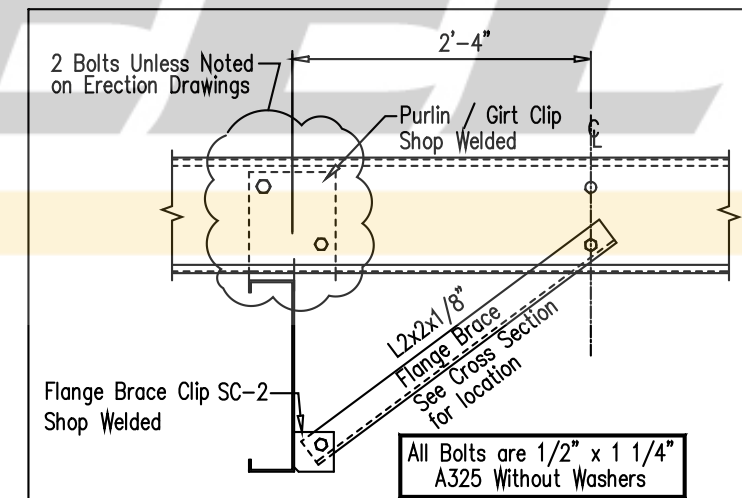


ENDWALL SHEETING & TRIM: FRAME LINE 1

PANELS: 26 Gauge PBR - Fern Green

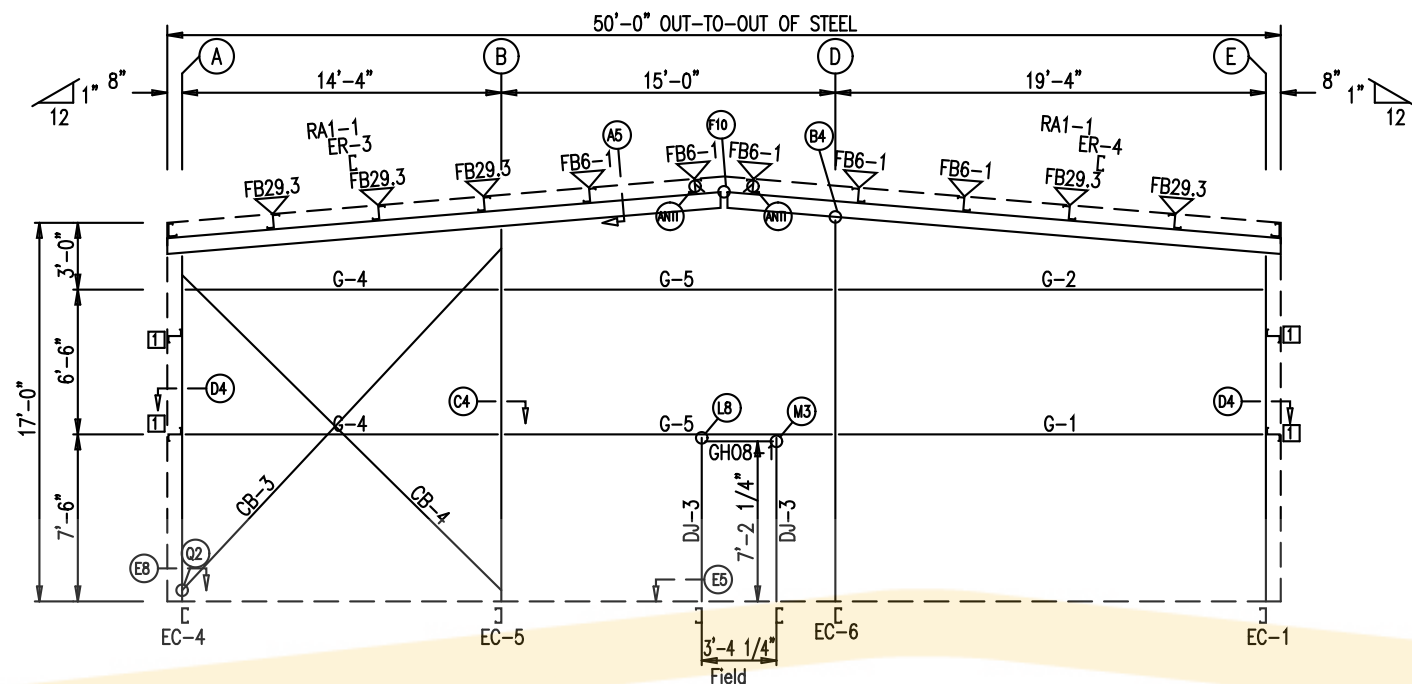
ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
0	8/30/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

- GENERAL NOTES:**
1. INSTALL ALL GIRTS AND FLANGE BRACES (FB) AS SHOWN.
 2. WALL PANEL PROVIDES STRUCTURAL STABILITY TO THE BUILDING.
 3. OTHER THAN FOR WALK DOORS AND WINDOWS SHOWN ON THE CONTRACT, DO NOT ADD ADDITIONAL WALL OPENINGS WITHOUT APPROVAL OF BUILDING MANUFACTURER OR PROFESSIONAL ENGINEER.
 4. AFTER INSTALLATION, WIPE ALL PANELS CLEAN OF METAL SHAVINGS CAUSED BY DRILLING.



FB6 Flange Brace Detail

SAMPLE - NOT FOR CONSTRUCTION



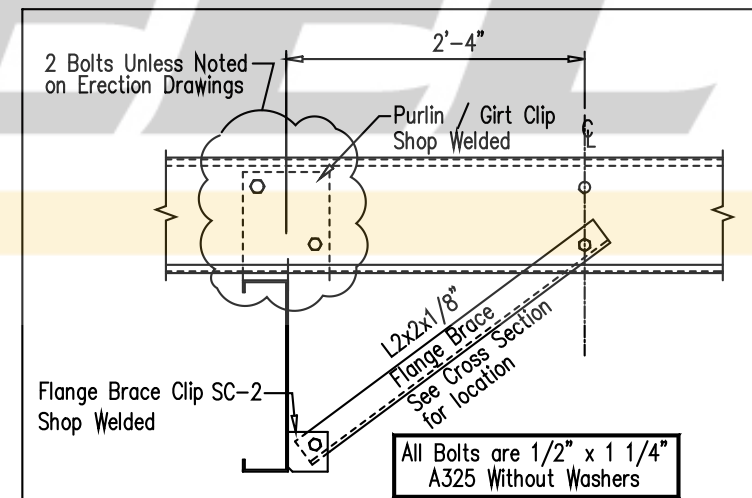
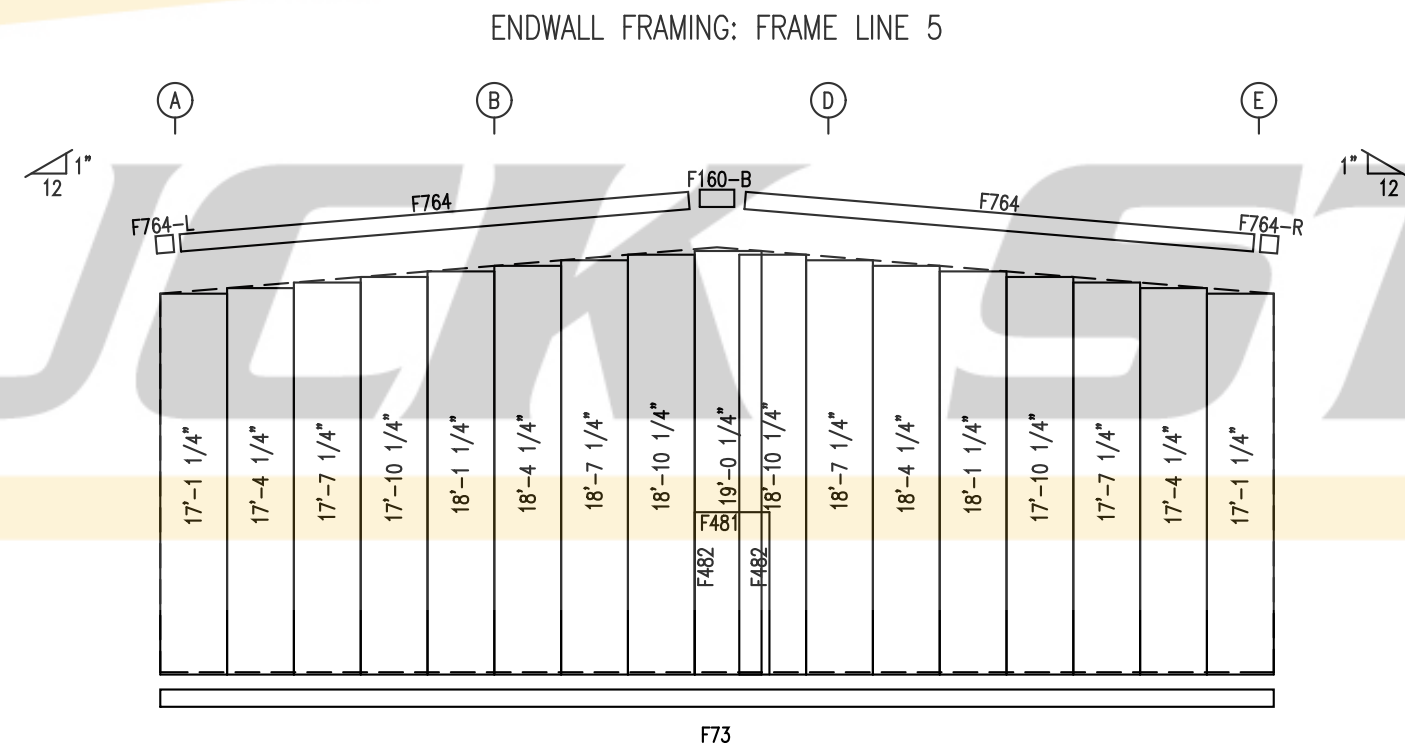
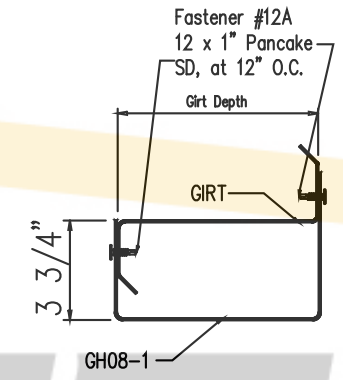
BEARING FRAME ONLY!
 WASHER TO BE USED AT ENDWALL COLUMN TO ENDWALL RAFTER CONNECTION. USE ONE WASHER ON COLUMN SIDE. WASHER NOT NEEDED ON CLIP SIDE.

BOLT TABLE FRAME LINE 5				
LOCATION	QUAN	TYPE	DIA	LENGTH
ER-4/ER-3 Columns/Raf	4	A325	5/8"	1 3/4"
	4	A325	1/2"	1 1/4"

MEMBER TABLE FRAME LINE 5		
MARK	PART	LENGTH
EC-1	8F25C14	15'-7 3/8"
EC-4	8F35C14	15'-7 3/8"
EC-5	8F25C12	16'-9 11/16"
EC-6	8F35C13	17'-2 11/16"
ER-4	8F35C12	25'-0 13/16"
ER-3	8F35C12	25'-0 13/16"
DJ-3	8F25C16	7'-6"
GH08-1	GH08-1	3'-4 1/4"
G-1	8X25Z13	18'-8"
G-2	8X25Z14	18'-8"
G-4	8X25Z16	13'-8"
G-5	8X25Z16	14'-11 1/2"
CB-3	1/4" CABLE	21'-9"
CB-4	1/4" CABLE	20'-11"

FLANGE BRACE TABLE FRAME LINE 1		
▽ ID	PART	LENGTH
FB29.3	L2X2X1/4G	2'-5 1/4"
FB6-1	L2X2X1/8"	2'-5 1/4"

CONNECTION PLATES FRAME LINE 5	
□ ID	MARK/PART
1	SC-5



ENDWALL SHEETING & TRIM: FRAME LINE 5
 PANELS: 26 Gauge PBR - Fern Green

ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
0	8/30/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

GENERAL NOTES:
 1. INSTALL ALL GIRTS AND FLANGE BRACES (FB) AS SHOWN.
 2. WALL PANEL PROVIDES STRUCTURAL STABILITY TO THE BUILDING.
 3. OTHER THAN FOR WALK DOORS AND WINDOWS SHOWN ON THE CONTRACT, DO NOT ADD ADDITIONAL WALL OPENINGS WITHOUT APPROVAL OF BUILDING MANUFACTURER OR PROFESSIONAL ENGINEER.
 4. AFTER INSTALLATION, WIPE ALL PANELS CLEAN OF METAL SHAVINGS CAUSED BY DRILLING.

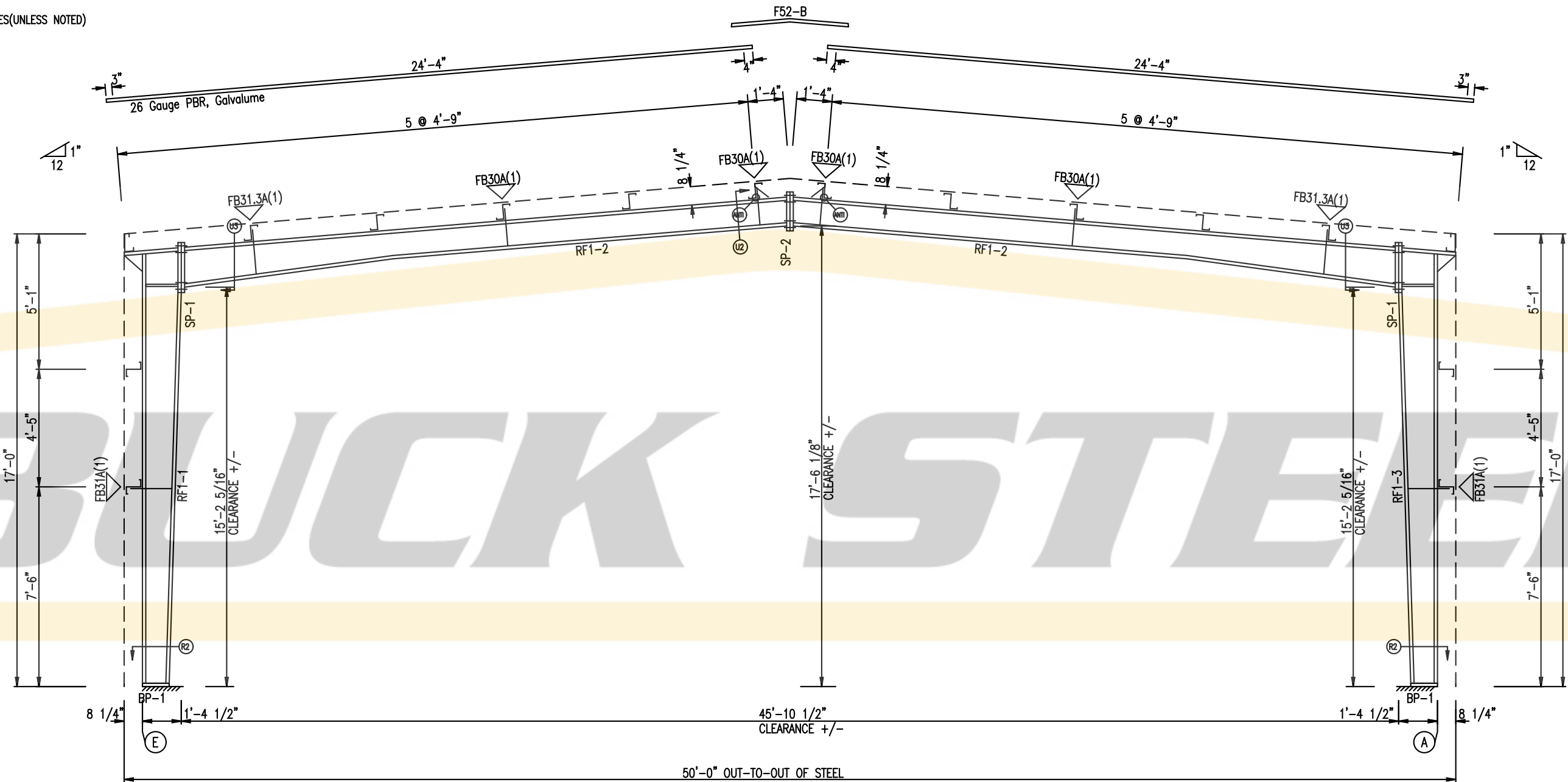
SAMPLE - NOT FOR CONSTRUCTION

SPLICE PLATE & BOLT TABLE									
Mark	Qty Top	Qty Bot	Int	Type	Dia	Length	Width	Thick	Length
SP-1	4	4	0	A325	3/4"	2"	6"	1/2"	1'-9 7/8"
SP-2	4	4	0	A325	3/4"	2"	6"	1/2"	1'-4 7/8"

BASE PLATE TABLE			
Col Mark	Width	Plate Size Thick	Length
BP-1	6"	3/8"	9 1/2"

MEMBER TABLE							
Mark	Web Depth		Web Plate		Outside Flange		Inside Flange
	Start/End	Thick	Length	W x Thk x Length	W x Thk x Length	W x Thk x Length	
RF1-1	9.0/13.7	0.134	120.0	5 x 1/4" x 195.8	5 x 1/4" x 24.6	5 x 1/4" x 178.5	
	13.7/16.0	0.156	58.3				
	16.0/16.0	0.185	18.8				
RF1-2	15.0/10.0	0.156	96.2	5 x 1/4" x 240.0		5 x 1/4" x 96.3	
	10.0/10.0	0.134	180.0	5 x 1/4" x 34.9		5 x 1/4" x 179.1	
	16.0/16.0	0.185	18.8	5 x 1/4" x 24.6		5 x 1/4" x 178.5	
RF1-3	16.0/13.7	0.156	58.3	5 x 1/4" x 195.8			
	13.7/9.0	0.134	120.0				

FLANGE BRACES: BOTH SIDES (UNLESS NOTED)
 FBxxA(1): xx=length(in)
 A - L2X2X14G



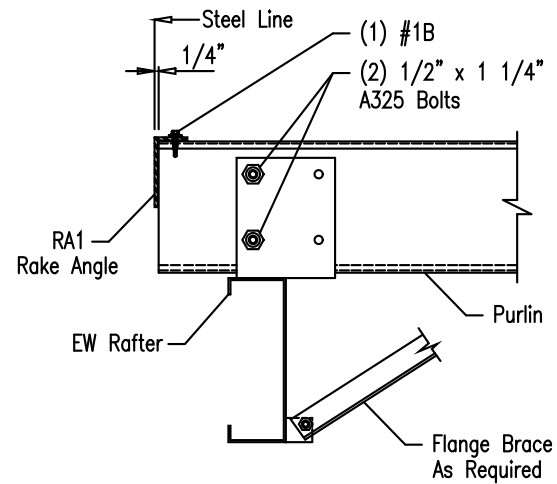
FRAME CROSS SECTION: FRAME LINE 2 3 4

GENERAL NOTES:

- ALL BOLTED JOINTS WITH A325M-09 TYPE 1 BOLTS ARE SPECIFIED SUPERLOK SNUG TIGHTED JOINTS IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, JUNE 30, 2004". PRETENSIONING METHODS, INCLUDING TURN-OF-NUT, CALIBRATED WRENCH, TWIST OFF TYPE TENSION BOLTS OR DIRECT TENSION INDICATOR ARE NOT REQUIRED. INSTALLATION INSPECTION REQUIREMENTS FOR SNUG TIGHT BOLTS (SPECIFICATION FOR STRUCTURAL JOINTS SECTION 9.1) IS SUGGESTED.
- ALL FIELD WELDED CONNECTIONS OF SECONDARY FRAMING SHALL BE BOLTED WITH A325 MACHINE BOLTS
- INSTALL ALL FLANGE BRACES ON COLUMN AND RAFTER SUPERLOK SHOWN

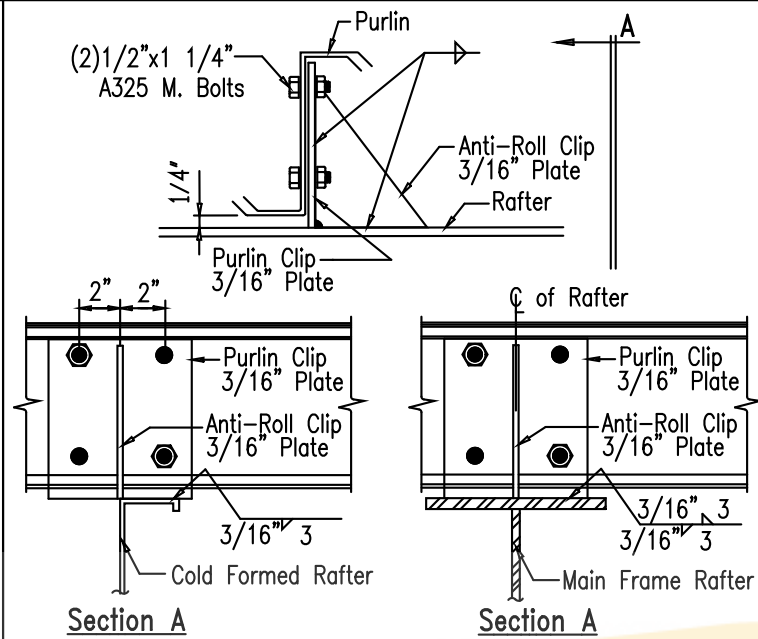
ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
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1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

SAMPLE - NOT FOR CONSTRUCTION

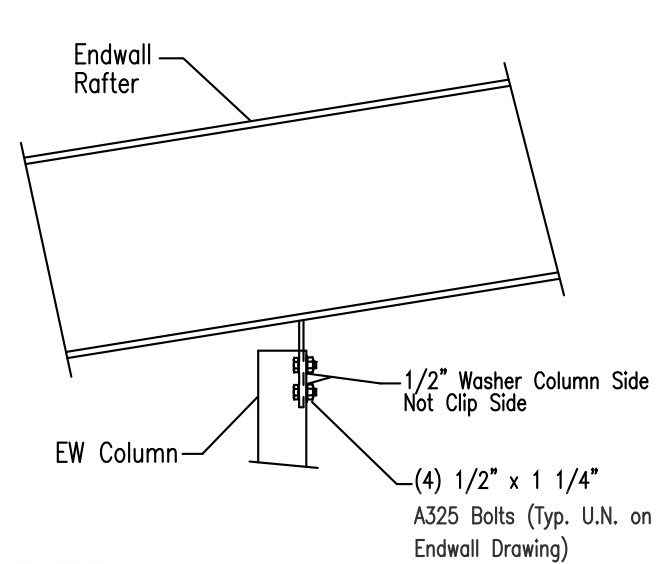


1/2" x 1 1/4" A325 Bolts
(Typ.) (U.N.)

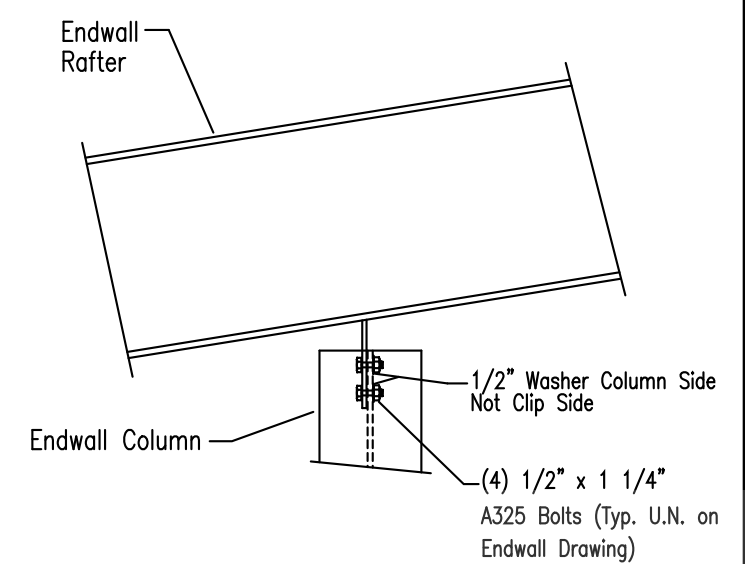
A5 SECTION THRU COLD FORMED RAFTER



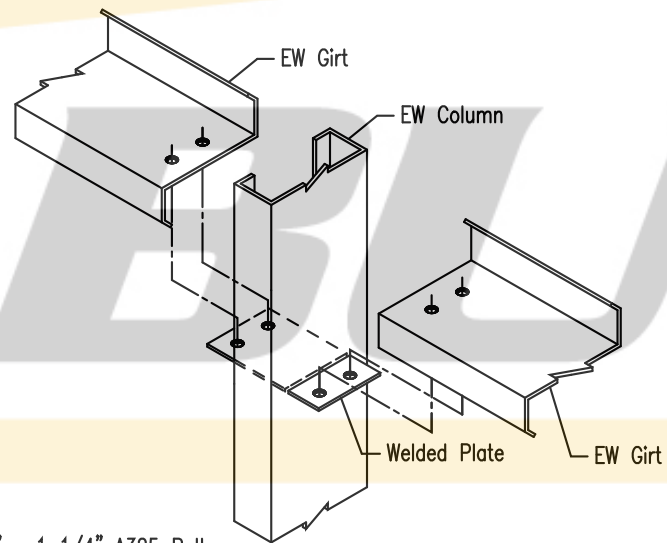
ANTI PURLIN ANTI-ROLL CLIP



B4 ENDWALL COLUMN TO RAFTER

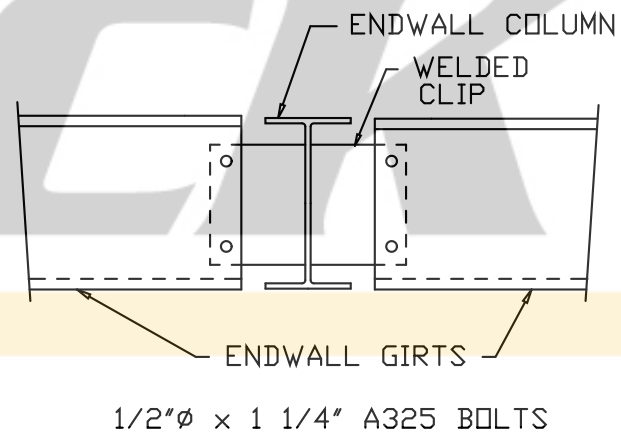


B6 HOT ROLLED ENDWALL COLUMN TO RAFTER

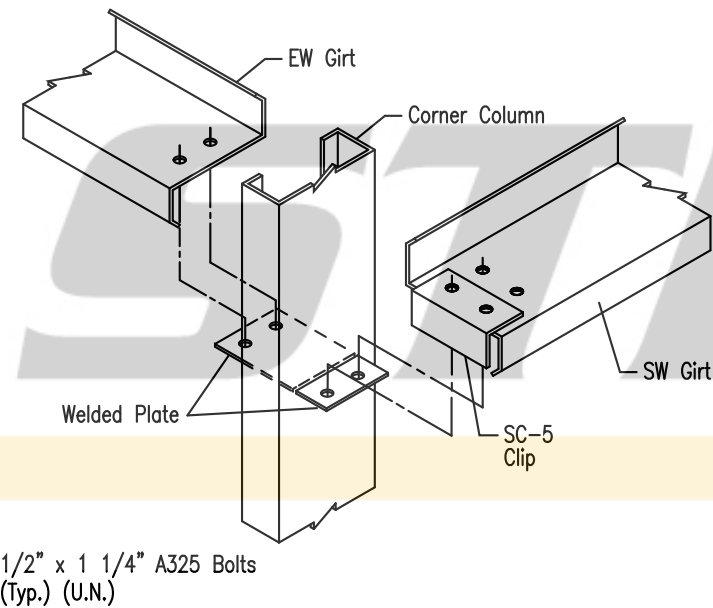


1/2" x 1 1/4" A325 Bolts
(Typ.) (U.N.)

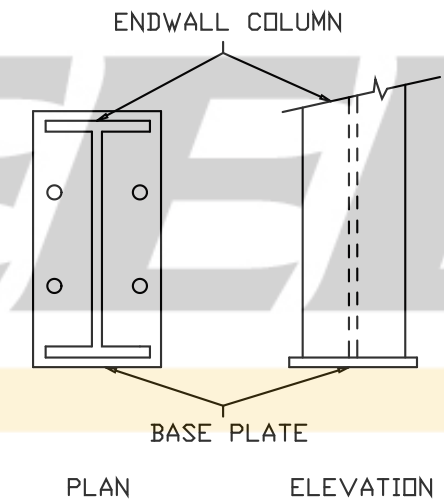
C4 CEE ENDWALL COLUMN TO WALL GIRT



C6 ENDWALL COLUMN TO WALL GIRT



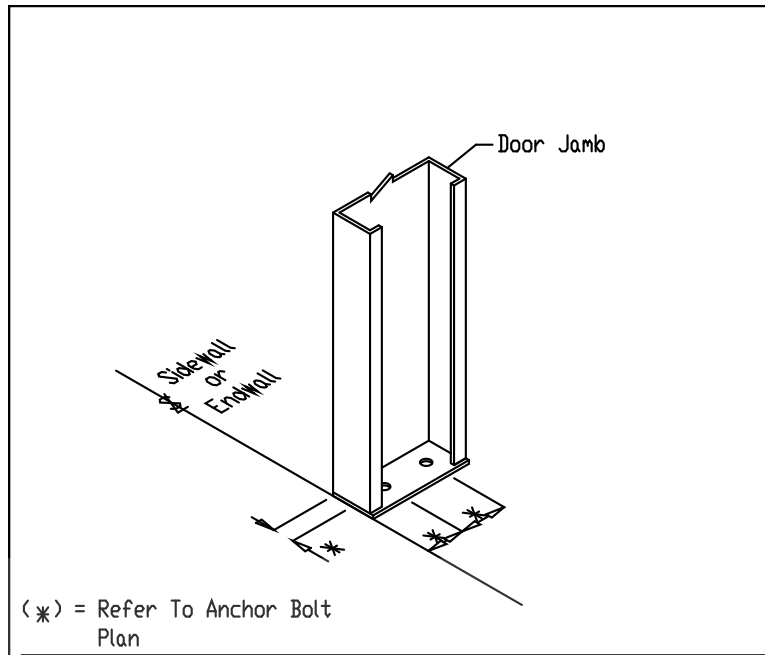
D4 CORNER COLUMN TO WALL GIRT



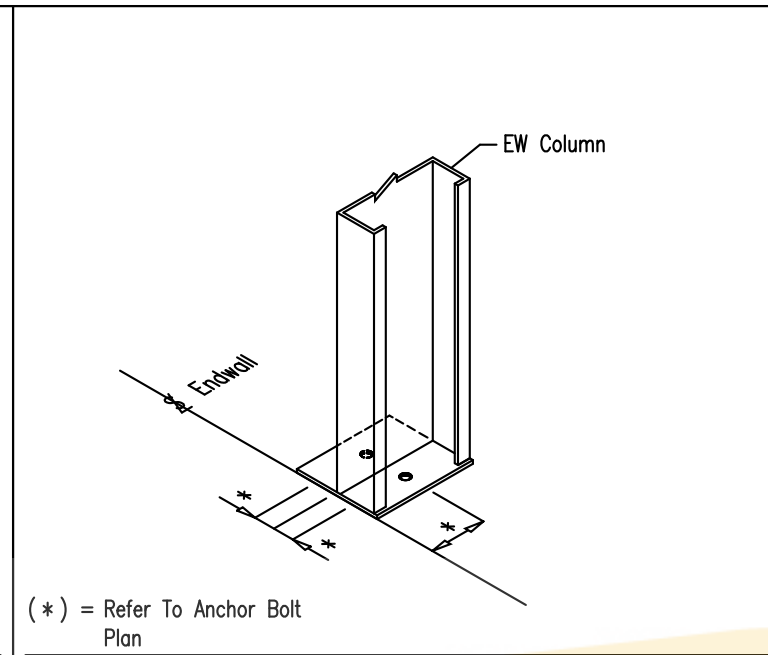
E3 BASE PLATE FOR ENDWALL COLUMN

ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
0	8/30/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

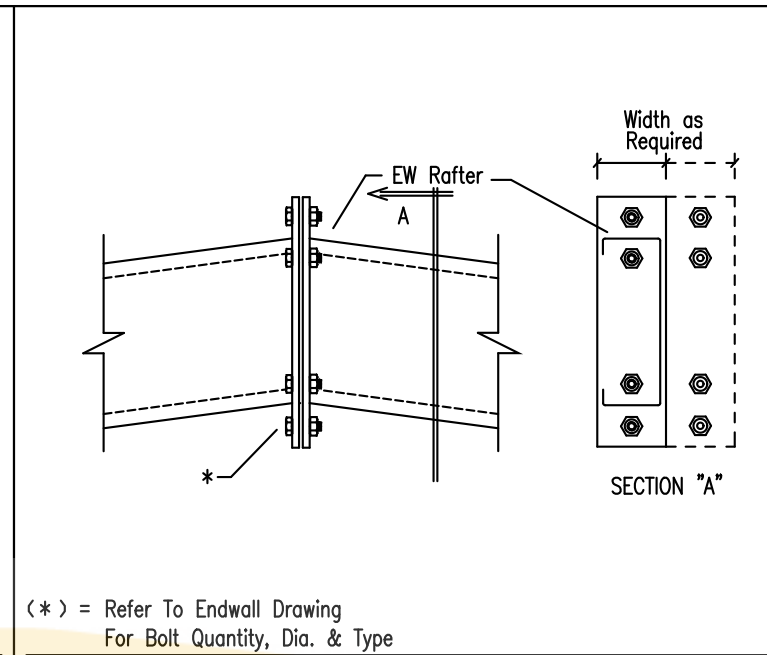
SAMPLE - NOT FOR CONSTRUCTION



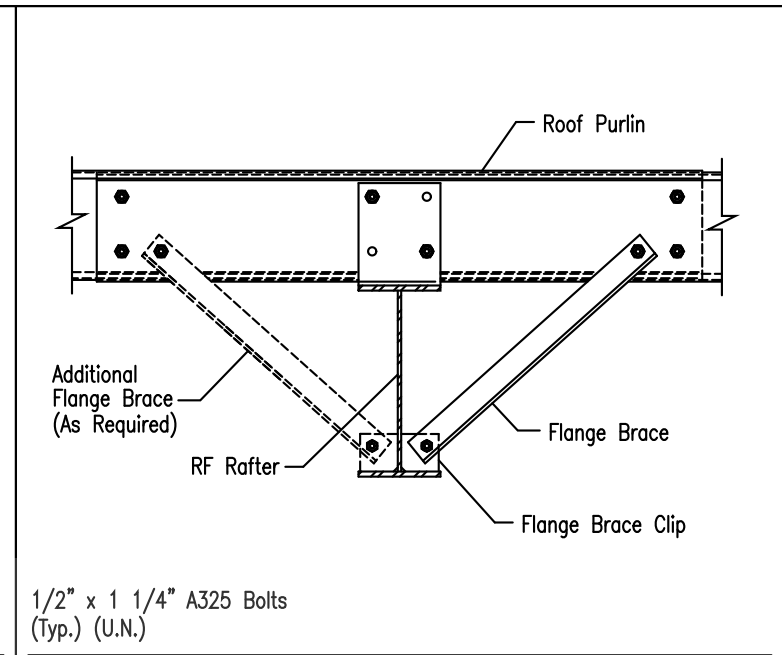
(E5) BASE PLATE FOR DOOR JAMB



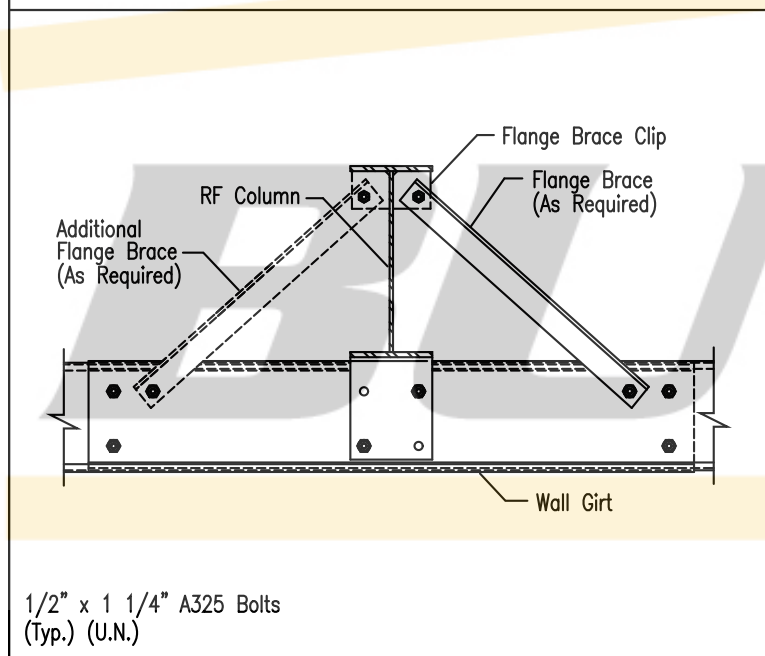
(E8) BASE PLATE FOR ENDWALL COLUMN



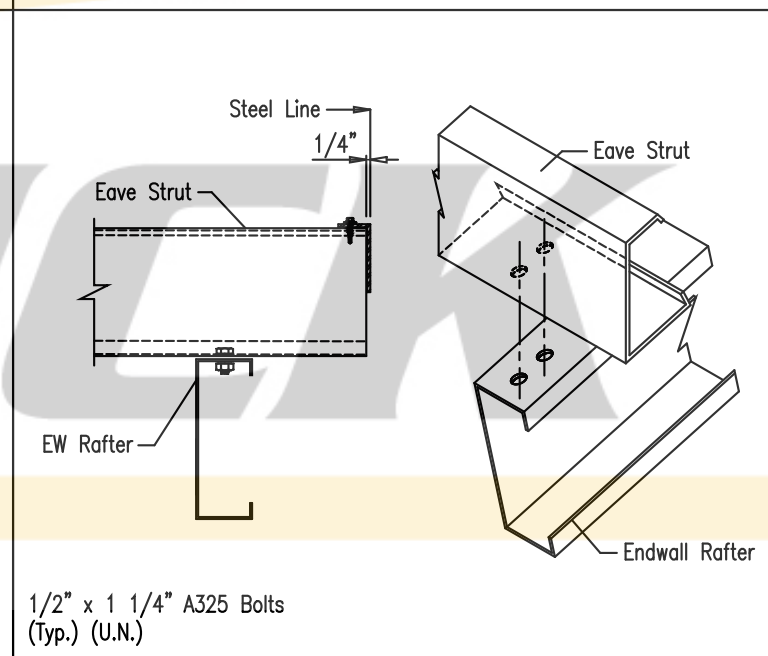
(F10) RAFTER SPLICE AT SURFACE CHANGE



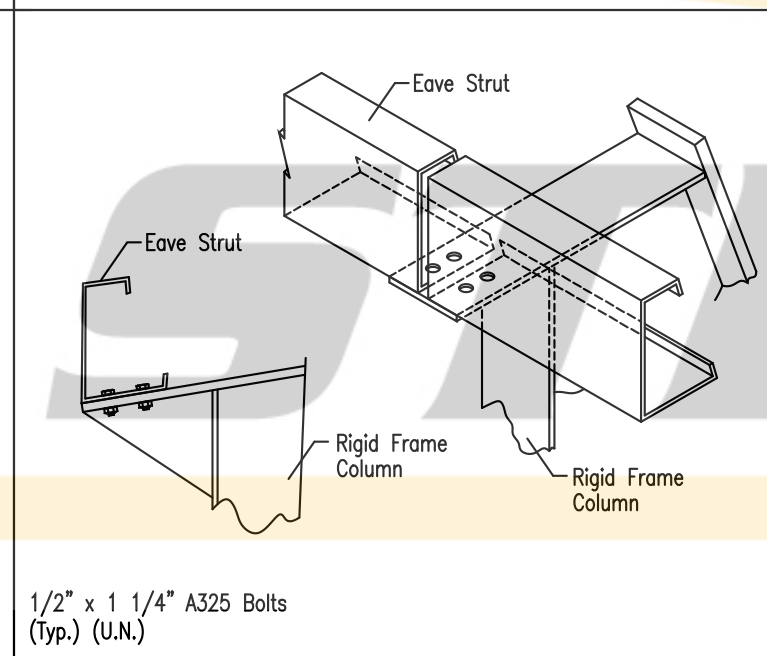
(G2) ROOF PURLIN TO INTERIOR FRAME RAFTER



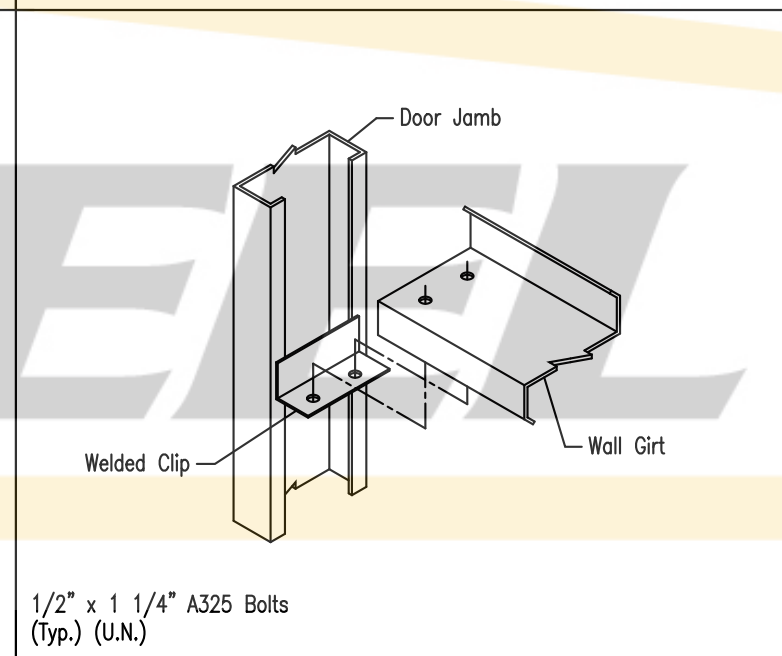
(H2) WALL GIRT TO RIGID FRAME COLUMN



16 LOW SIDE EAVE STRUT TO COLD FORMED RAFTER



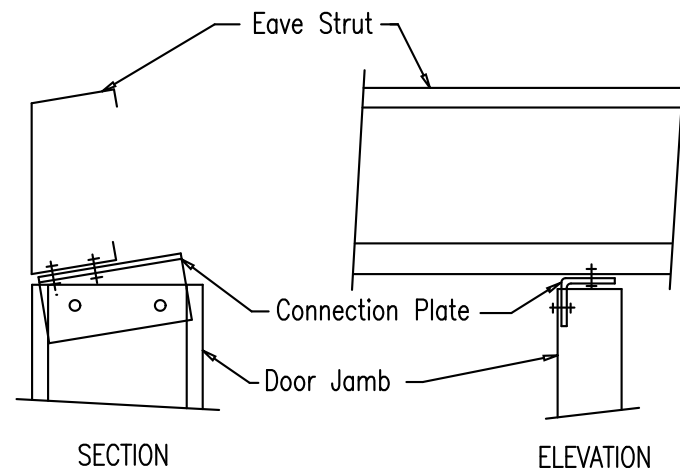
(J2) EAVE STRUT TO RIGID FRAME



(K3) WALL GIRT TO DOOR JAMB

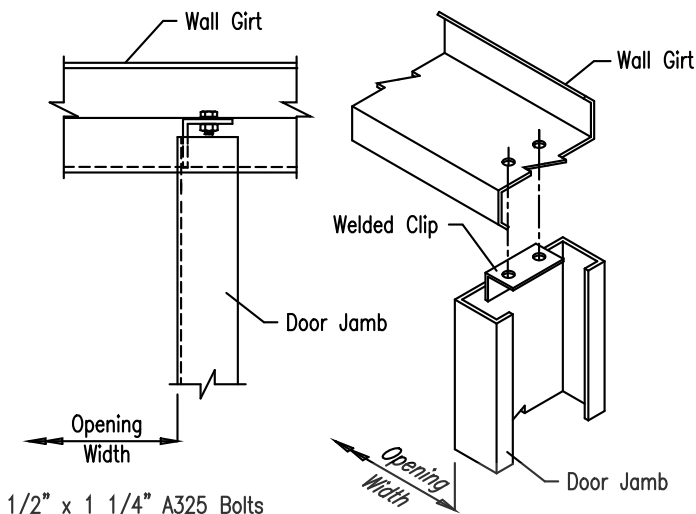
ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
0	8/30/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

SAMPLE - NOT FOR CONSTRUCTION



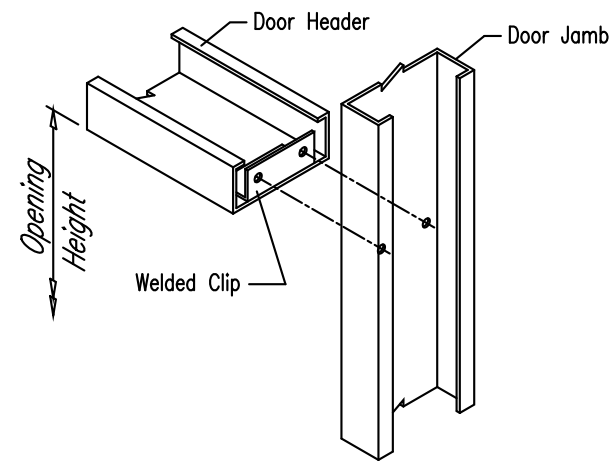
1/2" x 1 1/4" A325 Bolts @ Door Jamb (U.N.)
 1/2" x 1 1/4" A325 Bolts @ Eave Strut (U.N.)

L1 DOOR JAMB TO EAVE STRUT



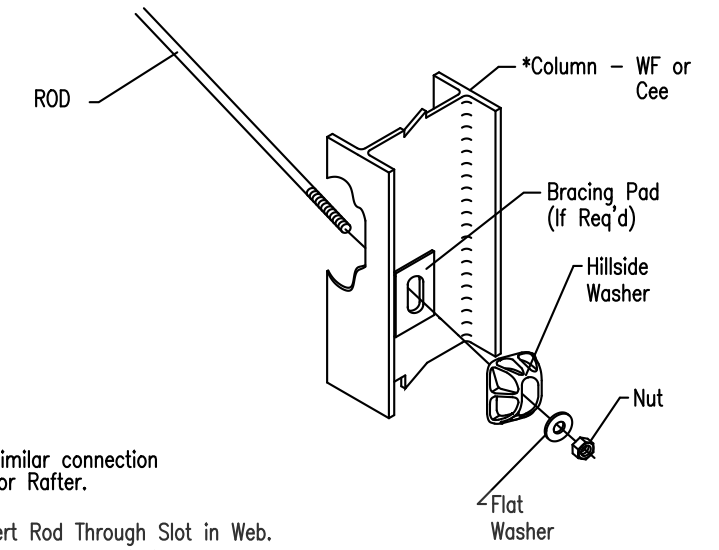
1/2" x 1 1/4" A325 Bolts (Typ.) (U.N.)

L8 DOOR JAMB TO WALL GIRT



1/2" x 1 1/4" A325 Bolts (Typ.) (U.N.)

M3 DOOR HEADER TO DOOR JAMB

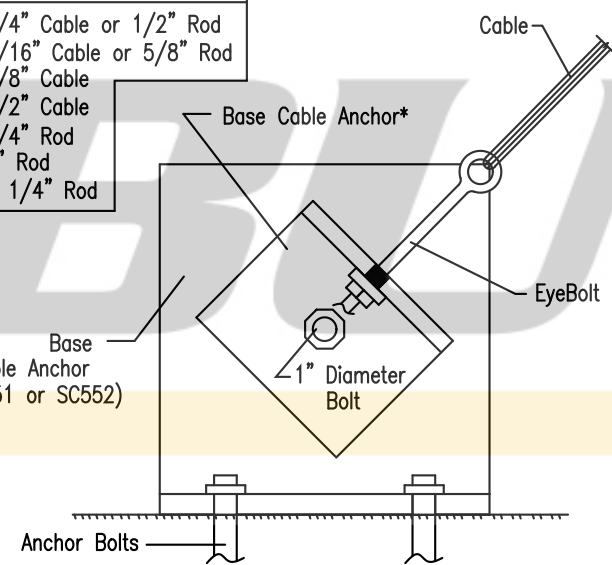


* Similar connection for Rafter.

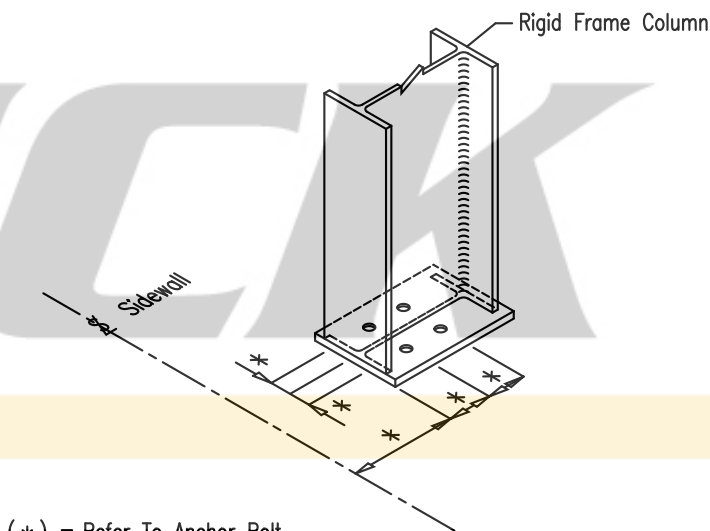
Insert Rod Through Slot in Web. Then Assemble Hillside Washer, Flat Washer, and Nut.

Q3 DIAGONAL ROD

*PART	APPLICATION
SC544	1/4" Cable or 1/2" Rod
SC545	5/16" Cable or 5/8" Rod
SC546	3/8" Cable
SC547	1/2" Cable
SC548	3/4" Rod
SC549	1" Rod
SC550	1 1/4" Rod

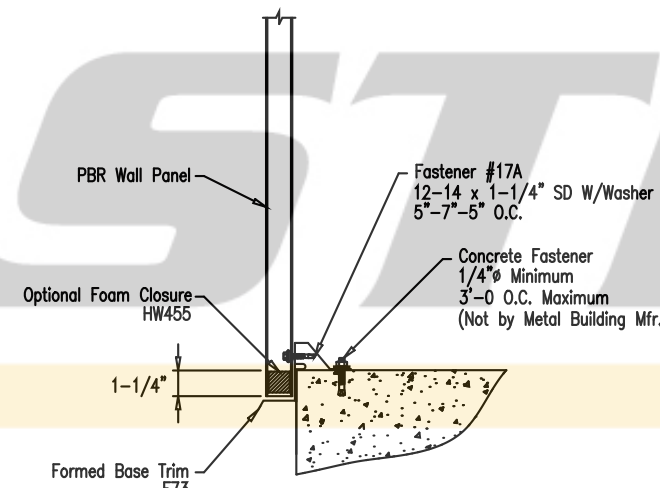


Q6 DIAGONAL BRACE CLIP TO FLOOR DETAIL



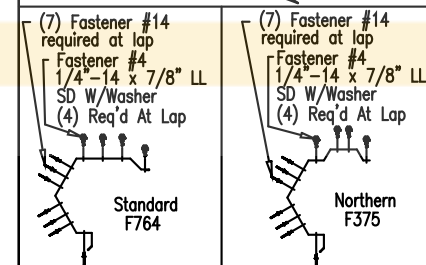
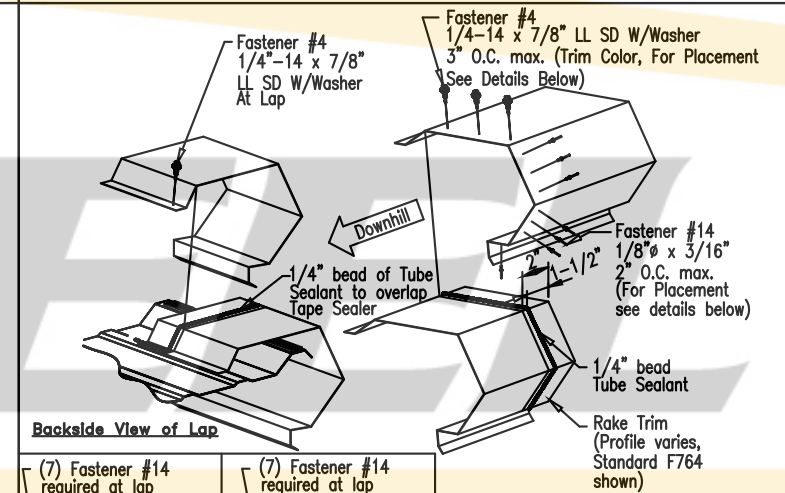
(*) = Refer To Anchor Bolt Plan

R2 ANCHOR BOLTS AT SIDEWALL COLUMNS



F73 Formed Base Trim Without Panel Recess

TRIM_39



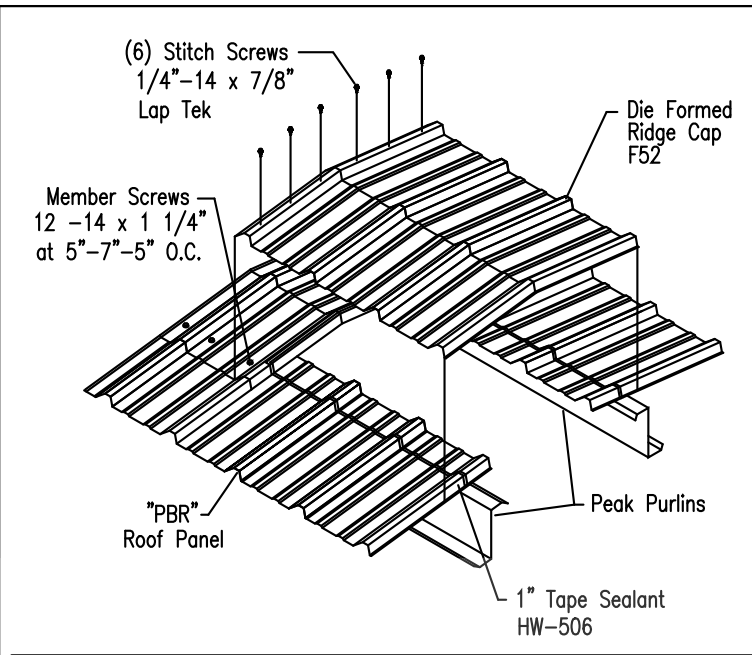
Rake Detail - PBR Roof

Classic Standard and Northern Rake End Lap Installation

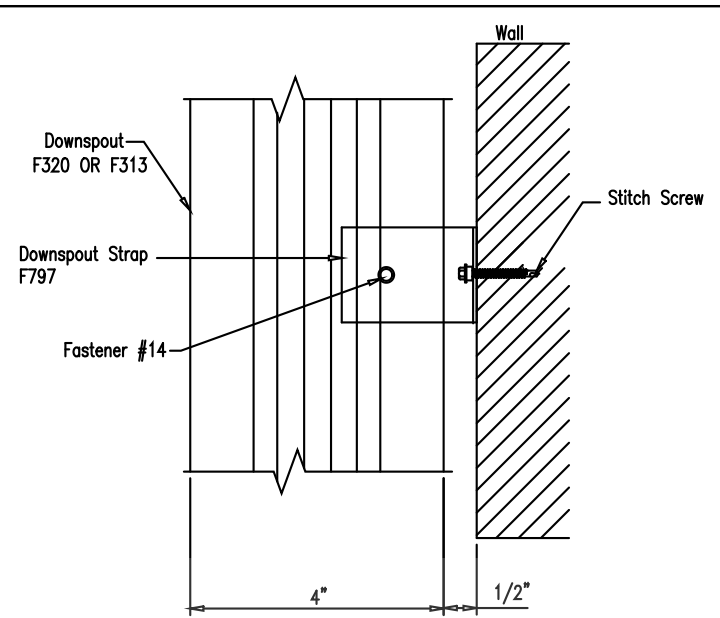
TRIM_50

ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
0	8/30/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

SAMPLE - NOT FOR CONSTRUCTION

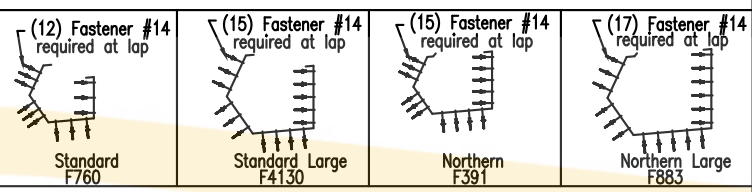
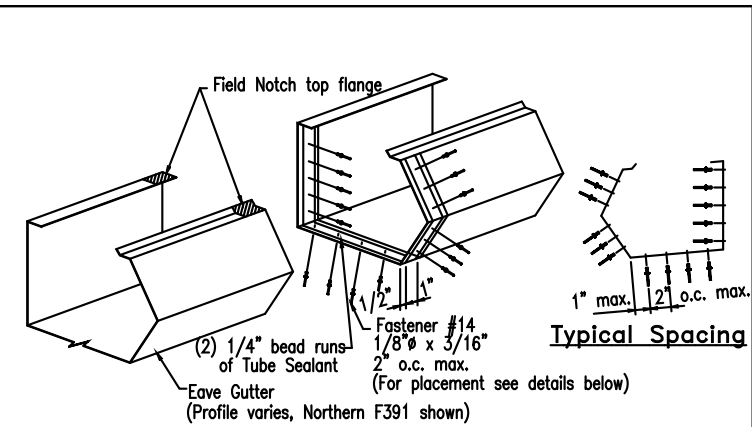


"PBR" ROOF FIXED RIDGE DETAIL
Trim_80



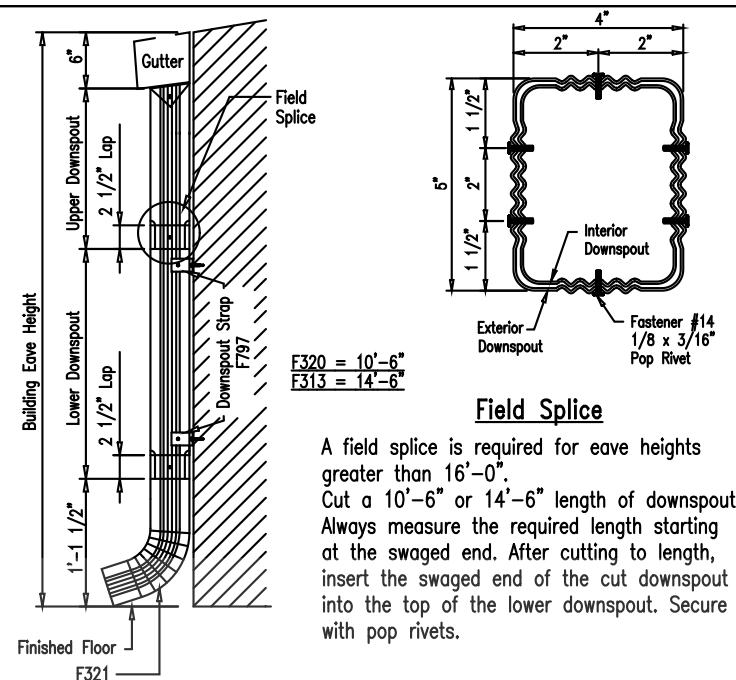
Downspout Strap Attachment Detail
4" x 5" Roll-Form

TRIM_81



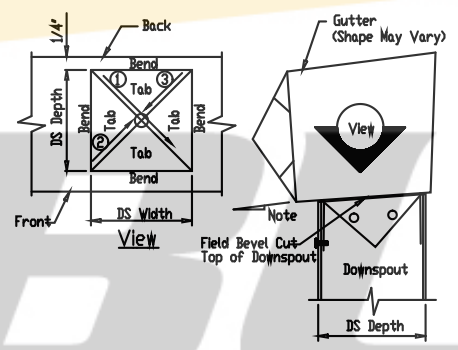
Eave Gutter End Lap Installation - PBR Roof
Classic Trim Profile

TRIM_90



4" x 5" Roll Form Downspout

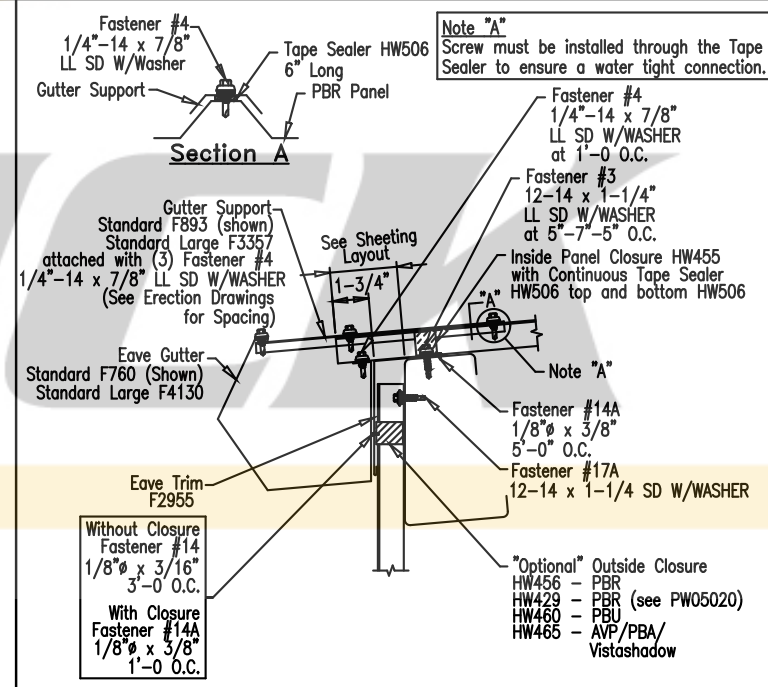
TRIM_96



Downspout To Gutter Attachment Detail

1. Refer to the building erection drawings for the location and spacing of the downspouts.
2. Locate all downspouts over a major panel rib if possible.
3. Make a cardboard template of the downspout shape. Place the template on the bottom of the gutter and trace the outline. Remove the template and draw a line from corner to corner, forming an "X" pattern.
4. Drill a hole at the center of the "X". Using tin snips, cut along the lines of the X only. Do not cut along the outside lines of the downspout square.
5. Bend each triangular tab down toward the ground, 90 Degrees to the bottom of the gutter.
6. Position the top of the downspout under the gutter. Make sure all four gutter tabs are on the inside of the downspout.
7. Install Fastener #14 through the downspout into the gutter tab. Only the two sides and the front of the downspout will receive fasteners.

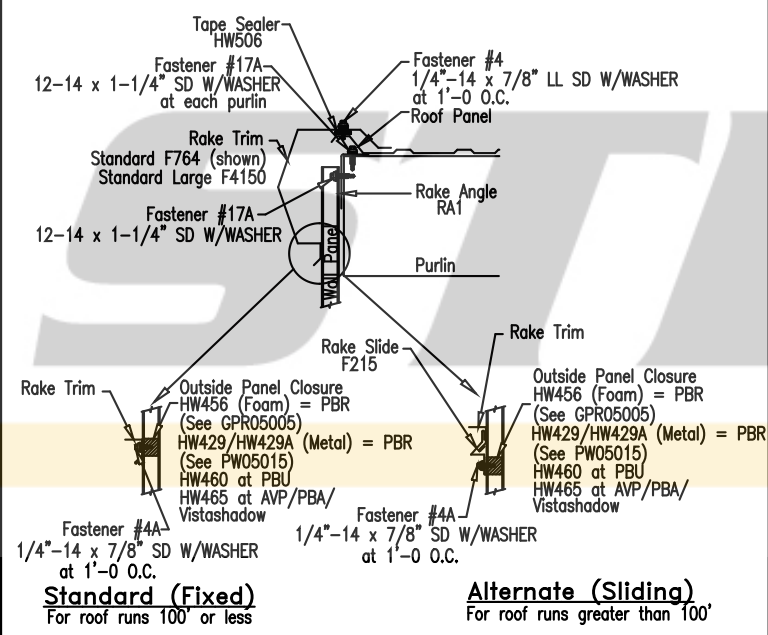
TRIM_98



Low Eave Detail - PBR Roof

Classic Standard and Standard Large Gutter - Sheeted Wall

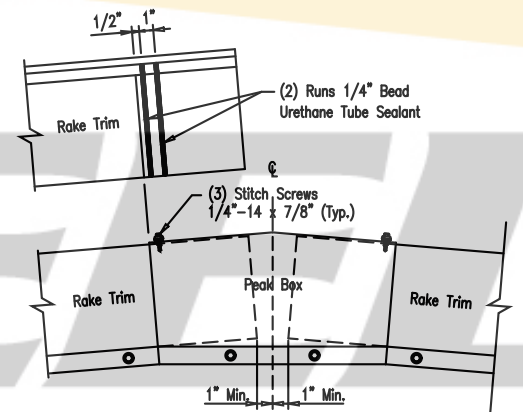
TRIM_103



Rake Detail - PBR Roof

Classic Standard and Standard Large Rake Trim - Sheeted Wall

TRIM_104



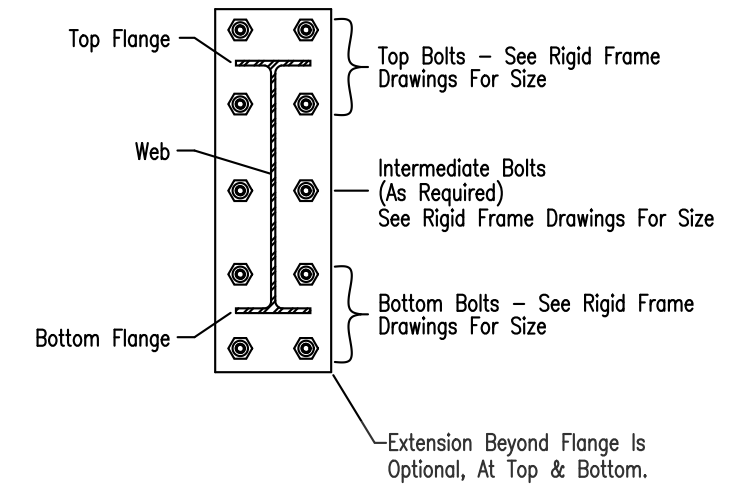
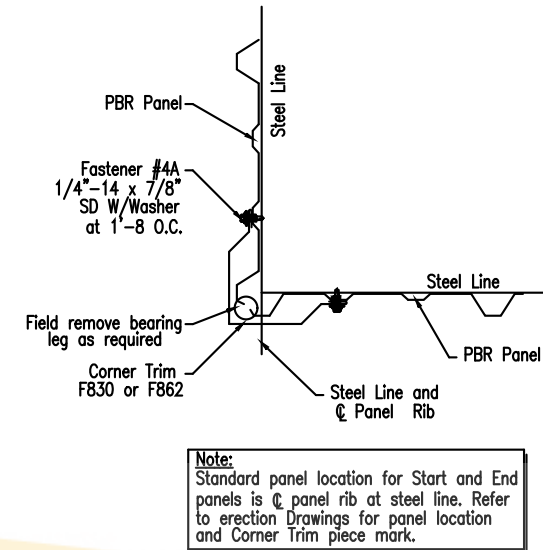
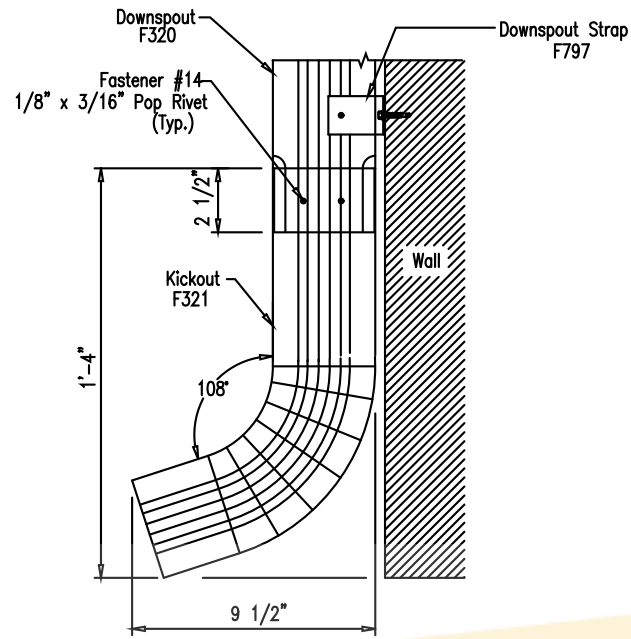
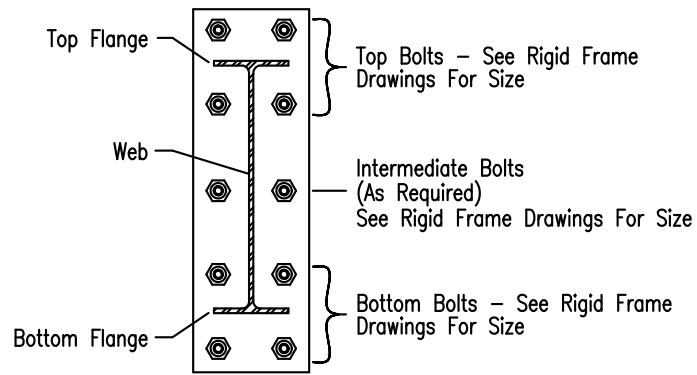
Standard Peak Box Detail

PBR Roof

TRIM_106

ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
0	8/30/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

SAMPLE - NOT FOR CONSTRUCTION

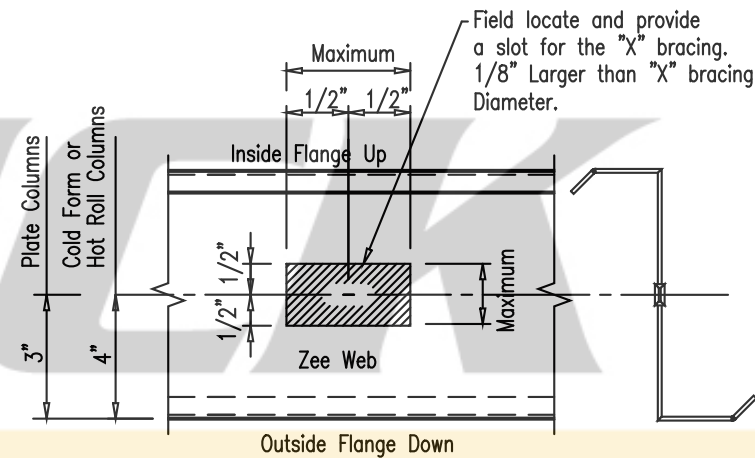
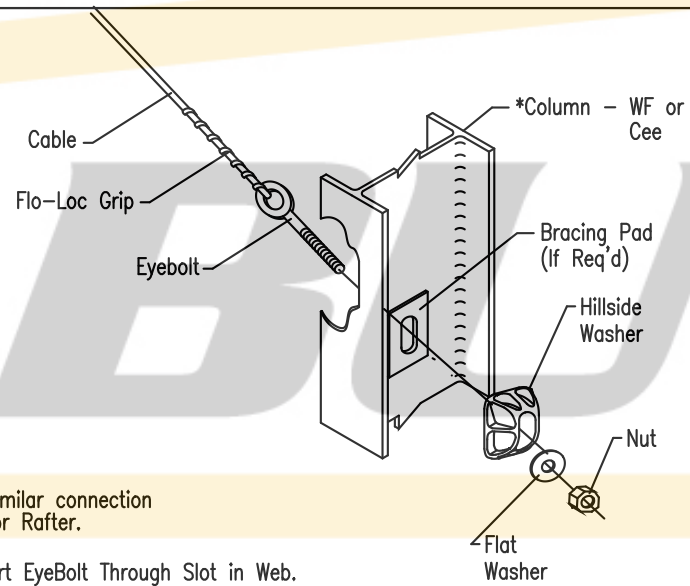


U3 BOLTS FOR RIGID FRAME RAFTER TO COLUMN CONNECTION

Downspout Kickout
4" x 5" Roll-Form
TRIM_123

Outside Corner Trim - PBR Wall Panel
TRIM_186

U2 BOLTS FOR RIGID FRAME RAFTER AT BUILDING PEAK



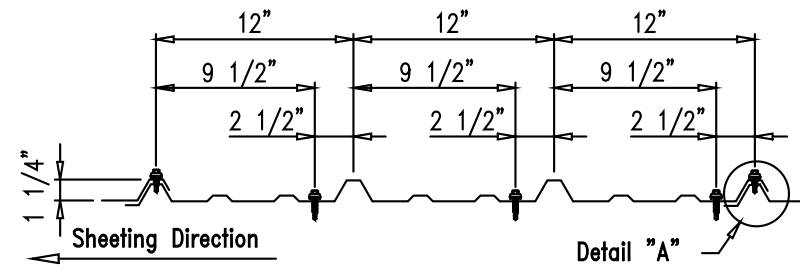
* Similar connection for Rafter.
Insert EyeBolt Through Slot in Web.
Then Assemble Hillside Washer, Flat Washer, and Nut.

*For Cable, Unravel Flo-Lock Grip and Remove Eye Bolt, Slip Through Slotted Girts, then Reassemble Cable.

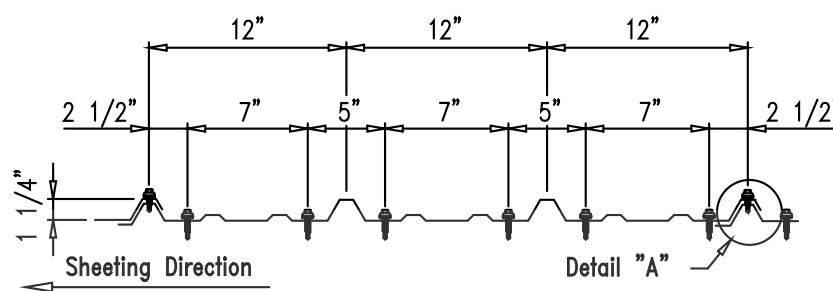
Q2 DIAGONAL CABLE, EYEBOLT END

CABLE AT FLUSH WALL GIRT

ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
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1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

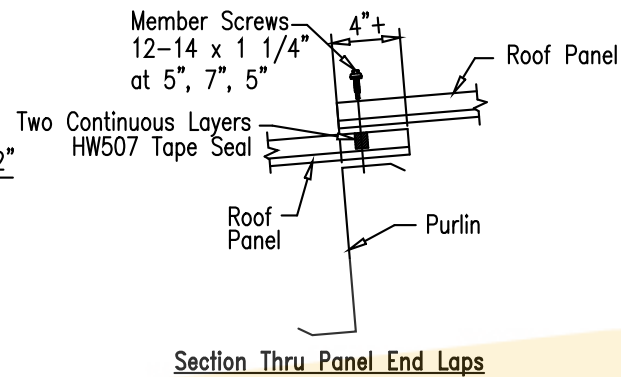
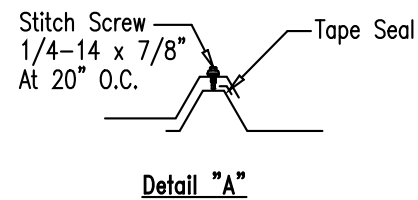


All Roof Members Except As Noted Below



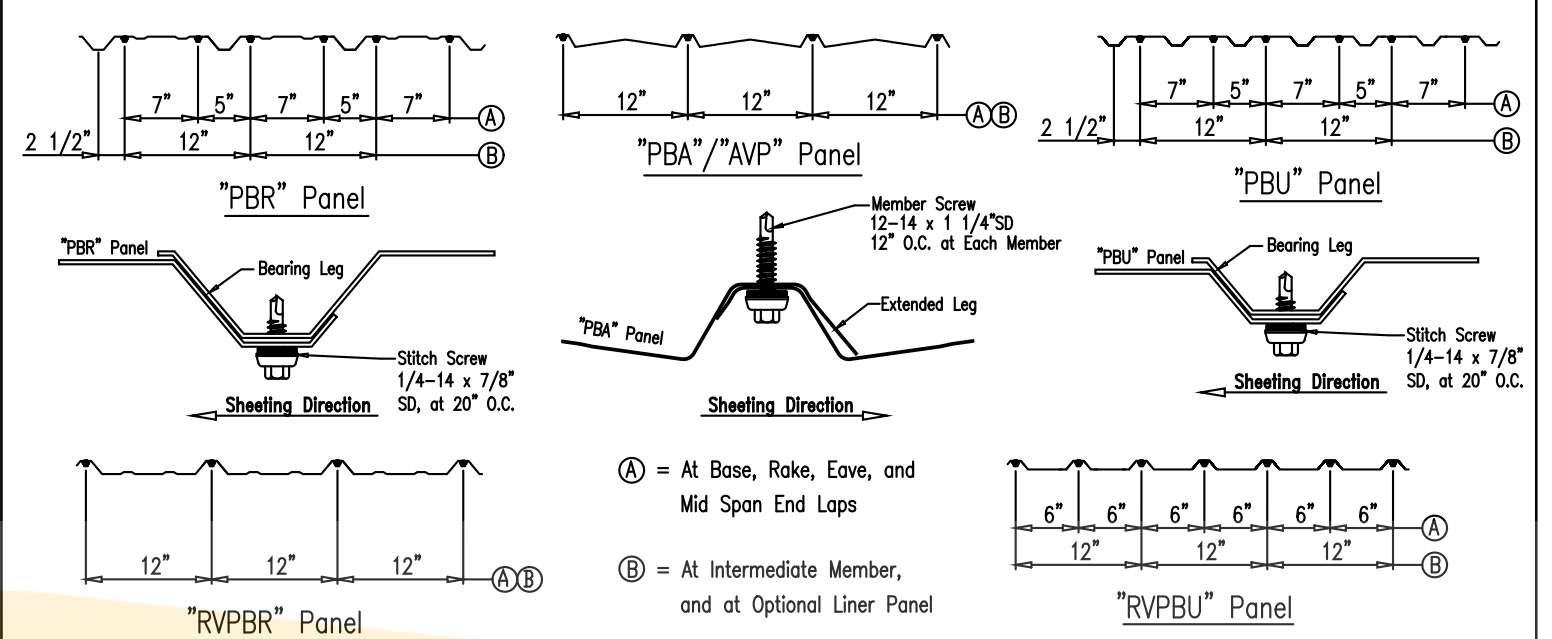
At Eave Strut, Panel End Lap, and Peak Purlin

Fastener Location for "PBR" Roof Panel



Section Thru Panel End Laps

TRIM_175

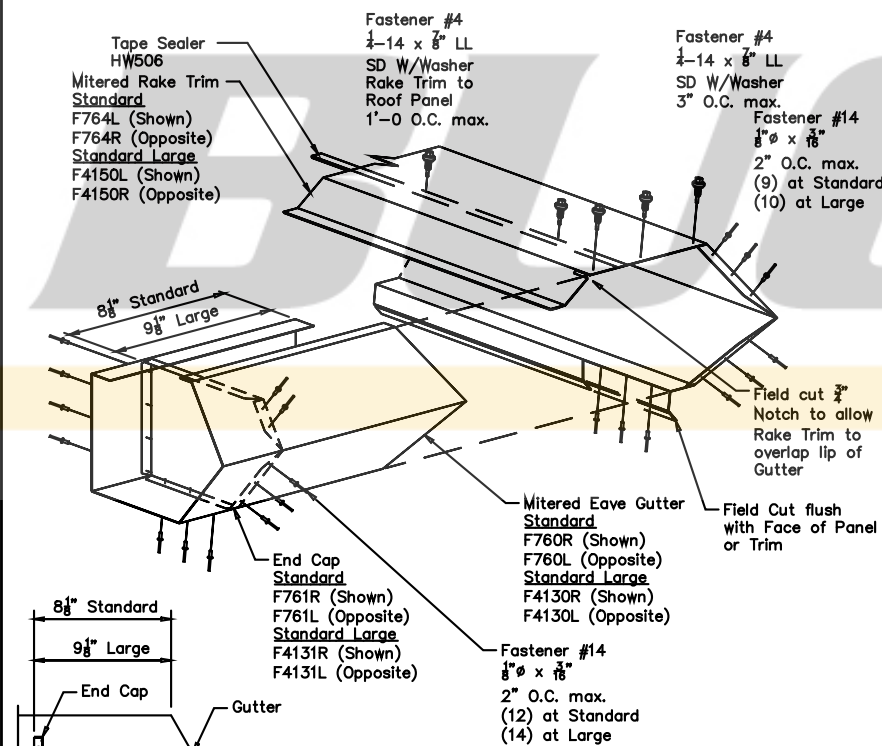


Fastener Location for Panel At Wall

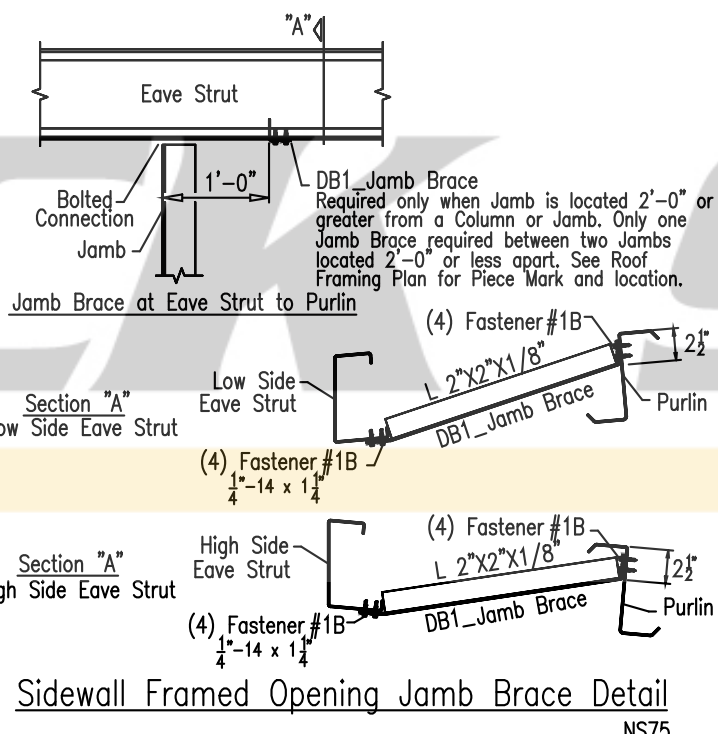
TRIM_174

PBR Roof Panel - Standard and Standard Large
Low Eave Rake Corner with Eave Gutter - 1 1/4" Wall Panel

Page WPR04004
Date Nov '14
Rev. 04



- 1.) Apply Tube Sealant to End Cap bottom and side tabs. Install Cap in from end of Gutter. 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. (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.



Sidewall Framed Opening Jamb Brace Detail
NS75

Standard Grade

Description	Fastener Number	Application
1/4"-14 x 7/8"	4A	Stitch & Trim Screw
12-14 x 1 1/4"	17A	Member Screw
12-14 x 1 1/2"	17B	Member Screw
12-14 x 2"	28	Member Screw

Long Life

Description	Fastener Number	Application
1/4"-14 x 7/8"	4	Stitch & Trim Screw
12-14 x 1 1/4"	3	Member Screw
12-14 x 1 1/2"	3A	Member Screw
12-14 x 2"	58	Member Screw

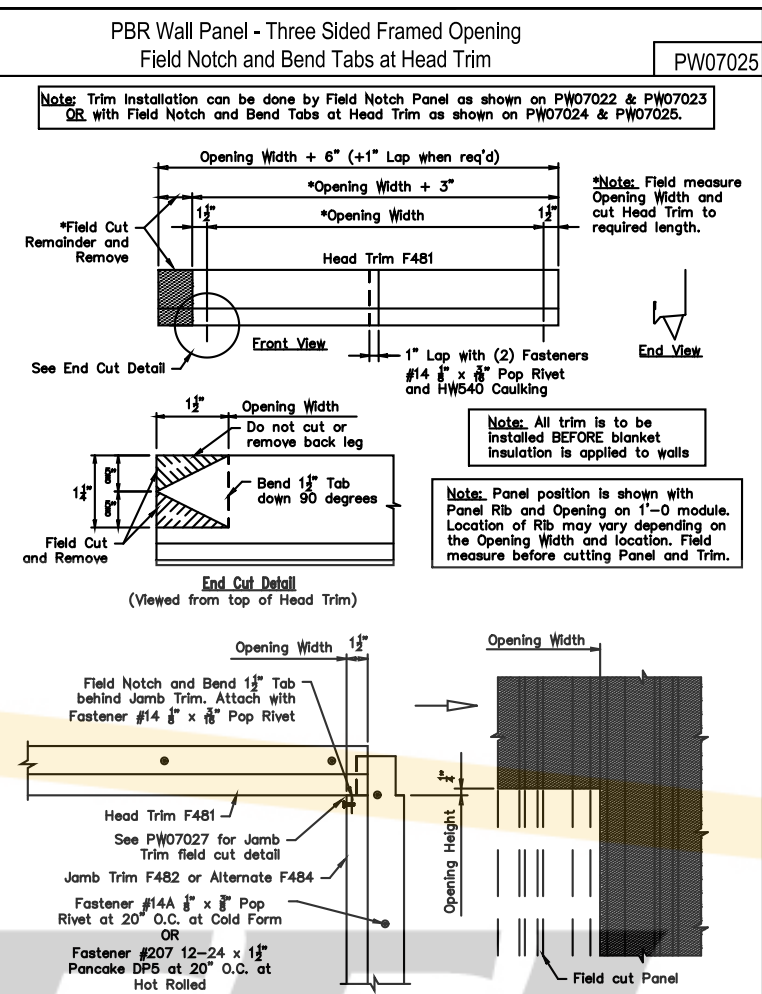
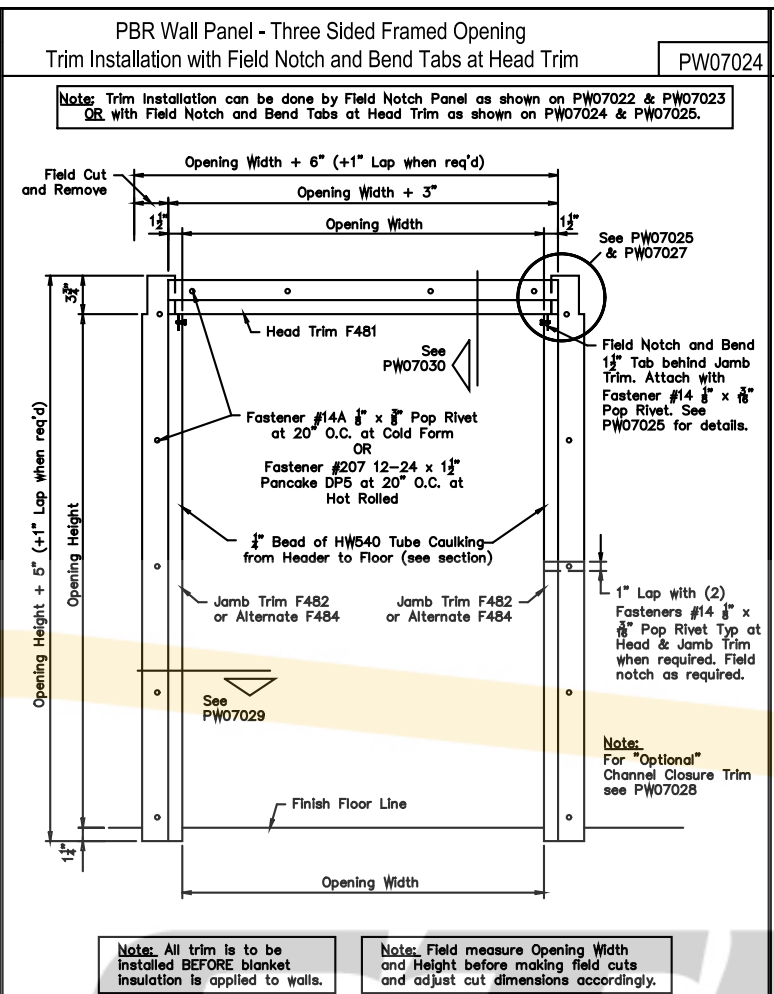
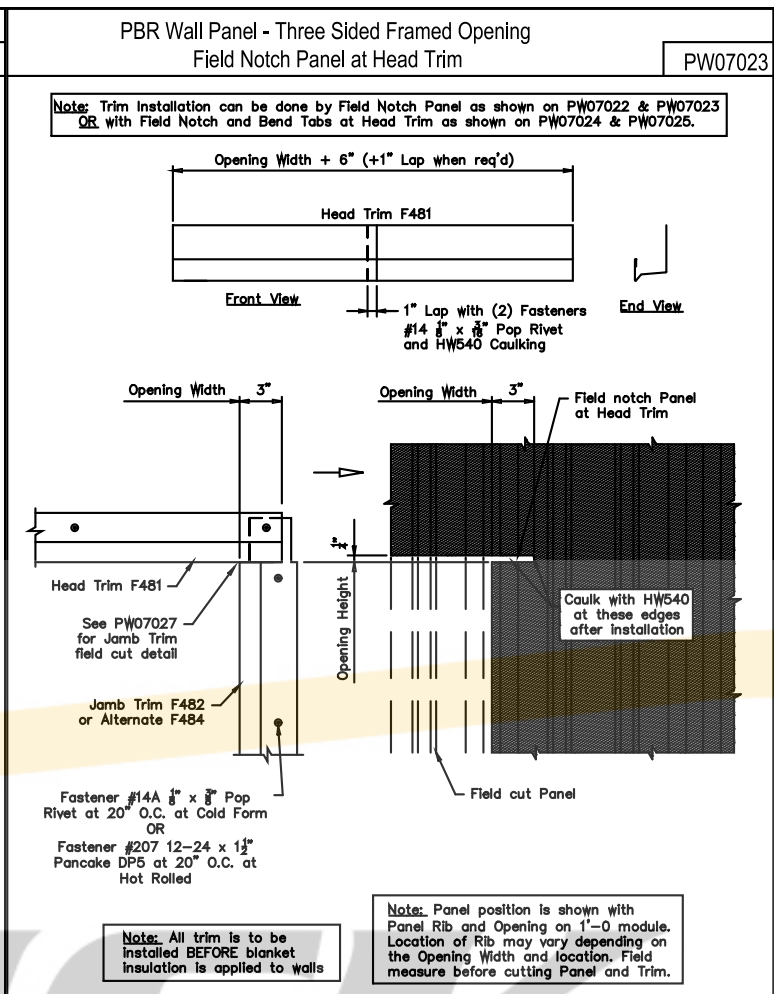
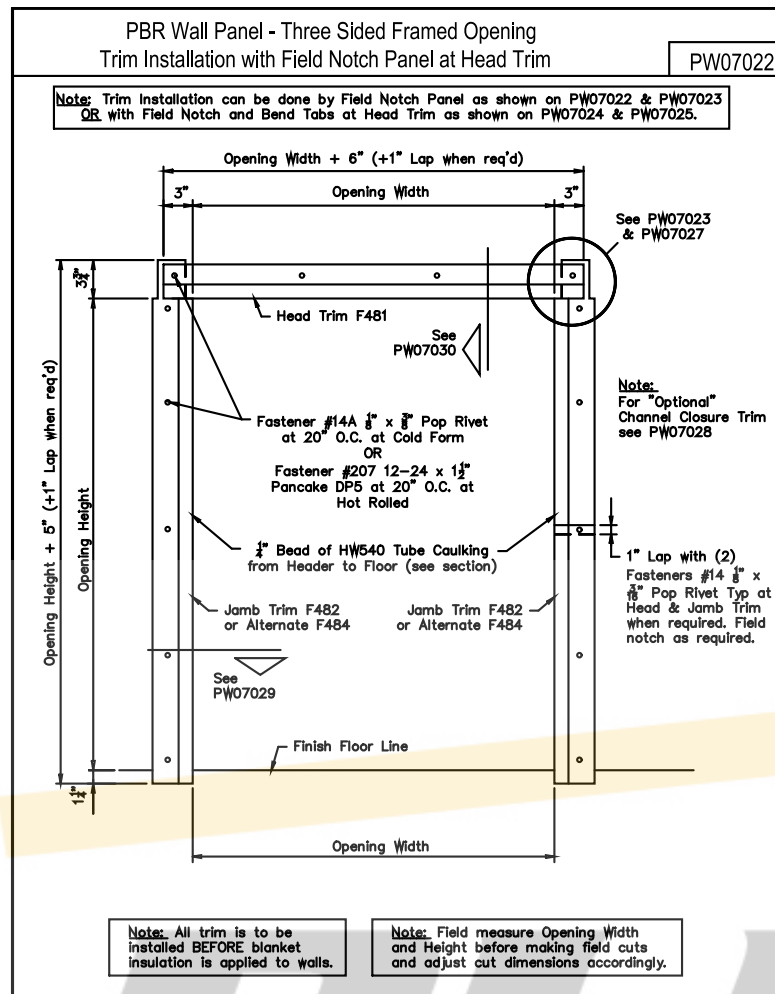
Self-Drilling Screw Application

SCRW1

Note:
Standard details call for 1 1/4" fasteners as member screws by default.
Member screws may be 1 1/4", 1 1/2", or 2" depending on insulation, application, or customer request.

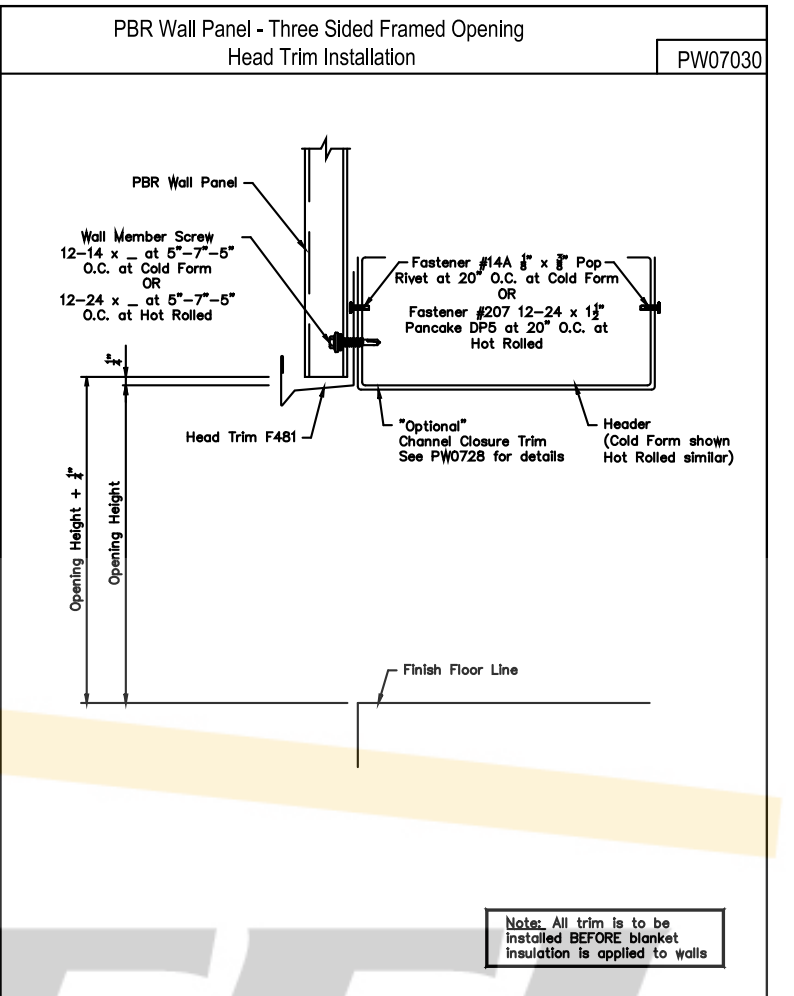
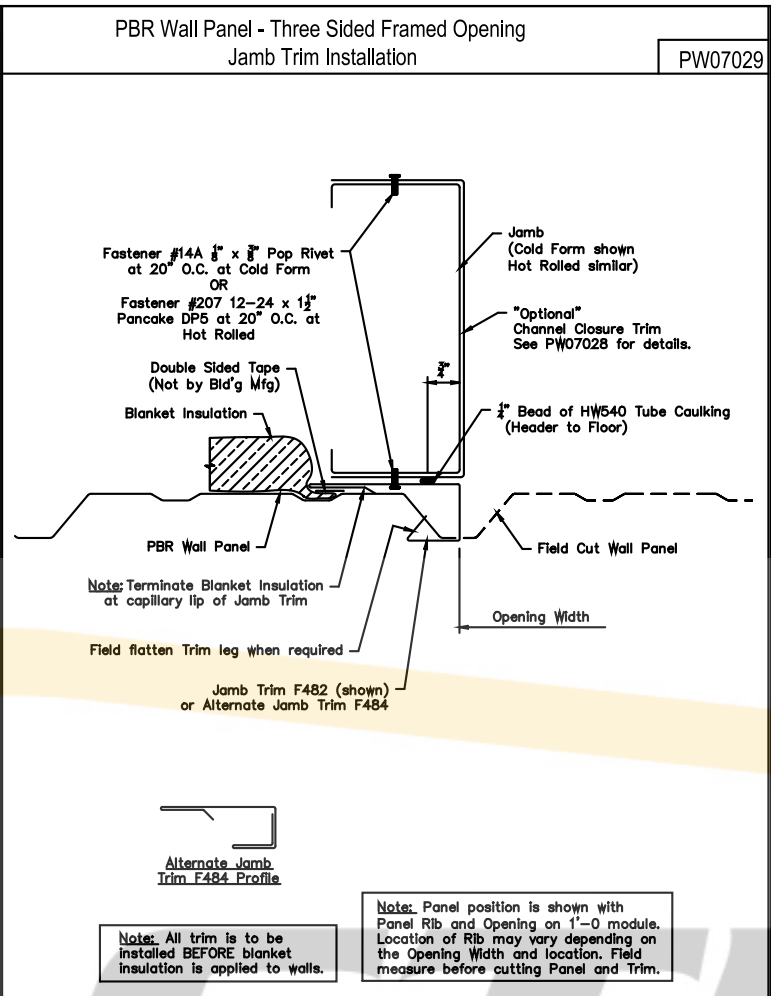
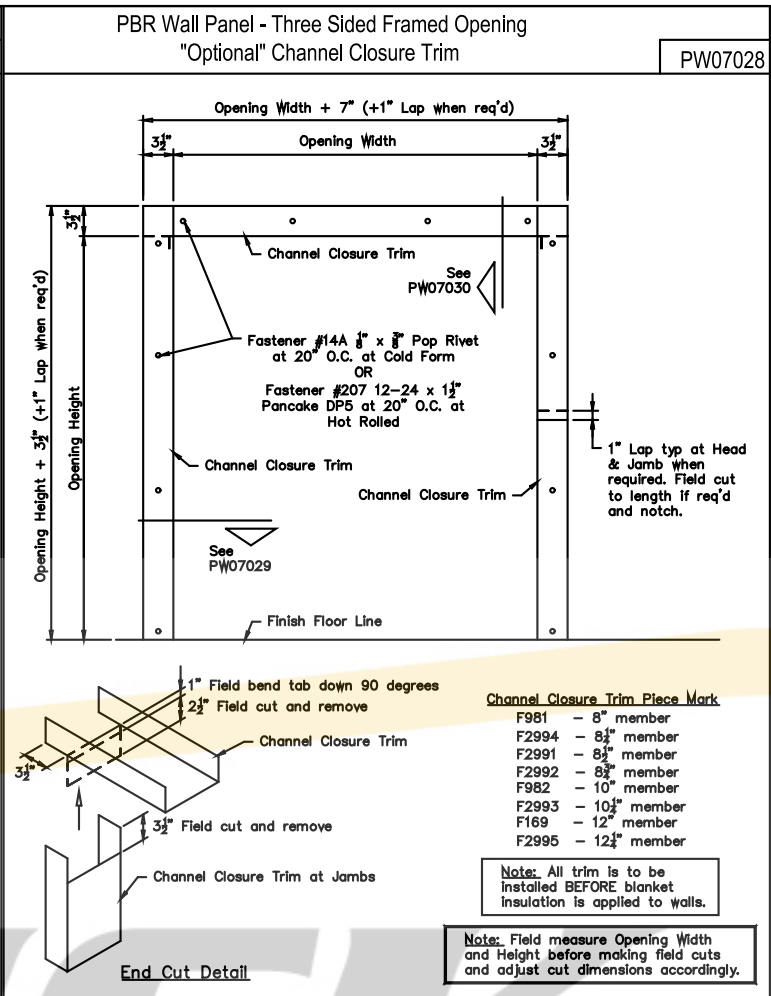
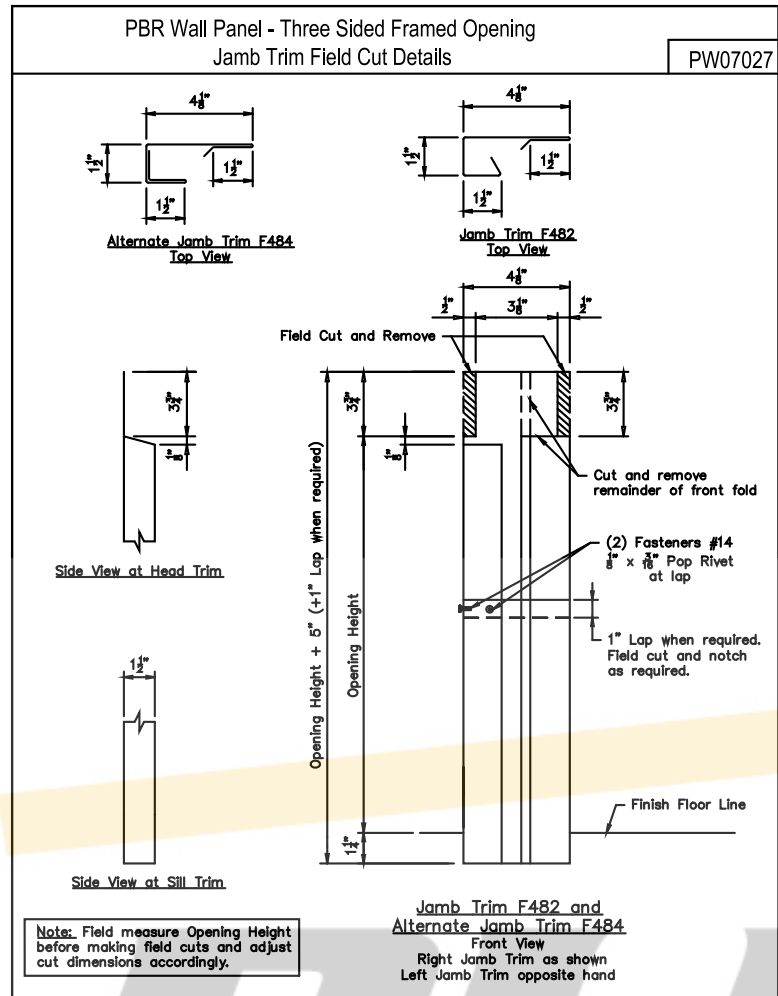
ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
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1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

SAMPLE - NOT FOR CONSTRUCTION



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1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

STANDARD FRAMED OPENING DETAILS (PBR WALL PANEL)

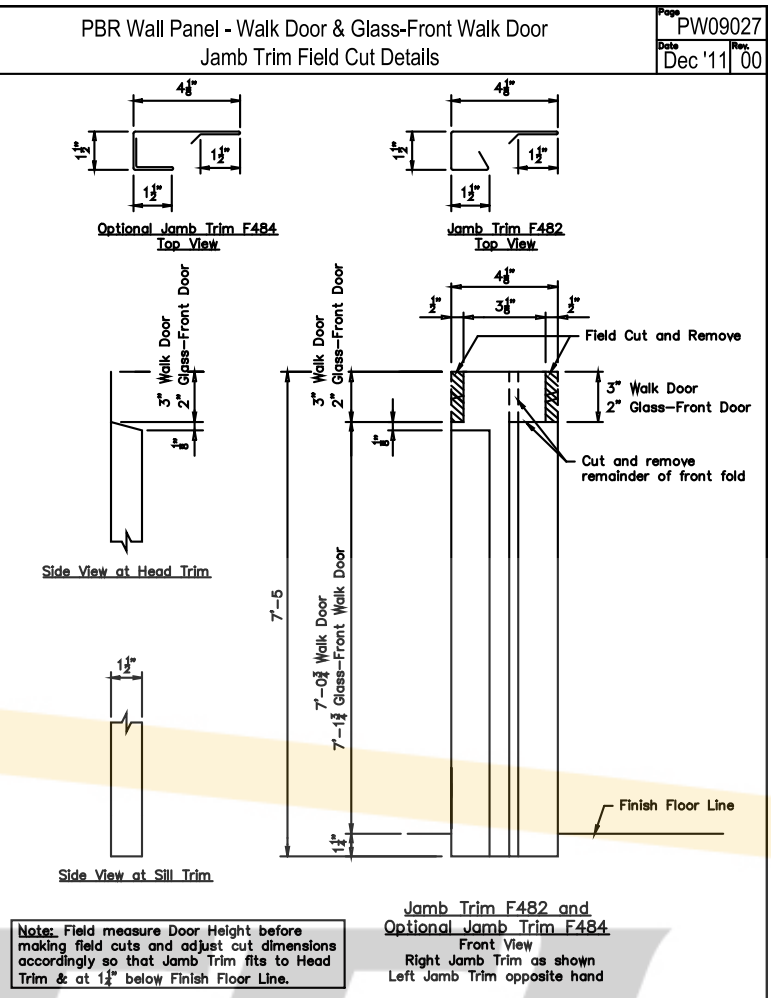
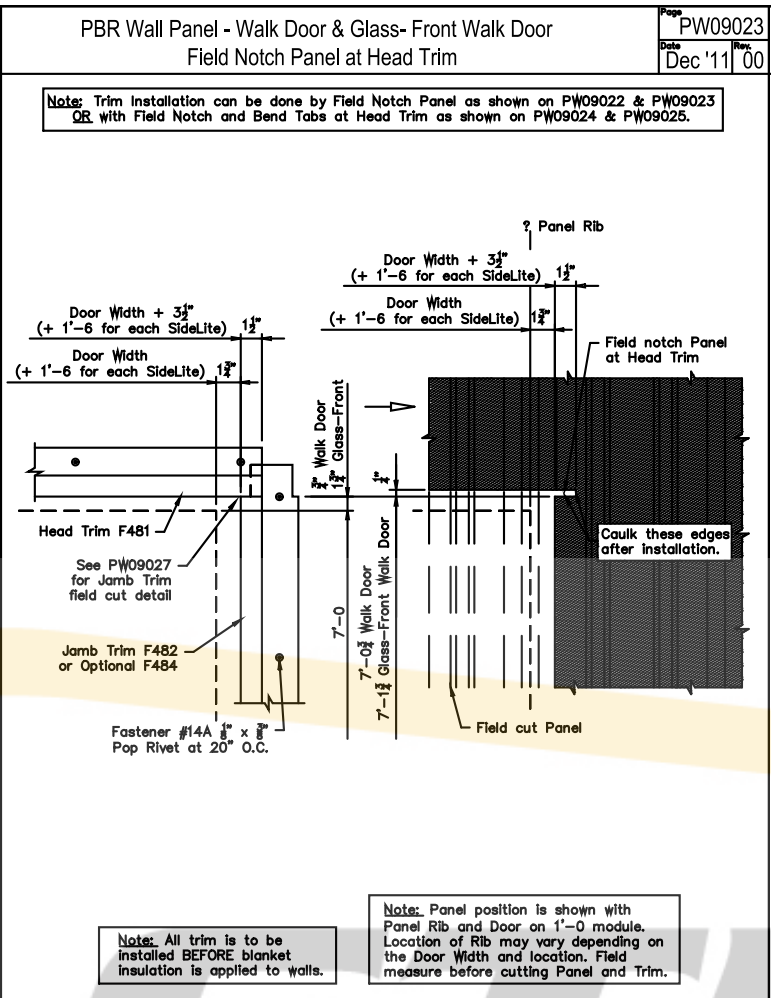
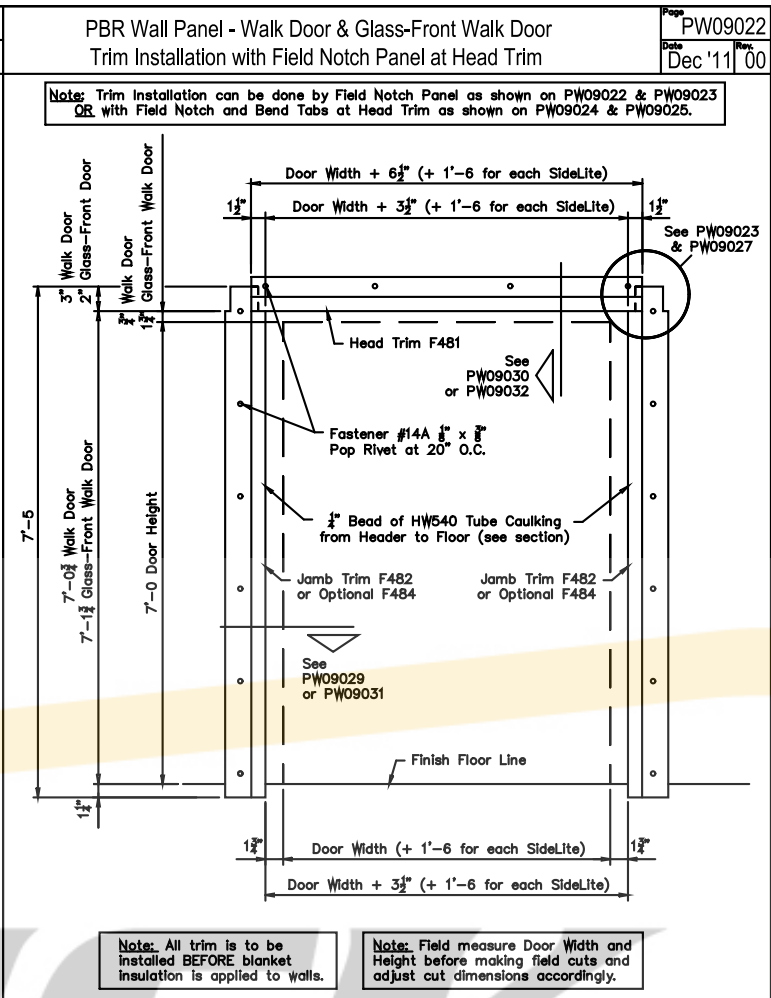
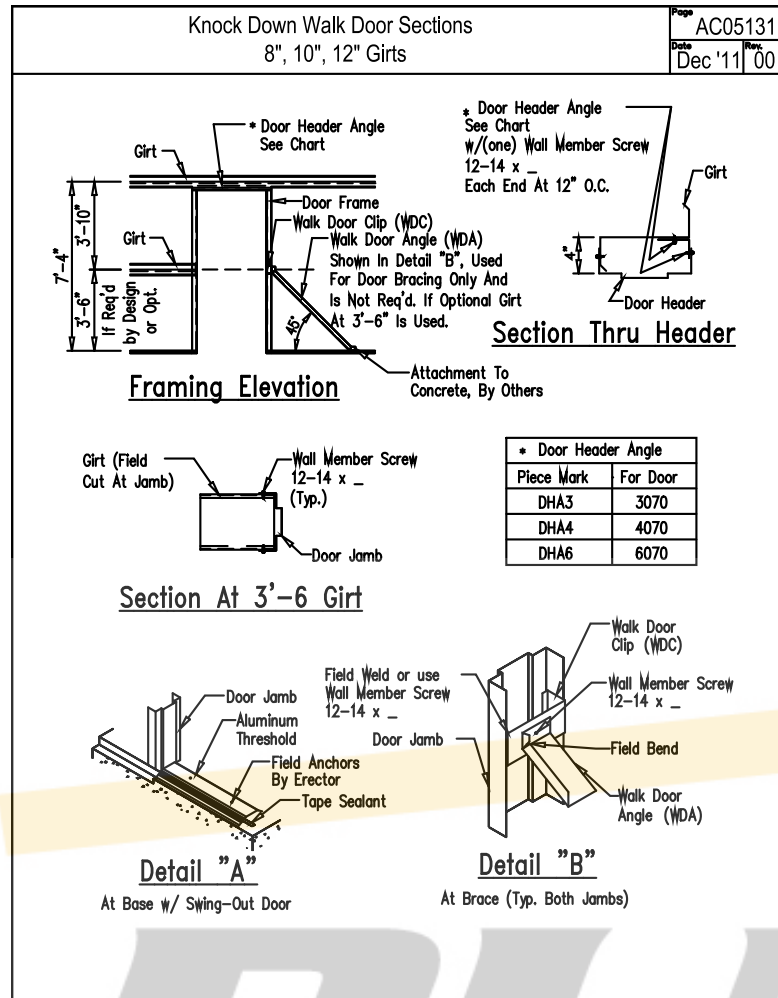


BUCKSTEEL

STANDARD FRAMED OPENING DETAILS (PBR WALL PANEL)
CONT.

ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
0	8/30/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

SAMPLE - NOT FOR CONSTRUCTION



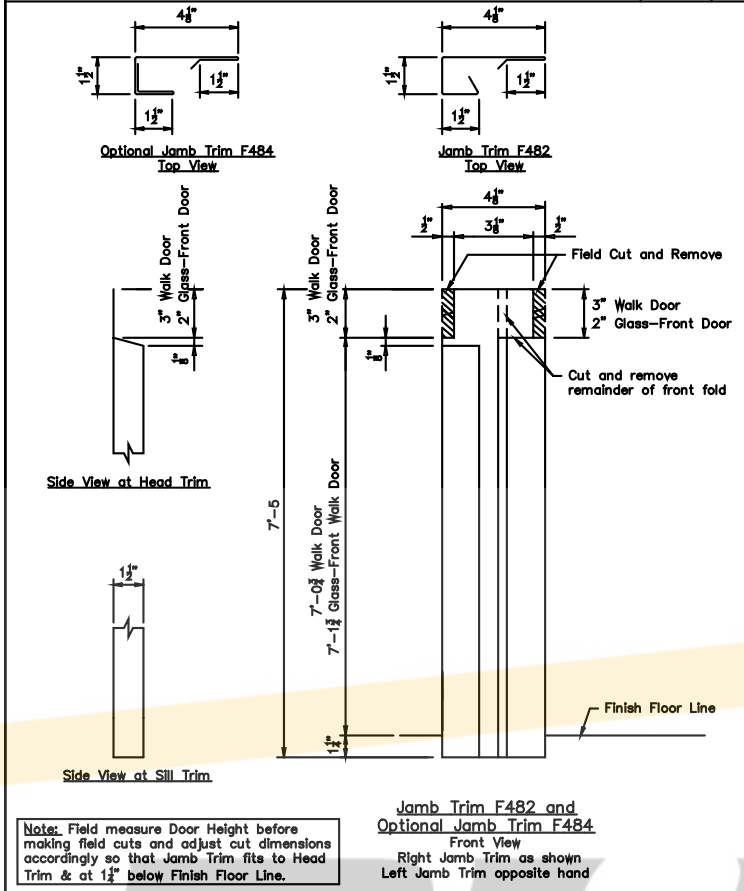
BUCK STEEL

STANDARD WALKDOOR DETAILS (PBR WALL PANEL)

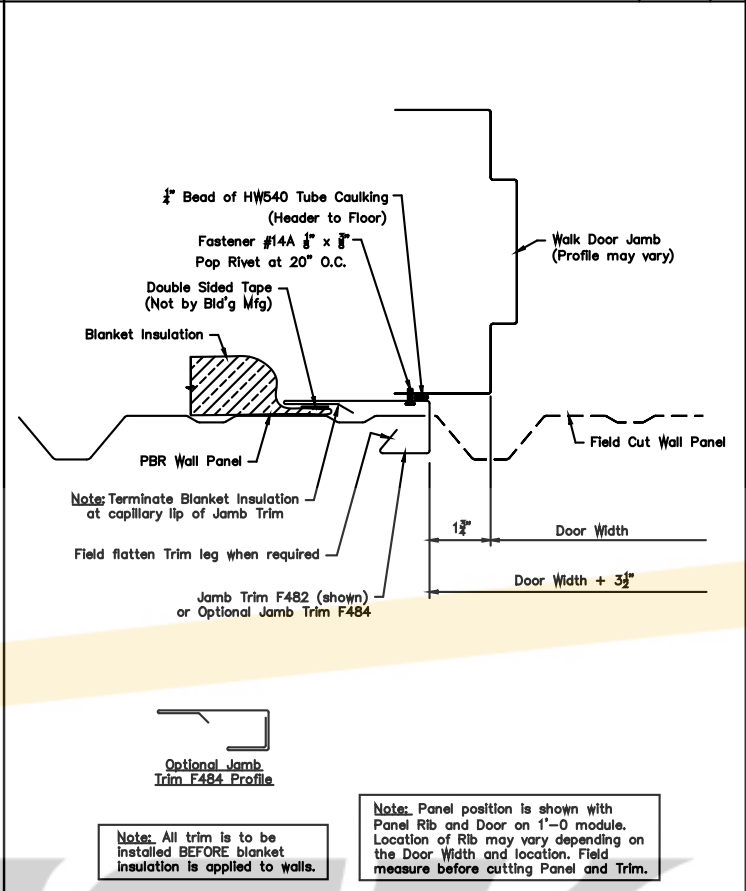
ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
0	8/30/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

SAMPLE - NOT FOR CONSTRUCTION

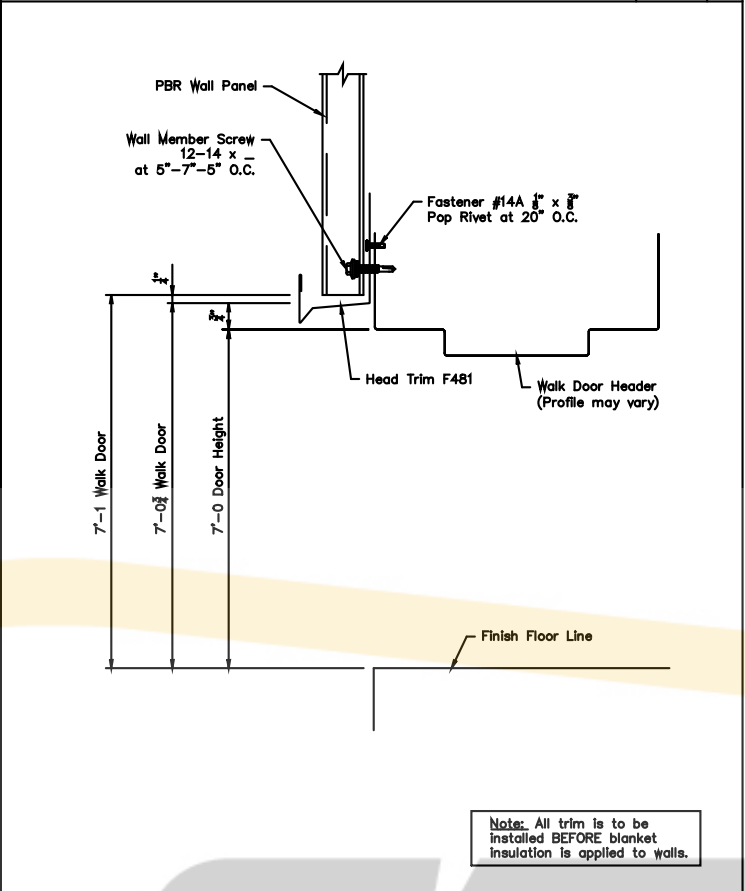
PBR Wall Panel - Walk Door & Glass-Front Walk Door
Jamb Trim Field Cut Details
PW09027
Dec '11 '00



PBR Wall Panel - Knock Down Walk Door
Jamb Trim Installation
PW09031
Dec '11 '00



PBR Wall Panel - Knock Down Walk Door
Head Trim Installation
PW09032
Dec '11 '00



BUCK STEEL

STANDARD WALKDOOR DETAILS (PBR WALL PANEL)
CONT.

ISSUE	DATE	DESCRIPTION	BY	CK'D	DSN
A	7/10/16	FOR CONSTRUCTION PERMIT	PNR	PNR	AJL
0	8/30/16	FOR ERECTOR INSTALLATION	PNR	PNR	AJL
1	9/15/16	REV FOR ERECTOR INSTALLATION	PNR	PNR	AJL

SAMPLE - NOT FOR CONSTRUCTION

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: CAREFULLY CHECK YOUR PACKING LIST WHILE UNLOADING. MARK ANY ITEMS, WHICH APPEAR TO BE MISSING AND NOTIFY THE FIELD SERVICE DEPARTMENT AT THE NUMBER SHOWN IN THE TITLEBLOCK AS SOON AS POSSIBLE. CALLING SOMEONE ELSE COULD DELAY THE PROPER RESPONSE.

SHORT MATERIALS - IMMEDIATELY UPON DELIVERY OF MATERIAL, QUANTITIES ARE TO BE VERIFIED BY THE CUSTOMER AGAINST QUANTITIES THAT ARE BILLED ON THE SHIPPING DOCUMENT. NEITHER THE MANUFACTURER NOR THE CARRIER IS RESPONSIBLE FOR THE MATERIAL SHORTAGES AGAINST THE QUANTITIES BILLED ON SHIPPING DOCUMENT IF SUCH SHORTAGES ARE NOT NOTED ON SHIPPING DOCUMENTS WHEN THE MATERIAL IS DELIVERED, AND THEN 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 THAT ARE 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 OF 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 IN WRITING BY THE CARRIER'S AGENT. THE MANUFACTURER IS NOT RESPONSIBLE FOR MATERIAL DAMAGED IN UNLOADING OF PACKAGED OR NESTED MATERIALS, INCLUDING, BUT NOT LIMITED TO: FASTENERS, SHEET METAL, "C" & "Z" SECTIONS & COVERING PANELS THAT BECOME WET AND/OR DAMAGED BY WATER WHILE IN THE POSSESSION OF OTHERS. PACKAGED OR NESTED MATERIAL THAT BECOMES WET IN TRANSIT MUST BE UNPACKED, UNSTACKED AND DRIED BY THE CUSTOMER. IF THE CARRIER IS THE MANUFACTURER, THE CUSTOMER MUST MAKE CLAIM FOR DAMAGE 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 THE CUSTOMER'S USE OF DAMAGED OR DEFECTIVE MATERIALS THAT CAN BE DETECTED BY VISUAL INSPECTION.

OIL CANNING IS NOT CAUSE FOR REJECTION

EXCESSIVE MATERIAL - THE MANUFACTURER RESERVES THE RIGHT TO RECOVER ANY MATERIAL DELIVERED IN EXCESS OR THOSE REQUIRED BY THE ORDER DOCUMENTS.

INITIAL CLAIM - IN THE EVENT OF ERROR, THE CUSTOMER MUST PROMPTLY MAKE A WRITTEN OR VERBAL "INITIAL CLAIM" TO THE MANUFACTURER FOR THE CORRECTION OF DESIGN, DRAFTING, BILL OF MATERIALS OF FABRICATION ERROR.

THE "INITIAL CLAIM" INCLUDES:

1. DESCRIPTION OF THE NATURE AND EXTENT OF THE ERRORS, INCLUDING QUANTITIES.
2. pi-0.099988j0.099988;2. DESCRIPTION OF THE NATURE AND EXTENT OF PROPOSED CORRECTIVE WORK INCLUDING ESTIMATED MAN-HOURS.
3. MATERIAL TO BE PURCHASED FROM OTHER THAN THE MANUFACTURER, INCLUDING ESTIMATED QUANTITIES AND COST.
4. MAXIMUM TOTAL COST OF PROPOSED CORRECTIVE WORK AND MATERIAL TO BE PURCHASED FROM OTHER THAN THE MANUFACTURER.

R1-01

AUTHORIZATION FOR CORRECTIVE WORK

NORMAL ERECTION OPERATIONS INCLUDE THE CORRECTION OF MINOR MISFITS BY MODERATE AMOUNTS OF REAMING, CHIPPING, WELDING OR CUTTING AND THE DRAWING OF ELEMENTS INTO LINE THROUGH THE USE OF DRIFT PINS. ERRORS WHICH CANNOT BE CORRECTED BY THE FOREGOING MEANS OR WHICH REQUIRE MAJOR CHANGES IN THE MEMBER CONFIGURATION SHOULD BE REPORTED IMMEDIATELY TO THE OWNER AND FABRICATOR BY THE ERECTOR, TO ENABLE WHOEVER IS RESPONSIBLE EITHER TO CORRECT THE ERROR OR TO APPROVE THE MOST EFFICIENT AND ECONOMICAL METHOD OF CORRECTION TO BE USED BY OTHERS. (AISC 303-10, SECTION 7.14) (MAR 05 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 TEN (10) DAYS OF COMPLETION OF THE CORRECTIVE WORK AUTHORIZED BY THE MANUFACTURER.

THE "FINAL CLAIM" MUST INCLUDE:

1. ACTUAL NUMBER OF MAN-HOURS BY DATE OF DIRECT LABOR USE ON CORRECTIVE WORK AND ACTUAL HOURLY RATES OF PAY.
2. TAXES AND INSURANCE ON TOTAL ACTUAL DIRECT LABOR.
3. OTHER DIRECT COSTS ON ACTUAL DIRECT LABOR.
4. COST OF MATERIAL (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 & 4). THE "FINAL CLAIM" MUST BE SIGNED AND CERTIFIED TRUE AND CORRECT BY THE CUSTOMER. "FINAL CLAIMS" ARE CREDITED TO THE CUSTOMER BY THE MANUFACTURER IN AN AMOUNT NOT TO EXCEED THE LESSER OF THE MAXIMUM TOTAL COST SET FORTH IN WRITING IN THE "AUTHORIZATION FOR CORRECTIVE WORK" OR TOTAL ACTUAL DIRECT COST OF CORRECTIVE WORK.

pi0j0;** 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 DAY AND AT THE REQUESTED HOUR. MANUFACTURER MAKES NO WARRANTY AND ACCEPTS NO RESPONSIBILITY FOR COSTS ASSOCIATED WITH A SHIPMENT NOT ARRIVING AT A REQUESTED TIME UNLESS A SEPARATE AGREEMENT HAS BEEN MADE IN WRITING FOR A GUARANTEED ARRIVAL TIME.

R1-02

UNLOADING, HANDLING, AND STORING MATERIALS

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 PRIMARY STRUCTURAL MEMBERS AT LOWER END, 1'-0" FROM END.

INSPECT ALL SHIPMENTS PRIOR TO RELEASING THE TIE-DOWNS FOR LOADS THAT MAY HAVE SHIFTED DURING TRANSIT!

REMEMBER, SAFETY FIRST!

BLOCKING UNDER THE COLUMNS AND RAFTERS PROTECTS THE SPLICE PLATES AND THE SLAB FROM DAMAGE DURING THE UNLOADING PROCESS. IT ALSO FACILITATES THE PLACING OF SLINGS OR CABLES AROUND THE 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 THE 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 THE SAME REASON.

THE COAT OF SHOP PRIMER IS INTENDED TO PROTECT THE STEEL FRAMING FOR ONLY 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 A SHOP PRIMER.

TOUCH-UP OF THESE MINOR ABRASIONS IS THE RESPONSIBILITY OF THE END CUSTOMER. ALL PRIMER SHOULD BE TOUCHED UP AS REQUIRED BEFORE ERECTION! - SEE R1-06 TITLED "SHOP PRIMED STEEL"

TEMPORARY SUPPORTS

TEMPORARY SUPPORTS, SUCH AS TEMPORARY GUYS, BRACES, FALSE WORK, CRIBBING OR OTHER ELEMENTS REQUIRED FOR THE ERECTION OPERATION WILL BE DETERMINED AND FURNISHED AND INSTALLED BY THE ERECTOR. THESE TEMPORARY SUPPORTS WILL SECURE THE STEEL FRAMING, OR ANY PARTLY ASSEMBLED STEEL FRAMING, AGAINST LOADS COMPARABLE IN INTENSITY TO THOSE FOR WHICH THE STRUCTURE WAS DESIGNED, RESULTING FROM WIND, SEISMIC FORCES AND ERECTION OPERATIONS, BUT NOT THE LOADS RESULTING FROM THE PERFORMANCE OF WORK BY OR THE ACTS OF OTHERS, NOR SUCH UNPREDICTABLE LOADS AS THOSE DUE TO TORNADO, EXPLOSION OR COLLISION. (SECT. 7.9.1 AISC CODE OF STANDARD PRACTICE, 9TH ED.).

R1-03

ROOF AND WALL PANELS

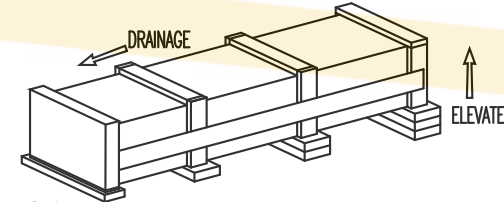
MANUFACTURER'S WALL AND ROOF PANELS INCLUDING COLOR COATED, GALVALUME & GALVANIZED, PROVIDE EXCELLENT SERVICE UNDER WIDELY VARIED CONDITIONS. ALL UNLOADING & ERECTION PERSONNEL SHOULD FULLY UNDERSTAND THAT THESE PANELS ARE QUALITY MERCHANDISE, WHICH MERITS CAUTIOUS CARE IN HANDLING.

UNDER NO CIRCUMSTANCES SHOULD PANELS BE HANDLED ROUGHLY. PACKAGES OF SHEETS SHOULD BE LIFTED OFF THE TRUCK WITH EXTREME CARE TAKEN TO INSURE 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 & DETERS PEOPLE FROM WALKING ON THE PACKAGES. ONE END OF THE PACKAGE SHOULD ALWAYS BE ELEVATED TO ENCOURAGE DRAINAGE IN CASE OF RAIN.

THE MFGOR EXERCISES EXTREME CAUTION DURING FABRICATING AND SHIPPING OPERATIONS TO INSURE THAT ALL PANEL STOCK IS KEPT DRY. HOWEVER, DUE TO CLIMATIC CONDITIONS, WATER FORMED BY CONDENSATION OF HUMID AIR CAN BECOME TRAPPED BETWEEN STACKED SHEETS. WATER CAN ALSO BE TRAPPED BETWEEN THE STACKED SHEETS WHEN EXPOSED TO RAIN. THIS MAY CAUSE DISCOLORATION CAUSED BY TRAPPED MOISTURE. THE STAIN IS USUALLY SUPERFICIAL & HAS LITTLE EFFECT ON THE APPEARANCE OR SERVICE LIFE OF THE PANELS AS LONG AS IT IS NOT PERMITTED TO REMAIN ON THE PANELS. HOWEVER, MOISTURE IN CONTACT WITH THE SURFACE OF THE PANELS OVER AN EXTENDED PERIOD CAN SEVERELY ATTACK THE FINISH & REDUCE THE EFFECTIVE SERVICE LIFE. SEE R1-07 "DAMAGE FROM CONDENSATION OR TRAPPED WATER."

CAUTION: CARE SHOULD ALWAYS BE TAKEN WHEN WALKING ON PANELS. USE SAFETY LINES AND NETS WHEN NECESSARY! PANELS ARE SLIPPERY. WIPE DRY ANY MOISTURE OR SURFACE MATERIAL THAT HAS PUDDLED 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 & ACT ACCORDINGLY. NEVER WALK OR STEP ON SKYLIGHTS OR TRANSLUCENT PANELS!

USE WOOD BLOCKING TO ELEVATE & SLOPE THE PANELS IN A MANNER THAT WILL ALLOW 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.



R1-04

DAMAGE DURING CONSTRUCTION

THE QUALITY OF WORKMANSHIP IN STEEL ERECTION, 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 CONDENSED 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 THE FORM OF HIGH HUMIDITY CAN KEEP THESE AREAS WET AND CONTINUE THE PROBLEM. OVERDRIVING THE FASTENER ALSO FORCES THE SEALING WASHER FROM UNDER THE FASTENER 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 ALLOWED TO COME IN CONTACT WITH WATER OR CONDENSED MOISTURE. WHEN PANELS ARE PRE-DRILLED OR CUT IN THE STACK PRIOR TO ERECTION ALL SHAVINGS OR FILLINGS 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 SWEEPED 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 EQUIPMENT SUCH AS AIR CONDITIONING UNITS, ETC...

PERSONNEL WALKING ON THE PANELS 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 STRAIGHTENED PRIOR TO ERECTION SINCE THE APPEARANCE AND/OR WEATHER TIGHTNESS OF THE PANEL COULD BE AFFECTED. DRAGGING ONE PANEL ACROSS ANOTHER CAN CUT OR ABRASIVE THE COATING CAUSING UNSIGHTLY MARKS ON THE PANEL SURFACE.

ATTEMPTS TO ERECT PANELS DURING WINDY CONDITIONS SHOULD BE AVOIDED TO PREVENT DAMAGE AND FOR 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 WILL CONTAIN SOME MOISTURE. MUD MAY HAVE BEEN SPLASHED ONTO THE WALL DURING CONSTRUCTION. CORROSION DAMAGE MAY OCCUR WHERE THIS DIRT OR MUD CONTACTS THE PANELS. 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 COMPLETION OF THE WORK. PRE-PAINTED PANELS MAY REQUIRE TOUCH-UP IF THE COATING HAS BEEN DAMAGED DURING HANDLING OR ERECTION.

THE APPEARANCE OF THE BLDG. MAY BE AFFECTED IF DAMAGED SPOTS OR SCRATCHES ARE LOCATED IN HIGHLY VISIBLE PLACES SUCH AS AROUND DOORS, WINDOWS, ETC... IF THE DAMAGE IS EXTENSIVE THEN REPLACEMENT OF THE ENTIRE PANEL SHOULD BE CONSIDERED.

R1-05

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 DAMAGE 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 06 IV 4.2.4)

GALVALUME
 GALVALUME IS THE TRADE NAME FOR A PATENTED STEEL SHEET & COIL PRODUCT HAVING A COATING OF CORROSION RESISTANT ALUMINUM-ZINC ALLOY. THE ALLOY MIXTURE IS BALANCED TO OBTAIN THE COATING THAT RETAINS THE CORROSION RESISTANCE & HEAT REFLECTIVITY OF ALUMINUM & THE SACRIFICIAL ACTION OF GALVANIZED. THE BEST PROPERTIES OF BOTH ALUMINUM & ZINC ARE COMBINED IN THIS COATING & OFFER ADDED SERVICE LIFE FOR BUILDING PANELS.

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 THE 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.

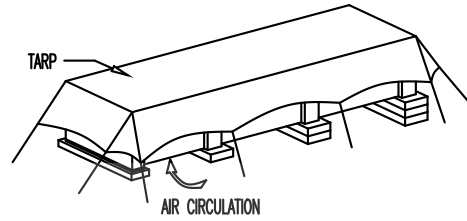
PAINT AND COATING MAINTENANCE

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. NO PRODUCT WILL REMOVE ALL SMUDGE MARKS. REMOVE RUST STAINS. SOFT SCRUB WITHOUT BLEACH HAS PROVEN TO BE SOMEWHAT EFFECTIVE. LIGHTLY 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 TO 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 PAINT REQUIRED TO FILL / COVER THE SCRATCH. CONTACT 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 OF TRAPPED WATER OR MOISTURE CONDENSATION WHILE AWAITING ERECTION. HIGH HUMIDITY CONDITIONS WITH TEMPERATURE CYCLING WILL CAUSE CONDENSATION BETWEEN THE 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 THE 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 UNSTACKED AND THOROUGHLY DRIED ON BOTH SIDES. RE-STACKING THE PANELS AT A SLIGHT ANGLE TO EACH OTHER TO PREVENT NESTING WILL ALLOW AIR CIRCULATION AND ASSIST IN KEEPING THE PANELS DRY. IN SEVERE CONDITIONS LARGE FANS CAN BE USED TO CIRCULATE AIR BETWEEN THE UNSTACKED 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 24-48 HOURS. THIS DAMAGE SHOWS AS 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 DECREASED. 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 OR 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 THE STAINS. WIRE BRUSHING OR USING ABRASIVE MATERIALS SHOULD BE AVOIDED SINCE SCRATCHING OR REMOVAL OF THE COATING COULD OCCUR. PANELS WITH SIGNIFICANT DAMAGE SHOULD BE REPLACED BY THE BUYER BEFORE ERECTION.

SAFETY COMMITMENT

pi-0.099988,io.099988: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 STATUTORY OR CUSTOMARY, SHOULD ALWAYS BE FOLLOWED TO HELP INSURE WORKER SAFETY. MAKE CERTAIN 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 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 OTHER STRUCTURAL MEMBERS. IF ADDITIONAL INFORMATION IS REQUIRED CONTACT THE FIELD SERVICE DEPARTMENT.

ICE AND SNOW REMOVAL

pi,io,io:EXCESSIVE ICE AND SNOW SHOULD BE REMOVED FROM 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 PLUMBING PIPES AND FLASHINGS. 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 AND SNOW. SEE 2002 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 SHOWN ON THIS SHEET 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 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 R , FOR EXTENDED PERIODS OF TIME.

PERIODIC INSPECTION

ALL HIGH STRENGTH BOLTS SHALL BE PERIODICALLY INSPECTED FOR TIGHTNESS, PARTICULARLY IN CRANE BUILDINGS AND AFTER ANY SEISMIC ACTIVITY OR WIND ACTIVITY. THE CRANE MANUFACTURER WILL SPECIFY A MINIMUM PERIOD BUT IT SHOULD NOT EXCEED 2 YEARS.

DRAINAGE

* KEEP ROOF FREE OF DEBRIS AND KEEP DEBRIS OUT OF GUTTER TO ALLOW WATER TO QUICKLY DRAIN FROM ROOF. * DO NOT USE WOOD BLOCKING TO HOLD EQUIPMENT OFF OF PANEL SEAMS. THIS BLOCKS THE FLOW OF WATER AND HOLDS MOISTURE. * DO NOT ALLOW ROOFTOP AC UNITS OR EVAPORATIVE COOLERS TO DRAIN ONTO THE ROOF. * ANYTHING THAT TRAPS OR HOLDS MOISTURE ON A ROOF WILL CAUSE PREMATURE CORROSION.

ROOF MAINTENANCE GUIDELINES

- * INSPECT ROOF FOR DAMAGE AFTER HEAVY STORMS.
- * INSPECT AND RESEAL AS NECESSARY ALL ROOF CURBS AND OTHER PENETRATIONS WITH URETHANE SEALANT.
- * ALWAYS GET MANUFACTURER APPROVAL BEFORE MAKING ANY MODIFICATIONS TO THE ROOF.
- * REPAINT ANY AREAS THAT ARE SUSCEPTIBLE TO RUST AS REQUIRED.
- * WHEN PERFORMING ROOF MAINTENANCE, ALWAYS TAKE THE FOLLOWING PRECAUTIONS:
 - * USE FALL PROTECTION AND OTHER SAFETY EQUIPMENT AS REQUIRED.
 - * DO NOT WALK ON ROOF FLASHINGS SUCH AS GUTTER, RAKE, HIP OR RIDGE FLASH.
 - * DO NOT WALK ON LIGHT TRANSMITTING PANELS (LTPS). THEY WILL NOT SUPPORT A PERSON'S WEIGHT.

- * GUARD ALL LTPS AND ROOF OPENINGS.
- * STEP ONLY IN THE PANEL FLAT DIRECTLY ON OR IN CLOSE PROXIMITY TO A SUPPORTING ROOF STRUCTURAL.
- * 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 ANY DEBRIS OR SCRAP LEFT BEHIND BY THE WORKERS IS REMOVED FROM THE ROOF IMMEDIATELY. AVOID USING CUTOFF SAWS AND WELDING EQUIPMENT OVER THE ROOF. IN CASES WHERE THIS IS NOT POSSIBLE, THE ROOF MUST ADEQUATELY PROTECTED.

FOOT TRAFFIC

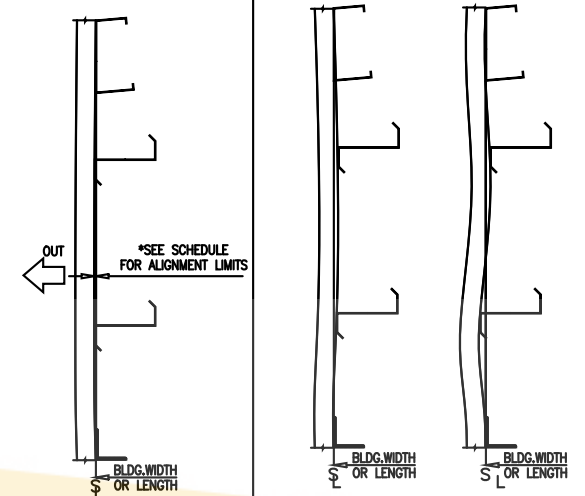
KEEP FOOT TRAFFIC TO A MINIMUM. HEAVY FOOT TRAFFIC CAN CAUSE PONDING ON LOW PITCHED ROOFS. THIS IS PARTICULARLY TRUE JUST UPSLOPE FROM THE EAVE AND AT ENDLAPS. ALWAYS WALK IN THE FLAT OF THE PANEL NEAR A SUPPORTING ROOF STRUCTURAL. DO NOT WALK ON TRIM OR IN GUTTERS. ON BARE GALVALUME @ ROOFS, EXCESSIVE 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 ROOF WALKWAY SYSTEM. IN ORDER TO LIMIT ACCESS TO THE ROOF, ROOF HATCHES OR ACCESS LADDERS SHOULD BE LOCKED AT ALL TIMES. A SIGN SHOULD BE POSTED AT THE POINT OF ACCESS, STATING THAT ONLY AUTHORIZED PERSONNEL ARE ALLOWED ONTO 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.

Secondary Steel Alignment for all IMP Projects

SUPPORT ALIGNMENT LIMITS	
SUPPORT SPAN	MAX DEVIATION LIMIT
UP TO 4'-0"	1/16"
4'-0" TO 8'-0"	1/8"
8'-0" AND UP	1/4"



Correct Alignment

Mis-Alignment
(Unacceptable, Avoid These Conditions)

R1-06

R1-07

R1-08

R1-09

R1-10

Erection Guide

R1
Jul '13 '02

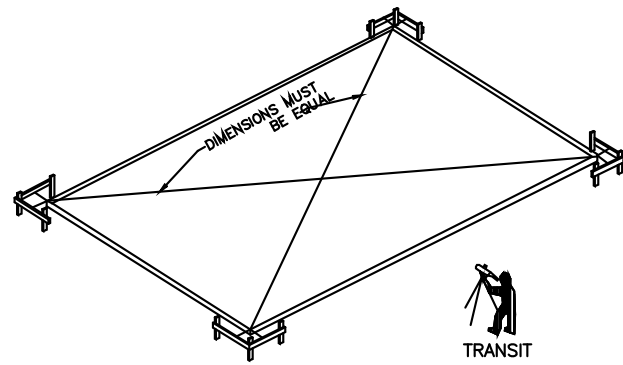


SHEET NUMBER

R2

SAMPLE - NOT FOR CONSTRUCTION

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 bolts against the Anchor Bolt Setting Plan furnished by the Manufacturer. All dimensions must be identical to assure a proper start-up.

**AISC CODE OF STANDARD PRACTICE
TOLERANCES FOR SETTING ANCHOR RODS**

7.5.1. Anchor rods, foundation bolts and other embedded items shall be set by the owner's designated representative for construction in accordance with embedment drawings that have been approved by the owner's designated representatives for design and construction. The variation in location of these items from the dimensions shown in the embedment drawings shall be as follows:

- (a) The variation in dimension between the centers of any two anchor rods within an anchor-rod group shall be equal to or less than 1/8 in. [3 mm].
- (b) The variation in dimension between the centers of adjacent anchor-rod groups shall be equal to or less than 1/4 in. [6 mm].
- (c) The variation in elevation of the tops of anchor rods shall be equal to or less than plus or minus 1/2 in. [13 mm].
- (d) The accumulated variation in dimension between centers of the anchor-rod groups along the column line through multiple anchor-rod groups shall be equal to or less than 1/4 in. per 100 ft [2 mm per 10000 mm], but not to exceed a total of 1 in. [25 mm].
- (e) The variation in dimension from center of any anchor-rod group to the column line through that group shall be equal to or less than 1/4 in. [6 mm].

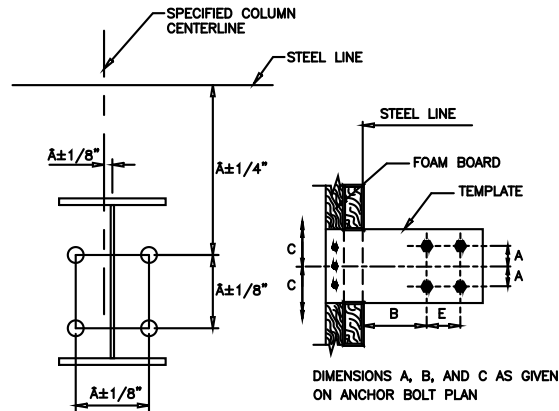
The tolerances that are specified in (b), (c) and (d) shall apply to offset dimensions shown in the structural design drawings, measured parallel and perpendicular to the nearest column line, for individual columns that are shown in the structural design drawings as offset from column lines.

7.5.2. Unless otherwise specified in the contract documents, anchor rods shall be set with their longitudinal axis perpendicular to the theoretical bearing surface.

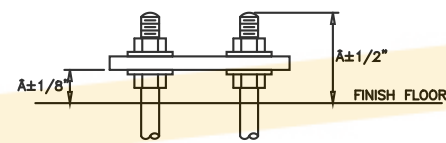
7.5.3. Embedded items and connection materials that are part of the work of other trades, but that will receive structural steel, shall be located and set by the owner's designated representative for construction in accordance with an approved embedment drawing. The variation in location of these items shall be limited to a magnitude that is consistent with the tolerances that are specified in Section 7.13 for the erection of the structural steel.

7.5.4. All work performed by the owner's designated representative for construction shall be completed so as not to delay or interfere with the work of the fabricator and the erector. The owner's designated representative for construction shall conduct a survey of the as-built locations of anchor rods, foundation bolts and other embedded items, and shall verify that all items covered in Section 7.5 meet the corresponding tolerances. When corrective action is necessary, the owner's designated representative for construction shall obtain the guidance and approval of the owner's designated representative for design.

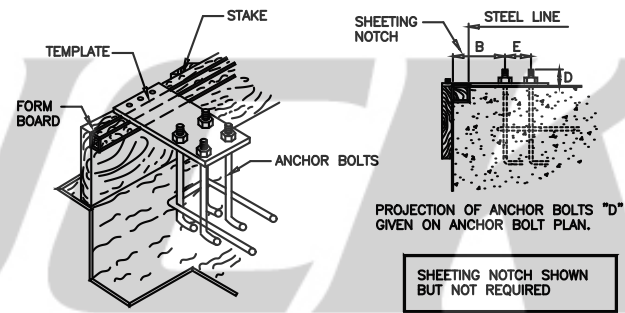
It is extremely important that anchor bolts be placed accurately in accordance with the Anchor Bolt Setting Plan. All anchor bolts should be held in place with a template or similar means, so that they will remain plumb and in correct location during placing of the concrete. A final check should be made after the completion of the concrete work and prior to the steel installation. This will allow any necessary corrections to be made before the costly installation labor and equipment arrives.



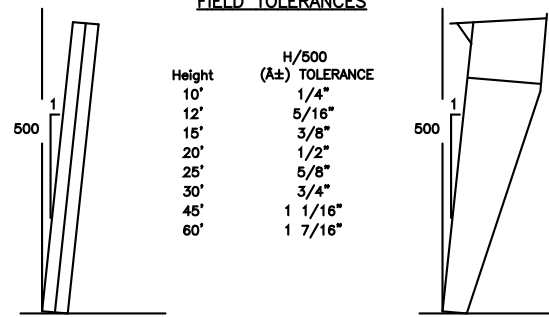
ANCHOR ROD SETTING TOLERANCES



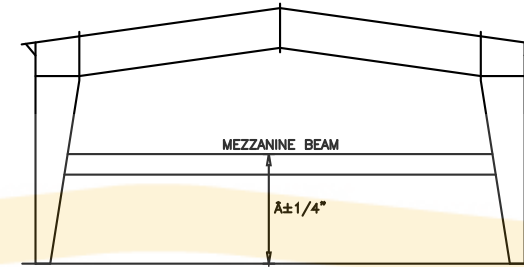
BASE PLATE AND ANCHOR ROD TOLERANCES



FIELD TOLERANCES

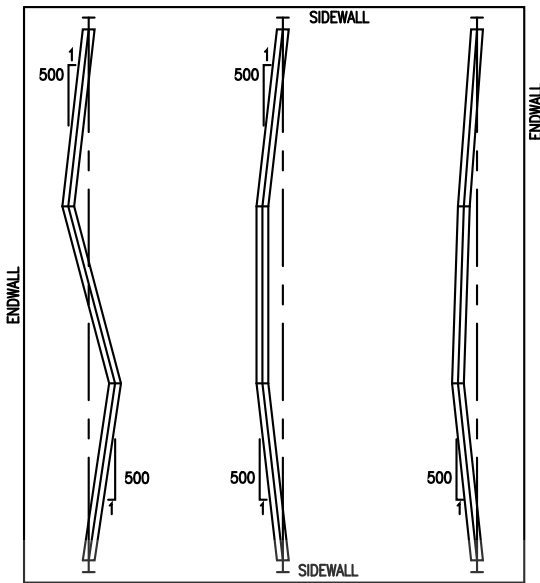


COLUMN ALIGNMENT TOLERANCES



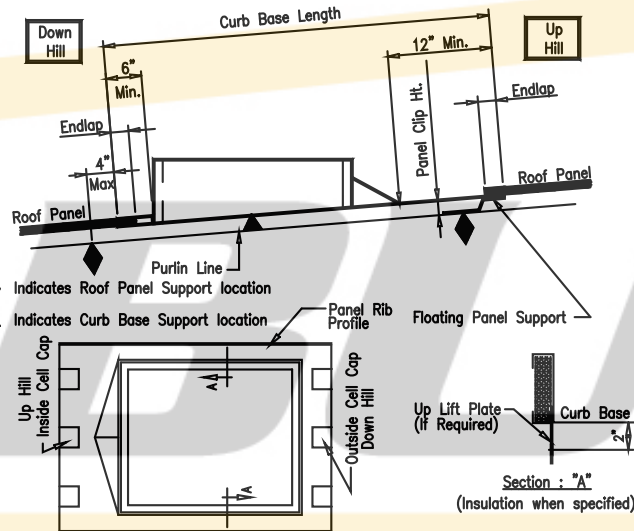
MEZZANINE BEAM HEIGHT TOLERANCE

STEEL



PLAN VIEW

ALIGNMENT TOLERANCE FOR MEMBERS WITH FIELD SPLICES



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.

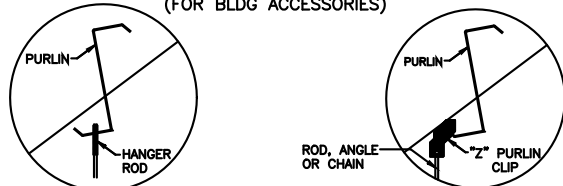
All roof curbs to be:

1. .080 Aluminum or 18ga. Stainless (No Galvalume/No Galvanized)
2. Panel rib to rib installation (No flat skirt or lay-over Curbs)
3. Installed over low end / under high end application for water flow at panel splice
4. Up lift prevention for clip applied roof systems are required if:
 - a. Wind load exceeds 110 mph or
 - b. Curb base crosses a purlin
5. Supported on (4) four side by primary or secondary framing
6. Max Single Curb weight Recommend = 1500#

Roof Curbs

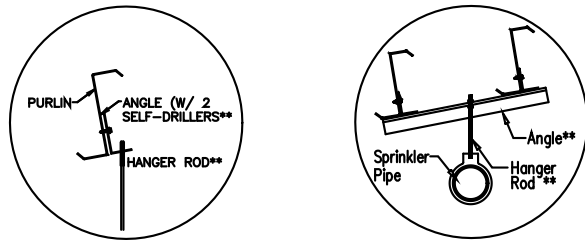
(When not Supplied by Building Manufacturer)

SUGGESTED METHOD OF PURLIN ATTACHMENT
(FOR BLDG ACCESSORIES)



DO NOT INSTALL HANGER ROD IN FLANGE OF PURLIN THE INCORRECT WAY

DO NOT INSTALL PURLIN CLIPS OF ANY KIND ON FLANGE OF PURLIN AS SHOWN



SUGGESTED METHODS

** (Not by Metal Bldg Manufacturer)

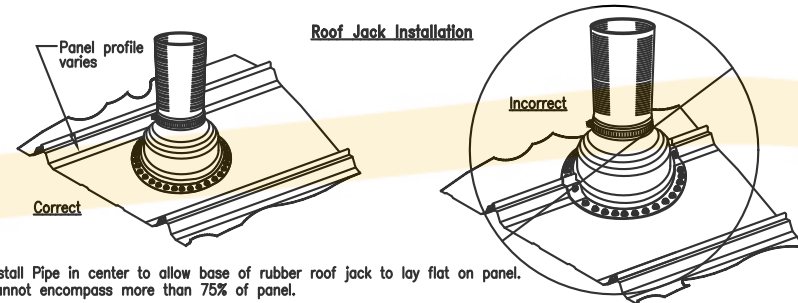
An angle is self-tapped to the web of the purlin to catch hanger rod. This method does not preclude other forms of attachment to the purlin web.

The total hanger load shall not exceed the design collateral load for the building. A sample calculation is shown below:

$$5' \text{ (purlin spacing)} \times 5' \text{ (hanger spacing)} \times 6 \text{ psf (collateral load)} = 150 \text{ lbs.}$$

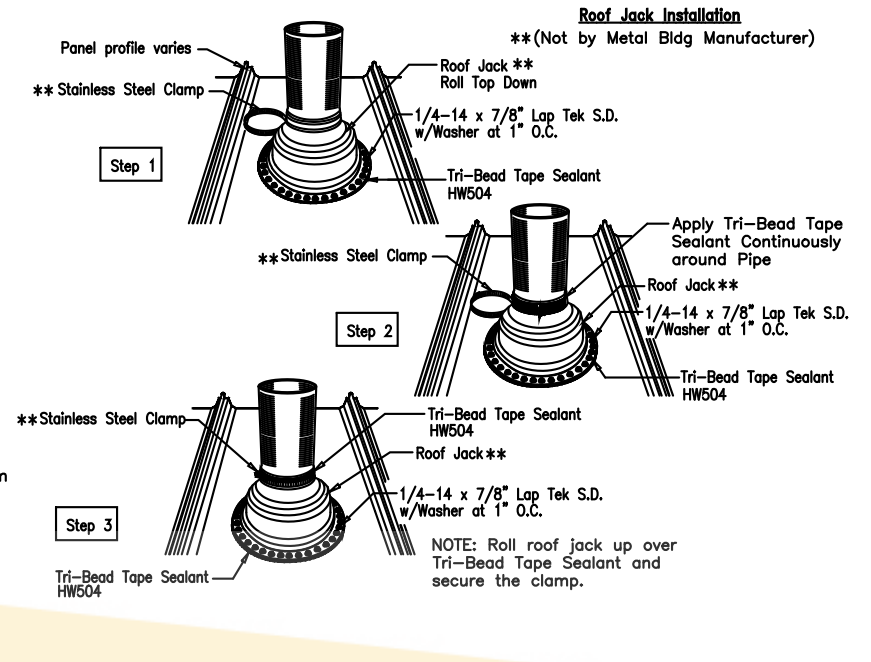
See cover sheet for design collateral load for this building.

Note: If this 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.



Install Pipe in center to allow base of rubber roof jack to lay flat on panel. Cannot encompass more than 75% of panel.

- 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 the case of lead hats, will cause galvanic corrosion of the roof panels.
- Use EPDM rubber roof jacks with an integral aluminum band bonded into the perimeter of the base. For high temperature applications (200-400 degrees Fahrenheit) use silicone rubber roof jacks. Retrofit rubber 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 caulk/silicone to seal roof jack to the roof panels. Use only tape sealant as supplied by Metal Bldg Manufacturer. Fasten the roof jack to the roof panels with 1/4"-14 x 7/8" Lap Tek Stitch Screws at 1" on center around base of roof jack.
- Roll down the top of the roof jack and apply tape sealant continuously around the exposed portion of the pipe. Roll the top of the roof jack back over the tape sealant. Apply the stainless steel clamp over top of roof jack and firmly tighten to form a secure compression seal.
- Do not install a pipe through the standing seam of the roof panel. Keep pipe penetration in center of panel to allow the base of the rubber roof jack to seal to the pan of the panel. If a pipe must be installed through a panel seam, or if the pipe diameter is so large to block the flow of water down the roof panel, you must install a "pipe curb" into the roof and then seal the pipe curb with rubber roof jack. For pipes in which top cannot be accessed, a two-piece pipe curb is available.
- In Northern climates, protect all pipe penetrations from moving ice or snow with a snow retention system immediately up slope from the pipe.



Roof Jack Installation

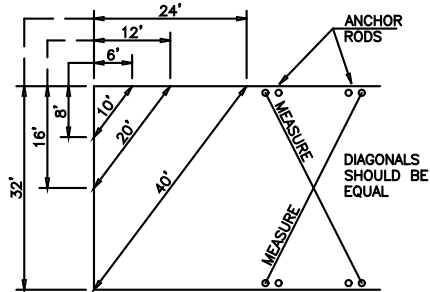
** (Not by Metal Bldg Manufacturer)

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.

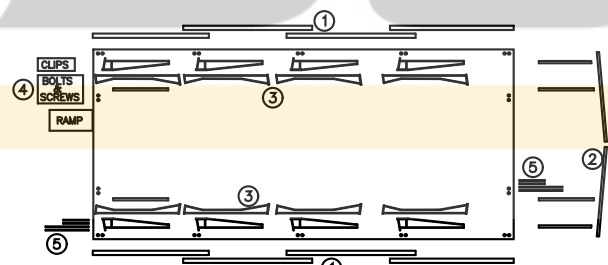
- 2.) When unloading the building, carefully check off each item from the packing list. Bundles and boxes will have a list attached indicating the contents.
 - 3.) Unload and layout the building columns on the foundation.
- pi-0.16763;10.16763;10.16763;4.) Unload the rafters onto the foundation so that they can be erected from whichever end of the building you wish to start. Your crane will move from one end of the building to the other while standing columns and hanging rafters.

- 5.) Layout the girts and purlins on dunnage or wood blocking around the foundation as near as possible to where they will be installed.
 - 6.) Unload and place trim crates out of the way, since these will be the last required.
 - 7.) Unload and place panels and insulation out of the way.
- NOTE: In extremely cold conditions, the vinyl facing on insulation will become brittle, requiring very careful handling.

pi-0.16763;10.16763;8.) Avoid lifting panel stacks with cables, chains or other devices which could damage the panel. Upon unloading, and every morning thereafter, inspect the panel bundles for moisture between the panels. This is especially important with galvalume or galvanized panels. The panel finish must be protected at all times before and during erection to preserve the appearance and function of the panels.

- 9.) All hardware boxes should be protected from theft and moisture, especially items such as tube caulking and locksets. Store mastic away from heat.

LAYOUT OF BUILDING COMPONENT



1. Girts, Eave Struts and Purlins
2. End Frames and Endpost
3. Main Frames
4. Clips, Bolts, Screws, ETC.
5. Endwall Girts

- 1.) Layout primary and secondary framing around the slab as shown.
- 2.) Place components and crates on the slab or on wood blocking to prevent contact with the ground.
- 3.) Block one end of components higher than other end to allow drainage of rain water.
- 4.) Leave one end of the building open for erection equipment access.
- 5.) Construct temporary ramp of timbers from grade to slab to prevent damage to concrete edge from equipment traffic.

pi-0.16763;10.16763;6.) Install clips and flange braces onto columns and rafters before these members are in the air. Clip and flange brace locations are shown on erection drawings.

GENERAL ERECTION NOTES

- 1.) All clips, flange braces, bolts, bracing systems, 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.
- 3.) Column bases must not be lag screwed or "RED HEADED" to concrete unless specified on erection drawings for the building.
- 4.) Tighten column wind brace rods/cables (exterior and interior) before tightening roof rods/cables. Roof rods/cables are tightened from eave to peak.
- 5.) High strength bolts (A325) must be used where specified.

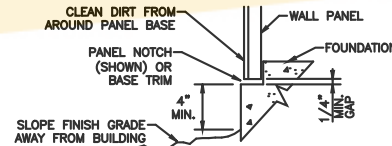
TEMPORARY CONSTRUCTION BRACING

- 1.) It is the responsibility of the erector to maintain stability of the structure during all stages of erection, particularly when left overnight.
- 2.) Temporary supports, such as temporary guys, braces or other elements shall be the total and complete responsibility of the erector. The temporary supports required shall be determined and furnished by the erector.
- 3.) Temporary construction supports shall be provided wherever necessary to accommodate all construction loads to which the structure may be subjected, left in place as long as may be required for safety.

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:

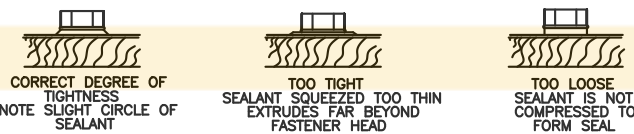
- 1.) The concrete foundation should be cured for a minimum of seven (7) days before wall panels are installed. (un-cured concrete is highly alkaline and metal panels can undergo varying degrees of corrosive attack when in direct contact with the concrete.) After the first week of the curing cycle, the 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 insure 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.

MASTIC SEALANT

Proper mastic application is critical to the weather tightness of a building. Mastic should not be stretched when installed. Apply only to clean, dry surfaces. Keep only enough mastic on the roof that can be installed in a day. During warm weather, store mastic in a cool dry place. During cold weather (below 60°F) mastic must be kept warm (60°F-90°F) until application. After mastic has been applied, keep protective paper in place until panel is ready to be installed.

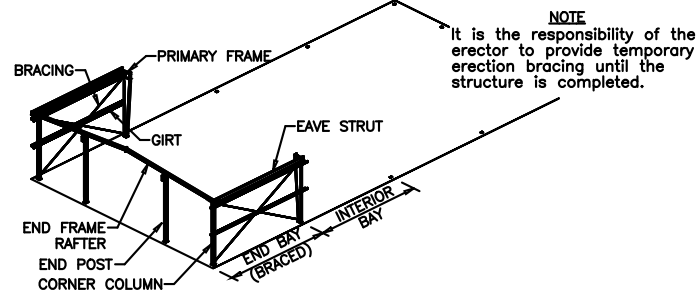
IMPORTANT NOTE:

All details, recommendations and suggestions contained in the ERECTION GUIDE portion 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 as to the sequencing and how the components could be assembled to create a building. 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.



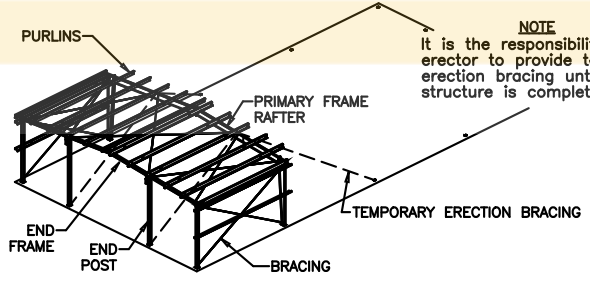
STEP 1: ERECT FIRST BAY WALL FRAMING



NOTE
It is the responsibility of the erector to provide temporary erection bracing until the structure is completed.

- 1A: Determine from erection drawings furnished with the building the location of the first braced bay. Framing for this bay will be erected first.
- 1B: Stand adjacent primary frame column and corner column over the anchor rods. Shim or chip out under the base plate if required to ensure that the base is level, at the correct elevation, and is in full contact with the foundation. Plumb and align the columns and install washers and nuts onto the Anchor Rods.
- NOTE:** The end frame may be a bearing frame with the rafter supported by end posts, or a rigid frame with the rafter self-supporting, and not attached to the end posts. The procedure shown is for a bearing frame. If the building has a rigid end frame, it is erected the same as interior frames as described in steps 1 and 2.
- 1C: Attach wall girts to the primary frame column and corner column. Bolt girts to the corner column with two bolts. Bolt girt to primary frame column with one bolt through the column flange and secure bolt with sub-nut (see detail on erection drawings).
- 1D: Install the eave strut by bolting to the top of the columns. Refer to the erection drawings and attach column flange brace where shown. Flange braces may be required on one or both sides of the columns. If a flange brace connects to a girt in the adjacent bay, that brace will be bolted to the girt after the adjacent bay girts are installed.
- NOTE:** As wall girts are installed around the building, framing for factory located framed openings and accessory framing to which the girts attach should be installed. Field located accessory framing may be installed at the same time as girts or at a later time.
- 1E: Install wall bracing systems (rods, cables, knee bracing, portal bracing) at this time but do not tighten completely until the bay is plumbed.
- 1F: Repeat steps 1B thru 1E for wall framing on the opposite side of the building.
- 1G: Attach clips to the end posts and stand these posts over the Anchor Rods. follow the procedure as described for corner columns in step 1B.
- 1H: Bolt required clips and flange braces to the end frame rafter sections and lift into place atop the end posts. Bolt rafter sections to corner column and end post cap plates. Bolt rafter sections together at peak.

STEP 2: ERECT FIRST BAY ROOF FRAMING



NOTE
It is the responsibility of the erector to provide temporary erection bracing until the structure is completed.

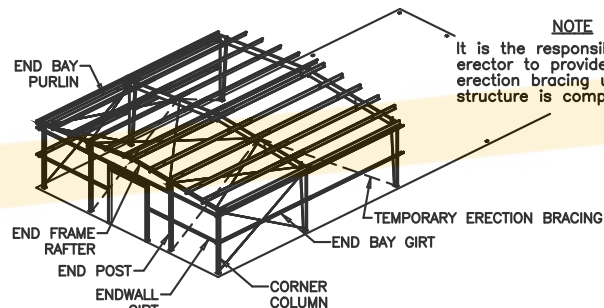
CAUTION

Until rafters are bolted in place with purlins and flange braces installed, they are easily damaged by incorrect or careless handling procedures. Use extreme caution when lifting rafters. Two booms should be used to lift any pinched rafter section 80 feet or more in length.

- 2A: Bolt primary frame rafter together at peak connection (unless rafter length requires lifting in sections). Attach the required clips and flange braces to the rafter before lifting since these items are more easily installed on the ground. Lift rafter into place between sidewall columns and install bolts in rafter to column knee connections.
- 2B: Install end bay purlins from end frame rafter to the first interior frame rafter. The end bay purlins will overlap the interior bay purlins at the frame as described in step 1C. Complete flange brace connection to purlins.
- 2C: Install roof bracing systems but do not tighten completely until the bay is plumbed.
- 2D: Plumb and square the first bay. After alignment, tighten wall bracing first and the roof bracing working from eave to peak. Tighten any remaining bolts.

Plumbing and aligning a total structural system begins with the first braced bay and continues through completion. Accurate alignment of the first bay is essential for correct alignment of succeeding bays. The installer is responsible for choosing the best method suited for plumbing and aligning the structural system.

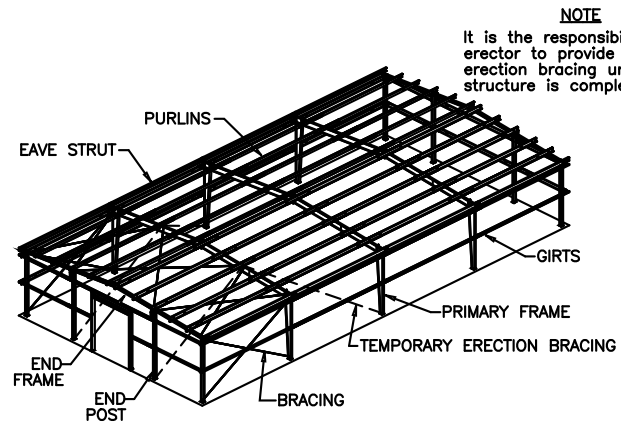
STEP 3: ERECT ENDWALL GIRTS AND FIRST INTERIOR BAY



NOTE
It is the responsibility of the erector to provide temporary erection bracing until the structure is completed.

- 3A: After end frame is plumb and square, install endwall girts and flange braces for end post if required.
- 3B: Attach wall girts to the primary frame columns (see step 1C).
- 3C: Install eave struts (see step 1D).
- 3D: Attach roof purlins for this bay to the two rafters. Purlins will bolt to the rafter flange in the same manner as girts to column flanges (see step 1C). connect flange braces to purlins.
- 3E: Check alignment, plumb and square the two bays just erected. Tighten all bolts and bracing.

STEP 4: ERECT REMAINING STRUCTURAL FRAMING

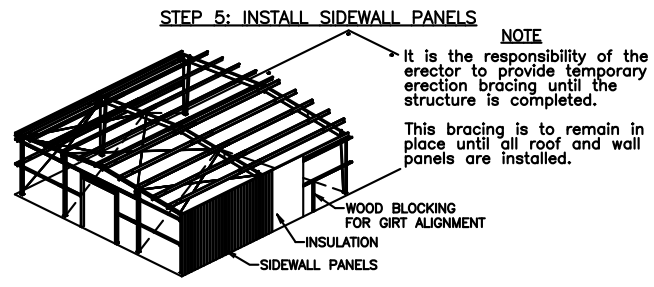


NOTE
It is the responsibility of the erector to provide temporary erection bracing until the structure is completed.

Starting at the opposite end of the first bay erected, install the remaining interior frames, girts, purlins, eave struts, bracing, end frames and end posts using the procedures described in the preceding steps. Be sure all wall girts, roof purlins and flange braces as shown on the erection drawings are installed. Constant checks should be made to ensure the building is square, plumb and aligned.

All X-Bracing should be checked that it is installed to a taut condition with all slack removed. Do not tighten beyond this state.



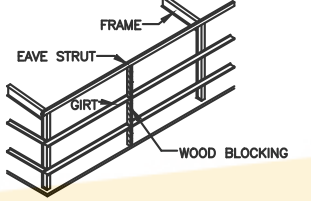


NOTE
It is the responsibility of the erector to provide temporary erection bracing until the structure is completed.
This bracing is to remain in place until all roof and wall panels are installed.

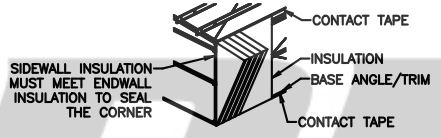
5A: Before installing wall panels, the girts must be aligned to a level position so that there is no visible sag. This should be done directly ahead of panel installation.

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.

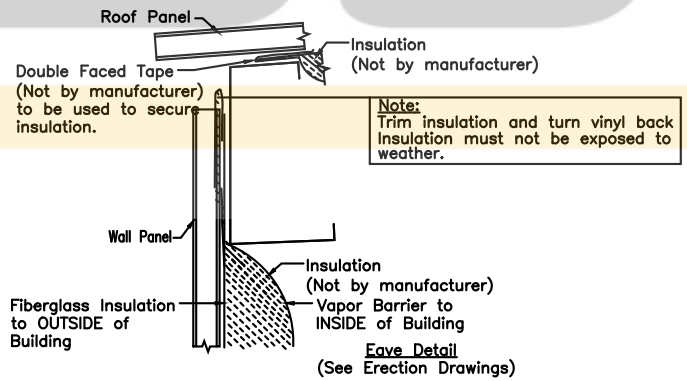


NOTE: Wall panel type and installation details will vary. Refer to the erection drawings and details for the specific panel used for your building.

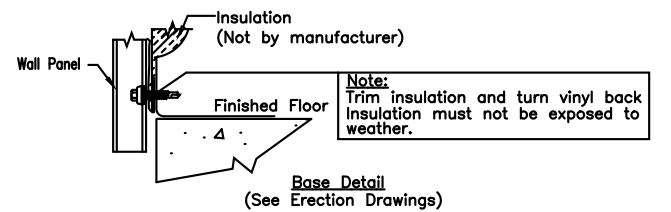


5B: If walls are to be insulated, place a continuous run of contact tape along the eave strut and base member.

NOTE: At the base, cut off the insulation a minimum of 1/2" above the bottom of the wall panel. This will prevent the insulation from hanging below the wall panel and wicking moisture.



Note:
Trim insulation and turn vinyl back. Insulation must not be exposed to weather.



Note:
Trim insulation and turn vinyl back. Insulation must not be exposed to weather.

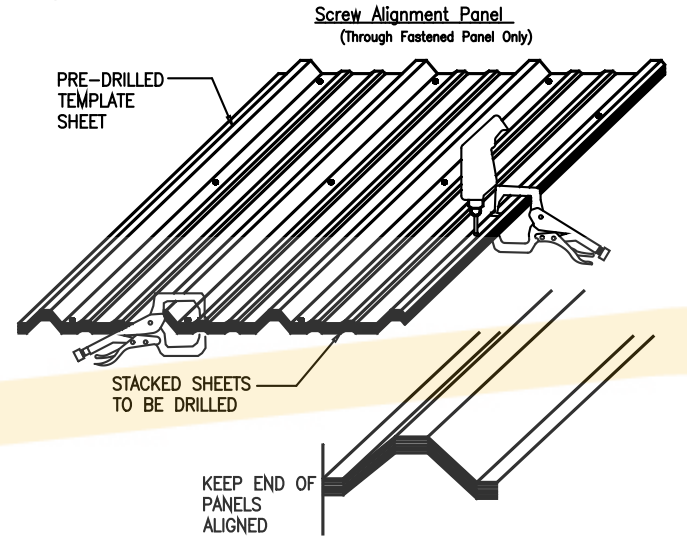
Starting at a building corner, attach the first piece of blanket insulation to the contact tape on the eave strut. Pull tight and adhere to tape at the base. It is recommended that insulation not be installed more than 6 feet ahead of panels.

5C: 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.)

5D: Install remaining sidewall insulation and panels, being careful to maintain correct panel coverage. It is suggested that the foundation be marked in increments of panel width to allow visual checking of panel coverage as installation progresses.

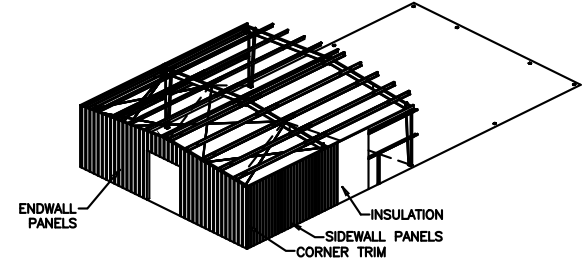
NOTE: Check periodically to ensure that all panels are aligned and plumb.

5E: At the finishing corner of a sidewall, the last panel may require additional lap or trimming for installation of corner trim refer to the details in the erection drawings.



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.

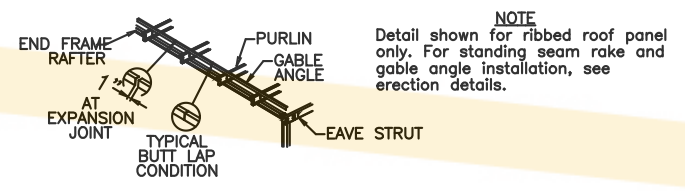
STEP 6: INSTALL ENDWALL PANELS



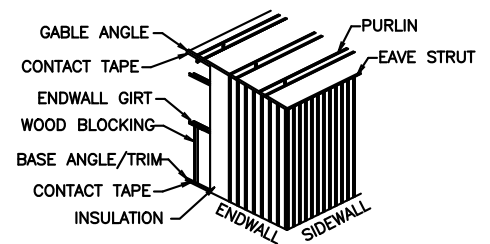
6A: Install gable angles/supports onto the ends of purlins and eave struts. This angle is to butt-up to each other or is spliced as required except at expansion joints where a one inch gap is maintained between ends of adjacent sections to allow for expansion.

Gable angle splices may occur on or between purlins and the angle must be attached to each purlin and the eave strut.

NOTE: Wall panel type and installation details will vary. Refer to the erection drawings and details for the specific panel used for your building.



6B: See erection drawings sheeting layouts for panel starting dimensions, panel trim locations, and lap locations.



6C: Align and level girts on endwall.

6D: If the walls are to be insulated, place a continuous run of contact tape along the gable angle and base member. Starting at the corner of the endwall, attach the first piece of insulation to the contact tape on the gable angle, pull tight and adhere to tape at the base. Cut off excess insulation. It is recommended that insulation not be installed more than 6 feet ahead of panels.

NOTE: At the base cut off the insulation a minimum of 1/2 inch above the bottom of the wall panel. This will prevent the insulation from hanging below the wall panel and wicking moisture.

6E: Start at the corner, trim panel (if required) and set in place. Refer to corner details in the erection drawings for the panel starting distance from the corner. When the panel is located and plumb, install fasteners.

6F: Install remaining endwall insulation and panels, being careful to maintain the correct panel coverage as suggested in step 5D.

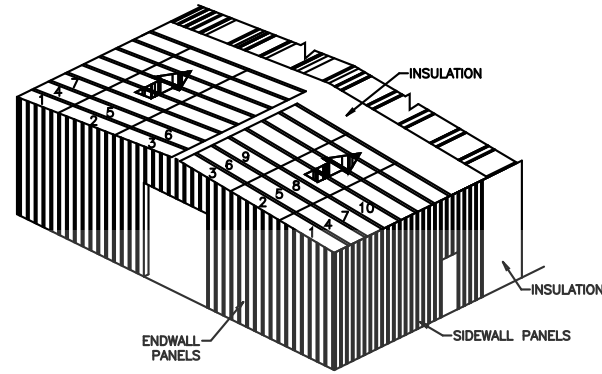
6G: Install corner trim.



STEP 7: INSTALL ROOF PANELS

- 7A: Install eave trim over top of sidewall panels and eave struts with fasteners per erection drawings eave detail.
- 7B: If the roof is insulated, place a continuous run of contact tape along top of eave struts at both sidewalls. Lay a starter roll of blanket insulation from eave to eave across roof and secure to contact tape. (refer to packing list for width of insulation starter roll). It is recommended that insulation be installed no more than 6 feet ahead of panels.

NOTE: For PBR roofs with a ridge panel, it is recommended that both sides of the ridge of a building 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. Note panel-sheeting sequence below!



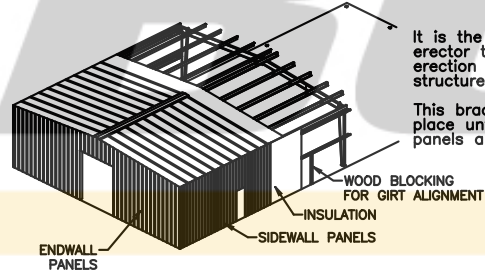
7C: Install the first run of roof panels across the building from eave to eave, or eave to ridge. To allow proper installation of rake trim, the starting location for the first panel must be as shown in rake details included with the erection drawings. When the first run is properly located and aligned with the correct endlaps and eave overhang, fasten to purlins. Roof panels should be installed so that the sidelap is in a direction away from the prevailing wind. Refer to appropriate lap detail.

7D: 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, mastic and closure requirements. Refer to details with erection drawings.

7E: At finishing end of roof, the last panels may require field modification for installation of rake trim. Refer to rake details. DO NOT BACK LAP THROUGH FASTENED ROOF SHEETS.

NOTE: Roof panel types and installation requirements will vary. Refer to the appropriate details for the specific panel used.

IMPORTANT: Loose fasteners, blind rivets, drill shaving, ETC.. must be removed from roof to guard against corrosion.



NOTE
It is the responsibility of the erector to provide temporary erection bracing until the structure is completed.
This bracing is to remain in place until all roof and wall panels are installed.

NEVER STEP ON LIGHT TRANSMITTING PANELS, TRANSLUCENT PANELS, 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 or translucent panels can never be considered as a walking surface.

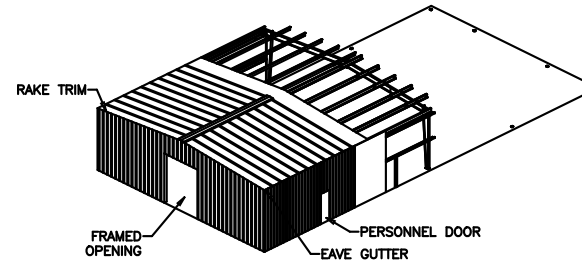
Partially attached or unattached panels should never be walked on!

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!

STEP 8: INSTALL TRIM AND ACCESSORIES



8A: Install rake trim and gable closure.

8B: If included with the building, install the eave gutter, corner closures and downspouts.

NOTE: Remove all loose fasteners, blind rivets, drill shavings, etc... from gutter to guard against corrosion.

8C: Install accessories (doors, windows, louvers, etc...) not previously installed. Refer to the appropriate details for installation instructions.

IMPORTANT:

Remove debris from roof and wall surfaces during installation and after. Clean surface of sheeting as required to remove smudges and touch-up any minor/mild scratches with color match touch-up paint.

WICK STEEL