

**ENCLOSED GABLE END BUILDING**

**MAXIMUM 30'-0" WIDE X 16'-0" EAVE HEIGHT WITH BOX FRAME / (UP TO) 145 M.P.H. WIND ZONE - 30 P.S.F. SNOW LOAD**

**FOR:**

**N.C. CARPORTS & GARAGES  
116 EAST MARKET STREET / ELKIN, NC. 28621**

ISSUE DATE: FEBRUARY 01, 2023



**JCMT Associates, LLC**

**211 Stone Drive, Pilot Mountain, NC 27041  
336-399-6277**

NOTE:  
THESE DRAWINGS ARE VALID FOR 1 (ONE)  
CALENDER YEAR AFTER THE ISSUE DATE  
LISTED ON THIS SHEET

Terry Gregory



DOCUMENTS DESIGNED AND DRAWN TO MEET THE 2018 NC BUILDING CODE (2015 IBC)



DOCUMENTS DESIGNED AND DRAWN TO MEET THE 2021 SC BUILDING CODE (2021 IBC)



DOCUMENTS DESIGNED AND DRAWN TO MEET THE 2018 VA CONSTRUCTION CODE (2018 IBC)



DOCUMENTS DESIGNED AND DRAWN TO MEET THE 2012 IBC



DOCUMENTS DESIGNED AND DRAWN TO MEET THE 2018 IBC



DOCUMENTS DESIGNED AND DRAWN TO MEET THE 2020 BUILDING CODE OF NEW YORK STATE (2018 IBC)



DOCUMENTS DESIGNED AND DRAWN TO MEET THE 2021 BUILDING CODENEW JERSEY EDITION (2021 IBC)



DOCUMENTS DESIGNED AND DRAWN TO MEET THE 2018 IBC



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S1



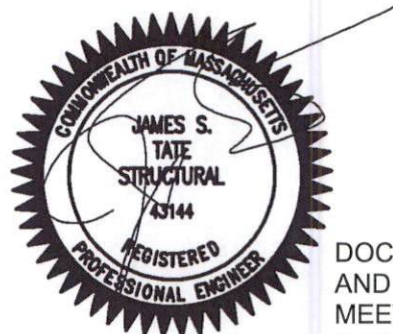
DOCUMENTS DESIGNED AND DRAWN TO MEET THE 2018 IBC



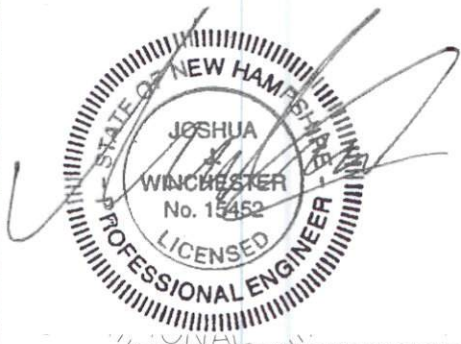
DOCUMENTS DESIGNED AND DRAWN TO MEET THE 2021 BUILDING CODE OF ALABAMA (2021 IBC)



DOCUMENTS DESIGNED AND DRAWN TO MEET THE 2018 IBC



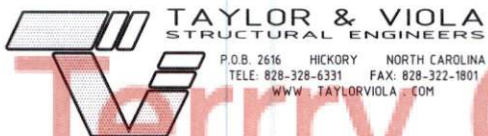
DOCUMENTS DESIGNED AND DRAWN TO MEET THE NINTH EDITION OF THE MA STATE BUILDING CODE



DOCUMENTS DESIGNED AND DRAWN TO MEET THE 2018 IBC



DOCUMENTS DESIGNED AND DRAWN TO MEET THE 2018 IBC



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# SHEET INDEX

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**S2**

DESIGN LOADS:

IMPORTANCE FACTORS	WIND	(1w)	<u>1.00</u>
	SNOW	(1s)	<u>1.00</u>
	SEISMIC	(1e)	<u>1.00</u>

DEAD LOADS	ROOF	<u>13</u>	PSF
	ROOF COLLATERAL	<u>0</u>	PSF

LIVE LOADS	ROOF	<u>20</u>	PSF
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GROUND SNOW LOAD:	<u>30</u>	PSF
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GROUND LOAD:	BASIC WIND SPEED	<u>V 145</u>	mph (ASCE 7-10)	* DRIFT LOAD HAS NOT BEEN CALCULATED
	EXPOSURE CATAGORY	<u>B</u>		

SEISMIC DESIGN CATAGORY A

COMPLIANCE WITH SECTION 1616.4?  NO  YES

PROVIDE THE FOLLOWING SEISMIC DESIGN PARAMETERS:

OCCUPANCY CATEGORY I

SPECTRAL RESPONSE ACCELERATION Ss 20.5 %g S1 8.8 %g

SITE CLASSIFICATION D  FIELD TEST  PRESUMPTIVE  HISTORICAL DATA

BASIC STRUCTURAL SYSTEM (CHECK ONE)

<input type="checkbox"/>	BEARING WALL	<input type="checkbox"/>	DUAL W/ SPECTRAL MOMENT FRAME
<input checked="" type="checkbox"/>	BUILDING FRAME	<input type="checkbox"/>	DUAL W/ INTERMEDIATE R/C OR SPECIAL STEEL
<input type="checkbox"/>	MOMENT FRAME	<input type="checkbox"/>	INVERTED PENDULUM

ANALYSIS PROCEDURE  SIMPLIFIED  EQUIVALANT LATERAL FORCE  MODAL

LATERAL DESIGN CONTROL?  EARTHQUAKE  WIND

SOIL BEARING CAPACITIES:

PRESUMPTIVE BEARING CAPACITIES: 2,000 PSF

GENERAL NOTES:

1. MAX FRAME SPACING SHALL BE 60"oc UNLESS NOTED OTHERWISE.
2. MAX. END-WALL COLUMN SPACING SHALL BE 60"oc UNLESS NOTED OTHERWISE.
3. TUBE MATERIAL SHALL BE 2-1/2" x 2-1/2" x 14 GA. 50 KSI MIN. UNLESS NOTED OTHERWISE.
4. ALL FASTENERS SHALL BE #12 SELF TAPPING AT 9"o.c. UNLESS NOTED OTHERWISE.
5. 2,000 PSF ASSUMED BEARING CAPACITY UNLESS NOTED OTHERWISE.



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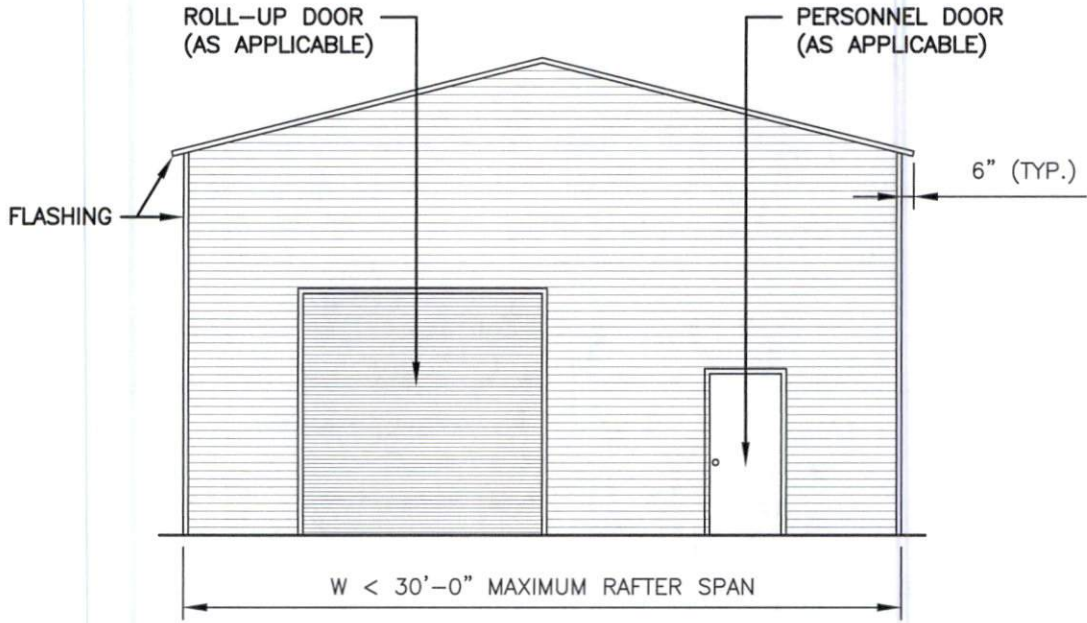
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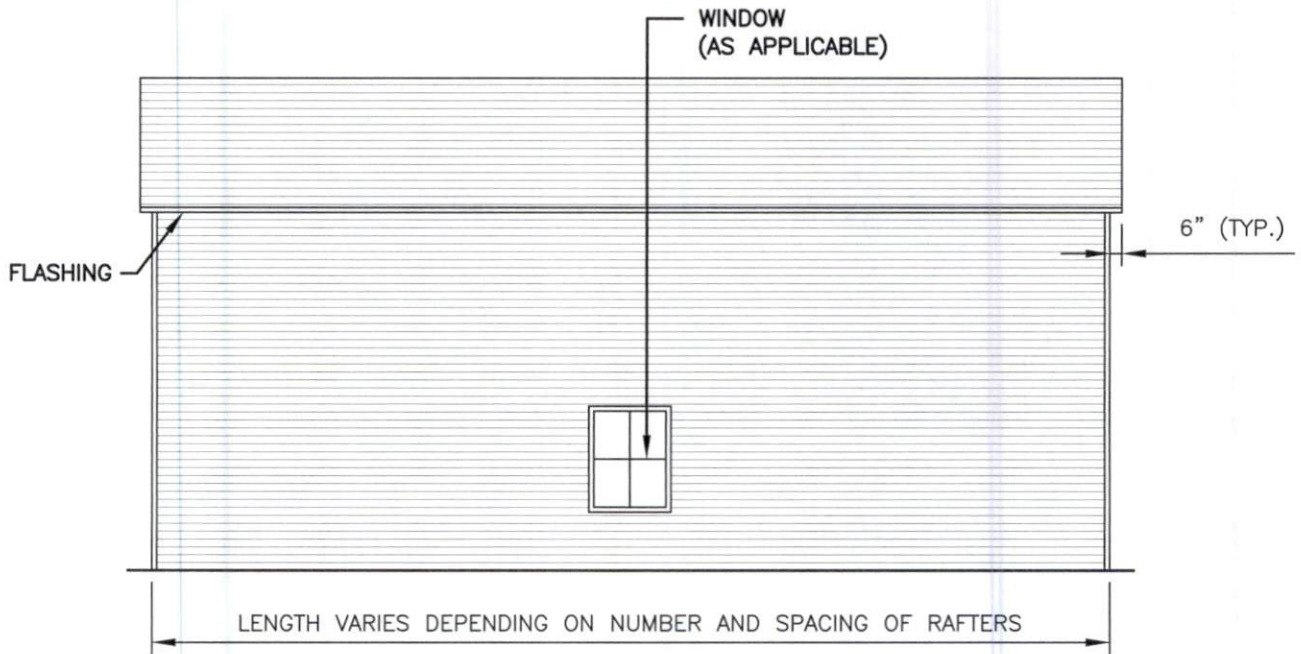
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S3

# BOX EVE FRAME RAFTER STURCTURE



TYPICAL END ELEVATION



TYPICAL SIDE ELEVATION



**TAYLOR & VIOLA**  
STRUCTURAL ENGINEERS

P.O.B. 2616 HICKORY NORTH CAROLINA  
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WWW.TAYLORVIOLA.COM

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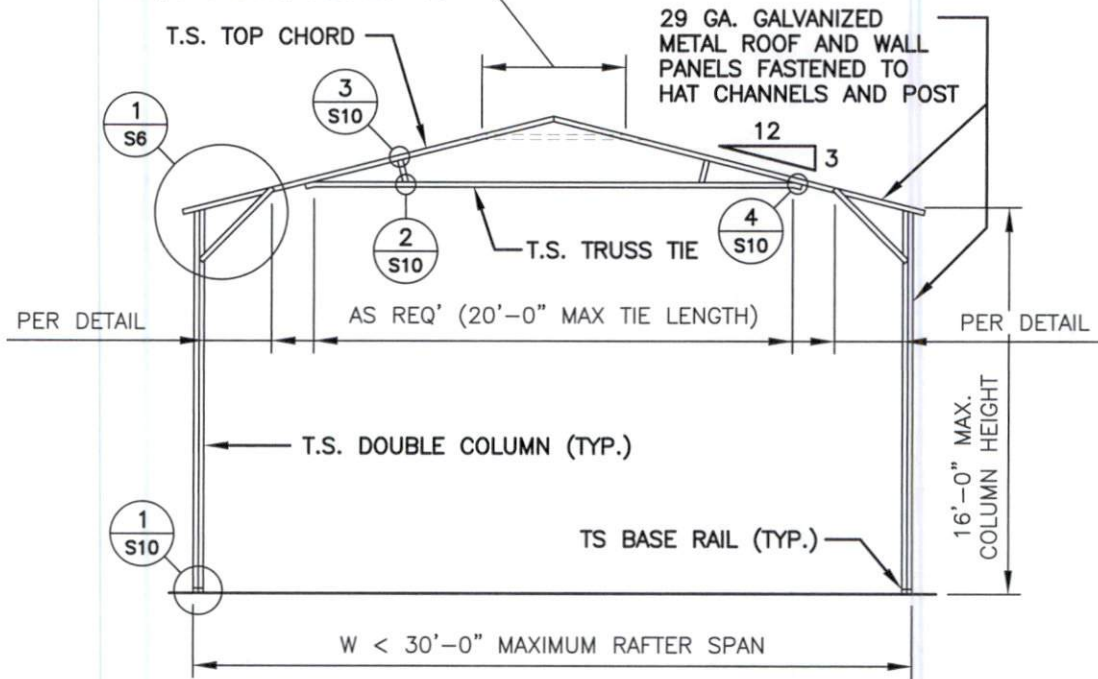
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**S4**

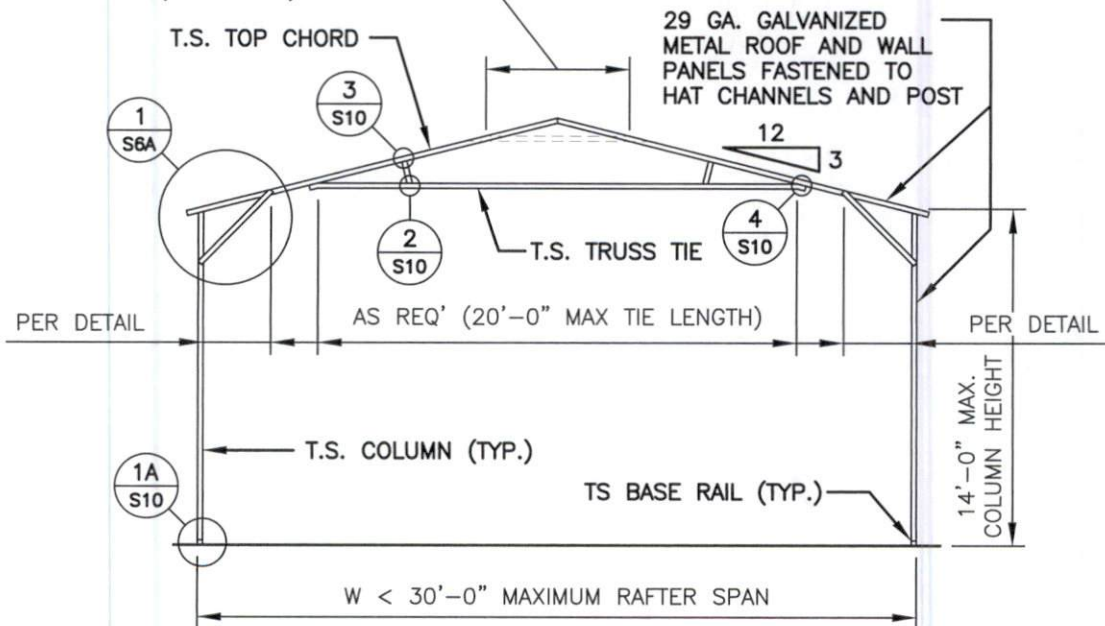
'U' BRACE TRUSS TIE - NOTE:  
 6'-0" BRACE FOR 21'-24' BUILDING WIDTH  
 20' TUBE TRUSS TIE (AS SHOWN) FOR 25'-30'



**TYPICAL RAFTER / COLUMN FRAME SECTION**

'U' BRACE TRUSS TIE - NOTE:  
 6'-0" BRACE FOR 21'-24' BUILDING WIDTH  
 20' TUBE TRUSS TIE (AS SHOWN) FOR 25'-30'

NOTE:  
 H.S.S. 2-1/2"x2-1/2"x14ga. OR 2-1/4"x2-1/4"x14ga.  
 MATERIAL MAY BE USED FOR TRUSS METAL.



**TYPICAL RAFTER / COLUMN FRAME SECTION**



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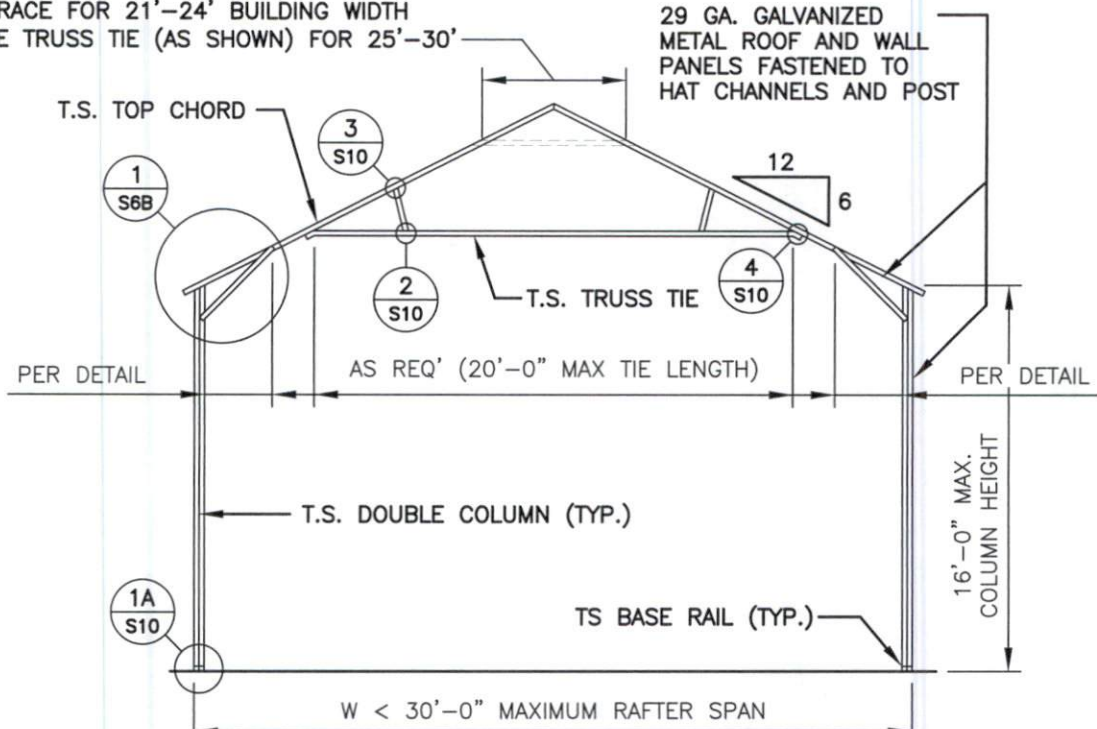
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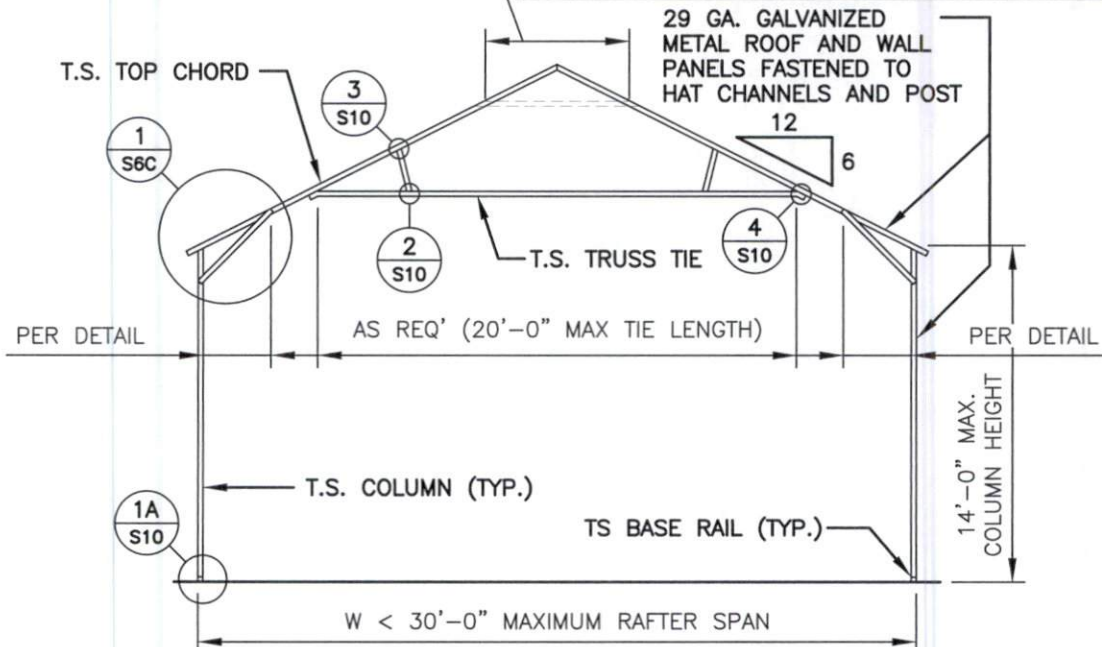
'U' BRACE TRUSS TIE - NOTE:  
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 20' TUBE TRUSS TIE (AS SHOWN) FOR 25'-30'



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NOTE:  
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 MATERIAL MAY BE USED FOR TRUSS METAL.



**TYPICAL RAFTER / COLUMN FRAME SECTION**



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 P.O.B. 2616 HICKORY NORTH CAROLINA  
 TELE: 828-328-6331 FAX: 828-322-1801  
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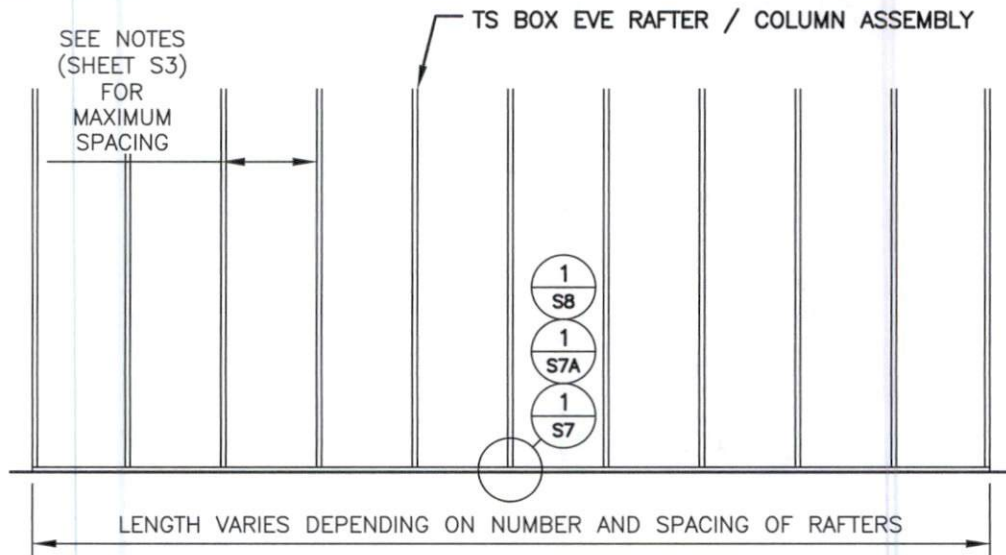
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**S5A**



NOTE:  
 H.S.S. 2-1/2"x2-1/2"x14ga. OR  
 2-1/4"x2-1/4"x14ga. MATERIAL  
 MAY BE USED FOR TRUSS METAL.



**TYPICAL RAFTER / COLUMN SIDE FRAME SECTION**

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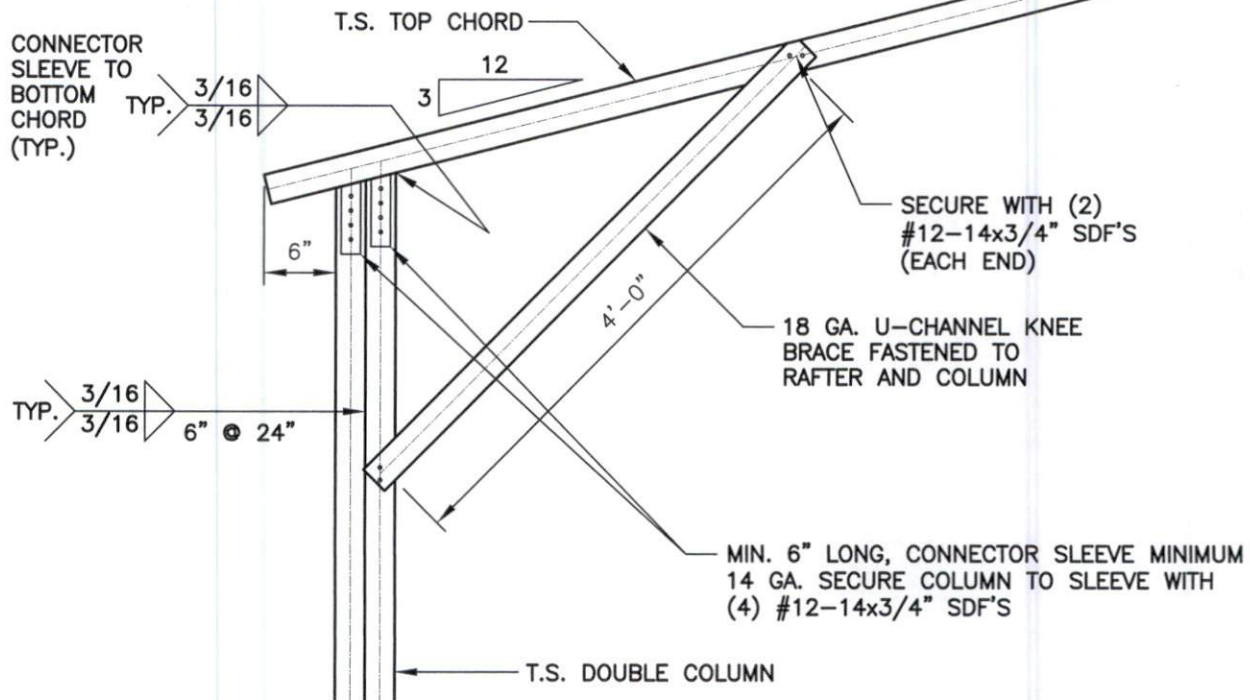
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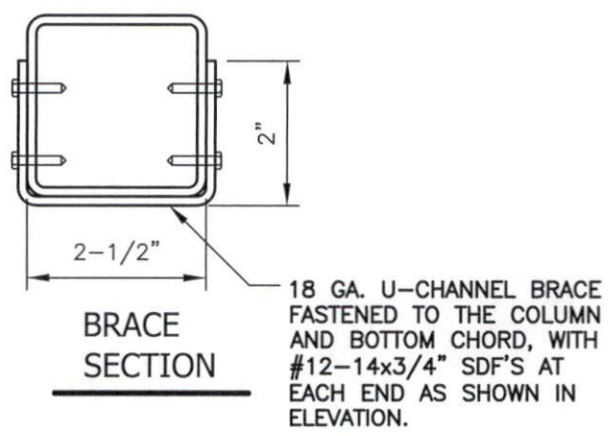
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**S5B**



1 BOX EAVE / CORNER POST CONNECTION DETAIL FOR HEIGHTS 14'-1" < TO <16'-0"  
 S6 SCALE: 3/4" = 1'-0"



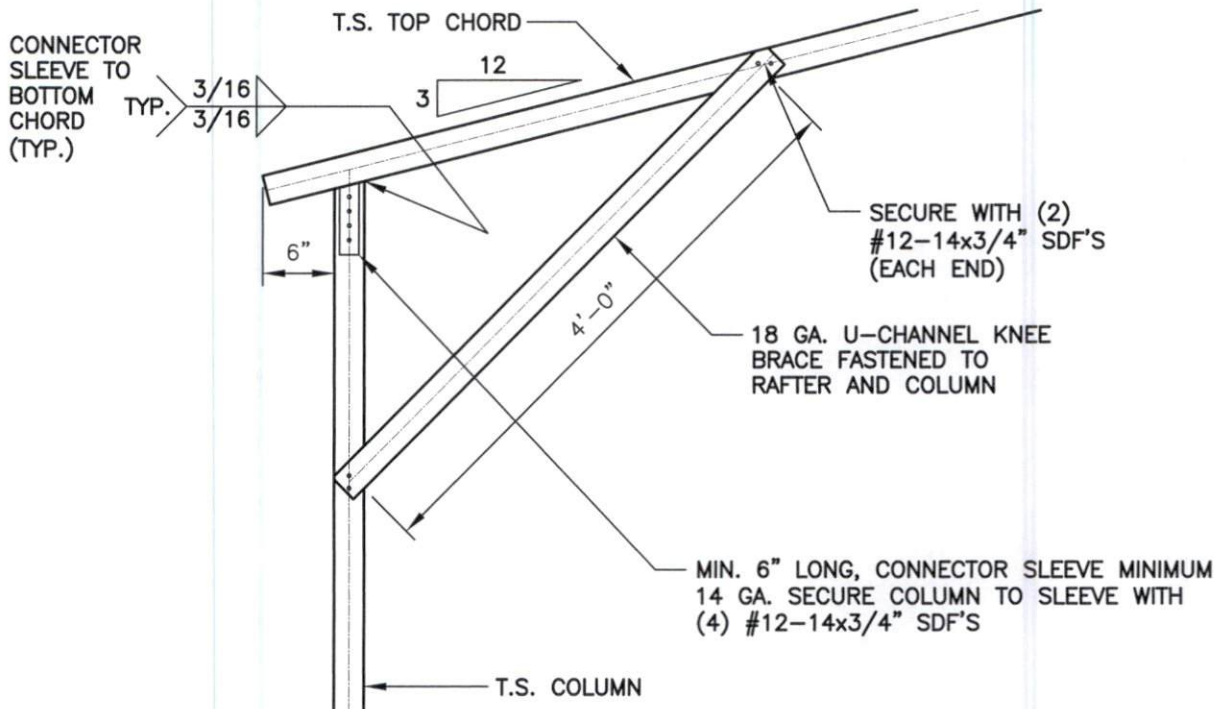
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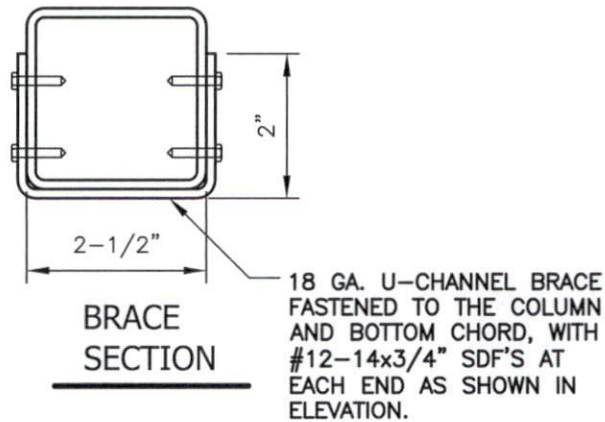
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1 BOX EAVE / CORNER POST CONNECTION DETAIL FOR HEIGHTS < 14'-0"

S6A SCALE: 3/4" = 1'-0"



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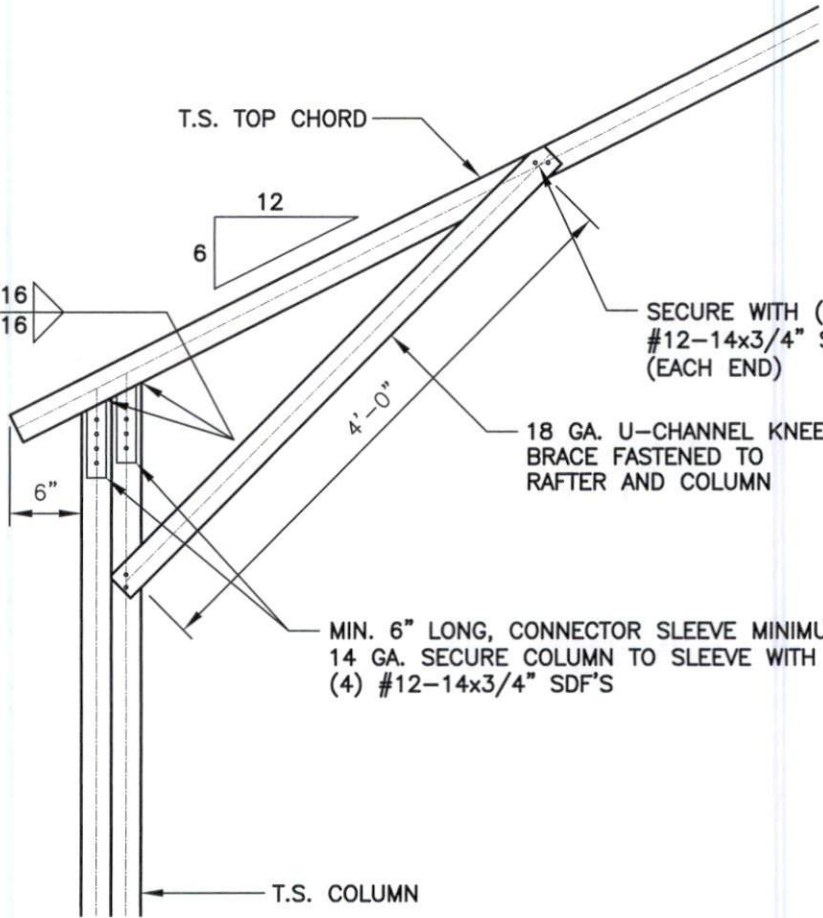
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**S6A**

CONNECTOR SLEEVE TO BOTTOM CHORD (TYP.)

TYP.  $\frac{3}{16}$  /  $\frac{3}{16}$



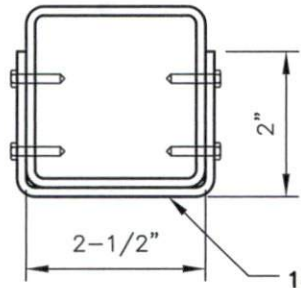
SECURE WITH (2) #12-14x3/4" SDF'S (EACH END)

18 GA. U-CHANNEL KNEE BRACE FASTENED TO RAFTER AND COLUMN

MIN. 6" LONG, CONNECTOR SLEEVE MINIMUM 14 GA. SECURE COLUMN TO SLEEVE WITH (4) #12-14x3/4" SDF'S

T.S. COLUMN

1 BOX EAVE / CORNER POST CONNECTION DETAIL FOR HEIGHTS 14'-1" < TO <16'-0"  
 S6C SCALE: 3/4" = 1'-0"



BRACE SECTION

18 GA. U-CHANNEL BRACE FASTENED TO THE COLUMN AND BOTTOM CHORD, WITH #12-14x3/4" SDF'S AT EACH END AS SHOWN IN ELEVATION.

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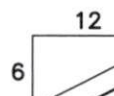
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**S6B**

CONNECTOR SLEEVE TO BOTTOM CHORD (TYP.)

TYP.  $\frac{3}{16}$  /  $\frac{3}{16}$

T.S. TOP CHORD

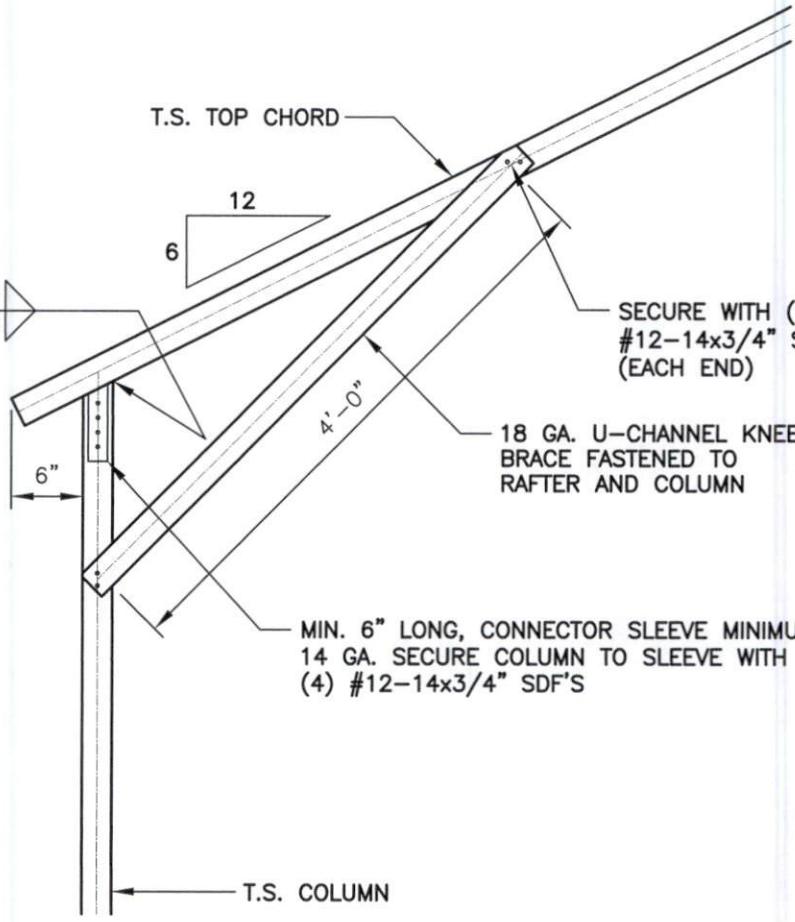


SECURE WITH (2) #12-14x3/4" SDF'S (EACH END)

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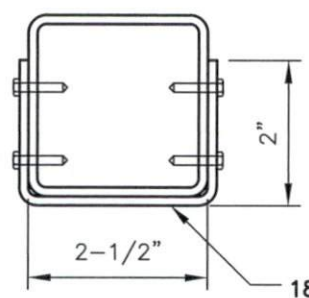
MIN. 6" LONG, CONNECTOR SLEEVE MINIMUM 14 GA. SECURE COLUMN TO SLEEVE WITH (4) #12-14x3/4" SDF'S

T.S. COLUMN



**1** BOX EAVE / CORNER POST CONNECTION DETAIL FOR HEIGHTS < 14'-0"

S6C SCALE: 3/4" = 1'-0"



**BRACE SECTION**

18 GA. U-CHANNEL BRACE FASTENED TO THE COLUMN AND BOTTOM CHORD, WITH #12-14x3/4" SDF'S AT EACH END AS SHOWN IN ELEVATION.

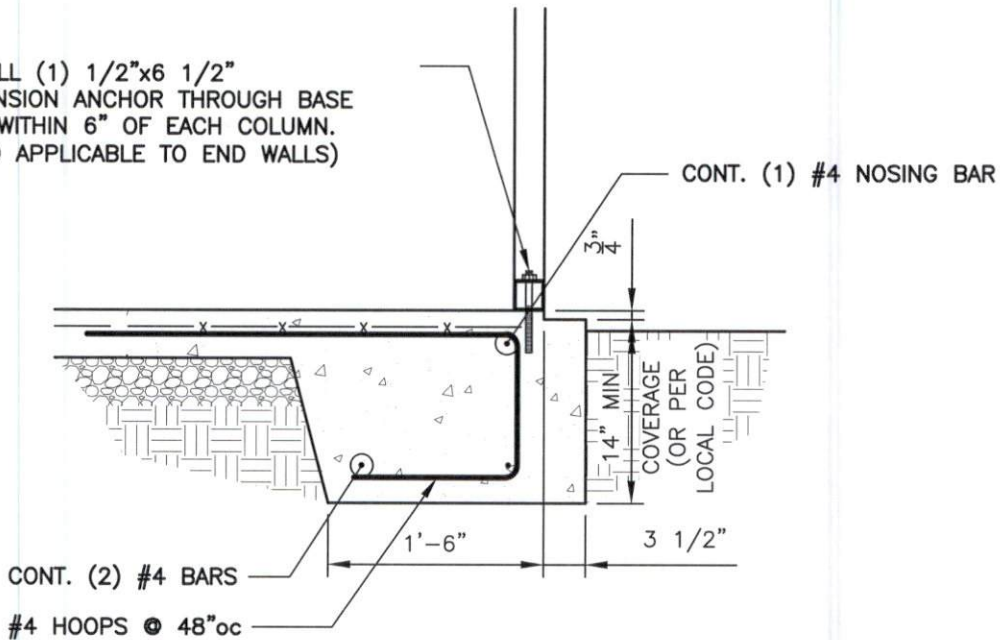
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## CONCRETE BASE RAIL ANCHORAGE

INSTALL (1) 1/2"x6 1/2"  
EXPANSION ANCHOR THROUGH BASE  
RAIL WITHIN 6" OF EACH COLUMN.  
(ALSO APPLICABLE TO END WALLS)



1
S7
**BASE RAIL ANCHORAGE DETAIL**  
 SCALE: 3/4" = 1'-0"

**GENERAL NOTES:**

ALL CONCRETE MONOLITHIC SLAB DESIGN BASED ON MINIMUM SOIL BEARING CAPACITY OF 2,000 PSF

**CONCRETE:**

CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS

**COVER OVER REINFORCING STEEL:**

FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-318:

3" IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH AND WEATHER AND 1-1/2" ELSEWHERE.

**REINFORCING STEEL:**

THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT.

**REINFORCEMENT MAT BE BENT IN THE SHOP OF THE FIELD PROVIDED:**

1. REINFORCEMENT IS BENT COLD.
2. THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETERS.
3. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT.



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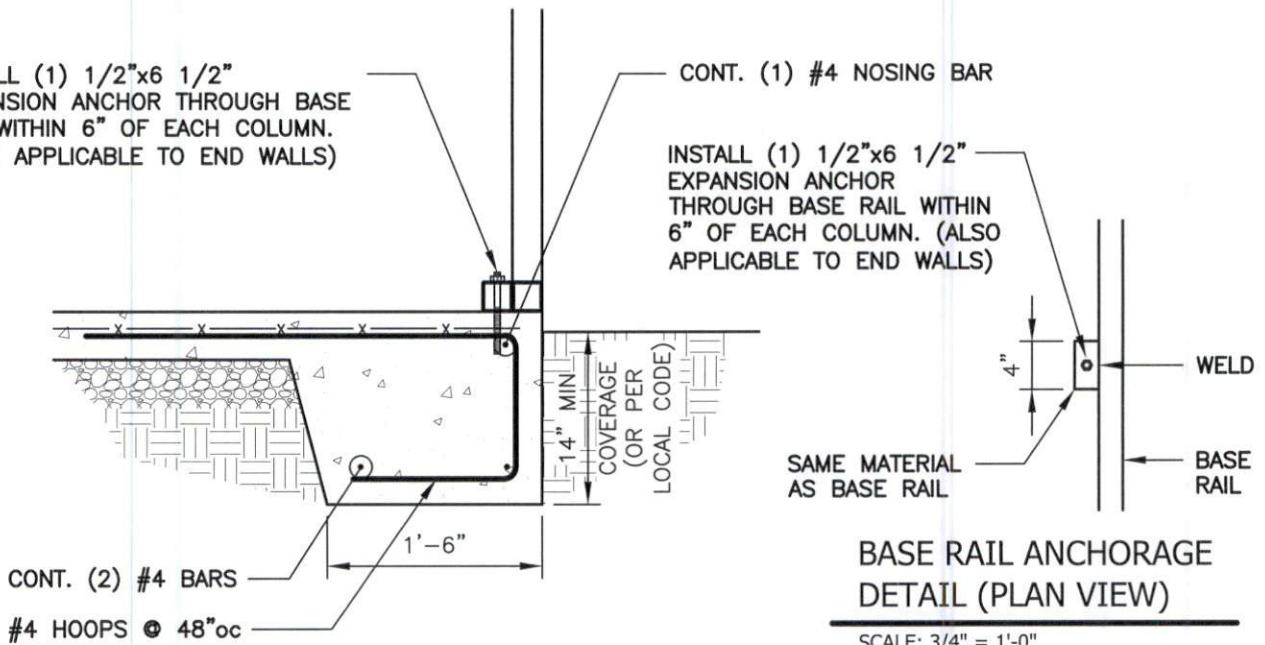
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**S7**

## CONCRETE BASE RAIL ANCHORAGE

INSTALL (1) 1/2"x6 1/2"  
EXPANSION ANCHOR THROUGH BASE  
RAIL WITHIN 6" OF EACH COLUMN.  
(ALSO APPLICABLE TO END WALLS)

CONT. (1) #4 NOSING BAR

INSTALL (1) 1/2"x6 1/2"  
EXPANSION ANCHOR  
THROUGH BASE RAIL WITHIN  
6" OF EACH COLUMN. (ALSO  
APPLICABLE TO END WALLS)



**BASE RAIL ANCHORAGE  
DETAIL (PLAN VIEW)**

SCALE: 3/4" = 1'-0"

**1**  
S7A **BASE RAIL ANCHORAGE DETAIL**  
SCALE: 3/4" = 1'-0"

**GENERAL NOTES:**

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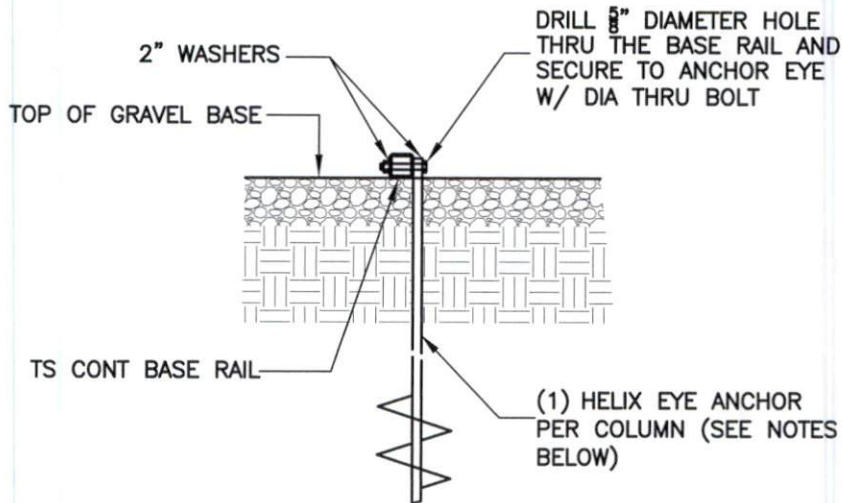
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**S7A**

## SOIL NAIL BASE RAIL ANCHORAGE



1
S8
**BASE RAIL ANCHORAGE DETAIL**  
 SCALE: 3/4" = 1'-0"

**HELIX EMBEDMENT INFORMATION:**


FOR VERY DENSE OR CEMENTED SANDS, COARSE GRAVEL, COBBLES, CALICHE, PRELOADED SILTS AND CLAYS, USE MIN (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT OR SINGLE 6" HELIX WITH 50" EMBEDMENT

FOR CORAL, USE MIN (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT OR SINGLE 6" HELIX WITH 50" EMBEDMENT

FOR MED DENSE COARSE SANDS, SANDY GRAVEL, VERY STIFF SILTS, AND CLAYS, USE MIN (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT OR SINGLE 6" HELIX WITH 50" EMBEDMENT

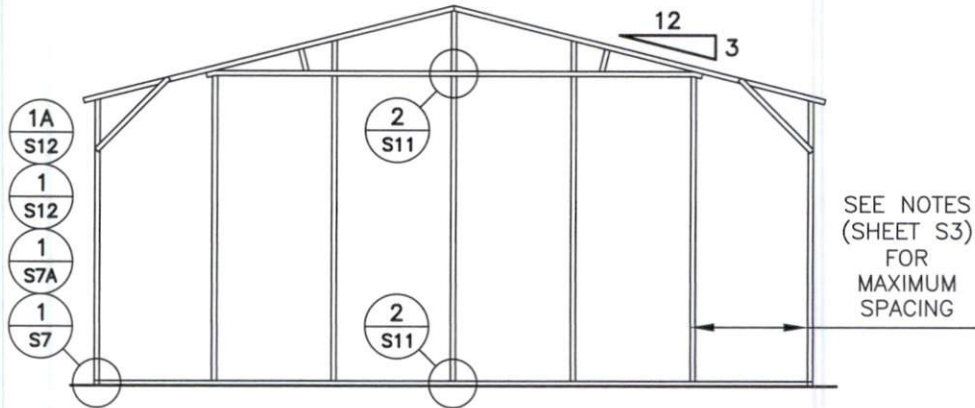
FOR LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS, USE MIN (2) 6" HELICES WITH MINIMUM 50" EMBEDMENT

FOR VERY LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER CLAYS AND SILTS AND ALLUVIAL FILL, USE MIN (2) 8" HELICES WITH MINIMUM 60" EMBEDMENT

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		BKS	MISC
		DATE:	SHEET NO:
		2023.02.01	<b>S8</b>

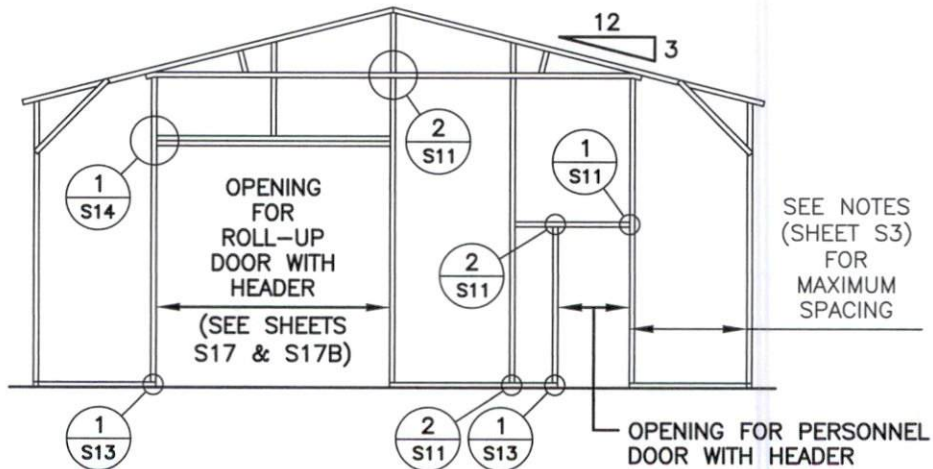


BOX EVE RAFTER END WALL OPENINGS



TYPICAL BOX EVE RAFTER / END WALL COLUMN FRAME SECTION

NOTE:  
 ROLL UP DOORS SHALL  
 HAVE ONE JAMB EACH  
 SIDE + ONE FRAME  
 COLUMN BETWEEN OR SITE  
 SPECIFIC SHALL BE REQ'D.



TYPICAL BOX EVE RAFTER END WALL OPENINGS FRAMING SECTION



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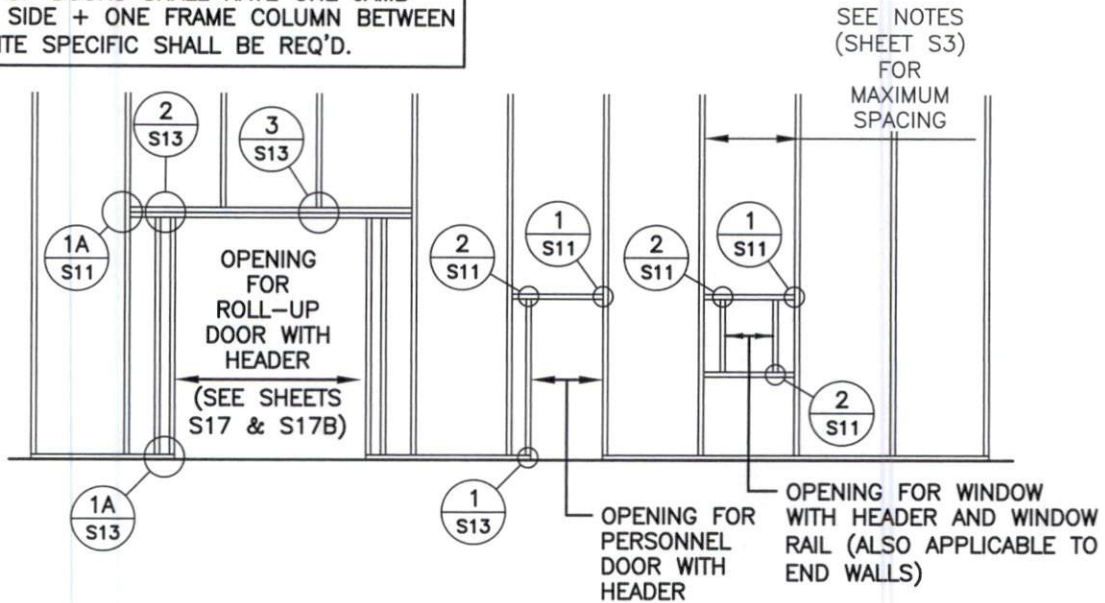
PROJECT NO:  
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**S9**

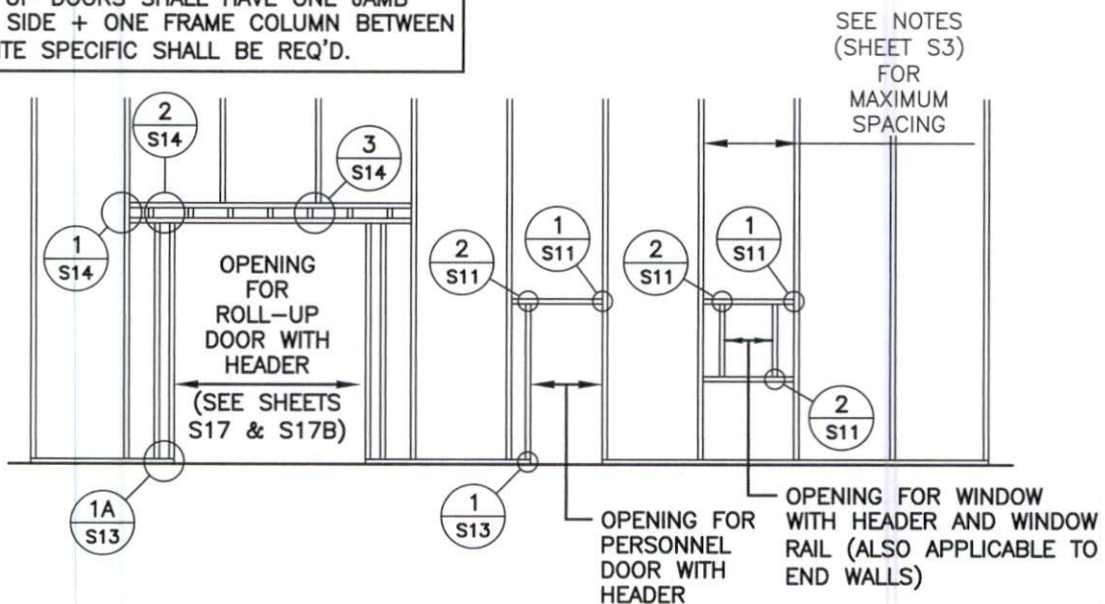
## BOX EVE RAFTER END WALL AND SIDE WALL OPENINGS

**NOTE:**  
 ROLL UP DOORS SHALL HAVE ONE JAMB  
 EACH SIDE + ONE FRAME COLUMN BETWEEN  
 OR SITE SPECIFIC SHALL BE REQ'D.



TYPICAL END WALL OPENING FRAMING SECTION

**NOTE:**  
 ROLL UP DOORS SHALL HAVE ONE JAMB  
 EACH SIDE + ONE FRAME COLUMN BETWEEN  
 OR SITE SPECIFIC SHALL BE REQ'D.



TYPICAL SIDE WALL OPENING FRAMING SECTION



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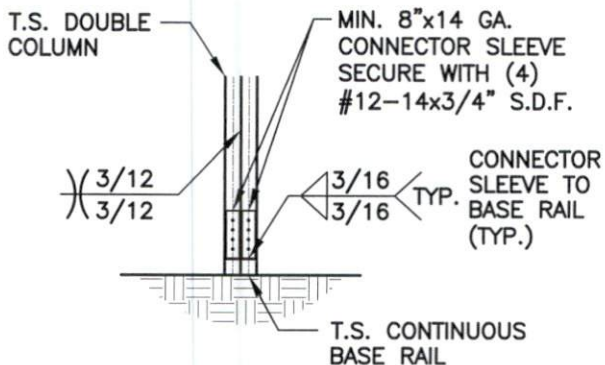
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**DATE:**  
 2023.02.01

**SHEET NO:**  
**S9A**

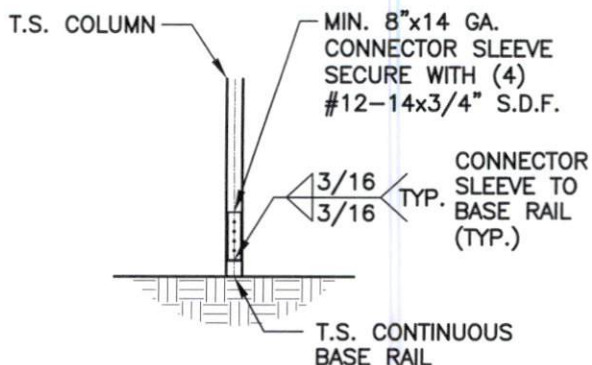
## CONNECTION DETAILS



**1**  
POST / BASE RAIL  
CONNECTION DETAIL

**S10**

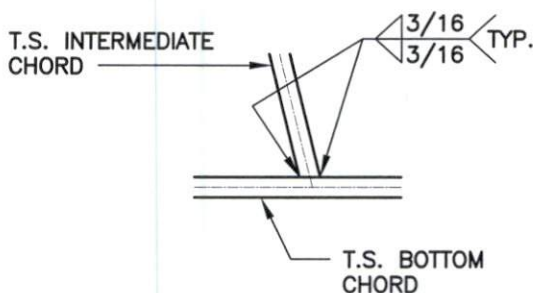
SCALE: 1/2" = 1'-0"



**1A**  
POST / BASE RAIL  
CONNECTION DETAIL

**S10**

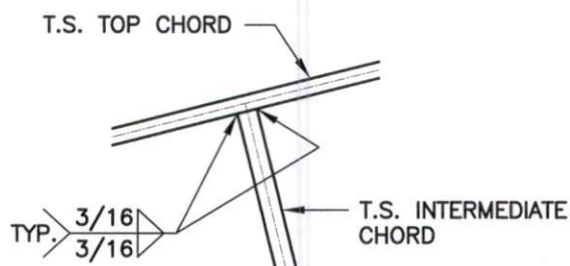
SCALE: 1/2" = 1'-0"



**2**  
INTERMEDIATE CHORD  
TO BOTTOM CHORD  
CONNECTION DETAIL

**S10**

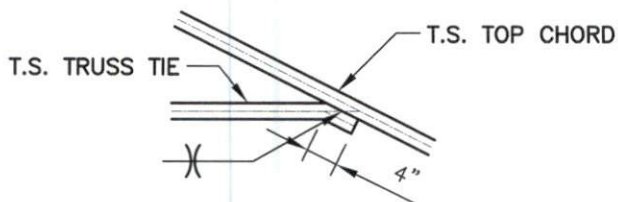
SCALE: 1/2" = 1'-0"



**3**  
INTERMEDIATE CHORD TO TOP  
CHORD CONNECTION DETAIL

**S10**

SCALE: 1/2" = 1'-0"



**4**  
TRUSS TIE  
CONNECTION DETAIL

**S10**

SCALE: 1/2" = 1'-0"

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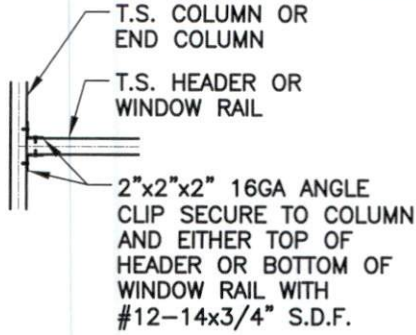
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SHEET NO:  
**S10**

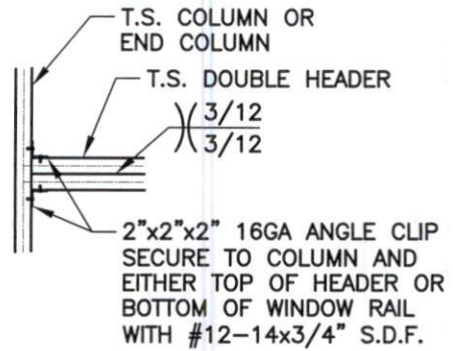
## CONNECTION DETAILS



COLUMN OR WINDOW  
RAIL / WALL GIRT TO POST  
CONNECTION DETAIL

1  
S11

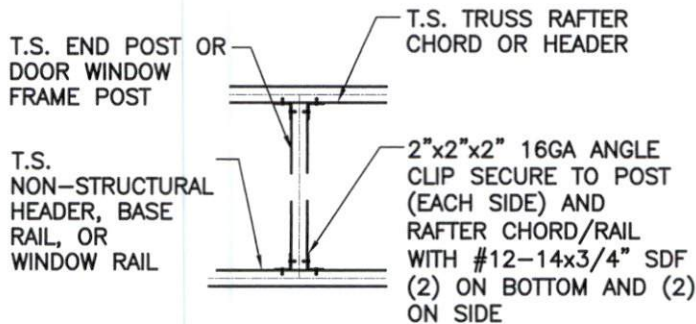
SCALE: 1/2" = 1'-0"



COLUMN / DOUBLE HEADER  
CONNECTION DETAIL

1A  
S11

SCALE: 1/2" = 1'-0"

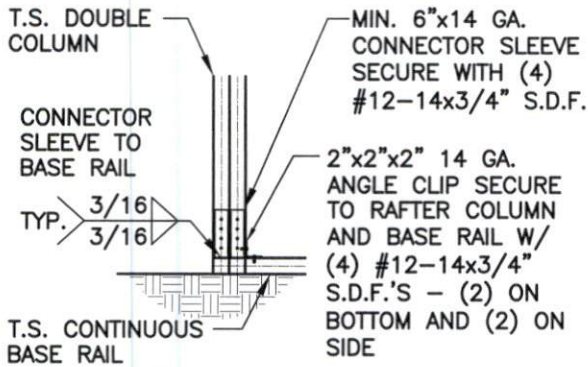


DOOR OR WINDOW HEADER  
RAIL TO POST CONNECTION  
DETAIL

2  
S11

SCALE: 1/2" = 1'-0"

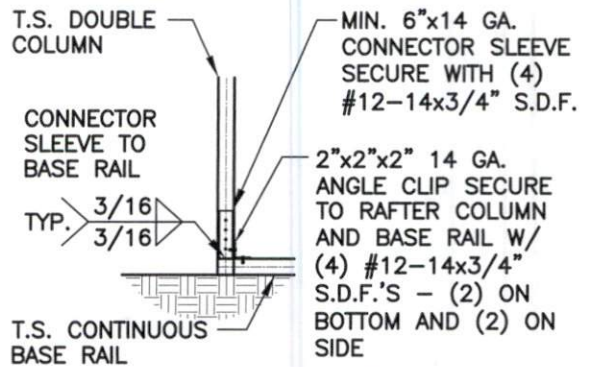
## CONNECTION DETAILS



END COLUMN / BASE RAIL  
CONNECTION DETAIL

1  
S12

SCALE: 1/2" = 1'-0"



END COLUMN / BASE RAIL  
CONNECTION DETAIL

1A  
S12

SCALE: 1/2" = 1'-0"



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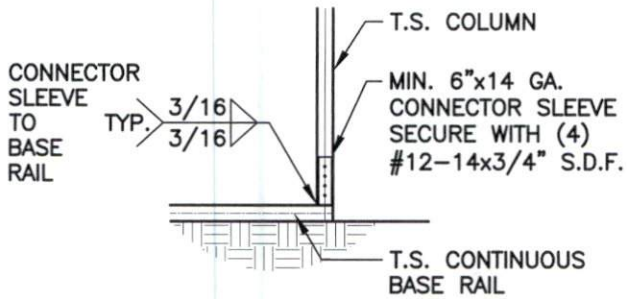
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**S12**

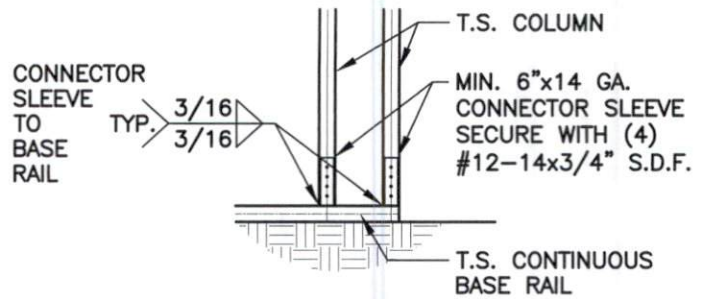
## CONNECTION DETAILS



**1**  
COLUMN / BASE RAIL CONNECTION DETAIL

**S13**

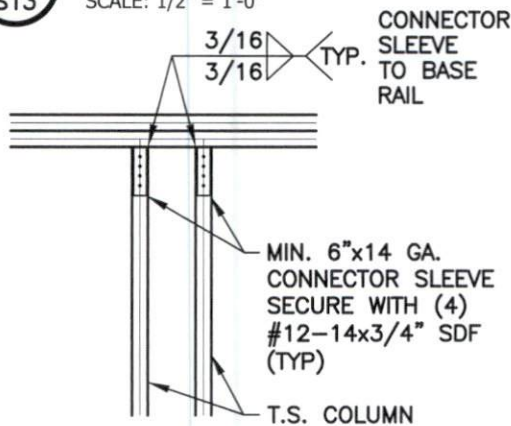
SCALE: 1/2" = 1'-0"



**1A**  
COLUMN / BASE RAIL CONNECTION DETAIL

**S13**

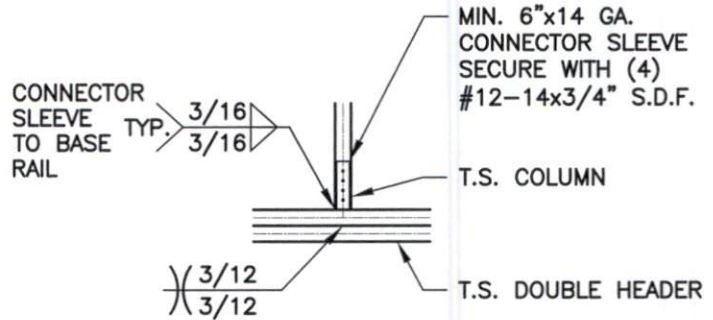
SCALE: 1/2" = 1'-0"



**2**  
DOUBLE HEADER / COLUMN CONNECTION DETAIL

**S13**

SCALE: 1/2" = 1'-0"

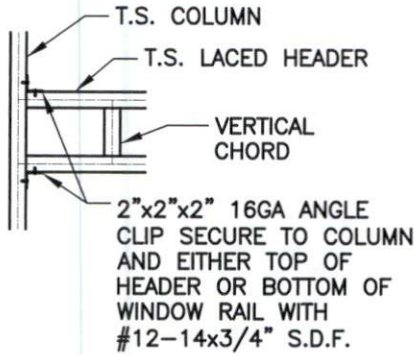


**3**  
COLUMN / DOUBLE HEADER CONNECTION DETAIL

**S13**

SCALE: 1/2" = 1'-0"

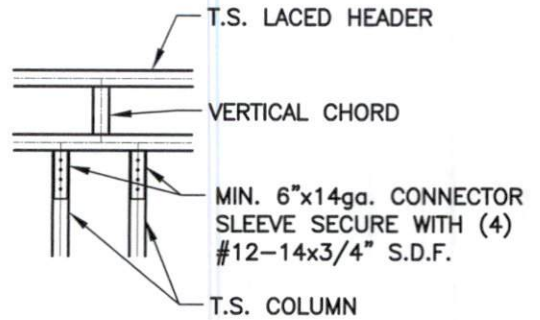
## CONNECTION DETAILS



**1**  
COLUMN / LACED HEADER  
CONNECTION DETAIL

**S14**

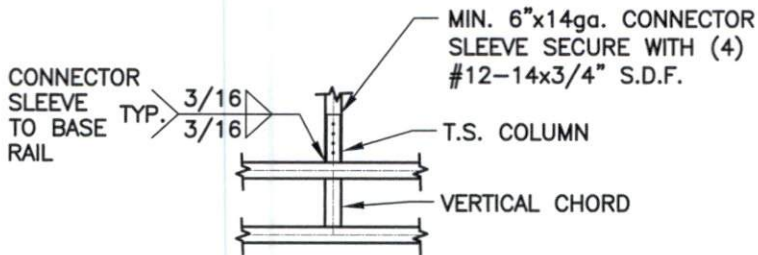
SCALE: 1/2" = 1'-0"



**2**  
LACED HEADER / COLUMN  
CONNECTION DETAIL

**S14**

SCALE: 1/2" = 1'-0"

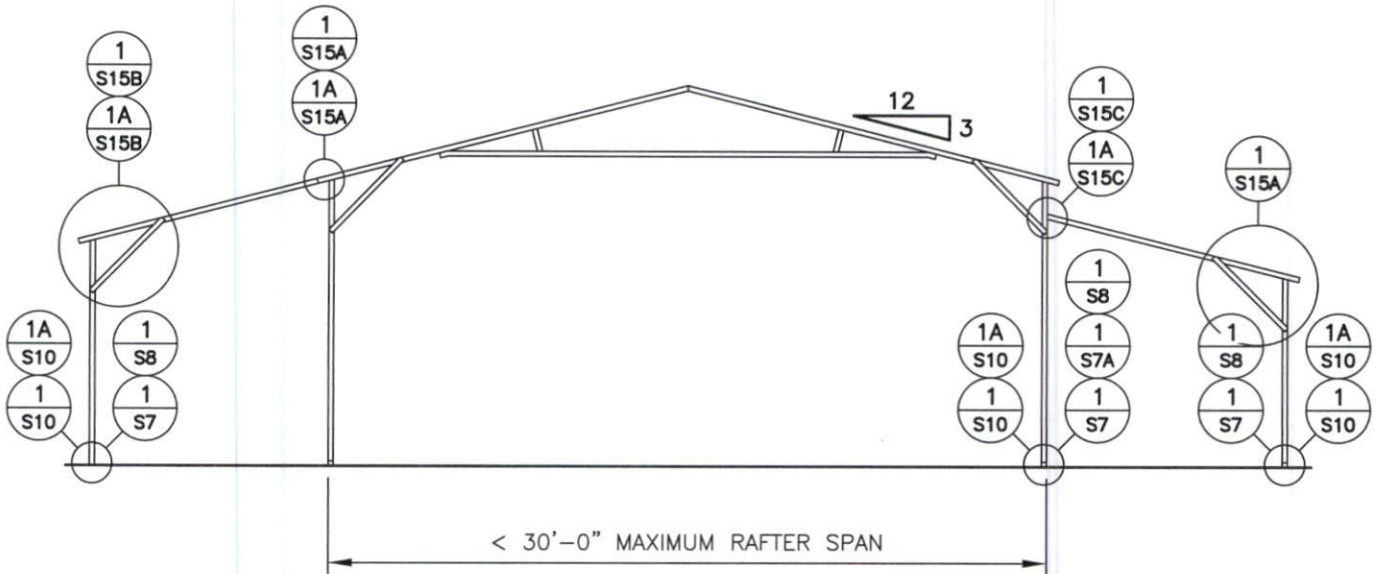


**3**  
COLUMN / LACED HEADER  
CONNECTION DETAIL

**S14**

SCALE: 1/2" = 1'-0"

BOX EVE RAFTER LEAN-TO OPTIONS



TYPICAL LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

MAXIMUM WIDTH OF SINGLE MEMBER ROOF EXTENSION AND LEAN-TO OPTION IS 12'-0"  
 MAXIMUM WIDTH OF DOUBLE MEMBER ROOF EXTENSION AND LEAN-TO IS 15'-0"  
 12'-0" MAX. LEAN-TO HEIGHT WITH SINGLE COLUMN



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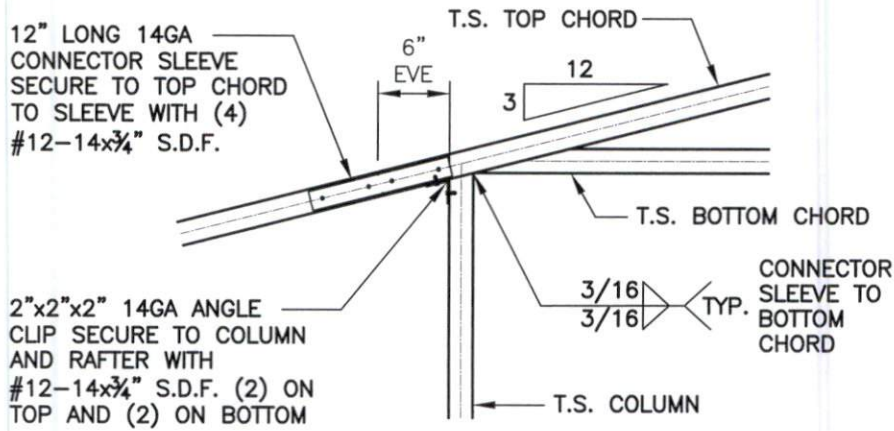
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SHEET NO:  
**S15**



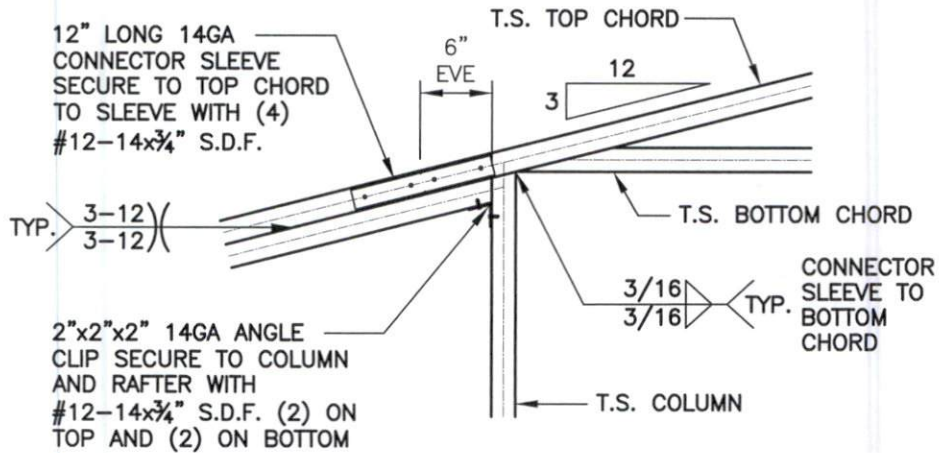
LEAN-TO CONNECTION DETAILS



ROOF EXTENSION RAFTER / CORNER POST  
DETAIL FOR WIDTHS < 12'-0"

1  
S15A

SCALE: 3/4" = 1'-0"



ROOF EXTENSION RAFTER / CORNER POST  
DETAIL FOR WIDTHS < 15'-0"

1A  
S15A

SCALE: 3/4" = 1'-0"

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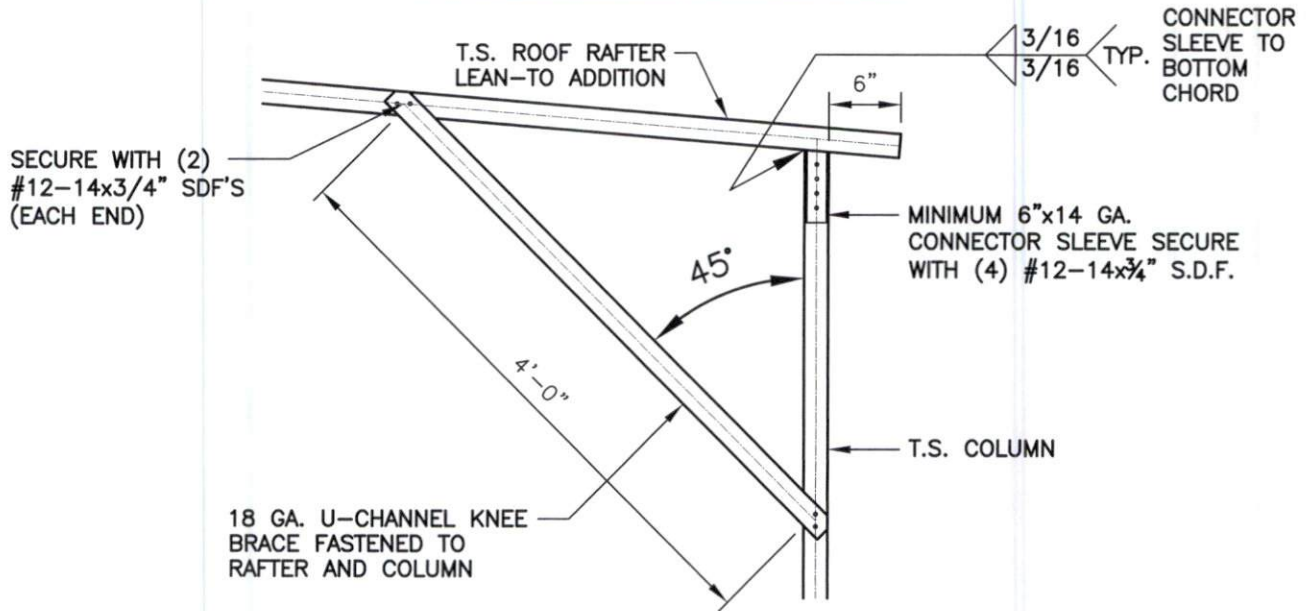
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2023.02.01

SHEET NO:  
**S15A**

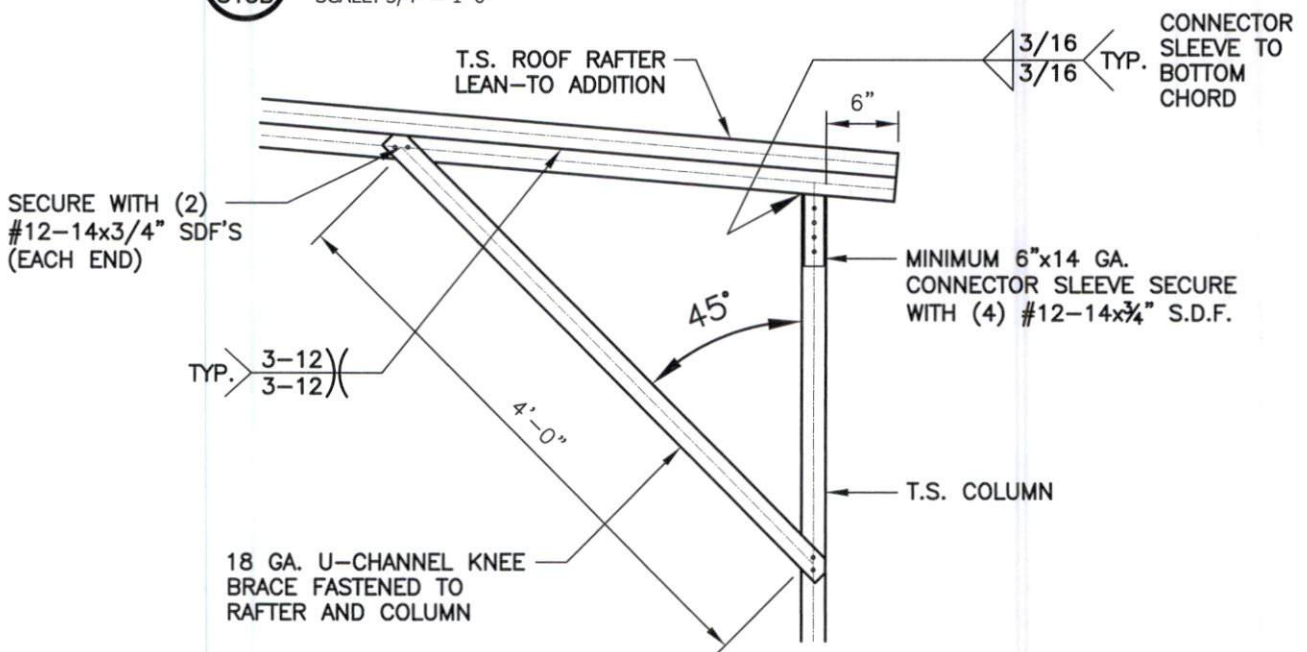
## LEAN-TO CONNECTION DETAILS



### BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR LEAN-TO RAFTER SPAN <12'-0"

1  
S15B

SCALE: 3/4" = 1'-0"



### BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR LEAN-TO RAFTER SPAN <15'-0"

1A  
S15B

SCALE: 3/4" = 1'-0"



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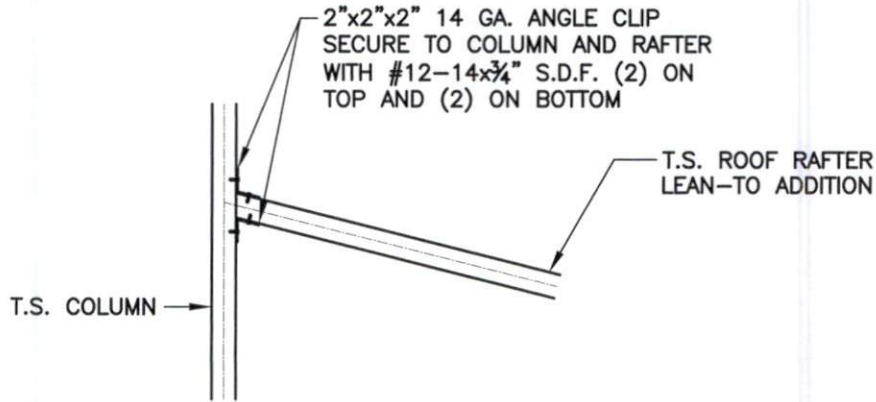
PROJECT NO:  
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DATE:  
2023.02.01

SHEET NO:  
**S15B**

Terry Gregory

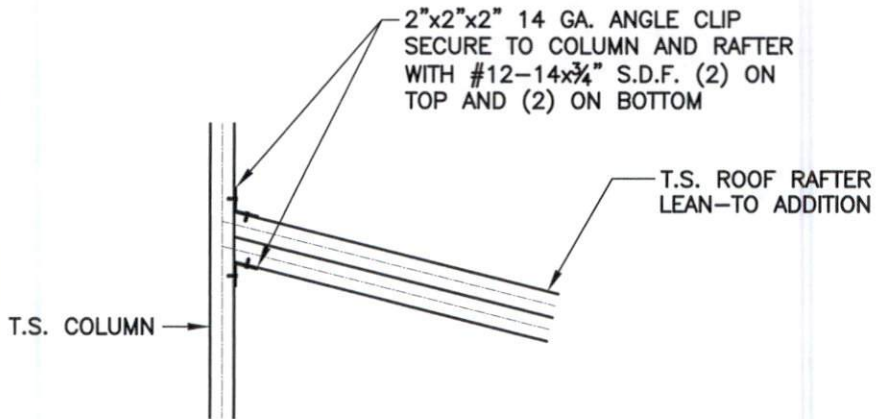
LEAN-TO CONNECTION DETAILS



LEAN-TO RAFTER TO RAFTER POST  
CONNECTION DETAIL FOR WIDTHS < 12'-0"

1  
S15C

SCALE: 3/4" = 1'-0"

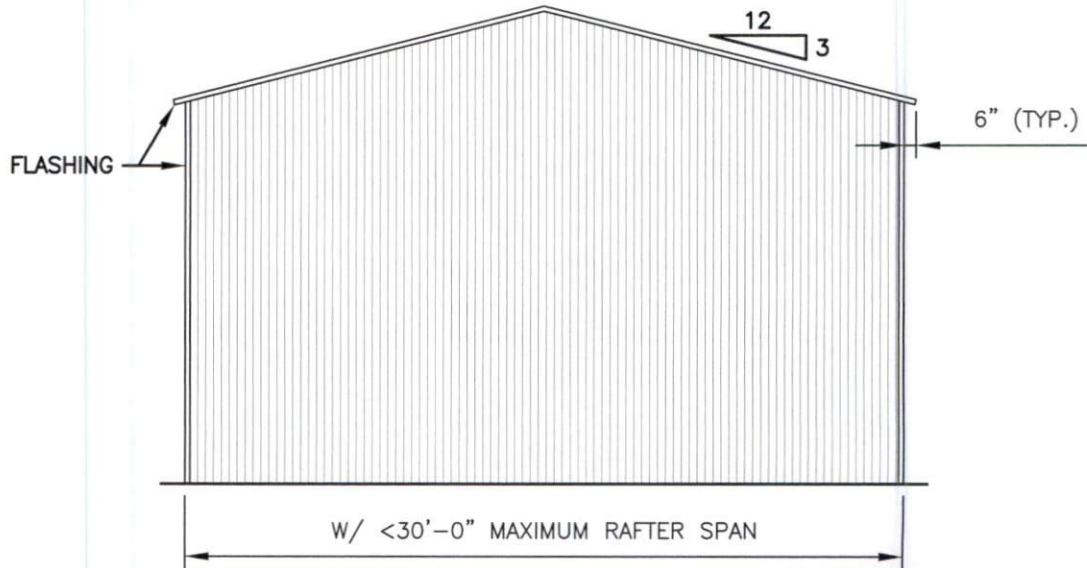


LEAN-TO RAFTER TO RAFTER POST  
CONNECTION DETAIL FOR WIDTHS < 15'-0"

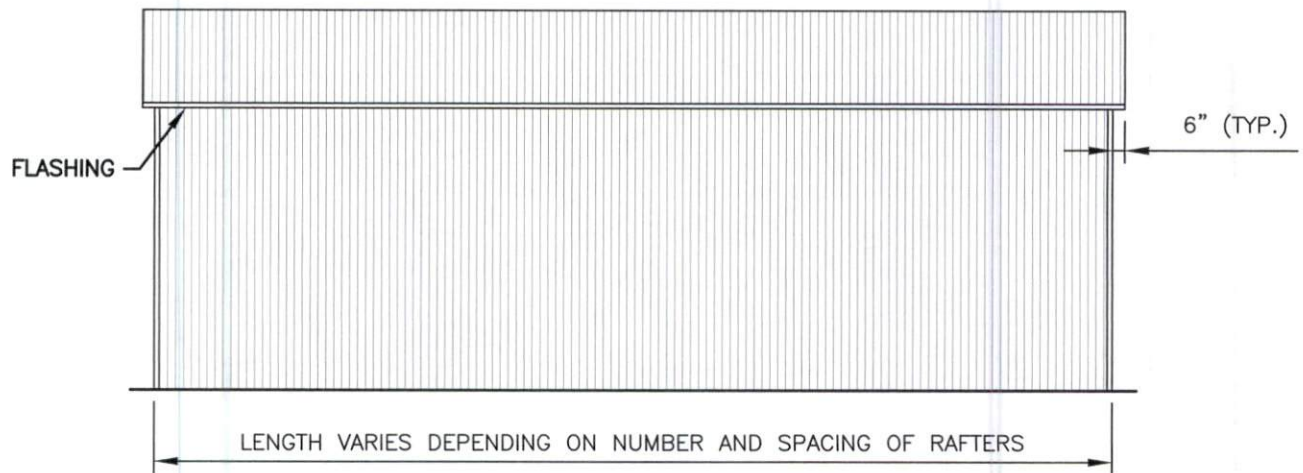
1A  
S15C

SCALE: 3/4" = 1'-0"

VERTICAL ROOF / SIDING OPTION



TYPICAL END ELEVATION - VERTICAL ROOF / SIDING



TYPICAL SIDE ELEVATION - VERTICAL ROOF / SIDING


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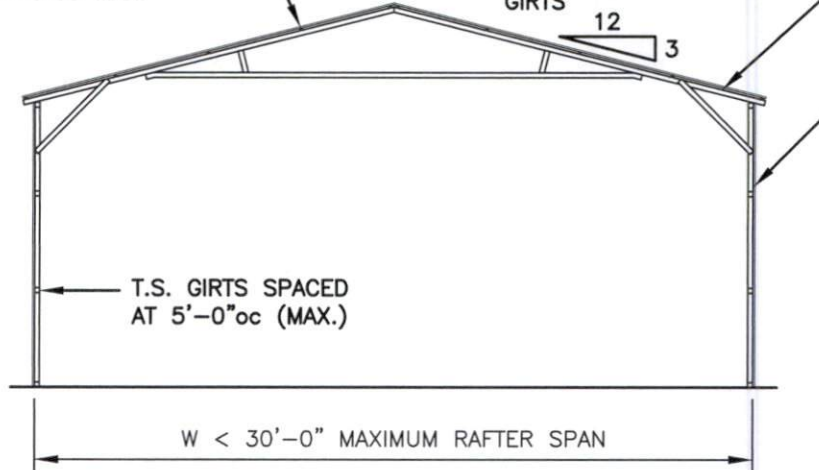
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**S16**

VERTICAL ROOF / SIDING OPTION

1.125"-18 GA. HAT CHANNELS  
FASTENED TO EACH RAFTER  
WITH (2) #12-14x $\frac{3}{4}$ " S.D.F.  
SPACED AT 4'-0"oc MAX.

29 GA. GALVANIZED  
METAL ROOF AND WALL  
PANELS FASTENED TO  
HAT CHANNELS AND  
GIRTS



T.S. GIRTS SPACED  
AT 5'-0"oc (MAX.)

W < 30'-0" MAXIMUM RAFTER SPAN

TYPICAL SECTION VERTICAL ROOF / SIDING OPTION

NOTE:  
H.S.S. 2-1/2"x2-1/2"x14ga. OR  
2-1/4"x2-1/4"x14ga. MATERIAL  
MAY BE USED FOR TRUSS METAL.

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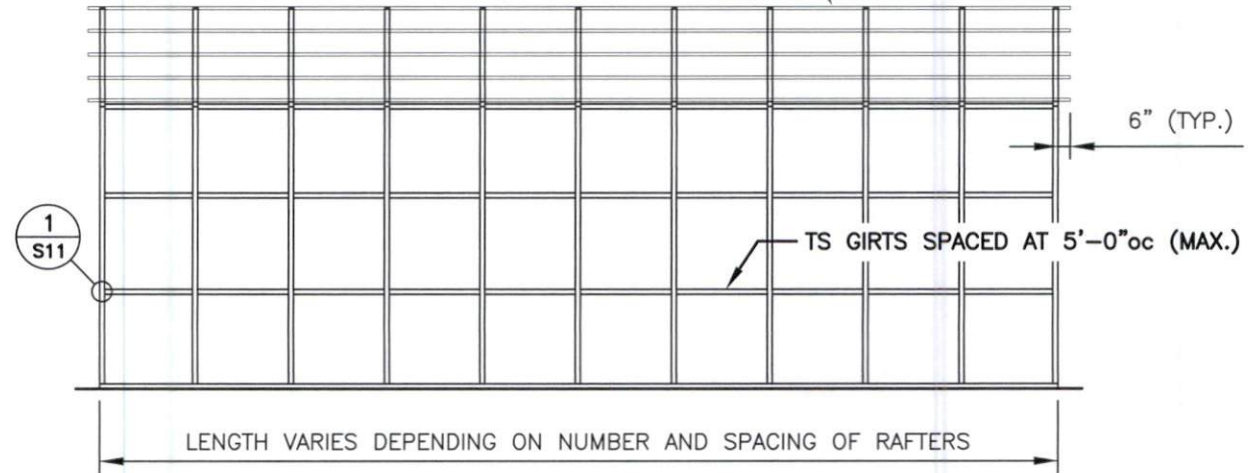
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**S16A**

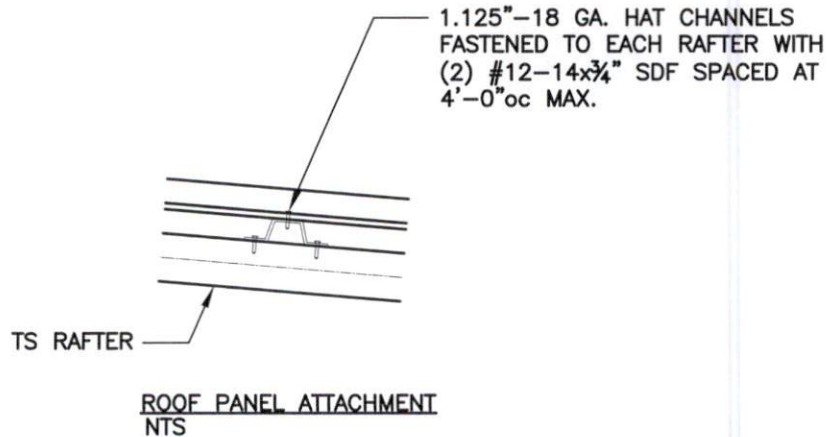
VERTICAL ROOF / SIDING OPTION

SEE NOTES  
(SHEET S3)  
FOR MAXIMUM  
SPACING

1.125"-18 GA. HAT CHANNELS  
FASTENED TO EACH RAFTER  
WITH (2) #12-14x $\frac{3}{4}$ " S.D.F.  
SPACED AT 4'-0"oc MAX.



TYPICAL SIDE FRAMING SECTION VERTICAL ROOF / SIDING OPTION



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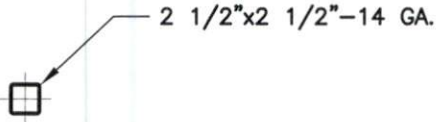
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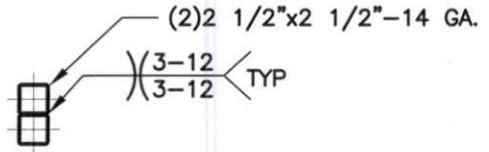
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SHEET NO:  
**S16B**

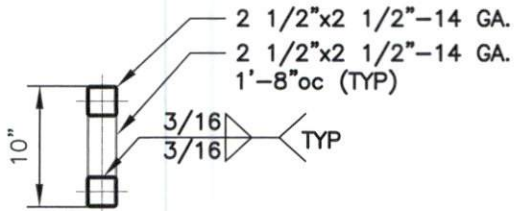
## SIDE WALL HEADER OPTIONS



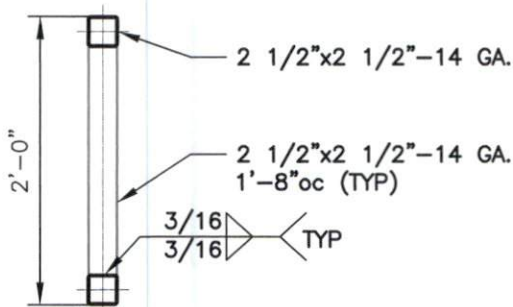
HEADER DETAIL FOR DOOR  
OPENINGS < 4'-0"  
 NTS



HEADER DETAIL FOR DOOR  
OPENINGS 4'-1" < TO < 12'-0"  
 NTS



LACED HEADER DETAIL FOR DOOR  
OPENINGS 12'-1" < TO < 15'-0"  
 NTS



LACED HEADER DETAIL FOR DOOR  
OPENINGS 15'-1" < TO < 20'-0"



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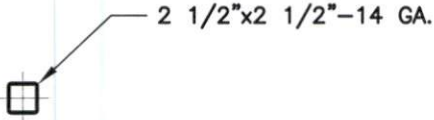
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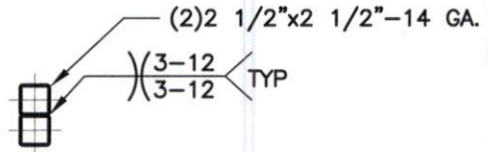
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SHEET NO:  
**S17**

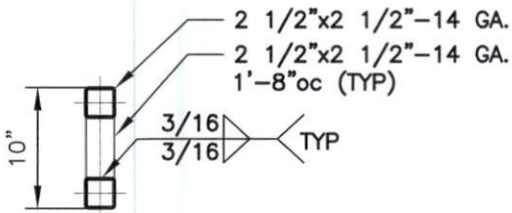
END WALL HEADER OPTIONS



HEADER DETAIL FOR DOOR  
OPENINGS < 7'-0"  
NTS



HEADER DETAIL FOR DOOR  
OPENINGS 7'-1" < TO < 16'-0"  
NTS



LACED HEADER DETAIL FOR DOOR  
OPENINGS 16'-1" < TO < 20'-0"  
NTS



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SHEET NO:  
**S17A**