



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

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DRAWING RELEASE HISTORY		
TYPE	DATE	DESCRIPTION
Anchor rods	2/20/2021	FOR CONSTRUCTION
Erection Drawings _ Rev-0	03/25/2021	FOR CONSTRUCTION

GENERAL NOTES

MATERIALS

3 PLATE WELDED SECTIONS
COLD FORMED LIGHT GAGE SHAPES
BRACE RODS
HOT ROLLED MILL SHAPES
HOT ROLLED ANGLES
HOLLOW STRUCTURAL SECTION (HSS)
CLADDING

ASTM DESIGNATION

A529, A572, A1011, A1018
A653, A1011
A572, A510
A36, A529, A572, A588, A992
A529, A572, A588, A992
A500
A653, A792

GRADE 55
GRADE 60
GRADE 50
GRADE 36 OR 50
GRADE 50
GRADE B
GRADE 50 OR GRADE 80

HIGH STRENGTH BOLT TIGHTENING REQUIREMENTS

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

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

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

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

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

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

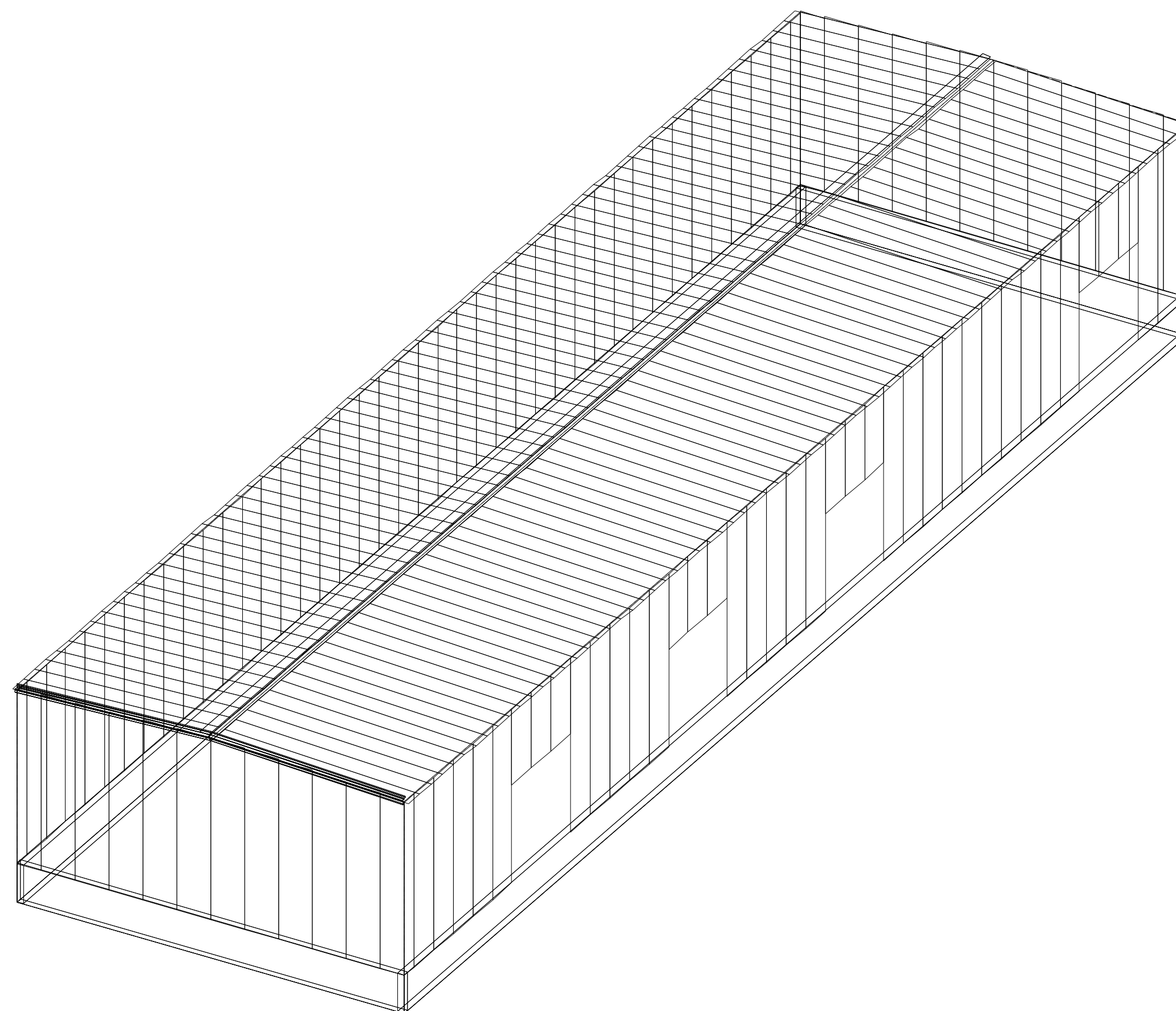
IN CANADA, ALL A325 AND A490 BOLTS SHALL BE "PRE-TENSIONED", EXCEPT FOR SECONDARY MEMBERS AND FLANGE BRACES.

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

INSPECTION AND TESTING

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

Note:
Building is not designed for any future expansion.



Designer: Juliet Bodley

Date: 3/30/2021 Pages 1-33

IMPORTANT NOTES:

- This building was NOT designed for future expansion in any direction
- Masonry walls are free standing and self-supporting.
- This building is not Designed for concentrated loads of 250 lb. or greater on or suspended from the BMC roof or walls
- This building is not designed to loads of fire suppression lines larger than 4" that will be suspended from the purlins or rafters
- BBNA Structure is designed to support a 3-ton crane.
- Butler is providing (4) crane stops. Hook bolts, rail clamps & rails are by others

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

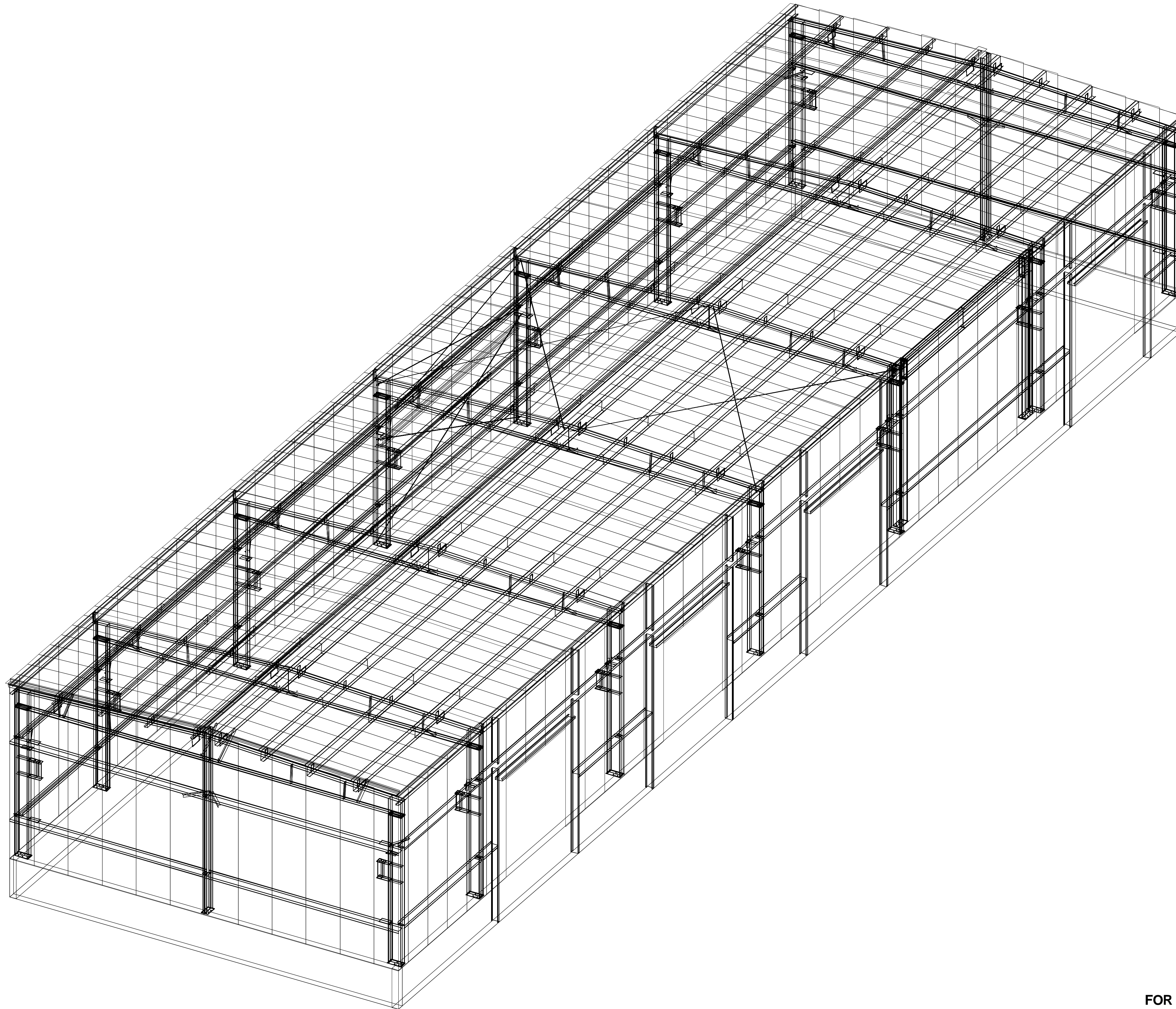
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THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY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

D BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

COVER SHEET	
BUILDER: Twin Pines Construction	JOB #: 21-000133-01
CUSTOMER:	DATE: 2/15/2021
LOCATION: Plainfield, New Hampshire	DRAWN/CHECK: /
PROJECT: Townline Shop	PAGE: 1
BUILDER'S PO#: VPC VERSION: 2020.4d	





FOR CONSTRUCTION

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1540 GENESSEE ST. KANSAS CITY, MO 64102

PERSPECTIVE DRAWING

REV:	DATE:	BY:	DESCRIPTION:

BUILDER:	Twin Pines Construction
CUSTOMER:	
LOCATION:	Plainfield, New Hampshire
PROJECT:	Townline Shop
BUILDER'S PO#:	

 Butler Manufacturing VPC VERSION: 2020.4d	JOB #:	21-000133-01
	DATE:	2/15/2021
	DRAWN/CHECK:	/
	PAGE:	2

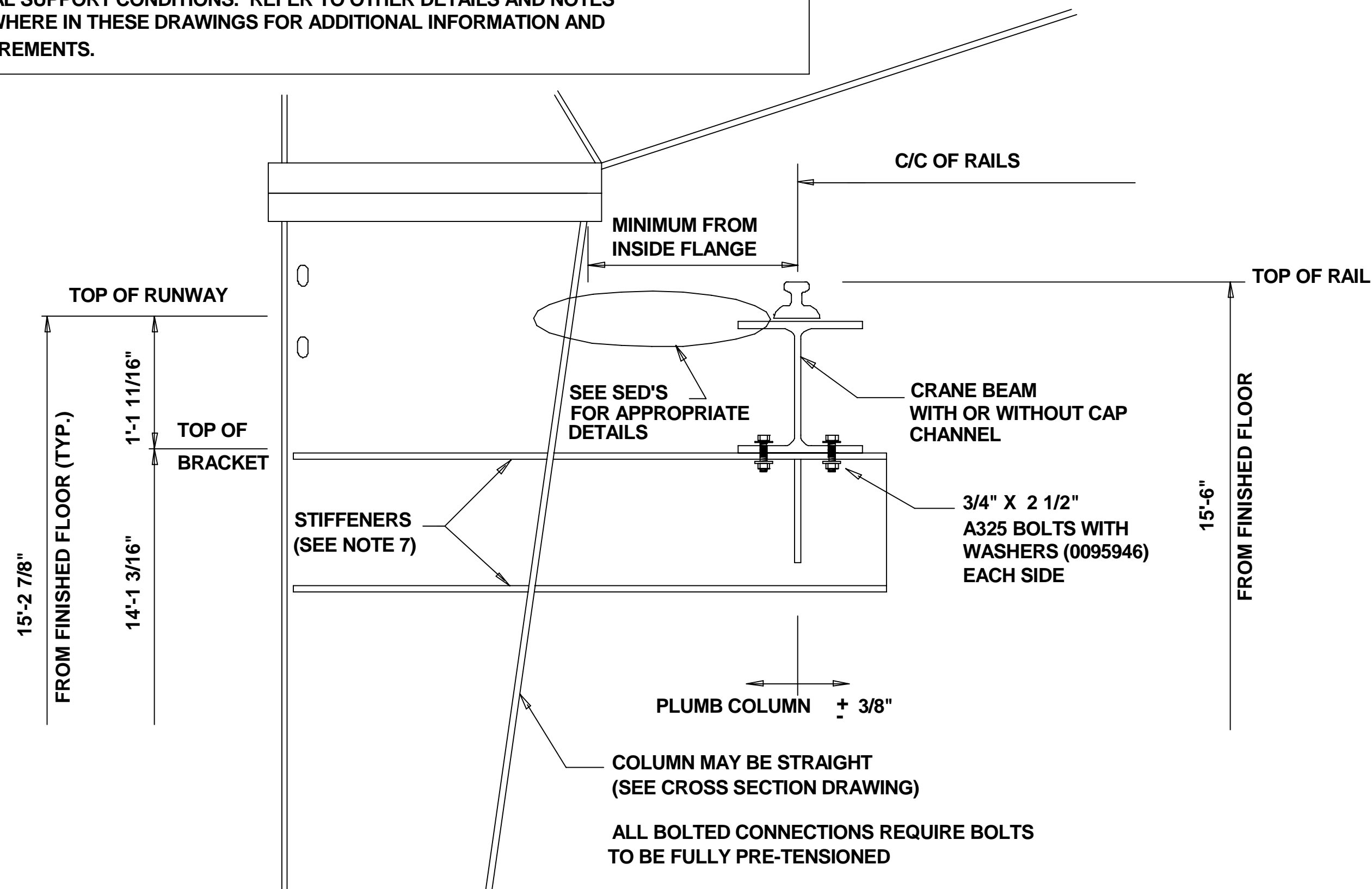
DRAWING SCALE: NTS

2/20/2021

8:51:28

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NOTE: THE CRANE BRACKET SHOWN ON THIS DRAWING MAY NOT REPRESENT ACTUAL SUPPORT CONDITIONS. REFER TO OTHER DETAILS AND NOTES ELSEWHERE IN THESE DRAWINGS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.



TOP RIDING BRIDGE CRANE AND BRACING DETAIL

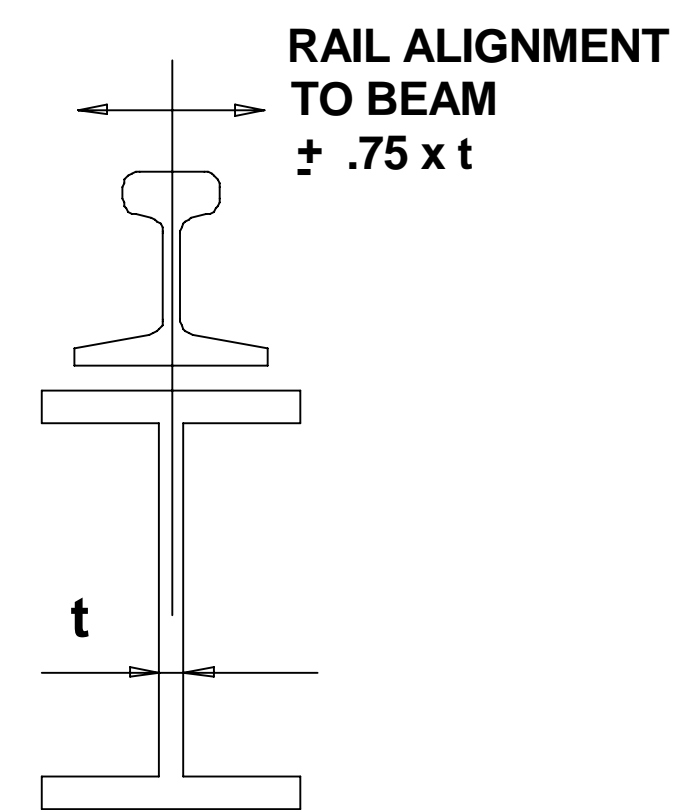
CRANE DESIGN DATA

CRANE CLASSIFICATION:	C (Moderate Service)	IMPACT: VERTICAL =	25.00	% OF WHEEL LOAD
CRANE CAPACITY:	3.00 Ton	LATERAL =	20.00	% OF LIFTED LOAD + TROLLEY
CRANE SPAN:	35'-7" (C/C OF RAILS)	LONGITUDINAL =	10.00	% OF MAXIMUM WHEEL LOADS, PER RAIL
WHEEL SPACING:	5'-3"	RUNWAY BEAM SIZE:	W14X43	
TROLLEY/HOIST WT.	0.53 k	CRANE RAIL SIZE:	ASCE Light 30 lb/yd By Others	
BRIDGE WT.	3.33 k			
MAXIMUM WHEEL LOAD:	3.90 k (W/O IMPACT)			
RUN-UP DIST. (IF TWO CRANES)	0.00 ft			

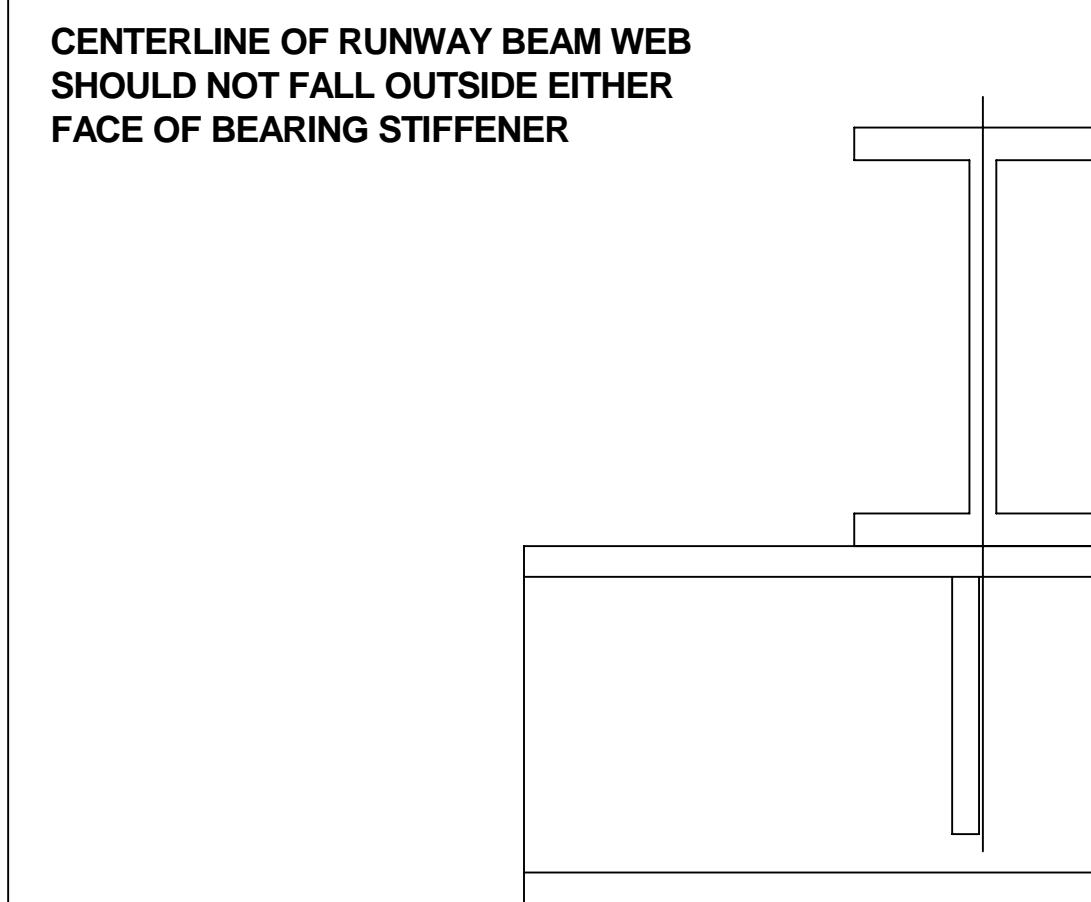
CRANE DATA

NOTES

- 1) CRANE OPERATIONS MAY CAUSE VIBRATIONS IN ROD BRACING AND OTHER BUILDING COMPONENTS. OTHERS TO PROVIDE AND INSTALL CLAMPS OR TIES AS REQUIRED TO MINIMIZE VIBRATION NOISE.
- 2) CRANE BRACKET ELEVATIONS MAY VARY SLIGHTLY DUE TO FABRICATION TOLERANCES. SHIMMING OF BEAMS OR LEVELING AND GROUTING OF COLUMN BASES MAY BE REQUIRED BY THE ERECTOR.
- 3) DO NOT WELD TO CRANE RUNWAY BEAMS OR SUPPORT BRACKETS OTHER THAN WELDS SPECIFIED IN THESE DRAWINGS WITHOUT THE ADVANCE WRITTEN CONSENT OF THE RUNWAY BEAM DESIGN ENGINEER.
- 4) CRANE RUNWAY SYSTEMS ARE SUBJECT TO FATIGUE RELATED PROBLEMS. THEREFORE, ANY RUNWAY COMPONENTS AND DETAILS SUPPLIED MUST BE DEVELOPED BY A PROFESSIONAL ENGINEER COMPETENT IN THE DESIGN OF SUCH SYSTEMS.
- 5) CRANE RAIL ATTACHMENTS MUST PERFORM SEVERAL IMPORTANT FUNCTIONS, INCLUDING:
 - TRANSFER OF LATERAL CRANE LOADS FROM THE TOP OF THE RAIL TO THE RUNWAY BEAM
 - ALLOW THE RAIL TO "FLOAT" LONGITUDINALLY RELATIVE TO THE CRANE RUNWAY BEAM
 - ALLOW FOR ADJUSTMENT/ALIGNMENT OF THE RAIL
 - HOLD THE RAIL IN PLACE LATERALLY
 SELECTION OF THE APPROPRIATE METHOD FOR CRANE RAIL ATTACHMENT MUST BE DONE BY A PROFESSIONAL ENGINEER COMPETENT IN THIS AREA OF DESIGN. THE CRANE RAILS MUST BE INSTALLED TO ALIGN WITH THE WEB OF THE RUNWAY BEAMS WITHIN THE TOLERANCE SHOWN IN THE DETAILS.
- 6) THE DESIGN AND ATTACHMENT DETAILS FOR THE CRANE END STOPS MUST BE DEVELOPED BY INDIVIDUAL(S) QUALIFIED TO DO SO. COORDINATION WITH THE CRANE MANUFACTURER IS STRONGLY RECOMMENDED.
- 7) THE STIFFENERS SHOWN ARE PROVIDED ONLY WHEN THE CRANE BRACKET IS PROVIDED BY BLUESCOPE. THESE STIFFENERS ARE ALWAYS REQUIRED. IN CASES WHERE THE BRACKET IS NOT BY BLUESCOPE, THE STIFFENER WIDTH, LENGTH, THICKNESS, FIELD WELDING REQUIREMENTS, ETC MUST BE DETERMINED BY A LICENSED PROFESSIONAL ENGINEER COMPETENT IN THE AREA OF BRIDGE CRANE DESIGN IN STEEL BUILDINGS.
- 8) THE CRANE RUNWAY TIE-BACKS ARE ONLY PROVIDED WHEN THE CRANE RUNWAY BEAMS ARE BY BLUESCOPE. RUNWAY TIE-BACKS ARE ALWAYS REQUIRED. IMPROPER DESIGN AND DETAILING OF TIE-BACKS CAN CAUSE FATIGUE RELATED PROBLEMS AND THEREFORE SHOULD BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER WHO IS COMPETENT IN THE AREA OF BRIDGE CRANE RUNWAY SYSTEM DESIGN. THE BEARING STIFFENER SHOWN WILL BE PROVIDED AT THE ELEVATION SHOWN ONLY WHEN THE RUNWAY BEAM IS BY BLUESCOPE.
- 9) THE CYCLIC NATURE OF BRIDGE CRANE EFFECTS WILL TEND TO CAUSE GRADUAL LOOSENING AND/OR MISALIGNMENT OF SOME BUILDING COMPONENTS. PERIODIC INSPECTION OF CONNECTIONS AND ALIGNMENT WILL BE REQUIRED.
- 10) BLUESCOPE HIGHLY RECOMMENDS THAT COLUMN SUPPORTING CRANES GREATER THAN 10 TONS HAVE DOUBLE NUT BASE DETAIL WITH NON-COMPRESSIBLE GROUT TO FACILITATE PROPER LEVELING. CONSULT PROJECT PROFESSIONAL.
- 11) WHEN BEAMS AND/OR RAILS ARE INDICATED AS "BY OTHERS", BLUESCOPE COMPANIES ACCEPT NO RESPONSIBILITY FOR DESIGN OR FABRICATION OR SUPPLY OF THESE ELEMENTS. THE CRANE BEAM SIZE SHOWN IS CONCEPTUAL ONLY FOR THE DESIGN OF SUPPORTING ELEMENTS AND SHOULD NOT BE CONSIDERED AS DESIGNED BY BLUESCOPE, NOR CHECKED BY BLUESCOPE ENGINEERS, NOR SUPPLIED BY BLUESCOPE COMPANIES. BUILDER MUST VERIFY WITH RUNWAY DESIGNER ACTUAL SIZE OF BEAM.



RAIL ALIGNMENT



CRANE BEAM ALIGNMENT

FOR CONSTRUCTION

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

City: Plainfield County: Sullivan State: New Hampshire Country: United States

Building Code
 Building Code: 2019 New Hampshire State Building Code Structural: 10AISC - ASD Rainfall: I: 4.00 inches per hour
 Based on Building Code: 2015 International Building Code Cold Form: 12AISI - ASD f'c: 3000.00 psi Concrete
 Building Risk/Occupancy Category: II (Standard Occupancy Structure)

Dead and Collateral Loads
 Collateral Gravity: 8.00 psf
 Collateral Uplift: 0.00 psf
 Material Dead Weight
 Roof Covering + Second. Dead Load: 3.40 psf
 Frame Weight (assumed for seismic): 2.50 psf

Wind Load
 Wind Speed: Vult: 115.00 (Vasd: 89.08) mph
 The 'Envelope Procedure' is Used
 Wind Exposure: B - Kz: 0.701
 Parts Wind Exposure Factor: 0.701
 Wind Enclosure: Enclosed
 Topographic Factor: Kzt: 1.0000
 Snow Load
 Ground Snow Load: pg: 75.00 psf
 Flat Roof Snow: pf: 52.50 psf
 Design Snow (Sloped): ps: 52.50 psf
 Rain Surcharge: 0.00
 Specified Minimum Roof Snow: 20.00 psf (Code)
 Exposure Factor: 2 Partially Exposed - Ce: 1.00
 Snow Importance: Is: 1.000
 Thermal Factor: Heated - Ct: 1.00
 Ground / Roof Conversion: 0.70
 Obstructed or Not Slippery

NOT Windborne Debris Region
 Base Elevation: 0/0/0
 Primary Zone Strip Width: 2a: 8/0/0
 Parts / Portions Zone Strip Width: a: 4/0/0
 Basic Wind Pressure: q: 20.16 psf

Roof Live Load
 Roof Live Load: 20.00 psf Not Reducible

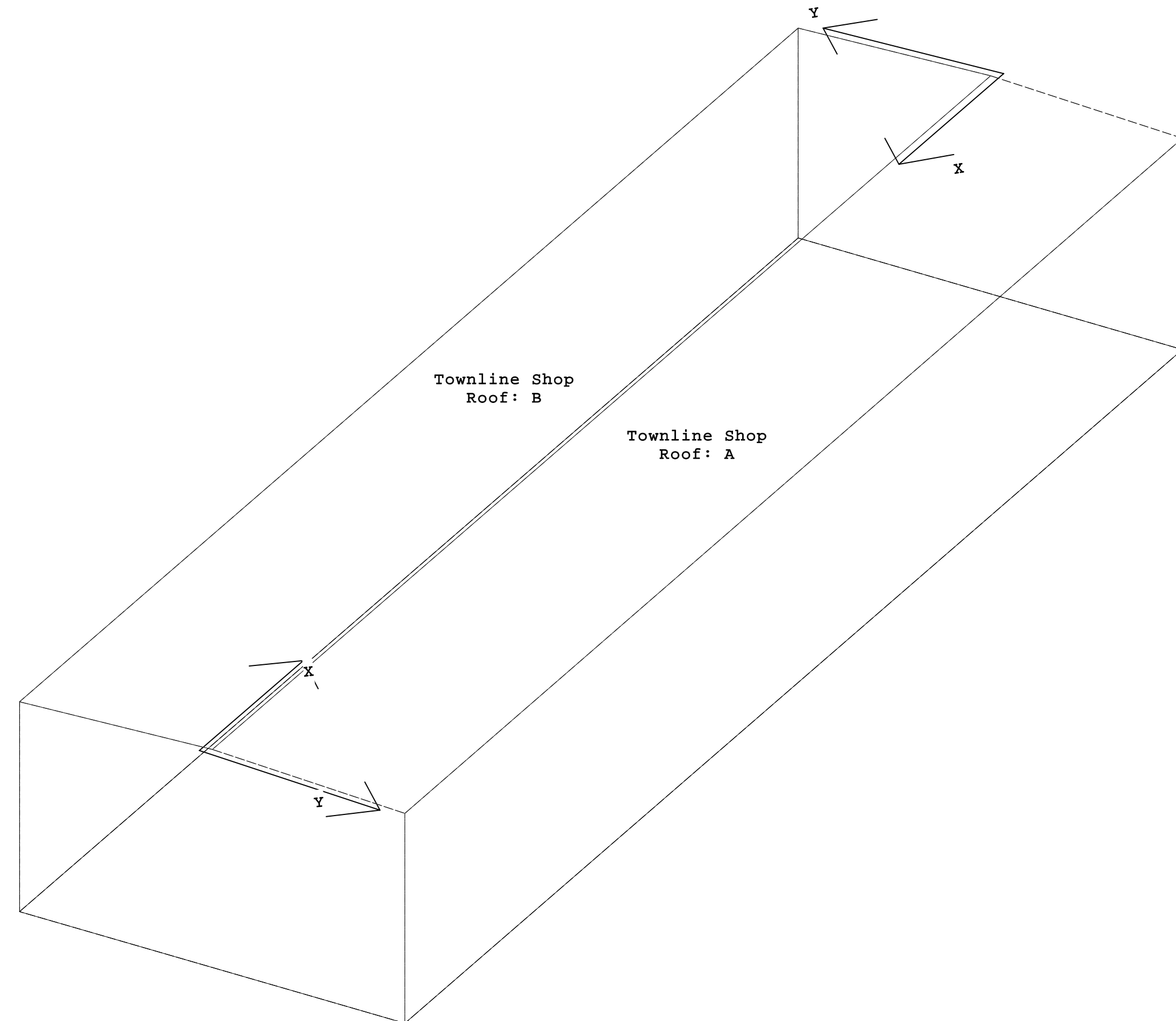
Seismic Load
 Lateral Force Resisting Systems using Equivalent Force Procedure
 Mapped MCE Acceleration: Ss: 23.70 %g
 Mapped MCE Acceleration: S1: 8.20 %g
 Site Class: Stiff soil (D)
 Seismic Importance: Ie: 1.000
 Design Acceleration Parameter: Sds: 0.2528
 Design Acceleration Parameter: Sd1: 0.1312
 Seismic Design Category: B
 Seismic Snow Load: 10.50 psf
 % Snow Used in Seismic: 20.00
 Diaphragm Condition: Flexible
 Fundamental Period Height Used: 21/10/8

Transverse Direction Parameters
 System NOT detailed for Seismic
 Redundancy Factor: Rho: 1.00
 Fundamental Period: Ta: 0.3305
 R-Factor: 3.00
 Overstrength Factor: Omega: 2.50
 Deflection Amplification Factor: Cd: 3.00
 Base Shear: V: 0.0843 x W


Longitudinal Direction Parameters
 System NOT detailed for Seismic
 Redundancy Factor: Rho: 1.00
 Fundamental Period: Ta: 0.2023
 R-Factor: 3.00
 Overstrength Factor: Omega: 2.50
 Deflection Amplification Factor: Cd: 3.00
 Base Shear: V: 0.0843 x W

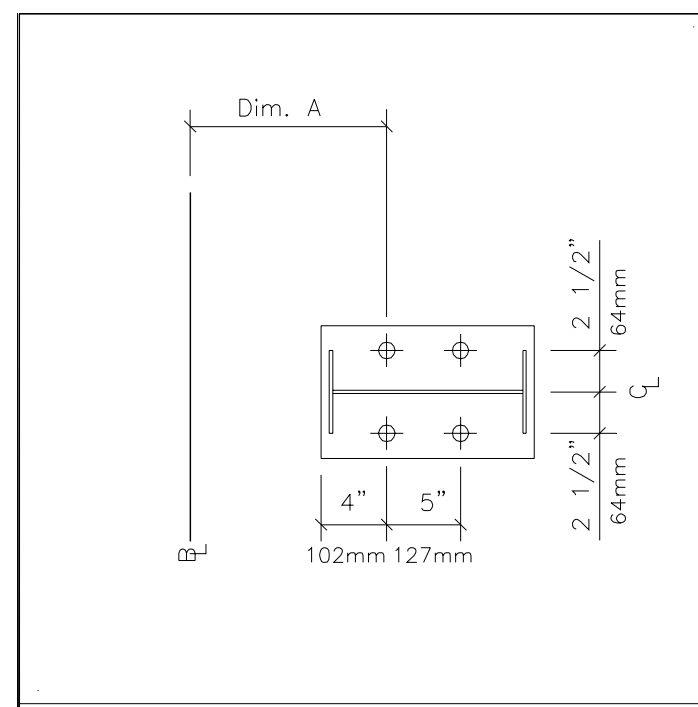
Snow Buildup Shape	Surface	Description	X Location	Y Location	Magnitude
Townline Shop	Roof: A	Unbalanced Snow Load 1, Shifted Left : Roof: A	0.0 ft	20.0 ft	9.9 psf
			0.0 ft	0.0 ft	9.9 psf
			140.0 ft	0.0 ft	9.9 psf
			140.0 ft	20.0 ft	9.9 psf
Townline Shop	Roof: B	Unbalanced Snow Load 1, Shifted Right : Roof: B	140.0 ft	0.0 ft	9.9 psf
			140.0 ft	20.0 ft	9.9 psf
			0.0 ft	20.0 ft	9.9 psf
			0.0 ft	0.0 ft	9.9 psf

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

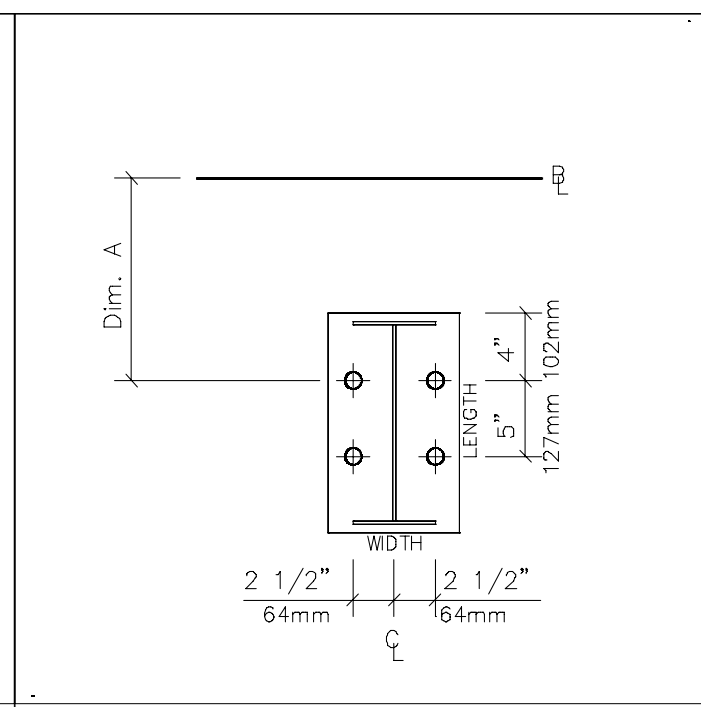


FOR CONSTRUCTION

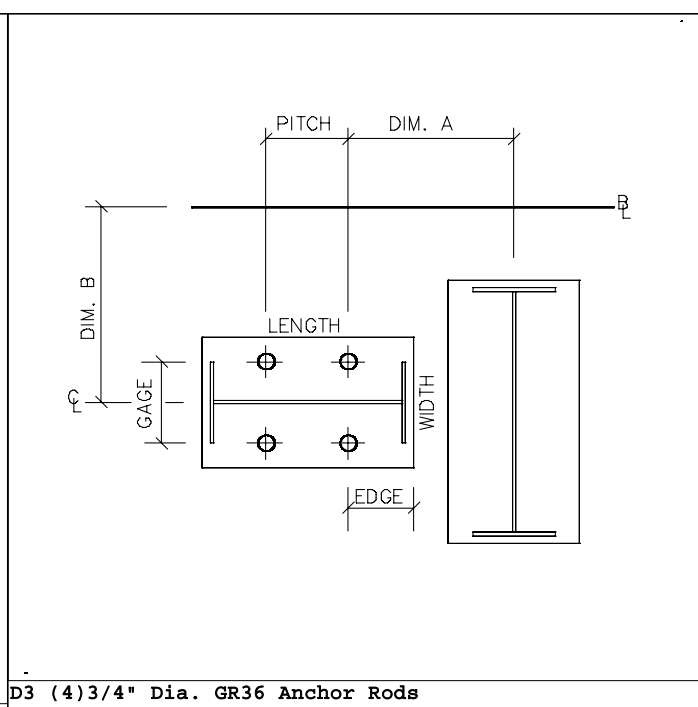
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DRAWING SCALE: NTS			BUILDER: Twin Pines Construction	 <p>Butler Manufacturing VPC VERSION: 2020.4d</p>			
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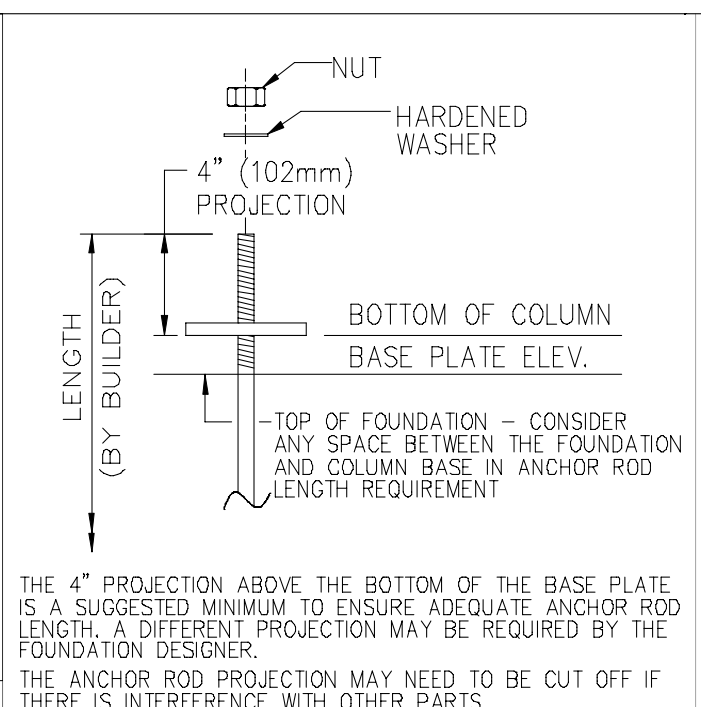
D1 (4)3/4" Dia. GR36 Anchor Rods
 Plate W=8" L=1'-2"
 Dim: A=5 1/8"
 Elev.=104'-0"



D2 (4)3/4" Dia. GR36 Anchor Rods
 Plate W=9" L=1'-5"
 Dim: A=5 1/8"
 Elev.=104'-0"

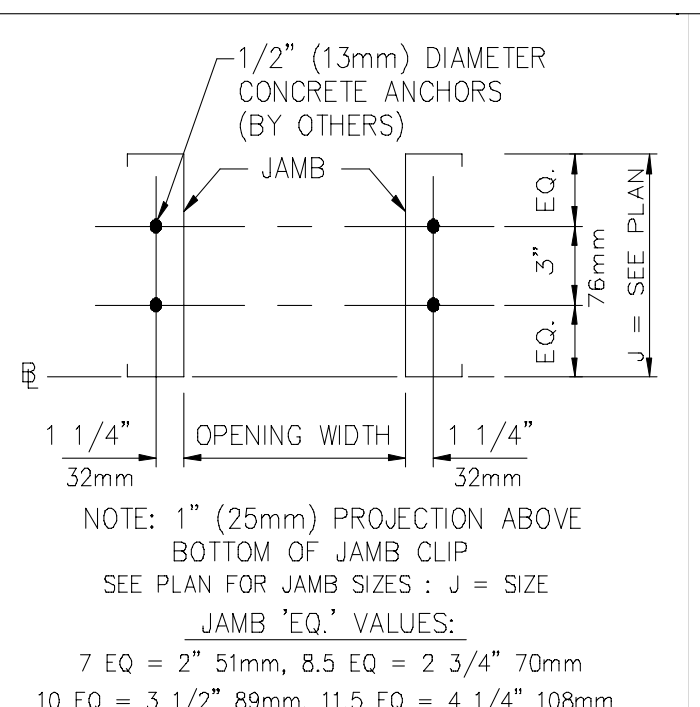


D3 (4)3/4" Dia. GR36 Anchor Rods
 Plate W=9" L=1'-5"
 Dim: A=11 1/2" B=1'-1"
 Gage=5" Pitch=5" Edge Out=4"
 Elev.=104'-0"



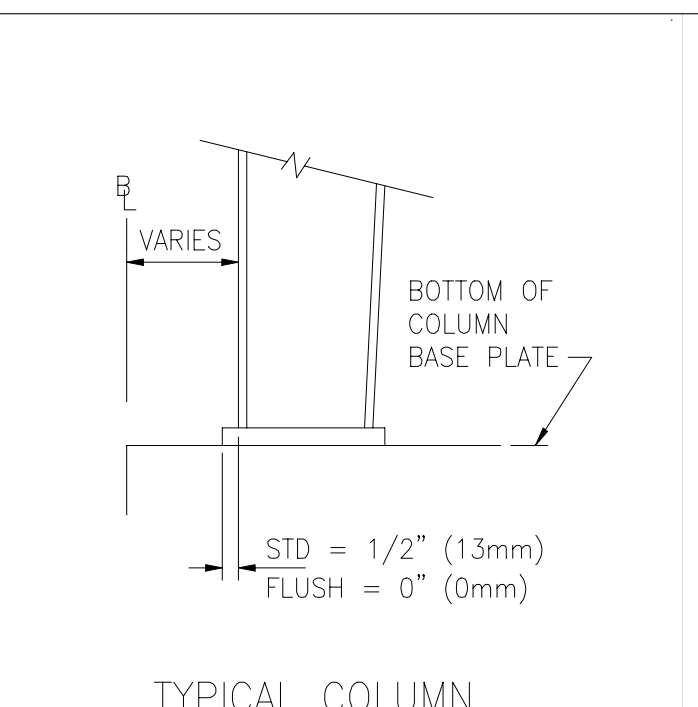
THE 4" PROJECTION ABOVE THE BOTTOM OF THE BASE PLATE IS A SUGGESTED MINIMUM TO ENSURE ADEQUATE ANCHOR ROD LENGTH. A DIFFERENT PROJECTION MAY BE REQUIRED BY THE FOUNDATION DESIGNER.
 THE ANCHOR ROD PROJECTION MAY NEED TO BE CUT OFF IF THERE IS INTERFERENCE WITH OTHER PARTS.

SUGGESTED ANCHOR ROD PROJECTION



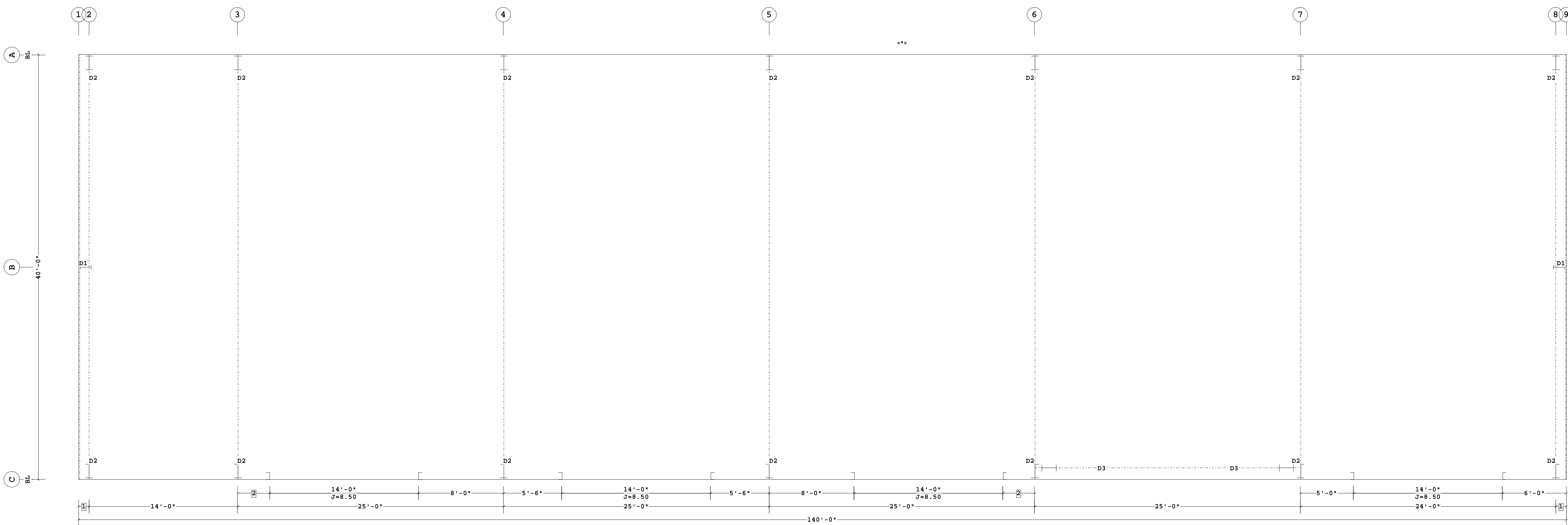
NOTE: 1" (25mm) PROJECTION ABOVE BOTTOM OF JAMB CLIP
 SEE PLAN FOR JAMB SIZES : J = SIZE
 JAMB "EQ." VALUES:
 7 EQ = 2" 51mm, 8.5 EQ = 2 3/4" 70mm
 10 EQ = 3 1/2" 89mm, 11.5 EQ = 4 1/4" 108mm

FRAMED OPENING DETAIL



TYPICAL COLUMN BASE PLATE DETAIL

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



ANCHOR ROD PLAN

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


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

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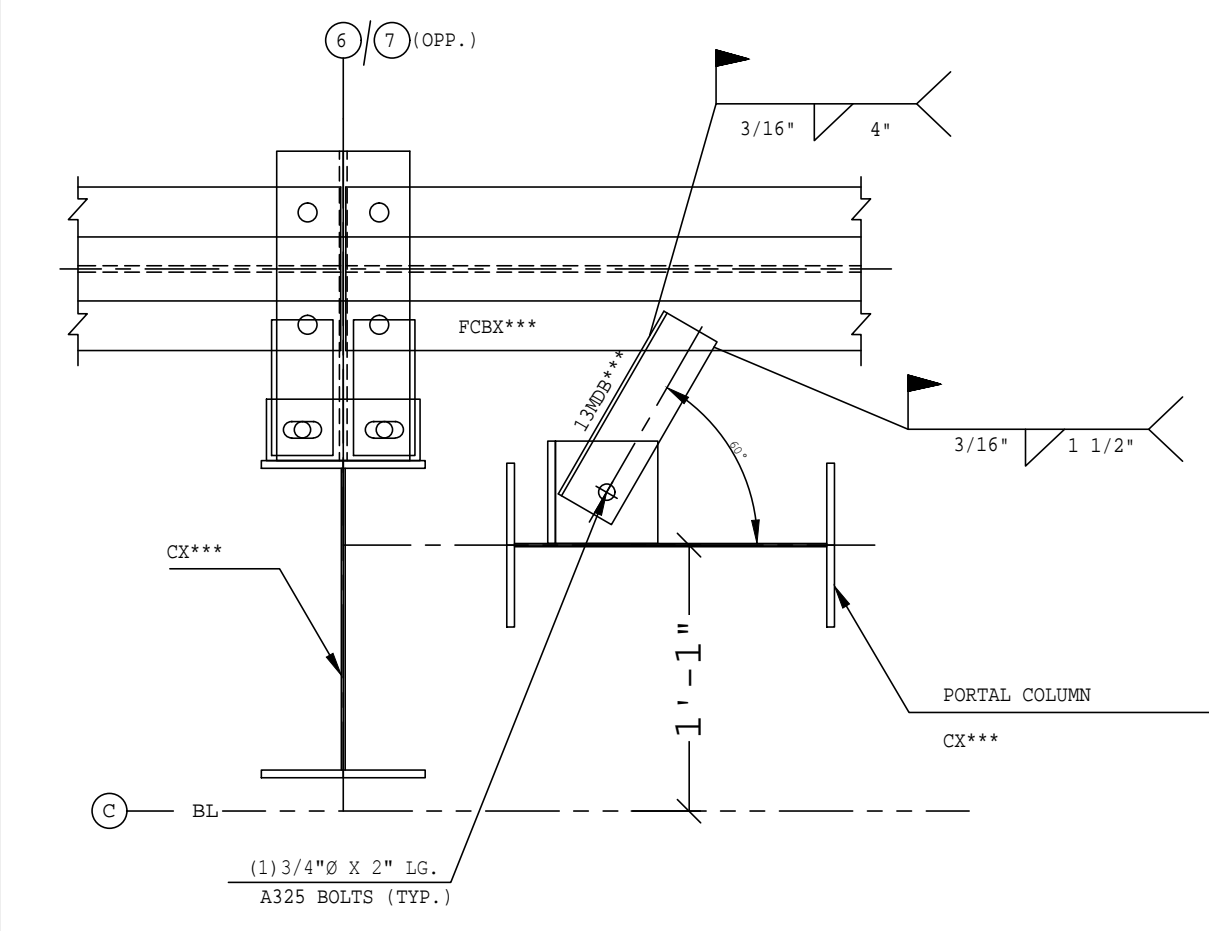
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D	BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102		
	REV:	DATE:	DESCRIPTION:
DRAWING SCALE:			NTS

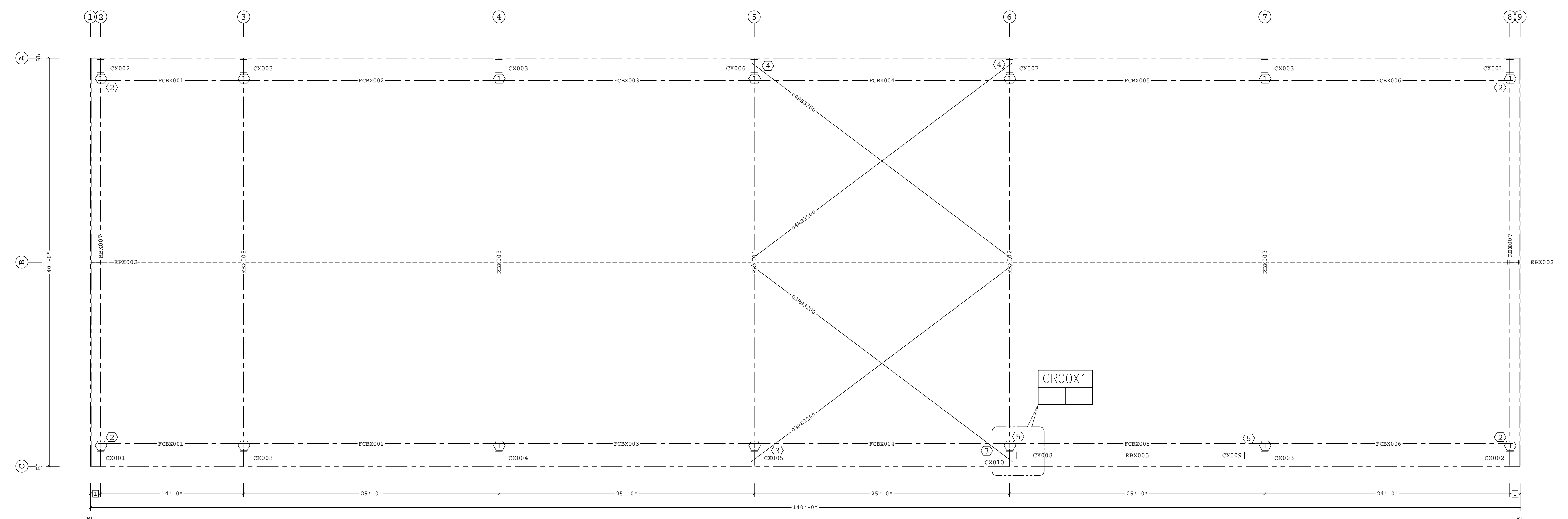
FOR CONSTRUCTION		ANCHOR ROD PLAN	
BUILDER:	Twin Pines Construction	JOB #:	21-000133-01
CUSTOMER:		DATE:	2/15/2021
LOCATION:	Plainfield, New Hampshire	DRAWN/CHECK:	/
PROJECT:	Townline Shop	PAGE:	4
BUILDER'S PO#:		 Butler Manufacturing VPC VERSION: 2020.4d	

Crane Tieback Parts Schedule

Detail	Part
1	CR01H7 CTC0065
2	CR01DC 701080
3	CR02B6 13MDB02052
4	CR02B6 13MDB01080
1	CR00X1 13MDB00106



CRANE LONGITUDINAL BRACING CONNECTION
DETAILS AT PORTAL COLUMN



PRIMARY AND ROOF BRACING PLAN

Bracing Part Schedule

Part	Qty	Length	Detail
03RS3200	4	32'-0"	BR02K1

1 1'-0"
Dimension Key

Shape Name = Townline Shop

FOR CONSTRUCTION

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

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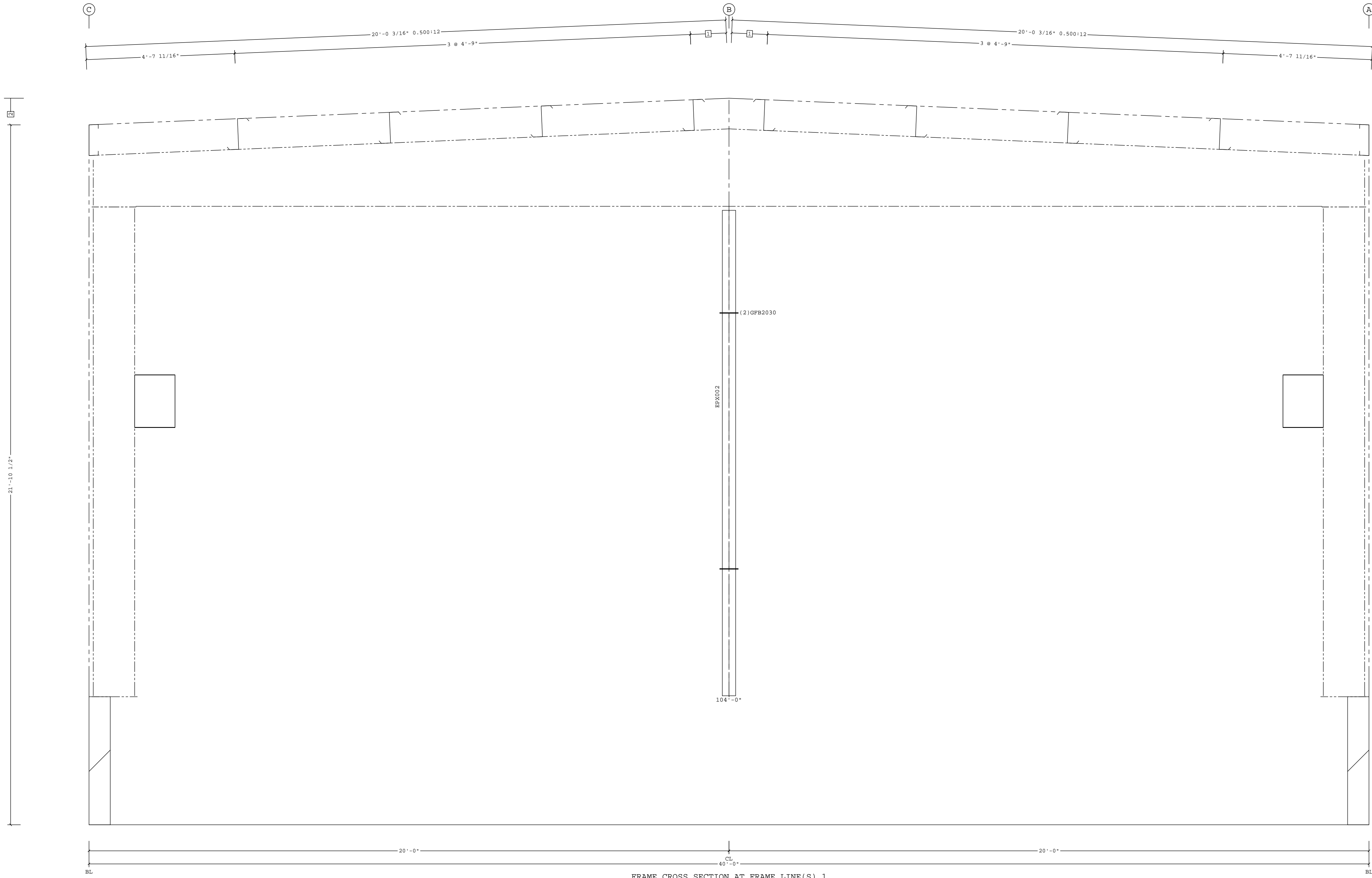
D	BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102		
	REV:	DATE:	BY:
			DESCRIPTION:

PRIMARY AND ROOF BRACING PLAN			JOB #: 21-000133-01
BUILDER:	Twin Pines Construction		
CUSTOMER:		DRAWN/CHECK:	MJU / MTV
LOCATION:	Plainfield, New Hampshire	PAGE:	5
PROJECT:	Townline Shop	Butler Manufacturing VPC VERSION: 2020.4d	
BUILDER'S PO#:		a division of BlueScope Buildings North America, Inc.	

MODIFIED IN AUTOCAD

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
EPX002	1	5.0000	.1345	.1345	1'-1"	1'-1"	15'-2 7/16"	171#

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



- 2 22'-8 1/2" Ridge Ht.
- 1 1'-1 1/2"

□ Dimension Key

Shape Name = Townline Shop Wall 4, Frame 1

FOR CONSTRUCTION


1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
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D	BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102		FRAME CROSS SECTION AT FRAME LINE(S) 1	
	REV:	DATE:	BY:	DESCRIPTION:
DRAWING SCALE:		NTS		

BUILDER:	Twin Pines Construction	JOB #:	21-000133-01
CUSTOMER:		DATE:	03/25/2021
LOCATION:	Plainfield, New Hampshire	DRAWN/CHECK:	MJU / MTV
PROJECT:	Townline Shop	PAGE:	6
BUILDER'S PO#:		 Butler Manufacturing VPC VERSION: 2020.4d	

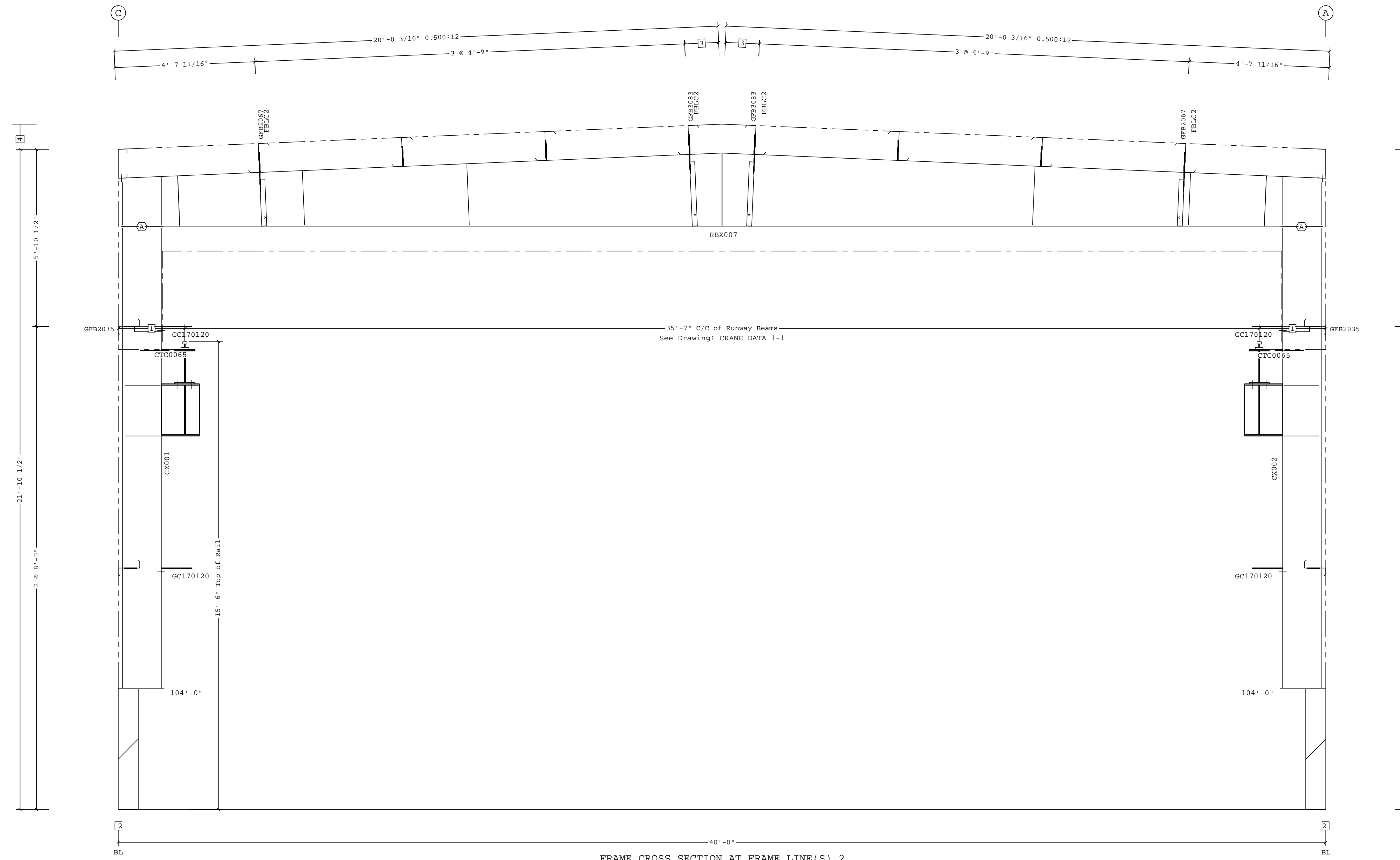
MODIFIED IN AUTOCAD

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx. Lgth	Approx. Weight
CX001	1	8.0000	.3750	.1875	1'-3 1/2"	1'-3 1/2"	15'-3 11/16"	583#
RBX007	2	8.0000	.3750	.1875	1'-7 3/4"	1'-8"	39'-11 7/8"	1530#
	3	8.0000	.3750	.1875	1'-8"	2'-5"		
	4	8.0000	.3750	.1875	2'-5"	1'-8"		
	5	8.0000	.3750	.1875	1'-8"	1'-7 3/4"		
CX002	6	8.0000	.3750	.1875	1'-3 1/2"	1'-3 1/2"	15'-3 11/16"	583#

Bolt Connection & Plate Schedule									
Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo	
A	6	A325	3/4"	2 1/2"	5/8"	2	1	0097284	

Frame Clearances
 Horiz. Clearance between members 1(CX001) and 6(CX002): 37'-1 3/4"
 Vert. Clearance at member 1(CX001): 19'-3 11/16"
 Vert. Clearance at member 6(CX002): 19'-3 11/16"
 Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)

Crane Clearances at Top of Rail
 Vert. Clearance at CRANE DATA 1-1(Left): 3'-9 15/16"
 Horiz. Clearance at CRANE DATA 1-1(Left): 9 3/8"
 Vert. Clearance at CRANE DATA 1-1(Right): 3'-9 15/16"
 Horiz. Clearance at CRANE DATA 1-1(Right): 9 3/8"



- 4 22'-8 1/2" Ridge Ht.
- 3 1'-1 1/2"
- 2 1 5/8"
- 1 2'-2 1/2" BL to CL of Runway Beam

□ Dimension Key

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
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Shape Name = Townline Shop Wall 4, Frame 2

D	BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102			FOR CONSTRUCTION	
	REV:	DATE:	BY:	DESCRIPTION:	BUILDER: Twin Pines Construction
					CUSTOMER:
					LOCATION: Plainfield, New Hampshire
				PROJECT: Townline Shop	JOB #: 21-000133-01
				BUILDER'S PO#:	DATE: 03/25/2021
					DRAWN/CHECK: MJU / MTV
					PAGE: 7

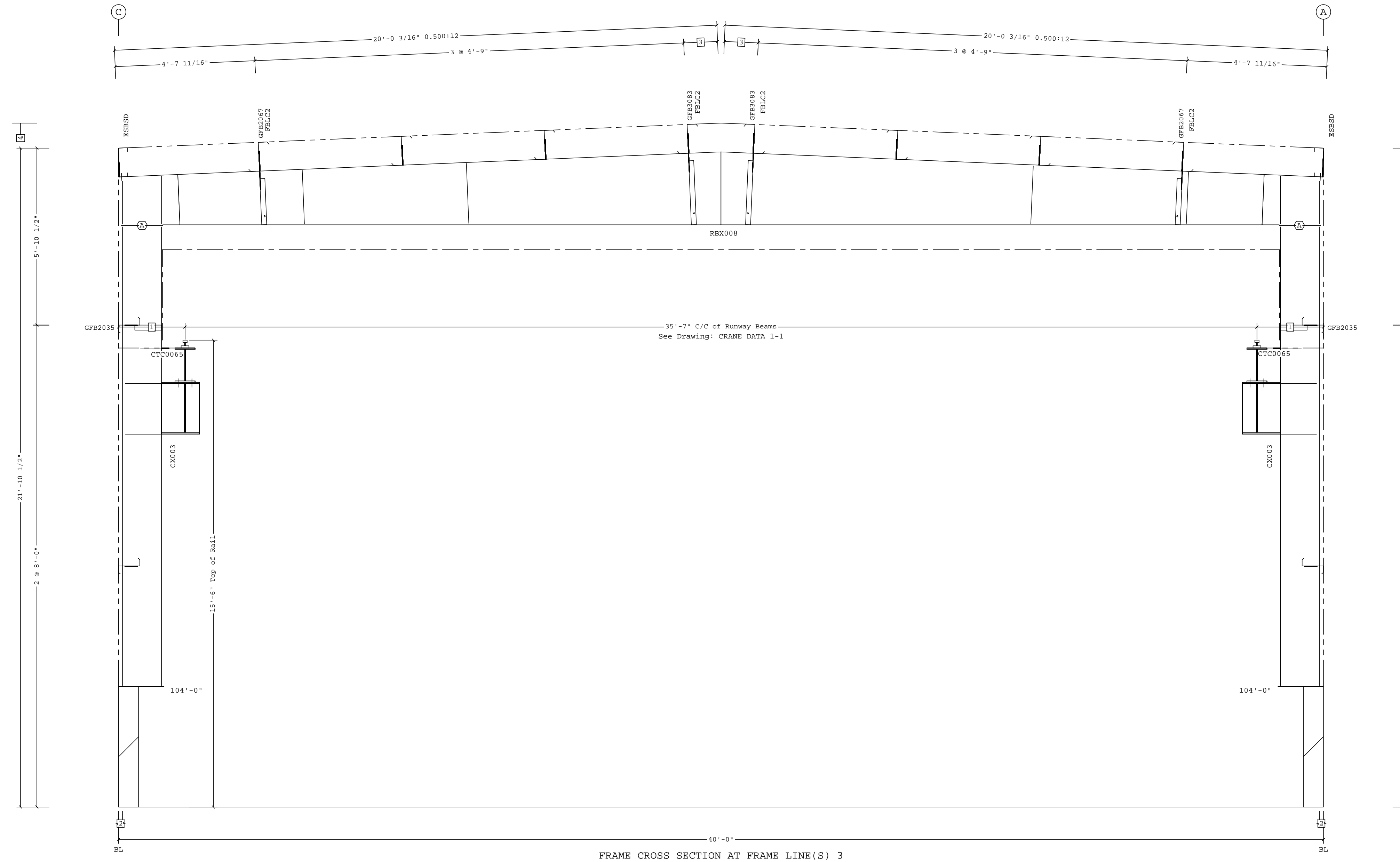


Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
CX003	1	8.0000	.3750	.1875	1'-3 1/2"	1'-3 1/2"	15'-3 11/16"	584#
RBX008	2	8.0000	.3750	.1875	1'-7 3/4"	1'-8"	39'-11 7/8"	1526#
	3	8.0000	.3750	.1875	1'-8"	2'-5"		
	4	8.0000	.3750	.1875	2'-5"	1'-8"		
	5	8.0000	.3750	.1875	1'-8"	1'-7 3/4"		
CX003	6	8.0000	.3750	.1875	1'-3 1/2"	1'-3 1/2"	15'-3 11/16"	584#

Bolt Connection & Plate Schedule									
Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo	
A	6	A325	3/4"	2 1/2"	5/8"	2	1	0097284	

Frame Clearances
 Horiz. Clearance between members 1(CX003) and 6(CX003): 37'-1 3/4"
 Vert. Clearance at member 1(CX003): 19'-3 11/16"
 Vert. Clearance at member 6(CX003): 19'-3 11/16"
 Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)

Crane Clearances at Top of Rail
 Vert. Clearance at CRANE DATA 1-1(Left): 3'-9 15/16"
 Horiz. Clearance at CRANE DATA 1-1(Left): 9 3/8"
 Vert. Clearance at CRANE DATA 1-1(Right): 3'-9 15/16"
 Horiz. Clearance at CRANE DATA 1-1(Right): 9 3/8"



- 4 22'-8 1/2" Ridge Ht.
- 3 1'-1 1/2"
- 2 1 5/8"
- 1 2'-2 1/2" BL to CL of Runway Beam

□ Dimension Key

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
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Shape Name = Townline Shop Wall 4, Frame 3

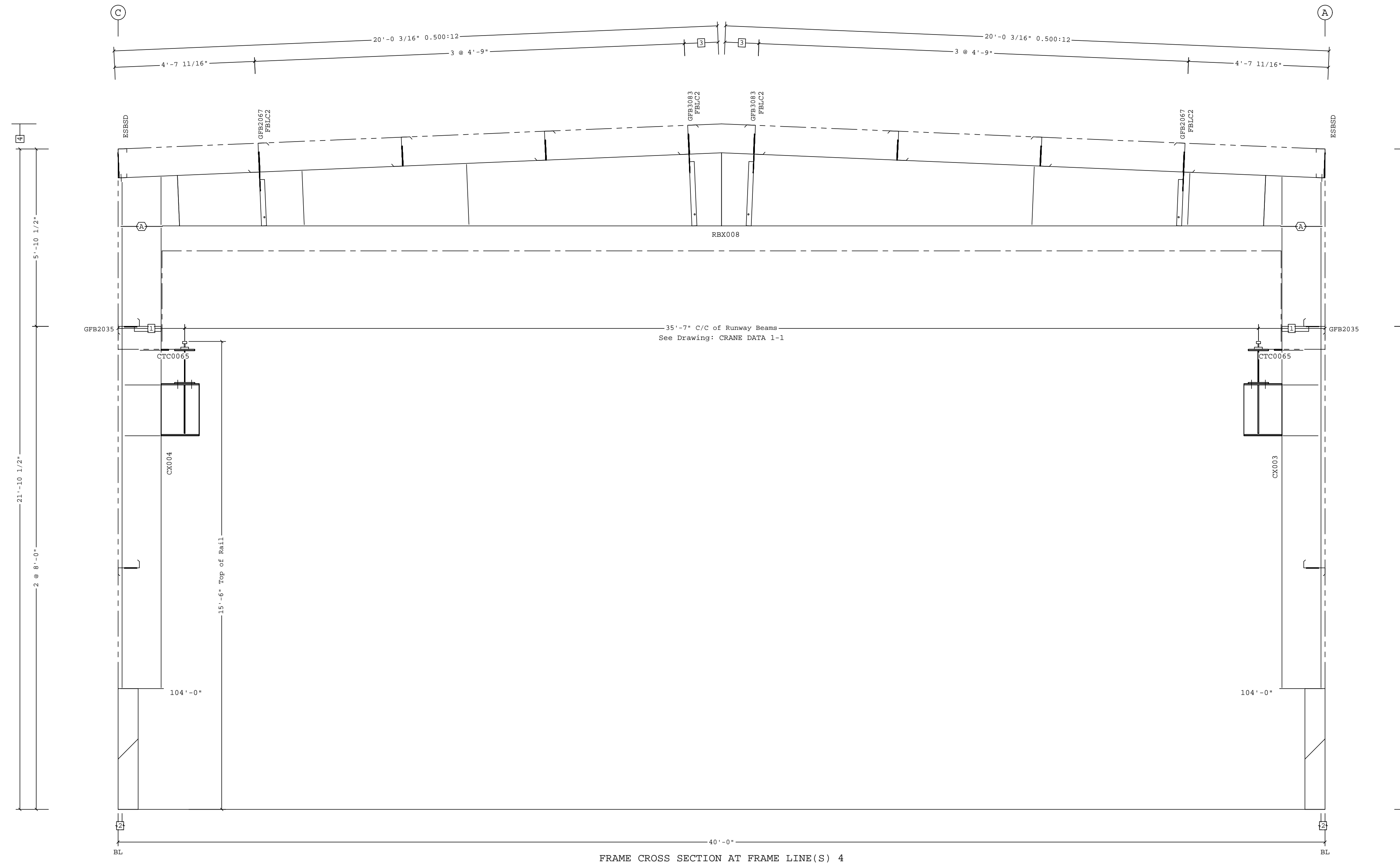
D	BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102			FOR CONSTRUCTION	
	FRAME CROSS SECTION AT FRAME LINE(S) 3				
	REV:	DATE:	BY:	DESCRIPTION:	BUILDER: Twin Pines Construction
					CUSTOMER:
DRAWING SCALE: NTS				PROJECT: Townline Shop	JOB #: 21-000133-01
SAVE DATE: 4/1/2021				BUILDERS PO#:	DATE: 03/25/2021
SAVE TIME: 09:56:14				LAST SAVED BY: manjunatha_c	DRAWN/CHECK: MJU / MTV
				Butler Manufacturing VPC VERSION: 2020.4d	PAGE: 8

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx. Lgth	Approx. Weight
CX004	1	8.0000	.3750	.1875	1'-3 1/2"	1'-3 1/2"	15'-3 11/16"	584#
RBX008	2	8.0000	.3750	.1875	1'-7 3/4"	1'-8"	39'-11 7/8"	1526#
	3	8.0000	.3750	.1875	1'-8"	2'-5"		
	4	8.0000	.3750	.1875	2'-5"	1'-8"		
	5	8.0000	.3750	.1875	1'-8"	1'-7 3/4"		
CX003	6	8.0000	.3750	.1875	1'-3 1/2"	1'-3 1/2"	15'-3 11/16"	584#

Bolt Connection & Plate Schedule									
Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo	
A	6	A325	3/4"	2 1/2"	5/8"	2	1	0097284	

Frame Clearances
 Horiz. Clearance between members 1(CX004) and 6(CX003): 37'-1 3/4"
 Vert. Clearance at member 1(CX004): 19'-3 11/16"
 Vert. Clearance at member 6(CX003): 19'-3 11/16"
 Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)

Crane Clearances at Top of Rail
 Vert. Clearance at CRANE DATA 1-1(Left): 3'-9 15/16"
 Horiz. Clearance at CRANE DATA 1-1(Left): 9 3/8"
 Vert. Clearance at CRANE DATA 1-1(Right): 3'-9 15/16"
 Horiz. Clearance at CRANE DATA 1-1(Right): 9 3/8"



- 4 22'-8 1/2" Ridge Ht.
- 3 1'-1 1/2"
- 2 1 5/8"
- 1 2'-2 1/2" BL to CL of Runway Beam

□ Dimension Key

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
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Shape Name = Townline Shop Wall 4, Frame 4

FOR CONSTRUCTION

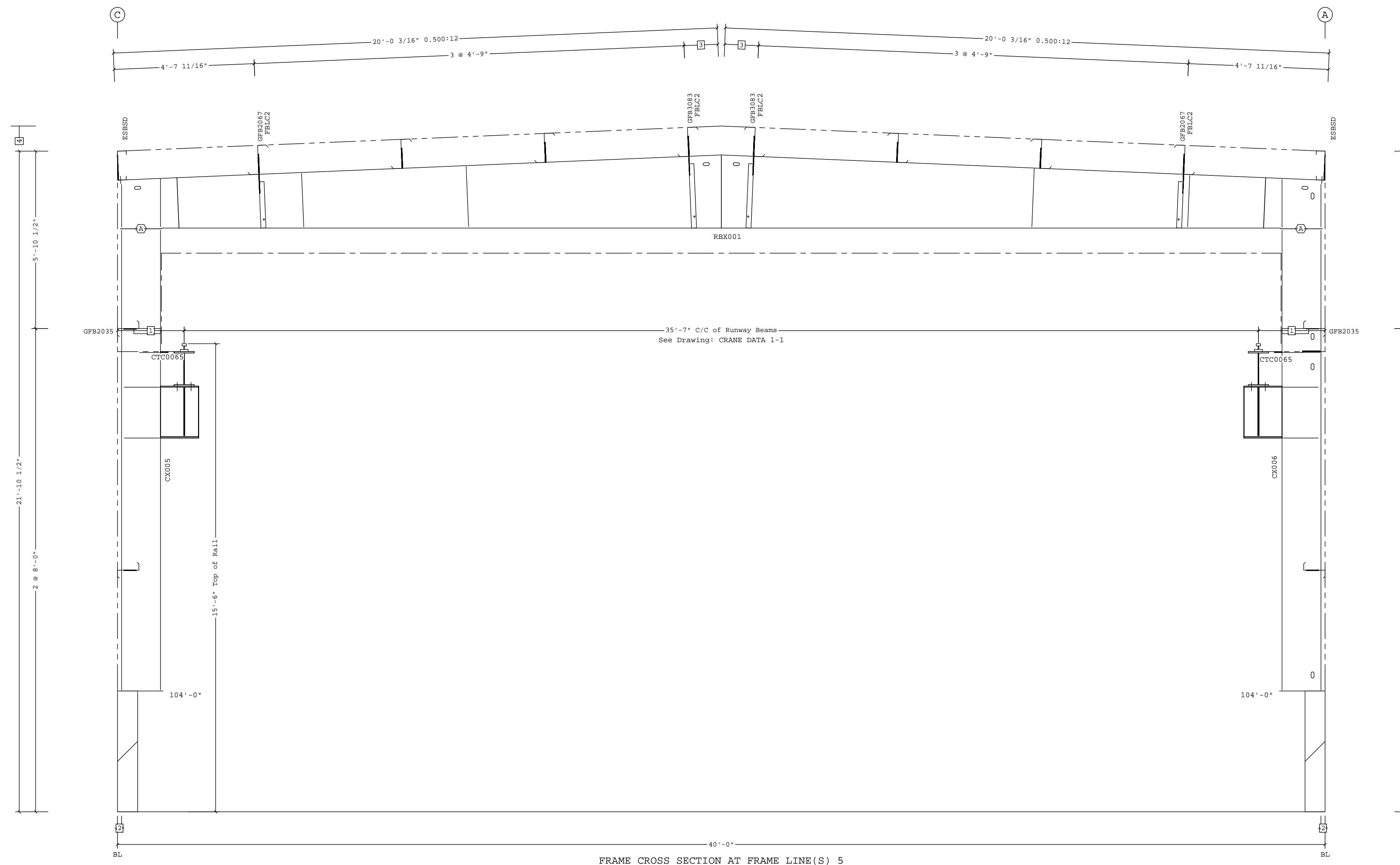
REV	DATE	BY	DESCRIPTION	BUILDER	CUSTOMER	LOCATION	PROJECT	BUILDER'S PO#	JOB #	DATE	DRAWN/CHECK	PAGE			
D BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102				Twin Pines Construction		Plainfield, New Hampshire			21-000133-01	03/25/2021	MJU / MTV	9			
				CUSTOMER:		PROJECT: Townline Shop		BUTLER		Butler Manufacturing	VPC VERSION: 2020.4d				
				DRAWING SCALE: NTS		SAVE DATE: 4/1/2021		SAVE TIME: 09:56:44		LAST SAVED BY: manjunatha_c		a division of BlueScope Buildings North America, Inc.			
				FRAME CROSS SECTION AT FRAME LINE(S) 4											

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx. Lgth	Approx. Weight
CX005	1	8.0000	.3750	.1875	1'-3 1/2"	1'-3 1/2"	15'-3 11/16"	586#
RBX001	2	8.0000	.3750	.1875	1'-7 3/4"	1'-8"	39'-11 7/8"	1526#
	3	8.0000	.3750	.1875	1'-8"	2'-5"		
	4	8.0000	.3750	.1875	2'-5"	1'-8"		
	5	8.0000	.3750	.1875	1'-8"	1'-7 3/4"		
CX006	6	8.0000	.3750	.1875	1'-3 1/2"	1'-3 1/2"	15'-3 11/16"	589#

Bolt Connection & Plate Schedule									
Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo	
A	6	A325	3/4"	2 1/2"	5/8"	2	1	0097284	

Frame Clearances
 Horiz. Clearance between members 1(CX005) and 6(CX006): 37'-1 3/4"
 Vert. Clearance at member 1(CX005): 19'-3 11/16"
 Vert. Clearance at member 6(CX006): 19'-3 11/16"
 Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)

Crane Clearances at Top of Rail
 Vert. Clearance at CRANE DATA 1-1(Left): 3'-9 15/16"
 Horiz. Clearance at CRANE DATA 1-1(Left): 9 3/8"
 Vert. Clearance at CRANE DATA 1-1(Right): 3'-9 15/16"
 Horiz. Clearance at CRANE DATA 1-1(Right): 9 3/8"



FRAME CROSS SECTION AT FRAME LINE(S) 5

- 4 22'-8 1/2" Ridge Ht.
- 3 1'-1 1/2"
- 2 1 5/8"
- 1 2'-2 1/2" BL to CL of Runway Beam

□ Dimension Key

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
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Shape Name = Townline Shop Wall 4, Frame 5

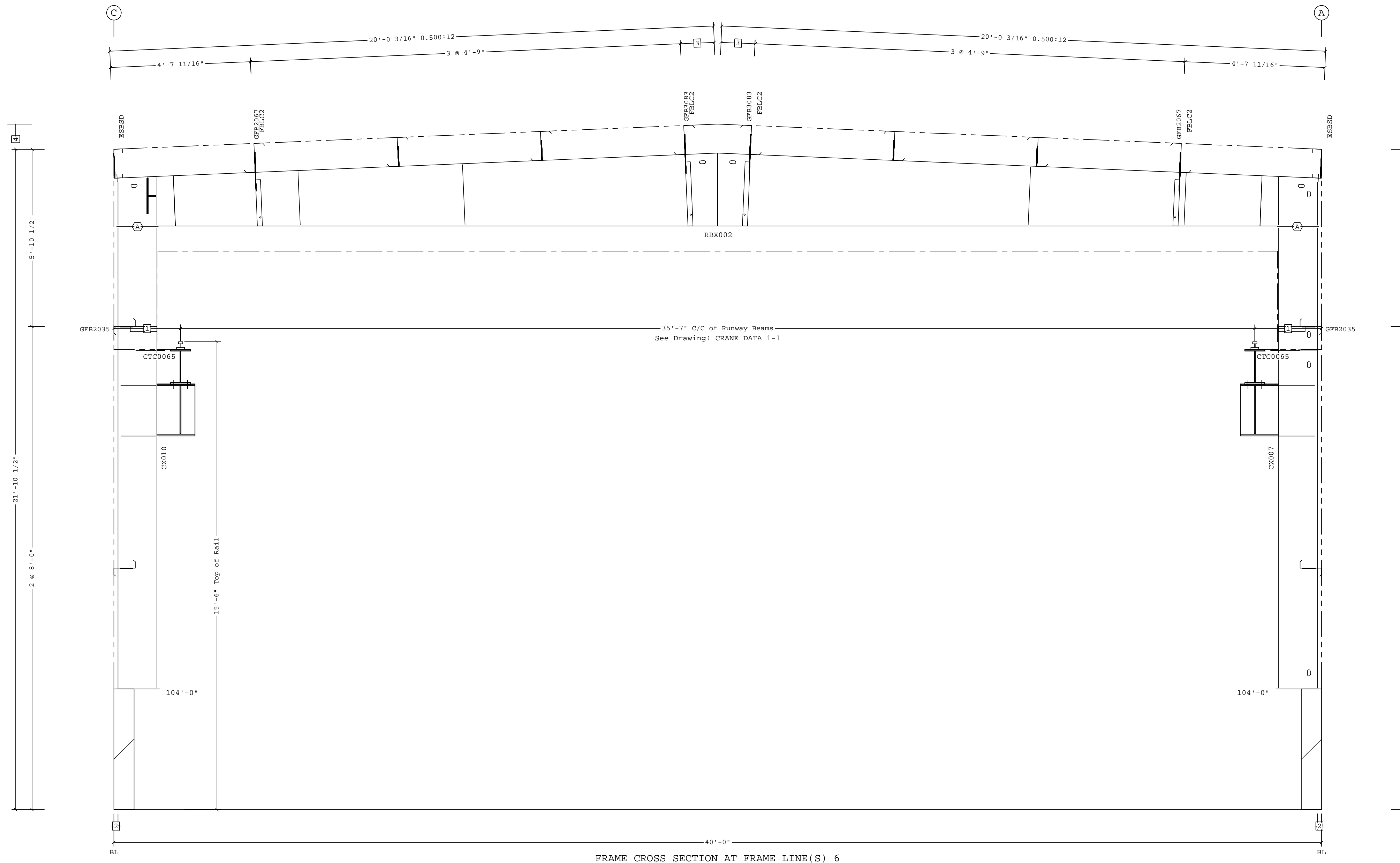
D		BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102		FOR CONSTRUCTION	
REV:	DATE:	BY:	DESCRIPTION:	BUILDER:	Twin Pines Construction
				CUSTOMER:	
				LOCATION:	Plainfield, New Hampshire
				PROJECT:	Townline Shop
				BUILDER'S PO#:	
DRAWING SCALE: NTS			JOB #: 21-000133-01		
SAVE DATE: 4/1/2021			DATE: 03/25/2021		
SAVE TIME: 09:57:14			DRAWN/CHECK: MJU / MTV		
LAST SAVED BY: manjunatha_c			PAGE: 10		
			Butler Manufacturing VPC VERSION: 2020.4d		
			a division of BlueScope Buildings North America, Inc.		

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx. Lgth	Approx. Weight
CX010	1	8.0000	.3750	.1875	1'-3 1/2"	1'-3 1/2"	15'-3 11/16"	586#
RBX002	2	8.0000	.3750	.1875	1'-7 3/4"	1'-8"	39'-11 7/8"	1537#
	3	8.0000	.3750	.1875	1'-8"	2'-5"		
	4	8.0000	.3750	.1875	2'-5"	1'-8"		
	5	8.0000	.3750	.1875	1'-8"	1'-7 3/4"		
CX007	6	8.0000	.3750	.1875	1'-3 1/2"	1'-3 1/2"	15'-3 11/16"	589#

Bolt Connection & Plate Schedule									
Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo	
A	6	A325	3/4"	2 1/2"	5/8"	2	1	0097284	

Frame Clearances
 Horiz. Clearance between members 1(CX003) and 6(CX007): 37'-1 3/4"
 Vert. Clearance at member 1(CX003): 19'-3 11/16"
 Vert. Clearance at member 6(CX007): 19'-3 11/16"
 Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)

Crane Clearances at Top of Rail
 Vert. Clearance at CRANE DATA 1-1(Left): 3'-9 15/16"
 Horiz. Clearance at CRANE DATA 1-1(Left): 9 3/8"
 Vert. Clearance at CRANE DATA 1-1(Right): 3'-9 15/16"
 Horiz. Clearance at CRANE DATA 1-1(Right): 9 3/8"



FRAME CROSS SECTION AT FRAME LINE(S) 6

- 4 22'-8 1/2" Ridge Ht.
- 3 1'-1 1/2"
- 2 1 5/8"
- 1 2'-2 1/2" BL to CL of Runway Beam

Dimension Key

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

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Shape Name = Towlne Shop Wall 4, Frame 6

FOR CONSTRUCTION

FRAME CROSS SECTION AT FRAME LINE(S) 6

D		BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102		FOR CONSTRUCTION	
REV:	DATE:	BY:	DESCRIPTION:	BUILDER:	Twin Pines Construction
				CUSTOMER:	
				LOCATION:	Plainfield, New Hampshire
				PROJECT:	Towlne Shop
				BUILDER'S PO#:	
DRAWING SCALE: NTS			JOB #: 21-000133-01		
SAVE DATE: 4/1/2021			DATE: 03/25/2021		
SAVE TIME: 09:57:54			DRAWN/CHECK: MJU / MTV		
LAST SAVED BY: manjunatha_c			PAGE: 11		



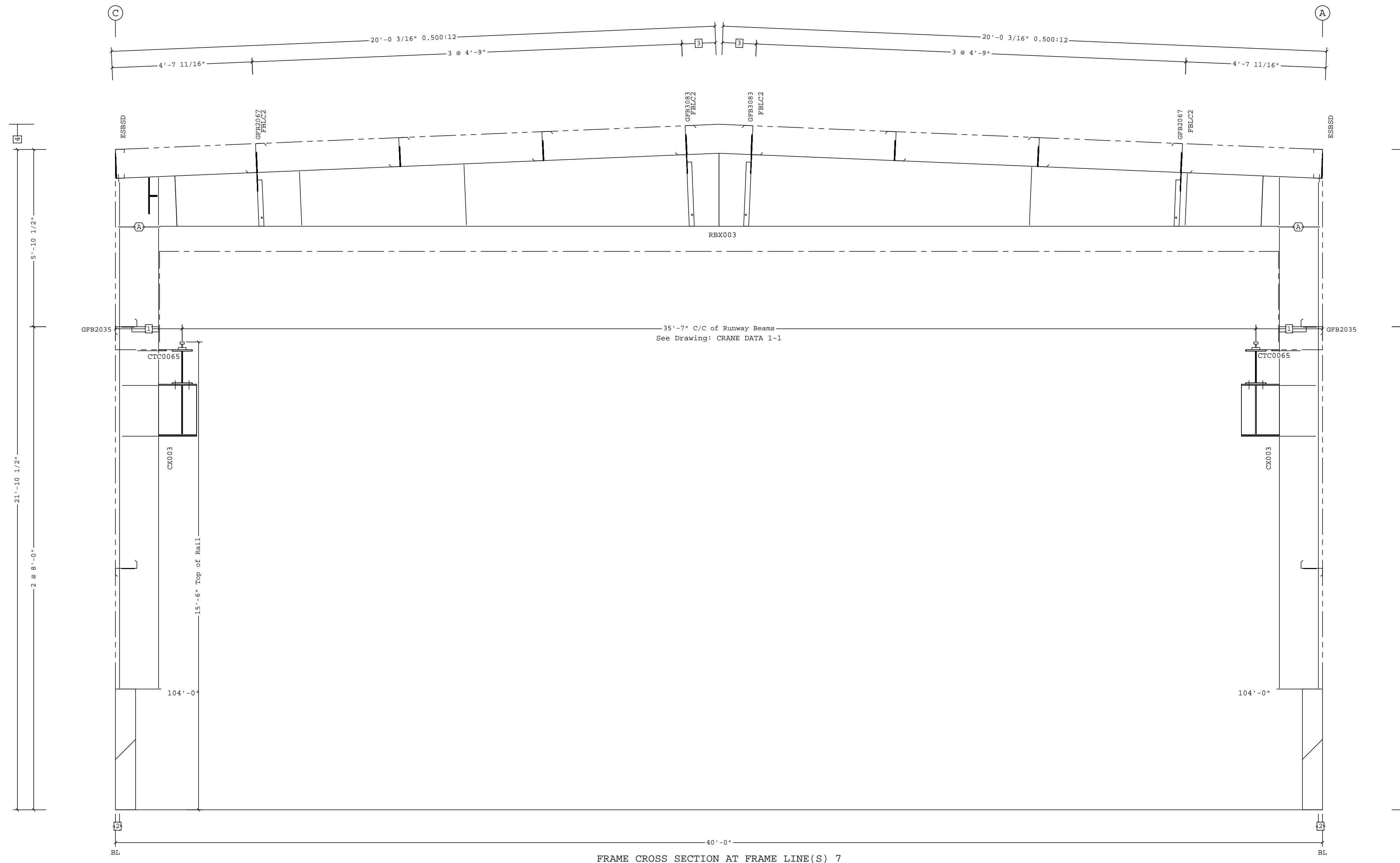
Butler Manufacturing
VPC VERSION: 2020.4d

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
CX003	1	8.0000	.3750	.1875	1'-3 1/2"	1'-3 1/2"	15'-3 11/16"	584#
RBX003	2	8.0000	.3750	.1875	1'-7 3/4"	1'-8"	39'-11 7/8"	1537#
	3	8.0000	.3750	.1875	1'-8"	2'-5"		
	4	8.0000	.3750	.1875	1'-8"	2'-5"		
	5	8.0000	.3750	.1875	1'-8"	1'-7 3/4"		
CX003	6	8.0000	.3750	.1875	1'-3 1/2"	1'-3 1/2"	15'-3 11/16"	584#

Bolt Connection & Plate Schedule									
Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo	
A	6	A325	3/4"	2 1/2"	5/8"	2	1	0097284	

Frame Clearances
 Horiz. Clearance between members 1(CX003) and 6(CX003): 37'-1 3/4"
 Vert. Clearance at member 1(CX003): 19'-3 11/16"
 Vert. Clearance at member 6(CX003): 19'-3 11/16"
 Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)

Crane Clearances at Top of Rail
 Vert. Clearance at CRANE DATA 1-1(Left): 3'-9 15/16"
 Horiz. Clearance at CRANE DATA 1-1(Left): 9 3/8"
 Vert. Clearance at CRANE DATA 1-1(Right): 3'-9 15/16"
 Horiz. Clearance at CRANE DATA 1-1(Right): 9 3/8"



FRAME CROSS SECTION AT FRAME LINE(S) 7

- 4 22'-8 1/2" Ridge Ht.
- 3 1'-1 1/2"
- 2 1 5/8"
- 1 2'-2 1/2" BL to CL of Runway Beam

□ Dimension Key

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


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Shape Name = Townline Shop Wall 4, Frame 7

FOR CONSTRUCTION

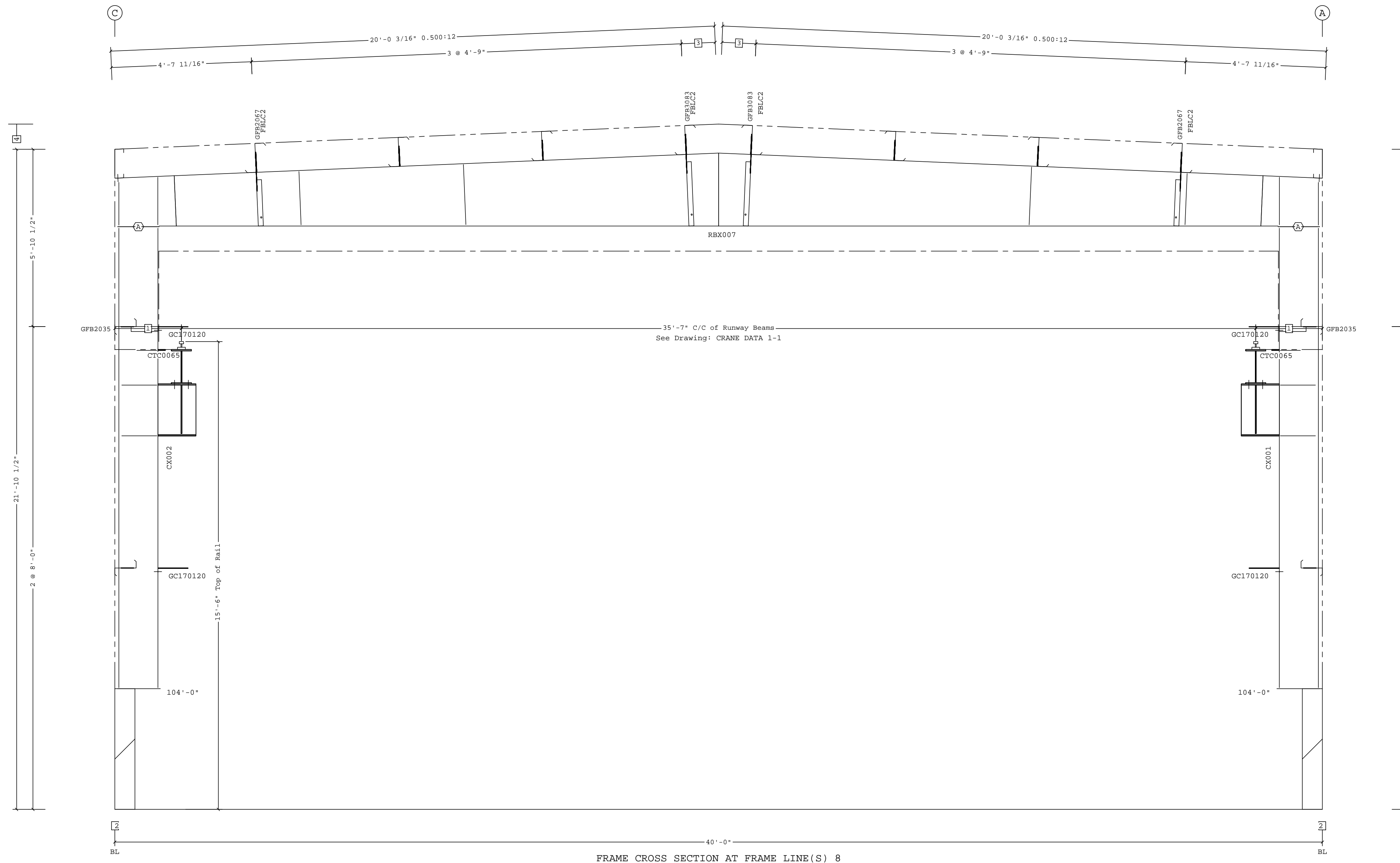
D	BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102			FRAME CROSS SECTION AT FRAME LINE(S) 7	
	REV:	DATE:	BY:	DESCRIPTION:	BUILDER: Twin Pines Construction
					CUSTOMER:
					LOCATION: Plainfield, New Hampshire
				PROJECT: Townline Shop	 Butler Manufacturing VPC VERSION: 2020.4d
				BUILDER'S PO#:	
DRAWING SCALE: NTS				JOB #: 21-000133-01	
SAVE DATE: 4/1/2021 SAVE TIME: 09:58:22				DATE: 03/25/2021	
LAST SAVED BY: manjunatha_c				DRAWN/CHECK: MJU / MTV	
				PAGE: 12	

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
CX002	1	8.0000	.3750	.1875	1'-3 1/2"	1'-3 1/2"	15'-3 11/16"	583#
RBX007	2	8.0000	.3750	.1875	1'-7 3/4"	1'-8"	39'-11 7/8"	1530#
	3	8.0000	.3750	.1875	1'-8"	2'-5"		
	4	8.0000	.3750	.1875	2'-5"	1'-8"		
	5	8.0000	.3750	.1875	1'-8"	1'-7 3/4"		
CX001	6	8.0000	.3750	.1875	1'-3 1/2"	1'-3 1/2"	15'-3 11/16"	583#

Bolt Connection & Plate Schedule									
Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo	
A	6	A325	3/4"	2 1/2"	5/8"	2	1	0097284	

Frame Clearances
 Horiz. Clearance between members 1(CX002) and 6(CX001): 37'-1 3/4"
 Vert. Clearance at member 1(CX002): 19'-3 11/16"
 Vert. Clearance at member 6(CX001): 19'-3 11/16"
 Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)

Crane Clearances at Top of Rail
 Vert. Clearance at CRANE DATA 1-1(Left): 3'-9 15/16"
 Horiz. Clearance at CRANE DATA 1-1(Left): 9 3/8"
 Vert. Clearance at CRANE DATA 1-1(Right): 3'-9 15/16"
 Horiz. Clearance at CRANE DATA 1-1(Right): 9 3/8"



FRAME CROSS SECTION AT FRAME LINE(S) 8

- 4 22'-8 1/2" Ridge Ht.
- 3 1'-1 1/2"
- 2 1 5/8"
- 1 2'-2 1/2" BL to CL of Runway Beam

□ Dimension Key

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


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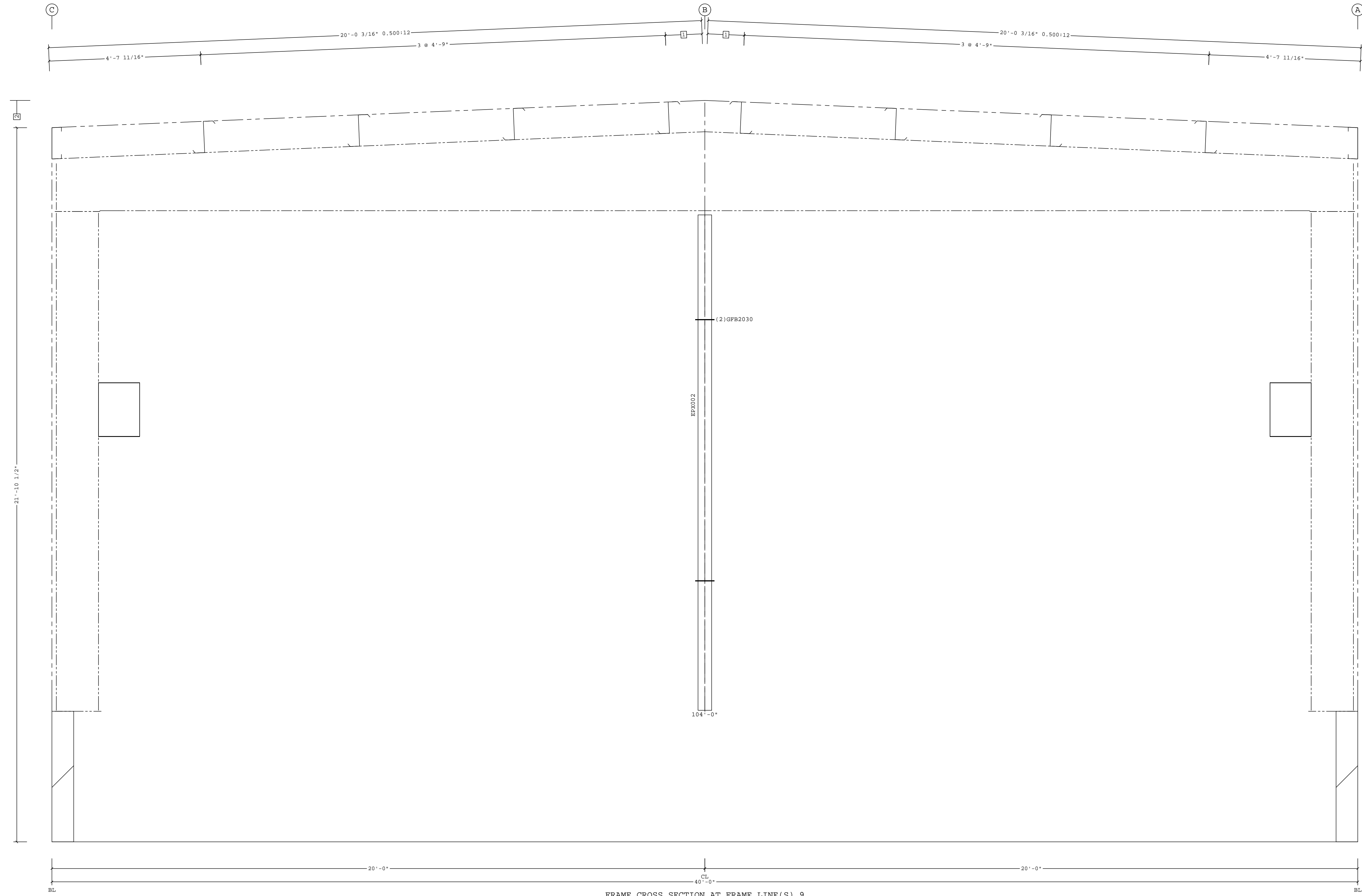
Shape Name = Towlne Shop Wall 4, Frame 8

FOR CONSTRUCTION

D	BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102		FRAME CROSS SECTION AT FRAME LINE(S) 8	
	REV:	DATE:	BY:	DESCRIPTION:
DRAWING SCALE: NTS		BUILDER: Twin Pines Construction		 Butler Manufacturing VPC VERSION: 2020.4d
SAVE DATE: 4/1/2021		CUSTOMER:		
SAVE TIME: 09:58:50		LOCATION: Plainfield, New Hampshire		
LAST SAVED BY: manjunatha_c		PROJECT: Towlne Shop		
		BUILDER'S PO#:		JOB #: 21-000133-01
				DATE: 03/25/2021
				DRAWN/CHECK: MJU / MTV
				PAGE: 13

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx. Lgth	Approx. Weight
EPX002	1	5.0000	.1345	.1345	1'-1"	1'-1"	15'-2 7/16"	171#

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



2 22'-8 1/2" Ridge Ht.

1 1'-1 1/2"

□ Dimension Key

Shape Name = Townline Shop Wall 4, Frame 9

FOR CONSTRUCTION

- USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
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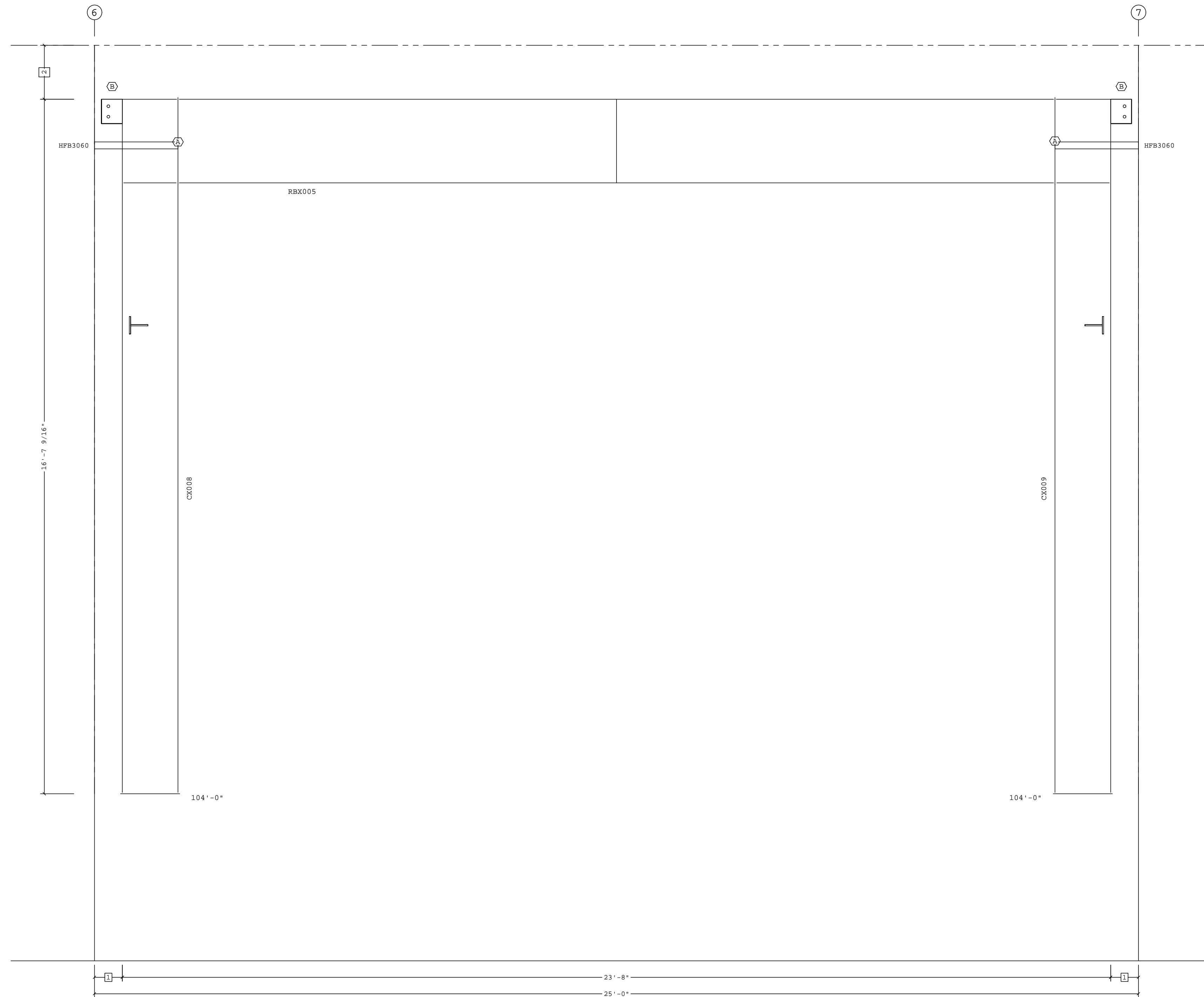
REV	DATE	BY	DESCRIPTION	BUILDER	CUSTOMER	LOCATION	PROJECT	BUILDER'S PO#	JOB #	DATE	DRAWN/CHECK	PAGE
				Twin Pines Construction		Plainfield, New Hampshire	Townline Shop		21-000133-01	03/25/2021	MJU / MTV	14



Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx. Lgth	Approx. Weight
CX008	1	8.0000	.3750	.1644	1'-4"	1'-4"	16'-7 9/16"	526#
RBX005	2-3	6.0000	.3125	.1345	2'-0"	2'-0"	21'-0"	523#
CX009	4	8.0000	.3750	.1644	1'-4"	1'-4"	16'-7 9/16"	526#

Bolt Connection & Plate Schedule									
Id	Qty	Grade	Bolt			Plate Thick.	Rows Out	Rows In	PartNo
			Dia.	Length	Thick.				
A	4	A325	3/4"	2 1/2"	3/8"	-	1	1	0097284
B	2	A325	3/4"	2 1/2"	-	-	-	-	0097284

Frame Clearances
 Horiz. Clearance between members 1(CX008) and 4(CX008): 21'-0"
 Vert. Clearance at member 1(CX008): 18'-7 1/16"
 Vert. Clearance at member 4(CX008): 18'-7 1/16"
 Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



PORTAL FRAME ELEVATION ALONG C

- 2 1'-3 1/2"
- 1 8"

Dimension Key

Shape Name = Townline Shop Wall 4, Frame 5

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
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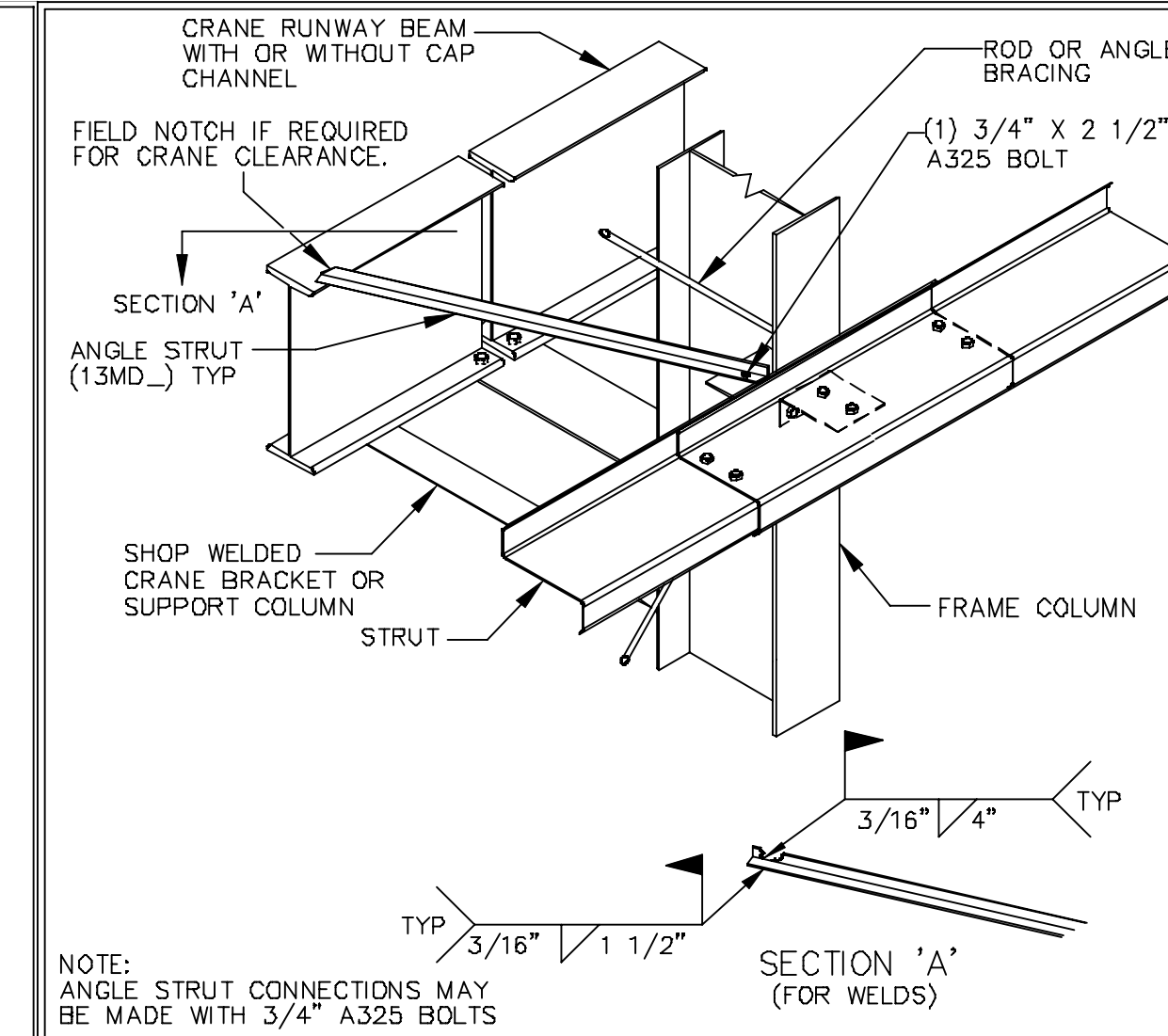
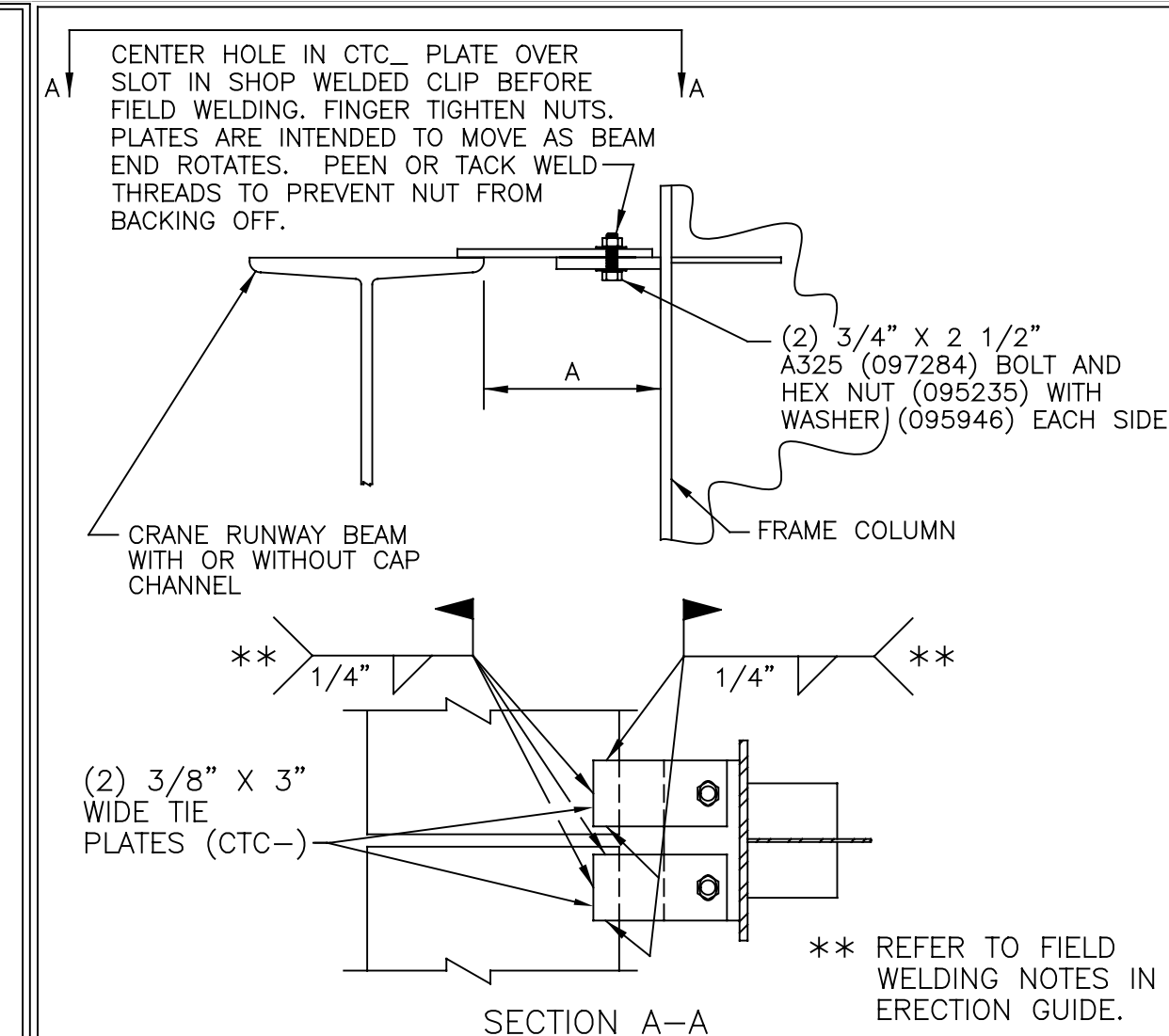
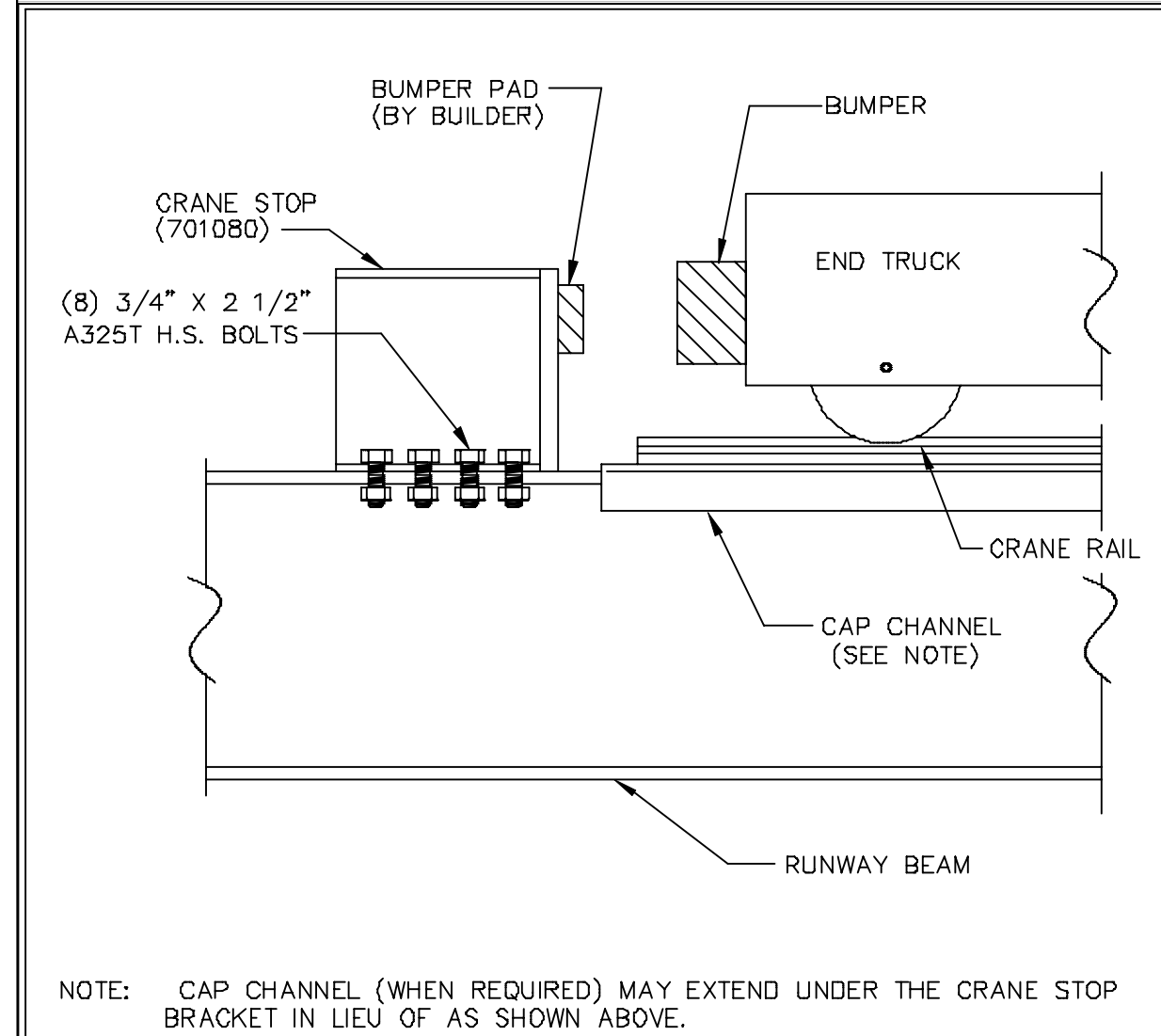
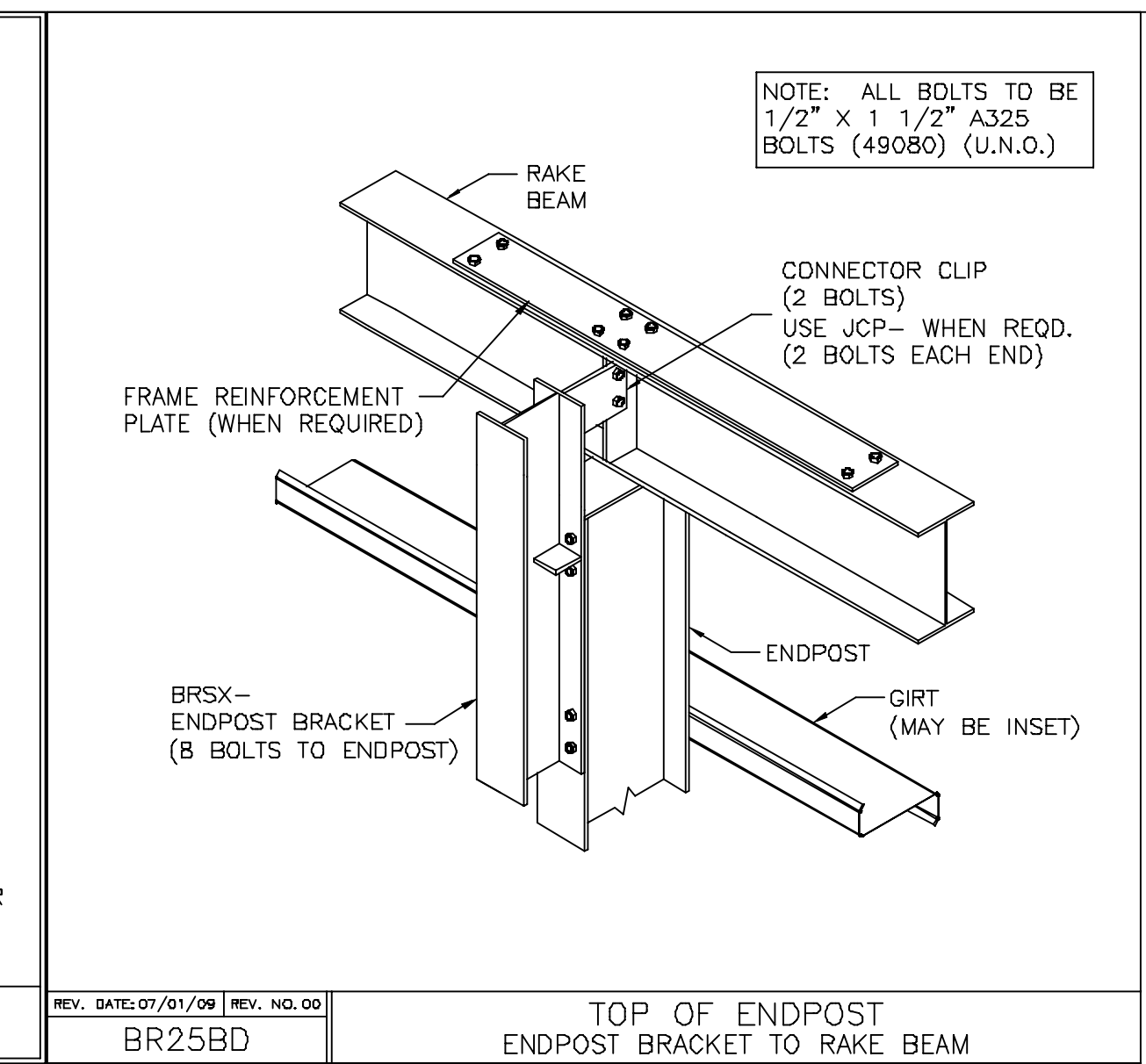
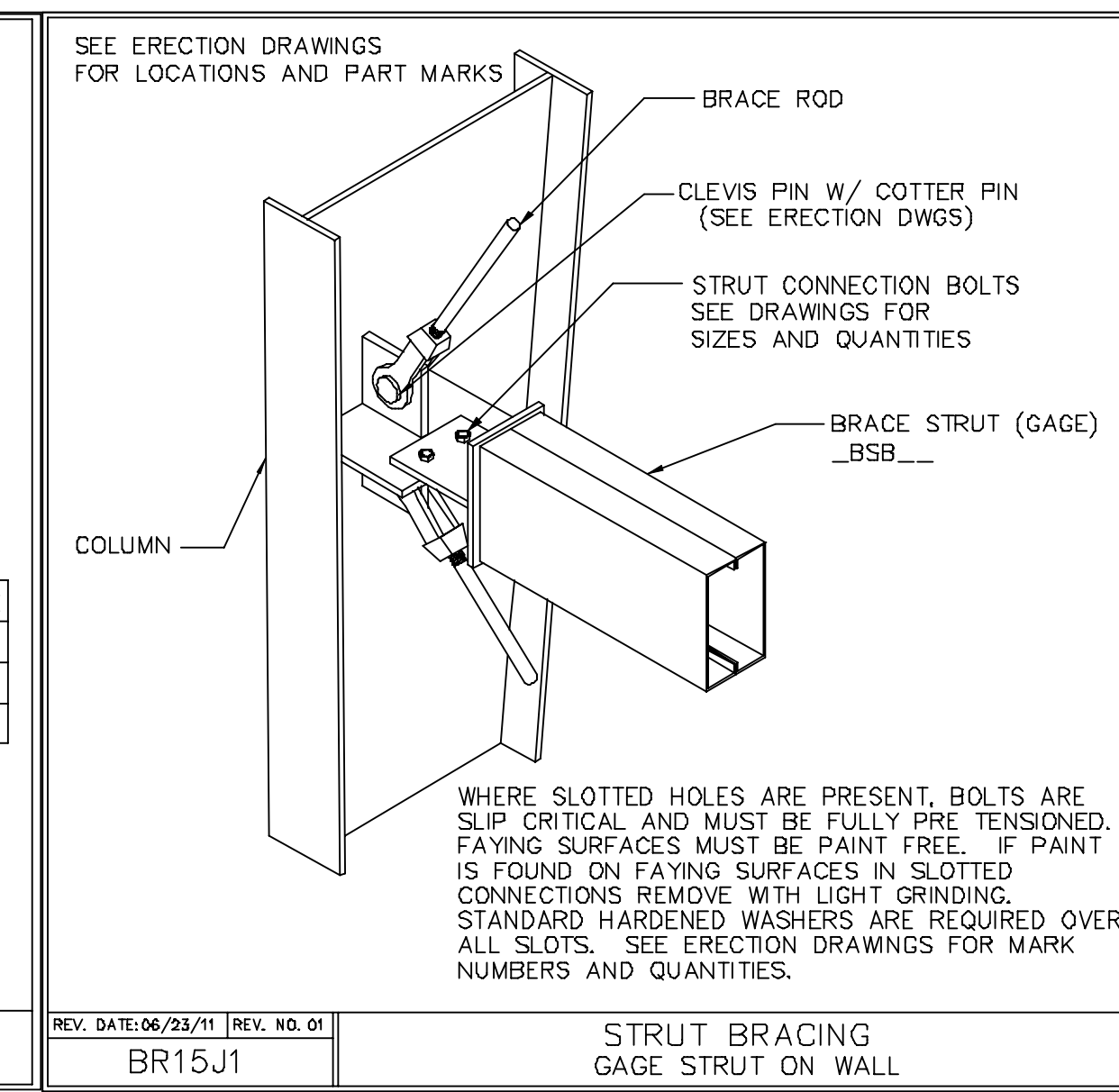
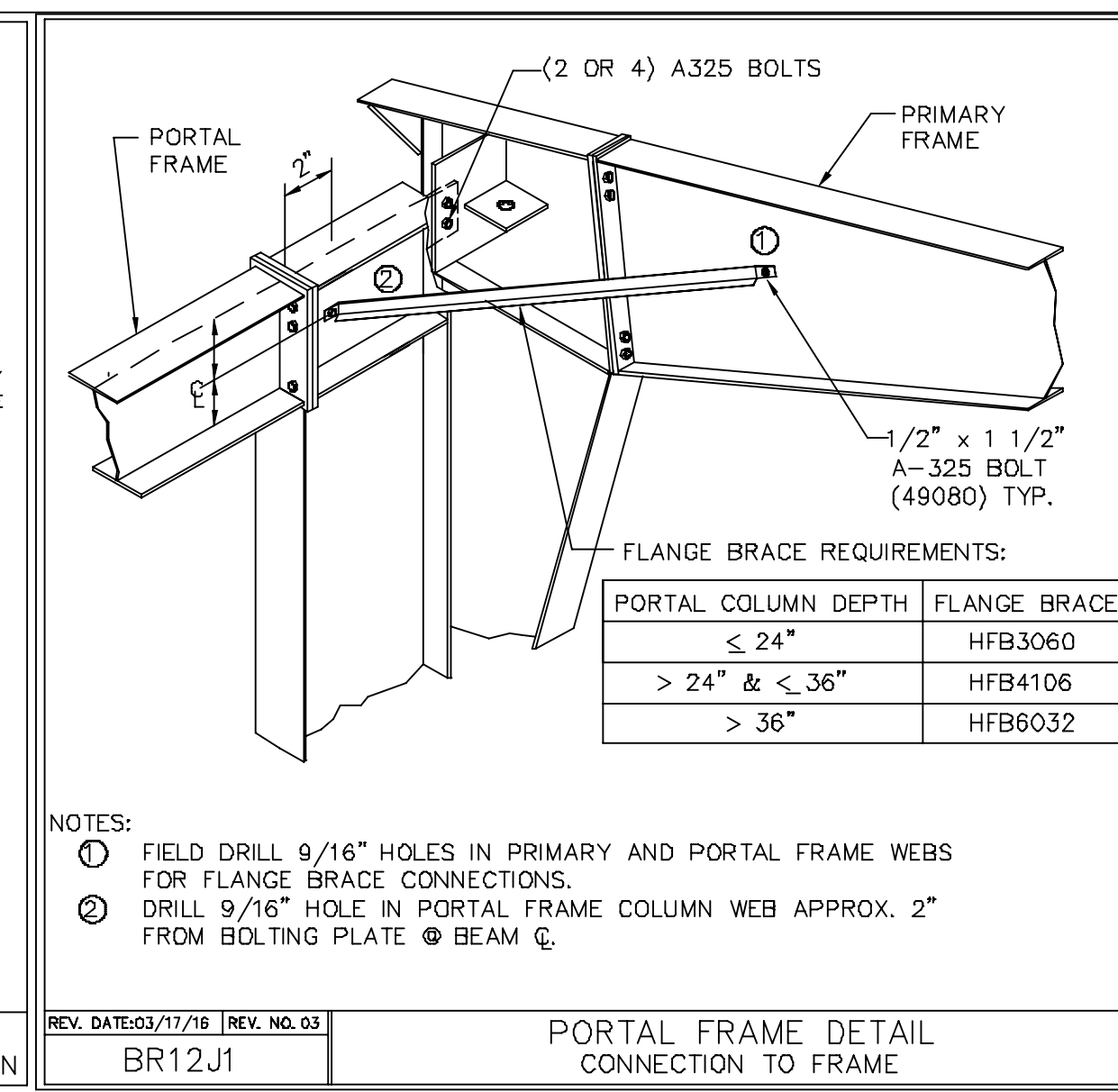
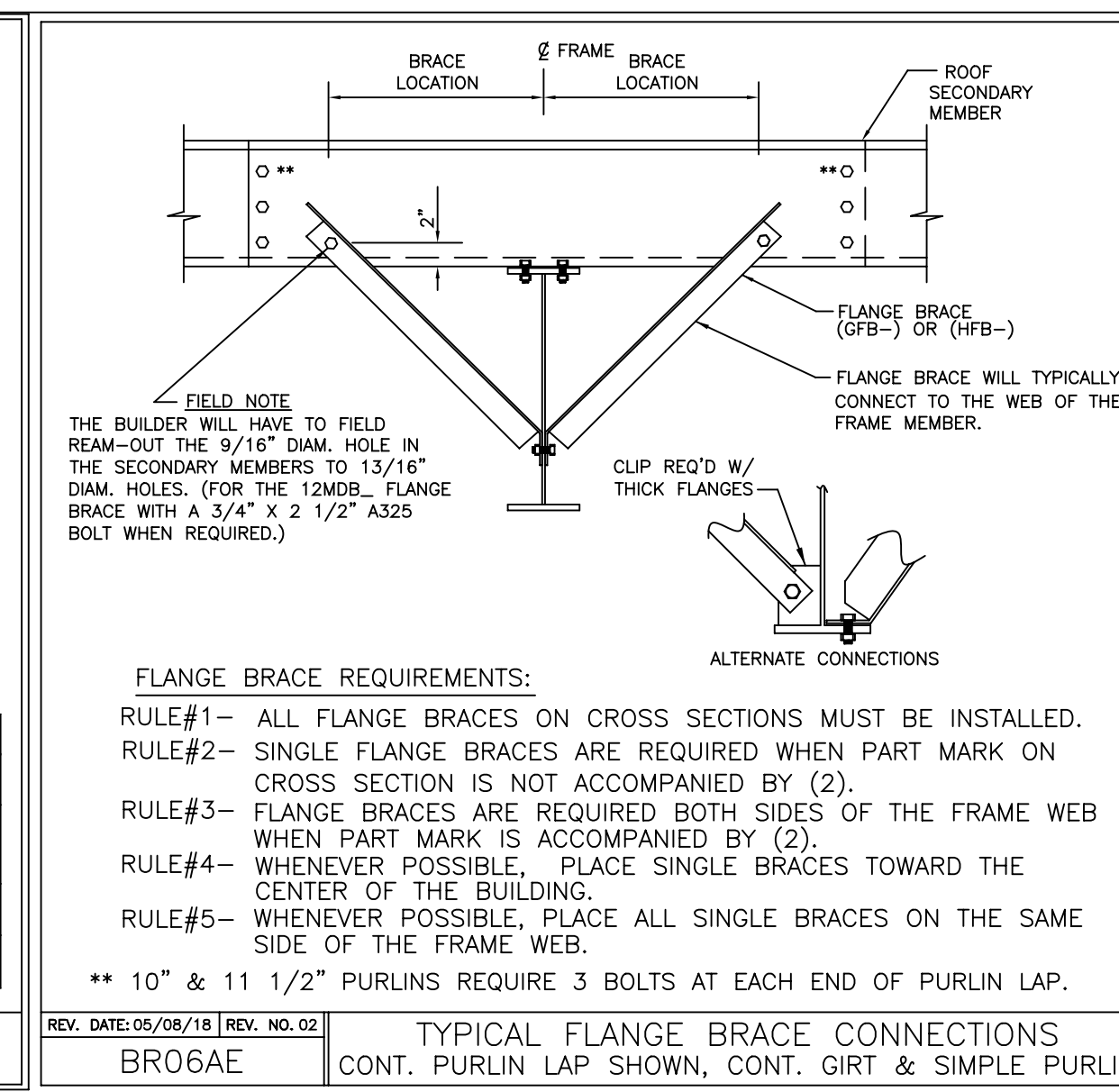
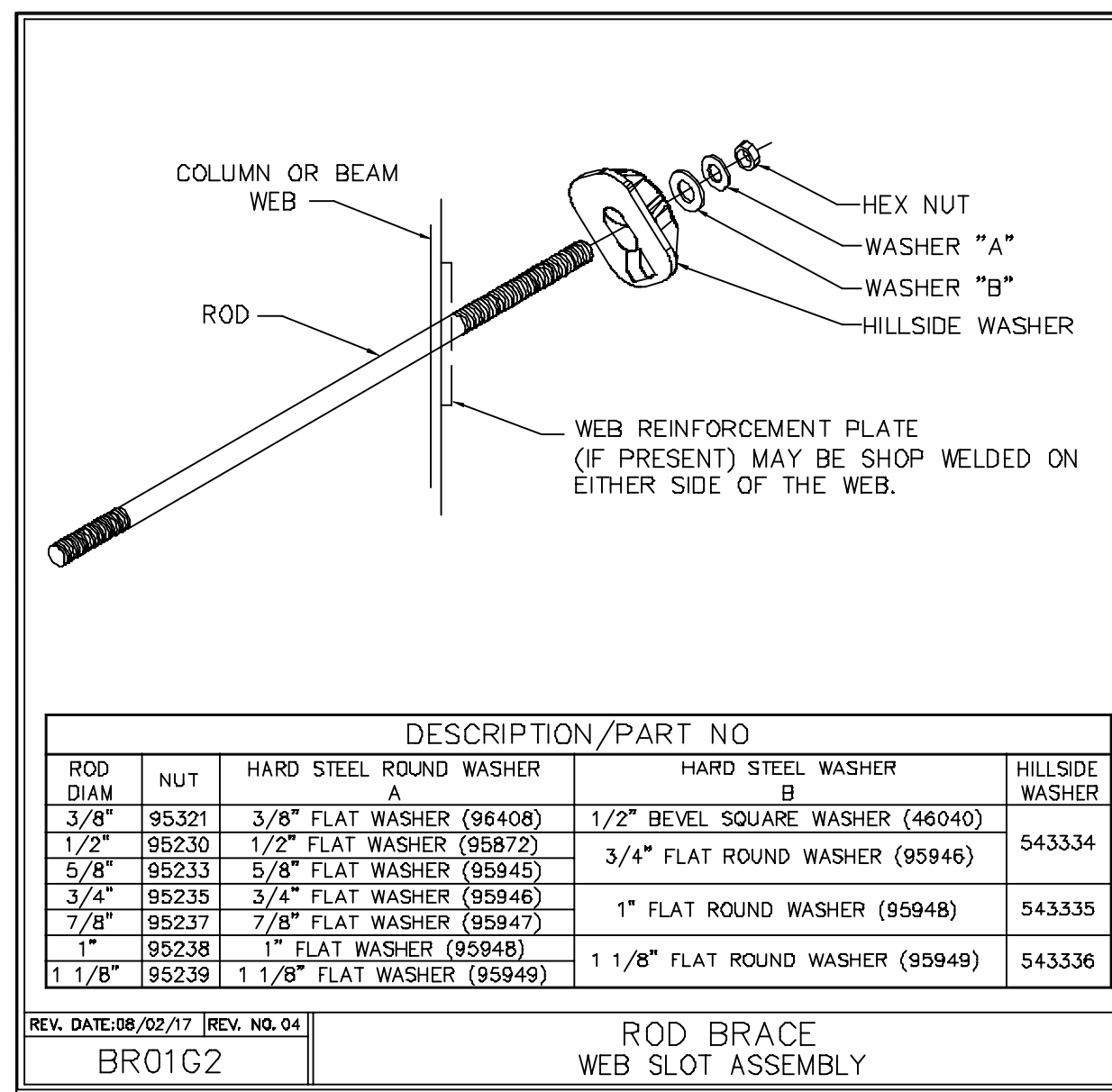
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BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102			
REV:	DATE:	BY:	DESCRIPTION:
DRAWING SCALE: NTS			
SAVE DATE: 4/1/2021 SAVE TIME: 09:59:44			

PORTAL FRAME ELEVATION ALONG C		BUTLER	
BUILDER:	Twin Pines Construction	JOB #:	21-000133-01
CUSTOMER:		DATE:	03/25/2021
LOCATION:	Plainfield, New Hampshire	DRAWN/CHECK:	MJU / MTV
PROJECT:	Townline Shop	PAGE:	15
BUILDER'S PO#:		Butler Manufacturing VPC VERSION: 2020.4d	
LAST SAVED BY: manjunatha_c		a division of BlueScope Buildings North America, Inc.	



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

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

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

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

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

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

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

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

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

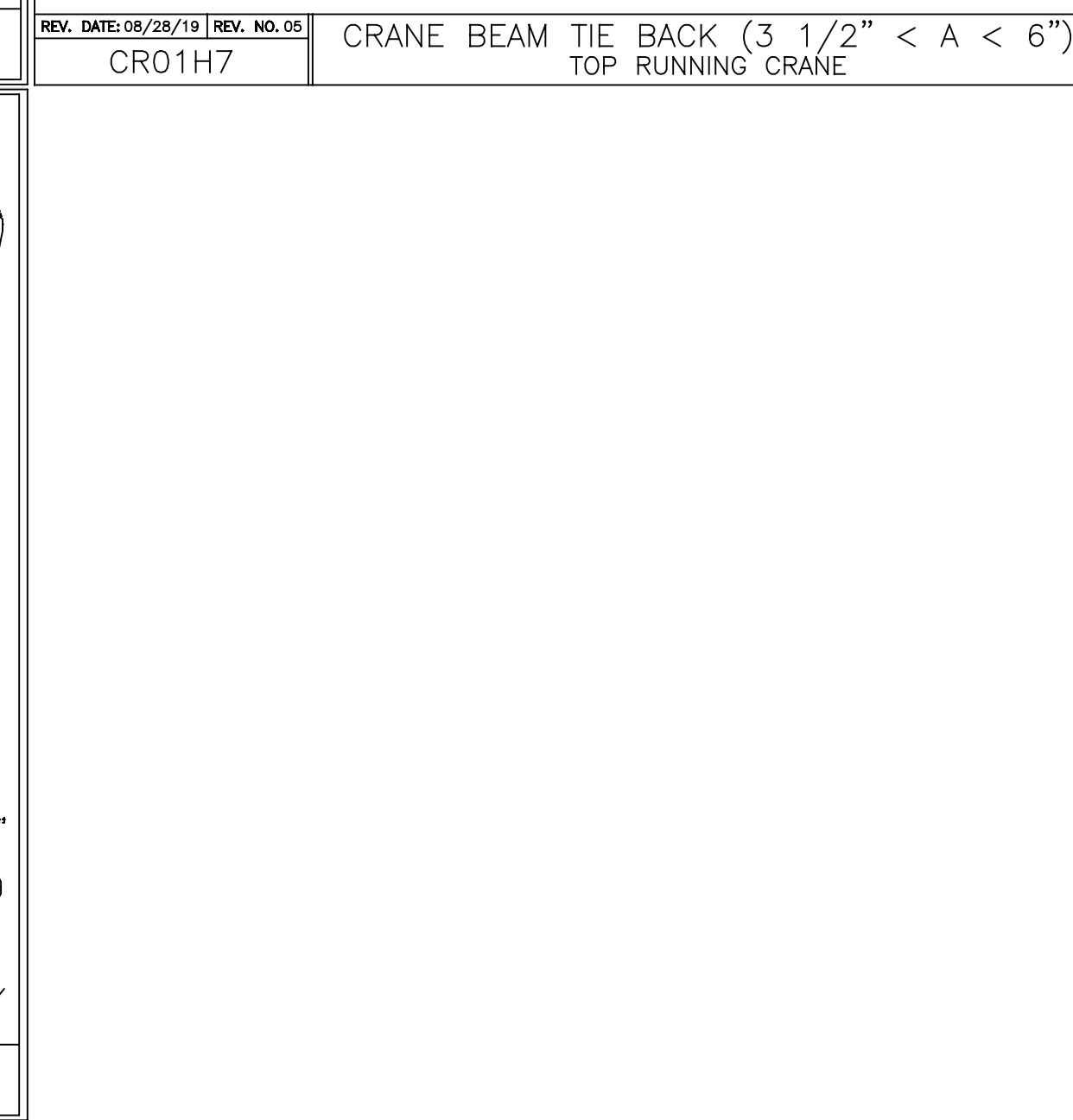
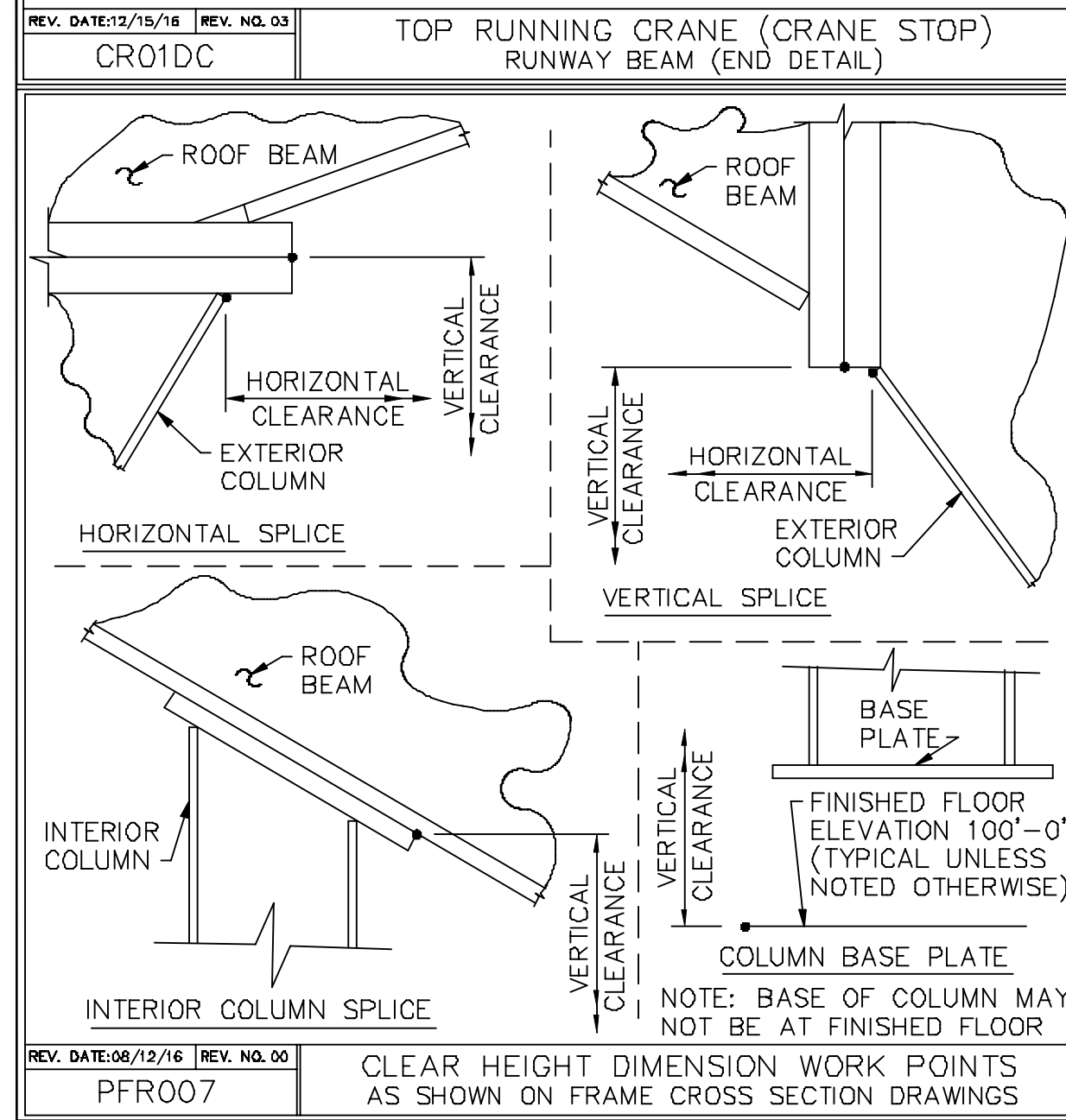
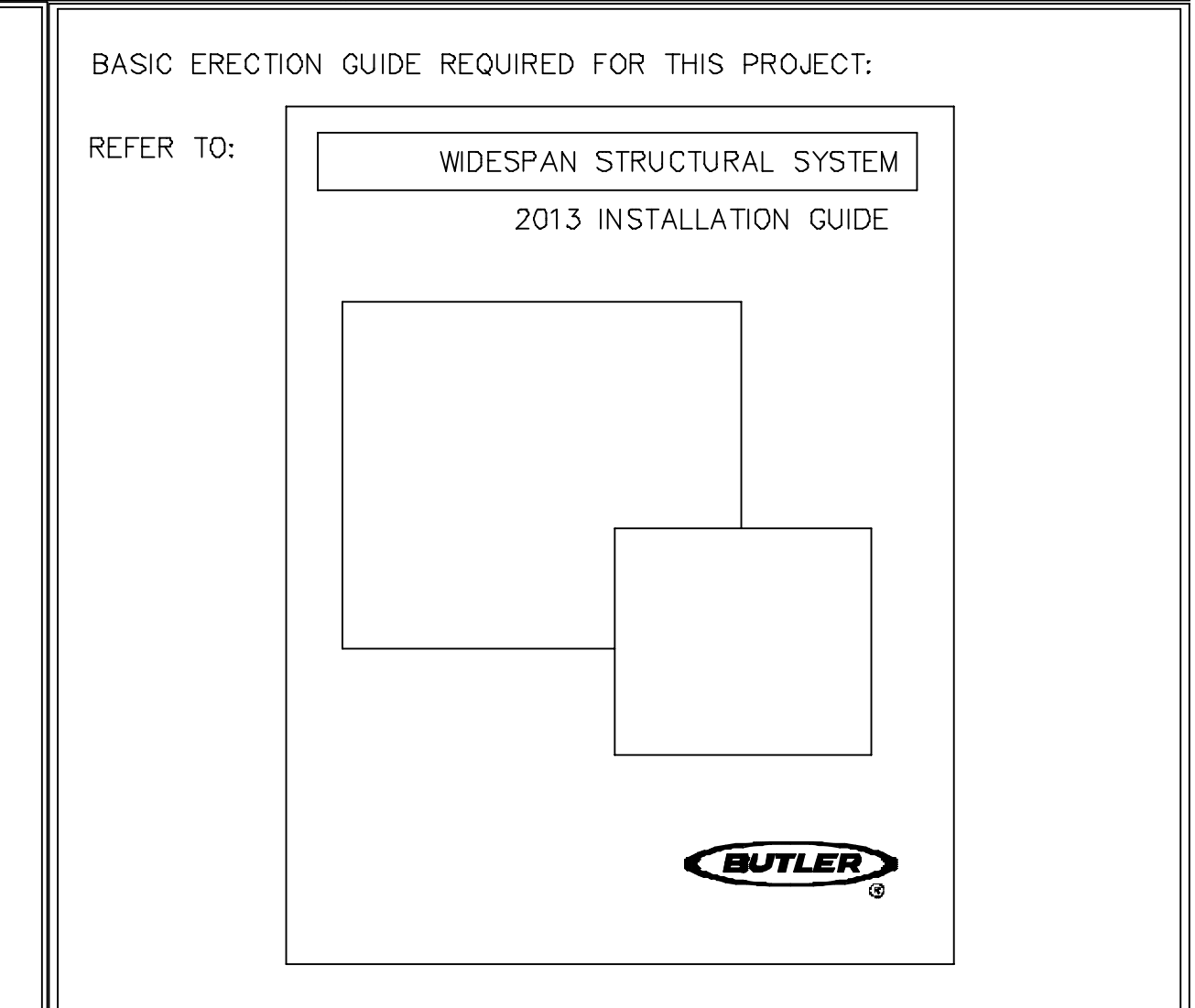
ICX*** = INTERIOR COLUMN
PCX*** = PIPE COLUMN
TCX*** = TUBE COLUMN

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

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

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

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



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D BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV: DATE: BY: DESCRIPTION:

DRAWING SCALE: NTS

FOR CONSTRUCTION

PRIMARY BRACING SED'S

BUILDER: Twin Pines Construction
CUSTOMER:
LOCATION: Plainfield, New Hampshire
PROJECT: Townline Shop
BUILDER'S PO#:

JOB #: 21-000133-01
DATE: 03/25/2021
DRAWING CHECK: MJU / MTV
PAGE: 16

Butler Manufacturing
VPC VERSION: 2020.4d

a division of BlueScope Buildings North America, Inc.

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) WO WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.

2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

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

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REV: DATE: BY: DESCRIPTION:

DRAWING SCALE: NTS

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CUSTOMER:
LOCATION: Plainfield, New Hampshire
PROJECT: Townline Shop
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JOB #: 21-000133-01
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PAGE: 16

Butler Manufacturing
VPC VERSION: 2020.4d

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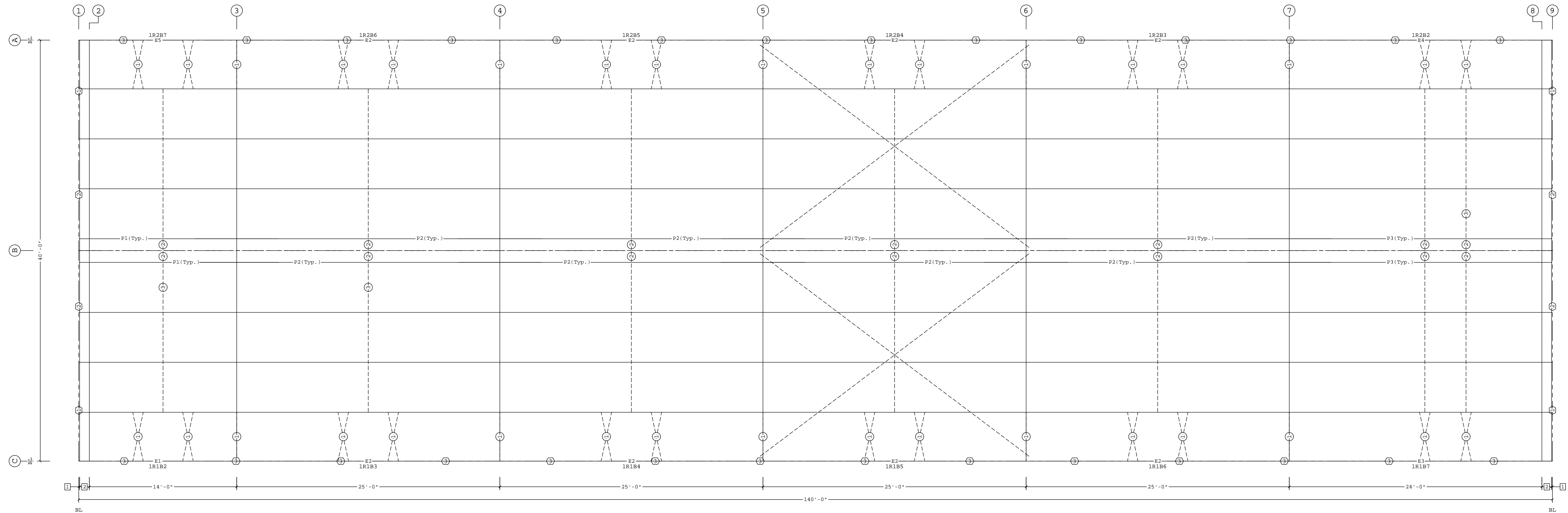
Secondary Part Schedule

Mark	Part	Thick.	Depth	Lap	Detail
E1	0011ES1411411030	0.1130	11 1/2"		RS12PH, RS12PA, RS12PJ
E2	0021ES2411411030	0.1130	11 1/2"		RS12PA, RS12PJ
E3	0031ES2411411030	0.1130	11 1/2"		RS12PH, RS12PA, RS12PJ
E4	0041ES2411411030	0.1130	11 1/2"		RS12PH, RS12PA, RS12PJ
E5	0051ES1411411030	0.1130	11 1/2"		RS12PH, RS12PA, RS12PJ
P1	11Z1811416A503	0.0680	11 1/2"	3'-10 1/2"	RS02T1, RS01U1
P2	11Z321141355B2	0.0880	11 1/2"	3'-10 1/2"	RS01U1
P3	11Z2811413A5B3	0.0880	11 1/2"	3'-10 1/2"	RS02T1, RS01U1

Secondary Bracing Schedule

Id	Qty	Mark No	Spacing
1	58	PBA0411	4'-7 11/16"
2	14	CPBRA010602	1'-1 1/2"
3	42	CPBB041008 (Typ.)	4'-9"

See SED:
 EN60C1, FV580, BR09K2, BR09RY, BR09RZ
 BR09K5, BR09JG, BR09PK, BR09PH, BR09JR
 BR09JH



ROOF SECONDARY PLAN

Part Mark Key

- 1 001SGC409081
- 2 001SGC410073
- 3 EA1021

- 2 11"
- 1 1"

Dimension Key

Shape Name = Townline Shop

FOR CONSTRUCTION

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2. FLANGE BRACES ARE AN INTEGRAL PART OF THE STABILITY OF THE STRUCTURAL SYSTEM AND MUST BE PROPERLY INSTALLED PRIOR TO ERECTION OF WALL AND ROOF SHEETS.
3. REMOVAL OR ALTERATION OF ANY COMPONENT IS PROHIBITED.

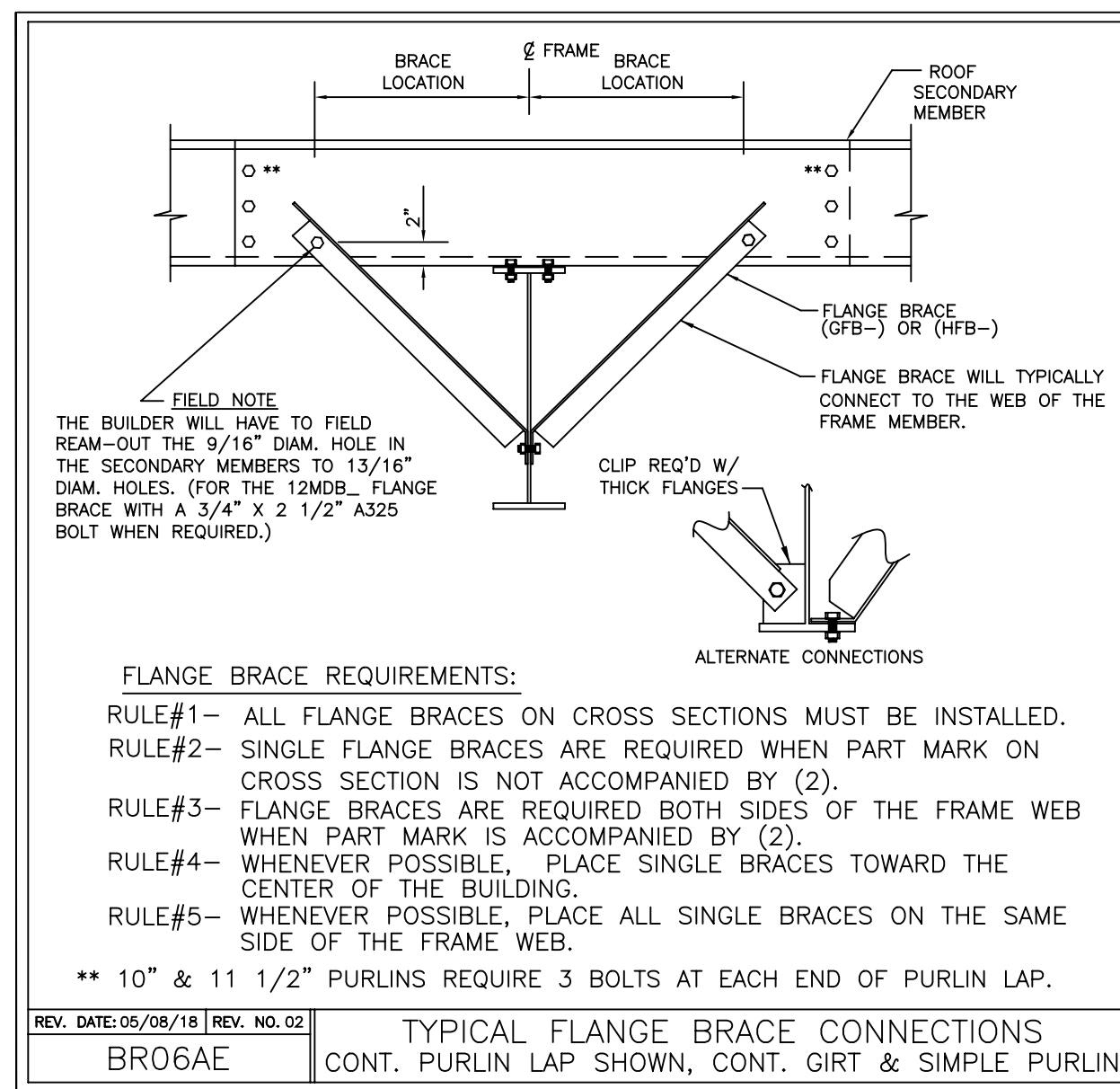
THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE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

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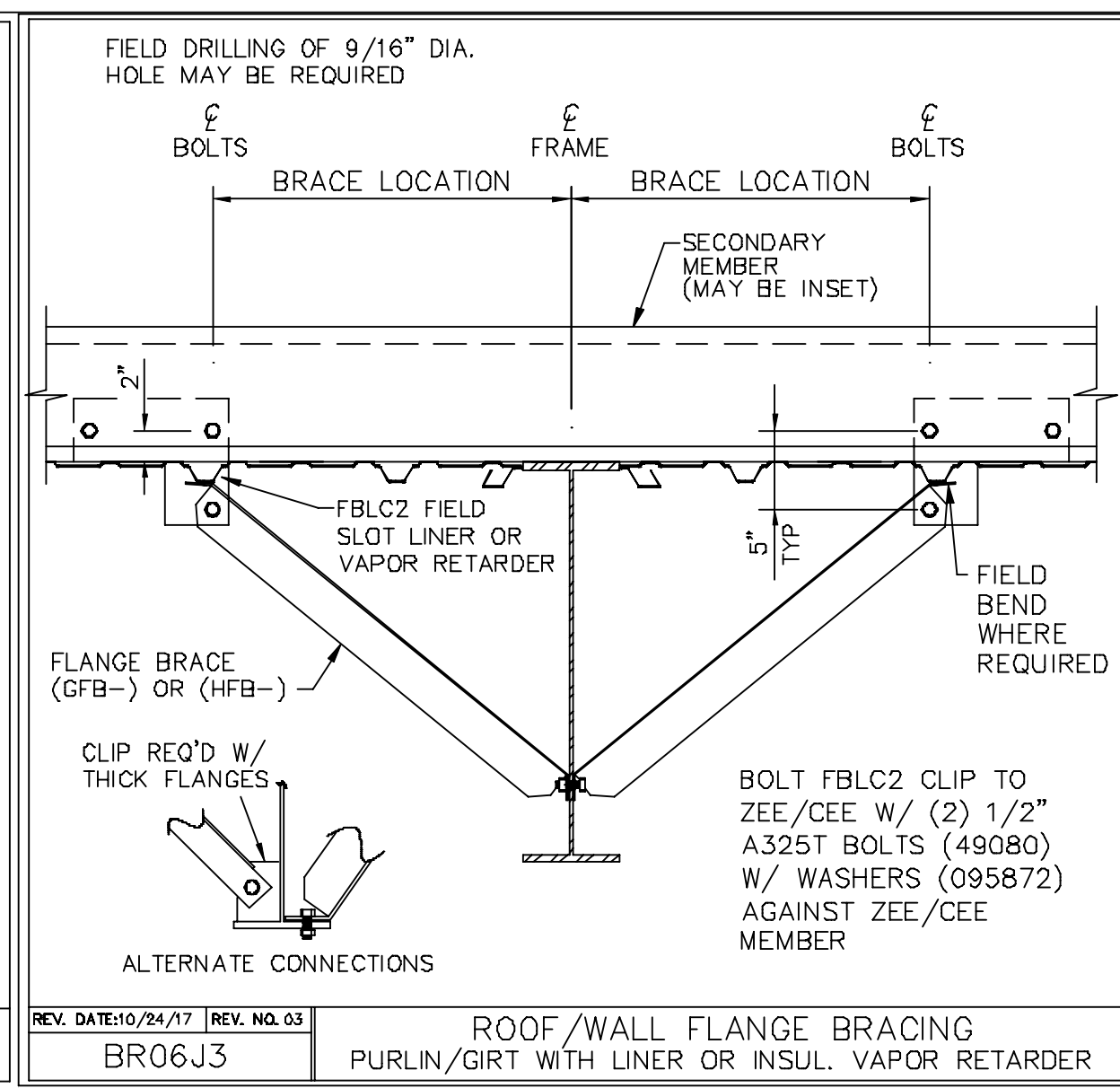
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D BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102		BUILDERS PO#:	
		TWIN PINES CONSTRUCTION	
DATE:		CUSTOMER:	
BY:		TWIN PINES CONSTRUCTION	
DESCRIPTION:		LOCATION: Plainfield, New Hampshire	
DRAWING SCALE: NTS		PROJECT: Townline Shop	
SAVE DATE: 3/22/2021		BUILDERS PO#:	
SAVE TIME: 15:57:40		TWIN PINES CONSTRUCTION	
LAST SAVED BY: manikandan_ramasamy		JOB #: 21-000133-01	
a division of BlueScope Buildings North America, Inc.		DATE: 03/25/2021	
BUTLER		DRAWN/CHECK: RMK / MTV	
Butler Manufacturing VPC VERSION: 2020.4d		PAGE: 17	

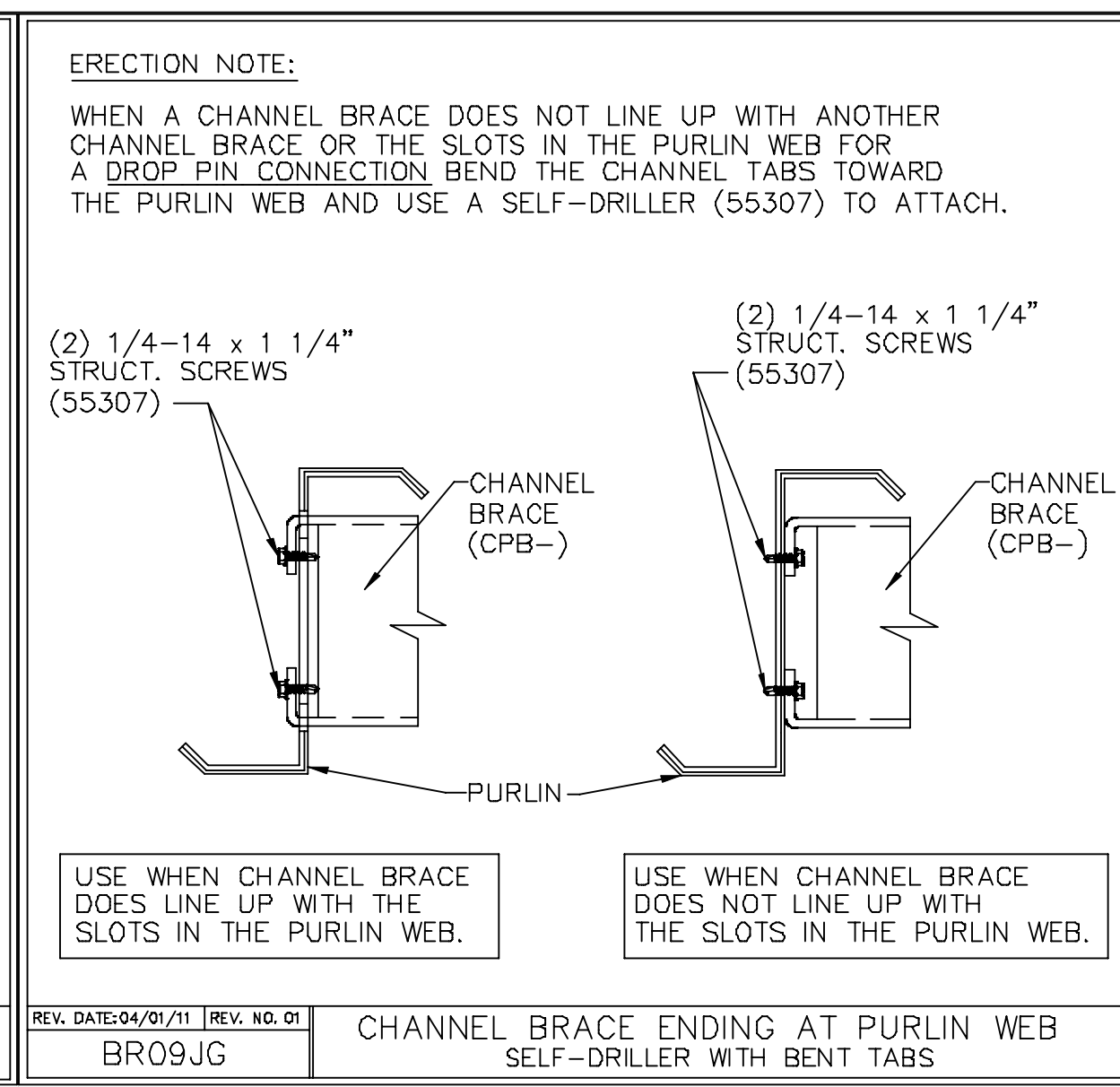
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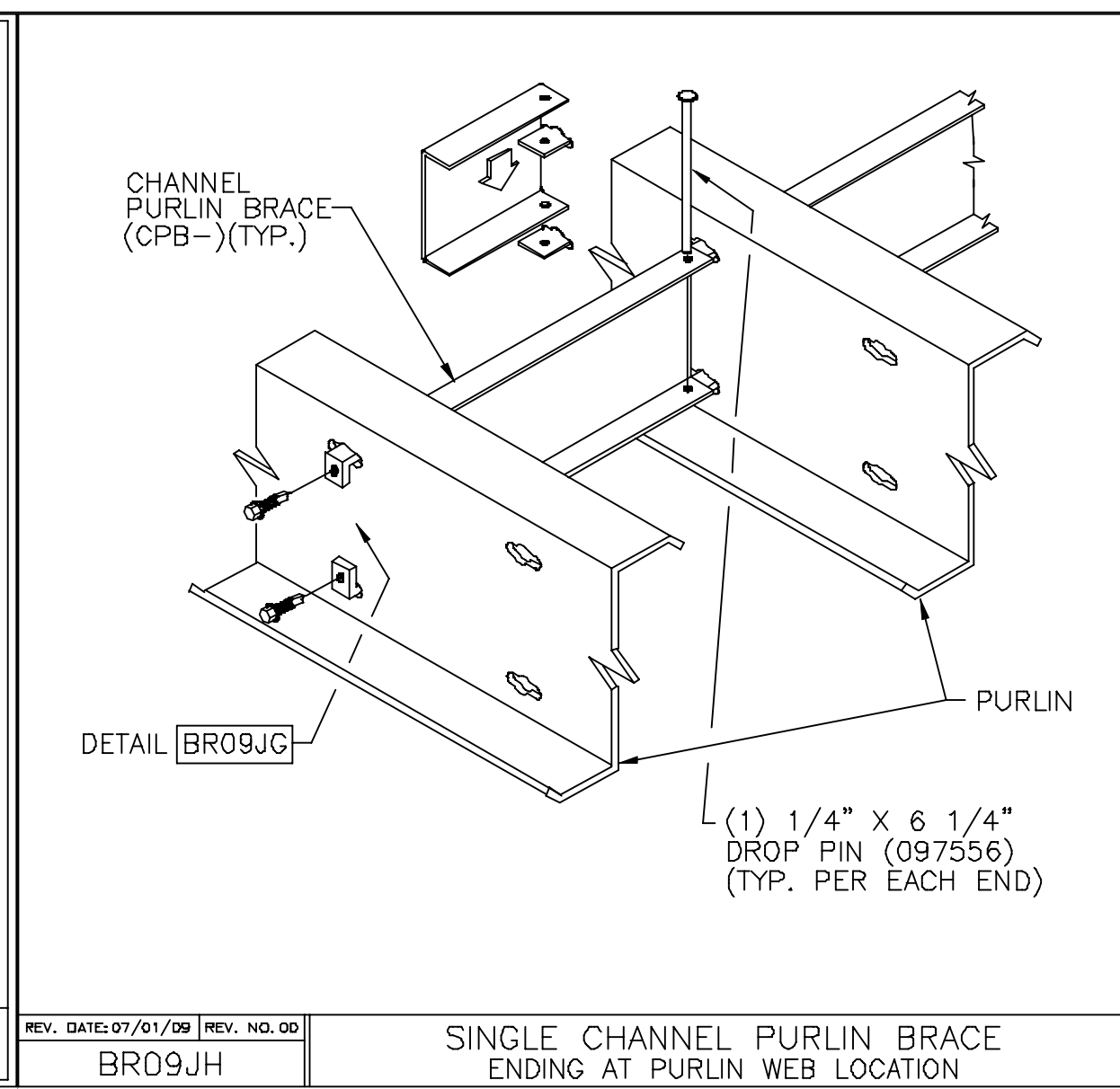
REV. DATE: 05/08/18 | REV. NO. 02 | TYPICAL FLANGE BRACE CONNECTIONS
BR06AE | CONT. PURLIN LAP SHOWN, CONT. GIRT & SIMPLE PURLIN



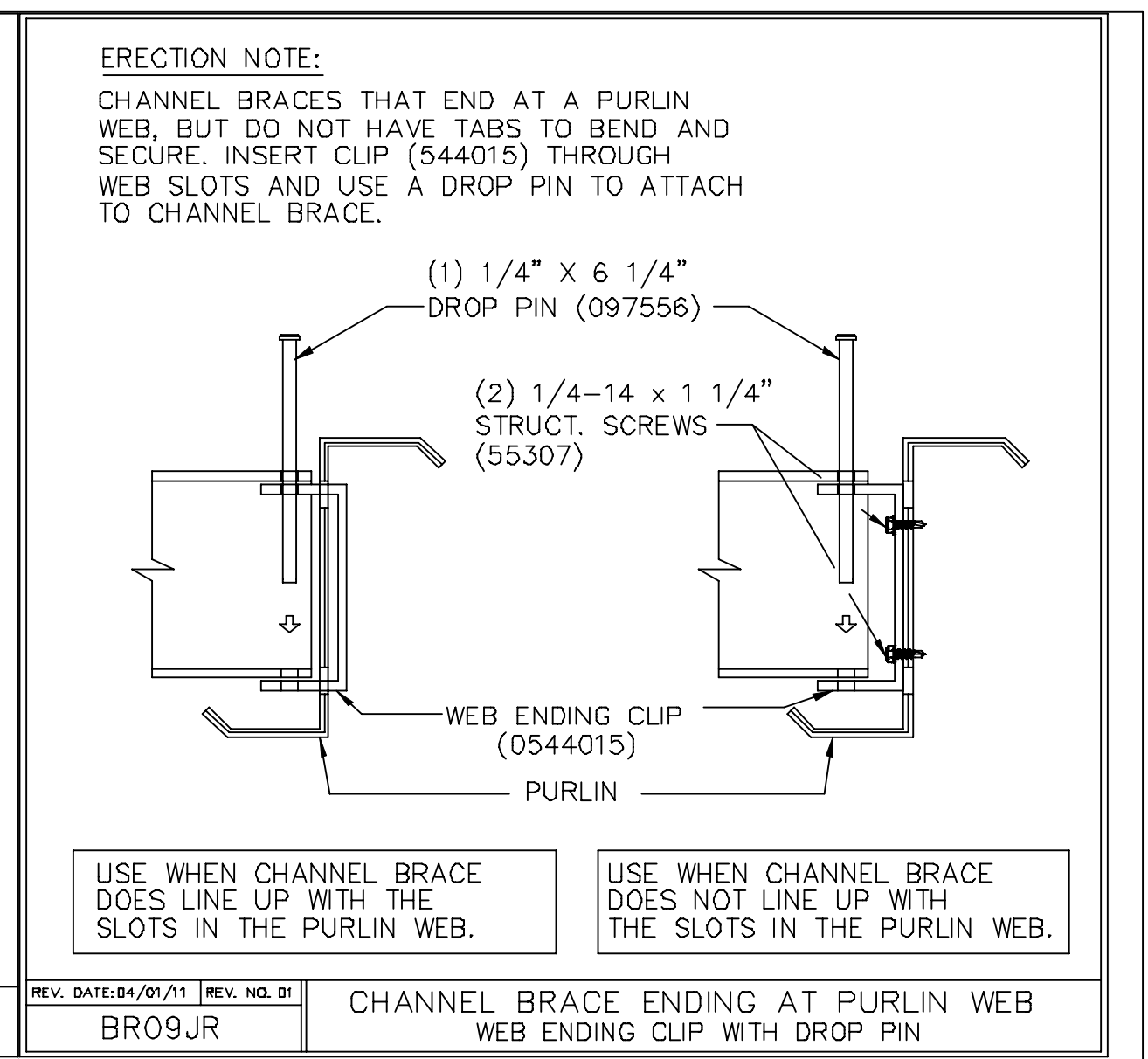
REV. DATE: 10/24/17 | REV. NO. 03 | ROOF/WALL FLANGE BRACING
BR06J3 | PURLIN/GIRT WITH LINER OR INSUL. VAPOR RETARDER



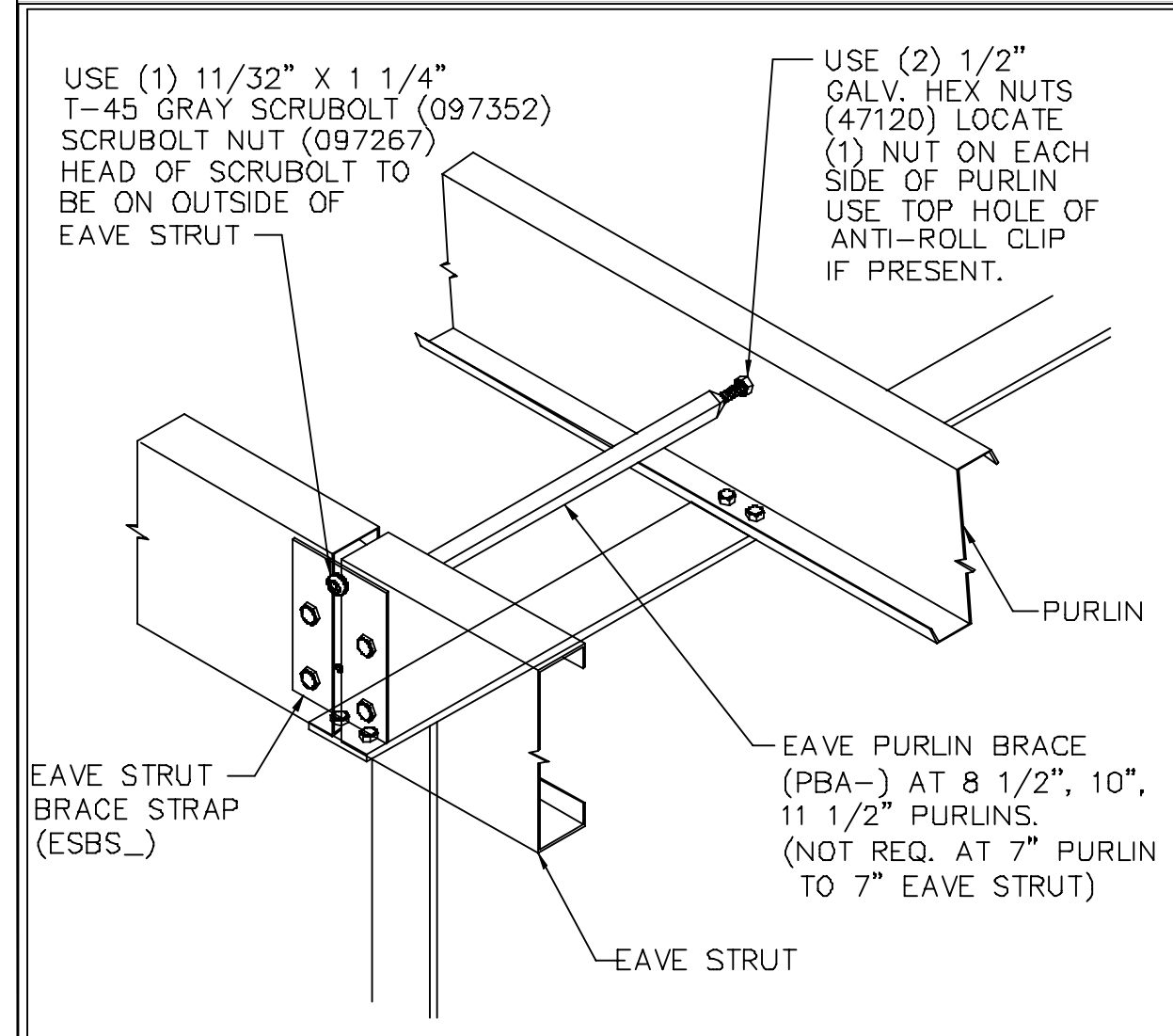
REV. DATE: 04/01/11 | REV. NO. 01 | CHANNEL BRACE ENDING AT PURLIN WEB
BR09JG | SELF-DRILLER WITH BENT TABS



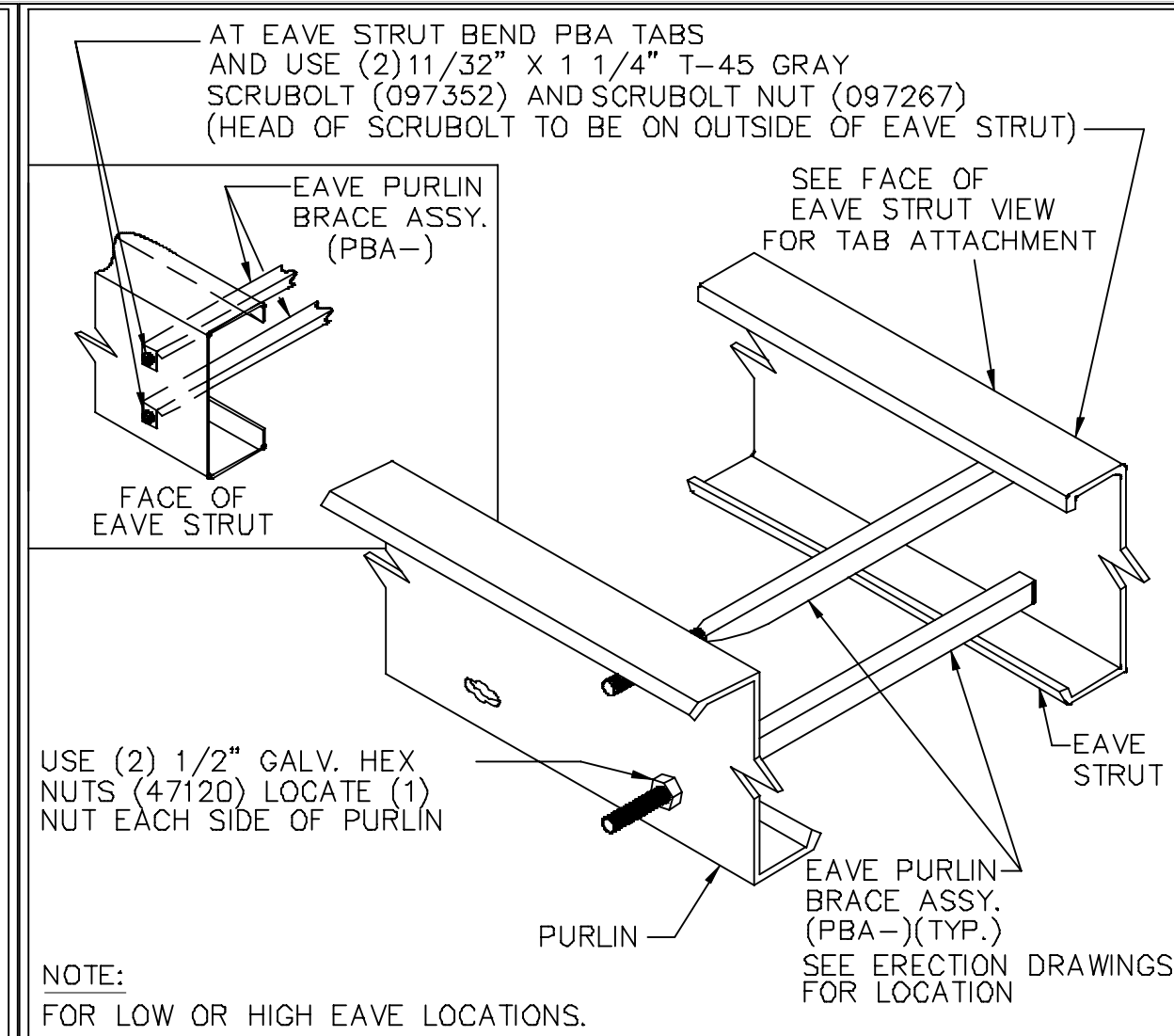
REV. DATE: 07/01/09 | REV. NO. 00 | SINGLE CHANNEL PURLIN BRACE
BR09JH | ENDING AT PURLIN WEB LOCATION



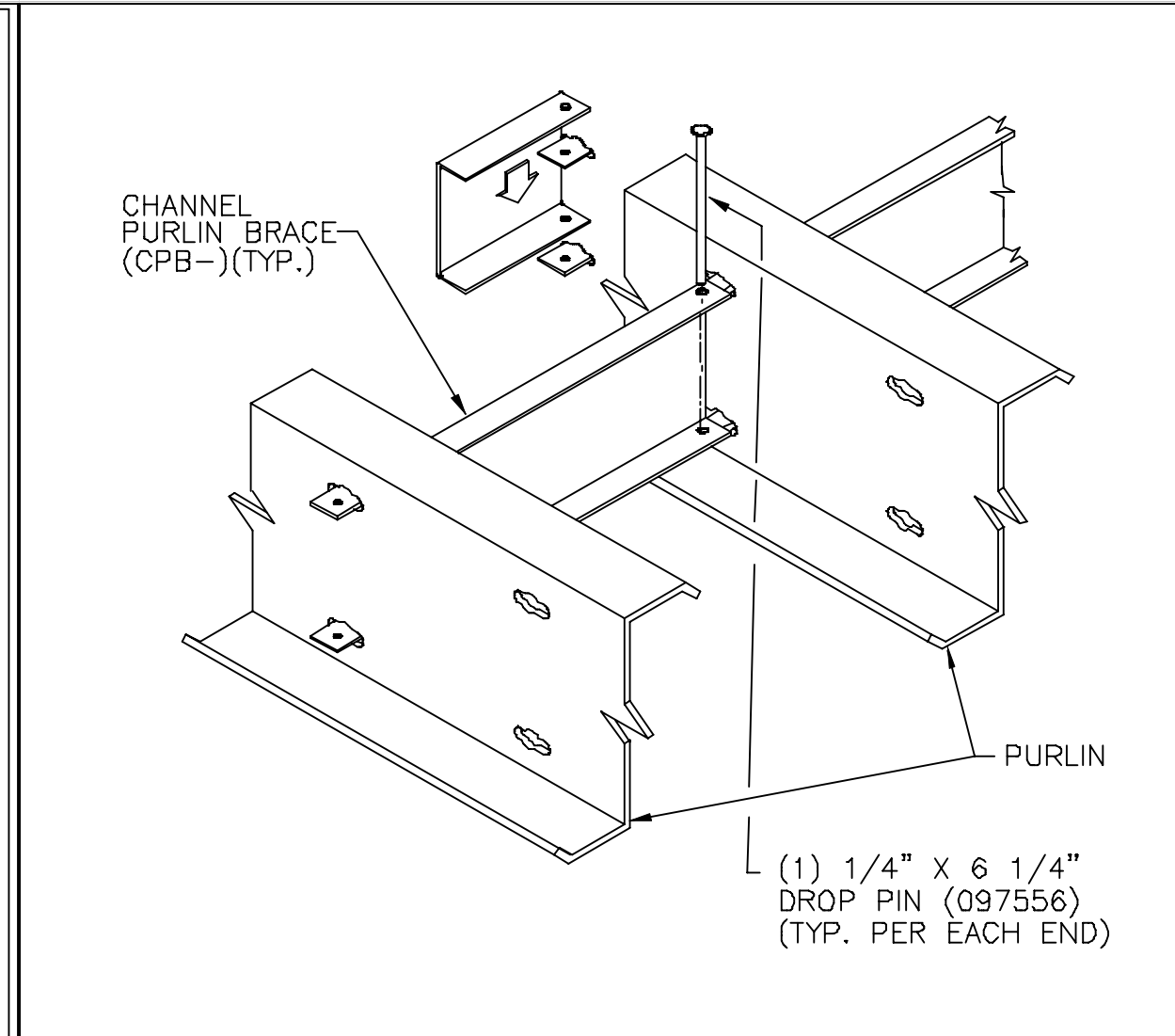
REV. DATE: 04/01/11 | REV. NO. 01 | CHANNEL BRACE ENDING AT PURLIN WEB
BR09JR | WEB ENDING CLIP WITH DROP PIN



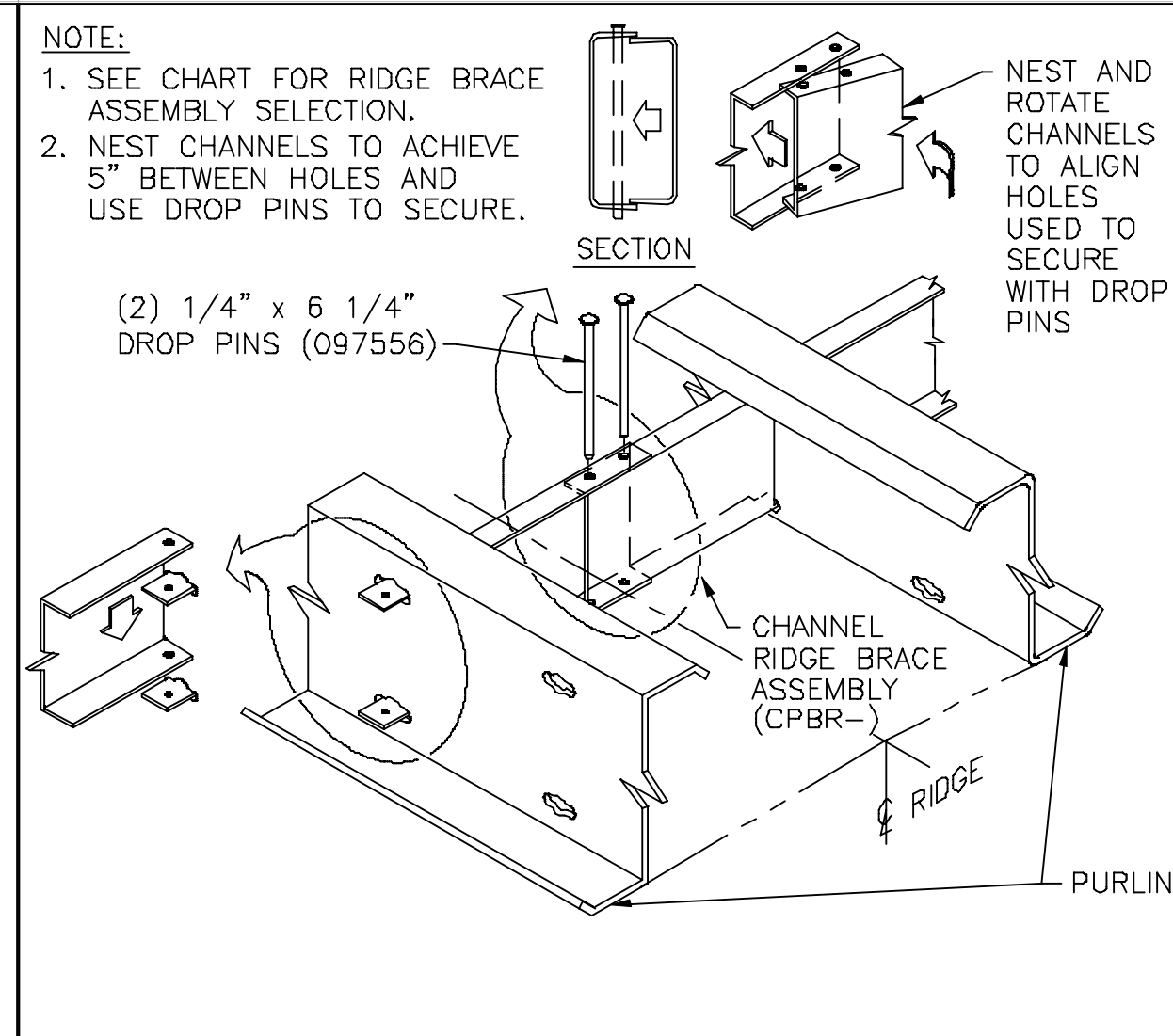
REV. DATE: 07/20/16 | REV. NO. 05 | EAVE BRACE STRAP AND EAVE PURLIN BRACE
BR09K2 | LOCATED AT EAVE - CENTERLINE OF FRAME



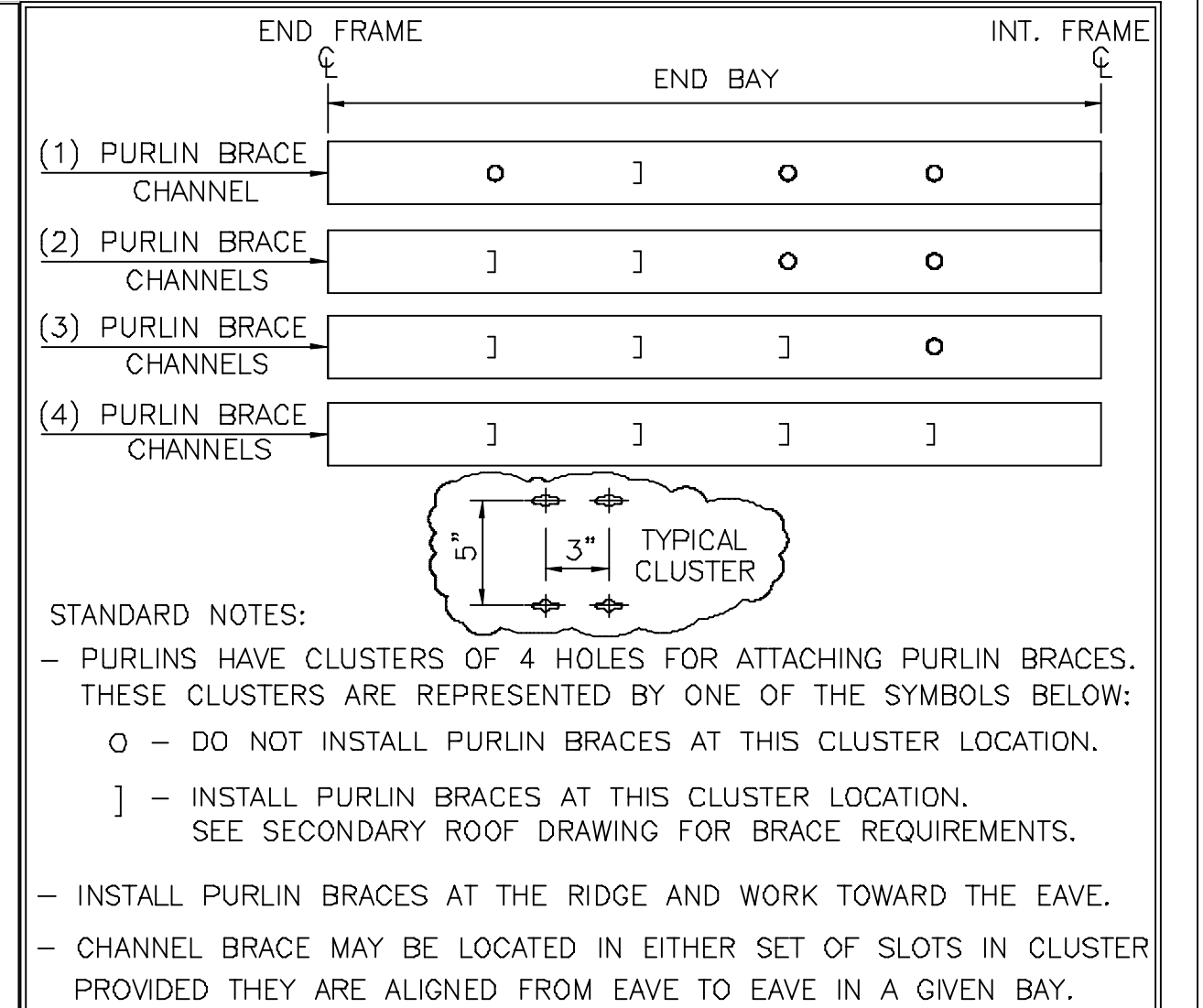
REV. DATE: 11/26/12 | REV. NO. 04 | EAVE STRUT BRACE
BR09K5



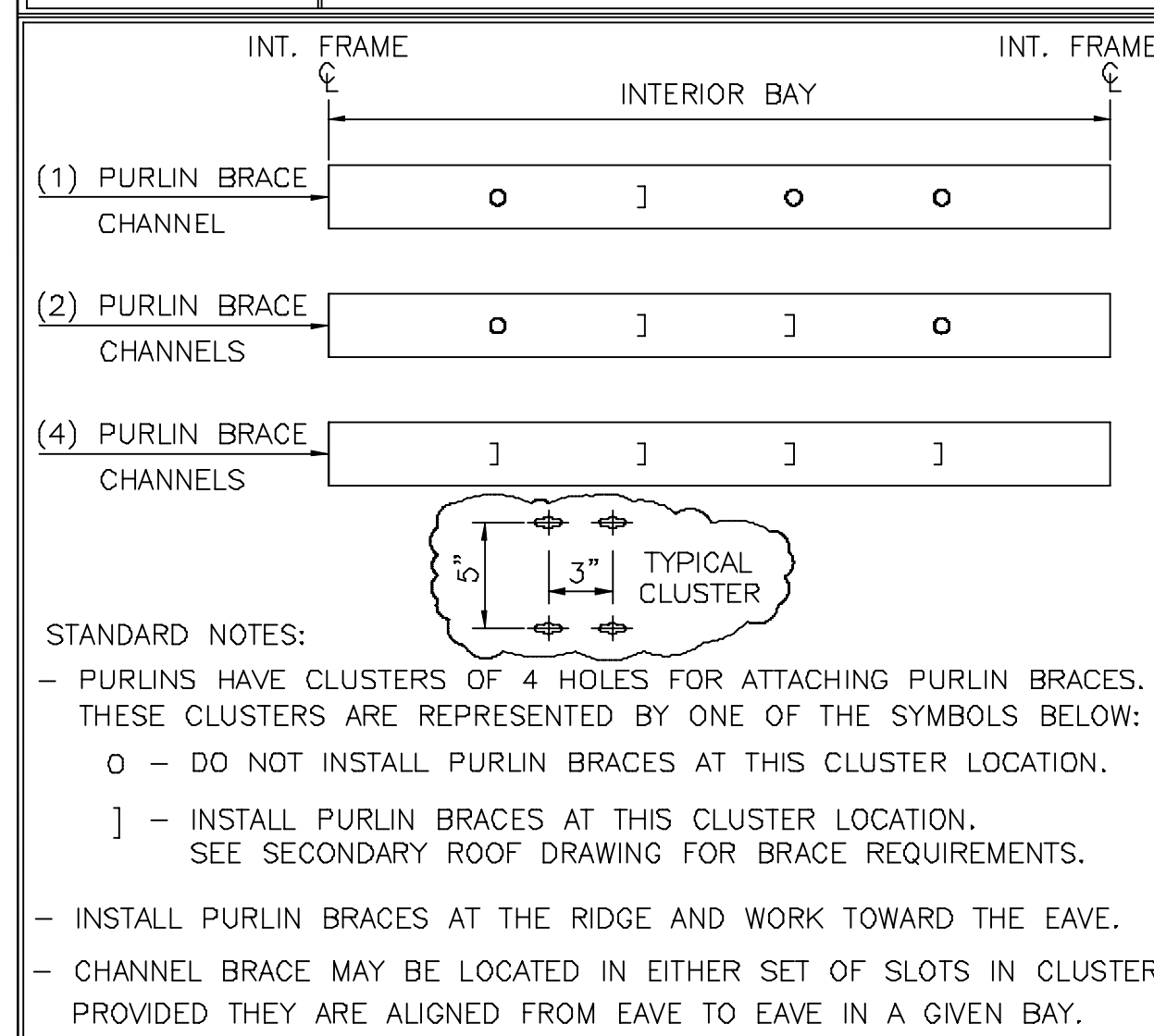
REV. DATE: 07/01/09 | REV. NO. 00 | SINGLE CHANNEL PURLIN BRACE
BR09PH | INTERMEDIATE LOCATION



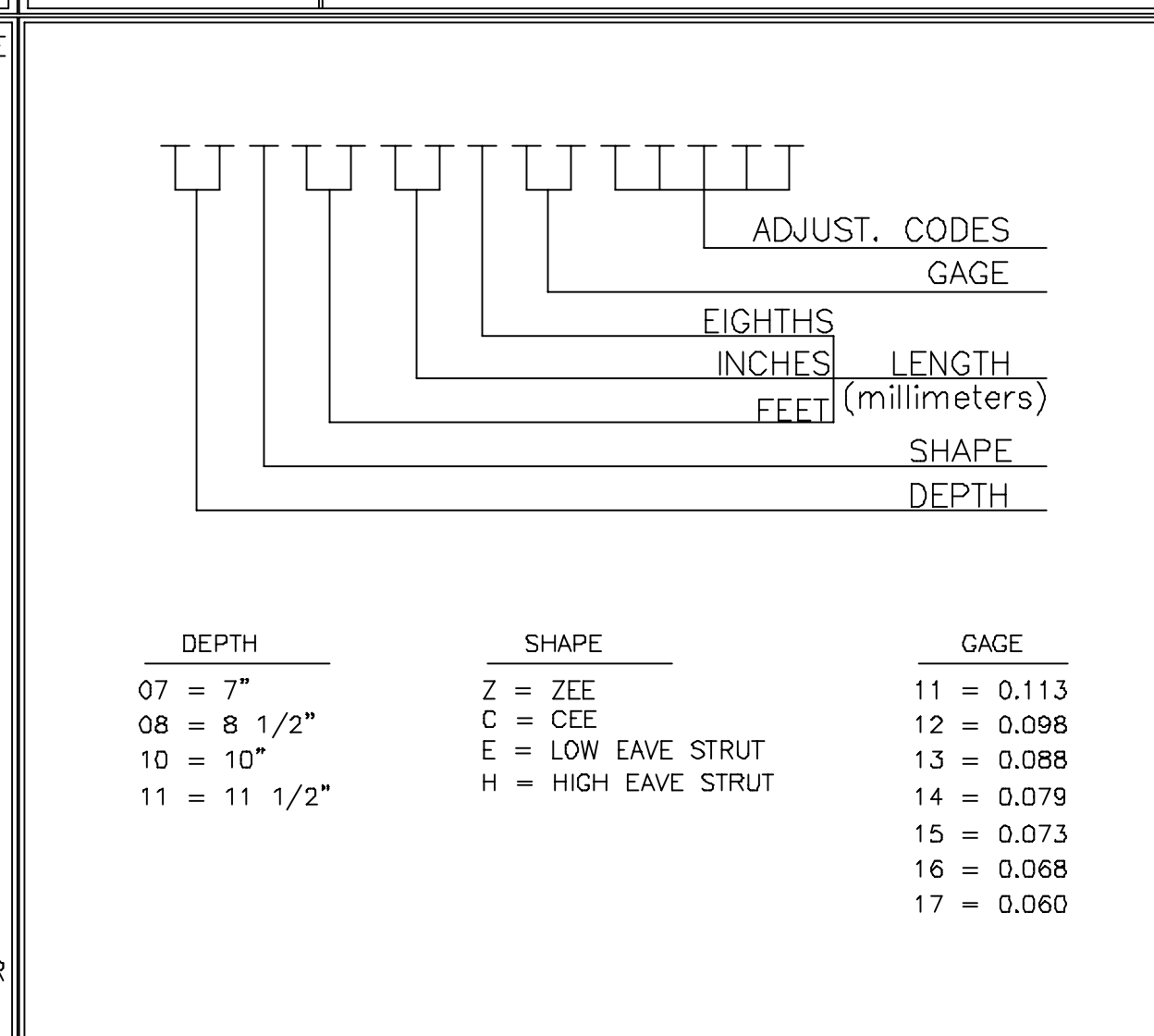
REV. DATE: 07/01/09 | REV. NO. 00 | CHANNEL RIDGE BRACE ASSEMBLY
BR09PK | SINGLE BRACE AT SYMMETRICAL RIDGE



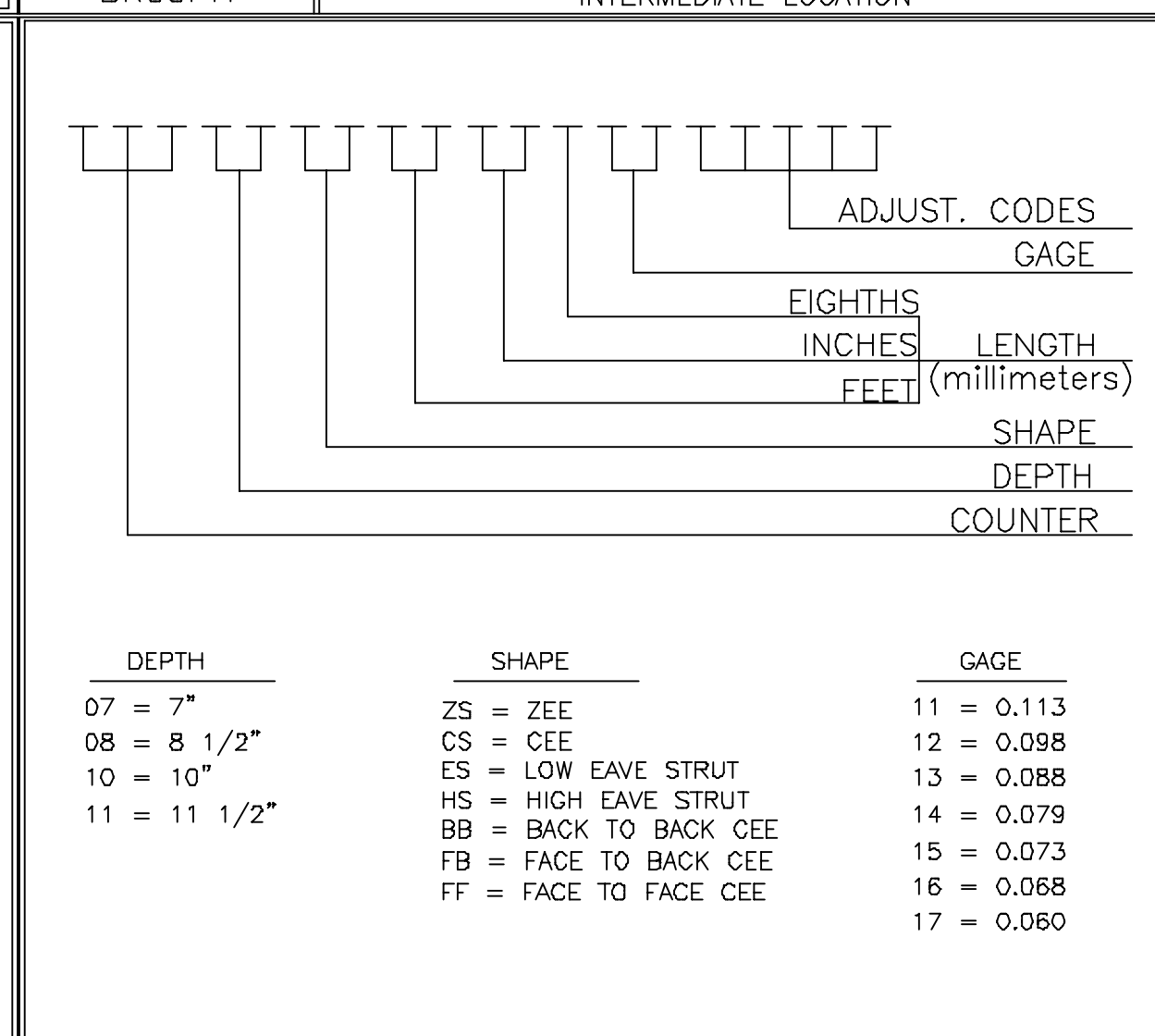
REV. DATE: 07/01/09 | REV. NO. 00 | PURLIN BRACE CLUSTER LOCATION
BR09RY | END BAY CHANNEL LOCATION



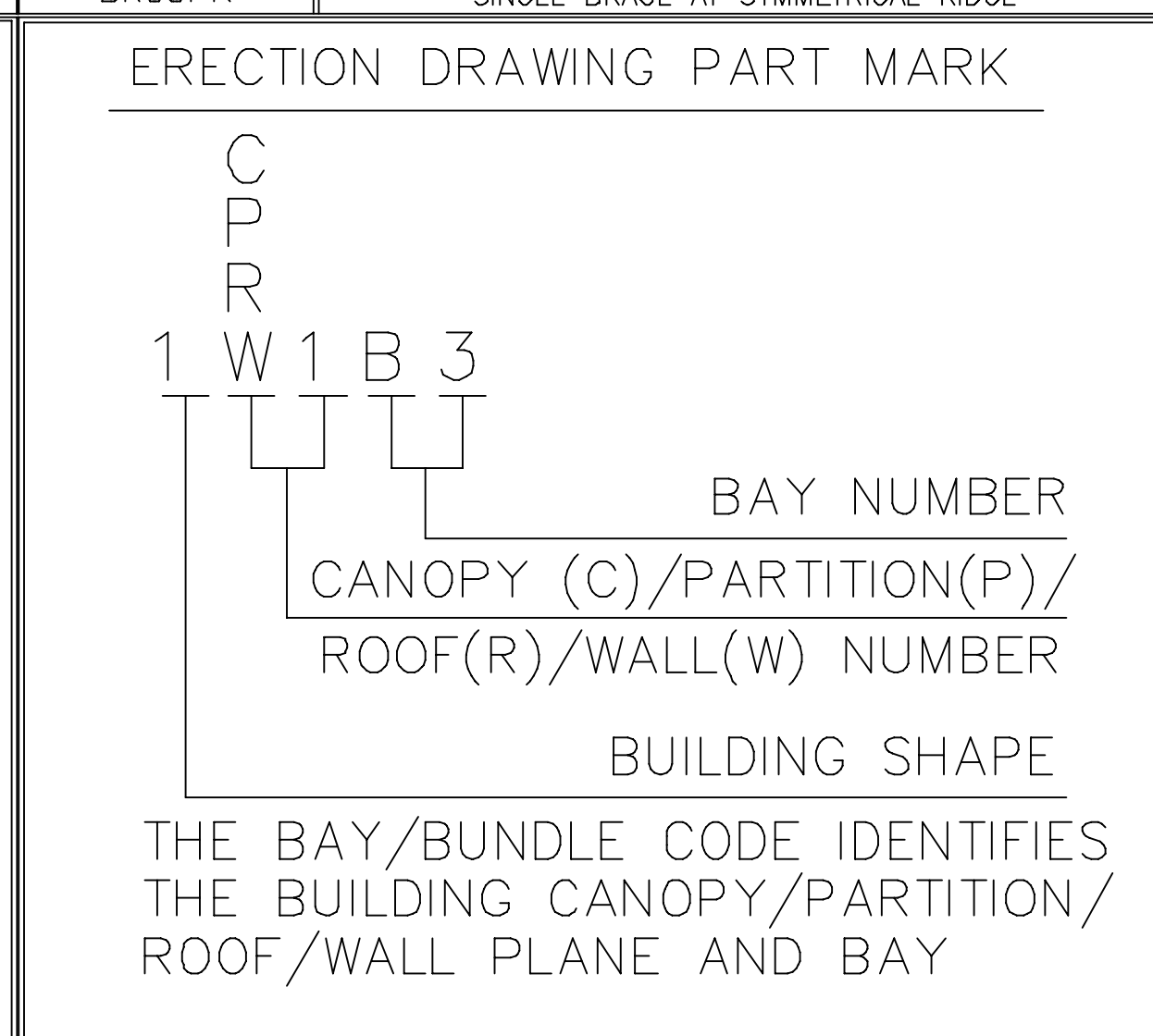
REV. DATE: 07/01/09 | REV. NO. 00 | PURLIN BRACE CLUSTER LOCATION
BR09RZ | INTERIOR BAY CHANNEL LOCATION



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



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



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

FOR CONSTRUCTION

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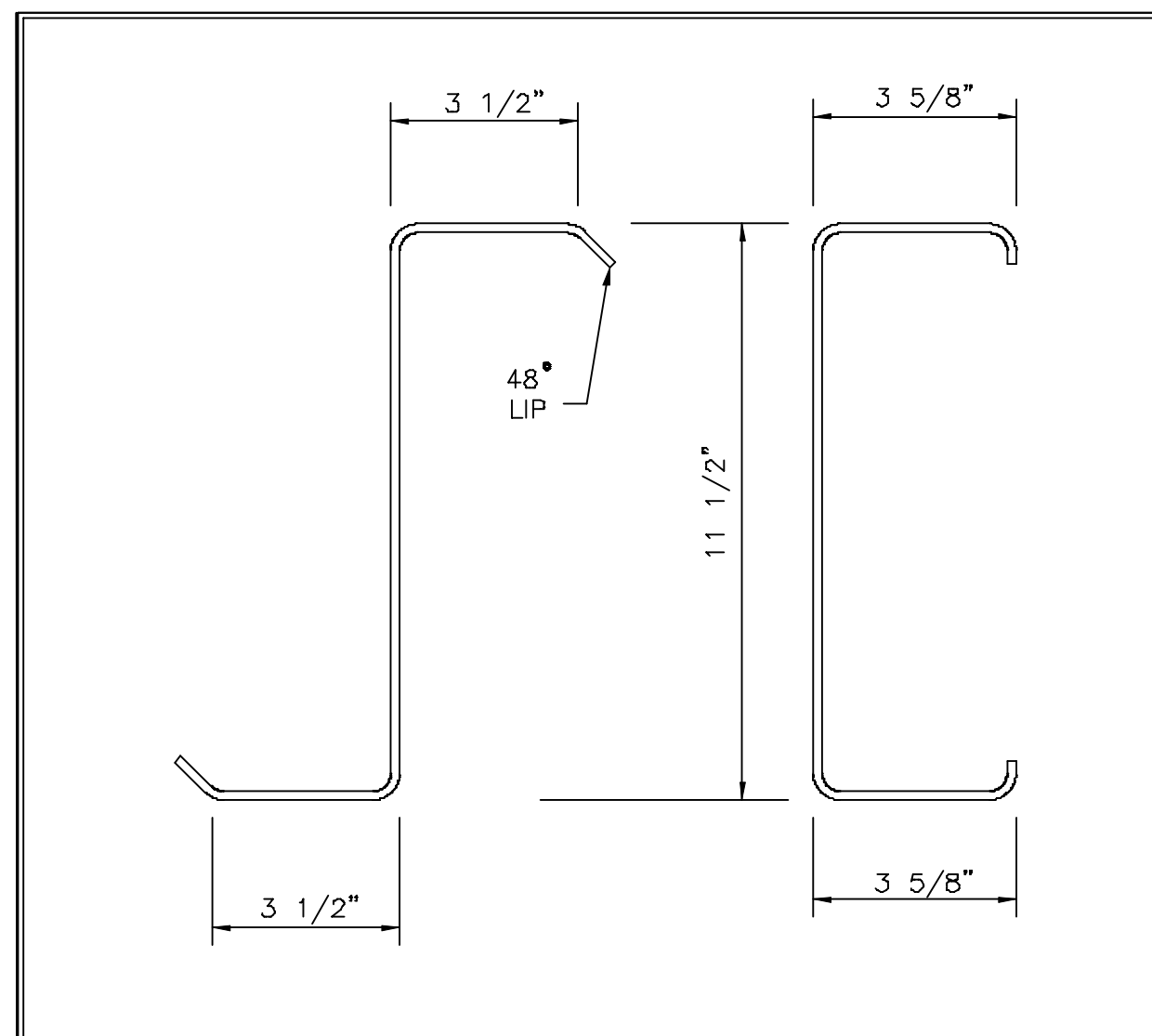
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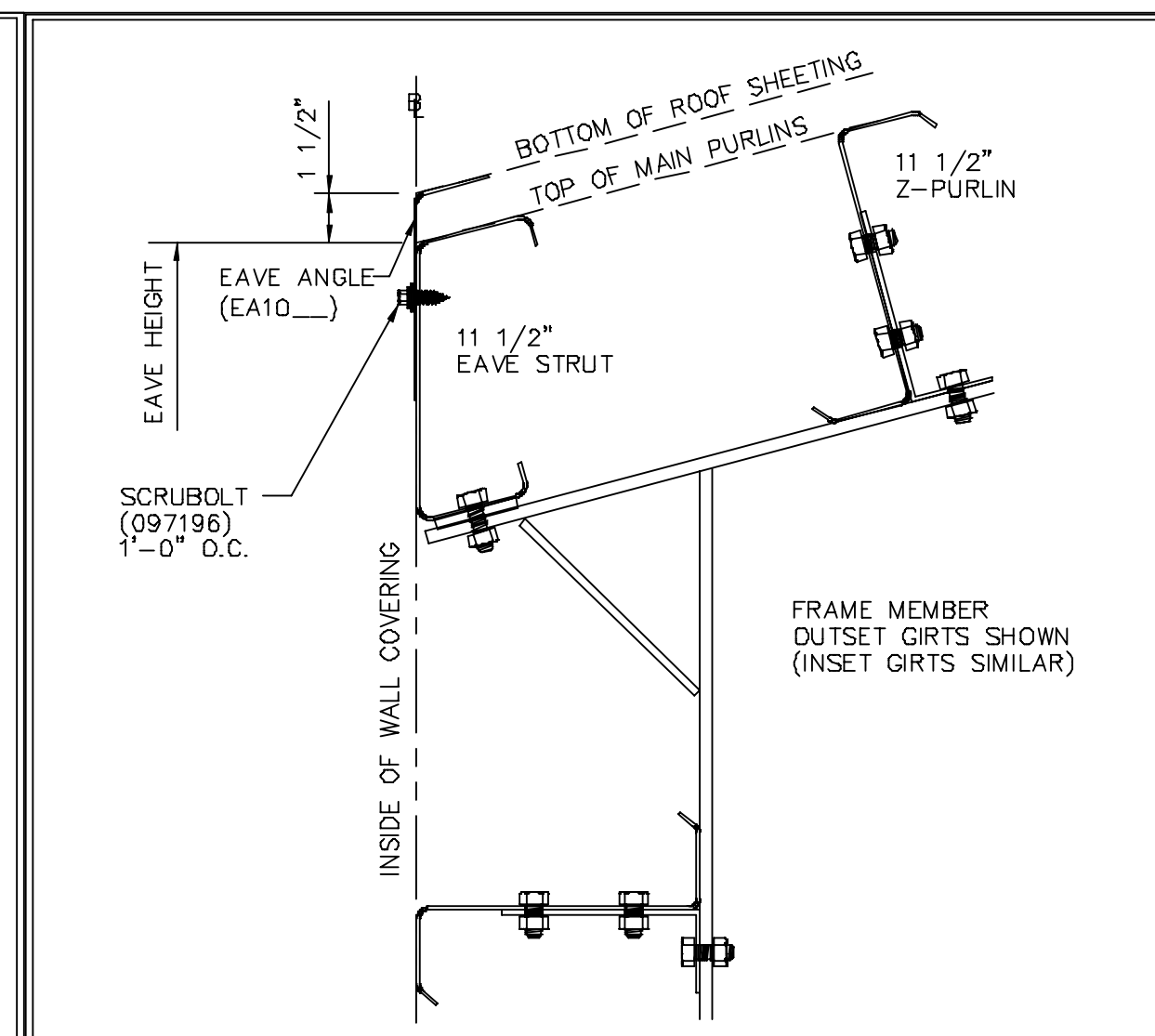
D BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102			
REV:	DATE:	BY:	DESCRIPTION:
DRAWING SCALE: NTS			

ROOF SECONDARY SED'S	
BUILDER:	Twin Pines Construction
CUSTOMER:	
LOCATION:	Plainfield, New Hampshire
PROJECT:	Townline Shop
BUILDER'S PO#:	

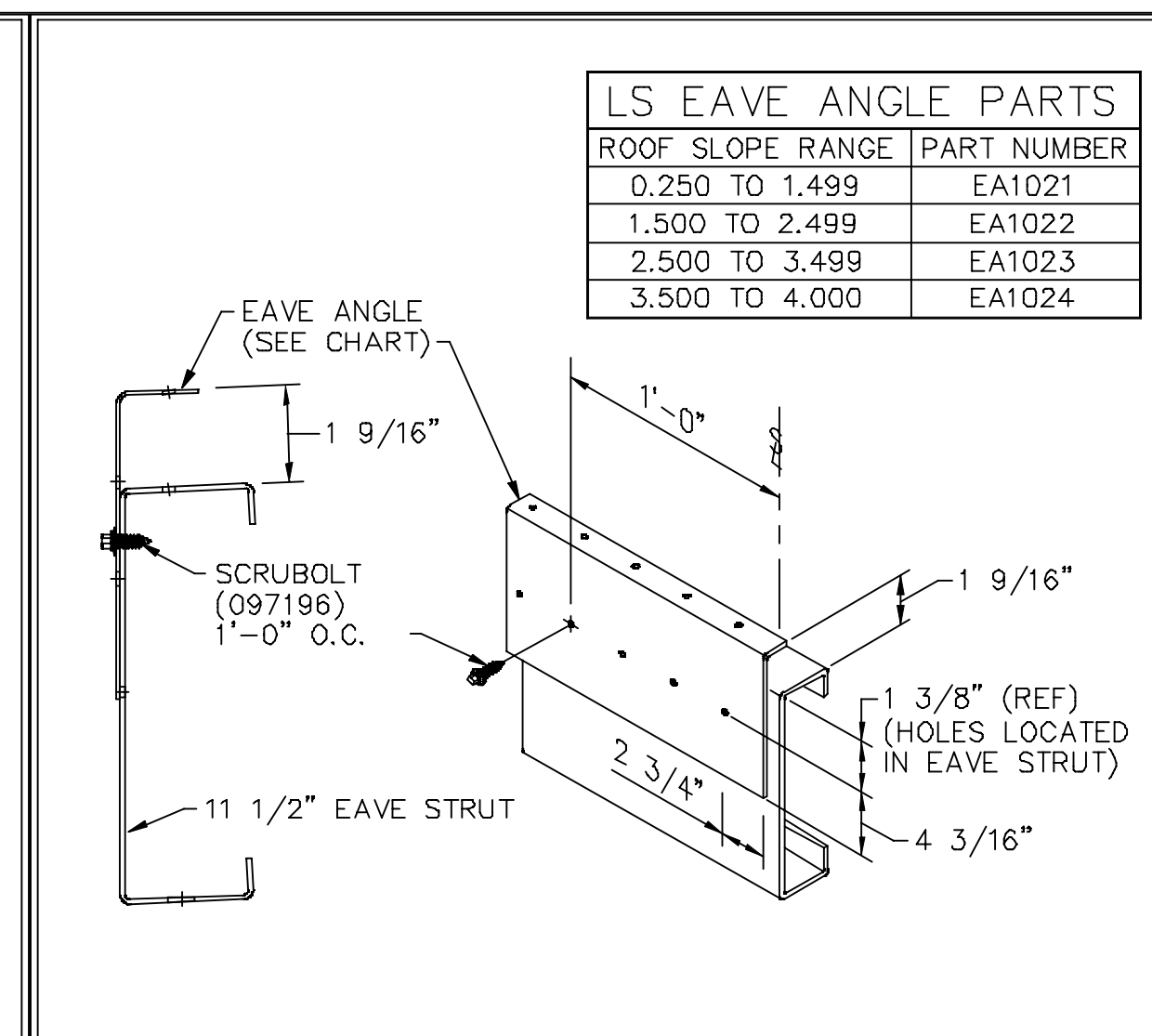
Butler Manufacturing
VPC VERSION: 2020.4d
JOB #: 21-000133-01
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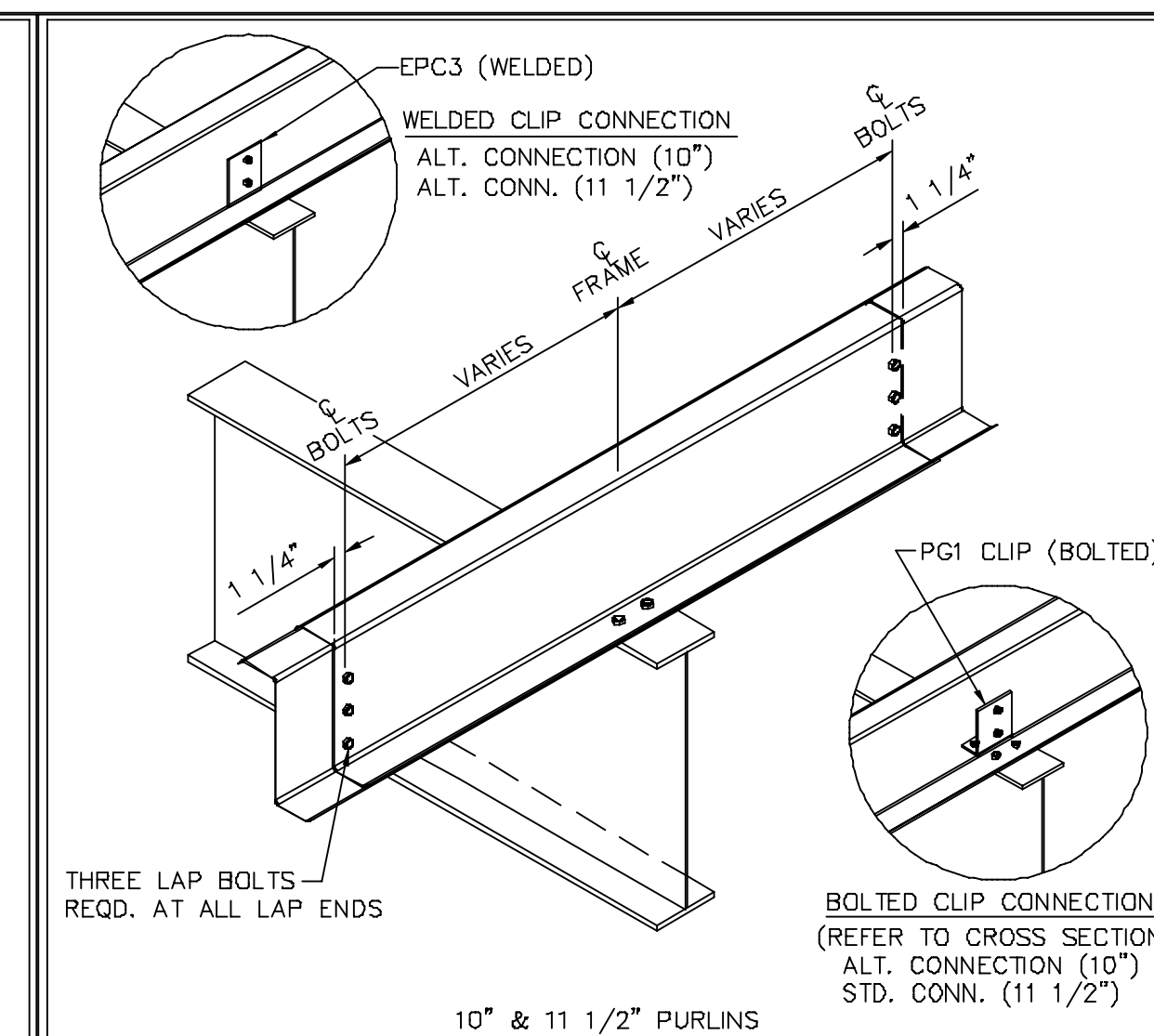
REV. DATE:07/01/09 | REV. NO. 00
EN53H1 | PURLIN / GIRT
11 1/2" 292mm



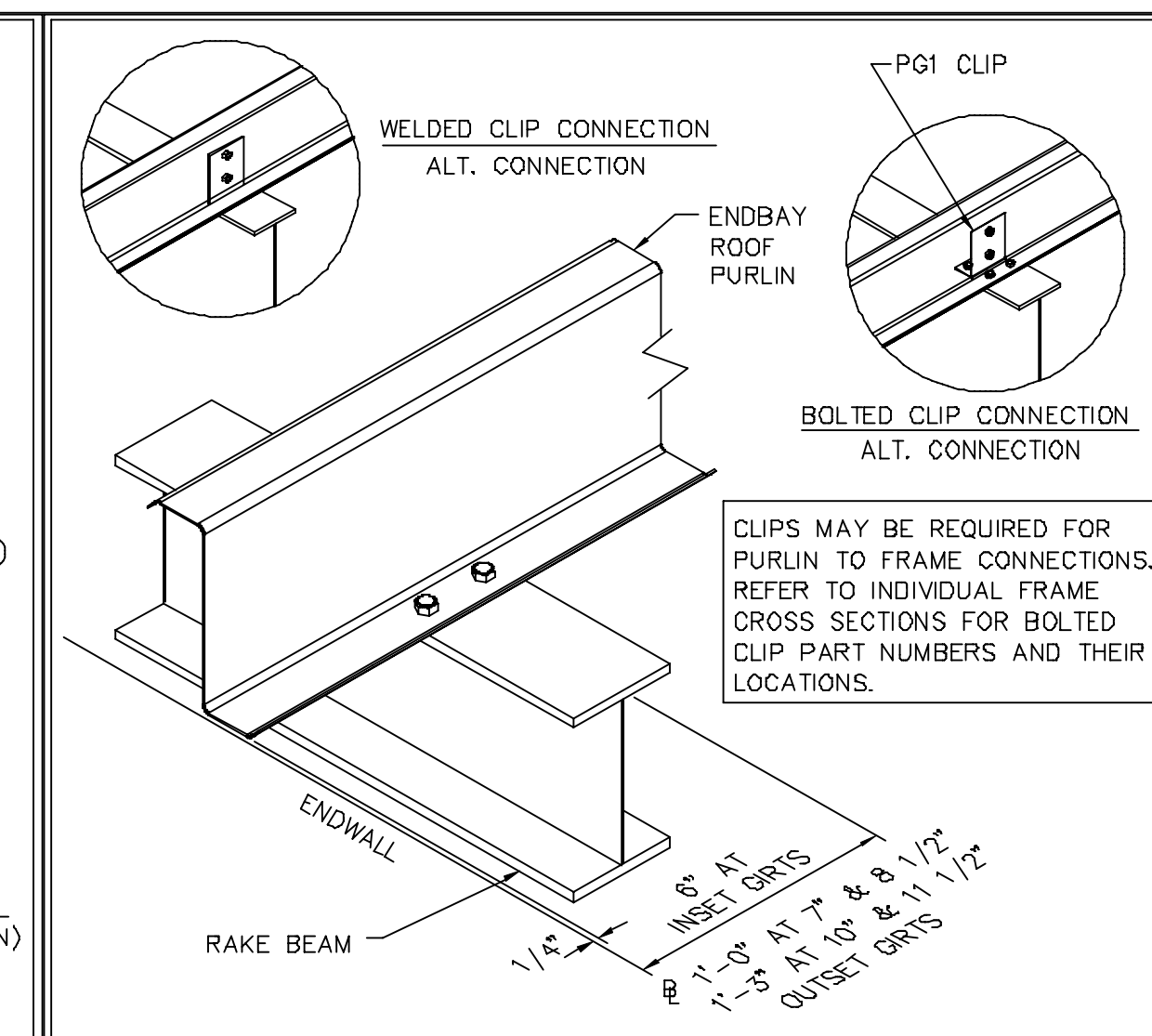
REV. DATE:07/27/15 | REV. NO. 01
EN60C1 | EAVE HEIGHT WITH INSULATED ROOF PANEL
PURLIN / GIRTS



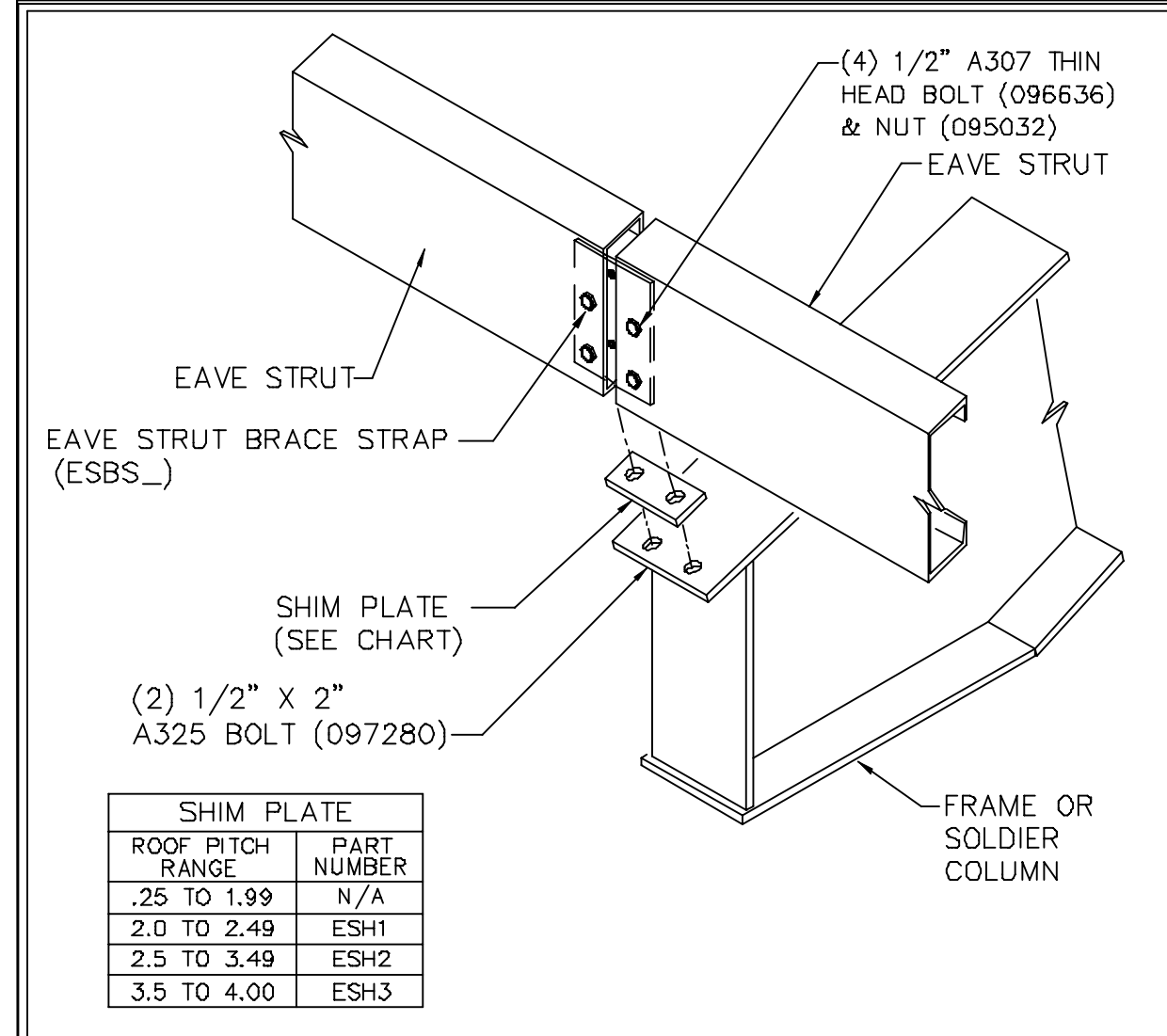
REV. DATE:06/10/15 | REV. NO. 02
FV580 | LOW SW EAVE ANGLE INSTALLATION
WITH 11 1/2" PURLIN AND THERMAL SPACER BLOCK



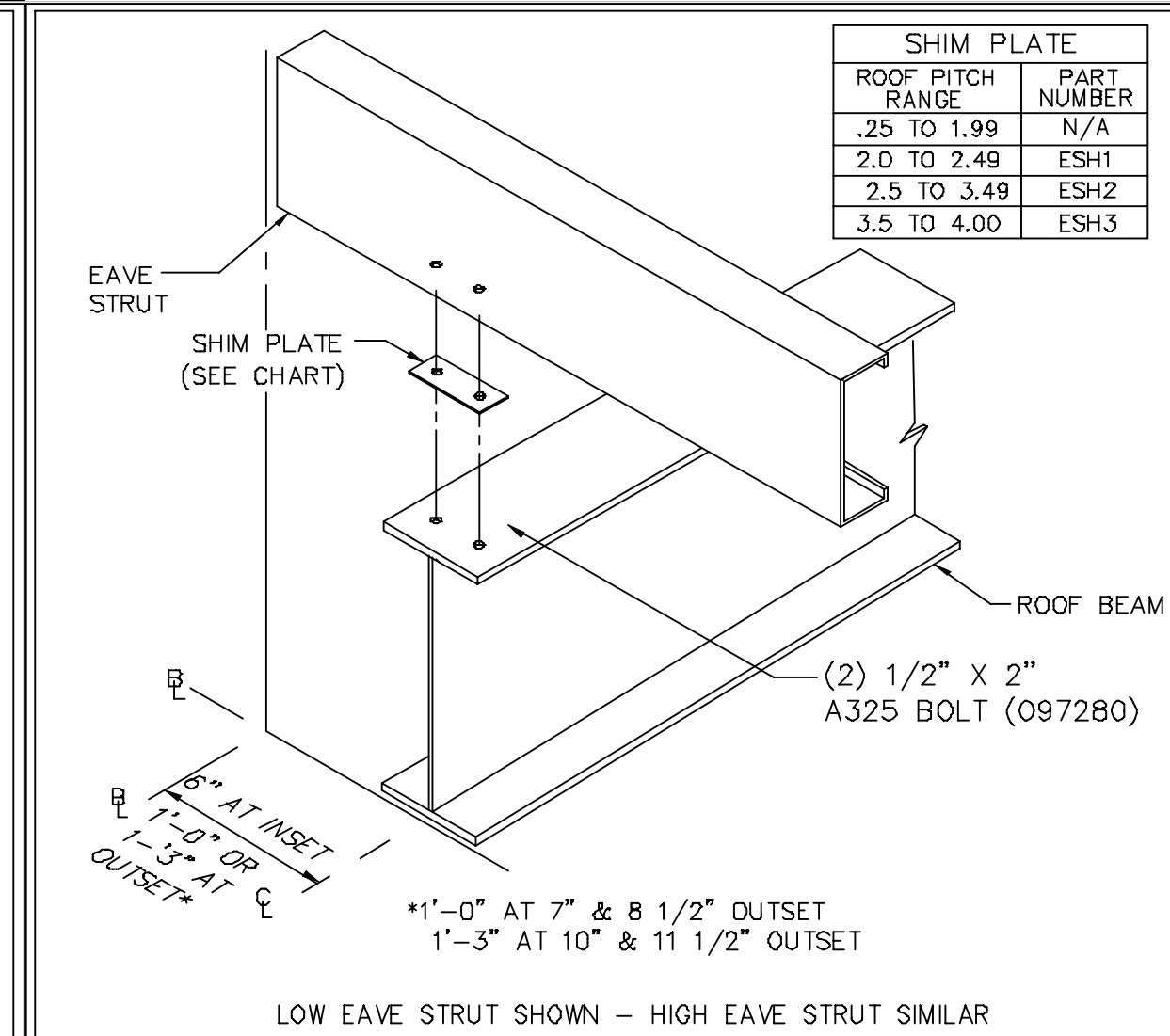
REV. DATE:06/17/14 | REV. NO. 02
RS01U1 | PURLINS AT INTERIOR FRAME
CONTINUOUS PURLINS



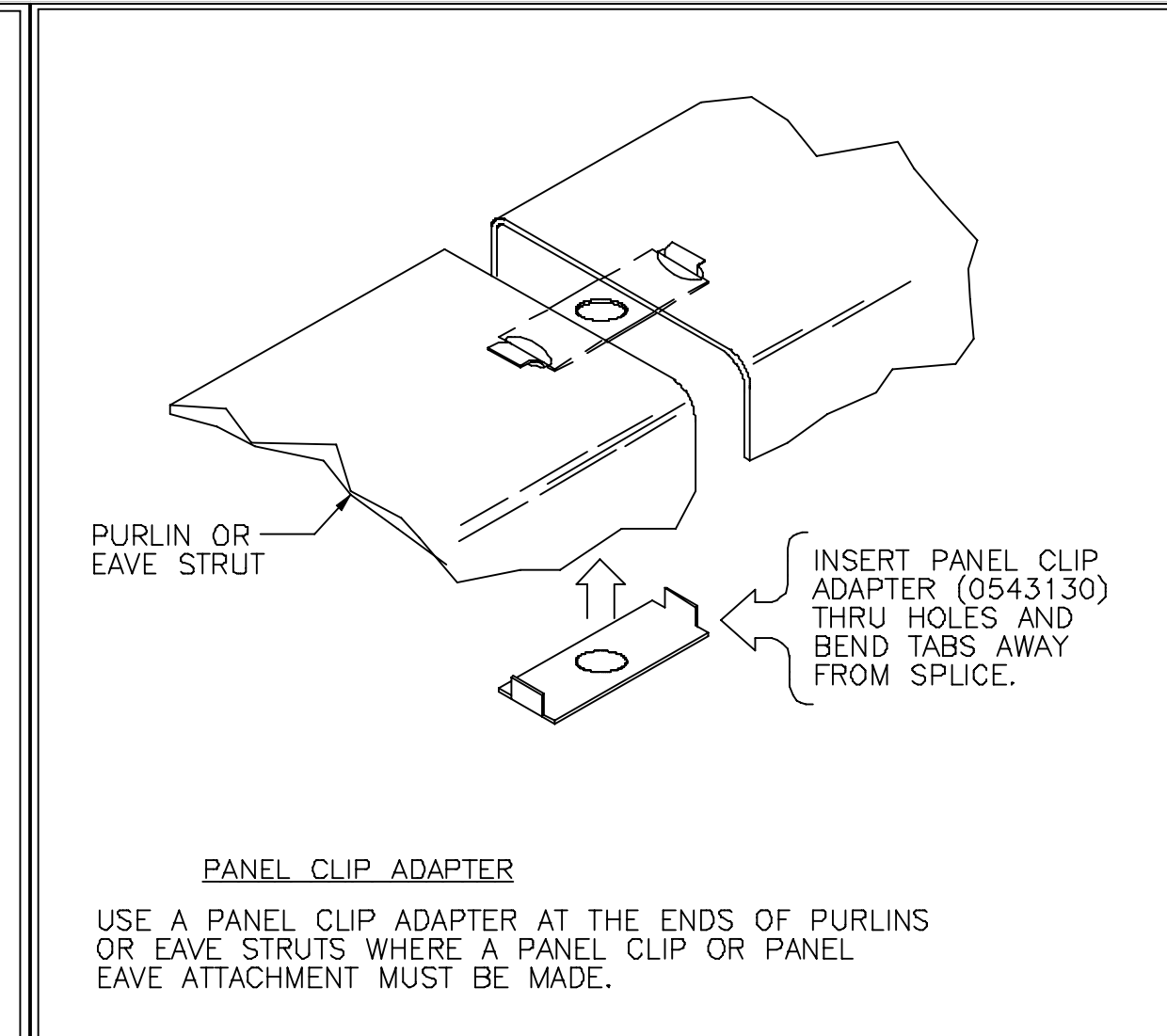
REV. DATE:06/17/15 | REV. NO. 02
RS02T1 | PURLIN CONNECTION TO END FRAME
CONTINUOUS PURLINS



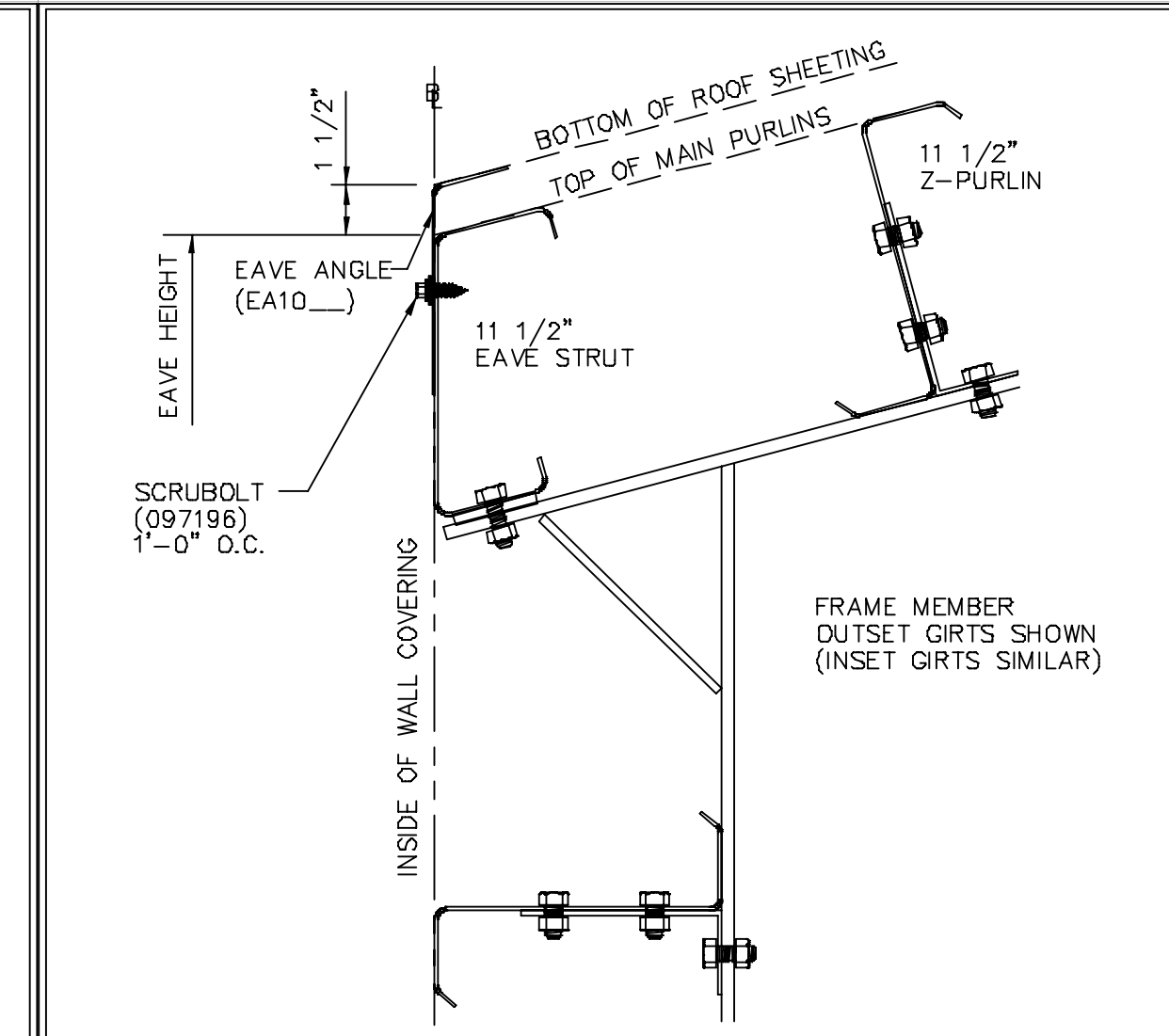
REV. DATE:07/20/16 | REV. NO. 03
RS12PA | EAVE STRUT CONNECTION
AT INTERIOR FRAME



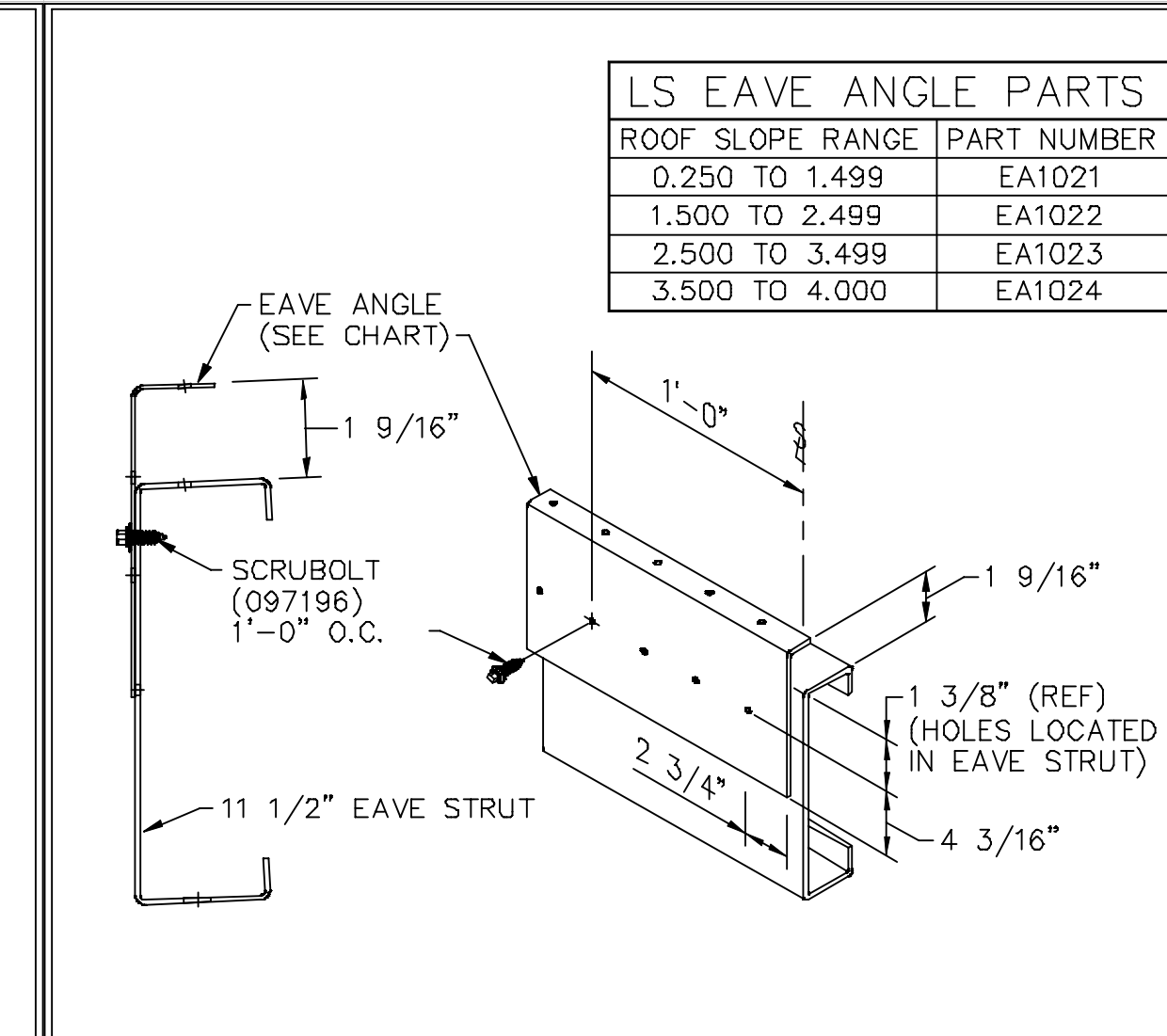
REV. DATE:03/28/15 | REV. NO. 01
RS12PH | EAVE STRUT CONNECTION
AT END FRAME



REV. DATE:12/05/09 | REV. NO. 00
RS12PJ | PANEL CLIP AT EAVE STRUT
LOCATED WHERE STRUT STOPS BUT CONNECTION REQUIRED



REV. DATE:07/27/15 | REV. NO. 01
EN60C1 | EAVE HEIGHT WITH INSULATED ROOF PANEL
PURLIN / GIRTS



REV. DATE:06/10/15 | REV. NO. 02
FV580 | LOW SW EAVE ANGLE INSTALLATION
WITH 11 1/2" PURLIN AND THERMAL SPACER BLOCK

1. UNLESS NOTED, USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) WO WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS.
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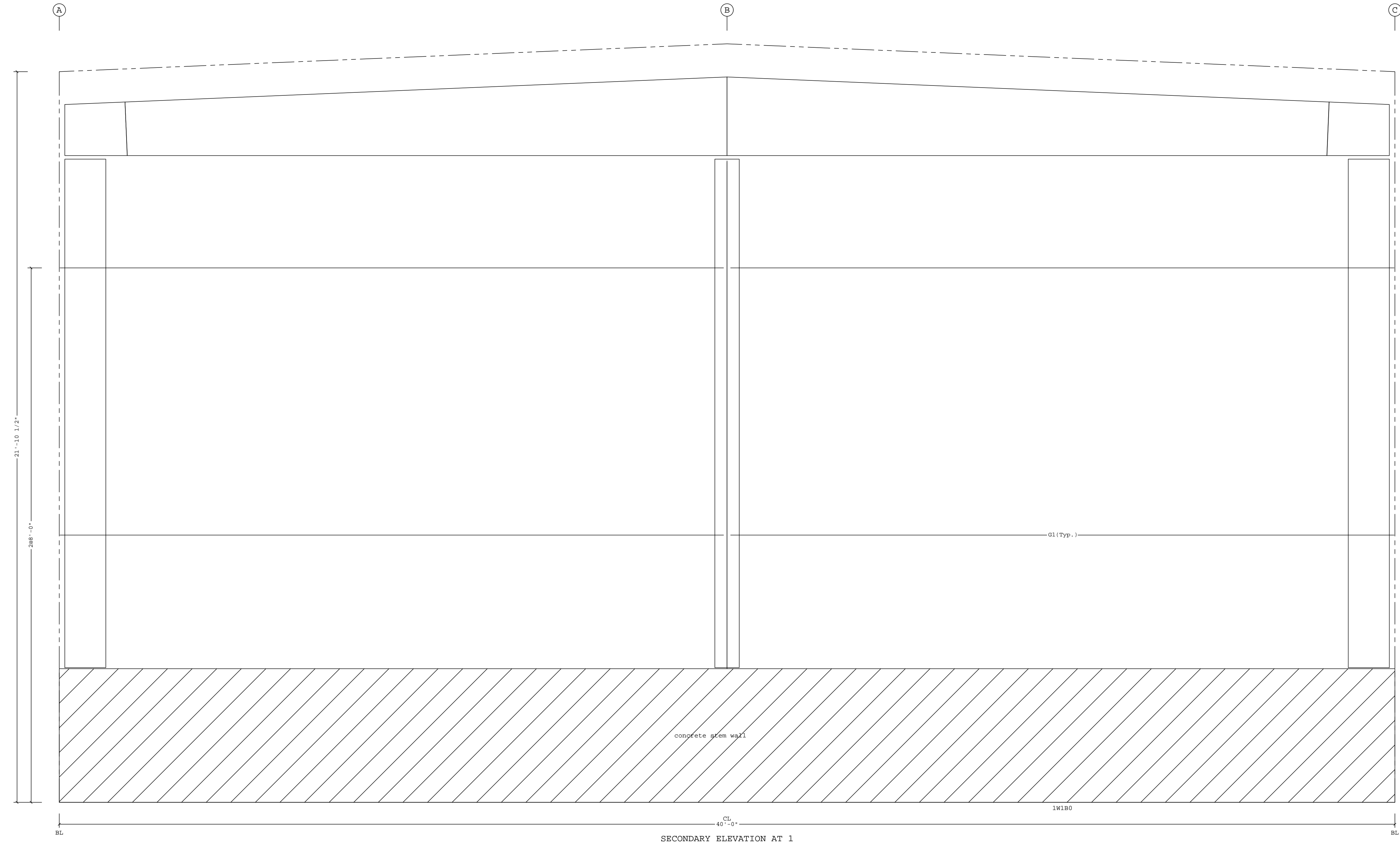
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	REV:	DATE:
	BY:	DESCRIPTION:
DRAWING SCALE: NTS		

FOR CONSTRUCTION		ROOF SECONDARY SED'S	
BUILDER:	Twin Pines Construction	JOB #:	21-000133-01
CUSTOMER:		DATE:	03/25/2021
LOCATION:	Plainfield, New Hampshire	DRAWING CHECK:	RMK / MTV
PROJECT:	Townline Shop	PAGE:	19
BUILDER'S PO#:		Butler Manufacturing VPC VERSION: 2020.4d	

Secondary Part Schedule				
Mark	Part	Thick.	Depth	Lap
G1	08Z1910415DE10	0.0730	8 1/2"	
				Detail
				WS12GB, WS01H2



CL 40'-0"
SECONDARY ELEVATION AT 1

Shape Name = Townline Shop, Wall = 1

FOR CONSTRUCTION


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	REV:	DATE:	BY:	DESCRIPTION:
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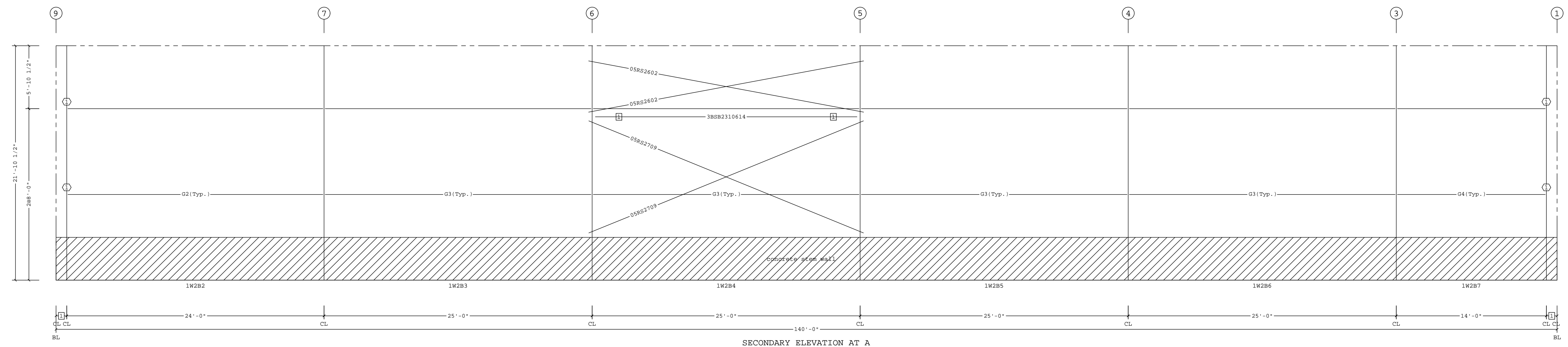
SECONDARY ELEVATION AT 1		 Butler Manufacturing <small>VPC VERSION: 2020.4d</small>	JOB #:	21-000133-01
BUILDER:	Twin Pines Construction		DATE:	03/25/2021
CUSTOMER:			DRAWN/CHECK:	RMK / MTV
LOCATION:	Plainfield, New Hampshire		PAGE:	20
PROJECT:	Townline Shop	BUILDER'S PO#:		

MODIFIED IN AUTOCAD

Mark	Part	Thick.	Depth	Lap	Detail
G2	08Z2309413EE10	0.0880	8 1/2"		WS12GB, WS01H2
G3	08Z2409412EE10	0.0980	8 1/2"		BRR052, WS01H2
G4	08Z1309417EE10	0.0600	8 1/2"		WS12GB, WS01H2

Rod, Strut, and Misc. Connection Bolts					
d	Qty	Grade	Bolt Diam.	Bolt Length	PartNo
1	2	A325	3/4"	2 1/2"	0097284

Bracing Part Schedule				
Part	Qty	Length	Detail	
3BSB2310614	1	24'-4 3/4"	BR15J1	
05RS2709	2	27'-9"	BR01G2	
05RS2602	2	26'-2"	BR01G2	



SECONDARY ELEVATION AT A

1 GFA200
 Part Mark Key

1 1'-0"
 Dimension Key

Shape Name = Townline Shop, Wall = 2

FOR CONSTRUCTION

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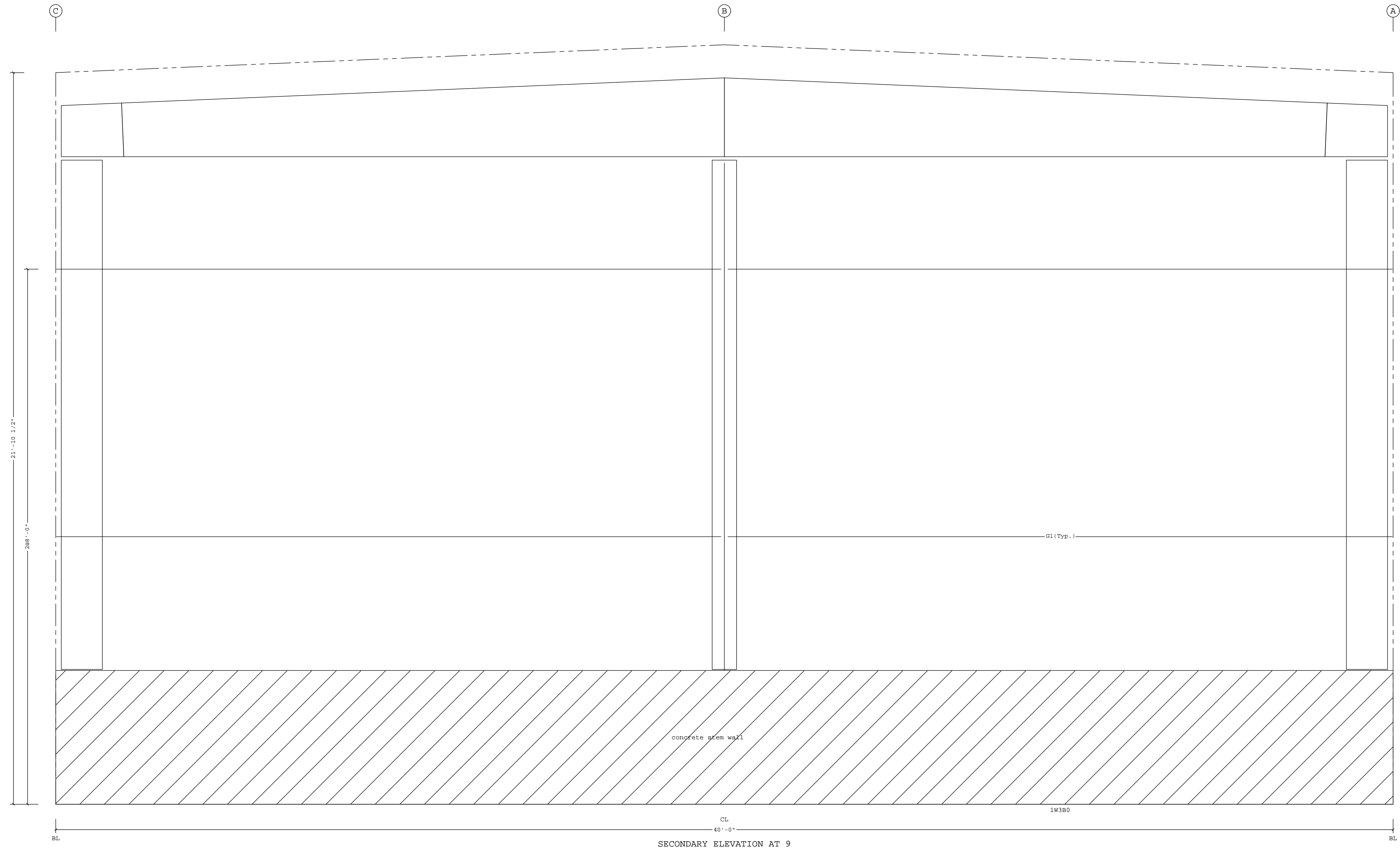
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REV	DATE	BY	DESCRIPTION	BUILDER	CUSTOMER	LOCATION	PROJECT	BUILDER'S PO#	JOB #	DATE	DRAWN/CHECK	PAGE
				Twin Pines Construction		Plainfield, New Hampshire	Townline Shop		21-000133-01	03/25/2021	RMK / MTV	21



Secondary Part Schedule					
Mark	Part	Thick.	Depth	Lap	Detail
G1	0821910415DE10	0.0730	8 1/2"		WS12GB, WS01H2



Shape Name = Townline Shop, Wall = 3

FOR CONSTRUCTION

- UNLESS NOTED, USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS.
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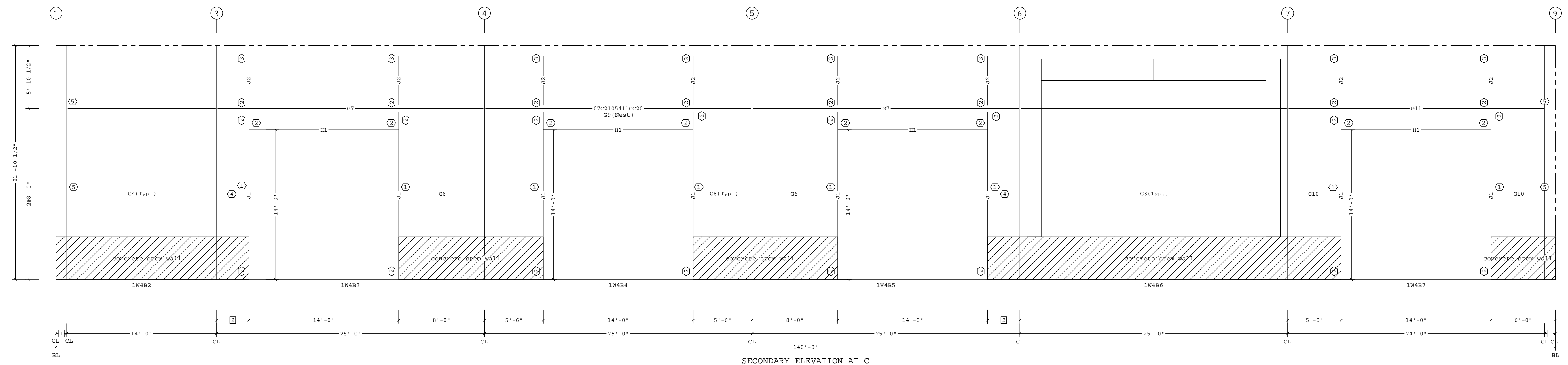
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D BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102				SECONDARY ELEVATION AT 9	
REV:	DATE:	BY:	DESCRIPTION:	BUILDER:	Twin Pines Construction
				CUSTOMER:	
				LOCATION:	Plainfield, New Hampshire
				PROJECT:	Townline Shop
DRAWING SCALE: NTS				BUILDER'S PO#:	
SAVE DATE: 3/22/2021				LAST SAVED BY: manikandan_ramasamy	
SAVE TIME: 15:59:50				JOB #: 21-000133-01	
				DATE: 03/25/2021	
				DRAWN/CHECK: RMK / MTV	
				PAGE: 22	



MODIFIED IN AUTOCAD

Mark	Part	Thick.	Depth	Lap	Detail
	07C2105411CC20	0.1130	7"		WS12GB
G10	08Z0407417EG10	0.0600	8 1/2"		WS12GB, WS20F2
G11	08Z2309411EE10	0.1130	8 1/2"		WS12GB, WS01H2, WS20H2, WS20B2
G3	08Z2409412EE10	0.0980	8 1/2"		BRR052, WS01H2
G4	08Z1309417EE10	0.0600	8 1/2"		WS12GB, WS01H2
G5	08Z0207417EG10	0.0600	8 1/2"		WS20F2, WS01H2
G6	08Z0707417EG10	0.0600	8 1/2"		WS20F2, WS01H2
G7	08Z2409413EE10	0.0880	8 1/2"		WS01H2, WS20H2
G8	08Z0501417EG10	0.0600	8 1/2"		WS01H2, WS20F2, WS20B2
G9(Nest)	08Z2409415EE10	0.0730	8 1/2"		WS01H2, WS20B2, WS20H2
H1	00108JS1400017	0.0600	8 1/2"		WS20F9
J1	00208JS1508217	0.0600	8 1/2"		WS20F9, WS20F2, WS20B2, WS20B8
J2	00308JS0407017	0.0600	8 1/2"		WS20B6, WS20H2



- 5 GFA200
- 4 G5
- 3 TSC1
- 2 PGI
- 1 JTGI
- Part Mark Key

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

Shape Name = Townline Shop, Wall = 4

FOR CONSTRUCTION

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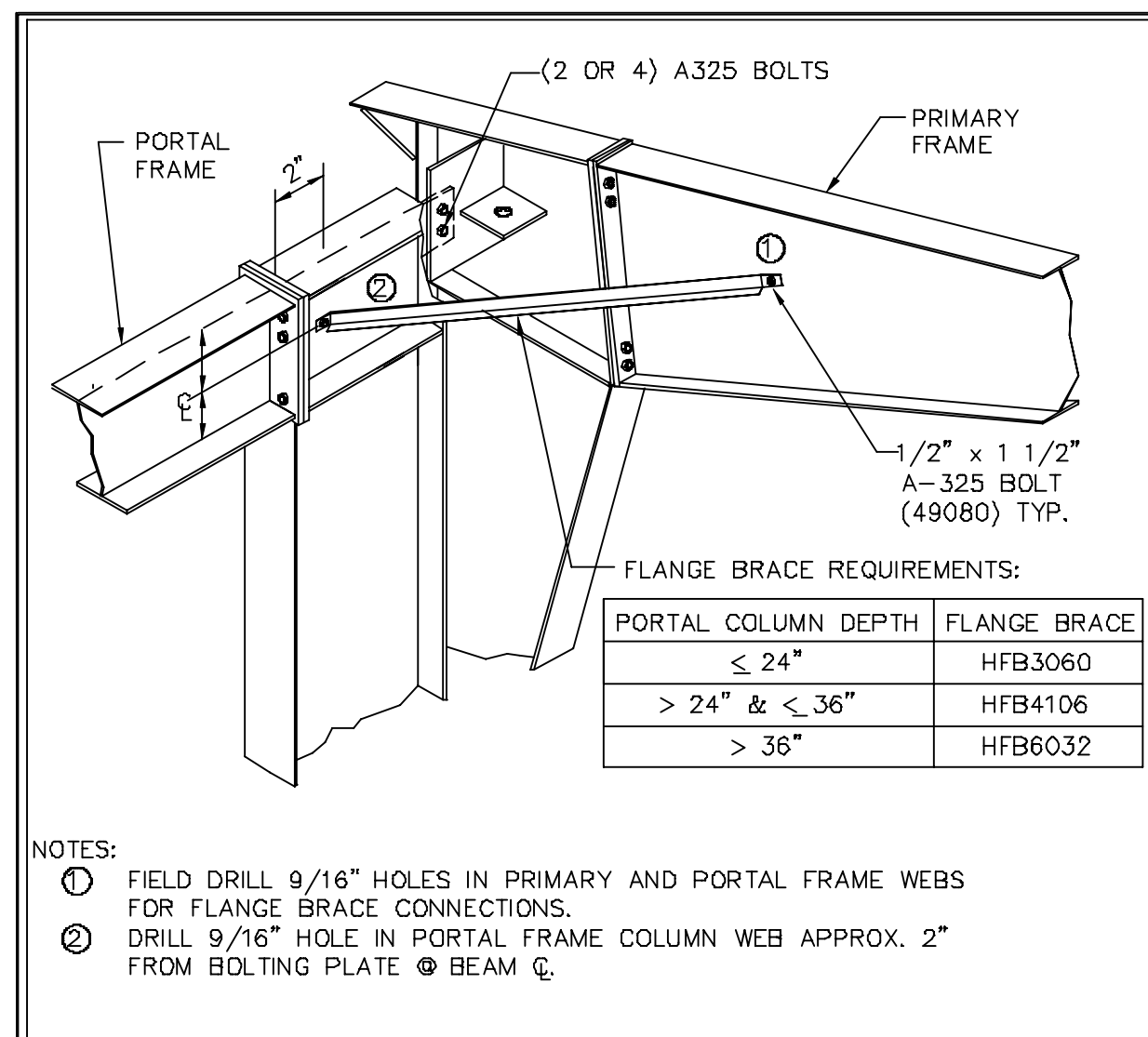
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D BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102		SECONDARY ELEVATION AT C																																																	
		BUILDER: Twin Pines Construction CUSTOMER: LOCATION: Plainfield, New Hampshire PROJECT: Townline Shop BUILDER'S PO#:	JOB #: 21-000133-01 DATE: 03/25/2021 DRAWN/CHECKED: RMK / MTV PAGE: 23																																																
REV: <table border="1"> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>													DATE: <table border="1"> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>													BY: <table border="1"> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>													DESCRIPTION: <table border="1"> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>												
DRAWING SCALE: NTS		BUTLER MANUFACTURING a division of BlueScope Buildings North America, Inc.																																																	

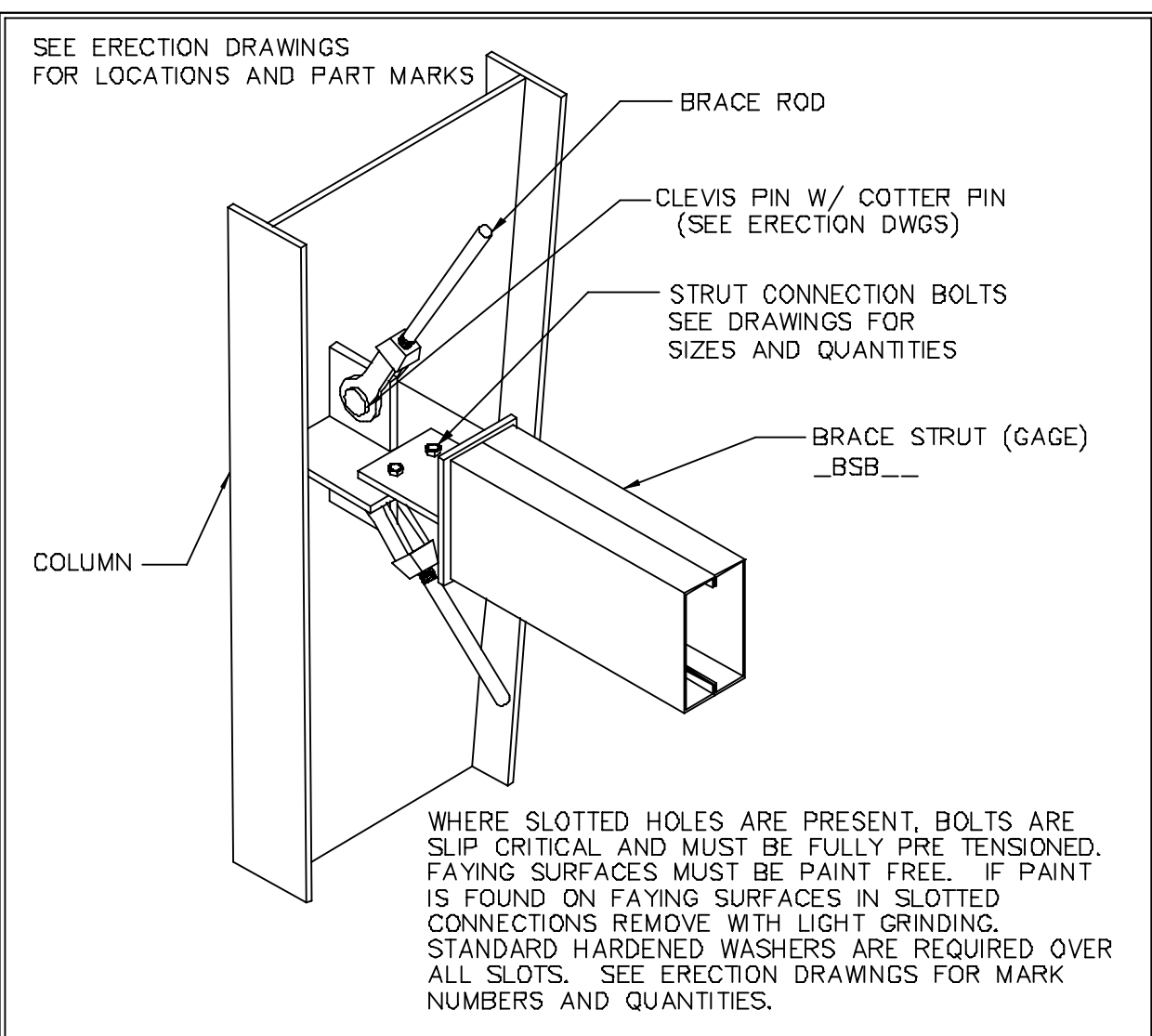
MODIFIED IN AUTOCAD



PORTAL COLUMN DEPTH	FLANGE BRACE
≤ 24"	HFB3060
> 24" & ≤ 36"	HFB4106
> 36"	HFB6032

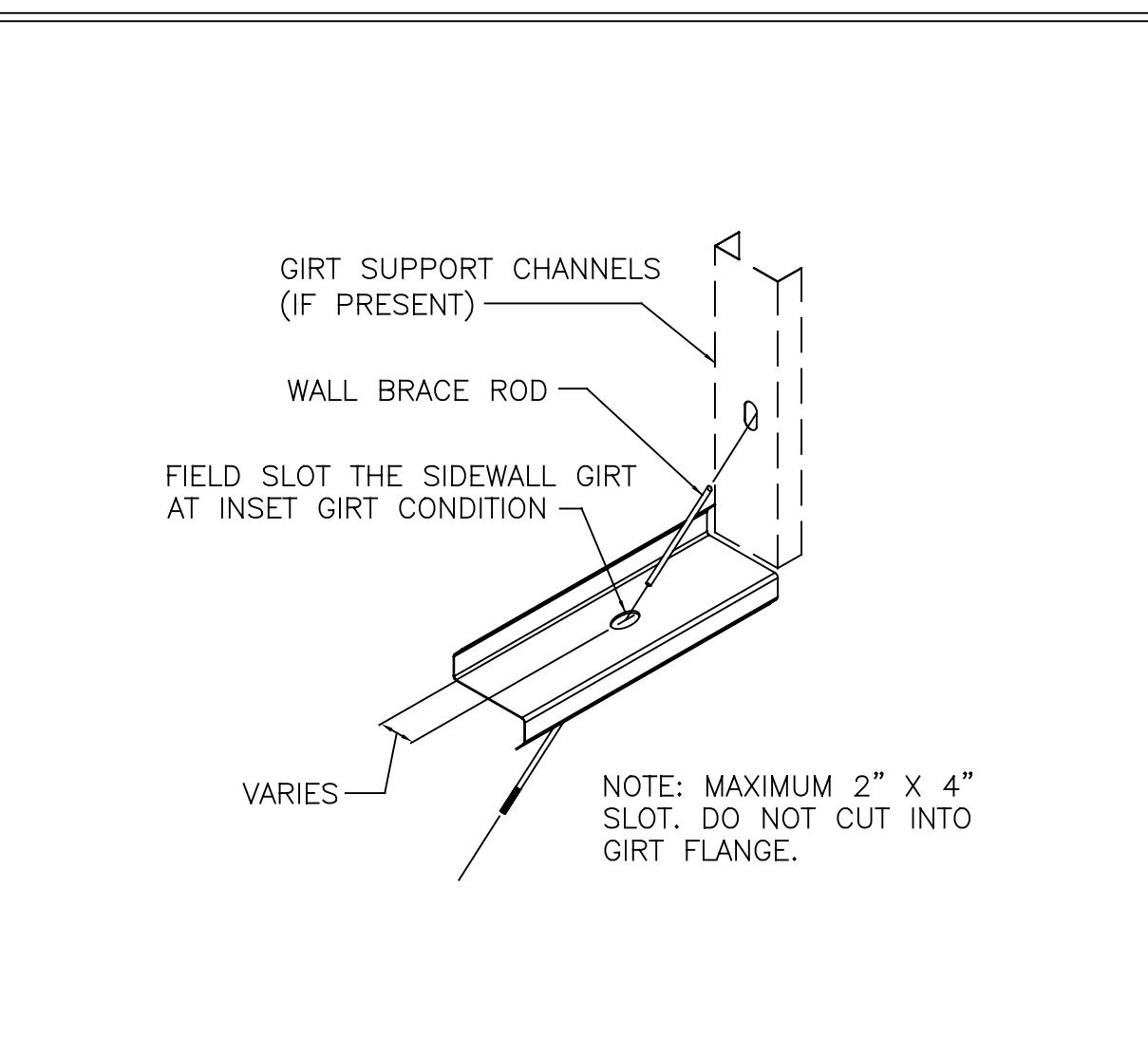
NOTES:
 ① FIELD DRILL 9/16" HOLES IN PRIMARY AND PORTAL FRAME WEBS FOR FLANGE BRACE CONNECTIONS.
 ② DRILL 9/16" HOLE IN PORTAL FRAME COLUMN WEB APPROX. 2" FROM BOLTING PLATE & BEAM C.

REV. DATE:03/17/16 REV. NO.03 PORTAL FRAME DETAIL CONNECTION TO FRAME BR12J1



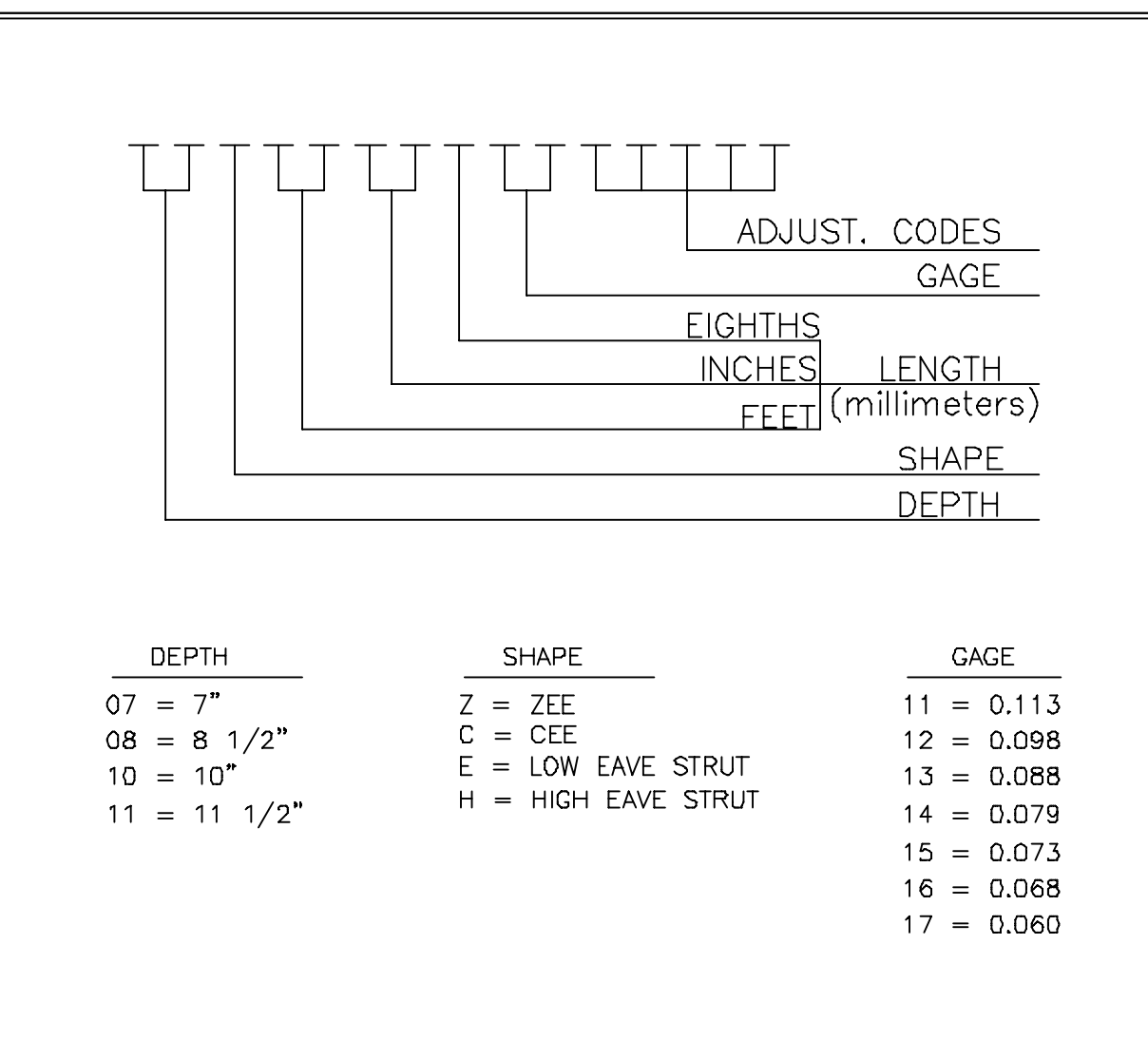
REV. DATE:06/23/11 REV. NO.01 STRUT BRACING GAGE STRUT ON WALL BR15J1

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

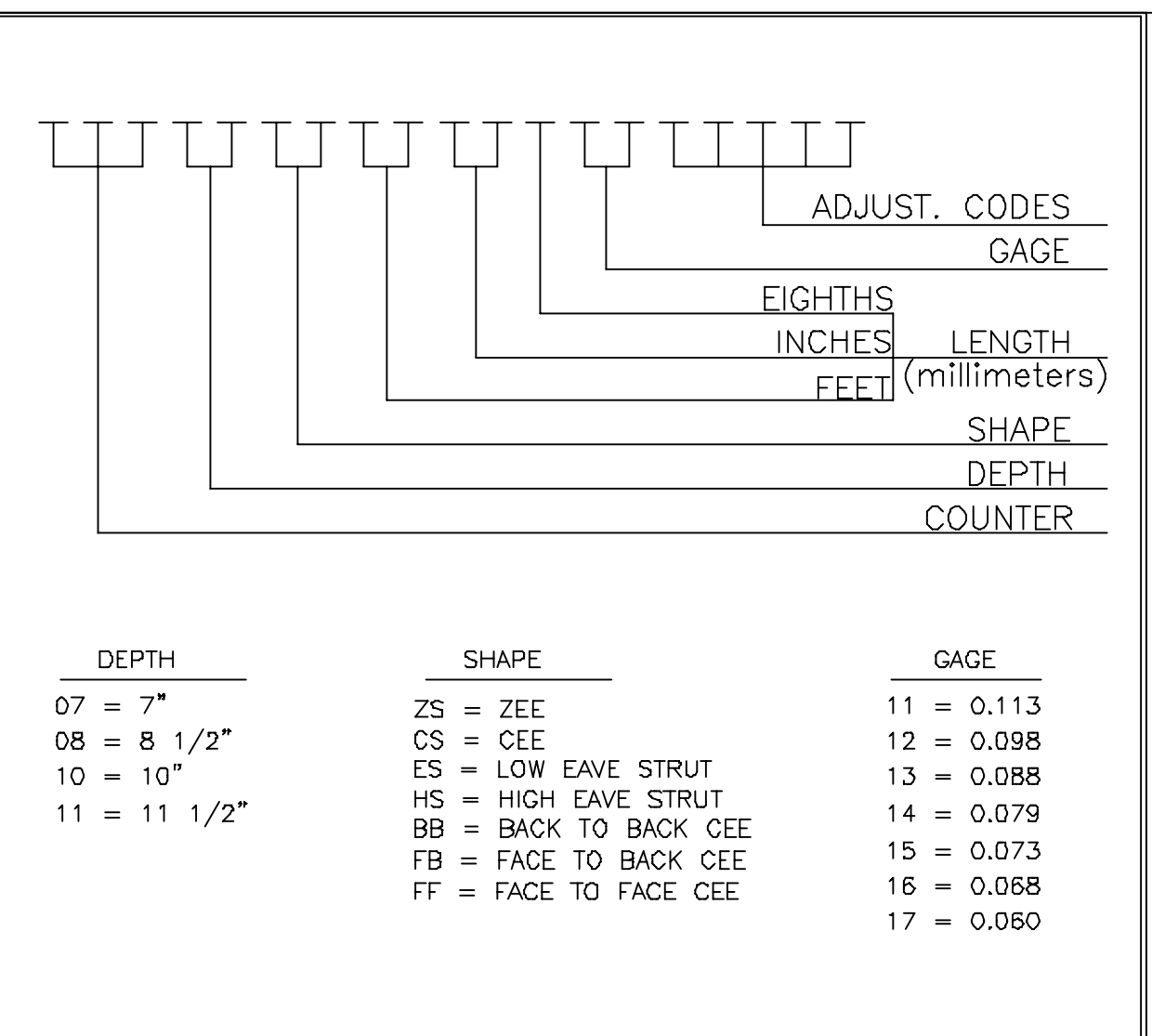


REV. DATE:09/10/20 REV. NO.00 INSET GIRTS WITH BRACE RODS FIELD WORK BRACE SLOT BRR052

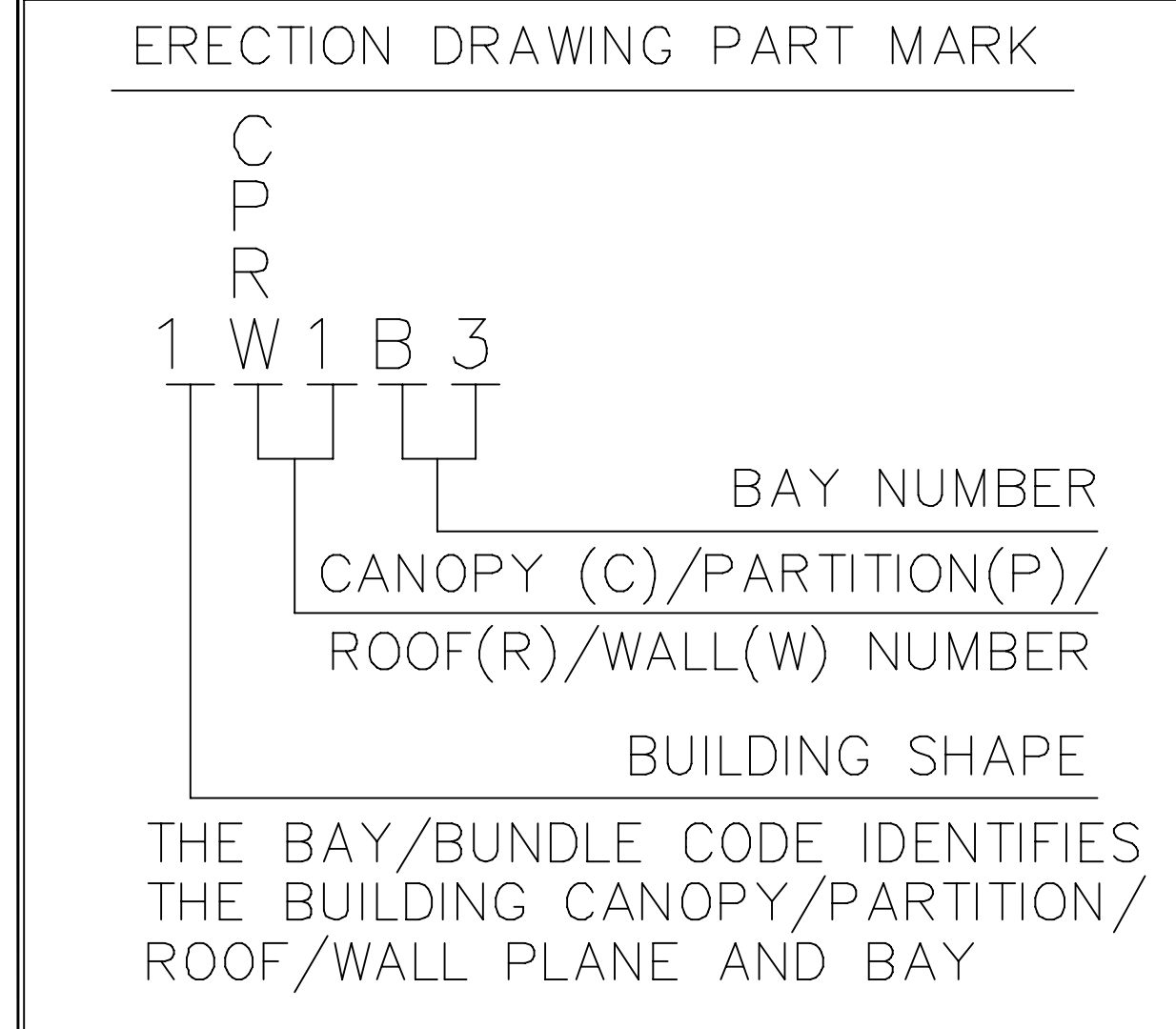
NOTE: MAXIMUM 2" X 4" SLOT. DO NOT CUT INTO GIRT FLANGE.



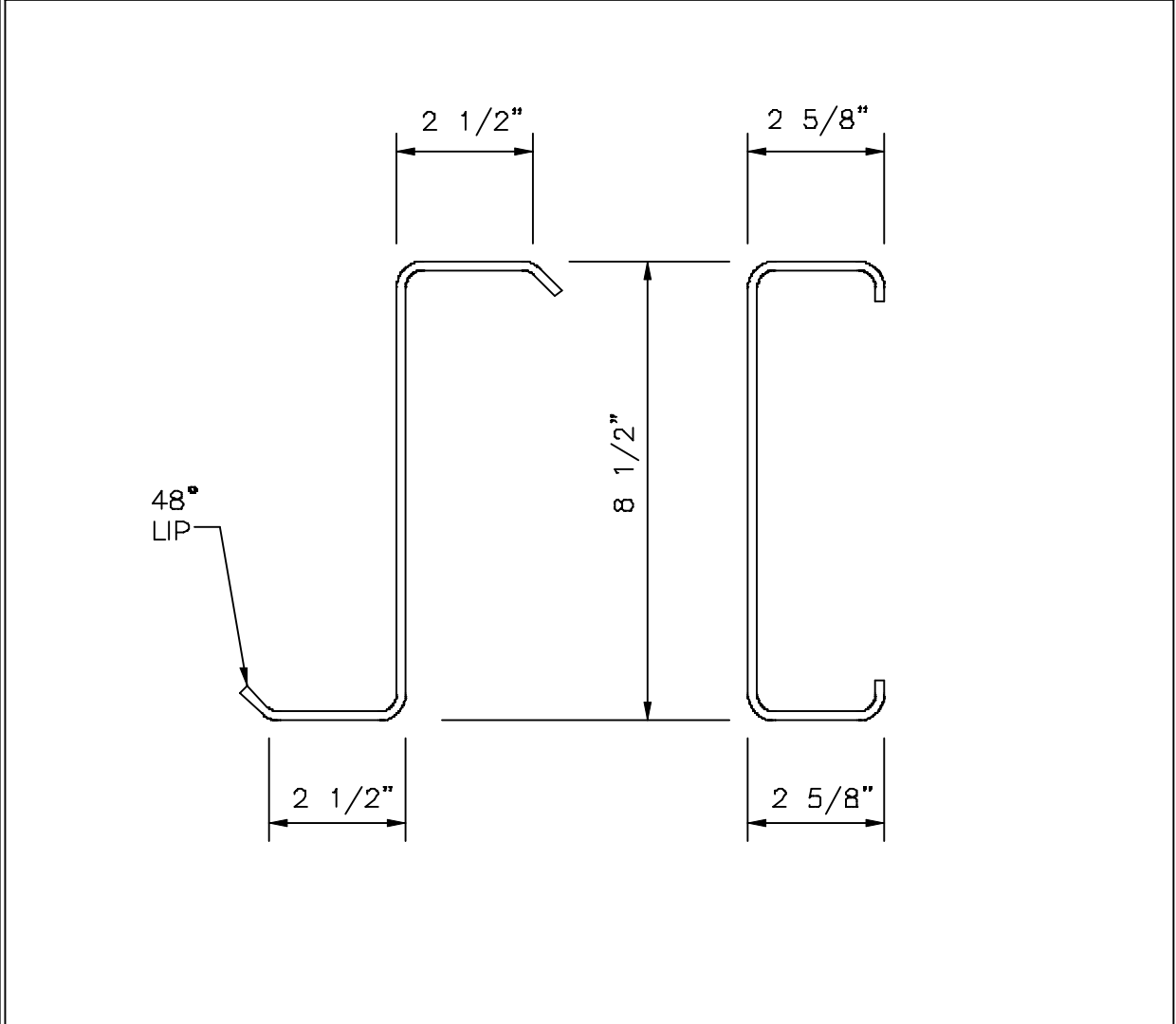
REV. DATE:07/01/09 REV. NO.00 SECONDARY PART MARK NUMBER COMMON GENERATED MARK NUMBERS EN51B1



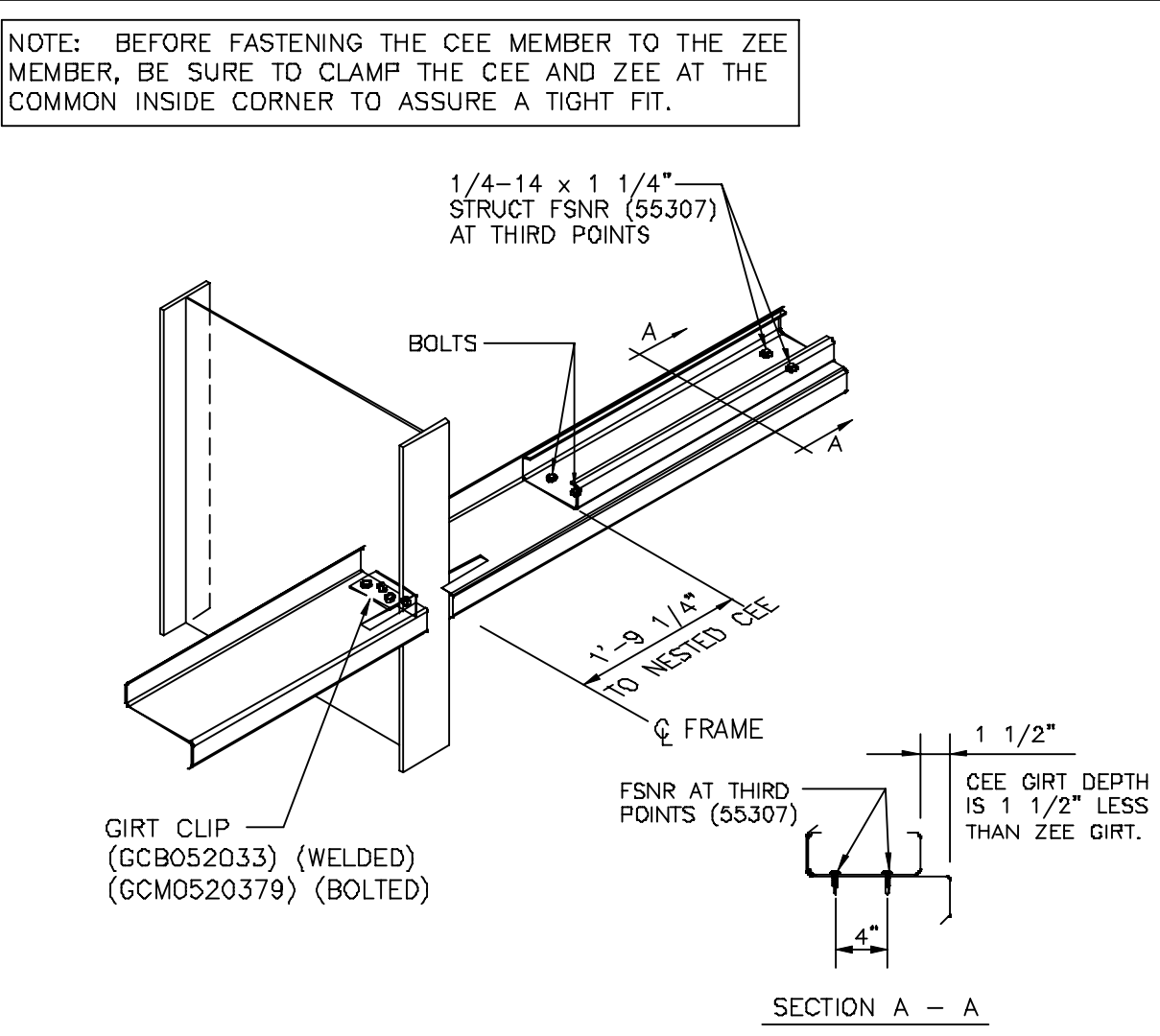
REV. DATE:07/01/09 REV. NO.00 SPECIAL SECONDARY PART MARK KEY COMMON GENERATED MARK NUMBERS EN51B2



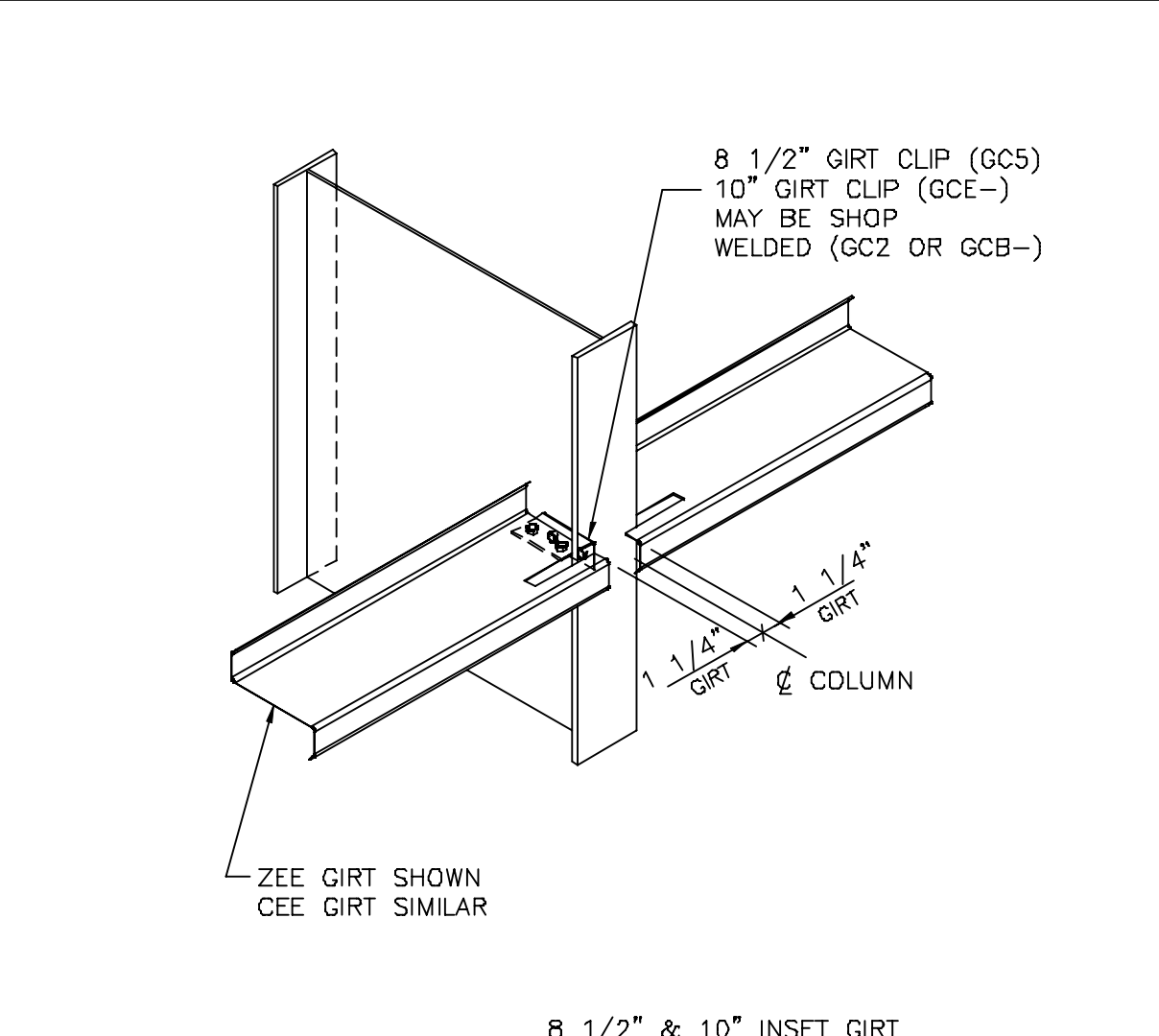
REV. DATE:01/31/13 REV. NO.01 SECONDARY BUNDLE LOCATION KEY ALL SECONDARY DEPTHS EN51B3



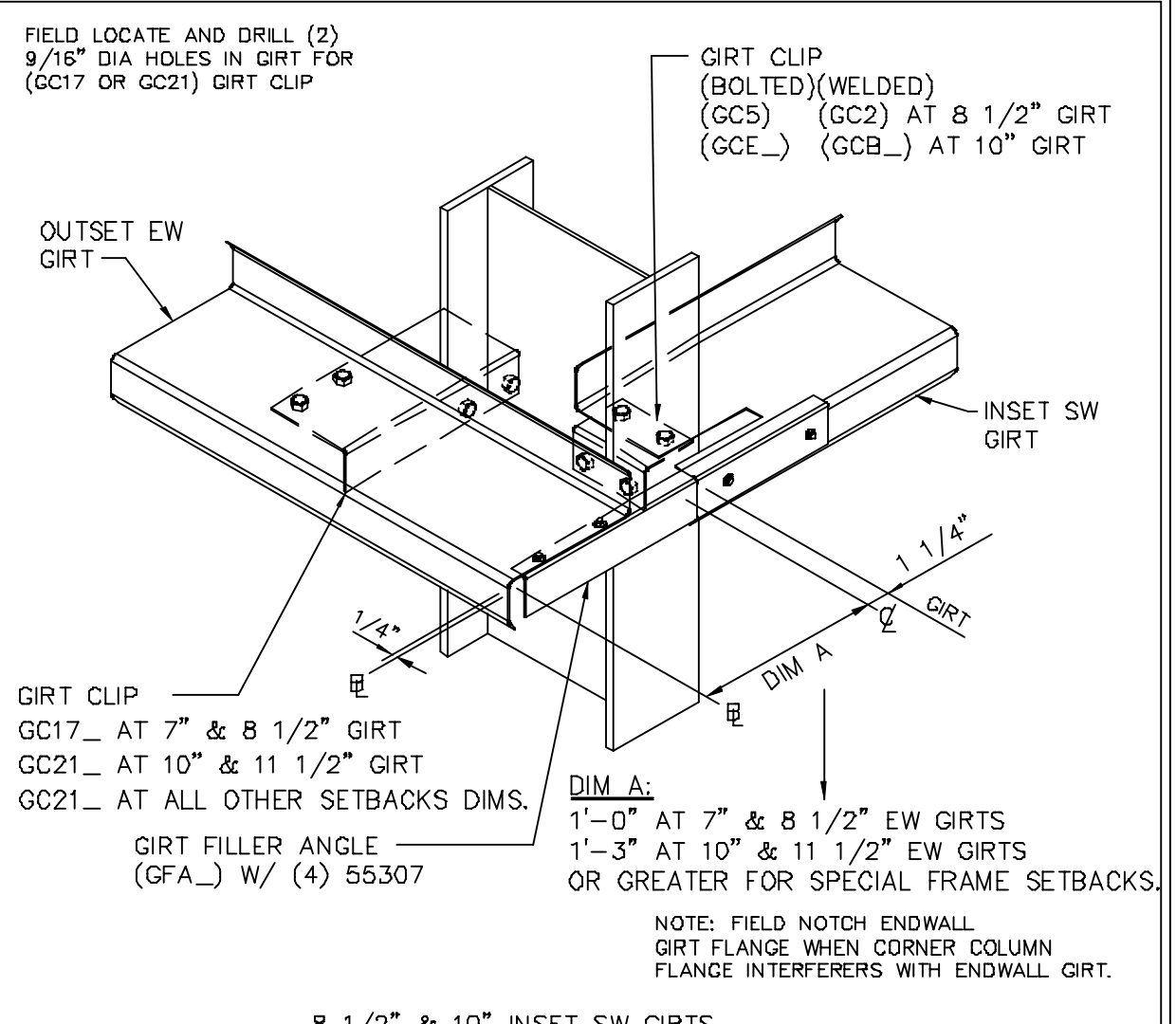
REV. DATE:07/01/09 REV. NO.00 PURLIN AND GIRT SIZES 8 1/2" 216mm EN53F1



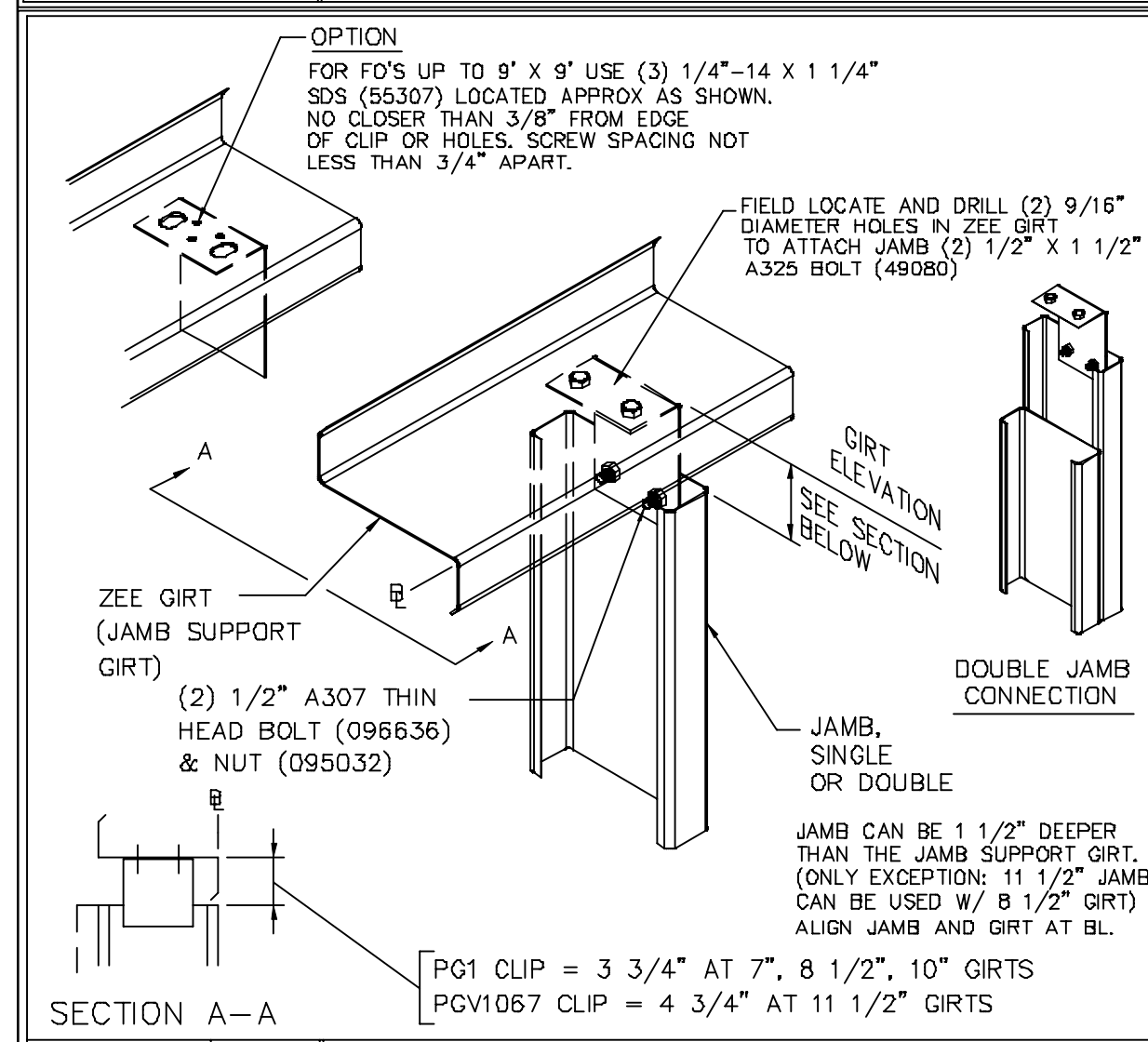
REV. DATE:07/01/09 REV. NO.00 GIRT CONN. AT COLUMN INSET ZEE GIRTS W/ NESTED CEE WS01BY



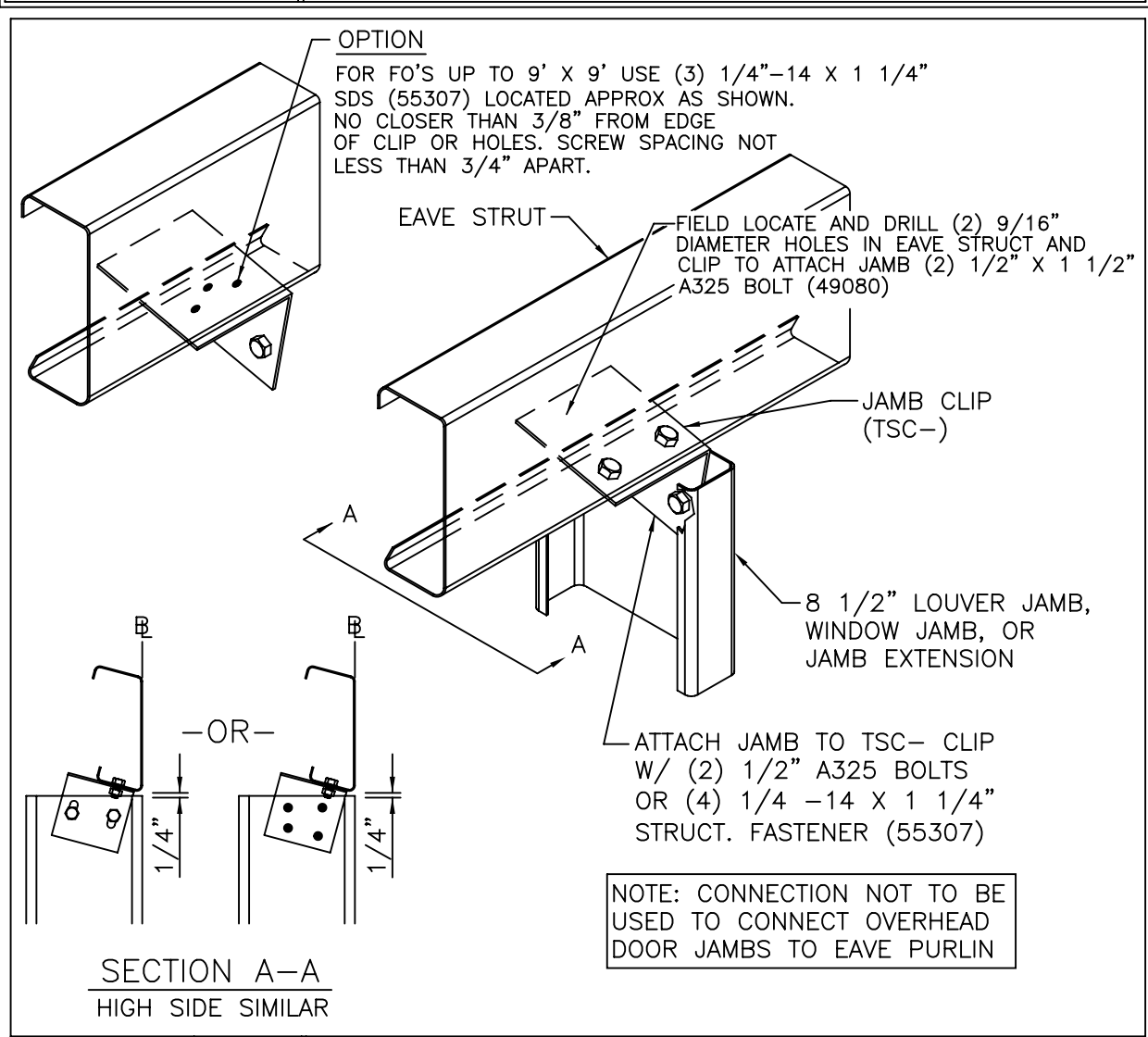
REV. DATE:06/28/10 REV. NO.01 GIRT CONN. AT COLUMN INSET GIRTS WS01H2



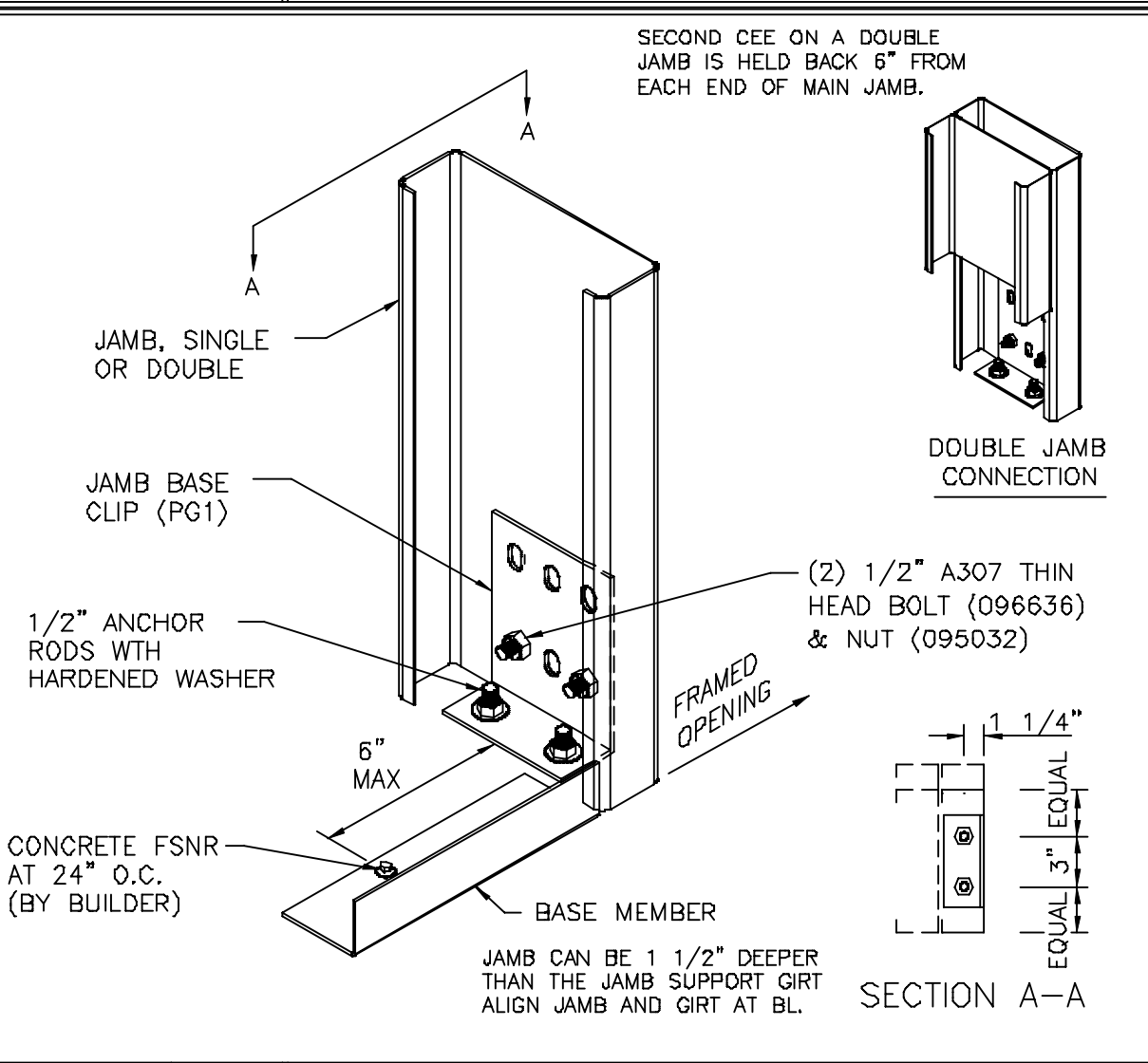
REV. DATE:06/16/14 REV. NO.02 GIRT CONN. AT CORNER COLUMN ANY OUTSET GIRT AT EW, INSET GIRT AT SW WS12GB



REV. DATE:11/30/15 REV. NO.03 JAMB TO GIRT SINGLE OR DOUBLE JAMB, ANY ZEE GIRT WS20B2



REV. DATE:05/08/18 REV. NO.04 JAMB EXTENSION TO EAVE STRUT LOW EAVE STRUT WS20B6



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

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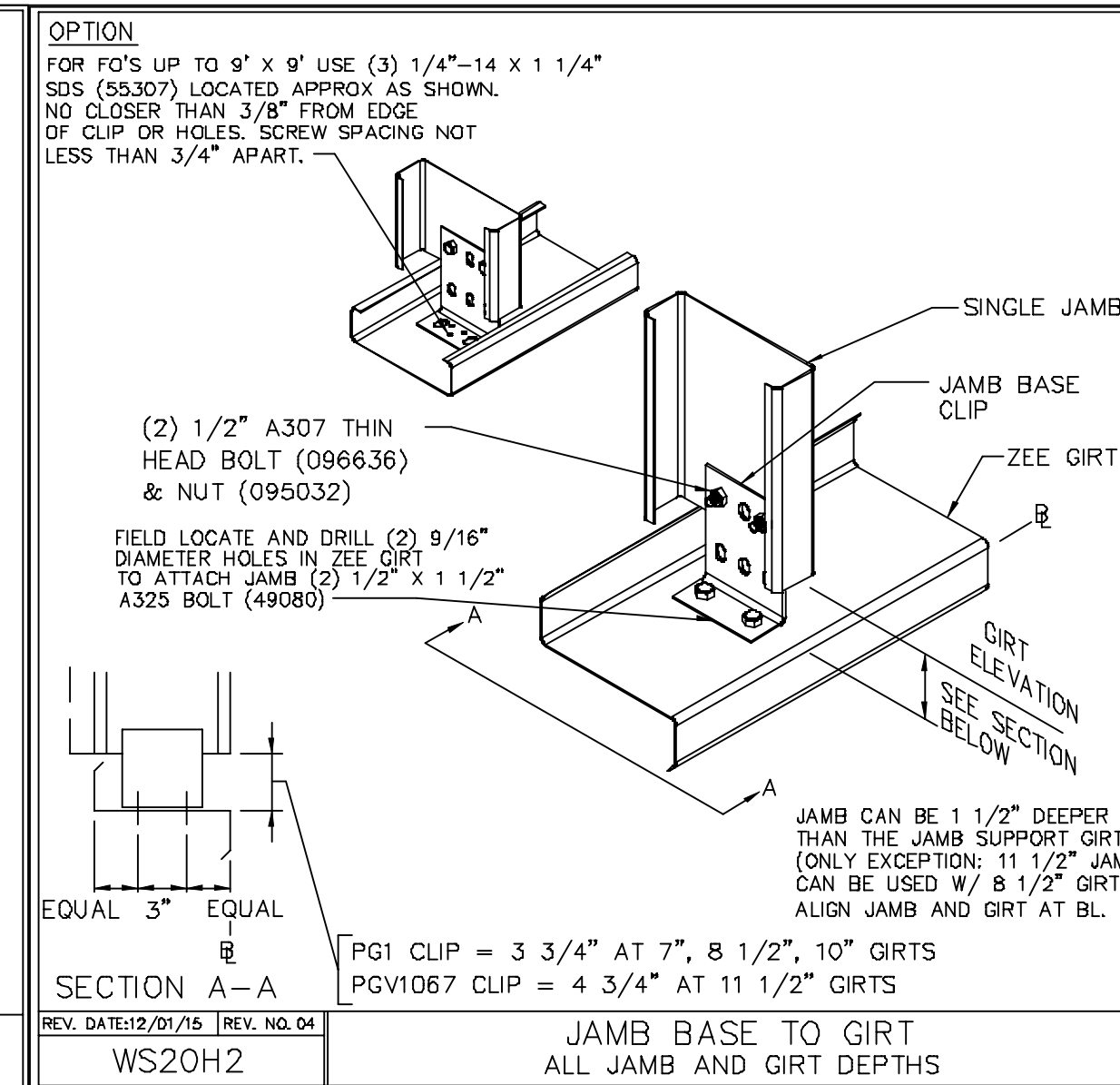
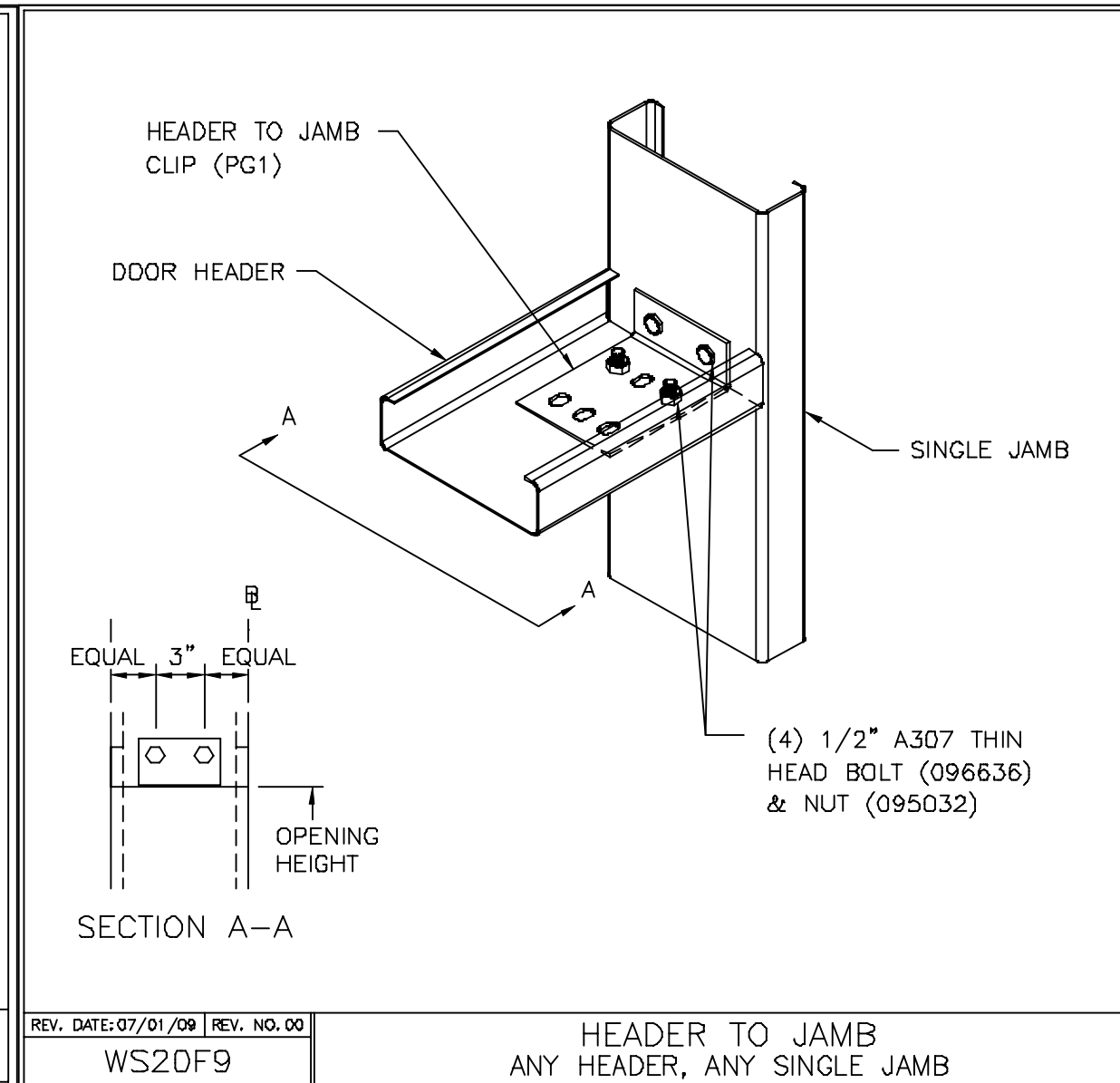
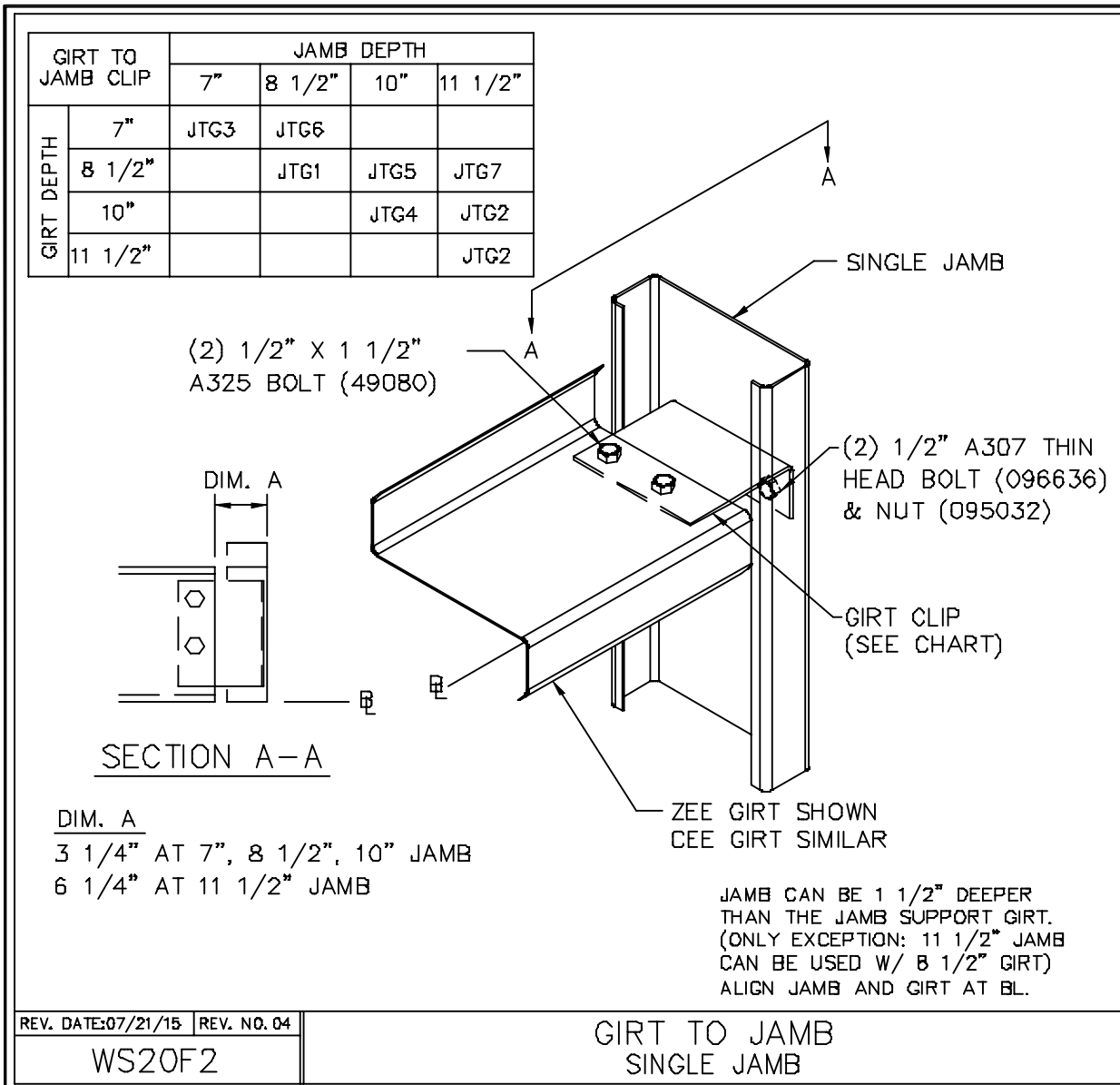
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FOR CONSTRUCTION

BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102		WALL SECONDARY SED'S	
REV:	DATE:	BY:	DESCRIPTION:
BUILDER:	Twin Pines Construction		
CUSTOMER:	21-000133-01		
LOCATION:	Plainfield, New Hampshire		
PROJECT:	Townline Shop		
BUILDER'S PO#:	DATE: 03/25/2021		
	DRAWN/CHECK: RMK / MTV		
	PAGE: 24		
DRAWING SCALE: NTS		Butler Manufacturing VPC VERSION: 2020.4d	

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REV.	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

WALL SECONDARY SED'S		JOB #: 21-000133-01	
BUILDER:	Twin Pines Construction	DATE:	03/25/2021
CUSTOMER:		DRAWN/CHECK:	RMK / MTV
LOCATION:	Plainfield, New Hampshire	PAGE:	25
PROJECT:	Townline Shop		
BUILDER'S PO#:			

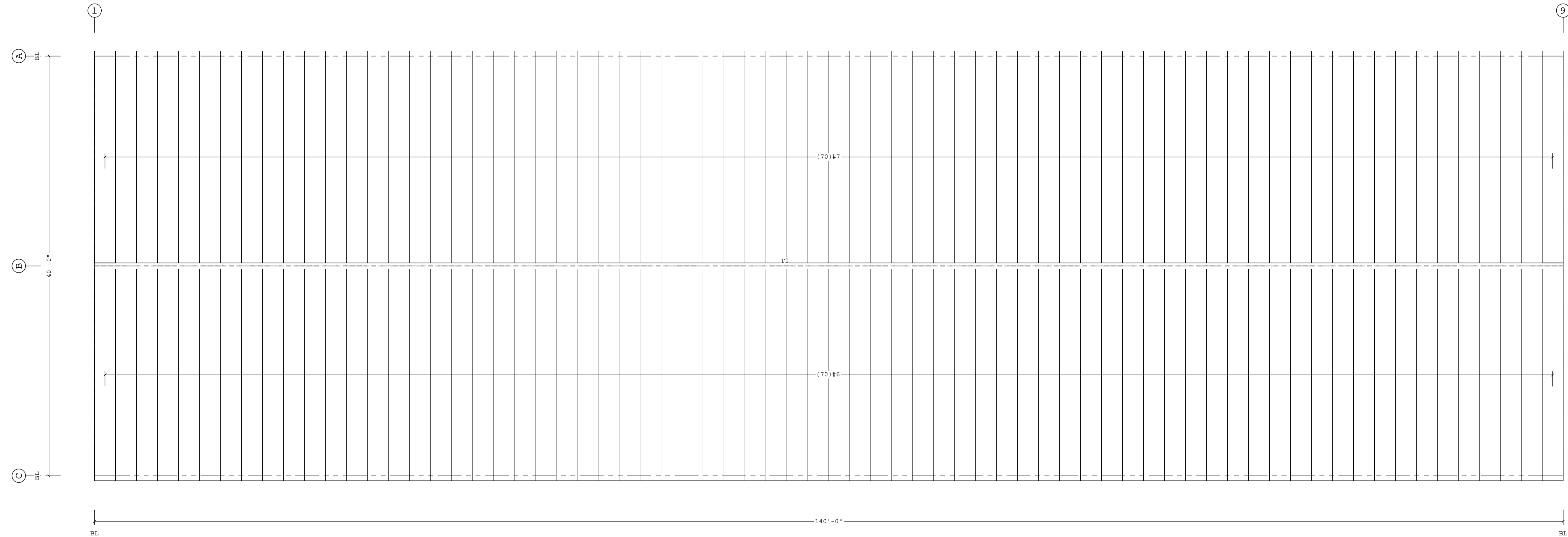


Covering Schedule								
Id	Qty	Length	Type	Gage	OP	Fin.	Color	Direction
#6	70	20'-2 1/2"	MR24	24	12	Z	AZ	Right to Left
#7	70	20'-2 1/2"	MR24	24	12	Z	AZ	Right to Left

Oper. Code:12=SQ, SQ
Finish:Z=AlZn
Color:AZ=Plain AlZn

Trim Schedule				
Id	Parts	Qty	Color	Details
T1	(7)RC20	140'-0"	Plain AlZn	ENB004, NV667

Accessory Schedule			Detail	
Qty	Color	Description		
3	Cool Gray Stone	3070 Door 3" Fineline/Shallow Plank/Light Mesa 30		
8	Not Applicable	Window 6030 Fixed - Clear 1" Glass Insulated - 3" IMP Pnl		
3	Not Applicable	Window 6030 Horizontal Slider w/ Screen - Clear 5/8" Glass Insulated - 3" IMP Pnl		



ROOF COVERING PLAN

Planograph Schedule	
Id	Details
T1	P-080573, P-080575, P-080578, P-080949, P-ZRSLO

Shape Name = Townline Shop

FOR CONSTRUCTION

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

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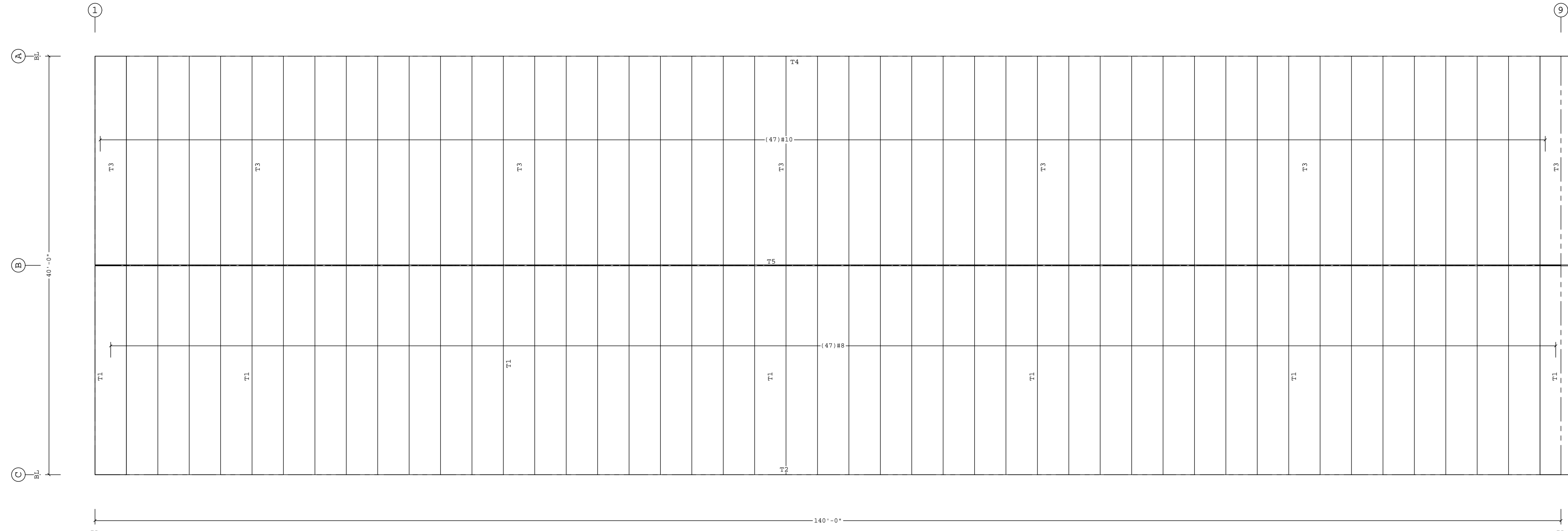
REV	DATE	BY	DESCRIPTION	BUILDER	CUSTOMER	LOCATION	PROJECT	BUILDER'S PO#	JOB #	DATE	DRAWN/CHECK	PAGE
D				Twin Pines Construction		Plainfield, New Hampshire	Townline Shop		21-000133-01	03/25/2021	RMK / MTV	26



Liner/Soffit Schedule									
Id	Qty	Type	Length	Gage	OP	Finish	Color	Direction	Cut
#8	47	MOD	19'-11 5/8"	28	1	Z	AZ	Right to Left	
#10	47	MOD	19'-11 5/8"	28	1	Z	AZ	Right to Left	

Oper. Code:l=SQ, SQ
Finish:Z=AlZn
Color:AZ=Plain AlZn

Liner Trim Schedule				
Id	Parts	Qty	Color	Details
T1	(5)JT10	20'-0 3/16"	Plain AlZn	WCB089
T2	(12)LPJT	140'-0"	Plain AlZn	WCB011
T3	(5)JT10	20'-0 3/16"	Plain AlZn	WCB089
T4	(12)LPJT	140'-0"	Plain AlZn	WCB011
T5	(14)LTA10	140'-0"	Plain AlZn	WCB016



ROOF LINER PLAN
(View from outside Building)

Planograph Schedule

Id	Details
T1	
T2	P-080234
T3	
T4	P-080234
T5	

Fastener Schedule

Part	Description
55307	(T-3) 1/4-14 x 1 1/4", 5/16" Hex Hd

Shape Name = Townline Shop


FOR CONSTRUCTION

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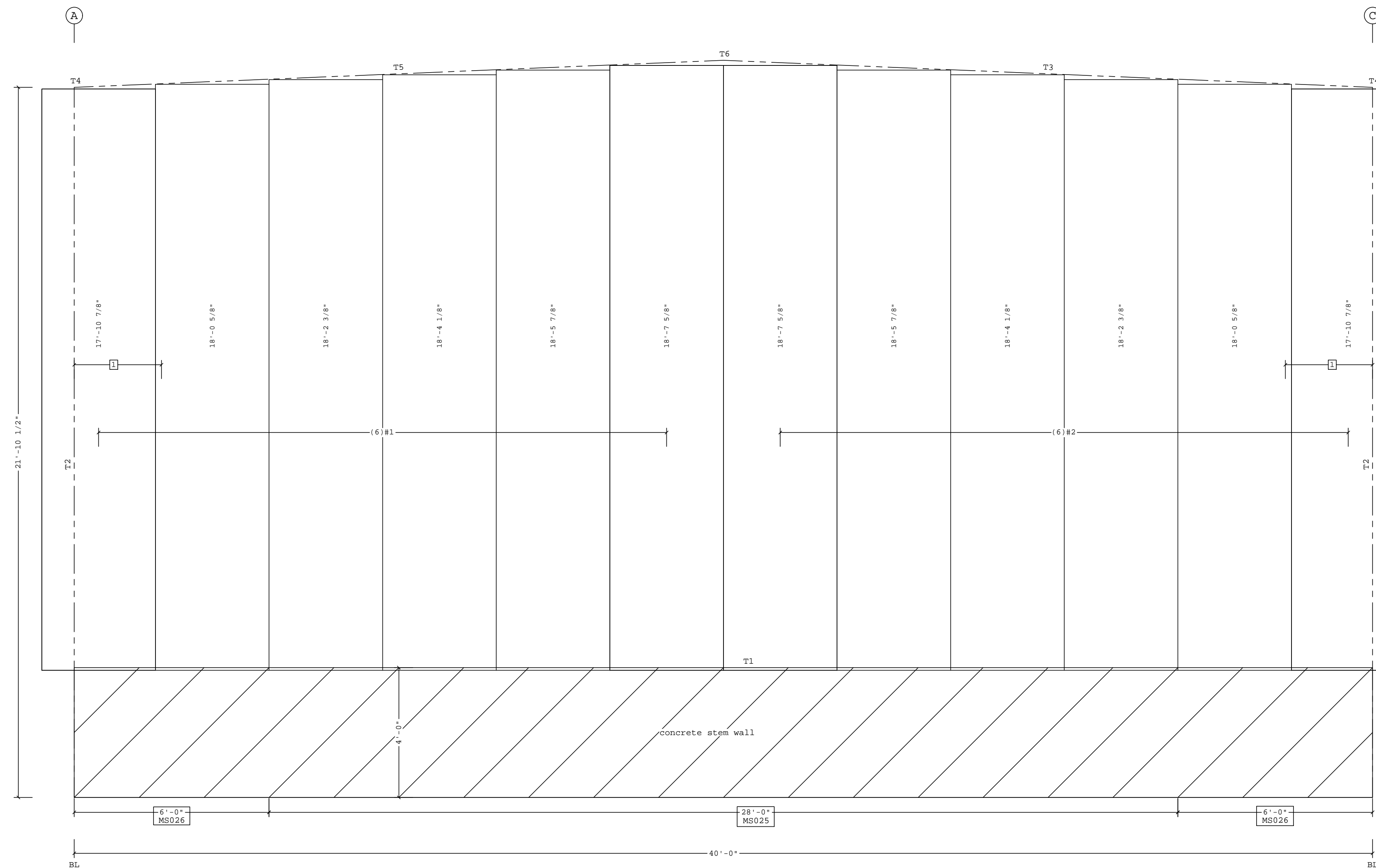
D	BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102		ROOF LINER PLAN	
	REV:	DATE:	BY:	DESCRIPTION:
DRAWING SCALE: NTS		BUILDER: Twin Pines Construction		 Butler Manufacturing VPC VERSION: 2020.4d
		CUSTOMER:		
		LOCATION: Plainfield, New Hampshire		
		PROJECT: Townline Shop		
		BUILDER'S PO#:		JOB #: 21-000133-01 DATE: 03/25/2021 DRAWN/CHECK: RMK / MTV PAGE: 27

MODIFIED IN AUTOCAD

Covering Schedule									
Id	Qty	Type	Start Length	Gage	OP	Fin.	Color	Increment	Direction
#1	6	THFL30	17'-10 7/8"	26	1	K	GT	1 3/4"	Left to Right
#2	6	THFL30	18'-7 5/8"	26	1	K	GT	-1 3/4"	Left to Right

Oper. Code:1=SQ, SQ
 Finish:K=Butler-Cote
 Color:GT=Cool Gray Stone

Trim Schedule			Color		Details
Id	Parts	Qty	Color		Details
T1	(3.4)F5984-26-12, (2)PBA20, (2)PSA20	40'-0"	Cool Gray Stone		MS003, MS018, MS035, NV673, WCB169
T2	(2)F5139-26-12, (2)SCT12B-26-12	17'-10 1/2"	Cool Gray Stone		MS007, MS035
T3	MRGT20R, (2.0)WA10B	20'-0 3/16"	Cool Birch White		KV411, KV412, MS018, MS028
T4	0630043	1	Cool Birch White		
T5	MRGT20L, (2.0)WA10B	20'-0 3/16"	Cool Birch White		KV411, KV412, MS018, MS028
T6	0560173, MRRET, RBT2, TCL1, (0.1)VWA10	1	Cool Birch White		



COVERING ELEVATION AT 1

Planograph Schedule	
Id	Details
T1	B-081517, P-080879
T2	B-081398, B-081517, P-080879
T3	B-081517, P-080883, P-081167, P-105018, P-RCI
T4	P-080572, P-081236, P-103223, P-104542, P-104714
T5	B-081517, P-080883, P-081167, P-105018, P-RCI
T6	P-081167, P-081243, P-GAI

- 1 2'-8 1/4" Scribe Line
- Dimension Key

Shape Name = Townline Shop, Wall = 1

FOR CONSTRUCTION

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

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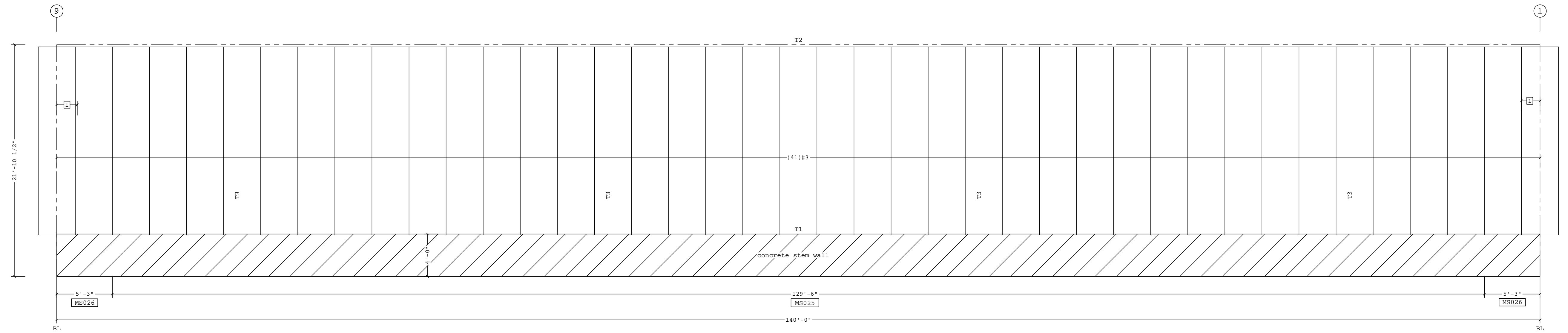
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D BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102		COVERING ELEVATION AT 1	
		BUILDER: Twin Pines Construction CUSTOMER:	JOB #: 21-000133-01 DATE: 03/25/2021
REV:	DATE:	BY:	DESCRIPTION:
DRAWING SCALE: NTS		LOCATION: Plainfield, New Hampshire PROJECT: Townline Shop	DRAWN/CHECK: RMK / MTV BUTLER Manufacturing VPC VERSION: 2020.4d
SAVE DATE: 3/25/2021		BUILDERS PO#:	PAGE: 28
SAVE TIME: 17:41:06		LAST SAVED BY: manikandan_ramasamy	a division of BlueScope Buildings North America, Inc.

MODIFIED IN AUTOCAD

Covering Schedule								
Id	Qty	Type	Start Length	Gage	OP	Fin.	Color	Direction
#3	41	THFL30	17'-9"	26	1	K	GT	Left to Right
Oper. Code:1=SQ, SQ								
Finish:K=Butler-Cote								
Color:GT=Cool Gray Stone								

Trim Schedule				
Id	Parts	Qty	Color	Details
T1	(11.9)F5984-26-12, (7)PBA20, (7)PSA20	140'-0"	Cool Gray Stone	MS003, MS018, MS035, NV673, WCB169
T2	(12)CLE12D, (6)GTR25	140'-0"	Cool Birch White	MS018, MS027, MV246
T3	0008738, 4CE75, (2.5)CP410	21'-10 1/2"	Cool Birch White	KV847



COVERING ELEVATION AT A

Planograph Schedule	
Id	Details
T1	B-081517, P-080879
T2	B-081517, P-103223, P-103315, P-104714, P-105017
T3	P-105224, P-105225, P-105228

- 1 1'-11 1/4" Scribe Line
- Dimension Key

Shape Name = Townline Shop, Wall = 2

FOR CONSTRUCTION

- PRE-DRILLING 1/8 DIAMETER HOLES FOR STRUCTURAL FASTENERS MAY BE REQUIRED FOR HEAVY GAGE NESTED ZEE'S AND/OR FASTENERS TO STRUCTURAL BEAMS
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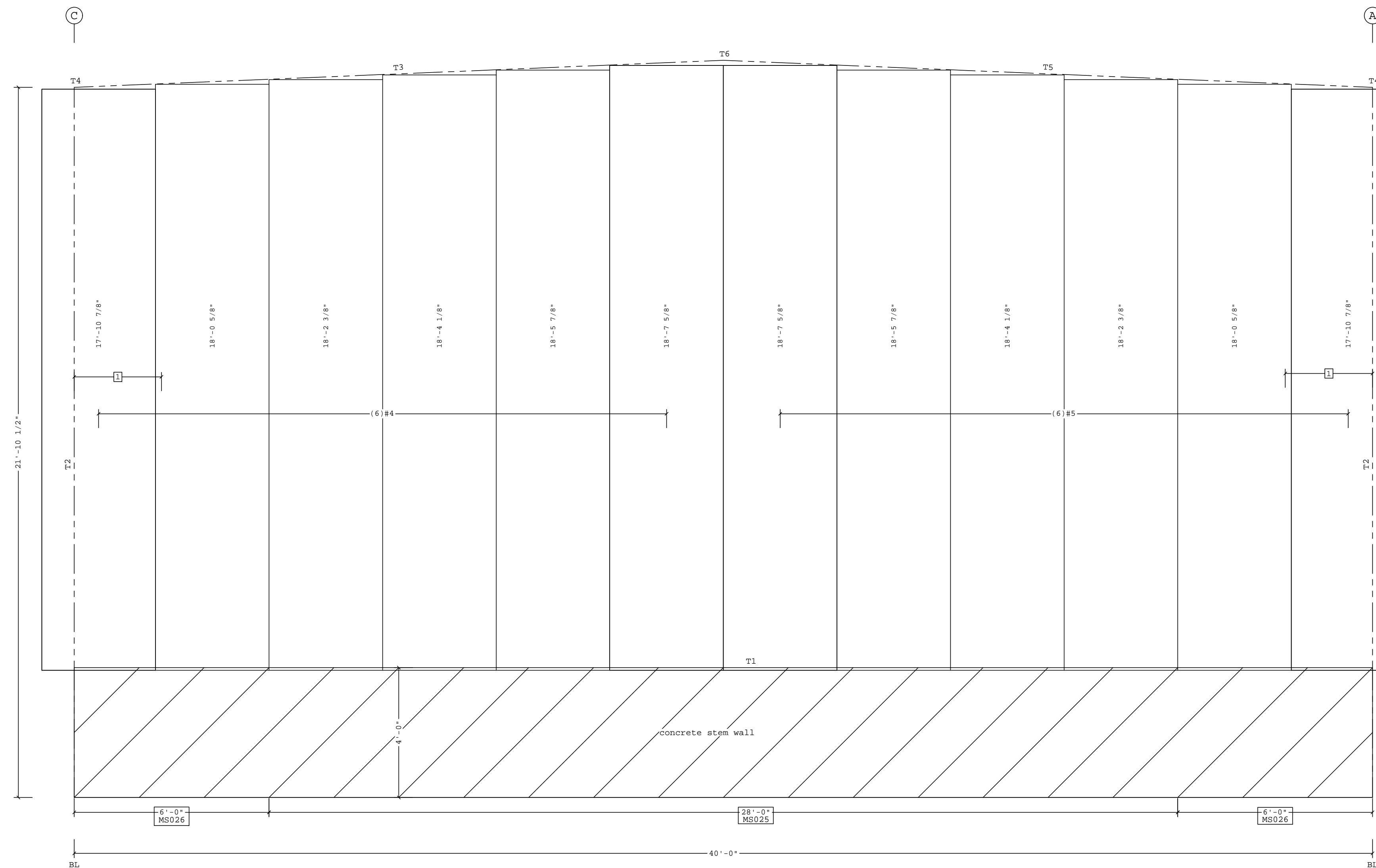
REV	DATE	BY	DESCRIPTION	BUILDER	CUSTOMER	LOCATION	PROJECT	BUILDER'S PO#	JOB #	DATE	DRAWN/CHECK	PAGE
D				Twin Pines Construction		Plainfield, New Hampshire	Townline Shop		21-000133-01	03/25/2021	RMK / MTV	29



Covering Schedule										
Id	Qty	Type	Start Length	Gage	OP	Fin.	Color	Increment	Direction	
#4	6	THFL30	17'-10 7/8"	26	1	K	GT	1 3/4"	Left to Right	
#5	6	THFL30	18'-7 5/8"	26	1	K	GT	-1 3/4"	Left to Right	

Oper. Code:l=SQ, SQ
Finish:K=Butler-Cote
Color:GT=Cool Gray Stone

Trim Schedule				Color	Details
Id	Parts	Qty			
T1	(3.4)F5984-26-12, (2)PBA20, (2)PSA20	40'-0"		Cool Gray Stone	MS003, MS018, MS035, NV673, WCB169
T2	(2)F5139-26-12, (2)SCT12B-26-12	17'-10 1/2"		Cool Gray Stone	MS007, MS035
T3	MRGT20L, (2.0)WA10B	20'-0 3/16"		Cool Birch White	KV411, KV412, MS018, MS028
T4	0630043	1		Cool Birch White	
T5	MRGT20R, (2.0)WA10B	20'-0 3/16"		Cool Birch White	KV411, KV412, MS018, MS028
T6	0560173, MRRET, RBT2, TC1, (0.1)VWA10	1		Cool Birch White	



COVERING ELEVATION AT 9

Planograph Schedule	
Id	Details
T1	B-081517, P-080879
T2	B-081398, B-081517, P-080879
T3	B-081517, P-080883, P-081167, P-105018, P-RCI
T4	P-080572, P-081236, P-103223, P-104542, P-104714
T5	B-081517, P-080883, P-081167, P-105018, P-RCI
T6	P-081167, P-081243, P-GAI

- 1 2'-8 1/4" Scribe Line
- Dimension Key

Shape Name = Townline Shop, Wall = 3

FOR CONSTRUCTION

- PRE-DRILLING 1/8 DIAMETER HOLES FOR STRUCTURAL FASTENERS MAY BE REQUIRED FOR HEAVY GAGE NESTED ZEE'S AND/OR FASTENERS TO STRUCTURAL BEAMS
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BUTLER MANUFACTURING 1540 GENESSEE ST. KANSAS CITY, MO 64102				COVERING ELEVATION AT 9	
REV:	DATE:	BY:	DESCRIPTION:	BUILDER:	Twin Pines Construction
				CUSTOMER:	
				LOCATION:	Plainfield, New Hampshire
				PROJECT:	Townline Shop
				BUILDER'S PO#:	
DRAWING SCALE: NTS			JOB #: 21-000133-01		
SAVE DATE: 3/25/2021			DATE: 03/25/2021		
SAVE TIME: 17:34:02			DRAWN/CHECK: RMK / MTV		
LAST SAVED BY: manikandan_ramasamy			PAGE: 30		

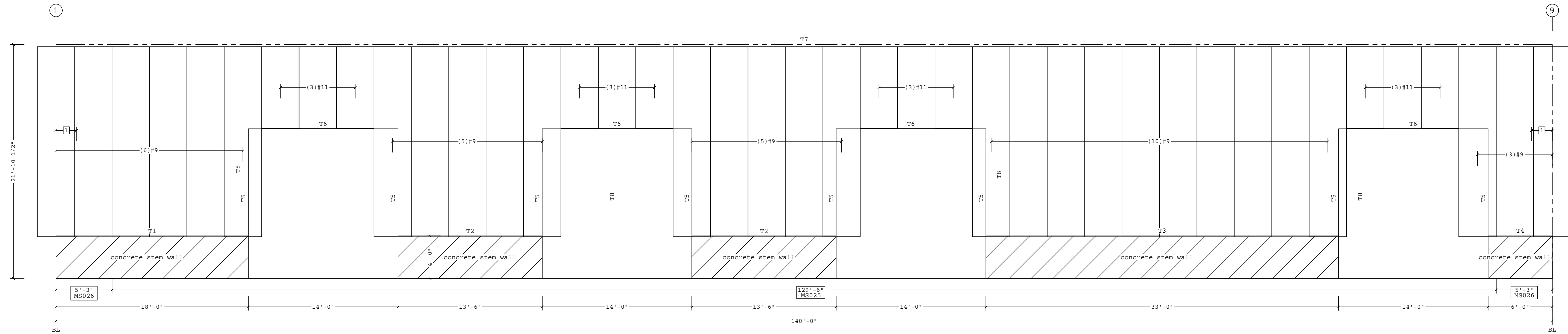


Butler Manufacturing
VPC VERSION: 2020.4d

Covering Schedule								
Id	Qty	Type	Start Length	Gage	OP	Fin.	Color	Direction
#9	29	THFL30	17'-9"	26	1	K	GT	Left to Right
#11	12	THFL30	7'-7 3/4"	26	1	K	GT	Left to Right

Oper. Code:l=SQ, SQ
Finish:K=Butler-Cote
Color:GT=Cool Gray Stone

Trim Schedule				Color	Details
Id	Parts	Qty			
T1	(1.6)F5984-26-12, (0.9)PBA20, (0.9)PSA20	18'-0"		Cool Gray Stone	MS003, MS018, MS035, NV673, WCB169
T2	(1.2)F5984-26-12, (0.7)PBA20, (0.7)PSA20	13'-6"		Cool Gray Stone	MS003, MS018, MS035, NV673, WCB169
T3	(2.8)F5984-26-12, (1.7)PBA20, (1.7)PSA20	33'-0"		Cool Gray Stone	MS003, MS018, MS035, NV673, WCB169
T4	(0.5)F5984-26-12, (0.3)PBA20, (0.3)PSA20	6'-0"		Cool Gray Stone	MS003, MS018, MS035, NV673, WCB169
T5	(1.0)F5993-26-12	10'-0"		Cool Gray Stone	MS013, MS035
T6	(2)F5033-26-12, (2.0)F5986-26-12	14'-0"		Cool Gray Stone	MS011, MS018, MS035
T7	(12)CLE12D, (6)GTR25	140'-0"		Cool Birch White	MS018, MS027, MV246
T8	0008738, 4CB75, (2.5)CP410	21'-10 1/2"		Cool Birch White	KV847



COVERING ELEVATION AT C

Planograph Schedule	
Id	Details
T1	B-081517, P-080879
T2	B-081517, P-080879
T3	B-081517, P-080879
T4	B-081517, P-080879
T5	B-080830, B-FRMOP2, B-FRMOP3, B-FRMOP4, P-080879
T6	B-080830, B-FRMOP2, B-FRMOP3, B-FRMOP4, P-080879
T7	B-081517, P-103223, P-103315, P-104714, P-105017
T8	P-105224, P-105225, P-105228

1 1'-11 1/4" Scribe Line
□ Dimension Key

Shape Name = Townline Shop, Wall = 4

FOR CONSTRUCTION

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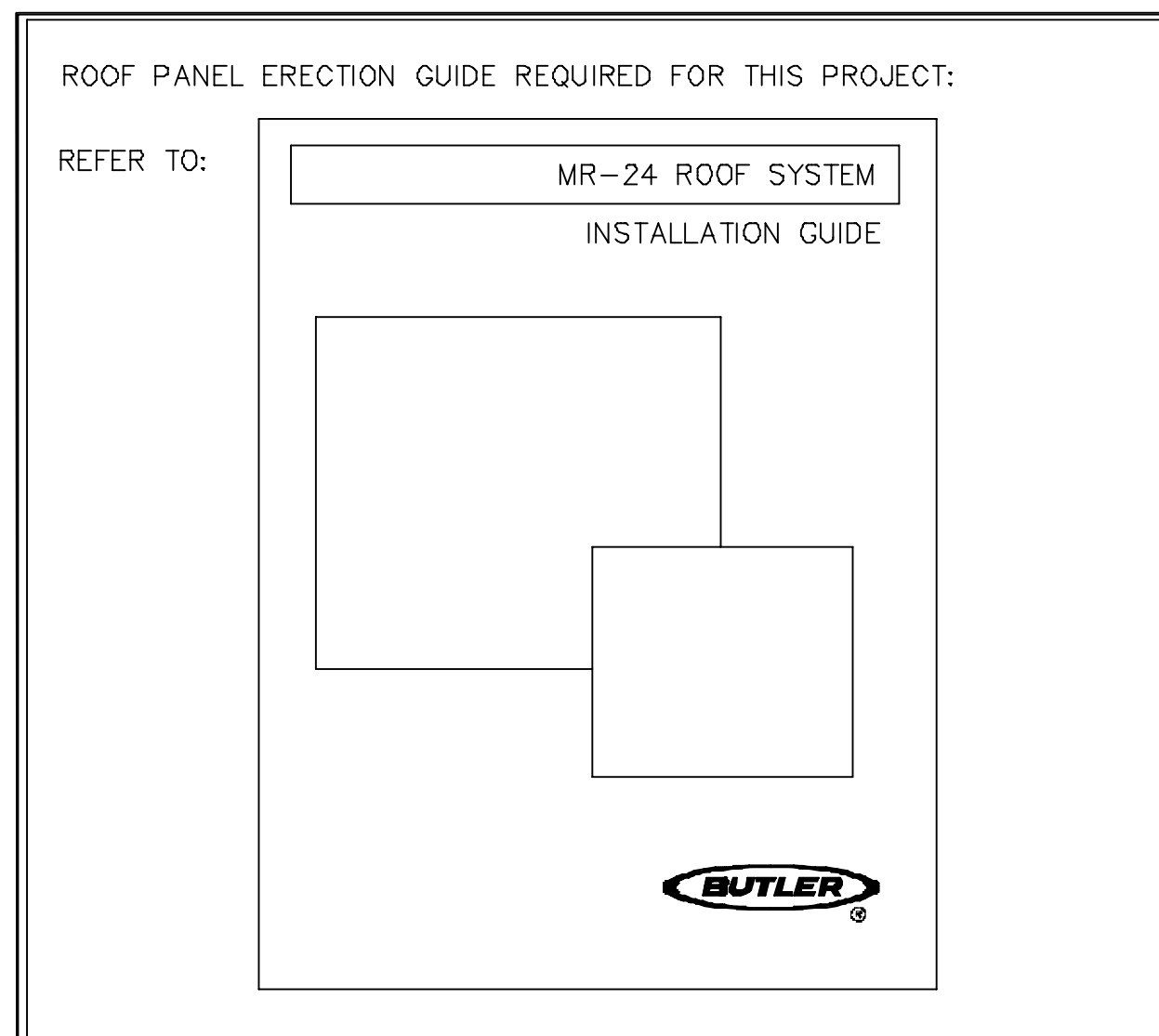
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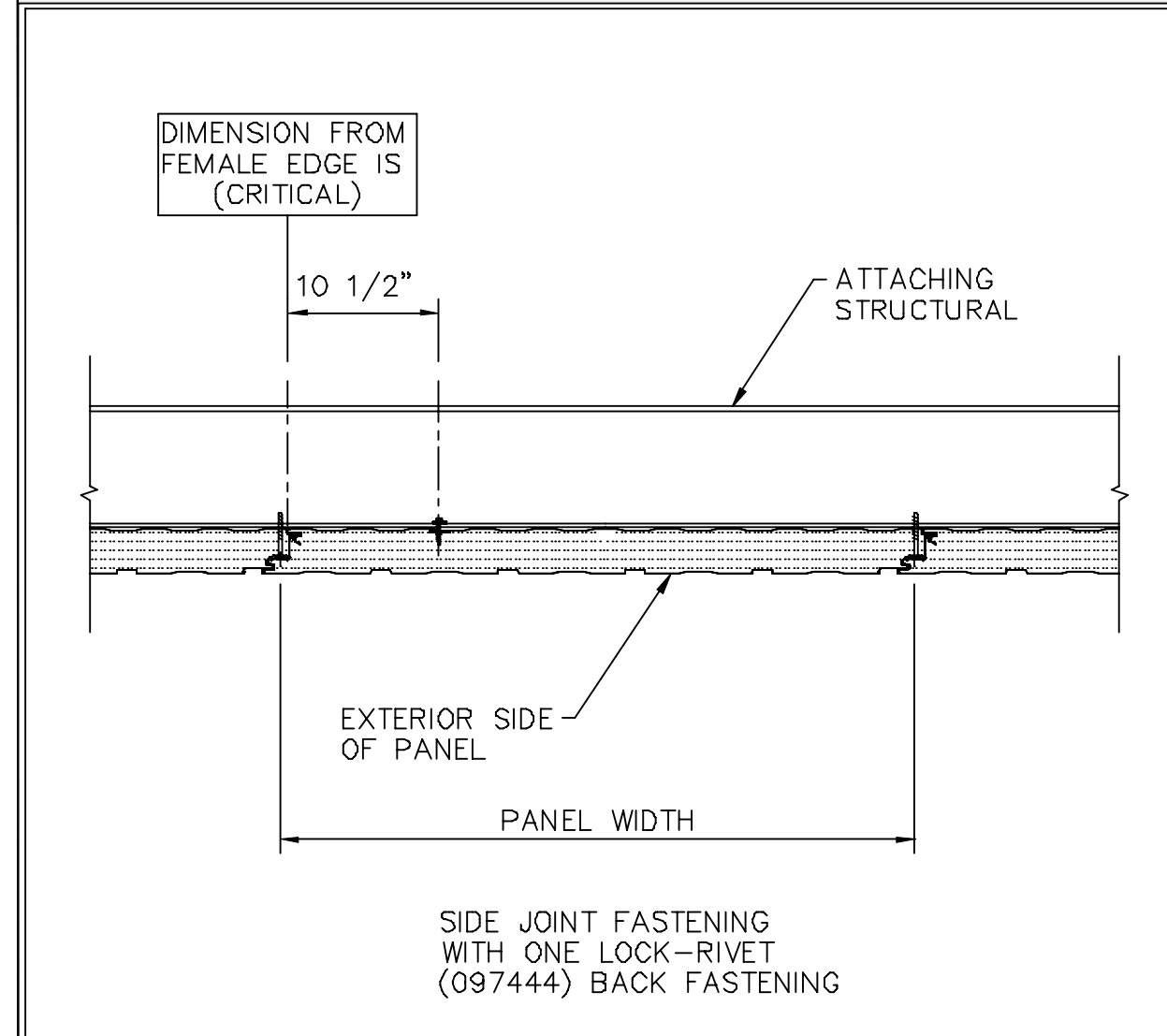
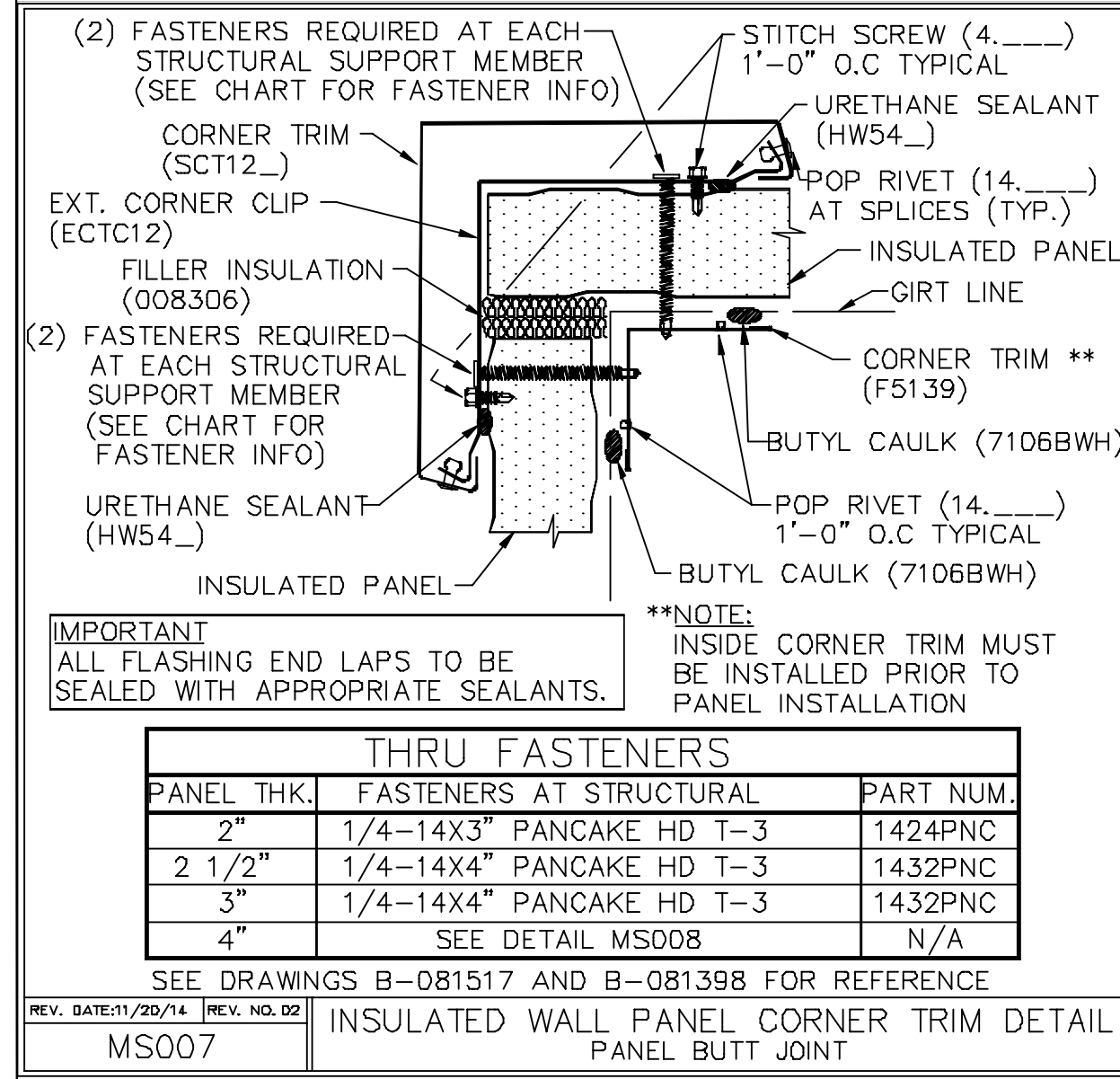
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REV	DATE	BY	DESCRIPTION	BUILDER	CUSTOMER	LOCATION	PROJECT	BUILDER'S PO#	JOB#	DATE	DRAWN/CHECK	PAGE
D				Twin Pines Construction		Plainfield, New Hampshire	Townline Shop		21-000133-01	03/25/2021	RMK / MTV	31

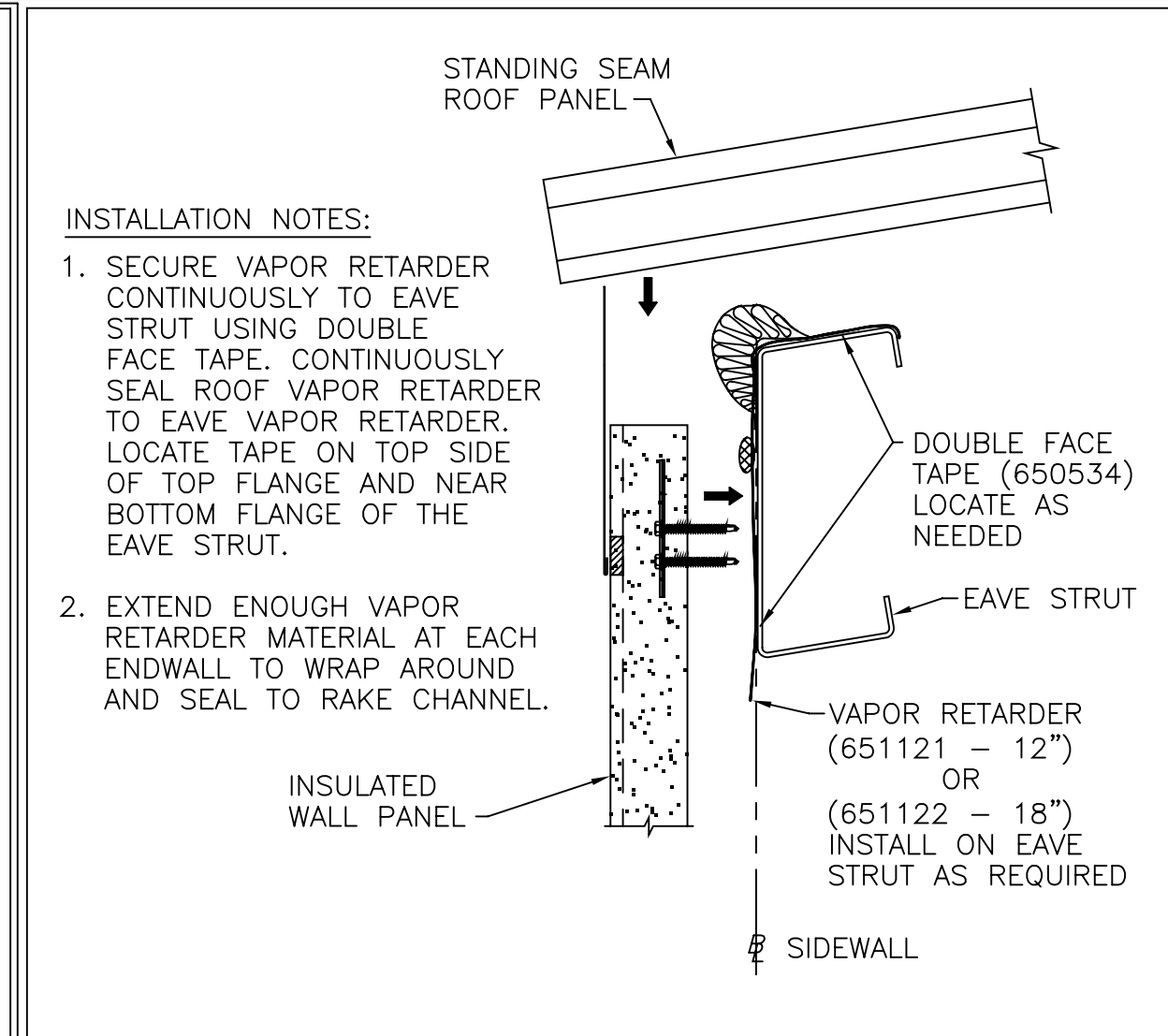
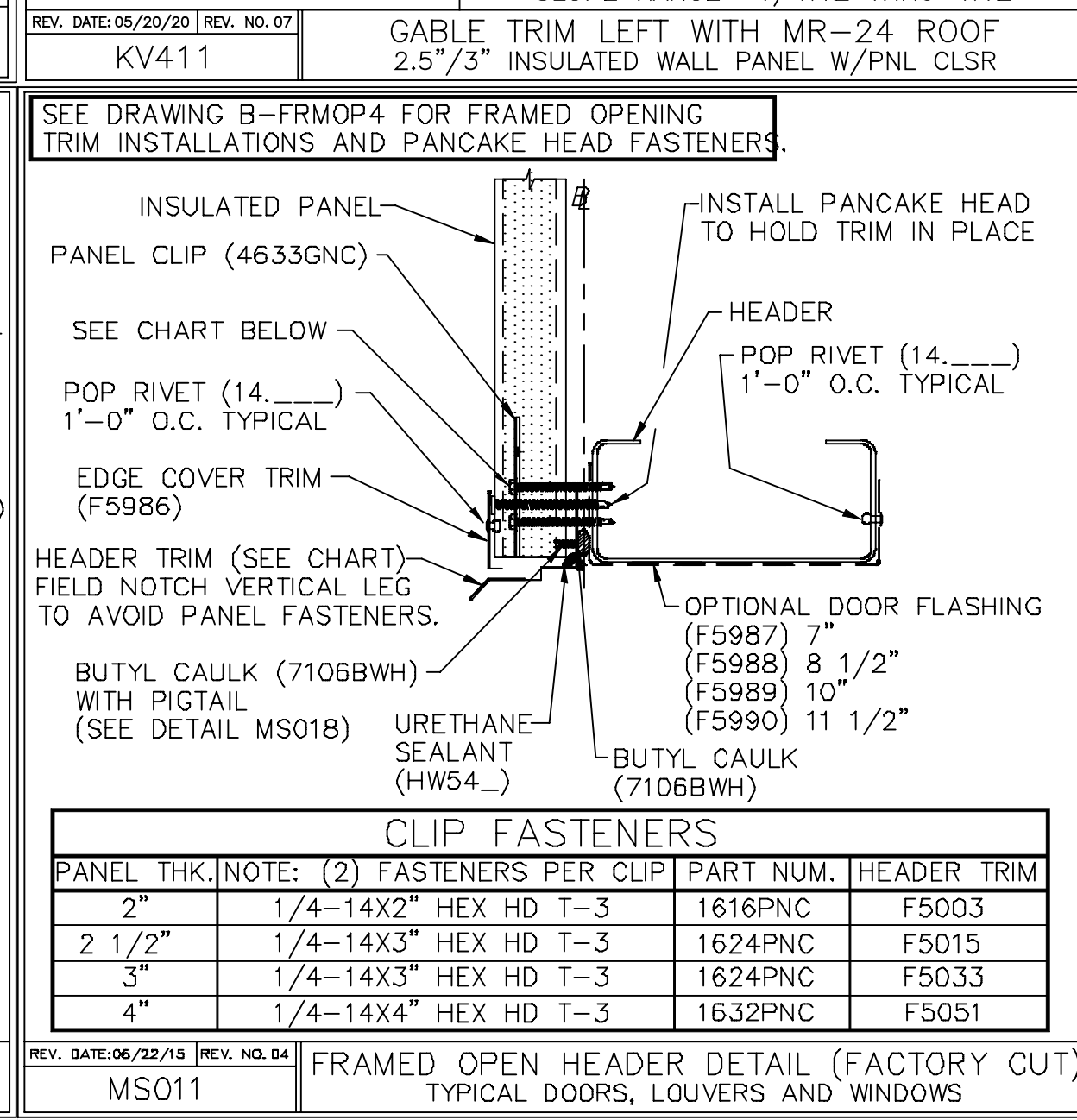
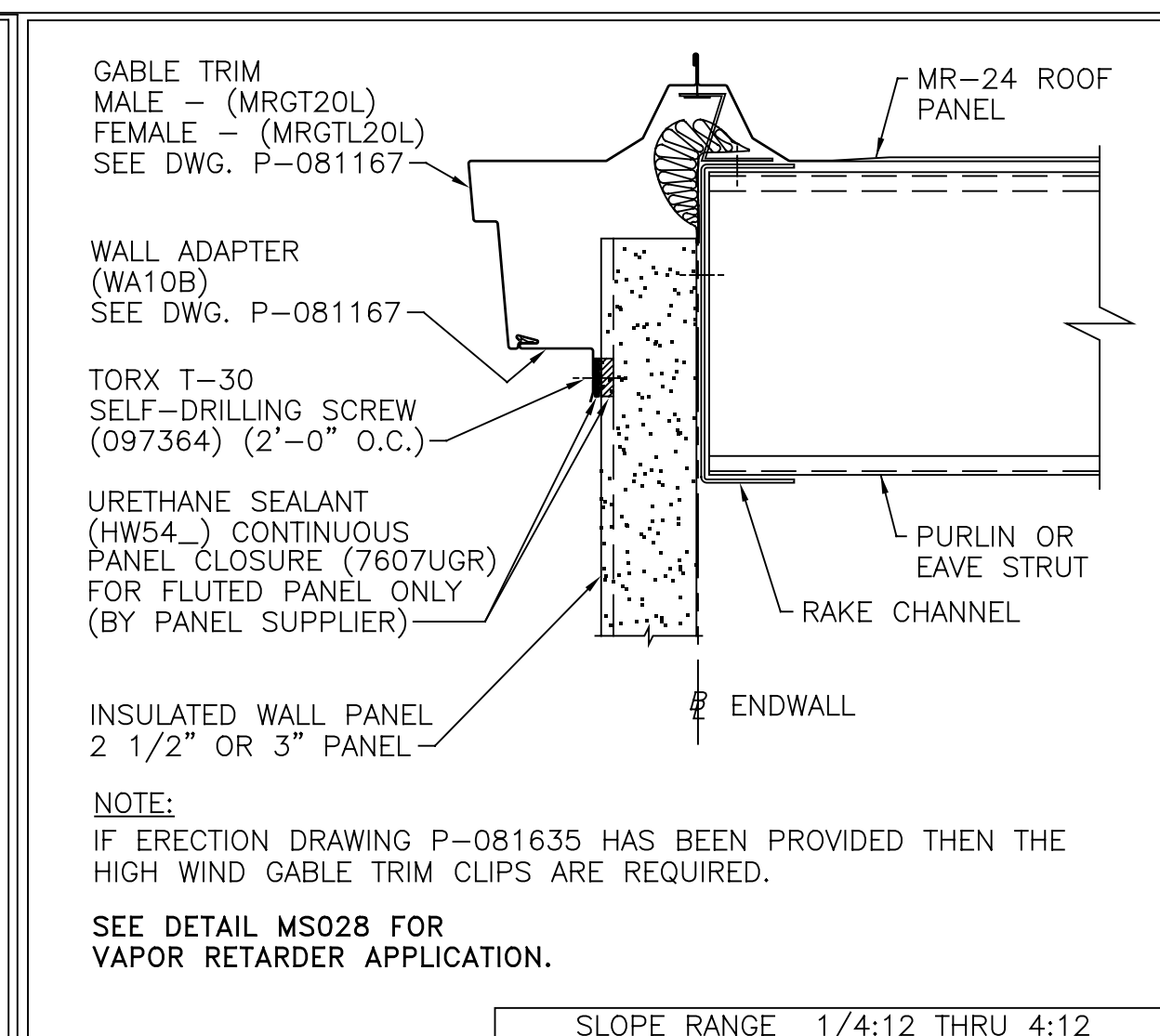




REV. DATE: 01/30/14	REV. NO. 00	ENB004	MR-24 ROOF SYSTEM
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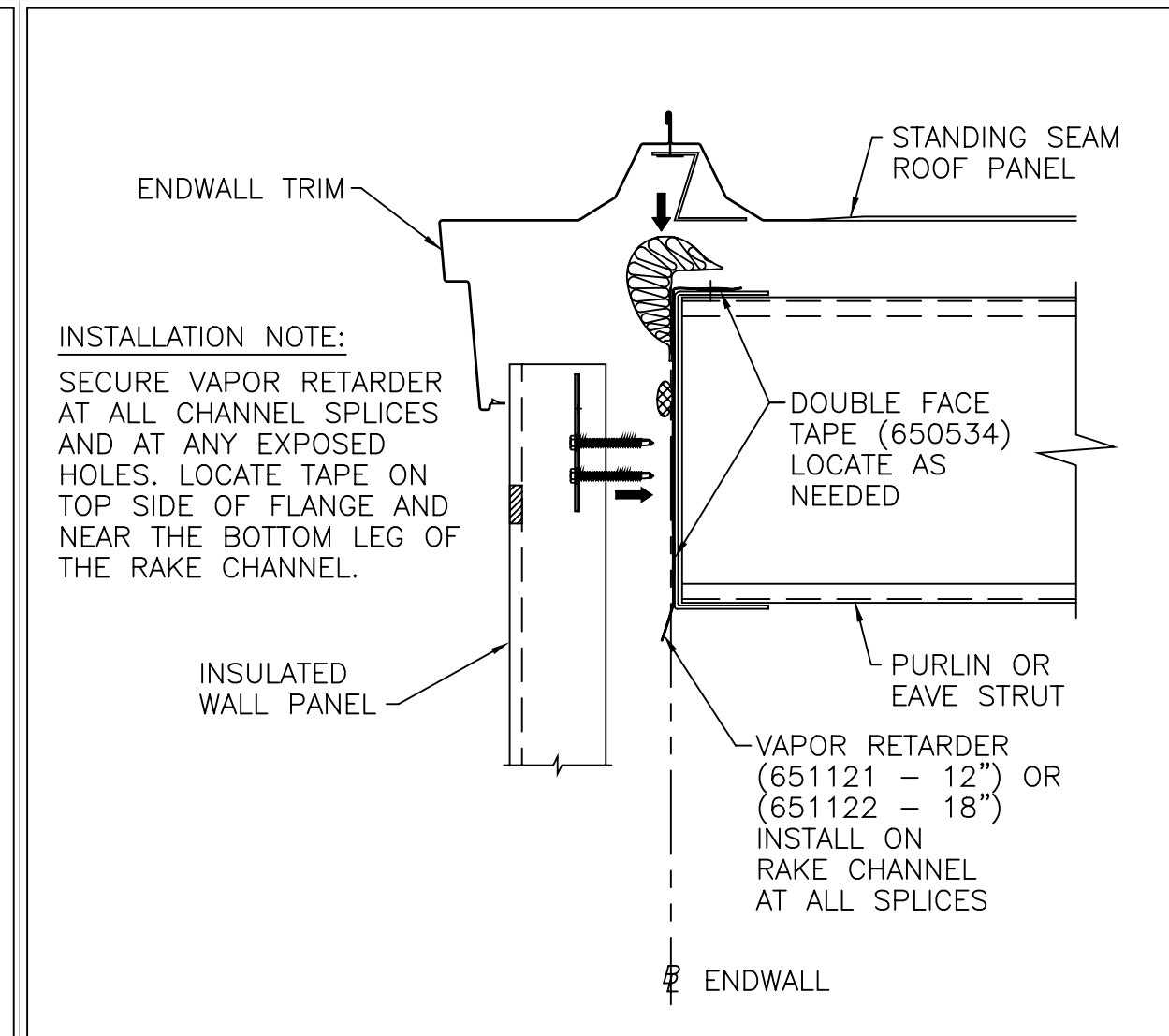
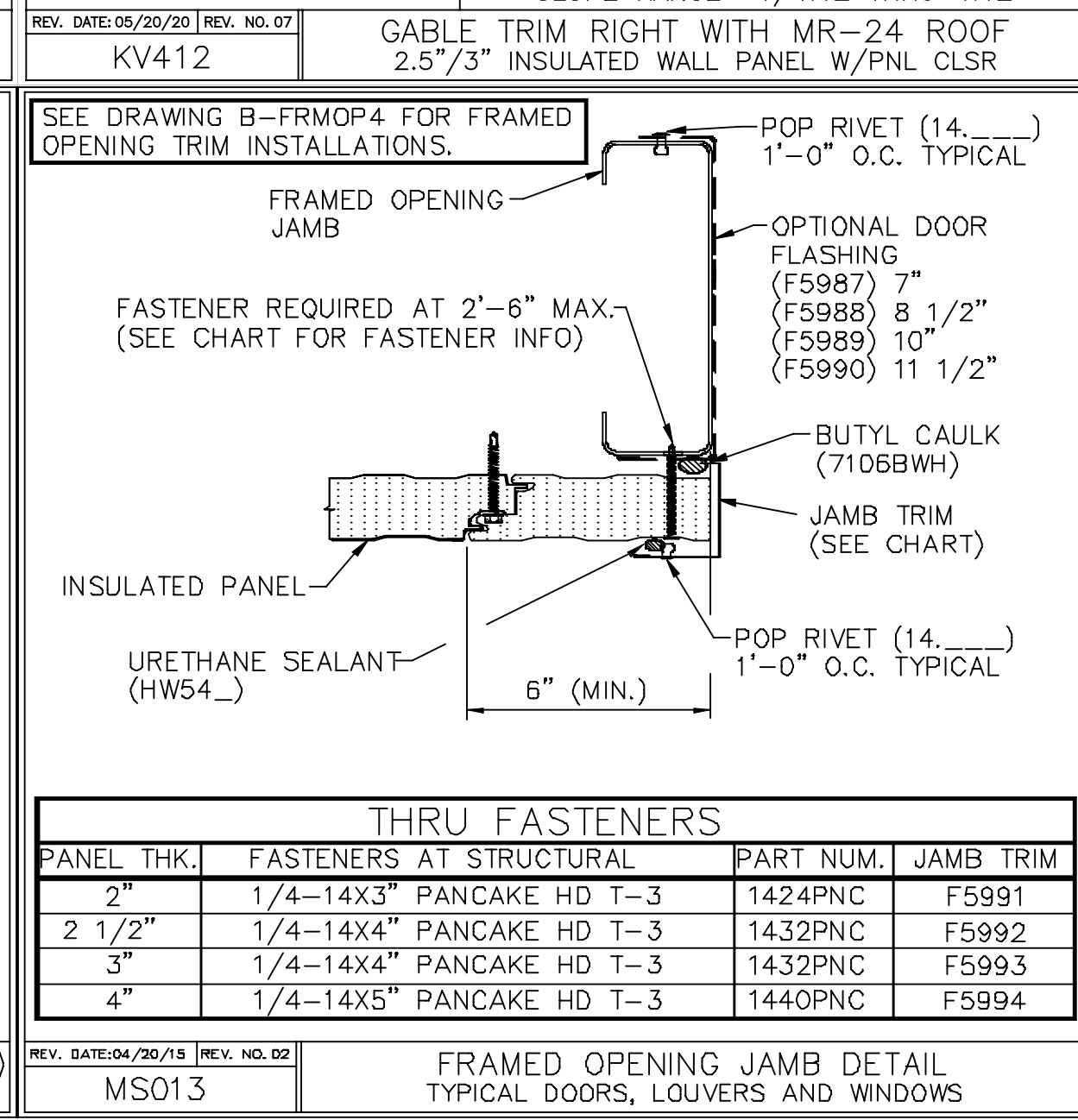
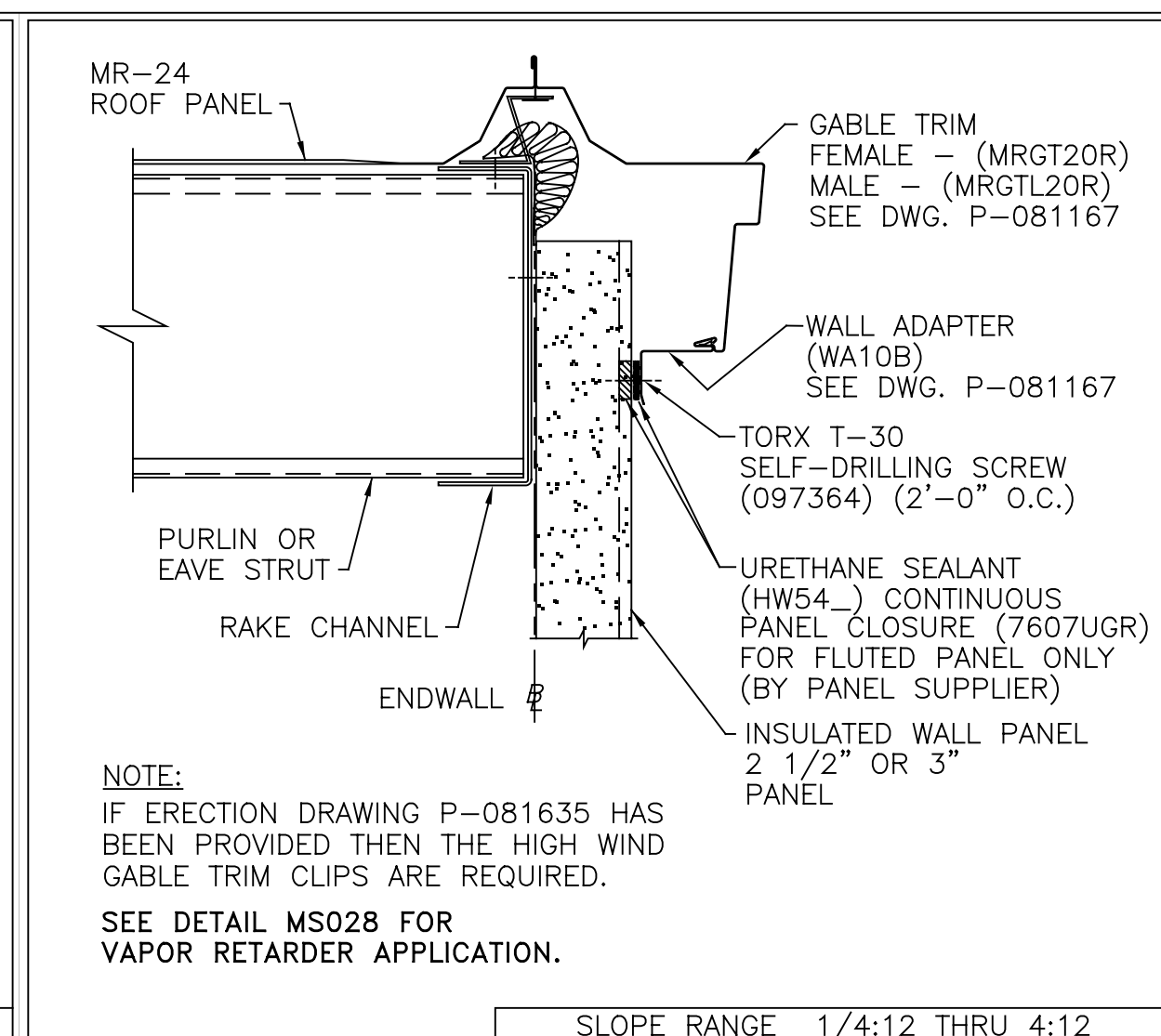


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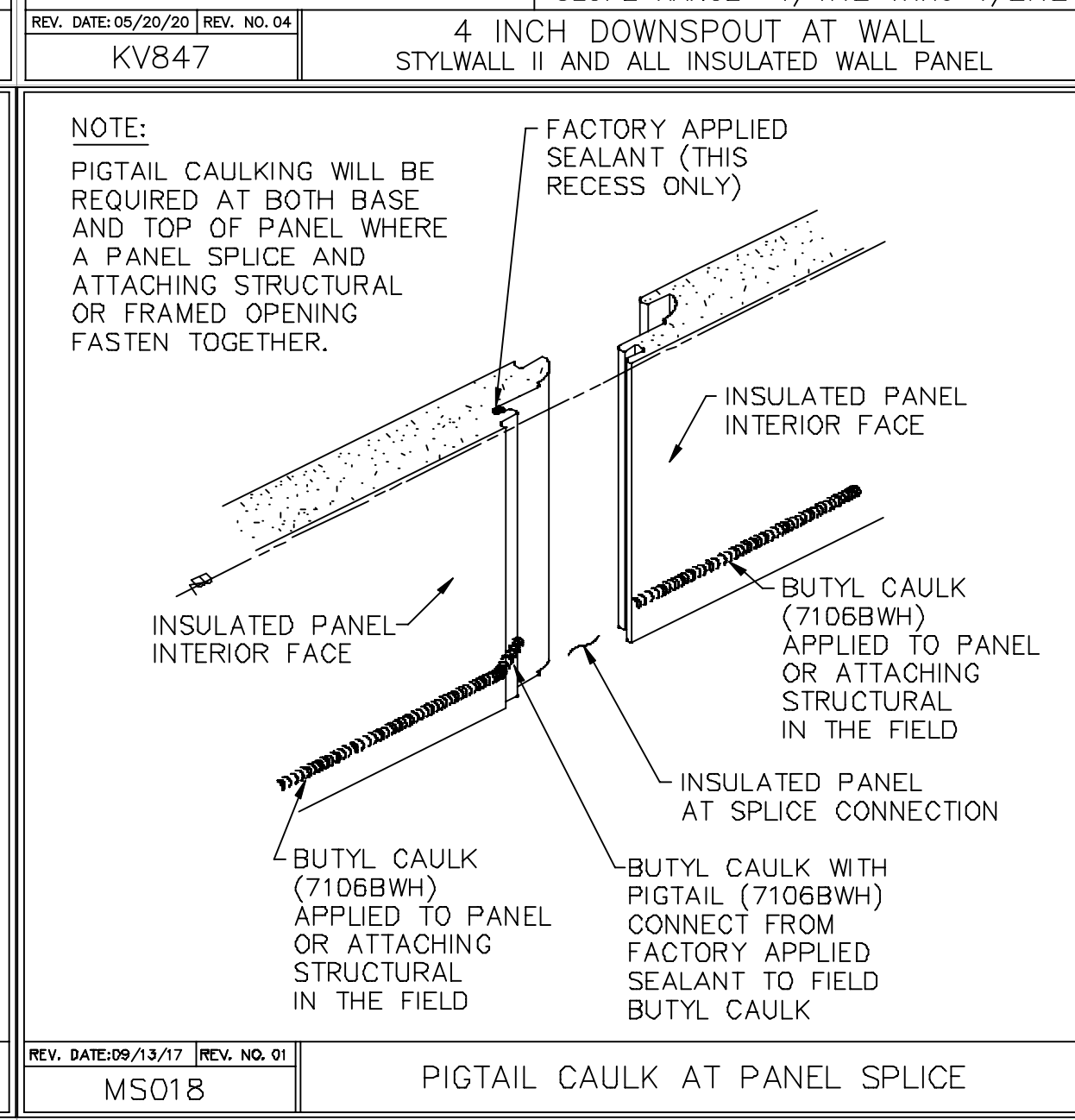
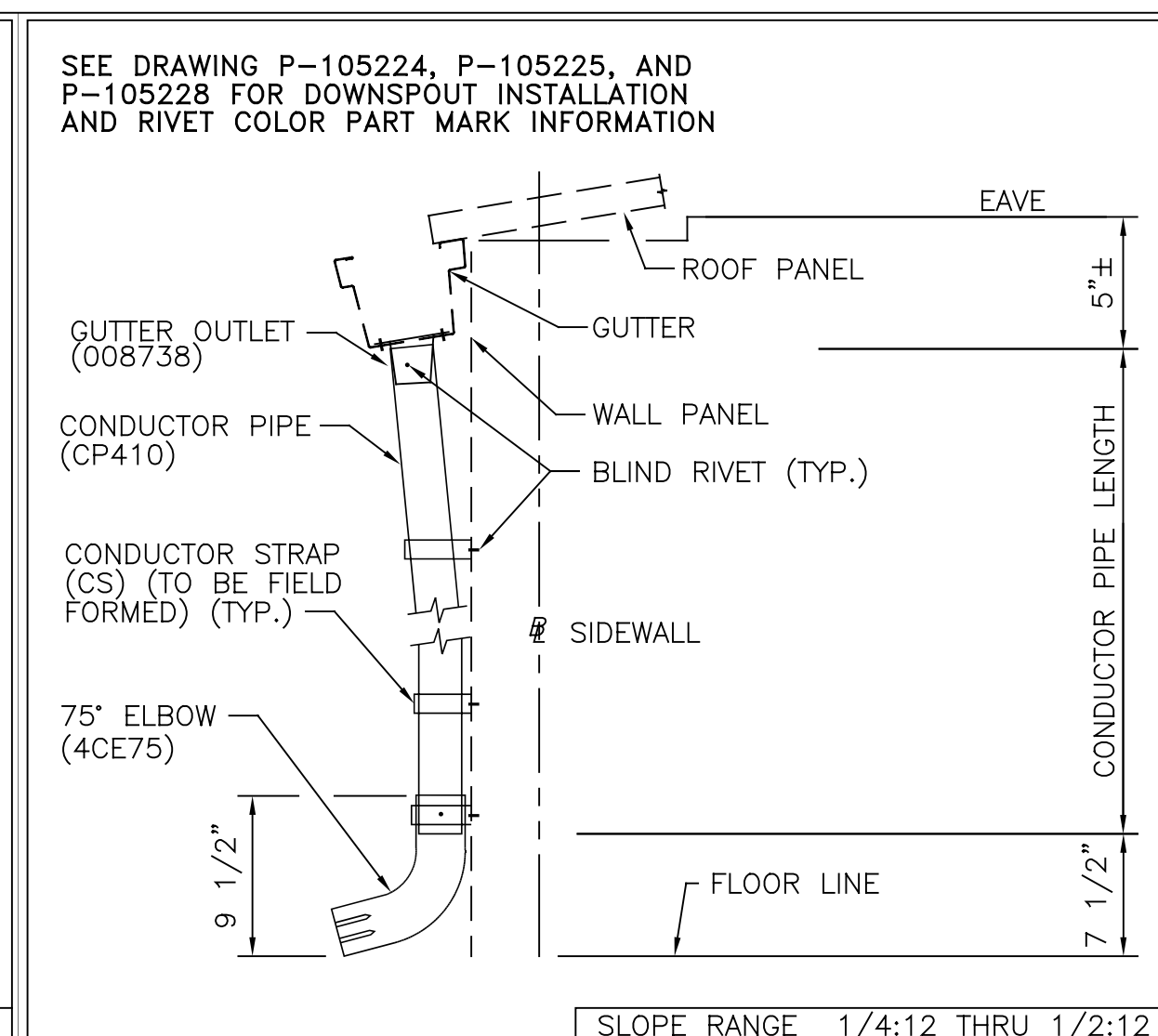


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ITEM NUMBER: USED TO MATCH ITEM FROM TRUCK MANIFEST TO BUNDLE ITEM

ITEM DESCRIPTION: IDENTIFIES THE BUILDING SHAPE, WALL AND SET ID AND APPEARS AS FOLLOWS: "SHAPENAME" W ID ____
SHAPE NAME IS LIMITED TO 12 CHARACTERS
WALL IS IDENTIFIED AS W ____
SET ID IS IDENTIFIED AS ID ____

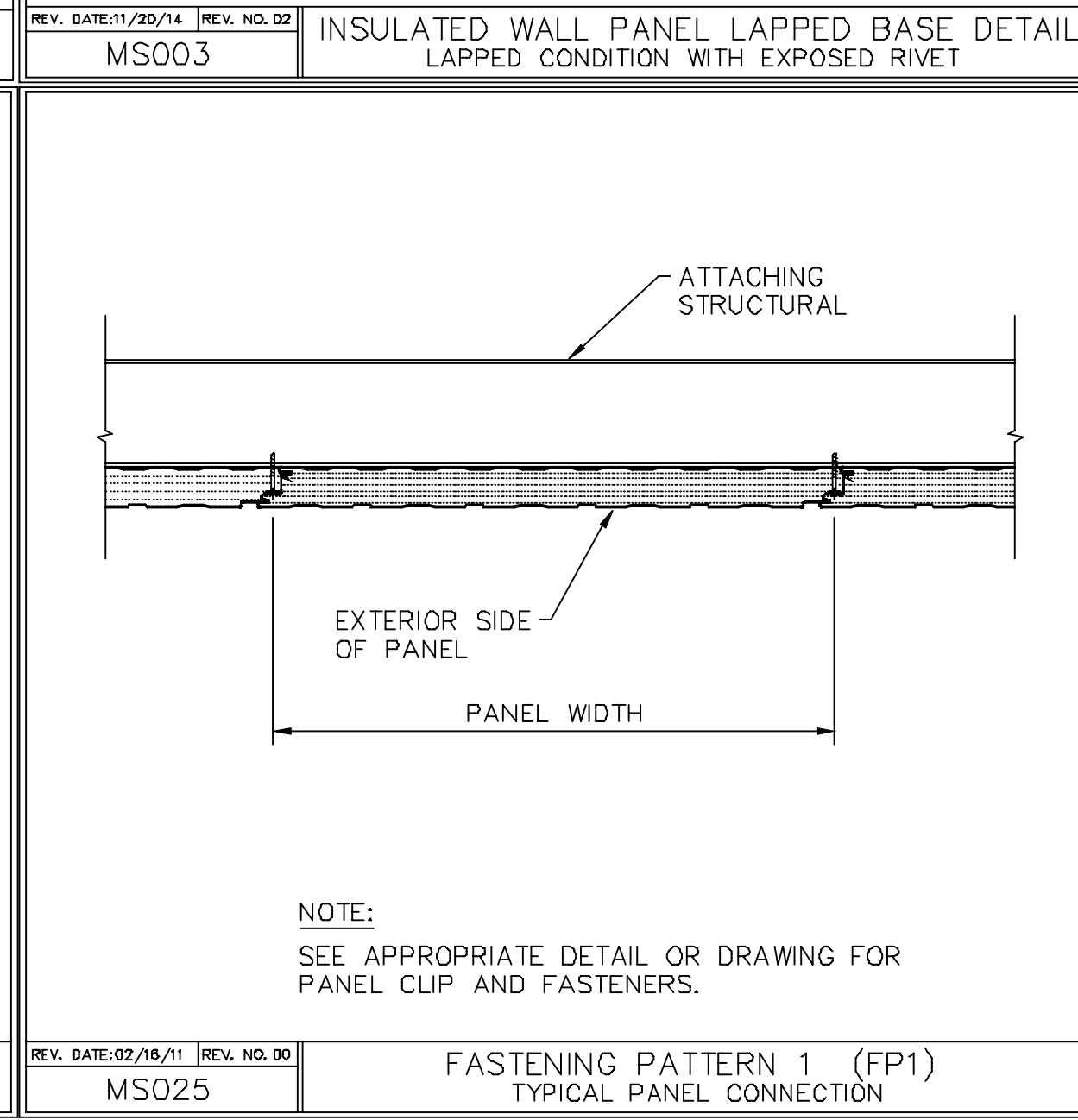
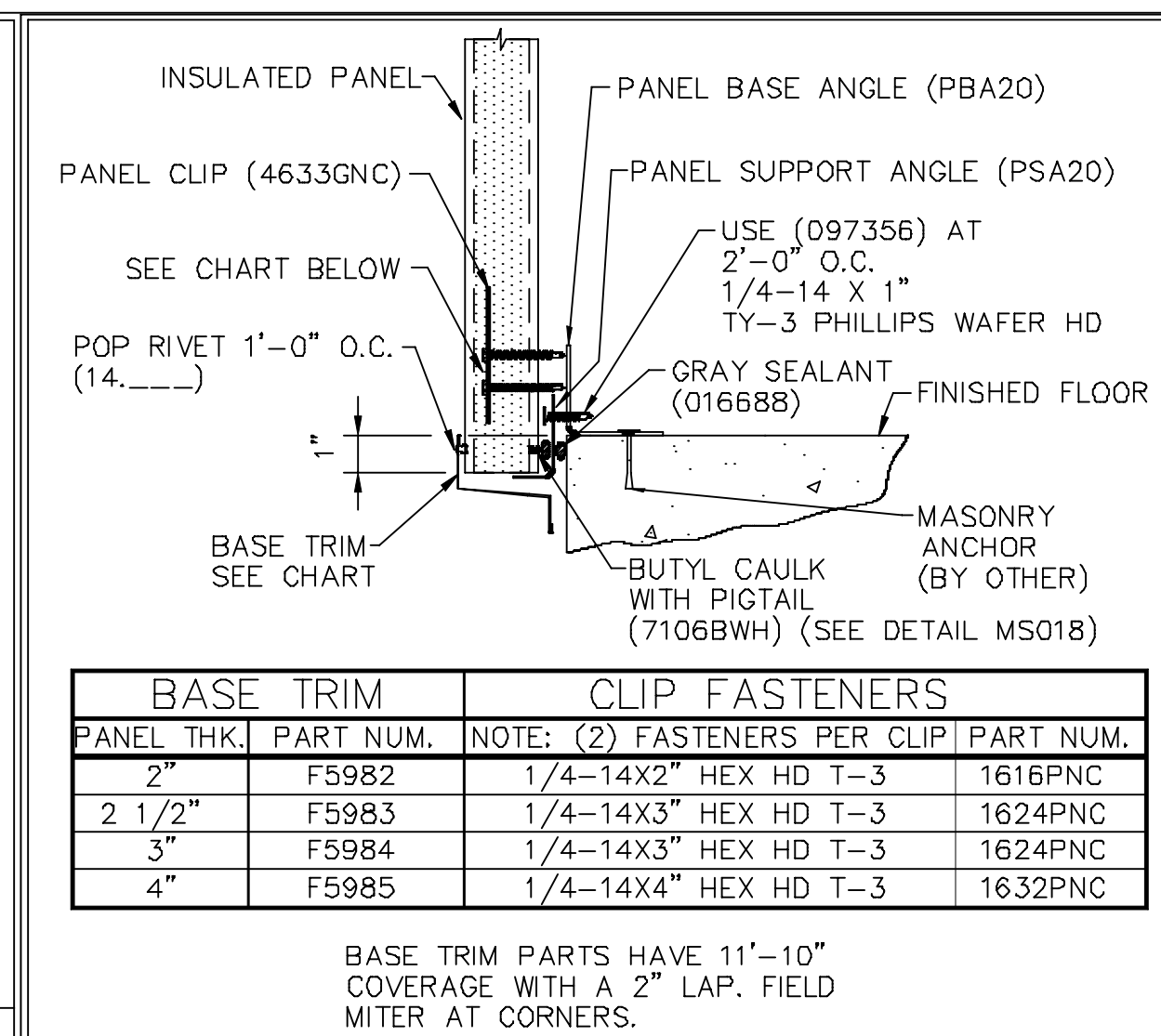
LENGTH: USE TO LOCATE THE PANEL WITHIN THE SET ID

JOB NUMBER	LINE-PACKAGE NUMBER	ITEM NUMBER	LENGTH	QTY / EXTRA
57632	L2-112	128	DOCK-1 28'-9 1/2"	1
		129	DOCK-2 24'-7 1/2"	1
		130	DOCK-3 20'-5 1/2"	1
		131	DOCK-4 16'-3 1/2"	1
		132	DOCK-5 12'-1 1/2"	1

CUSTOMER NAME: _____ PANEL TYPE: _____
THICKNESS: 2.0" COLOR: _____ PROFILE: _____
CAULKING REQ: [Interior] [Exterior] [Phone Number] 4 of 4 DATE OF PRODUCTION: _____
OPERATOR: _____ BUNDLE: _____ SHIFT: L2-sh1 TOTAL PACKAGE: 5

REV. DATE: 03/29/11	REV. NO. 00	MS035	BUNDLE SHIPMENT IDENTIFICATION INSULATED WALL PANEL
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FOR CONSTRUCTION



FOR CONSTRUCTION

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

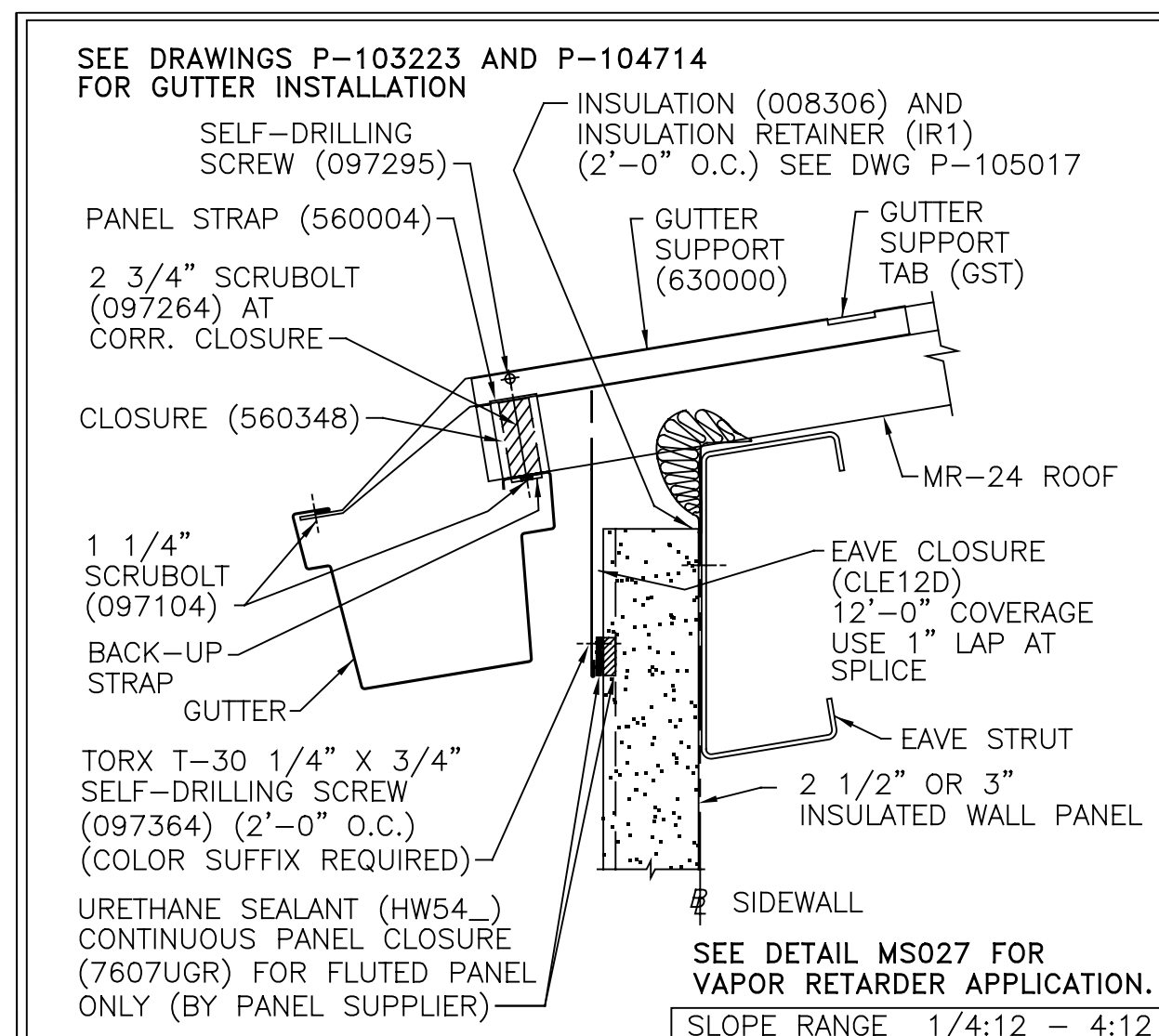
COVERING & TRIM SED'S

BUILDER: Twin Pines Construction
CUSTOMER: _____
LOCATION: Plainfield, New Hampshire
PROJECT: Townline Shop
BUILDER'S PO#: _____

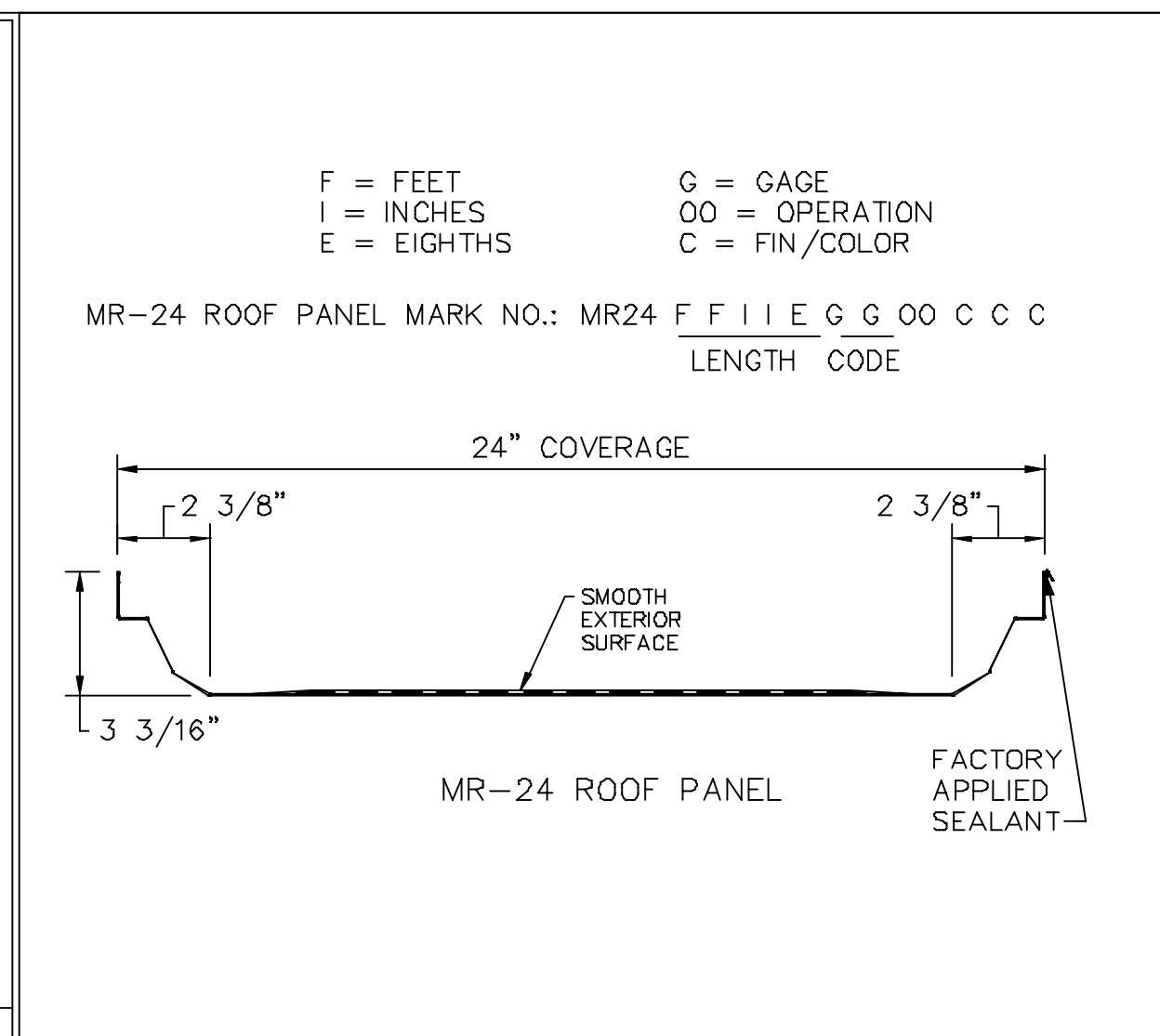
JOB #: 21-000133-01
DATE: 03/25/2021
DRAWING CHECK: RMK / MTV
PAGE: 32

Butler Manufacturing
VPC VERSION: 2020.4d

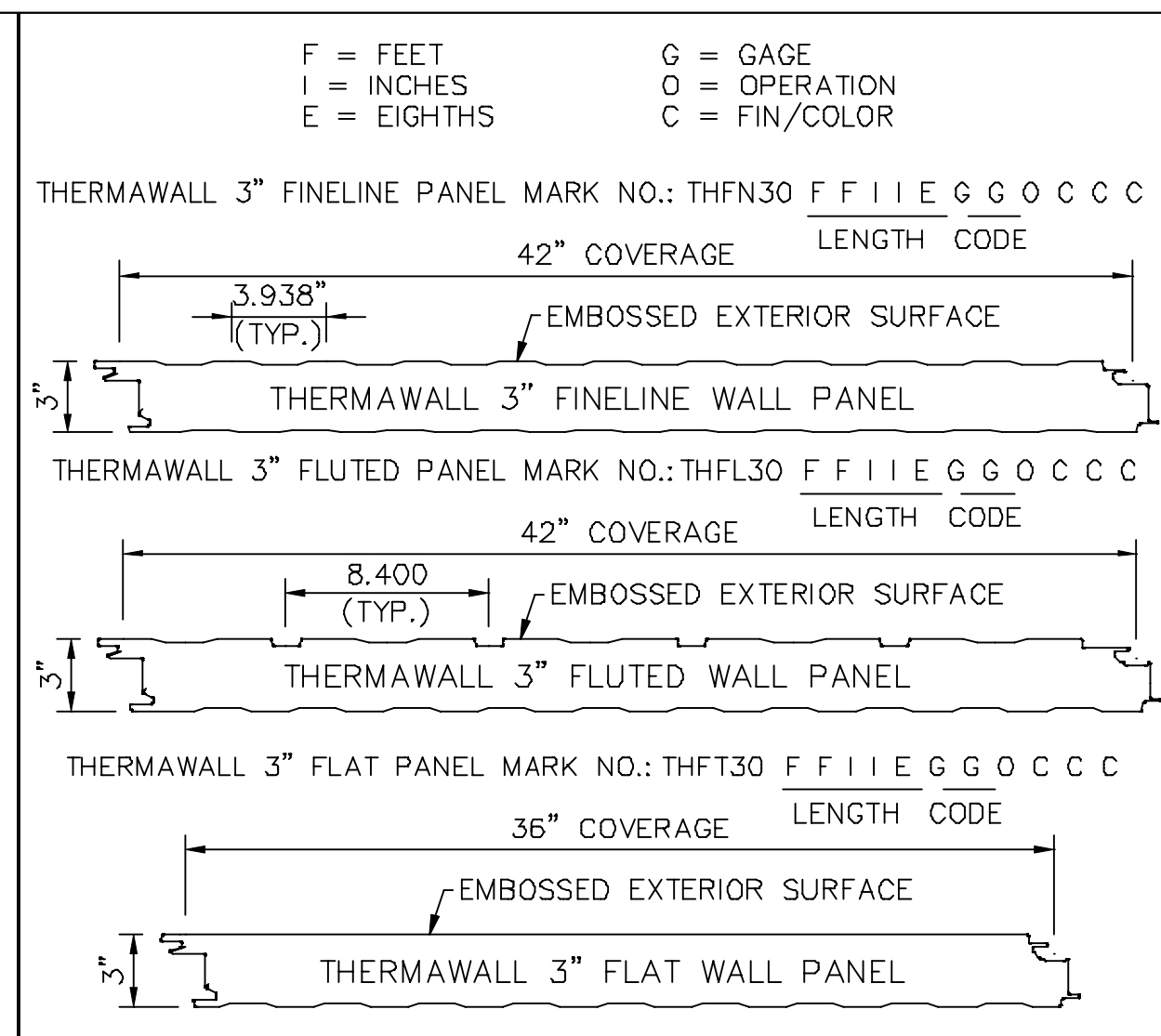
a division of BlueScope Buildings North America, Inc.



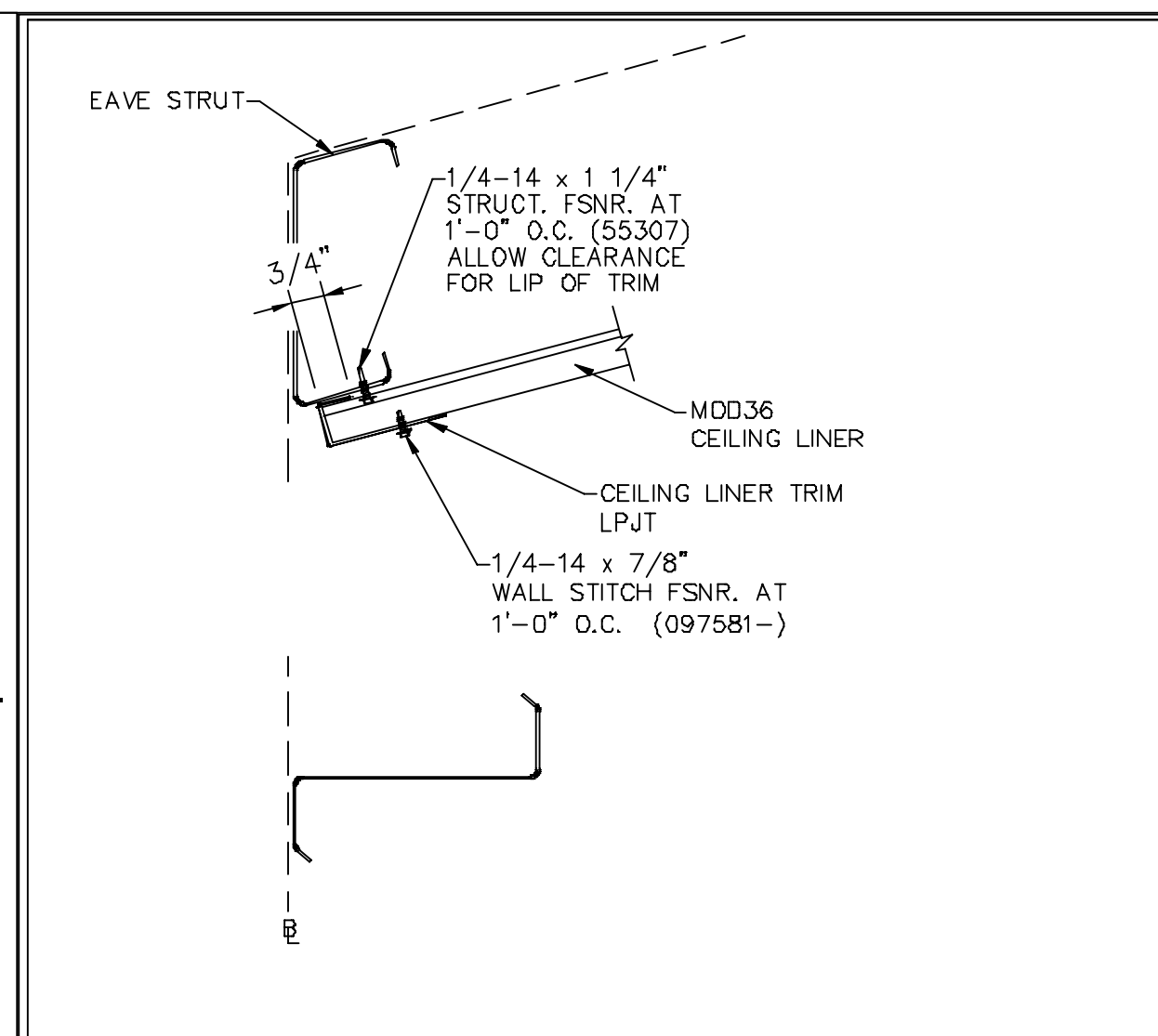
REV. DATE: 05/20/20	REV. NO. 06	GUTTER W/WTHR. SEAL WITH MR-24 ROOF 2.5"/3" INSULATED WALL PANEL W/WALL CLSR
		MV246



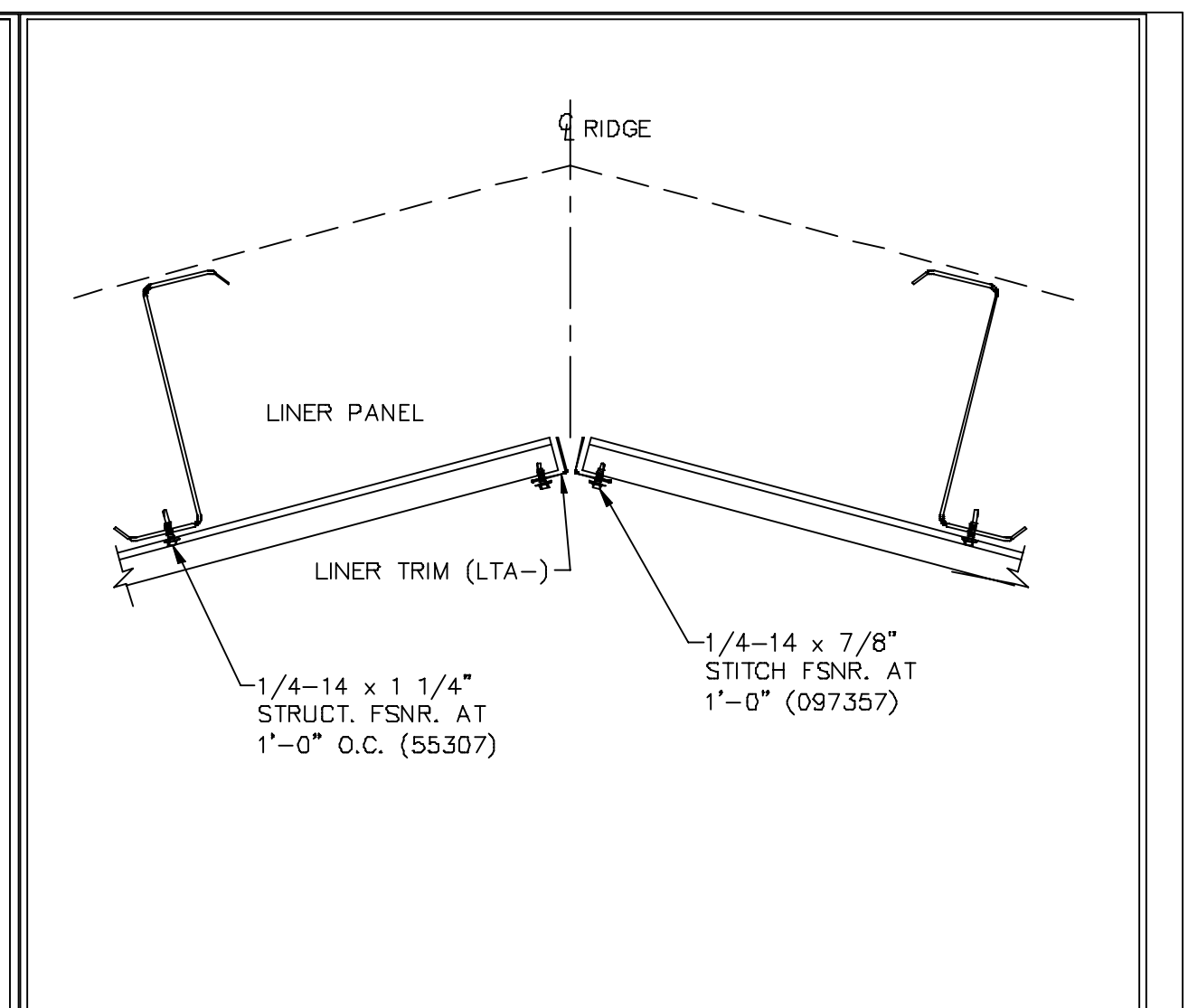
REV. DATE: 01/14/10	REV. NO. 00	MR-24 STANDING SEAM ROOF PANEL
		NV667



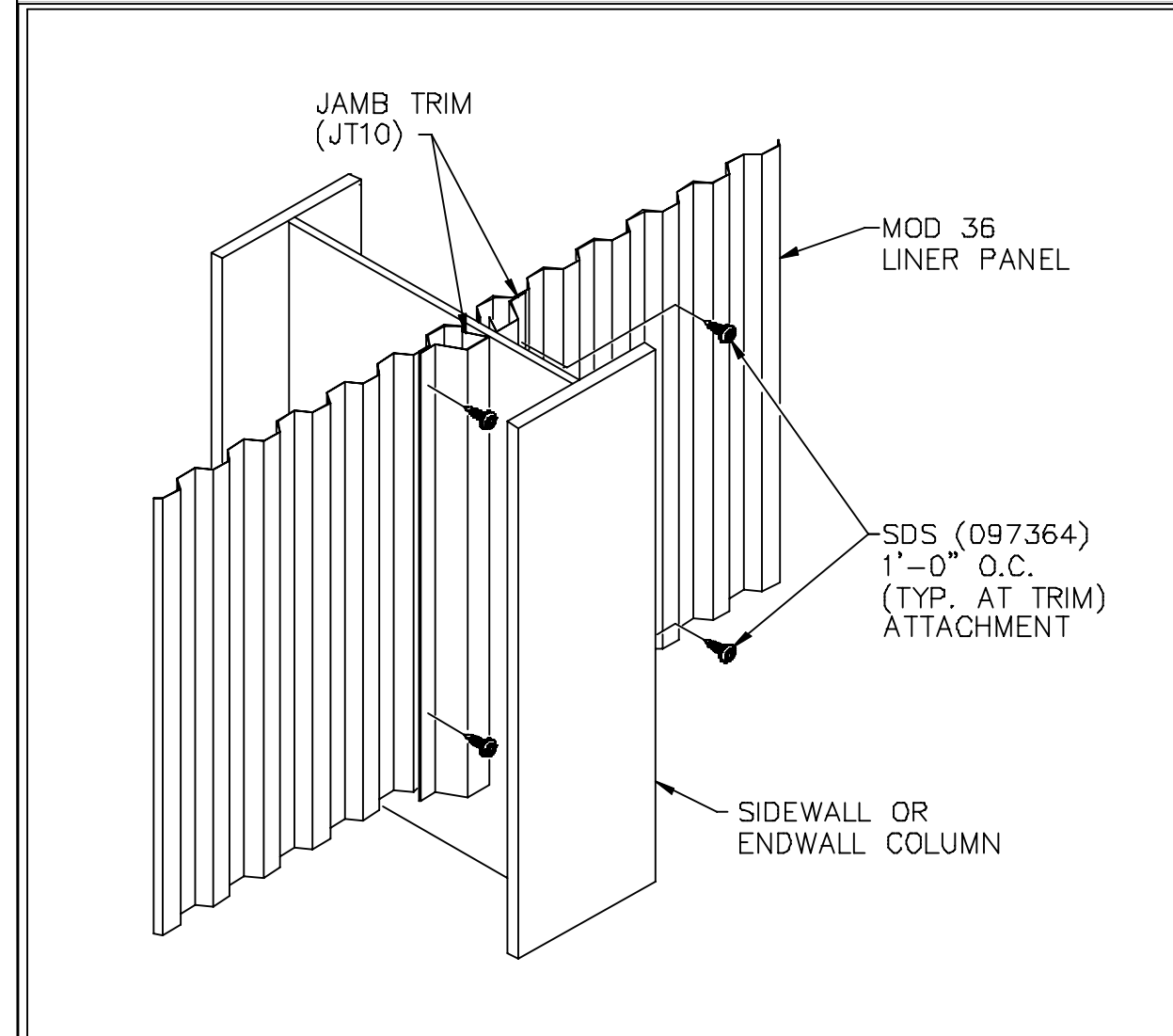
REV. DATE: 01/14/10	REV. NO. 00	THERMAWALL 3" WALL PANELS
		NV673



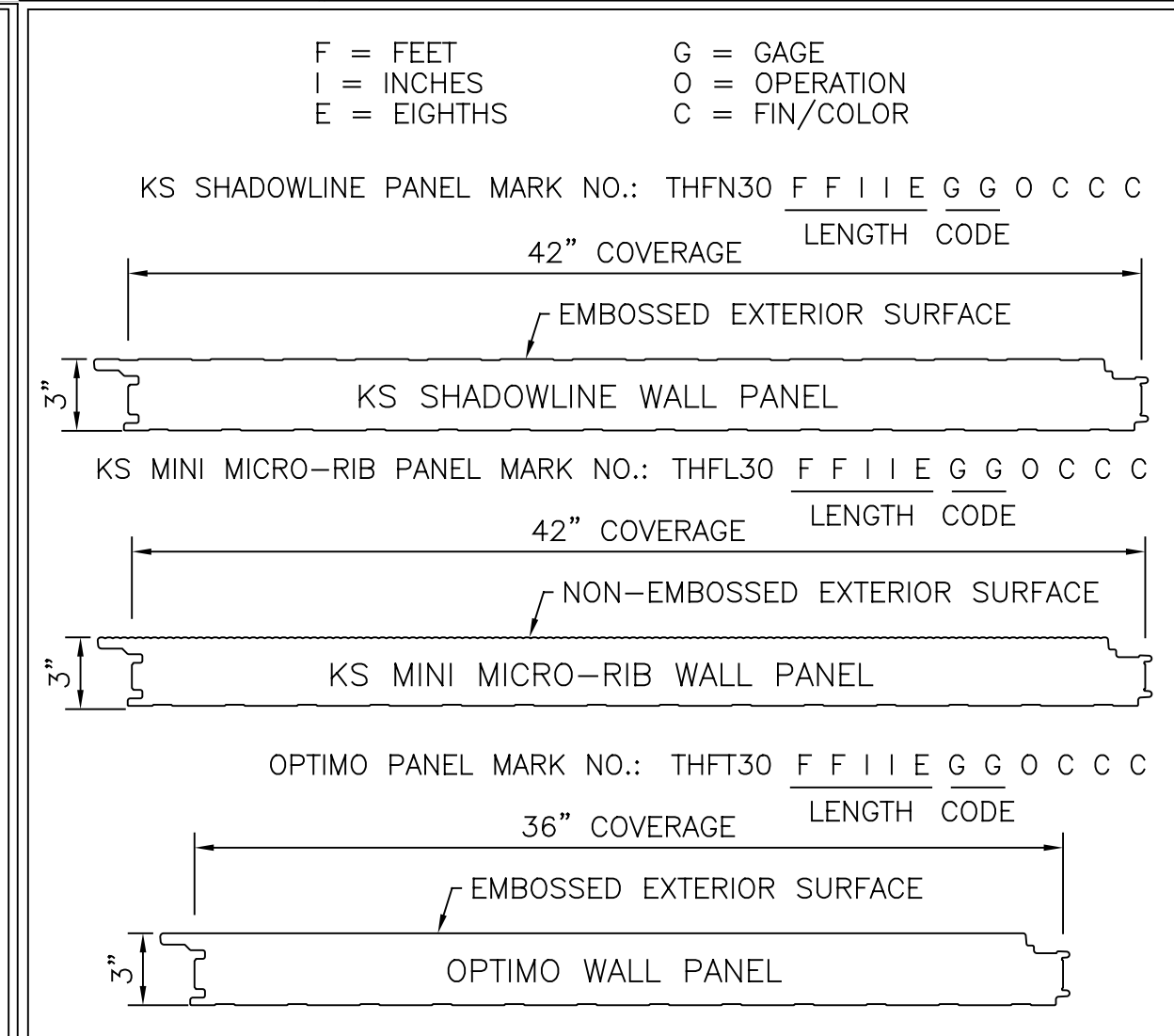
REV. DATE: 12/17/14	REV. NO. 00	LINER PANEL ATTACHMENT LOW EAVE CEILING LINER
		WCB011



REV. DATE: 03/14/16	REV. NO. 01	LINER PANEL ATTACHMENT CEILING LINER OR SOFFIT AT RIDGE
		WCB016



REV. DATE: 06/23/17	REV. NO. 00	LINER TRIM AT COLUMN - INSET WALL MOD 36 PANEL
		WCB089



REV. DATE: 05/21/20	REV. NO. 00	KINGSPAN 3" INSULATED WALL PANELS
		WCB169

FOR CONSTRUCTION

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

THIS DRAWING, INCLUDING THE INFORMATION HEREON, REMAINS THE PROPERTY OF BUTLER MFG. IT IS PROVIDED SOLELY FOR ERECTING THE BUILDING DESCRIBED IN THE APPLICABLE PURCHASE ORDER AND MAY BE REPRODUCED ONLY FOR THAT PURPOSE. IT SHALL NOT BE MODIFIED, REPRODUCED OR USED FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN APPROVAL OF BUTLER MFG.

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

D BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

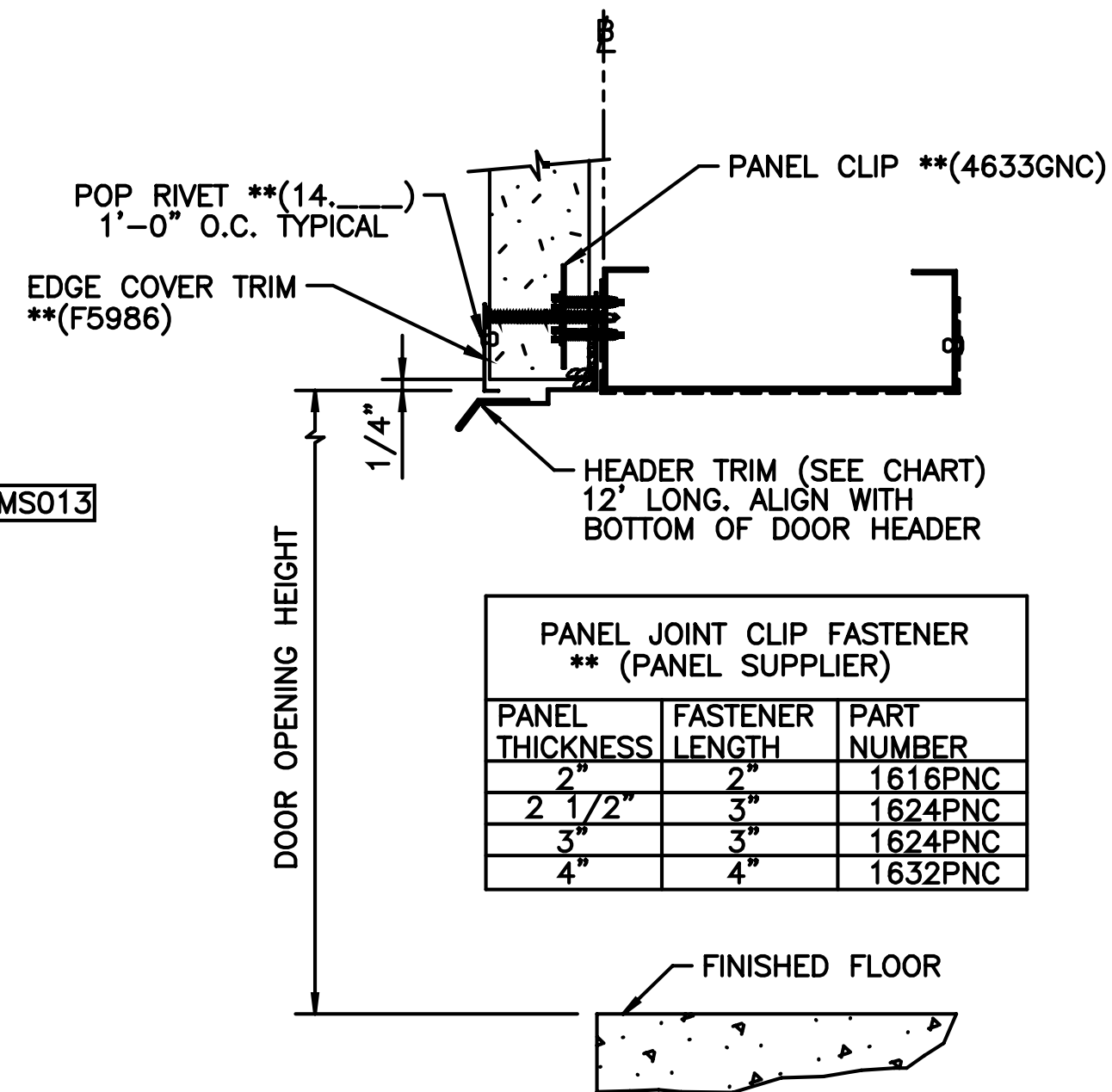
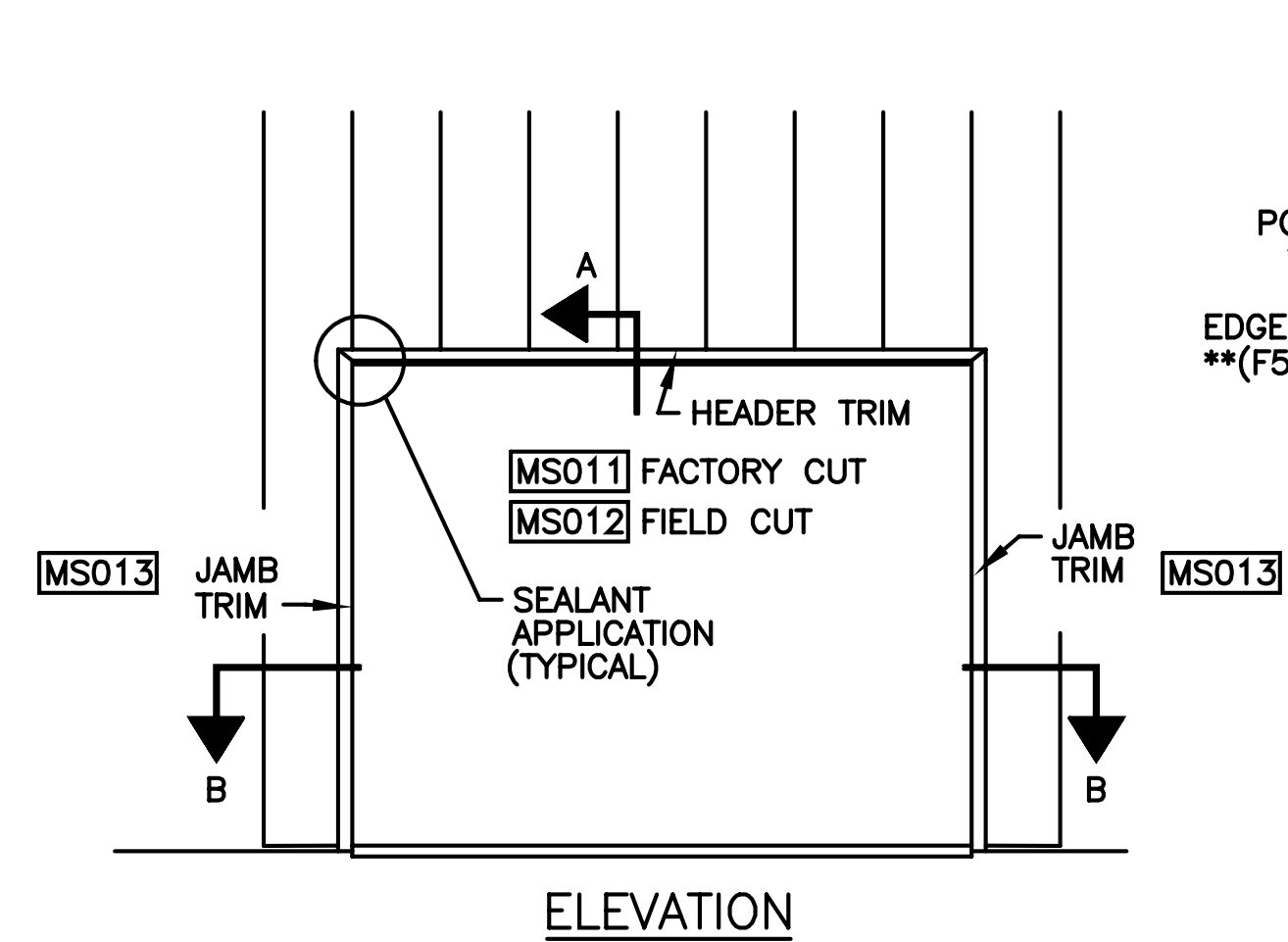
REV.	DATE	BY	DESCRIPTION

DRAWING SCALE: NTS

BUILDER:	Twin Pines Construction
CUSTOMER:	
LOCATION:	Plainfield, New Hampshire
PROJECT:	Townline Shop
BUILDER'S PO#:	

JOB #:	21-000133-01
DATE:	03/25/2021
DRAWN/CHECK:	RMK / MTV
PAGE:	33

BUTLER
Butler Manufacturing
VPC VERSION: 2021.1a



PANEL JOINT CLIP FASTENER
** (PANEL SUPPLIER)

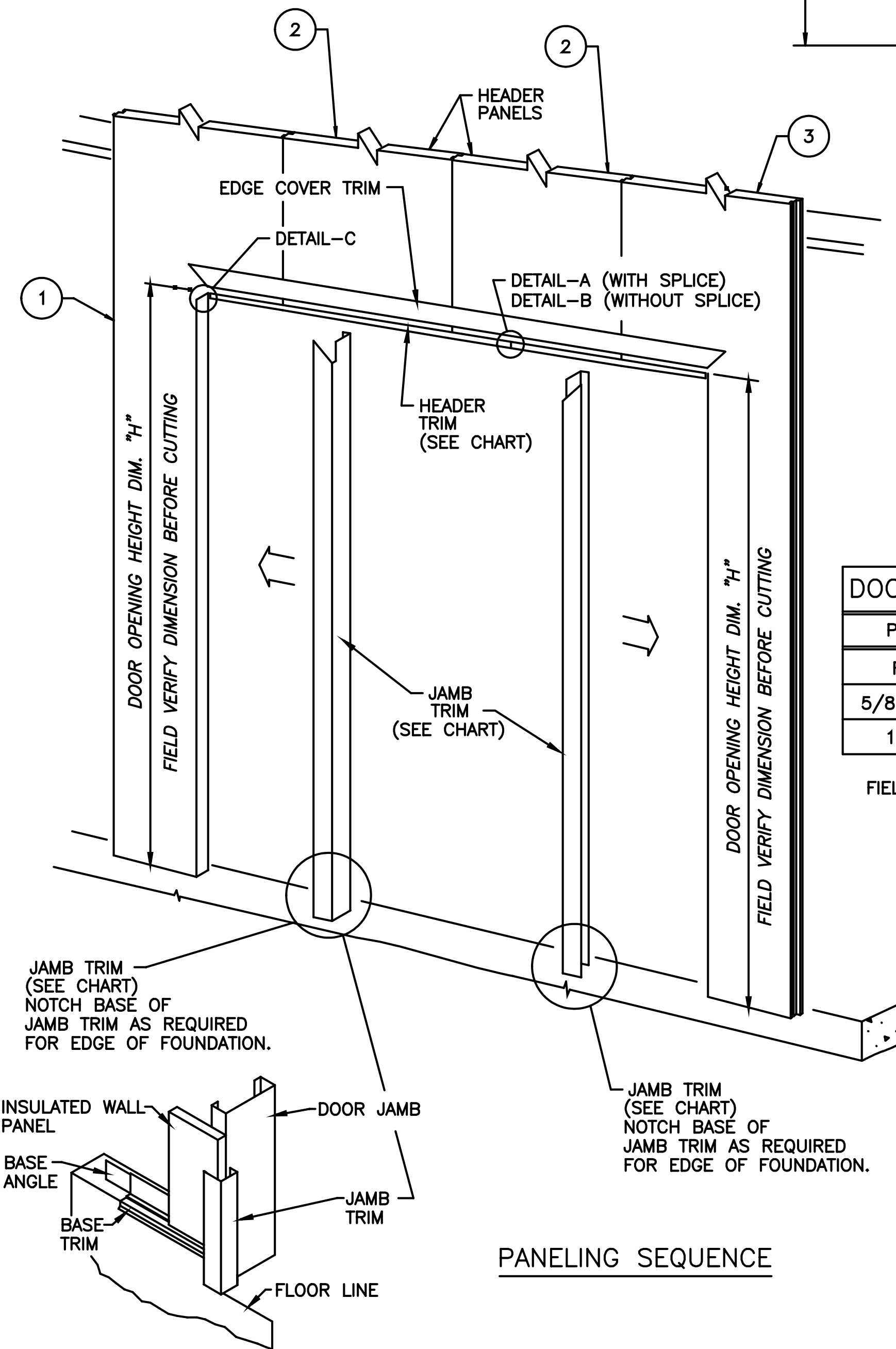
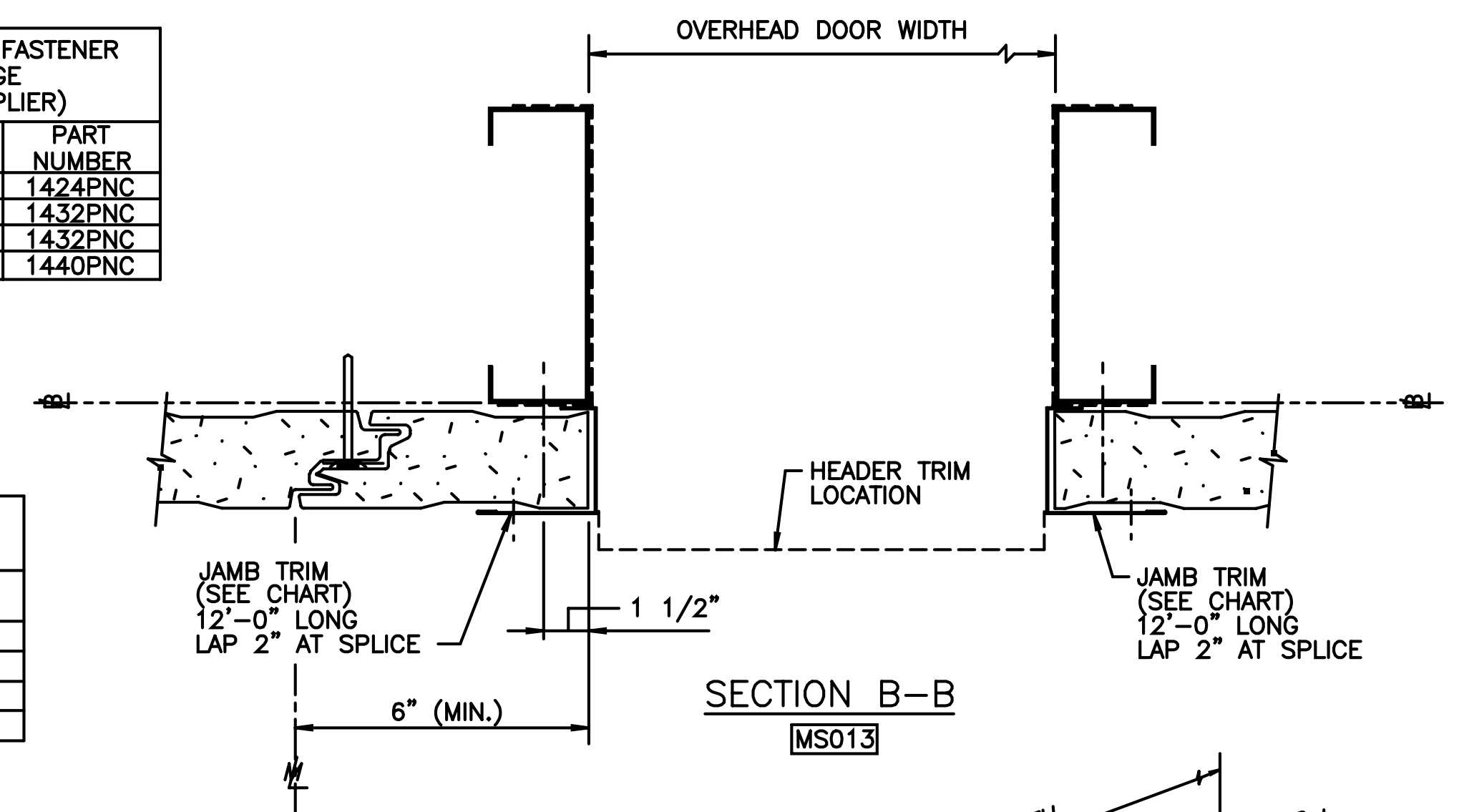
PANEL THICKNESS	FASTENER LENGTH	PART NUMBER
2"	2"	1616PNC
2 1/2"	3"	1624PNC
3"	3"	1624PNC
4"	4"	1632PNC

OVERHEAD DOOR TRIM
** (PANEL SUPPLIER)

PANEL THICKNESS	12' HEADER TRIM	12' JAMB TRIM
2"	F5003	F5991
2 1/2"	F5015	F5992
3"	F5033	F5993
4"	F5051	F5994

WAFFER HEAD THRU FASTENER
AT DOOR EDGE
** (PANEL SUPPLIER)

PANEL THICKNESS	FASTENER LENGTH	PART NUMBER
2"	3"	1424PNC
2 1/2"	4"	1432PNC
3"	4"	1432PNC
4"	5"	1440PNC

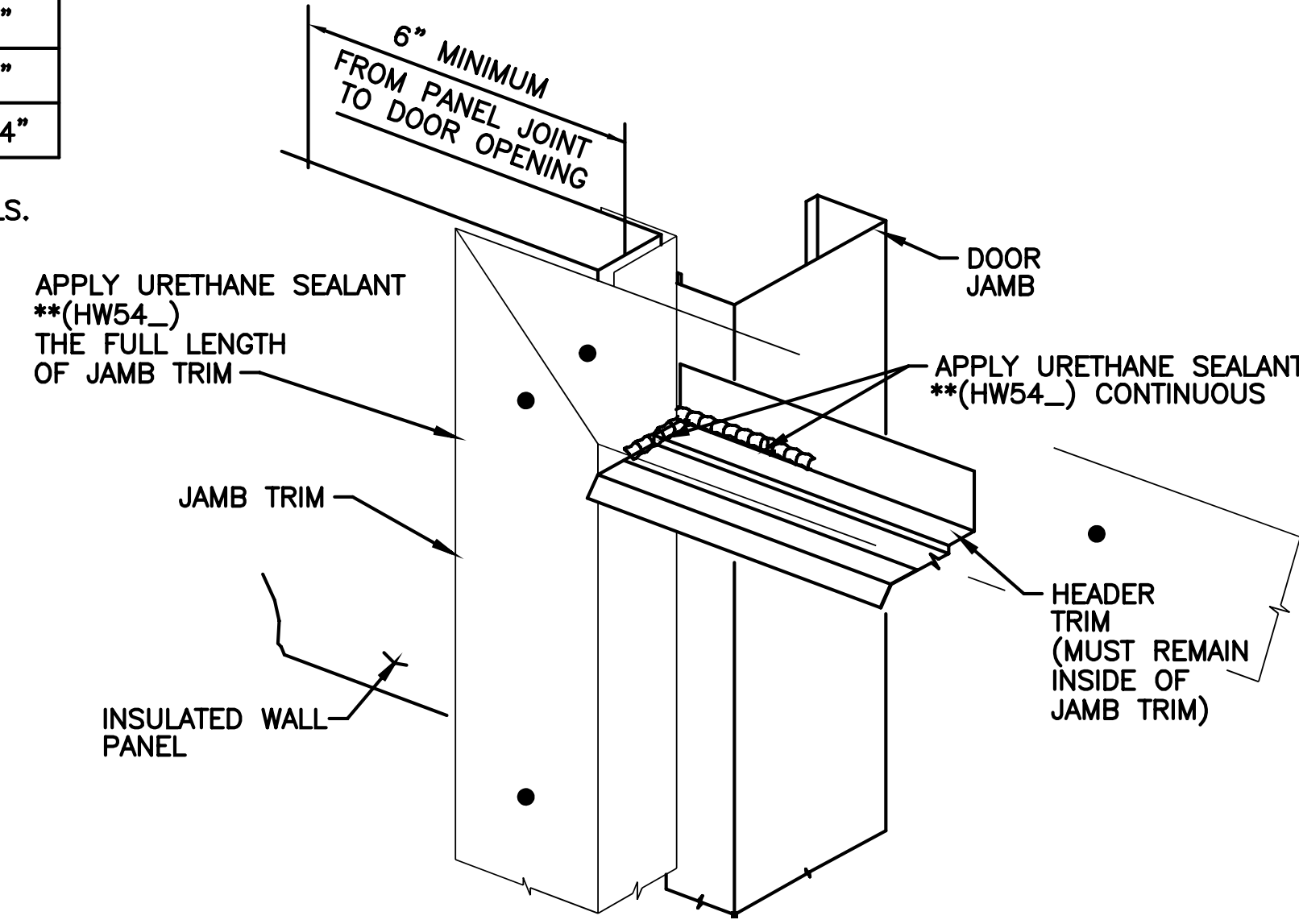
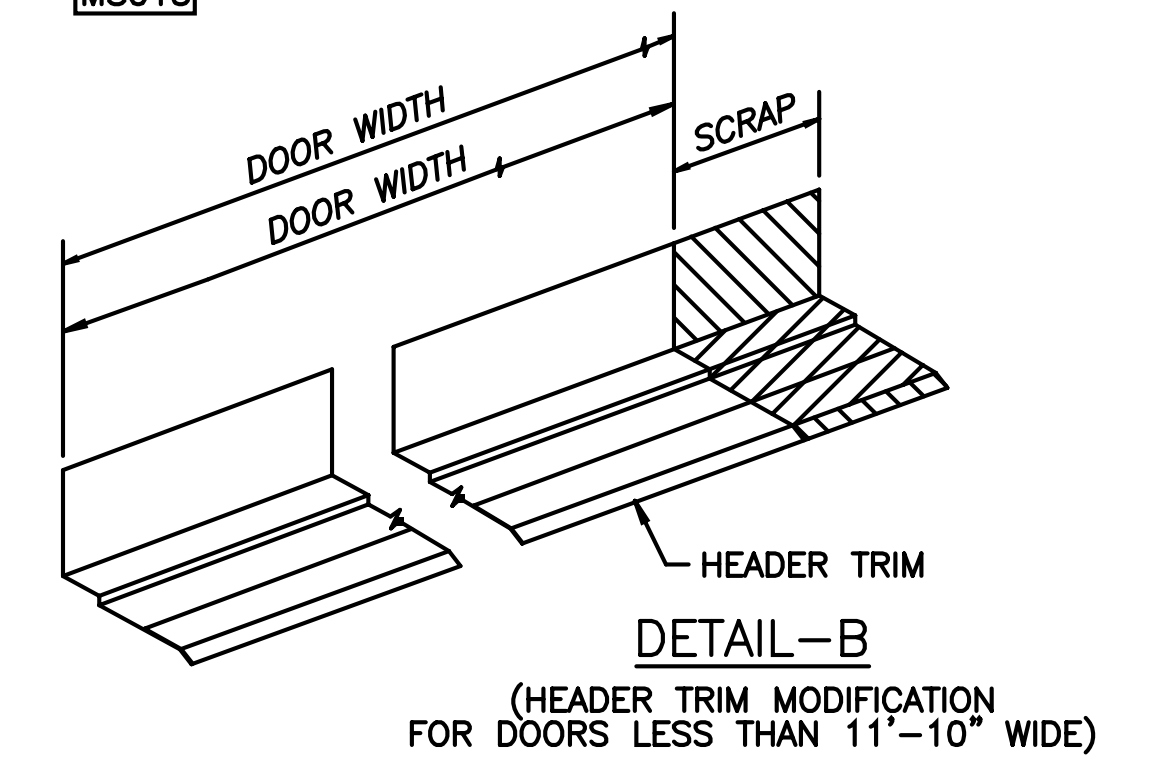
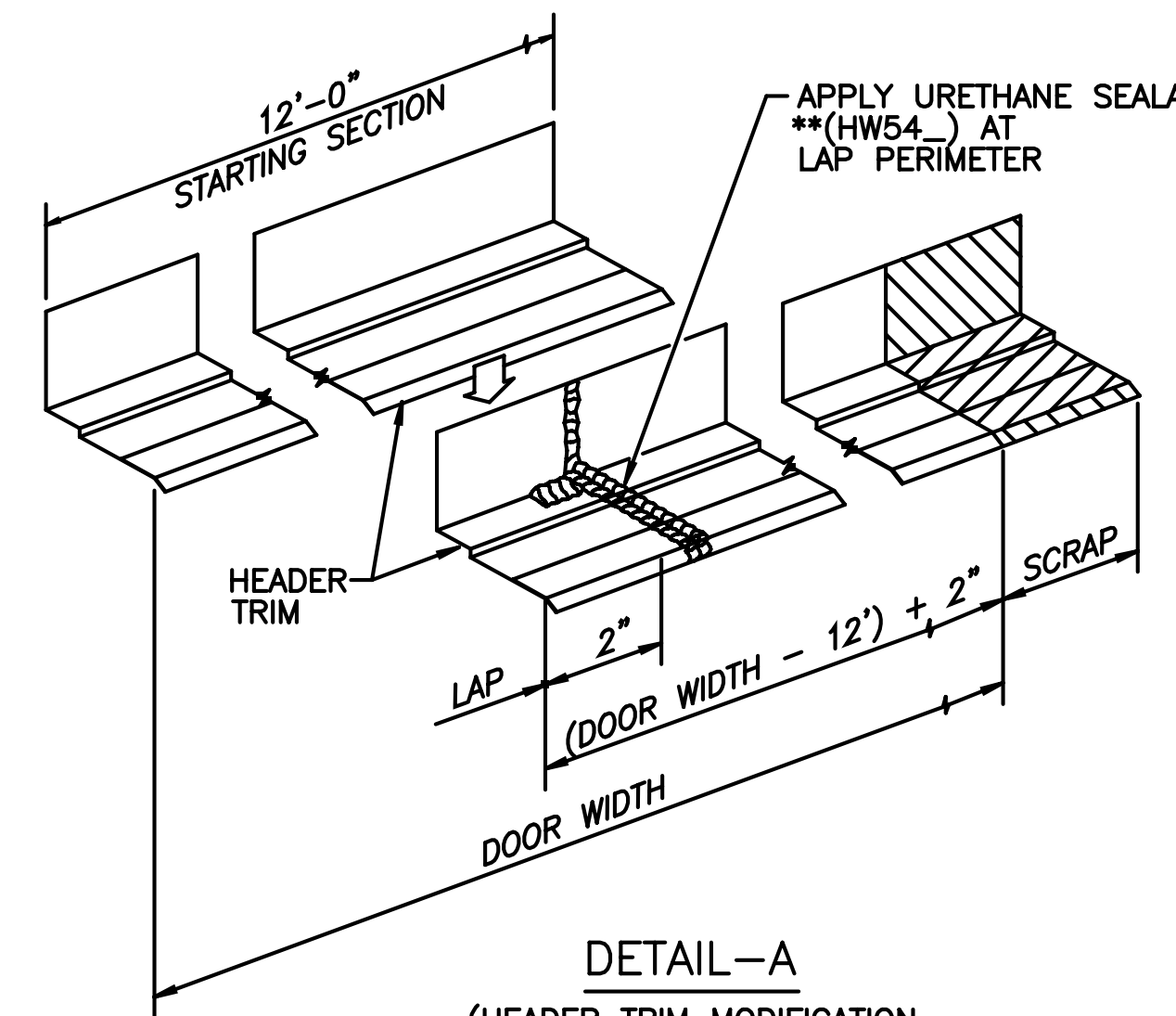


DOOR OPENING HEIGHT DIM. "H"

PANEL BASE LOCATION	DIM. "H"
FINISHED FLOOR LINE	H + 1/4"
5/8" LAP PAST FLOOR LINE	H + 7/8"
1" LAP PAST FLOOR LINE	H + 1 1/4"

THESE ARE FOR REFERENCE ONLY.
FIELD VERIFY BEFORE CUTTING WALL PANELS.

SEE SECTION A



- ⊕ INDICATES THE EXTERIOR FACE OF THE STRUCTURALS TO WHICH THE PANELS ATTACH.
- ⊥ INDICATES MODULE LINE / THE CENTERLINE OF THE PANEL JOINT.
- ** INDICATES PARTS THAT ARE PROVIDED BY THE PANEL SUPPLIER.
- > SEQUENCE ASSUMES OVERHEAD DOOR FRAMING IS IN PLACE PRIOR TO PANEL INSTALLATION.

FIELD WORK NOTES:

1. PREPARE PANELS ① AND ③. FIELD CUT PANEL FOR DOOR OPENING AND HEADER TRIM. SEE PANELING SEQUENCE.
2. PREPARE HEADER TRIM FOR DOOR WIDTH (IF REQUIRED). PER DETAIL-A OR DETAIL-B.
3. JAMB TRIMS TO BE INSTALLED BEFORE HEADER TRIM.

ERECTION NOTES:

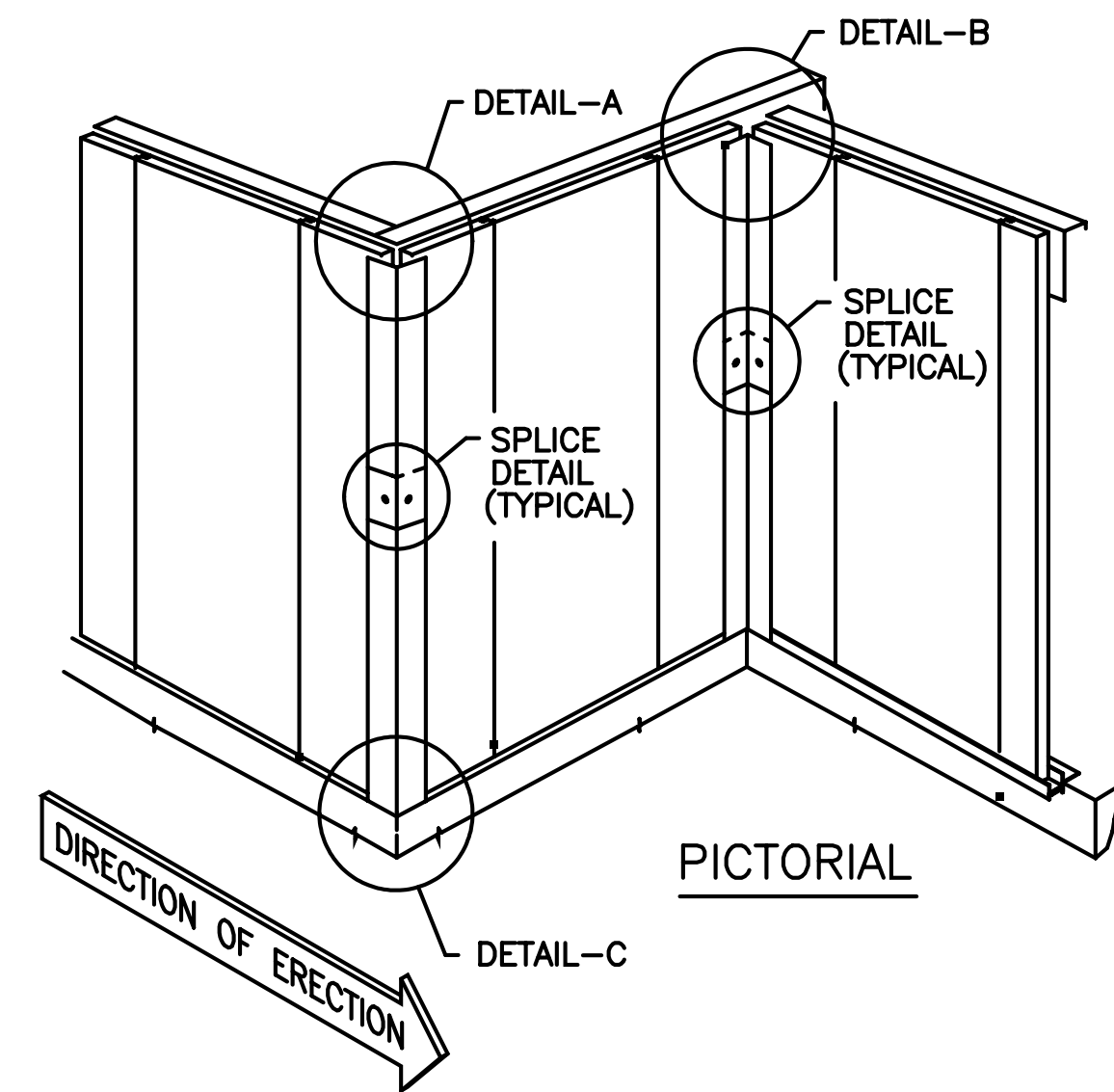
FOR ERECTION SEQUENCE SEE DRAWINGS:

- B-FRMOP2
- B-FRMOP3
- B-FRMOP4

IMPORTANT NOTES:

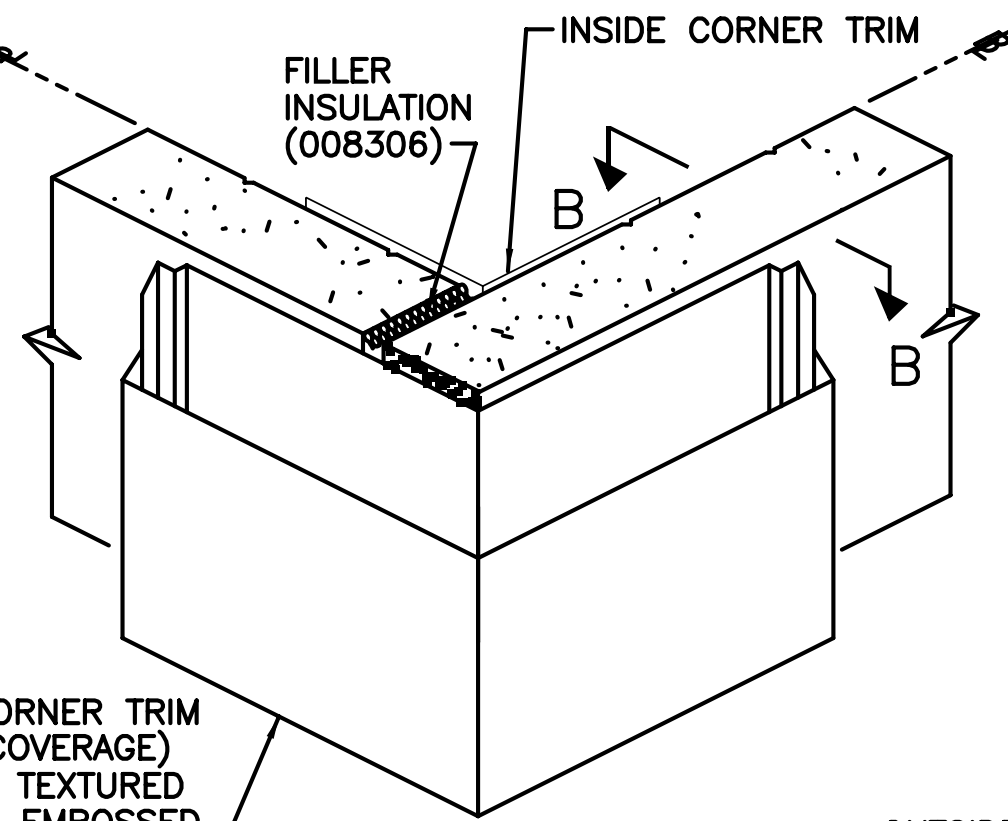
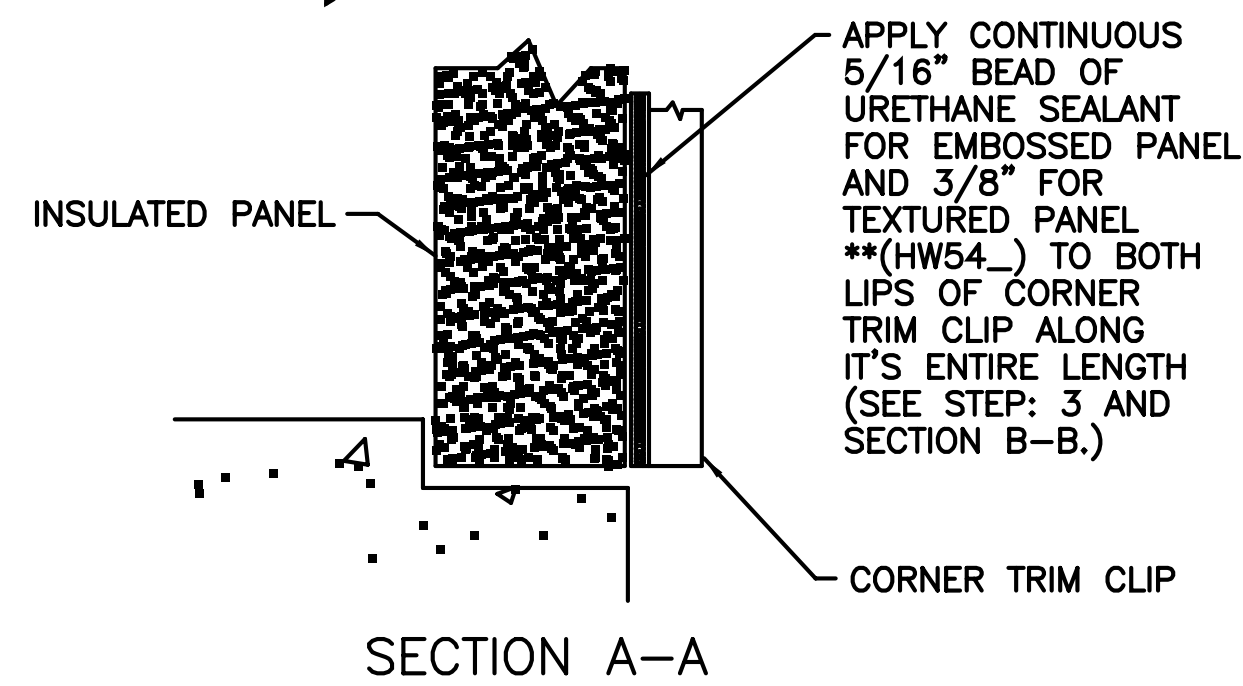
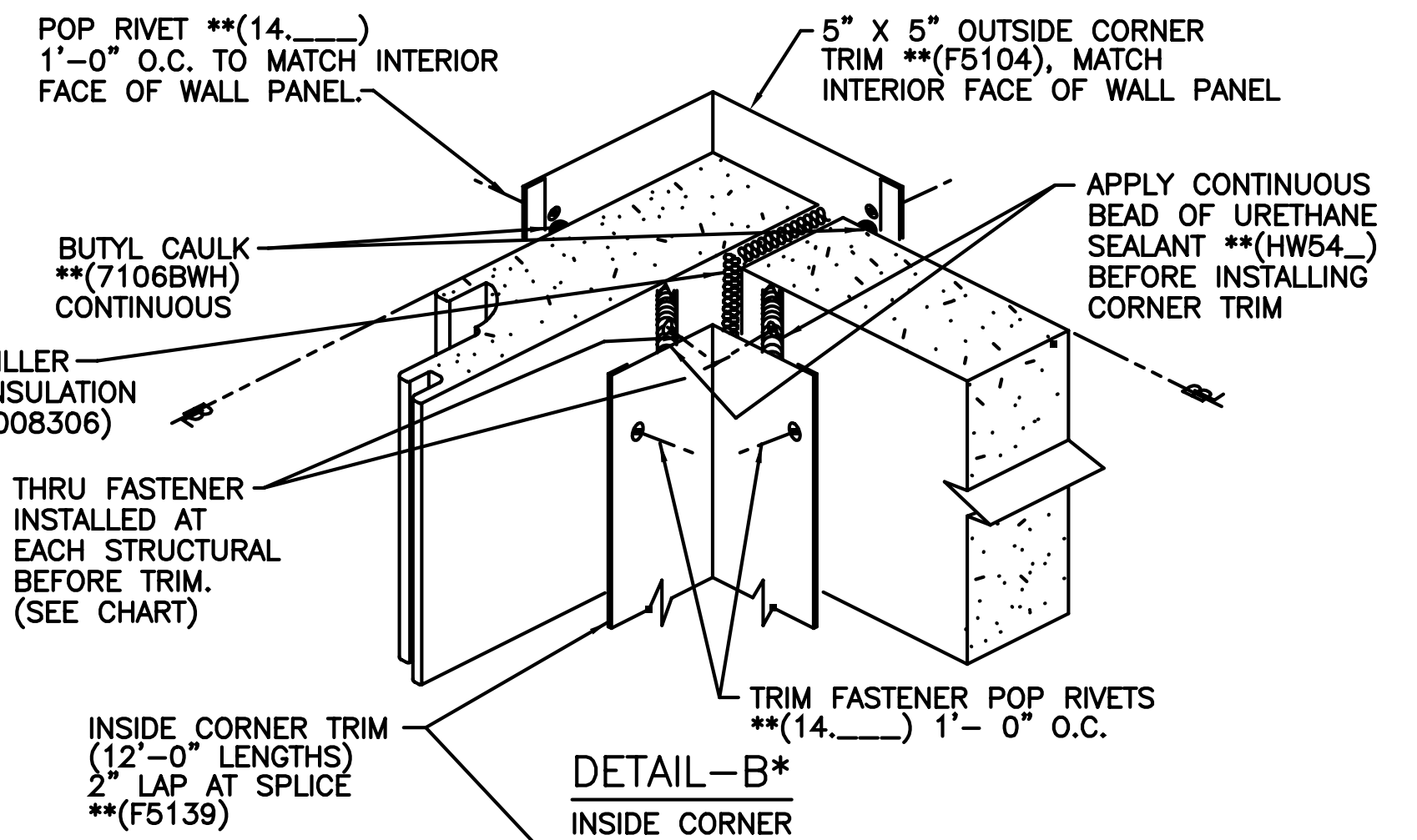
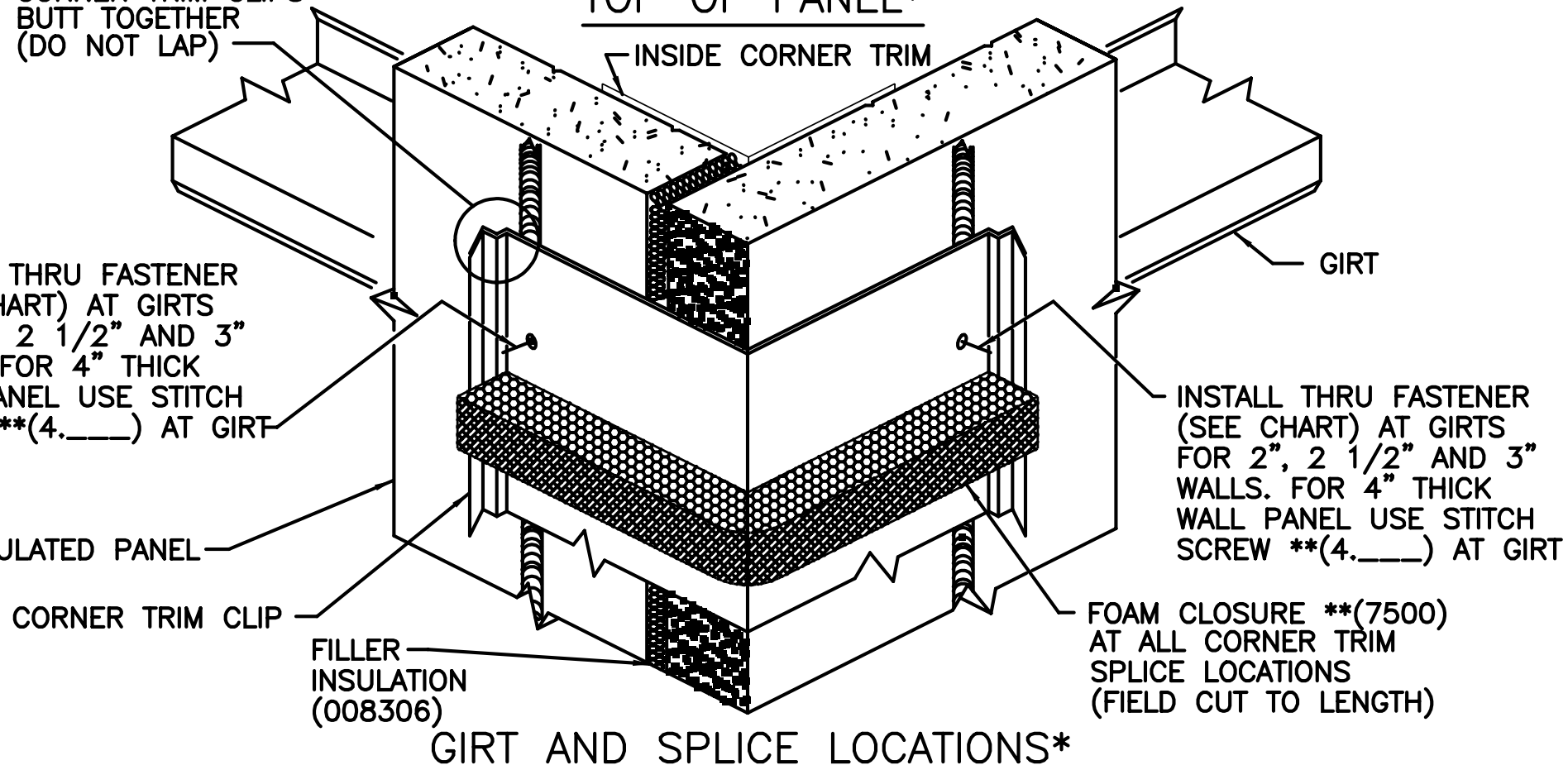
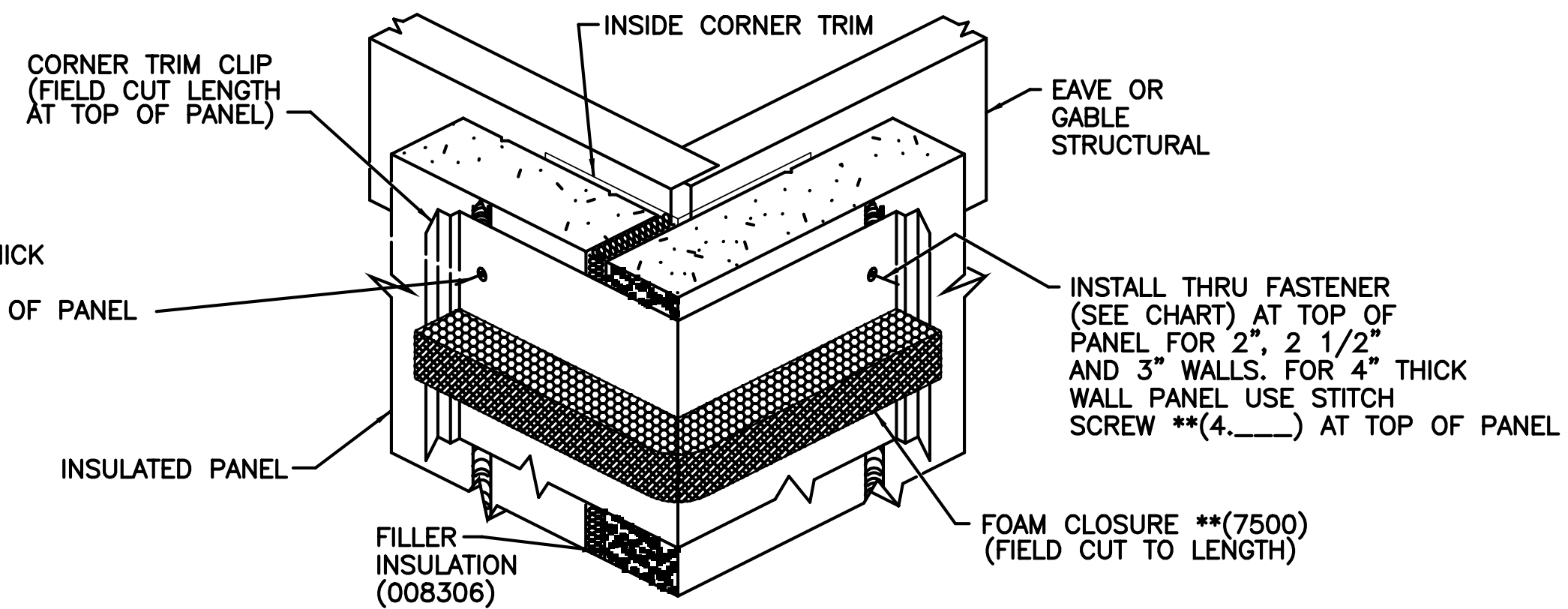
1. EXTREME CAUTION IS REQUIRED WHEN FIELD CUTTING PANELS TO PREVENT DELAMINATION OF INTERIOR AND EXTERIOR PANEL FACES.
2. EXTREME CAUTION IS REQUIRED WHEN FIELD DRILLING PANELS FROM THE BACKSIDE TO PREVENT DRILLING THRU THE PANEL EXTERIOR FACE.
3. IT IS IMPORTANT TO FORM A HIGH QUALITY WATER TIGHT SEAL AROUND THE OPENINGS IN THE WALL PANEL FOR THE DOOR TRIMS AND INSULATED WALL PANEL. ALL SEALANTS NEED TO TIE TOGETHER TO FORM A CONTINUOUS BEAD.

OVERHEAD DOOR INSTALLATION INSULATED WALL PANEL			
DRAWN BY BSN	CHECKED BY RLB	GROUP NUMBER: 33-025-01	
FIRST RELEASE DATE 12/13/10	REVISION DATE 07/16/18	B	B-080830 05



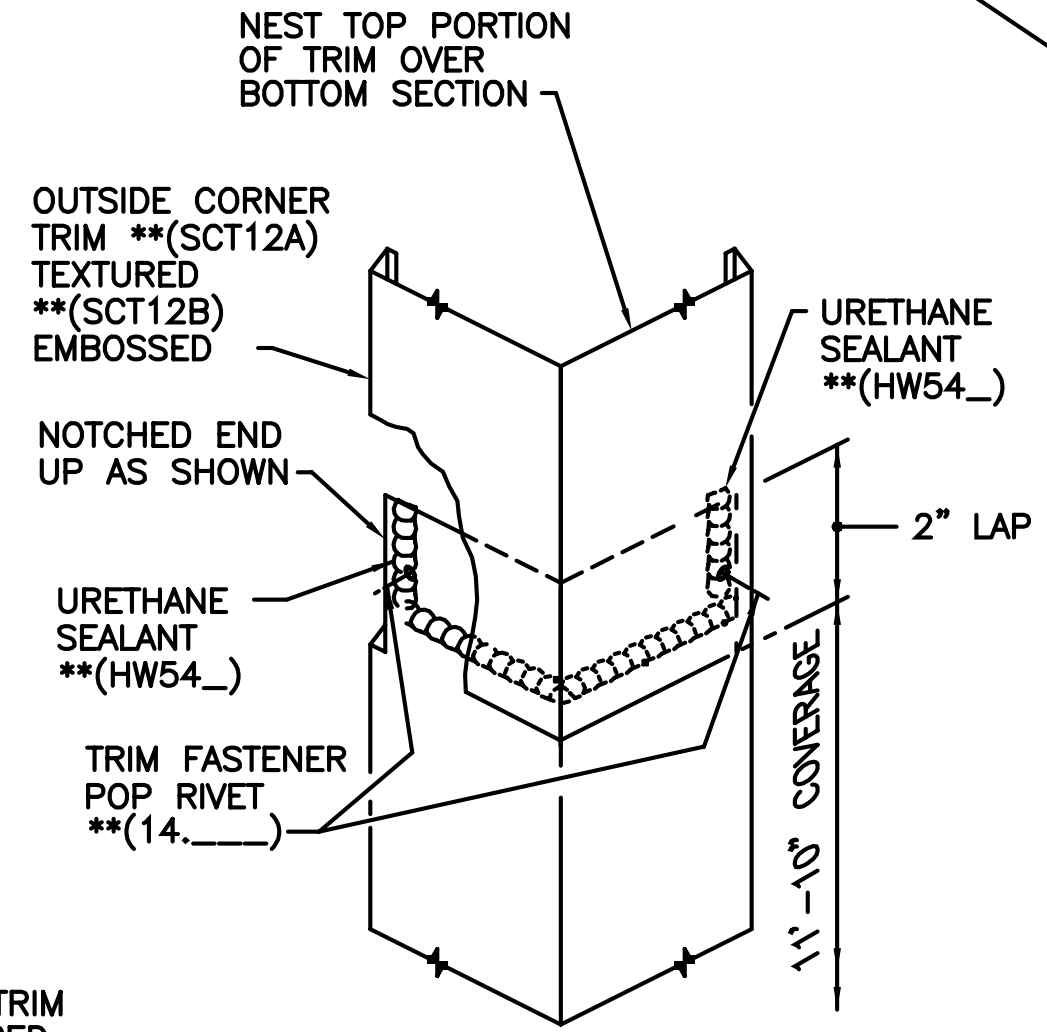
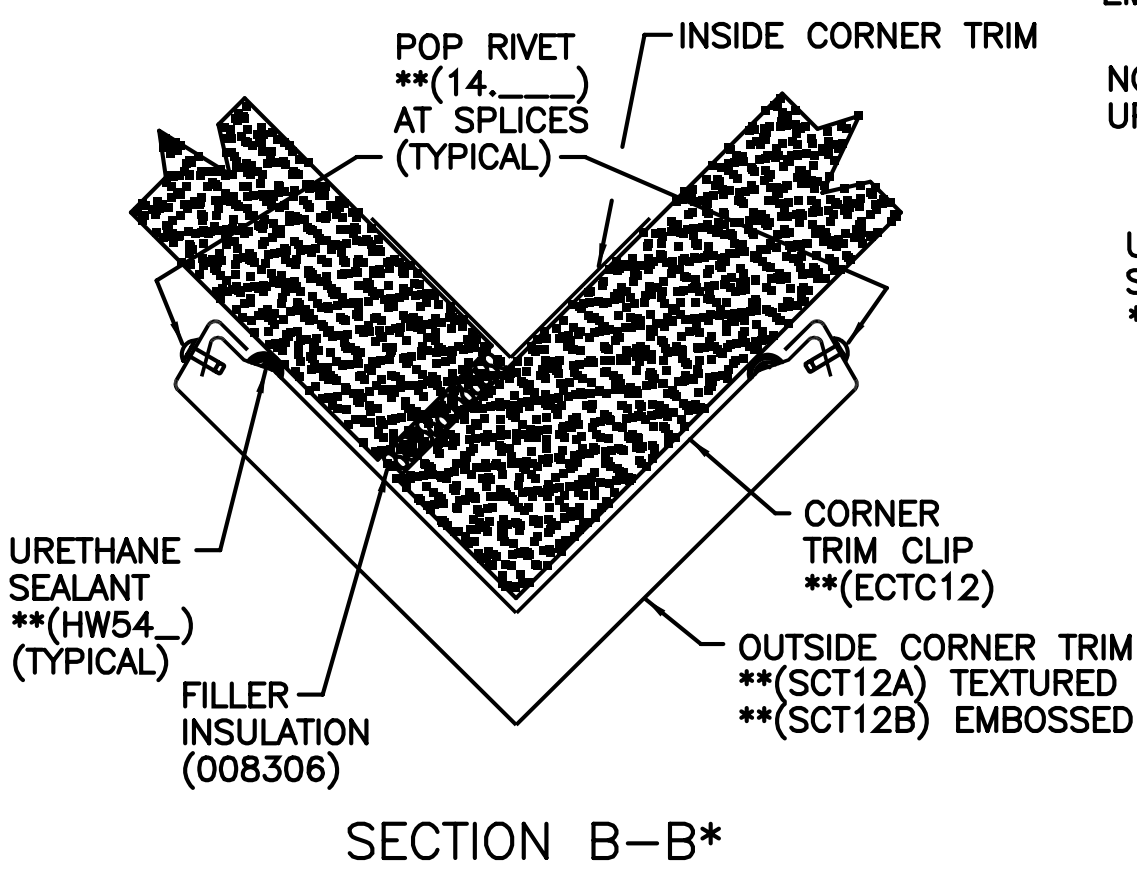
INSTALL THRU FASTENER (SEE CHART) AT TOP OF PANEL FOR 2", 2 1/2" AND 3" WALLS. FOR 4" THICK WALL PANEL USE STITCH SCREW ** (4.) AT TOP OF PANEL

*** NOTE:**
BUTT JOINT PANELS SHOWN. MITERED CORNERS REQUIRED FOR 4" THICK PANELS.



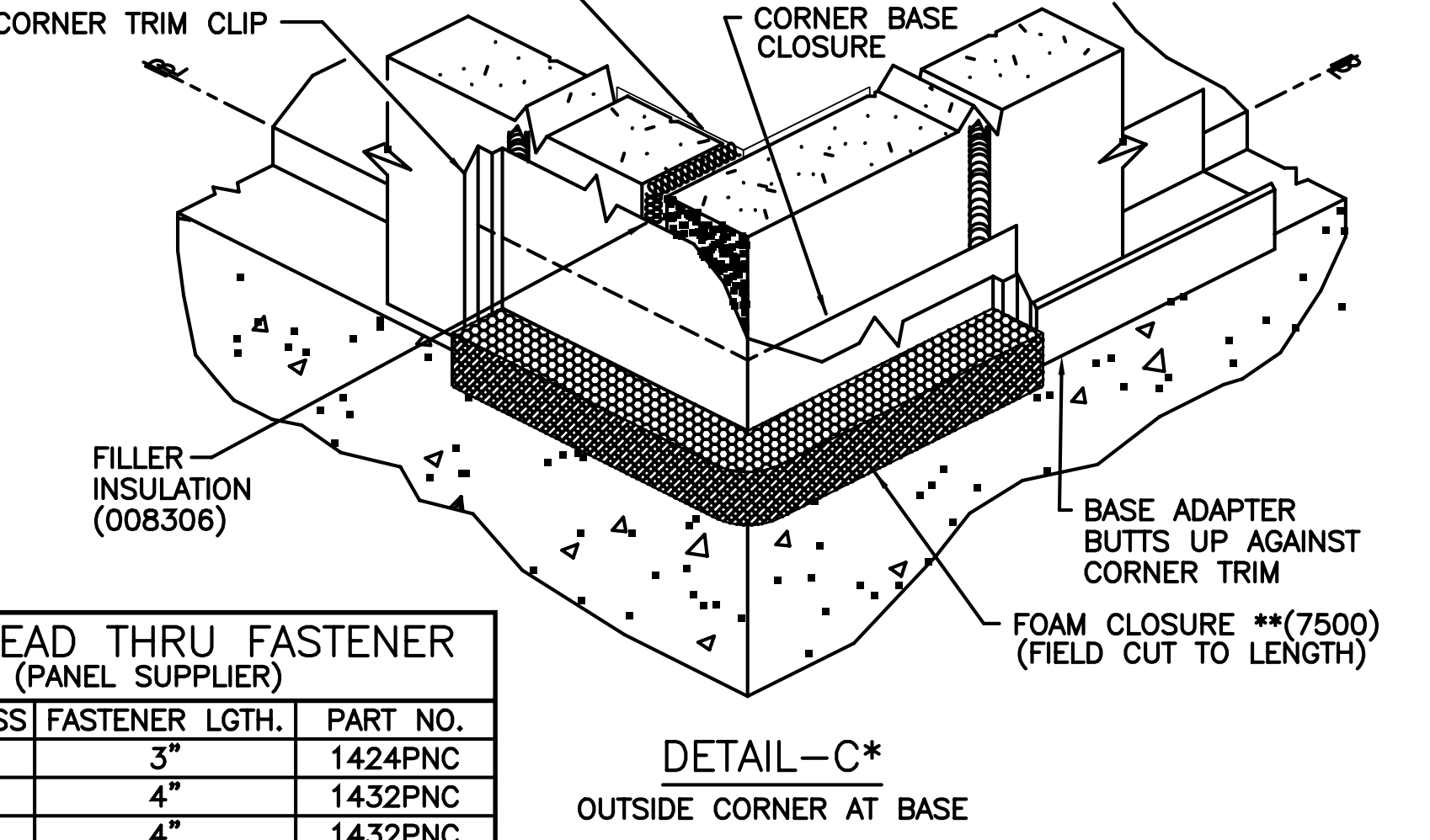
OUTSIDE CORNER TRIM (1'-10" COVERAGE) ** (SCT12A) TEXTURED ** (SCT12B) EMBOSSED

DETAIL-A*
OUTSIDE CORNER



CORNER TRIM SPLICE DETAIL (TYPICAL)

WAFER HEAD THRU FASTENER ** (PANEL SUPPLIER)		
PANEL THICKNESS	FASTENER LGTH.	PART NO.
2"	3"	1424PNC
2 1/2"	4"	1432PNC
3"	4"	1432PNC
4"	5"	1440PNC



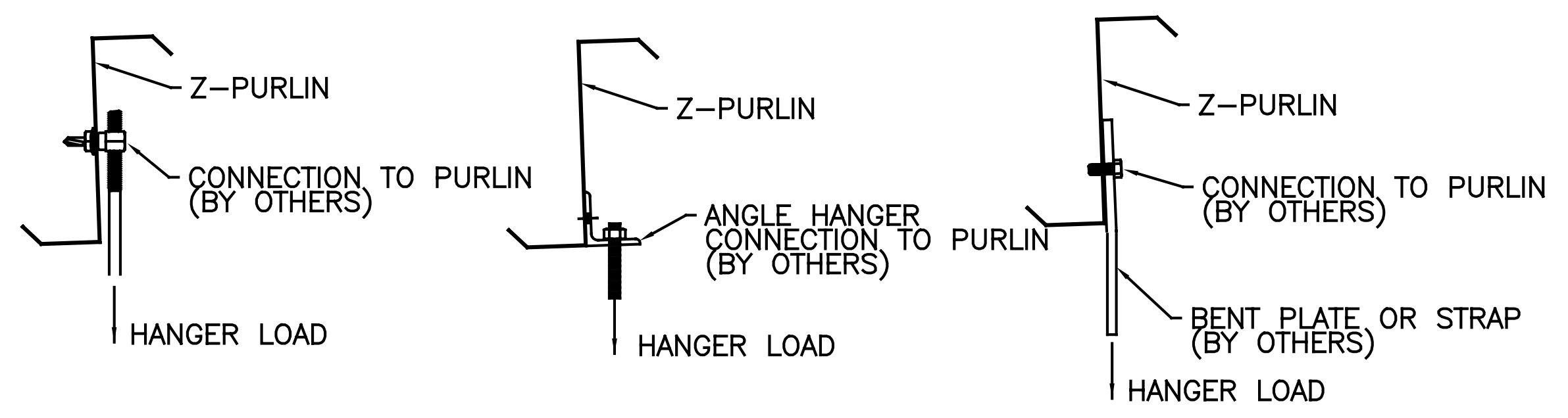
CORNER TRIM INSTALLATION NOTES:

- REFER TO GENERAL PANEL INSTALLATION DRAWING B-081517 FOR ADDITIONAL INFORMATION OF PANELS AT CORNER.
- STEP 1: ATTACH PANELS TO WALL STRUCTURALS WITH FASTENERS AS SHOWN ON DRAWING B-081517.
 - STEP 2: INSTALL FILLER INSULATION (008306) IN GAPS AT CORNERS WHERE REQUIRED TO PREVENT ANY VOIDS.
 - STEP 3: INSTALL CORNER BASE CLOSURE AND CORNER TRIM CLIP OVER OUTSIDE OF PANELS WITH THRU FASTENERS AT STRUCTURALS AND STITCH SCREWS AT 1'-0" O.C.. NOTE: FOR 4" THICK PANELS BASE FASTENER MUST BE A STITCH SCREW AT ALL LOCATIONS. SEE SECTION B-B
 - STEP 4: APPLY FOAM CLOSURE ** (7500) AT CORNER BASE CLOSURE, INTERMEDIATE SPLICE AND EAVE LOCATION.
 - STEP 5: INSTALL OUTSIDE CORNER TRIM PIECE, BY HOOKING LIP OF TRIM IN THE CLIP RECESS AND FLEXING IT BEYOND AND INTO THE OPPOSITE SIDE OF THE CLIP. INSTALL POP RIVETS AT SPLICE LOCATIONS PER SECTION B-B.

NOTES:

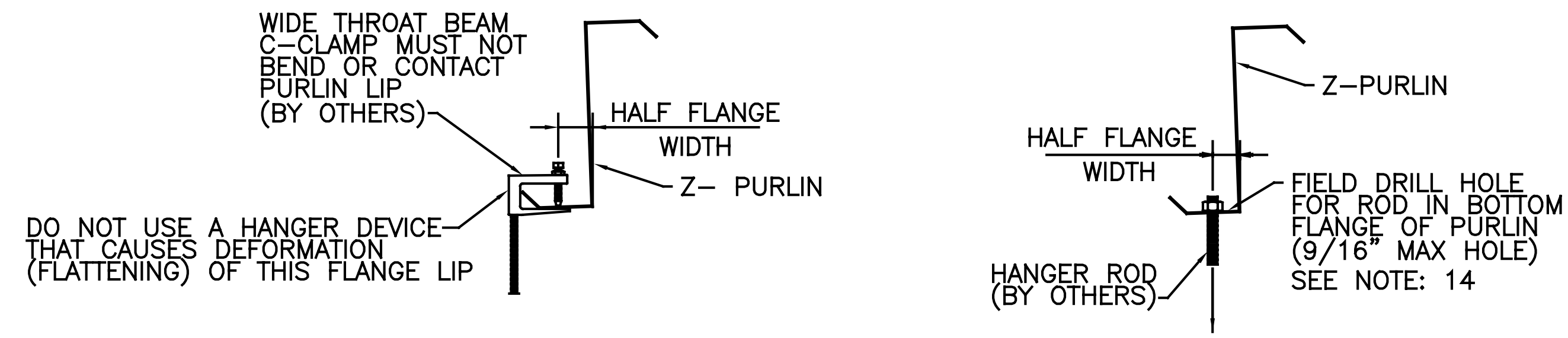
- CORNER TRIMS ARE INSTALLED FROM BOTTOM TO TOP (REFER TO SPLICE DETAIL).
- FIELD CUTTING PANELS SHOULD BE ACCOMPLISHED USING A RECIPROCATING SAW (VARIABLE SPEED WITH 0 TO 2300 STROKES PER MINUTE CAPABILITY IS RECOMMENDED TO MAINTAIN MAXIMUM CONTROL OF PANEL CUT). A GOOD QUALITY RECIPROCATING SAW BLADE (6" LONG WITH 24 TEETH PER INCH) IS ALSO RECOMMENDED. WHEN FIELD CUTTING 1'-0" OR LESS FROM A LENGTH OF PANEL, A REINFORCEMENT MEMBER SHOULD BE CLAMPED ACROSS THE FACE OF THE PANEL TO AVOID DELAMINATION.
- ** INDICATES PARTS THAT ARE PROVIDED BY THE PANEL SUPPLIER.

CORNER TRIM INSTALLATION INSULATED WALL PANEL				
DRAWN BY	CHECKED BY	GROUP NUMBER: 33-031-01		
BSN	RLB	B	B-081398	03
FIRST RELEASE DATE	REVISION DATE			
12/16/10	05/10/18			



WEB HANGERS

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



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

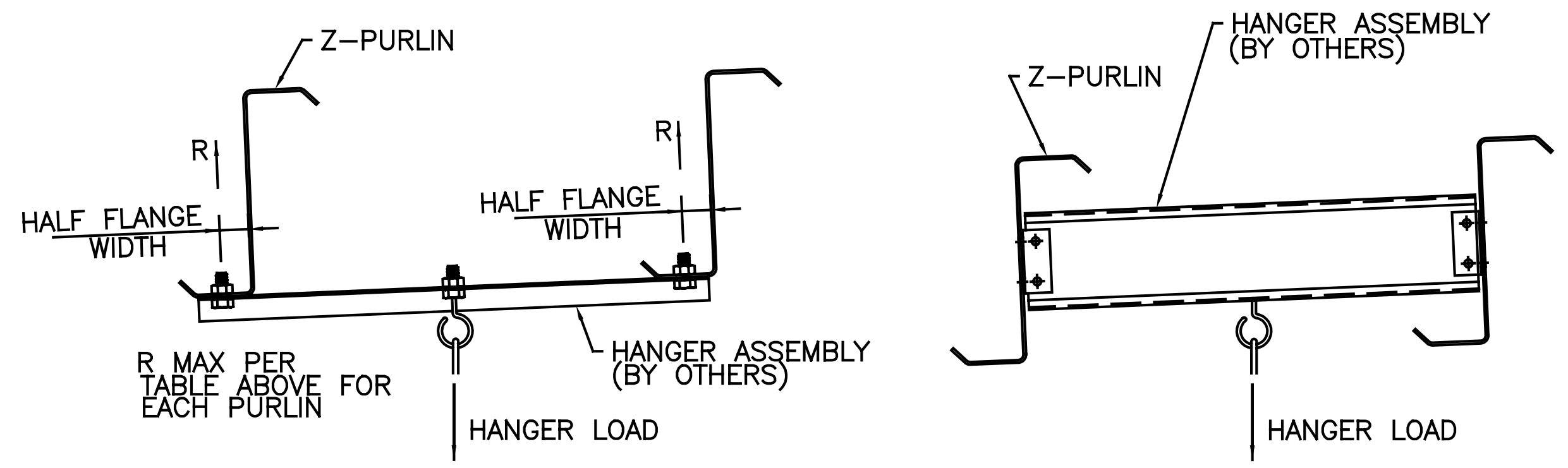
MAXIMUM LOAD SUSPENDED FROM BOTTOM FLANGE (LOCATED AT HALF-FLANGE WIDTH)			
THICKNESS	MAX LOAD	THICKNESS	MAX LOAD
0.060"	110lbs	0.088"	200lbs
0.068"	120lbs	0.098"	250lbs
0.073"	140lbs		
0.079"	180lbs	0.113"	250lbs

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

**BOTTOM FLANGE CLAMP HANGER
(TOP FLANGE SIMILAR)**

**BOTTOM FLANGE ROD HANGER
(TOP FLANGE SIMILAR)**

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

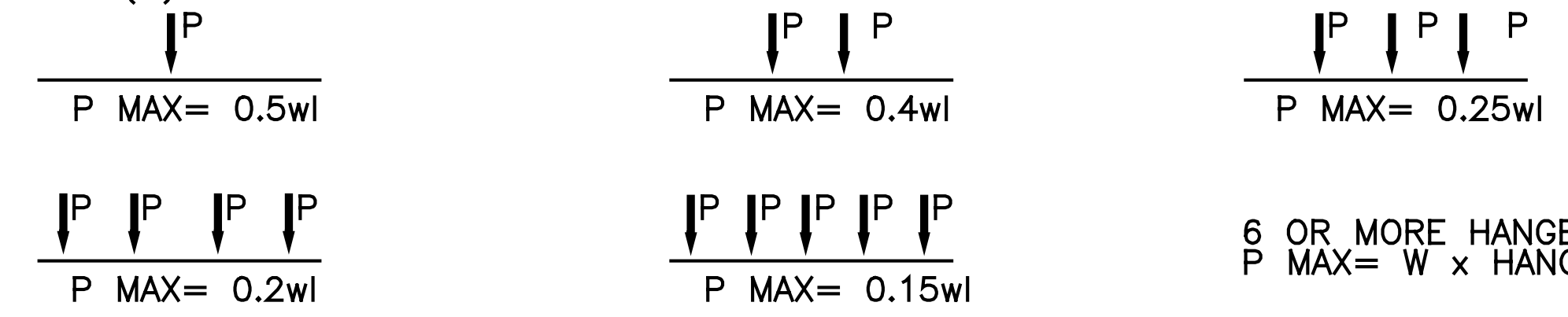


DOUBLE PURLIN HANGERS

VERIFY OVERALL PURLIN DESIGN CAN SUPPORT APPLIED LOADS.

GENERAL NOTES

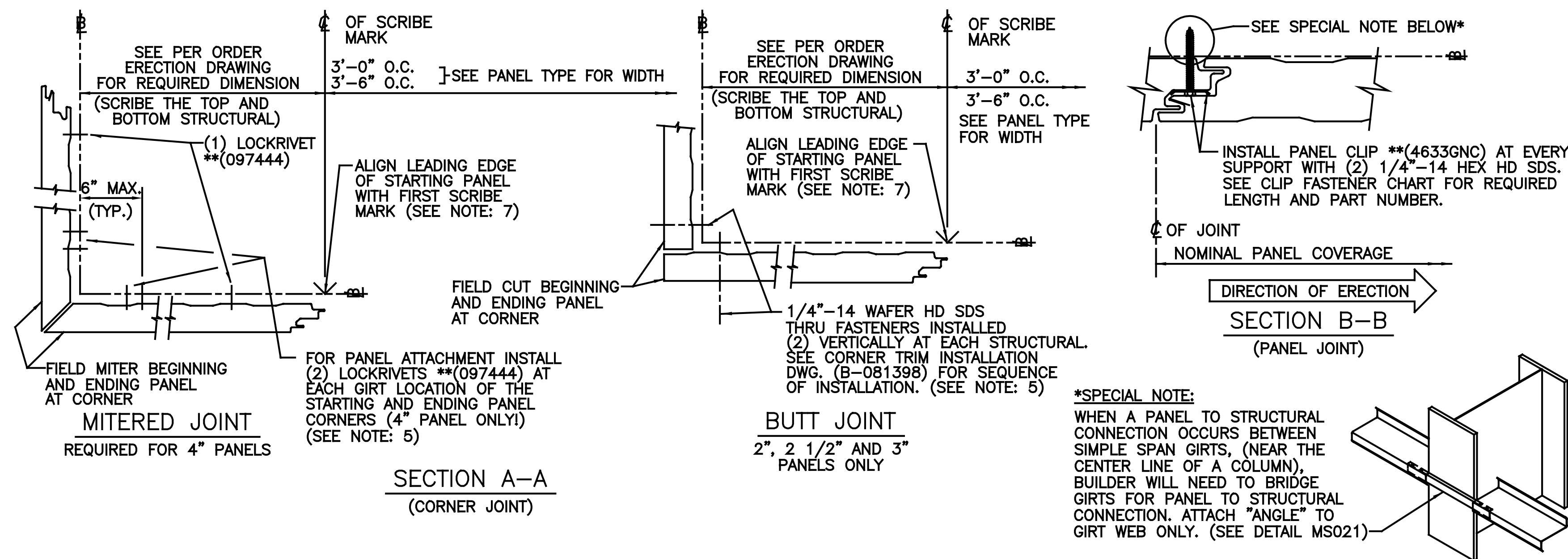
1. CONCENTRATED LOADS GREATER THAN 500lbs ON ANY SINGLE PURLIN MUST BE EXPLICITLY LOCATED AND DESIGNED FOR DURING DESIGN OF BUILDING SYSTEM.
2. SPECIFIED COLLATERAL LOADS MAY BE CONVERTED TO SAFE CONCENTRATED LOADS AS FOLLOWS, WHERE P = MAX CONCENTRATED LOAD(lbs); W = UNIFORM COLLATERAL LOAD (PSF) x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



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

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

CONCENTRATED LOADS ON ROOF Z-PURLIN HANGER DETAILS				
DRAWN BY	CHECKED BY	GROUP NUMBER: 80-054-01		
REVERTT	RBENTON			
FIRST RELEASE DATE	REVISION DATE	B	B-081465	09
02/26/10	02/26/20			

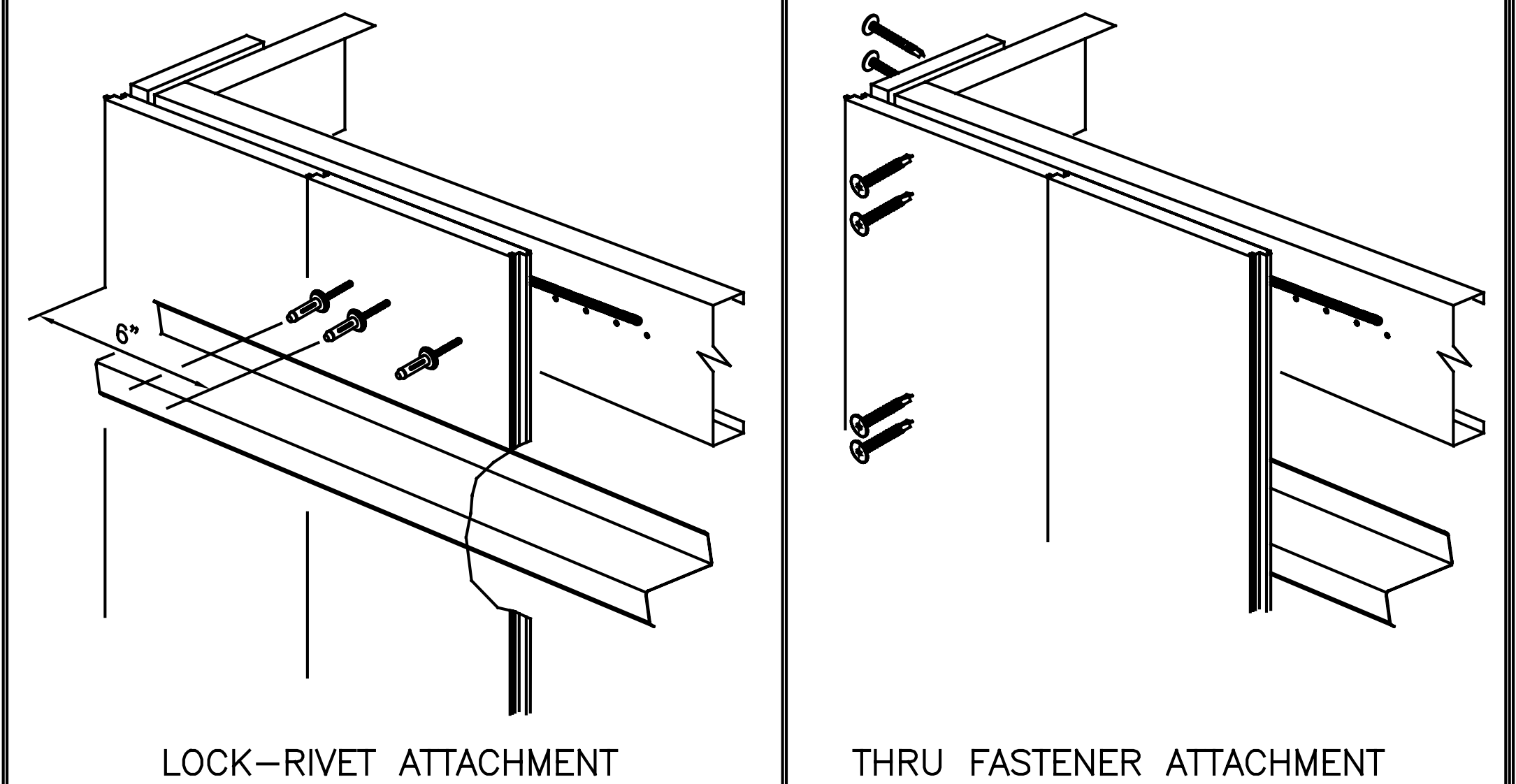


"SCRIBE LINE" IS A FIELD MARKING OF THE WALL STRUCTURALS (BASE ANGLE, GIRT, EAVE STRUT), THAT LOCATES THE LEADING EDGE OF THE WALL PANEL. THE FIRST SCRIBE LINE FOR A PANEL RUN IS REFERENCED FROM THE CLOSEST GRID LINE TO THE RIGHT OF THE STARTING PANEL.

FASTENER NOTE:
IF PANEL JOINT CLIP FASTENER IS ATTACHING TO A STRUCTURAL THAT HAS A THICKNESS BETWEEN 3/16" TO 1/2" SEE DETAIL MS048 FOR WHAT CONVERSION IS REQUIRED. NOTE THAT TEK V IS 1" LONGER.

PANEL JOINT CLIP FASTENER ** (PANEL SUPPLIER)		
PANEL THICKNESS	FASTENER LENGTH	PART NUMBER
2"	2"	1616PNC
2 1/2"	3"	1624PNC
3"	3"	1624PNC
4"	4"	1632PNC

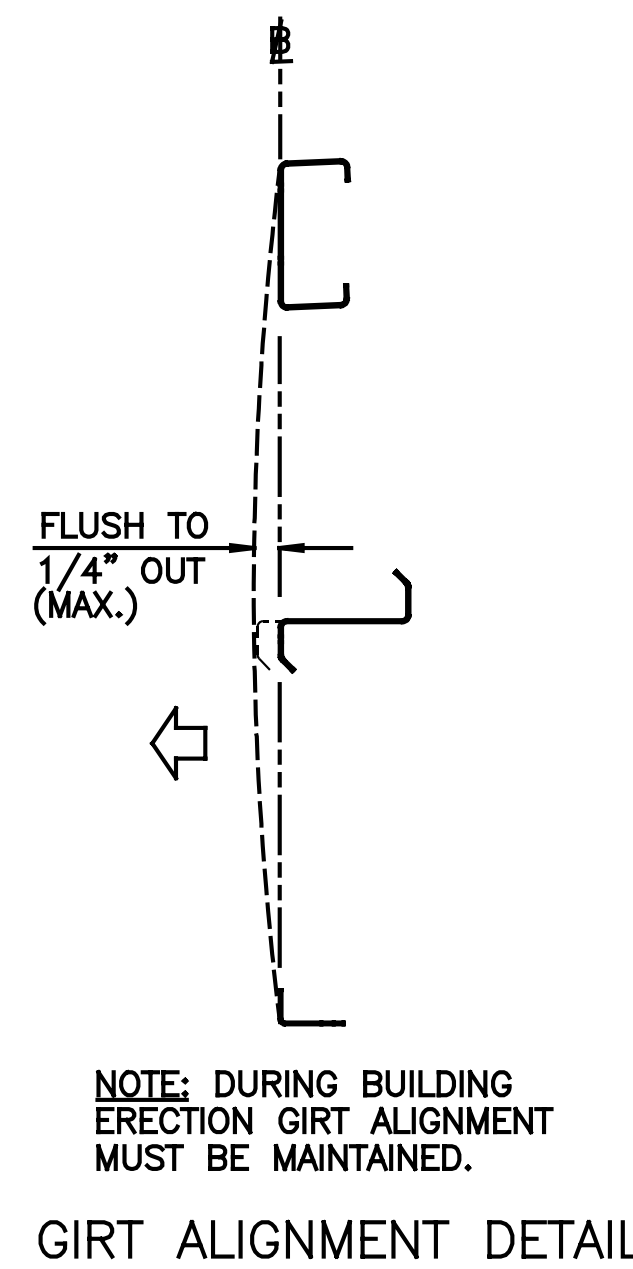
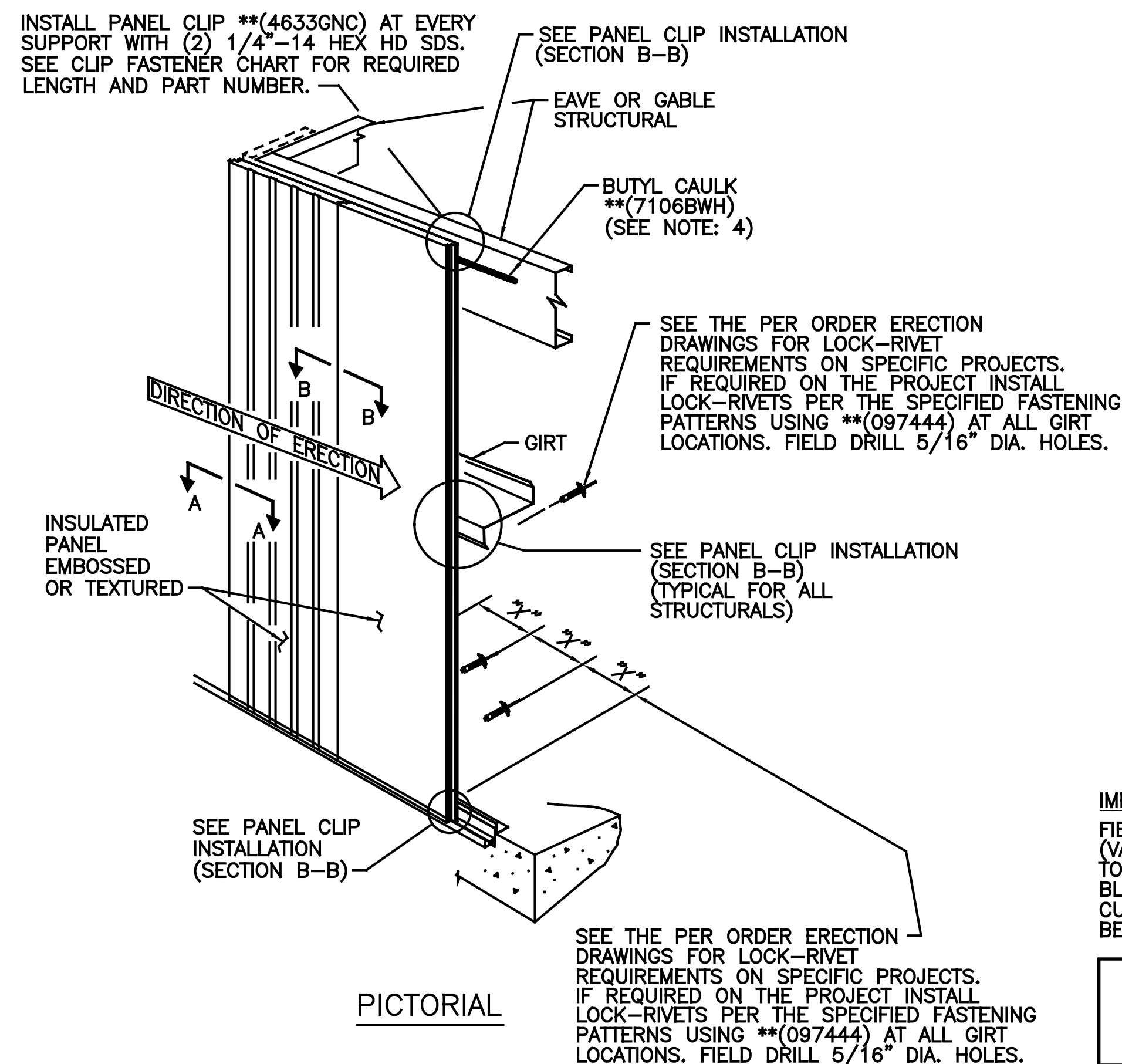
WAFER HEAD THRU FASTENER ** (PANEL SUPPLIER)		
PANEL THICKNESS	FASTENER LENGTH	PART NUMBER
2"	3"	1424PNC
2 1/2"	4"	1432PNC
3"	4"	1432PNC
4"	5"	1440PNC



INSULATED WALL PANEL INSTALLATION NOTES:

NOTES:

- AFTER ESTABLISHING THE STARTING DIMENSION, SCRIBE THE TOP AND BOTTOM STRUCTURALS FOR ENTIRE LENGTH OF WALL AT 3'-6" O.C. OR 3'-0" O.C. DEPENDING ON PANEL WIDTH. THE SCRIBE LINE MARKS THE LOCATION OF THE LEADING EDGE OF THE PANEL AFTER THE PANEL IS INSTALLED. (SEE SECTION A-A).
- APPLY A CONTINUOUS BEAD OF BUTYL CAULK ALONG THE BASE (AS REQUIRED). PUT BASE MEMBER IN PLACE AND FASTEN WITH MASONRY ANCHORS OR SELF-DRILLING SCREWS.
- APPLY A CONTINUOUS BEAD OF BUTYL CAULK ALONG THE BASE TRIM IN THE BACK. USE PIGTAILS TO TIE FACTORY APPLIED JOINT SEALANT TO THE BEAD OF BUTYL CAULK.
- APPLY A CONTINUOUS BEAD OF BUTYL CAULK ALONG THE EAVE STRUT OR GABLE STRUCTURAL JUST BELOW THE TOP OF WALL PANEL. SEE WALL PANEL LAYOUT FOR PANEL HEIGHTS. USE PIGTAILS TO TIE FACTORY APPLIED JOINT SEALANT TO THE BEAD OF BUTYL CAULK.
- INTERIOR INSIDE CORNER TRIMS AND BUTYL CAULK MUST BE INSTALLED PRIOR TO PANEL INSTALLATION.
- INSTALL PANELS IN A LEFT TO RIGHT DIRECTION, STARTING AT A CORNER. SEE PER ORDER ERECTION DRAWINGS BEFORE FIELD CUTTING STARTING PANEL.
- ALIGN NOSE OF STARTING PANEL WITH SCRIBE MARKS ON TOP AND BOTTOM WALL STRUCTURALS. ATTACH RIGHT EDGE OF PANEL TO EACH WALL STRUCTURAL WITH A PANEL CLIP AND FASTENERS. THE PROPER FASTENING PATTERN IS TWO FASTENERS PER PANEL CLIP AT BASE, EAVE, AND AT EACH GIRT. (SEE SECTION B-B) (FASTENER LENGTH IS BASED ON THE PANEL THICKNESS). WHEN ALUMINUM BASE TRIM IS USED, PLACE WOOD SHIMS (1/8" THICK) IN THE BASE ADAPTER SLOT OF THE ALUMINUM BASE TRIM. TAKE SPECIAL CARE TO AVOID DISTURBING FACTORY APPLIED JOINT SEALANT.
- INSTALLATION OF THE CORNER TRIM DOES NOT ALLOW FOR THE THROUGH FASTENERS TO BE ATTACHED UNTIL CORNER TRIMS ARE INSTALLED. STARTING AND ENDING PANELS AT THE CORNERS WILL BE ATTACHED WITH LOCKRIVETS AT THE BASE AND TOP UNTIL THE CORNER TRIM IS IN PLACE. THEN THE REMAINING FASTENERS CAN BE INSTALLED. (SEE SECTION A-A)
- INSTALL THE REMAINING PANELS, FOR THAT WALL, FOLLOWING A SIMILAR PROCEDURE OF JOINT INSTALLATION, THEREFORE CONCEALING ALL PREVIOUS FASTENERS IN THE JOINTS. USE PIGTAILS TO TIE FACTORY APPLIED JOINT SEALANT TO THE BEAD OF BUTYL CAULK. BE SURE TO CHECK EACH PANEL JOINT FOR CONSISTENT SPACE BETWEEN THE PANELS. CUT AS NECESSARY, THE ENDING PANEL IS TO ALIGN WITH THE BUILDING LINE, REMOVING ALL BURRS FROM THE CUT EDGE. ATTACH THE RIGHT EDGE OF ENDING PANEL AT BASE AND TOP STRUCTURAL AS DIRECTED IN SECTION A-A. REPAIR ANY VOIDS IN JOINT SEALANT WITH BUTYL CAULK. INSTALL THE REMAINING FASTENERS (IF REQUIRED) FOR 4" PANELS AS SHOWN IN SECTION A-A.
- IF THE BUILDING ROOF SLOPE IS 1:12 OR GREATER, THE TOP OF EACH PANEL APPLIED TO ENDWALLS MUST BE FIELD CUT TO MATCH ROOF SLOPE. THIS MAY BE ACCOMPLISHED BY USING THE GABLE ANGLE AS A CUTTING GUIDE AFTER THE PANEL IS INSTALLED. IF CUTTING PANELS BEFORE ERECTING IS DESIRED SEE DRAWING P-080883 (MITER CUT ENDWALL NOTES) FOR REFERENCE. EXERCISE CAUTION WHEN FIELD CUTTING PANELS TO PREVENT DELAMINATION OF INTERIOR OR EXTERIOR PANEL FACE. FOR BUILDINGS WITH ROOF SLOPES LESS THAN 1:12, THE WALL PANELS WILL BE STAGGERED PER PANEL, DEPENDING ON THE ROOF SLOPE.
- USE A 5/16" BEAD OF SEALANT WHEN APPLYING URETHANE SEALANT TO EMBOSSED PANELS AND A 3/8" BEAD WHEN APPLYING URETHANE SEALANT TO TEXTURED PANELS.
- SEE DETAILS MS003 AND MS004 FOR REFERENCE ON BASE DETAILS FOR INSULATED WALL PANEL.
- ** INDICATES PARTS THAT ARE PROVIDED BY THE PANEL SUPPLIER.



IMPORTANT NOTE:
FIELD CUTTING PANELS SHOULD BE ACCOMPLISHED USING A RECIPROCATING SAW (VARIABLE SPEED WITH 0 TO 2300 STROKES PER MINUTE CAPABILITY IS RECOMMENDED TO MAINTAIN MAXIMUM CONTROL OF PANEL CUT). A GOOD QUALITY RECIPROCATING SAW BLADE (6" LONG WITH 24 TEETH PER INCH) IS ALSO RECOMMENDED. WHEN FIELD CUTTING 1'-0" OR LESS FROM A LENGTH OF PANEL, A REINFORCEMENT MEMBER SHOULD BE CLAMPED ACROSS THE FACE OF THE PANEL TO AVOID DELAMINATION.

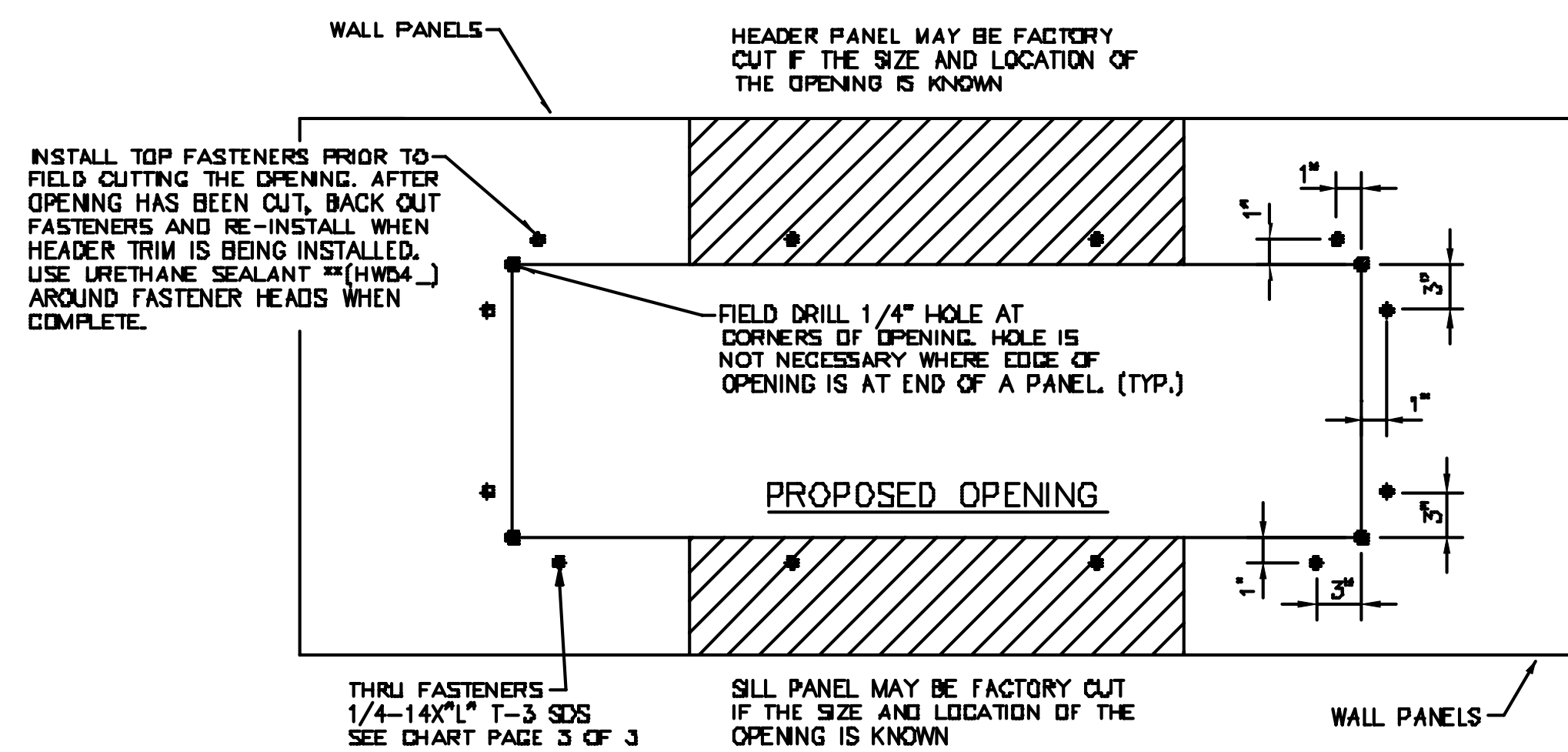
IMPORTANT:
ALL PANELS GREATER THAN 20'-0" LONG REQUIRE TWO LIFTING POINTS

INSULATED PANEL GENERAL INSTALLATION

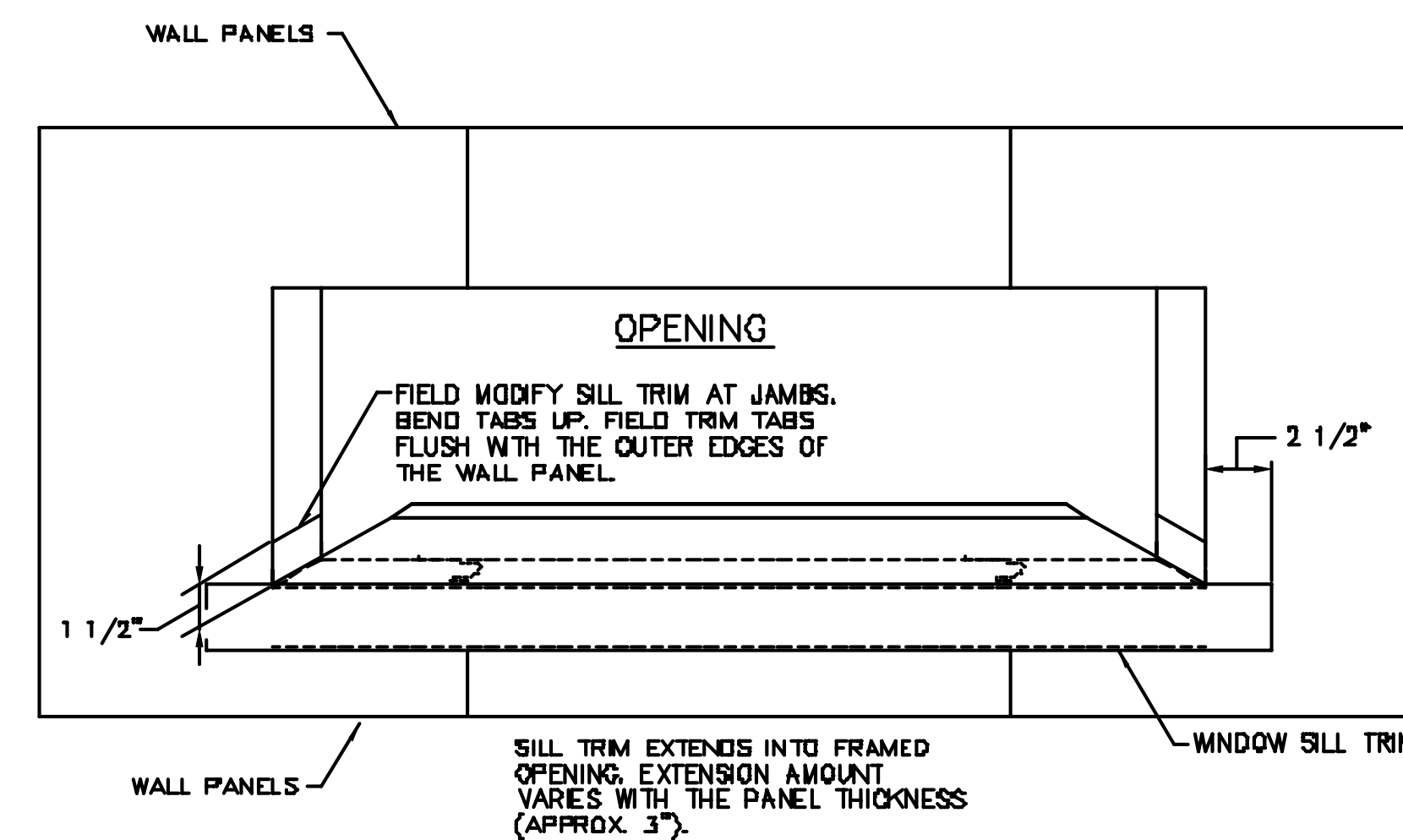
DRAWN BY BSN	CHECKED BY RLB	GROUP NUMBER: 33-031-01
FIRST RELEASE DATE 12/20/10	REVISION DATE 12/04/18	B B-081517 04

ANTI-ROLL CLIP ARC1	DOOR JAMB CLIP (OUTSET) DJC1	DOOR JAMB CLIP (INSET) DJC2	DOOR JAMB CLIP (INSET) DJC4L	DOOR JAMB CLIP (INSET) DJC4R	EAVE ATTACHMENT PLATE EAP1	ENDFRAME EAVE ATTACHMENT PLATE EAP2	EAVE STRUT BRACE STRAP ESBS
EAVE STRUT SHIM PLATE ESH	BOLTED FULL FRAME CLIP FFC	GIRT CLIP TO RAFTER GC18	INSET GIRT CLIP TO RAFTER LEFT / RIGHT GC19	GIRT / JAMB CLIP GC5	INSET GIRT TO GAGE COLUMN FLG. CLIP GC53	VARIABLE LEG CLIP & 5 GIRTS GC71	CORNER COLUMN TO RAKE CHANNEL CLIP GC9
GIRT CLIP GAGE ENDWALL GC91	VARIABLE OUTSET GIRT CLIP GCD	VARIABLE INSET GIRT CLIP GCE	GAGE POST GIRT CLIP GCW1	11.5 INSET GIRT CLIP GCZZ	GIRT FILLER ANGLE GFA	JAMB TO COLUMN MISC. PLATE JC	JAMB TO GIRT CLIP & 5 - 6.5 JTG1
JAMB TO GIRT CLIP 11.5 - 10 / 11.5 JTG2	JAMB TO GIRT CLIP 7 - 7 JTG3	JAMB TO GIRT CLIP 10 - 10 JTG4	SIMPLE SAVER FB CLIP KMA1	GUSSETED PURLIN GIRT CLIP PC4/PC5	ANTI-ROLL PURLIN CLIP PC27	PURLIN / GIRT CLIP PG1	VARIABLE PURLIN GIRT CLIP PGV
VARIABLE OUTSET GIRT CORNER CLIP VCC	CLIP WBBC2	FLAT WIDTH BEND LOC SIDE VIEW "A" HIP FRAME CONNECTION CLIP 02H	FLAT WIDTH BEND LOC SIDE VIEW "A" HIP FRAME CONNECTION CLIP 06H	FLAT WIDTH BEND LOC SIDE VIEW "A" HIP FRAME CONNECTION CLIP 10H			

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

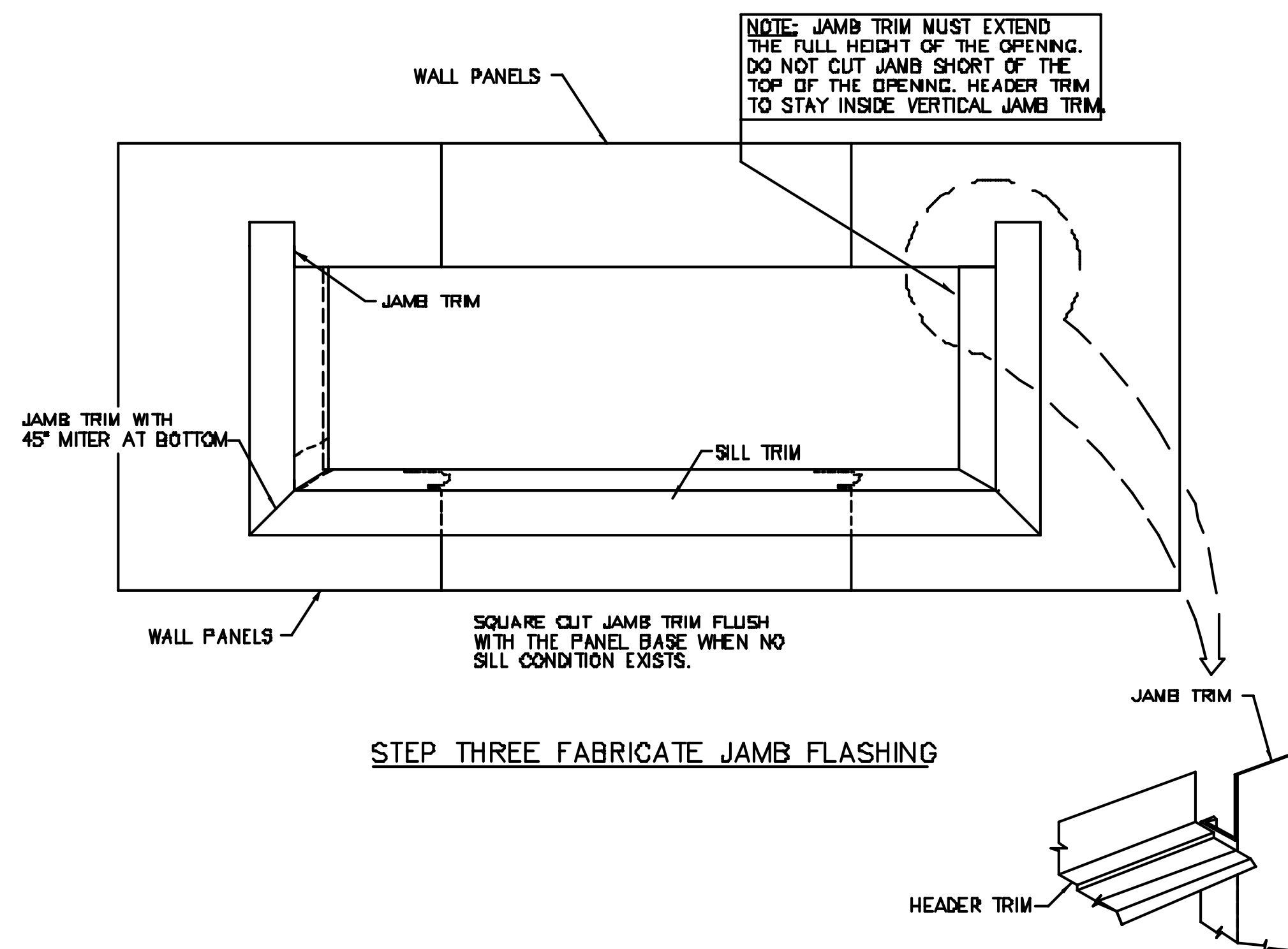


STEP ONE - LAYOUT / CUT OPENING

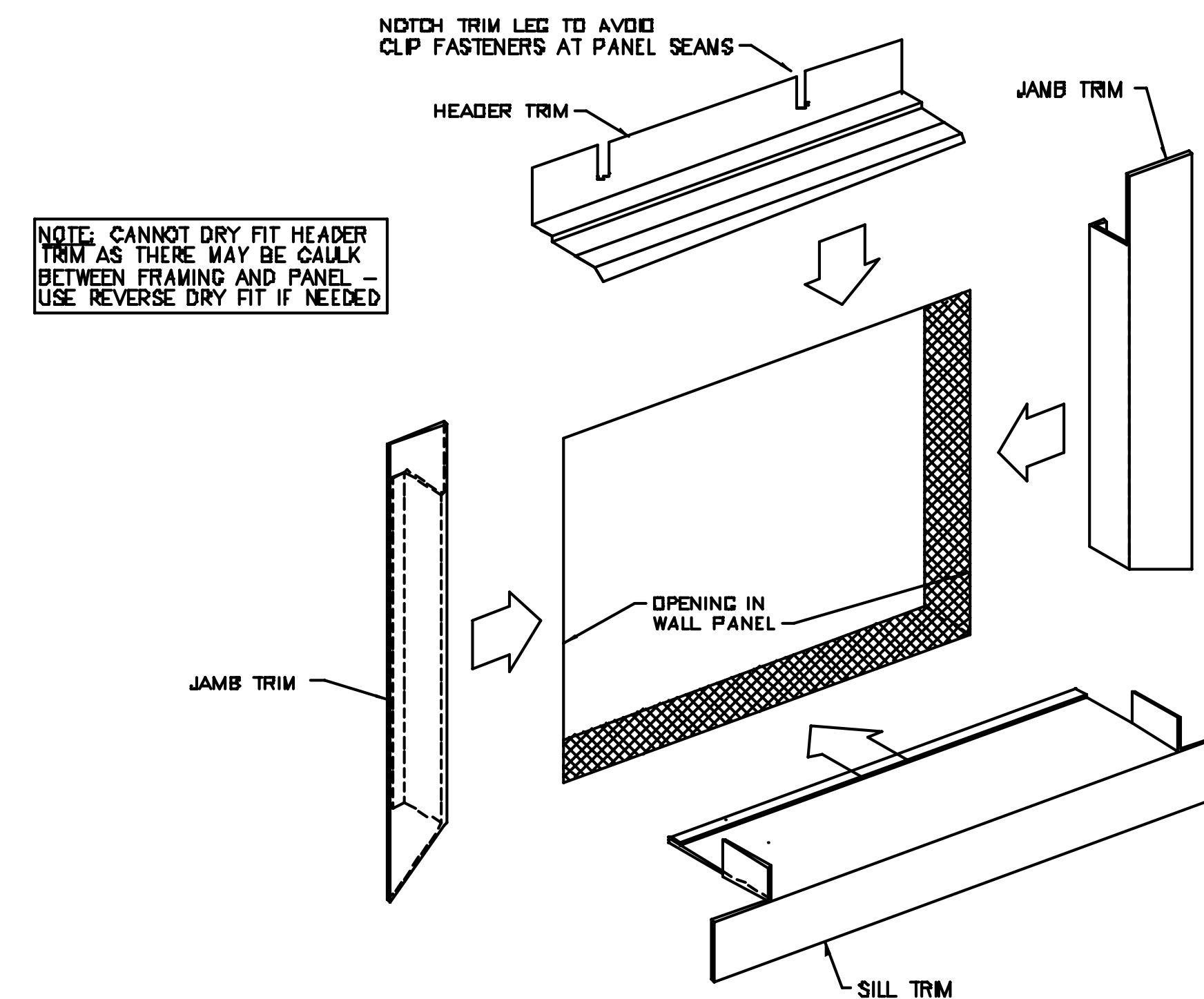


STEP TWO FABRICATE SILL FLASHING

NOTE: IF SILL TRIM IS NOT REQUIRED, PROCEED TO THE NEXT STEP



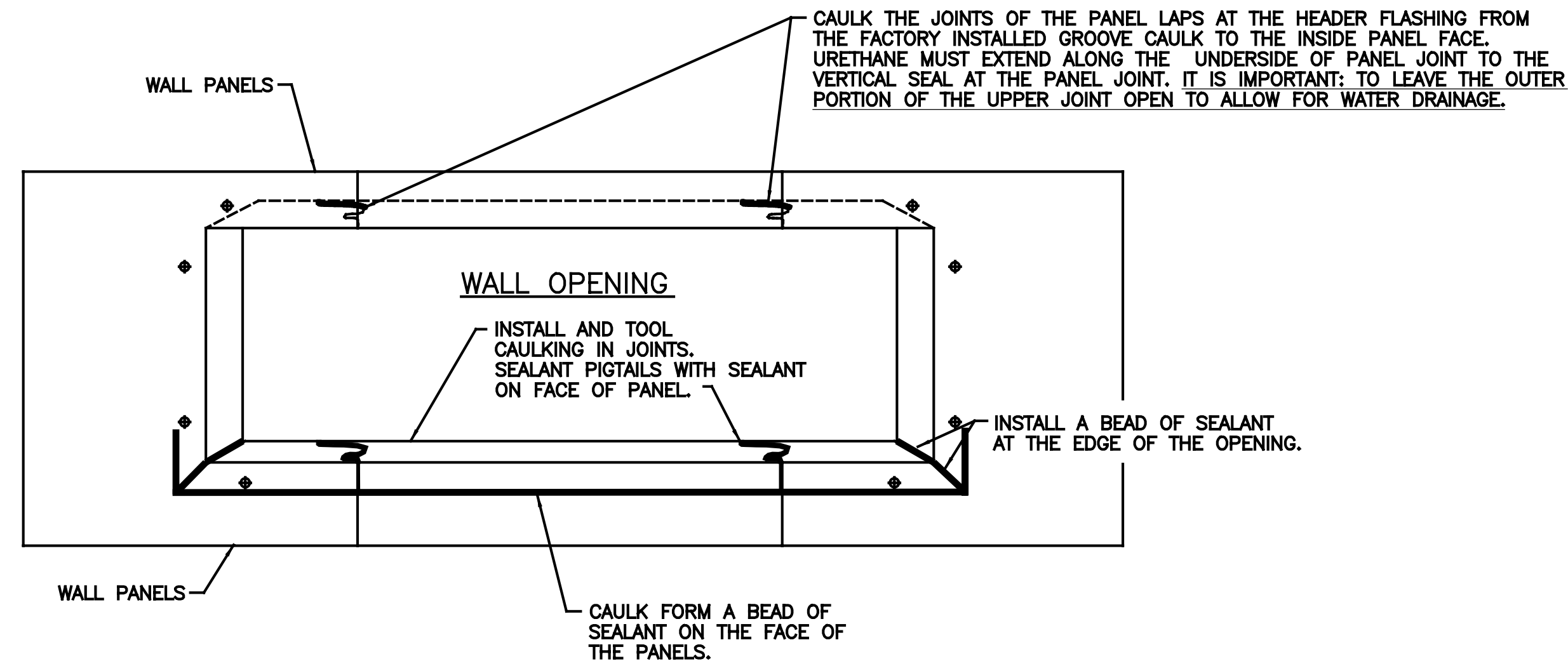
STEP THREE FABRICATE JAMB FLASHING



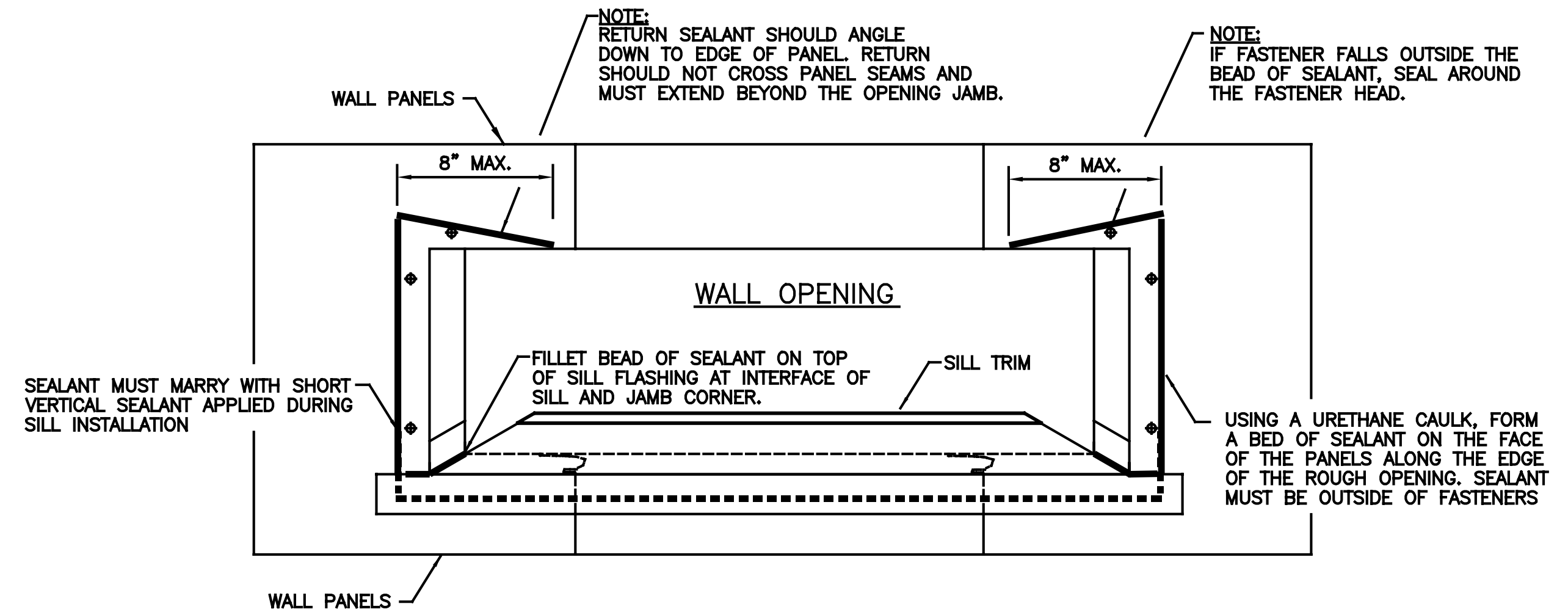
STEP FOUR - DRY FIT TRIMS TO OPENING

TRIM INSTALLATION DRAWING 1 OF 3 FOR INSULATED PANELS			
DRAWN BY	CHECKED BY	GROUP NUMBER: 00-000-00	
BSN	RLB	C	B-FRMOP2 02
FIRST RELEASE DATE	REVISION DATE		
11/15/10	11/06/14		

NOTE:
PRIOR TO INSTALLING ANY OF THE METAL FLASHING CAULKING, CLEAN ALL METAL SURFACES TO BE SEALED, BY USING THE "TWO-CLOTH" CLEANING METHOD, CONSISTING OF A RUBBING ALCOHOL WIPE FOLLOWED BY A DRY CLOTH WIPE. INSTALL ALL SEALANTS WITH PROPER TOOLS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

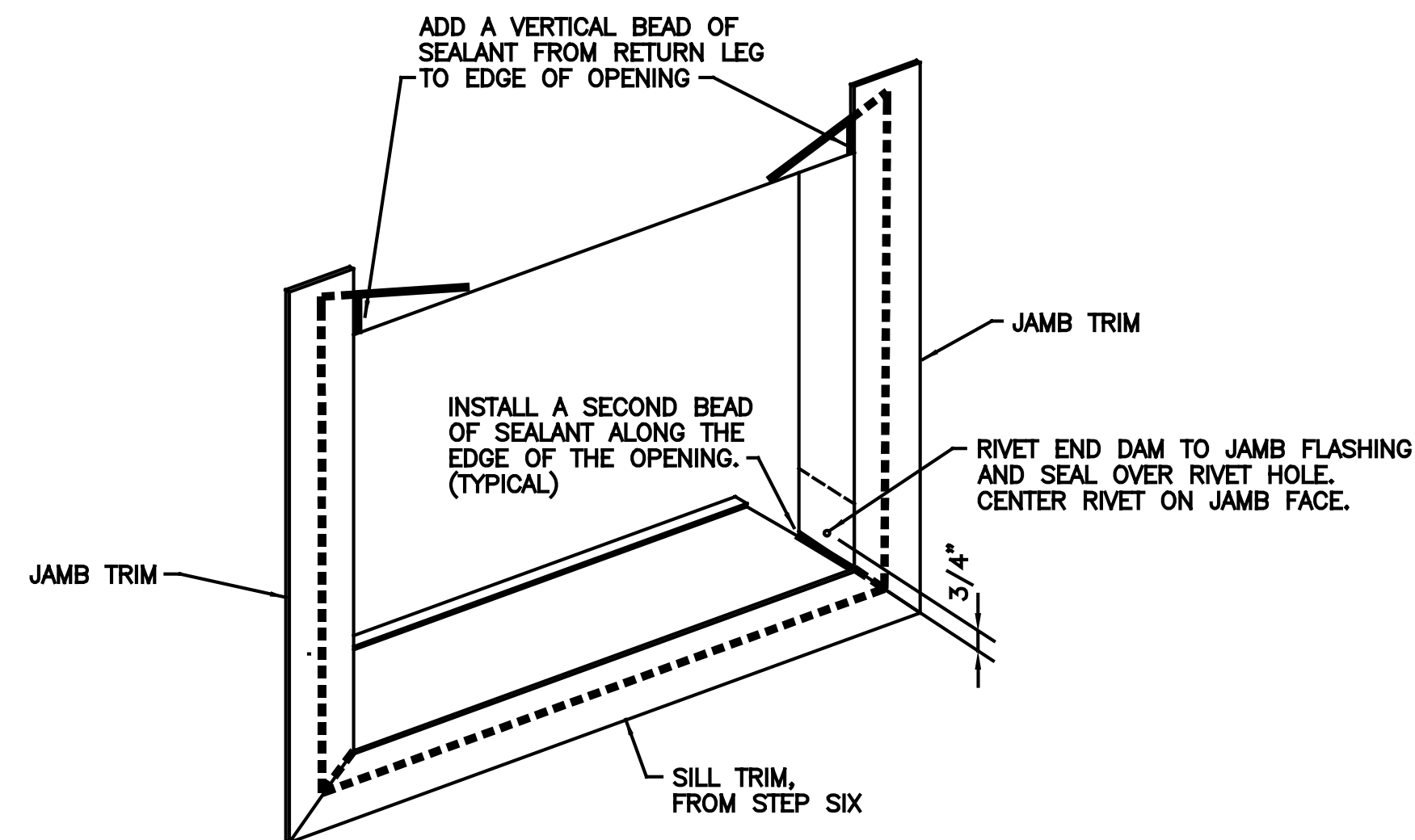


STEP FIVE – INSTALL SEALANT AT SILL



STEP SIX – INSTALL SILL FLASHING AND JAMB SEALANT

IMPORTANT NOTE:
INSTALL METAL SILL AND JAMB TRIM PIECES AND PRESS INTO ALL UNDERLYING SEALANTS ENSURING ENGAGEMENT OF SEALANT TO BOTH THE METAL PANEL AND THE TRIM PIECES.



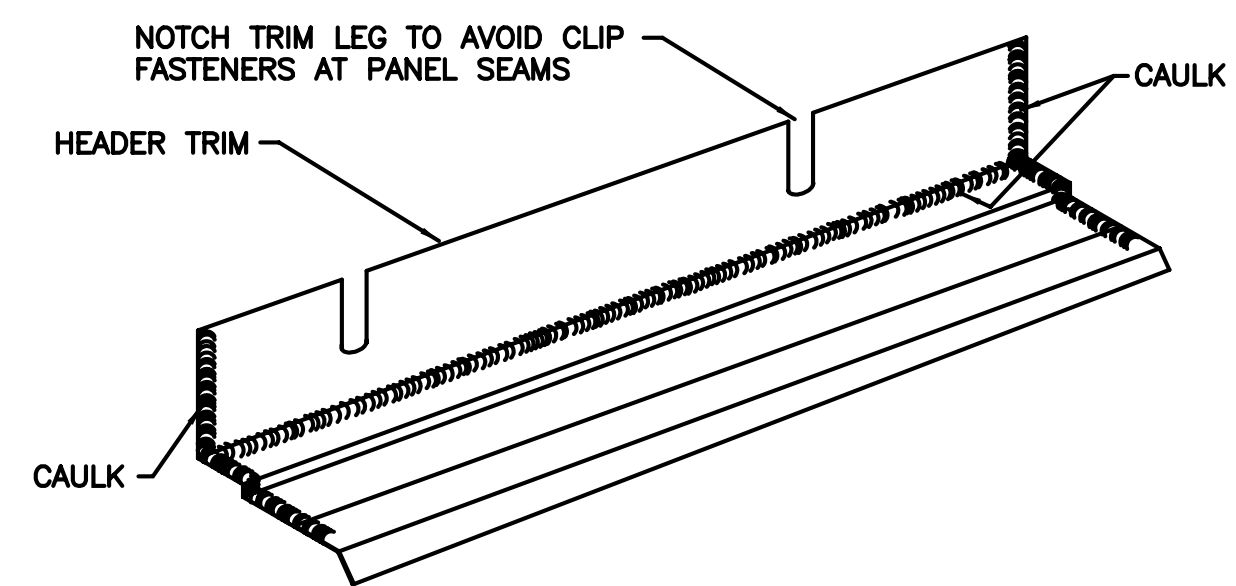
STEP SEVEN – INSTALL JAMB FLASHING

NOTE:

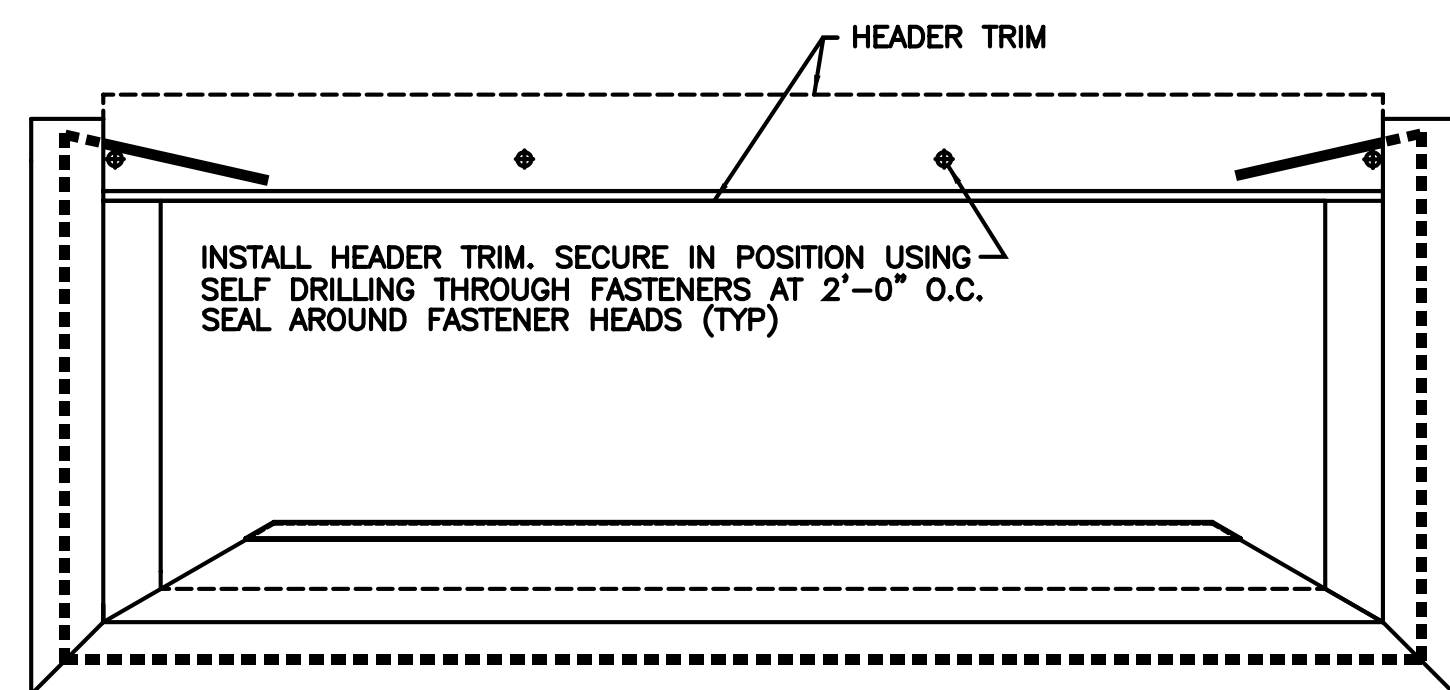
1. USE URETHANE SEALANT FOR ALL TRIM INSTALLATION. BEAD SIZE SHALL ALLOW FOR A DURABLE SEAL AT TRIM PIECES.
2. INSTALL SEALANT 1/4" FROM EDGE OF WINDOW ROUGH OPENING AS WELL AS ALL CORNERS AND PANEL JOINTS AT SILL. SEALANT INSTALLED AT PANEL JOINTS SHOULD TURN DOWN AND TIE INTO SILL SEALANT AROUND EDGE OF WINDOW TO ALLOW PROPER SEAL AT TRIM PIECES.

TRIM INSTALLATION DRAWING 2 OF 3
FOR INSULATED PANELS

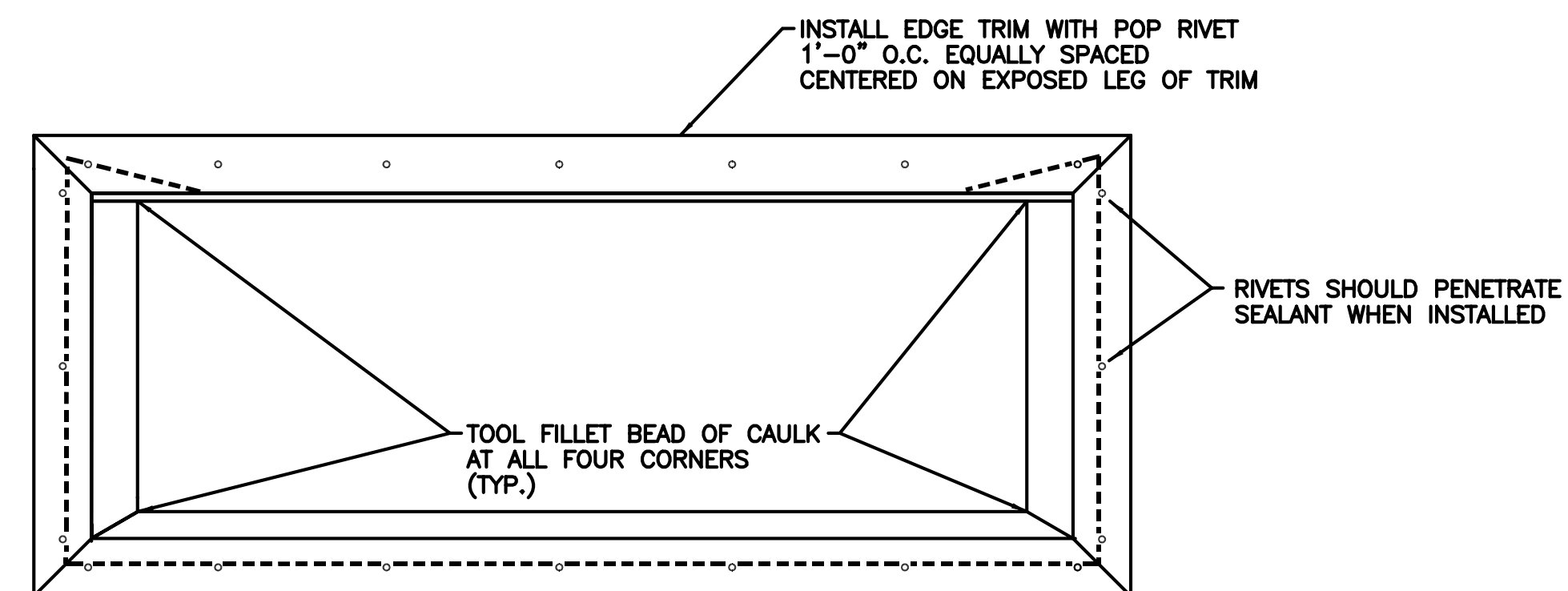
DRAWN BY	CHECKED BY	GROUP NUMBER: 00-000-00	
BSN	RLB	C	B-FRMOP3 01
FIRST RELEASE DATE	REVISION DATE		
11/15/10	12/04/18		



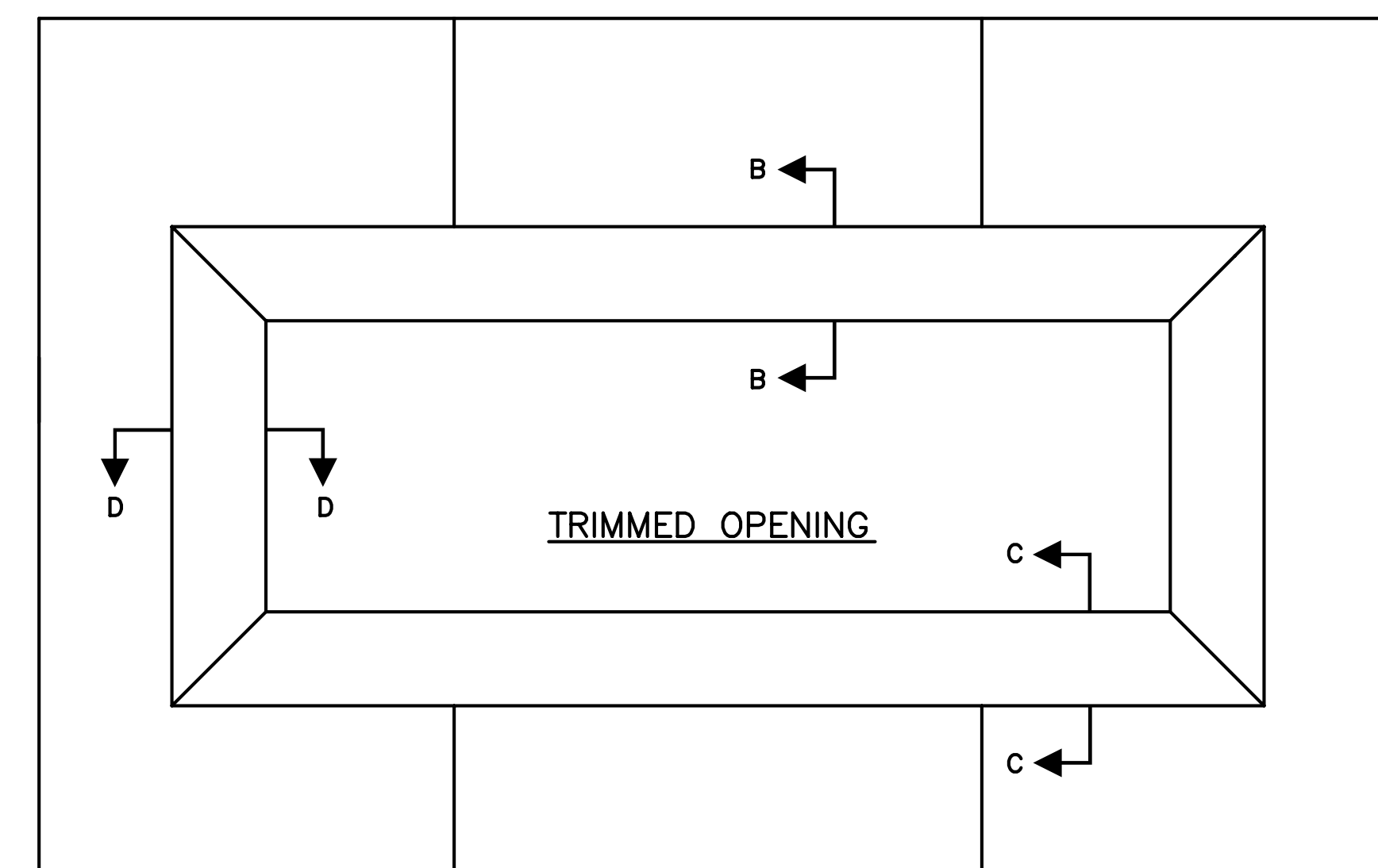
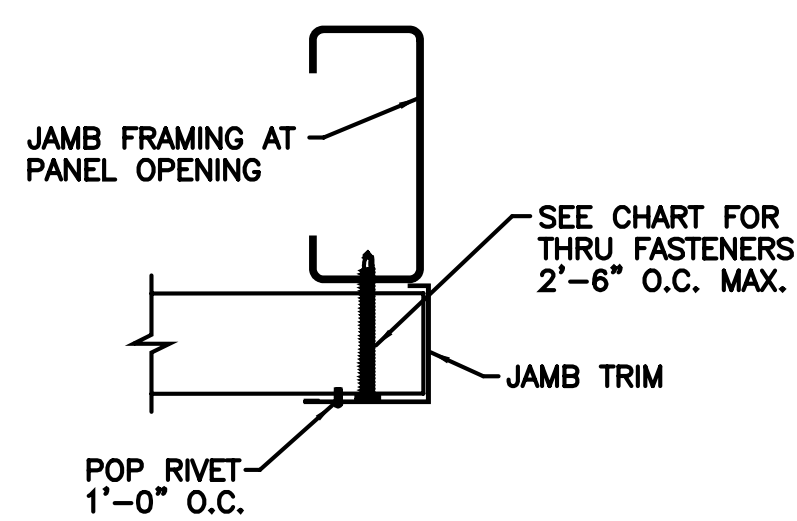
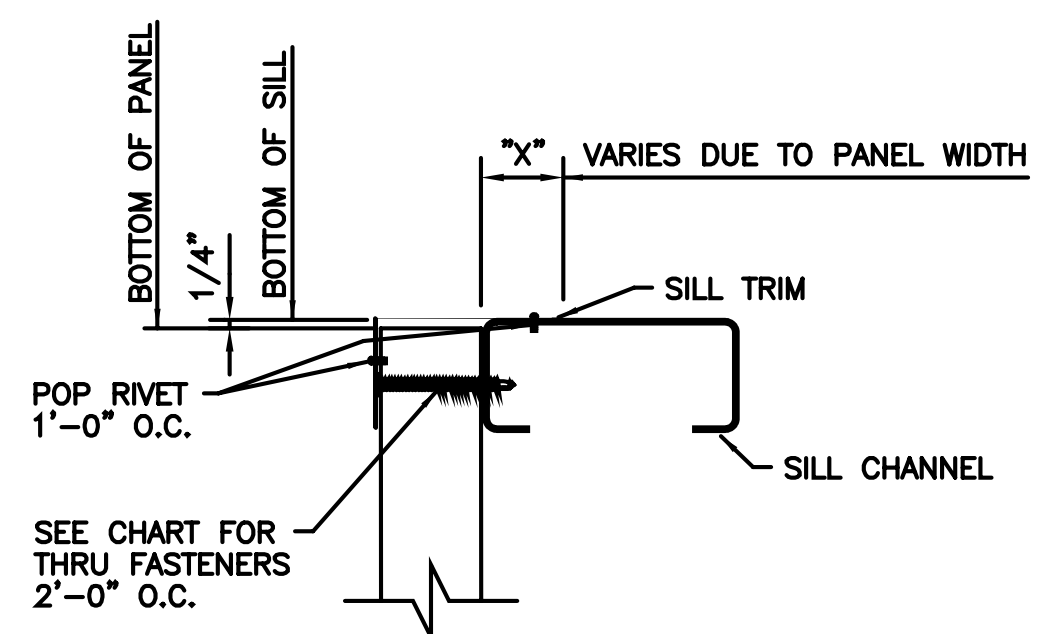
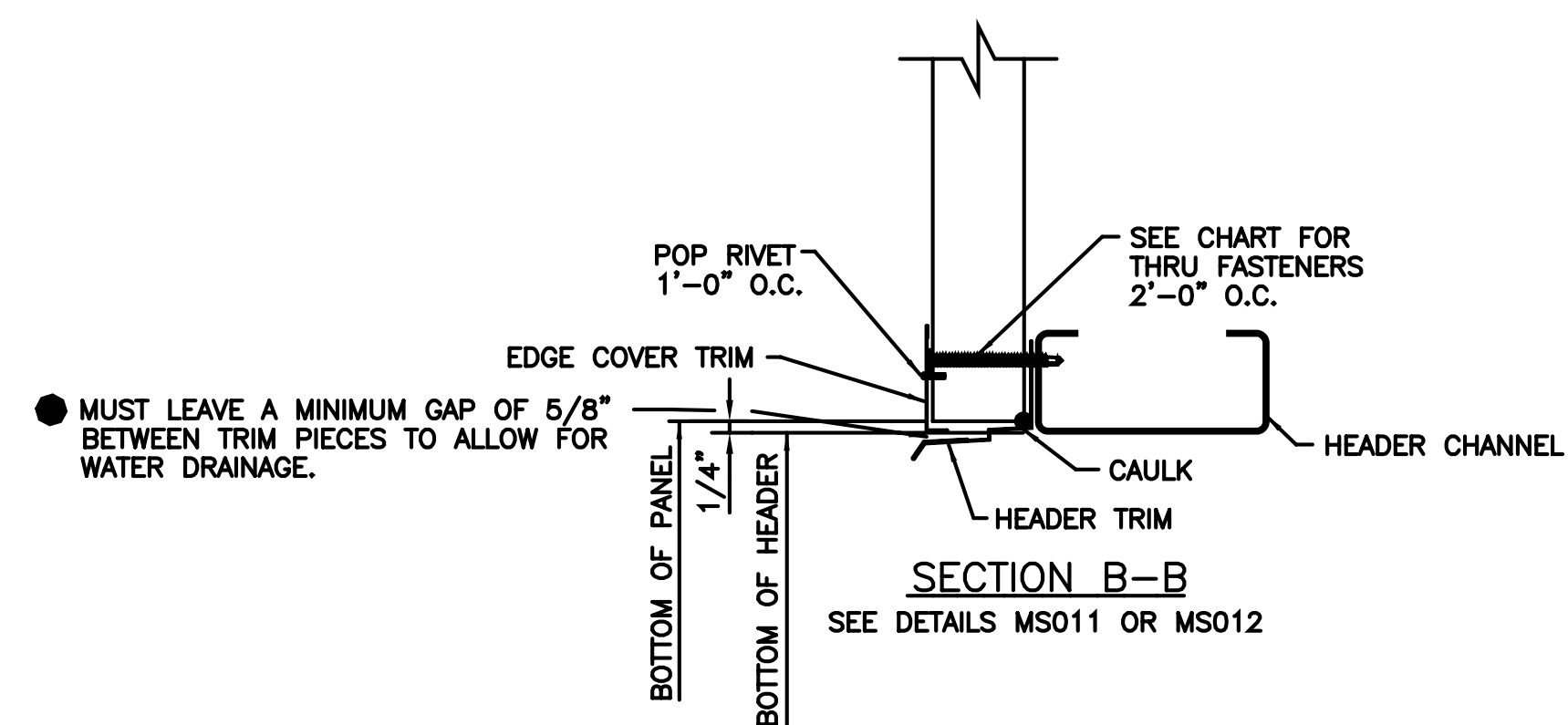
STEP EIGHT - PREPARE HEADER TRIM



STEP NINE - INSTALL HEADER TRIM



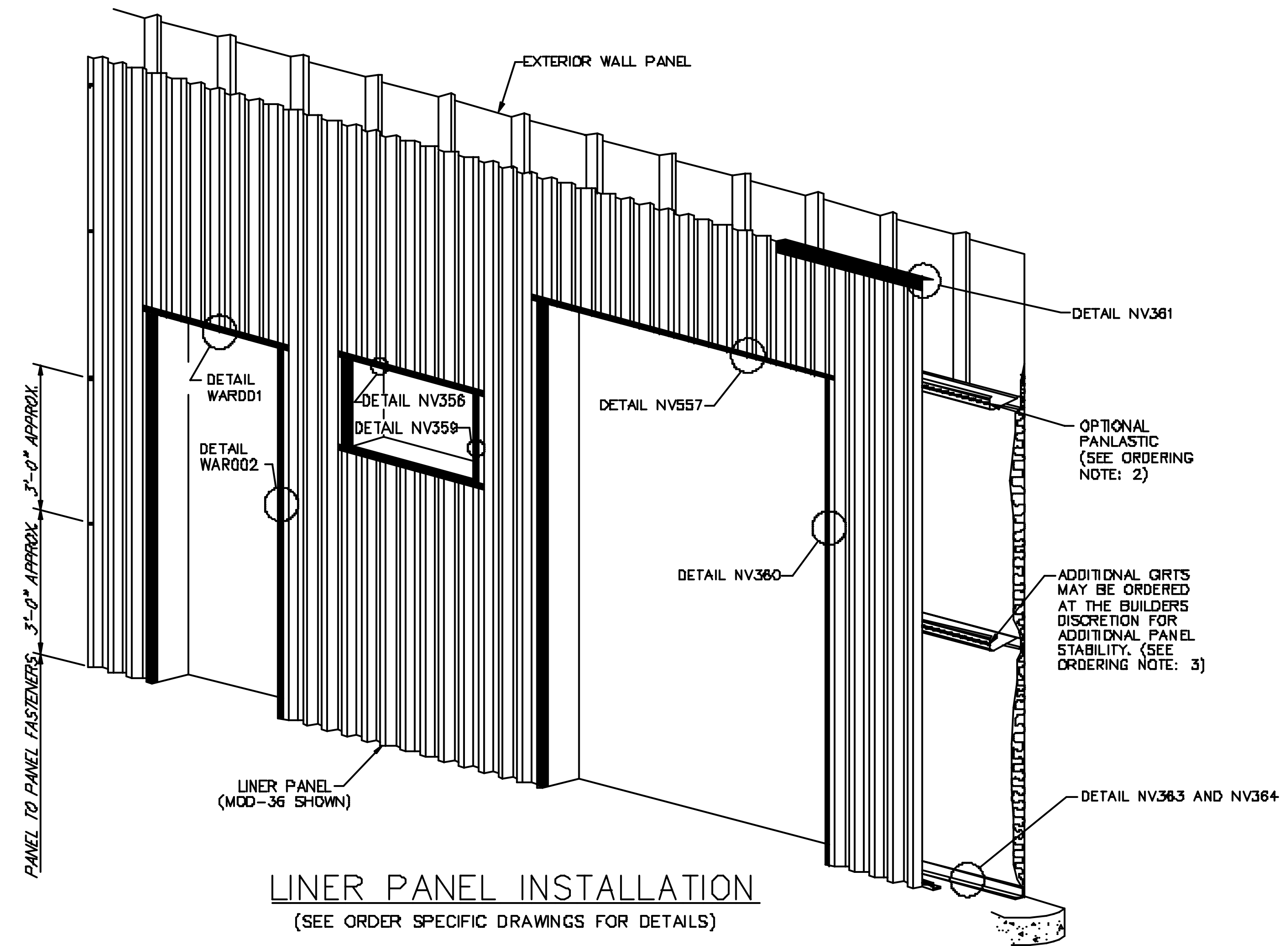
STEP TEN - INSTALL EDGE TRIM



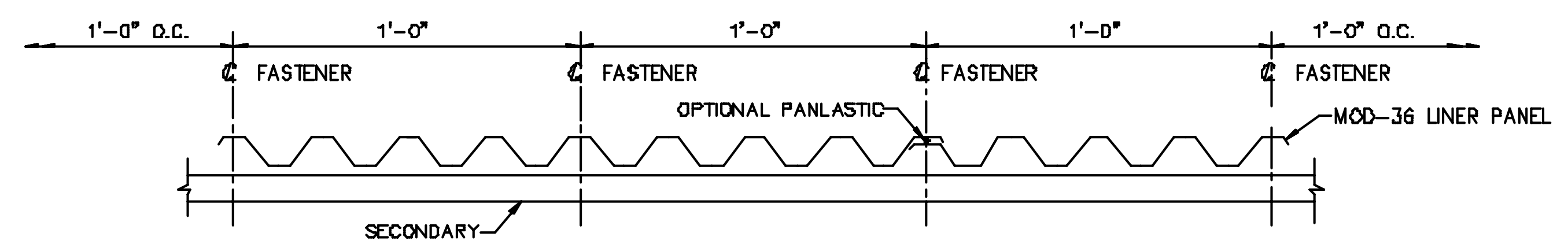
FINISHED OPENING DETAILS

THRU FASTENERS		
PANEL THK.	FASTENERS AT STRUCTURAL	PART NUM.
2"	1/4-14 X 3" PANCAKE HD T-3	1424PNC
2 1/2"	1/4-14 X 4" PANCAKE HD T-3	1432PNC
3"	1/4-14 X 4" PANCAKE HD T-3	1432PNC
4"	1/4-14 X 5" PANCAKE HD T-3	1440PNC

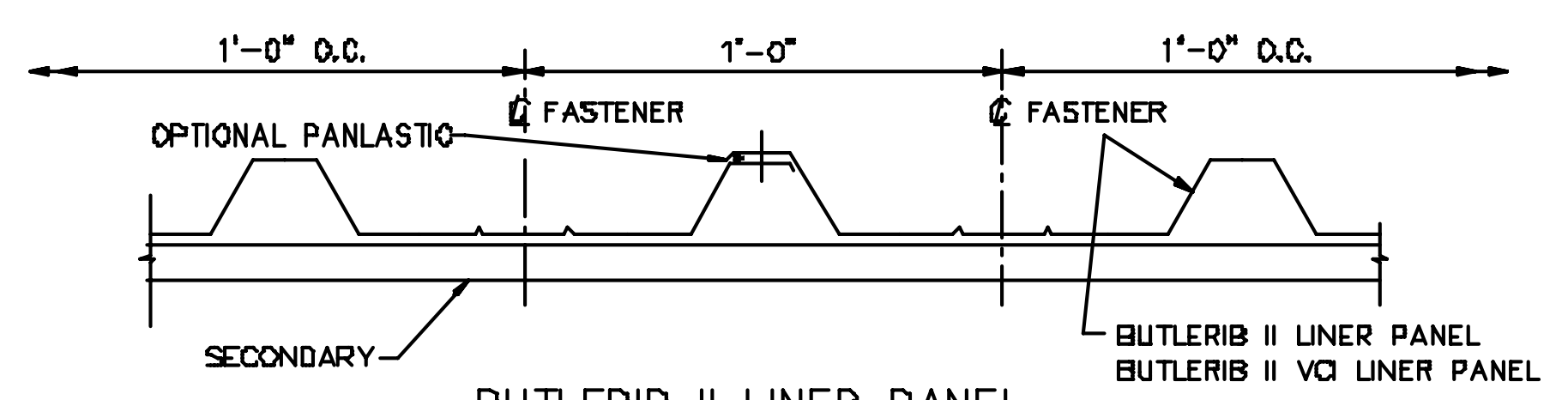
TRIM INSTALLATION DRAWING 3 OF 3 FOR INSULATED PANELS			
DRAWN BY	CHECKED BY	GROUP NUMBER: 00-000-00	
BSN	RLB	C	B-FRMOP4 04
FIRST RELEASE DATE	REVISION DATE		
11/16/10	07/19/18		



LINER PANEL INSTALLATION
(SEE ORDER SPECIFIC DRAWINGS FOR DETAILS)



MOD 36 LINER PANEL
3'-0" COVERAGE



BUTLERIB II LINER PANEL
3'-0" COVERAGE

TRIM FASTENER OPTIONS			
PART NUMBER	DESCRIPTION	HOLE SIZE	COLOR
097580 XXX	BLIND RIVET	9/64" DIA.	SEE DRAWING P-081764
097216	SELF DRILLING SCREW	--	BLACK
097295	SELF DRILLING SCREW	--	ALZN

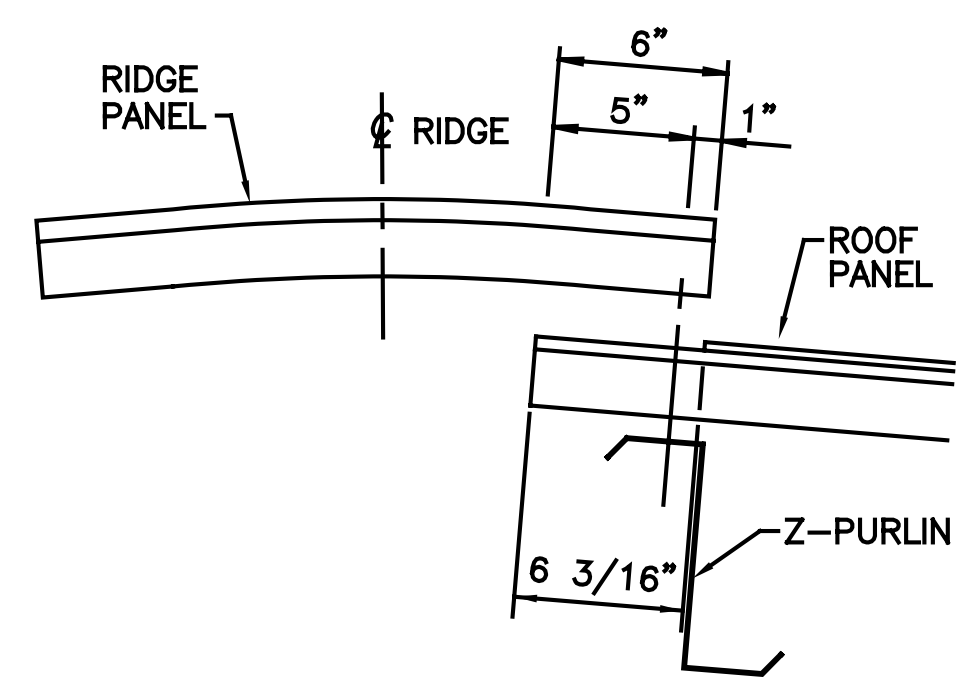
ORDERING NOTES:

1. DETERMINE AREA TO RECEIVE LINER PANEL AND STUDY THE DETAILS ON ORDER SPECIFIC DRAWINGS OF THE VARIOUS CONDITIONS APPLICABLE TO YOUR BUILDING. THESE DETAILS ARE SUGGESTIONS AND ARE INTENDED TO BE A STARTING POINT FROM WHICH OTHER SUITABLE APPLICATIONS MAY BE DERIVED. DETERMINE LINER PANEL LENGTH DESIRED, AND LENGTHS OF TRIM PARTS REQUIRED FOR CORNERS, POSTS, COLUMNS, AND ACCESSORIES.
2. IT IS RECOMMENDED THAT PANLASTIC (D25390) BE USED AT PANEL LAPS AND BETWEEN PANELS AND STRUCTURALS FOR SOUND DEADENING. ONE ROLL OF PANLASTIC CONTAINS 40 LINEAL FEET. PANLASTIC MUST BE ORDERED SEPARATELY.
3. AN ADDITIONAL GIRT MAY BE REQUIRED FOR ADDITIONAL STABILITY, PARTIAL HEIGHT WALLS OR WITH OVERHEAD DOORS TO SUPPORT THE LINER PANEL ABOVE THE DOOR HEADER. (FIELD HOLES IN COLUMN WILL BE REQUIRED). FOR CLIPS AND BOLTS REQUIRED TO ATTACH ADDITIONAL GIRTS, REFER TO STANDARD GIRT CONNECTION FOR PANEL TO PANEL FASTENER AND #12-14 X 1 1/4" TORX T-30 SELF DRILLING SCREW DETAILS.
4. FIELD WORK REQUIRED FOR ALL OPENINGS.

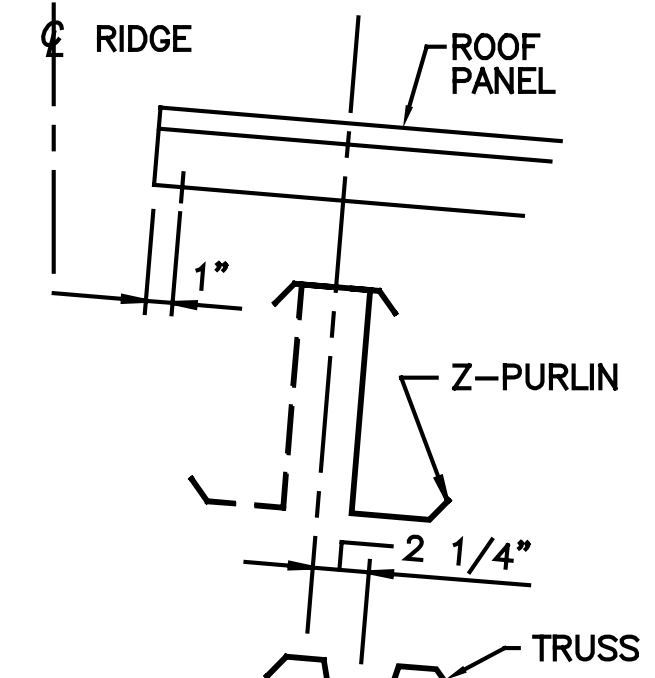
ERECTION NOTES:

1. INSTALL LINER PANEL AFTER INSTALLATION OF GIRTS, EXTERIOR WALL PANELING, DOORS, AND OTHER WALL ACCESSORIES.
2. INTERIOR FLANGE OF GIRT IS UNPUNCHED FOR WALL LINER APPLICATION. BMC PROVIDES 1/4-14 X 3/4" TORX T-30 SELF DRILLING SCREW (097364) FOR PANEL TO PANEL FASTENER AND #12-14 X 1 1/4" TORX T-30 SELF DRILLING SCREW (097365) FOR THE PANEL TO STRUCTURAL FASTENER.
3. BECAUSE PANELS ARE UNPUNCHED, "CREEPING" MAY OCCUR DURING INSTALLATION. BE SURE TO CHECK FOR PANEL MODULARITY AND SQUARENESS.
4. TO AVOID DIMPLING OF THE TRIM PARTS, FASTENER SPAACING FOR TRIM ATTACHMENT SHOULD ALIGN WITH WALL LINER CORRUGATIONS.
5. FIELD WORK REQUIRED FOR ALL OPENINGS.

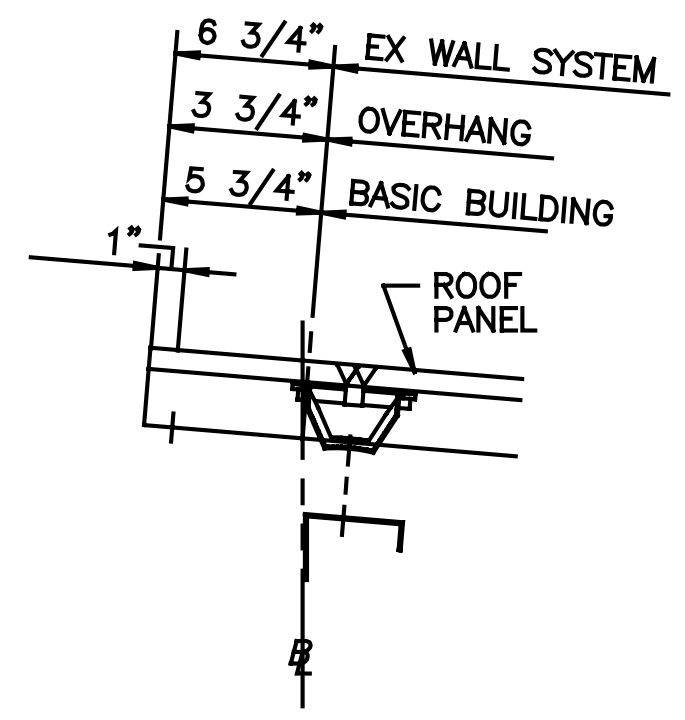
LINER PANEL INSTALLATION			
ALL WALLS/MOD-36 AND BUTLERIB II			
DRAWN BY	CHECKED BY	GROUP NUMBER: 28-031-01	
RHE	BLF	B	P-080234 09
FIRST RELEASE DATE	REVISION DATE		
01/21/10	03/08/16		



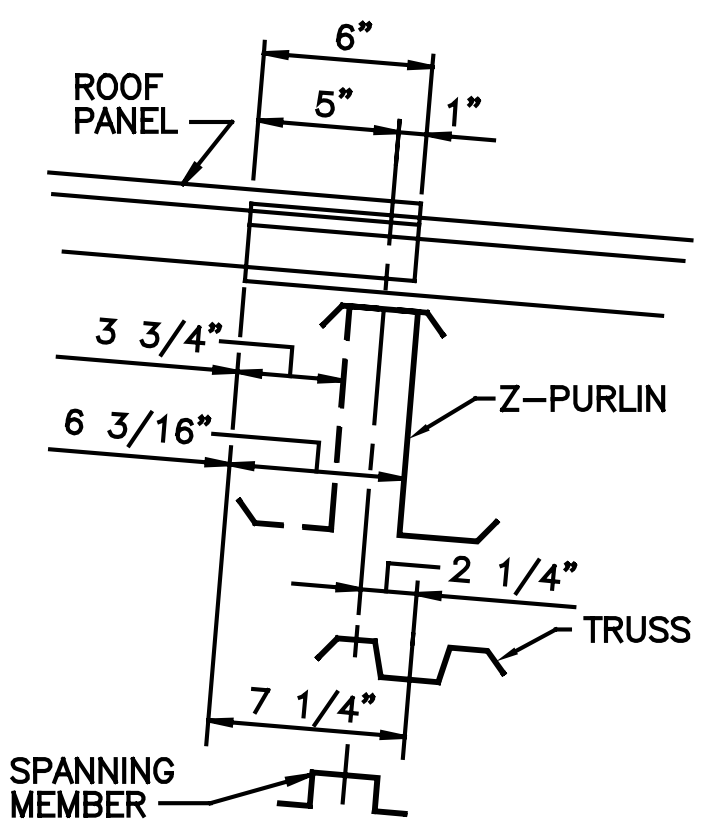
SEAMED RIDGE PANEL



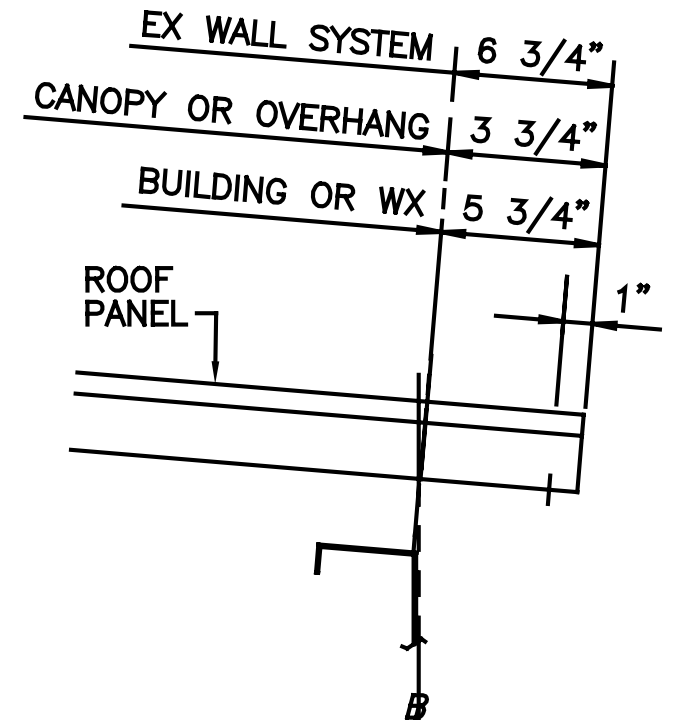
RIDGE



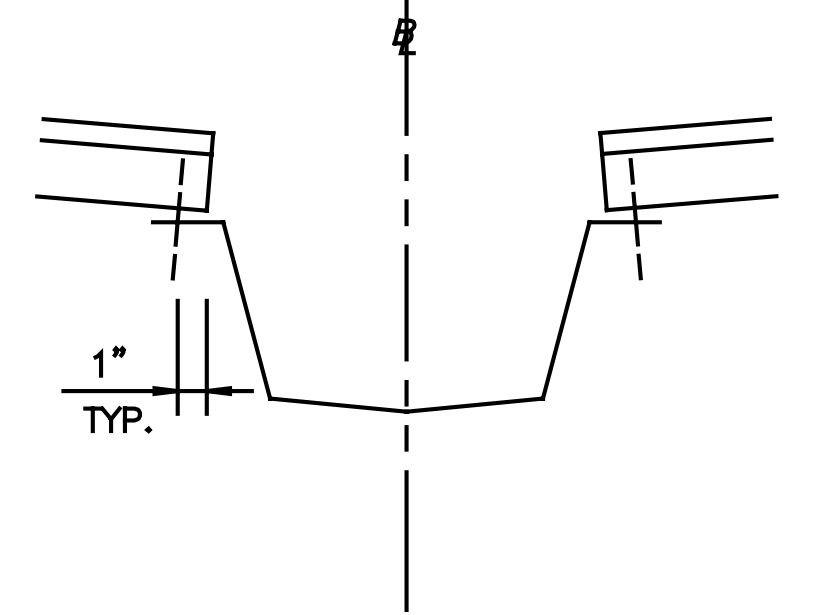
HIGH EAVE



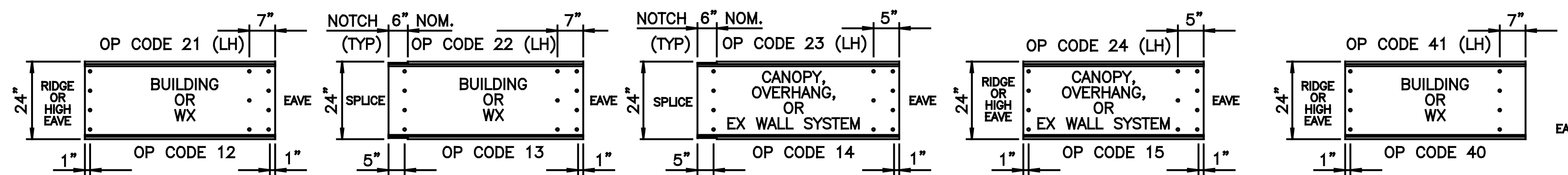
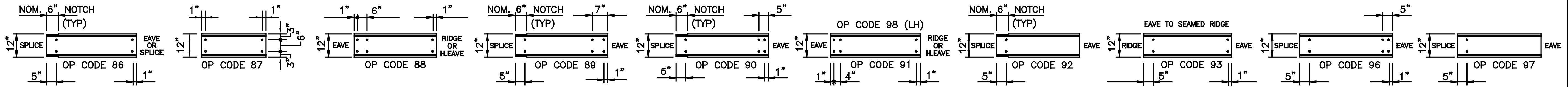
END LAP SPLICE



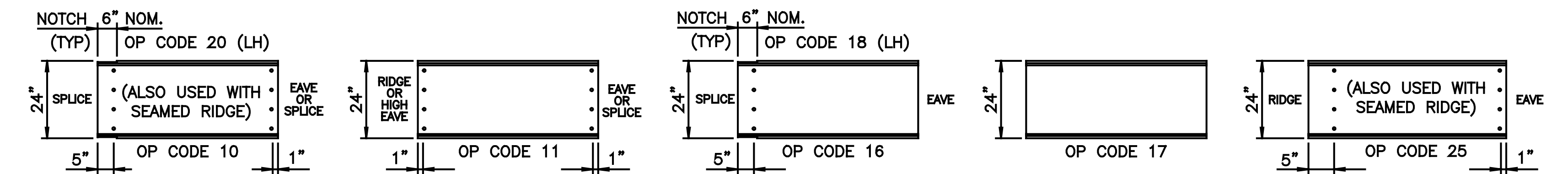
LOW EAVE



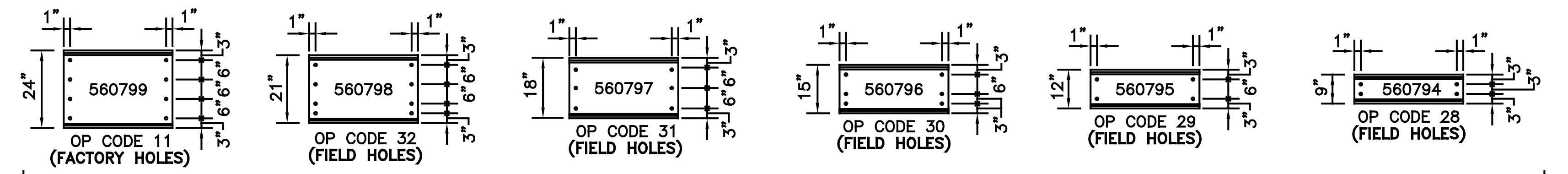
VALLEY GUTTER



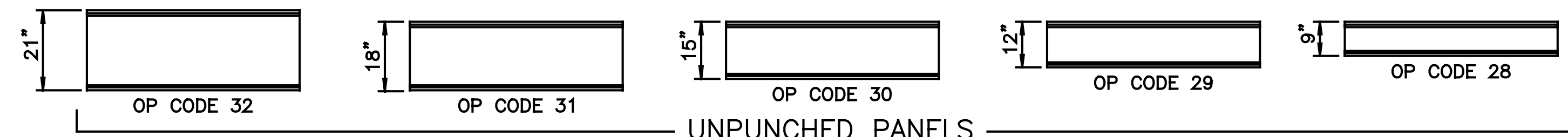
TO HELP PREVENT WALL STAINING CAUSED BY ROOF RUN-OFF, INSTALL EAVE EDGE OF ROOF TRIM OR GUTTER PARTS IMMEDIATELY AFTER ROOF PANELS ARE INSTALLED.



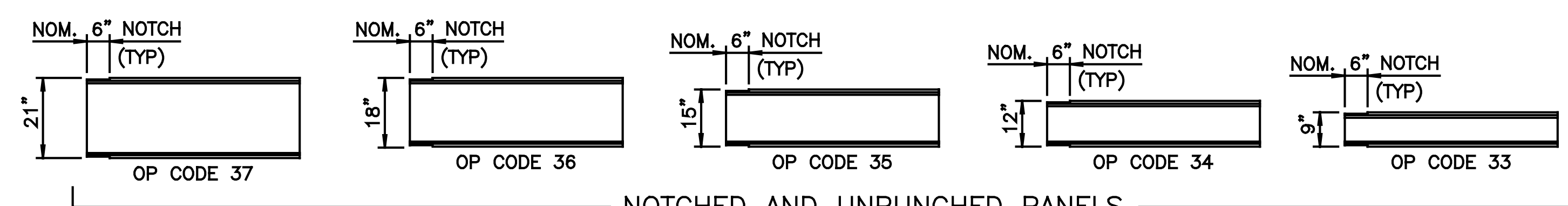
MR-24 PANELS



SEAMED RIDGE PANELS



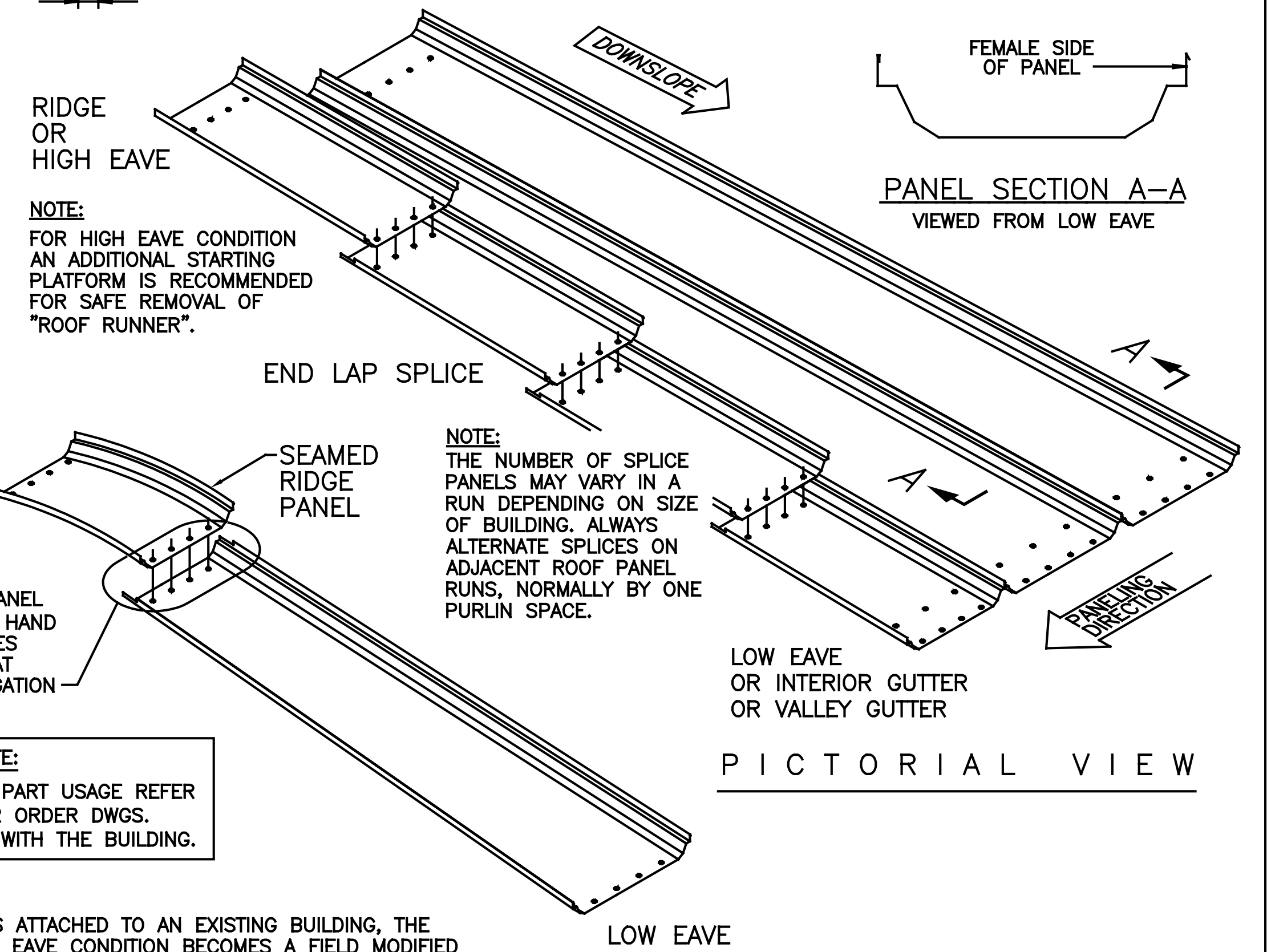
UNPUNCHED PANELS



NOTCHED AND UNPUNCHED PANELS

MR-24 VARIABLE WIDTH PANELS

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



NOTE: FOR HIGH EAVE CONDITION AN ADDITIONAL STARTING PLATFORM IS RECOMMENDED FOR SAFE REMOVAL OF "ROOF RUNNER".

NOTE: THE NUMBER OF SPLICE PANELS MAY VARY IN A RUN DEPENDING ON SIZE OF BUILDING. ALWAYS ALTERNATE SPLICES ON ADJACENT ROOF PANEL RUNS, NORMALLY BY ONE PURLIN SPACE.

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

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

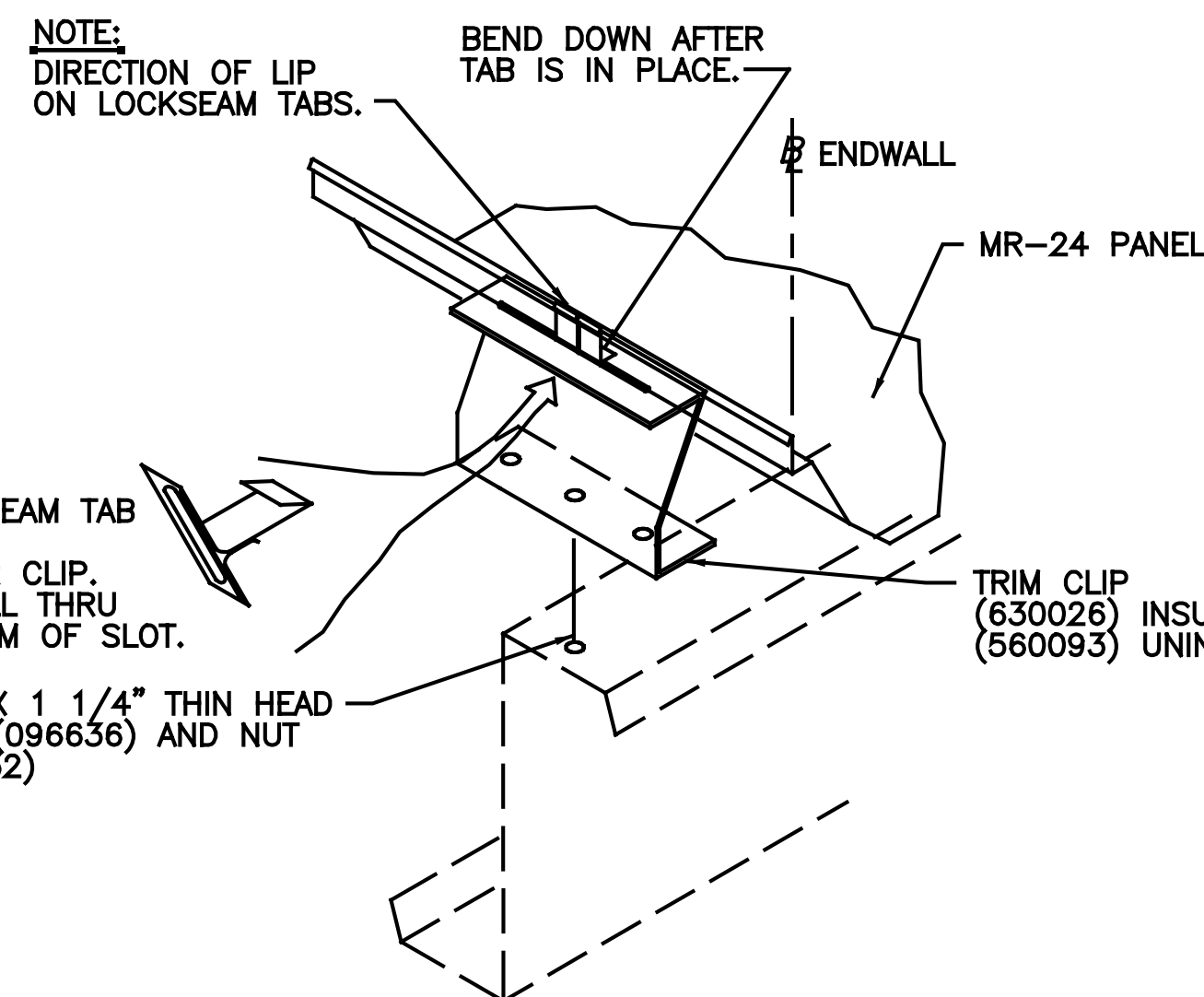
MR-24 ROOF PANEL IDENTIFICATION			
DRAWN BY	CHECKED BY	GROUP NUMBER: 02-030-01	
JPV	BJF	B	P-080570 05
FIRST RELEASE DATE	REVISION DATE		
01/21/10	12/01/17		

CAUTION

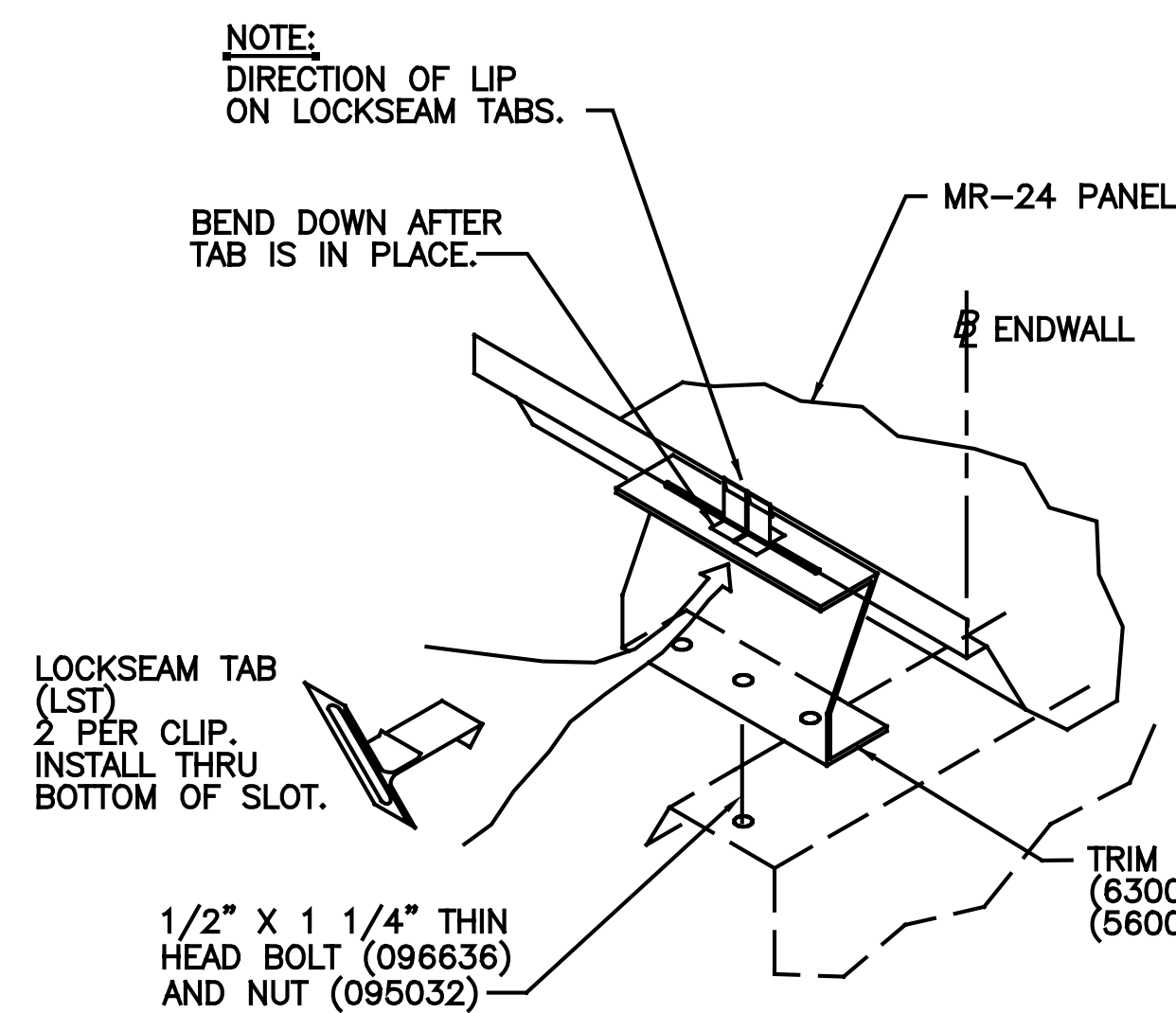
THE TRIM CLIP MUST BE INSTALLED AT THE SAME TIME AS THE GABLE ANGLE OR RAKE CHANNEL. BEFORE INSTALLING TRIM CLIPS SEE THE PROPER SECONDARY STRUCTURAL DETAIL DRAWING.

DETAIL 1 IMPORTANT NOTES:

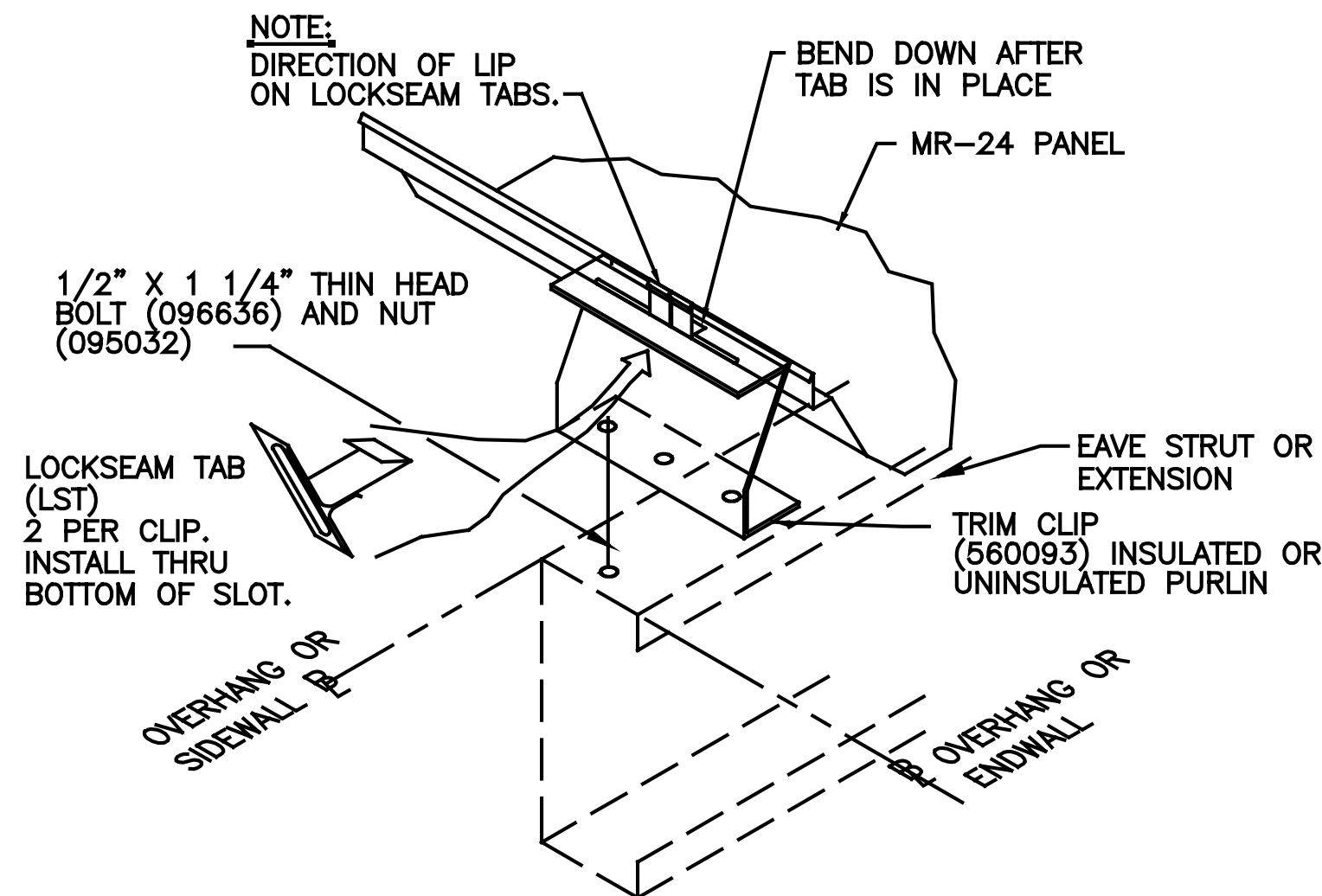
1. USE THE OUTER DOWNSLOPE HOLE OR SLOT IN THE TRIM CLIP FOR THE CONNECTION TO THE EAVE STRUT.
2. WITH MULTIPLE GUTTER AT THE EAVE, MOVE THE TRIM CLIP UPSLOPE TO CLEAR THE RUBBER CORRUGATION CLOSURE IN THE END CORRUGATION. USE THE CLIP AS A TEMPLATE TO FIELD DRILL (2) 9/16" DIA. HOLES. USE THE TWO OUTER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



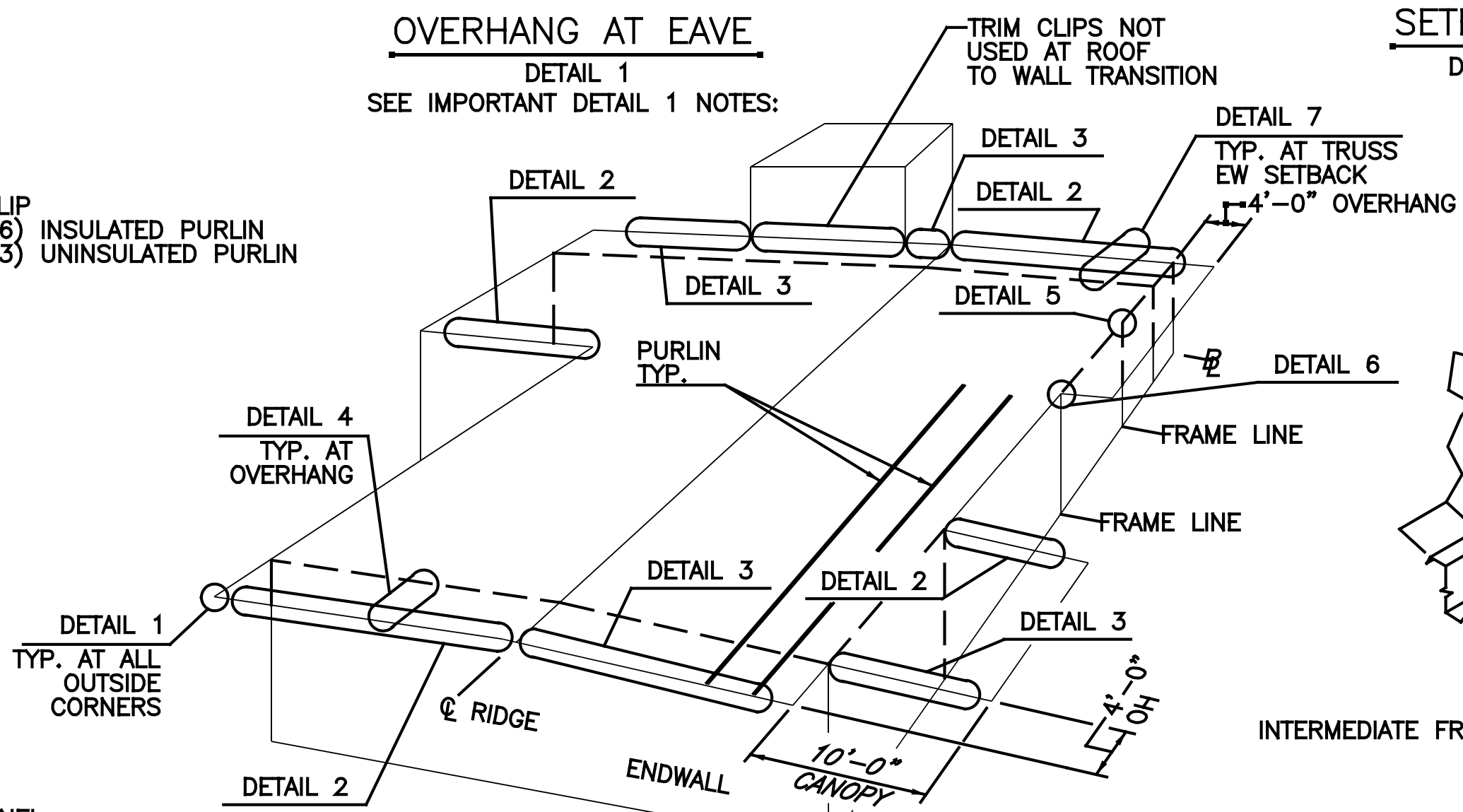
TAB ORIENTATION AT FEMALE SIDE OF PANEL
DETAIL 2



TAB ORIENTATION AT MALE SIDE OF PANEL
DETAIL 3

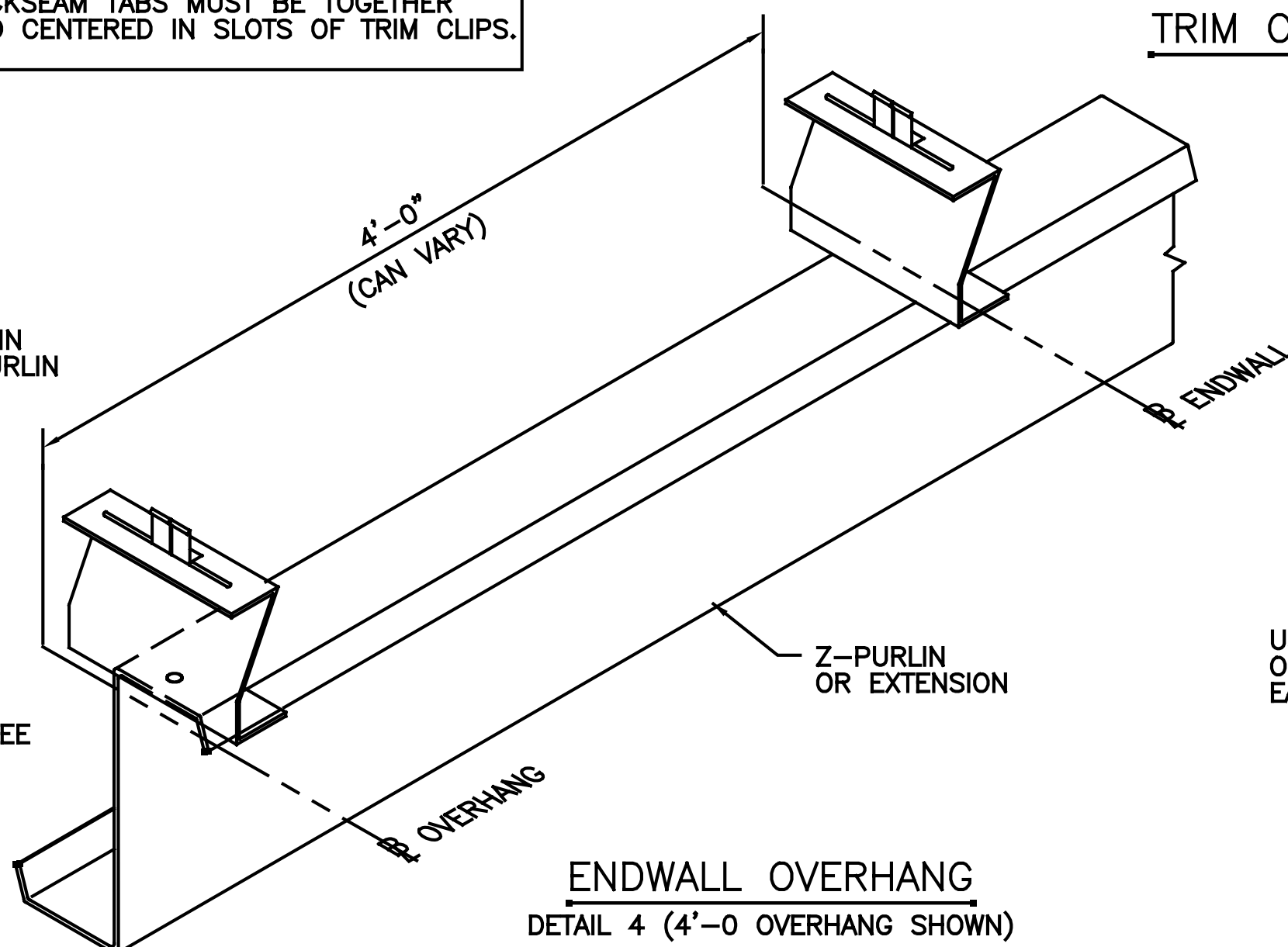


OVERHANG AT EAVE
DETAIL 1
SEE IMPORTANT DETAIL 1 NOTES:

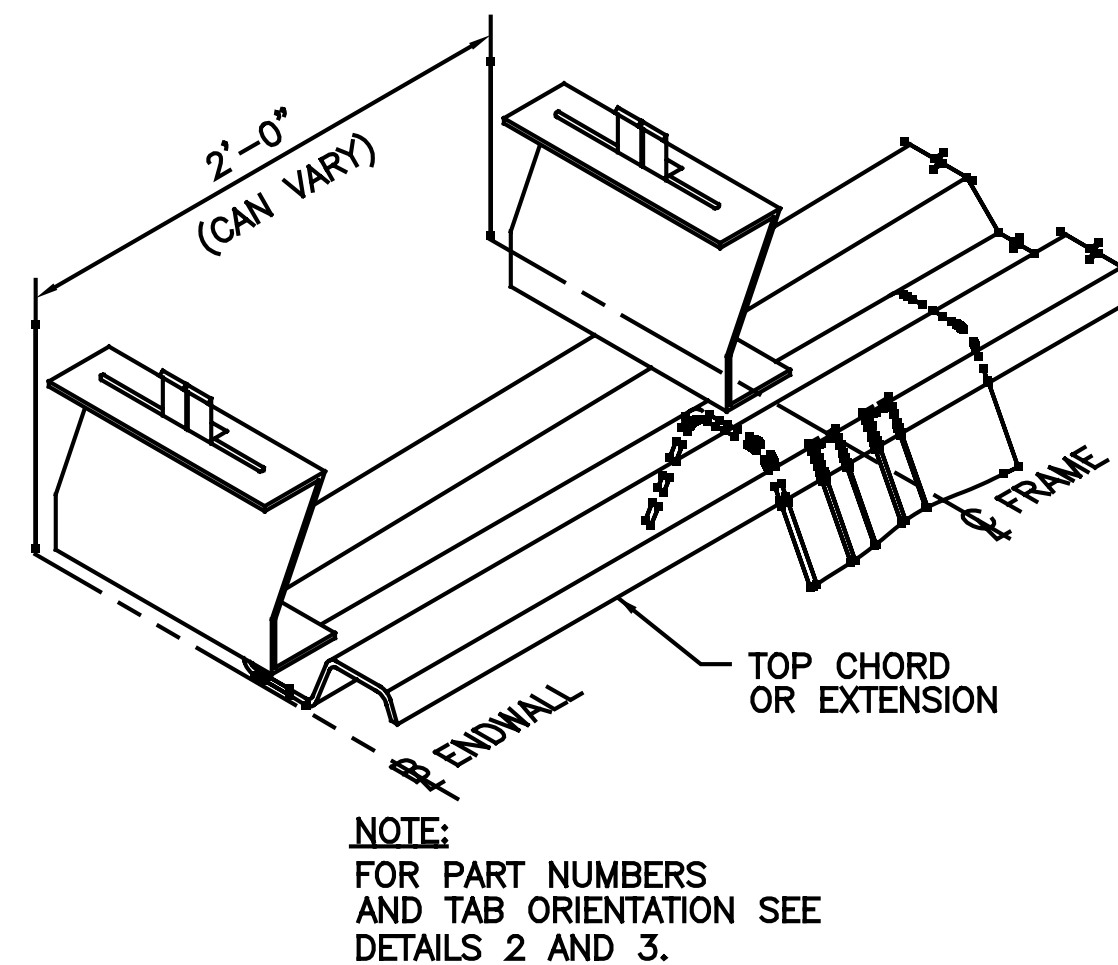


IMPORTANT NOTE
LOCKSEAM TABS MUST BE TOGETHER AND CENTERED IN SLOTS OF TRIM CLIPS.

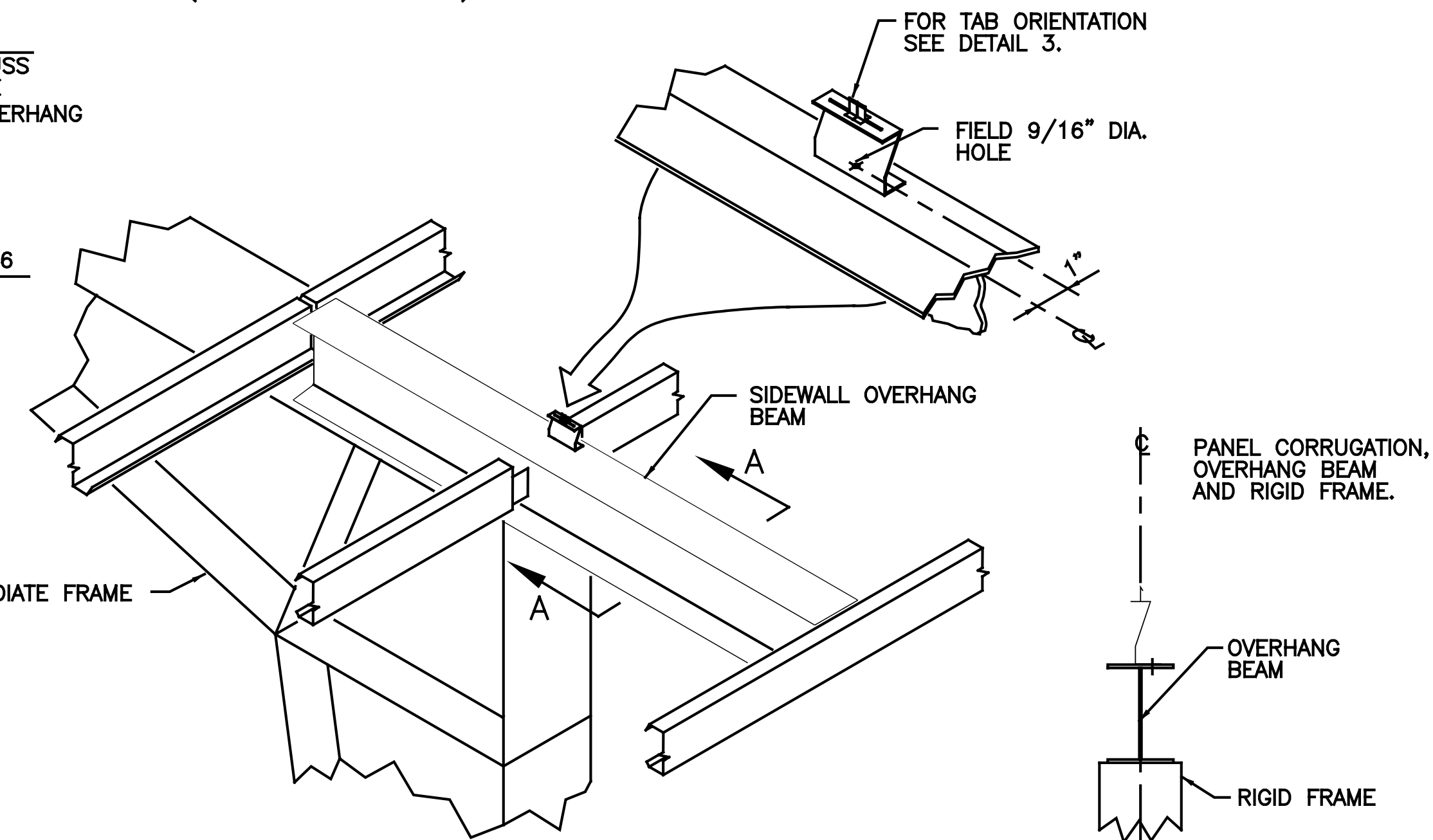
NOTE:
FOR PART NUMBERS AND TAB ORIENTATION SEE DETAILS 2 AND 3.



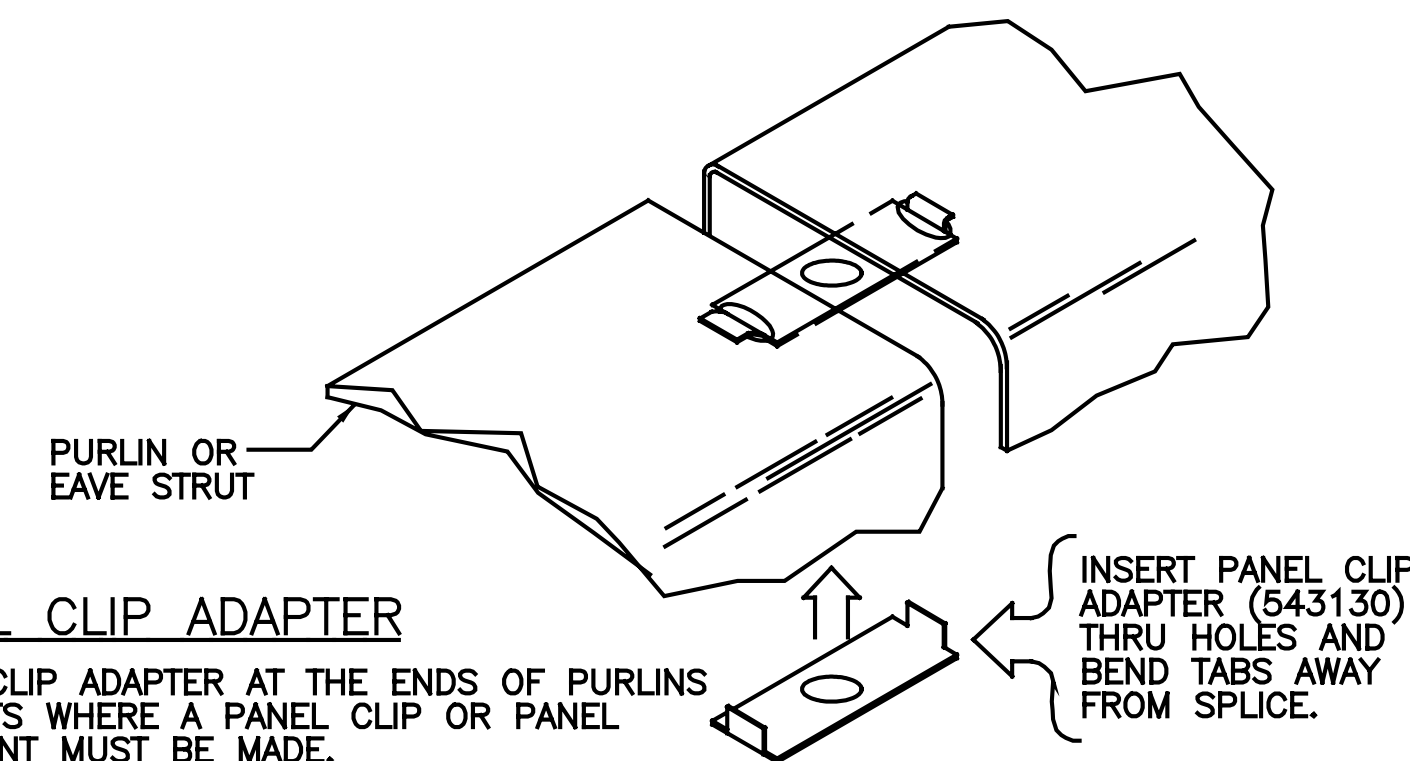
ENDWALL OVERHANG
DETAIL 4 (4'-0" OVERHANG SHOWN)



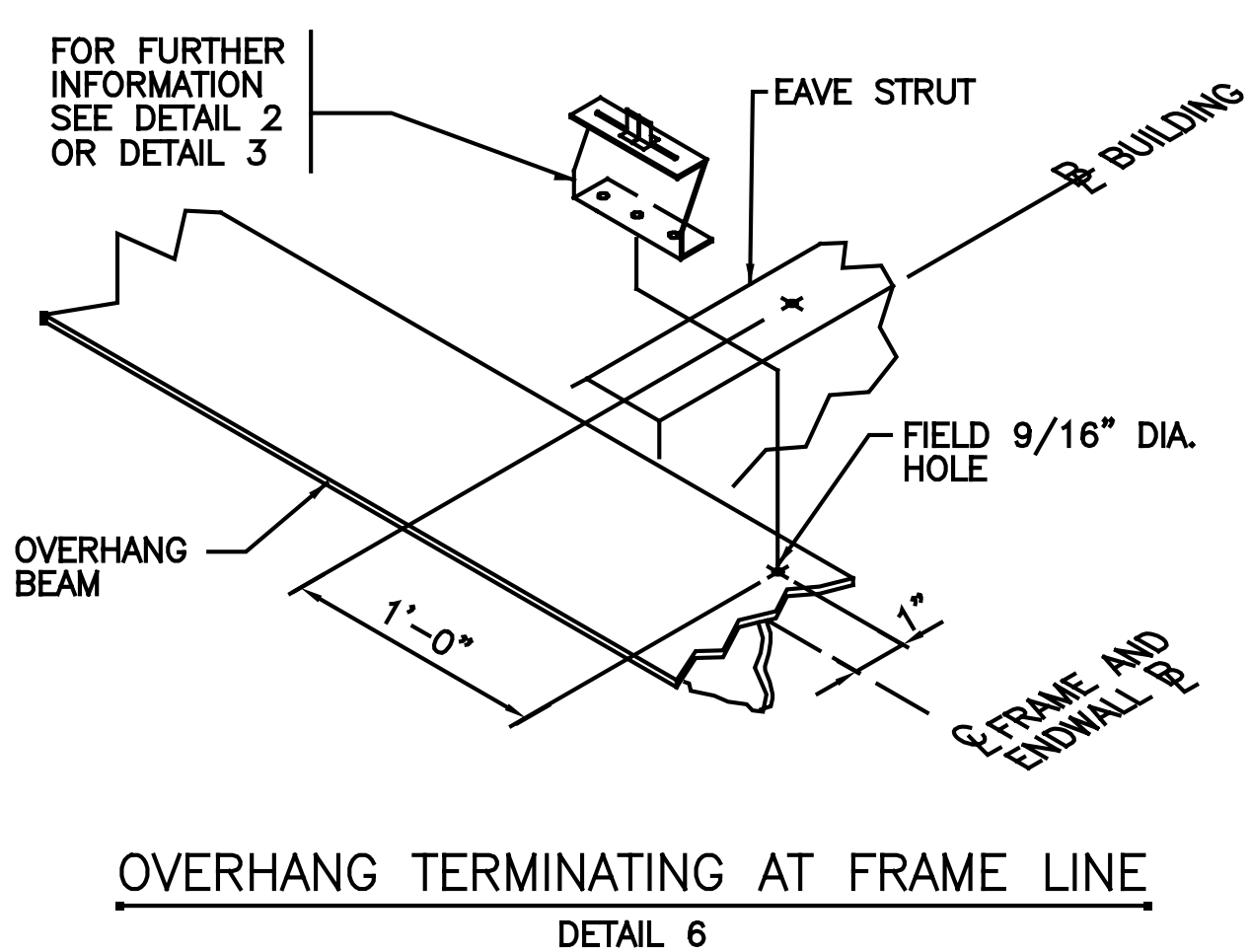
SETBACK AT TRUSS ENDWALL
DETAIL 7 (2'-0" SETBACK SHOWN)



TRIM CLIPS REQUIRED ON SIDEWALL OVERHANG BEAMS
DETAIL 5

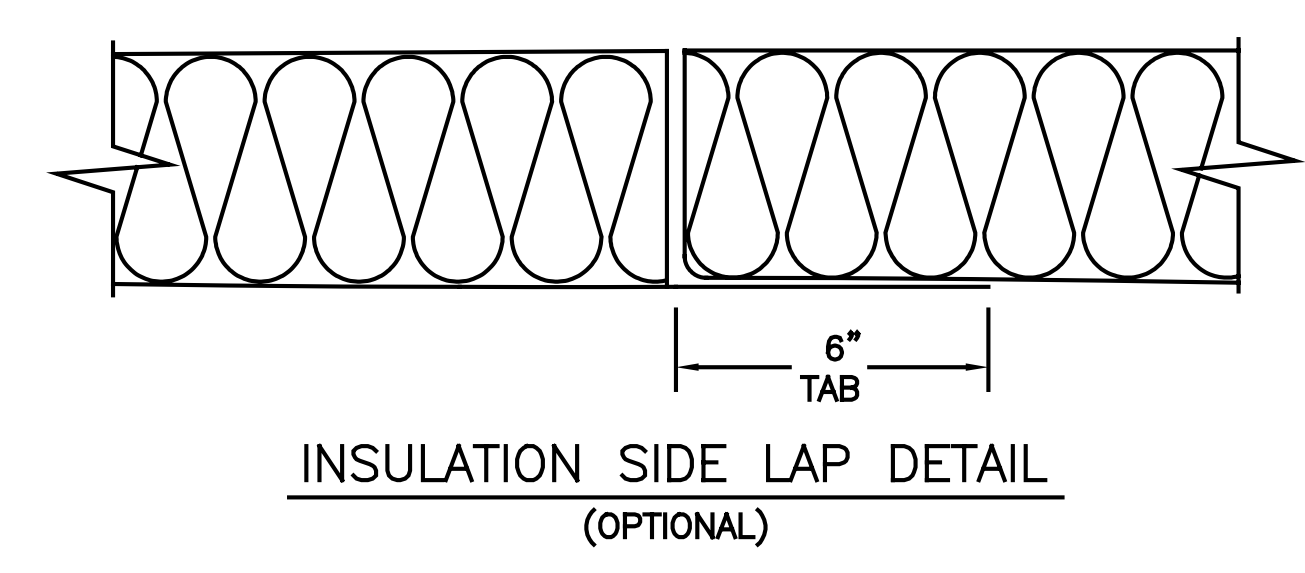
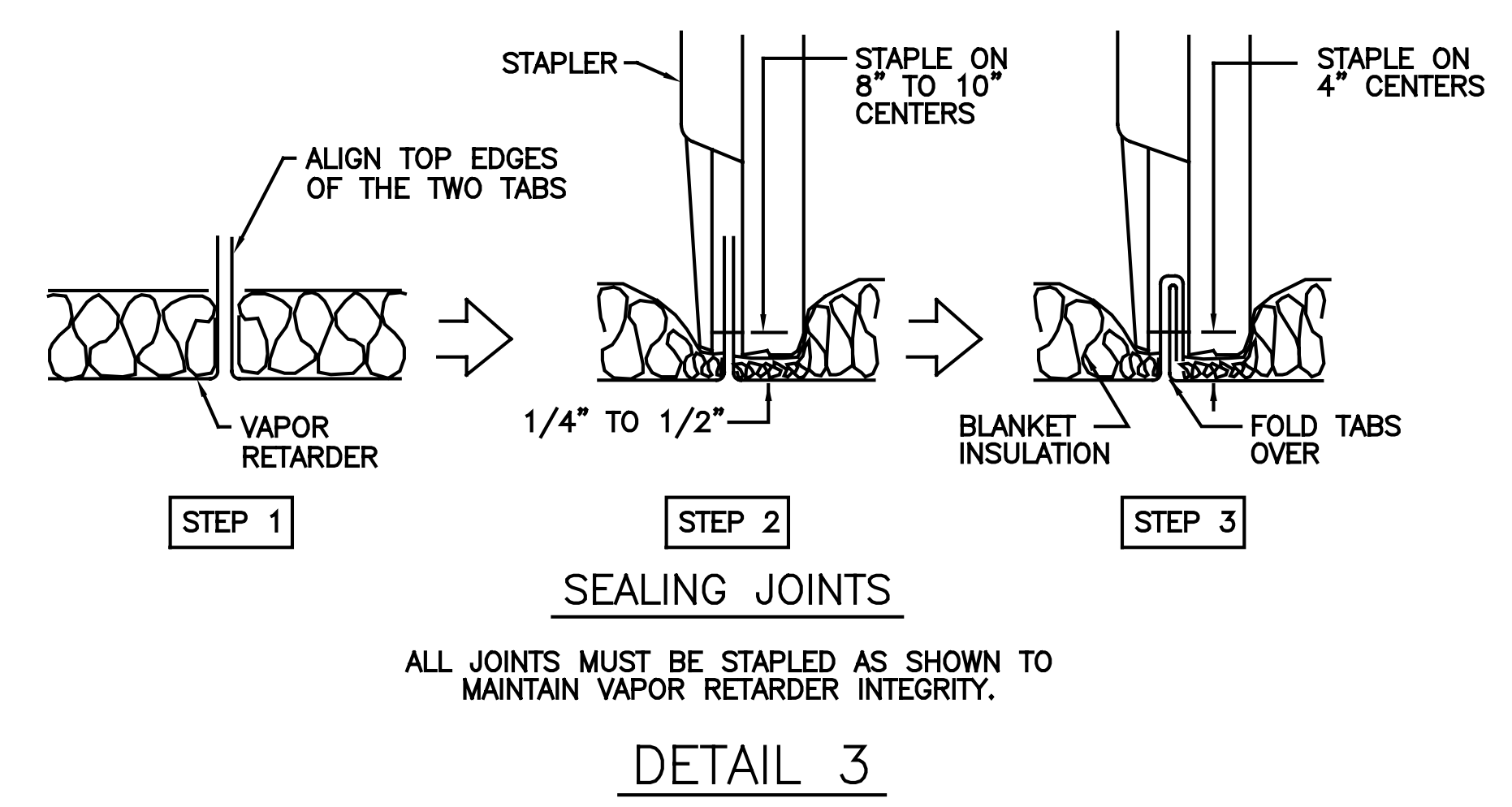
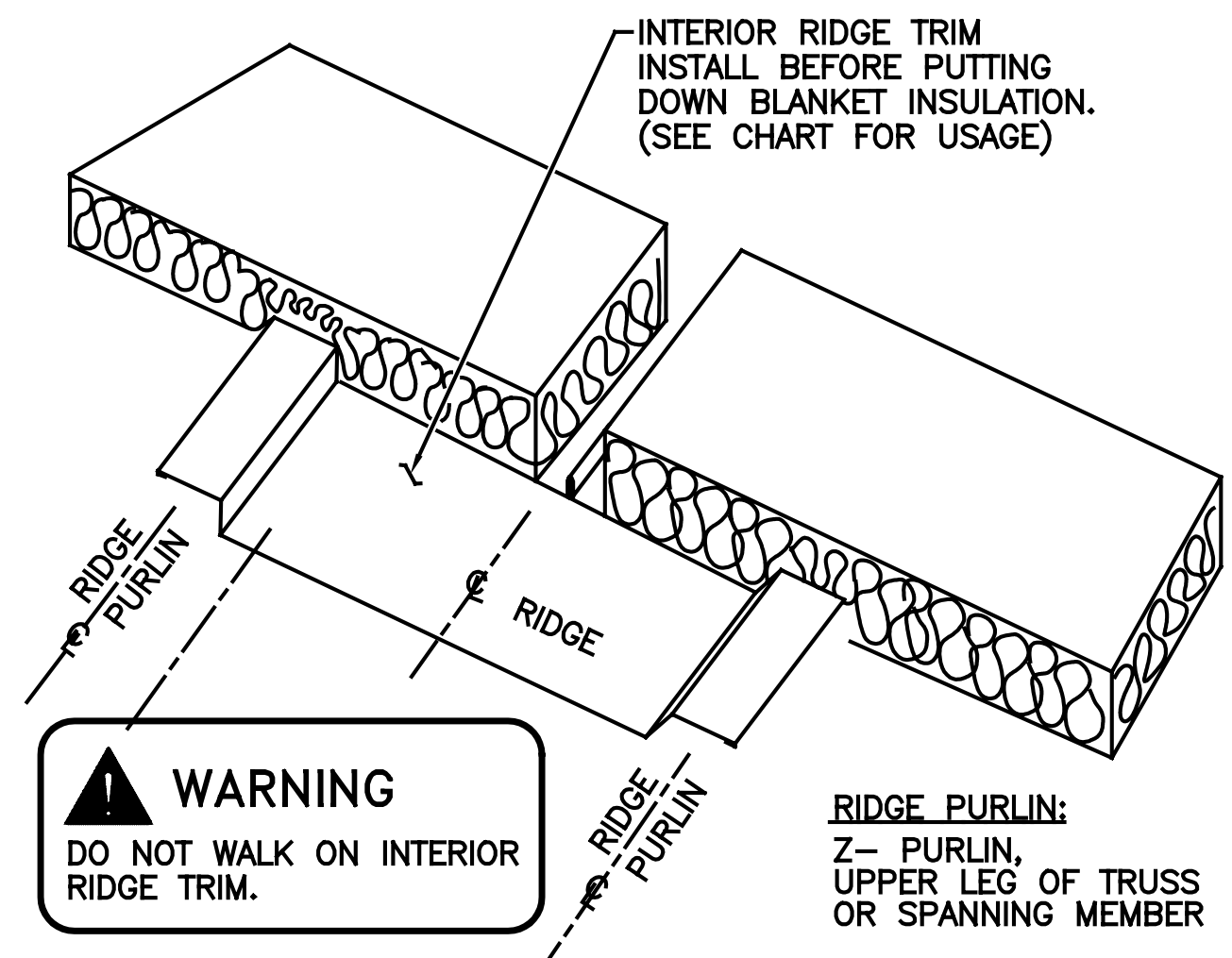


PANEL CLIP ADAPTER
USE A PANEL CLIP ADAPTER AT THE ENDS OF PURLINS OR EAVE STRUTS WHERE A PANEL CLIP OR PANEL EAVE ATTACHMENT MUST BE MADE.



OVERHANG TERMINATING AT FRAME LINE
DETAIL 6

MR-24 TRIM CLIP LOCKSEAM TAB AND PANEL CLIP ADAPTER INSTL.			
DRAWN BY	CHECKED BY	GROUP NUMBER: 02-030-02	
JPV	BJF	B	P-080572 04
FIRST RELEASE DATE	REVISION DATE		
01/21/10	02/04/20		



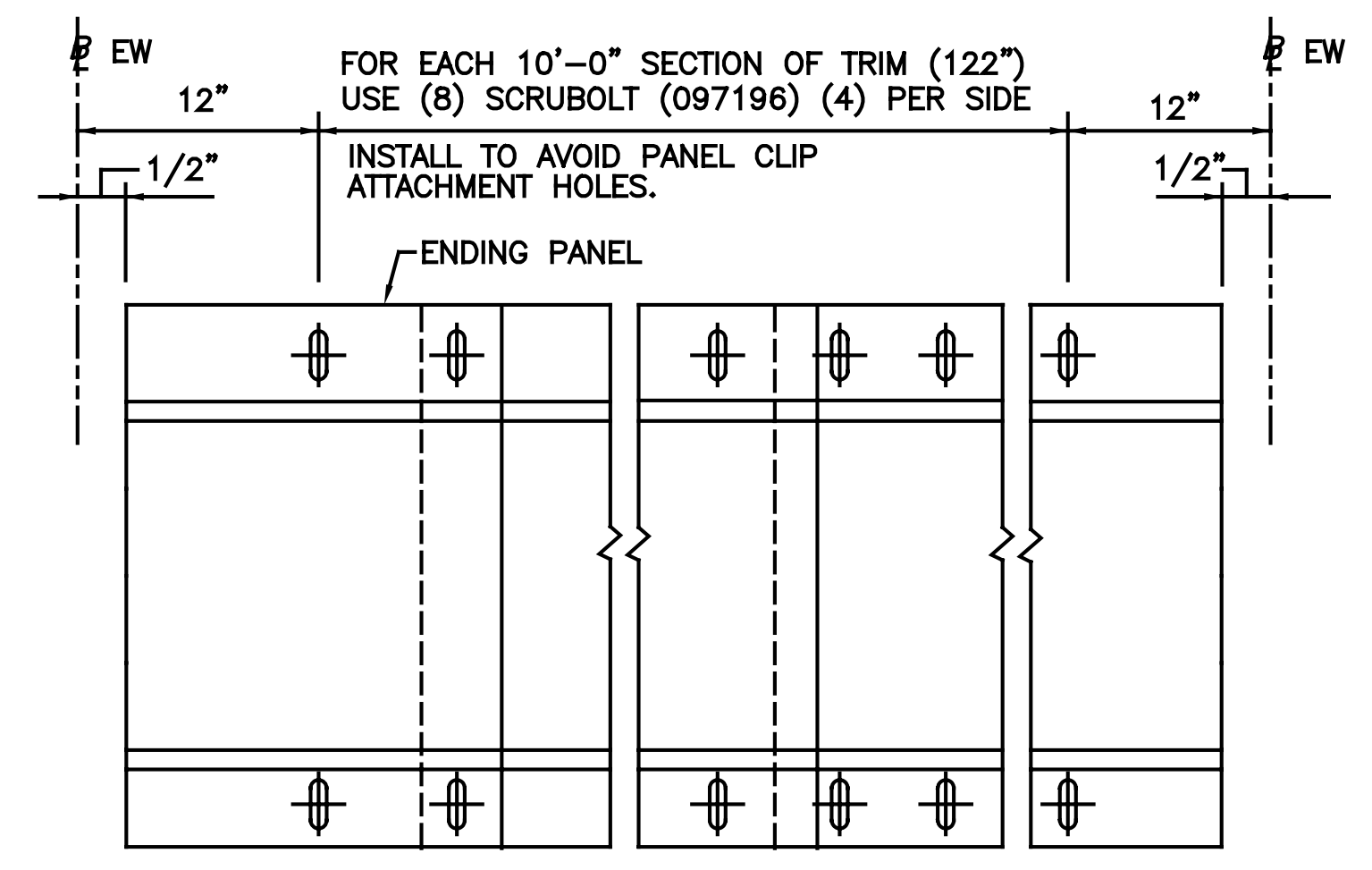
INTERIOR RIDGE TRIM PART NUMBER					
BUILDING TYPE	ROOF SLOPE	7" PURLIN	8 1/2" PURLIN	10" PURLIN	11 1/2" PURLIN
Z-PURLIN	1/4:12 TO < 3/4:12	IRT10C	IRT10C	IRT10C	IRT10C
	3/4:12 TO <= 2 3/4:12	IRT10C	IRT10C	IRT10B	IRT10B
	> 2 3/4:12 TO < 3 1/2:12	IRT10C	IRT10C	IRT10D	IRT10D
	>= 3 1/2:12 TO <= 4:12	IRT10A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

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

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

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

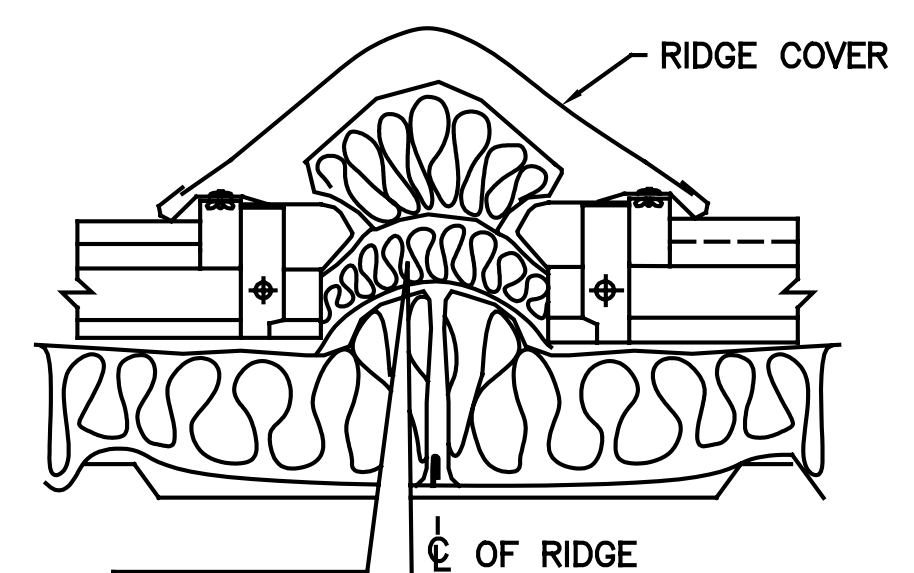
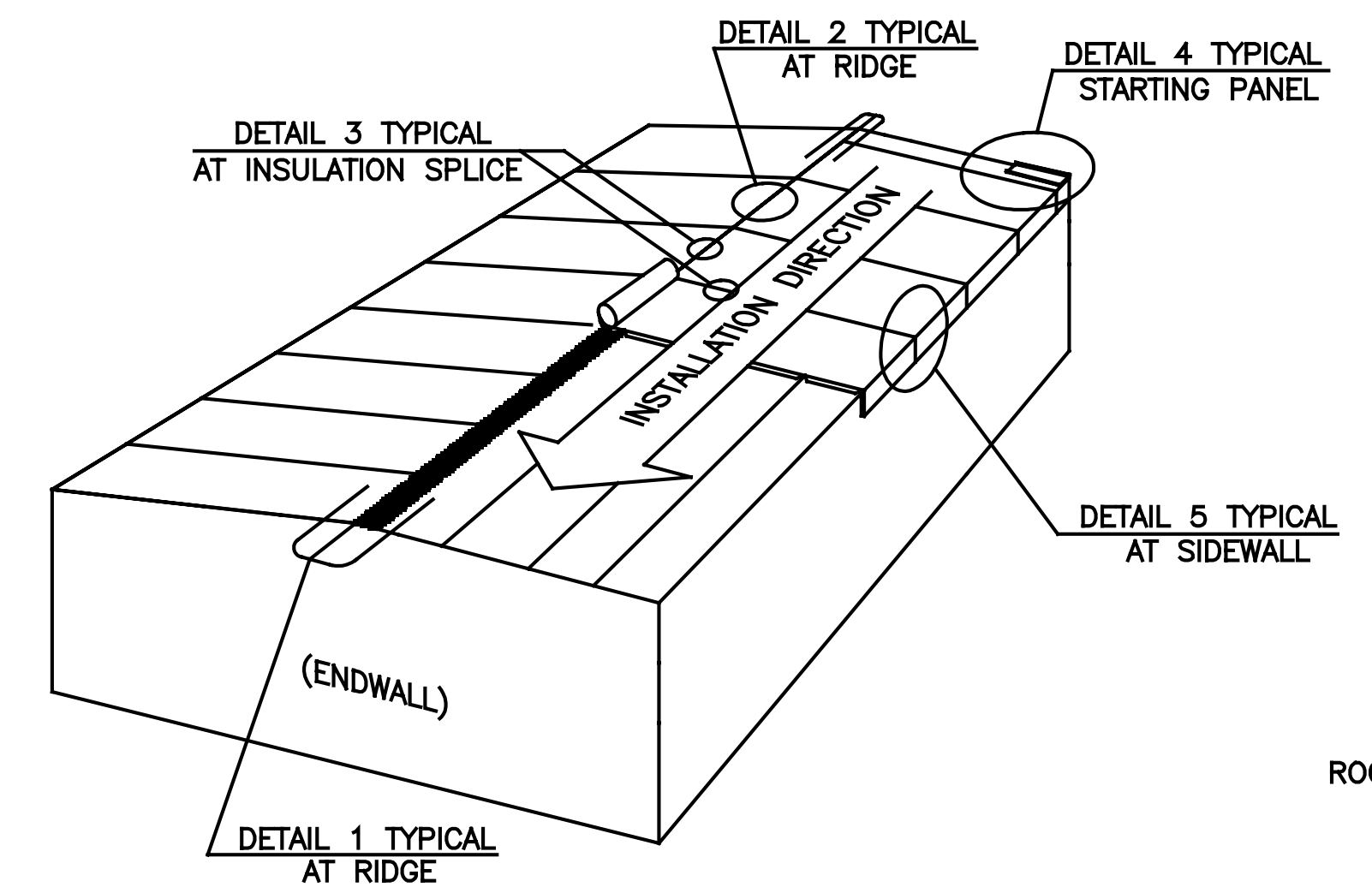
RIDGE CONDITION
DETAIL 2



INTERIOR RIDGE TRIM INSTALLATION

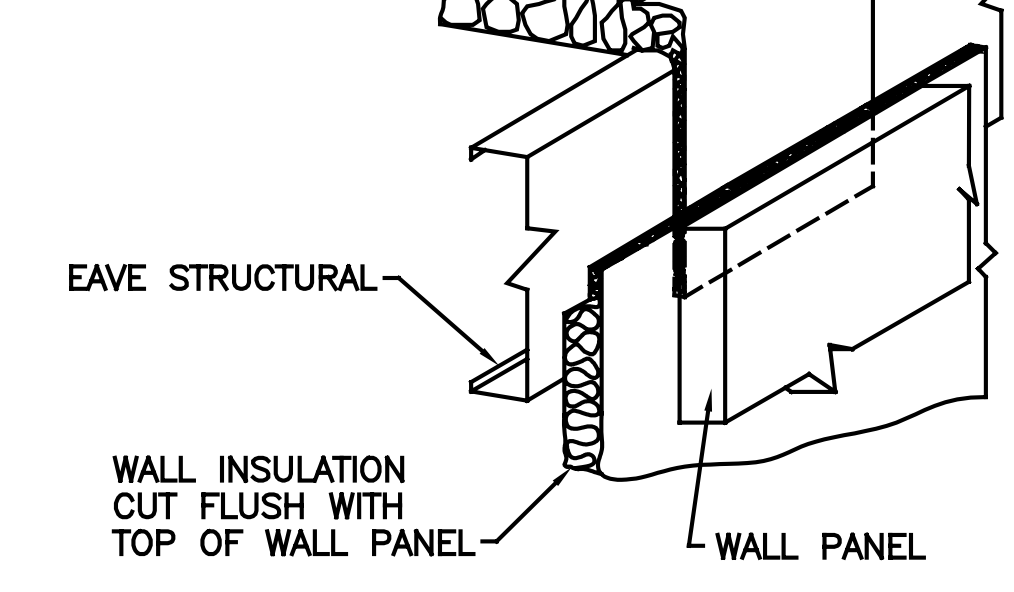
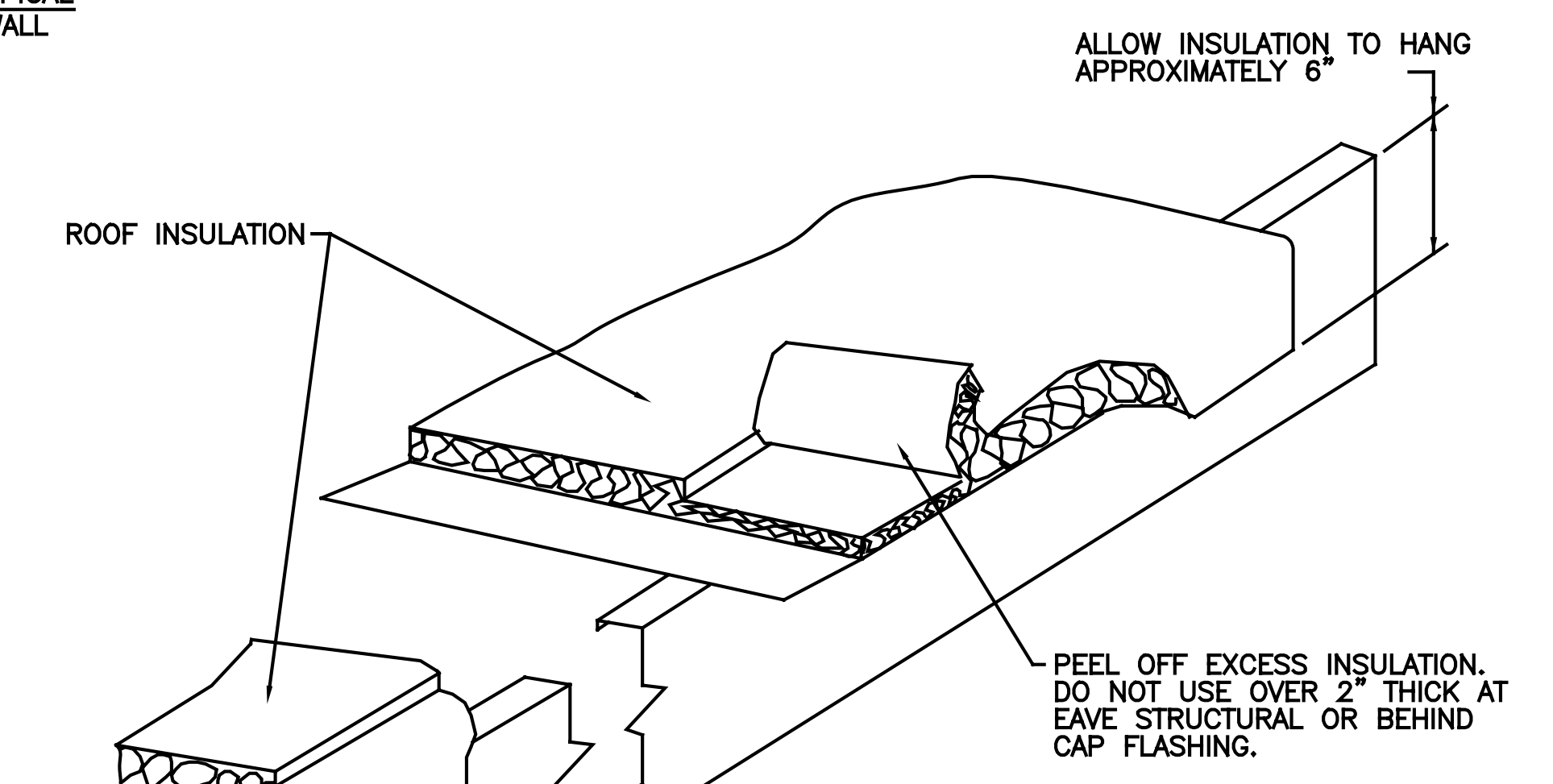
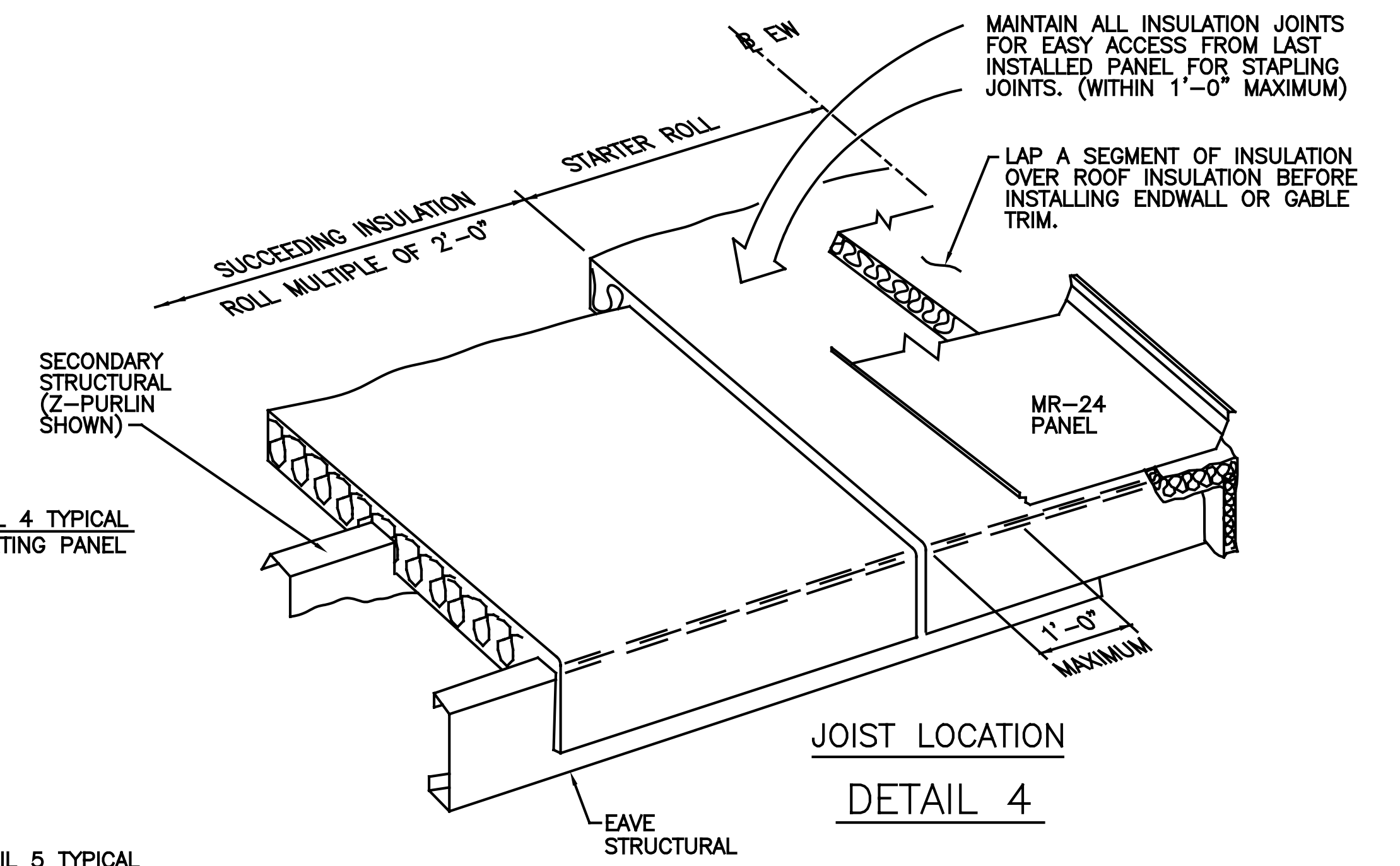
NOTE: ROTATE ENDING PANEL

DETAIL 1

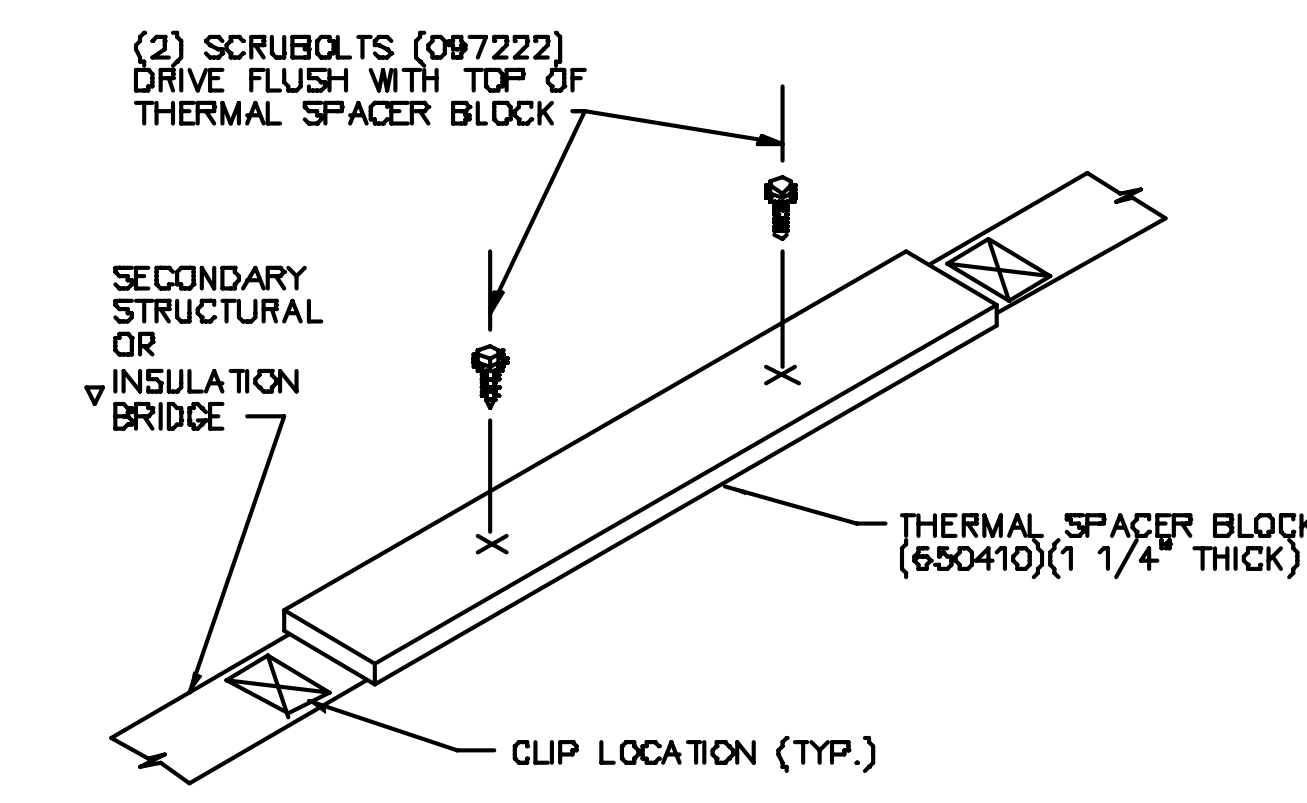
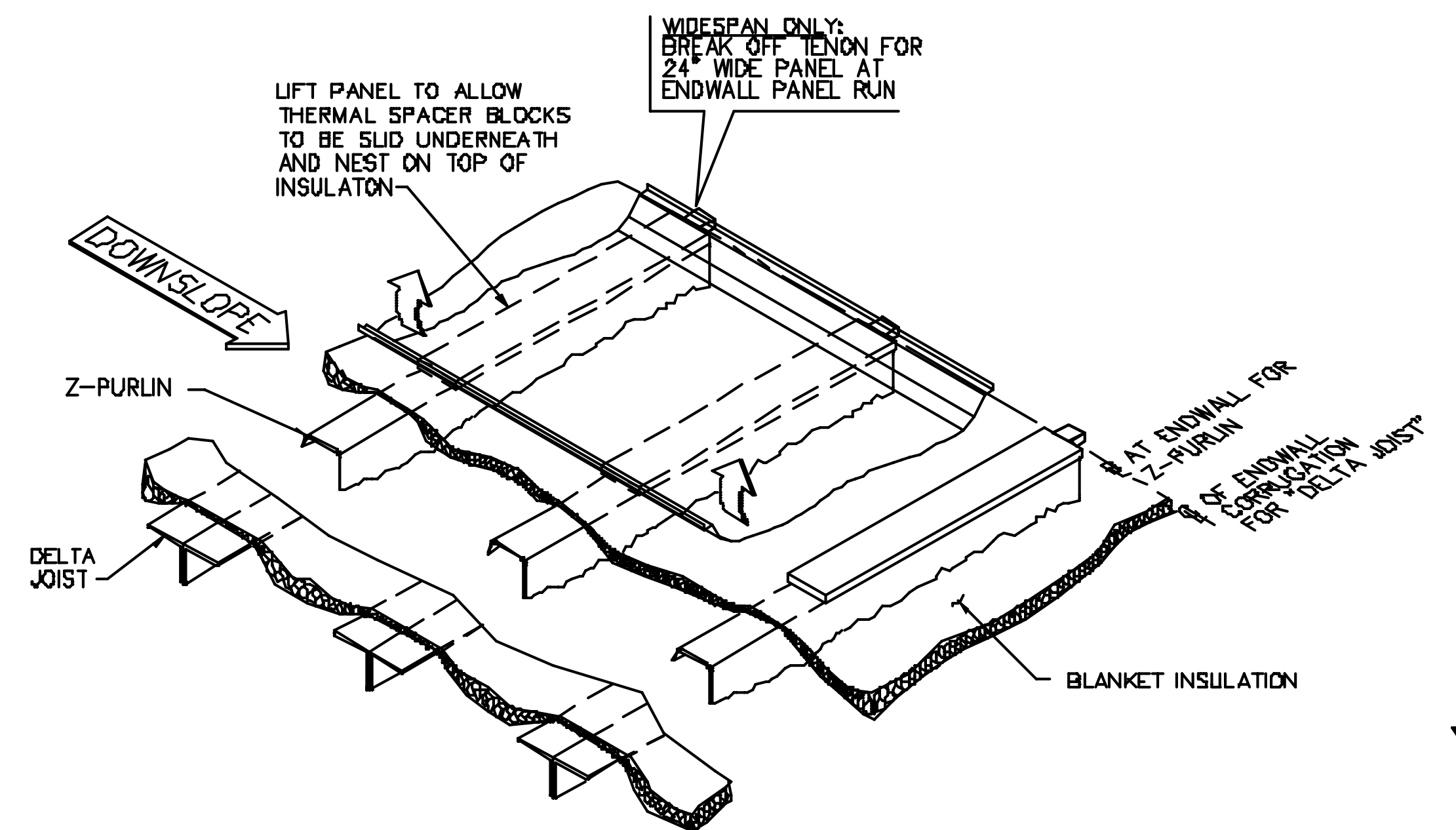


IMPORTANT
AFTER THE BUILDING HAS BEEN
COMPLETELY INSULATED, ANY
SCRAPS LEFT OVER, (IF ANY), CAN
BE ADDED AT THE RIDGE.

SECTION AT (FINISHED) RIDGE
(REFERENCE ONLY)



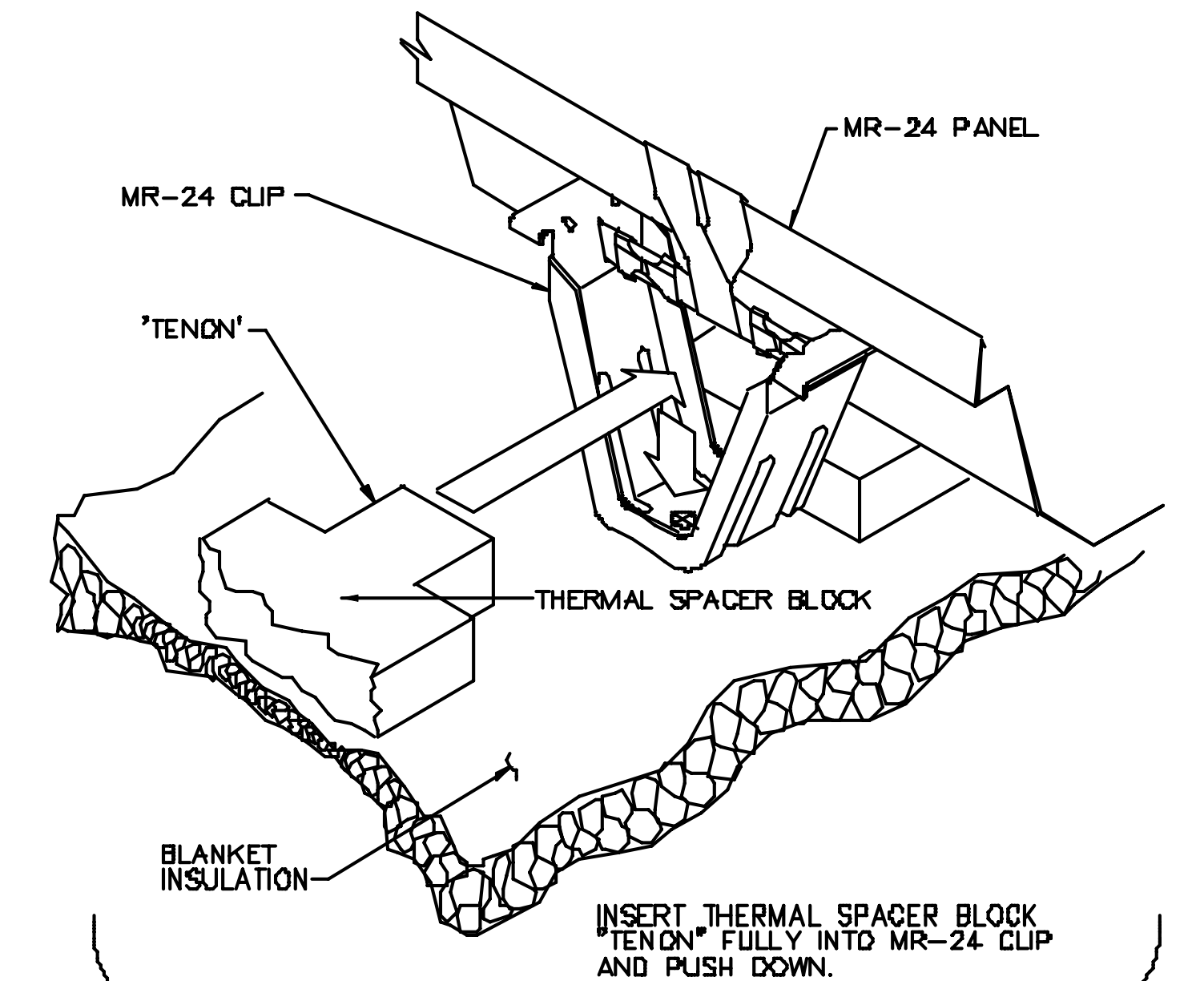
MR-24/CMR-24 BLANKET INSULATION AND INTERIOR RIDGE TRIM INSTALLATION				
DRAWN BY	CHECKED BY	GROUP NUMBER: 02-032-01		
ACM	RKH	B	P-080573	05
FIRST RELEASE DATE	REVISION DATE			
01/21/10	03/15/19			



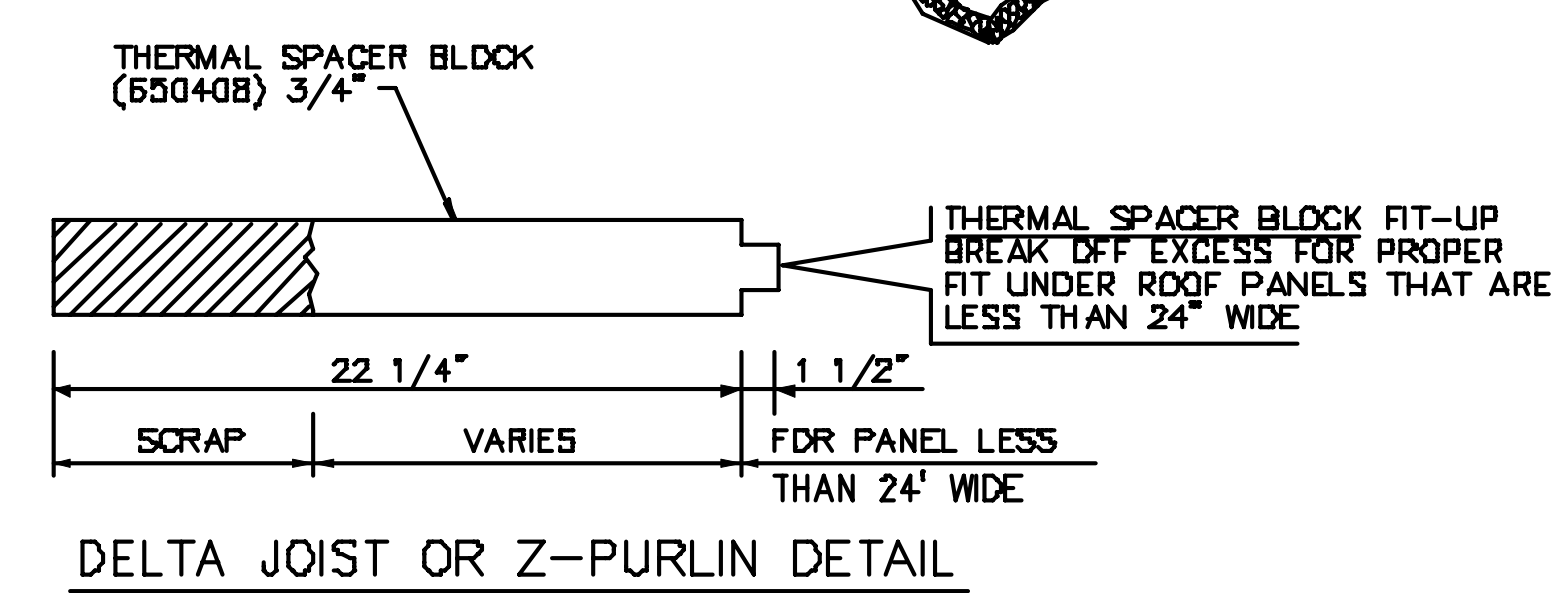
SIDEWALL OR ENDWALL OVERHANG DETAIL

▼ SAME PRINCIPLE APPLIES WHEN INSULATION BRIDGE IS INSTALLED

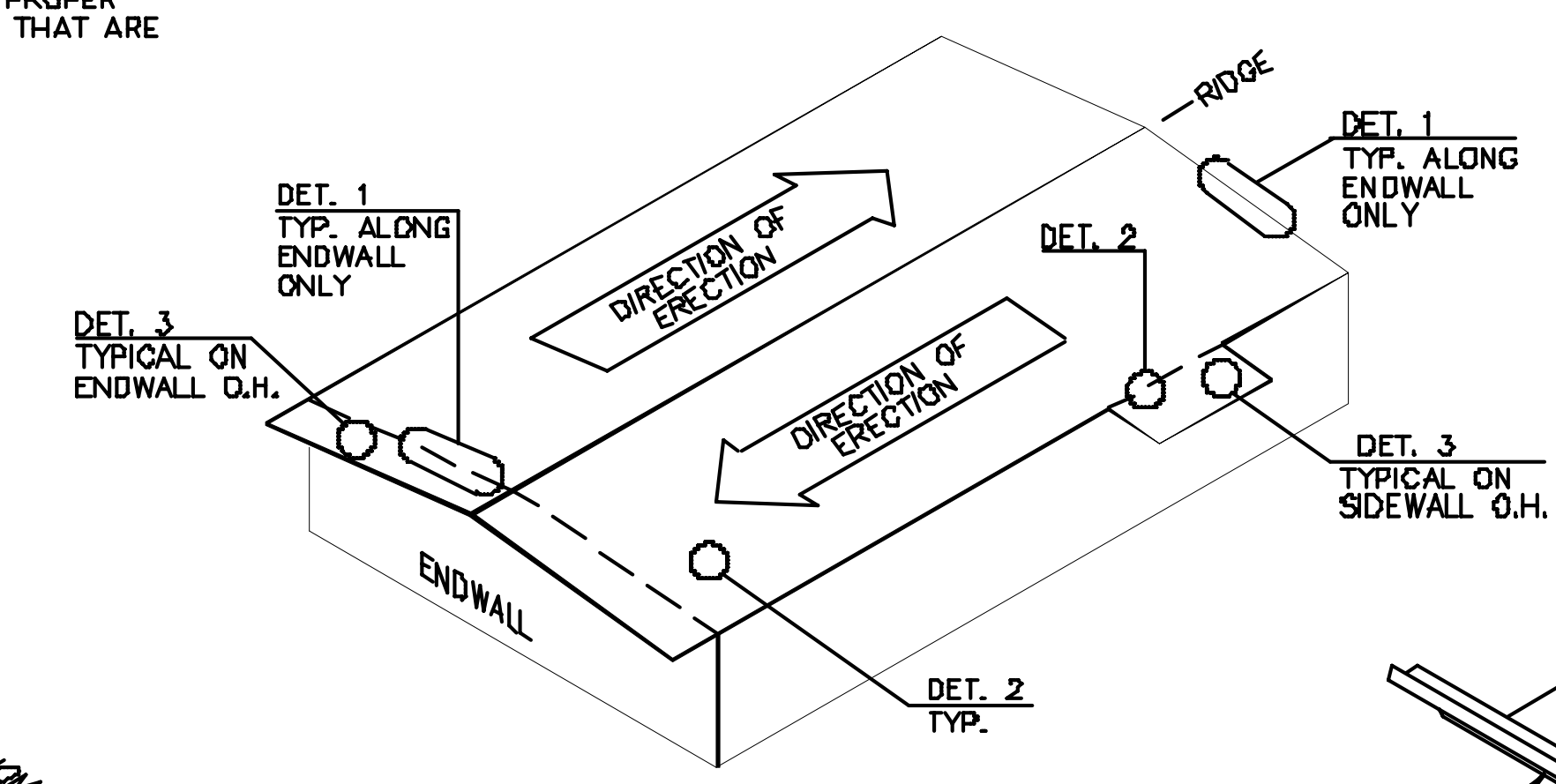
IT IS RECOMMENDED THAT OVERHANGS HAVE A MINIMUM OF 2" FACED INSULATION TO REDUCE CONDENSATION IN THESE AREAS.



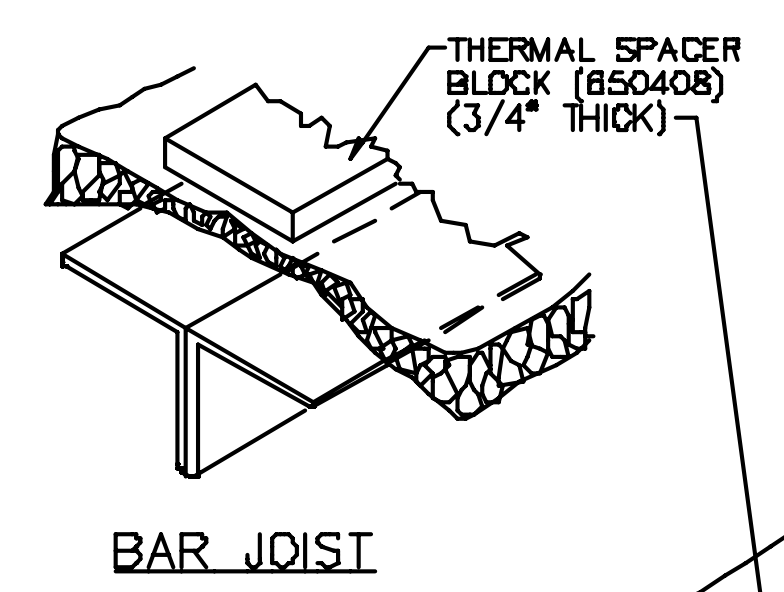
INSERT THERMAL SPACER BLOCK 'TENON' FULLY INTO MR-24 CLIP AND PUSH DOWN.



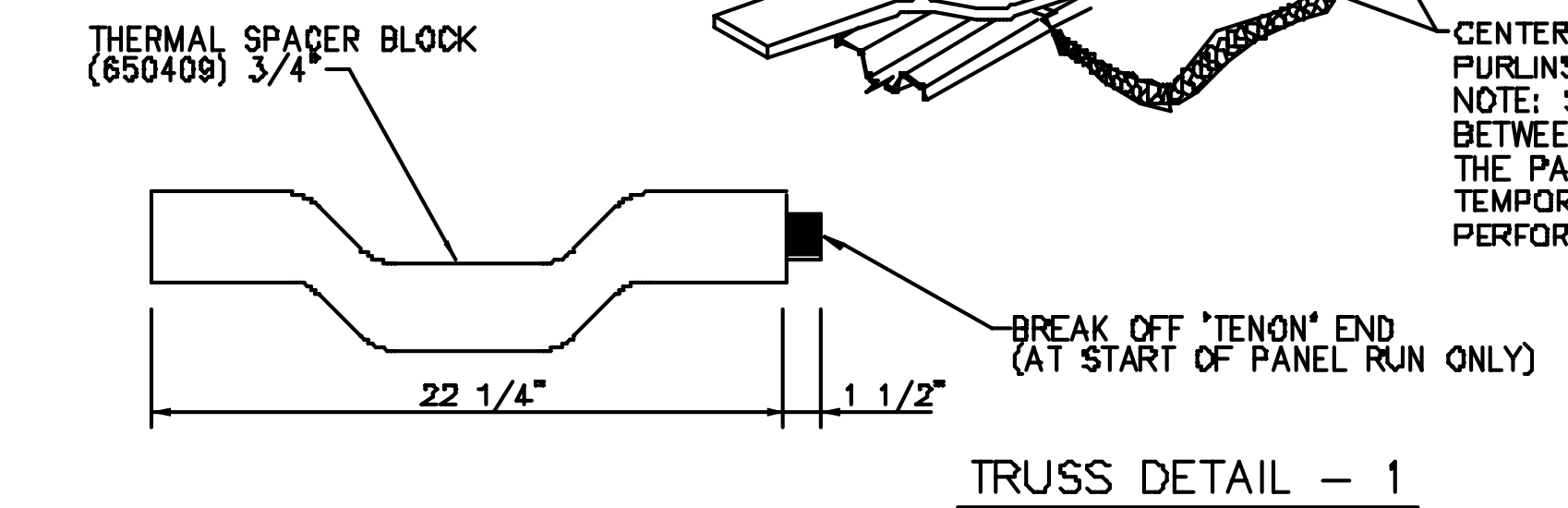
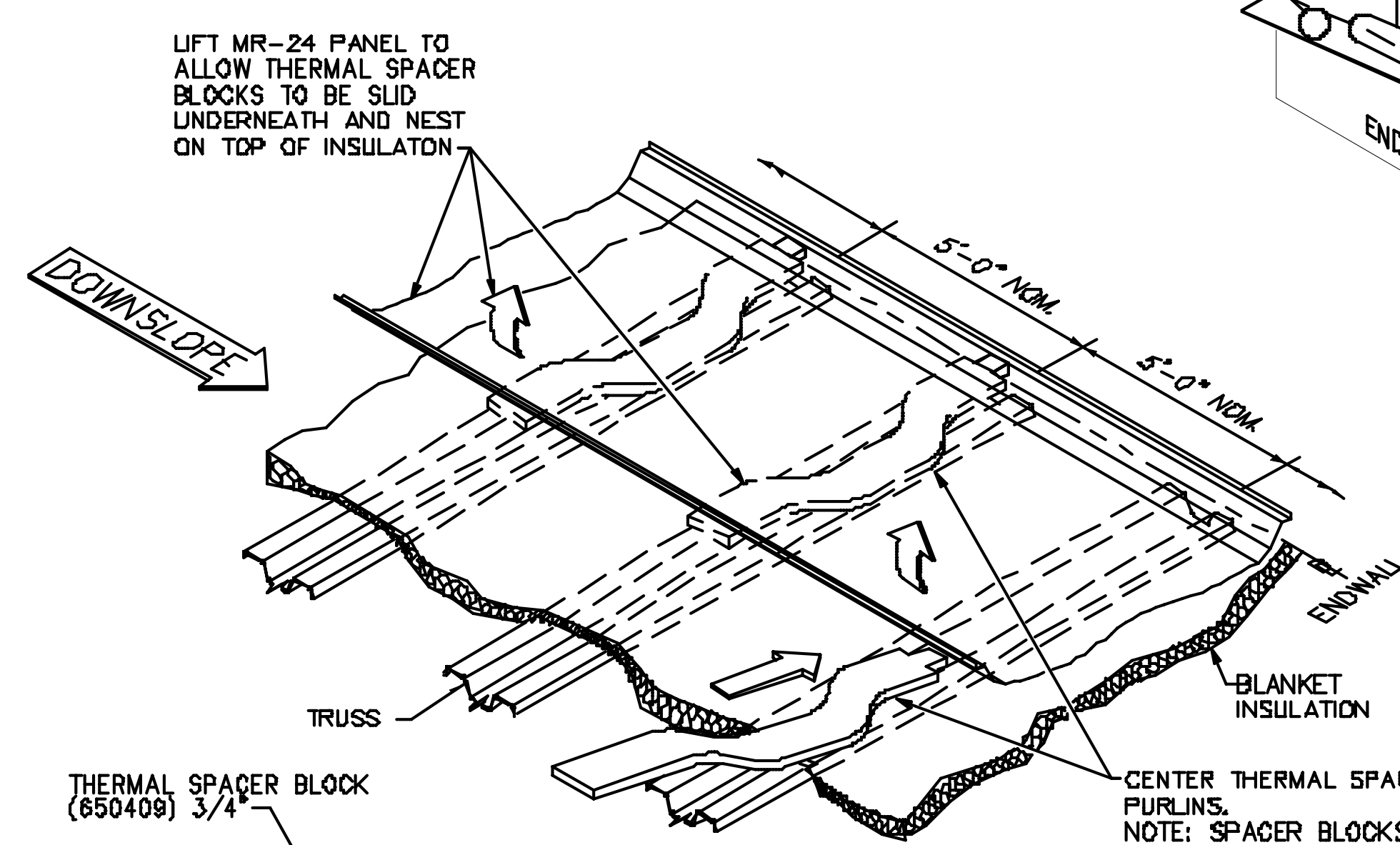
DELTA JOIST OR Z-PURLIN DETAIL



BUILDING KEY

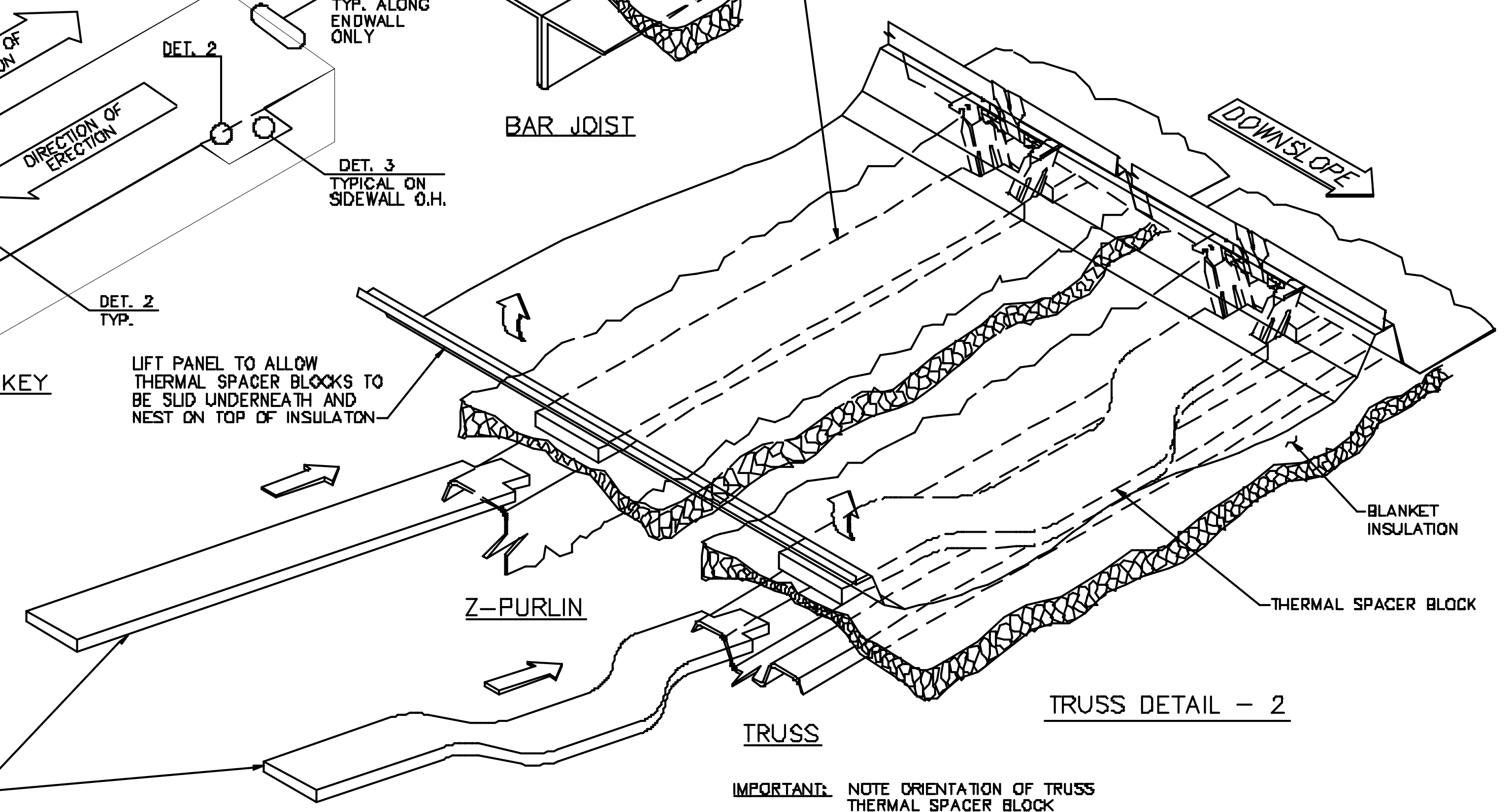


BAR JOIST



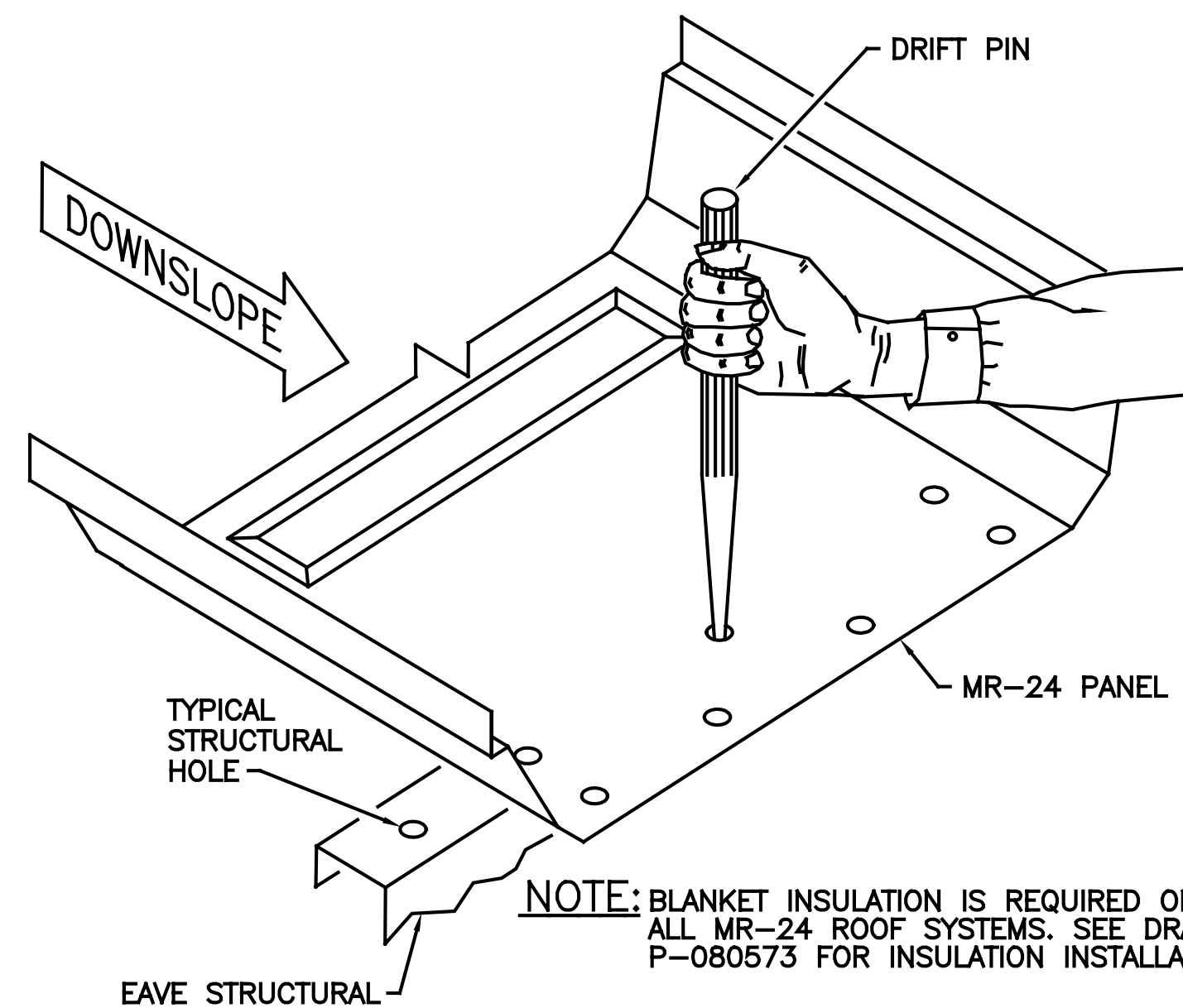
TRUSS DETAIL - 1

CENTER THERMAL SPACER BLOCKS OVER PURLINS. NOTE: SPACER BLOCKS ARE NESTED BETWEEN PANELS AND INSULATION ONCE THE PANELS HAVE BEEN LOCATED AND TEMPORARILY SECURED PRIOR TO PERFORMING THE SEAMING OPERATION.



TRUSS DETAIL - 2

THERMAL SPACER BLOCK INSTALLATION			
MR-24 ROOF			
DRAWN BY: RKH	CHECKED BY: ACM	GROUP NUMBER: 02 030 01	
FIRST RELEASE DATE: 01/21/10	REVISION DATE: 09/26/16	B	P-080574 04

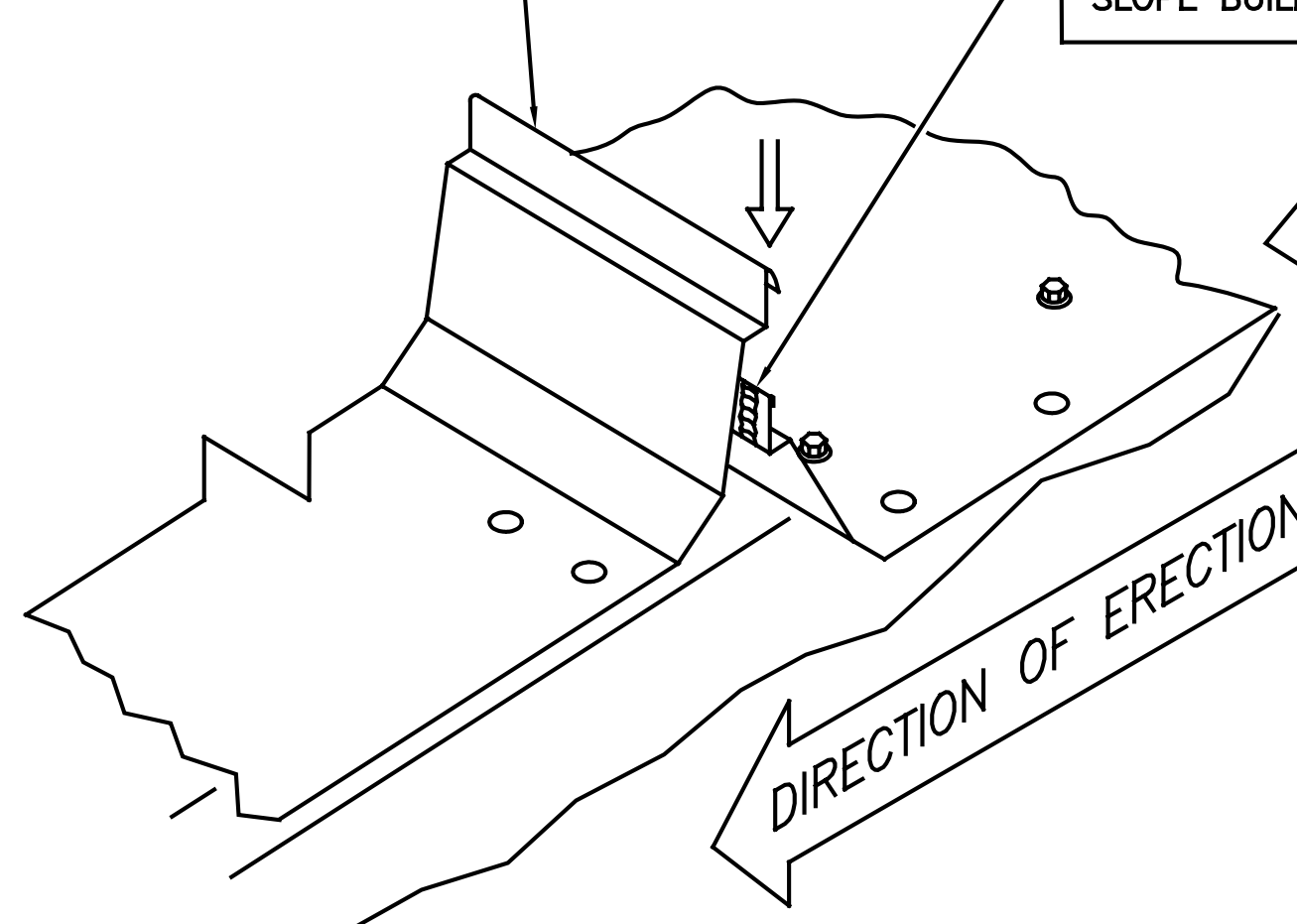


STEP 1 – LOCATE STRUCTURAL HOLE

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

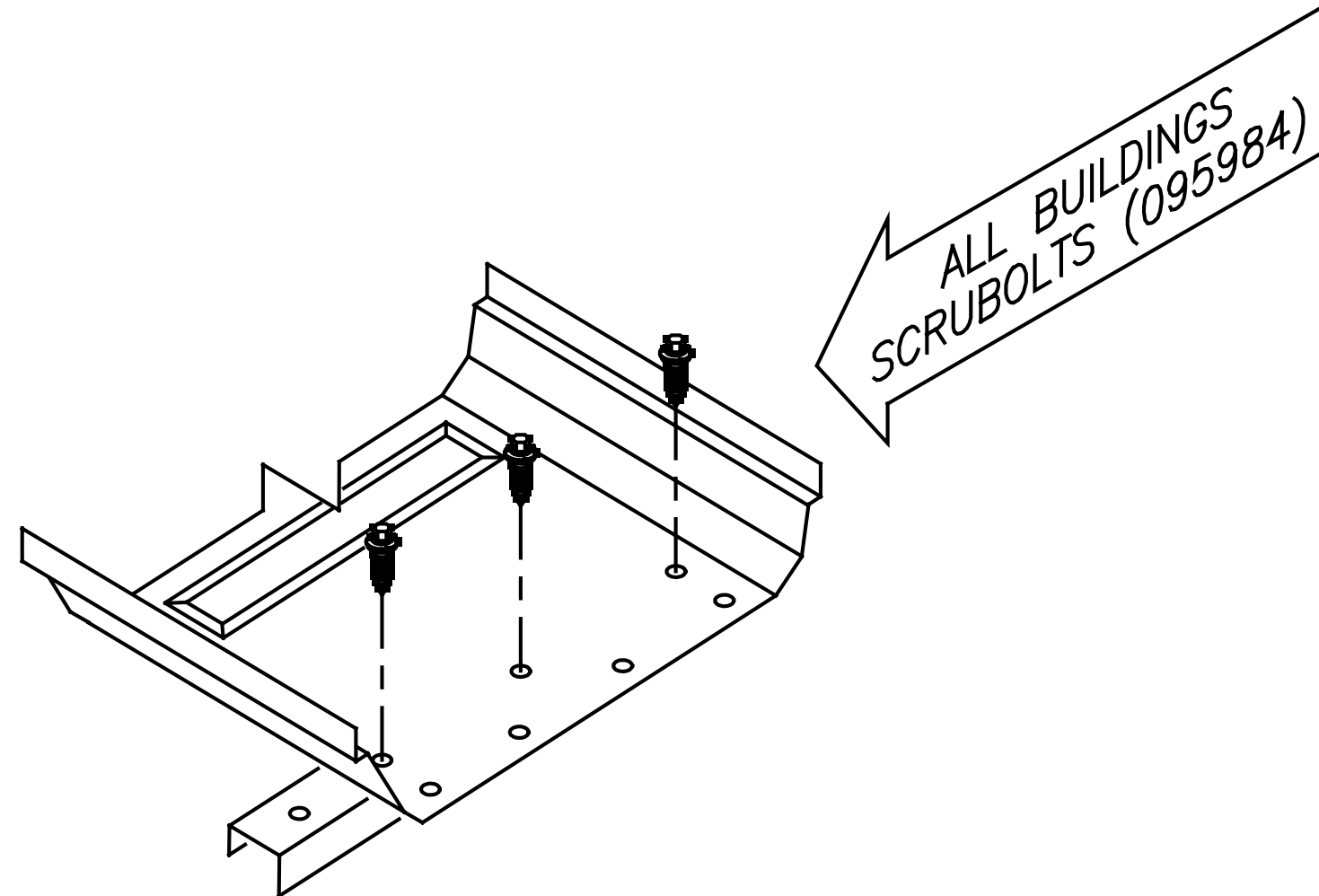
WARNING
ALWAYS USE FALL PROTECTION WHILE WORKING AROUND ROOF OPENINGS.

ROOF PANEL SEAM AT HIGH SIDE SINGLE SLOPE BUILDINGS OR RIDGE



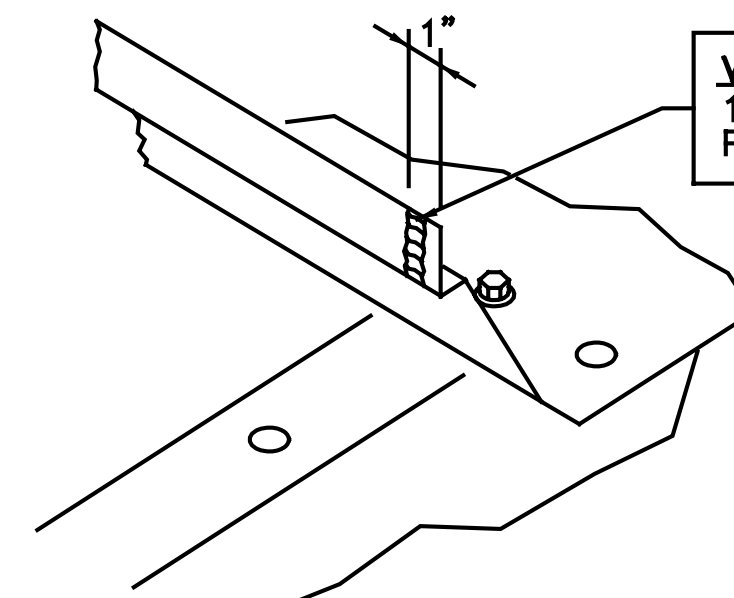
STEP 4 – NEXT PANEL

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



STEP 2 – INSTALL FASTENERS

- INSTALL APPROPRIATE FASTENERS BEFORE PANEL CORRUGATIONS ARE LOCK SEAMED.

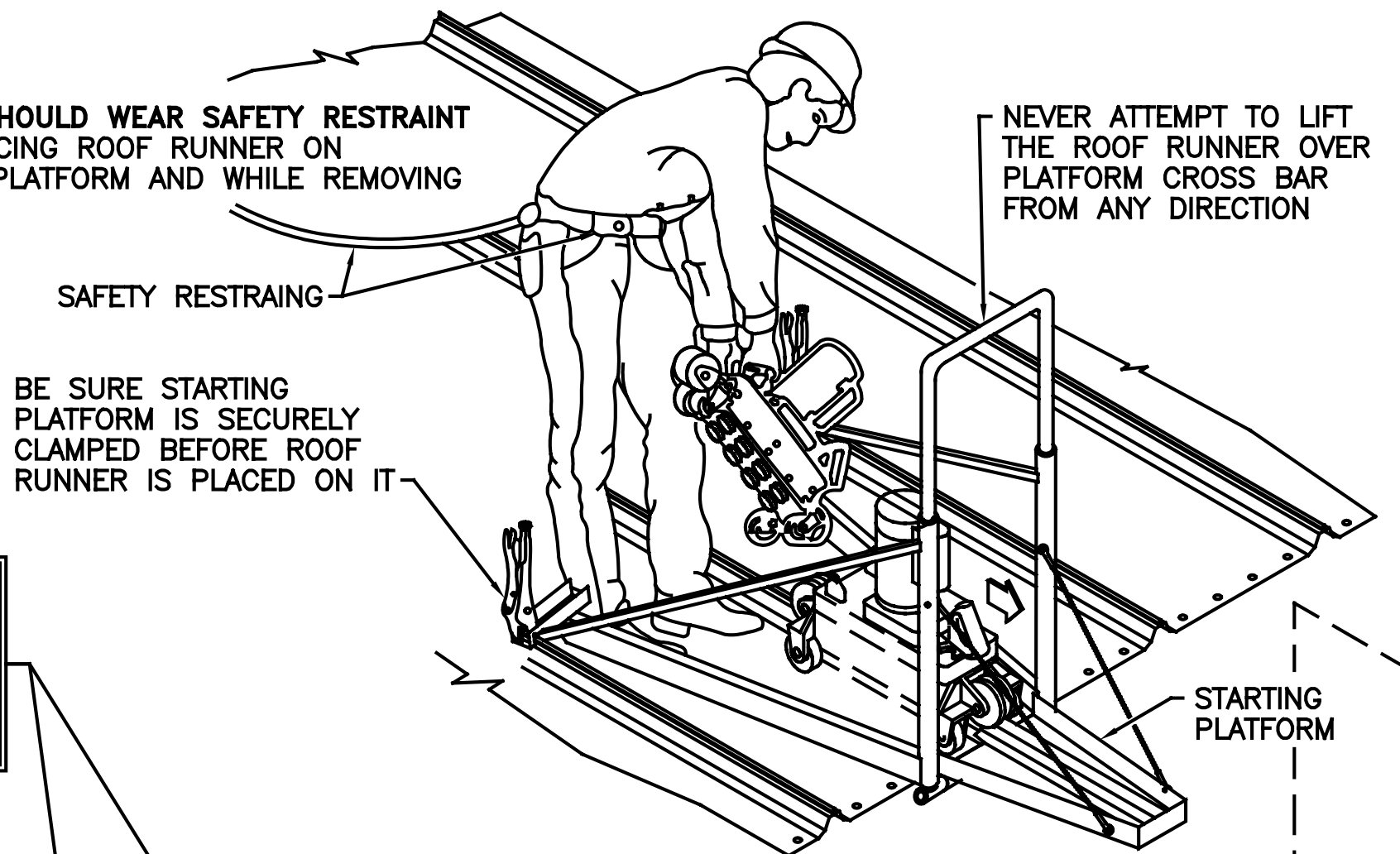


VERY IMPORTANT:
1/4" DIA. BEAD OF GUN GRADE PANLASTIC (025392)

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

STEP 3 – INSTALL SEALANT

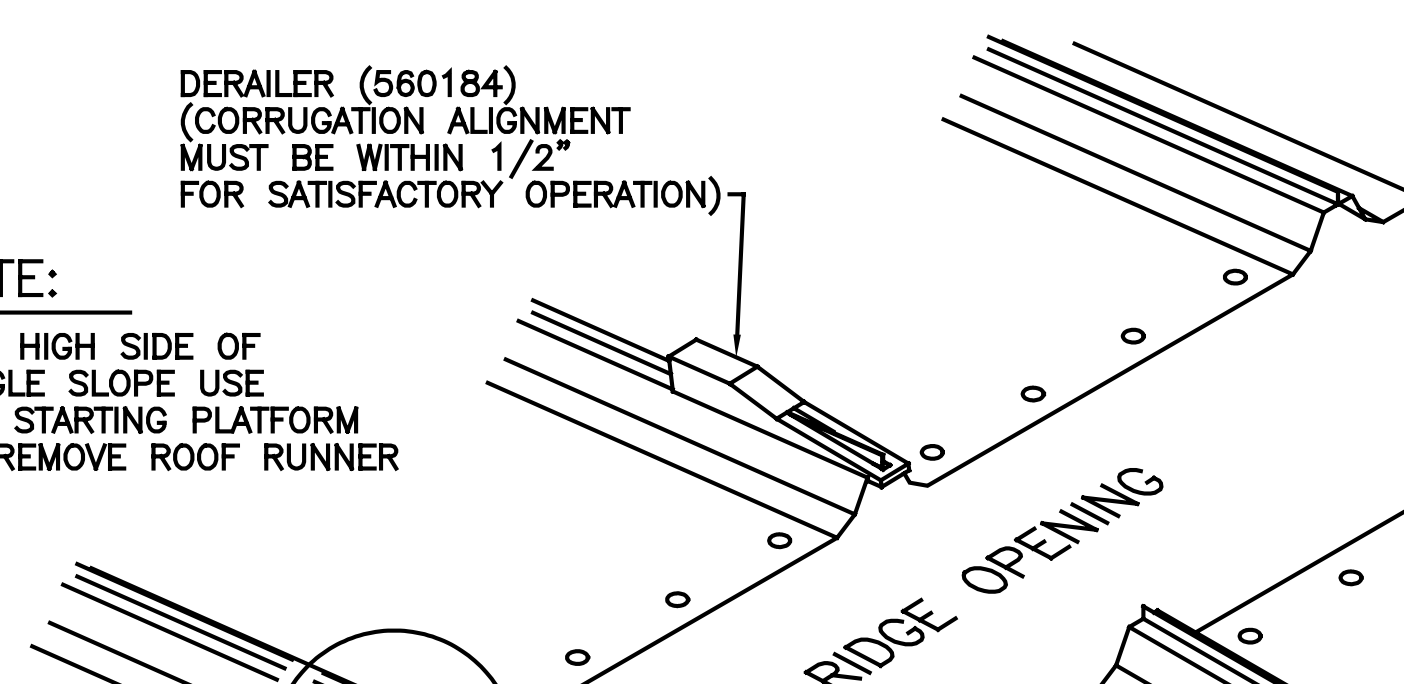
- WORKER SHOULD WEAR SAFETY RESTRAINT WHILE PLACING ROOF RUNNER ON STARTING PLATFORM AND WHILE REMOVING



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

NOTE:
FOR HIGH SIDE OF SINGLE SLOPE USE THE STARTING PLATFORM TO REMOVE ROOF RUNNER

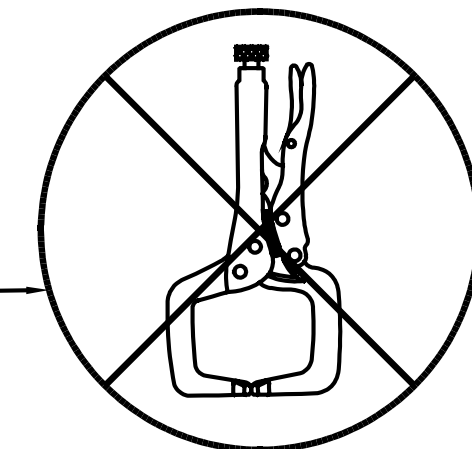
DERAILER (560184) (CORRUGATION ALIGNMENT MUST BE WITHIN 1/2" FOR SATISFACTORY OPERATION)



STEP 5 – CRIMP PANEL

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

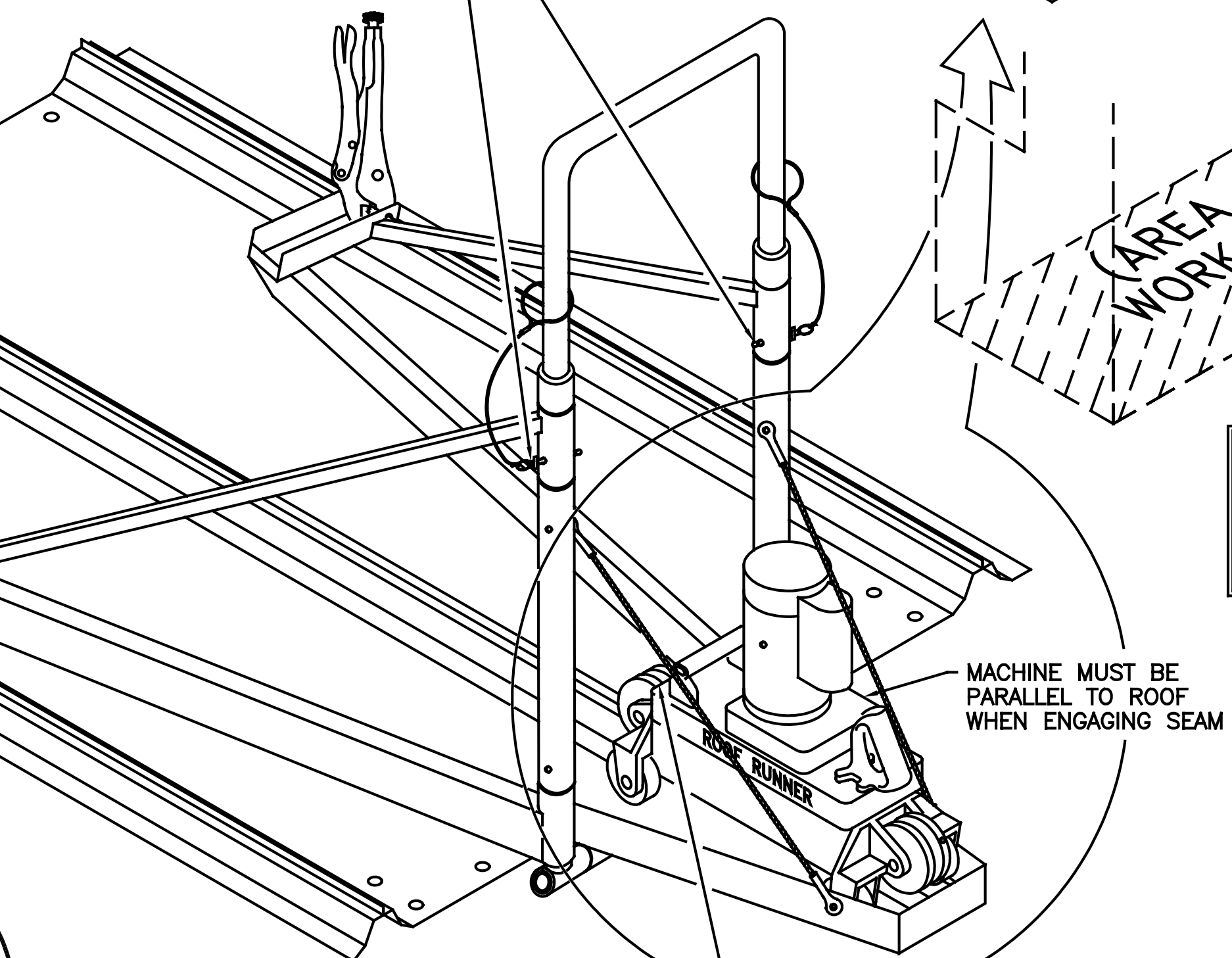
IMPORTANT:
DO NOT USE C-CLAMP STYLE LOCKING PLIERS WHEN SECURING THE STARTING PLATFORM AT MR-24 CORRUGATION SEAM LOCATIONS. ONLY CURVED JAW TYPE, (9" MIN.), MAY BE USED.



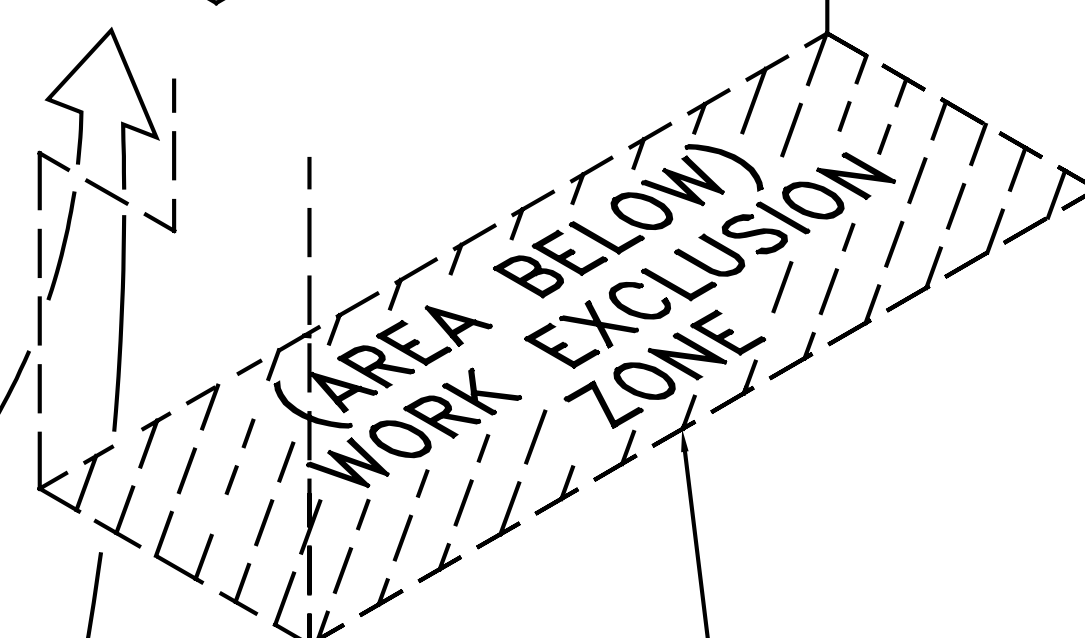
STEP 6 – SEAMING OPERATION

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

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



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

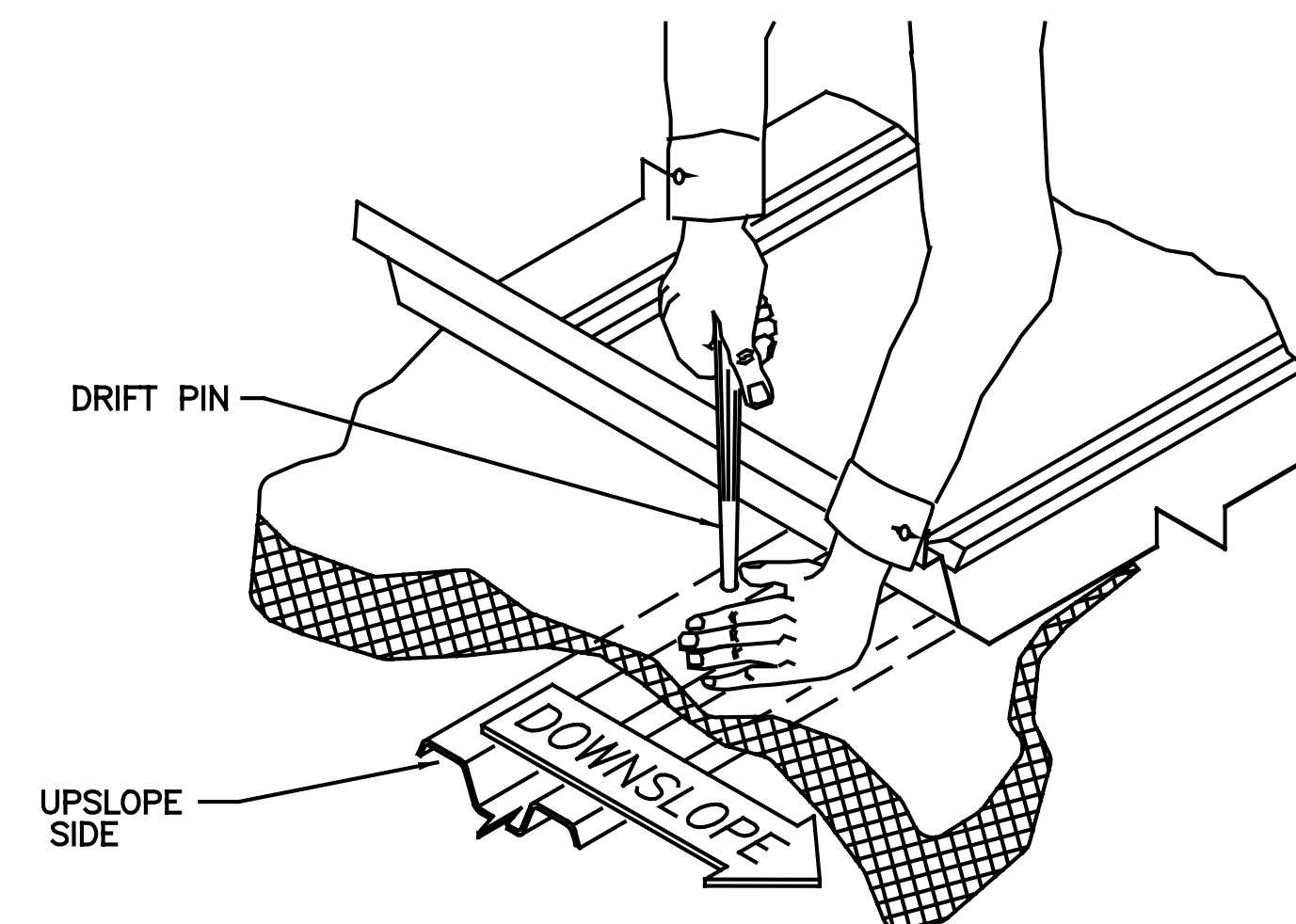
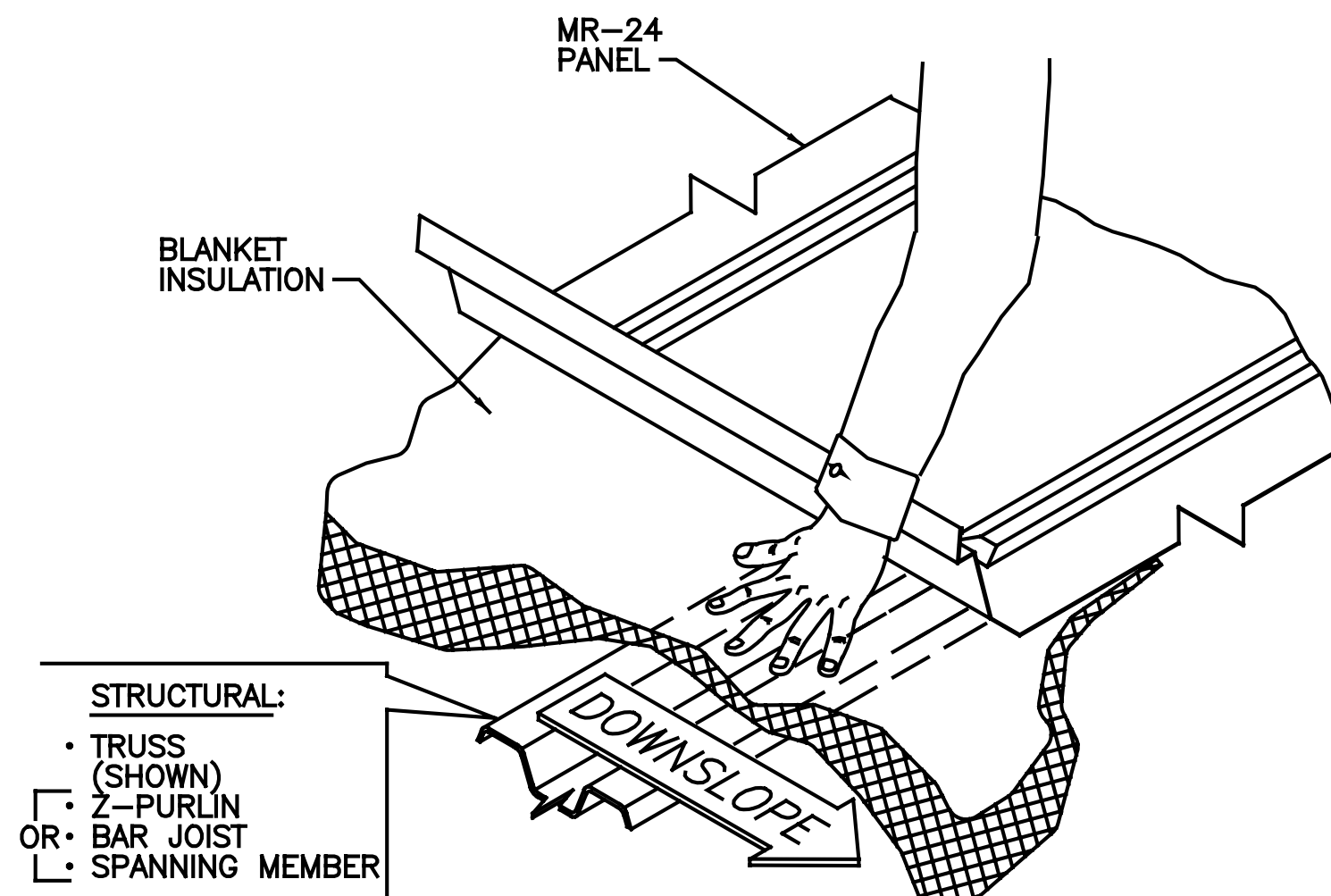
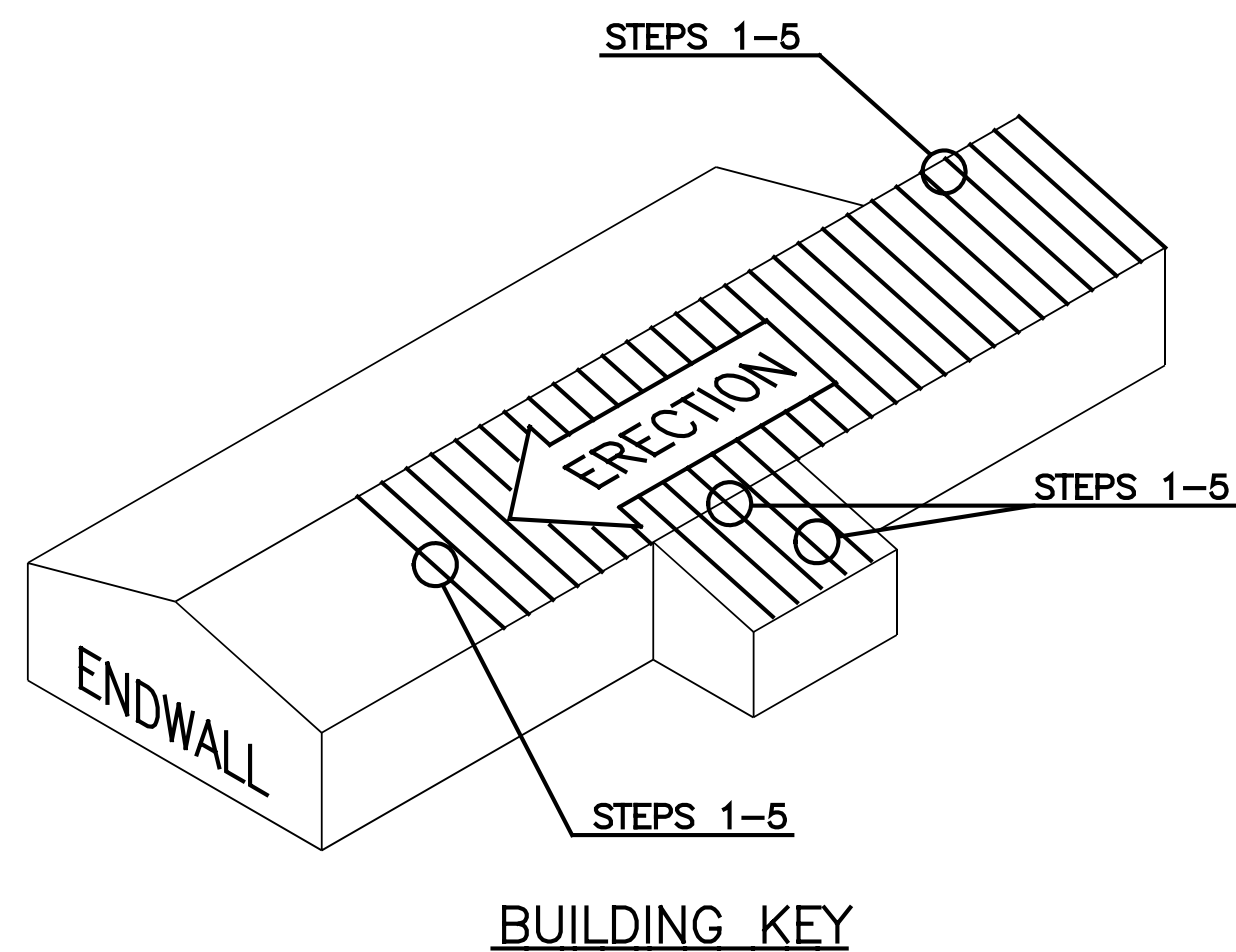


THIS DRAWING IS INCLUDED IN A PRODUCT APPROVAL PACKAGE REVISIONS MUST BE APPROVED BY THE MANAGER OF PRODUCT EXCELLENCE



MR-24 PANEL INSTALLATION

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



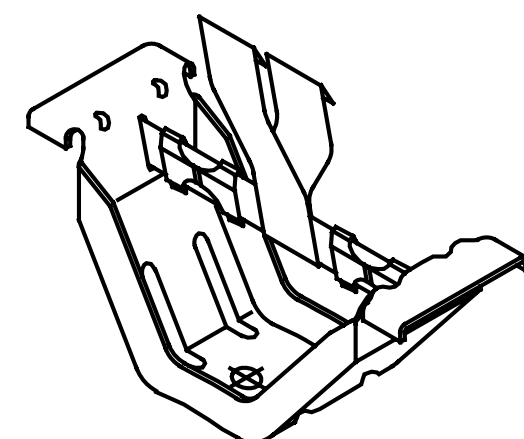
STEP 1 LOCATE STRUCTURAL

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

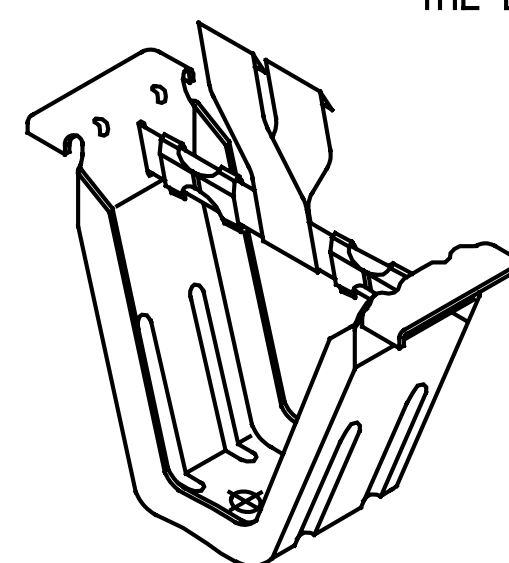
STEP 2 LOCATE HOLE IN STRUCTURAL
WITH DRIFT PIN

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

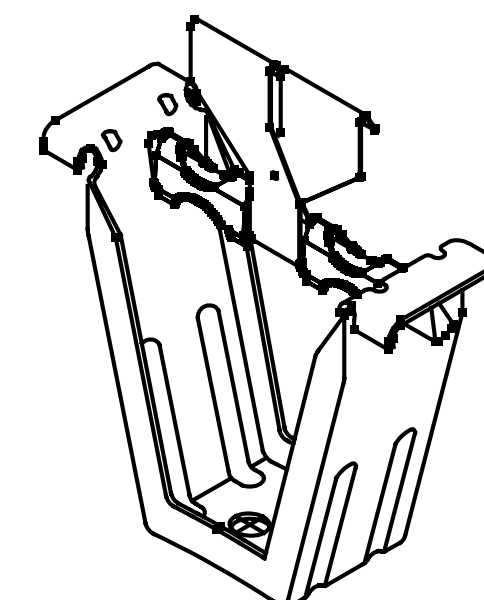
***NOTE:**
MR-24 CLIP 560743, 560744 OR 560745
MAY BE SUPPLIED WHEN FACTORY MUTUAL
CLASSIFICATION IS SPECIFIED.



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

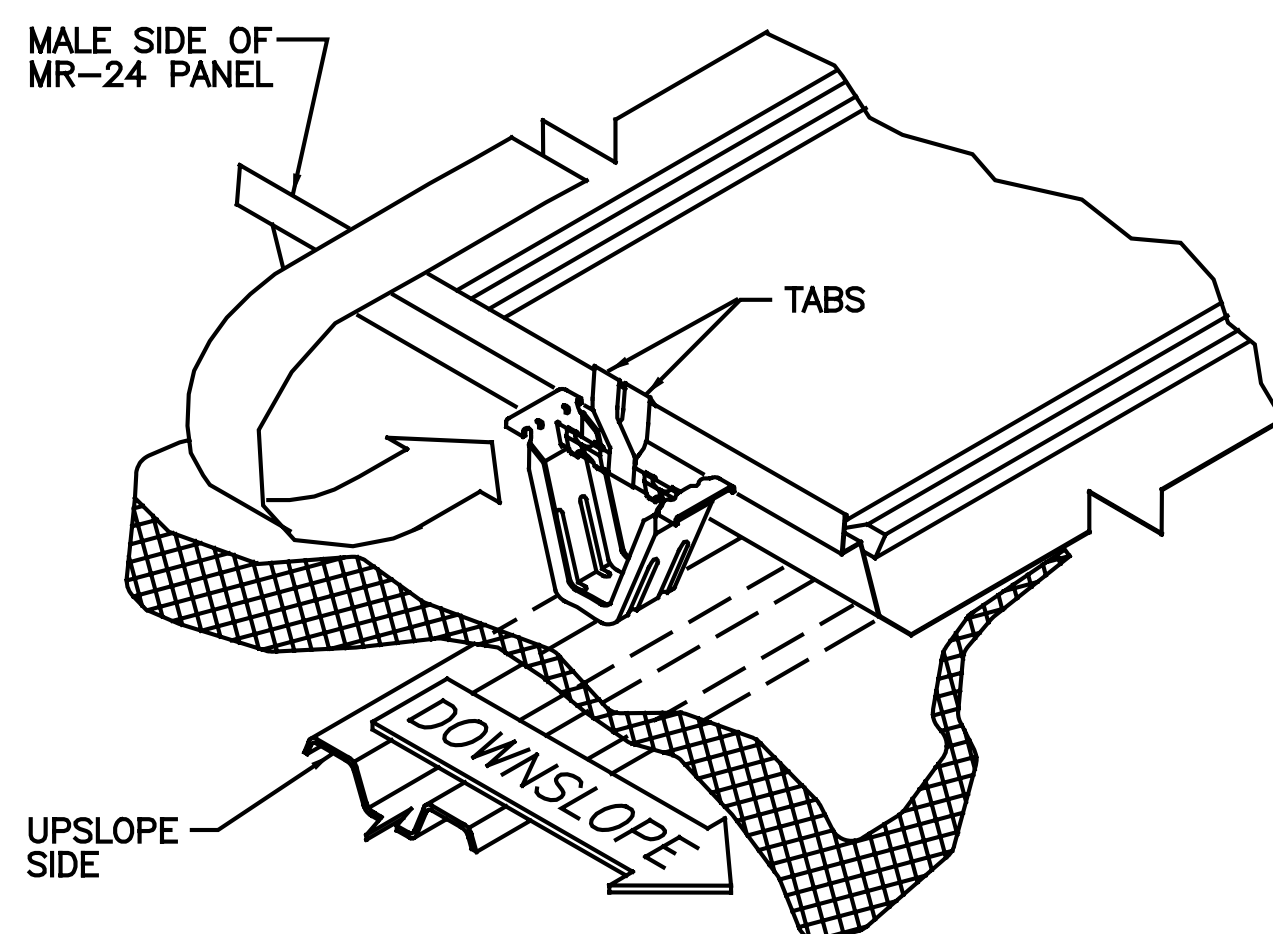


TALL PANEL CLIP (560441 OR *560744)
(WITH THERMAL SPACER BLOCK)

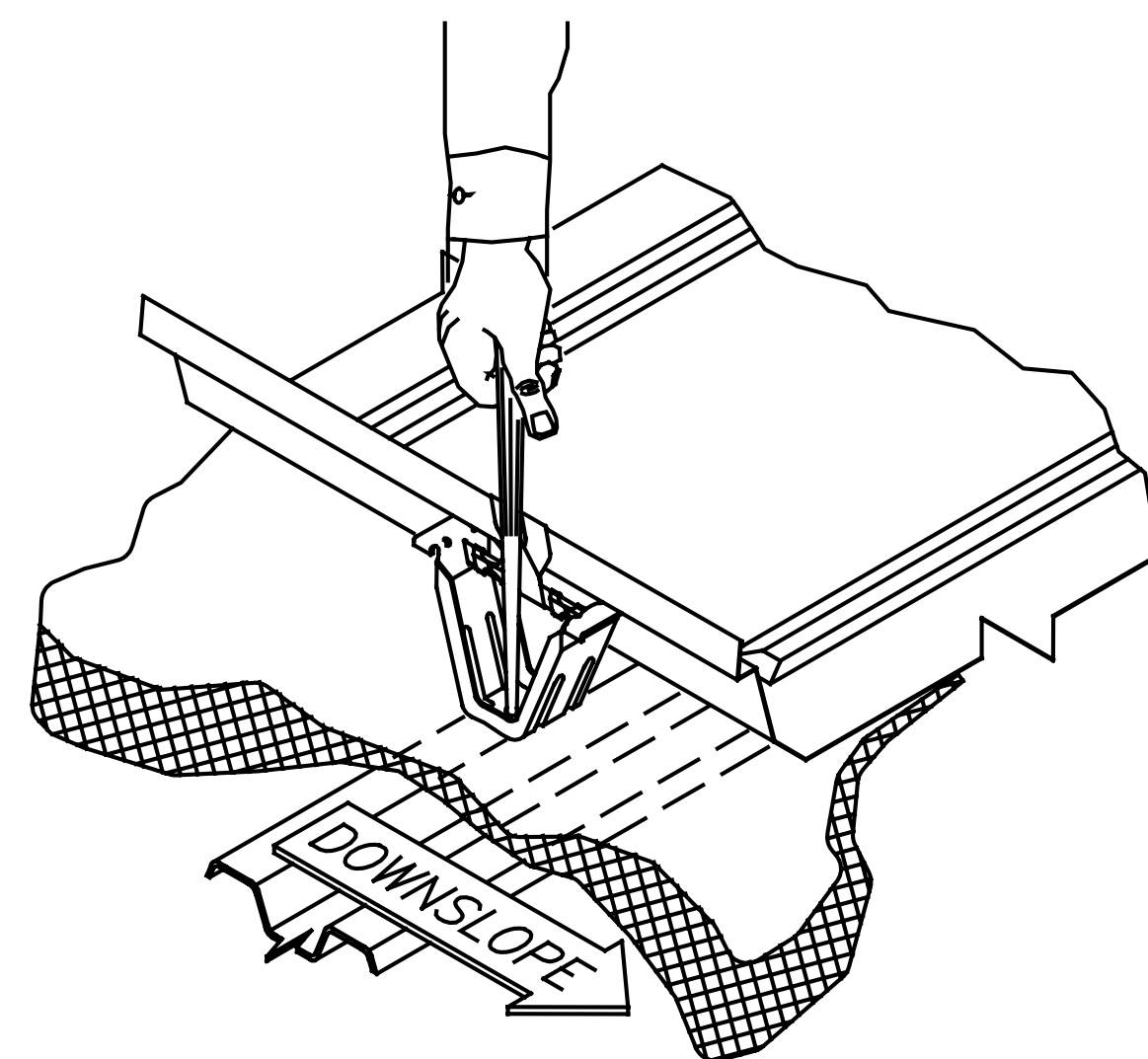


EXTRA TALL PANEL CLIP (*560745)
(WITH THERMAL SPACER BLOCK FOR 6" TO 9" INSULATION)

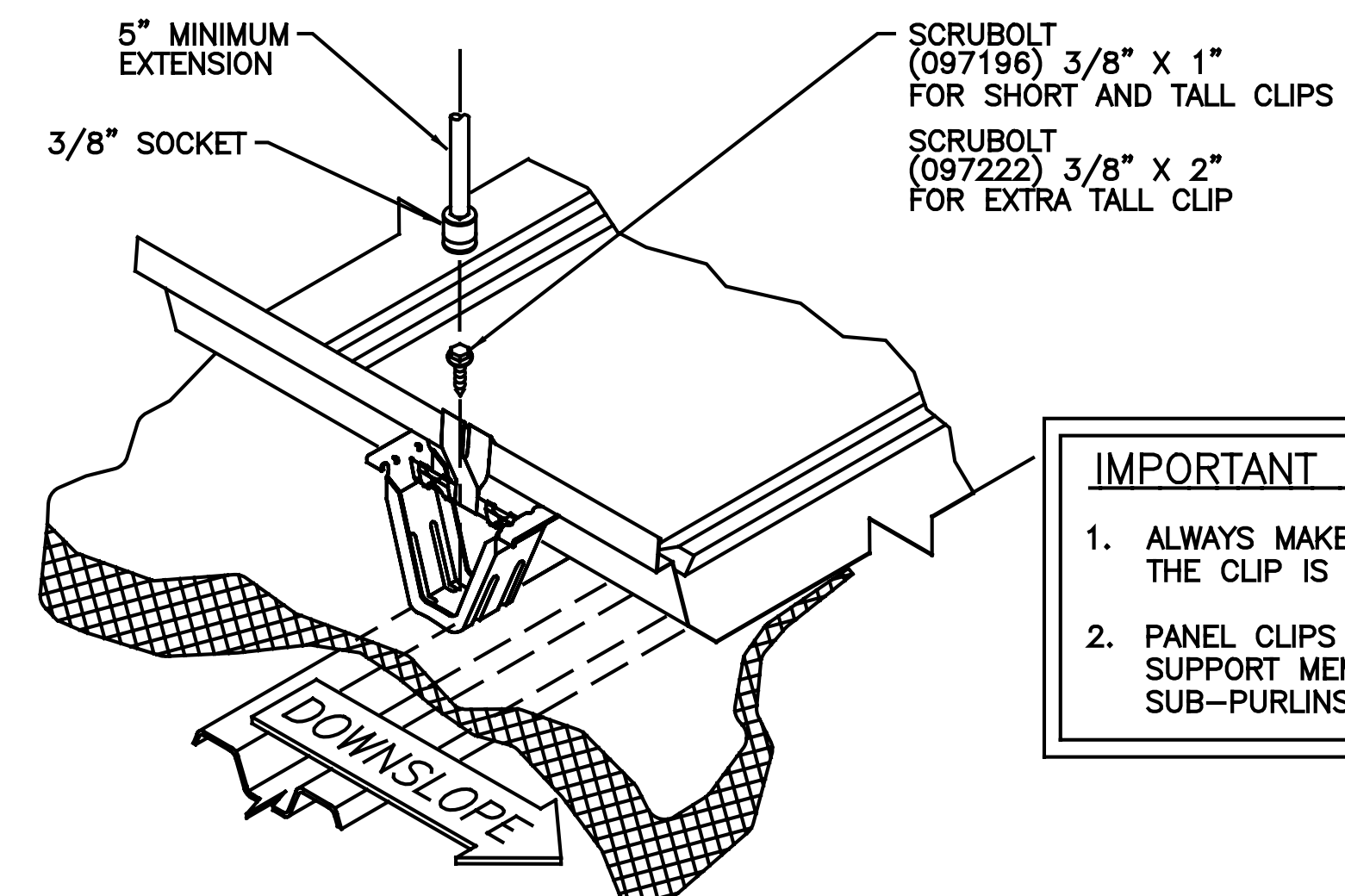
WARNING
ALWAYS USE FALL PROTECTION WHILE
WORKING AROUND ROOF OPENINGS.



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



STEP 4 TEMPORARILY SECURE THE
PANEL CLIP WITH A
DRIFT PIN

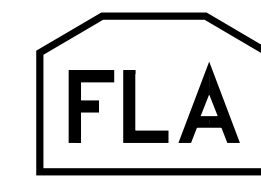


STEP 5 INSTALL SCRUBOLT FASTENER
INSTALLATION OF SCRUBOLT REQUIRES A 3/8"
SOCKET AND A 5" (MINIMUM) EXTENSION.

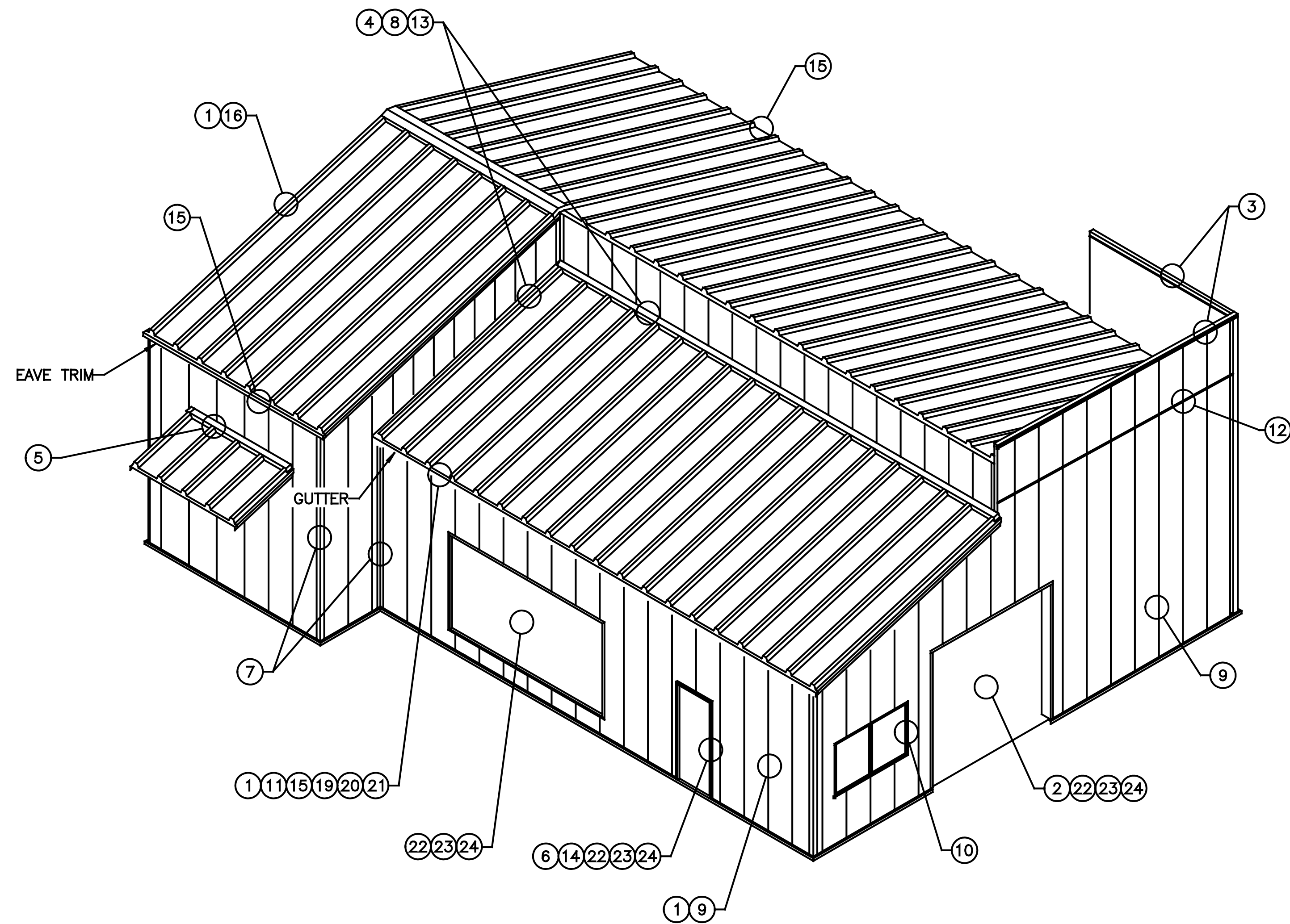
IMPORTANT NOTE

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

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



MR-24 PANEL CLIP INSTALLATION			
DRAWN BY	CHECKED BY	GROUP NUMBER: 02-030-01	
RKH	RMS	B	P-080576 06
FIRST RELEASE DATE	REVISION DATE		
01/21/10	09/02/20		



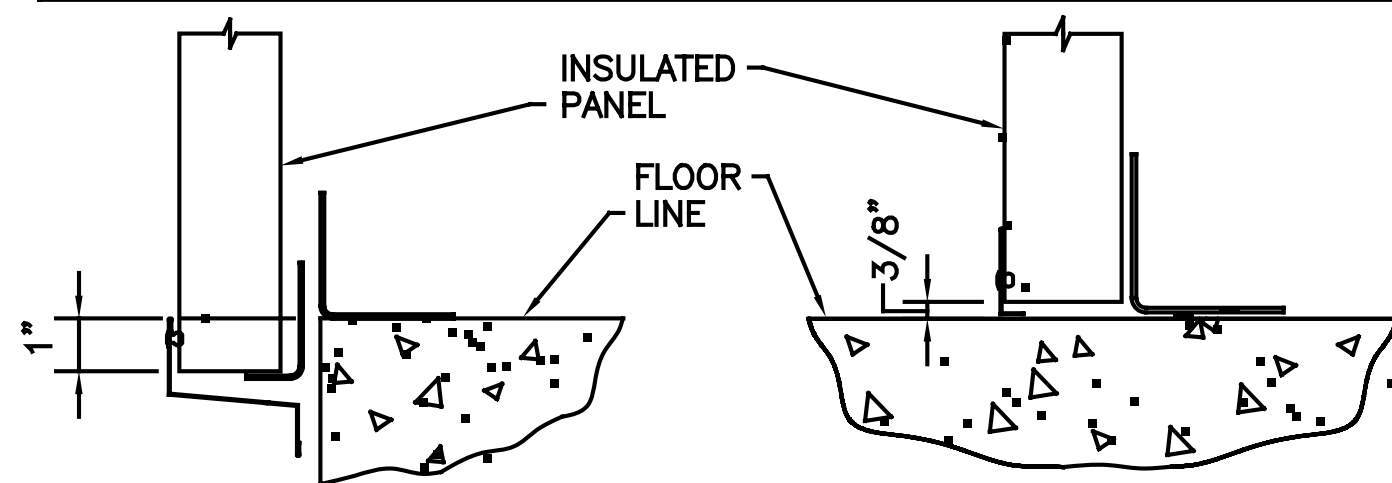
INSULATED WALL PANEL DRAWINGS AND DETAILS		
ITEM	DRAWING NUMBER	DRAWING TITLE
1	P-080883	INSULATED WALL PANEL LENGTH CALCULATIONS
2	B-080830	OVERHEAD DOOR INSTALLATION
3	B-080836	INSULATED WALL PANEL - PARAPET INSTALLATION
4	P-080886	WALL PANEL INSTL. - BRII ROOF TO WALL TRANS. - INSULATED WALL PANEL
5	P-081370	ROOF-WALL CANOPY FLASHING DETAILS AT BELOW EAVE
6	B-081379	HOLLOW METAL DOOR - PANEL AND TRIM INSTALLATION
7	B-081398	CORNER TRIM INSTALLATION
8	P-081611	WALL PANEL INSTL. - MR-24/CMR-24 ROOF TO WALL TRANS. - INSULATED WALL PANEL
9	B-081517	GENERAL PANEL INSTALLATION - INSULATED WALL PANEL
10	XXXXXX	ERECTION DRAWINGS FOR WINDOW INSTALLATION WILL BE FURNISHED BY THE WINDOW SUPPLIER
11	P-080091	ALL BLDGS. - WIDE CTR. GUTTER/CONDUCT. PIPE INSTL. & DETAILS
12	SEE DETAILS	STACKED JOINT DETAILS MS019 AND MS020
13	P-080818	ALL BLDGS. - WALL PANEL CALC. - ROOF TO WALL TRANSITIONS
14	P-081380	EXPI-DOOR - GIRT CONNECTION AT 6'-0" OR LESS
15	P-105017	INSULATION - TOP OF WALL - SIDEWALL
16	P-105018	INSULATION - TOP OF WALL - ENDWALL
19	P-105224	CONDUCTOR PIPE INSTALLATION
20	P-105225	CONDUCTOR PIPE DETAILS
21	P-105228	ALL BLDGS. - CONDUCTOR PIPE DETAILS
22	B-FRMOP2	TRIM INSTALLATION FOR FRAMED OPENING 1 OF 3
23	B-FRMOP3	TRIM INSTALLATION FOR FRAMED OPENING 2 OF 3
24	B-FRMOP4	TRIM INSTALLATION FOR FRAMED OPENING 3 OF 3

NOTE:
 ONLY THOSE DRAWINGS REQUIRED SPECIFICALLY ON A GIVEN BUILDING ORDER WILL BE FURNISHED WITH THE ORDER.

INSULATED WALL PANEL DRAWING INDEX			
DRAWN BY	CHECKED BY	GROUP NUMBER: 33 031 01	
BSN	RLB	B	P-080879 04
FIRST RELEASE DATE	REVISION DATE		
02/17/11	09/14/20		

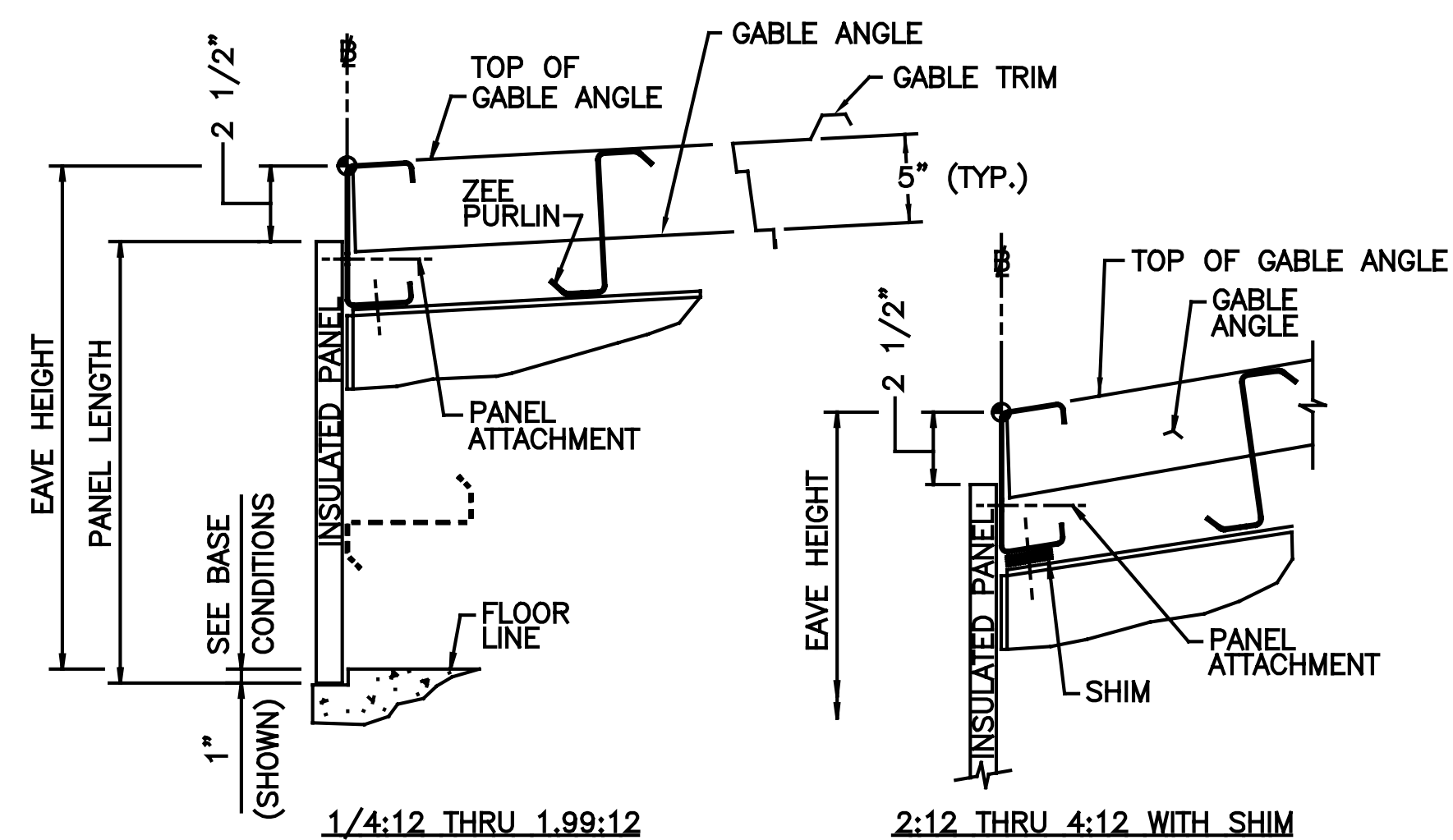
EMBOSSED PANEL IDENTIFICATION CHART (PANEL SUPPLIER)				
PANEL TYPE	THICKNESS	LOCATION	PART NUMBER	OP CODE
42" FLUTED KS MINI MICRO-RIB	2"	SIDEWALL AND ENDWALL	THFL20LLLLLGGOFCC	1
	2 1/2"	SIDEWALL AND ENDWALL	THFL25LLLLLGGOFCC	1
	3"	SIDEWALL AND ENDWALL	THFL30LLLLLGGOFCC	1
	4"	SIDEWALL AND ENDWALL	THFL40LLLLLGGOFCC	1
42" FINELINE OR KS SHADOWLINE	2"	SIDEWALL AND ENDWALL	THFN20LLLLLGGOFCC	1
	2 1/2"	SIDEWALL AND ENDWALL	THFN25LLLLLGGOFCC	1
	3"	SIDEWALL AND ENDWALL	THFN30LLLLLGGOFCC	1
	4"	SIDEWALL AND ENDWALL	THFN40LLLLLGGOFCC	1
36" FLAT	2 1/2"	SIDEWALL AND ENDWALL	THFT25LLLLLGGOFCC	1
	3"	SIDEWALL AND ENDWALL	THFT30LLLLLGGOFCC	1
	4"	SIDEWALL AND ENDWALL	THFT40LLLLLGGOFCC	1

42" TEXTURED PANEL IDENTIFICATION CHART (PANEL SUPPLIER)				
PANEL TYPE	LOCATION	PART NUMBER	OP CODE	
2" TEXTURED	SIDEWALL AND ENDWALL	THTX20LLLLLGGOFCC	1	
2 1/2" TEXTURED	SIDEWALL AND ENDWALL	THTX25LLLLLGGOFCC	1	
3" TEXTURED	SIDEWALL AND ENDWALL	THTX30LLLLLGGOFCC	1	
4" TEXTURED	SIDEWALL AND ENDWALL	THTX40LLLLLGGOFCC	1	



SEE DETAIL MS003

SEE DETAIL MS043

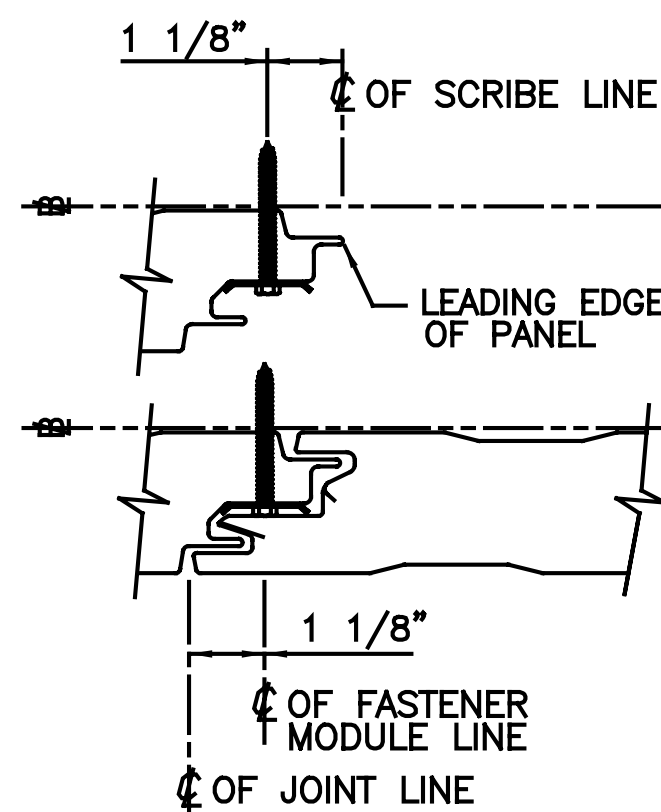


FOR BASE CONDITION SEE DETAIL MS004.

CONDITION 1 - SIDEWALL PANELS
(MR-24 WITHOUT THERMAL BLOCKS)

SIDEWALL PANEL NOTES:

- DETERMINE EAVE HEIGHT AND DEDUCT DIM. 2 1/2" TO ESTABLISH PANEL LENGTH
NOTE: TOP OF PANEL FOR BUILDINGS WITH CMR-24 ROOF IS 2" BELOW TOP OF EAVE STRUT.
- NEXT YOU NEED TO DETERMINE THE BASE CONDITION AND ADD OR DEDUCT AS NECESSARY.
- IF YOU HAVE WALL ACCESSORIES CONSIDER THE FOLLOWING:
 - * OVERHEAD DOOR - DEDUCT DOOR HEIGHT, PLUS OR MINUS BASE CONDITION, PLUS 1/4" FROM FULL LENGTH PANEL. (SEE DWG. B-080830).
 - * WINDOW AND HOLLOW METAL DOORS ARE FIELD CUT AND WILL NOT BE SUPPLIED.
 - * FOR PANELS ABOVE ROOF-TO-WALL TRANSITION (SEE DWG. P-080818).
- ROUND ALL PANEL LENGTH TO NEAREST 1/8" AND SHOW IN FEET, INCHES AND EIGHTHS AN OF INCH.



$$\text{PANEL RISE} = \frac{\text{SLOPE}}{12} \times \text{PANEL WIDTH (36" OR 42")}$$

- FOR ROOF SLOPES 1:12 OR LESS ADD RISE TO ADJACENT WALL PANEL.
- FOR ROOF SLOPES OVER 1:12 ADD RISE TO STARTING WALL PANEL FOR MITERING.

EXAMPLE FOR 2:12 SLOPE:

$$\text{PANEL RISE} = \frac{2}{12} \times 42" = 7" \text{ RISE}$$

*** FOR WALL PANEL LENGTHS WITH CMR-24 ROOF USE:
EAVE HEIGHT - DIM. "A" - DIM. "B"
+/- BASE CONDITION
+ RIGID INSL. THK. + .8125" (LINER PNL)
SEE PANEL RISE CONDITIONS ABOVE WITH VARYING ROOF SLOPES FOR WALL PANEL ADJUSTMENTS

"ROOF LINE" IS THE BOTTOM SURFACE OF ROOF PANELS.

"EAVE HEIGHT" = FLOOR LINE TO TOP OF PURLIN.

ALL GABLE ANGLE FOR INSULATED PANELS WILL BE UNPUNCHED REGARDLESS OF ROOF SLOPE OR FASTENER REQUIREMENTS.

TO DETERMINE EAVE HEIGHT
SEE DRAWING P-080819

"DIM. "A" IS THE VERTICAL DISTANCE BETWEEN EAVE HEIGHT AND THE TOP OF WALL PANEL NEAREST THE TOP OF GABLE ANGLE.

"DIM. "B" IS THE VERTICAL RISE OF THE "EXCESS PANEL" WIDTH.

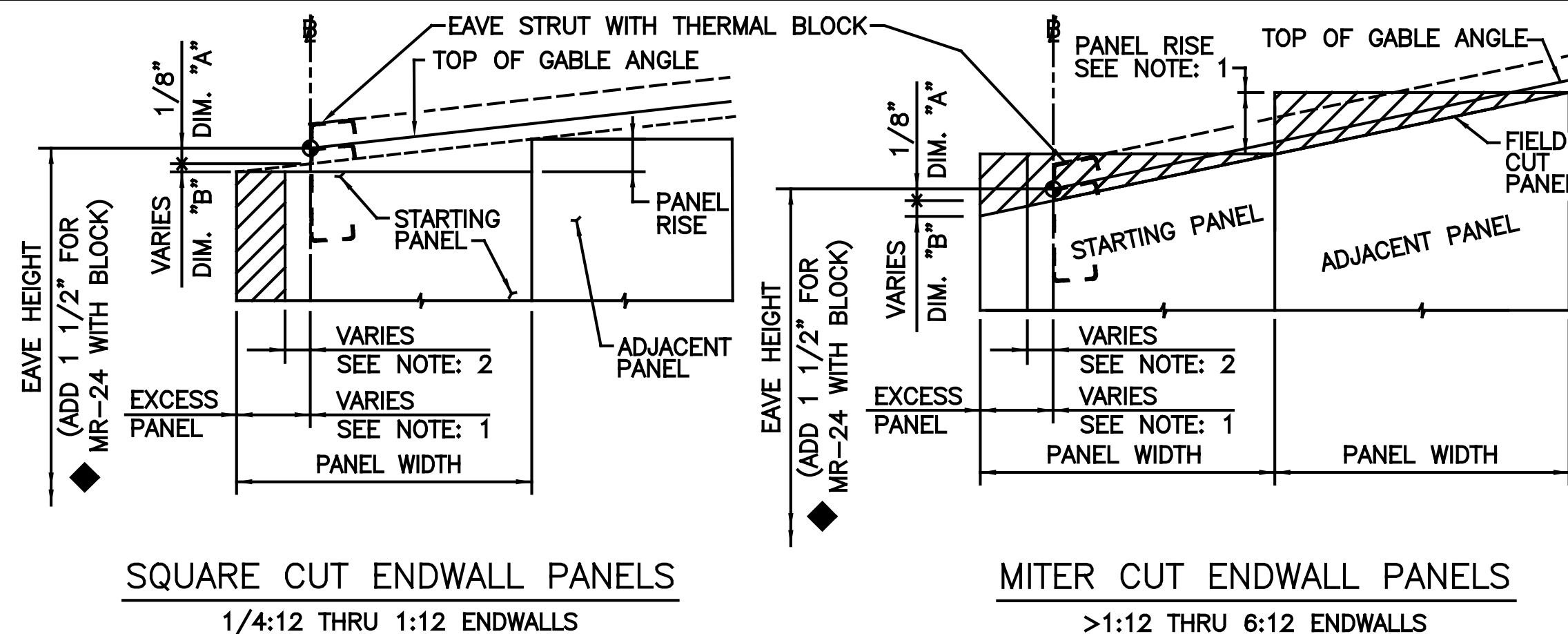
"SCRIBE LINE" IS A FIELD MARKING OF THE WALL STRUCTURALS (BASE ANGLE, GIRT, EAVE STRUT), THAT LOCATES THE LEADING EDGE OF THE WALL PANEL. THE FIRST SCRIBE LINE FOR A PANEL RUN IS REFERENCED FROM THE CLOSEST GRID LINE TO THE RIGHT OF THE STARTING PANEL.

"FASTENER MODULE LINE" IS CENTER LINE OF THE PANEL CLIP ATTACHMENT.

"JOINT LINE" IS CENTER LINE OF VISABLE EXTERIOR PANEL JOINT.

GENERAL NOTES:

- THE NUMBER OF ENDWALL PANELS PROVIDED IS BASED ON THE WIDTH OF THE PANEL RUN PLUS (2) TIMES THE PANEL THICKNESS DIVIDED BY THE PANEL WIDTH (36" OR 42") AND THEN ROUNDED UP.
- STARTING AND ENDING PANELS WILL ALWAYS BE FIELD CUT AND STARTING PANEL WILL EXTEND BEYOND STRUCTURE LINE THE THICKNESS OF THE ADJACENT PANEL. SEE DWG. B-081517.
- PANEL RUNS ARE CENTERED ALONG THE WIDTH OF THE AREA TO BE paneled, THEREFORE THERE WILL NOT NECESSARILY BE A PANEL JOINT LINE THAT LINES UP WITH THE RIDGE LINE OF THE ENDWALL.



SQUARE CUT ENDWALL PANELS
1/4:12 THRU 1:12 ENDWALLS

MITER CUT ENDWALL PANELS
>1:12 THRU 6:12 ENDWALLS

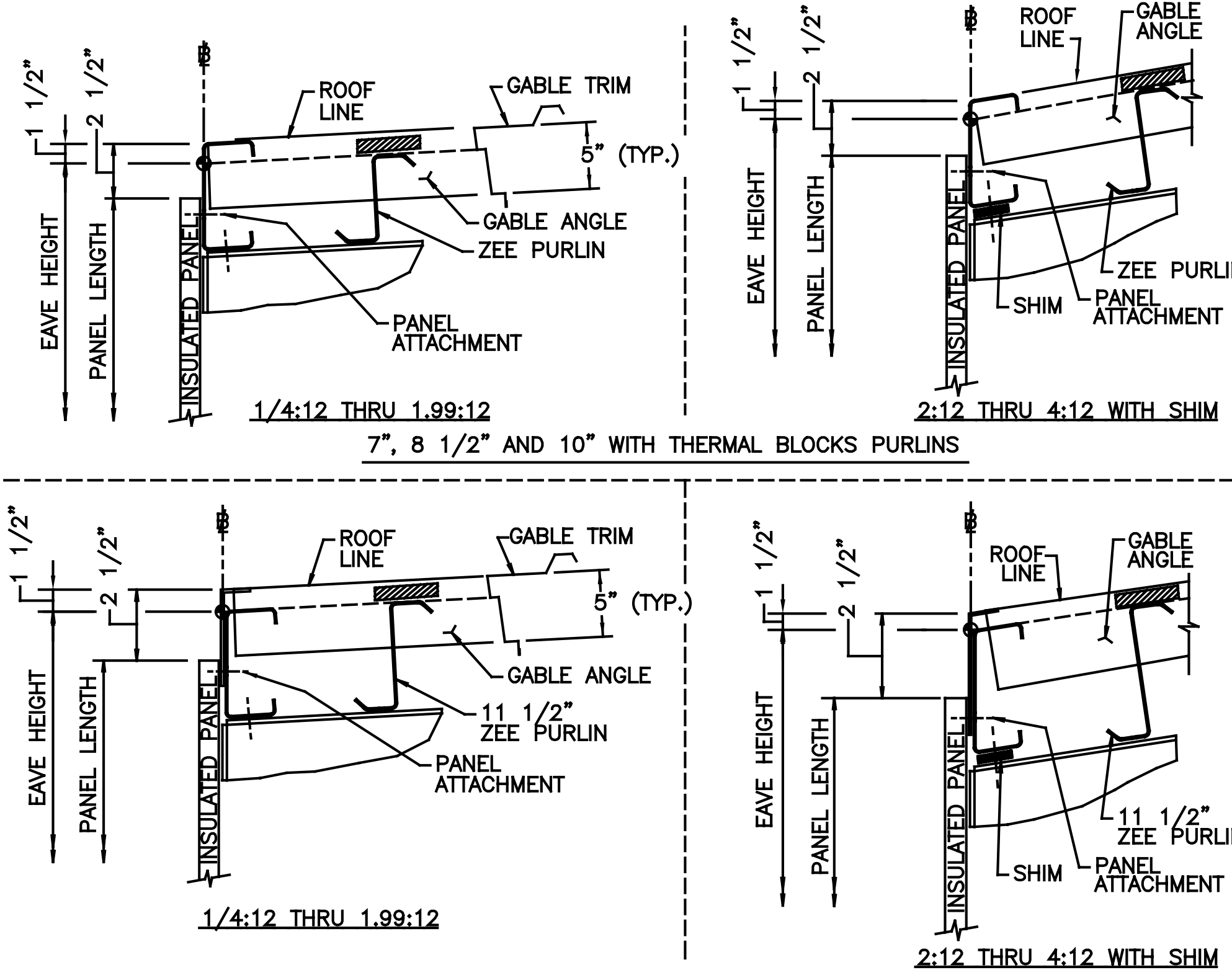
SQUARE CUT ENDWALL NOTES:

- STARTING PANEL LENGTH:
A. DETERMINE THE EAVE HEIGHT.
B. NEXT, DEDUCT DIM. "A".
C. THEN, DEDUCT DIM. "B".
D. NEXT, YOU NEED TO DETERMINE THE BASE CONDITION AND ADD OR DEDUCT AS REQUIRED.
*** SEE CMR-24 PANEL CALC. NOTES FOR RIGID INSULATION ADJUSTMENTS.
◆ ADD 1 1/2" IF THERMAL BLOCKS ARE USED WITH RAISED EAVE STRUT.
CONTINUE FOR NEXT THRU LAST PANELS ON A SLOPE:
E. ADD THE PANEL RISE TO THE ADJACENT PANEL LENGTH AND THEN STEP PANEL LENGTHS.
F. SEE SIDEWALL PANEL NOTES: 3 AND 4 BELOW FOR ACCESSORIES AND LENGTH CALL-OUT.

MITER CUT ENDWALL NOTES:

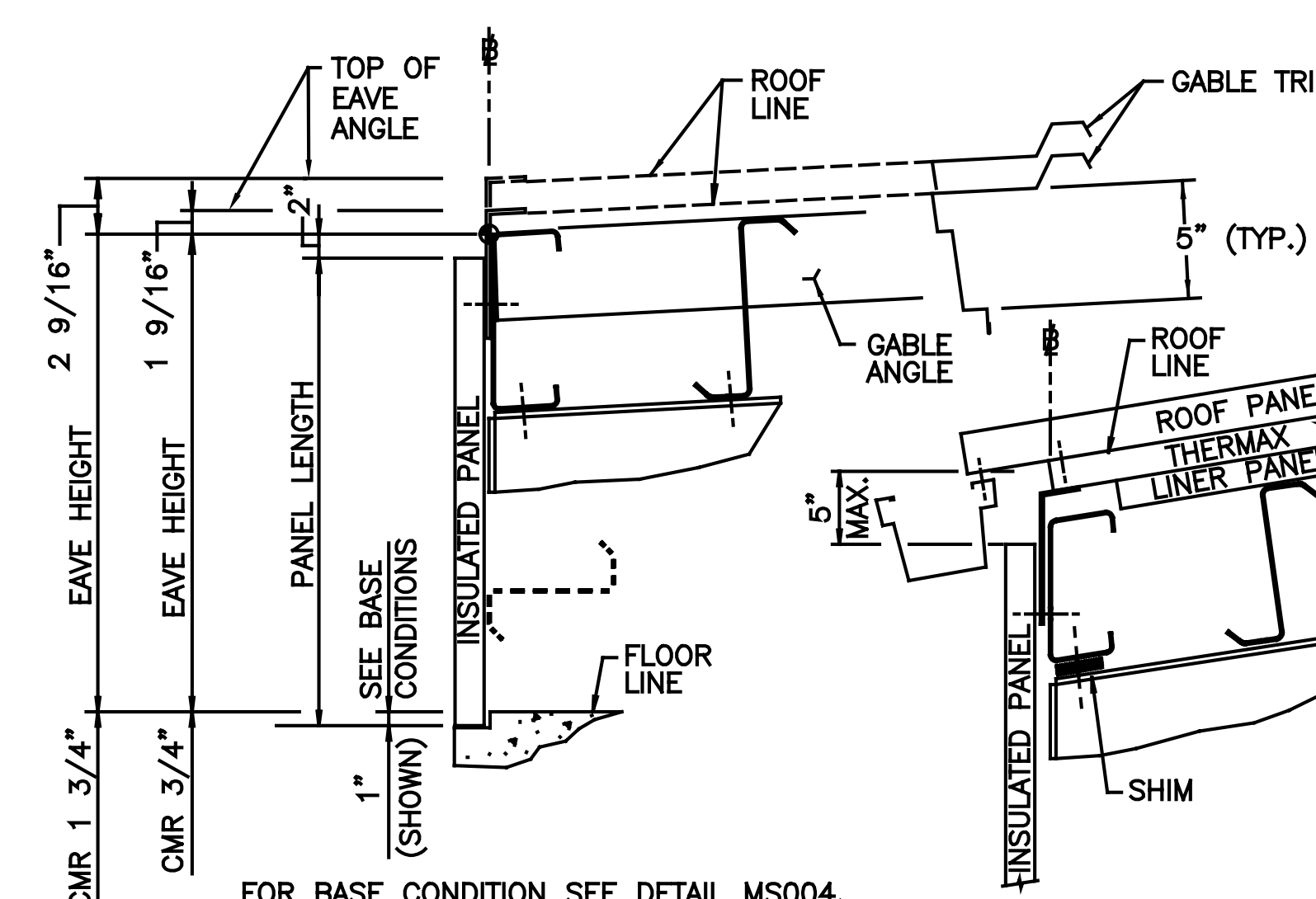
- STARTING PANEL LENGTH:
A. DETERMINE THE EAVE HEIGHT.
B. NEXT, DEDUCT DIM. "A".
C. THEN, DEDUCT DIM. "B".
D. THEN ADD PANEL RISE (SEE EXAMPLE).
E. NEXT, YOU NEED TO DETERMINE THE BASE CONDITION AND ADD OR DEDUCT AS REQUIRED.
*** SEE CMR-24 PANEL CALC. NOTES FOR RIGID INSULATION ADJUSTMENTS.
◆ ADD 1 1/2" IF THERMAL BLOCKS ARE USED WITH RAISED EAVE STRUT.
CONTINUE FOR NEXT THRU LAST PANELS ON A SLOPE:
F. ADD THE PANEL RISE TO THE STARTING PANEL LENGTH AND THEN STEP PANEL LENGTHS.
G. FIELD CUT (ON THE SLOPE) THE PANELS.
H. SEE SIDEWALL PANEL NOTES: 3 AND 4 BELOW FOR ACCESSORIES AND LENGTH CALL-OUT.

ENDWALL PANELS



CONDITION 2 - SQUARE CUT SIDEWALL PANELS
(MR-24 WITH THERMAL BLOCKS)

SIDEWALL PANELS

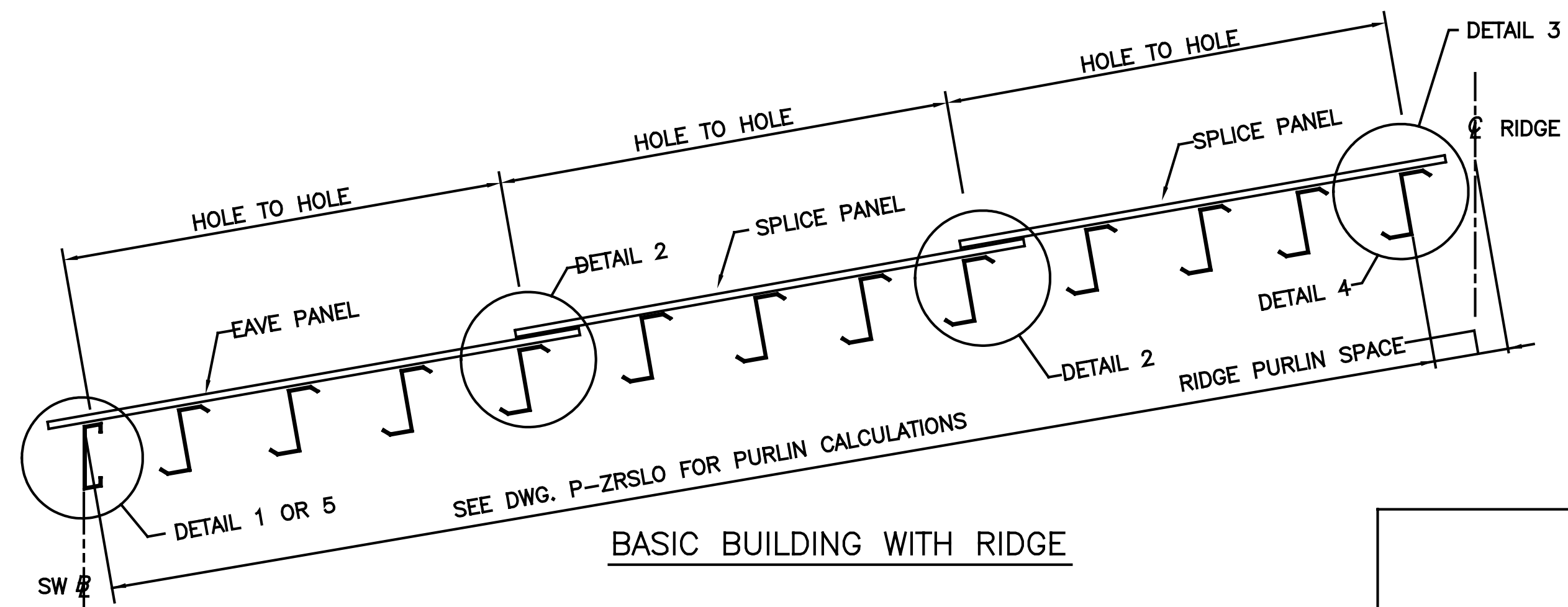


CONDITION 3 - SQUARE CUT SIDEWALL PANELS
(CMR-24)

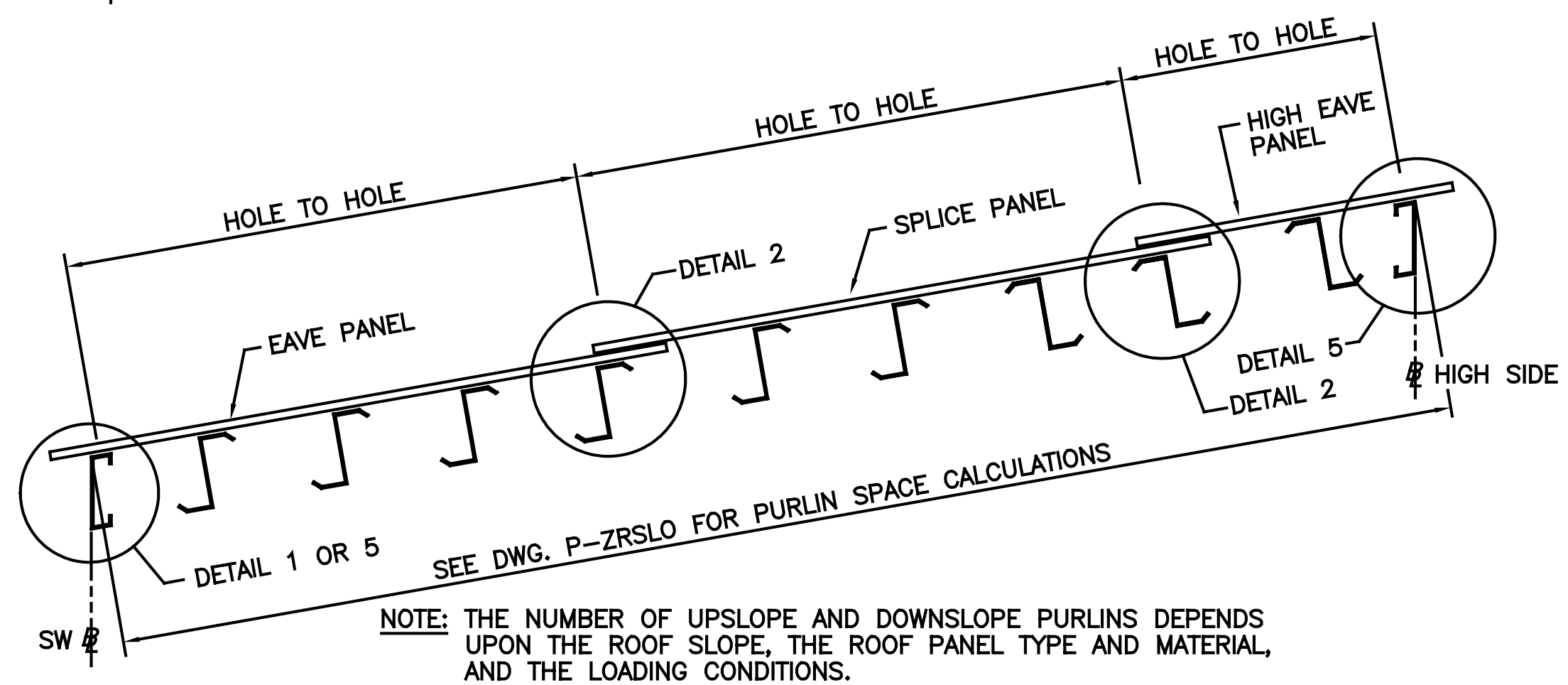
FOR 3/4" THERMAX: PANEL LENGTH = EAVE HT. +/- BASE COND. ADJ. - 2"
FOR 1 3/4" THERMAX: PANEL LENGTH = EAVE HT. +/- BASE COND. ADJ. - 2"

NOTE: DO NOT EXCEED 5" BETWEEN ROOF LINE AND TOP OF PANEL.

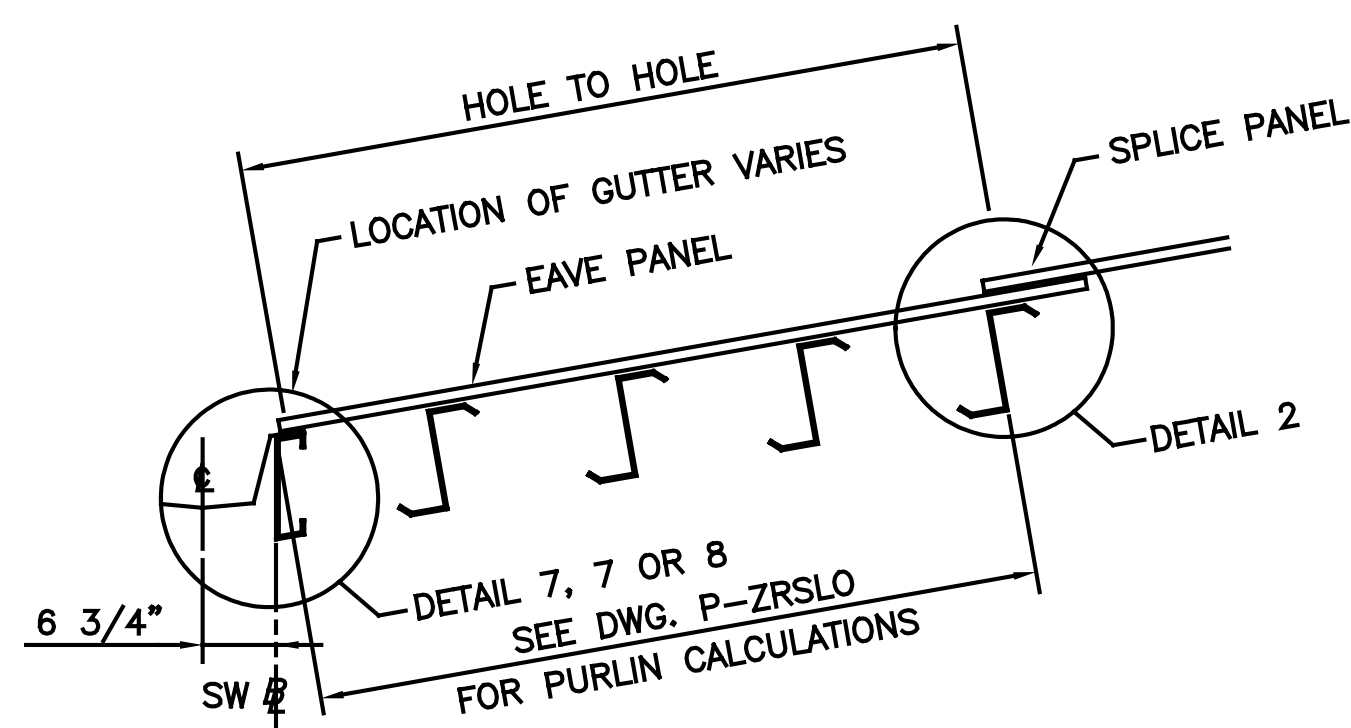
INSULATED WALL PANEL LENGTH CALCS (MR-24 AND CMR-24 ROOF PANEL)			
DRAWN BY	CHECKED BY	GROUP NUMBER: 33-031-01	
JPV	BJF	B	P-080883 07
FIRST RELEASE DATE 01/21/10	REVISION DATE 05/21/20		



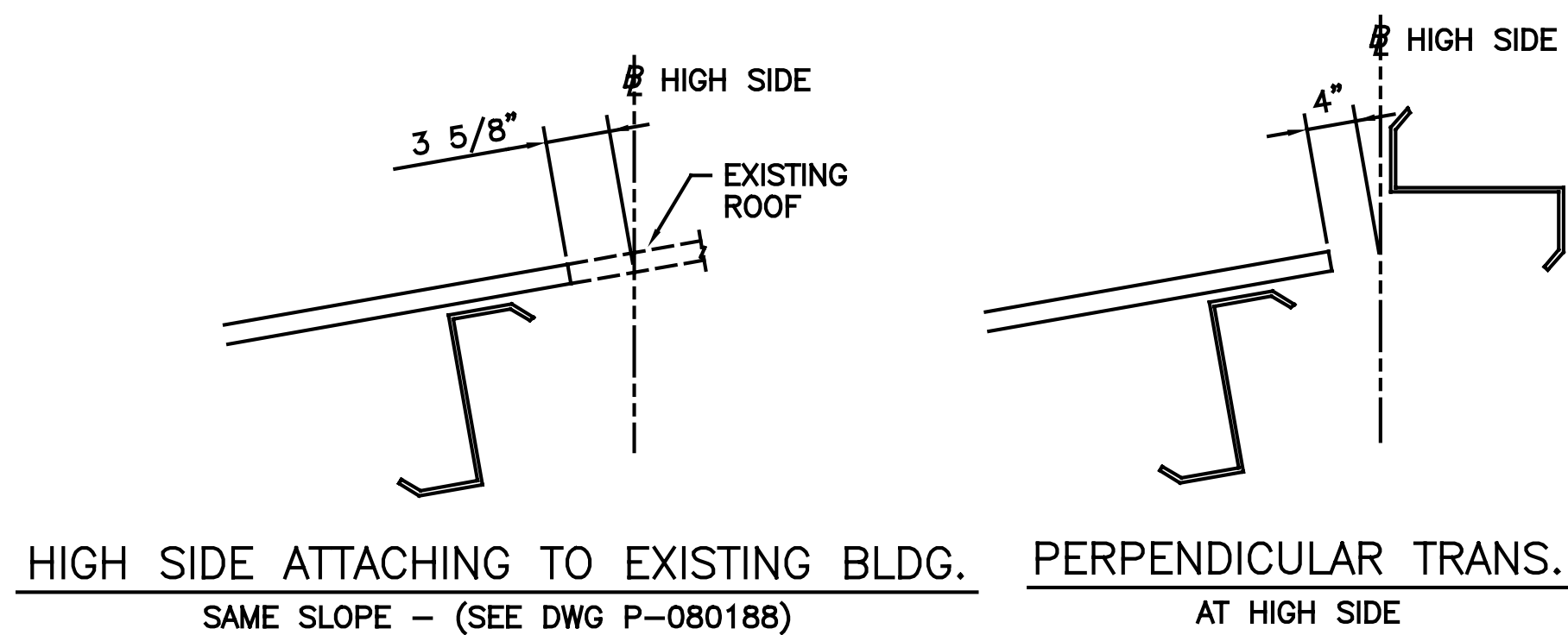
BASIC BUILDING WITH RIDGE



SINGLE SLOPE BUILDING

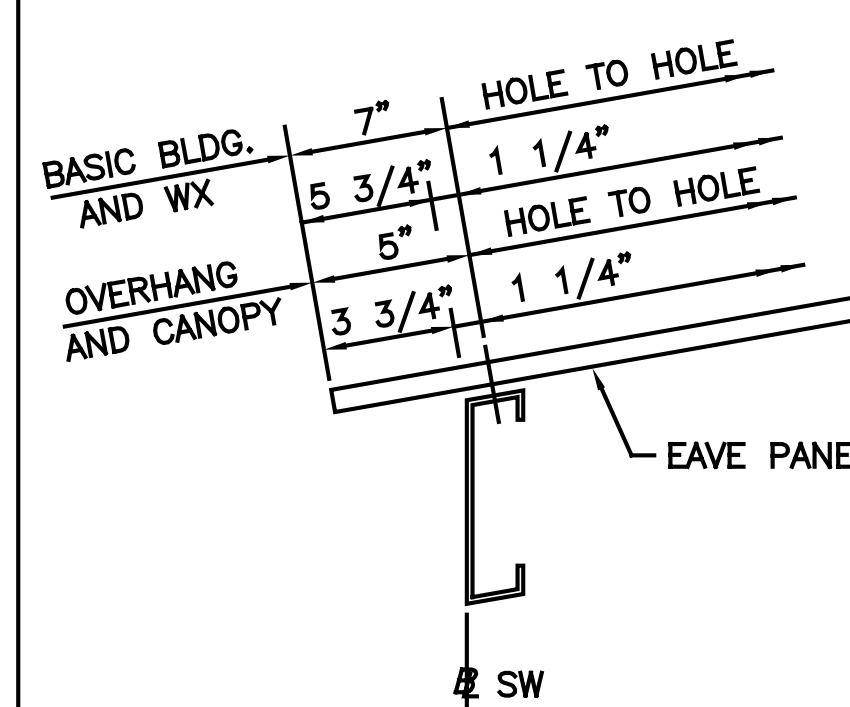


MULTIPLE GUTTER CONDITION

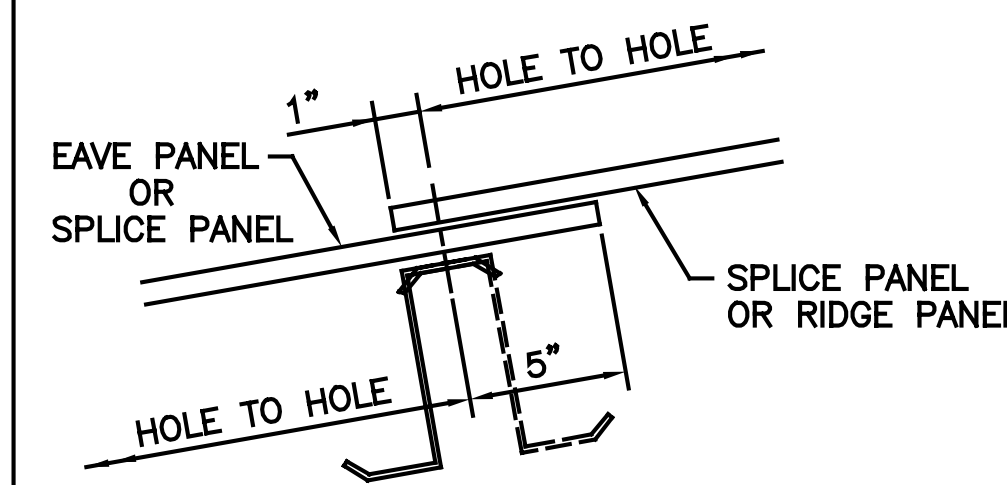


HIGH SIDE ATTACHING TO EXISTING BLDG. SAME SLOPE - (SEE DWG P-080188)

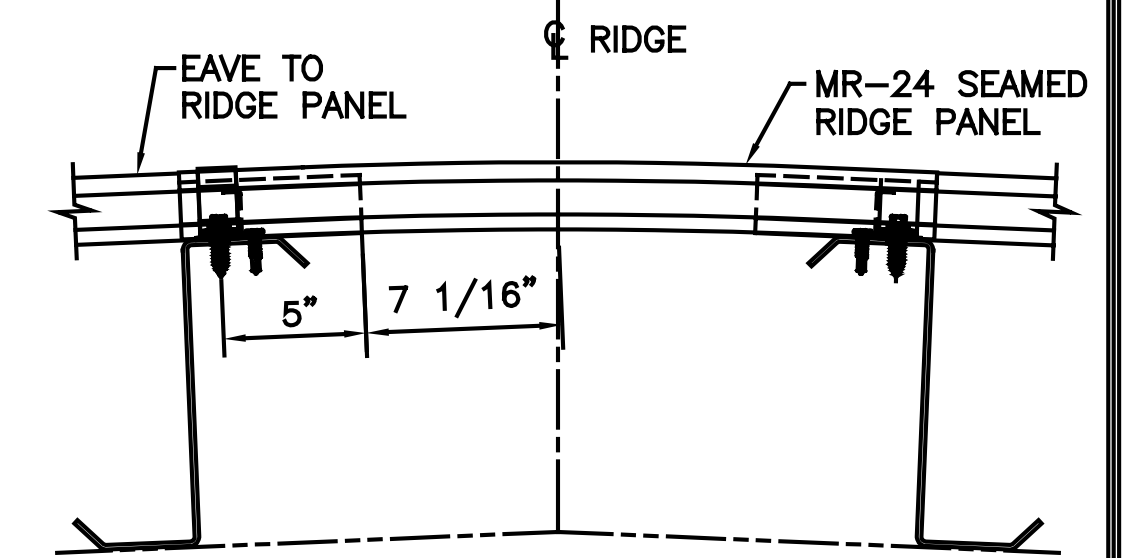
PERPENDICULAR TRANS. AT HIGH SIDE



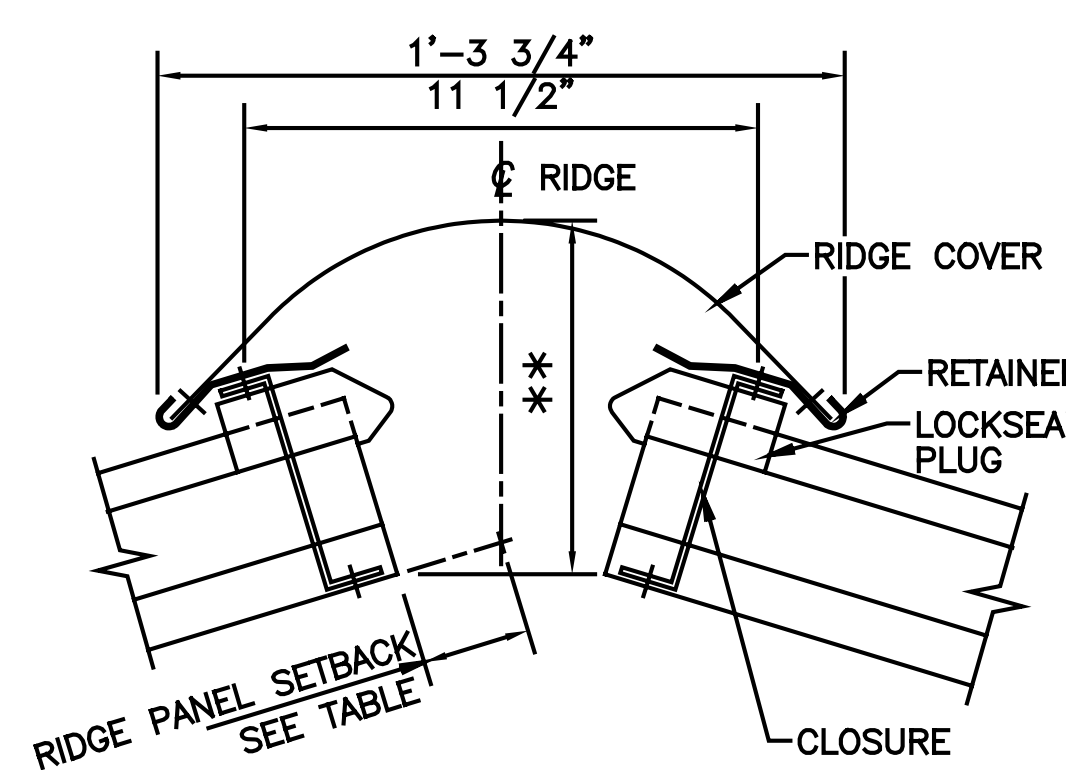
DETAIL 1 MR-24 LOW EAVE



DETAIL 2 INTERMEDIATE SPLICE



DETAIL 3 MR-24 SEAMED RIDGE ROOF SYSTEM



RIDGE PANEL SETBACK DIM. TABLE

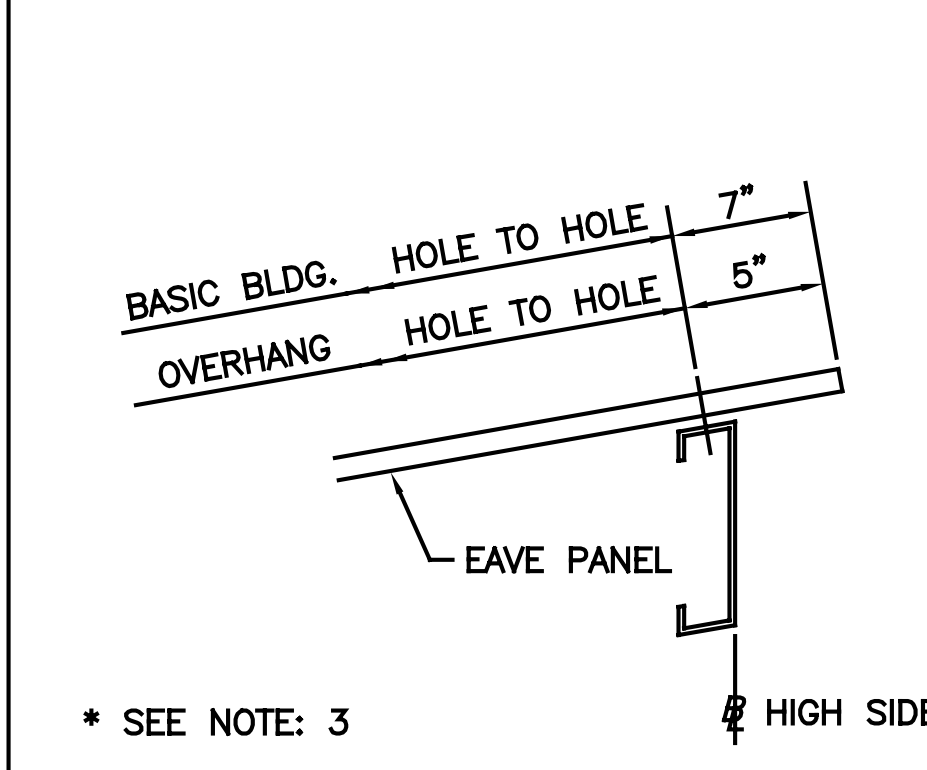
SLOPE	ROOF SURFACE WIDTH *		
	< 100'	100' < 150'	> 150'
≤ 1/4:12	3 7/16"	3 1/4"	3 3/16"
> 1/4:12 TO ≤ 1/2:12	3 7/16"	3 1/4"	3 1/16"
> 1/2:12 TO ≤ 1:12	3 3/8"	3 3/16"	3"
> 1:12 TO ≤ 1 1/2:12	3 1/4"	3 1/16"	2 7/8"
> 1 1/2:12 TO ≤ 2:12	3 1/16"	2 7/8"	2 11/16"
> 2:12 TO ≤ 2 1/2:12	2 15/16"	2 3/4"	2 9/16"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

* ROOF SURFACE WIDTH IS HORIZONTAL STRUCTURAL WIDTH UNDER ONE ROOF SLOPE (INCLUDING ANY WX). THIS DIMENSION DOES NOT INCLUDE ANY CANOPY, OVERHANG OR EAVE/RIDGE ADJUSTMENT.
** VARIES BETWEEN 5" AND 8 1/2"

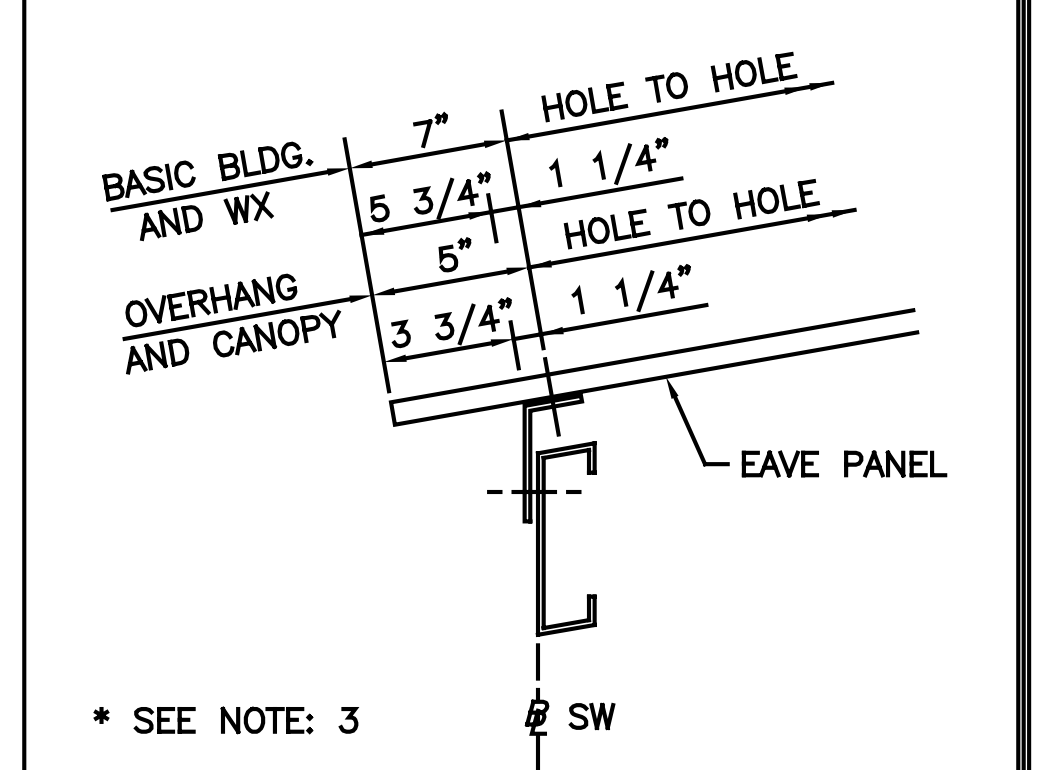
DETAIL 4 RIDGE OPENING

NOTES:

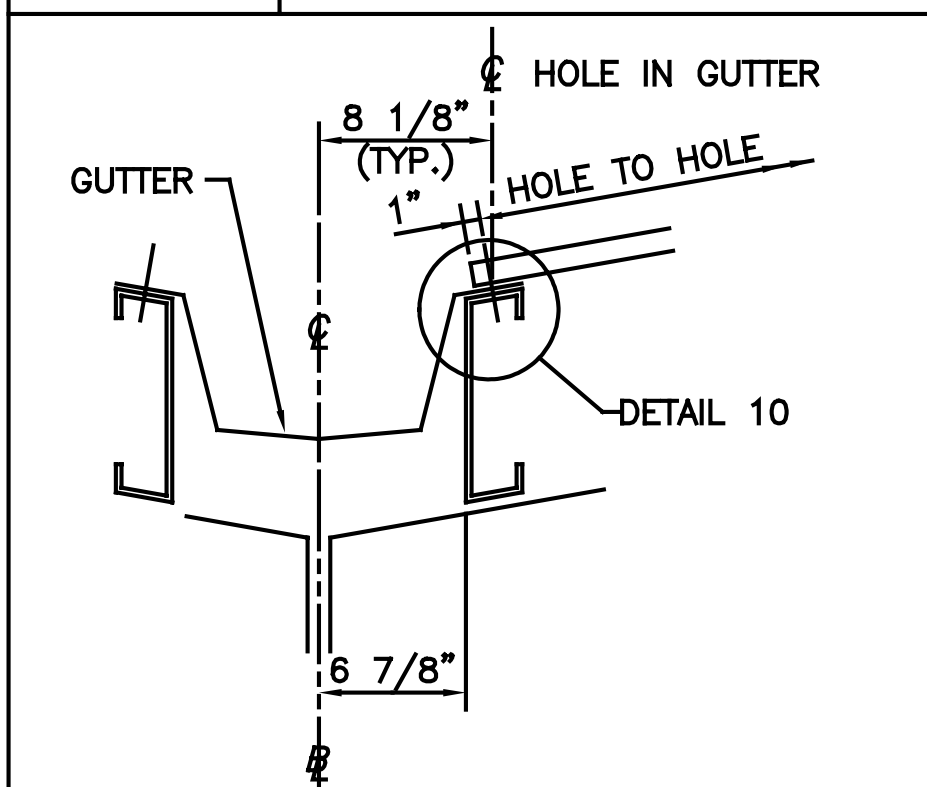
1. THE HOLE TO HOLE AND \emptyset TO HOLE DIMENSION SHOULD BE DETERMINED FROM THE ROOF STRUCTURAL CALCULATOR DWG. P-ZRSLO BEFORE PROCEEDING TO THIS DRAWING. ADD PANEL MATERIAL SHOWN IN APPROPRIATE DETAILS TO DIMENSIONS DETERMINED FROM P-ZRSLO TO ARRIVE AT ROOF PANEL LENGTHS.
2. FOR MR-24 AND CMR-24 PANEL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



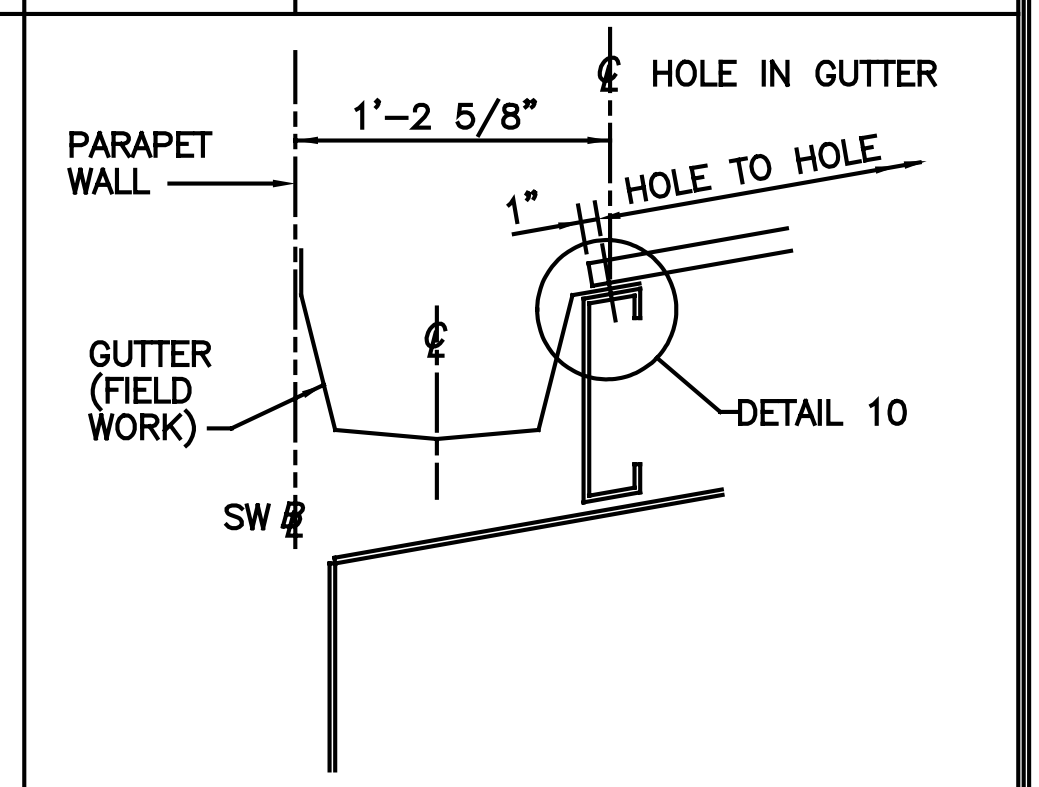
DETAIL 5 HIGH SIDE EAVE



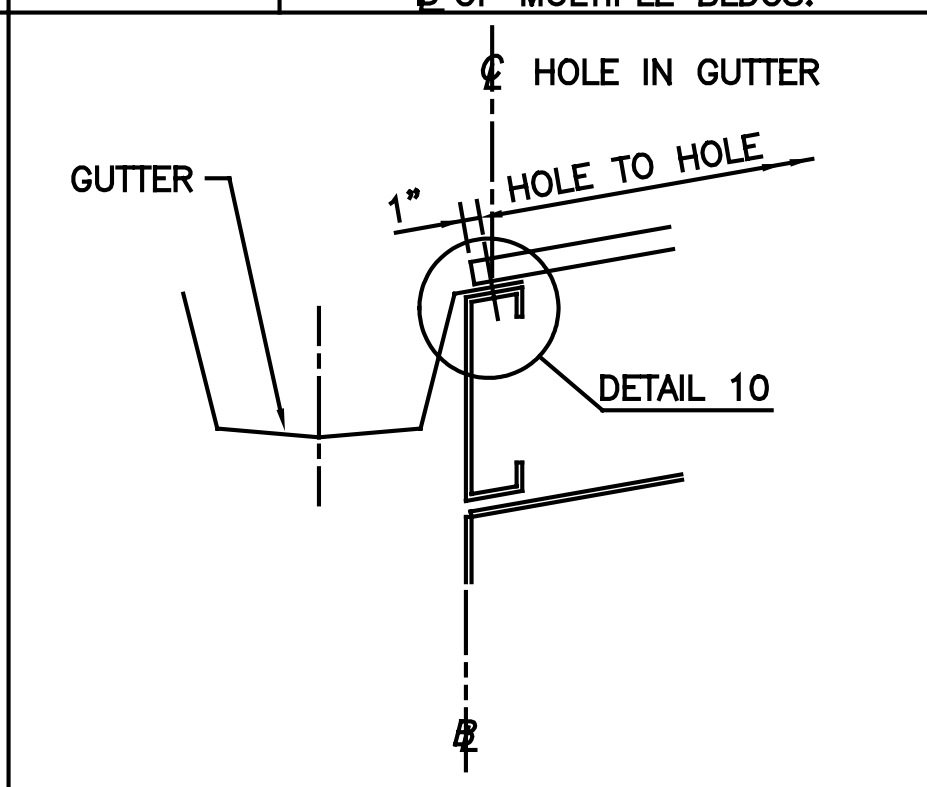
DETAIL 6 CMR-24 LOW EAVE



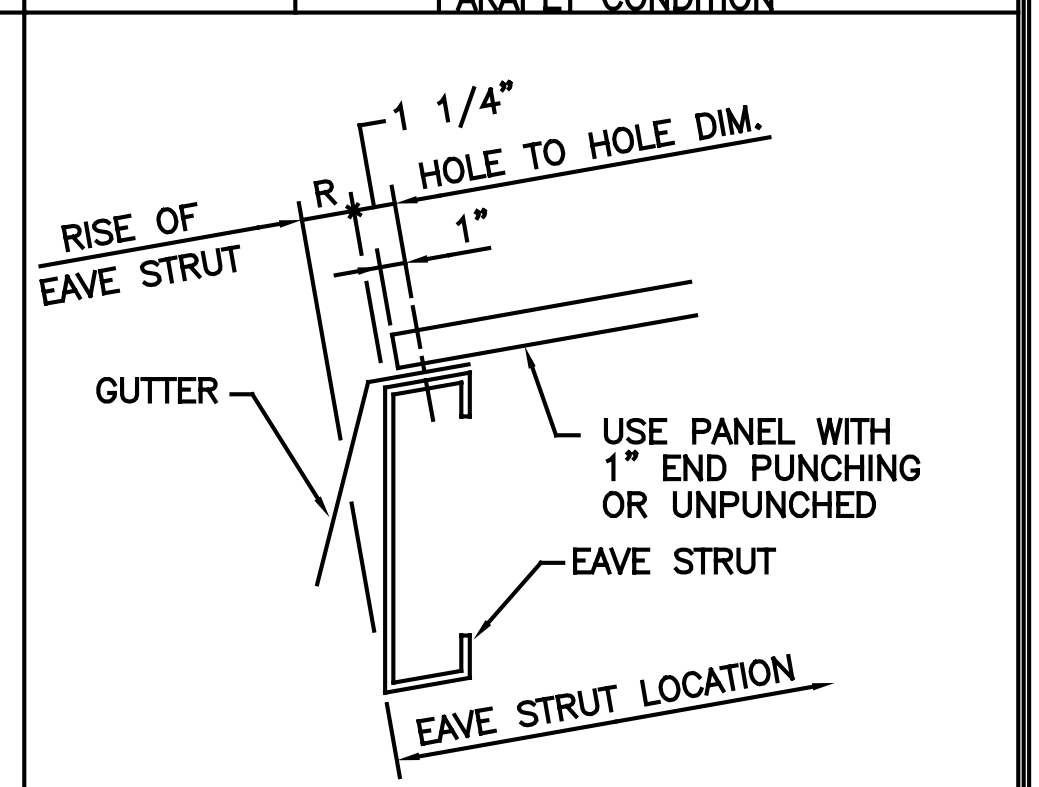
DETAIL 7 \emptyset OF GUTTER IS COMMON WITH \emptyset OF MULTIPLE BLDGS.



DETAIL 8 RECESSED GUTTER PARAPET CONDITION



DETAIL 9 FLUSH-GUTTER OUTSIDE \emptyset



DETAIL 10 TYPICAL PANEL ATTACHMENT AT MULTIPLE GUTTER

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

DRAWN BY	CHECKED BY	GROUP NUMBER:	02 030 02
JPV	BJF		
FIRST RELEASE DATE	REVISION DATE	B	P-080949 05
01/21/10	09/14/20		

CATEGORY	DRAWING TITLE	DWG. NO.	CATEGORY	DRAWING TITLE	DWG. NO.	CATEGORY	DRAWING TITLE	DWG. NO.	CATEGORY	DRAWING TITLE	DWG. NO.
ROOF PANELING	MR-24 ROOF SYSTEM ERECTION MANUAL	P-004797	TRIM	WIDE GUTTER, ASS'LY. AND COMP'NTS.	P-080082	TRANSITIONS	WALL PNL. CALC. (ROOF TO WALL TRANS.)	P-080818	ROOF ACCESSORIES	THERMAL SPACER BLOCK INSTALLATION	P-080574
	MR-24 WIDTH ADDITION TO EXISTING BLDG. MAXIMUM 50 FT. SAME SLOPE	P-080188		WIDE GUTTER INSTALLATION WITHOUT WEATHERSEAL	P-080088		FLEXIBLE SEAL INSTALLATION STEPPED ROOF OR ROOF TO WALL TRANS.)	P-081525		SKY-WEB PRODUCT DETAILS	P-080940
	MR-24 ROOF PANEL IDENTIFICATION	P-080570		WIDE GUTTER WITH WEATHERSEAL	P-080089		SUPPORT MEMBER INSTALL (STEPPED ROOF)	P-081526		SKY-WEB INSTALL ON BLDG. STRUCT.	P-080941
	MR-24 TRIM CLIP LOC. LOCKSEAM TAB AND PNL. CLIP ADAPTER	P-080572		MR/CMR-24 WEATHERSEAL FOR LOCAL TRIM	P-080377		STEPPED ROOF FLASH'G INSTALLATION	P-081528		SKY-WEB ATTACHMENT DETAILS	P-080942
	MR-24 PANEL INSTALLATION	P-080575		MR/CMR-24 HIGH EAVE PNL. CLOSURE FOR LOCAL TRIM	P-080378		END COVER INSTALLATION PERP. ROOF TRANSITION	P-081530		SKY-WEB ASSEMBLY DAMAGE	P-080950
	MR-24 PANEL CLIP INSTALLATION	P-080576		MR/CMR-24 RIDGE TRANSITION AND EXTENSION	P-080583		PARALLEL TRANS SUPT ANGLE INSTALL (CMR-24 AND UN-INSUL. PURLIN W/ MR-24)	P-081531		IFCJURB INSTALLATION PROCEDURES PANEL PREPARATION	P-081153
	MR-24 END LAP SPLICE	P-080577		MR/CMR-24 DRIP ANGLE INSTALL.	P-080720		SHORT PARALLEL TRANSITION PANEL INSTALLATION	P-081532		IFCJURB INSTALLATION PROCEDURES DIVERTER PLATE AND CURB	P-081154
	MR-24 RIDGE INSTALLATION	P-080578		MR/CMR-24 WEATHERSEAL FOR LOCAL TRIM	P-080802		PARALLEL TRANS. SUPT ANGLE INSTALL (INSULATED PURLIN)	P-081534		IFCJURB INSTALLATION ELEVATED FRAME AT CARRY BEAMS	P-081854
	MR/CMR-24 HAND SEAMER INSTRUCTIONS	P-080600		GABLE TRIM AND WALL ADAPTER INSTALLATION (WITH RIDGE ASSEMBLY)	P-081167		TALL PARALLEL TRANSITION PANEL INSTALLATION	P-081535		IFCJURB INSTALLATION DOUBLE WALL - PURLIN CUTTING REQ'D	P-081855
	MR/CMR-24 VALLEY FLASH. PNL. PREP.	P-080783		INSIDE CORNER TRIM INSTALLATION-NARROW GUTTER TO GABLE TRIM	P-081235		PARA / PERP TRANS. (SHORT AND TALL) COUNTER FLASHING INSTALLATION	P-081537		IFCJURB INSTALLATION DOUBLE WALL - NO PURLIN CUTTING REQ'D	P-081856
	MR/CMR-24 VALLEY FLASH. PARTS INSTALL.	P-080784		NARROW GUTTER CORNER CAP INSTALL. INSTALLATION BUTLERB II, MR-24/CMR-24	P-081236		PARALLEL TO PERP. TRANSITION INSIDE CORNER WITHOUT CORRUGATION	P-081539		IFCJURB INSTALLATION CARRY BEAMS - PURLIN CUTTING REQ'D	P-081857
	MR/CMR-24 VALLEY FLASH. DETAILS	P-080785		EAVE TRIM INSTALLATION	P-081239		PARALLEL TO PERP. TRANSITION INSIDE CORNER WITH CORRUGATION	P-081541		IFCJURB INSTALLATION CARRY BEAMS - NO PURLIN CUTTING REQ'D	P-081858
	MR/CMR-24 HIP RIDGE PNL. PREP.	P-080786		WIDE GUTTER, CORNER TRIM AND COLLECTOR BOX INSTALL.	P-081240		PARALLEL TO PERP. TRANSITION INSIDE CORNER WITH CORRUGATION	P-081542		LITE*PNL PLACEMENT	P-081859
	MR/CMR-24 HIP RIDGE PARTS INSTALL.	P-080787		WIDE GUTTER SEALANT AND SUPPORT CHANNEL INSTALLATION	P-081241		RIDGE TO WALL SHORT TRANS. (W/O CORR.)	P-081544		UNINSULATED LITE*PNL-UNINSULATED PURLIN	P-081860
	MR/CMR-24 HIP RIDGE DETAILS	P-080788		RIDGE END COVER INSTALLATION (WITH RIDGE ASSEMBLY)	P-081243		RIDGE TO WALL TALL TRANS. (W/CORR.)	P-081547		INSULATED LITE*PNL-UNINSULATED PURLIN	P-081861
	MR-24 HS EAVE CLIP AND PNL. CLIP REQMT.	P-080789		INSIDE CORNER TRIM INSTALLATION EAVE TRIM TO GABLE TRIM	P-081244		RIDGE TO WALL TALL TRANS. (W/O CORR.)	P-081548		UNINSULATED LITE*PNL-INSULATED PURLIN	P-081862
	MR/CMR-24 MASTIC APPLICATION	P-080847		WIDE GUTTER INSIDE CORNERS	P-081246		RIDGE TO WALL TALL TRANS. (W/CORR.)	P-081549		INSULATED LITE*PNL-INSULATED PURLIN	P-081863
	MR/CMR-24 VARIABLE WIDTH PANELS	P-080875		VARIABLE WALL ADAPTER INSTALLATION	P-081259		PARALLEL TO PERP. TRANSITION INSIDE/OUTSIDE CORNER WITH CORR.	P-081552		UL 90 UNINSULATED LITE*PNL FOR UNINSULATED PURLINS	P-081864
	MR/CMR-24 CORR. END DEFLECTOR	P-080918		EW TRIM REINFORCING CLIP (HIGH WIND LOAD APPLICATION)	P-081635		PARALLEL TO PERP. TRANSITION INSIDE/OUTSIDE CORNER WITHOUT CORR.	P-081553		UL 90 INSULATED LITE*PNL FOR UNINSULATED PURLIN	P-081865
	MR/CMR-24 SEAM REINFORCING CLIP ASS'LY.	P-080951		NARROW GUTTER ASSEMBLY	P-103223		END COVER INSTALLATION STEPPED ROOF (WITH SUPPORT MBR.)	P-081554		UL 90 UNINSULATED LITE*PNL FOR INSULATED PURLIN	P-081866
	MR-CMR-24 ROOF WITHOUT RIDGE	P-081257		MR/CMR-24 GUTTER EXPANSION JOINT	P-103315		PERPENDICULAR R TO W TRANSITION WITH SOLID WALL	P-081564		UL 90 INSULATED LITE*PNL FOR INSULATED PURLIN	P-081867
	MR-24 SUB PURLIN INSTALLATION	P-081598		BIRD STOP INSTALL. - GABLE TRIM	P-104542		PERPENDICULAR R TO W TRANSITION	P-081568		LITE*PNL REPLACEMENT - DRAWING 1 OF 1	P-081881
	MR-24 SEAMER PLATFORM ASS'Y AND USAGE	P-081618		SOFFIT TRIM DETAILS	P-104544		PERPENDICULAR TRANSITION SHORT PERP. FLASHING INSTALLATION	P-081572		RIDGE VENTILATOR DETAILS	P-107551
	MR-24 REPAIR CLIP INSTALLATION	P-081680		CORNER CAP INSTALLATION EAVE TRIM	P-104549		PERPENDICULAR TRANSITION WITH OPEN WALL TALL PERP. FLASHING INSTALLATION	P-081573		RIDGE VENTILATOR PREPARATION DETAILS	P-107552
	MR-24/CMR-24 PANEL CLOSURE INSTALL.	P-103247		NARROW GUTTER INSTALL W/O WEATHERSEAL	P-104713		PARALLEL TRANSITION INSTALLATION TO EXISTING BLDG - NO WIDTH ADD.	P-081613		RIDGE VENTILATOR INSTALLATION	P-107553
	MR-24 ENDWALL EXT./ROOF REPLACEMENT	P-105528		NARROW GUTTER INSTALL W/WEATHERSEAL	P-104714		PARALLEL TRANSITION INSTALLATION TO EXISTING BLDG - FOR WIDTH ADD.	P-081614		CONTINUOUS RIDGE VENTILATOR INSTALL.	P-107559
	MR-24/CMR-24 PANEL CLOSURE INSTALL.	P-105634					CORRUGATION TRANSITION INSTALLATION GENERAL INFO AND CLIP INSTALL 1 OF 5	P-081675			
	MR-24 SINGLE PANEL REPAIR	P-107656		MR-24 SEAMED RIDGE ROOF SYSTEM RIDGE END COVER INSTALL. WITH RIDGE ASSY.	P-090008		CORRUGATION TRANSITION INSTALLATION SEAMING OPERATION 2 OF 5	P-081678			
	MR-24/CMR-24 PANEL REPAIR CAP INSTALL.	P-107657		MR-24 SEAMED RIDGE ROOF SYSTEM INTERIOR RIDGE TRIM INSTALLATION	P-090010		CORRUGATION TRANSITION INSTALLATION SILICONE MEMBRANE AND COVER 3 OF 5	P-081677			
	MR-24/CMR-24 MULT. PANEL REPAIR AND DET.	P-107743		CONDUCTOR PIPE INSTALLATION AND DETAILS	P-080091		CORRUGATION TRANSITION INSTALLATION SPECIFIC DETAILS 4 OF 5	P-081678			
	MR-24 MULTIPLE PANEL REPAIR	P-107744		COLLECTOR BOX INSTALL.-NARROW GUTTER	P-103225		CORRUGATION TRANSITION INSTALLATION RIDGE AND PERP. TRANS. 5 OF 5	P-081679			
	MR-24 MULTIPLE PANEL REPAIR	P-107745		CONDUCTOR PIPE INSTALLATION	P-105224		MR-24 SEAMED RIDGE ROOF SYSTEM RIDGE PANEL AT PARALLEL TRANSITION	P-090009			
	MR-24 SEAMED RIDGE ROOF SYSTEM GENERAL INSTALLATION	P-090006		CONDUCTOR PIPE DETAILS	P-105225		PERPENDICULAR TRANSITION MEMBRANE ROOF TO METAL ROOF	P-081574			
MR-24 SEAMED RIDGE ROOF SYSTEM PANEL INSTALLATION	P-090007	CONDUCTOR PIPE DETAILS	P-105226	PARALLEL TRANSITION MEMBRANE ROOF TO METAL ROOF	P-081575						
MR-24 SEAMED RIDGE ROOF SYSTEM ROOF PANEL FIELD NOTCHING DETAILS	P-090011	CONDUCTOR PIPE DETAILS	P-105228	INTERIOR GUTTER CORNER INSTALLATION ROOF TO WALL	P-080189						
MR-24 SEAMED RIDGE ROOF SYSTEM SPLICE DETAIL AND RIDGE PANEL FIELD HOLES	P-090012			INTERIOR GUTTER PAR. TO INSIDE CORNER FLASHING WITHOUT CORRUGATION	P-081543						
BLGS. WITH TRUSS	MR/CMR-24 ROOF PANEL CALCULATOR	P-081113	CONDUCTOR PIPE	CONDUCTOR PIPE INSTALLATION AND DETAILS	P-080091						
	ROOF STRUCTURALS FOR ROOF PNL. CALC.	M-149099		COLLECTOR BOX INSTALL.-NARROW GUTTER	P-103225						
	MR/CMR ROOF PANEL CALCULATOR	P-080949		CONDUCTOR PIPE INSTALLATION	P-105224						
BLGS. WITH Z-PURLIN	ROOF STRUCTURALS FOR ROOF PANEL CALCULATIONS	P-2R5L0		CONDUCTOR PIPE DETAILS	P-105225						
				CONDUCTOR PIPE DETAILS	P-105228						

NOTES:

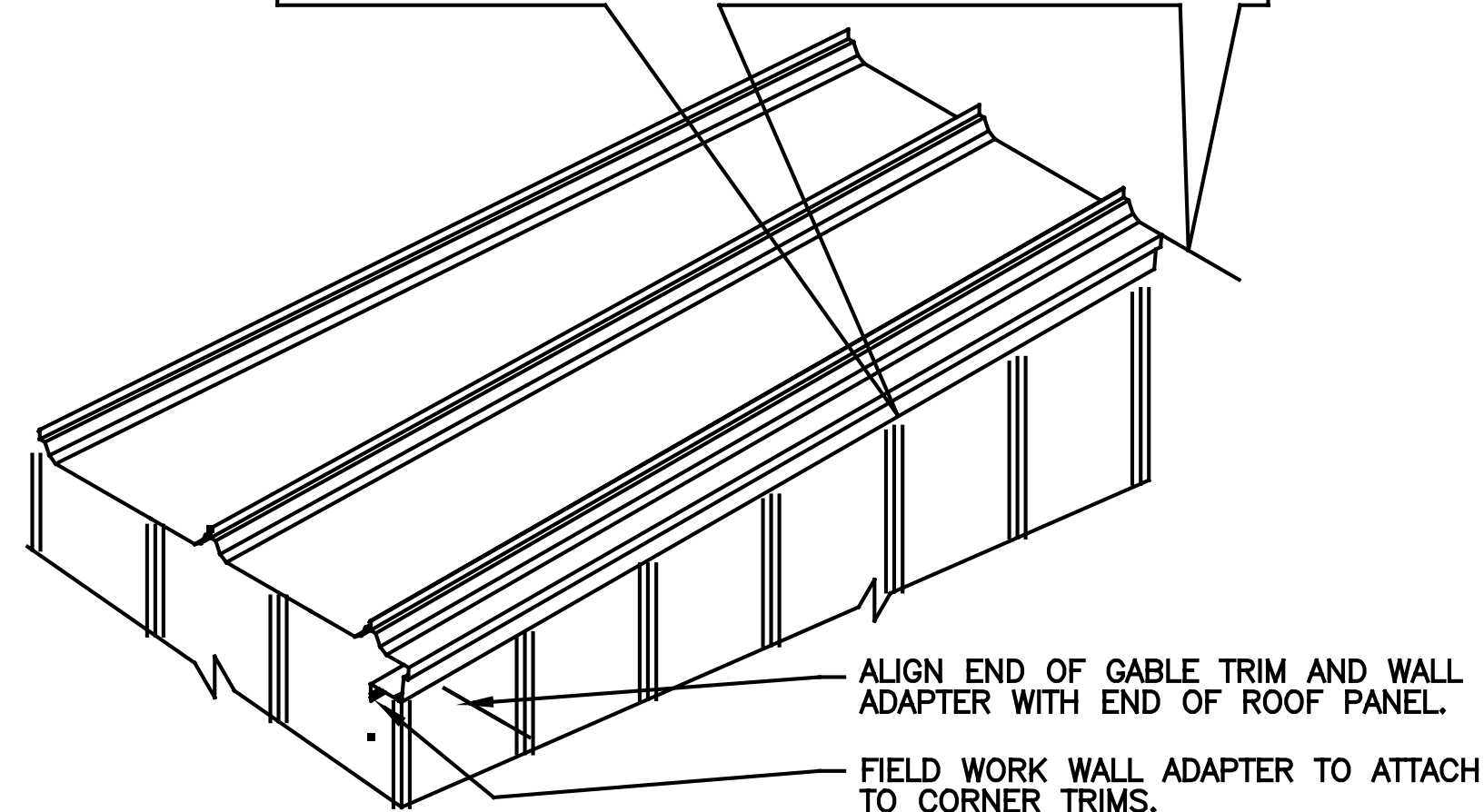
1. THE ABOVE DRAWINGS PERTAIN TO WIDESPAN BUILDINGS WITH Z-PURLIN AND/OR TRUSS FOR THE ROOF SECONDARY. THESE BUILDING HAVE EAVE STRUTS (OR AN EQUIVALENT MEMBER), GABLE ANGLES OR RAKE CHANNELS AT THE BUILDING STRUCTURE LINE, AT STANDARD LOCATIONS, FOR PANEL AND TRIM SUPPORT. THIS INDEX DRAWING IDENTIFIES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

MR-24 ERECTION DRAWING INDEX

DRAWN BY	CHECKED BY	GROUP NUMBER:	02-030-02
FRM	RSS		
FIRST RELEASE DATE	REVISION DATE	B	P-081111
01/21/10	06/09/17		07

SINGLE SLOPE BUILDINGS

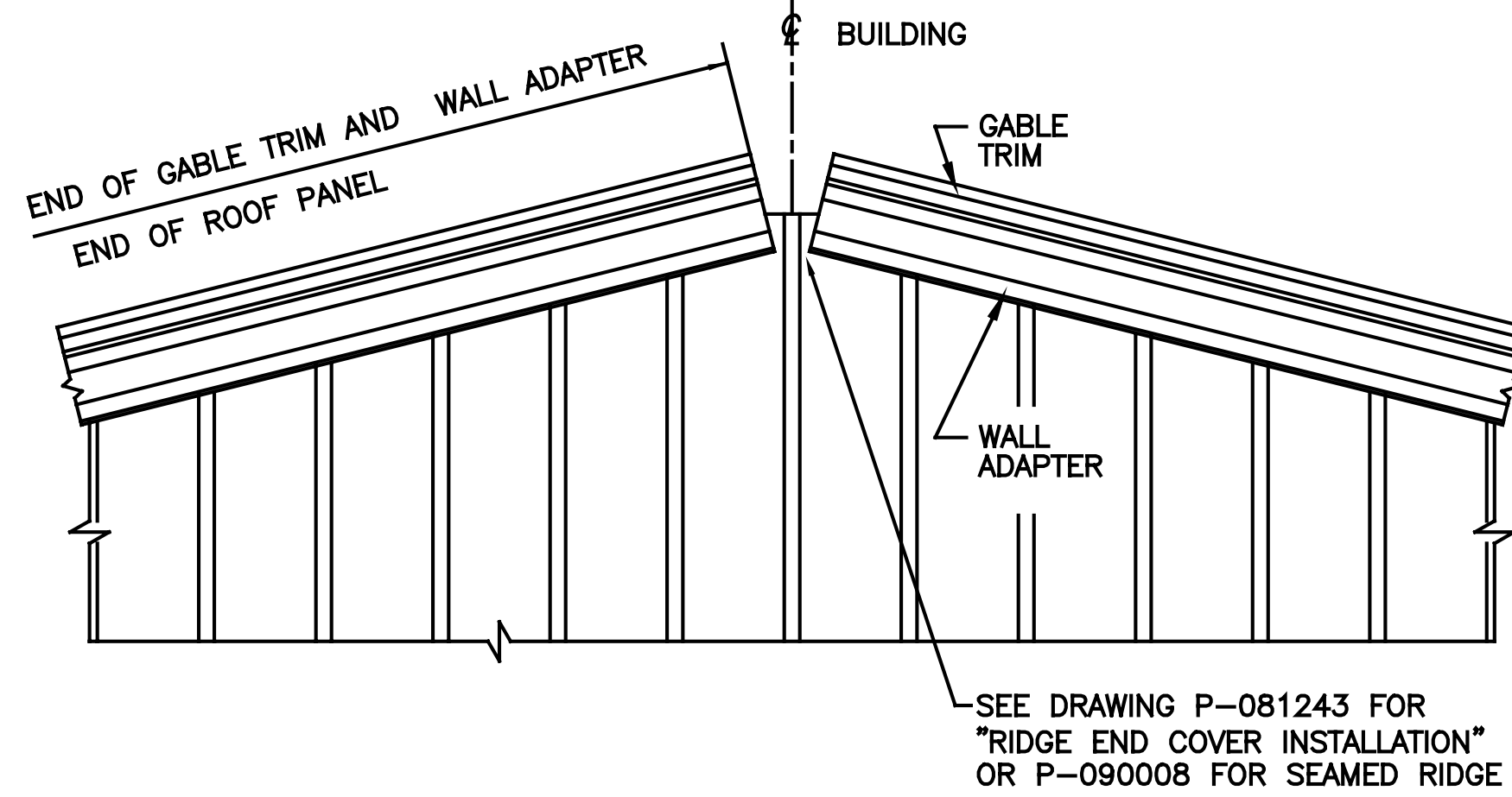
1. ALIGN END OF GABLE TRIM AND WALL ADAPTER WITH END OF ROOF PANEL.
2. INSTALL BUTLER NAME PLATE (630393) AT MID SLOPE WITH (2) 1/4-14 X 3/4" T-30 TORX SDS (097364).



GABLE TRIM AND WALL ADAPTER-GENERAL

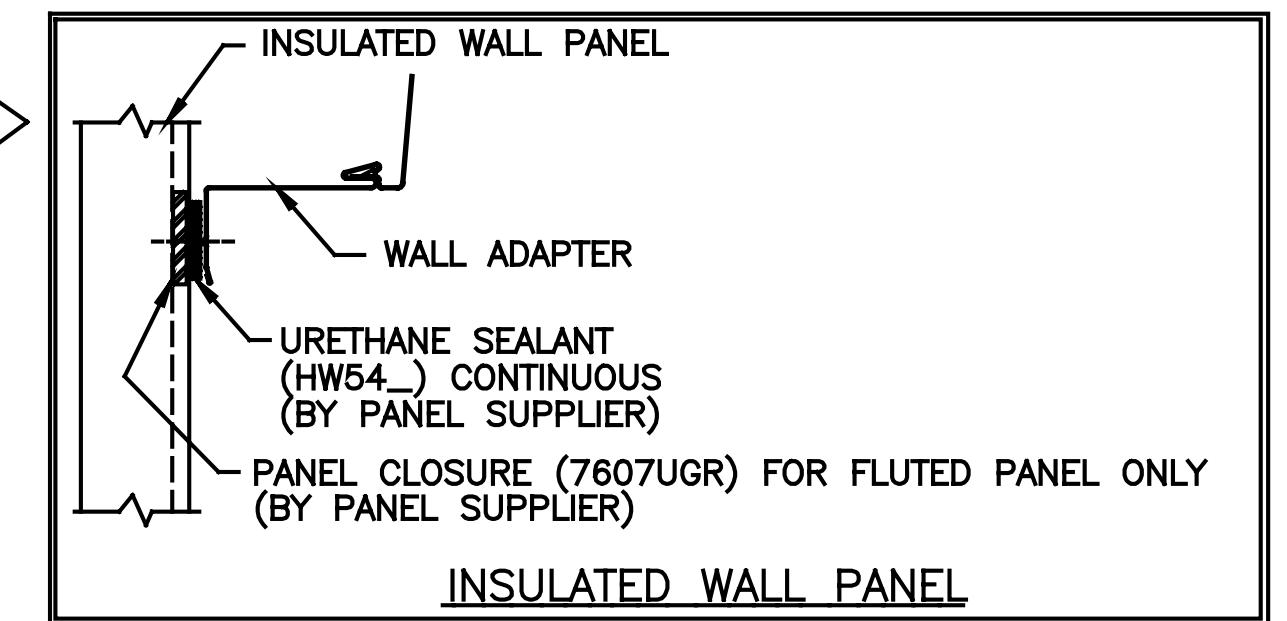
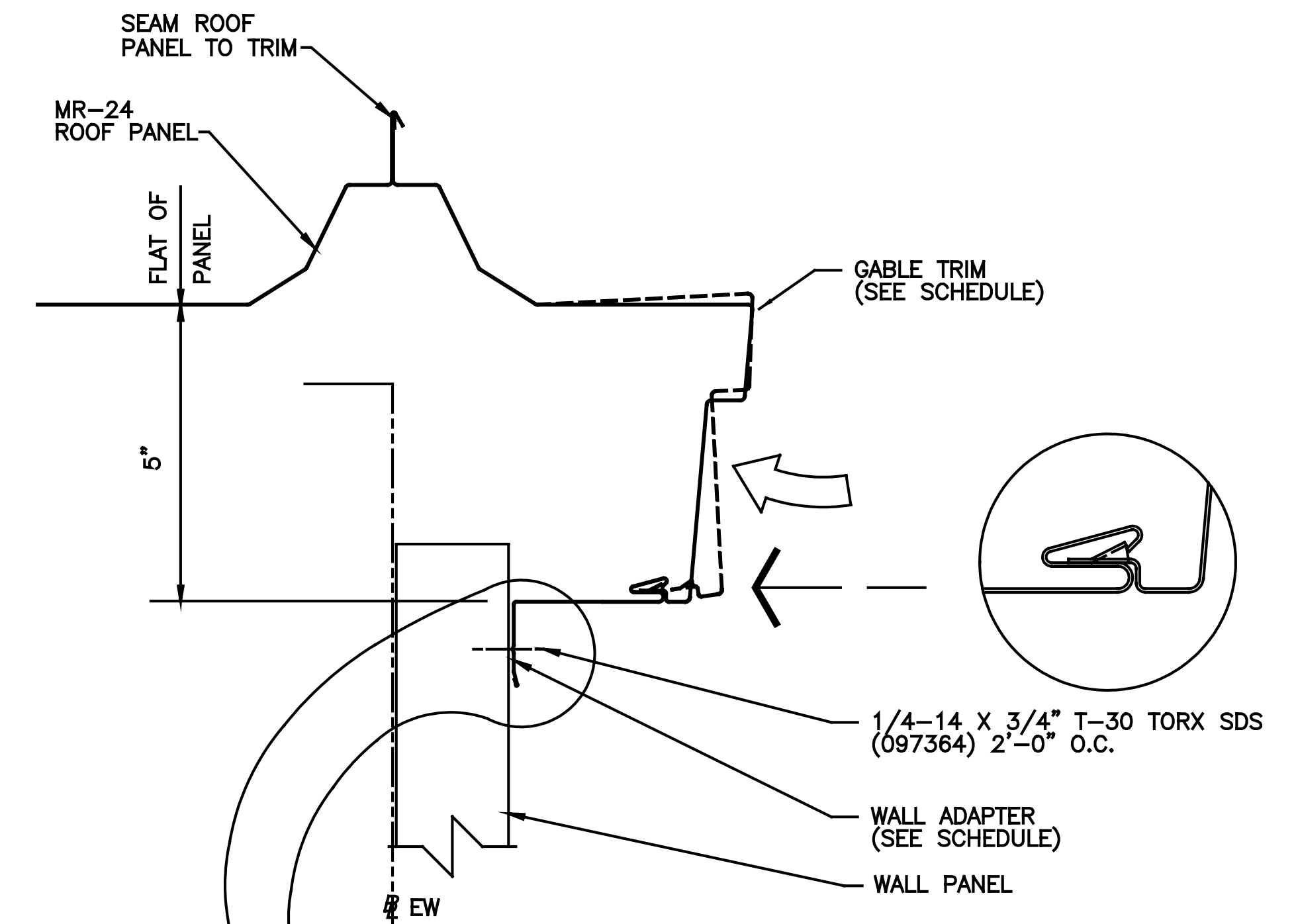
WALL ADAPTER PART SCHEDULE		
WALL PANEL	PART NUMBER	LENGTH
NON-BMC WALL (SEE DWG. P-081259)	VWA10	10'-4 1/2"
BUTLERIB II, SHADOWALL, STYLWALL II FLAT AND FLUTED, ALL (2") TEXTURED AND INSULATED WALL PANEL	WA10A	
ALL (2 1/2") TEXTURED AND INSULATED WALL PANEL ALL (3") TEXTURED AND INSULATED WALL PANEL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

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

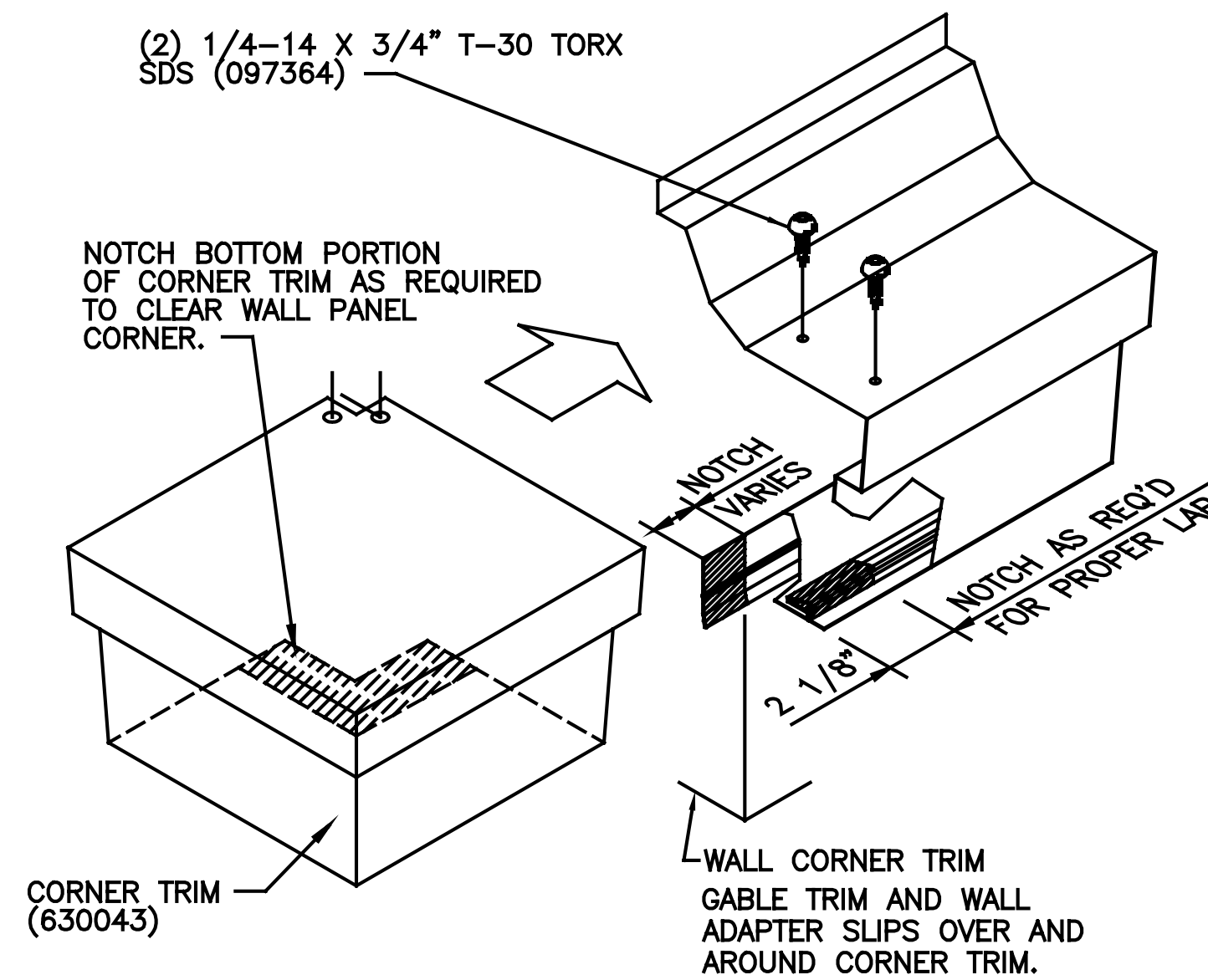


GABLE TRIM AND WALL ADAPTER AT RIDGE
DOUBLE SLOPE BUILDINGS

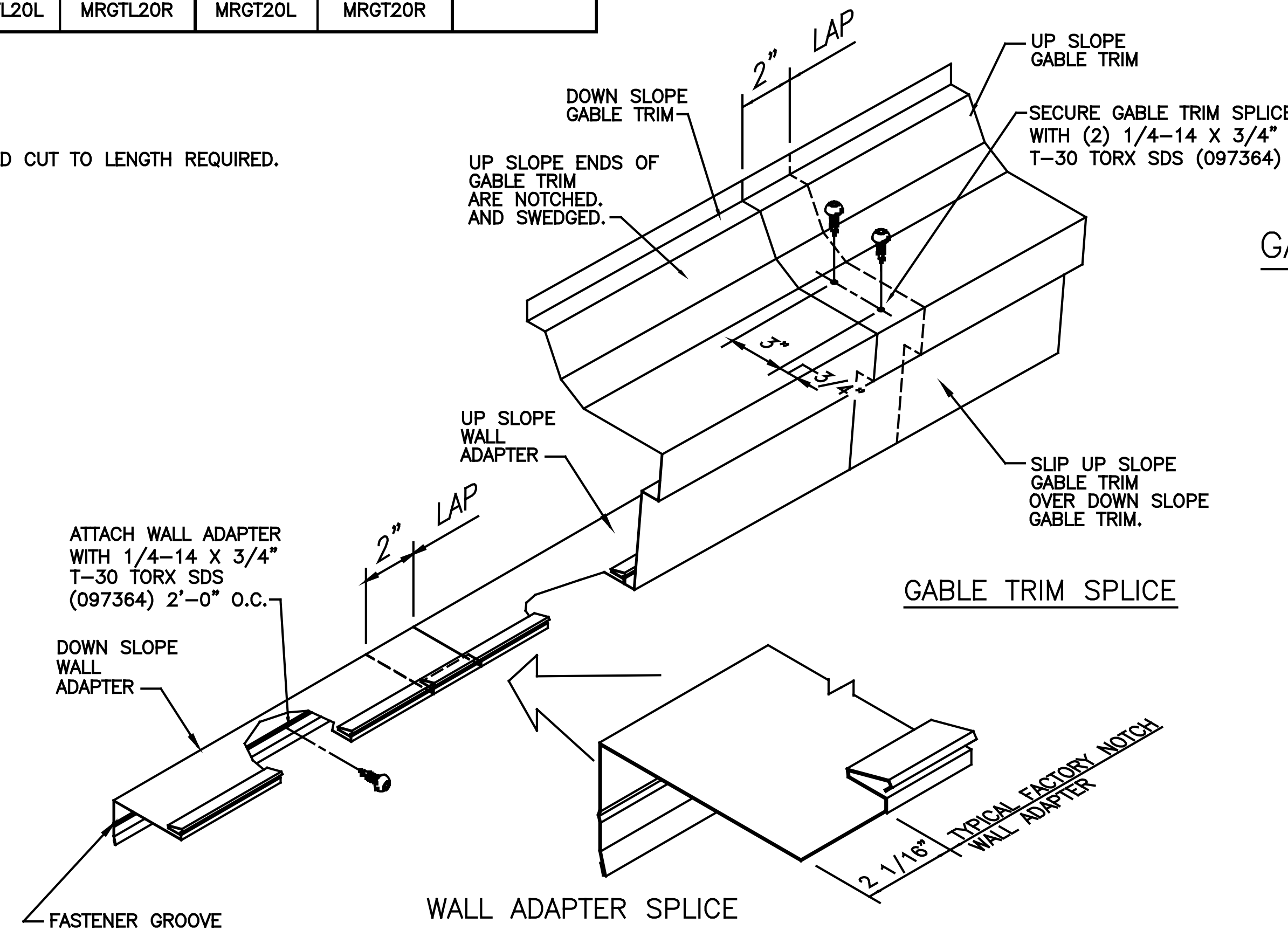
GABLE TRIM PART SCHEDULE				
LEFT HANDED PANELS		RIGHT HANDED PANELS		LENGTH
LEFT SLOPE	RIGHT SLOPE	LEFT SLOPE	RIGHT SLOPE	20'-6 7/8"
PART NO.	PART NO.	PART NO.	PART NO.	
MRGTL20L	MRGTL20R	MRGT20L	MRGT20R	



GABLE TRIM AND WALL ADAPTER ASSEMBLY



GABLE TRIM TO CORNER TRIM



GABLE TRIM AND WALL ADAPTER SPLICE

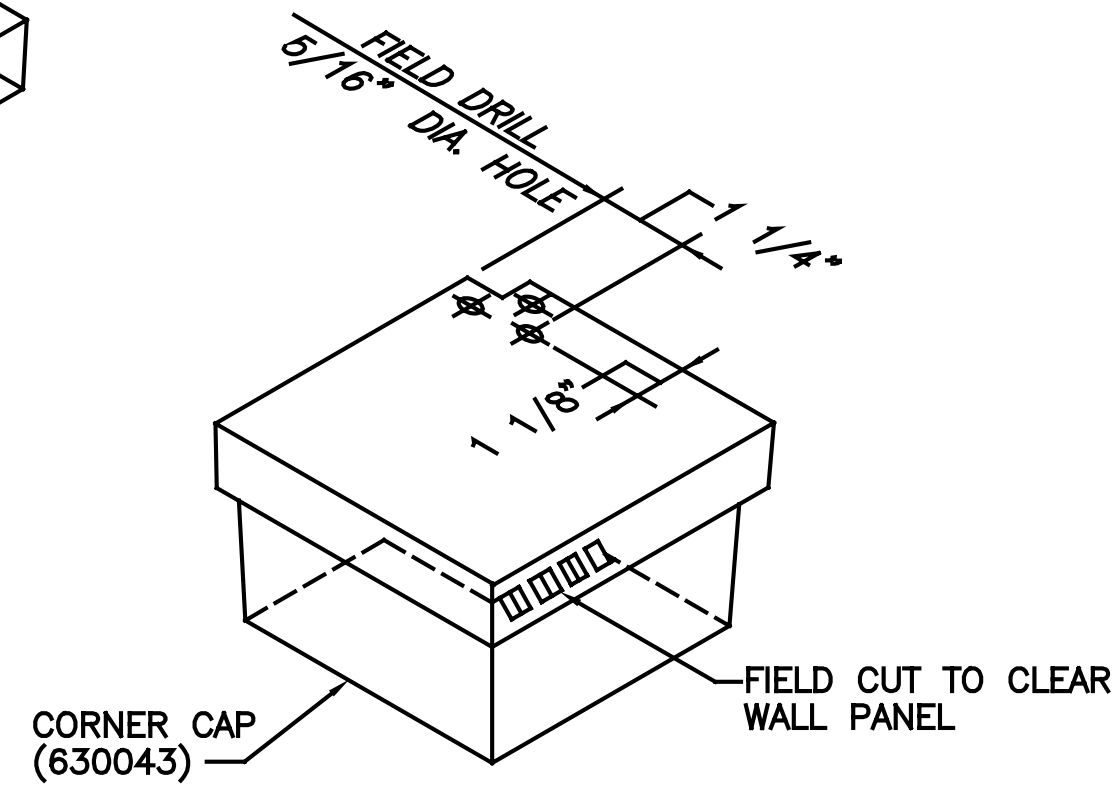
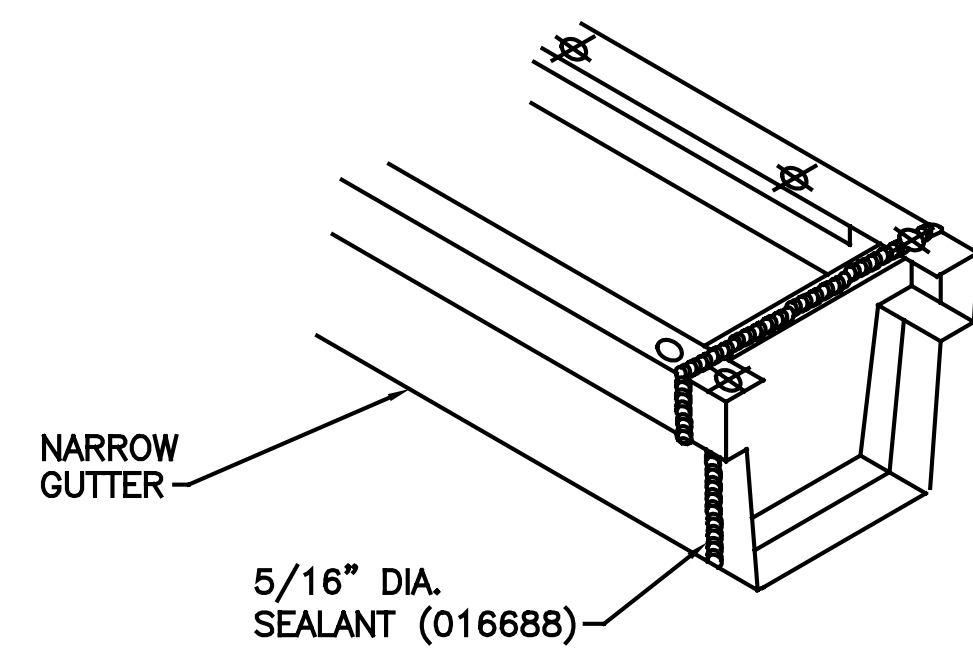
ERECTION SEQUENCE:

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

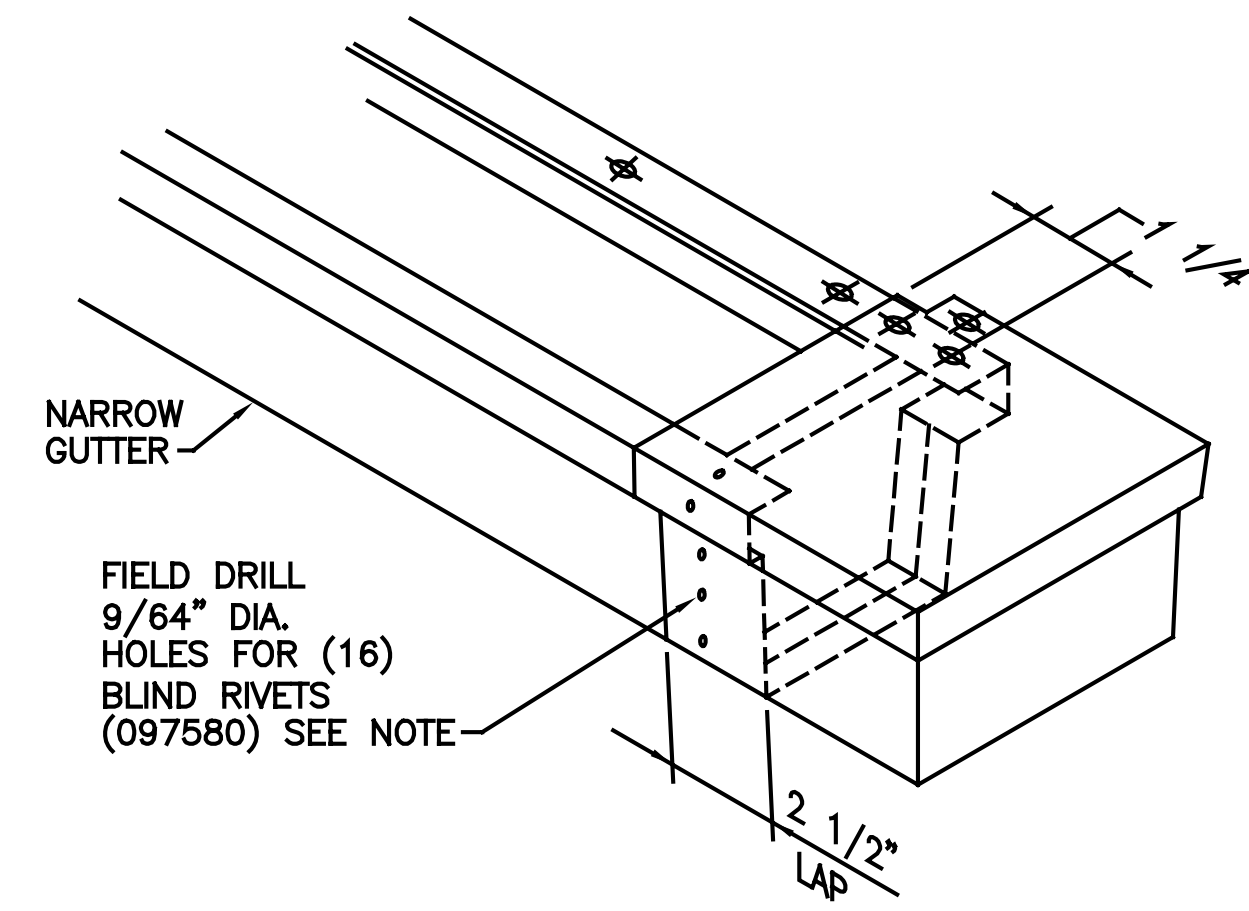
NOTES:

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

MR-24/CMR-24 GABLE TRIM AND WALL ADAPTER INSTALL. WITH RIDGE ASSEMBLY			
DRAWN BY	CHECKED BY	GROUP NUMBER: 02-001-02	
ACM	RHE	B	P-081167 06
FIRST RELEASE DATE	REVISION DATE		
01/21/10	09/14/20		



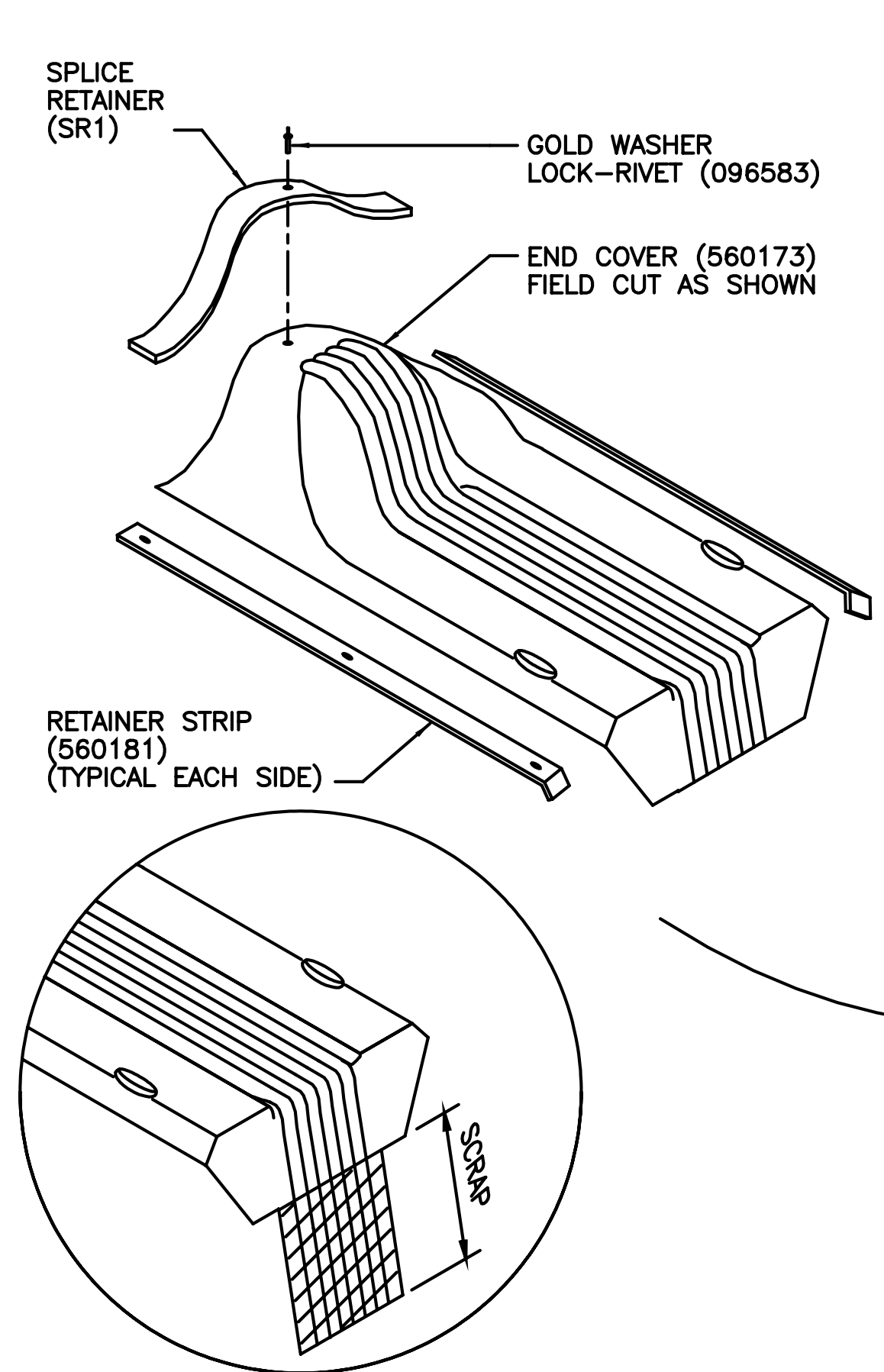
NARROW GUTTER



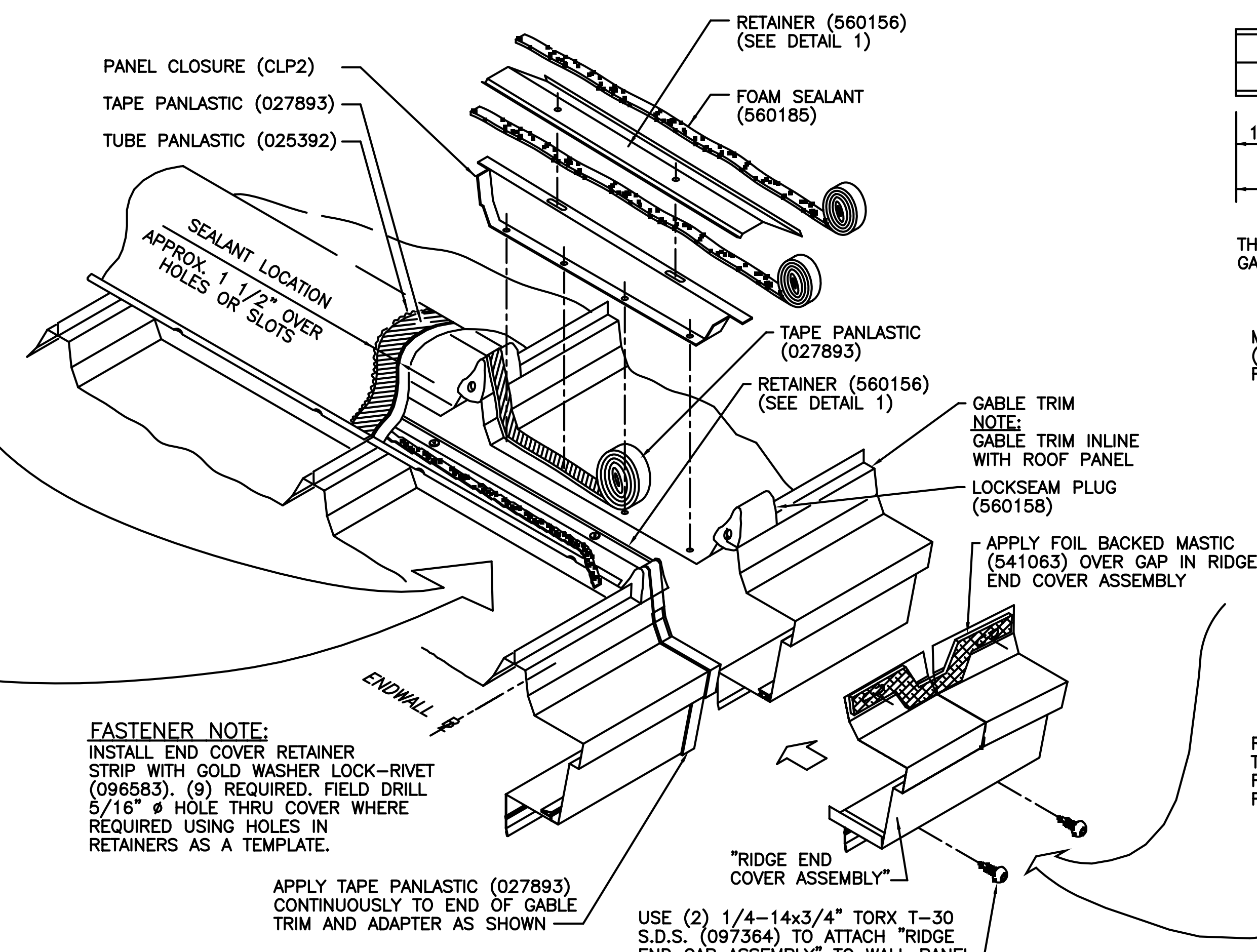
NOTE:

SEE DRAWING P-081764 FOR BLIND RIVET COLOR INFORMATION.

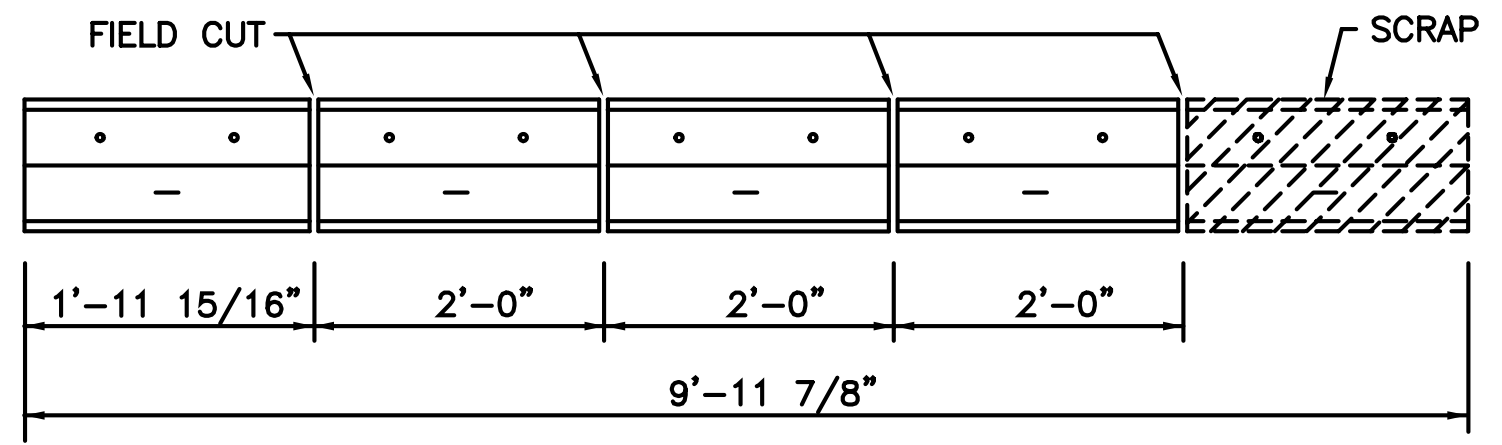
NARROW GUTTER CORNER CAP INSTALLATION - ALL ROOFS			
DRAWN BY	CHECKED BY	GROUP NUMBER: 01-004-01	
CAG	MEC	B	P-081236 04
FIRST RELEASE DATE	REVISION DATE		
01/21/10	12/04/18		



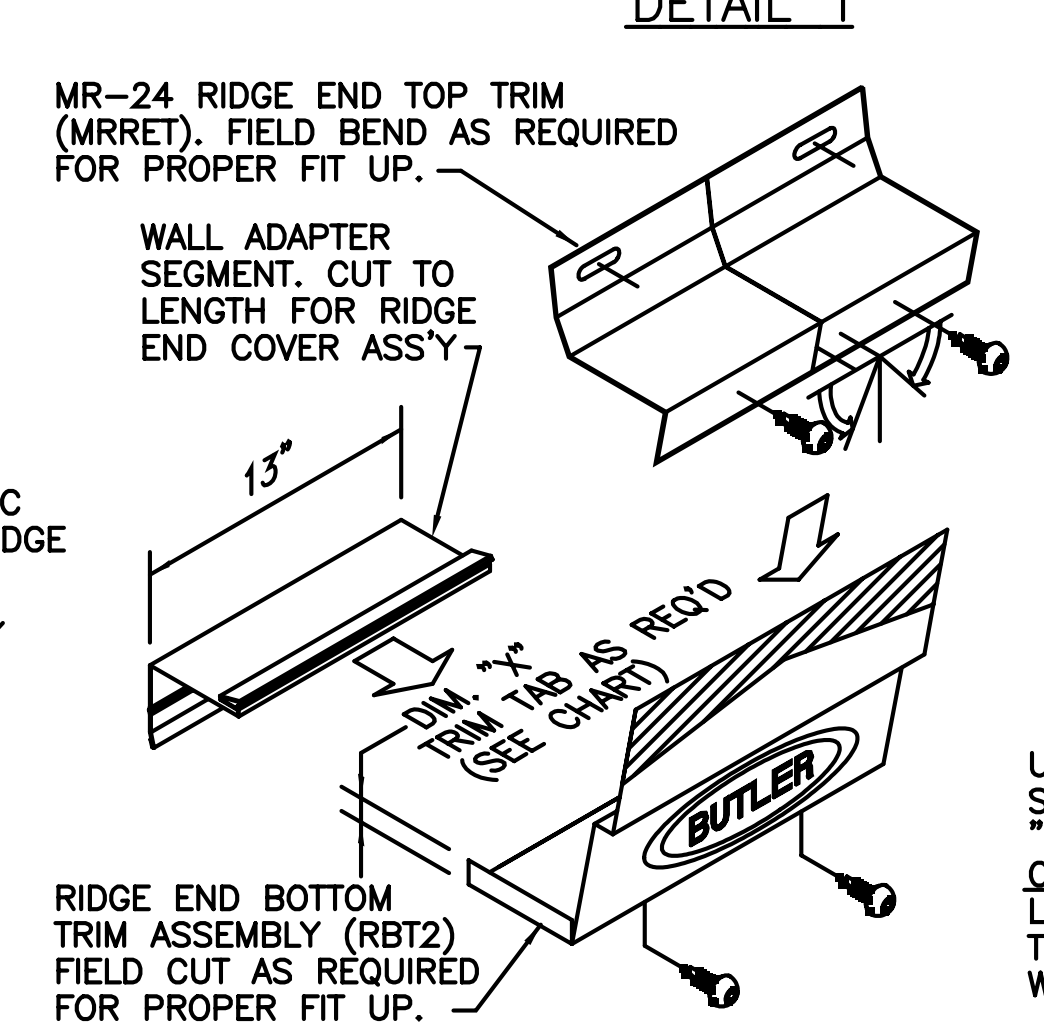
END COVER MODIFICATION



RIDGE END COVER COMPONENTS



RETAINER (560156) CUTTING DIAGRAM
THIS CUTTING DIAGRAM IS A PROCEDURE USED WHEN RIDGE IS INSTALLED BEFORE GABLE TRIM. (SEE "RIDGE INSTALLATION" DWG. P-080578).

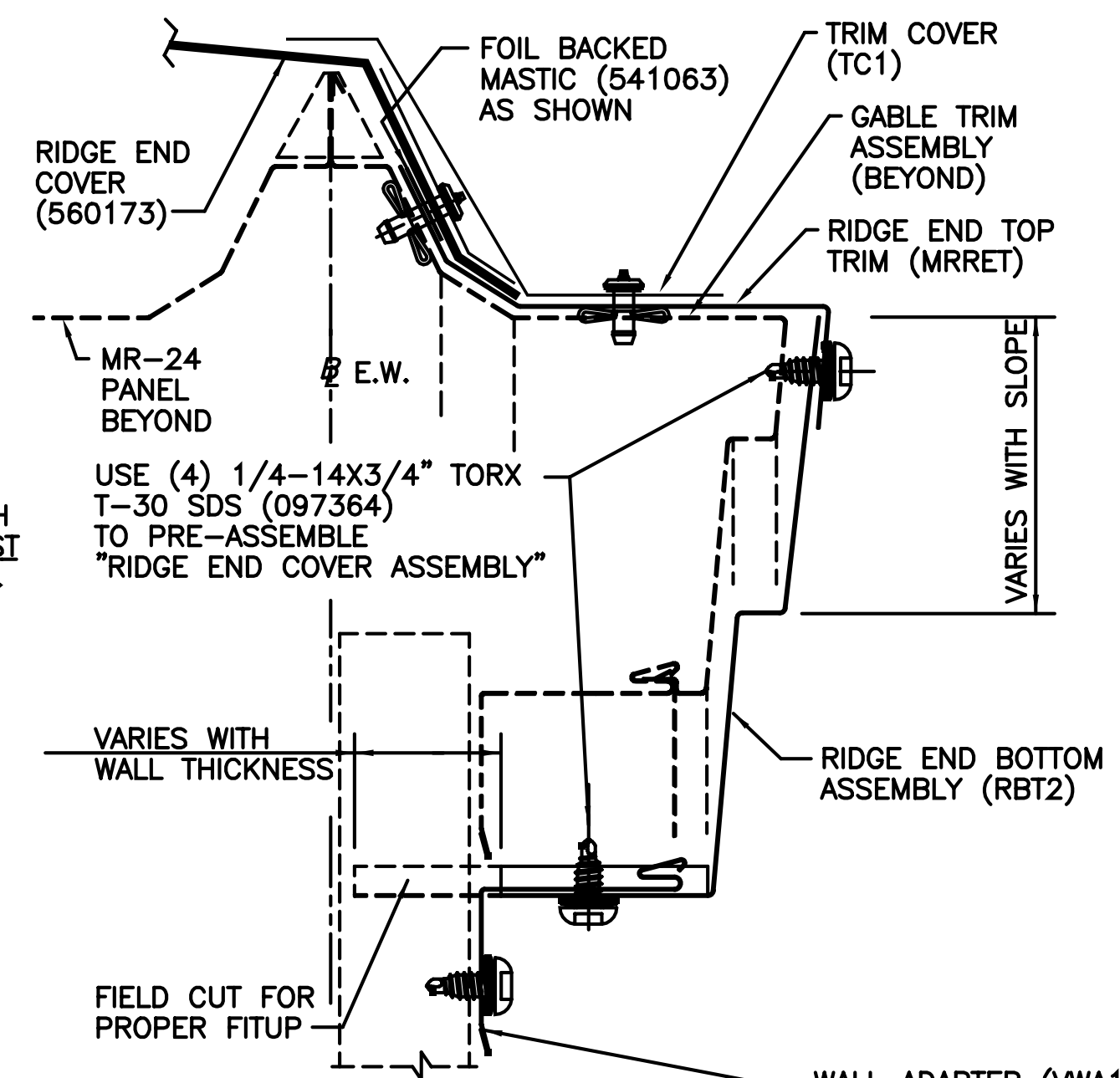


TAB TRIMMING CHART

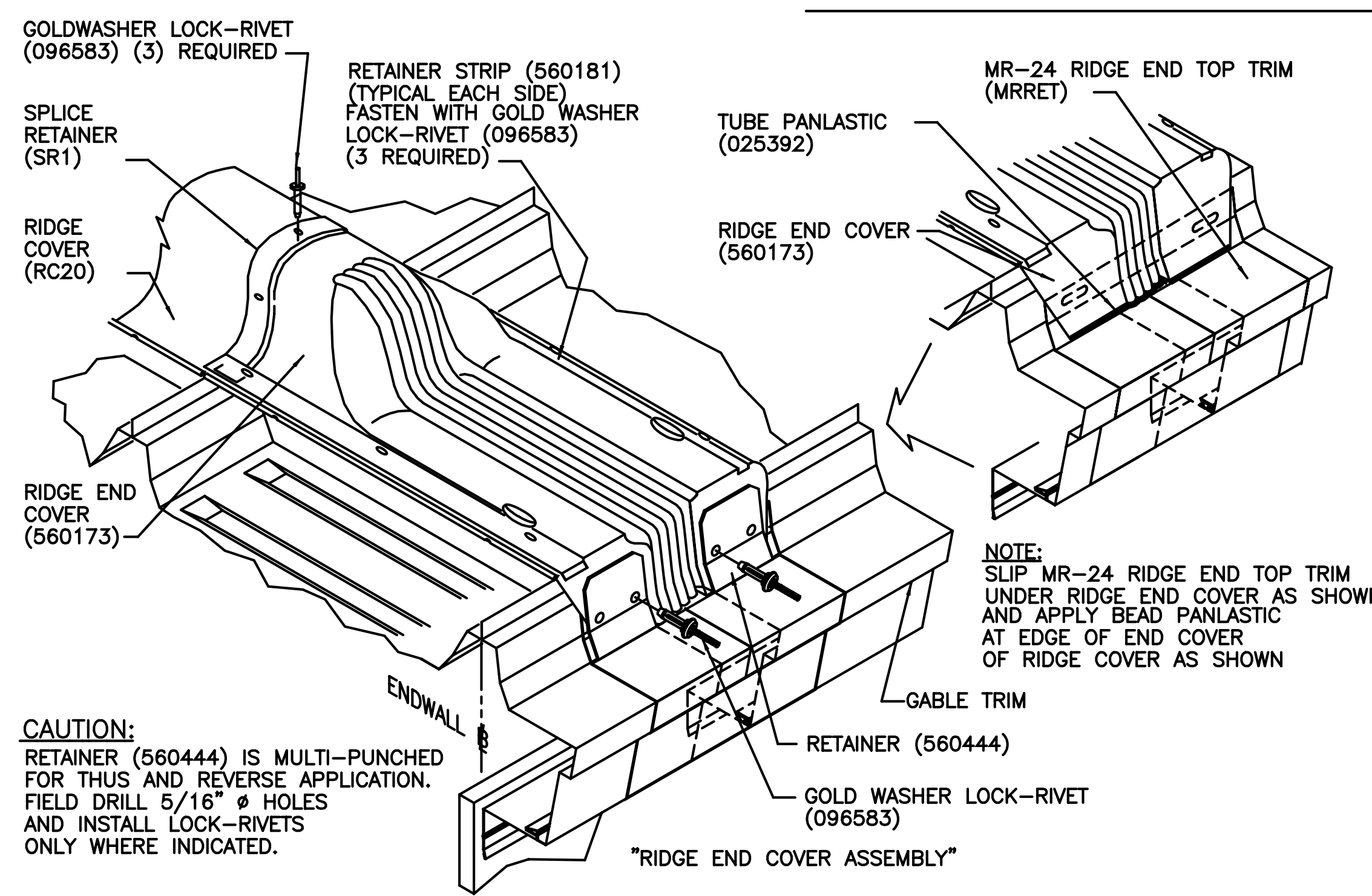
ROOF SLOPE	DIM. "X"
1:12	3/8"
2:12	11/32"
3:12	9/32"
4:12	7/32"
5:12	1/8"
6:12	0"

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

RIDGE END COVER ASSEMBLY



SECTION A-A
RIDGE END COVER ASSEMBLY



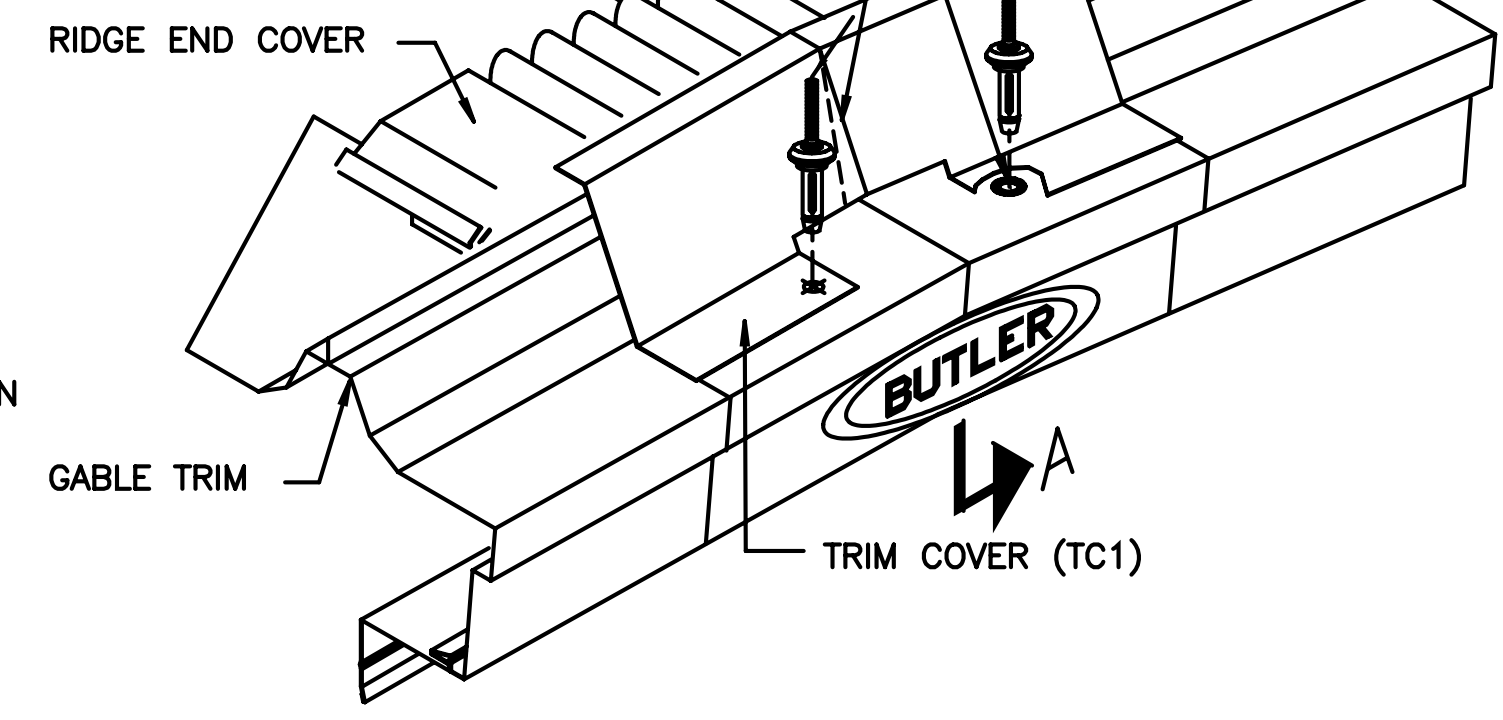
RIDGE END COVER INSTALLATION

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

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

FIELD CUT TRIM COVER (TC1) AS REQUIRED AND BEND TO MATCH ROOF SLOPE. THEN FIELD DRILL (2) 5/16" DIA. HOLES IN RIDGE END COVER ASSEMBLY USING TRIM COVER FOR TEMPLATE. APPLY TUBE PANLASTIC (025392) AROUND EACH HOLE BETWEEN RIDGE END COVER AND TRIM COVER. THEN FASTEN WITH LOCKRIVETS.

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

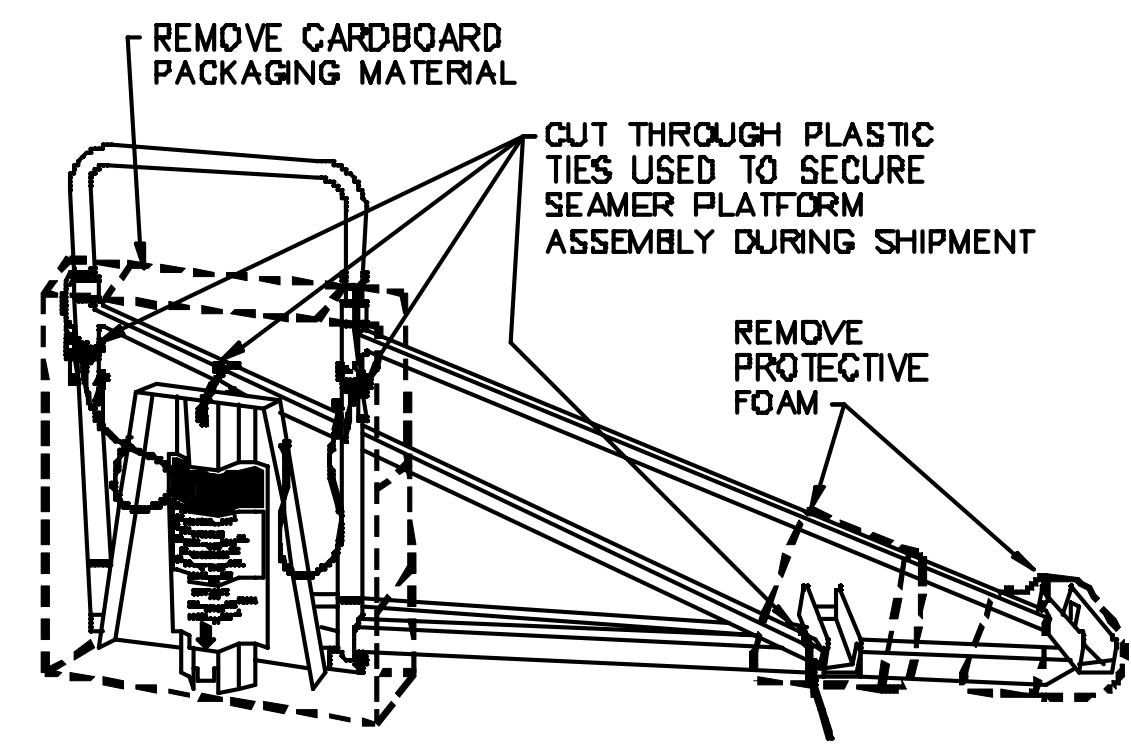


END COVER RETAINER INSTALLATION

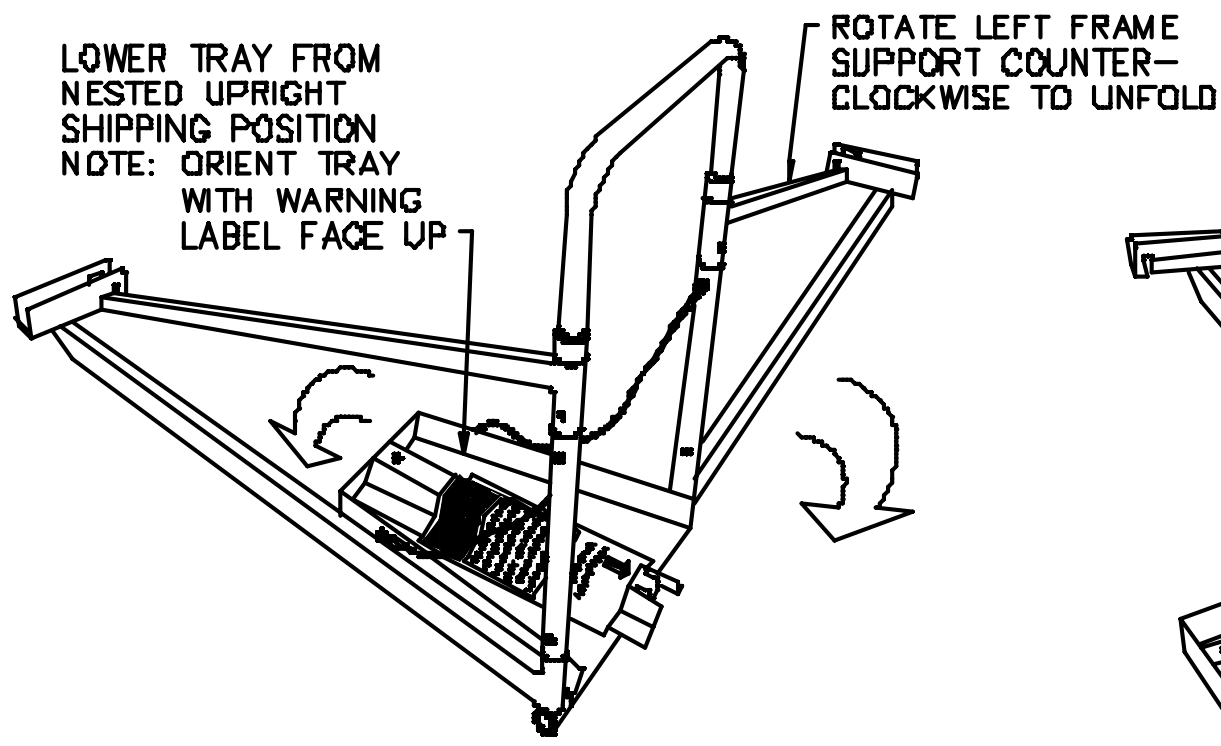
NOTES:

1. WALL ADAPTER SEGMENT USED TO MAKE UP "RIDGE END COVER ASSEMBLY" IS TO BE CUT FROM ADDITIONAL LENGTH OF WALL ADAPTER
2. "RIDGE END COVER ASSEMBLY" CAPS OVER GABLE TRIM AND WALL ADAPTER.

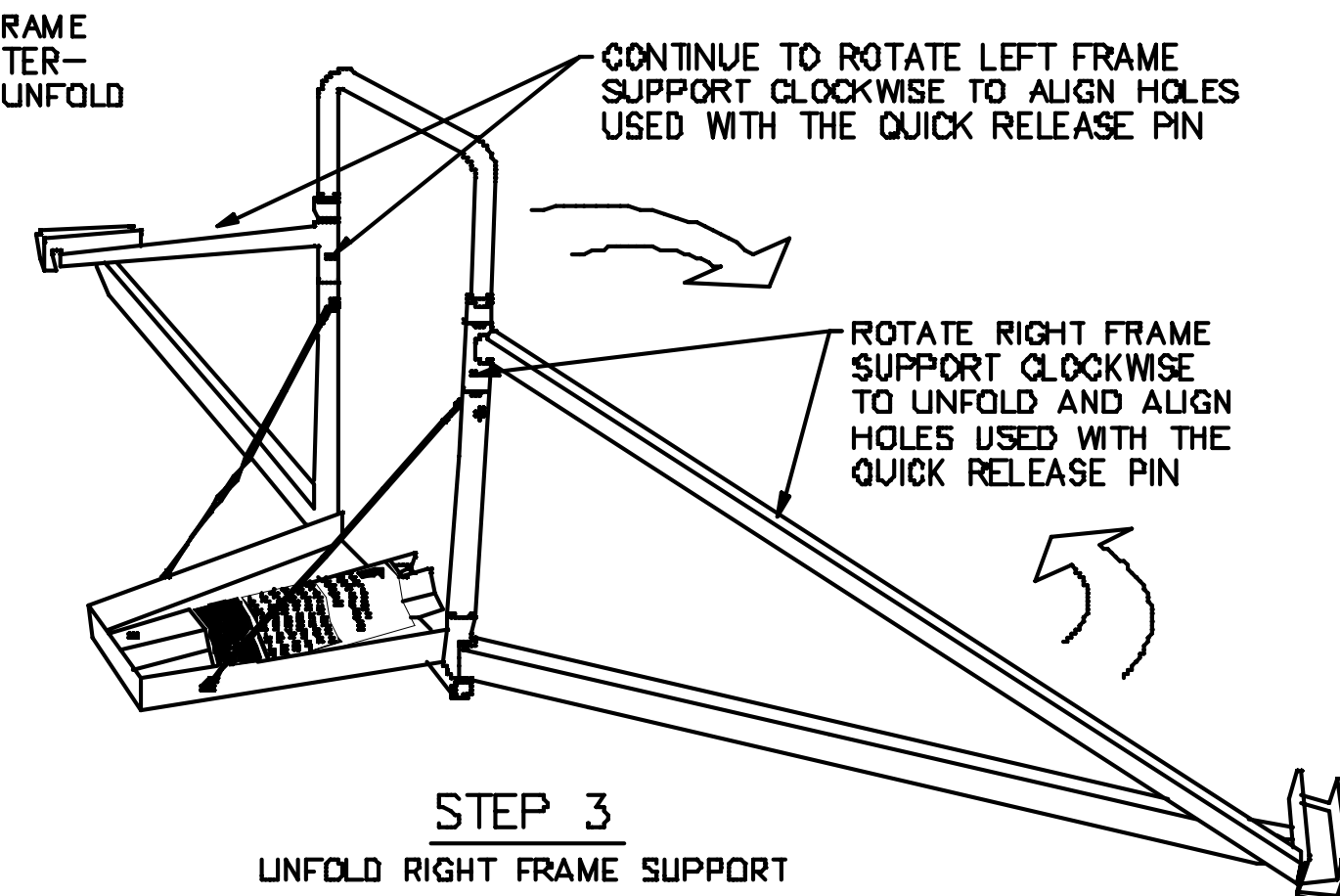
MR-24/CMR-24 RIDGE END COVER RIDGE ASSEMBLY INSTALLATION W/WALL ADAPTER			
DRAWN BY	CHECKED BY	GROUP NUMBER: 02-001-02	
ACM	RHE	B	P-081243 02
FIRST RELEASE DATE	REVISION DATE		
01/21/10	12/10/18		



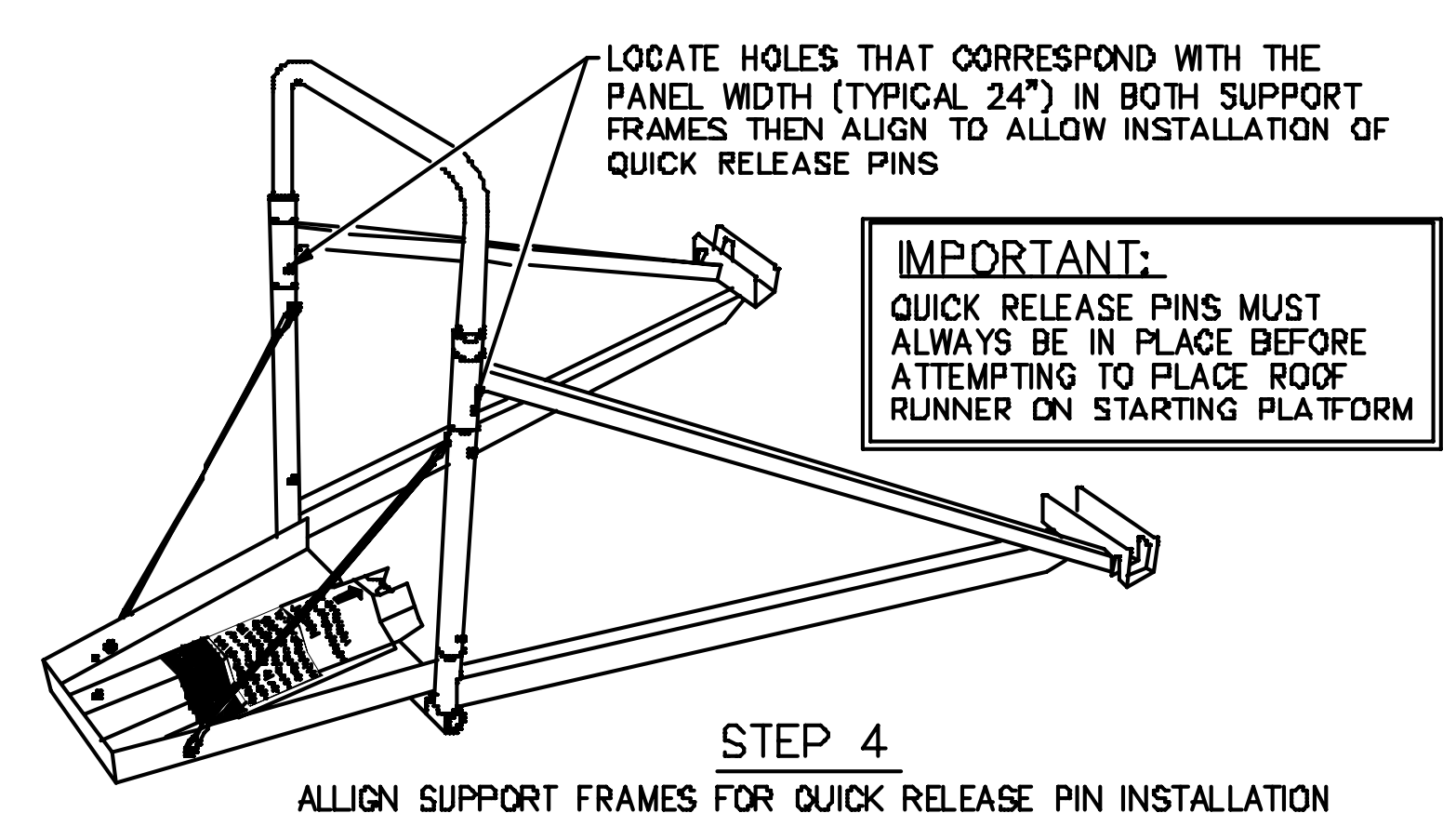
STEP 1
REMOVAL OF PACKAGING MATERIAL AND PLASTIC TIES



STEP 2
LOWER TRAY AND UNFOLD LEFT FRAME SUPPORT

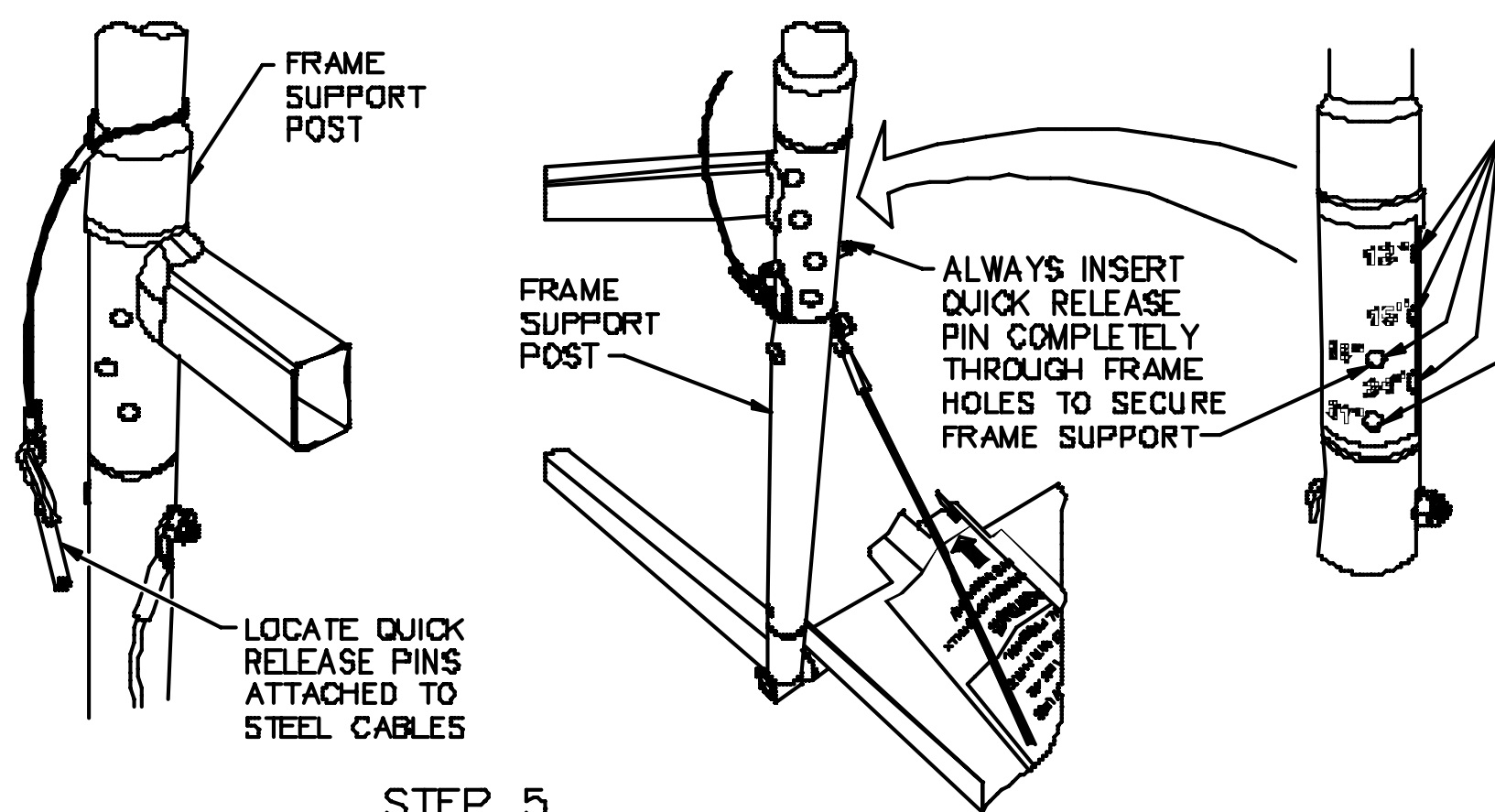


STEP 3
UNFOLD RIGHT FRAME SUPPORT

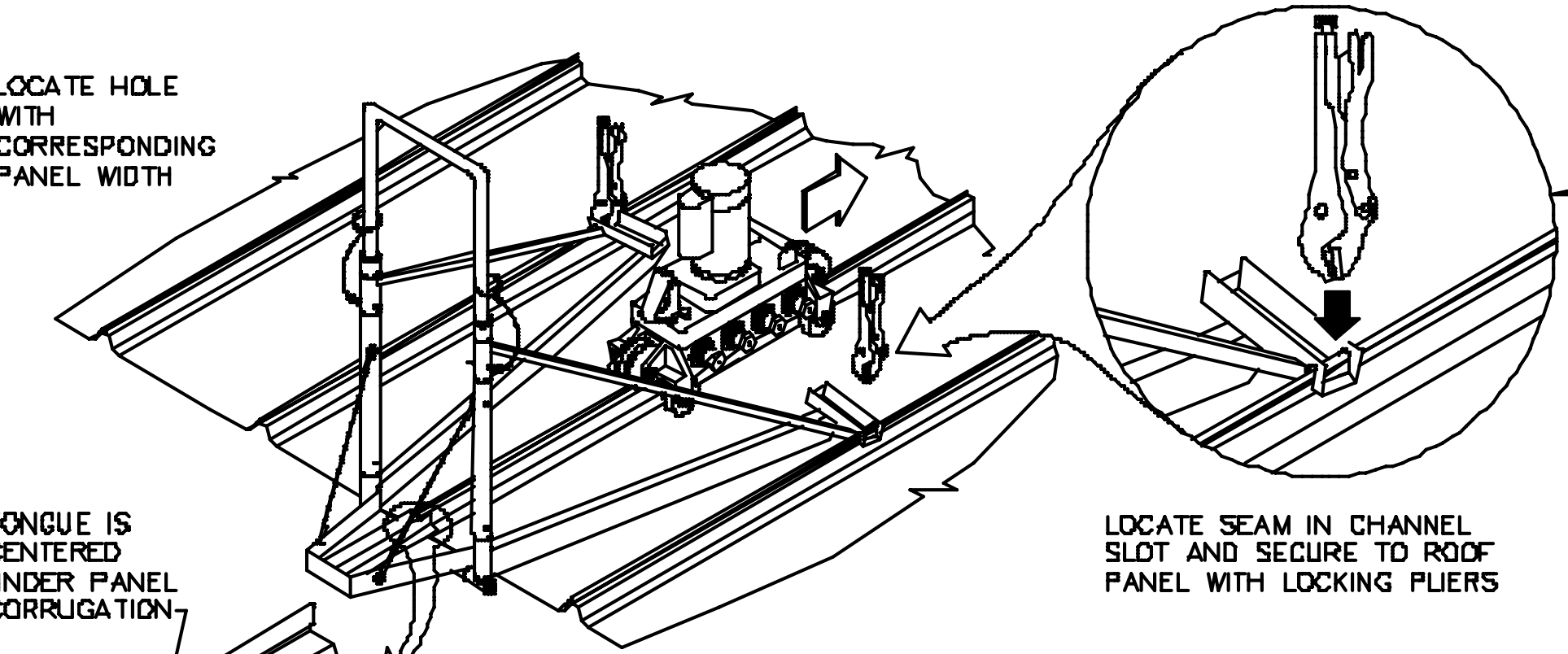


STEP 4
ALIGN SUPPORT FRAMES FOR QUICK RELEASE PIN INSTALLATION

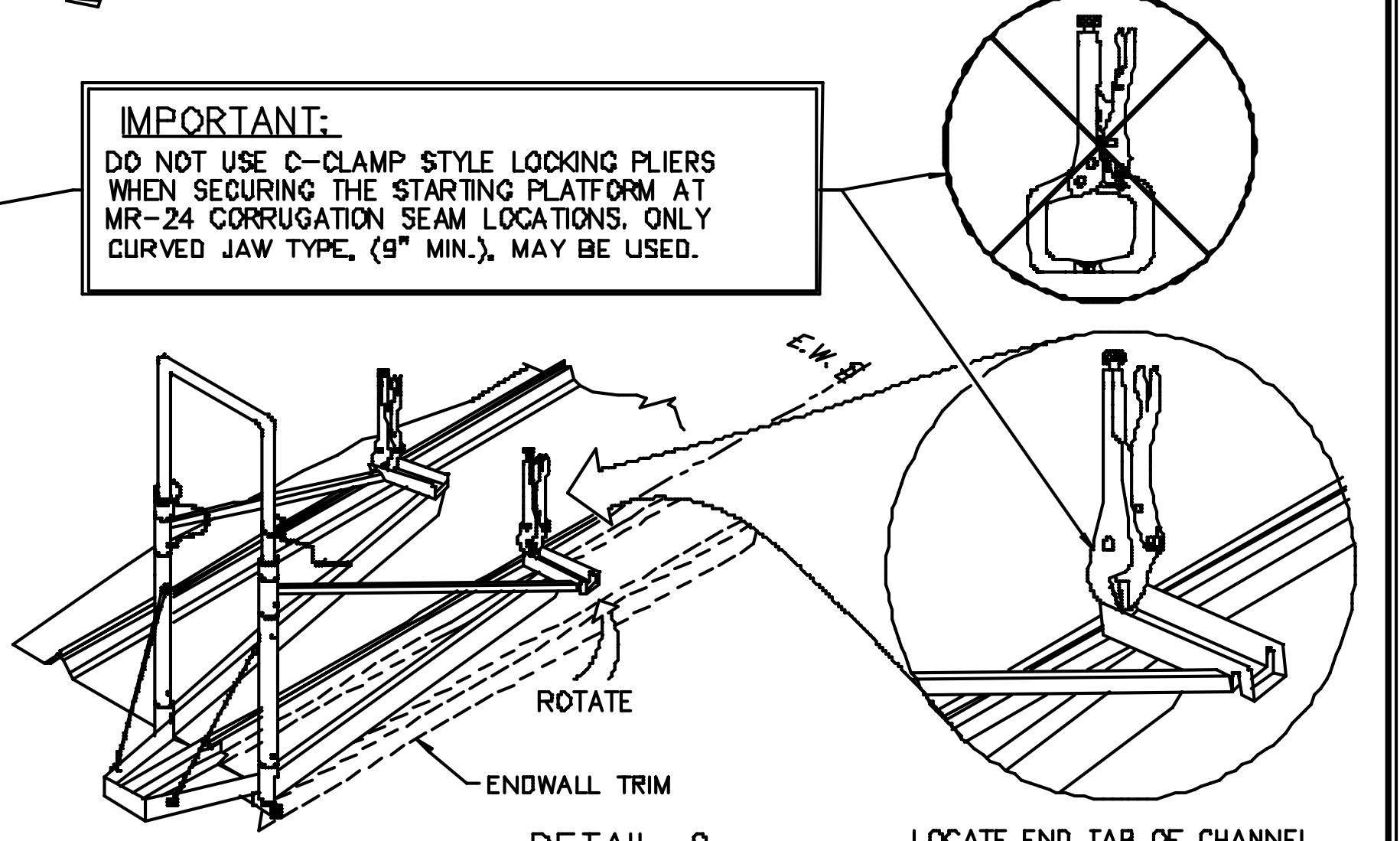
IMPORTANT:
QUICK RELEASE PINS MUST ALWAYS BE IN PLACE BEFORE ATTEMPTING TO PLACE ROOF RUNNER ON STARTING PLATFORM



STEP 5
INSTALL QUICK RELEASE PIN TO BOTH SUPPORT FRAMES

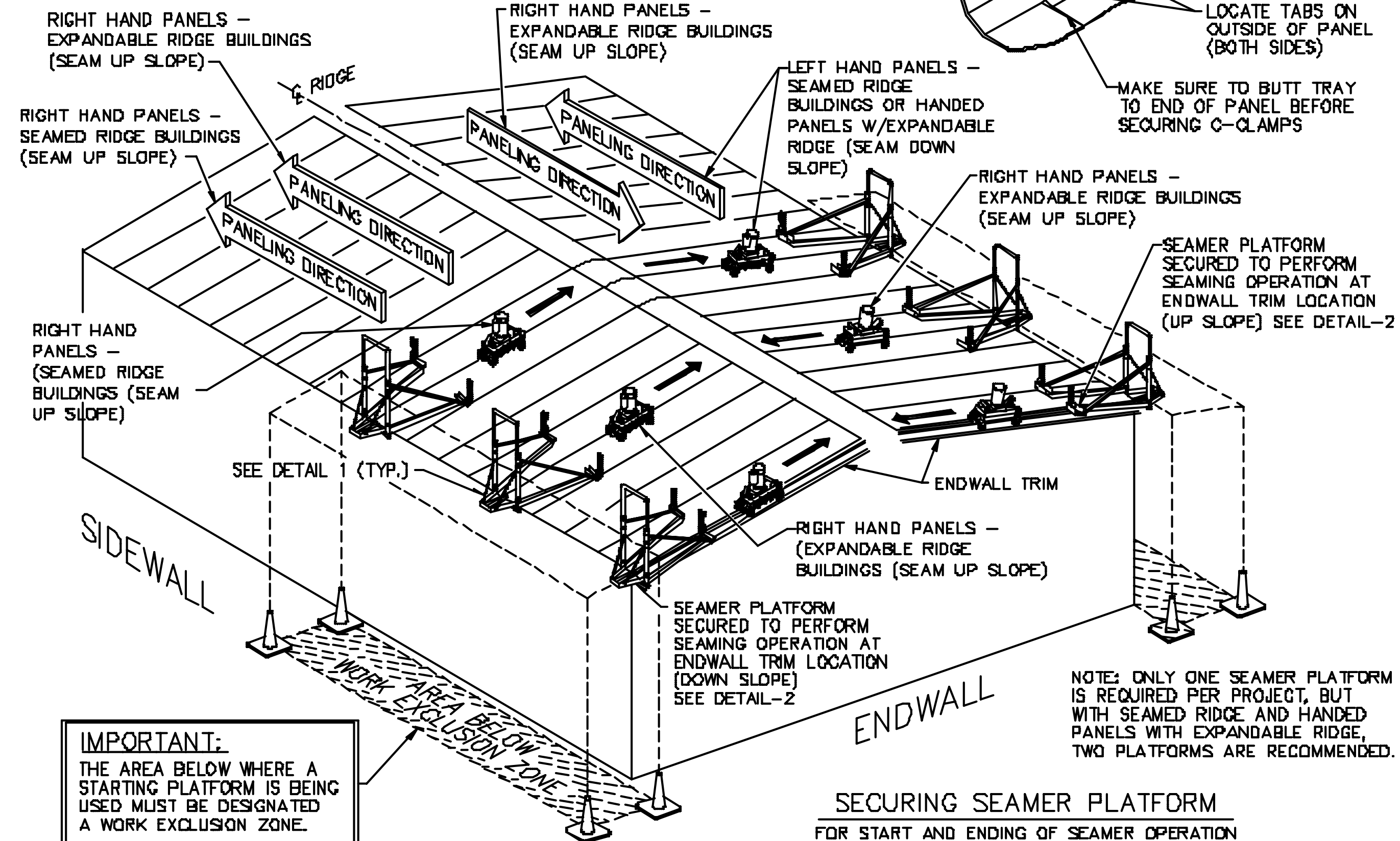


DETAIL-1
SECURING THE SEAMER PLATFORM (TYP. AT INTERMEDIATE LOCATION)



DETAIL-2
SECURING THE SEAMER PLATFORM (TYP. AT ENDWALL TRIM)

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



SECURING SEAMER PLATFORM
FOR START AND ENDING OF SEAMER OPERATION

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

GENERAL NOTES:

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

ASSEMBLY NOTES:

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

SECURING THE SEAMER PLATFORM:

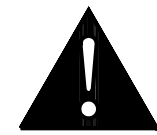
1. BEFORE PLACING PLATFORM ON END OF PANEL, ROTATE BOTH FRAME SUPPORTS AND ATTACH QUICK RELEASE PIN IN HOLE CORRESPONDING WITH PANEL WIDTH BEING CLAMPED TO.
2. PLACE THE SEAMER PLATFORM AT THE END OF THE CORRUGATION TO BE SEAMED, INSERT THE CORRUGATION SUPPORT (ON THE PLATFORM TRAY) INTO THE PANEL CORRUGATION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

MR-24 SEAMER PLATFORM			
UNPACKING AND SECURING THE PLATFORM			
DRAWN BY:	CHECKED BY:	GROUP NUMBER: 02-064-01	
GW	RMC		
FIRST RELEASE DATE:	REVISION DATE:	B	P-081616 03
01/21/10	09/20/16		

SAFETY PRECAUTIONS

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

RECOGNIZE SAFETY INFORMATION



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

FOLLOW SAFETY INSTRUCTIONS

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

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

! WARNING

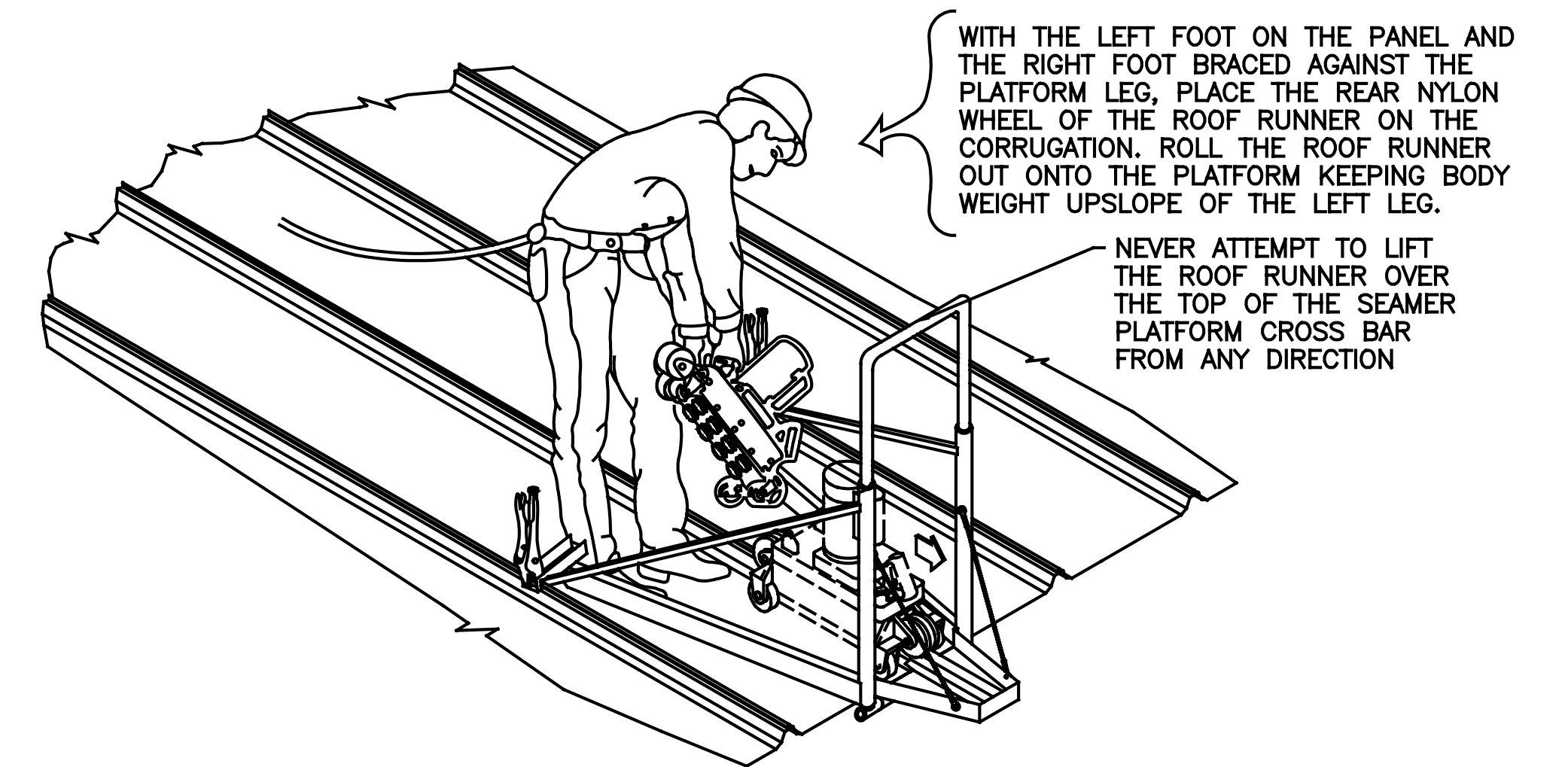
- DO NOT STEP ON PLATFORM PAN.
- DO NOT LEAN ON PLATFORM.
- DO NOT STRADDLE PLATFORM LEGS.
- MAKE SURE LOCKING PLIERS ARE SECURELY CLAMPED ONTO PANELS.
- ALWAYS USE FALL PROTECTION.

IMPORTANT:

CORRUGATION SUPPORT MUST BE FULLY INSERTED INTO CORRUGATION.

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

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



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

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

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



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



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



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



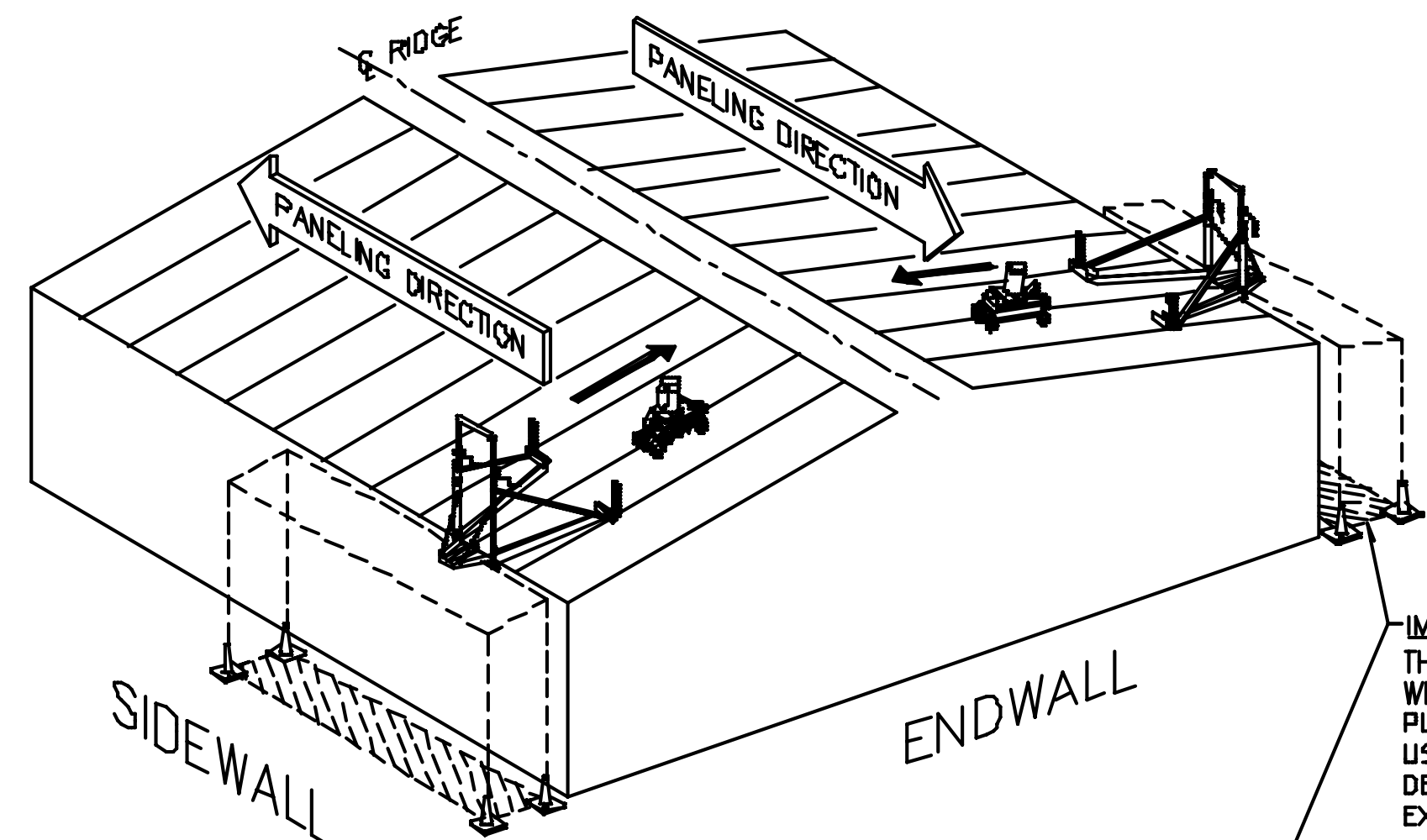
WARNING: PANELS NOT FULLY SEAMED CAN COLLAPSE OR SLIDE OUT FROM UNDER YOU. ALWAYS USE FALL PROTECTION AND WALKBOARDS WHEN INSTALLING PANELS OR WORKING NEAR ROOF EDGES. MAKE SURE SEAMING FOLLOWS THE LAYING OF PANELS AS CLOSELY AS POSSIBLE.



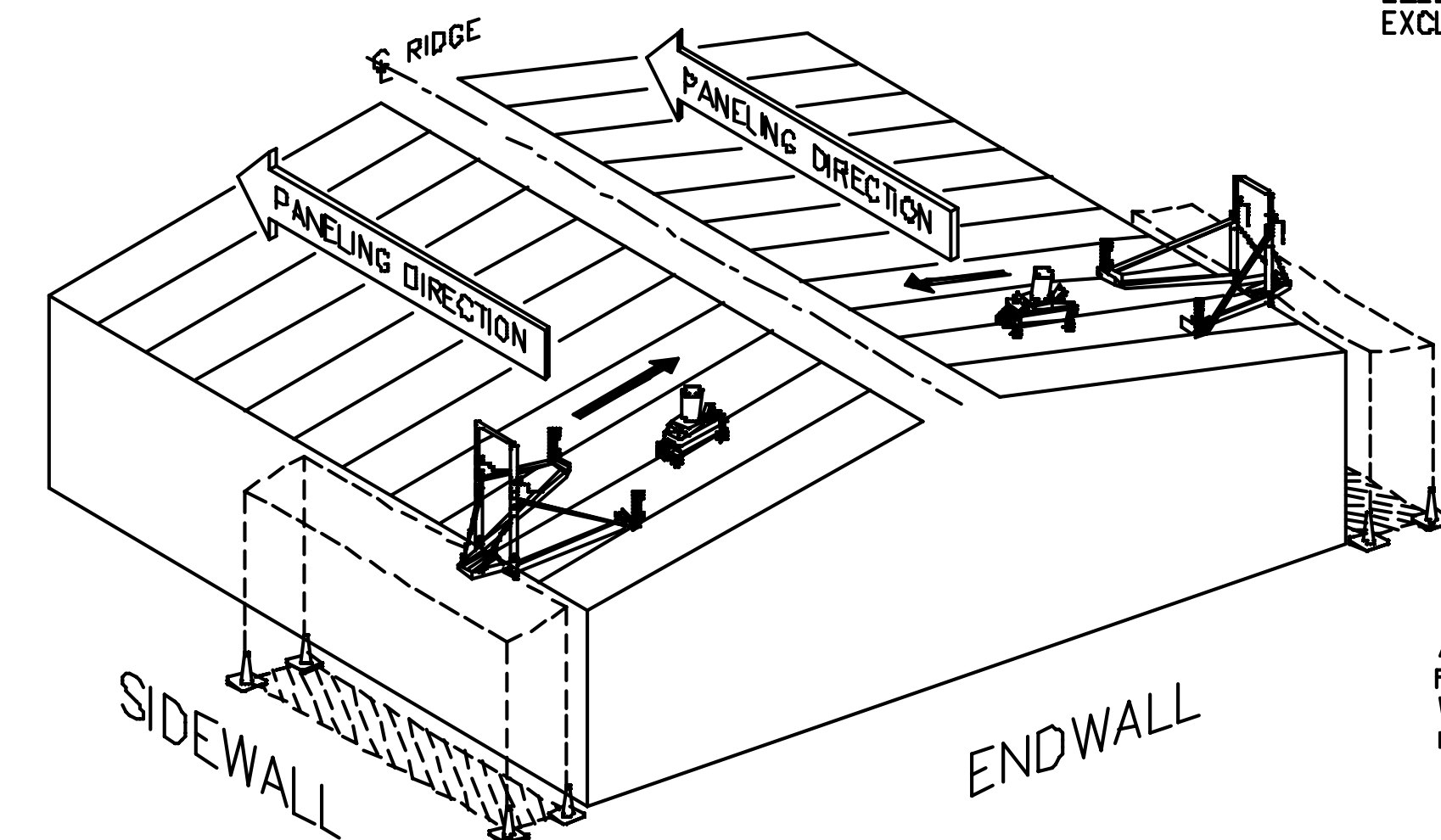
CAUTION: ALL ELECTRICAL SERVICE MUST BE PROPERLY GROUNDED, AND MUST INCLUDE A GROUND FAULT INTERRUPTER!

MR-24 ROOF RUNNER OPERATIONS SAFETY PRECAUTIONS

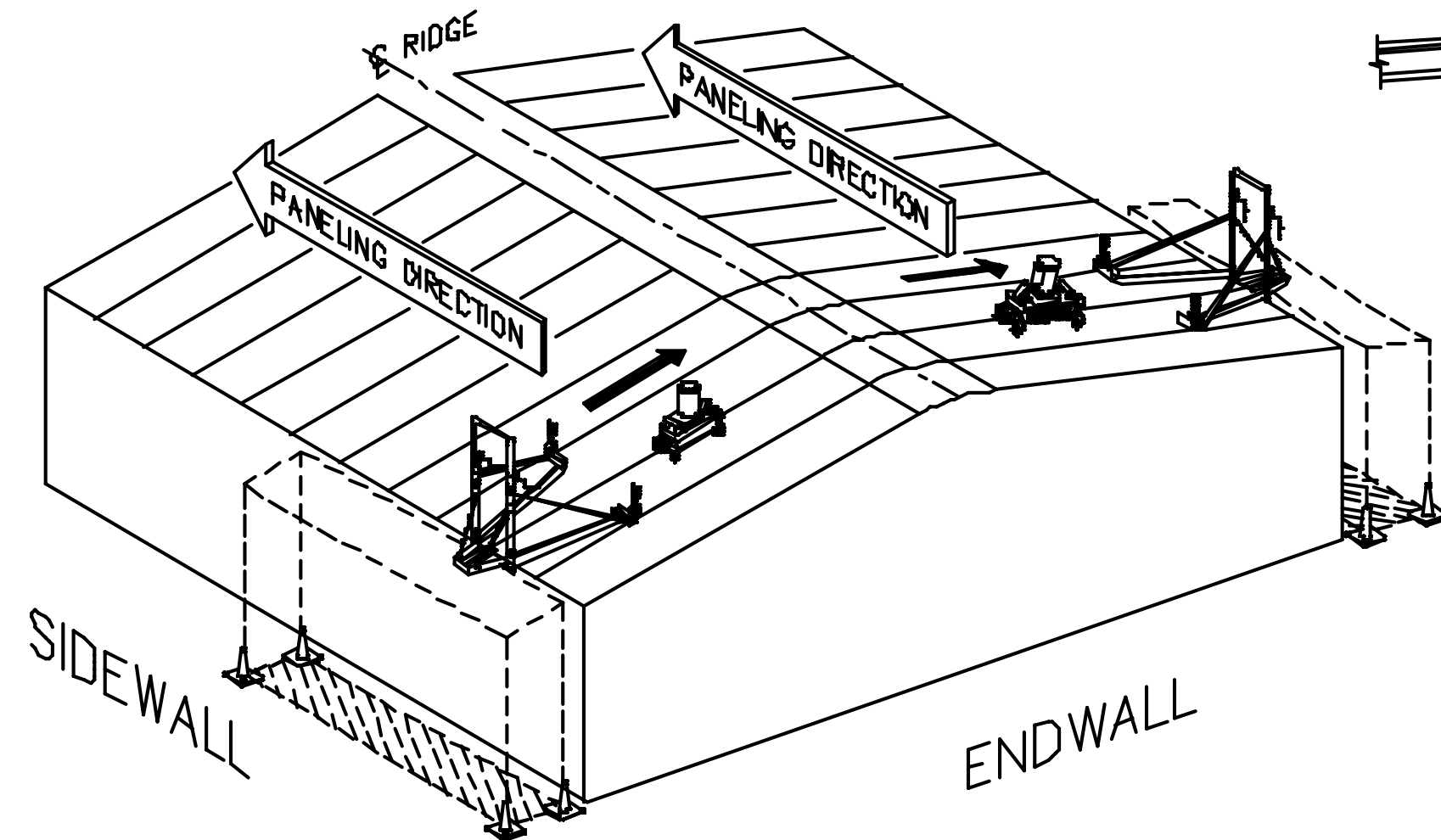
DRAWN BY	CHECKED BY	GROUP NUMBER: 02-064-01	
RHE	RMC	B	P-081672 01
FIRST RELEASE DATE	REVISION DATE		
01/21/10	12/04/18		



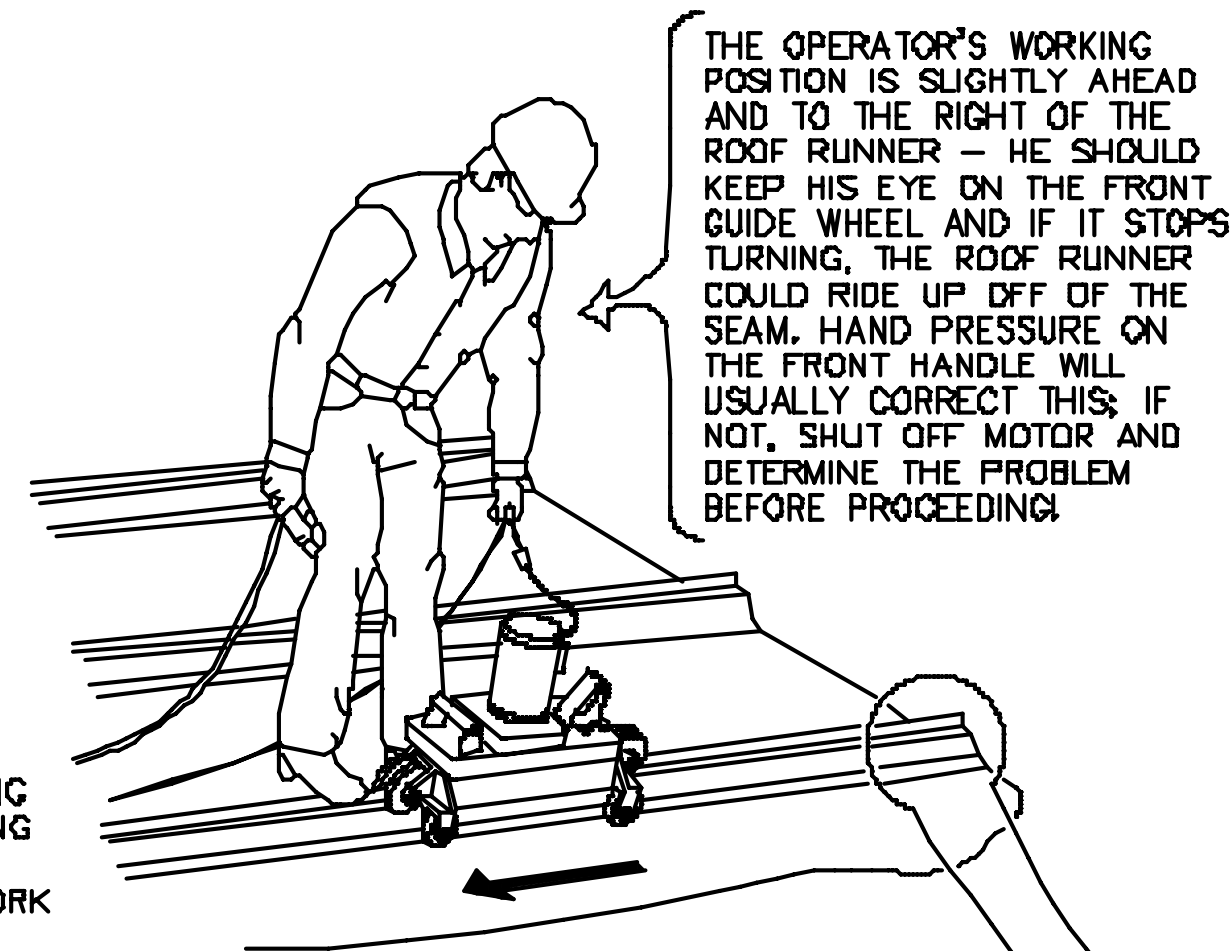
INSTALLATION OF MR-24
ON OPPOSITE SLOPES IN THE OPPOSITE DIRECTION
(PREFERRED METHOD OF INSTALLATION)



INSTALLATION OF (HANDED) MR-24
ON OPPOSITE SLOPES IN THE OPPOSITE DIRECTION

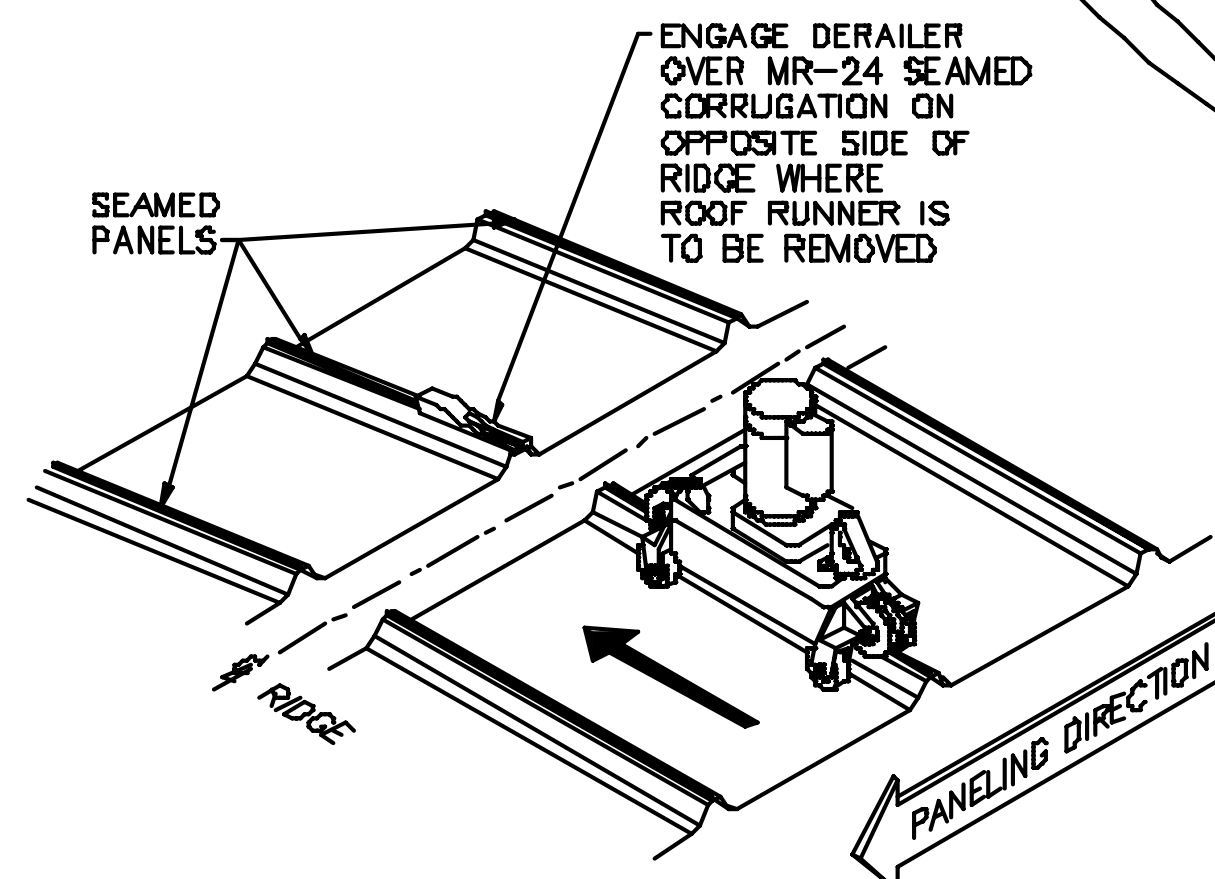


INSTALLATION OF (SEAMED RIDGE) MR-24
ON OPPOSITE SLOPES IN THE SAME DIRECTION

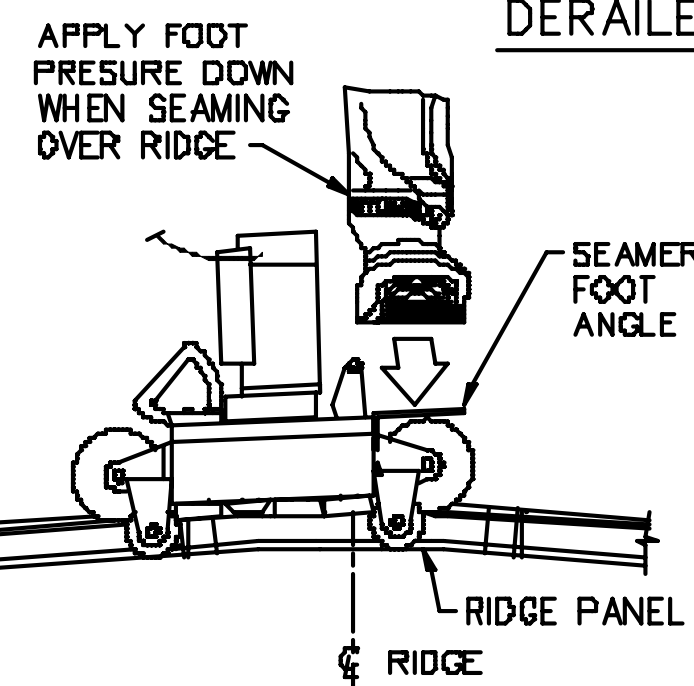


IMPORTANT:
THE AREA BELOW WHERE A STARTING PLATFORM IS BEING USED MUST BE DESIGNATED A WORK EXCLUSION ZONE

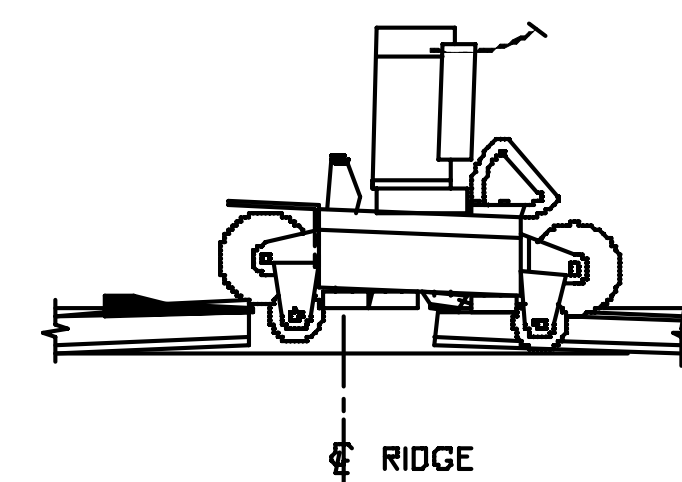
DENOTES AREA BELOW WORK EXCLUSION ZONE



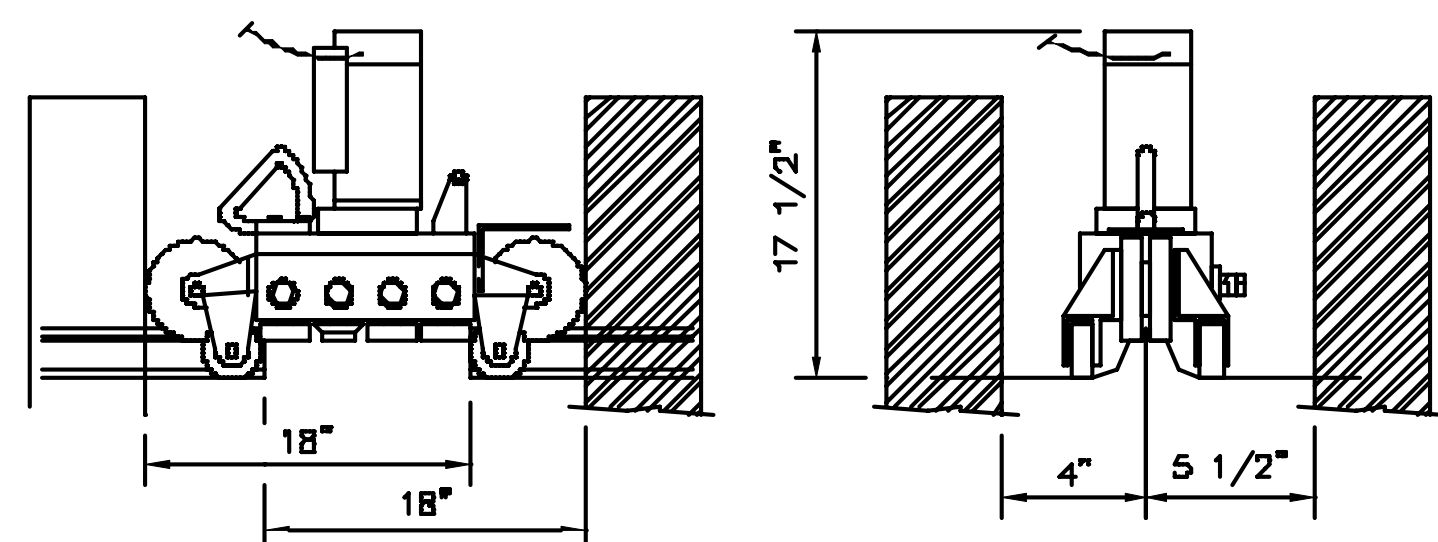
DERAILER AND ROOF RUNNER AT RIDGE



CROSS SECTION AT SEAMED RIDGE



CROSS SECTION DERAILER AND ROOF RUNNER AT RIDGE



ROOF RUNNER CLEARANCES

ROOF RUNNER DESCRIPTION

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

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

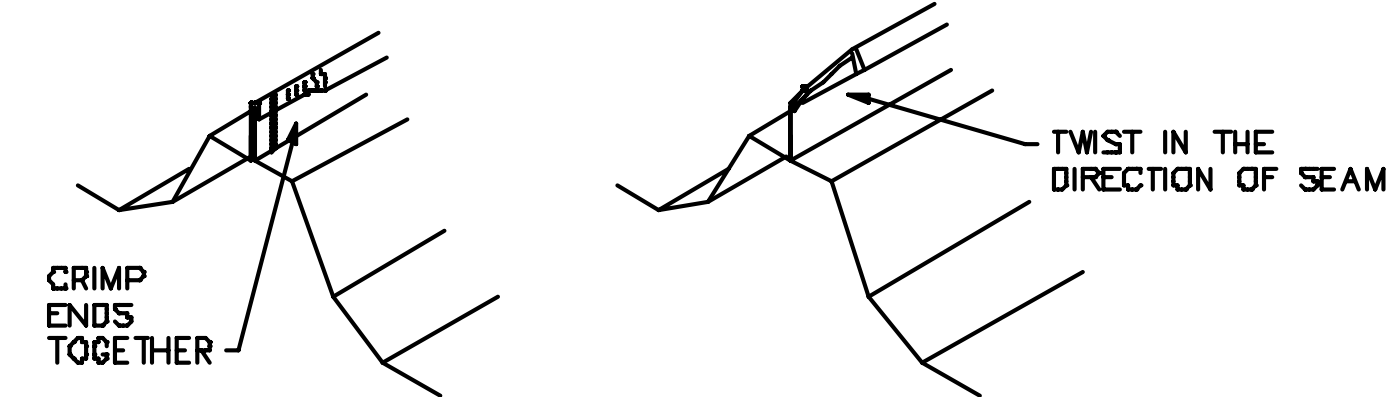
PAINTED PANELS

PRIOR TO USE ON "PAINTED" MR-24 PANELS, PLEASE CONTACT ROOF RUNNER OPERATIONS 816-763-0815. PAINTED MATERIAL PRESENTS SPECIAL CONDITIONS THAT REQUIRE NEW OR NEARLY NEW FEED WHEELS. IF YOU ALREADY HAVE A MACHINE, FEED WHEELS WILL BE SUPPLIED FOR FIELD INSTALLATION OR A REPLACEMENT MACHINE WILL BE FURNISHED IN ANY CASE, THERE IS NO ADDITIONAL CHARGE FOR THIS UPGRADE AND IT WORKS FINE WITH UNPAINTED MR-24. 22 GA. ROOF RUNNERS DO NOT REQUIRE UPGRADING FOR PAINTED PANELS.

THE SEAMING OPERATION

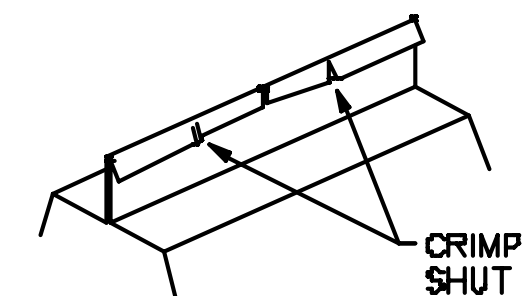
SEAMING WITH THE ROOF RUNNER CAN BEGIN AS SOON AS SUFFICIENT ROWS OF PANELS ARE LAYED IN PLACE TO PERMIT OPERATION OF THE ROOF RUNNER WITHOUT INTERFERENCE WITH THE CREW LAYING THE PANELS. **IMPORTANT:** REFER TO THE MR-24 INSTALLATION MANUAL AND THE ERECTION DRAWINGS FOR MORE SPECIFIC INFORMATION ON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

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



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

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

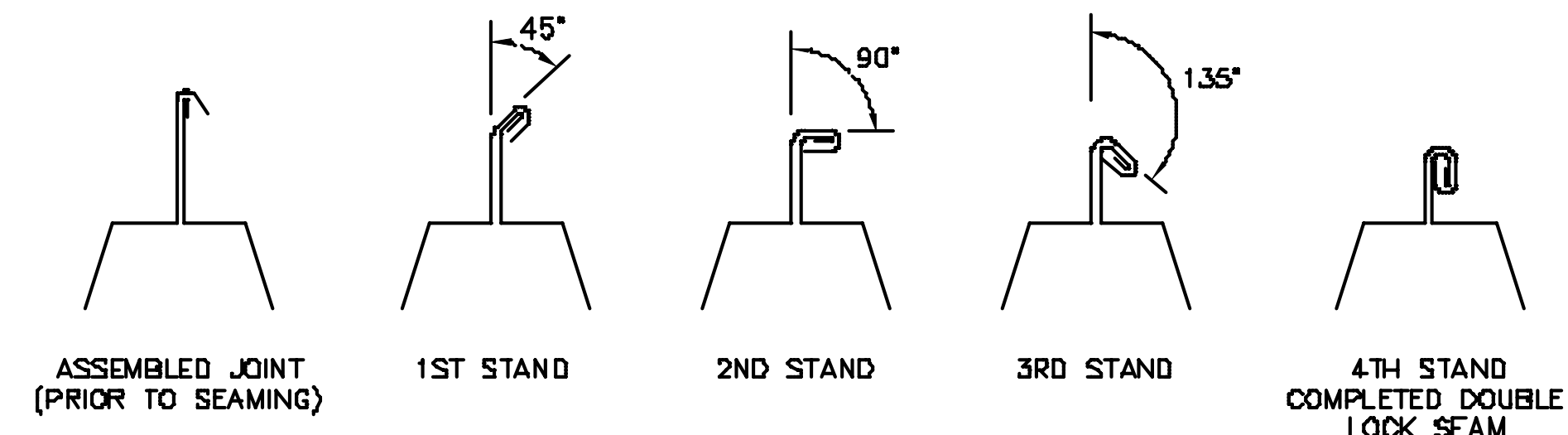


AVOID ROOF TRAFFIC DISTORTION TO THE PANELS BEING SEAMED. KEEP ROOF TRAFFIC AWAY FROM THE ROOF RUNNER. **IMPORTANT:** THE OPERATOR SHOULD STAY IN A POSITION THAT MINIMIZES TRAFFIC DISTORTION. THE BEST POSITION IS 4' TO 5' AHEAD, TO THE RIGHT OF THE ROOF RUNNER ON A FULLY SEAMED PANEL FROM THIS POSITION,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

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

LOCK-SEAM SEQUENCE

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



ROOF RUNNER CLEARANCES

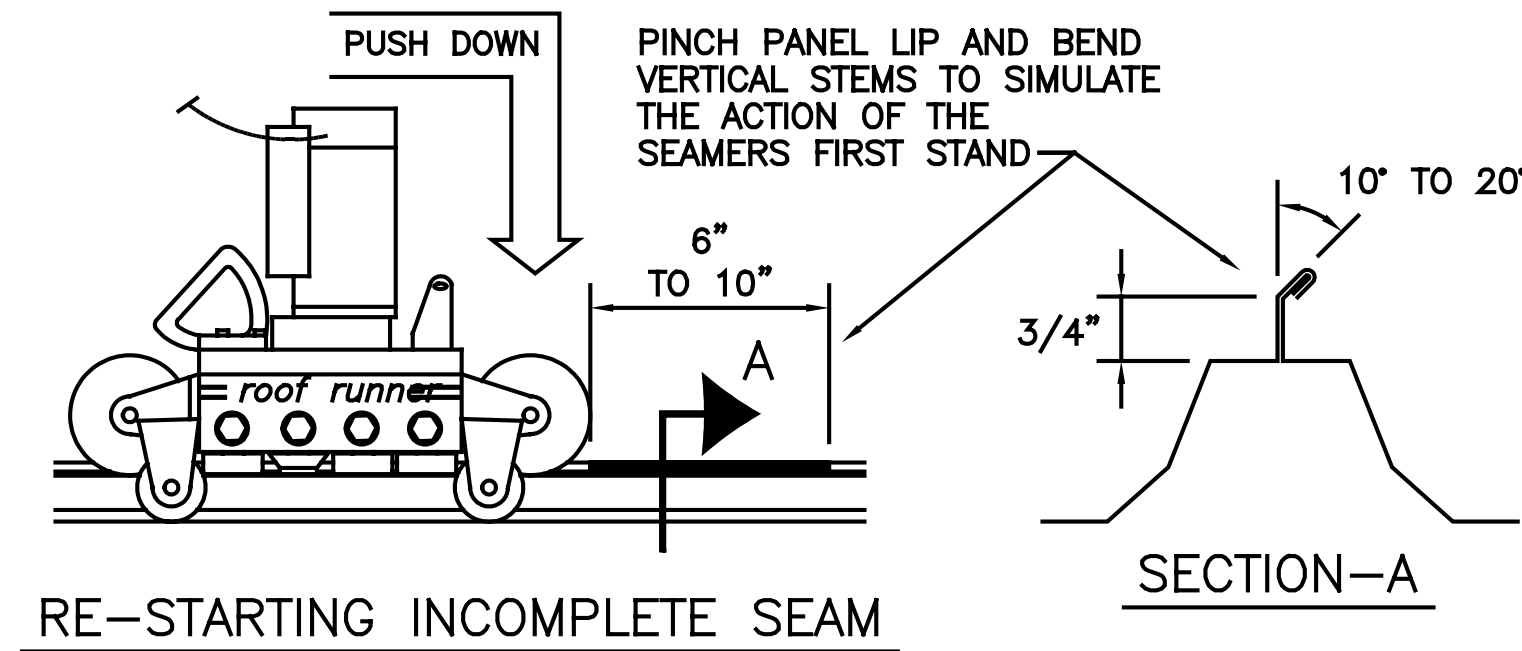
IN ORDER TO START OR REMOVE THE ROOF RUNNER IN CONDITIONS SUCH AS PARAPET WALLS OR OTHER OBSTRUCTION, A MINIMUM CLEAR DISTANCE OF 18 INCHES IS REQUIRED. THE MULTIPLE GUTTER CONDITION WILL REDUCE THIS DISTANCE DEPENDING ON THE ROOF SLOPES USED.

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

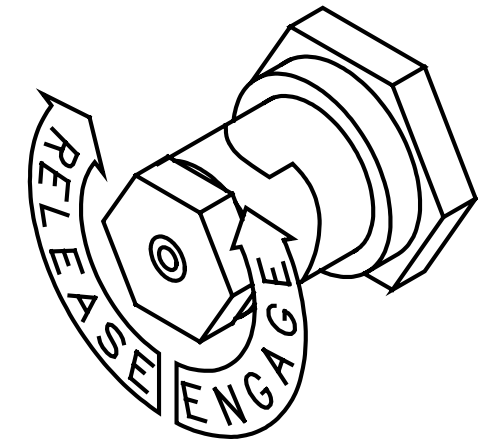
MR-24 ROOF RUNNER OPERATIONS			
GENERAL SEAMING OPERATIONS			
DRAWN BY:	CHECKED BY:	GROUP NUMBER: 02-064-01	
RHE	RMC		
FIRST RELEASE DATE:	REVISION DATE:	B	P-081673 01
01/21/10	10/11/18		

TIPS FOR TROUBLE FREE OPERATION

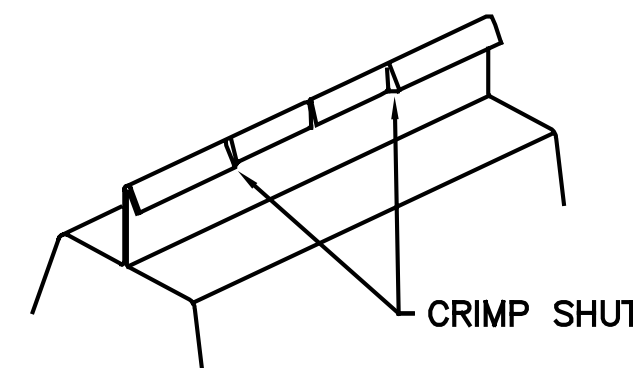
- SAFE AND CORRECT SEAMING REQUIRES ALL MACHINE OPERATORS TO BE FAMILIAR WITH THE MACHINE FEATURES. BE SURE THEY ARE AWARE OF THE PROPER MATERIAL FLOW THROUGH THE FEED WHEELS SO THAT THEY CAN SPOT A MALFUNCTION QUICKLY AND CAN CORRECT ITS CAUSE IMMEDIATELY. IMPROPER SEAMS LONGER THAN 5 FEET ARE DIFFICULT TO REPAIR AS THEY INVOLVE THE PANEL CLIPS AND TABS.
- ALWAYS USE A SEAMER PLATFORM.
- MAKE SURE THE FEED WHEELS ARE KEPT CLEAN, ESPECIALLY ON PAINTED MATERIAL! (SEE MAINTENANCE)
- MANY SEAMING PROBLEMS ARE THE RESULT OF MIS-ALIGNED PURLINS AND/OR FRAMES. A SUDDEN CHANGE IN DIRECTION (1/4" IN 5'-0") CAN CAUSE AN INCORRECT SEAM. A GOOD RULE TO FOLLOW IS TO "STRING LINE" THE PURLIN HOLES IN EACH BAY BEFORE PANELING.
- BE SURE THE PANELS ARE PROPERLY ENGAGED PRIOR TO SEAMING. USE LOCKING PLIERS TO HOLD THEM IN POSITION AS REQUIRED. SHOULD AN INCOMPLETE SEAM OCCUR, STOP THE ROOF RUNNER IMMEDIATELY! AN INCOMPLETE SEAM CAN USUALLY BE RESTARTED BY BENDING THE PANEL STEMS SEVERAL INCHES AHEAD OF THE SEAMER, IN THE DIRECTION OF SEAMING.



- WATCH TO SEE THAT THE LARGE FRONT AND REAR GUIDE WHEELS ARE BEARING ON THE CORRUGATION. THE WHEELS SHOULD TURN THROUGHOUT THE SEAMING OPERATION (AT CLIPS AND END SPLICES THEY MAY STOP MOMENTARILY, BUT SHOULD RESUME TURNING AGAIN IMMEDIATELY).
- CAM RELEASES ARE PROVIDED FOR THE PURPOSE OF DISENGAGING THE MACHINE FROM THE PANEL. THEY SHOULD BE USED ONLY WHEN ABSOLUTELY NECESSARY. A LARGE ADJUSTABLE WRENCH OR 30 MM SOCKET IS REQUIRED AND THE PROCESS SHOULD BE DONE SLOWLY AND WITH GREAT CARE AS THERE ARE SEVERAL CAST PIECES INVOLVED THAT ARE UNDER HEAVY SPRING PRESSURE. THESE PIECES WILL BREAK IF EXTREME CARE IS NOT USED TO RELEASE AND ENGAGE THE CAM.



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



- AVOID ROOF TRAFFIC DISTORTION TO THE PANELS BEING SEAMED. KEEP ROOF TRAFFIC AWAY FROM THE ROOF RUNNER. IMPORTANT: THE OPERATOR SHOULD STAY IN A POSITION THAT MINIMIZES TRAFFIC DISTORTION. THE BEST POSITION IS 4' TO 5' AHEAD, TO THE RIGHT OF THE ROOF RUNNER. THE OPERATOR CAN:
 - KEEP PANELS ENGAGED
 - WATCH SEAM AND ROOF RUNNER
 - STOP MACHINE AS NECESSARY
 - HOLD DOWN FRONT OF MACHINE ACROSS LAPS
 - WORK FROM SAFEST POSITION ON A STABLE PANEL

MAINTENANCE FOR THE SEAMER PLATFORM

ALL MAINTENANCE AND REPAIRS ARE THE RESPONSIBILITY OF THE BUILDER.

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

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

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

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

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

MAINTENANCE FOR THE ROOF RUNNER

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

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

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

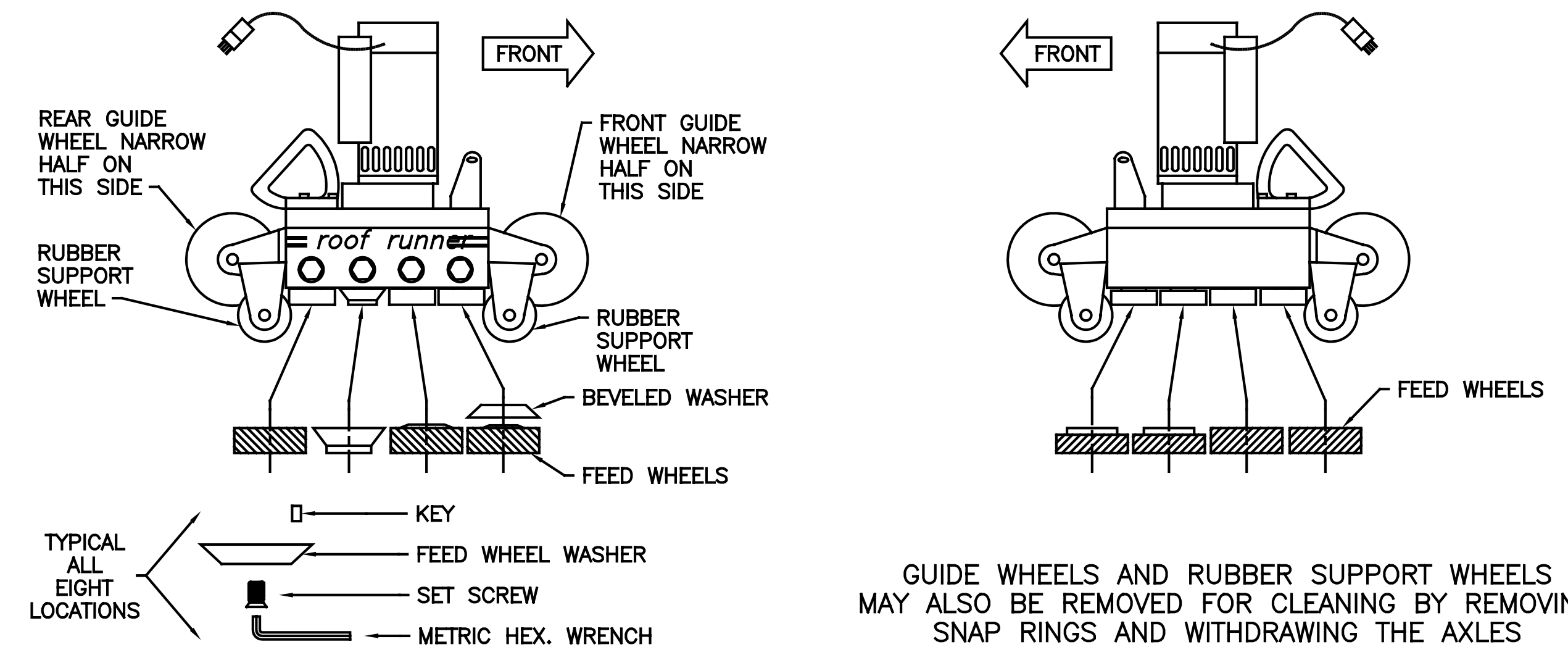
BUTLER MANUFACTURING COMPANY
13500 BOTTS ROAD
GRANDVIEW, MISSOURI 64030

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

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

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

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



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

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

MR-24 ROOF RUNNER OPERATIONS TIPS FOR TROUBLE FREE OPERATION-MAINT.			
DRAWN BY	CHECKED BY	GROUP NUMBER: 02-064-01	
RHE	RMC	B	P-081674 01
FIRST RELEASE DATE	REVISION DATE		
01/21/10	12/04/18		

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

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

MISCELLANEOUS FASTENERS		
PART MARK	COLOR	DESCRIPTION
095050		MACHINE SCREW 1/4 X 3/4", HEX HD
095051		MACHINE SCREW 1/4 X 1", HEX HD
095056		MACHINE SCREW 1/4 X 3", HEX HD
095062		NUT, MACHINE SCREW 1/4", HEX HD
095241		NUT, 1/4" FLAT SPEED NUT
095895		(T-A) #10 X 3/4", PAN HD (SHEET METAL SCREW)
097190-		NUT, 1/4-20 SS FLANGE NUT

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

FASTENER COLOR SUFFIX CHART

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

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

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

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

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

PANEL CLOSURES		
PART MARK	COLOR	DESCRIPTION
026648		OPT. BUTLERIB RUBBER BASE CLOSURE 3'
026649		OPT. BUTLERIB FOAM BASE CLOSURE 3'
026654		BUTLERIB RUBBER ROOF CLOSURE 10 23/32"
560000		MR-24 RUBBER CORRUGATION CLOSURE
560158		MR-24 LOCK SEAM PLUG
560348		MR-24 PLASTIC CORRUGATION CLOSURE
570452		OPT. STYLWALL FLUTED FOAM WALL CLOSURE 2'-8"
570555		BUTLERIB OUTSIDE FOAM WALL CLOSURE 3'
570597		STYLWALL FLAT FOAM BASE CLOSURE 1'-4"
570674		STYLWALL FLUTED FOAM BASE CLOSURE 1'-4"
570730		OPT. SHADOWWALL RUBBER BASE CLOSURE 10 11/16"
570731		OPT. SHADOWWALL FOAM BASE CLOSURE 3'
570776		SHADOWWALL OUTSIDE FOAM WALL CLOSURE 3'
ARPCPG		VSR II CORRUGATION CLOSURE
ARPHCP		VSR II HIP CORRUGATION PLUG 3'
BRCC12		BUTLERIB CANOPY CLOSURE 12'
BRCL10A		OPT. BUTLERIB WALL CLOSURE 10' .75:12-3:12
BRCL10B		OPT. BUTLERIB WALL CLOSURE 10' 3.1:12-4:12
BRCL12		OPT. BUTLERIB WALL CLOSURE 12' .25:12-1:12
BRCL12		VSR II EAVE CLOSURE 12' W/BUTLERIB WALL
CLE12A		BUTLERIB EAVE CLOSURE 12', 6 3/4"
CLE12B		BUTLERIB EAVE CLOSURE 12" W/BUTLERIB OVER 4:12, SHADOWWALL OVER 1/2:12
CLE12C		MR-24 EAVE CLOSURE 12' W/STYLWALL OR SHADOWWALL
CLE12D		MR-24 EAVE CLOSURE 12'-0" WITH INSULATED WALL PANEL
CLE1A		MR-24 EAVE CLOSURE 12' W/BUTLERIB
CLP2		MR-24 PANEL CLOSURE 2'-1 1/2"
MRCLE12A		CMR-24 EAVE CLOSURE 12'-0" WITH INSULATED WALL PANEL 10 3/4"
MRCLE12B		CMR-24 EAVE CLOSURE 12'-0" WITH INSULATED WALL PANEL 1'-1 3/4"
SHCL12		OPT. SHADOWWALL WALL CLOSURE 12' .25:12-4:12
SHCLE11A		VSR II EAVE CLOSURE 11' W/SHADOWWALL
SIIC12A		VSR II EAVE CLOSURE 12'-0" WITH INSULATED WALL PANEL OR FLAT STYLWALL
SIIC12B		VSR II EAVE CLOSURE 12' W/FLUTED STYLWALL
SIICLB1A		STYLWALL FLUTED METAL TRANSITION BASE CLOSURE 1'-4"
SIICLB1B		STYLWALL FLAT METAL TRANSITION BASE CLOSURE 1'-4"
TLCLB		BUTLERIB WITH TLS PARTIAL WALL HEIGHT EAVE CLOSURE
TLCLM		MR-24 WITH TLS PARTIAL WALL HEIGHT EAVE CLOSURE
TLCLV		VSR II WITH TLS PARTIAL WALL HEIGHT EAVE CLOSURE

BMC COMMON WAREHOUSE PARTS

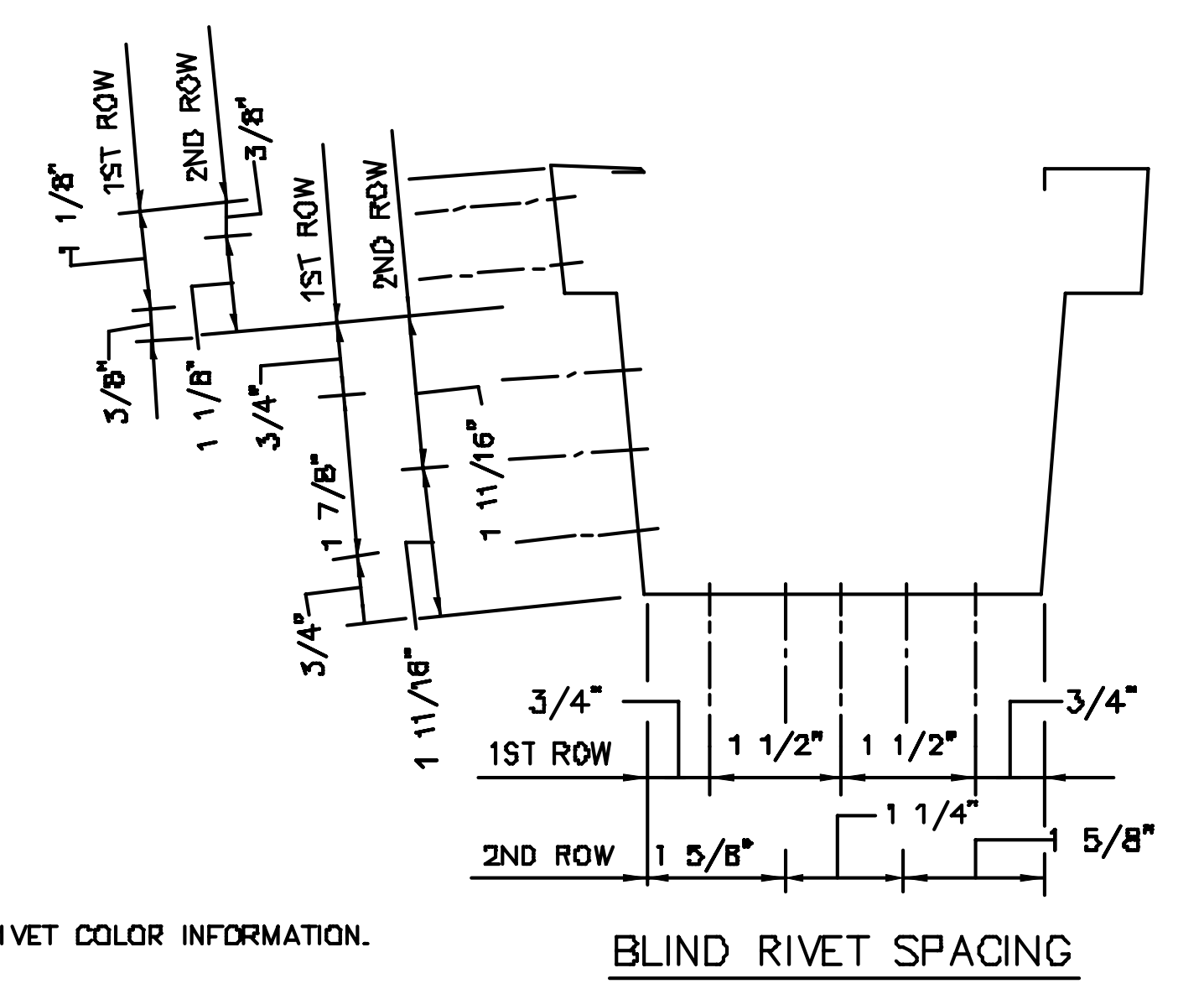
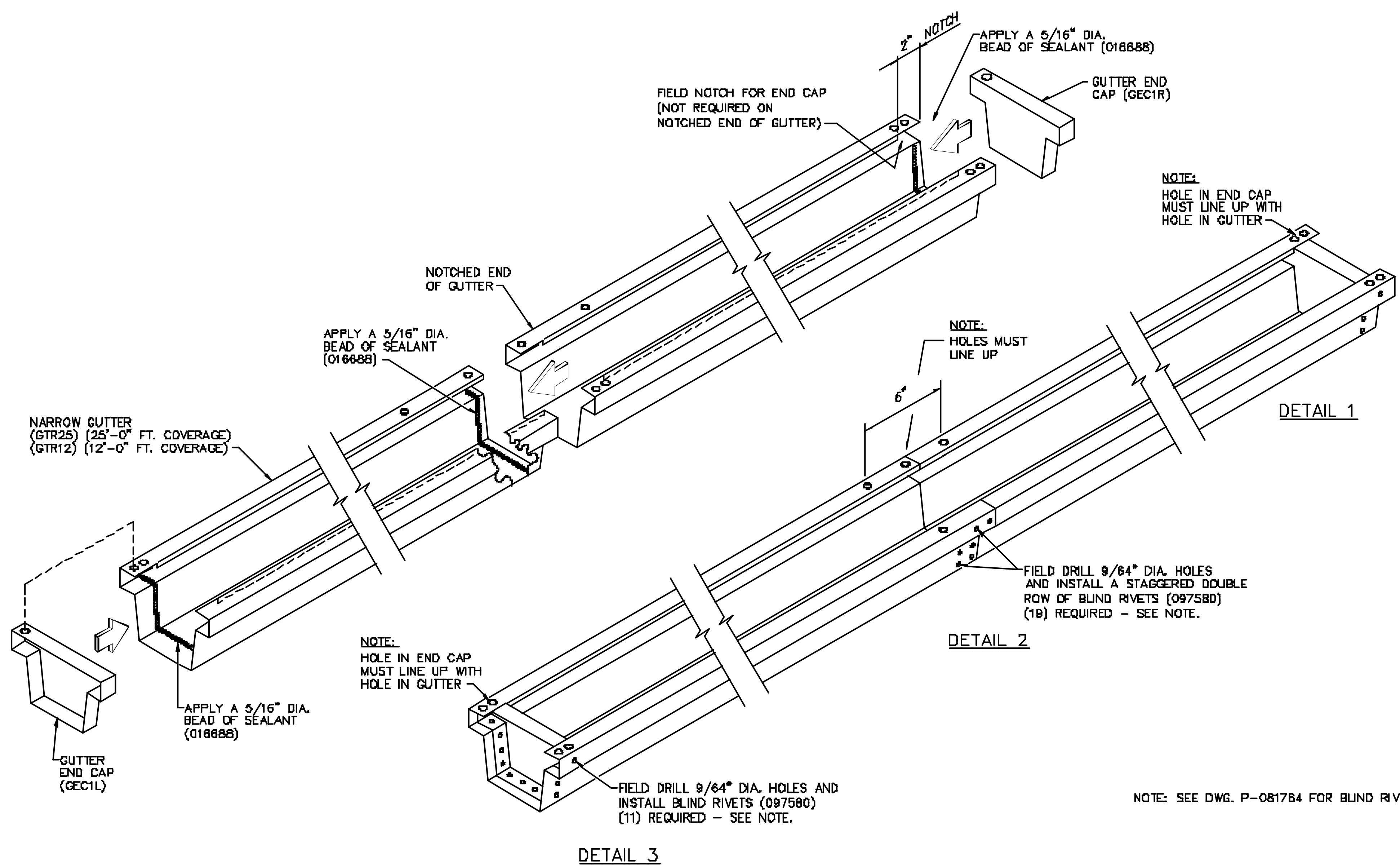
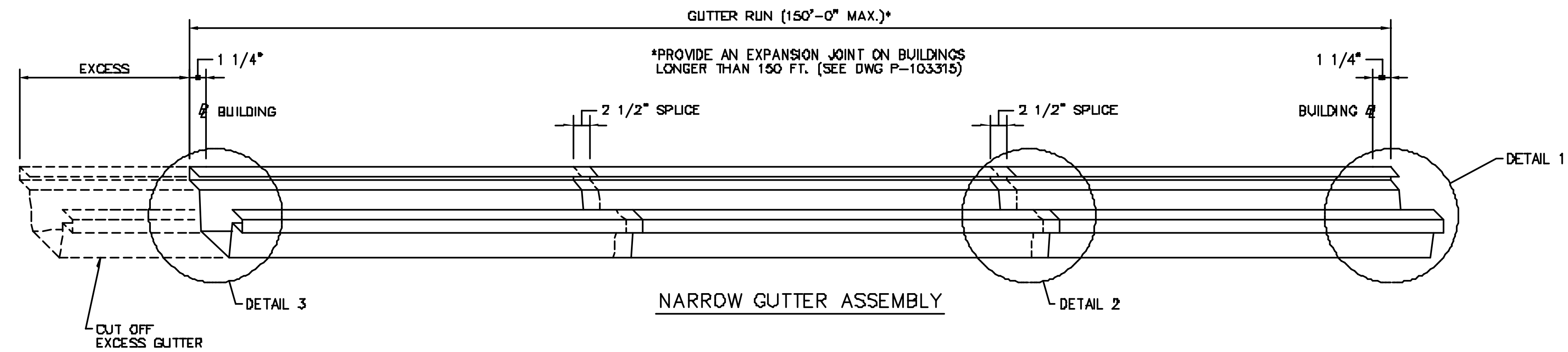
DRAWN BY	CHECKED BY	GROUP NUMBER:	
BJF		B	P-081764 13
FIRST RELEASE DATE	REVISION DATE		
01/10/13	09/15/20		

<p>WALL CLOSURE BRII</p>	<p>WALL CLOSURE BRII</p>	<p>EAVE CLOSURE BRII WALL</p>	<p>BUTLERIB CORNER TRIM</p>	<p>WALL CLOSURE BRII</p>	<p>BRII RIDGE END TOP TRIM</p>	<p>PICTORIAL</p>	<p>EAVE CLOSURE BRII TO MR 24</p>
<p>EAVE CLOSURE</p>	<p>PANEL CLOSURE</p>	<p>PICTORIAL</p>	<p>DRIP GUTTER</p>	<p>DOOR POST FLASHING</p>	<p>DRIP TRIM ATTCHMENT</p>	<p>EAVE TRIM 'A' THRU 'E'</p>	<p>GUTTER END CAP LEFT(L) OR RIGHT(R)</p>
<p>GUTTER SUPPORT TAB</p>	<p>GUTTER</p>	<p>INSIDE CORNER TRIM</p>	<p>INTERIOR RIDGE TRIM 'A' THRU 'D'</p>	<p>PICTORIAL</p>	<p>PICTORIAL</p>	<p>PICTORIAL</p>	<p>RIDGE END BOTTOM TRIM ASSY.</p>
<p>SOFFIT TRIM</p>	<p>PICTORIAL</p>	<p>PICTORIAL</p>	<p>WALL SOFFIT SUPPORT</p>	<p>SPLICE PLATE ASSEMBLY MR 24</p>	<p>GUTTER SUPPORT</p>	<p>CORNER TRIM ASSEMBLY</p>	<p>GUTTER HANGER</p>
<p>EXTERIOR CORNER TRIM STYLWALL II</p>	<p>EXTERIOR CORNER TRIM STYLWALL II</p>	<p>DRIP GUTTER STYLWALL II</p>	<p>REINFORCEMENT CLIP</p>	<p>O.H. DOOR SIDE TRIM LEFT STYLWALL II</p>	<p>O.H. DOOR SIDE TRIM RIGHT STYLWALL II</p>	<p>O.H. DOOR SIDE TRIM LEFT STYLWALL II</p>	<p>O.H. DOOR SIDE TRIM RIGHT STYLWALL II</p>

TRIM COLOR NOTE
 △ DESIGNATES COLOR SIDE

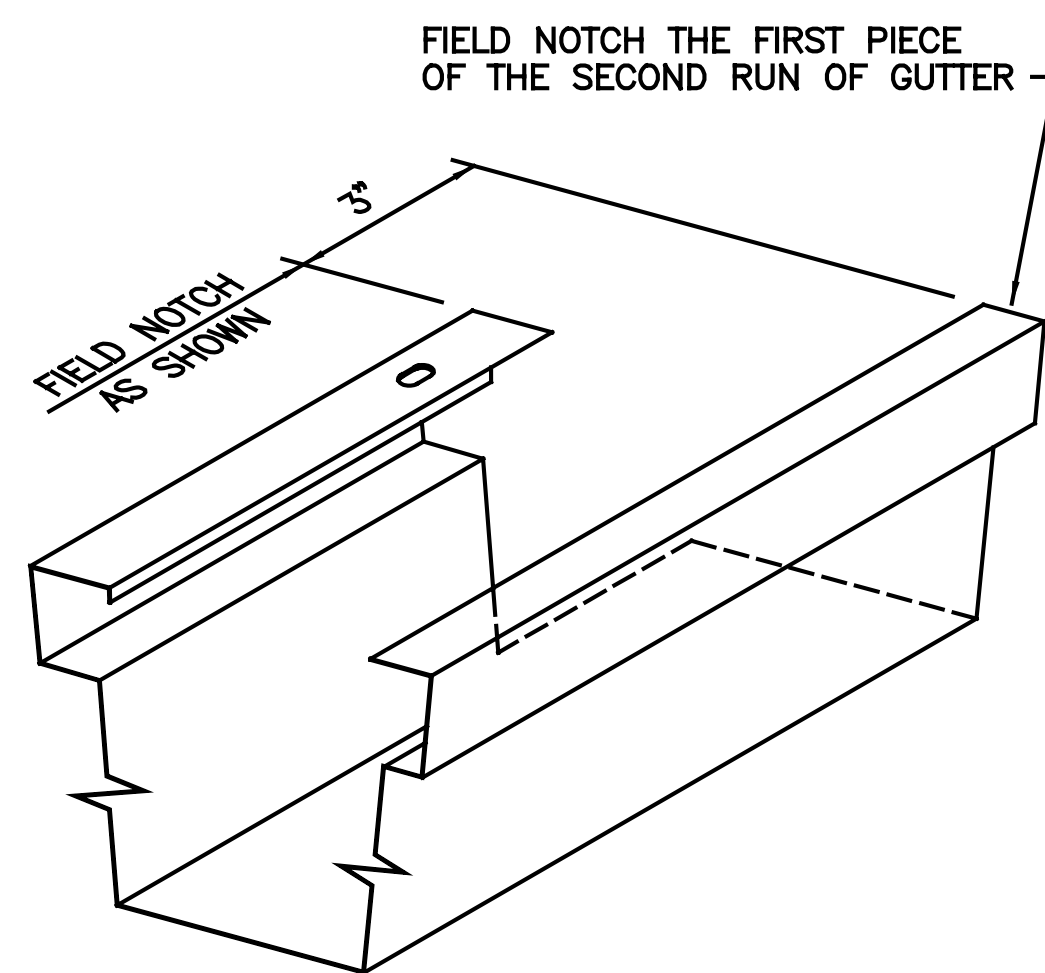
STANDARD TRIMS

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

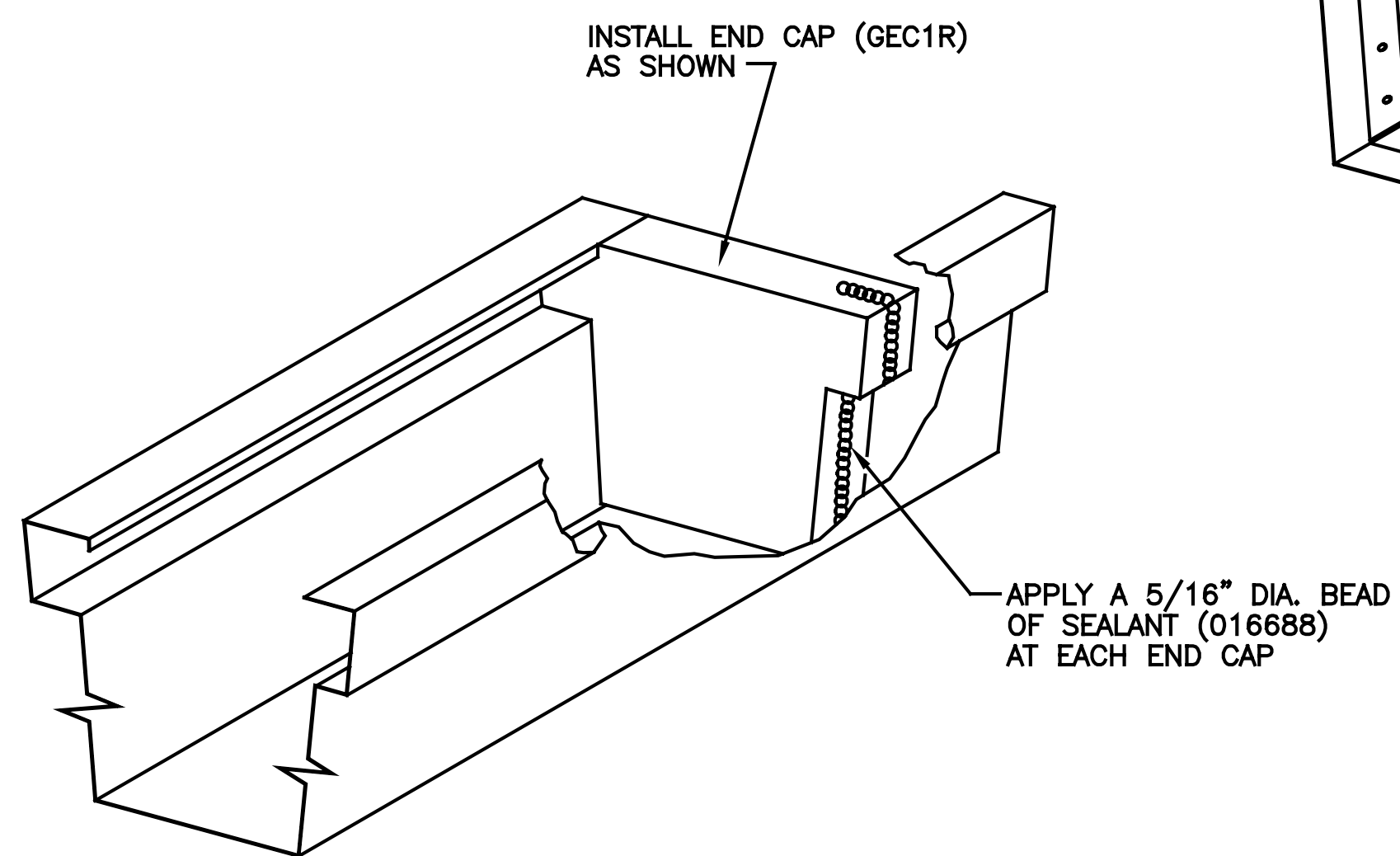


NOTE: SEE DWG. P-081764 FOR BLIND RIVET COLOR INFORMATION.

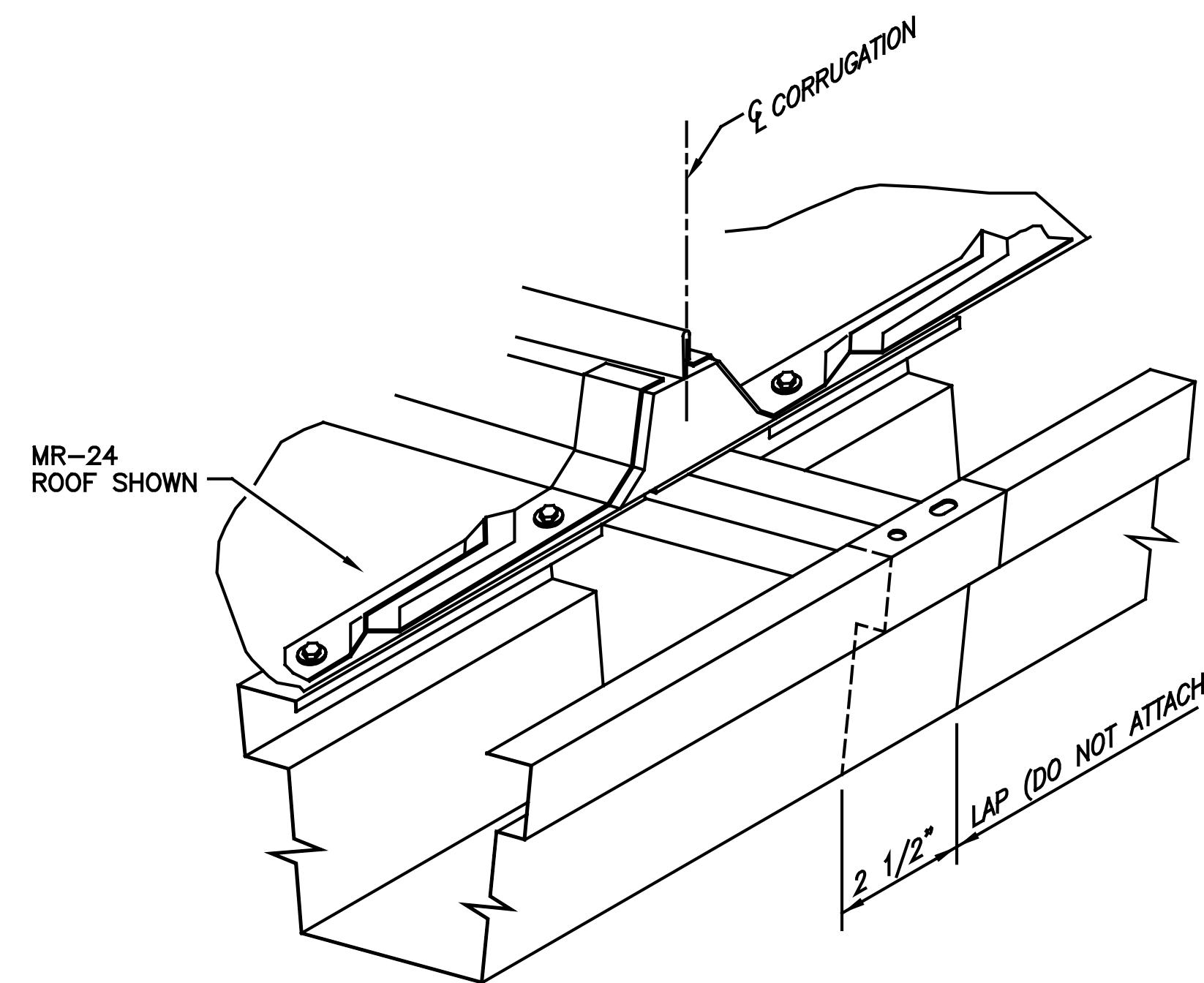
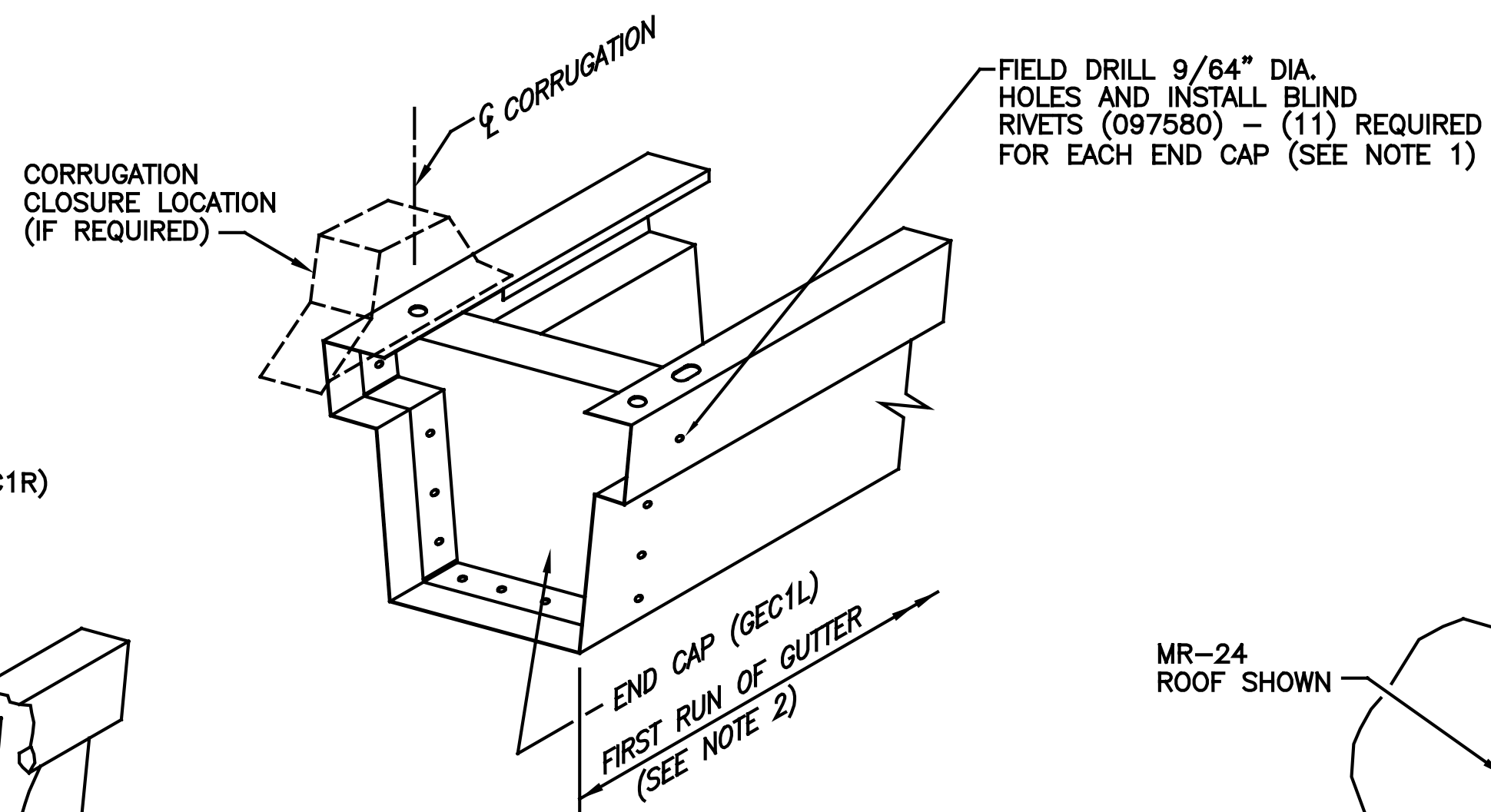
NARROW GUTTER ASSEMBLY (ALL ROOFS)				
DRAWN BY	CHECKED BY	GROUP NUMBER: D1-004-D1		
FIRST RELEASE DATE	REVISION DATE	B	P-103223	04
01/21/10	08/26/17			



STEP 1



STEP 2

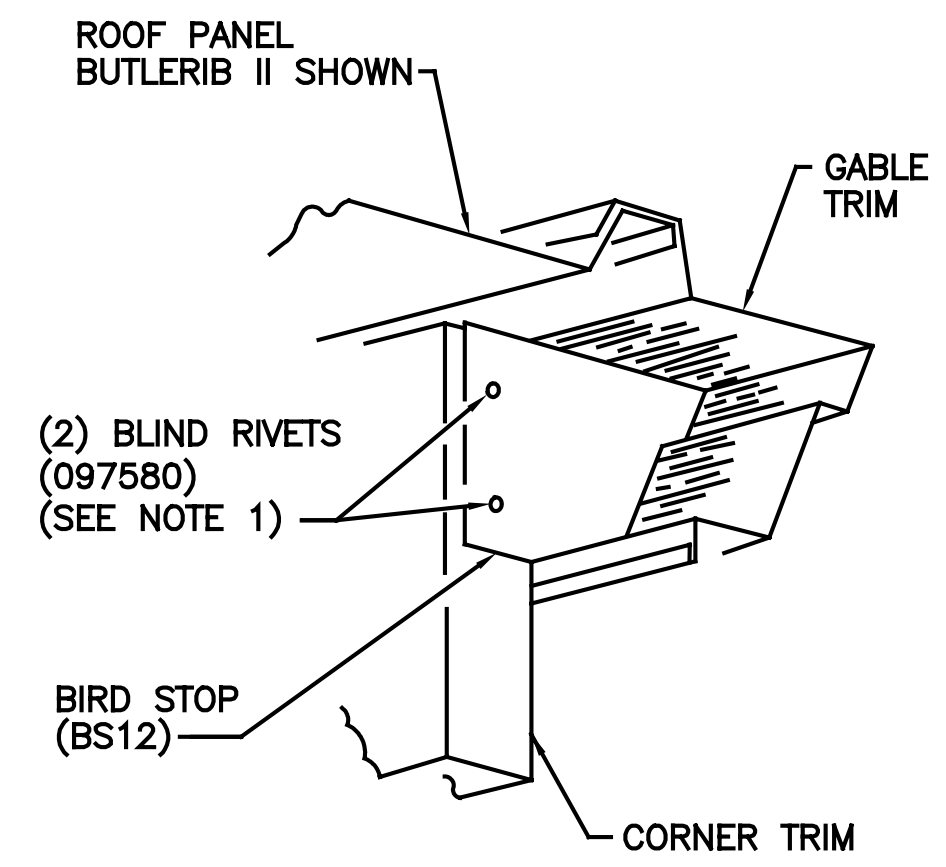


STEP 3

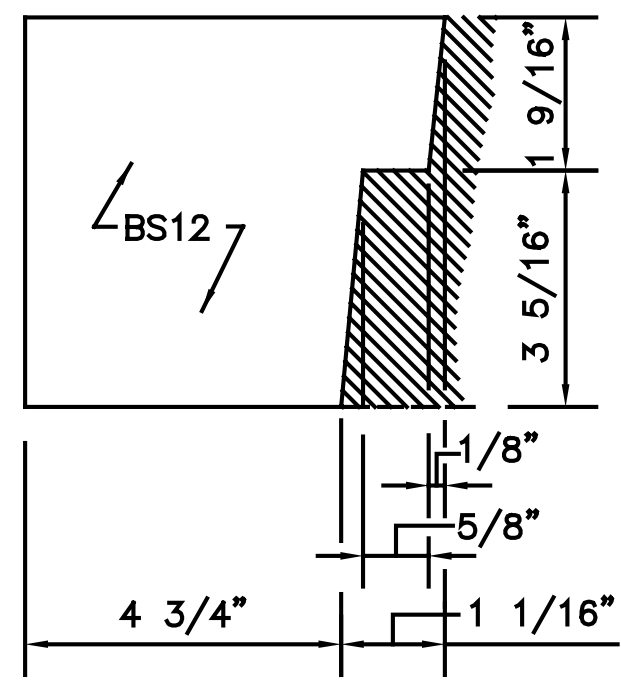
NOTES:

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

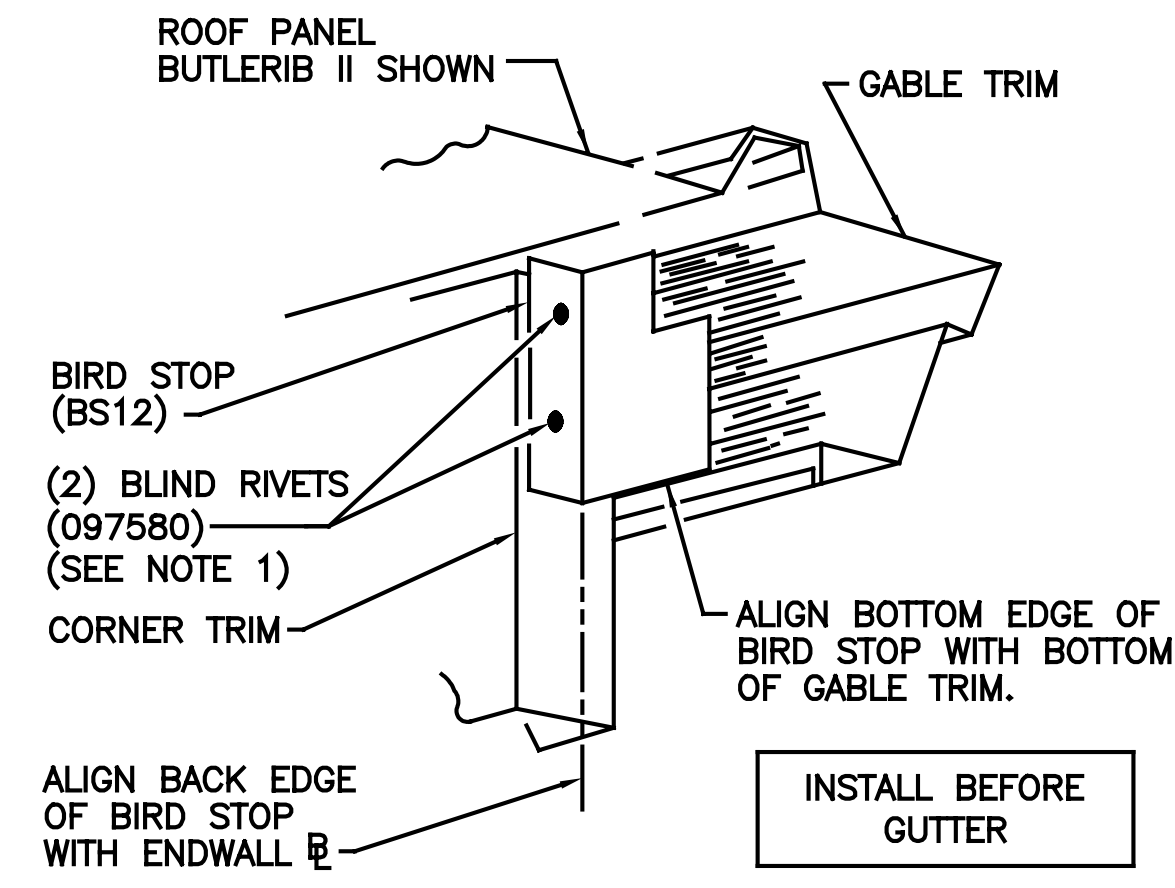
NARROW GUTTER EXPANSION JOINT			
GUTTER - ALL ROOFS			
DRAWN BY	CHECKED BY	GROUP NUMBER: 01-004-01	
M.B.	J.S.		
FIRST RELEASE DATE	REVISION DATE	B	P-103315 04
01/21/10	12/04/18		



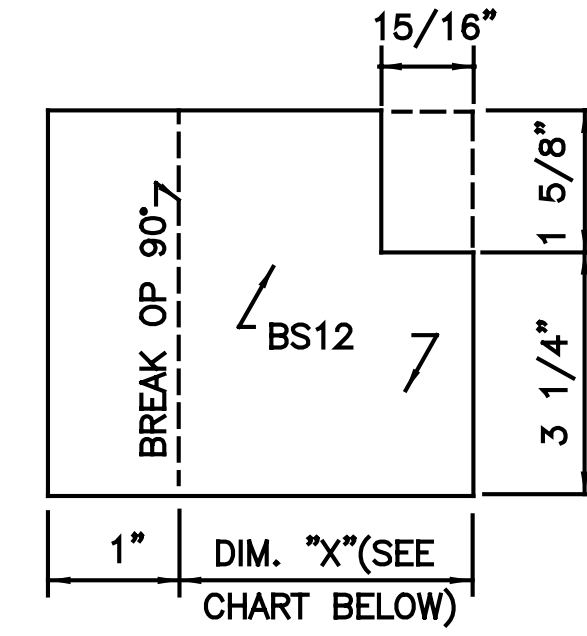
UNTRIMMED EAVE



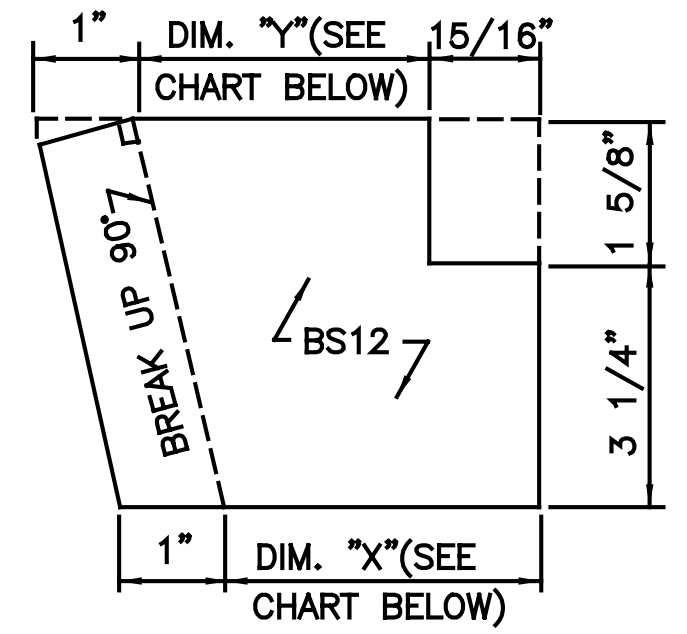
UNTRIMMED EAVE
BIRD STOP CUTTING DIAGRAM
FOR INSTALLATION SHOWN,
(REVERSE FOR OPPOSITE CORNER)



EAVE WITH GUTTER



1/4:12, 1/2:12, AND 1:12 ROOF SLOPES
(SEE NOTE 2)



4:12 ROOF SLOPE
(SEE NOTE 2)

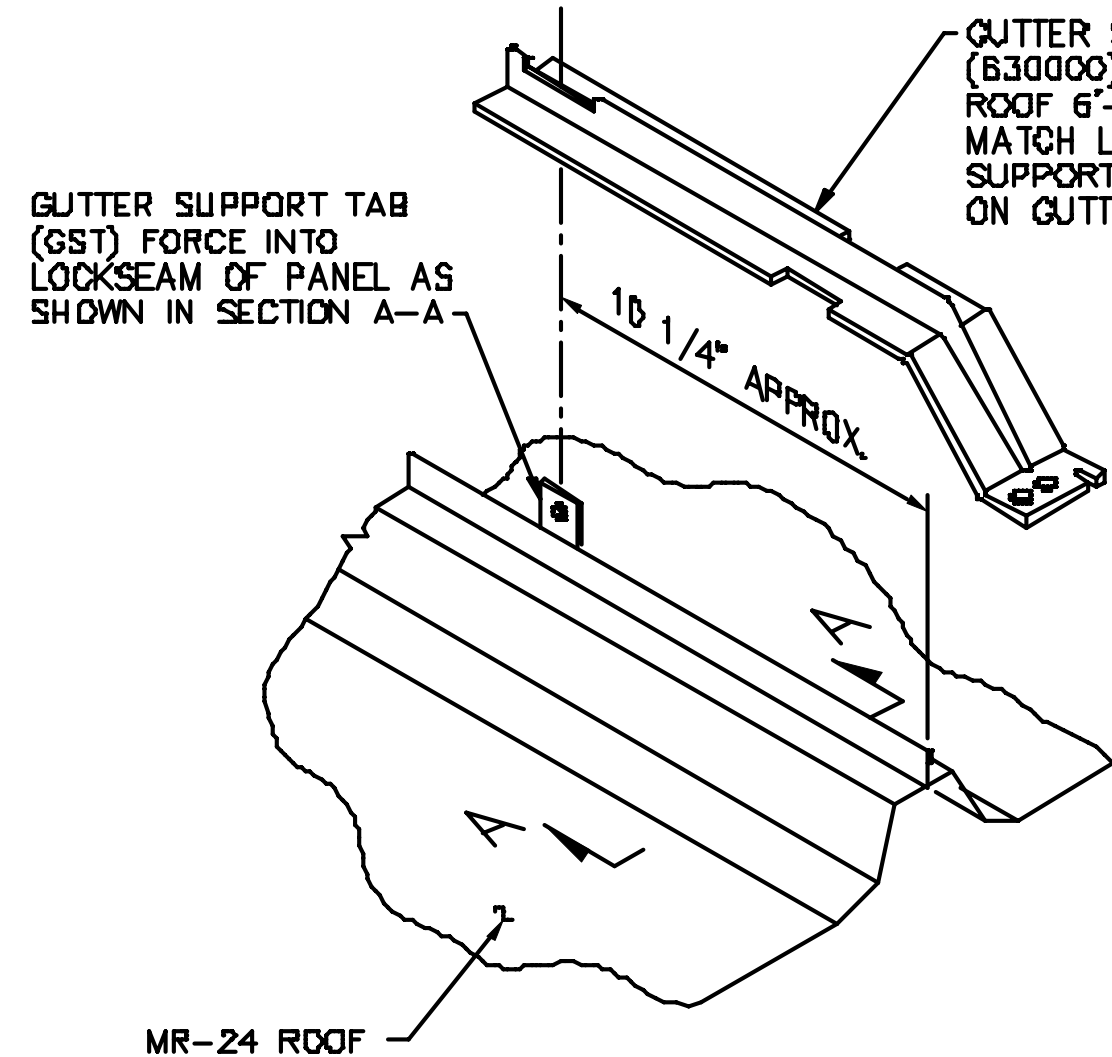
EAVE WITH GUTTER
BIRD STOP CUTTING DIAGRAM
FOR INSTALLATION SHOWN,
(REVERSE FOR OPPOSITE CORNER)

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

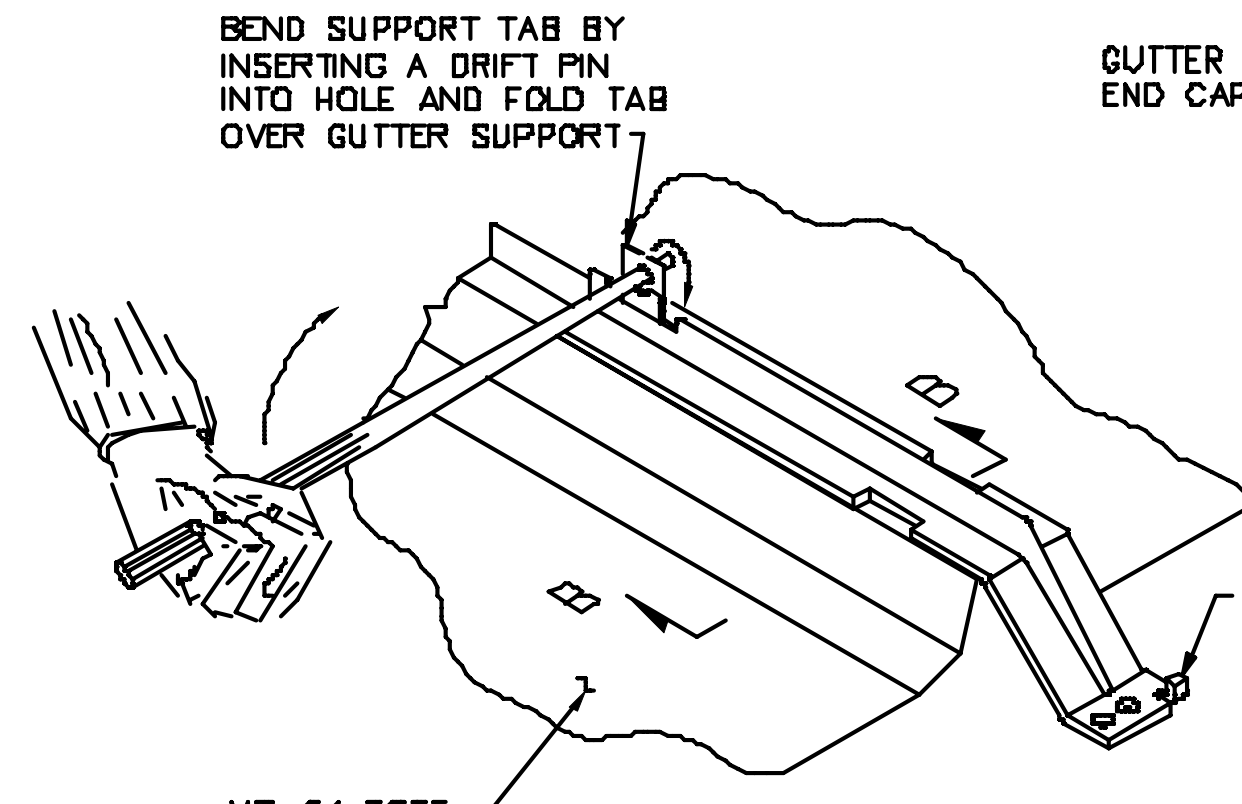
NOTE:

- SEE DRAWING P-081764 FOR BLIND RIVET COLOR INFORMATION.
- FIELD CUT BIRD STOP AS SHOWN IN CUTTING DIAGRAM FOR STANDARD SLOPES. FOR NON-STANDARD SLOPES, USE NEAREST STD. SLOPE INFO. AND ADJUST AS REQUIRED.

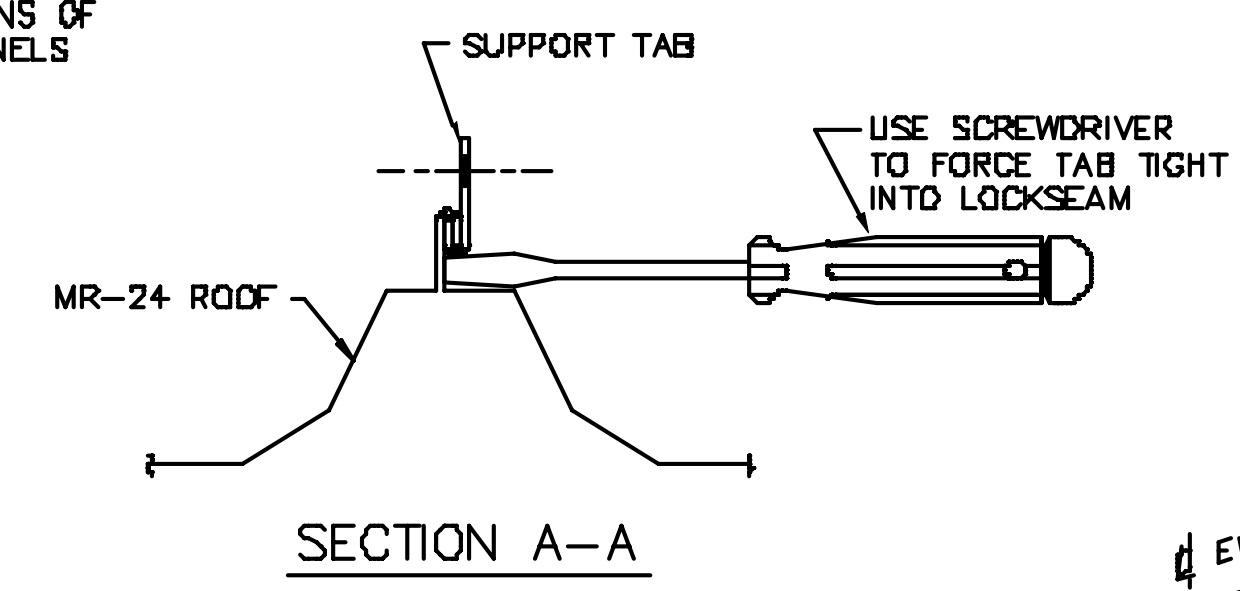
BIRD STOP INSTALLATION - ALL ROOFS				
DRAWN BY	CHECKED BY	GROUP NUMBER: 01-001-01		
FIRST RELEASE DATE	REVISION DATE	B	P-104542	06
02/25/10	08/17/20			



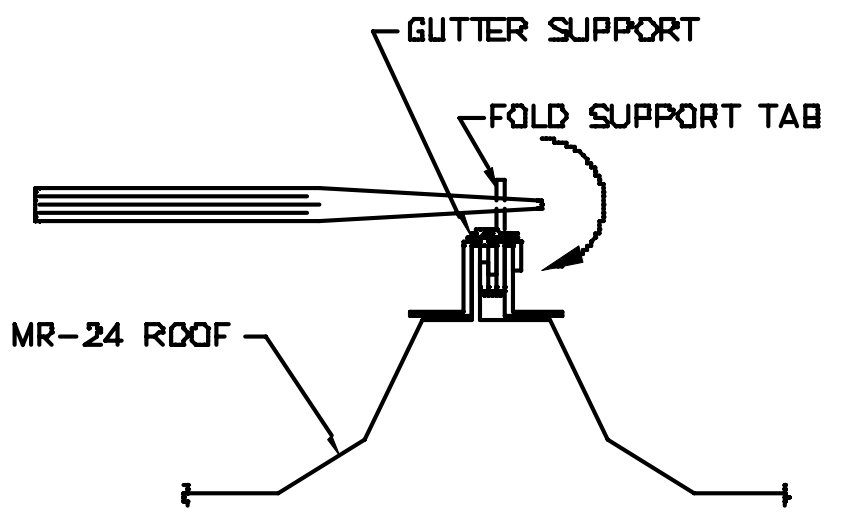
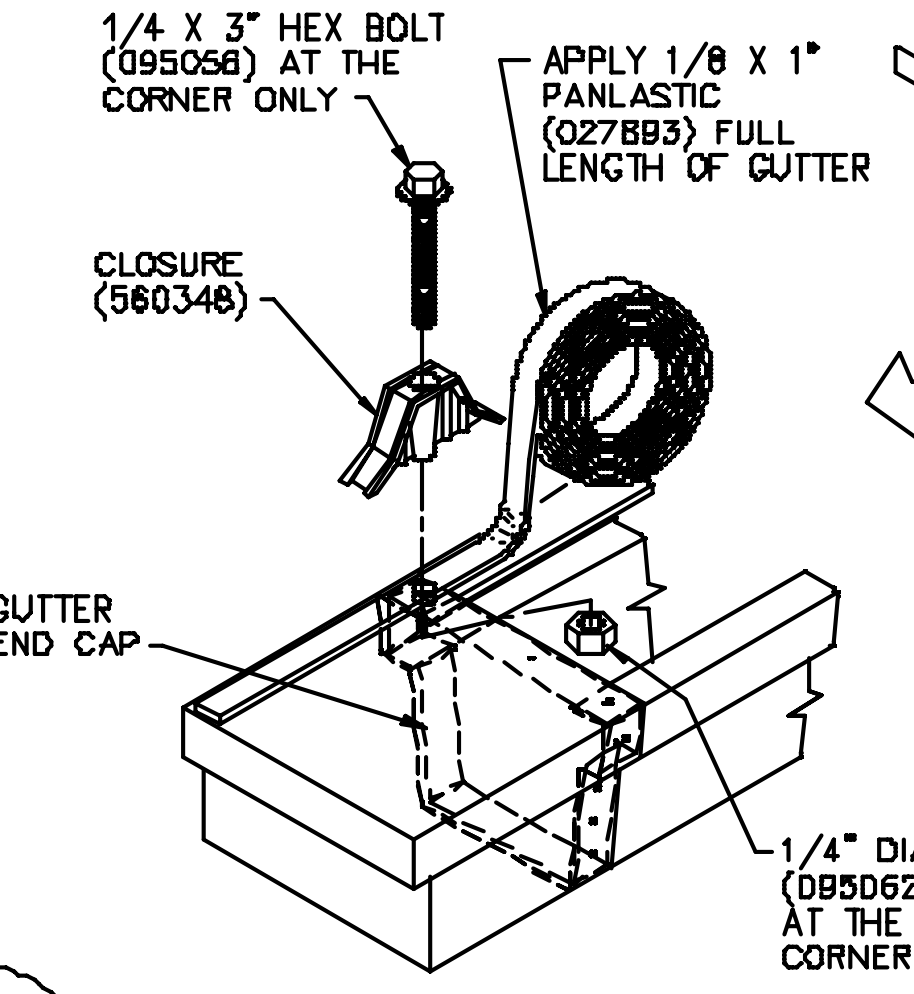
STEP 1
GUTTER SUPPORT TAB INSTALLATION



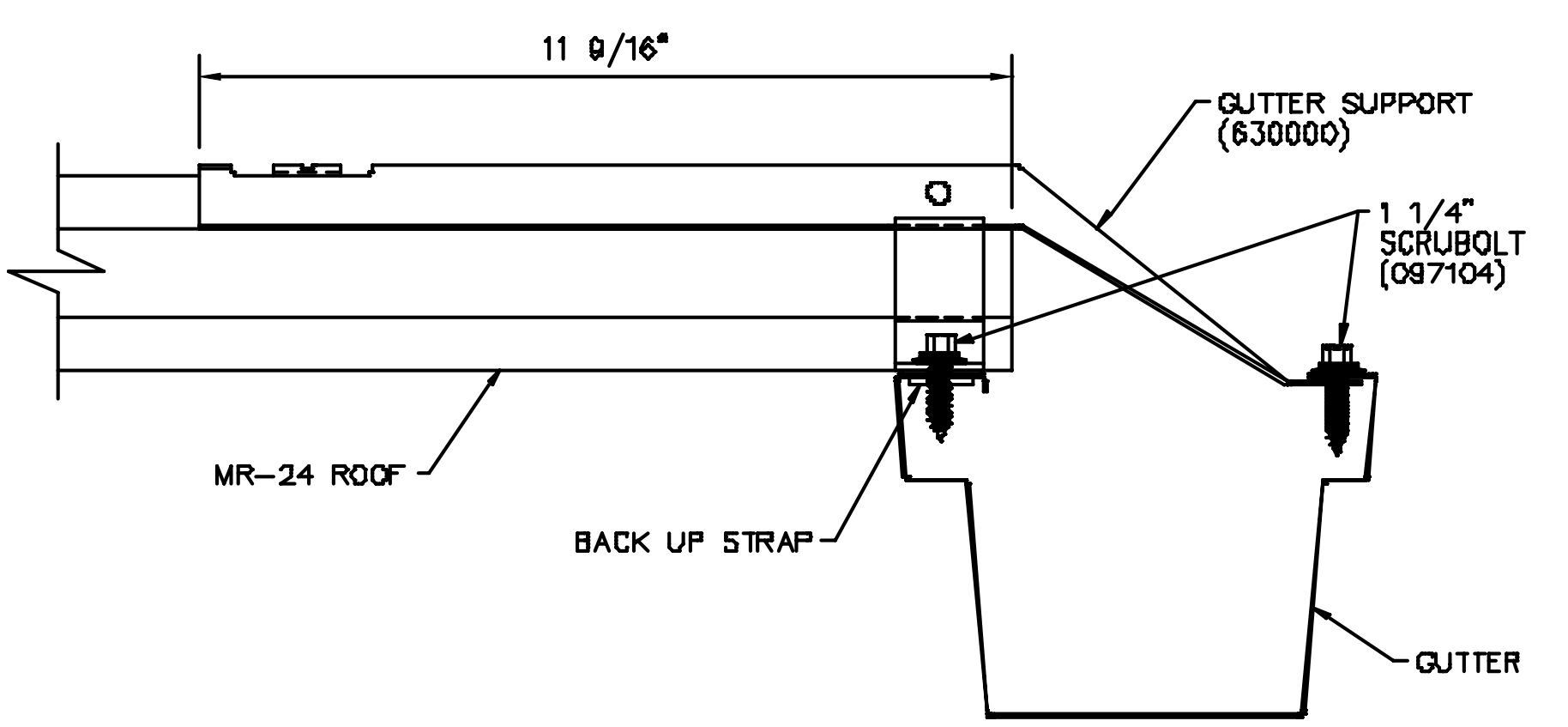
STEP 2
GUTTER SUPPORT INSTALLATION



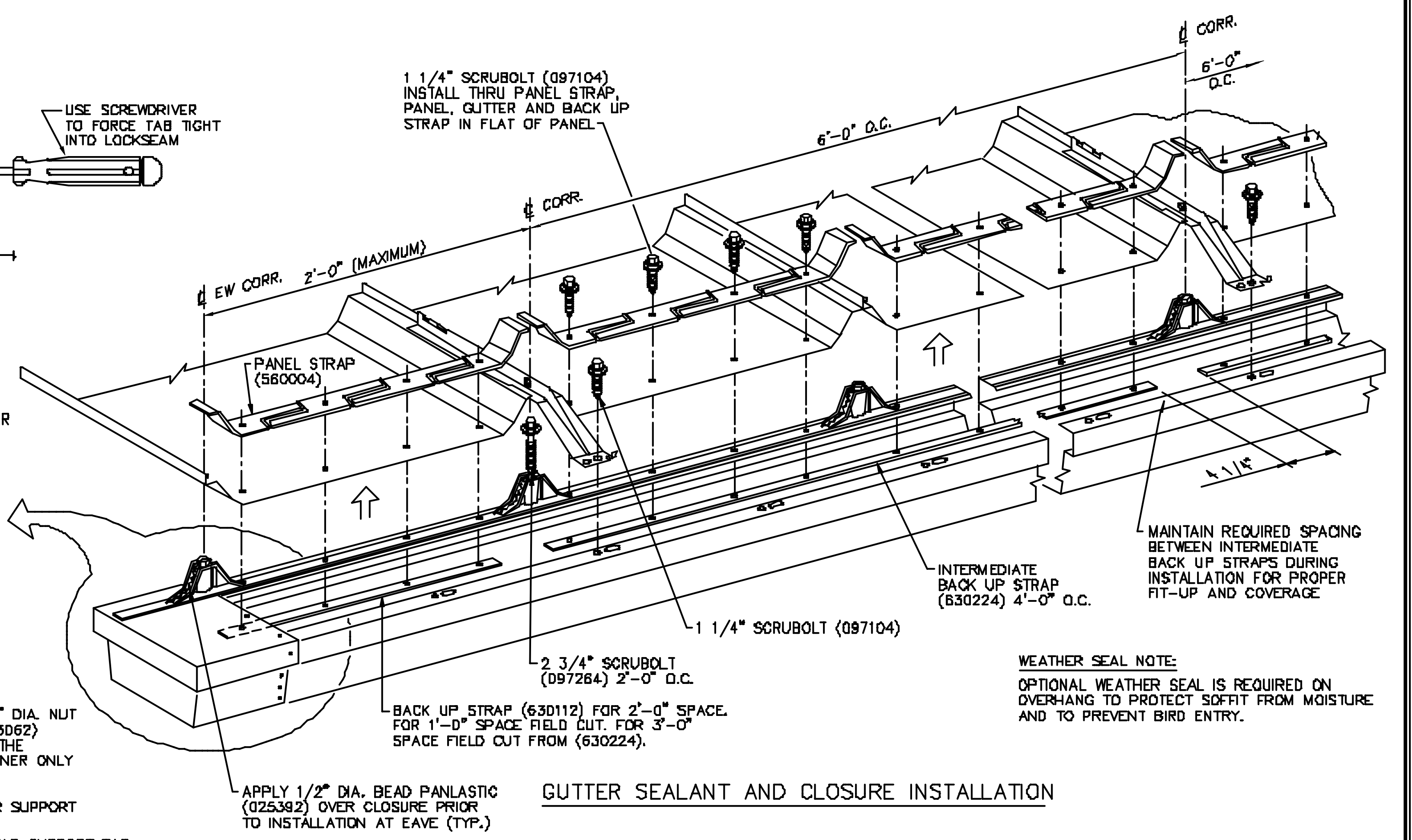
SECTION A-A



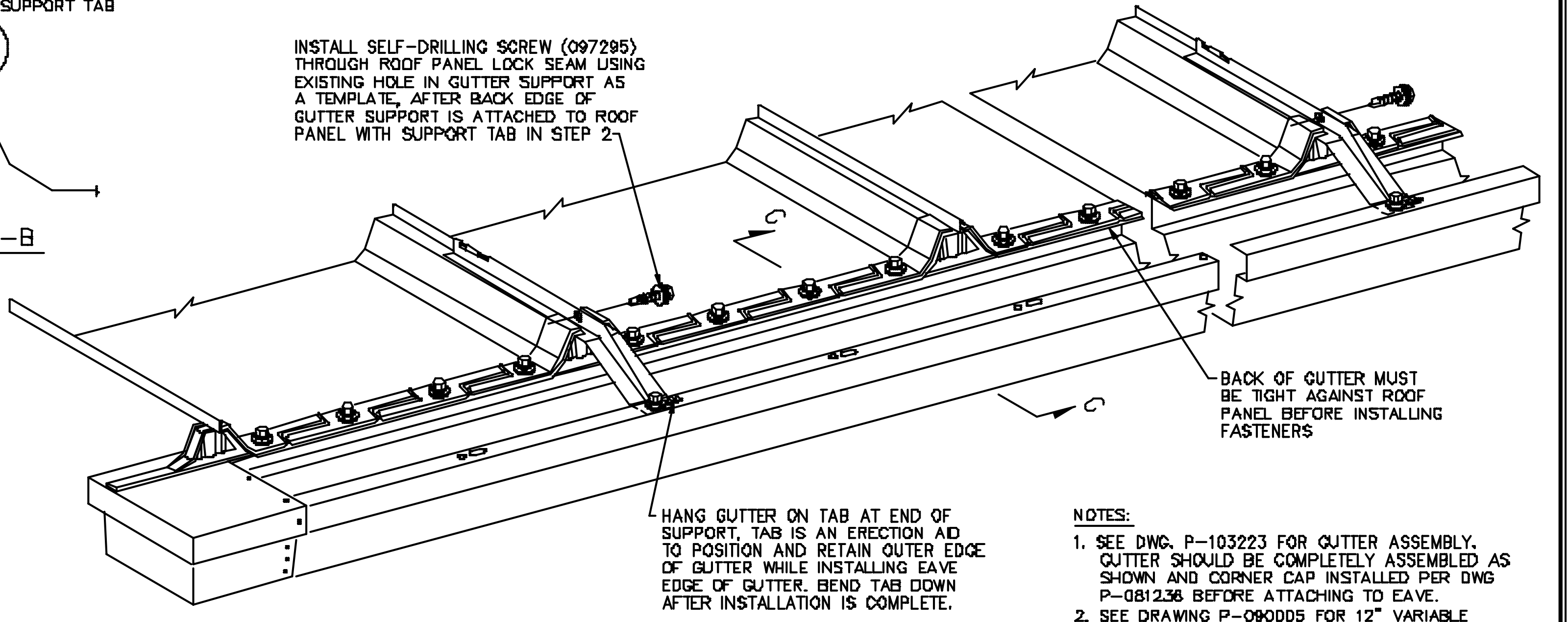
SECTION B-B



SECTION C-C



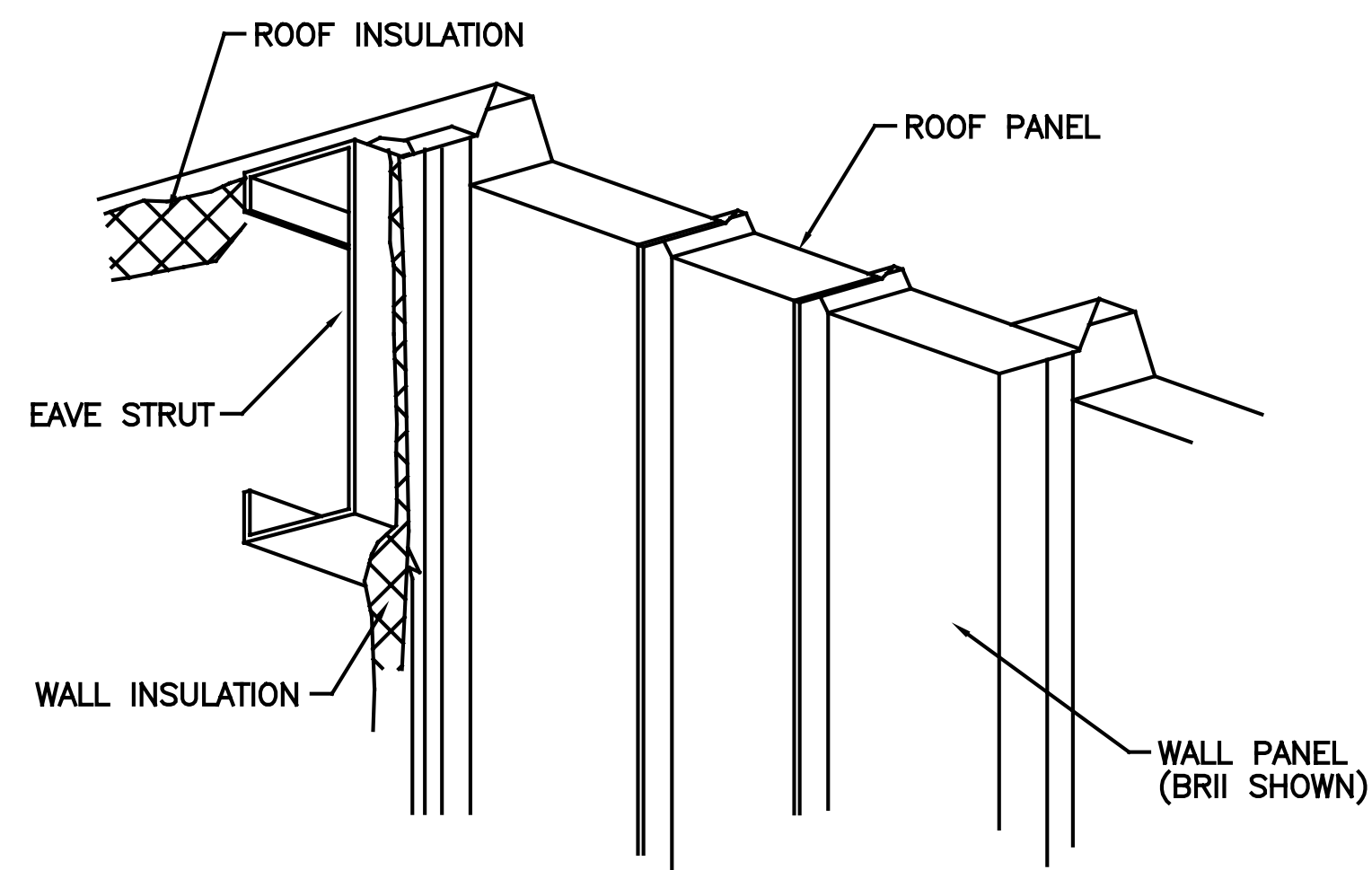
GUTTER SEALANT AND CLOSURE INSTALLATION



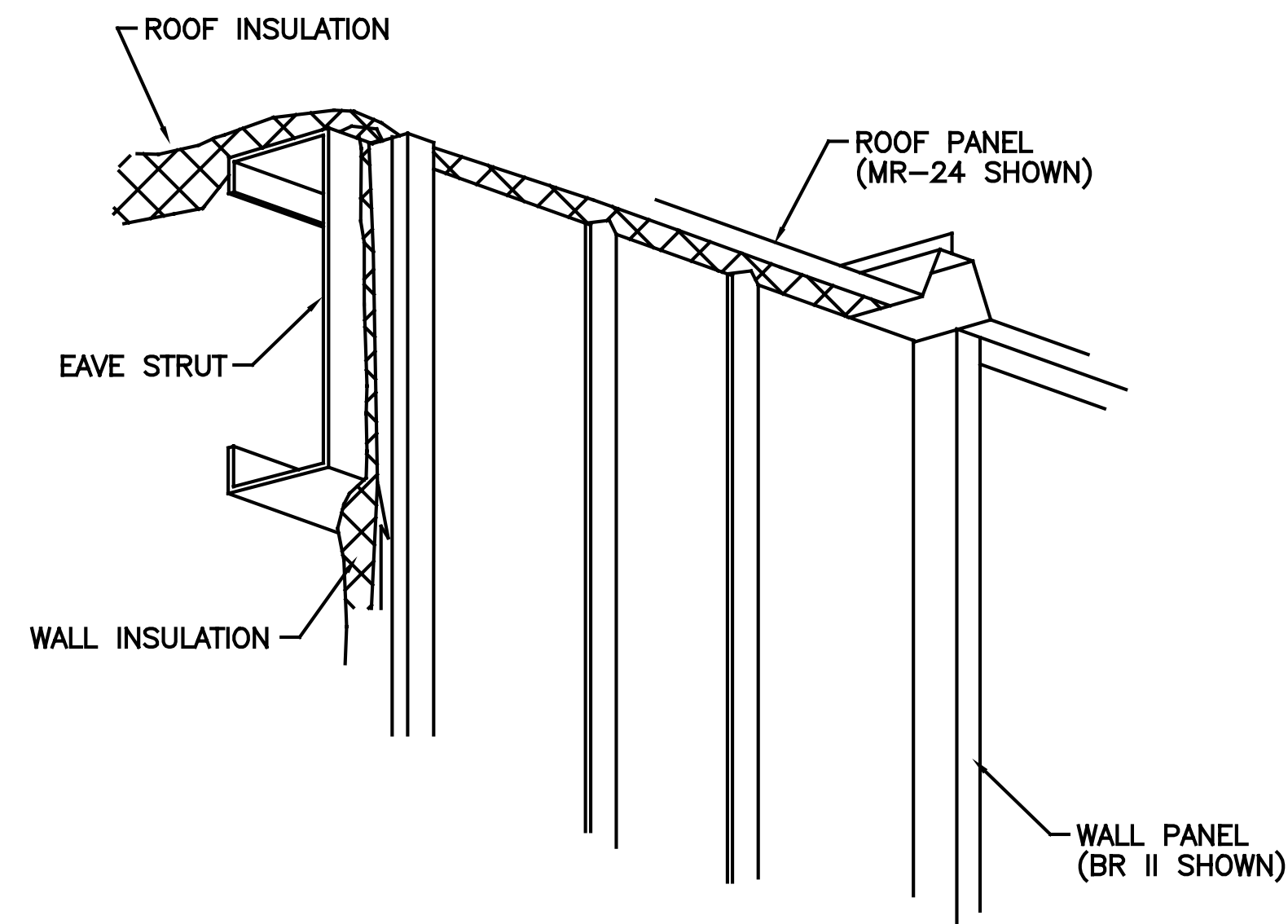
FINISHED GUTTER

- NOTES:**
- SEE DWG. P-103223 FOR GUTTER ASSEMBLY. GUTTER SHOULD BE COMPLETELY ASSEMBLED AS SHOWN AND CORNER CAP INSTALLED PER DWG P-081236 BEFORE ATTACHING TO EAVE.
 - SEE DRAWING P-090055 FOR 12" VARIABLE WIDTH PANEL INFORMATION

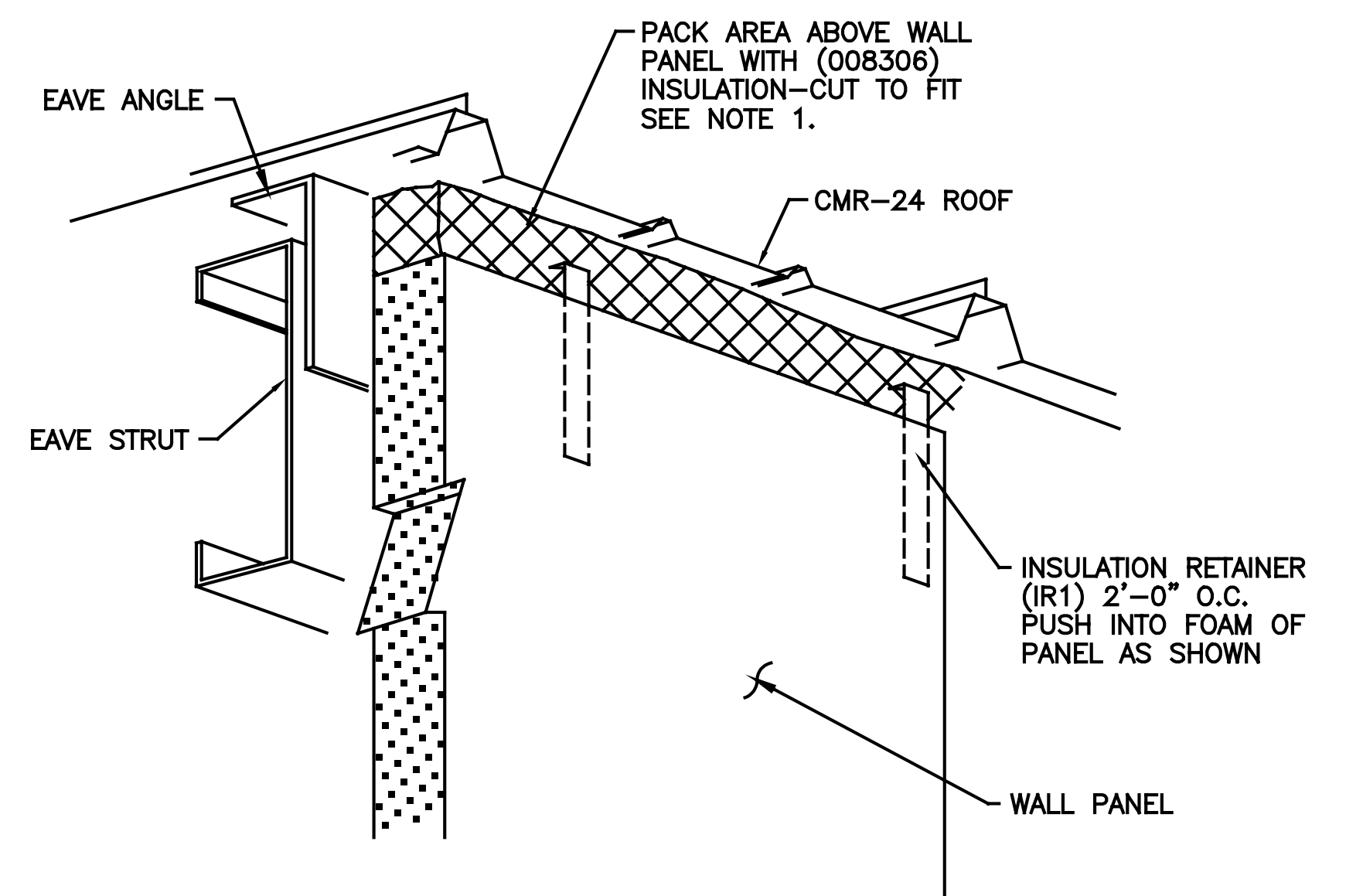
MR-24/CMR-24 NARROW GUTTER INSTALLATION WITH WEATHERSEAL			
DRAWN BY: RP	CHECKED BY: VLT	GROUP NUMBER: 02-004-01	
FIRST RELEASE DATE: 01/21/10	REVISION DATE: 03/08/16	B	P-104714 03



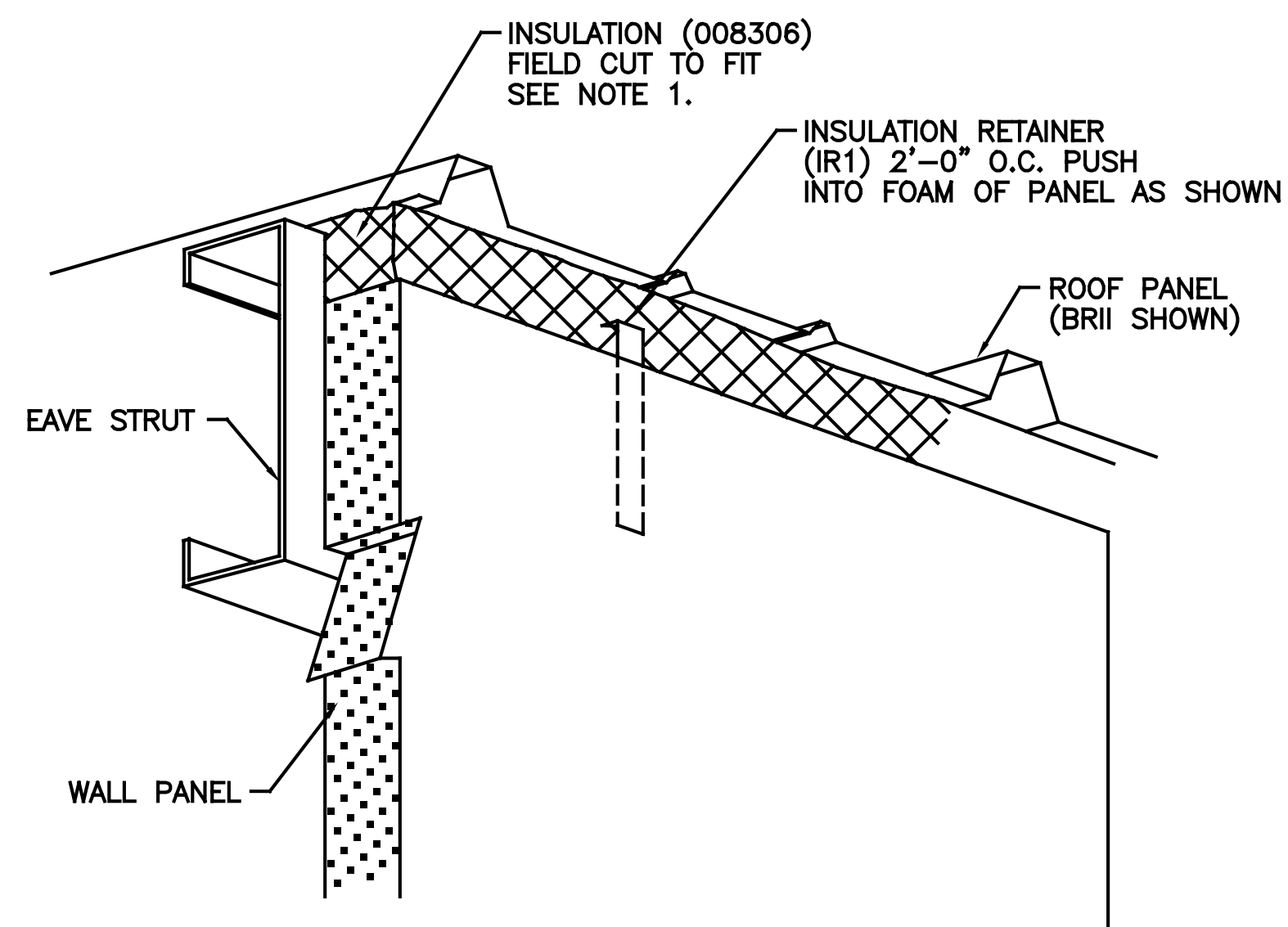
BUTLERIB II—ALL ROOF SLOPES THRU 4:12
SHADOWWALL—ROOF SLOPES TO 1/2:12
WITH BUTLERIB II ROOF



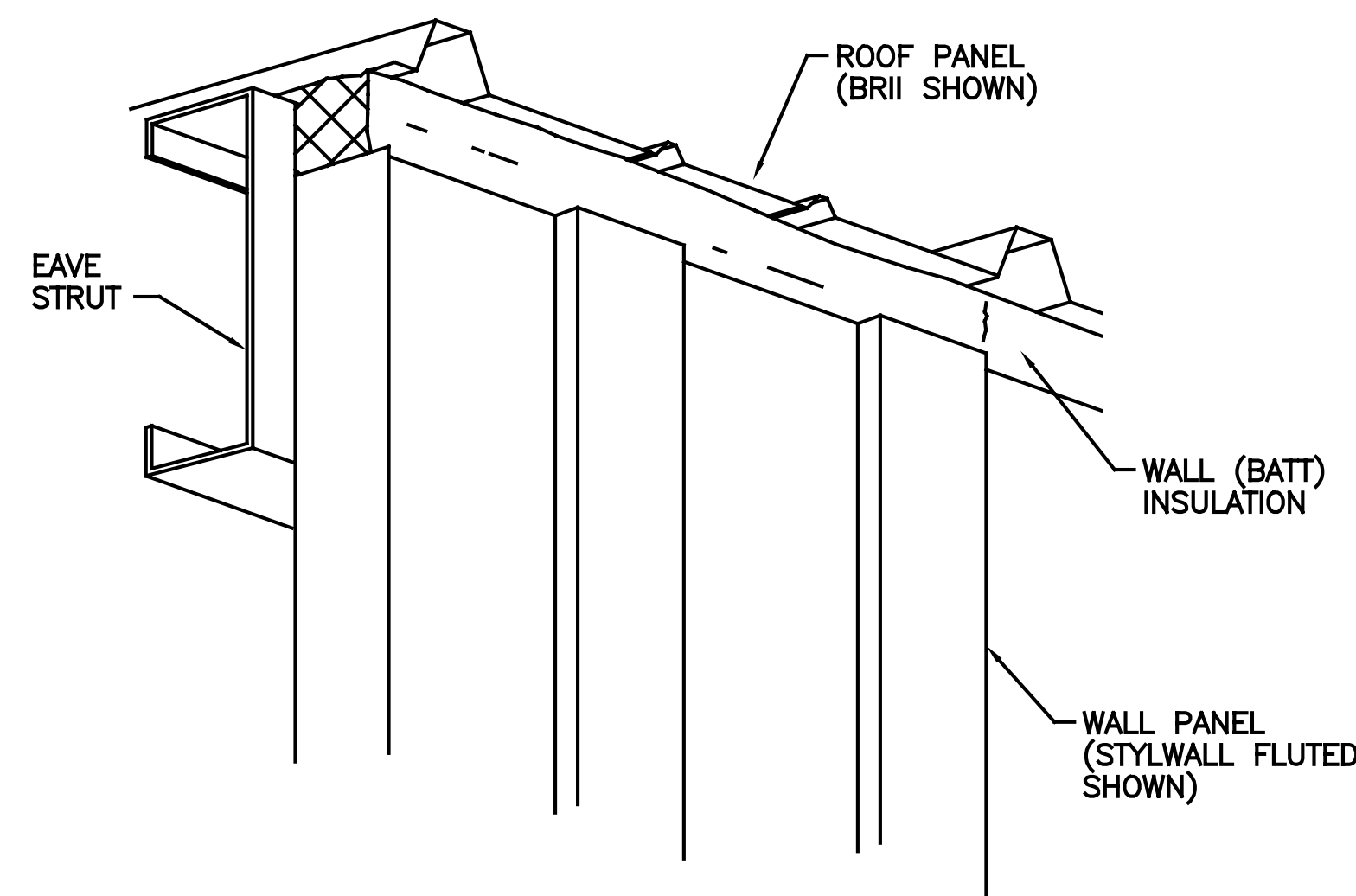
BUTLERIB II WALL
WITH MR-24 OR CMR-24 ROOFS
SHADOWWALL WALL
FOR ALL ROOFS WITH ROOF
SLOPES GREATER THAN 1/2:12



INSULATED WALL PANEL WITH CMR-24 ROOF



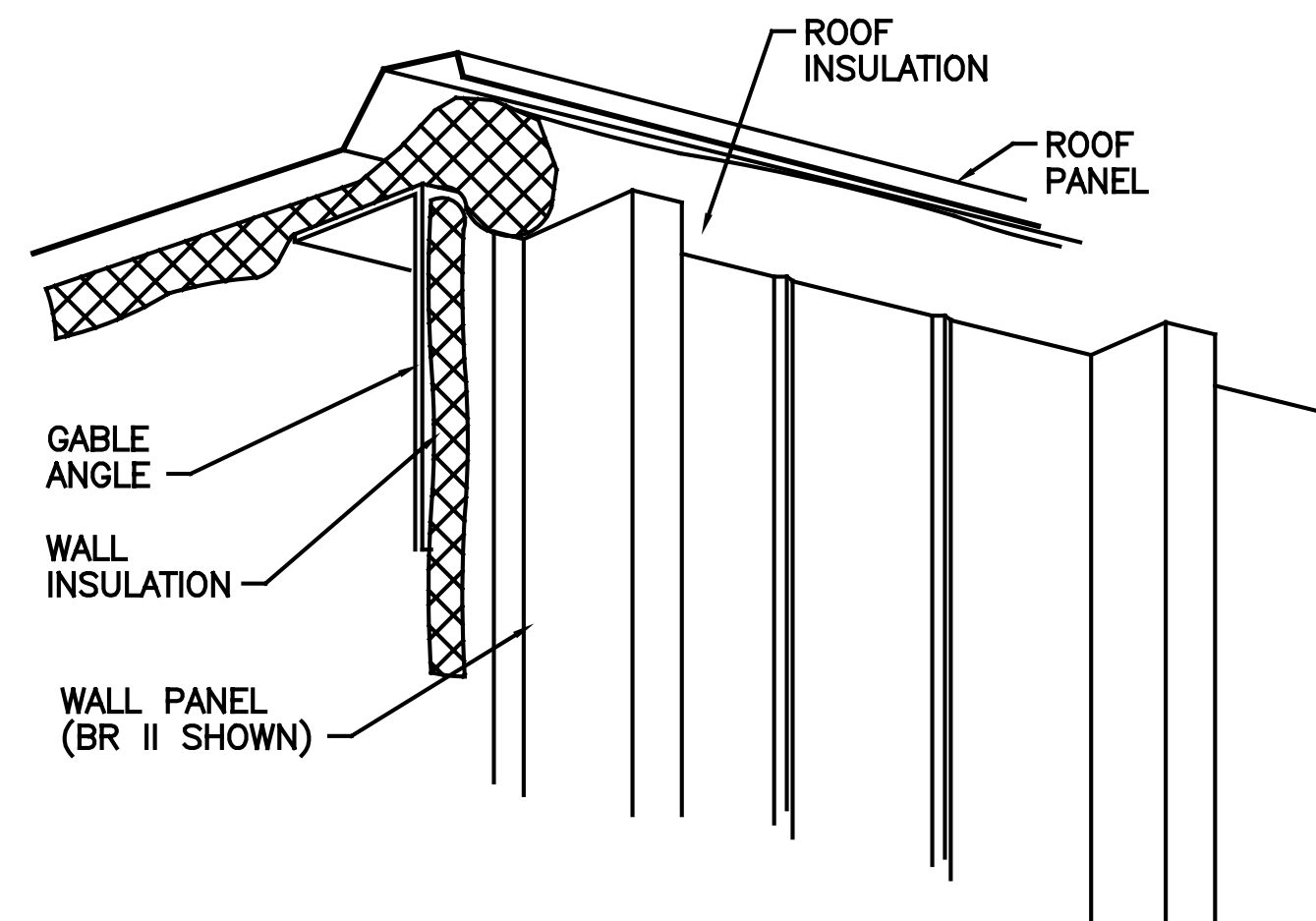
INSULATED WALL PANEL WITH BR II OR MR-24 ROOF



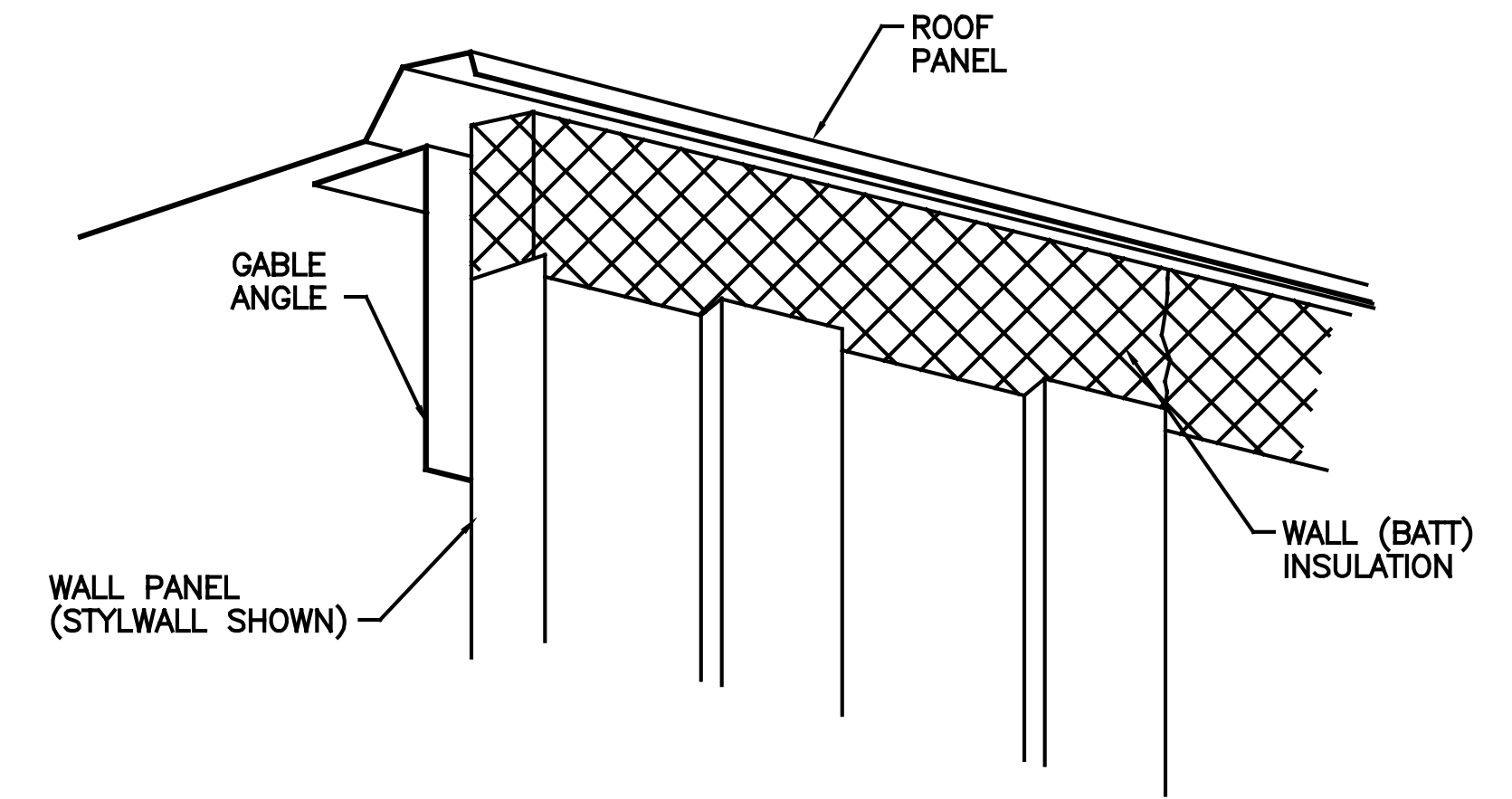
STYLWALL II (FLAT OR FLUTED)
WITH ALL ROOFS

- NOTES:**
- INSULATION (008306) IS PROVIDED IN A ROLL 12" WIDE x 1056" LONG x 2" THICK. FIELD CUT ROLL TO 6" WIDE. AFTER CUTTING THE ROLL, COVERAGE WILL BE 176' LINEAL FEET.

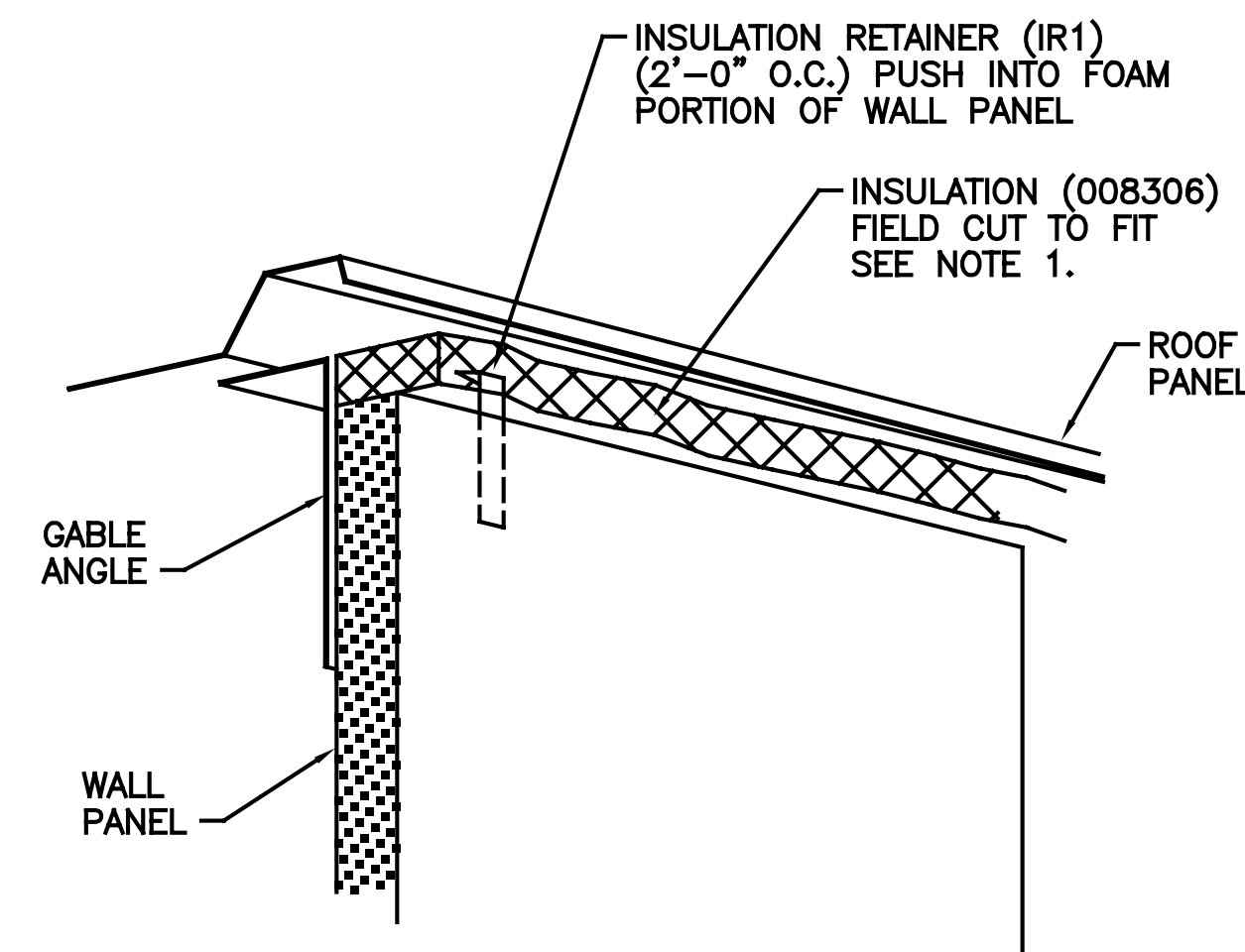
INSULATION—TOP OF WALL—SIDEWALL			
ALL WALLS			
DRAWN BY	CHECKED BY	GROUP NUMBER: 26-031-02	
FIRST RELEASE DATE	REVISION DATE	B	P-105017 02
01/21/10	06/09/20		



BUTLER II WALL
SHADOW WALL



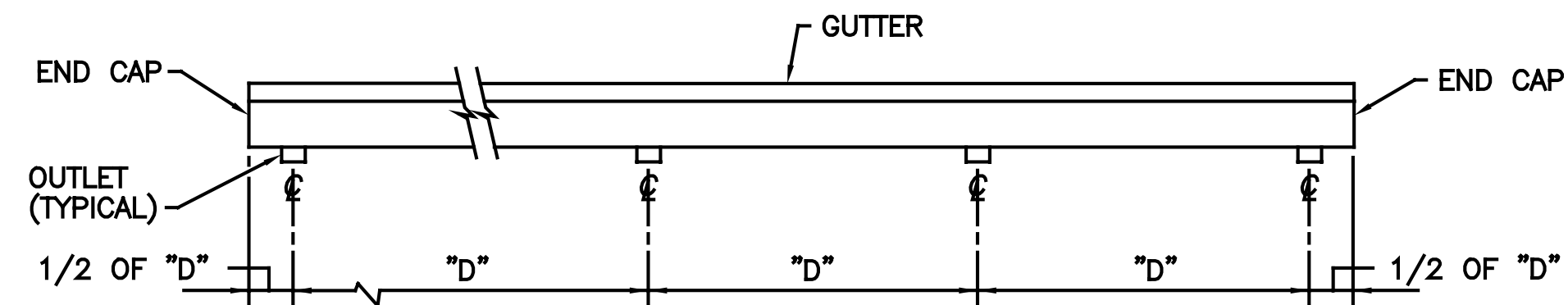
STYLWALL II (FLAT OR FLUTED)



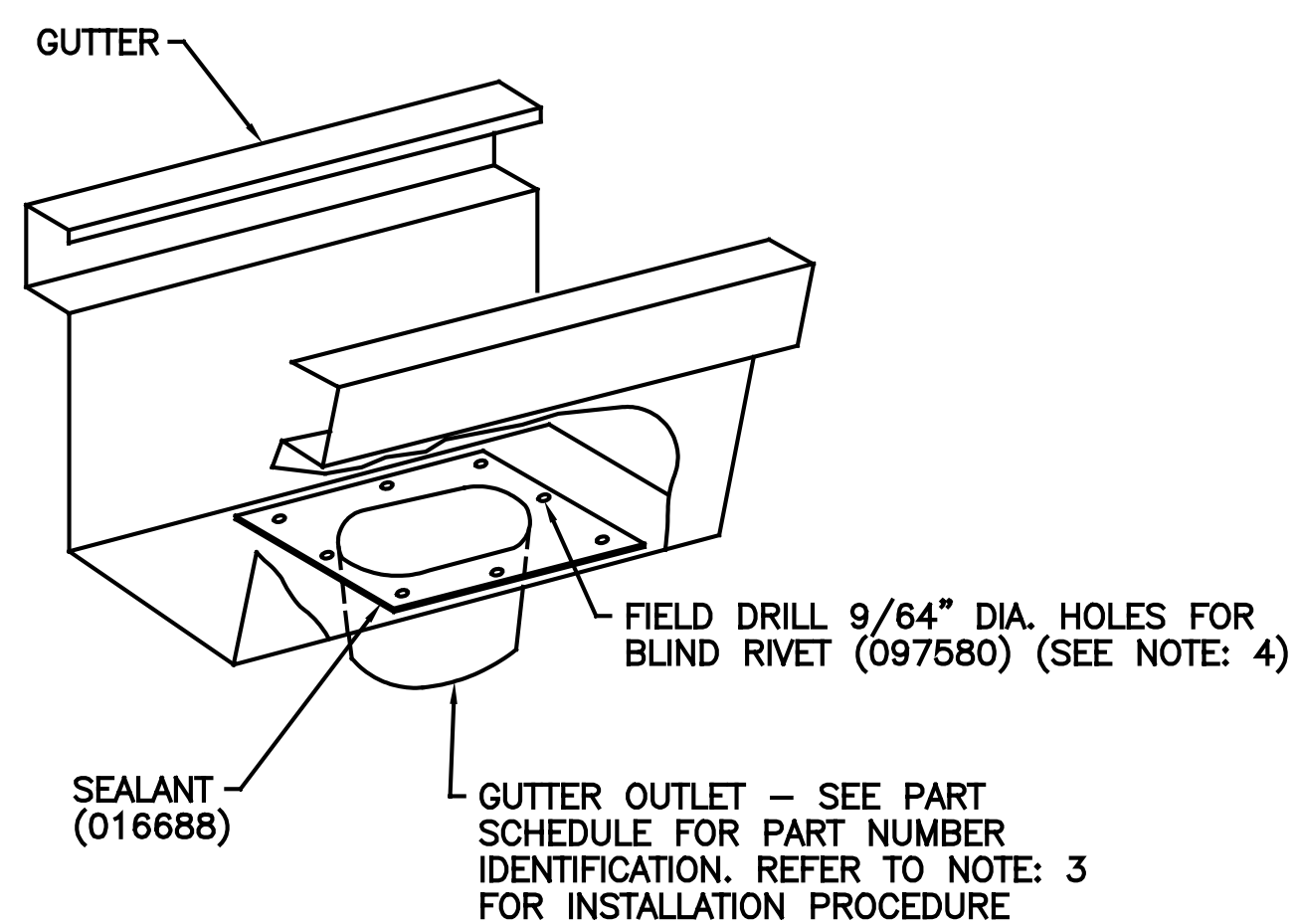
INSULATED WALL PANEL

NOTES:
1. INSULATION (0008306) IS PROVIDED IN A ROLL 12" WIDE x 1056" LONG x 2" THICK. FIELD CUT ROLL TO 6" WIDE. AFTER CUTTING THE ROLL, COVERAGE WILL BE 176' LINEAL FEET.

INSULATION - TOP OF WALL - E.W.			
ALL WALLS			
DRAWN BY	CHECKED BY	GROUP NUMBER: 26-031-02	
FIRST RELEASE DATE	REVISION DATE	B	P-105018 02
01/21/10	05/21/20		



NOTE: MAXIMUM CONDUCTOR SPACING "D" MUST BE DETERMINED BASED ON RAINFALL INTENSITY. CONSULT BUTLER REFERENCE LIBRARY FOR ADDITIONAL INFORMATION ON DETERMINING SPACING.



OUTLET INSTALLATION

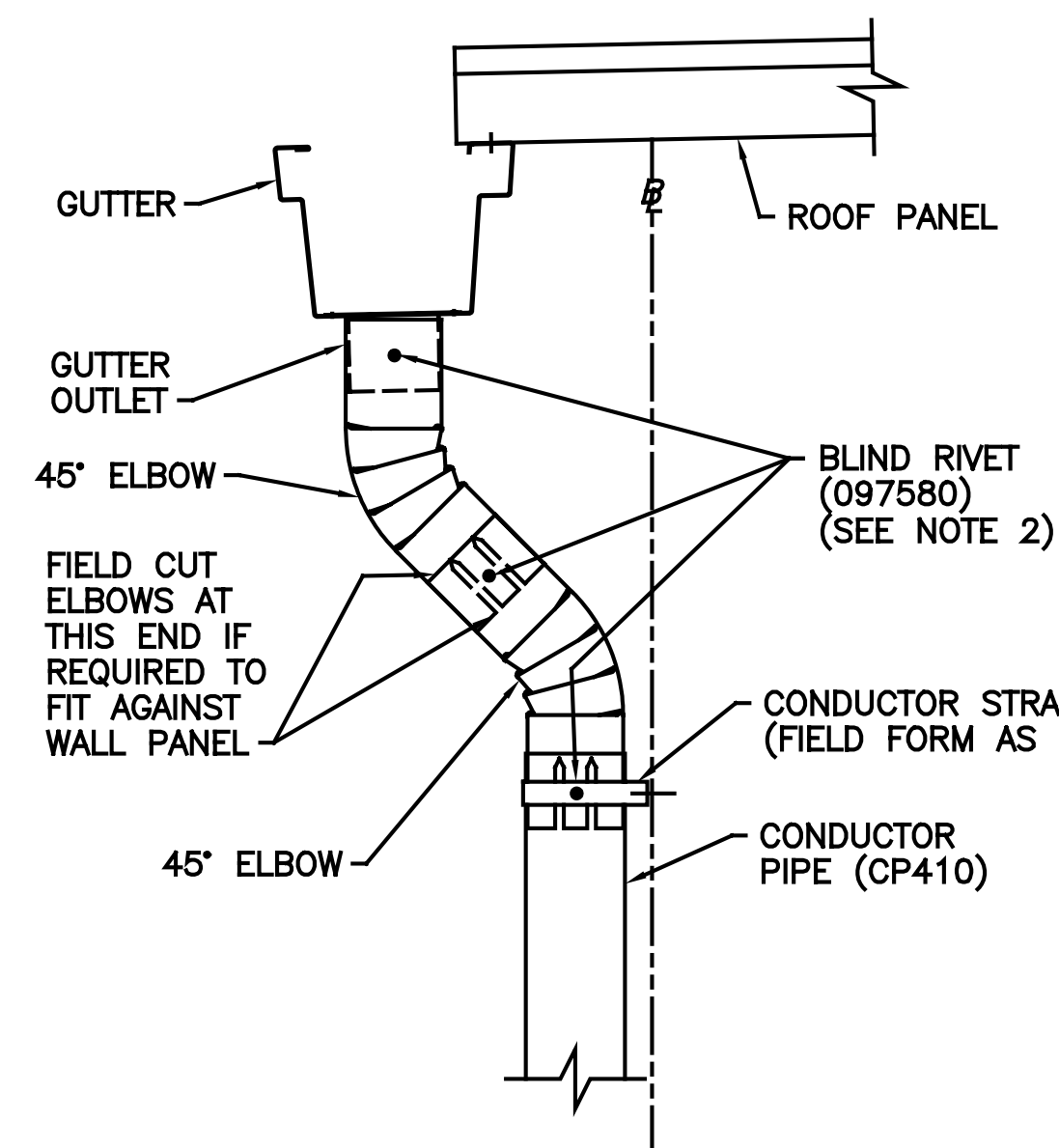
10'-0" CONDUCTOR PIPE AND STRAPS								
EAVE HEIGHT	BUTLERIB II BUTLERIB II EX SHADOWWALL SHADOWWALL EX eSHADOWWALL STYLWALL II FLAT STYLWALL II FLUTED eSTYLWALL II FLAT eSTYLWALL II FLUTED INSULATED WALL 2" TEXTURED INSULATED WALL 2"	ALL WALLS	4'-0" OVERHANG	5'-0" OR 10'-0" CANOPY	QUANTITY PER OUTLET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

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

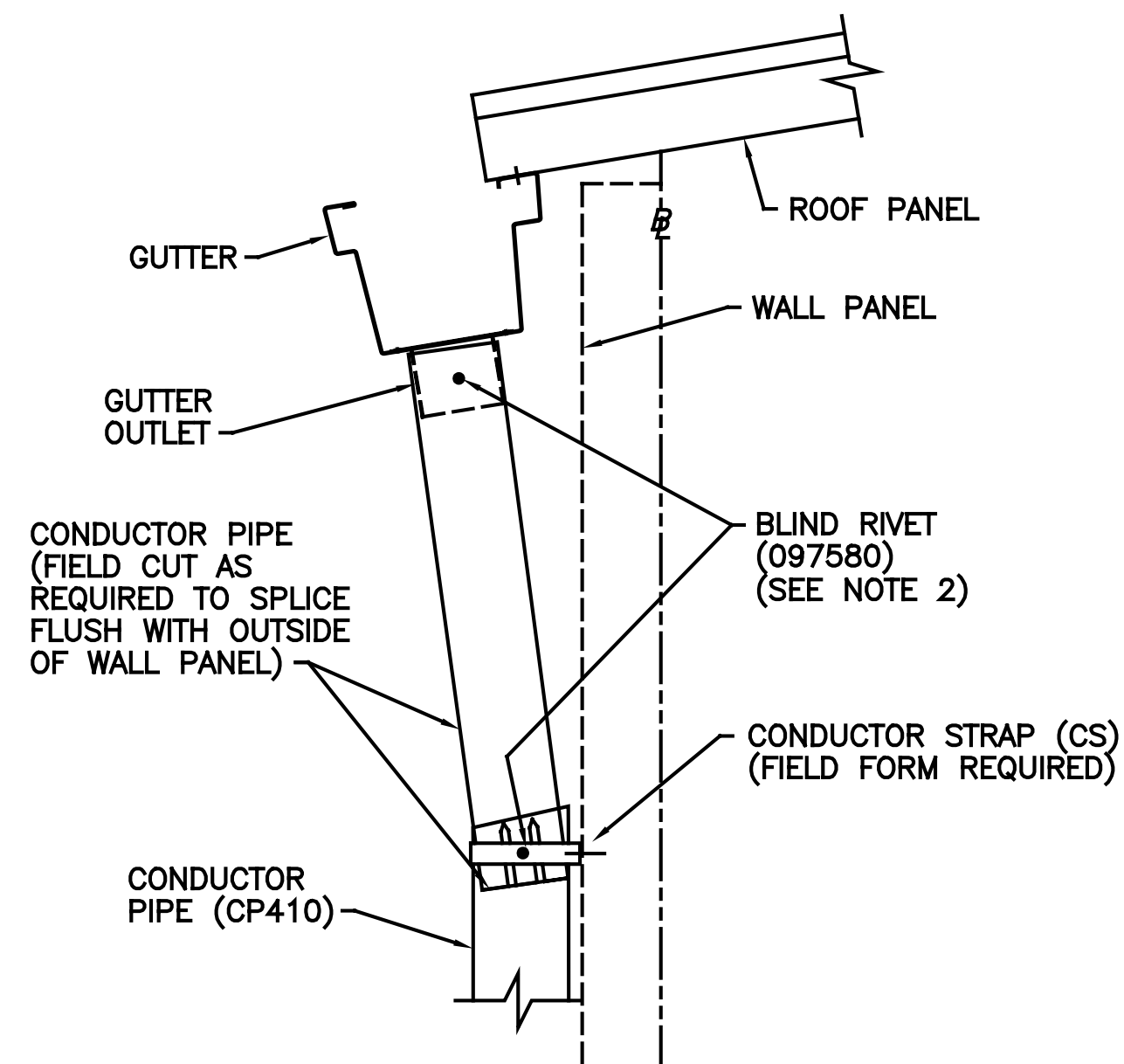
NOTES:

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

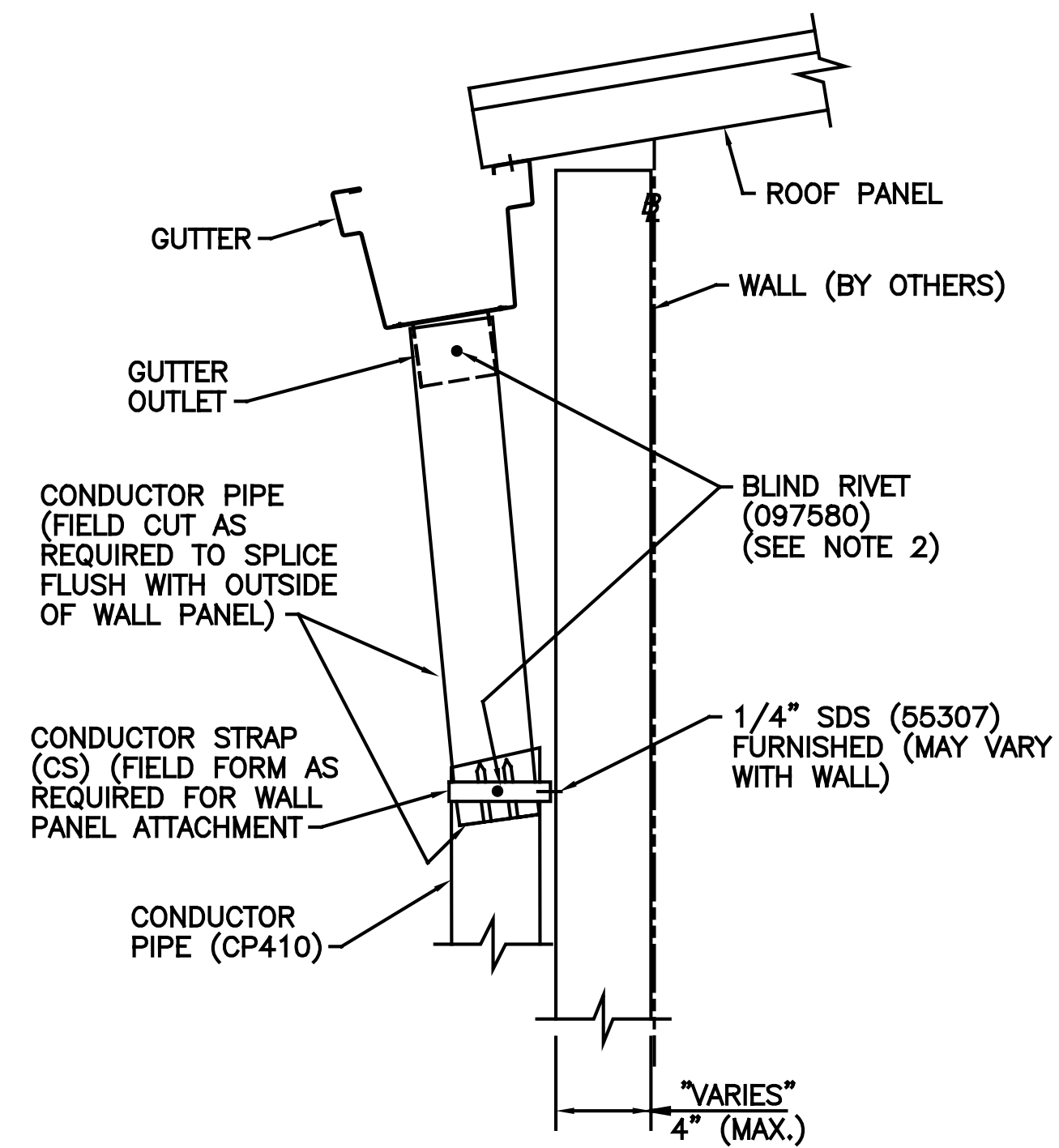
4" CONDUCTOR PIPE INSTALLATION ALL WALLS			
DRAWN BY	CHECKED BY	GROUP NUMBER: 26-008-01	
RHE	BJF	B	P-105224 07
FIRST RELEASE DATE	REVISION DATE		
01/21/10	05/06/20		



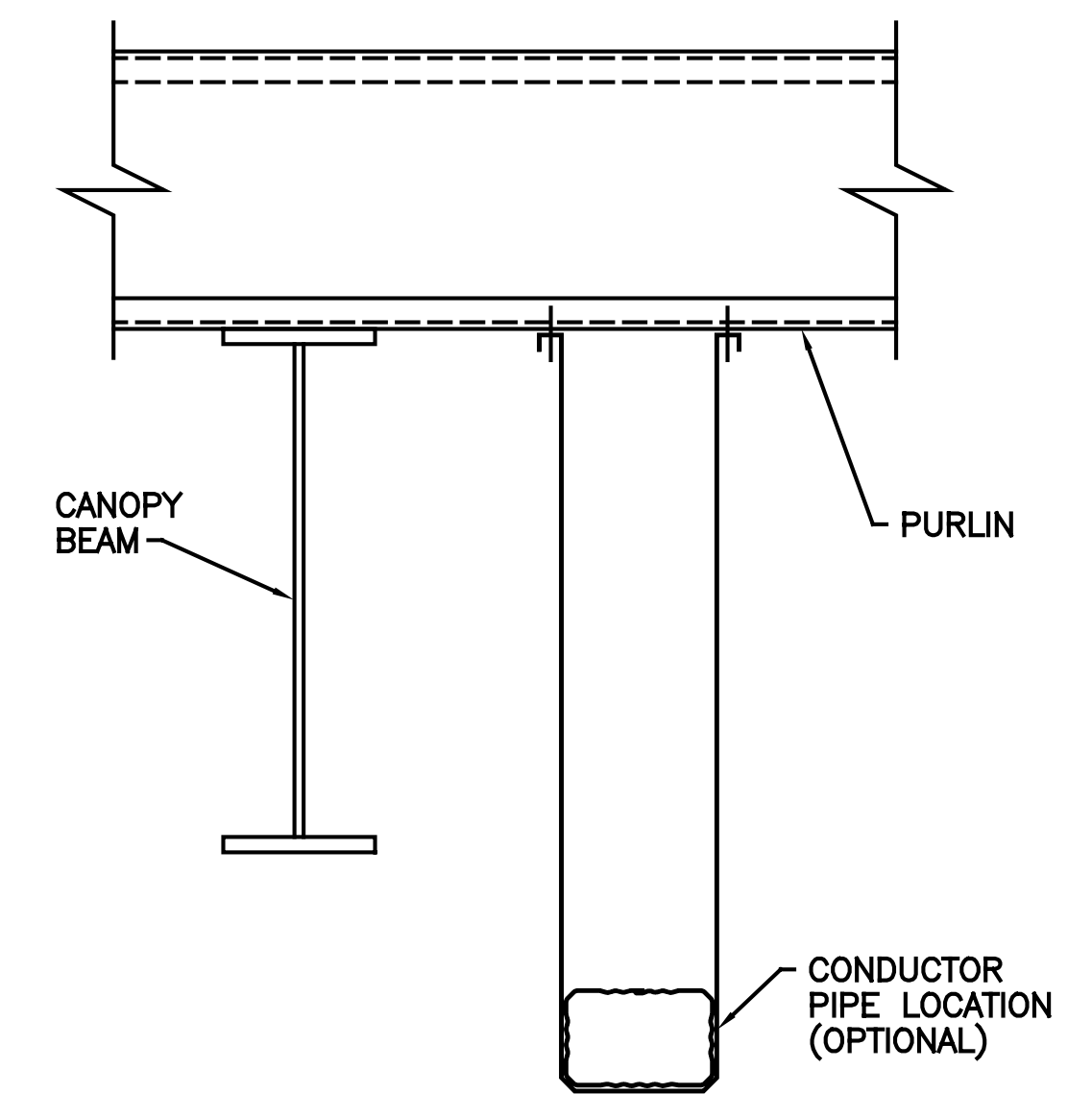
BUTLER II AND SHADOWWALL
1/4:12 THRU 1/2:12 ROOF SLOPE



BUTLER II AND SHADOWWALL
>1/2:12 THRU 4:12 ROOF SLOPE

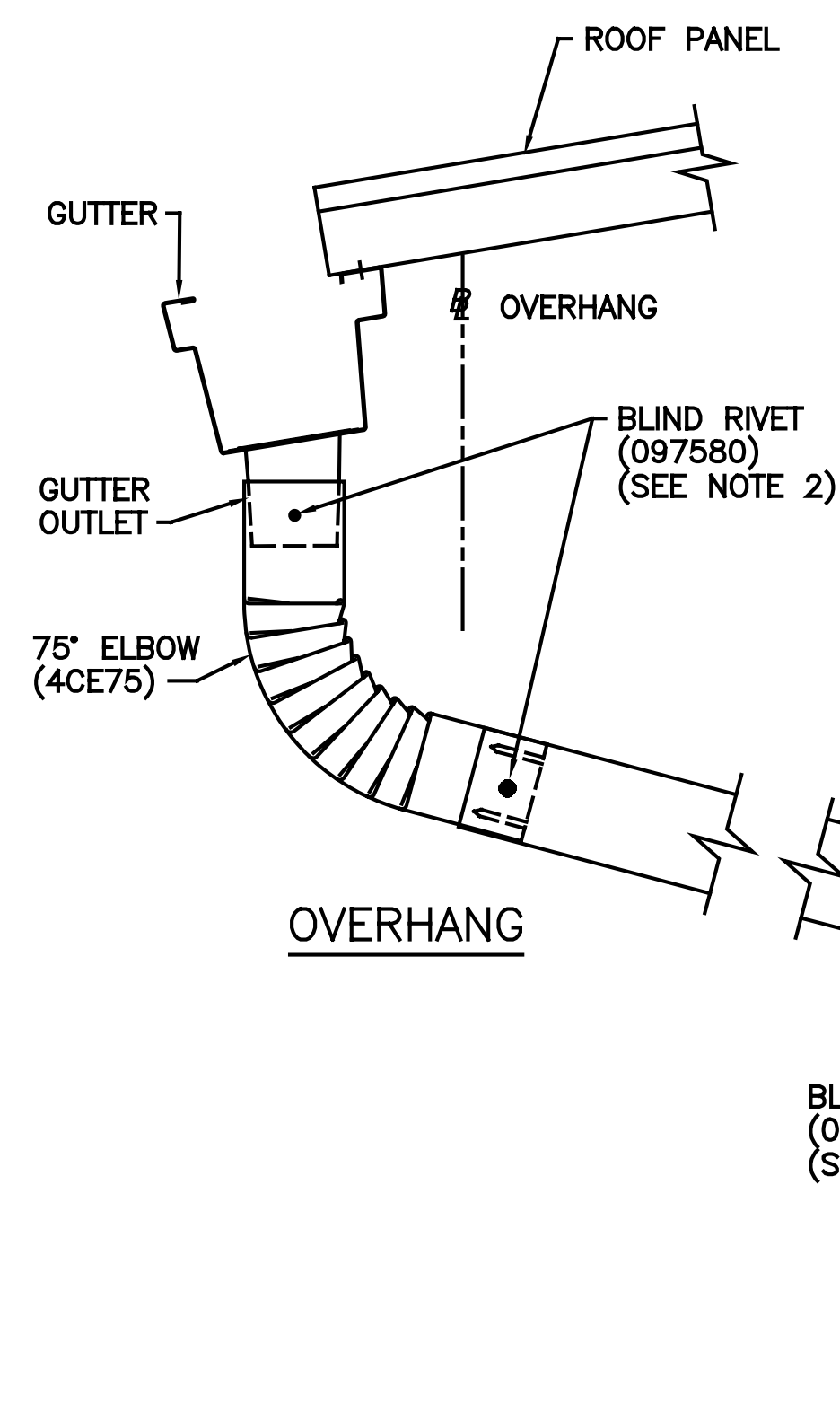


WALL (BY OTHERS)
>1/2:12 THRU 4:12 ROOF SLOPE

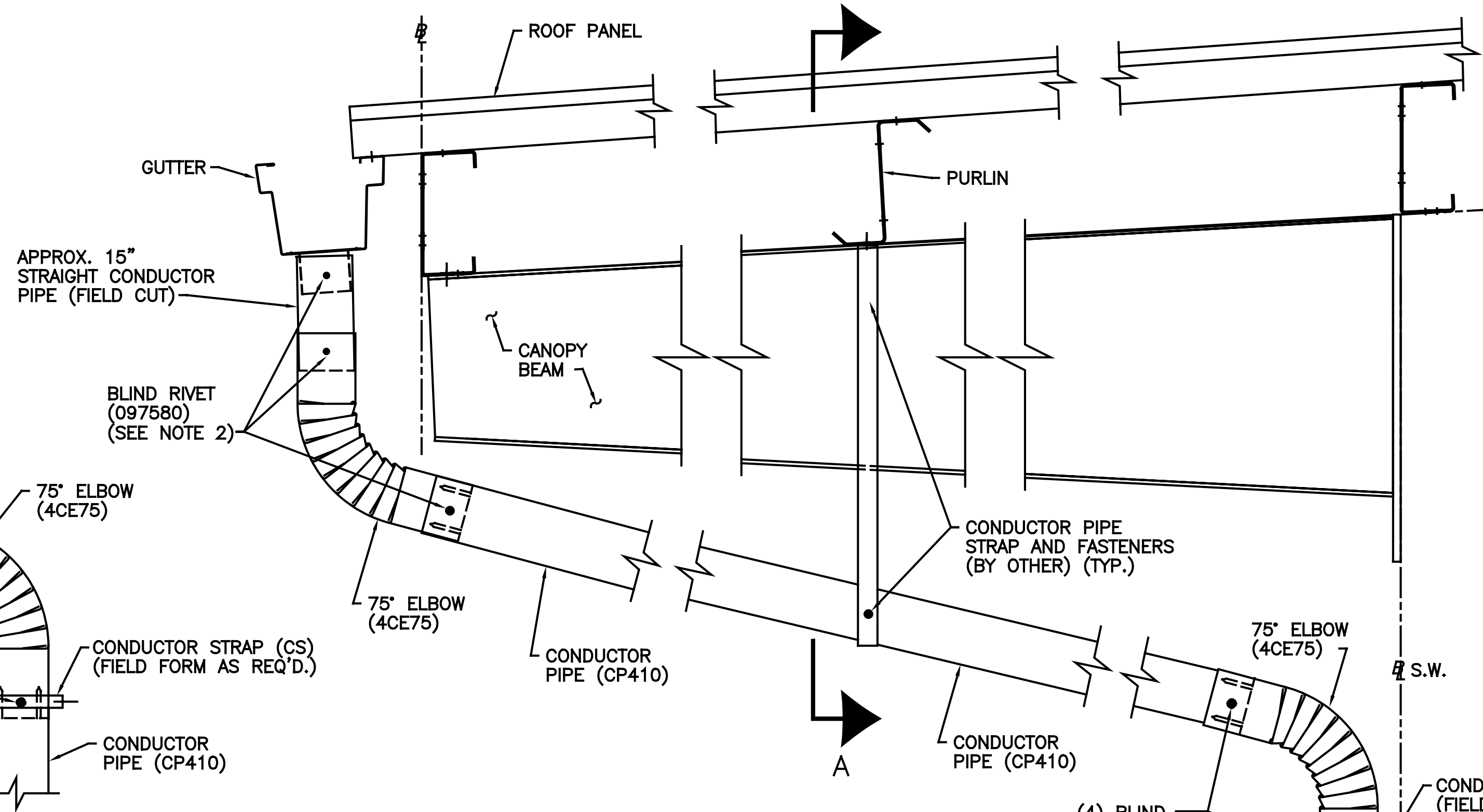


SECTION A-A

**STYLWALL II, eSTYLWALL II, eSHADOWWALL,
BUTLER II EX, SHADOWWALL EX,
AND ALL INSULATED WALL PANELS/TEXTURED INSULATED WALL PANELS**
1/4:12 THRU 4:12 ROOF SLOPE



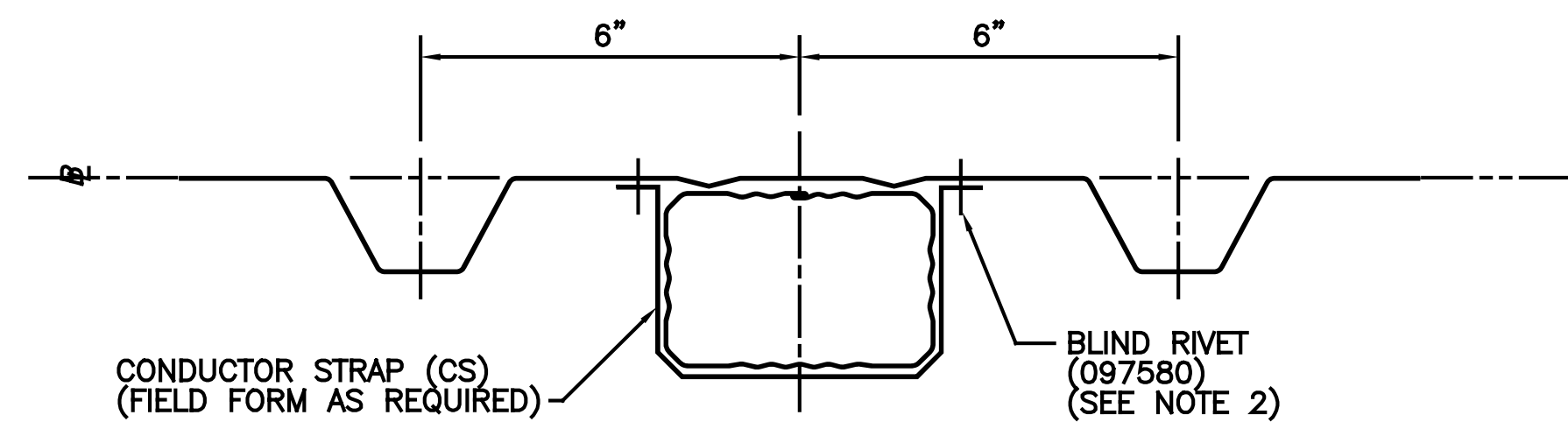
5' CANOPY OR 4' OVERHANG



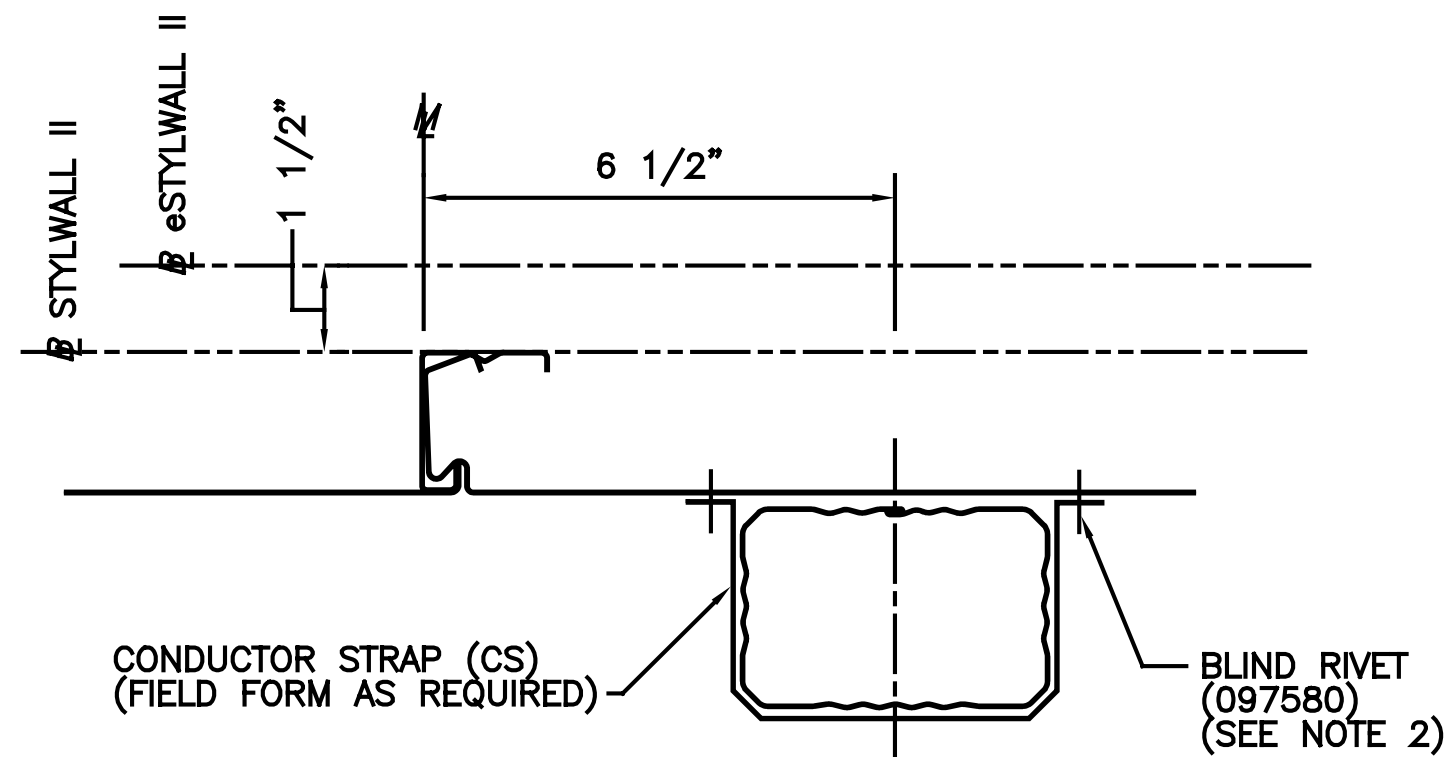
10' CANOPY

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

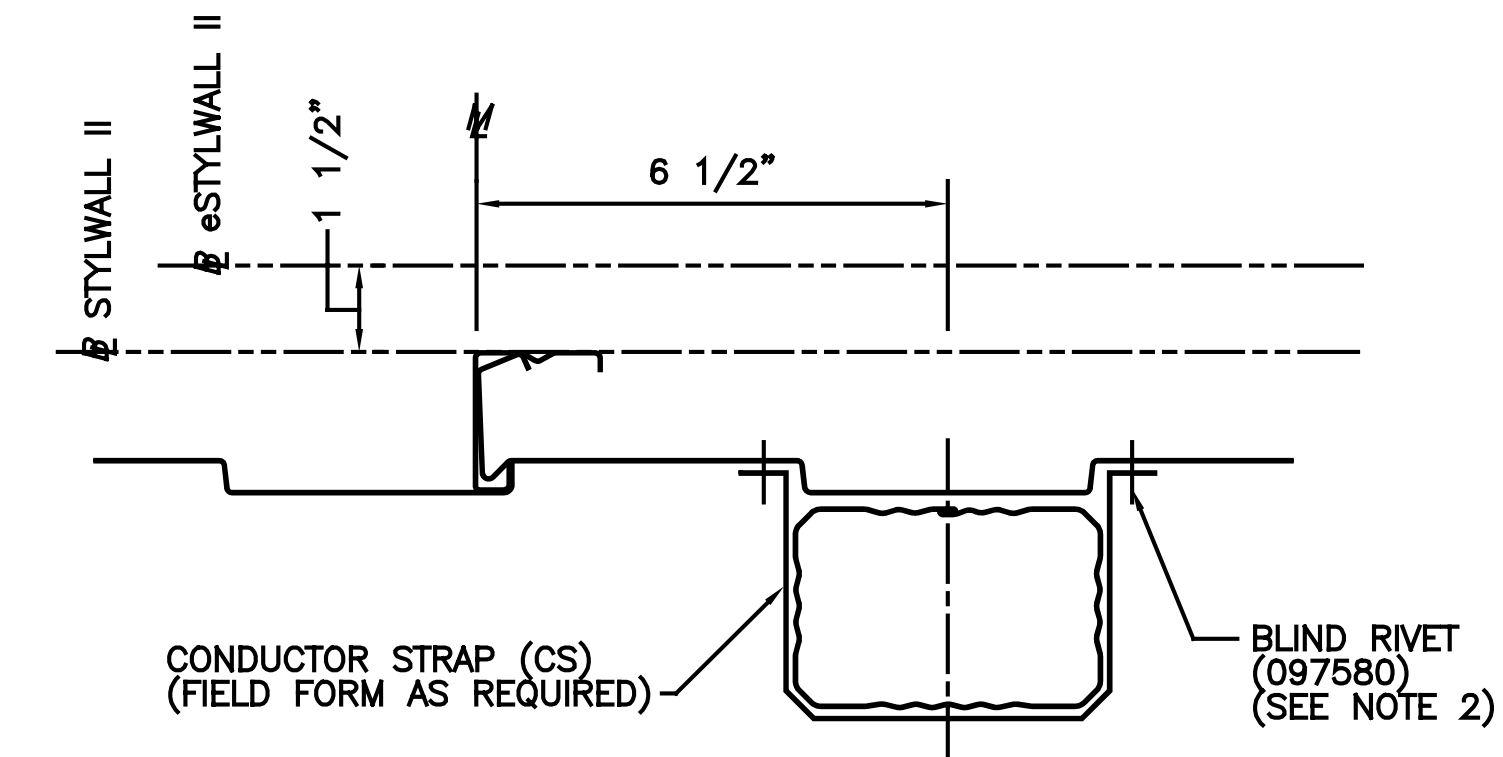
4" CONDUCTOR PIPE DETAILS			
ALL WALLS			
DRAWN BY	CHECKED BY	GROUP NUMBER: 26-008-01	
FIRST RELEASE DATE	REVISION DATE	B	P-105225 08
01/21/10	08/18/20		



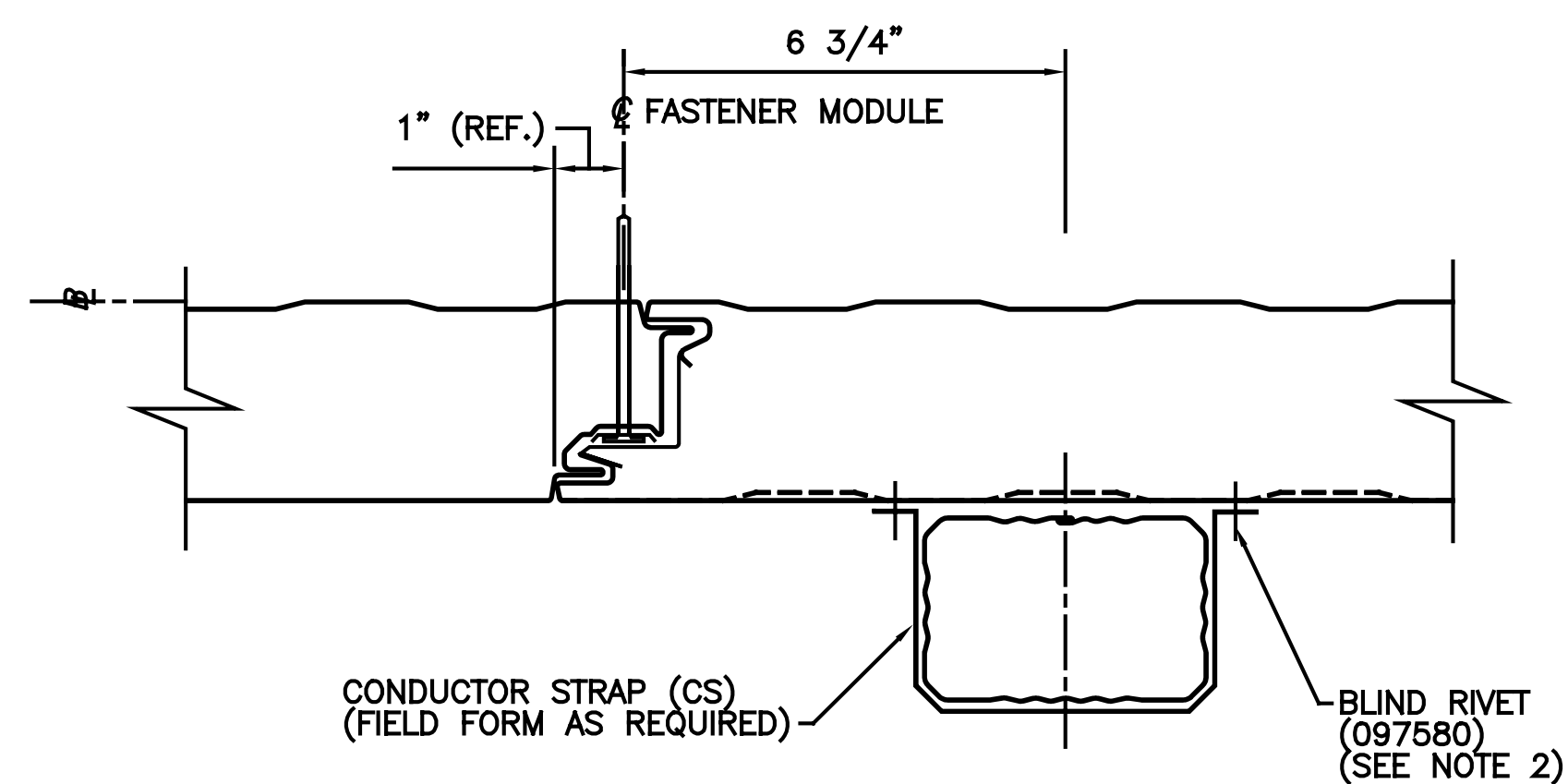
BUTLERIB II



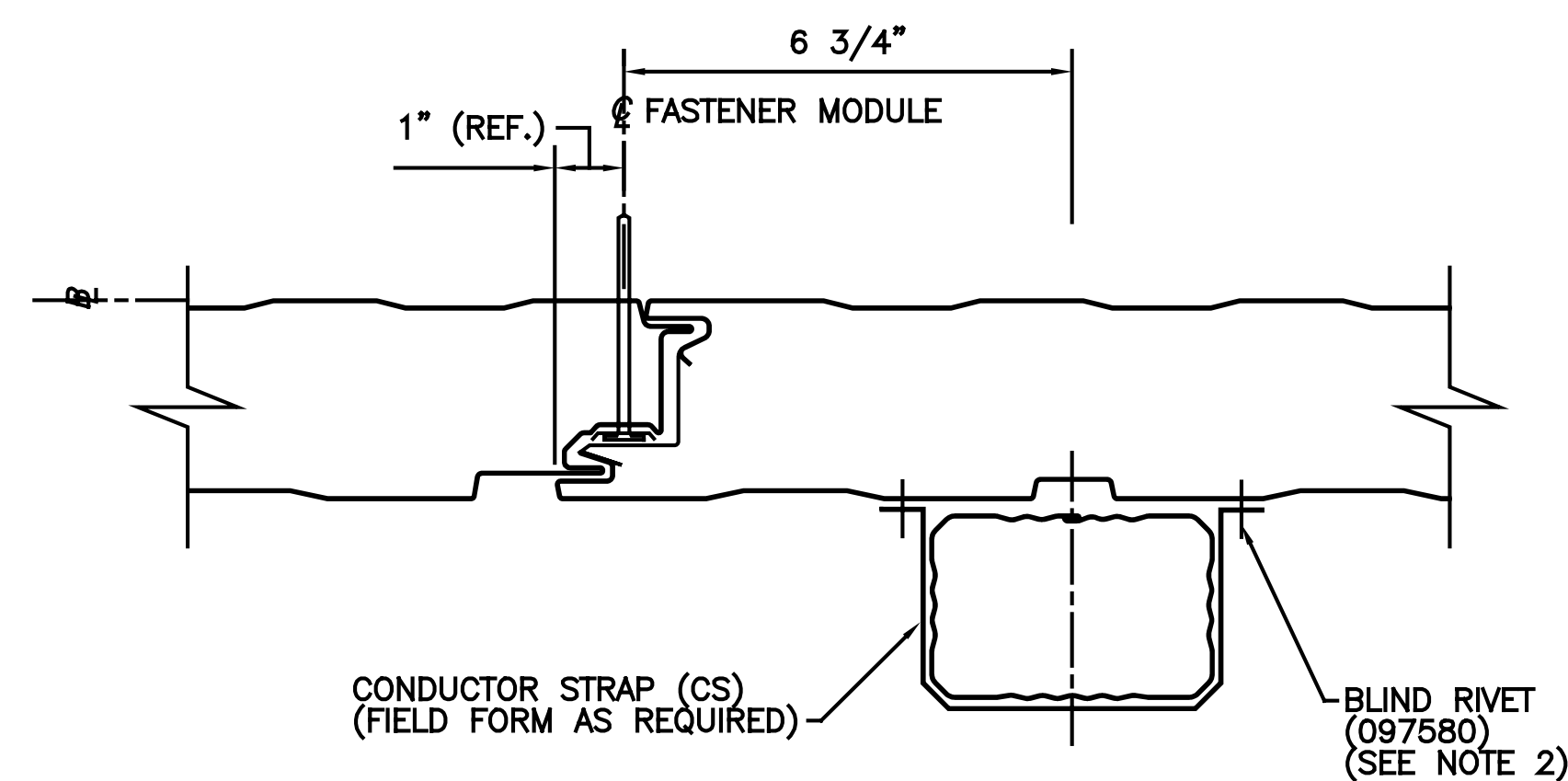
FLAT STYLWALL II AND FLAT eSTYLWALL II



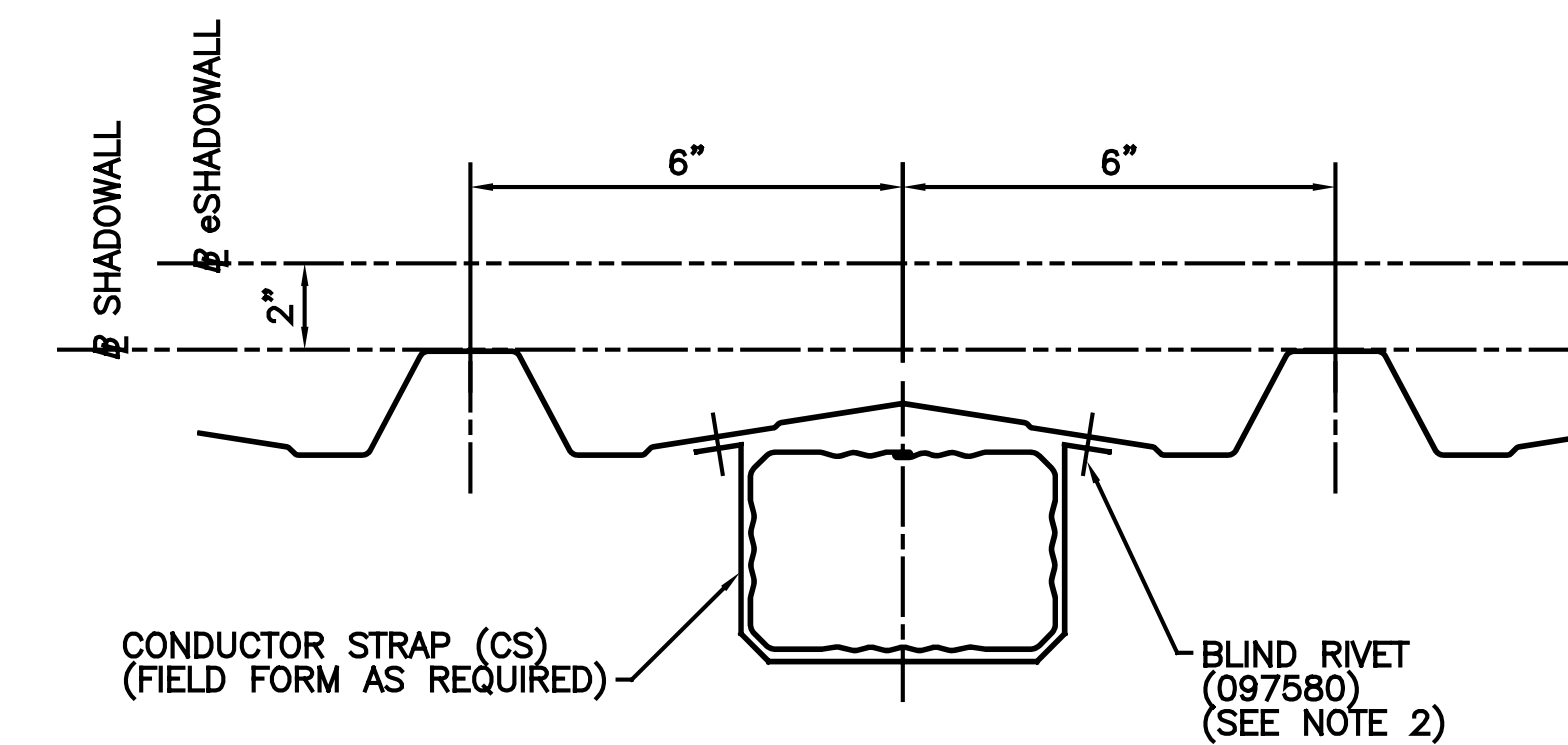
FLUTED STYLWALL II AND FLUTED eSTYLWALL II



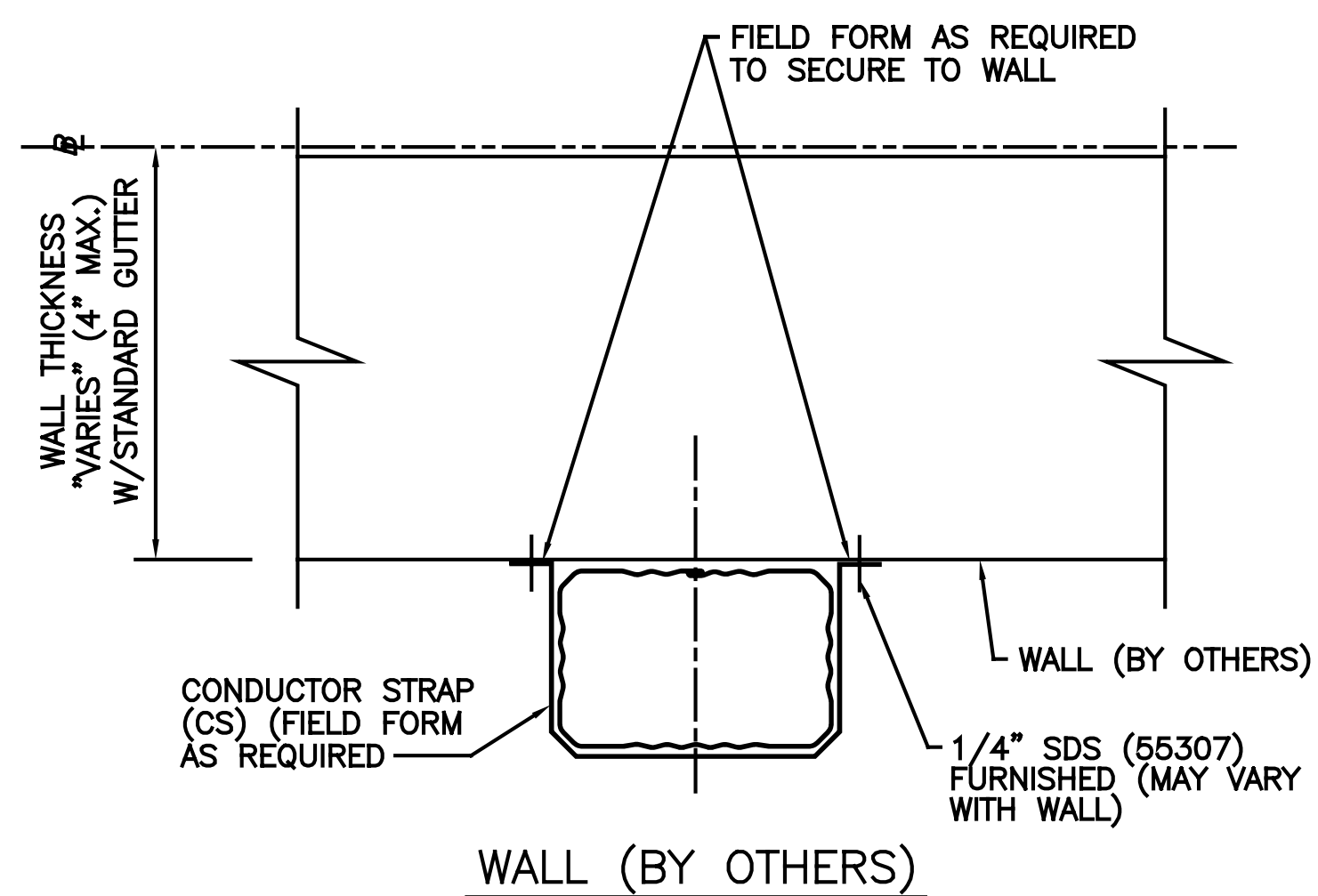
INSULATED WALL PANEL WITHOUT FLUTES
TEXTURED INSULATED WALL PANEL



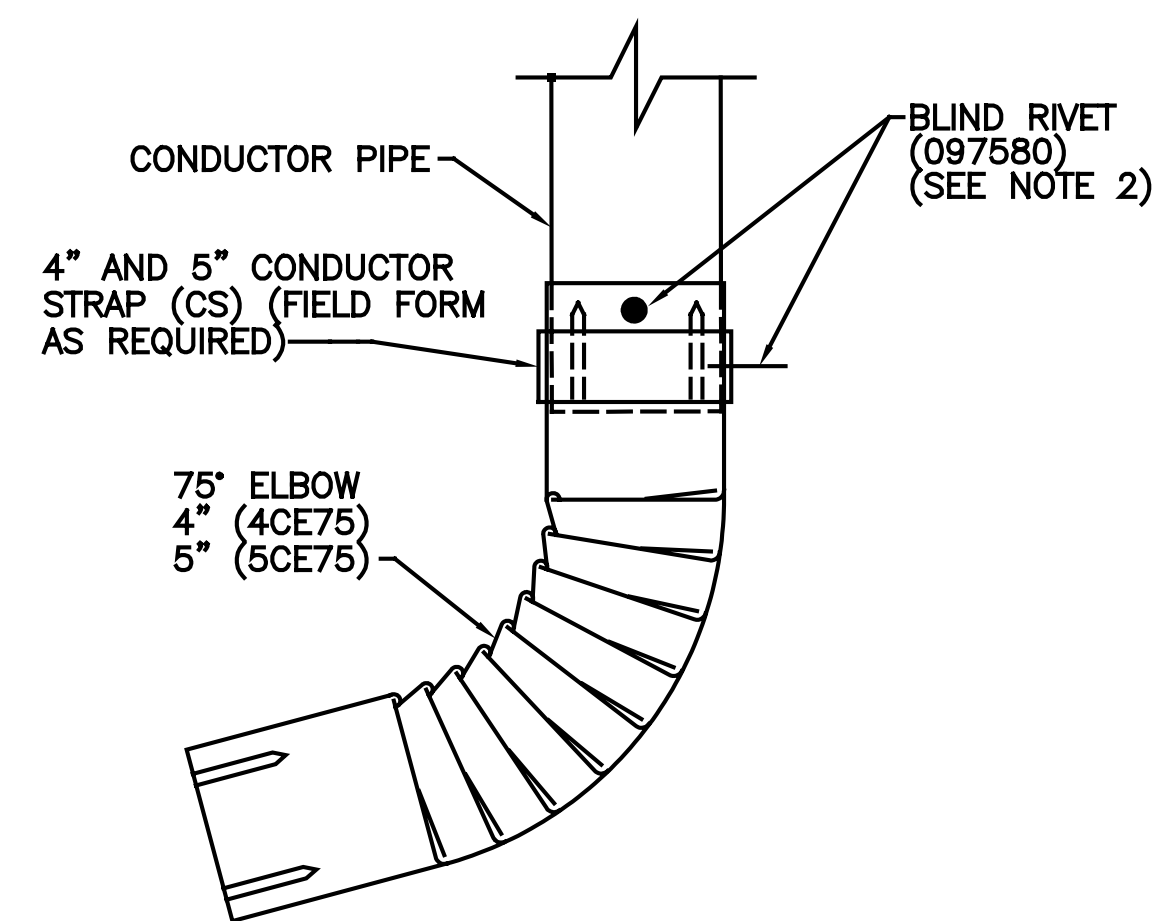
INSULATED WALL PANEL WITH FLUTES



SHADOWWALL AND eSHADOWWALL



WALL (BY OTHERS)

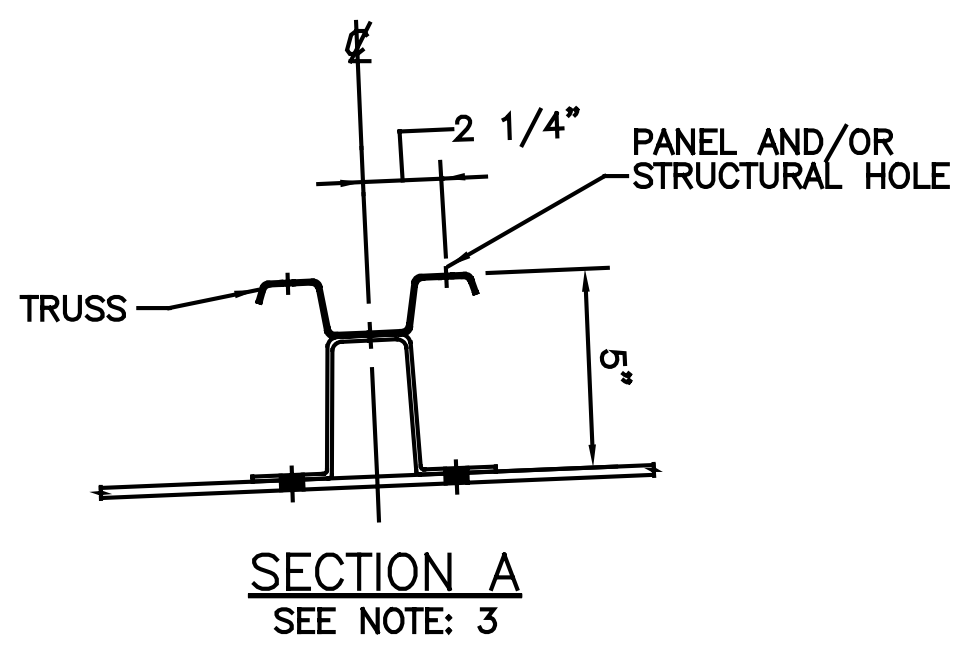
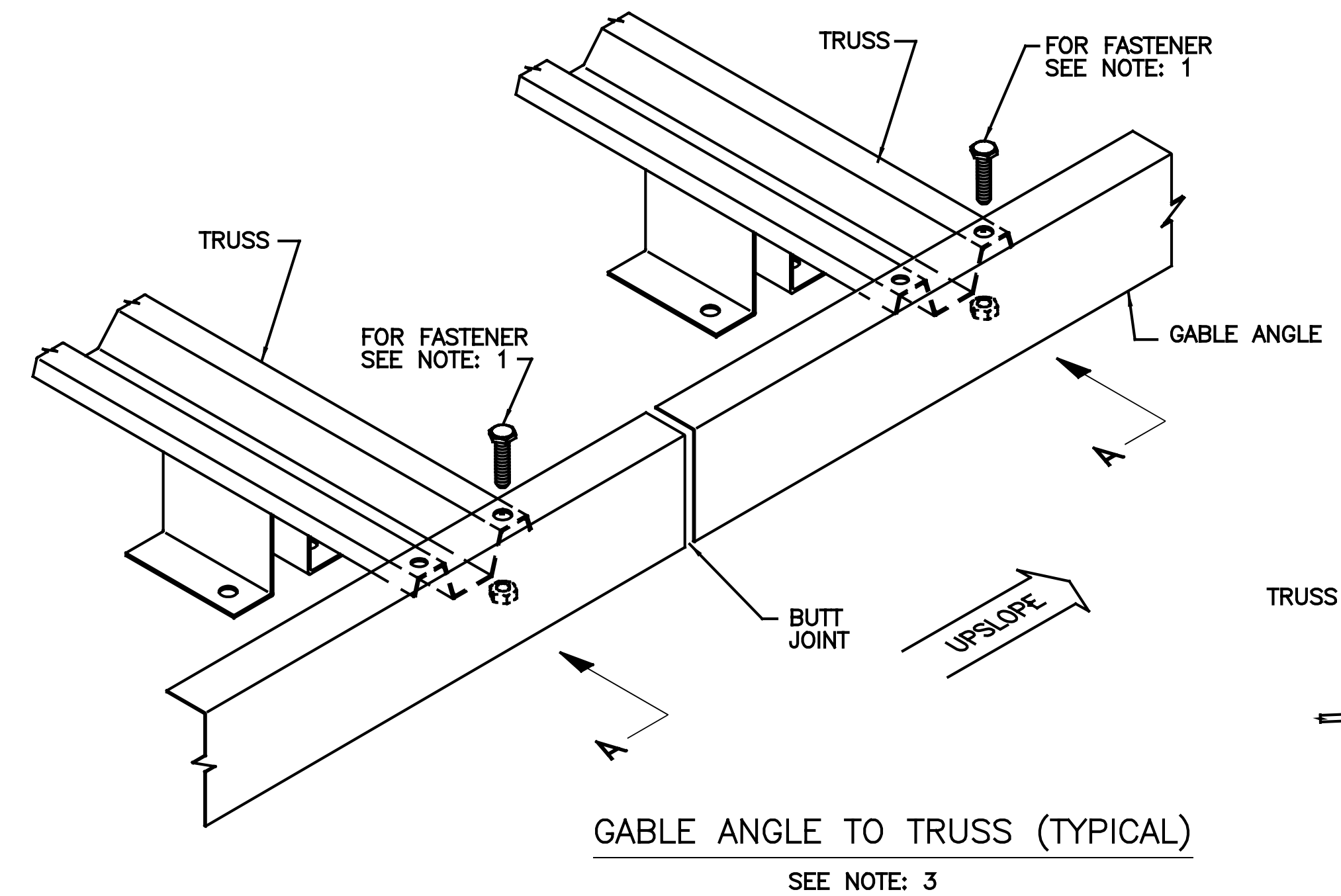
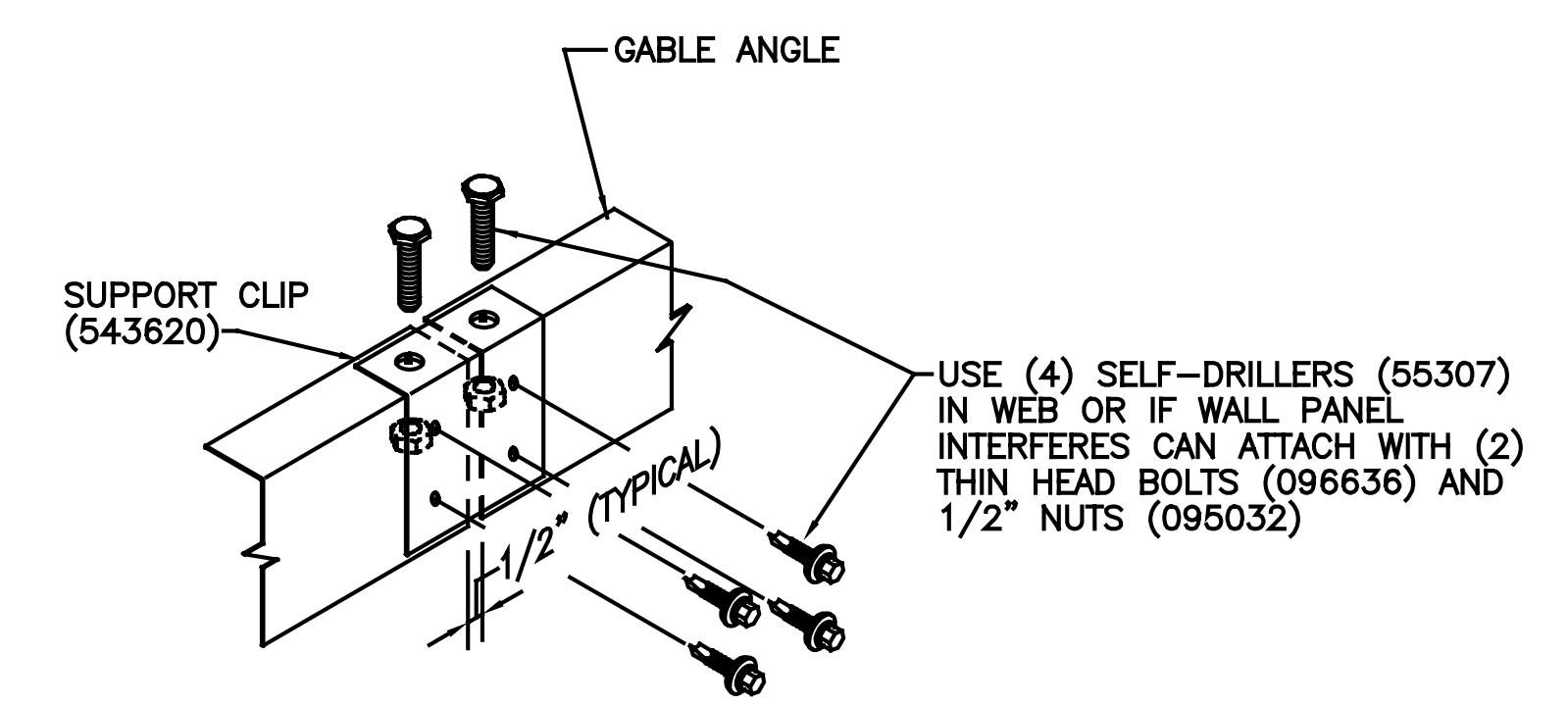
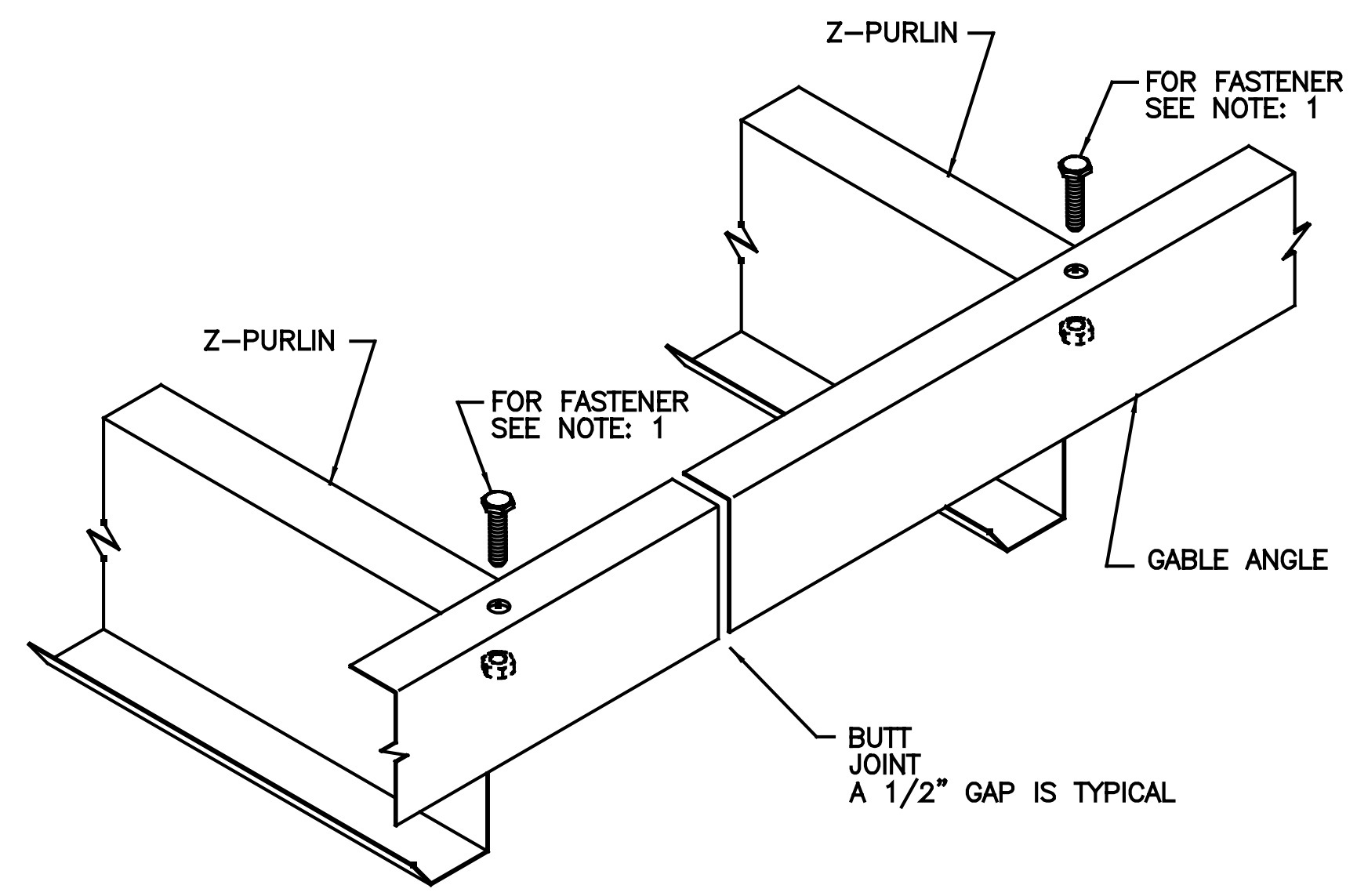
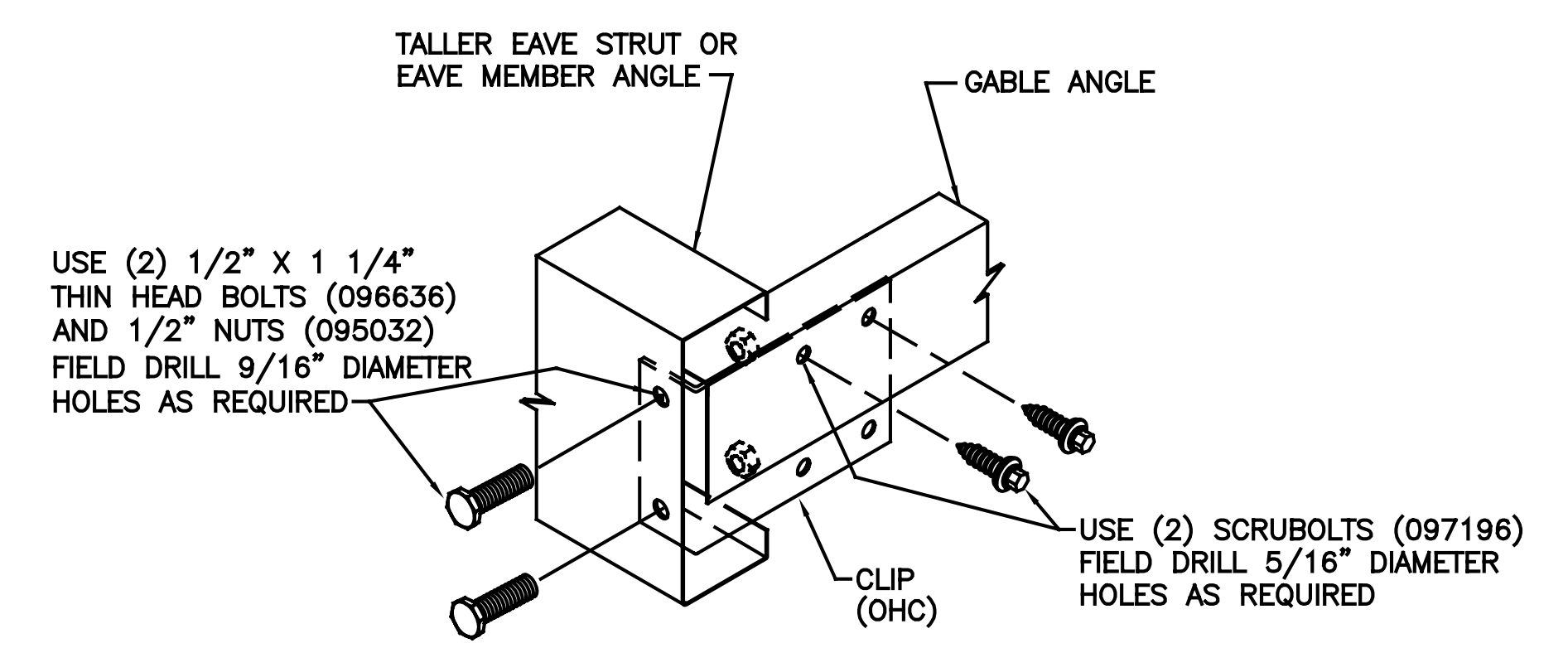
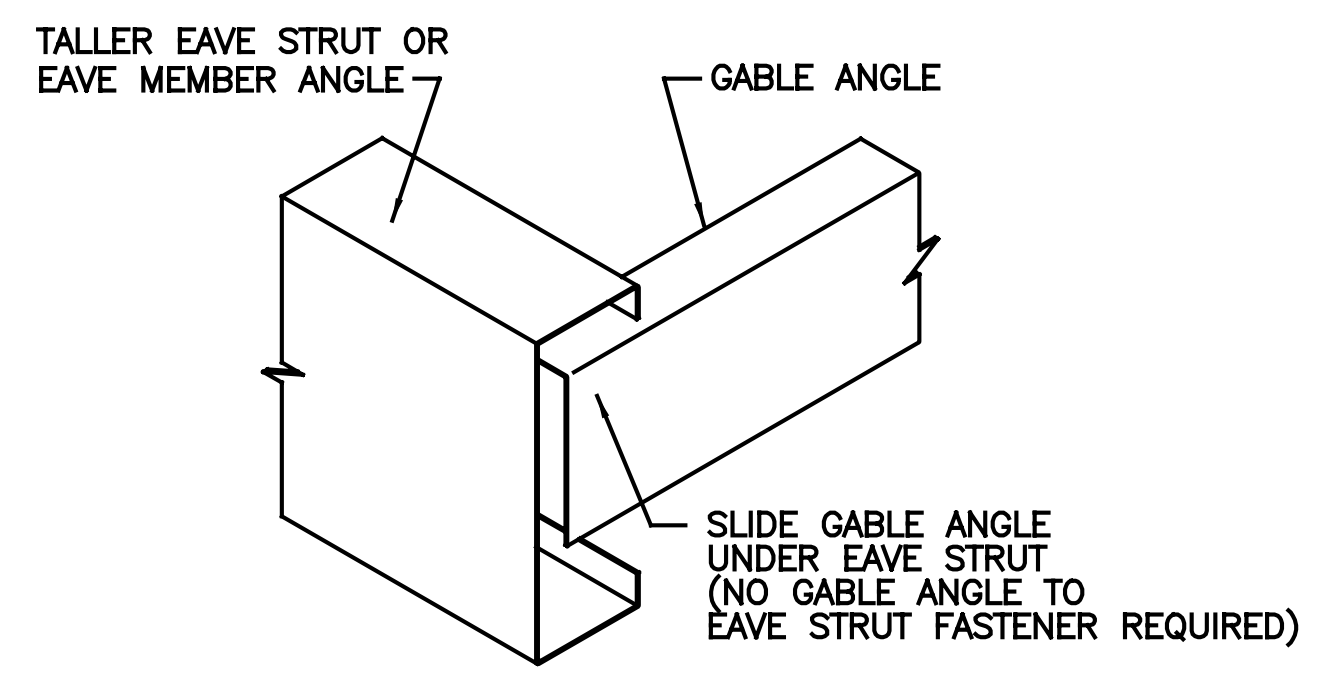
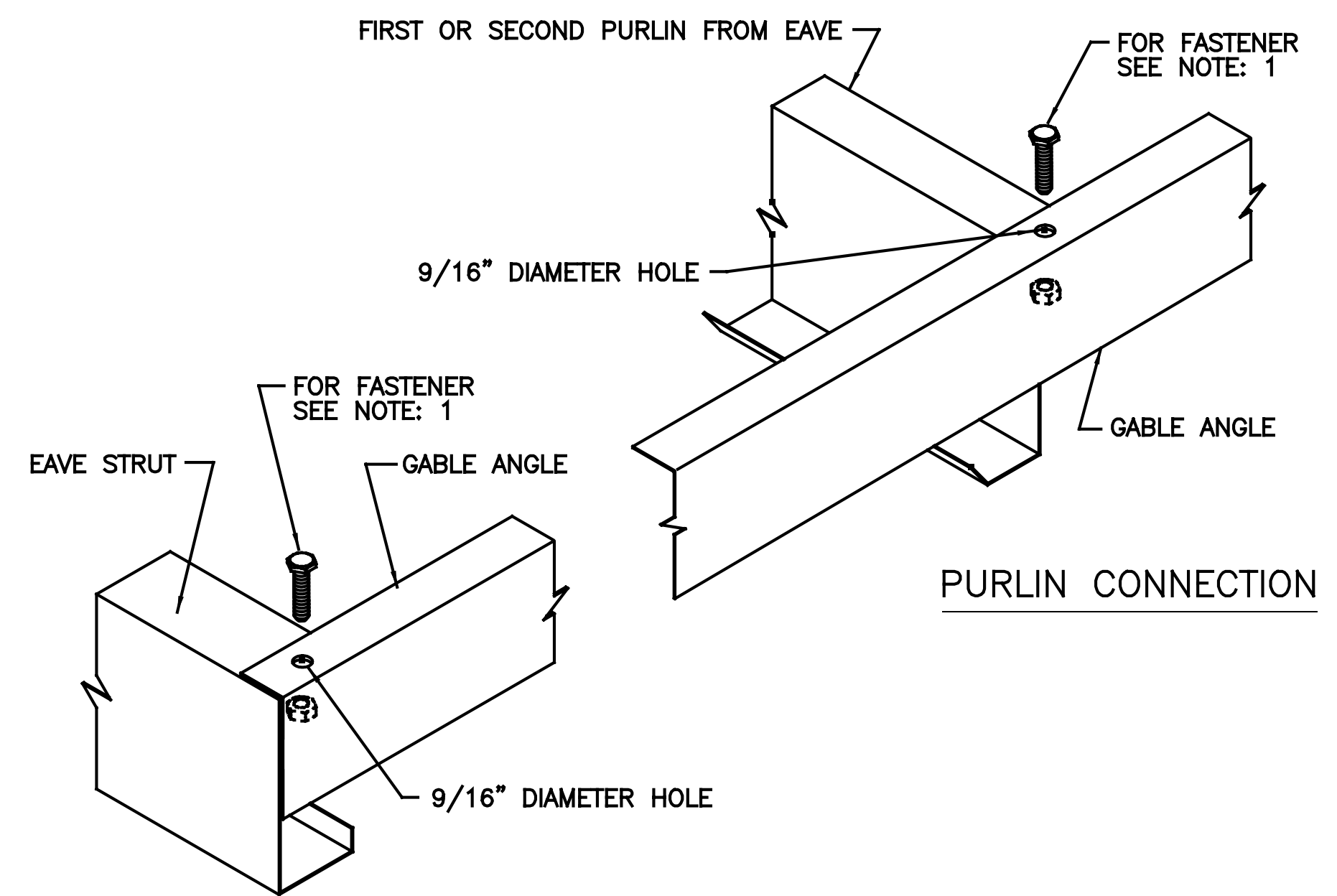


SHOE INSTALLATION
(TYPICAL SECTIONS - ABOVE)

NOTES:

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

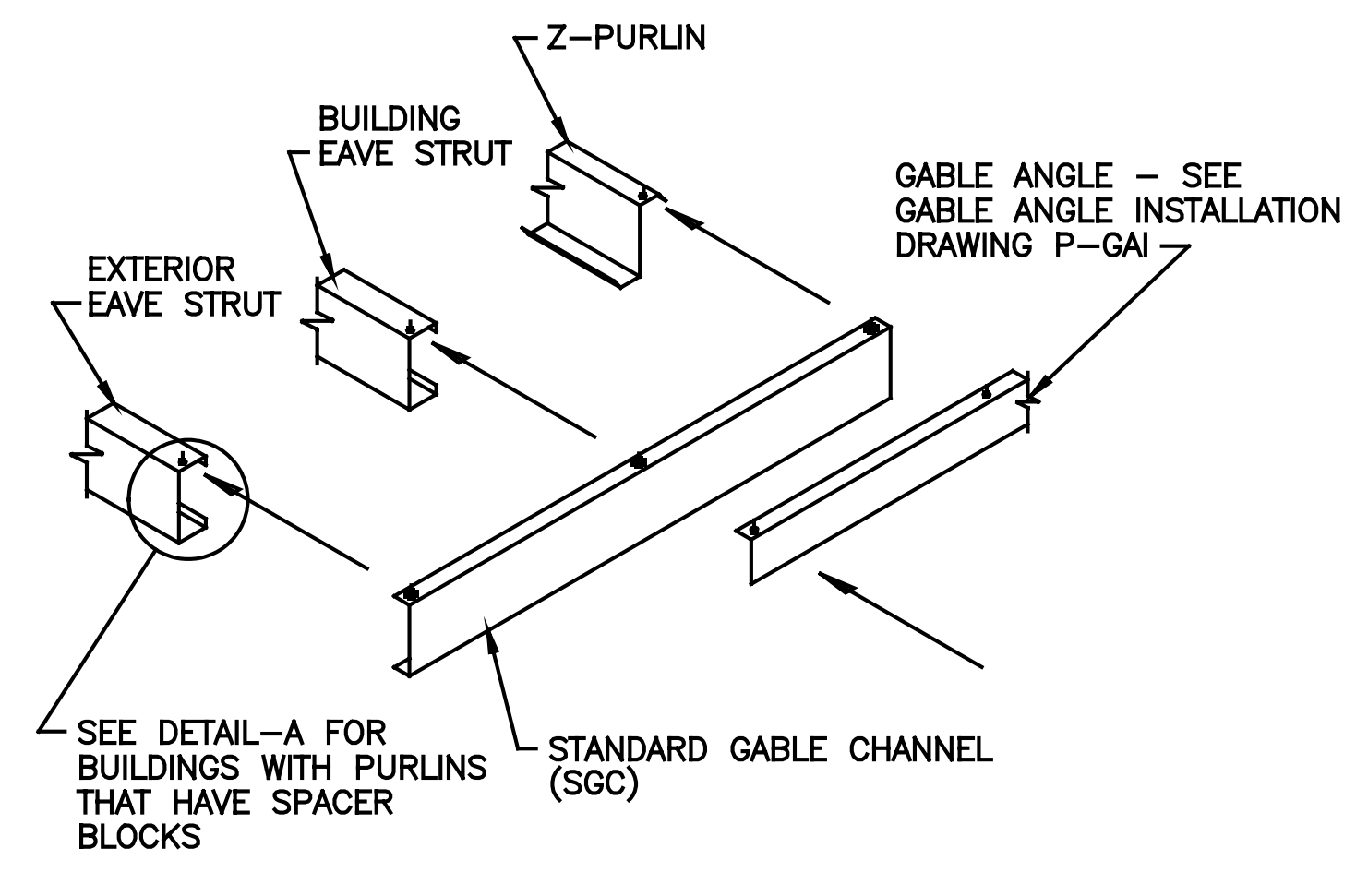
4" AND 5" CONDUCTOR PIPE AND CONDUCTOR STRAP DETAILS (ALL WALLS)				
DRAWN BY	CHECKED BY	GROUP NUMBER: 26-008-01		
FIRST RELEASE DATE	REVISION DATE	B	P-105228	07
01/21/10	05/21/20			



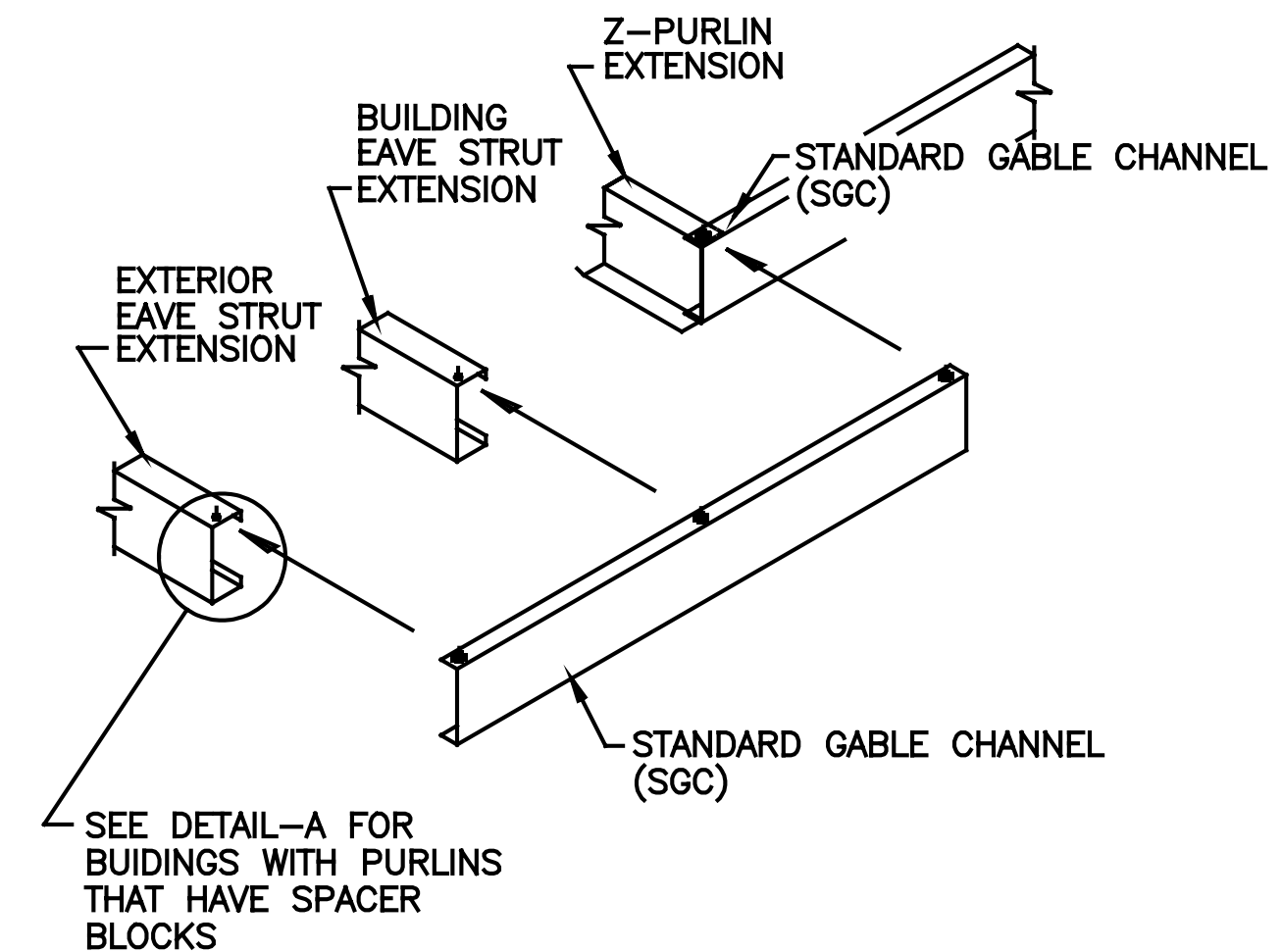
GENERAL NOTES

1. ATTACH GABLE ANGLE WITH 1/2" X 1 1/4" THIN HD. HEX BOLT (096636) AND 1/2" HEX NUT (095032).
2. BUILDINGS WITH A SLOPE OTHER THAN A 1/4, 1/2, 1, 2 OR 4:12 SLOPE WILL BE PROVIDED A UNPUNCHED VERTICAL LEG.
3. ATTACHMENT TO TRUSS IS SIMILAR TO Z-PURLIN. USING STRUCTURAL HOLE UPSLOPE FROM LOW EAVE IN TOP CHORD.
4. IF GABLE ANGLE DOES NOT BEAR ON TWO OR MORE PURLINS, THEN USE ALTERNATE CONNECTIONS SHOWN USING CLIPS.

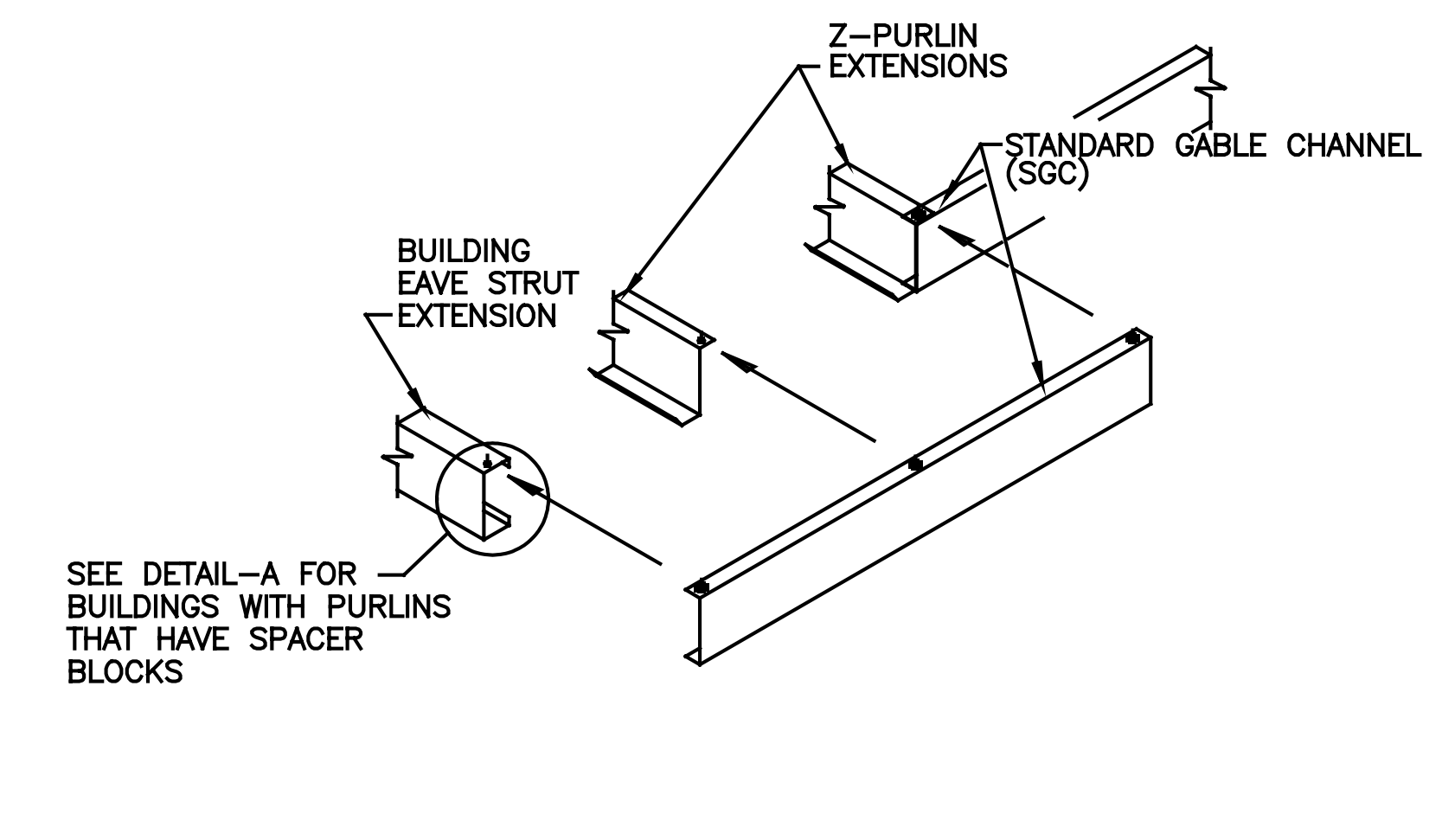
GABLE ANGLE INSTALLATION CONNECTIONS TO PURLIN				
DRAWN BY	CHECKED BY	GROUP NUMBER: 00-000-00		
BSN	MCC	B	P-GAI	07
FIRST RELEASE DATE	REVISION DATE			
04/21/10	02/10/20			



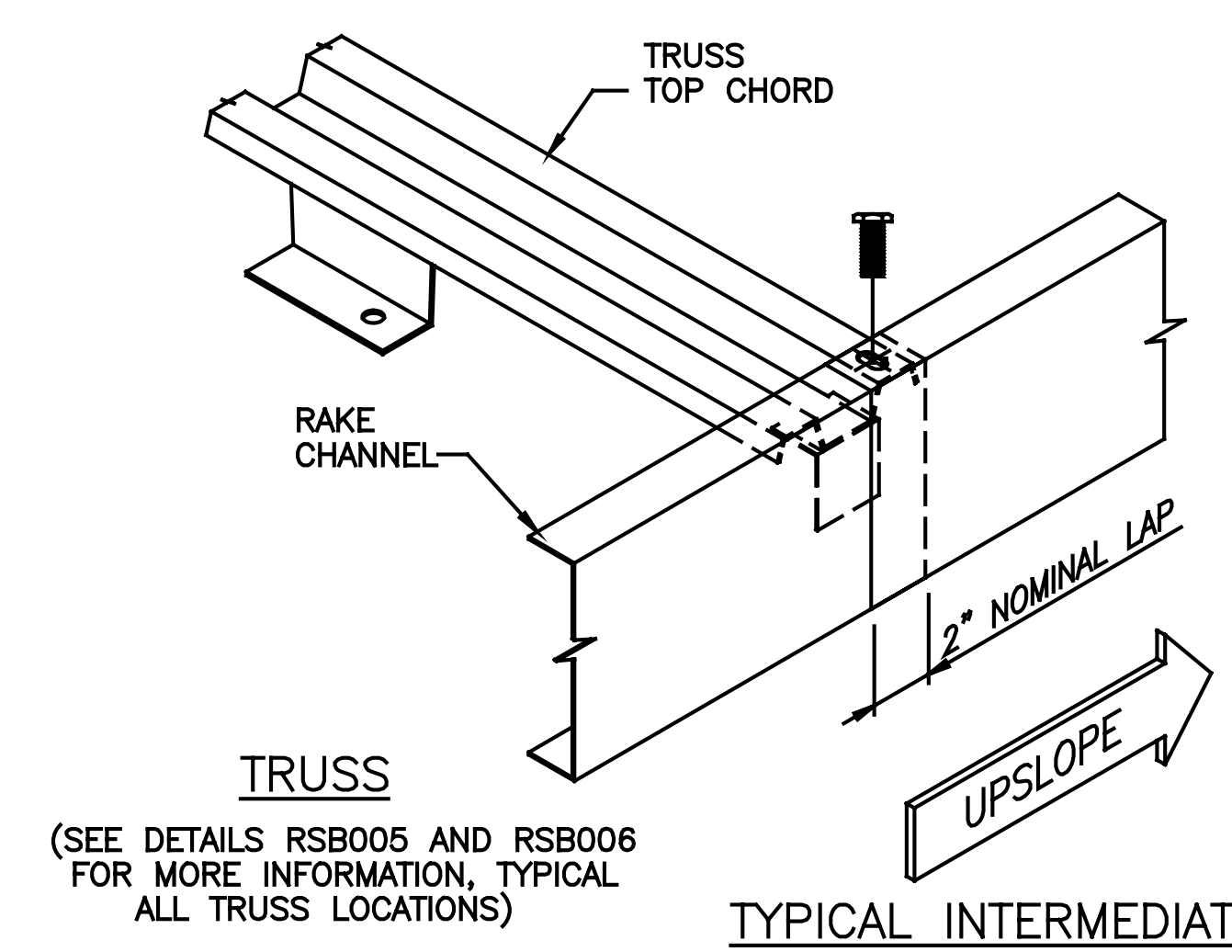
RAKE CHANNEL INSTALLATION
SIDEWALL OVERHANG ONLY



RAKE CHANNEL INSTALLATION
ENDWALL AND SIDEWALL OVERHANG

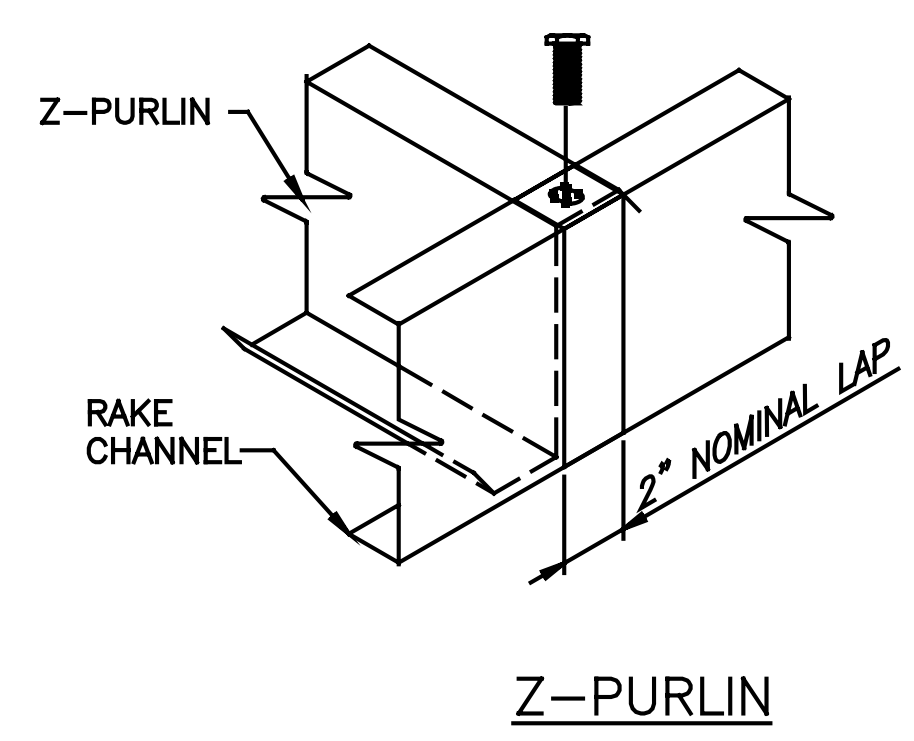


RAKE CHANNEL INSTALLATION
ENDWALL OVERHANG ONLY

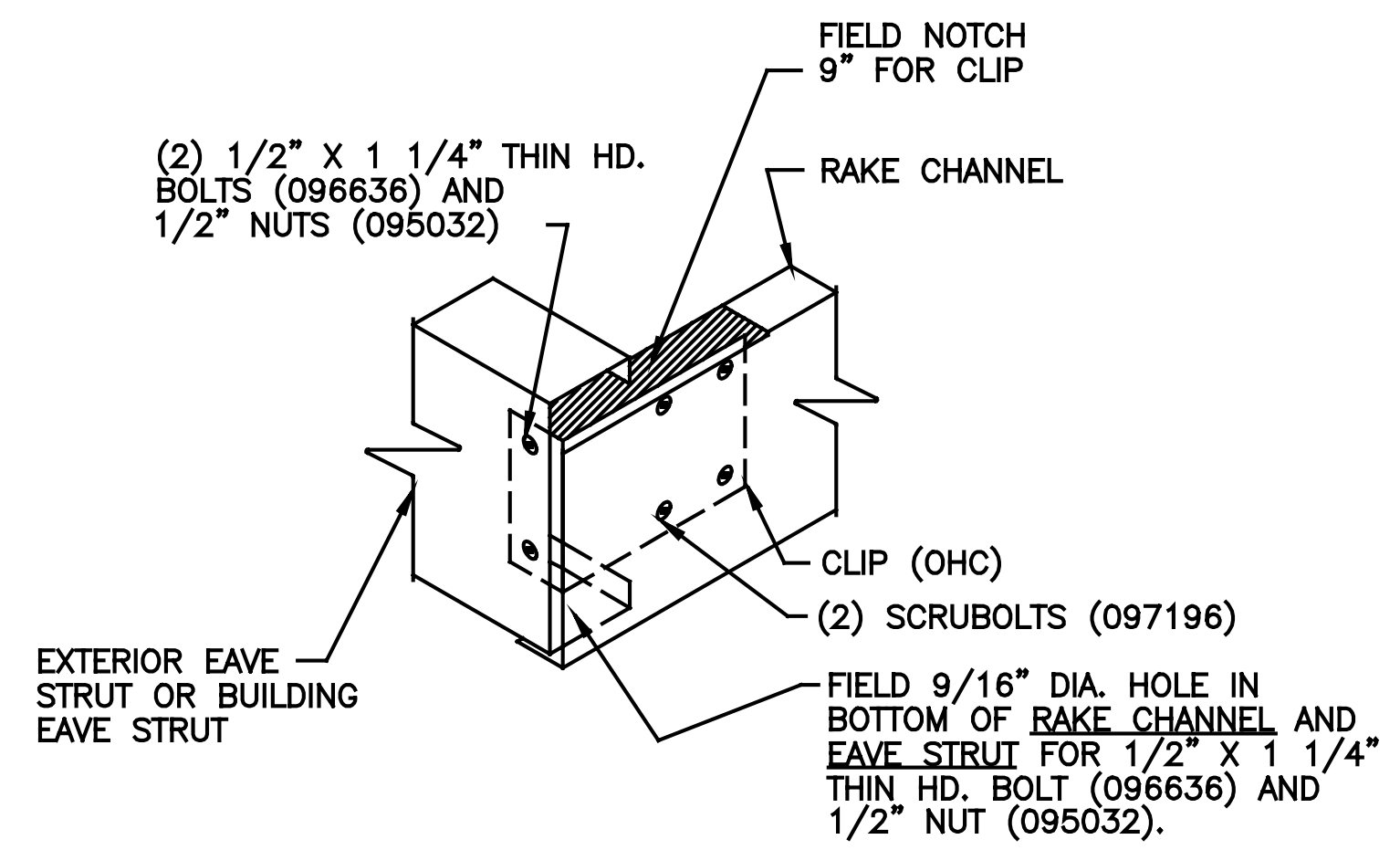


TRUSS
(SEE DETAILS RSB005 AND RSB006 FOR MORE INFORMATION, TYPICAL ALL TRUSS LOCATIONS)

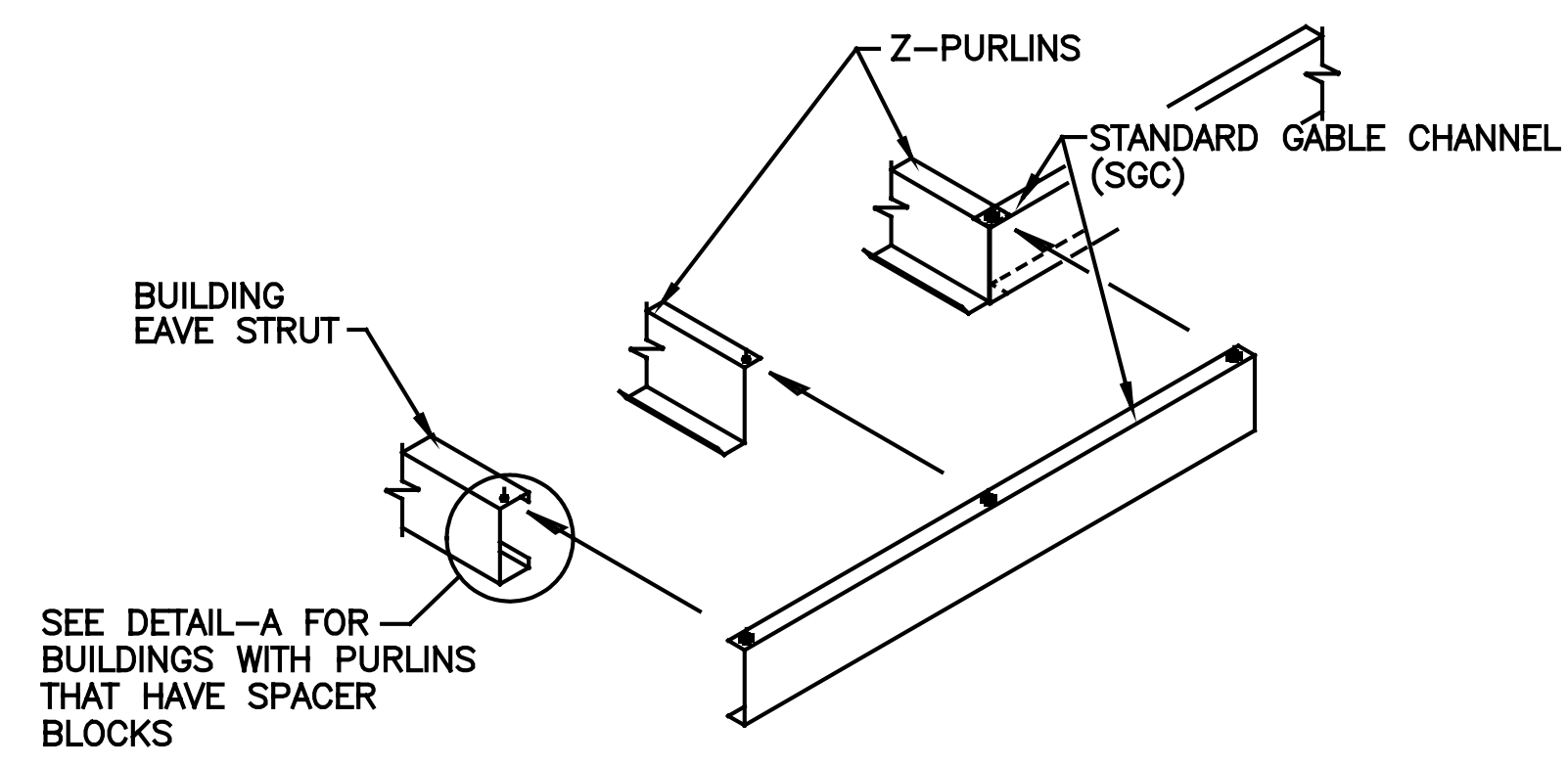
TYPICAL INTERMEDIATE RAKE CHANNEL SPLICE



Z-PURLIN

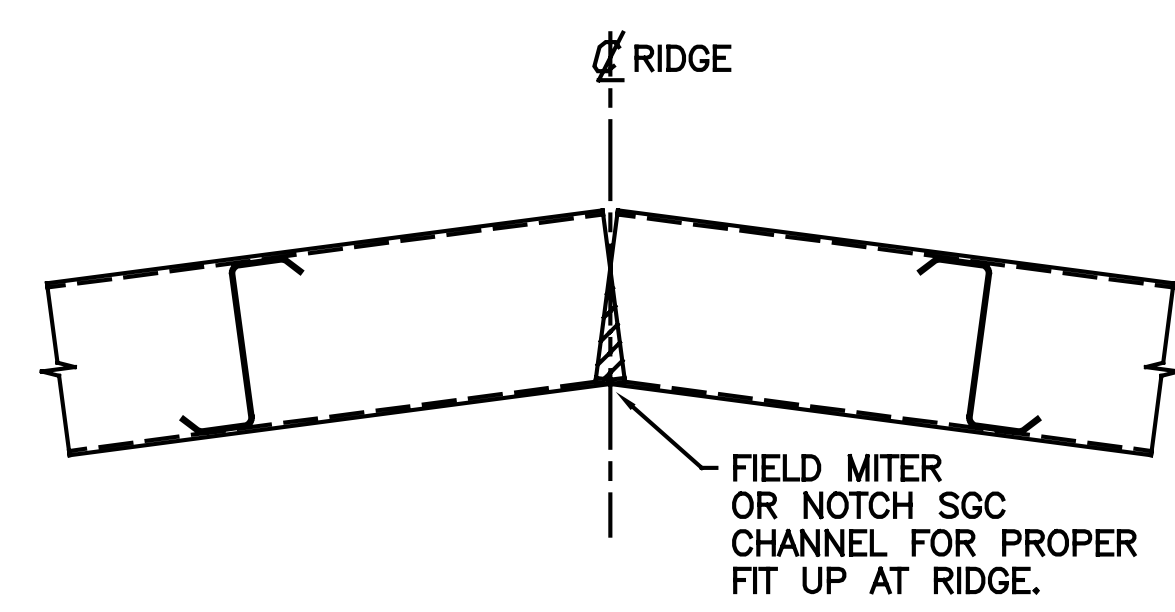


DETAIL-A
(SEE DETAIL RSB011 FOR ALTERNATE CONNECTION)



SEE DETAIL-A FOR BUILDINGS WITH PURLINS THAT HAVE SPACER BLOCKS

RAKE CHANNEL INSTALLATION AT ENDWALL ONLY FOR INSULATED WALL PANEL



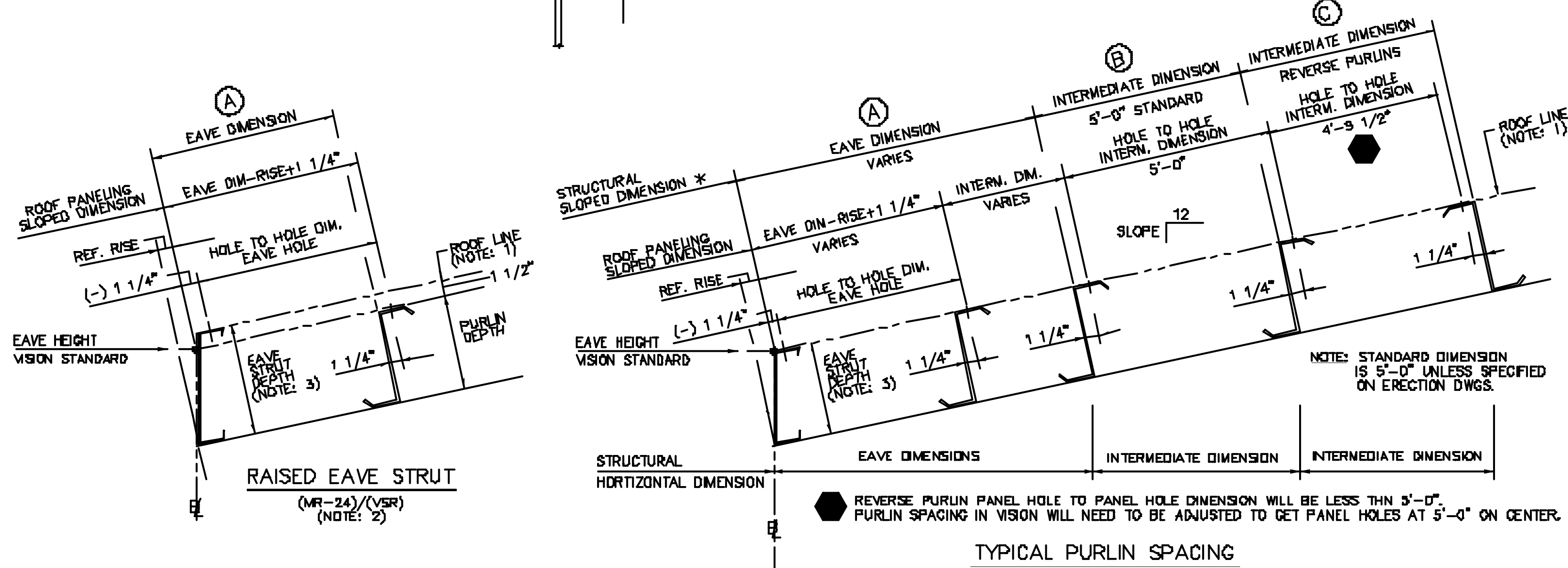
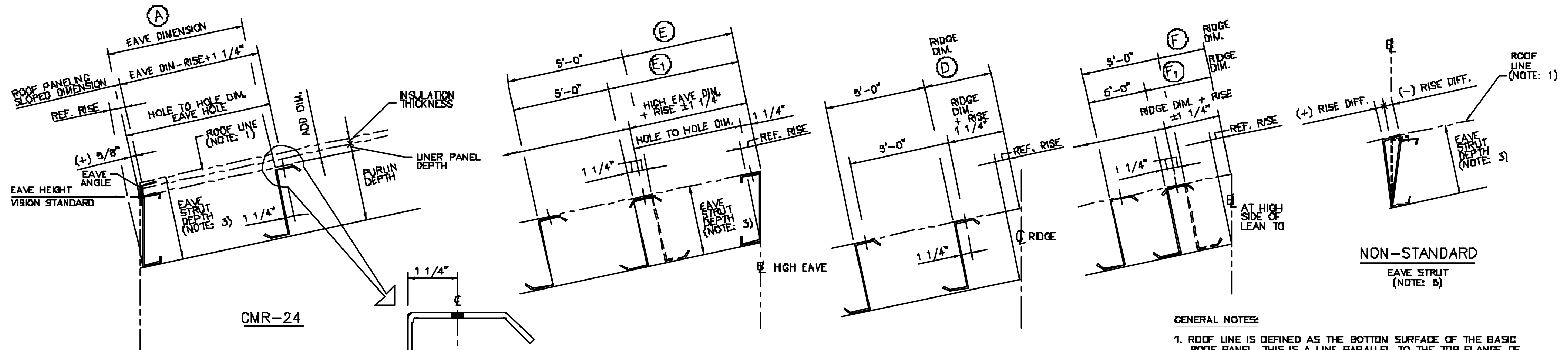
DETAIL-B

- NOTES:
1. SEE DETAIL-B FOR FIELD CUTTING OF CHANNEL SGC AT RIDGE.
 2. INSTALLATION FOR TRUSS IS SIMILAR. SEE DRAWING P-GAI FOR REFERENCE.

GENERAL NOTES:

1. ATTACH RAKE CHANNELS TO TOP ONLY OF PURLIN EXTENSION AND EAVE STRUT EXTENSION WITH 1/2" X 1 1/4" THIN HEAD BOLT (096636) AND 1/2" NUT (095032). EXCLUDING EAVE STRUT ATTACHMENT WITH INSULATED PURLINS.
2. FOR EAVE STRUT CONNECTION WITH INSULATED PURLINS SEE DETAIL-A, THIS DRAWING.

RAKE CHANNEL WITH OUT FASCIA INSTALLATION DETAILS				
DRAWN BY	CHECKED BY	GROUP NUMBER: 00-000-00		
BSN	RHE	C	P-RCI	04
FIRST RELEASE DATE	REVISION DATE			
01/21/10	05/02/19			



GENERAL NOTES:

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

THE BASIC SLOPE IN THE TABLE IS A BUTLER STANDARD SLOPE. THE PURLIN SPACES ARE USED FOR THE ENTIRE SLOPE RANGE. THE HORIZONTAL SPACES ARE FOR THE BASIC SLOPE ONLY. TO DETERMINE THE HORIZONTAL SPACES FOR OTHER SLOPES IN THE SLOPE RANGE, DIVIDE THE SLOPED DIMENSION BY THE COSINE OF THE ROOF SLOPE.

STANDARD EAVE STRUTS ARE DESIGNED FOR THE "BASIC" SLOPES ONLY. ON STANDARD BUILDINGS THESE EAVE STRUTS ARE USED FOR ALL SLOPES WITHIN THE SLOPE RANGE.

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

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

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

$$3 \div 12 \times 10 = 2.500"$$

$$MINUS 2.3 \div 12 \times 10 = 2.083"$$

$$RISE DIFFERENCE = 27/64" (\approx 13/32")$$

SINCE THE RISE DIFFERENCE IS GREATER THAN 1/8" 3/8" SHOULD BE DEDUCTED FROM THE EAVE PANEL LENGTH.

8. TO COMPLETE ROOF PANEL CALCULATIONS, REFER TO SPECIFIC ROOF PANELING CALCULATOR DRAWINGS OR PROCESSING PROCEDURES.

SLOPE RANGE	DIM.	A LOW EAVE DIMENSION FIRST AND SECOND PURLIN SPACES	B INTERMEDIATE DIMENSION	C SINGLE SLOPE REVERSE PURLIN DIMENSION	D DEL. SLOPE RIDGE DIMENSION				E DOWN SLOPE HIGH EAVE DIMENSION	E1 UP SLOPE HIGH EAVE DIMENSION	F DOWN SLOPE LEAN TO HIGH SIDE OR PERP. TRANSITION DIMENSION				F1 UP SLOPE LEAN TO HIGH SIDE OR PERP. TRANSITION DIMENSION				RISE DIMENSION (IN INCHES) EAVE STRUT DEPTH (NOTE: 3)			
					ALL PANEL TYPES / PURLIN DEPTH						ALL PANEL TYPES / PURLIN DEPTH				ALL PANEL TYPES / PURLIN DEPTH				ALL PANEL TYPES / PURLIN DEPTH			
RANGE		ALL PANEL TYPES	ALL PANEL TYPES	ALL PANEL TYPES	7"	8 1/2"	10"	11 1/2"	ALL PANEL TYPES	ALL PANEL TYPES	7"	8 1/2"	10"	11 1/2"	7"	8 1/2"	10"	11 1/2"	7"	8 1/2"	10"	11 1/2"
.25	SLOPED *	VARIES	5'-0" 60.00	5'-0" 60.00	1'-1 3/16" 13.75	1'-1 3/16" 13.75	1'-1 3/16" 13.21	1'-1 1/4" 13.25	5'-0" 60.00	5'-0" 60.00	10 7/8" 10.88	10 7/8" 10.88	10 7/8" 10.88	10 7/8" 10.88	1'-1 3/8" 13.38	1'-1 3/8" 13.38	1'-1 3/8" 13.38	1'-1 3/8" 13.38	.1408	.1771	.2083	.2395
	HORIZ.				1'-1" 13.00	1'-1" 13.00	1'-1" 13.00	1'-1" 13.00			10 3/4" 10.75	10 11/16" 10.70	10 11/16" 10.67	10 3/8" 10.64	1'-1 1/4" 13.25	1'-1 3/16" 13.17	1'-1 1/8" 13.14	1'-1 1/8" 13.14	BASIC SLOPE - .25:12			
.251 THRU .749	SLOPED *				1'-1 5/16" 13.30	1'-1 5/16" 13.35	1'-1 3/8" 13.40	1'-1 1/2" 13.49			10 7/8" 10.88	10 7/8" 10.88	10 7/8" 10.88	10 7/8" 10.88	1'-1 3/8" 13.38	1'-1 3/8" 13.38	1'-1 3/8" 13.38	1'-1 3/8" 13.38	.2817	.3542	.4167	.4782
	HORIZ.				1'-1" 13.00	1'-1" 13.00	1'-1" 13.00	1'-1" 13.00			10 5/8" 10.58	10 5/8" 10.52	10 5/8" 10.48	10 5/8" 10.40	1'-1 1/8" 13.08	1'-1 1/8" 13.02	1'-0 31/32" 12.80	1'-0 29/32" 12.80	BASIC SLOPE - .3:12			
.75 THRU 1.249	SLOPED *				1'-0 27/32" 12.85	1'-0 31/32" 12.97	1'-1 1/16" 13.08	1'-1 7/32" 13.23			10 7/16" 10.44	10 7/16" 10.44	10 7/16" 10.44	10 7/16" 10.44	1'-0 15/16" 12.94	1'-0 15/16" 12.94	1'-0 15/16" 12.94	1'-0 15/16" 12.94	.5833	.7083	.8333	.9583
	HORIZ.				1'-0 7/32" 12.22	1'-0 7/32" 12.22	1'-0 7/32" 12.22	1'-0 7/32" 12.22			9 27/32" 9.85	9 3/4" 9.75	9 19/32" 9.60	9 15/32" 9.48	1'-0 11/32" 12.35	1'-0 1/4" 12.25	1'-0 1/8" 12.10	1"-0 11.90	BASIC SLOPE - 1:12			
1.25 THRU 2.249	SLOPED *				1'-1 11/32" 12.85	1'-1 9/16" 13.11	1'-1 13/16" 13.31	1'-2 1/32" 13.42			11" 11.00	11" 11.00	11" 11.00	11" 11.00	1'-1 1/2" 13.50	1'-1 1/2" 13.50	1'-1 1/2" 13.50	1'-1 1/2" 13.50	1.1687	1.4167	1.6667	1.9167
	HORIZ.				1'-0" 12.00	1'-0" 12.00	1'-0" 12.00	1'-0" 12.00			9 27/32" 9.85	9 19/32" 9.68	9 11/32" 9.53	9 1/8" 9.08	1'-0 5/16" 12.33	1'-0 1/16" 12.08	11 13/16" 11.83	11 19/32" 11.68	BASIC SLOPE - 2:12			
2.25 THRU 3.499	SLOPED *				1'-1 13/32" 13.41	1'-1 25/32" 13.78	1'-2 1/8" 14.14	1'-2 17/32" 14.54			11 1/4" 11.25	11 1/4" 11.25	11 1/4" 11.25	11 1/4" 11.25	1'-1 7/8" 13.88	1'-1 7/8" 13.88	1'-1 7/8" 13.88	1'-1 7/8" 13.88	1.7500	2.1250	2.5000	2.8750
	HORIZ.				11 5/16" 11.31	11 5/16" 11.31	11 5/16" 11.31	11 5/16" 11.31			9 1/2" 9.5	9 1/2" 9.13	8 3/4" 8.75	8 3/8" 8.38	1'-0 1/8" 12.13	11 3/8" 11.75	11 3/8" 11.38	11 3/8" 11.00	BASIC SLOPE - 3:12			
3.5 THRU 4.0	SLOPED *				1'-0 5/8" 12.63	1'-0 19/32" 13.11	1'-1 19/32" 13.59	1'-2 1/8" 14.12			10" 10.00	10" 10.00	10" 10.00	10" 10.00	1'-0 5/8" 12.63	1'-0 5/8" 12.63	1'-0 5/8" 12.63	1'-0 5/8" 12.63	2.3333	2.8333	3.3333	3.8333
	HORIZ.	VARIES	6'-0" 60.00	6'-0" 60.00	9 3/4" 9.75	9 3/4" 9.75	9 3/4" 9.75	9 3/4" 9.75	6'-0" 60.00	6'-0" 60.00	7 11/16" 7.67	7 3/16" 7.17	8 11/16" 8.67	8 3/16" 8.17	10 9/32" 10.29	9 25/32" 9.79	9 9/32" 9.29	8 25/32" 8.79	BASIC SLOPE - 4:12			

* DEFAULT DIMENSION USED BY VISION

FORMULAS USED IN ROOF CALCULATIONS:

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

Z-PURLIN ROOF STRUCTURAL LOCATION PURLIN SPACING

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