

WALL OPENING SCHEDULE

DOOR	WIDTH	HEIGHT	OPENING TYPE	HEADER GIRT	OPENING JAMBS
1 - 2	10'-0"	10'-0"	ROLL UP DOOR	DOUBLE	C4X2.5 X14
3 - 5	6'-0"	6'-8"	PERSONNEL DOOR	DOUBLE	CHN4X 3X18
6	3'-0"	6'-8"	PERSONNEL DOOR	DOUBLE	CHN4X 3X18
7 - 10	6'-0"	4'-0"	WINDOW	SEE NOTE #4	CHN4X 3X18
11-16	6'-0"	4'-0"	WINDOW	SINGLE	CHN4X 3X18

NOTES:

- JAMB MEMBERS SHOWN AS "CHN" ARE CHANNEL MEMBERS (WITHOUT STIFFENER LIPS) AND THOSE SHOWN AS "C" ARE CEE MEMBERS. FIRST NUMBER IS WEB DEPTH IN INCHES, SECOND NUMBER IS FLANGE WIDTH IN INCHES, AND THIRD NUMBER IS MATERIAL THICKNESS (GAUGE).
- SEE DETAILS J/9 AND /O FOR OPENING FRAMING INFORMATION.
- SIZE OF HEADER GIRT MEMBER TO BE SAME AS SIDEWALL OR ENDWALL GIRT, AS APPROPRIATE, PER ELEVATIONS. AT WINDOWS, INSTALL HEADER GIRT SPECIFIED ABOVE AND BELOW WINDOWS, U.N.O.
- AT OPENINGS NOTED, INSTEAD OF ATTACHING DOOR JAMBS TO HEADER GIRT PER DETAIL L1/10 ATTACH DOOR JAMBS TO UNDERSIDE OF ENDWALL RAFTER PER DETAIL L2/10.
- ALL OPENINGS AND ACCESSORIES SHALL BE CAPABLE OF SUPPORTING ALL WIND PRESSURES PERPENDICULAR TO THE SURFACE (GENERATED BY WINDS AT THE SPEED AND EXPOSURE INDICATED ABOVE) BY SPANNING BETWEEN THE JAMBS.

PROJECT DESIGN CRITERIA

ROOF DEAD LOAD: 3 psf
 ROOF COLLATERAL LOAD: 0 psf
 GROUND SNOW LOAD: 0 psf $C_t = 1.2$
 ROOF SNOW LOAD: 0 psf
 ROOF LIVE LOAD: 20 psf
 WIND SPEED: 110 mph
 WIND EXPOSURE: C
 $S_s: 1.984$ $S_{ds}: 1.587$
 $S_1: 0.774$ $S_{d1}: 0.877$
 SEISMIC DESIGN CATEGORY:
 E ('short' period) E ('l-sec' period)
 R transverse: 3.0 R longitudinal: 3.0
 RISK CATEGORY: 1
 SOIL BEARING PRESSURE: 1500 psf

WIND DESIGN OF LATERAL FORCE-RESISTING SYSTEMS IS BASED ON THE DIRECTIONAL DESIGN PROCEDURE OF ASCE 7-16, CHAPTER 27

SEISMIC DESIGN OF LATERAL FORCE-RESISTING SYSTEMS ARE AS FOLLOWS:
 -- TRANSVERSE: ORDINARY STEEL MOMENT FRAME (SEISMIC DESIGN IS BASED ON ASCE 07-16, SECTIONS 12.1 - 12.13)
 -- LONGITUDINAL: ORDINARY STEEL BRACED FRAME. (SEISMIC DESIGN IS PERFORMED USING THE SIMPLIFIED DESIGN PROCEDURE (ASCE 07-16, SECTION 12.14).

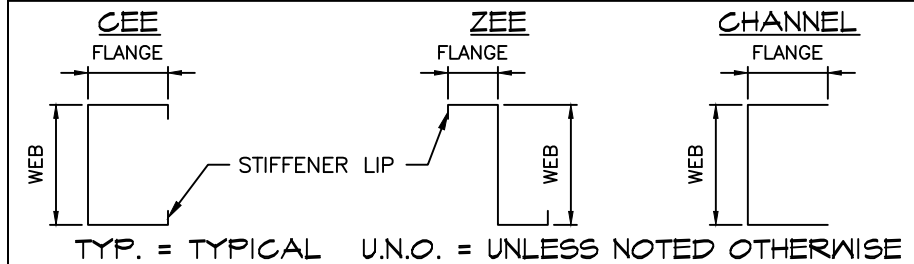
DESIGN BASE SHEAR: IS SHOWN ON CALCULATION SHEET M2.

IMPORTANT: IN ADDITION TO THESE ENGINEERING PLANS (WHICH ALWAYS TAKE PRECEDENCE), YOU SHOULD HAVE THE FOLLOWING FROM ACT BUILDING SYSTEMS:

- CONSTRUCTION PACKAGE
- INSTALLATION MANUALS
- CONSTRUCTION VIDEOS

PLEASE CONTACT YOUR SALES REP IF YOU HAVE NOT RECEIVED THESE PRIOR TO STARTING CONSTRUCTION.

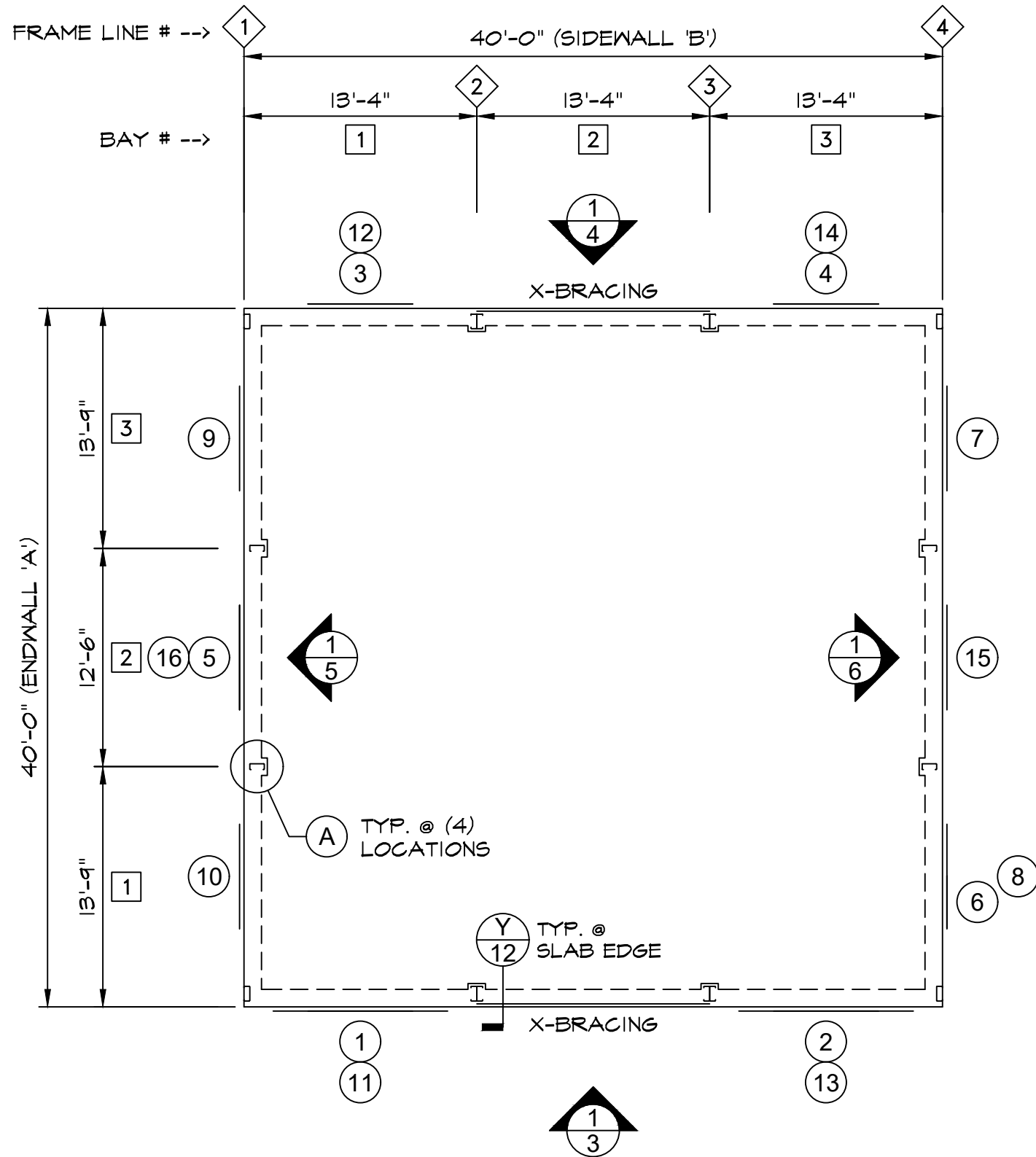
COMPONENT DIAGRAM



FOUNDATION DETAIL KEYS

- (A) ENDWALL COLUMN (SEE DETAIL C/8 FOR TOP CONNECTION AND G/9 FOR BASE CONNECTION)

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NOTE: USE 5/8" X 5" DEWALT 'SCREW-BOLT+' ANCHOR IN 5 1/2" DEEP HOLES AT ANCHOR LOCATIONS PER BASE DETAIL F/9, INSTALLED PER ICC REPORT ESR-3889, SECTION 4.3.

NOTE: SEE "TYP. FRAME CROSS-SECTION" DETAIL ON SHEET II FOR SPECIFIC FRAME DETAIL INFORMATION.

NOTE: EXCEPT AT DOOR OPENINGS, INSTALL 18G FORMED BASE TO FOUNDATION (FOR ATTACHMENT OF BOTTOM OF WALL SIDING) WITH 1/4in X 1in MUSHROOM HEAD SPIKE ANCHORS AT 48" O.C. (6" MAX. FROM ANY END).

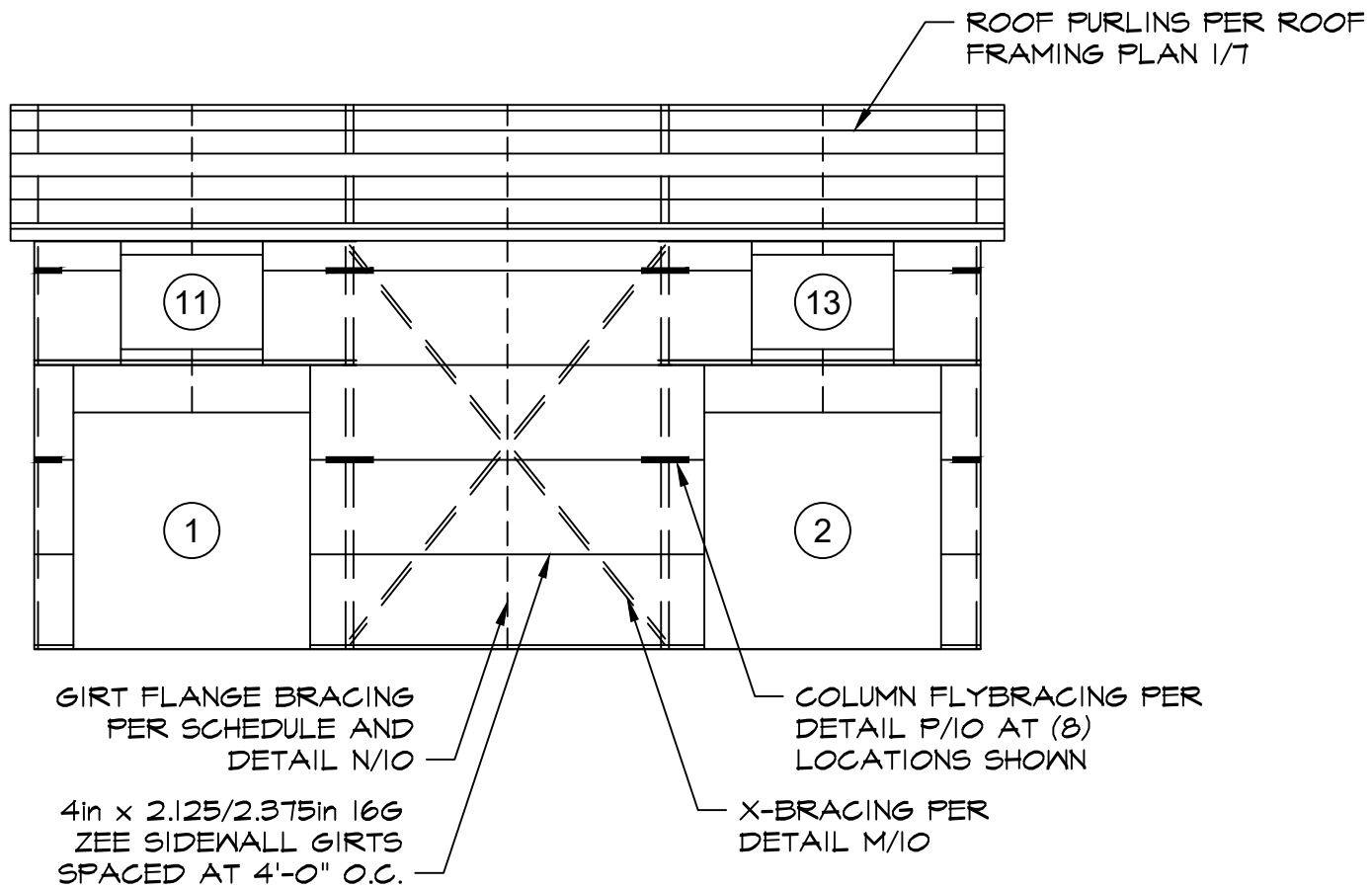
1 FOUNDATION PLAN
2 SCALE: 1/8" = 1'-0"

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2 of 13	


GIRT FLANGE
BRACING SCHEDULE

	BAY #1	BAY #2	BAY #3
Sidewall 'A'	M/S	M/S	M/S

M/S = MIDSPAN



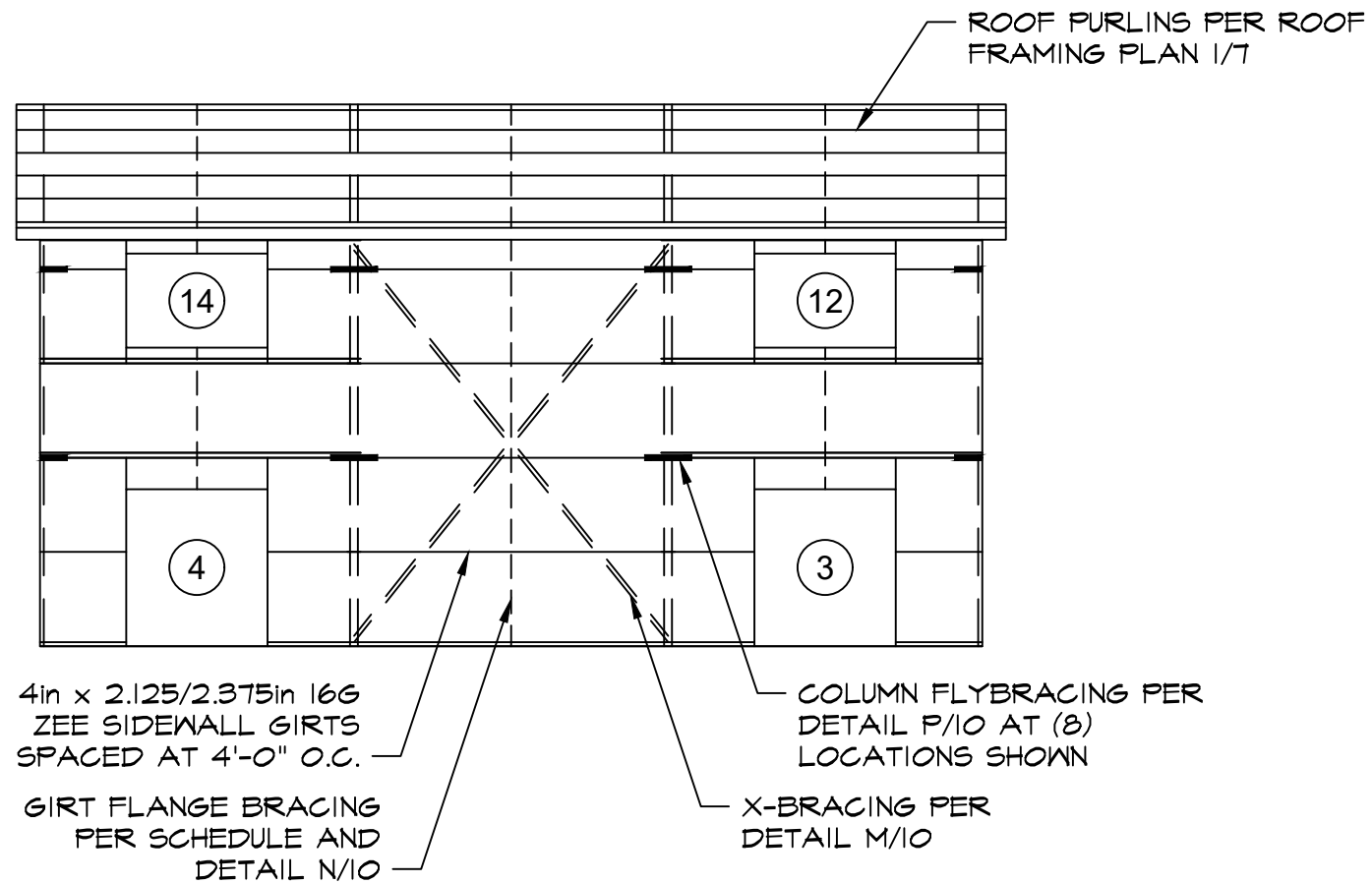
1 SIDEWALL 'A' EXTERIOR ELEVATION
3 SCALE: 1/8" = 1'-0"

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SHEET: <div style="font-size: 2em; font-weight: bold;">3</div> of <div style="font-size: 2em; font-weight: bold;">13</div>

GIRT FLANGE
BRACING SCHEDULE

	BAY #1	BAY #2	BAY #3
Sidewall 'B'	M/S	M/S	M/S

M/S = MIDSPAN



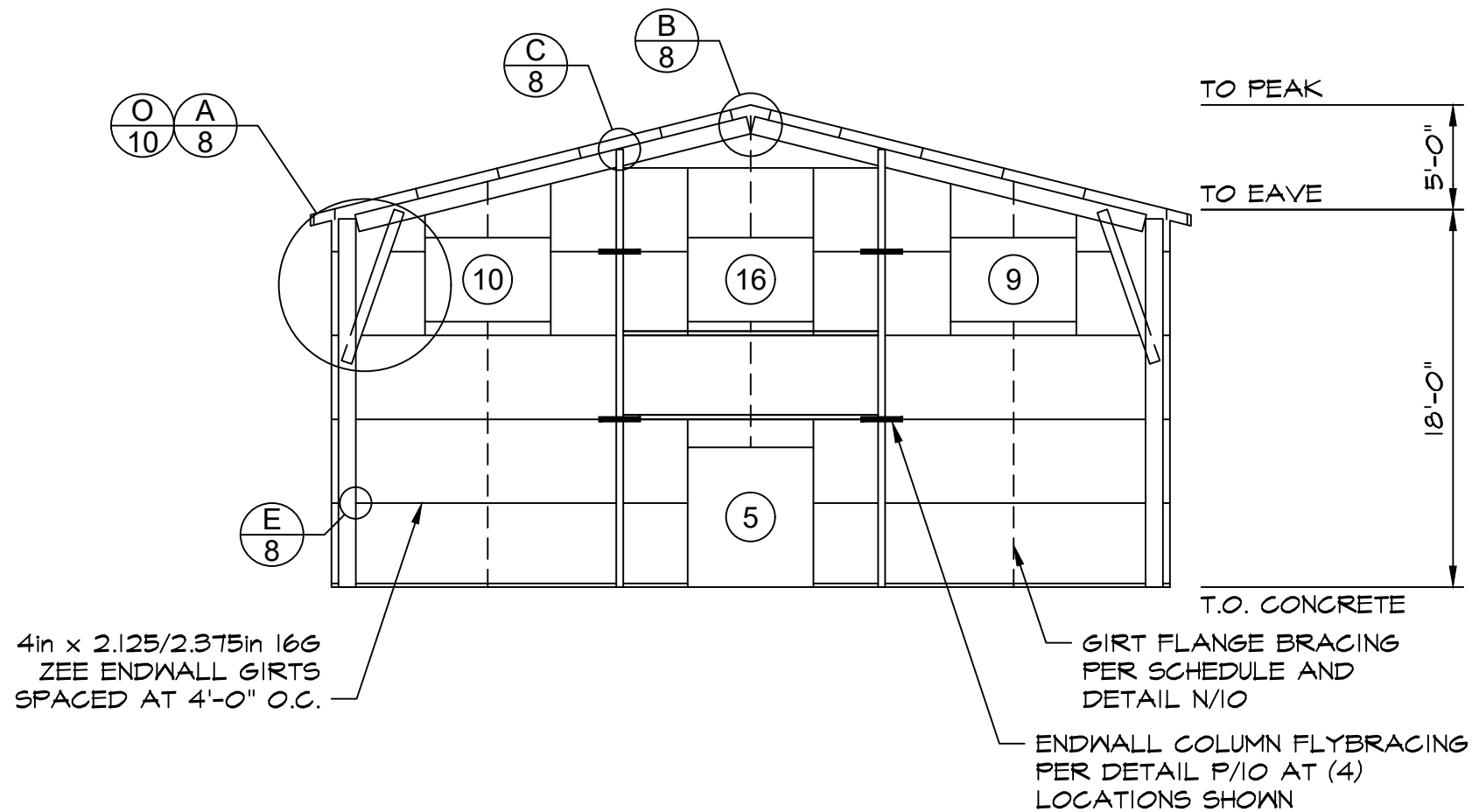
1 SIDEWALL 'B' EXTERIOR ELEVATION
4 SCALE: 1/8" = 1'-0"

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GIRT FLANGE BRACING SCHEDULE

	BAY #1	BAY #2	BAY #3
Endwall 'A'	M/S	M/S	M/S

M/S = MIDSPAN



1 ENDWALL 'A' INTERIOR ELEVATION
 5 SCALE: 1/8" = 1'-0" FRAME #1

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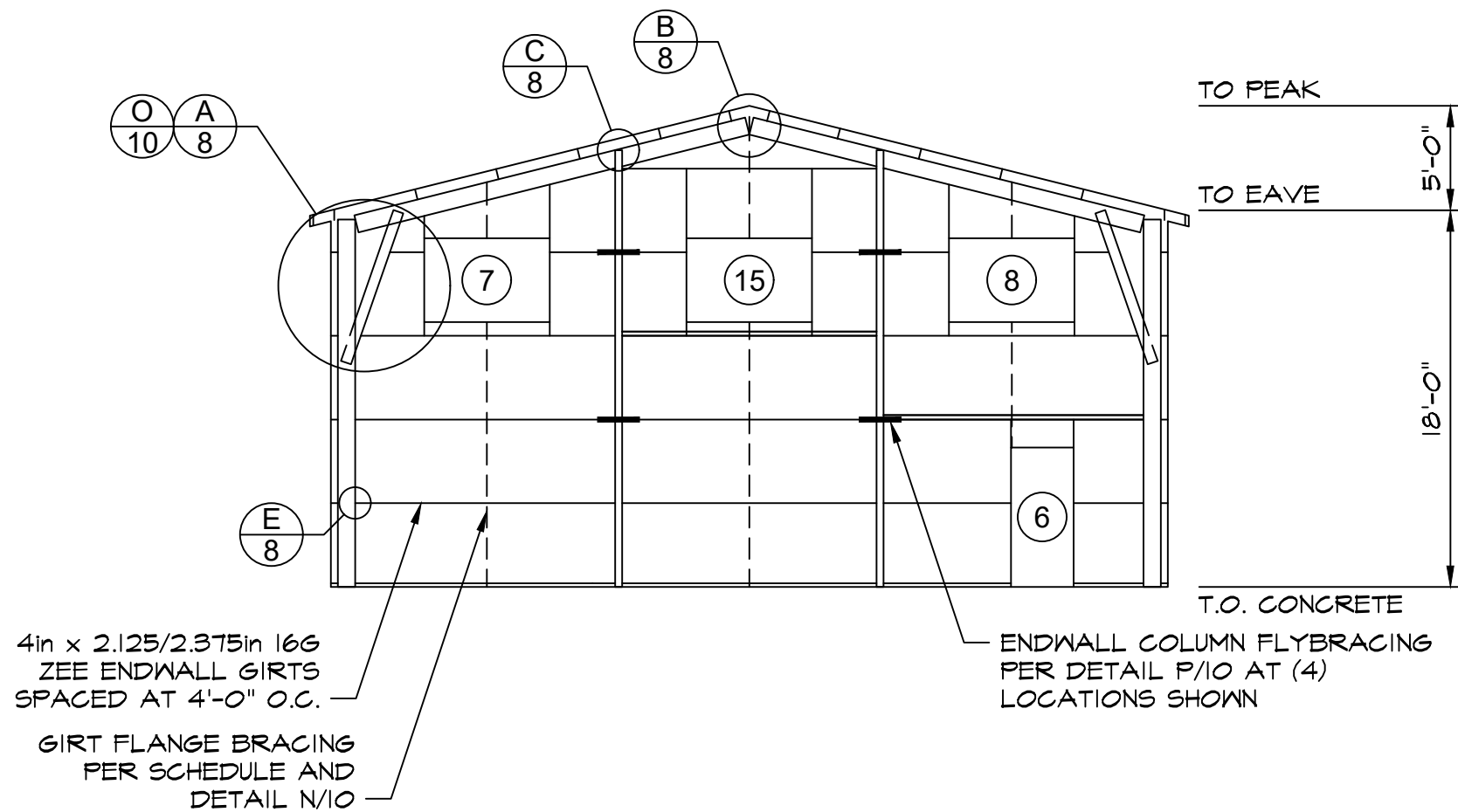
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SHEET
5
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GIRT FLANGE
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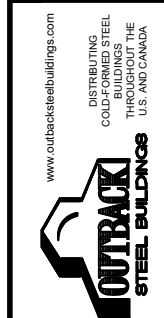
	BAY #1	BAY #2	BAY #3
Endwall 'B'	M/S	M/S	M/S

M/S = MIDSPAN



1 ENDWALL 'B' INTERIOR ELEVATION
6 SCALE: 1/8" = 1'-0" FRAME #4

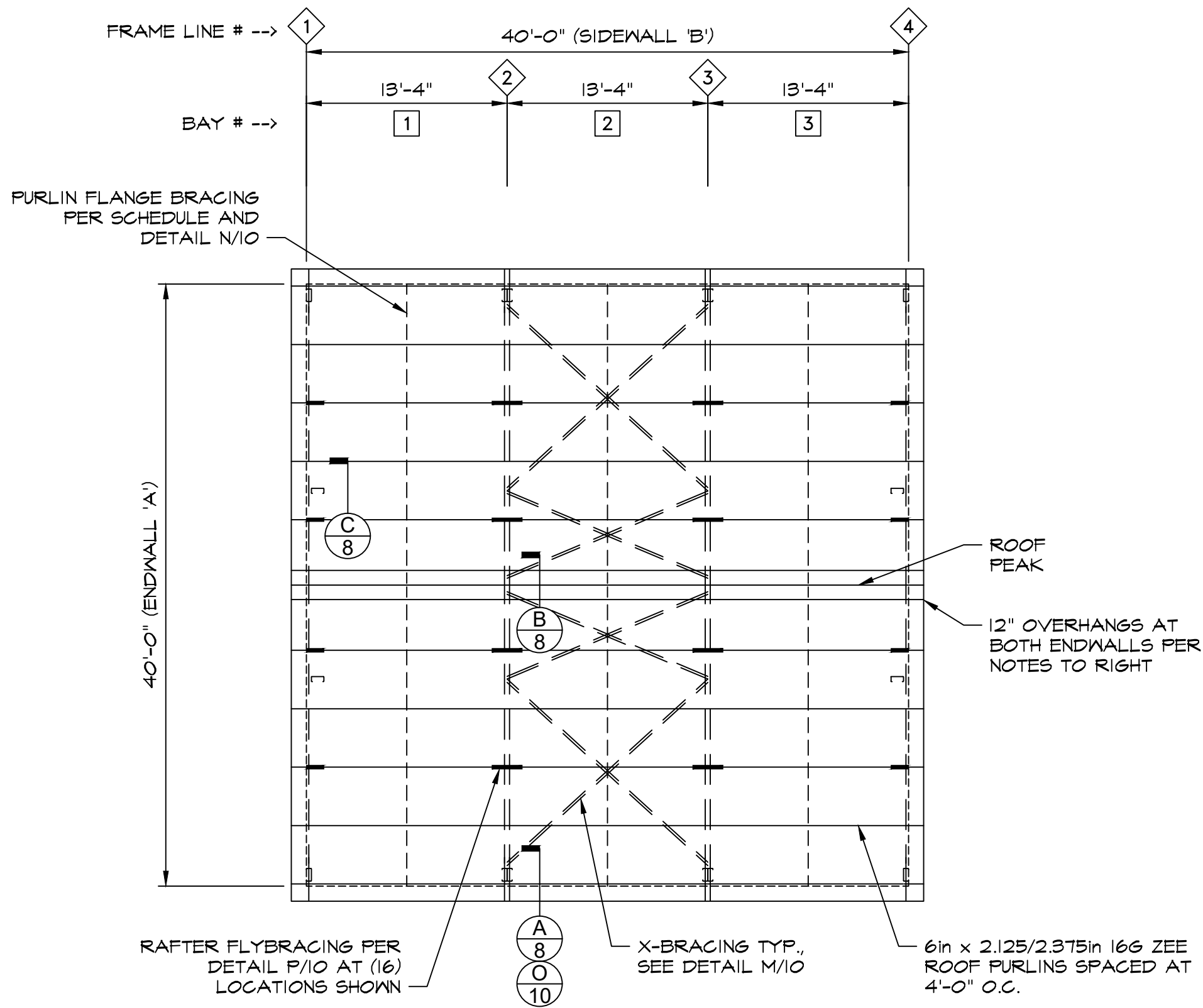
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6
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PURLIN FLANGE BRACING SCHEDULE

	BAY #1	BAY #2	BAY #3
Main Roof	M/S	M/S	M/S

M/S = MIDSPAN

TYPICAL ENDWALL OVERHANG INFORMATION:

1) CONTINUE ROOF PURLINS 12" MAX. BEYOND OUTSIDE FACE OF ENDWALL GIRTS AND ENCLOSE PURLIN ENDS WITH 6in x 3in x 16G CHANNEL (INSTALL #14 SCREW AT EACH CHANNEL FLANGE TO PURLIN).

2) INFILL BETWEEN CHANNEL AT PURLIN ENDS AND 'OUTRIGGER' AT ENDWALL FRAME (SEE DETAIL O/10) WITH TYP. STEEL ROOF PURLINS.

3) INFILL WITH PURLIN MATERIAL BETWEEN PURLINS ABOVE ENDWALL RAFTER TO SEAL OFF BUILDING OR ENCLOSE BOTTOM OF OVERHANG WITH MATERIAL OF CUSTOMER'S CHOICE.

1 ROOF FRAMING PLAN
7 SCALE: 1/8" = 1'-0"

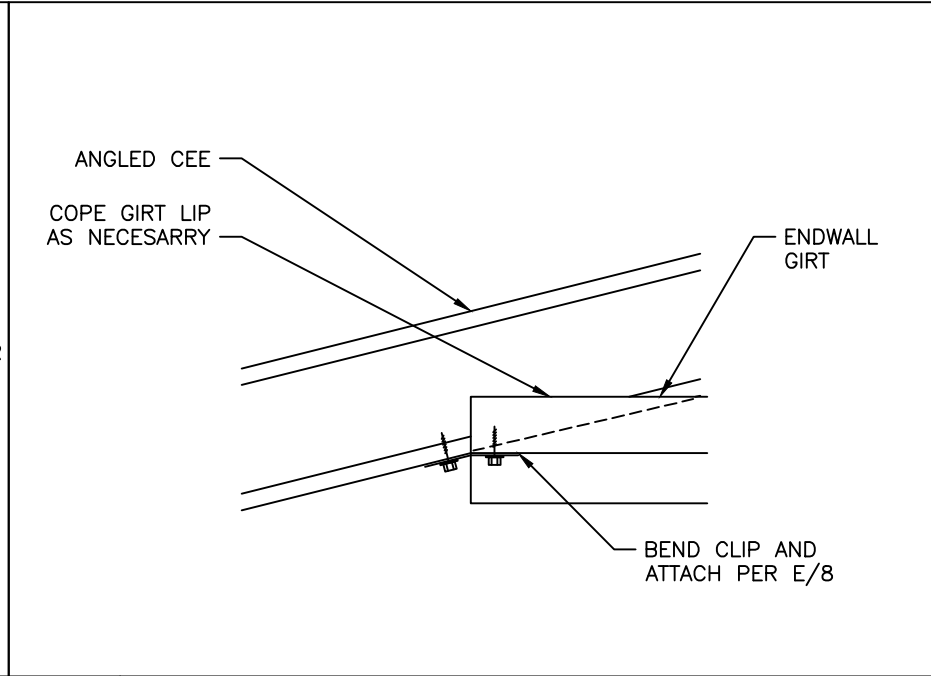
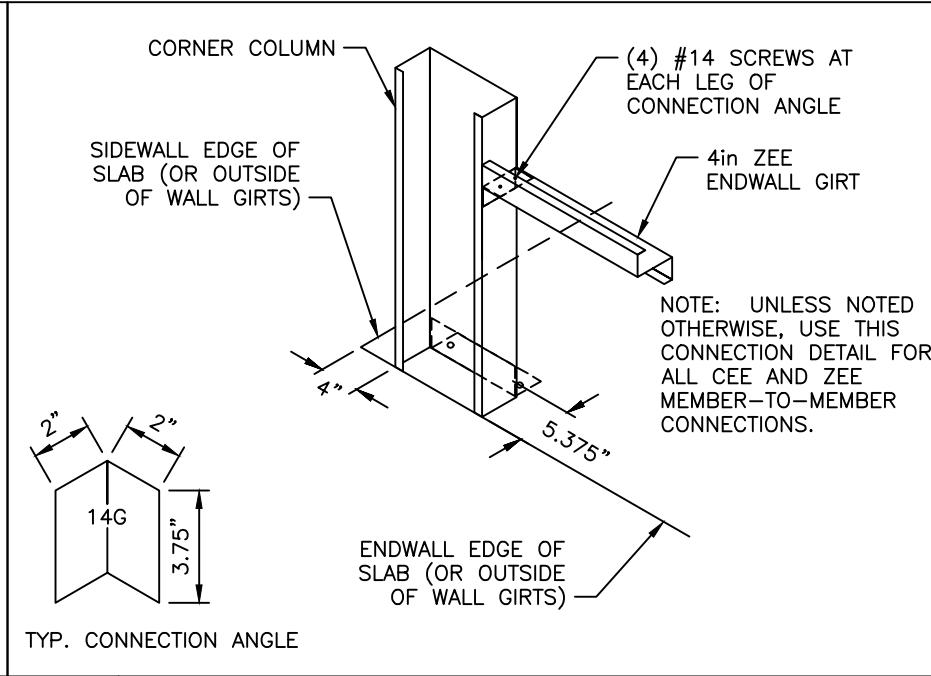
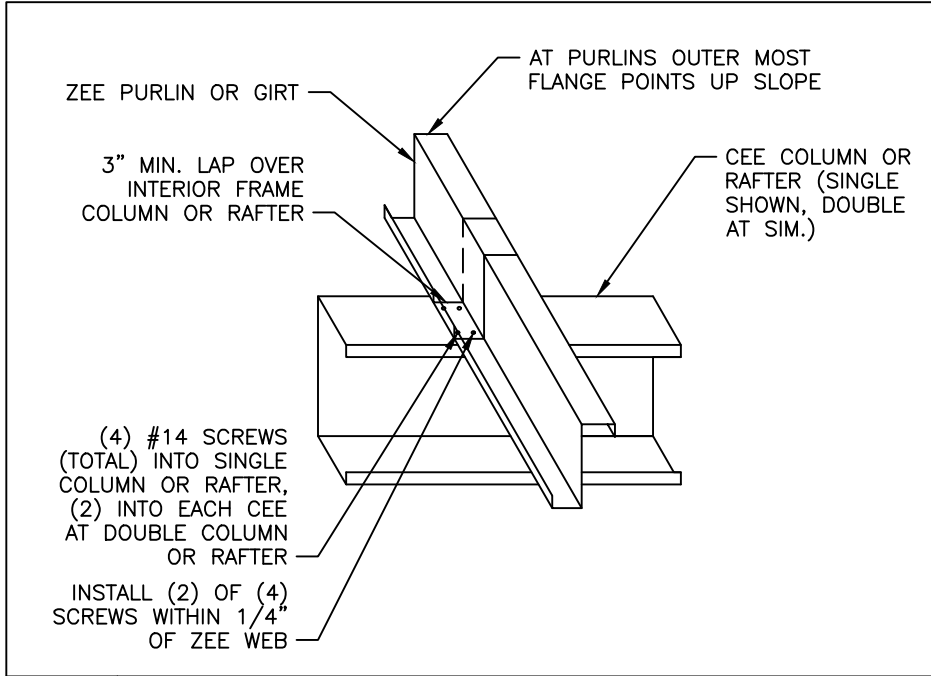
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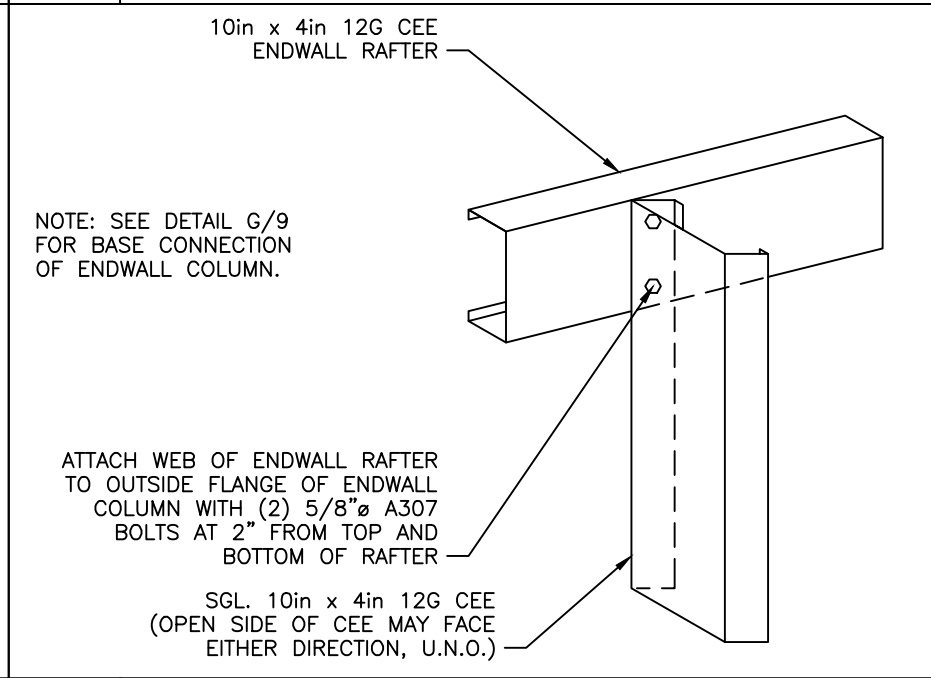
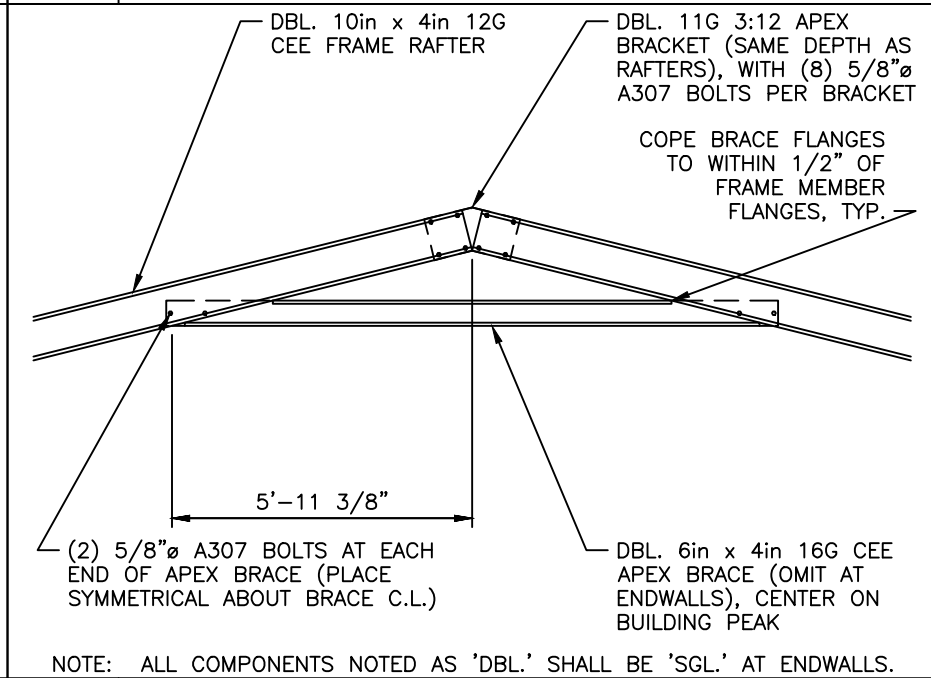
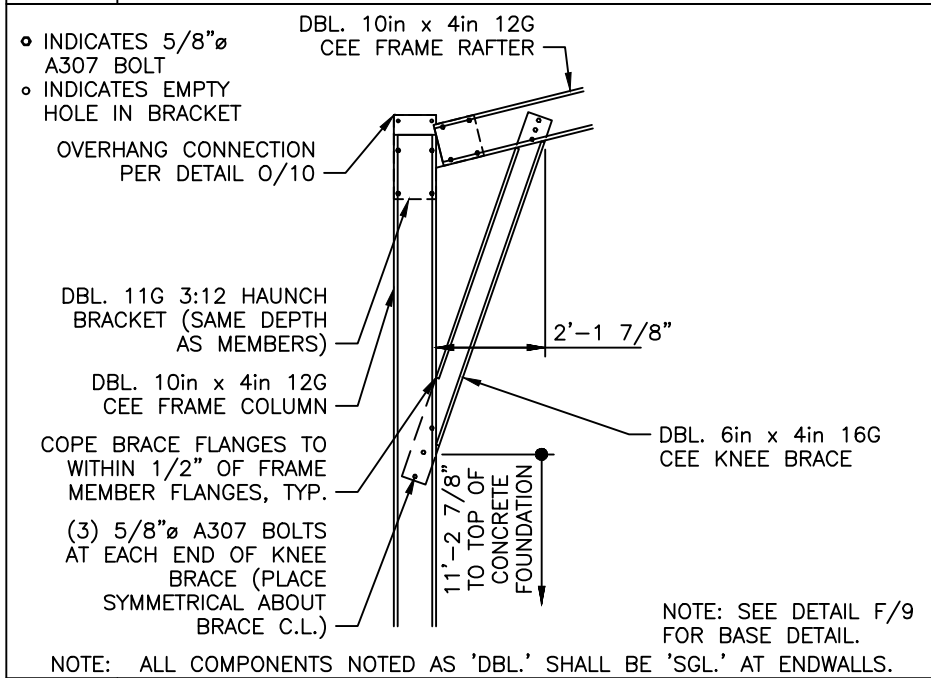
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7
 OF **13**



D ZEE PURLIN/GIRT CONNECTION

E ENDWALL GIRT AT CORNER COLUMN

E2 END GIRT TO ANGLED CEE



A HAUNCH CONNECTION

B APEX CONNECTION

C ENDWALL COLUMN TO RAFTER

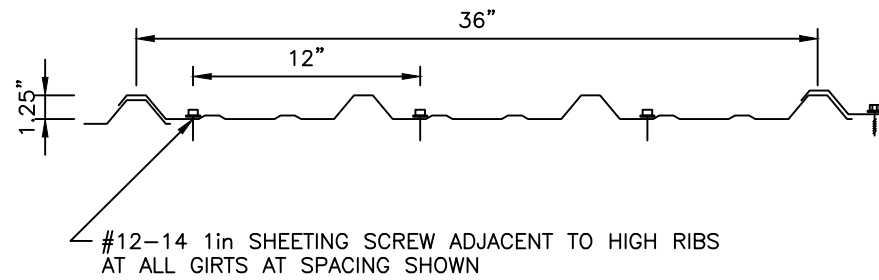
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 8
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NOTE: ONLY STRUCTURAL INFORMATION IS INCLUDED IN THIS DETAIL. CONSULT PANEL MANUFACTURER FOR ADD'L WEATHERTIGHTNESS RECOMMENDATIONS.

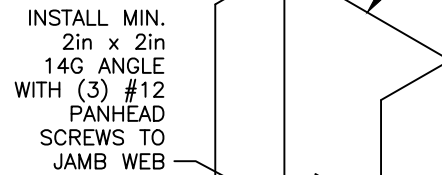
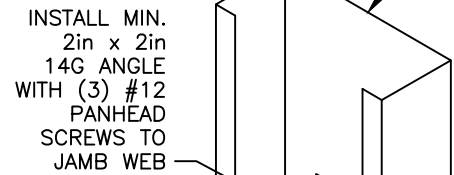


Metal Sales Manufacturing Corp.
PBR-Panel 24G

$I_x(t) = 0.056 \text{ in}^4/\text{ft}$ $I_x(b) = 0.0457 \text{ in}^4/\text{ft}$
 $S_x(t) = 0.0579 \text{ in}^3/\text{ft}$ $S_x(b) = 0.0613 \text{ in}^3/\text{ft}$ $F_y = 50 \text{ ksi}$

'DOOR JAMB' PER OPENING SCHEDULE (MAY BE TURNED WITH OPEN SIDE TO DOOR)

CHANNEL 'OPENING JAMB' PER OPENING SCHEDULE

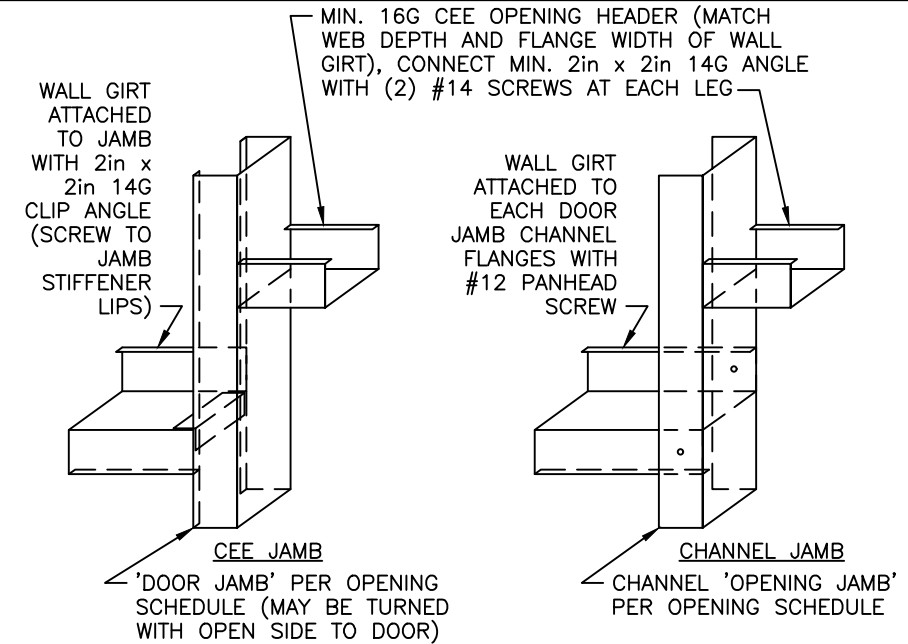


1/2" X 3" DEWALT 'SCREW-BOLT+' ANCHOR IN 3 1/2" DEEP HOLE

1/2" X 3" DEWALT 'SCREW-BOLT+' ANCHOR IN 3 1/2" DEEP HOLE

CEE JAMB

CHANNEL JAMB

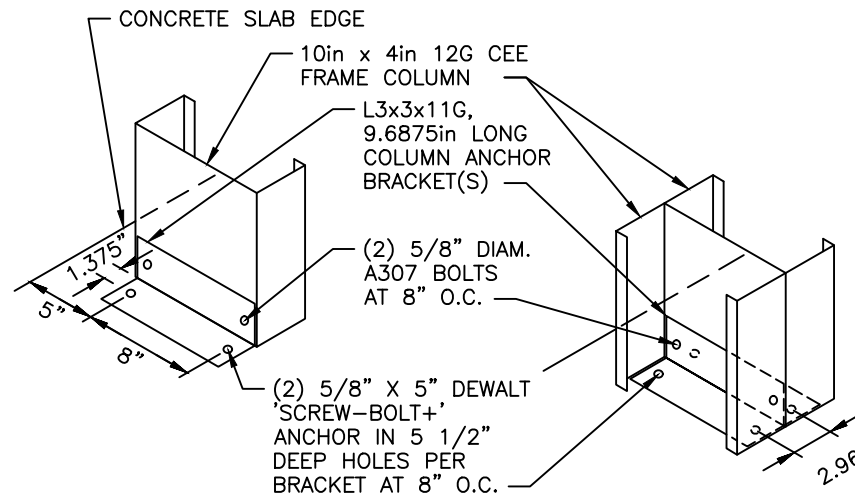


I WALL SHEETING

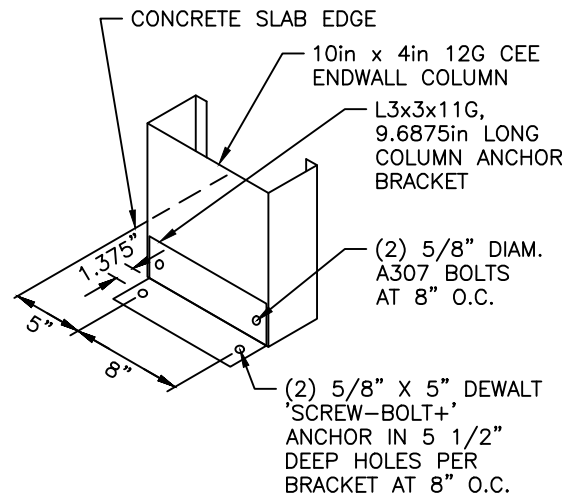
J OPENING JAMB BASE CONNECTION

K OPENING JAMB GIRTS CONNECTION

SINGLE CEE CORNER COLUMN DOUBLE CEE FRAME COLUMN



NOTE: CENTER ALL BOLTS ON COLUMN ANCHOR BRACKET LENGTHS. AT SINGLE FRAME COLUMN, BRACKET MAY BE PLACED ON EITHER SIDE OF COLUMN. EXCEPT AT CORNER COLUMN, BRACKET MUST BE INSTALLED ON SIDE OF COLUMN SHOWN.

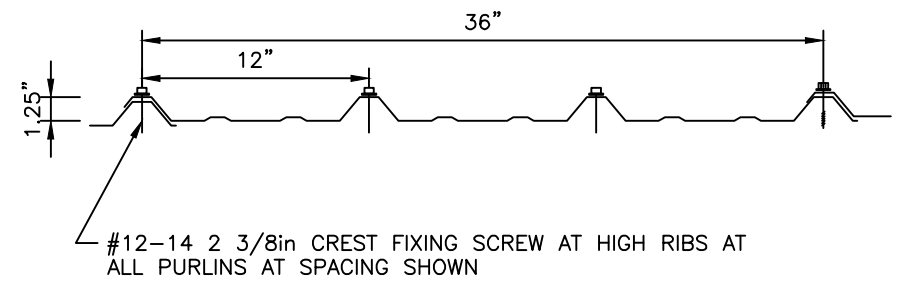


NOTE: CENTER ALL BOLTS ON COLUMN ANCHOR BRACKET LENGTHS. BRACKET MAY BE PLACED ON EITHER SIDE OF COLUMN.

F FRAME COLUMN BASE DETAIL

G ENDWALL COLUMN BASE DETAIL

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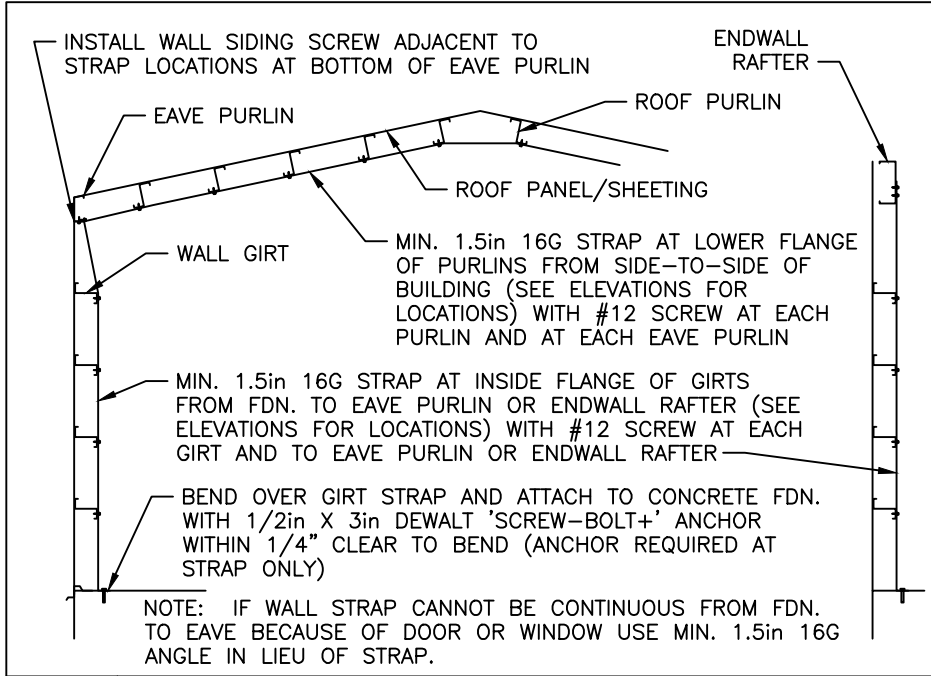
H ROOF SHEETING

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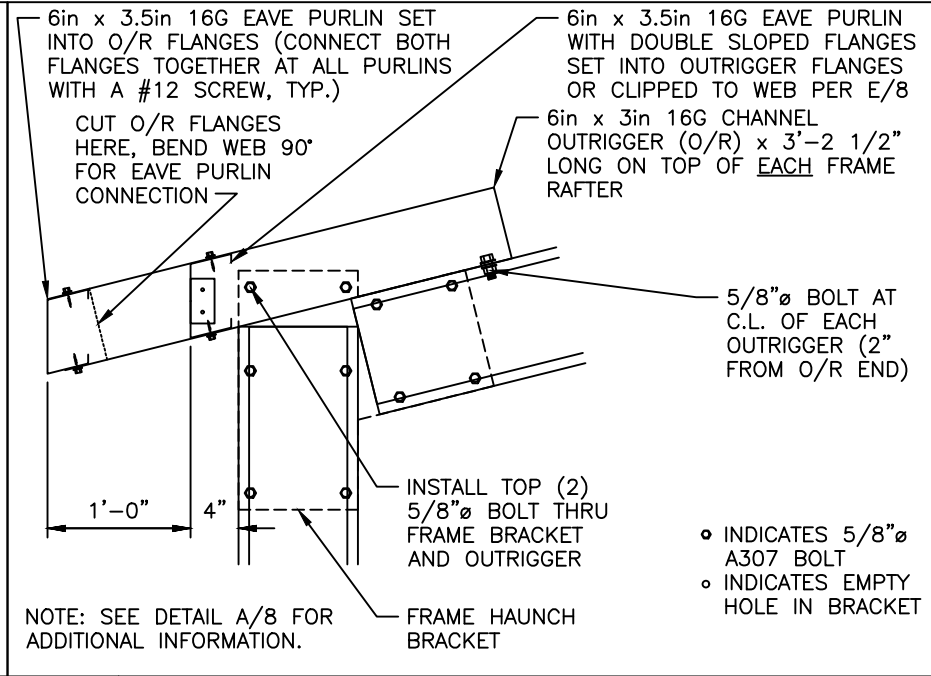
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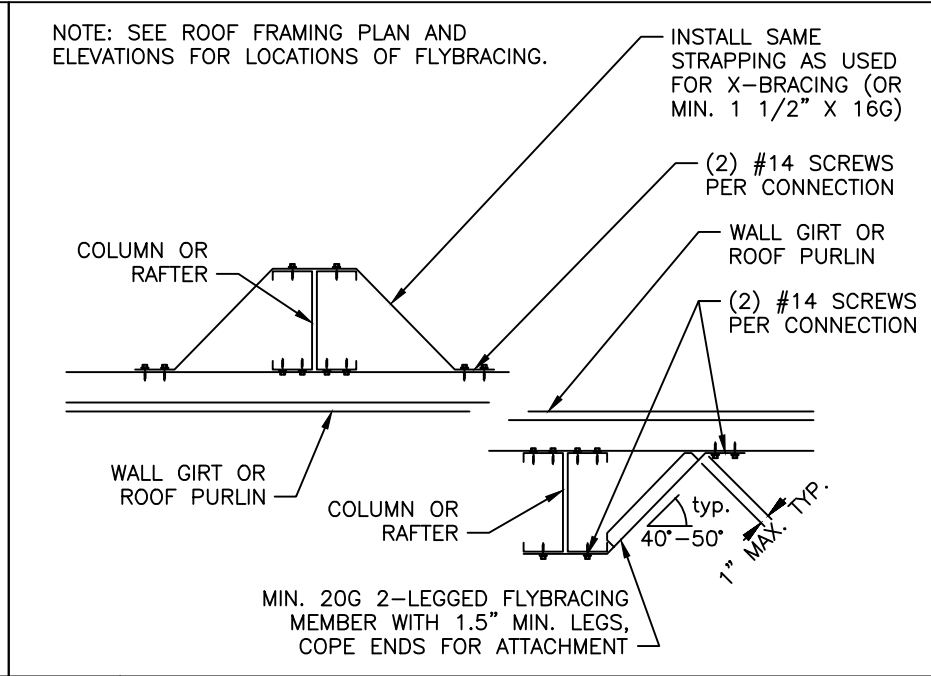
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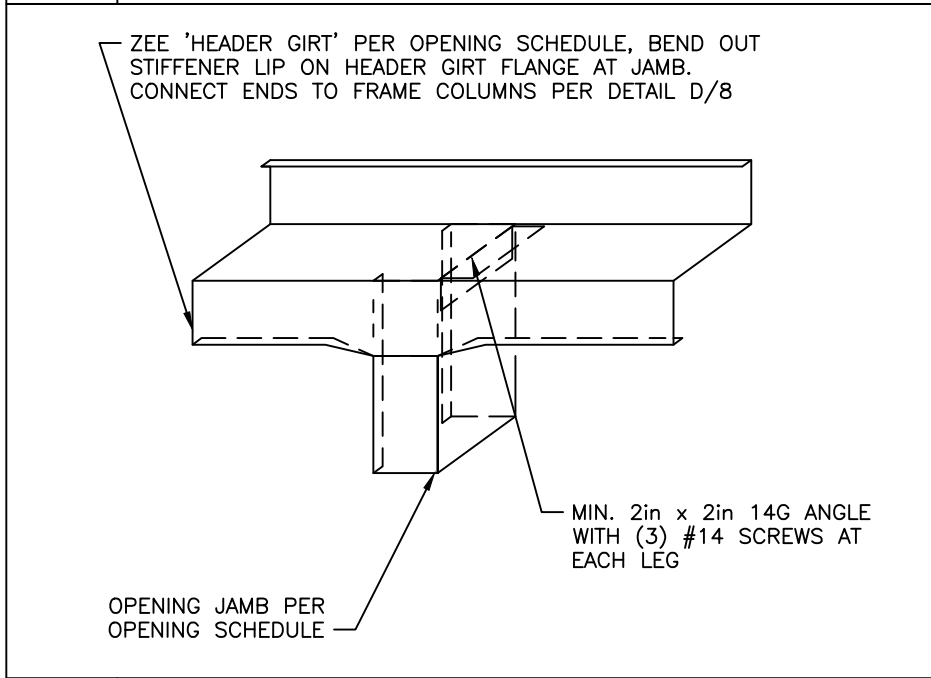
N PURLIN AND GIRT FLANGE BRACING



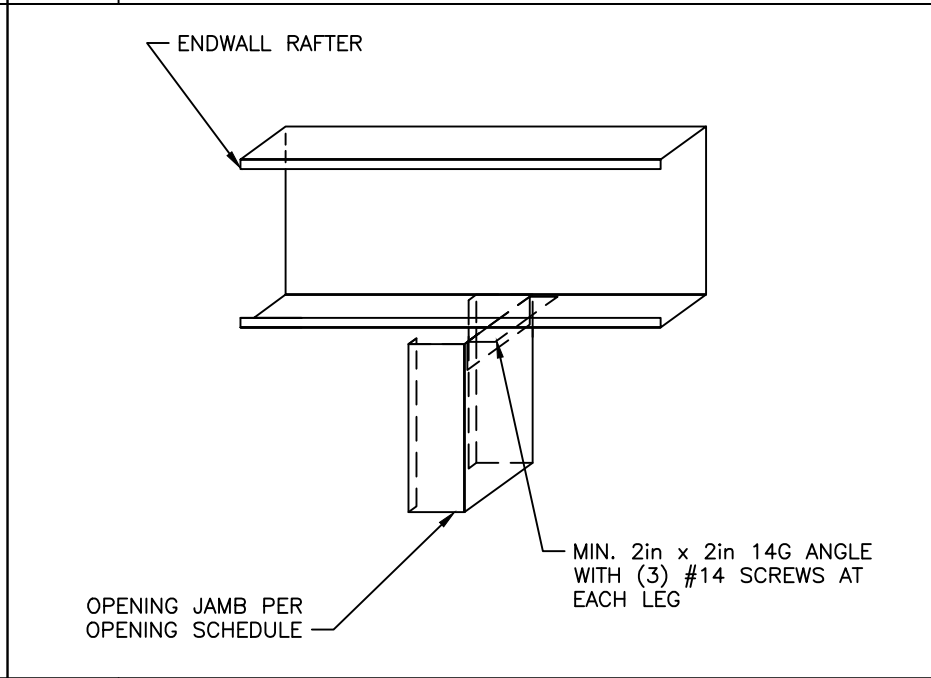
O OVERHANG CONNECTION



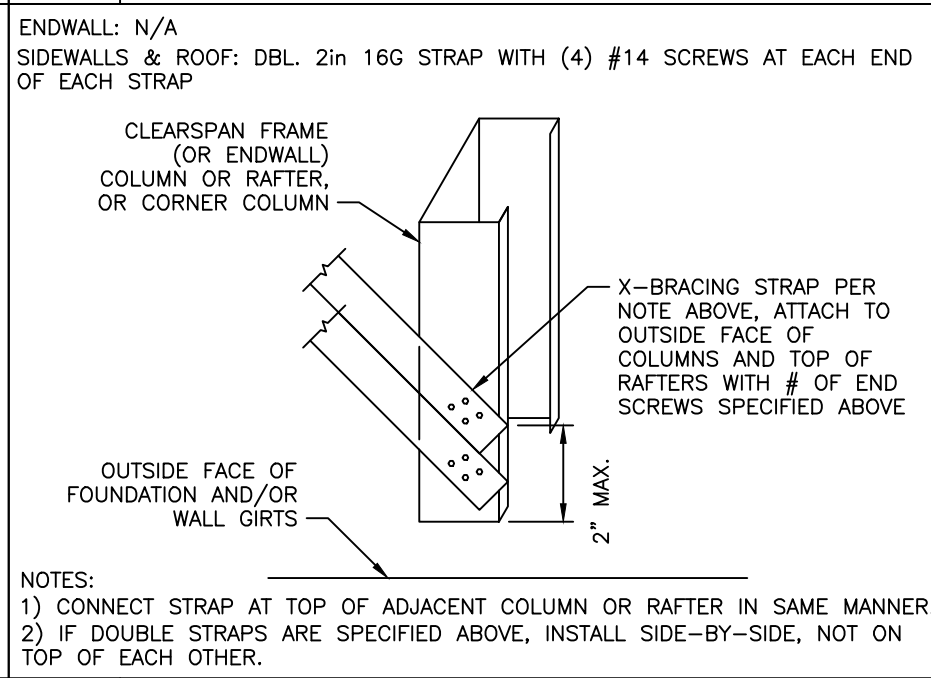
P FLYBRACING CONNECTION



L1 HEADER GIRT JAMB CONNECTION



L2 CEE JAMB CONNECTION



M ROOF AND WALL X-BRACING CONNECTION

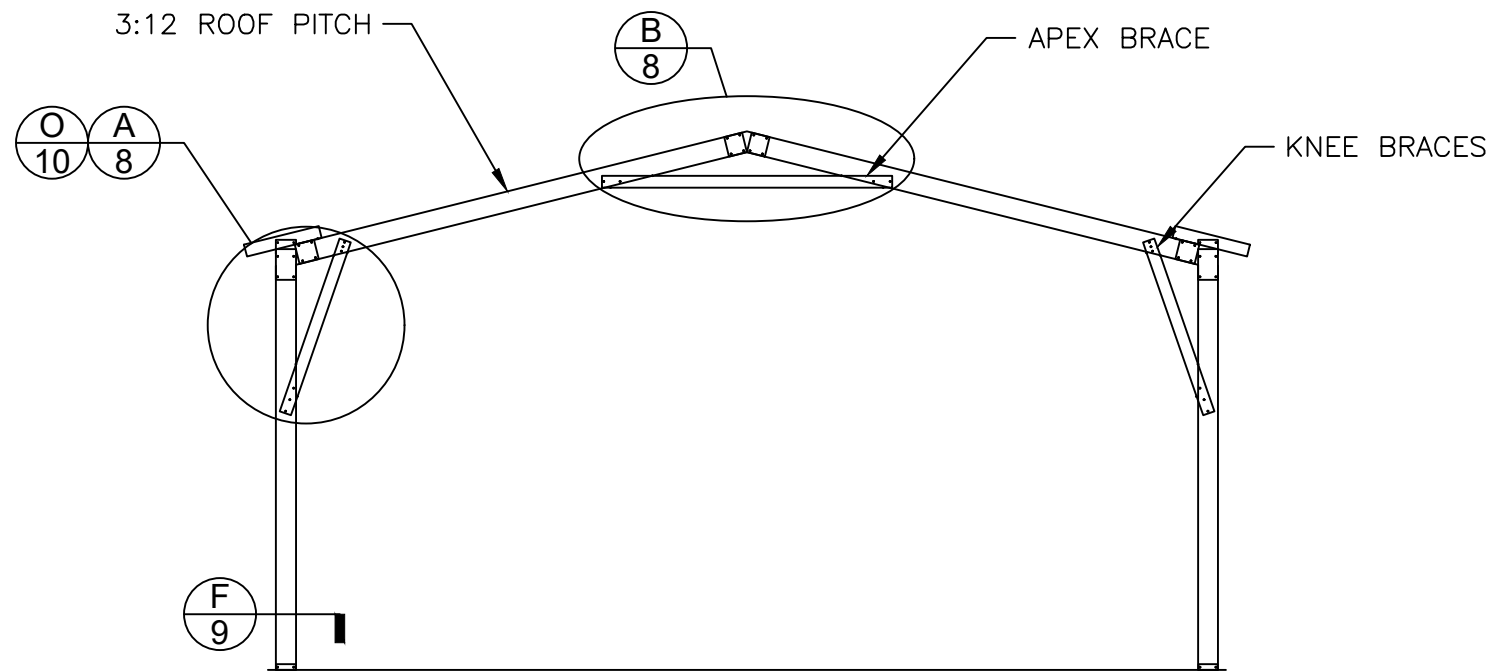
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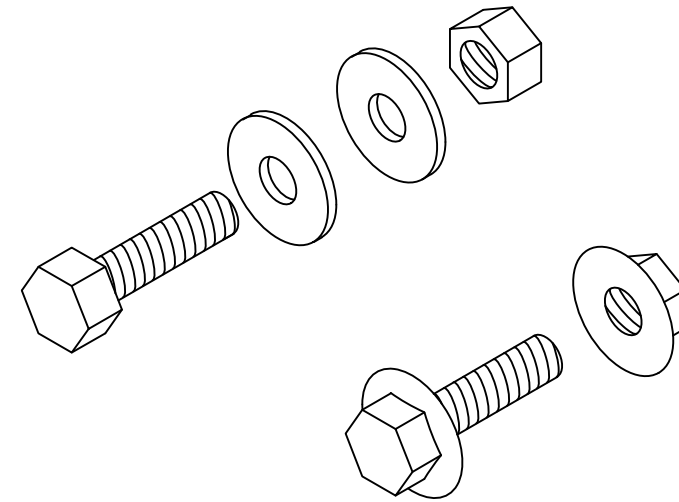
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13



1 TYP. FRAME CROSS-SECTION
11 SCALE: 1/8" = 1'-0" FRAMES 2, 3

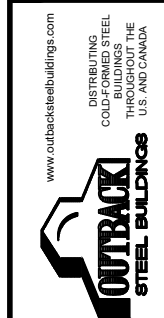
ALL NUTS AND BOLTS TO HAVE WASHER OR FLANGED HEADS



U

BOLT OPTIONS

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STRUCTURAL GENERAL NOTES

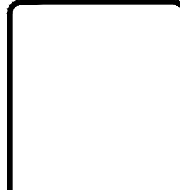
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CONTRACTOR SHALL PROVIDE ALL TEMPORARY BRACING, SHORING, GUYING, OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE DURING ERECTION. THESE TEMPORARY PROVISIONS SHALL REMAIN IN PLACE UNTIL SUFFICIENT PERMANENT MEMBERS ARE ERECTED TO INSURE THE SAFETY OF PARTIALLY ERECTED STRUCTURES. CONTRACTOR IS RESPONSIBLE FOR MEETING ALL LAWS REGULATING THE ERECTION OF STEEL BUILDINGS.
THESE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. BUILDING IS NOT CONSIDERED COMPLETE UNTIL THE INSTALLATION OF ALL COMPONENTS AND DETAILS SHOWN HEREIN ARE INSTALLED ACCORDING TO THE DRAWINGS.
- ENGINEERING:
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THIS BUILDING HAS BEEN REVIEWED BY METAL BUILDING ENGINEERING, LLC FOR CONFORMITY ONLY TO THE STRUCTURAL DESIGN PORTIONS OF THE GOVERNING CODE. THE BUILDING OWNER IS RESPONSIBLE TO SEEK PROFESSIONAL ADVICE IN ADDRESSING ANY OTHER CODE REQUIREMENTS (INCLUDING, BUT NOT LIMITED TO, FIRE AND LIFE SAFETY, ENVIRONMENTAL, ACCESSIBILITY, OR ELECTRICAL) THAT MAY APPLY TO THIS PROJECT.
DRAWINGS SCALES INDICATED ON DRAWINGS ARE APPROXIMATE AND INTENDED TO BE USED FOR REFERENCE ONLY. DO NOT SCALE DRAWINGS FOR CONSTRUCTION PURPOSES.
THESE DOCUMENTS ARE STAMPED ONLY AS TO THE COMPONENTS FURNISHED BY OSB. IT IS THE RESPONSIBILITY OF THE PURCHASER TO COORDINATE DRAWINGS PROVIDED BY METAL BUILDING ENGINEERING, LLC WITH OTHER PLANS AND/OR OTHER COMPONENTS THAT ARE PART OF THE OVERALL PROJECT. IN CASES OF DISCREPANCIES, DRAWINGS PROVIDED BY METAL BUILDING ENGINEERING, LLC SHALL GOVERN. THE UNDERSIGNED ENGINEER WILL NOT SUPERVISE THE FABRICATION OR ERECTION OF THIS STRUCTURE. ANY OBSERVATION VISITS TO THE PROJECT SITE BY THE UNDERSIGNED ENGINEER ARE NOT TO BE CONSTRUED AS BEING INSPECTIONS FOR THE CONSTRUCTION OF ANY COMPONENT OF THIS BUILDING.
- INSPECTIONS:
NO SPECIAL INSPECTIONS ARE REQUIRED BY THE GOVERNING CODE ON THIS JOB. ALL SPECIAL INSPECTIONS AND ANY OTHER ADDITIONAL INSPECTIONS REQUESTED BY BUILDING DEPARTMENT SHALL BE AT OWNER'S EXPENSE.
- SOIL REQUIREMENTS:
ALLOWABLE SOIL BEARING VALUE INDICATED ON DRAWING SHEET 1 OCCURS AT 12" BELOW FINISH GRADE, OR EXISTING NATURAL GRADE, OR AT FROST DEPTH SPECIFIED BY BUILDING DEPARTMENT, WHICHEVER IS THE LOWEST ELEVATION. FOUNDATION DESIGN SHOWN ASSUMES BOTTOM OF FOOTING BEARS ON NATIVE SOILS.
FOUNDATION DESIGN SHOWN DOES NOT ACCOUNT FOR EXPANSIVE SOIL CONDITIONS OR FOR CONCRETE THAT WILL BE EXPOSED TO SULFATE CONTAINING SOLUTIONS OR CHLORIDES. OWNER SHALL CONTACT ENGINEER PRIOR TO CONSTRUCTION IF ANY OF THESE CONDITIONS EXIST.
- CONCRETE REQUIREMENTS:
ALL CONCRETE SHALL HAVE A MIN. 28-DAY STRENGTH OF 2500 psi. HIGHER STRENGTH CONCRETE MAY BE USED, AT OWNER'S DISCRETION, FOR FINISH AND DURABILITY PURPOSES. CEMENT SHALL COMPLY WITH ASTM C150, TYPE 2, AND SHALL CONTAIN NO FLYASH.
ALL CONCRETE PLACEMENT SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE", WHICH IS HEREBY MADE A PART OF THESE DOCUMENTS.
CONCRETE REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60 FOR #4 BARS AND LARGER, GRADE 40 FOR #3 BARS. WELDED WIRE MESH SHALL CONFORM TO ASTM A185 (Fy MIN. OF 70 ksi). ALL FOOTING REINFORCING BARS TO BE CONTINUOUS AROUND CORNERS. LAP SPLICE FOOTING REINFORCING MIDWAY BETWEEN COLUMNS. ALL LAP SPLICES TO BE 48 BAR DIAMETERS MIN., U.N.O.
CONCRETE GRADE BEAMS, THICKENED SLAB EDGES, PIERS, AND SPREAD FOOTINGS SHALL BE POURED ONTO UNDISTURBED, NATIVE SOIL WHICH IS FREE FROM ANY MATERIAL THAT WILL ADVERSELY AFFECT THE MIN. ALLOWABLE SOIL BEARING PRESSURE SPECIFIED ON SHEET 1.
CONCRETE ANCHOR INSTALLATION SHALL BE DONE IN ACCORDANCE WITH ICC REPORT ESR-3889, SECTION 4.3.
- STRUCTURAL STEEL REQUIREMENTS:
ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 (Fy MIN. OF 36000 psi), U.N.O. ALL BOLTS SHALL CONFORM TO ASTM A307, U.N.O. BOLT HOLE DIAMETERS SHALL BE 1/16" LARGER THAN NOMINAL BOLT DIAMETER. ALL INSTALLATION SHALL BE IN ACCORDANCE WITH AISC "CODE OF STANDARD PRACTICE".
NO WELDING IS REQUIRED ON THIS JOB.
- LIGHT GAUGE STRUCTURAL STEEL REQUIREMENTS:
ALL LIGHT GAUGE STEEL FRAMING MATERIAL AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN IRON AND STEEL INSTITUTE (AISI) "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS".
ALL LIGHT GAUGE STEEL MATERIAL SHALL CONFORM TO ASTM A653 HAVING A MINIMUM YIELD STRENGTH OF 55000 psi. THE GRADE AND ASTM SPECIFICATION NUMBER SHALL BE INDICATED BY PAINTING, DECAL, TAGGING, OR OTHER SUITABLE MEANS, ON EACH LIFT OR BUNDLE OF FABRICATED ELEMENTS.
UNLESS NOTED OTHERWISE, CEE, ZEE, AND CHANNEL MEMBERS' WEB AND FLANGE DIMENSIONS (IN INCHES) SHALL BE AS NOTED IN DETAILS IN THE FOLLOWING FORMAT: [WEB DEPTH]in x [FLANGE WIDTH]in [GAUGE]G. FOR ZEES WITH UNEQUAL FLANGES, THE WIDTHS FOR BOTH FLANGES WILL BE LISTED, SEPARATED BY A " / ". MIN. FLANGE STIFFENER LIPS SHALL BE 0.885" FOR 12G CEES, 0.800" FOR 14G CEES, 0.773" FOR 16G CEES, 0.900" FOR 12G ZEES, 0.900" FOR 14G ZEES, AND 0.900" FOR 16G ZEES. ALL BEND RADIUSES SHALL BE .1875". FOR ANGLES, THE FIRST TWO NUMBERS ARE THE LEG DIMENSIONS.
DECIMAL THICKNESS OF THE DELIVERED LIGHT GAUGE STEEL MATERIAL, ACCORDING TO NOMINAL GAUGES, SHALL MEET OR EXCEED 95% THE FOLLOWING DESIGN VALUES

GAUGE NO.	DECIMAL THICKNESS, IN.	GAUGE NO.	DECIMAL THICKNESS, IN.	GAUGE NO.	DECIMAL THICKNESS, IN.
10	0.135	14	0.070	18	0.046
12	0.105	16	0.059	20	0.036

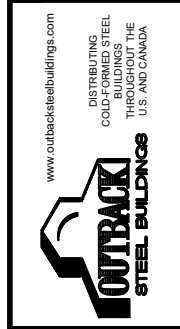
EXCEPT AS SHOWN ON DRAWINGS, CEE COLUMN AND RAFTER MEMBERS SHALL NOT BE DRILLED OR NOTCHED WITHOUT PRIOR APPROVAL OF THE ENGINEER. DOOR JAMB, ROOF PURLIN, AND WALL GIRT ENDS MAY HAVE FLANGES COPEDED 3" MAX. IF CONNECTION IS MADE TO PERPENDICULAR MEMBER PER DETAIL E/B. ROUND HOLES MAY BE DRILLED THROUGH ANY GIRT OR PURLIN MEMBER WITHIN THE MIDDLE THIRD OF THE DEPTH OF THAT MEMBER AND NOT WITHIN 24" OF MEMBER END (FIELD-DRILLED BOLT HOLES INDICATED AT ENDS OF KNEE OR APEX BRACE WEBS AND SHOP-PUNCHED HOLES IN BRACE FLANGES EXCEPTED).
ALL BOLTS USED TO CONNECT LIGHT GAUGE MATERIAL SHALL CONFORM TO ASTM A307. BOLTS TO BE SNUG TIGHT PER THE RCSC AND AISC SPECIFICATIONS, UNLESS SPECIFICALLY NOTED OTHERWISE. BOLTS SHALL BE SPACED NO LESS THAN 3 BOLT DIAMETERS BETWEEN CENTERS. DISTANCE FROM BOLT CENTER TO THE END OR EDGE OF ANY LIGHT GAUGE MEMBER SHALL BE A MIN. OF 1.5 BOLT DIAMETERS. ALL SCREWS USED TO CONNECT LIGHT GAUGE MATERIAL SHALL BE SELF-DRILLING SCREWS AND SHALL HAVE A MIN. TENSILE BREAKING STRENGTH OF 100,000 psi. SCREWS SHALL BE SPACED NO LESS THAN 1" O.C. AND EDGE OR END DISTANCE SHALL NOT BE LESS THAN 1". UNLESS NOTED OTHERWISE, ALL REFERENCES TO "SCREWS" CONNECTING MATERIAL THICKER THAN 20 ga. SHALL BE MIN. #14 SCREWS AND SHALL HAVE MIN. 14 THREADS PER INCH.
SCREW ROOT DIAMETERS SHALL NOT BE LESS THAN: #14 SCREW: .200" #12 SCREW: .177" #10 SCREW: .153"
- STEEL ROOF AND WALL PANELS (CLADDING):
LIGHT GAUGE STEEL ROOF AND WALL PANELS SHALL CONFORM TO ASTM A653 AND THE STEEL DECK INSTITUTE SPECIFICATIONS AND HAVE A MIN. YIELD STRENGTH OF 80000 psi.
DECIMAL THICKNESSES, ACCORDING TO NOMINAL GAUGES, SHALL MEET OR EXCEED THE FOLLOWING:

GAUGE NO.	DECIMAL THICKNESS, IN.	GAUGE NO.	DECIMAL THICKNESS, IN.	GAUGE NO.	DECIMAL THICKNESS, IN.
22	0.0299	26	0.0179	29	0.0134
24	0.0239	28	0.0149	30	0.0120

SEE DETAILS H/9 AND I/9 FOR ROOF AND WALL PANEL FASTENER TYPES AND SPACINGS.



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