Field Service Procedures

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

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

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

The "Initial Claim" Includes:

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

SHORT MATERIALS:

Immediately Upon Delivery Of Materials, Quantities Are To Be Verified

Including Estimated Man-Hours.

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

DAMAGED OR DEFECTIVE MATERIAL

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

EXCESSIVE MATERIAL:

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

OIL CANNING IS NOT A CAUSE FOR REJECTION

Authorization For Corrective Work

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

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

THE "FINAL CLAIM" MUST INCLUDE:

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

Be Purchased From Other Than The Manufacturer, Including Copies Of Paid

** IMPORTANT NOTE **

Corrective Work.

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

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

Unloading, Handling And Storage

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.

Piece Marks Are Stenciled On The Primary Structural Members At The Lower End,

1'-0" From The End. Inspect All Shipments Prior To Releasing The Tie-downs For Loads That May Have Shifted During Transit.

REMEMBER SAFETY FIRST: Blocking Under Columns And Rafters Protect The Splice Plates And The Slab From Damage During The Unloading Process. It Also Facilitates The Placing Of Slings And Cables Around Members For Later Lifting And Allows Members To Be Bolted Together Into Sub-assemblies While On The Ground. Extra Care Should Always Be Exercised In The Unloading Operation To Prevent Injuries From Handling Steel And To Prevent Damage To Materials And The Concrete Slab. If Water Is Allowed To Remain For Extended Periods In Bundles Of Primed Parts Such As Girts, Purlins, Etc., The Pigment Will Fade And The Paint Will Gradually Soften Reducing Its Bond To The Steel. Therefore, Upon Receipt Of A Job, All Bundles Of Primed Parts Should Be Stored At An Angle To Allow Any Trapped Water To Drain Away And

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

Permit Air Circulation For Drying. Puddles Of Water Should Not Be Allowed To

Collect And Remain On Columns Or Rafters For Same Reason.

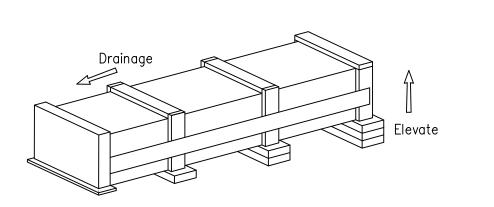
Roof And Wall Panels

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

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

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

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



Roof And Wall Panel Damage During Construction

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

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

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

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

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

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

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

Types Of Finishes

SHOP PRIMED STEEL:

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

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

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

PAINT AND COATING MAINTENANCE:

Remove Rust Stains:

Paint As Needed.

Remove Smudge Marks From Bare Galvalume:

Formula 409 Has Proven To Be Somewhat Effective. Lightly Rub With A Clean Cloth And Rinse With Water. Do Not Rub More Than Required To Remove Smudge Marks. No Product Will Remove All Smudge Marks.

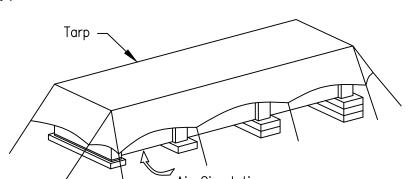
Soft Scrub Without Bleach Has Proven To be Somewhat Effective. Rub With A Soft Cloth And Rinse With Water. Do Not Rub More Than Required To Remove Stain. No Product Will Completely Remove Rust Stains.

To Touch—Up Scratches In Paint (Not Bare Metal): Clean Area To Be Painted With Mild Detergent. Rinse Thoroughly And Dry. Using A Small Artist's Brush, Lightly Apply A Minimal Amount Of Color Matched Touch-Up Pain Required To Fill/Cover The Scratch. Contact The Building Manufacturer For Assistance With Ordering/Purchasing Touch—Up

Damage From Condensation Or Trapped Water

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

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



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

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

Safety Commitment

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

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

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

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

Make Sure All Employees Know The Safest And Most Productive Way Of Erecting A Building. Emergency Procedures Should Be Known To All Employees. Daily Meetings Highlighting Safety Procedures Are Also Recommended. The Use Of Hard Hats, Rubber Sole Shoes For Roof Work, Proper Equipment For Handling Material And Safety Nets Where Applicable Are Recommended

For The Purposes Of Determining Lift Requirements, No Bundle Supplied By The Manufacturer Will Exceed 4,000 Pounds. For Further Information Also reference The Bill Of Materials For Individual Member Weights Of Structural Members. If Additional Information Is Required Contact The Field Service Department.

Excessive Ice And Snow Removal Should Be Removed From The Roof Immediately To Prevent Damage To Roof And Possible Collapse. Do Not Use Metal Tools To remove The Ice Or Snow As This Can Damage The Paint And/Or Galvalume Coatings. Also Be Careful Around Pipes And Flashing's.

Be Extremely Careful If Your Roof Has Light Transmitting Panels. These Panels Will Not Support A Person's Weight And Will Be Difficult Or Impossible To See If They Are Covered With Ice Or Snow. See MBMA Low-Rise Building Systems Manual, Appendix A8 For Details On Snow Removal Procedures. These Procedures Should Commence When Half Of The Design Roof Snow Load Is Realized.

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

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

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

Roof Maintenance Guidelines

1. Inspect Roof For Damage After Heavy Storms.

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

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

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

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

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

Walk On Trim Or In Gutters.

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 Always Walk In The Flat Of The Panel Near A Supporting Roof Structural. Do Not

On Bare Galvalume Roofs, Excessive Foot Traffic May Cause Black Burnish Marks. If Regular Foot Traffic Is Planned For A Roof, Provisions Should Be Made For A Properly Designed And Installed Walkway System. In Order To Limit Access To The Roof, Roof Hatches Or Access Ladders Should Be Locked At All Times. A Sign Posted At The Access Site Stating That Only Authorized Personnel Are Allowed On The Roof. In Addition A Log Book Should Be Kept Of All Visits To The Roof And The Reason For Such Visits.

DISSIMILAR METALS:

Never Allow Your Roof To Come In Contact With, Or Water Runoff From Any Dissimilar Metal Including But Not Limited To:

Copper, Lead Or Graphite, This Includes Copper And Arsenic Salts Used In Treated Lumber, Calcium Used In Concrete, Mortar And Grout.

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



Panels May Collapse If Not Properly Secured

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

Partially Attached Or Unattached Panels Should Never Be Walked On!

1. Step On Rib At Edge Of Panel.

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

Regulations For The Construction Industry). Safety First!

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



NOT TO SCALE Scale: EBF 5/17/18 Drawn bv: Checked by: CLS 5/17/18

ICE 149

SYSTEMS_®

DING

Job Number: 16-B-42908

Project Engineer:

R1 of 15 Sheet Number:

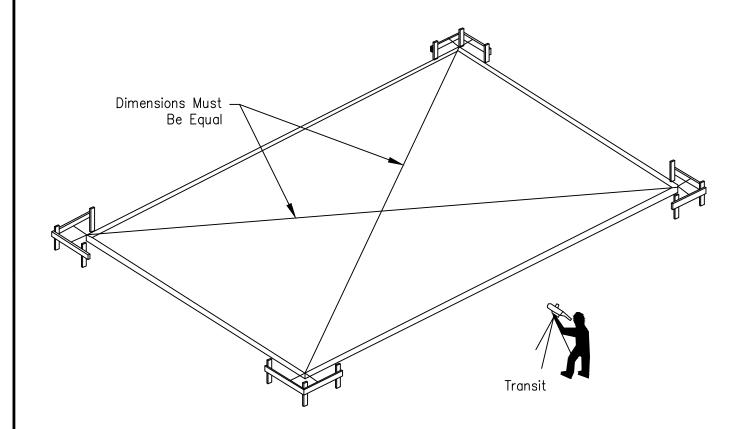
The engineer whose seal appears hereon is an employee for the manufacturer for the materials described herein. Said seal or certification is limited to the products designed and manufactured by manufacturer only. The undersigned engineer i not the overall engineer of record for this project.

Erection Guide

R1

Building Anchorage

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

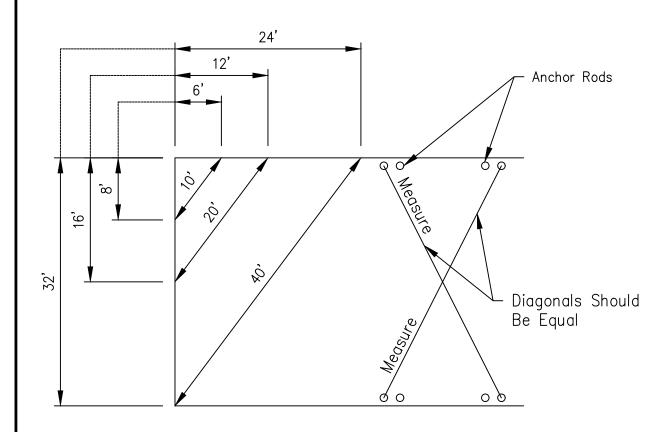


Pre-Erection Notes:

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

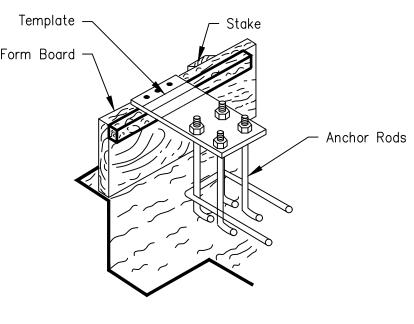
1.) Prior To The Time The Erection Crew Arrives, A Responsible Person Should Check The Job Site For Foundation Readiness, Square, And Accuracy And Anchor Rod Size And Location.

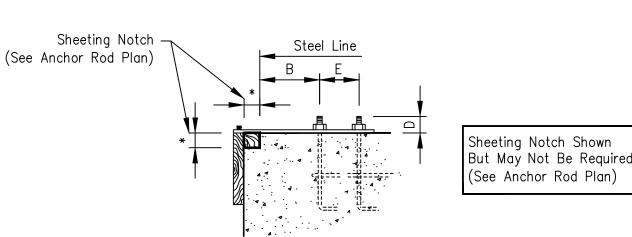
The Drawing Shown Below Indicates A Method Which May Be Used To Check The Foundation And Bolts For Square.



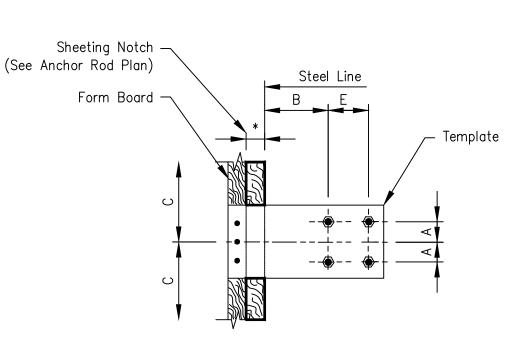
Measure Along Adjacent Sides Of Foundation Using A Pair Of Dimensions Shown. If The Diagonal Distance Between These Points Is As Noted, The Corner Is Square. Diagonal Measurements Between Opposite Anchor Rods Will Indicate If These Bolts Are Set Square.

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





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



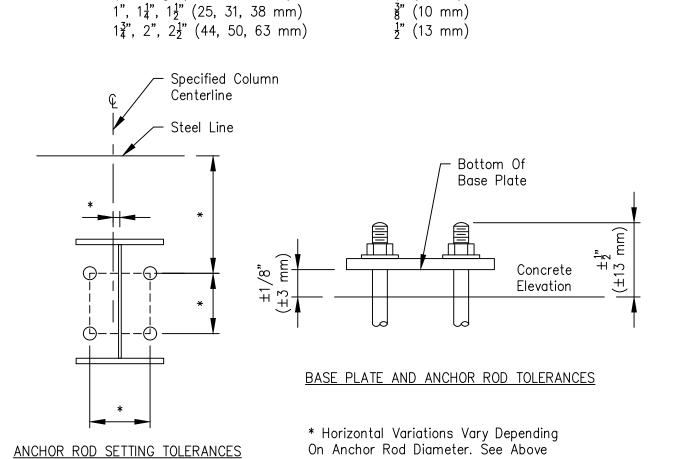
Dimensions A, B, And C Given On Anchor Rod Plan

 $\frac{1}{4}$ " (6 mm)

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

Anchor Rod Diameter, Inches (mm) *Horizontal Variation, Inches (mm)

 $\frac{3}{4}$ " and $\frac{7}{8}$ " (19 And 22 mm)

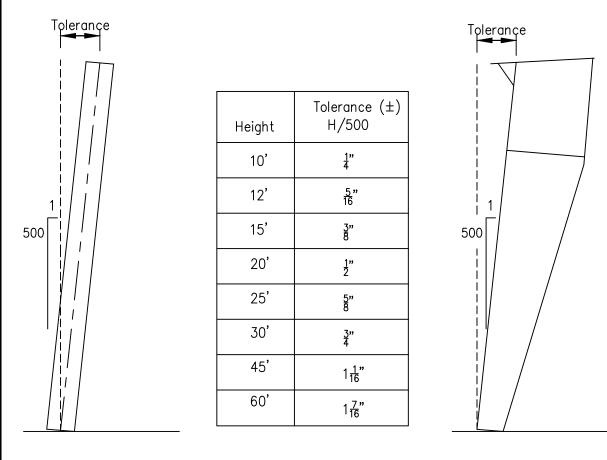


Erection Tolerances

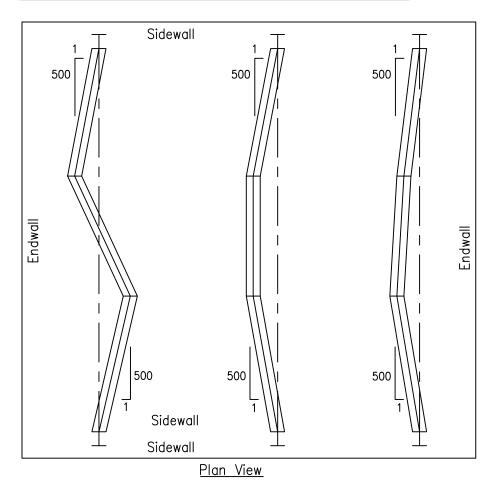
ERECTION BRACING:

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

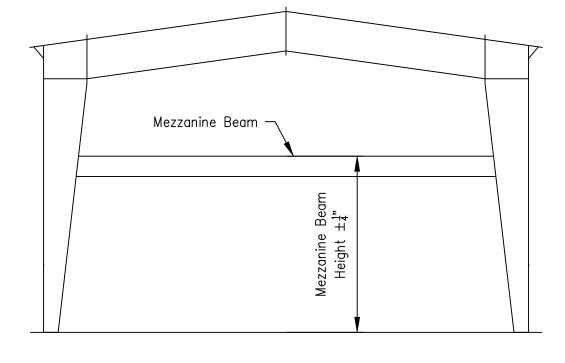
COLUMN ALIGNMENT TOLERANCES



ALIGNMENT TOLERANCE FOR MEMBERS WITH FIELD SPLICES



MEZZANINE BEAM HEIGHT TOLERANCE

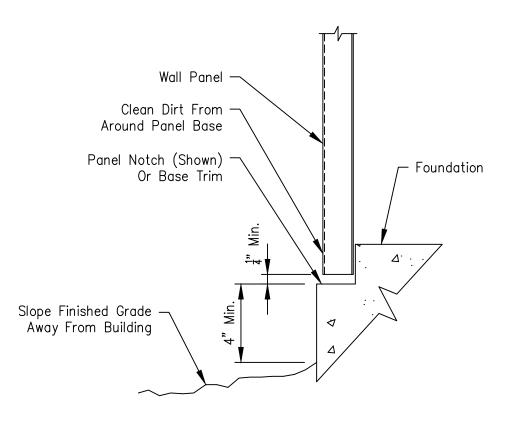


General Erection Notes

- 1.) All Structural Framing Members, Purlins, Girts, Clips, Flange Braces, Bolts, Bracing Systems, Roof And Wall Panels, Etc. Must Be Installed As Shown On Erection Drawings.
- 2.) It Is Extremely Important, Especially During Construction, That Panels At The Eaves, Rakes And Ridges Be Kept Secure.

Panel Cautions And Notes

- To Minimize Potential Of Corrosive Action At The Bottom Edge Of Wall Panels, The Contractor Must Assure That The Following Procedures Are Followed:
- 1.) The Concrete Foundation Should Be Cured For A Minimum Of Seven (7) Days Before Wall Panels Are Installed. (Uncured Concrete Is Highly Alkaline And Metal Panels Can Undergo Varying Degrees Of Corrosive Attack When In Direct Contact With The Concrete.) After The First Week Of The Curing Cycle, The Reaction Between Metallic Coatings On Steel And The Concrete Is Essentially Halted.
- 2.) Top Of Finish Grade At Building To Be A Minimum Of Four (4) Inches Below Bottom Of Panel.
- 3.) Finish Grade Is To Slope Away From Building To Ensure Proper Drainage.
- 4.) Upon Completion Of Finish Grading, All Dirt Is To Be Cleaned From Around Base Of Wall Panel Where It May Have Collected In Panel Notch Or On Base Trim.



Fastener Installation

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

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.







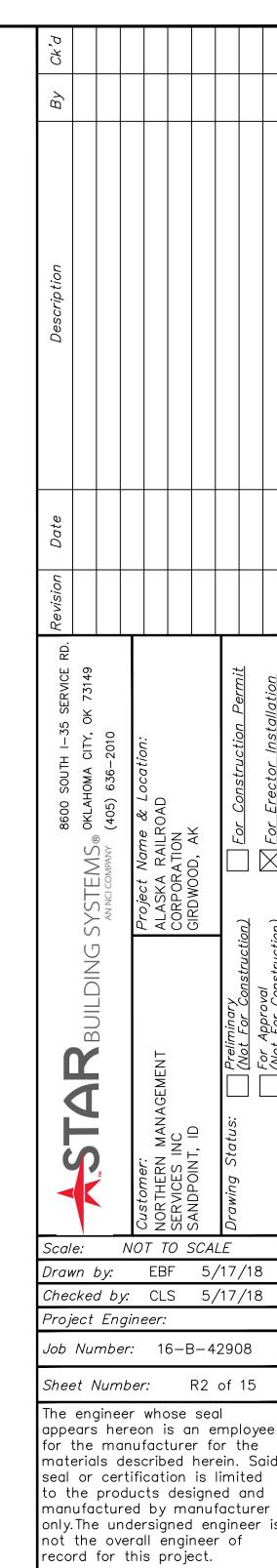
Too Loose Compression Of Sealing Washer

Tape And Tube Sealant

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

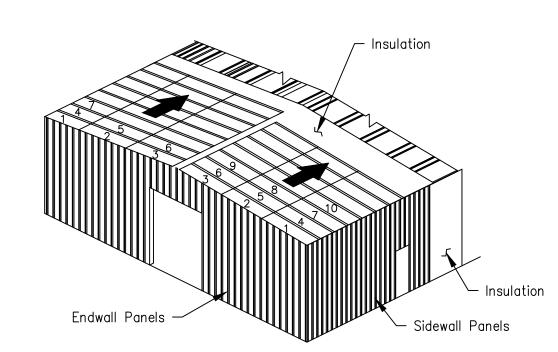
Important Note

- All Details, Recommendations And Suggestions Contained In This Erection Guide Of This Drawings Set Are For General Guidelines Only, And Not Meant To Be All-inclusive. Industry Accepted Installation Practices With Regard To All Areas Not Specifically Discussed In This Section Should Be Followed. Only Experienced, Knowledgeable Installers Familiar With Accepted Practices Should Be Used To Assure A Quality Project.
- It is Emphasized That The Manufacturer is Only A Manufacturer Of Metal Building Components And Is Not Engaged In The Installation Of Its Products. Opinions Expressed By The Manufacturer About Installation Practices Noted In The Erection Guide Are Intended To Represent Only A Guide. Both The Quality And Safety Of Installation And The Ultimate Customer Satisfaction With The Completed Building Are Determined By The Experience, Expertise, And Skills Of The Installation Crews, As Well As The Equipment Available For Handling The Materials. Actual Installation Operations, Techniques And Site Conditions Are Beyond The Manufacturers Control.



PBR Roof Panels

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



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

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

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

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

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

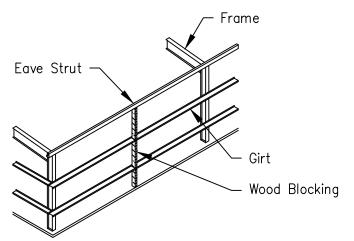
Wall Panels

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

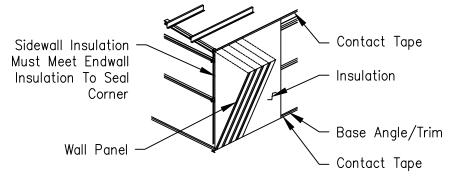
Before Installing Wall Panels, The Girts Must Be Aligned To A Level Position So That There Is No Visible Sag. This Should Be Done Directly Ahead Of Panel

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.

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

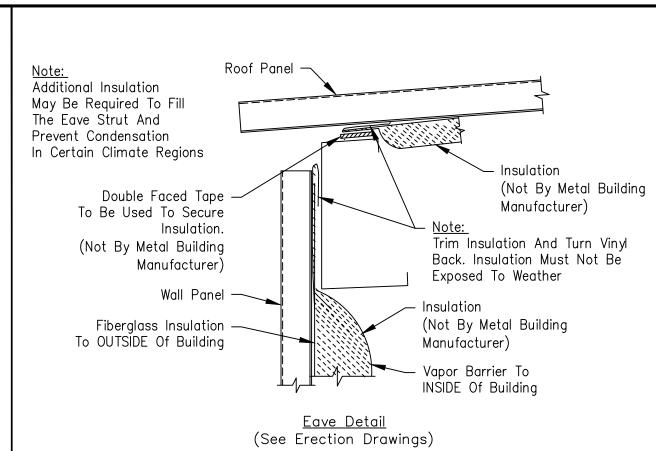


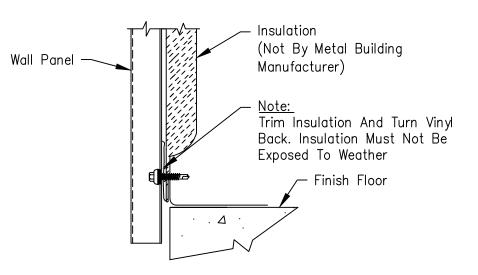
Wall Panel Type And Installation Details Will Vary. Refer To The Erection Drawings And Details For The Specific Panel Used For Your Building.



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

At The Base, Cut Off The Insulation A Minimum Of $\frac{1}{2}$ Above The Bottom Of The Wall Panel. This Will Prevent The Insulation From Hanging Below The Wall Panel And Wicking Moisture.



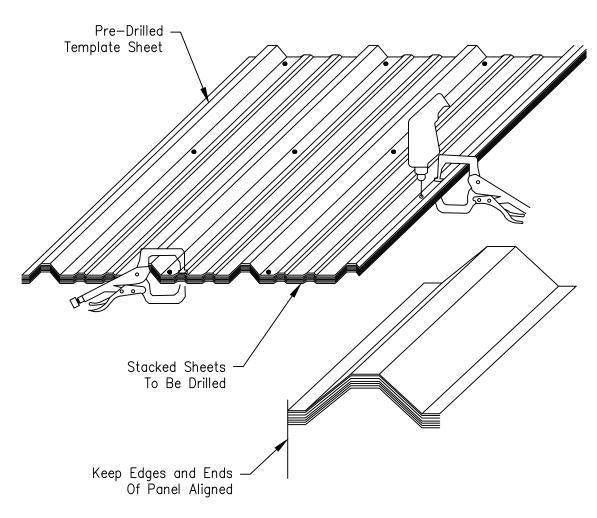


Sidewall Panels Should Be Installed So That The Panel Sidelap Is In A Direction Away From The Prevailing Wind. Refer To Appropriate Lap Detail Included With Erection Drawings.)

<u>Base Detail</u>

(See Erection Drawings)

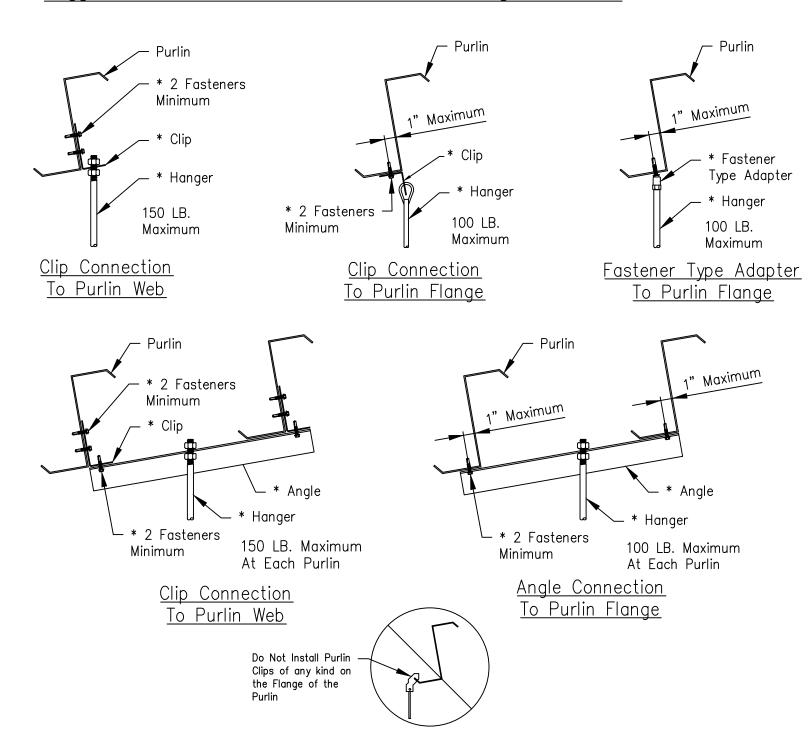
Check Periodically To Ensure That All Panels Are Aligned And Plumb.



Screw Alignment Panel (Through Fastened Panel Only)

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

Suggested Method Of Purlin Attachment For Building Accessories



* Denotes Material Not Provided By Metal Building Manufacturer.

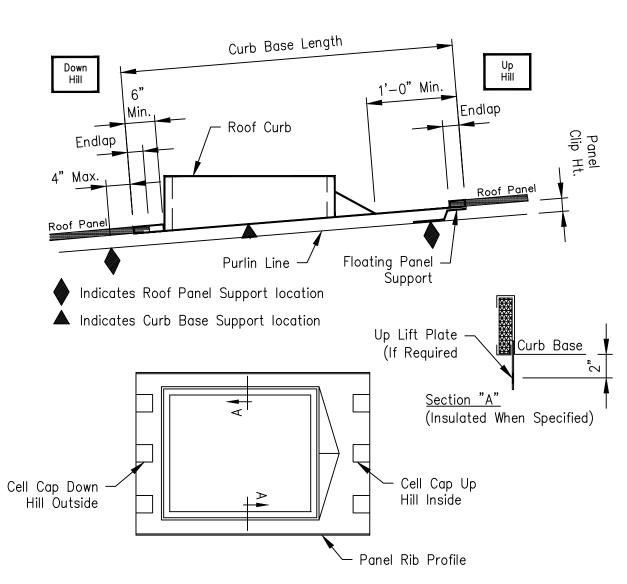
The Total Hanger Load Shall Not Exceed The Design Collateral Load For The Building. Example:

5'-0 (Purlin Spacing) X 5'-0 (Hanger Spacing) X 6 PSF (collateral Load) = 150 Lbs.

See Cover Sheet For Design Collateral Load For This Building.

Note: If The Building Is Designed For O PSF Collateral Load, Then Adding Any Suspended System (i.e. Duct Work, Piping, Lights, Ceilings, Etc.) Will Correspondingly Reduce The Design Live Load.

Roof Curbs When Not Supplied By Building Manufacturer



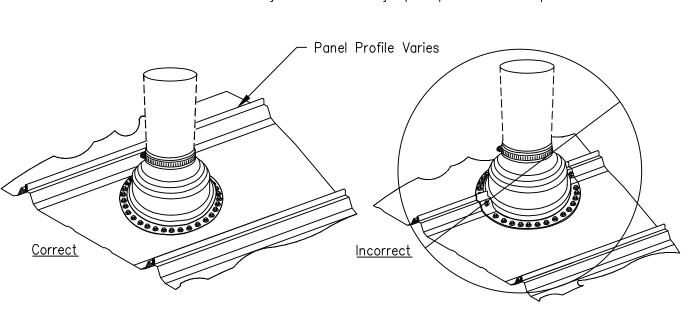
The Curb Details Shown Illustrate The Building Manufacturers Recommended Curb Style And Installation Method. It Is The Erector/Installer's Responsibility To Provide The Proper Curb Style And Install Them In Accordance With The Procedures Established By These Details. Failure By The Erector/Installer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

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

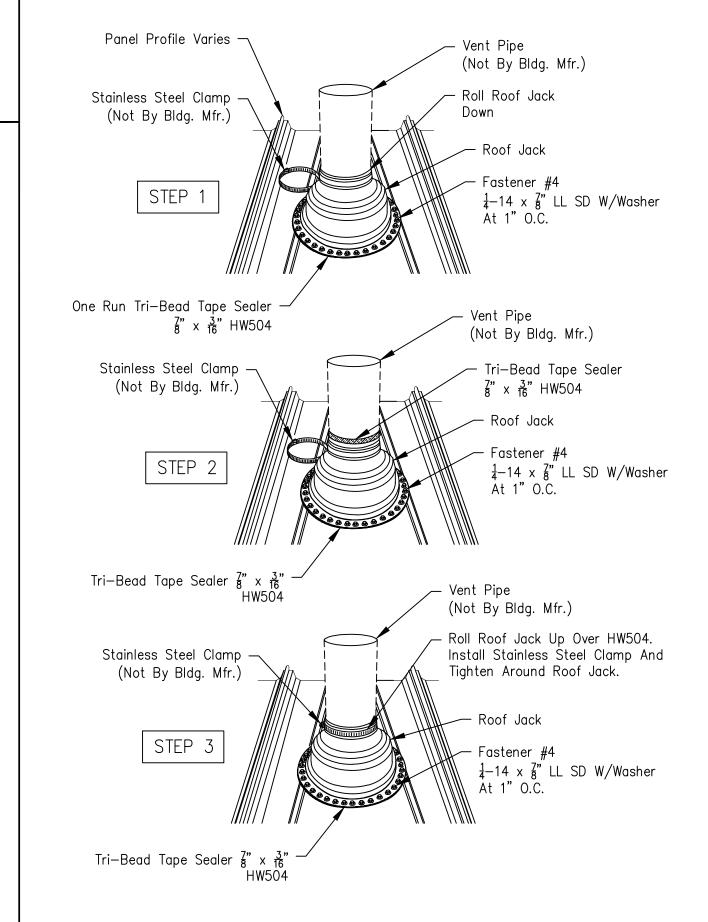
Roof Jack Installation when Not Supplied By Building Manufacturer

General Installation Notes

- Do Not Use Galvanized Roof Jacks, Lead Hats, Or Other Residential Grade Roof Jacks. These Roof Jacks Do Not Have 20 Year Service Life And In Case Of Lead Hats Will Cause Galvanic Corrosion Of The Roof Panel.
- Use EPDM Rubber Roof Jacks With An Integral Aluminum Band Bonded Into The Perimeter Of The Base. EPDM Roof Jacks Have A Temperature Range From -65°F To 212°F. Use Silicone Roof Jacks For High Temperatures. Silicone Roof Jacks Have A Temperature Range Of -100°F To 437°F.
- Retrofit Roof Jacks Are Available For Applications In Which The Top Of The Pipe Is Inaccessible, Eliminating The Possibility Of Sliding The Roof Jack Over The Top Of The
- Do Not Use Tube Sealant To Seal The Roof Jack To The Roof Panels. Use Roll Tape Sealer Between The Roof Jack And The Roof Panel And Attach The Roof Jack To The Roof Panel With Fastener #4 $\frac{1}{4}$ - 14 X $\frac{7}{8}$ " LL SD W/washer At 1" O.C. Around The Base Of The Roof Jack. See Table Below For Quantities.
- Trim The Top Of The Roof Jack To Fit Over The Pipe, Roll Down The Roof Jack Over The Pipe And Apply Tape Sealer For The Perimeter Of The Roof Jack Base Between The Roof Jack And The Roof Panel. Apply Tape Sealer Around The Pipe And Install A Stainless Steel Clamp (Not By Bldg. Mfr.) Over The Top Of The Roof Jack And Firmly Tighten To Form A Secure Compression Seal.
- If The Pipe Diameter Is So Large To Block The Flow Of Water Down The Roof Panel, A Flat Base Roof Curb Must Be Installed Into The Roof And The Roof Jack Will Be Sealed To The Curb. A Two Piece Curb May Be Required When The Top Of The Pipe Is Inaccessible.
- In Northern Climates, The Pipe Penetration Should Be Protected From Moving Ice Or Snow With A Snow Retention System Immediately Up Slope From The Pipe.

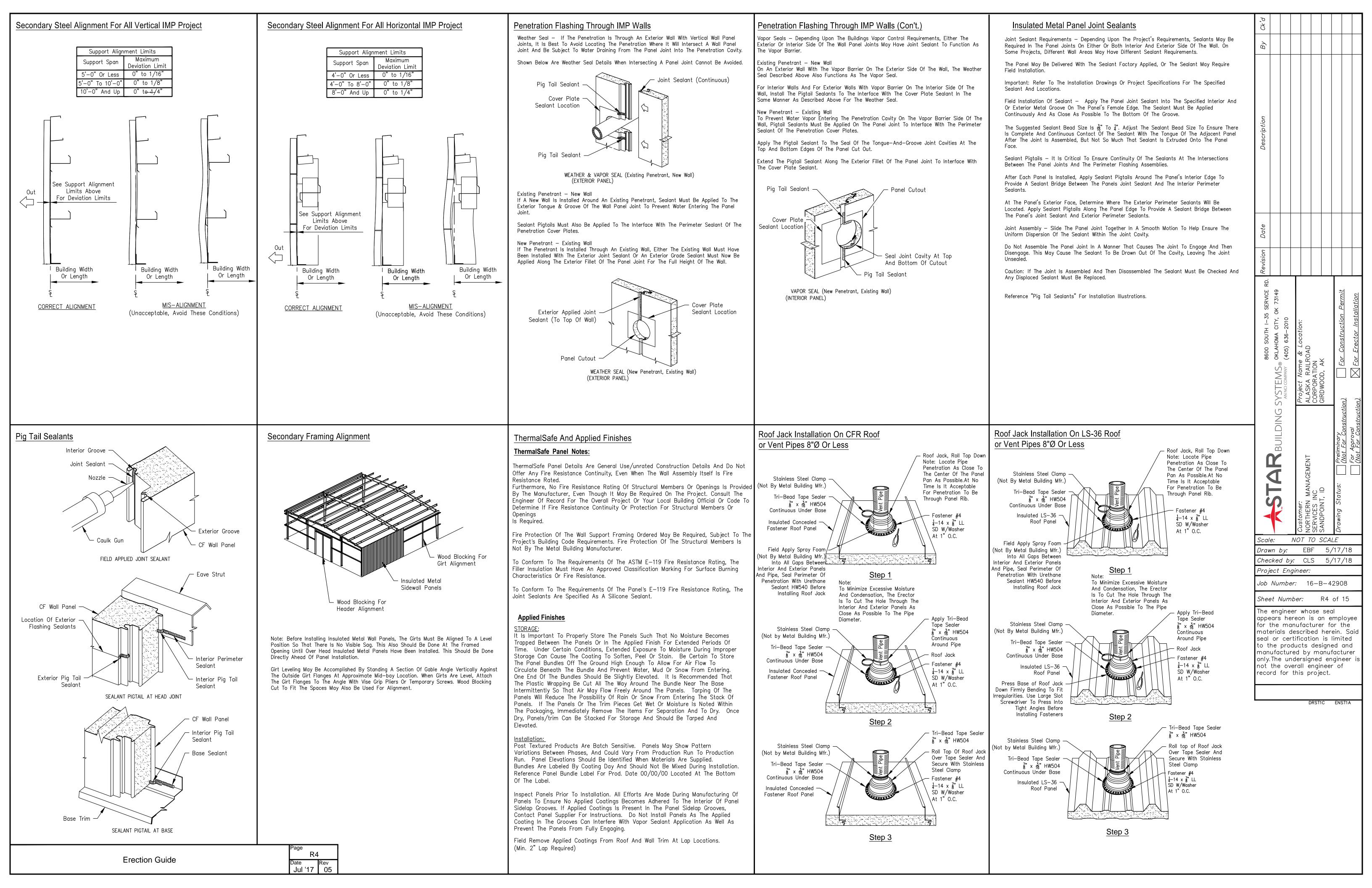


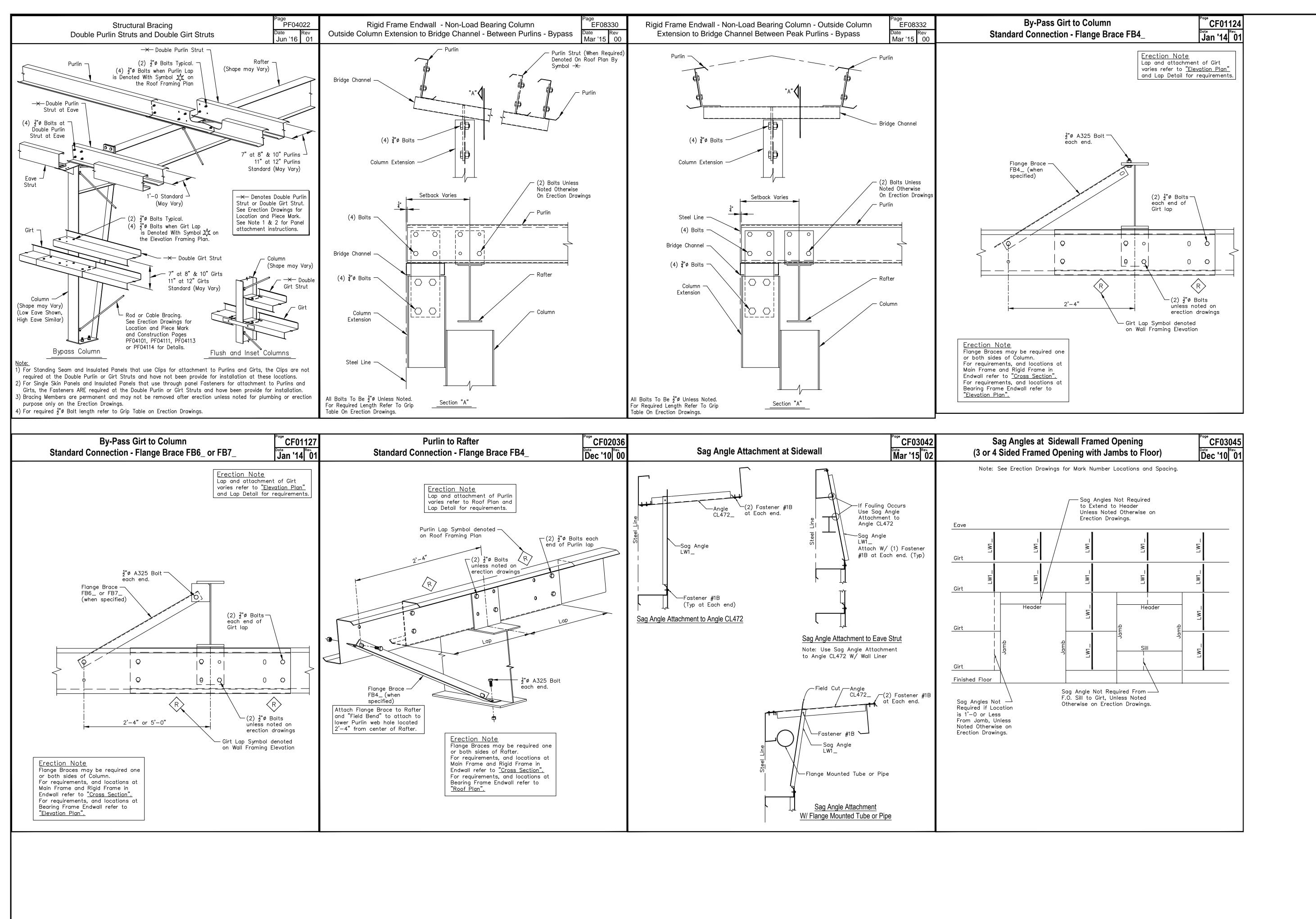
Install Pipe In Center To Allow Base Of Roof Jack To Lay Flat on Panel. Cannot Encompass More Than 75% Of Panel.



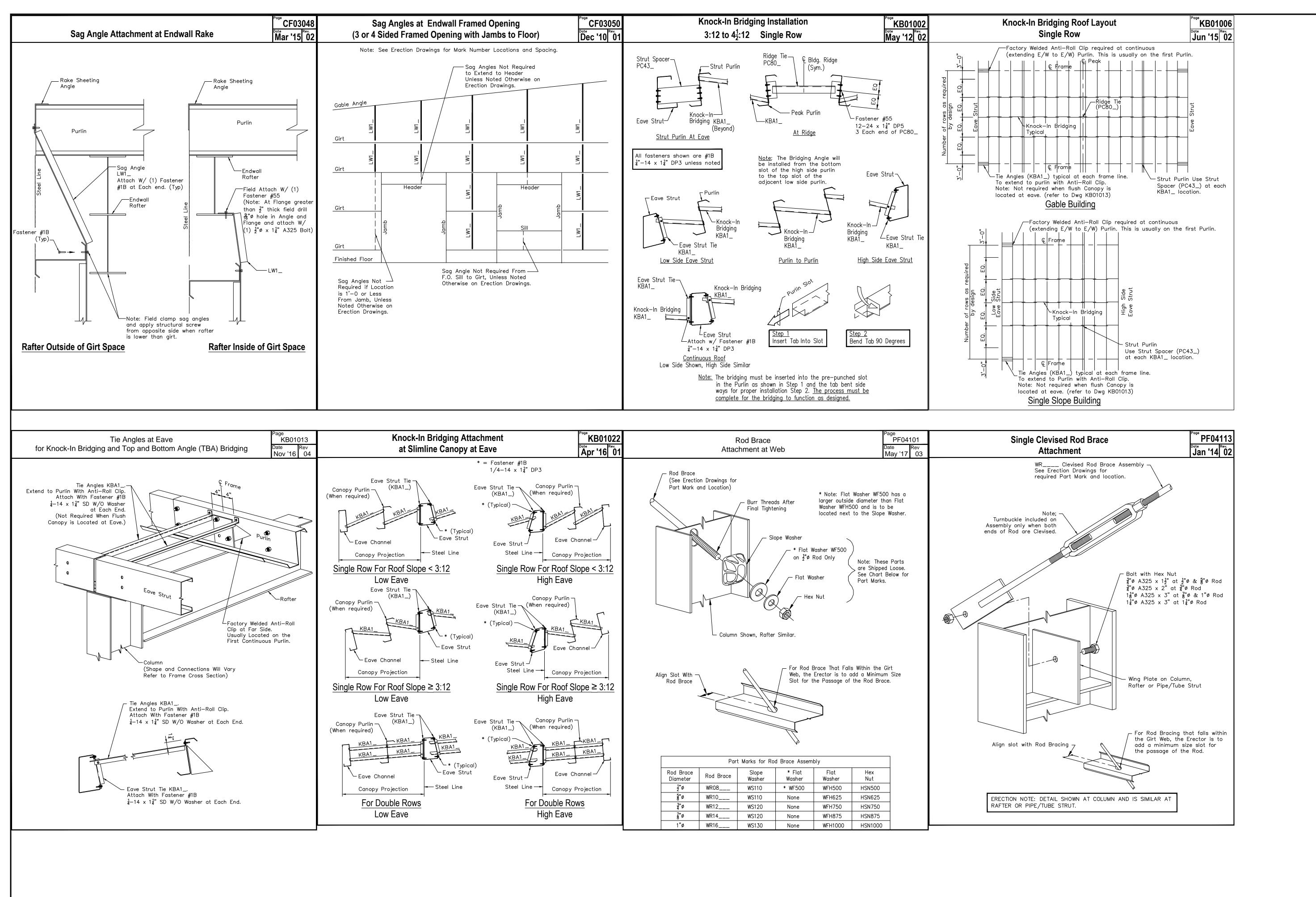
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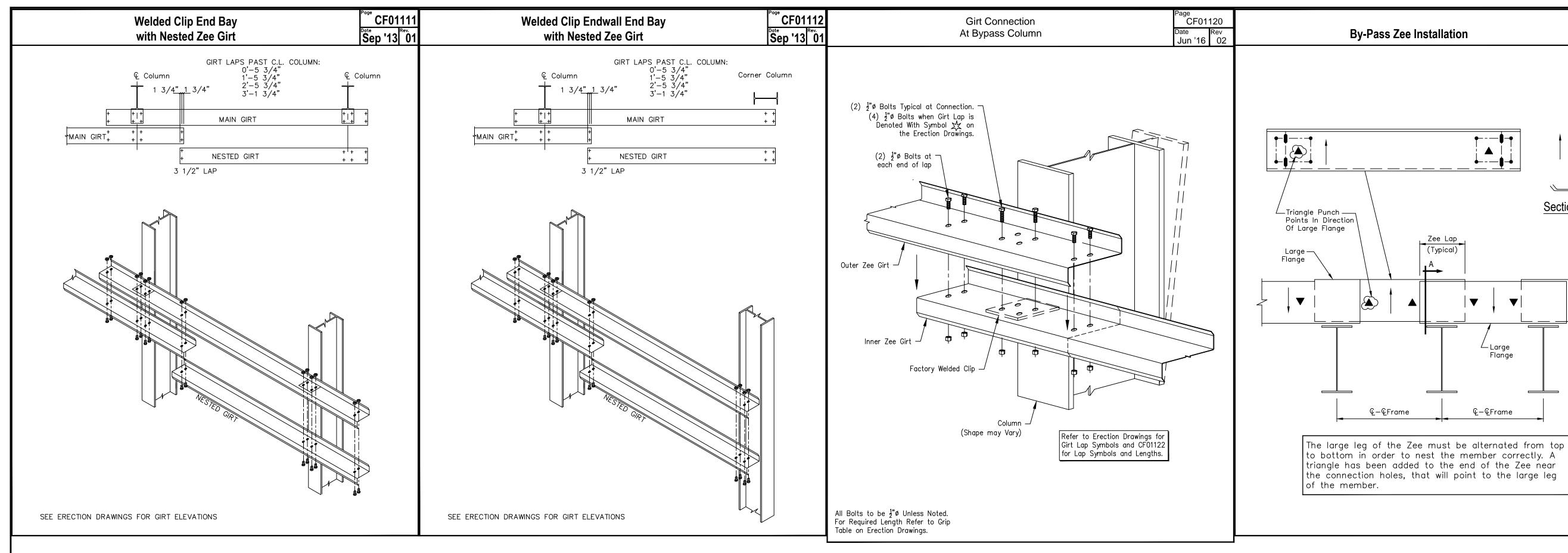


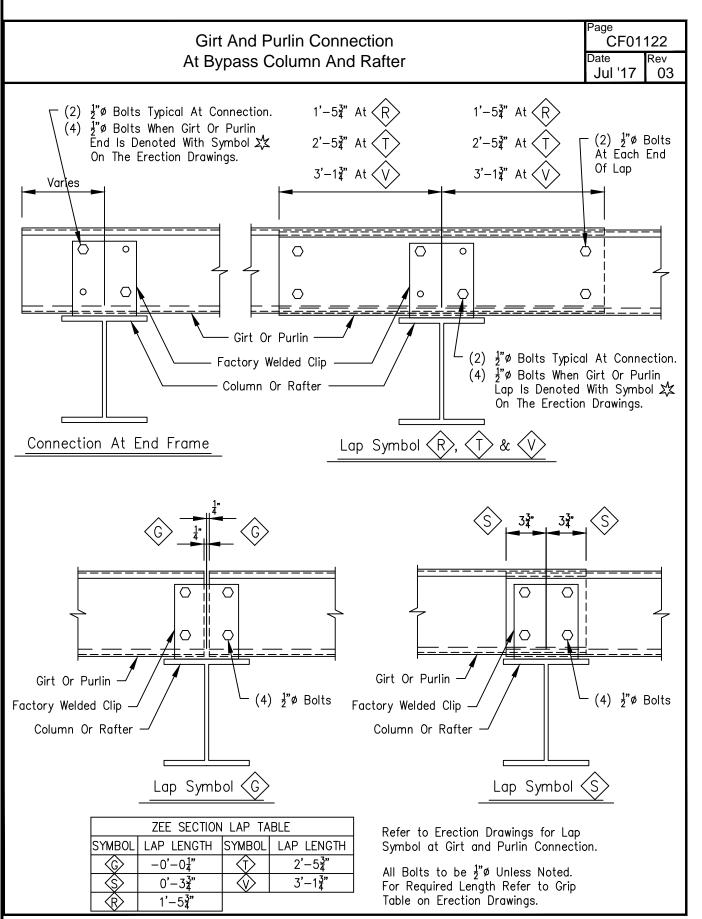
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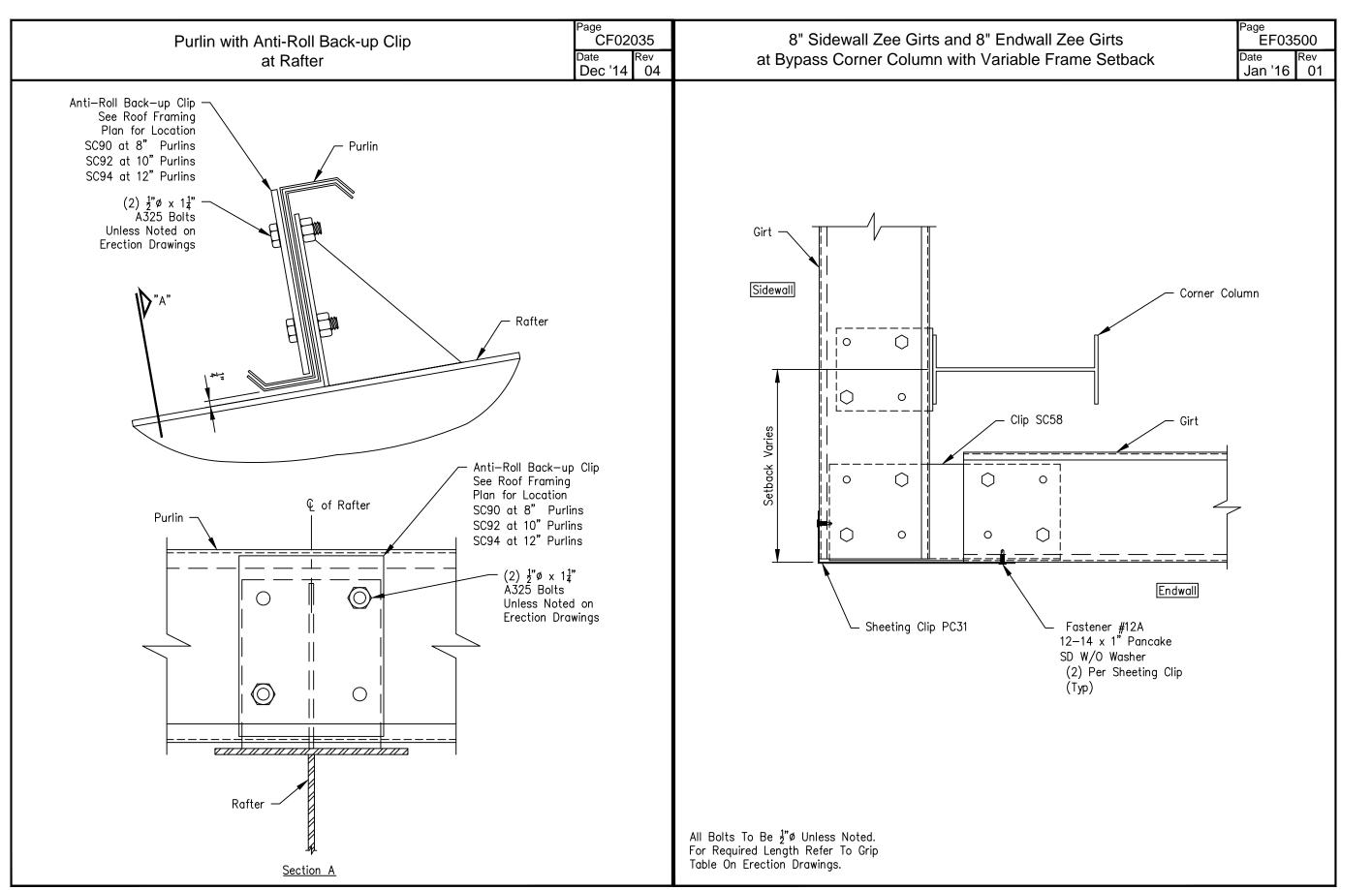


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Job Number: 16-B-42908

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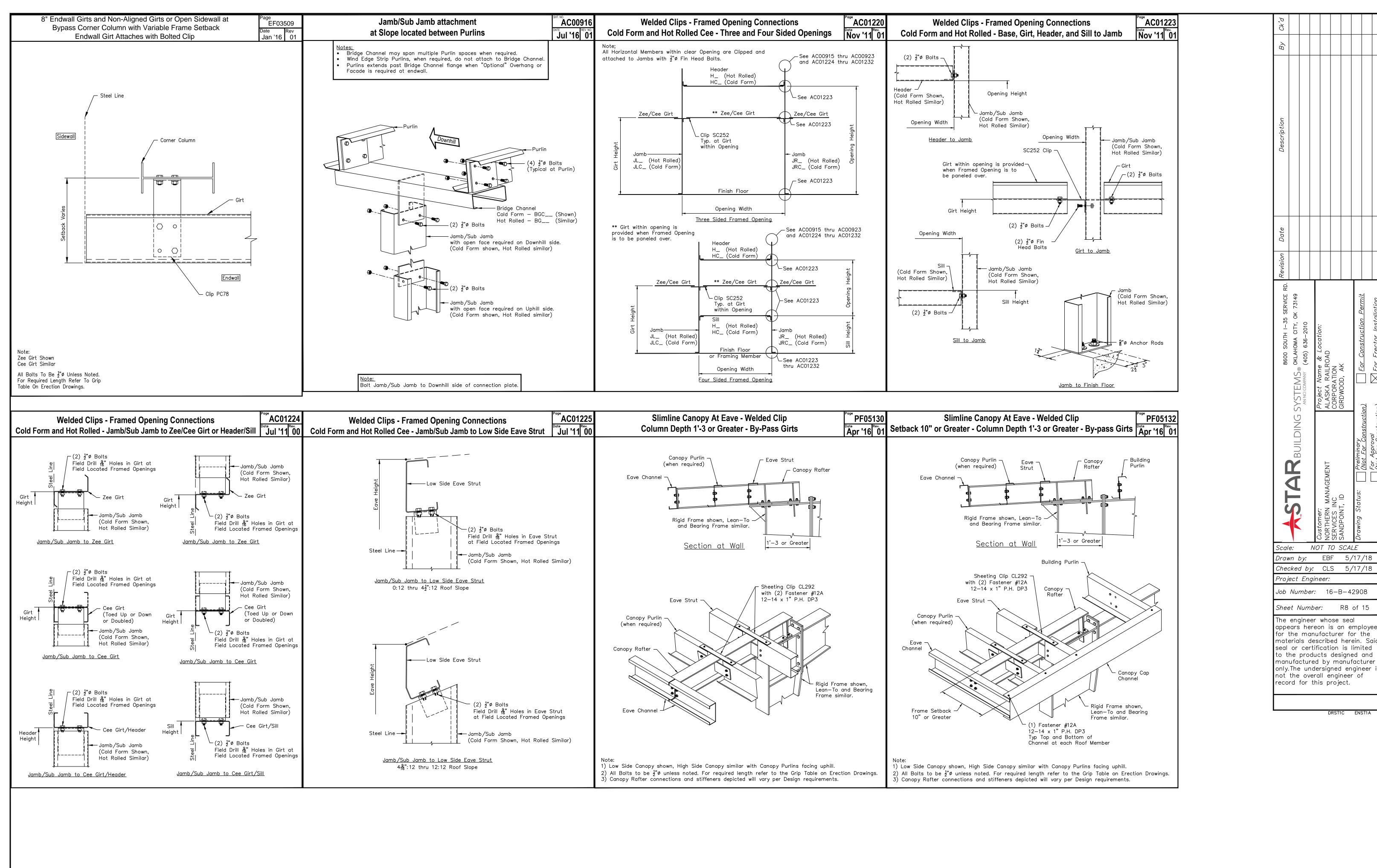
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Section A

Zee Lap (Typical)

-Large

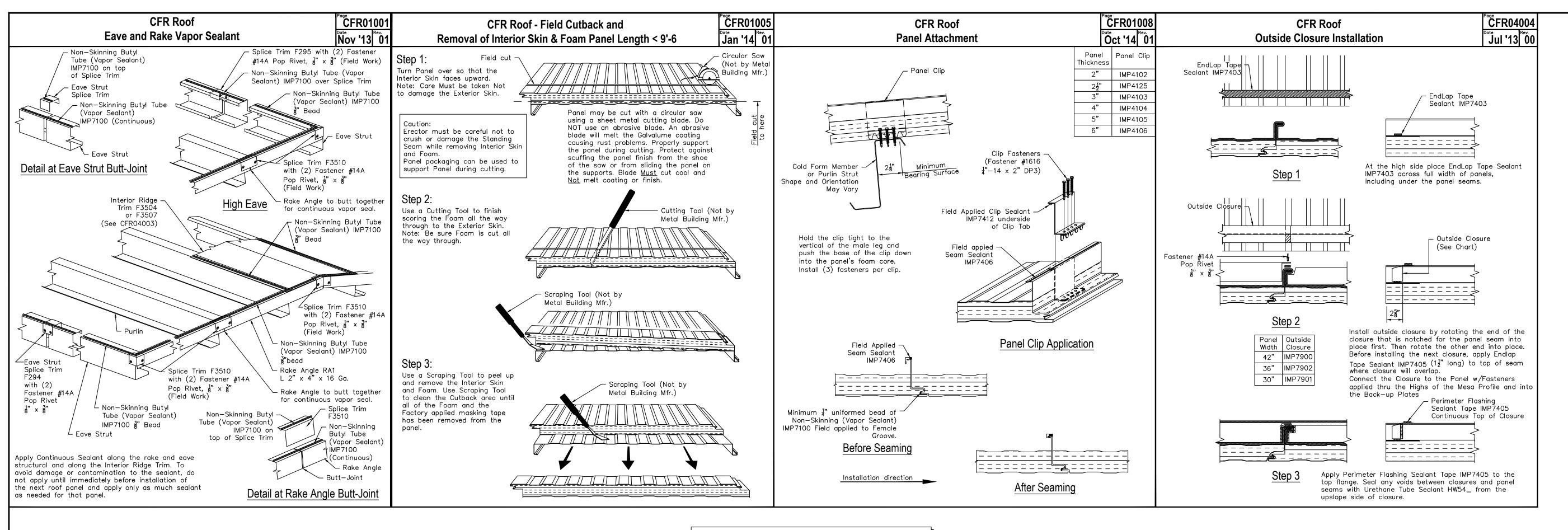
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EBF 5/17/18

R8 of 15



SUBSTITUDE ALL FASTENERS #4 WITH #4A

6" THICK CFR ROOF PANELS
4" THICK LS-36 WALL PANELS
FIELD CUT ALL FLASH TO LENGTH

NOT TO SCALE

R9 of 15

Job Number: 16-B-42908

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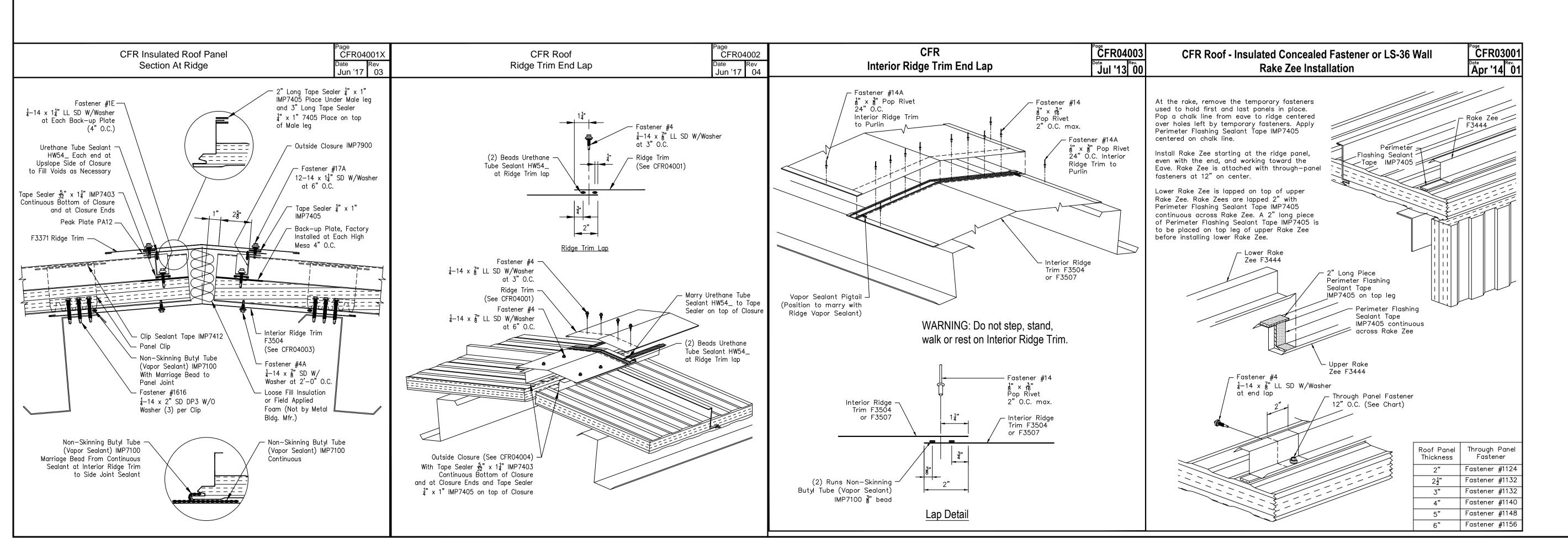
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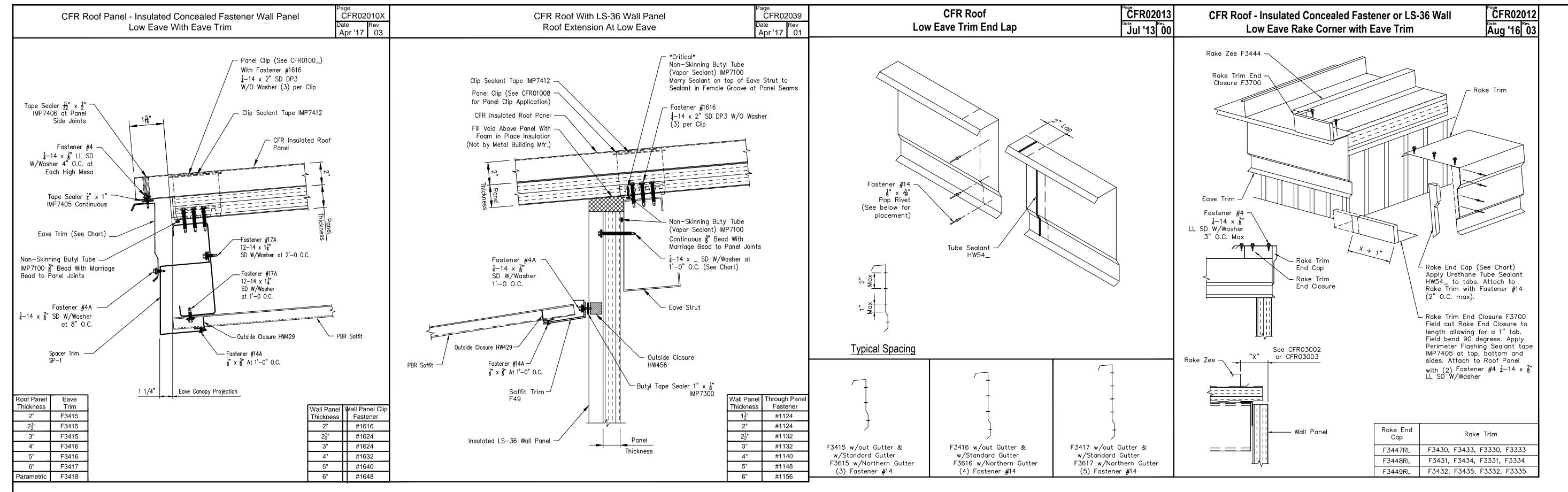
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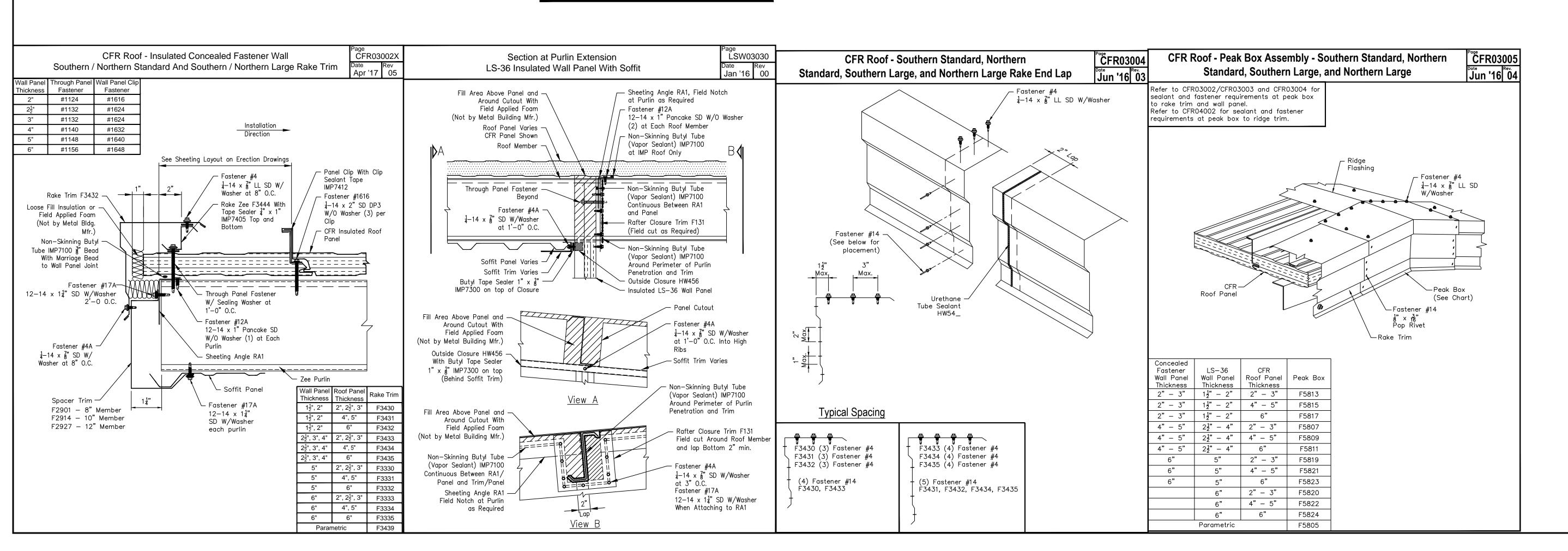
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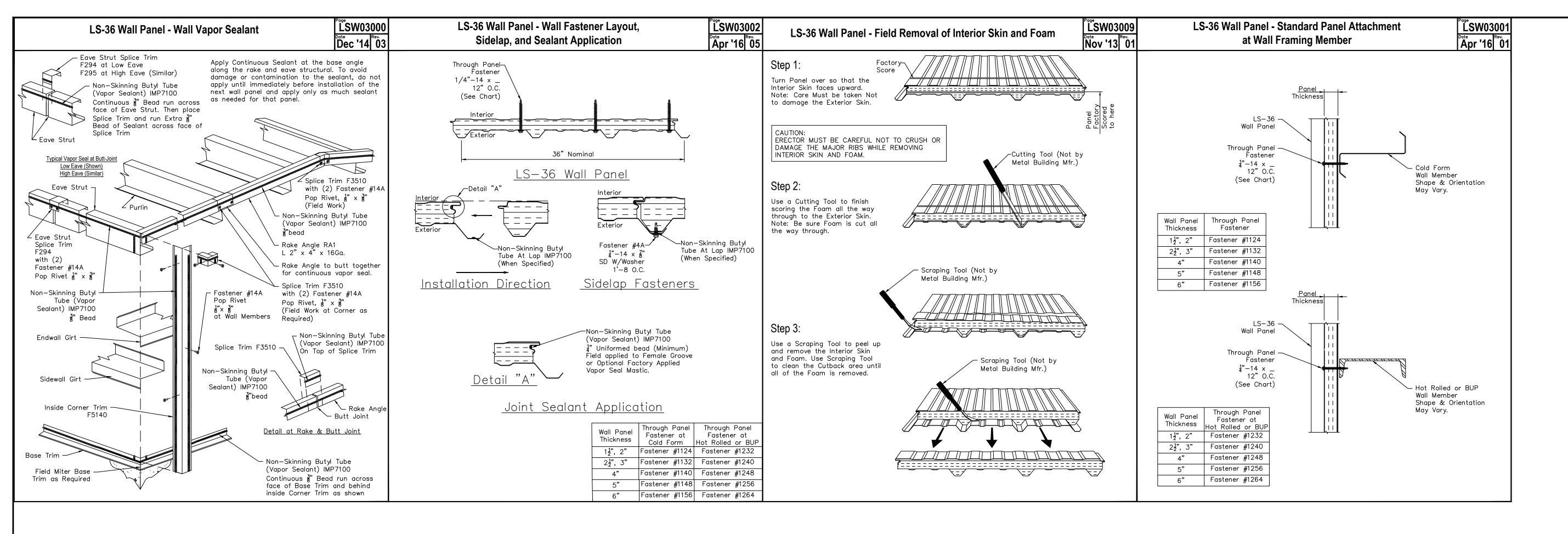


SUBSTITUDE ALL FASTENERS #4 WITH #4A

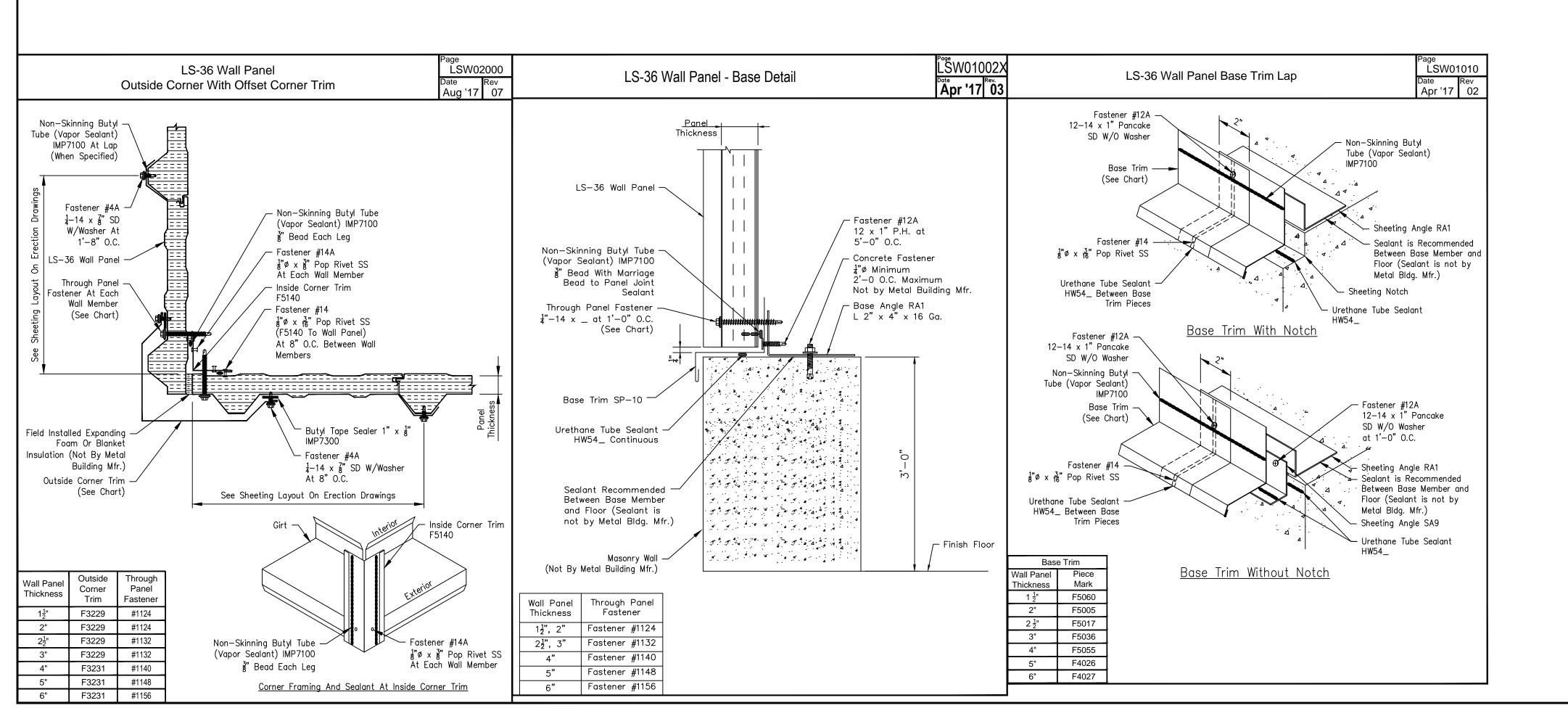
6" THICK CFR ROOF PANELS
4" THICK LS-36 WALL PANELS
FIELD CUT ALL FLASH TO LENGTH



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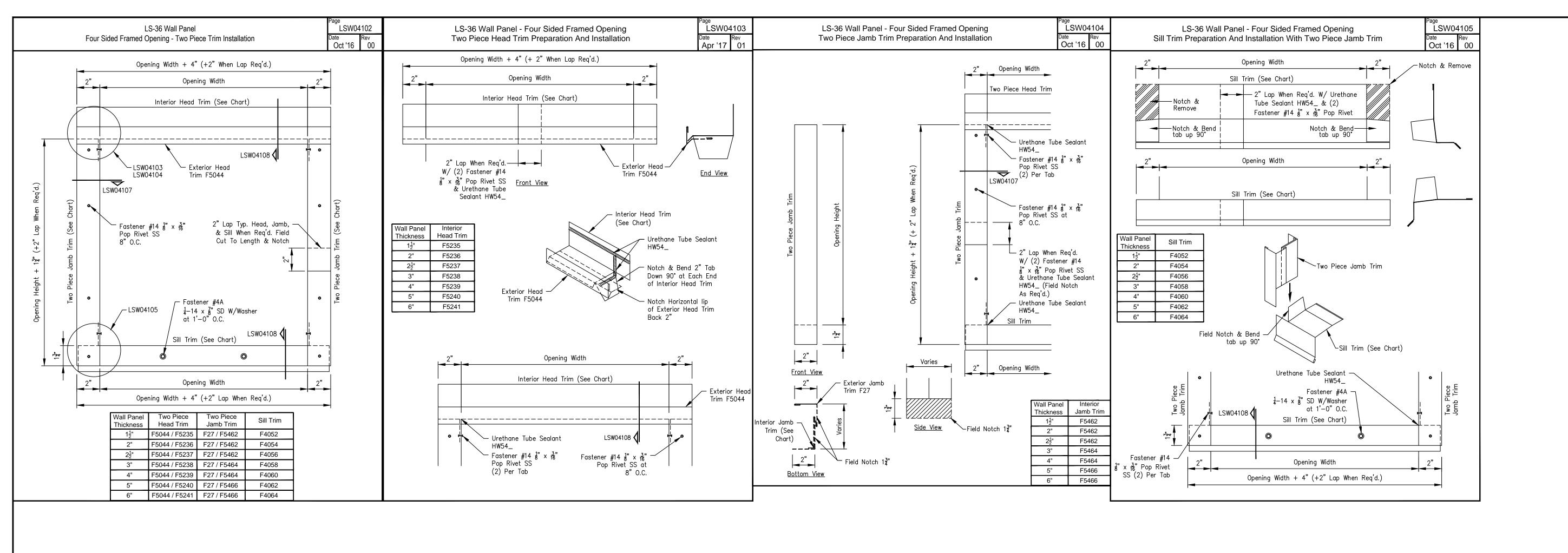


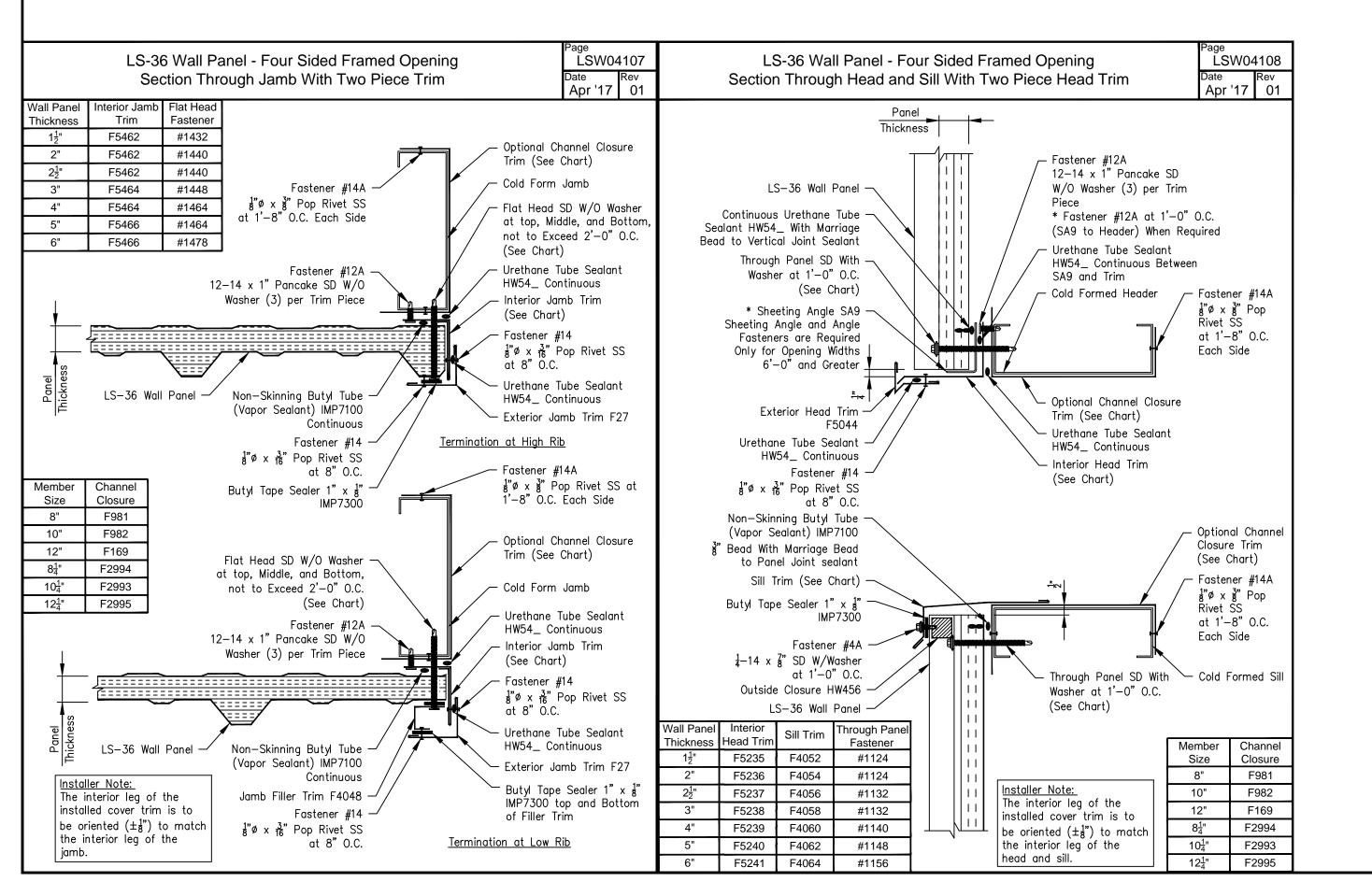
SUBSTITUDE ALL FASTENERS #4 WITH #4A



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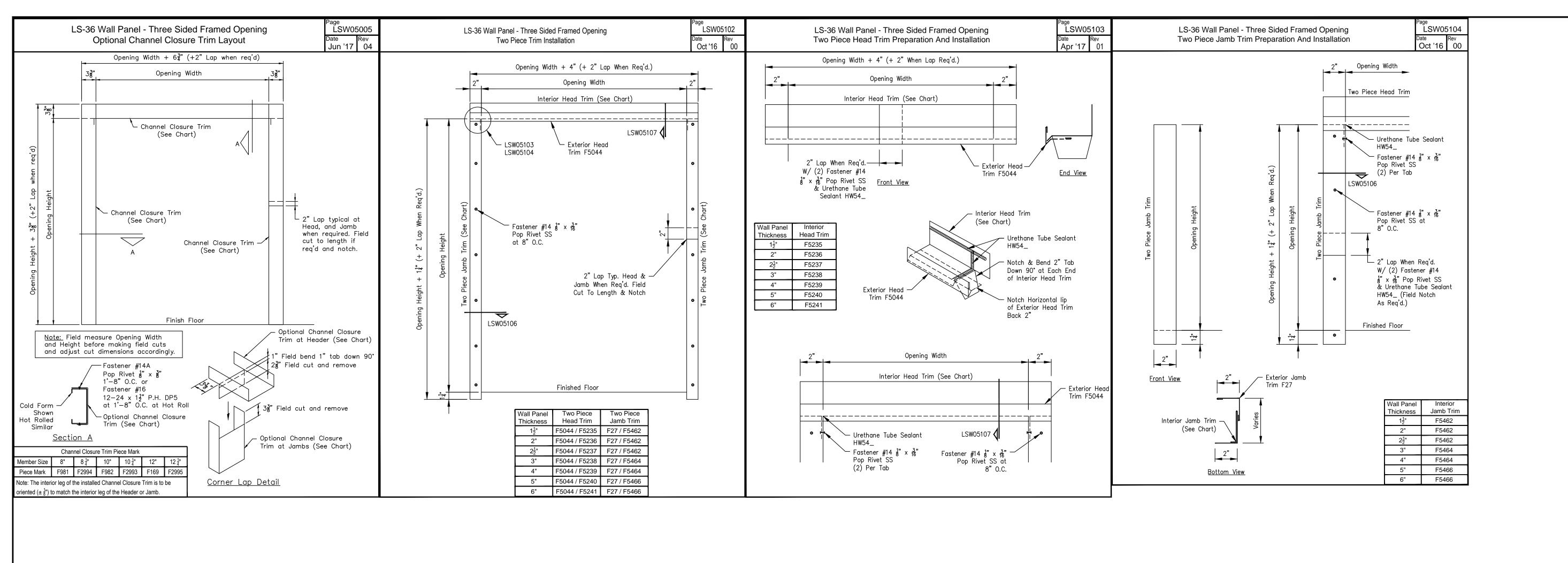
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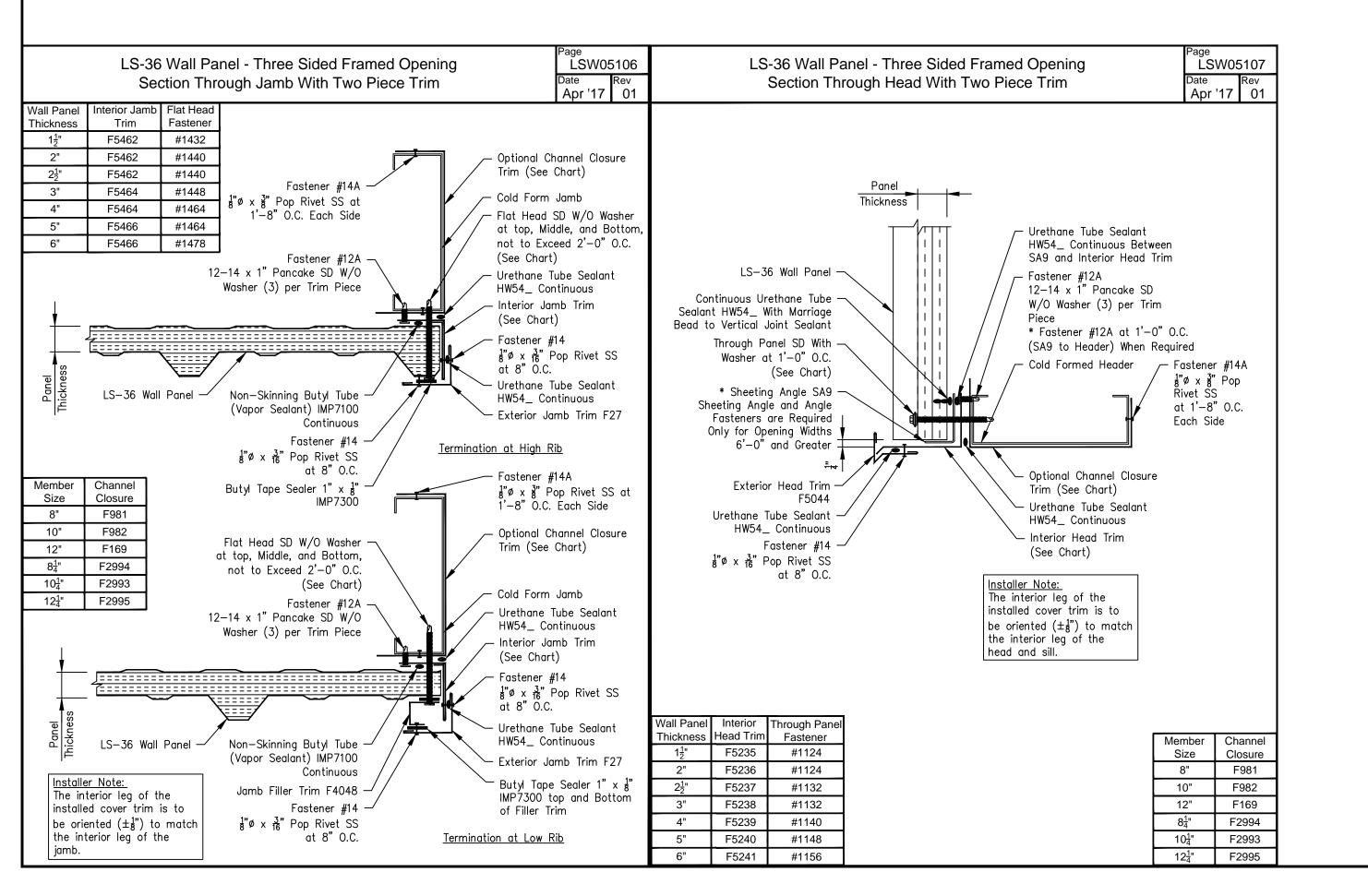




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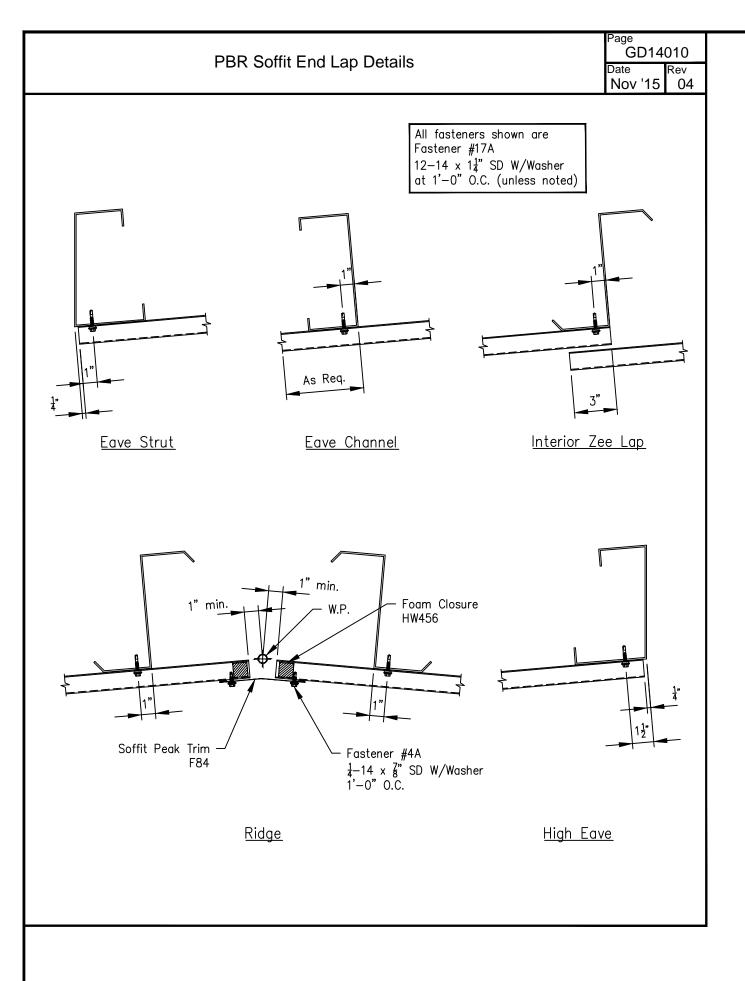
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FIELD CUT ALL FLASH TO LENGTH

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Tape Seala	ant and Tube Sealant	Page G000005 Date Rev Oct '15 03	,	Various Fasteners	Page G000009 Date Rev Nov '16 11		Fasteners	Page G000004 Date Rev Jul '17 05
TRI-BEAD TAPE SEALER HW504	FLAT TAPE SEALER HW507	TAPE SEALER — SWAGED HW515	Fastener #17 12—14 x 1" SD W/Washer	Fastener #38 1 -14 x 7 SD W/O Washer		<u>Fastener #14</u>	<u>Fastener</u> #14A	<u>Fastener #24</u>
3" X 7" X 25'-0"	3/32" X ½" X 50'−0"	3" X 2½" X 6"	语" Hex Head	15″ Hex Head				
TRIPLE BEAD TAPE SEALER HW502	FLAT TAPE SEALER HW506	BattenLok HS SuperLok	<u> </u>			1/8" x 3/16" Pop Rivet Stainless Steel	1/8" x 3/8" Pop Rivet Stainless Steel	8 x 5/8" Nibbed Driller
$\frac{3}{16}$ " $\times 2\frac{1}{2}$ " $\times 20'-0$ "	3." X 1" X 45'-0"	SuperLok		Fastener #12A 12—14 x 1" Pancake SD W/O Washer		<u>Fastener #35</u>	<u>Fastener #43L</u>	Fastener #44L
URETHANE TUBE SEALANT	TAPE SEALER MINOR RIB HW512	NON-SKINNING BUTYL TUBE (VAPOR SEALANT)						
	À, À		Fastener #55 12-24 x 1½" SD DP5 W/0 Washer	Fastener #70 12-24 x 1½" SD DP5 W/O Washer	Fastener #142 12-14 x 1½" SD W/O Washer	#14 x 1 1/8" O.D. Bonded Washer	L.T.P. Member Screw (Long Life) 1/4"-14 x 1 1/4" 5/16" Hex Washer Head W/ 1 1/8" O.D. Washer	L.T.P. Stitch Screw (Long Life) 1/4"-14 x 7/8" 5/16" Hex Washer Head W/ 1 1/8" O.D. Washer
HW540 (White) HW541 (Gray) HW542 (Bronze)	$\frac{7}{32}$ " X $1\frac{3}{8}$ " X 4"	IMP7100 (WHITE)	5" Hex Head	5" Hex Head	5. Hex Head	<u>Fastener #226</u>	<u>Fastener #228</u>	<u>Fastener #271</u>
Note: 25'-0" per Tube at 1/4" Bead	2" WIDE X 24 GA. STRAPPING	Note: 12'-6" per Tube at 3/8" Bead FLEXIBLE MEMBRANE (EPDM)						
		or 24"	Fastener #76 12-14 x 2" SD W/O Washer 16" Hex Head	Fastener #61 12—14 x 1¼" SD W/O Washer ½" Hex Head	Fastener #1B 1-14 x 11 SD W/O Washer 15" Hex Head	3/16" x 9/16" Closed End Rivet	10 x 1/2" Grommet Washer	8–18 x 1/2" Trim Screw
DEKSTRIP 7" WIDE = HW5227		16,0				<u>Fastener HW399</u> ∏n		
DEKSTRIP 9" WIDE = HW5228 DEKSTRIP 12" WIDE = HW5229	- 51470 OF' O" D II	- LINESO 40" FO' 0" D. H.	Fastener #16		Fastener #46			
COLOR = Gray SCREWS 2" O.C. MAX. PERIMETER TAPE SEALANT BOTH SIDES TUBE SEALANT EACH END TERMINATION STRIP HW5305 EACH	• FL470 — 25'-0" Roll Galvalume Plus Only • FL471 — 100'-0" Roll Galvalume Plus Only	• HW520 - 16" x 50'-0" Roll • HW521 - 24" x 50'-0" Roll	12-24 x 1½ Pancake SD DP5 W/O Washer	NOTE: Refer to Bill of Materials for Specific job Requirements	1-14 x 8 LL ST Type B W/Washer 5 Hex Head	#6 x 1" Rubber Grommet 1/4" Hex Head w/ Washer		
END (1" Wide x 4'-0" Long Alum.)	• FL569 — 500'—0" Roll Galvalume Plus or White Wash Coat	NOTE: Refer to bill of materials for specific job requirements				Note: Refer to bill of materials for specific job requirements.		

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