



## **STRUCTURAL DESIGN**

### **ENCLOSED BUILDING**

**MAXIMUM 30'- 0" WIDE X 20'- 0" HEIGHT-  
BOX EAVE FRAME AND BOW FRAME**  
text

**23 October 2020  
Revision 0  
M&A Project No. 20193S**

**Prepared for:**

**Vega Metal Structures & Concrete, LLC  
4047 US Hwy 311  
Randleman, NC 27317**

**Prepared by:**

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**MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING**

		<p><b>Professional Certification.</b> I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 49744, Expiration Date <u>6/6/2022</u></p>	

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	<p>CHECKED BY: PDM</p>	<p>PROJECT MGR: VSM</p>	<p>DATE: 10-23-20</p>	<p>SCALE: NTS</p>
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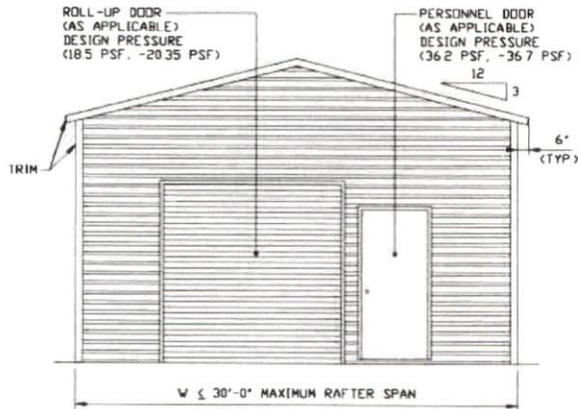
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	CHECKED BY: PDH	30'-0"x20'-0" ENCLOSED STRUCTURE		
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	CLIENT: VEGA METAL	SHT. 2	DWG. NO: SK-3	REV: 0

## INSTALLATION NOTES AND SPECIFICATIONS

1. DESIGN IS FOR MAXIMUM 30'-0" WIDE x 20'-0" EAVE HEIGHT ENCLOSED STRUCTURES.
2. DESIGN WAS DONE IN ACCORDANCE WITH THE 2020 FLORIDA BUILDING CODE, 7TH EDITION, 2018 NORTH CAROLINA BUILDING CODE (NCBC), 2018 INTERNATIONAL BUILDING CODE (IBC), 2015 IBC AND 2012 IBC.
3. DESIGN LOADS ARE AS FOLLOWS:
  - A) DEAD LOAD = 15 PSF
  - B) LIVE LOAD = 12 PSF
  - C) GROUND SNOW LOAD = 45 PSF
  - = 30 PSF WITH U-CHANNEL PEAK BRACE (W ≤ 24'-0")
- NOTE: DIFFERENTIAL LOADING DUE TO SNOW DRIFTING NOT ANALYZED
4. 3-SECOND GUST ULTIMATE WIND SPEED ( $V_{ULT}$ ) = ≤ 145 MPH (NOMINAL WIND SPEED = ≤ 112 MPH)
5. MAXIMUM RAFTER/POST AND END POST SPACING = 50 FEET (UNLESS NOTED OTHERWISE)
6. END WALL COLUMNS (POSTS) ARE EQUIVALENT TO SIDE WALL POSTS IN SIZE AND SPACING (UNLESS NOTED OTHERWISE)
7. RISK CATEGORY I.
8. WIND EXPOSURE CATEGORY B.
9. SPECIFICATIONS APPLICABLE TO 29 GAUGE METAL PANELS FASTENED DIRECTLY TO 2 1/2" x 2 1/2" - 14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS (UNLESS NOTED OTHERWISE). WHERE TS 2 1/2" x 2 1/2" - 14 GAUGE IS SPECIFIED, TS 2 1/4" x 2 1/4" - 12 GAUGE MAY BE USED AS AN OPTION.
10. AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR HAT CHANNELS, AND COLUMNS (INTERIOR OR END) = 10" O.C. (MAX)
11. FASTENERS CONSIST OF #12-14x3/4" SELF-DRILLING FASTENER (SDF), USE CONTROL SEAL WASHER WITH EXTERIOR FASTENERS. SPECIFICATIONS APPLICABLE ONLY FOR MEAN ROOF HEIGHT OF 20 FEET OR LESS, AND ROOF SLOPES OF 14° (3:12 PITCH) OR LESS SPACING REQUIREMENTS FOR OTHER ROOF HEIGHTS AND/OR SLOPES MAY VARY. ROOF SLOPES LESS THAN 3:12 REQUIRE USE OF LAP JOINT SEALANT.
12. ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6" OF EACH RAFTER COLUMN ALONG SIDES.
13. STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBAR W/ WELDED NUT x MINIMUM 36" LONG AND MAY ONLY BE USED IN SUITABLE SOILS. OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED. COORDINATE WITH LOCAL CODES/ORDINANCES REGARDING MINIMUM LENGTH FOR FROST DEPTH PROTECTION.
14. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:
  - SOIL SITE CLASS = D
  - RISK CATEGORY I
  - R = 325                       $I_e = 10$
  - $S_{DS} = 2.039 g$                $V = C_s W$
  - $S_{DI} = 1.258 g$
15. DOOR AND WINDOW PRESSURE VALUES ARE APPLICABLE FOR THE STATE OF FLORIDA

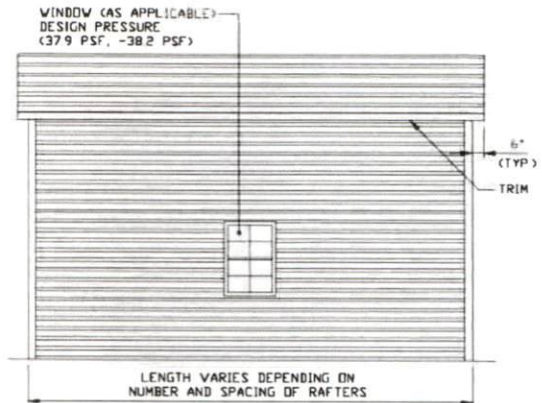
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### BOX EAVE FRAME RAFTER STRUCTURE



**TYPICAL END ELEVATION**

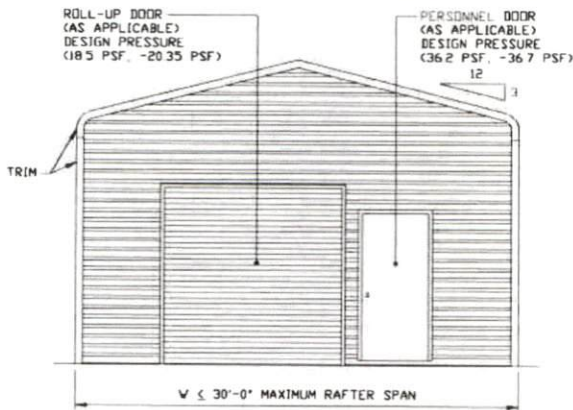
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**TYPICAL SIDE ELEVATION**

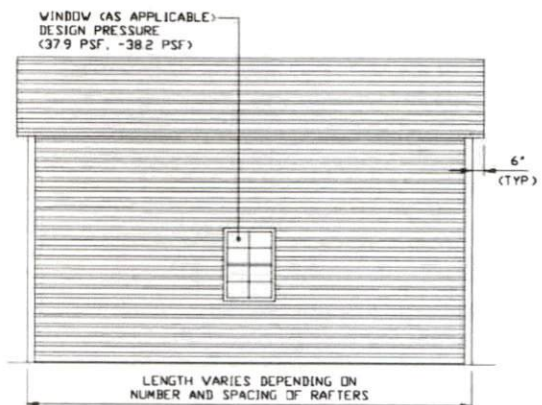
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### BOW FRAME RAFTER STRUCTURE



**TYPICAL END ELEVATION**

SCALE: NTS



**TYPICAL SIDE ELEVATION**

SCALE: NTS

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SHT. 4

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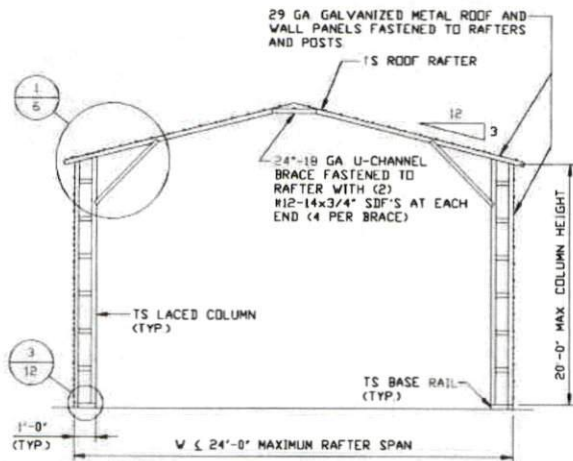
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JOB NO: 20193S

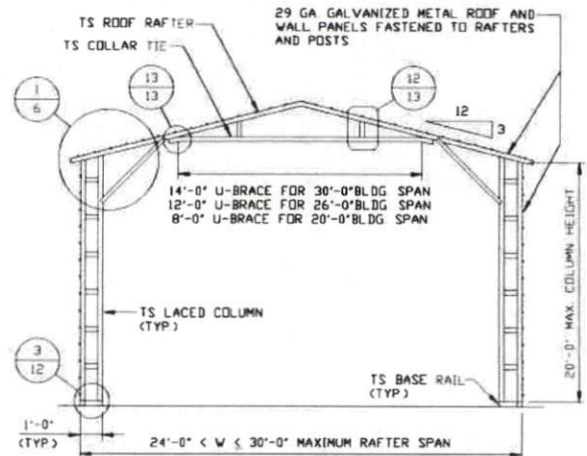
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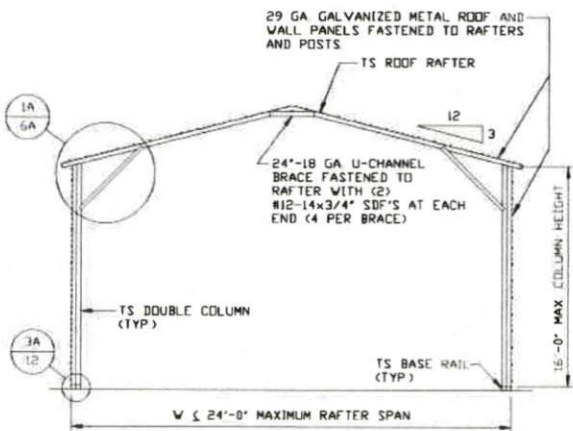




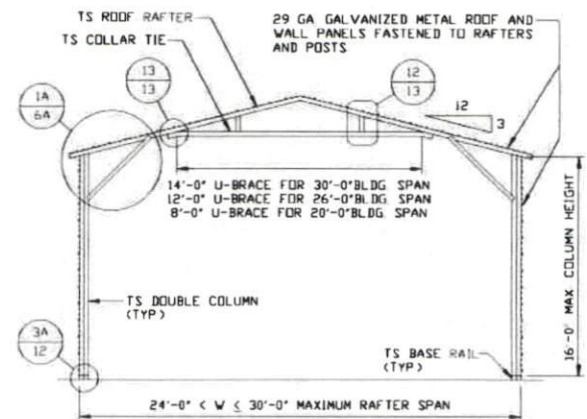
**TYPICAL RAFTER/COLUMN END FRAME SECTION**  
SCALE: NTS



**TYPICAL RAFTER/COLUMN END FRAME SECTION**  
SCALE: NTS



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SCALE: NTS



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SCALE: NTS

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**SHT. 5**

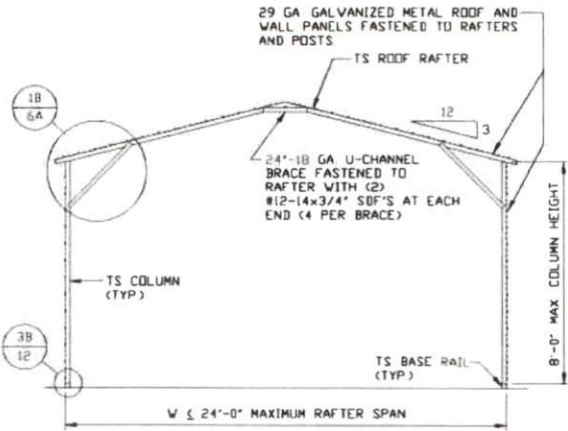
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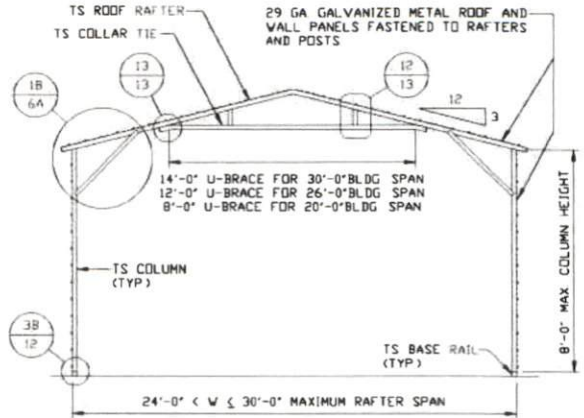
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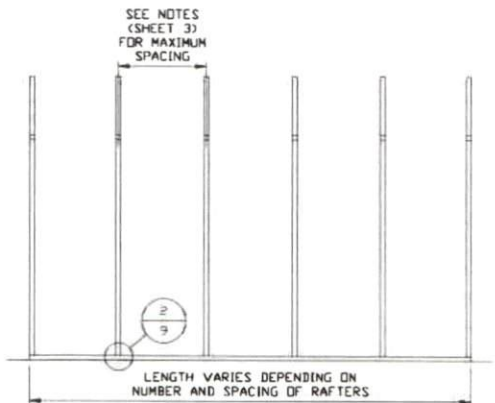
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**TYPICAL RAFTER/COLUMN END FRAME SECTION**  
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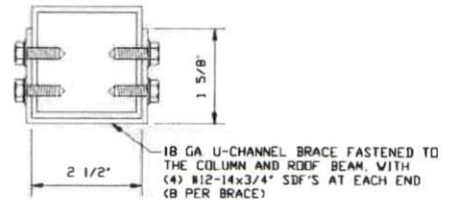
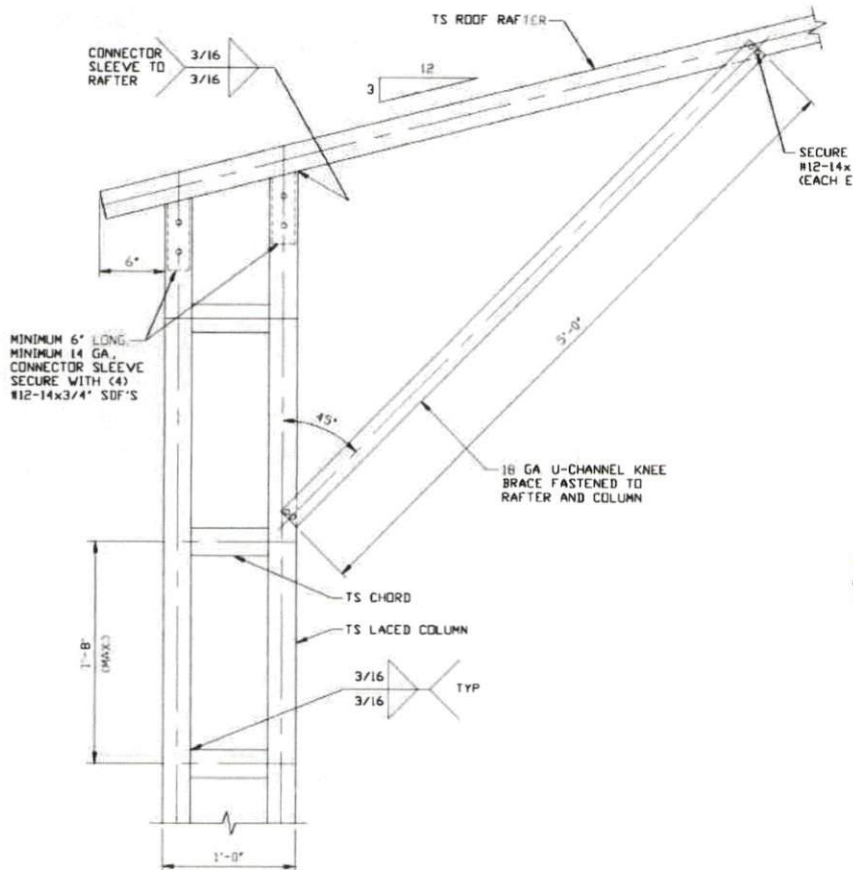


**TYPICAL RAFTER/COLUMN END FRAME SECTION**  
SCALE: NTS



**TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION**  
SCALE: NTS

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	CLIENT: VEGA METAL	SHT. 5A	DWG. NO SK-3	REV: 0



**BRACE SECTION**  
SCALE: NTS

**1** BOX EAVE RAFTER COLUMN CONNECTION  
DETAIL FOR HEIGHTS 16'-0" < TO ≤ 20'-0"  
SCALE: NTS

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JOB NO: 20193S

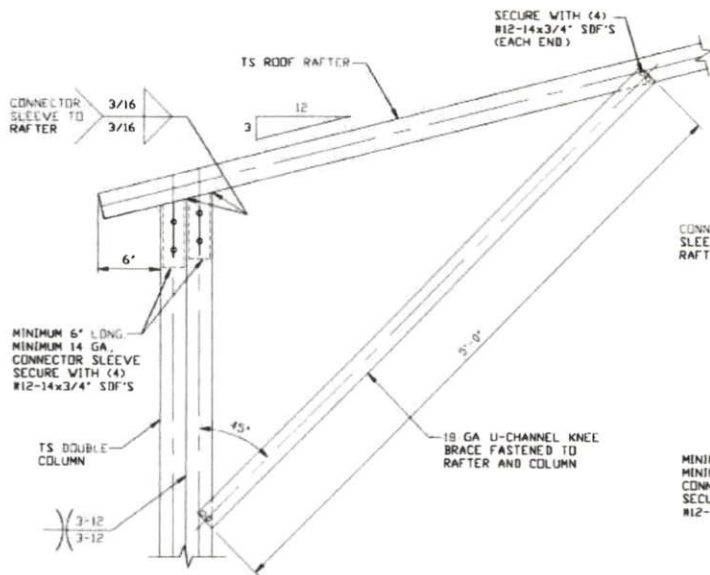
SHT. 6

DWG. NO: SK-3

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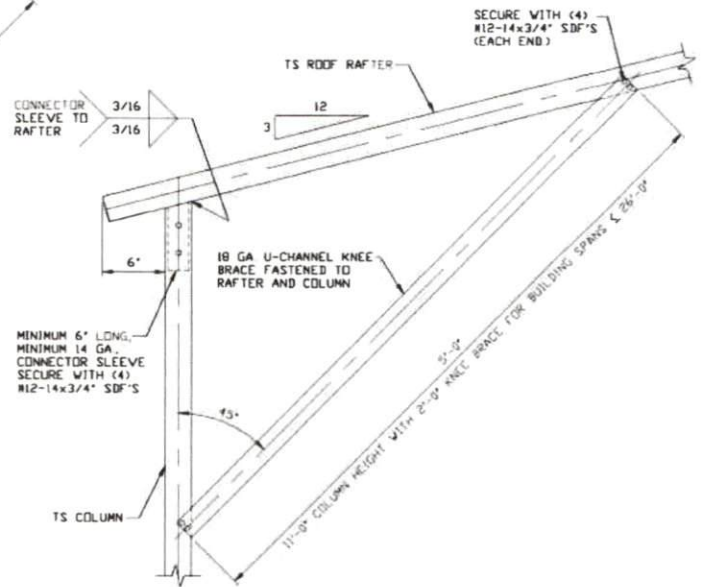




1A

**BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 8'-0" < TO <= 16'-0"**

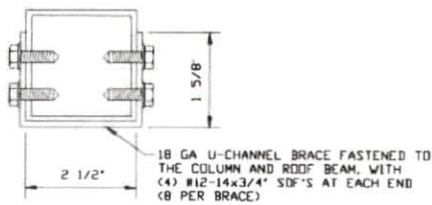
SCALE: NTS  
NOTE: 4'-0" KNEE BRACE MAY BE USED FOR BUILDING WIDTHS <= 26'-0"



1B

**BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS <= 8'-0"**

SCALE: NTS  
NOTE: 2'-0" KNEE BRACE MAY BE USED FOR BUILDING WIDTHS <= 26'-0"



**BRACE SECTION**

SCALE: NTS

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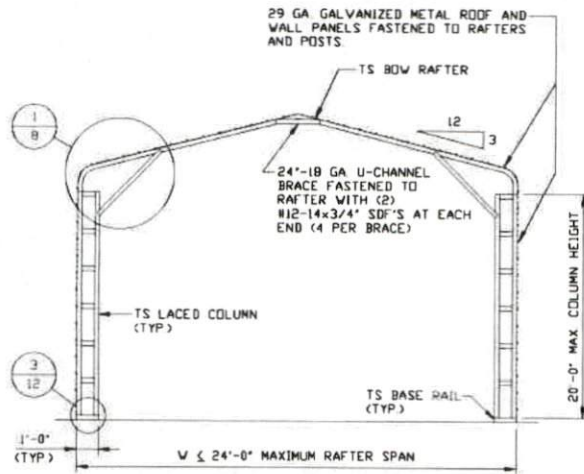
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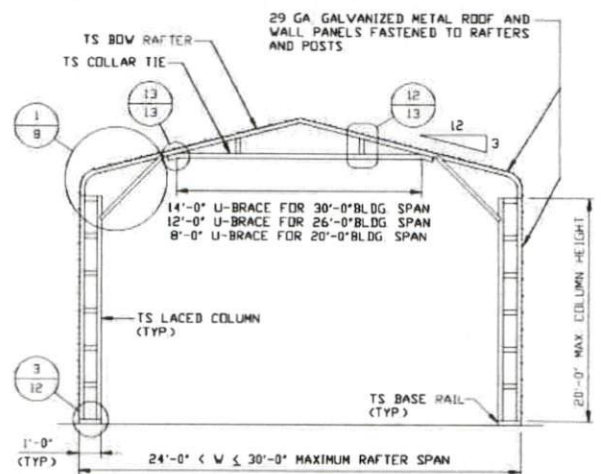
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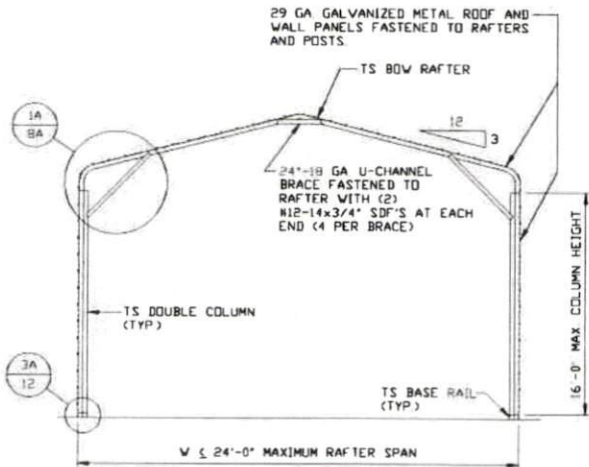
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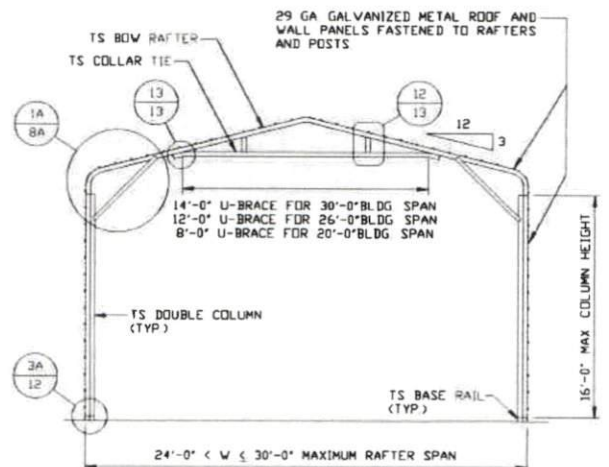
**TYPICAL RAFTER/COLUMN END FRAME SECTION**  
SCALE: NTS



**TYPICAL RAFTER/COLUMN END FRAME SECTION**  
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SHT. 7

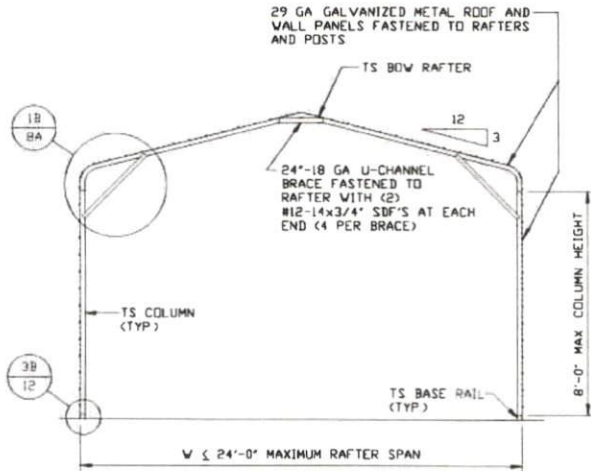
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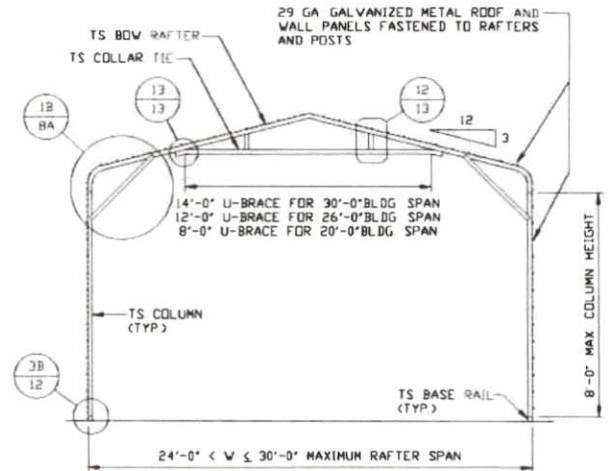
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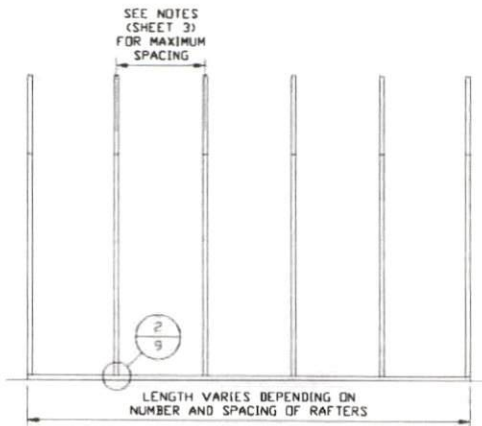
**TYPICAL RAFTER/COLUMN END FRAME SECTION**

SCALE: NTS



**TYPICAL RAFTER/COLUMN END FRAME SECTION**

SCALE: NTS



**TYPICAL RAFTER/COLUMN FRAMING SIDE SECTION**

SCALE: NTS

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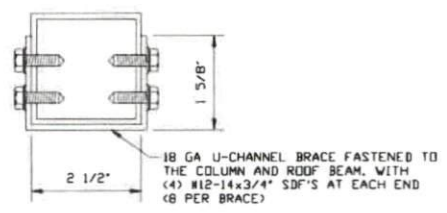
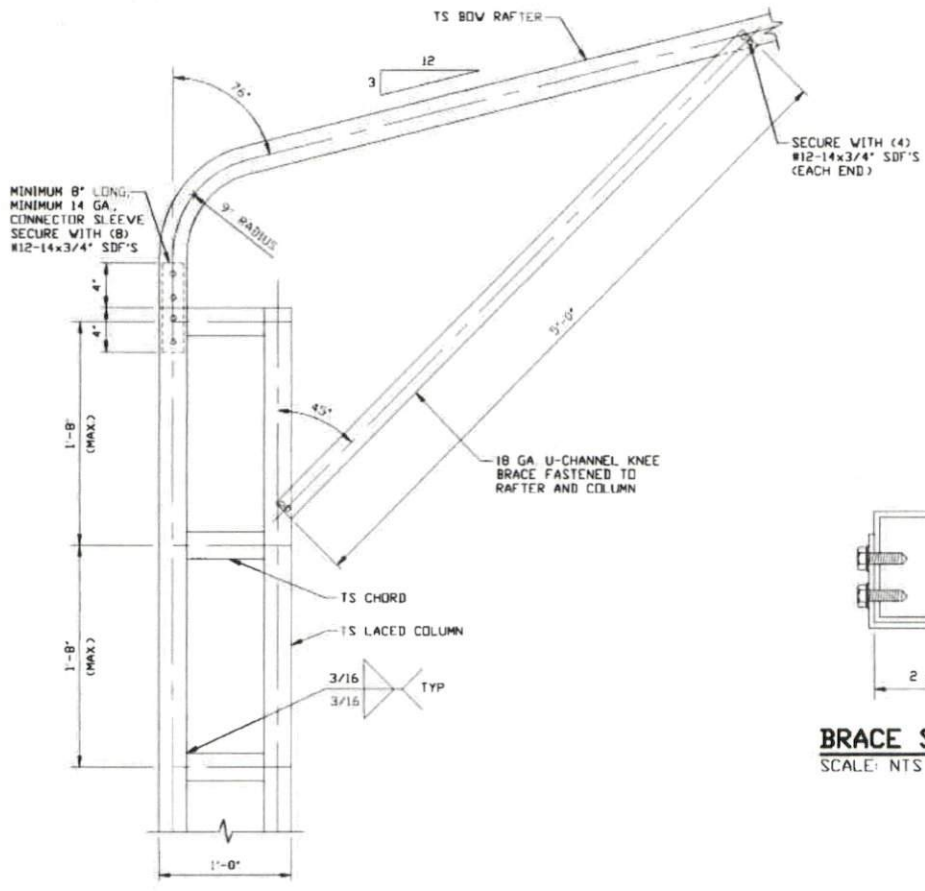
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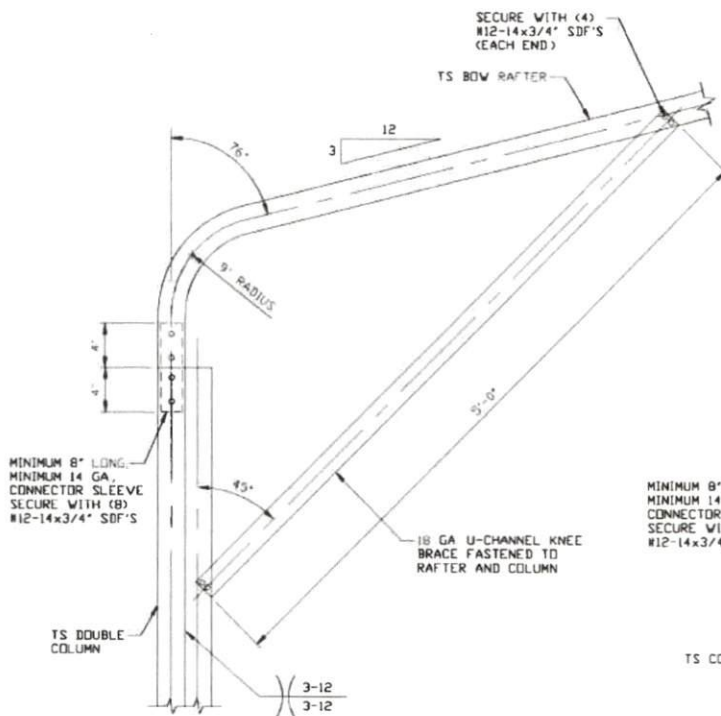




**BRACE SECTION**  
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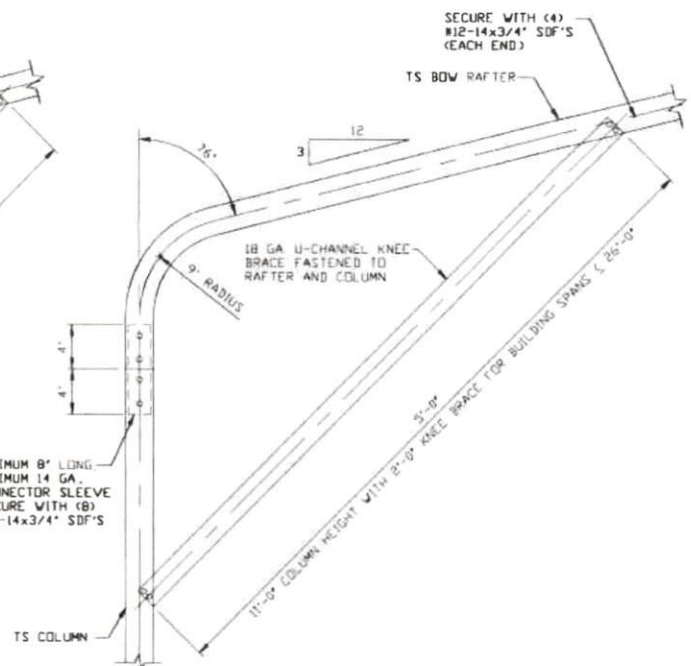
**1** **BOW EAVE RAFTER COLUMN CONNECTION**  
**DETAIL FOR HEIGHTS 16'-0" < TO ≤ 20'-0"**  
SCALE: NTS

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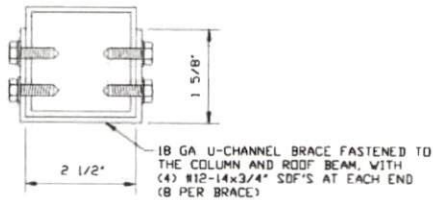
**1A** BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 8'-0" < TO ≤ 16'-0"

SCALE: NTS  
NOTE: 4'-0" KNEE BRACE MAY BE USED FOR BUILDING WIDTHS ≤ 26'-0"



**1B** BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 8'-0"

SCALE: NTS  
NOTE: 2'-0" KNEE BRACE MAY BE USED FOR BUILDING WIDTHS ≤ 26'-0"



**BRACE SECTION**  
SCALE: NTS

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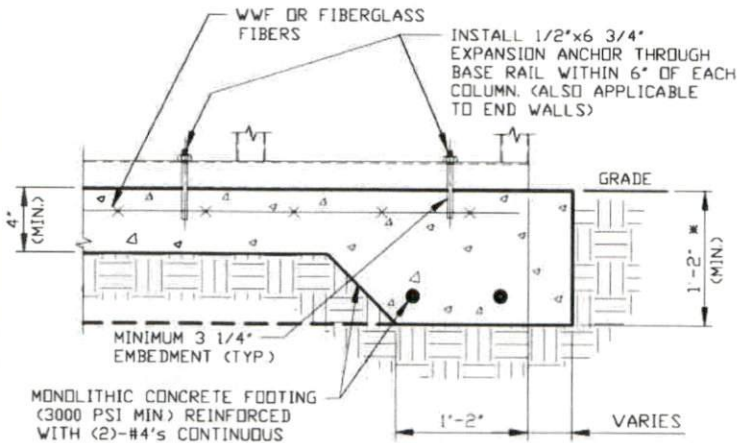
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4047 US HWY 311  
RANDLEMAN, NC 27317  
30-0"x20'-0" ENCLOSED STRUCTURE

DATE: 10-23-20  
SCALE: NTS  
JOB NO: 20193S  
SHT. 8A  
DVG. NO SK-3  
REV: 0

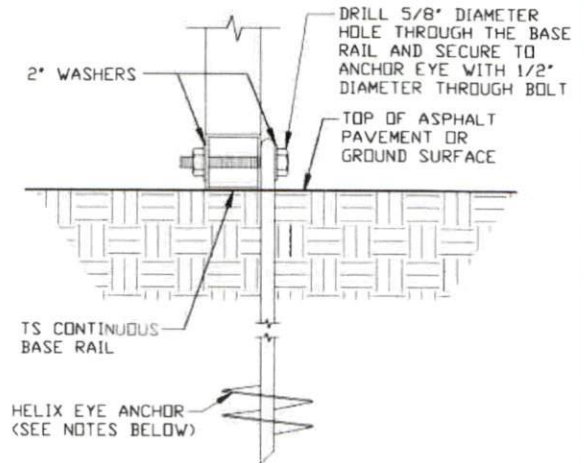
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## BASE RAIL ANCHORAGE OPTIONS



### 2 CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS  
 MINIMUM ANCHOR EDGE DISTANCE IS 4"  
 \* COORDINATE WITH LOCAL BUILDING CODE  
 AND/OR BUILDING OFFICIAL REGARDING  
 REQUIRED FOOTING DEPTH.



### 2A GROUND BASE HELIX ANCHORAGE

SCALE: NTS (CAN BE USED FOR ASPHALT)  
 \* COORDINATE WITH LOCAL CODES/ORD.  
 REGARDING MIN FROST DEPTH (LENGTH).

### GENERAL NOTES

NOTE: CONCRETE MONOLITHIC SLAB DESIGN BASED ON MINIMUM  
 SOIL BEARING CAPACITY OF 1,500 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 OR 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 MAY BE BENT IN THE SHOP OR 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.

#### **HELIX ANCHOR NOTES:**

- 1 FOR VERY DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL  
 AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS, USE  
 MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT OR  
 SINGLE 6" HELIX WITH MINIMUM 50" EMBEDMENT
- 2 FOR CORAL USE MINIMUM (2) 4" HELICES WITH MINIMUM  
 30" EMBEDMENT OR SINGLE 6" HELIX WITH MINIMUM  
 50" EMBEDMENT.
- 3 FOR MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY  
 STIFF SILTS, AND CLAYS USE MINIMUM (2) 4" HELICES WITH  
 MINIMUM 30 INCH EMBEDMENT OR SINGLE 6" HELIX WITH MINIMUM  
 50" EMBEDMENT.
- 4 FOR LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND  
 SILTS ALLUVIAL FILL, USE MINIMUM (2) 6" HELICES WITH MINIMUM  
 50" EMBEDMENT.
- 5 FOR VERY LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER  
 CLAYS AND SILTS, ALLUVIAL FILL, USE MINIMUM (2) 8" HELICES  
 WITH MINIMUM 60" EMBEDMENT.

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**DRAWN BY: JG**

**CHECKED BY: PDH**

**PROJECT MGR: WSM**

**CLIENT: VEGA METAL**

VEGA METAL STRUCTURES & CONCRETE, LLC  
 4047 US HWY 311  
 RANDLEMAN, NC 27317  
 30'-0" x 20'-0" ENCLOSED STRUCTURE

**DATE: 10-23-20**

**SHT. 9**

**SCALE: NTS**

**DWG. NO SK-3**

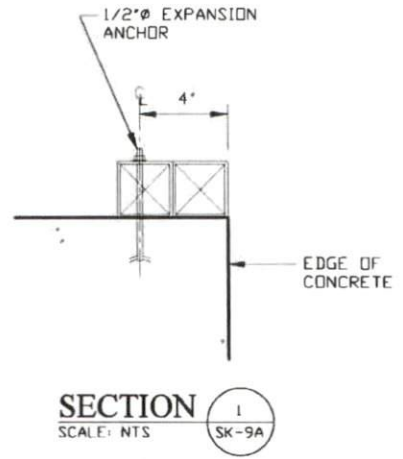
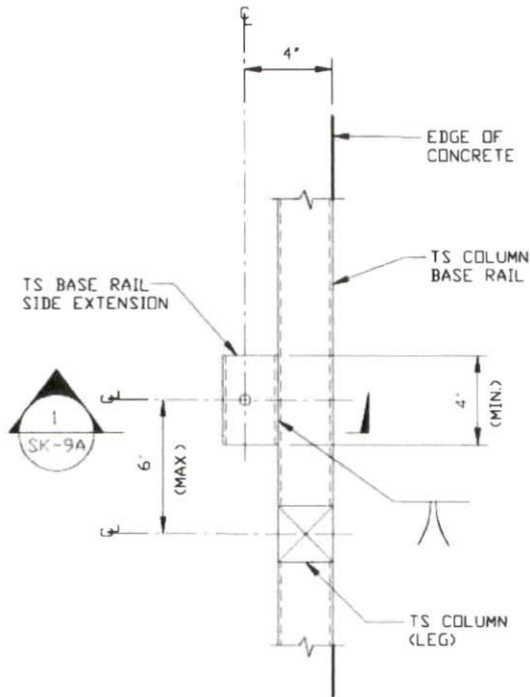
**JOB NO: 201935**

**REV: 0**

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## ADDITIONAL BASE RAIL ANCHORAGE OPTION



**TYPICAL ANCHOR DETAIL WHEN BASE RAIL IS NEAR EDGE OF CONCRETE**

SCALE: NTS

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**DRAWN BY: JG**  
**CHECKED BY: PDH**

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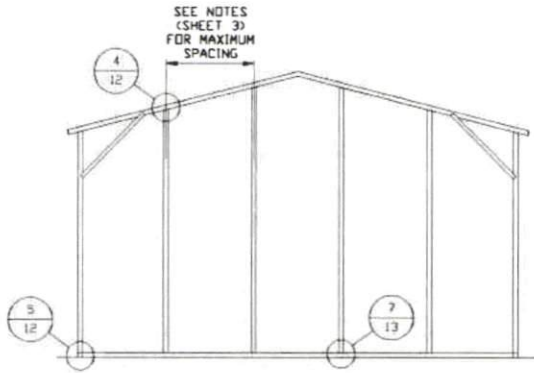
**PROJECT MGR: WSM**  
**CLIENT: VEGA METAL**

**DATE: 10-23-20**  
**SHT. 9A**

**SCALE: NTS**  
**DWG. NO: SK-3**

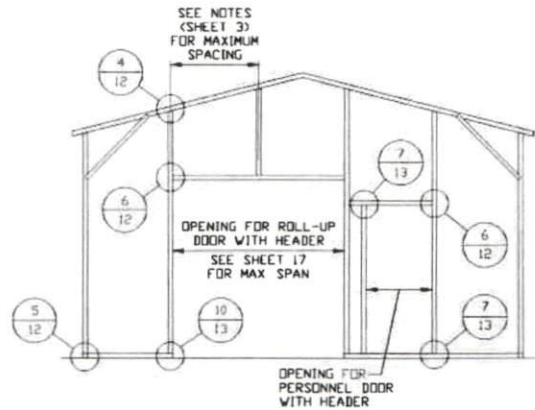
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**REV: 0**

## BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



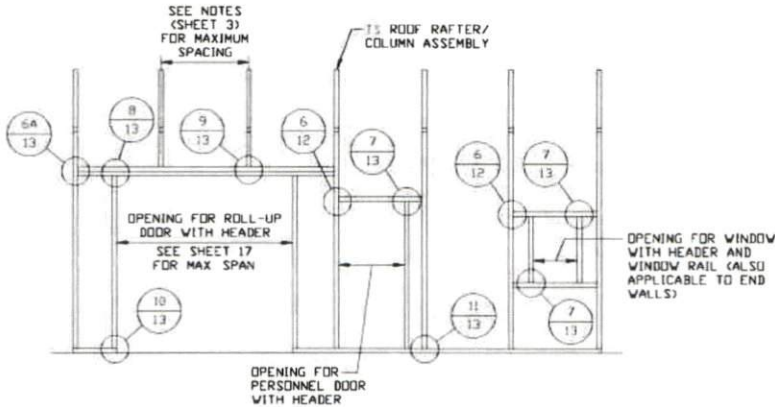
**TYPICAL BOX EAVE RAFTER  
END WALL FRAMING SECTION**

SCALE: NTS



**TYPICAL BOX EAVE RAFTER END WALL  
OPENINGS FRAMING SECTION**

SCALE: NTS



**TYPICAL BOX EAVE RAFTER SIDE  
WALL OPENINGS FRAMING SECTION**

SCALE: NTS

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**CHECKED BY: PDH**

**PROJECT MGR: VSM**

**CLIENT: VEGA METAL**

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**DATE: 10-23-20**

**SHT. 10**

**SCALE: NTS**

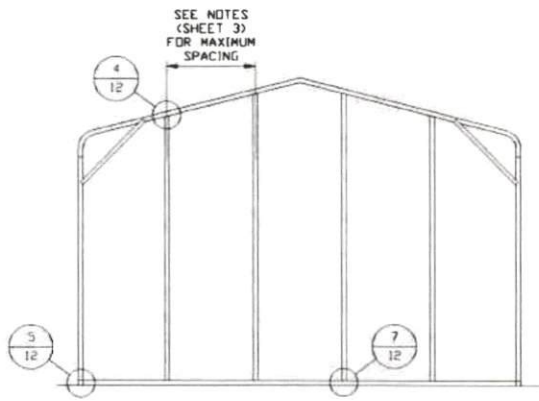
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**JOB NO: 201935**

**REV: 0**

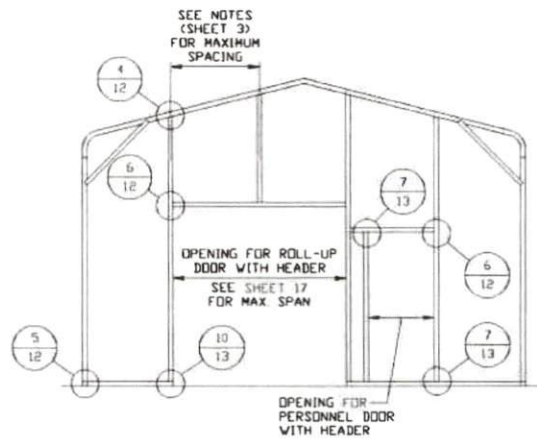
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## BOW RAFTER END WALL AND SIDE WALL OPENINGS



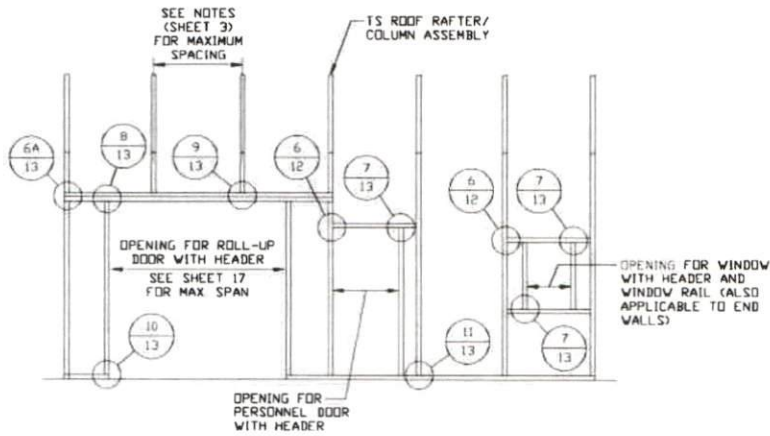
**TYPICAL BOW RAFTER  
END WALL FRAMING SECTION**

SCALE: NTS



**TYPICAL BOW RAFTER END WALL  
OPENINGS FRAMING SECTION**

SCALE: NTS



**TYPICAL BOW RAFTER SIDE  
WALL OPENINGS FRAMING SECTION**

SCALE: NTS

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**CLIENT: VEGA METAL**

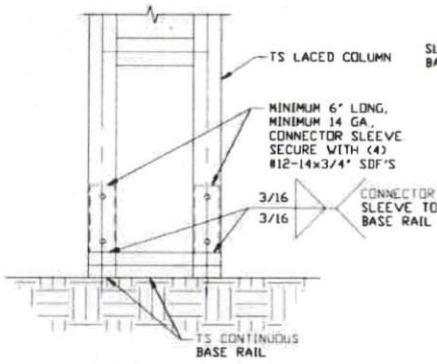
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**SHT. 11**

**SCALE: NTS**  
**DWG. NO: SK-3**

**JOB NO: 20193S**  
**REV: 0**

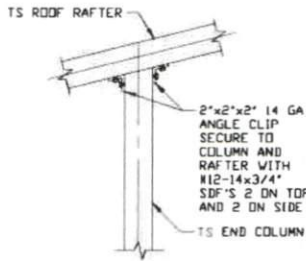


## CONNECTION DETAILS



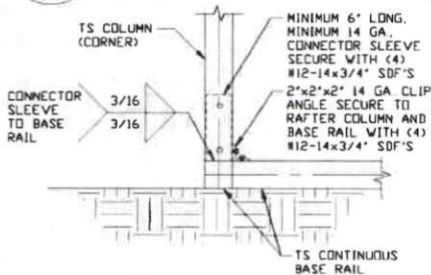
**3** RAFTER COLUMN/  
BASE RAIL  
CONNECTION DETAIL

SCALE: NTS



**4** END COLUMN/RAFTER  
CONNECTION DETAIL

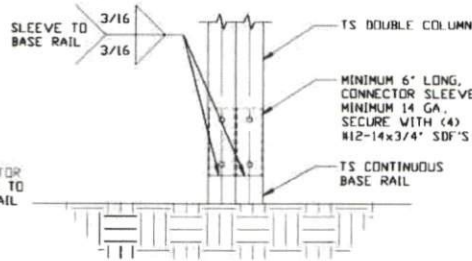
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**5B**

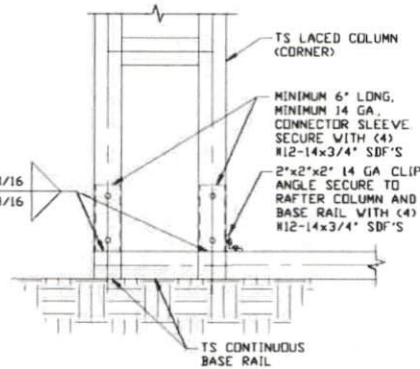
END COLUMN/BASE RAIL  
CONNECTION DETAIL

SCALE: NTS



**3A** RAFTER COLUMN/  
BASE RAIL  
CONNECTION DETAIL

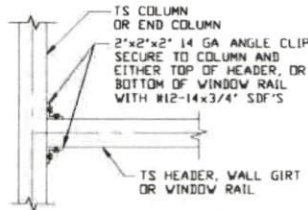
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**5**

END COLUMN/BASE RAIL  
CONNECTION DETAIL

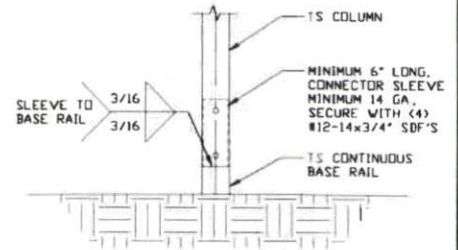
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**6**

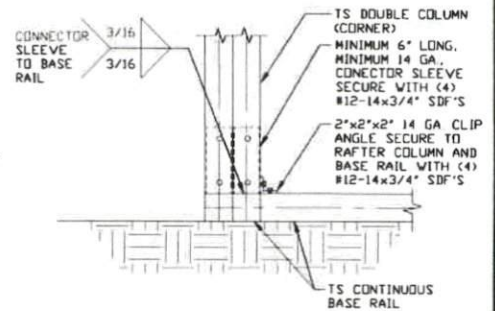
COLUMN OR WINDOW  
RAIL/WALL GIRT  
TO POST  
CONNECTION DETAIL

SCALE: NTS



**3B** RAFTER COLUMN/  
BASE RAIL  
CONNECTION DETAIL

SCALE: NTS



**5A**

END COLUMN/BASE RAIL  
CONNECTION DETAIL

SCALE: NTS

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CLIENT: VEGA METAL

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SCALE: NTS

JOB NO: P01935

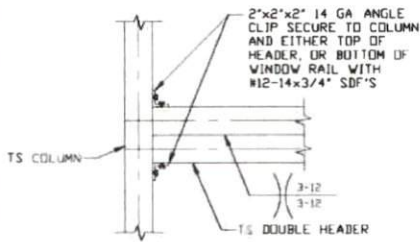
SHT. 12

DWG. NO: SK-3

REV: 0

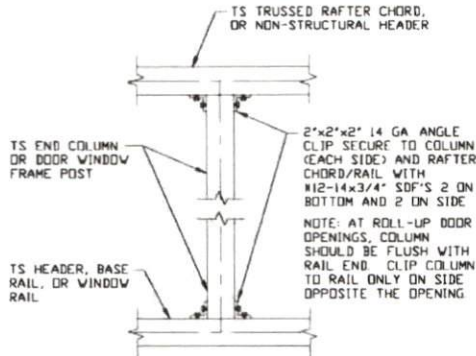
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## CONNECTION DETAILS



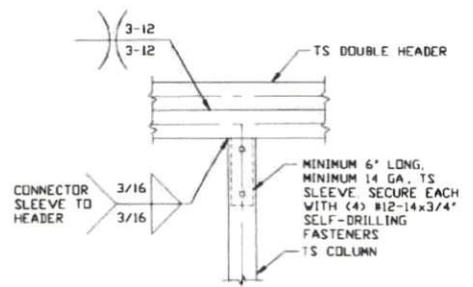
**6A**  
**COLUMN OR DOUBLE  
HEADER TO POST  
CONNECTION DETAIL**

SCALE: NTS



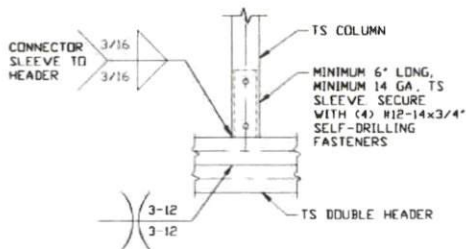
**7**  
**COLUMN TO WINDOW RAIL  
CONNECTION DETAIL**

SCALE: NTS



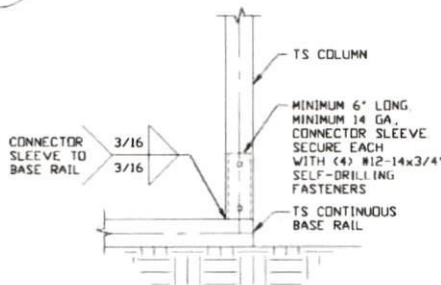
**8**  
**DOUBLE HEADER/  
COLUMN  
CONNECTION DETAIL**

SCALE: NTS



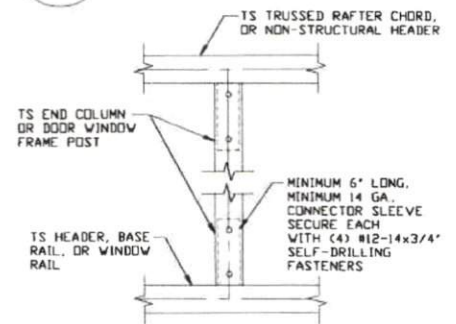
**9**  
**COLUMN/DOUBLE HEADER  
CONNECTION DETAIL**

SCALE: NTS



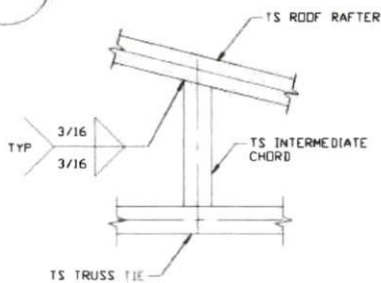
**10**  
**COLUMN/BASE RAIL  
CONNECTION DETAIL**

SCALE: NTS



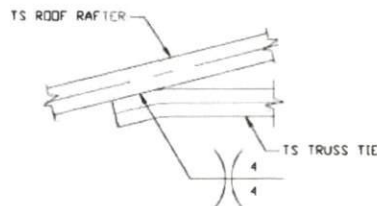
**11**  
**COLUMN TO HEADER  
OR BASE RAIL  
CONNECTION DETAIL**

SCALE: NTS



**12**  
**RAFTER TO CHORD  
CONNECTION DETAIL**

SCALE: NTS



**13**  
**COLLAR TIE  
CONNECTION DETAIL**

SCALE: NTS

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PROJECT MGR: WSM

CLIENT: VEGA METAL

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30'-0" x 20'-0" ENCLOSED STRUCTURE

DATE: 10-23-20

SHT. 13

SCALE: NTS

DWG. NO: SK-3

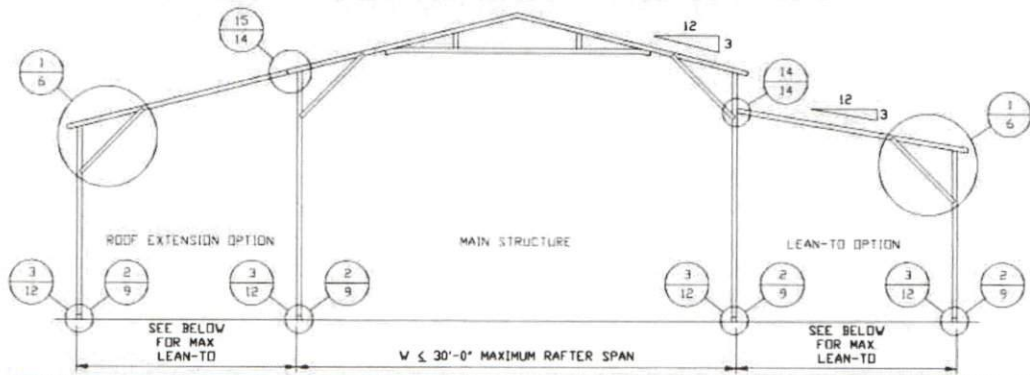
JOB NO: 20193S

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# BOX EAVE RAFTER LEAN-TO OPTIONS



**TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)**

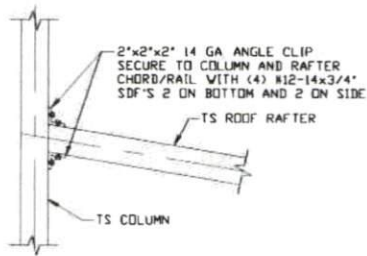
SCALE: NTS

MAXIMUM WIDTH OF SINGLE MEMBER ROOF EXTENSION AND LEAN-TO IS 10'-0"

MAXIMUM WIDTH OF DOUBLE MEMBER ROOF EXTENSION AND LEAN-TO IS 16'-0"

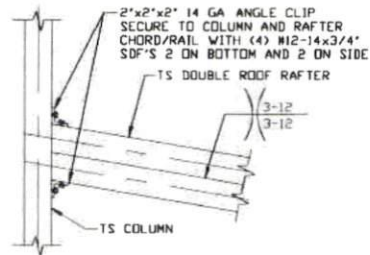
MAXIMUM WIDTH OF LACED MEMBER ROOF EXTENSION AND LEAN-TO IS 20'-0"

FOR SHARED COLUMN HEIGHTS REFERENCE RAFTER COLUMN CONNECTION DETAILS FOR APPROPRIATE COLUMN HEIGHT AND TUBING SPECIFICATIONS.



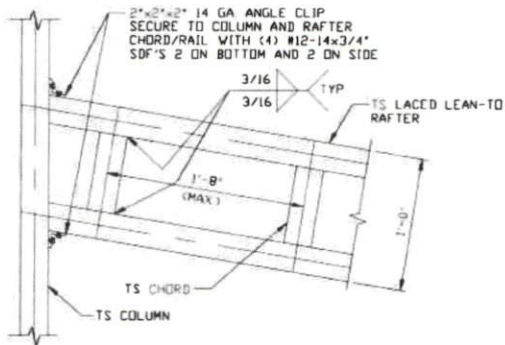
**14** LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS ≤ 10'-0"

SCALE: NTS



**14A** LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 10'-0" < TO ≤ 16'-0"

SCALE: NTS



**14B** LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 16'-0" < TO ≤ 20'-0"

SCALE: NTS

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CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: VEGA METAL

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DATE: 10-23-20

SHT. 14

SCALE: NTS

DWG. NO: SK-3

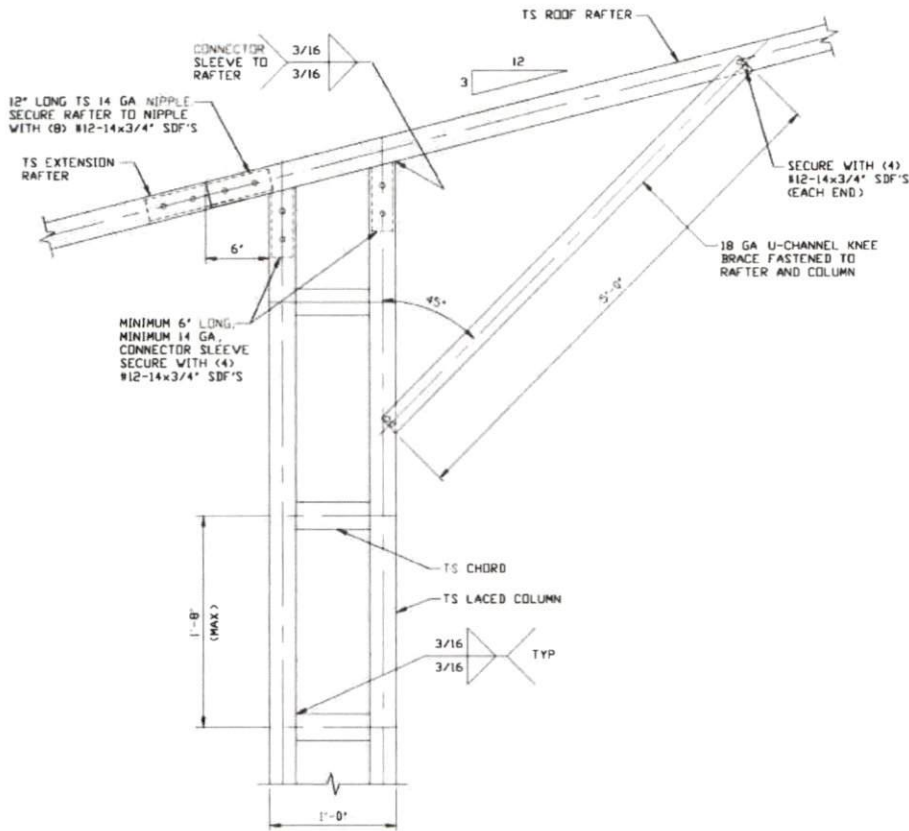
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**BOX EAVE RAFTER LEAN-TO OPTION FOR RAFTER SPANS  $\leq 10'-0''$**



**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 16'-0" < TO  $\leq$  20'-0"**  
SCALE: NTS

15

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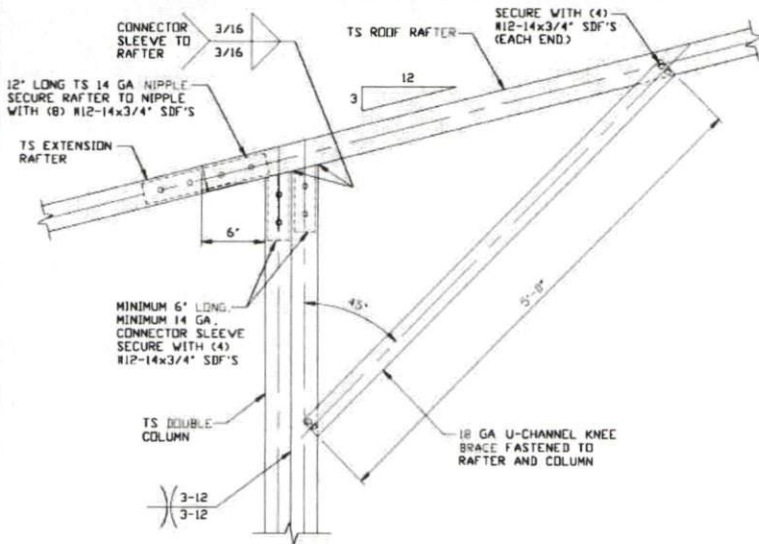
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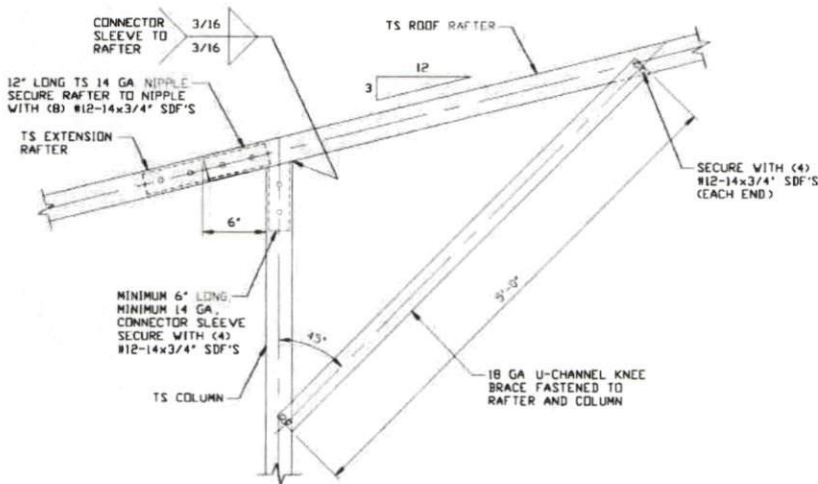
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<b>CLIENT: VEGA METAL</b>	<b>SHT. 14A</b>	<b>DWG. NO: SK-3</b>	<b>REV: 0</b>

## BOX EAVE RAFTER LEAN-TO OPTIONS FOR RAFTER SPANS $\leq 10'-0''$



15A

**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 12'-0" < TO  $\leq$  16'-0"**  
SCALE: NTS



15B

**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS  $\leq$  12'-0"**  
SCALE: NTS

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PROJECT MGR: VSM

CLIENT: VEGA METAL

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SHT. 14B

SCALE: NTS

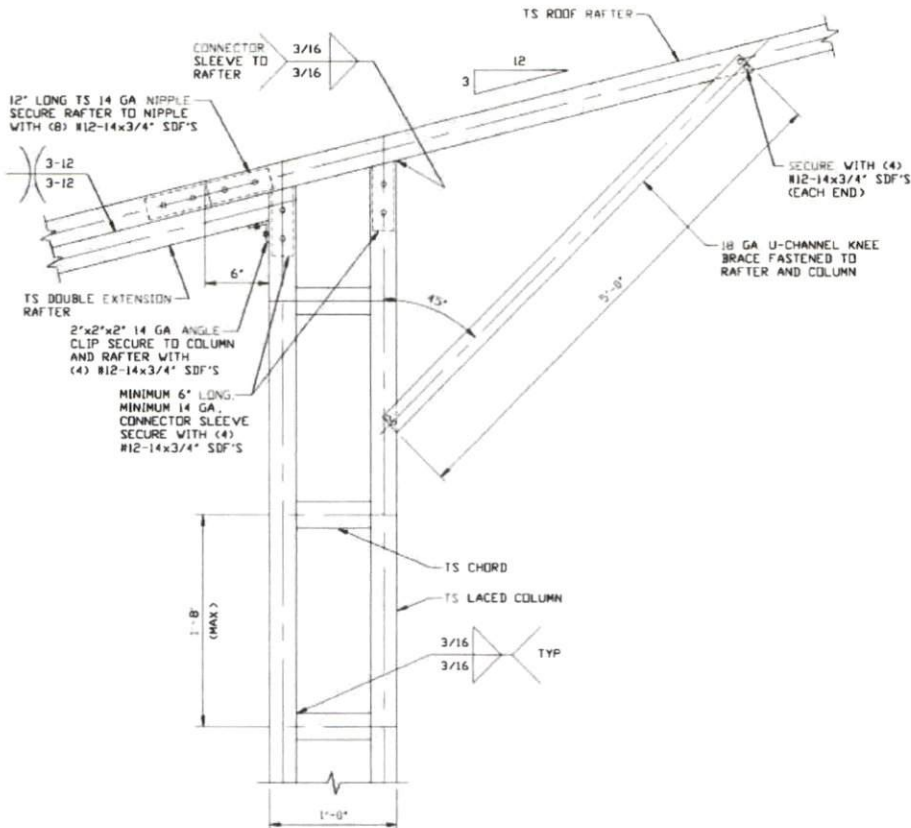
DWG. NO SK-3

JTB NO: 20193S

REV: 0

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**BOX EAVE RAFTER LEAN-TO OPTION FOR RAFTER SPANS 10'-0" < TO ≤ 16'-0"**



**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 16'-0" < TO ≤ 20'-0"**

15C

SCALE: NTS

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DATE: 10-23-20

SCALE: NTS

JOB NO: 20193S

SHT. 14C

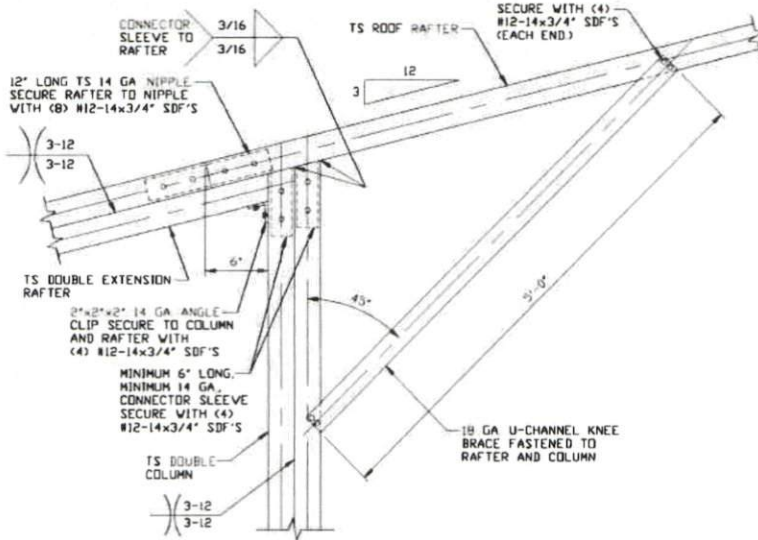
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REV: 0

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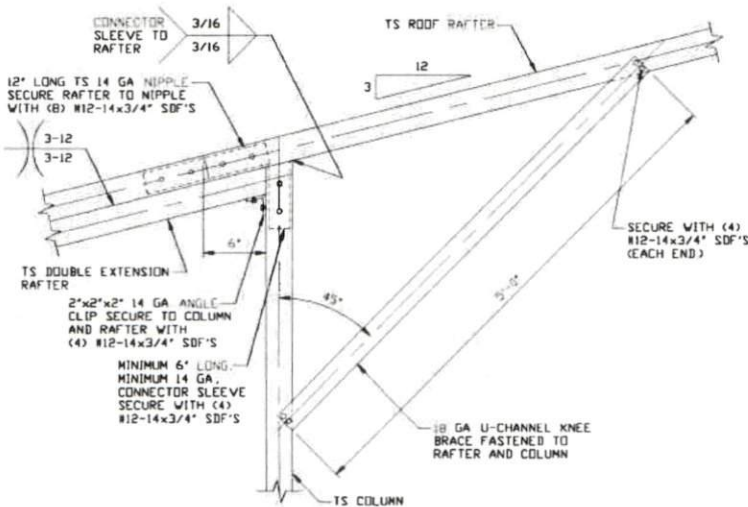
# BOX EAVE RAFTER LEAN-TO OPTIONS FOR RAFTER SPANS 10'-0" < TO ≤ 16'-0"



15D

SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 12'-0" < TO ≤ 16'-0"

SCALE: NTS



15E

SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS < 12'-0"

SCALE: NTS

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SCALE: NTS

JOB NO: 201935

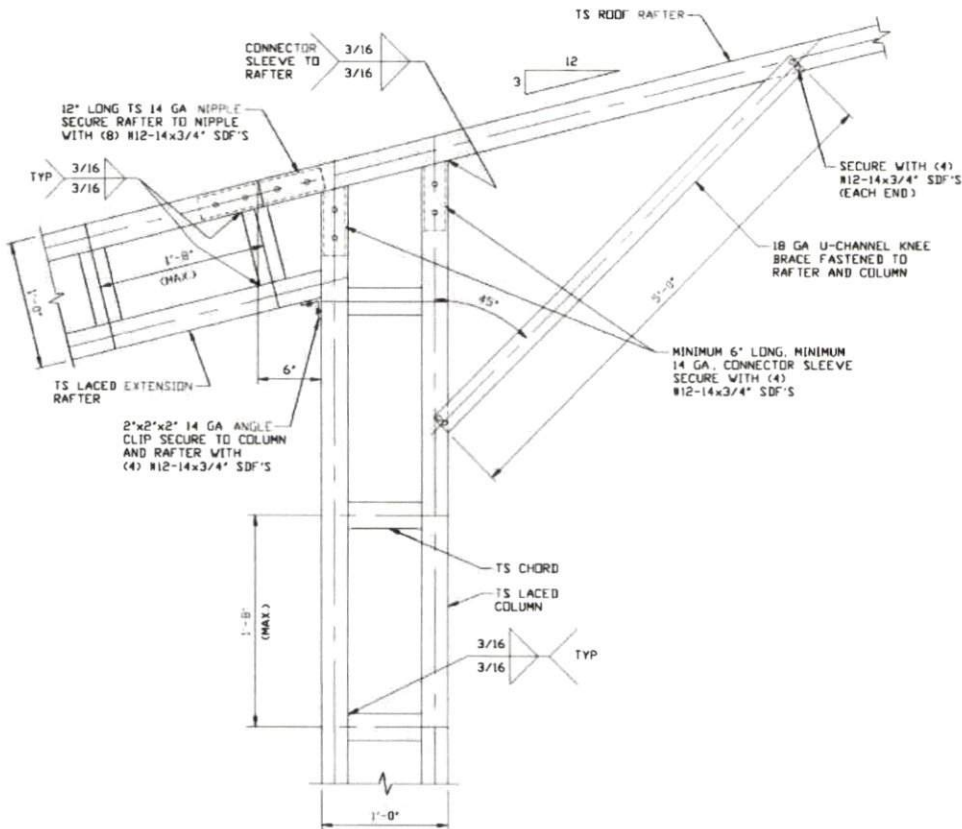
SHT. 14D

DWG. NO SK-3

REV: 0

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**BOX EAVE RAFTER LEAN-TO OPTION FOR RAFTER SPANS 16'-0" < TO ≤ 20'-0"**

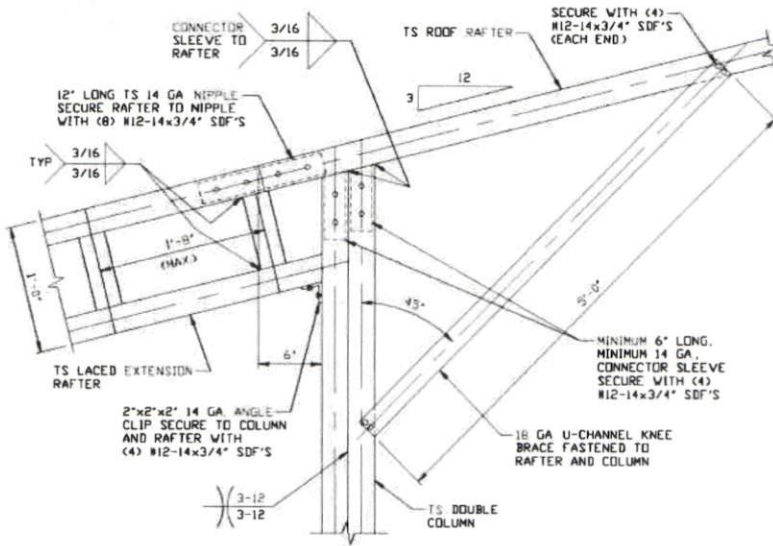


**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 16'-0" < TO ≤ 20'-0"**  
SCALE: NTS

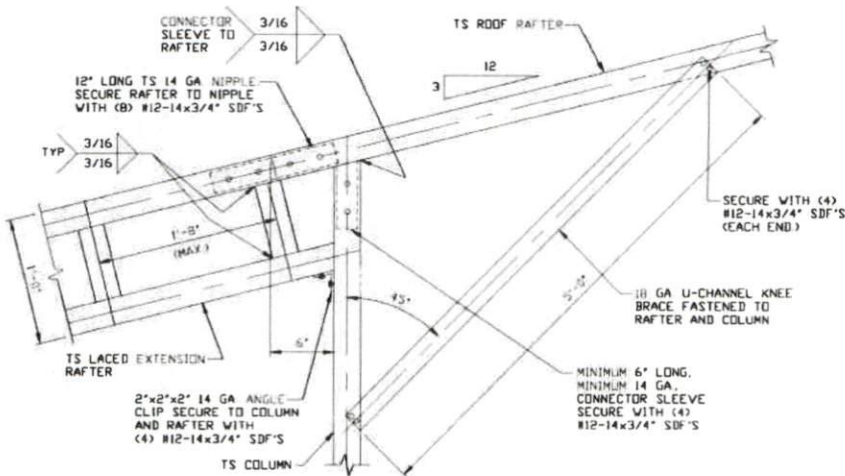
15F

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	CHECKED BY: PDH			
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	CLIENT: VEGA METAL	SHT. 14E	DWG. NO: SK-3	REV: 0

**BOX EAVE RAFTER LEAN-TO OPTIONS FOR RAFTER SPANS 16'-0" < TO ≤ 20'-0"**



**15G**  
**SIDE EXTENSION RAFTER/  
 COLUMN DETAIL FOR  
 HEIGHTS 12'-0" < TO ≤ 16'-0"**  
 SCALE: NTS



**15H**  
**SIDE EXTENSION RAFTER/  
 COLUMN DETAIL FOR  
 HEIGHTS ≤ 12'-0"**  
 SCALE: NTS

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 ENGINEERING AND CONSULTING, INC.**

**DRAWN BY: JG**

**CHECKED BY: PDH**

**PROJECT MGR: WSH**

**CLIENT: VEGA METAL**

**VEGA METAL STRUCTURES & CONCRETE, LLC.**  
 4047 US HWY 311  
 RANDLEMAN, NC 27317  
 30'-0"x20'-0" ENCLOSED STRUCTURE

**DATE: 10-23-20**

**SCALE: NTS**

**JOB NO: 201935**

**SHT. 14F**

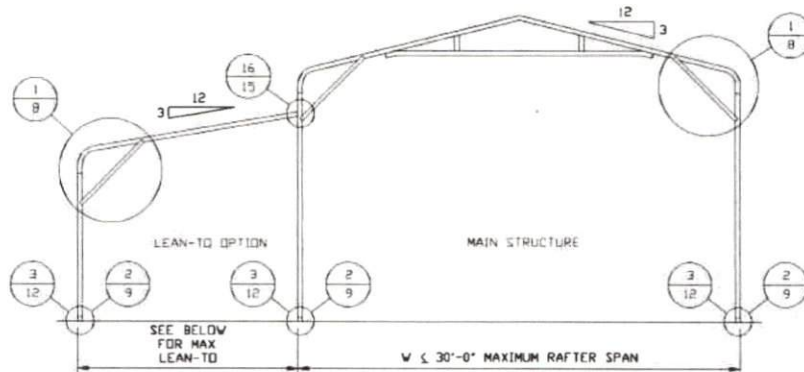
**DWG. NO: SK-3**

**REV: 0**

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## BOW EAVE RAFTER LEAN-TO OPTION



### TYPICAL BOW EAVE RAFTER LEAN-TO OPTION FRAMING SECTION

SCALE: NTS

MAXIMUM WIDTH OF SINGLE MEMBER ROOF EXTENSION AND LEAN-TO IS 10'-0"

MAXIMUM WIDTH OF DOUBLE MEMBER ROOF EXTENSION AND LEAN-TO IS 16'-0"

MAXIMUM WIDTH OF LACED MEMBER ROOF EXTENSION AND LEAN-TO IS 20'-0"

FOR SHARED COLUMN HEIGHTS REFERENCE RAFTER COLUMN CONNECTION DETAILS FOR APPROPRIATE COLUMN HEIGHT AND TUBING SPECIFICATIONS.

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**CHECKED BY: PDH**

**PROJECT MGR: WSM**

**CLIENT: VEGA METAL**

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RANDLEMAN, NC 27317  
30'-0"x20'-0" ENCLOSED STRUCTURE

**DATE: 10-23-20**

**SHT. 15**

**SCALE: NTS**

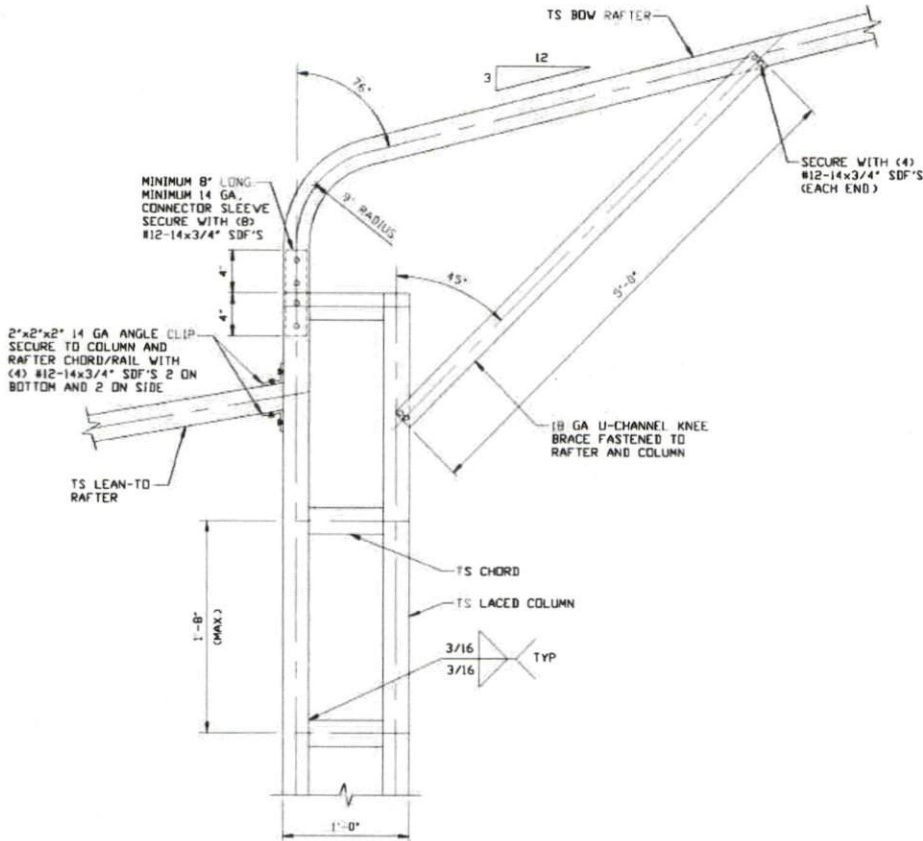
**DWG. NO: SK-3**

**JOB NO: 20193S**

**REV: 0**

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**BOW EAVE RAFTER LEAN-TO OPTION FOR RAFTER SPANS  $\leq 10'-0''$**



**16** SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 16'-0" < TO  $\leq$  20'-0"  
SCALE: NTS

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PROJECT MGR: VSM

CLIENT: VEGA METAL

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30'-0"x20'-0" ENCLOSED STRUCTURE

DATE: 10-23-20

SCALE: NTS

JOB NO: 20193S

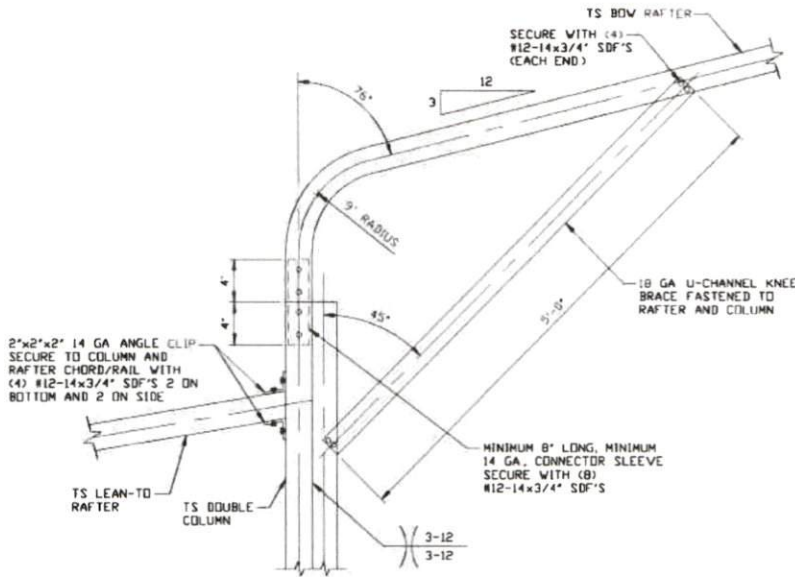
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DWG. NO: SK-3

REV: 0

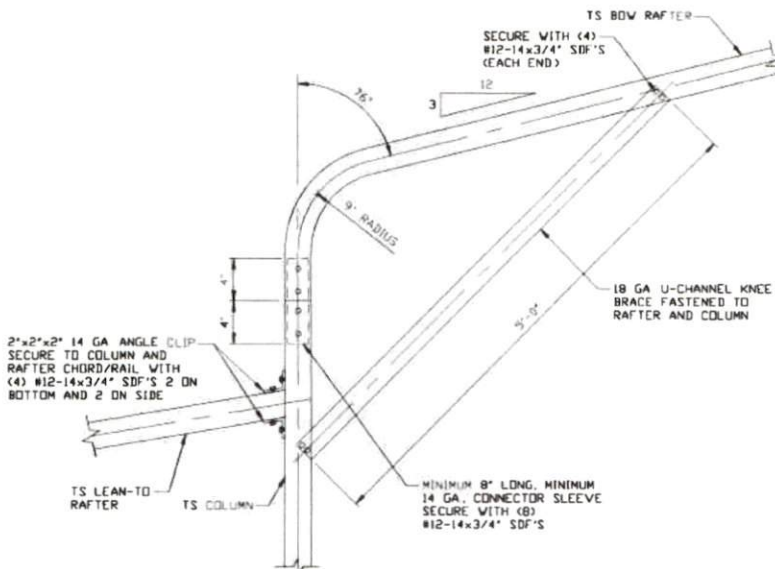
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**BOW EAVE RAFTER LEAN-TO OPTIONS FOR RAFTER SPANS  $\leq 10'-0''$**



16A

**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 12'-0" < TO  $\leq$  16'-0"**  
SCALE: NTS



16B

**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS  $\leq 12'-0''$**   
SCALE: NTS

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**DRAWN BY: JG**  
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**PROJECT MGR: WSM**  
**CLIENT: VEGA METAL**

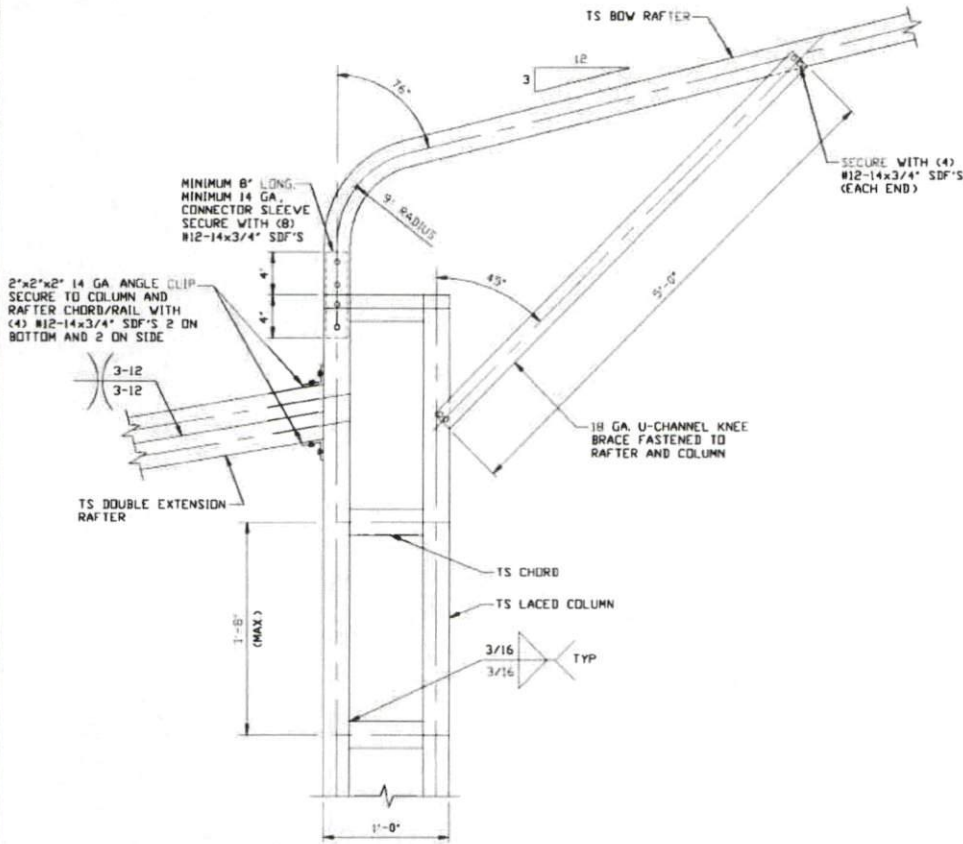
**DATE: 10-23-20**  
**SHT. 15B**

**SCALE: NTS**  
**DWG. NO SK-3**

**JOB NO: 20193S**  
**REV: 0**



**BOW EAVE RAFTER LEAN-TO OPTION FOR RAFTER SPANS 10'-0" < TO ≤ 16'-0"**



**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 16'-0" < TO ≤ 20'-0"**

16C

SCALE: NTS

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CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: VEGA METAL

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RANDLEMAN, NC 27317  
30'-0" x 20'-0" ENCLOSED STRUCTURE

DATE: 10-23-20

SHT. 15C

SCALE: NTS

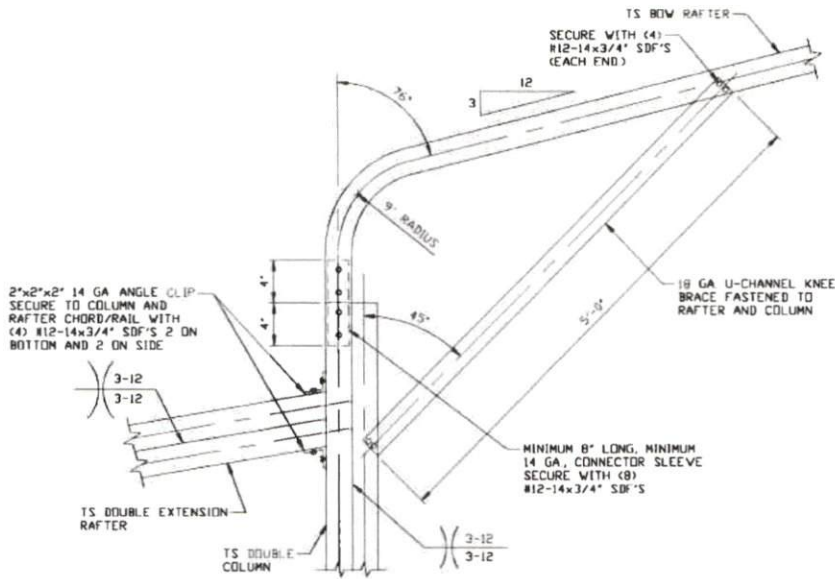
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JOB NO: 20193S

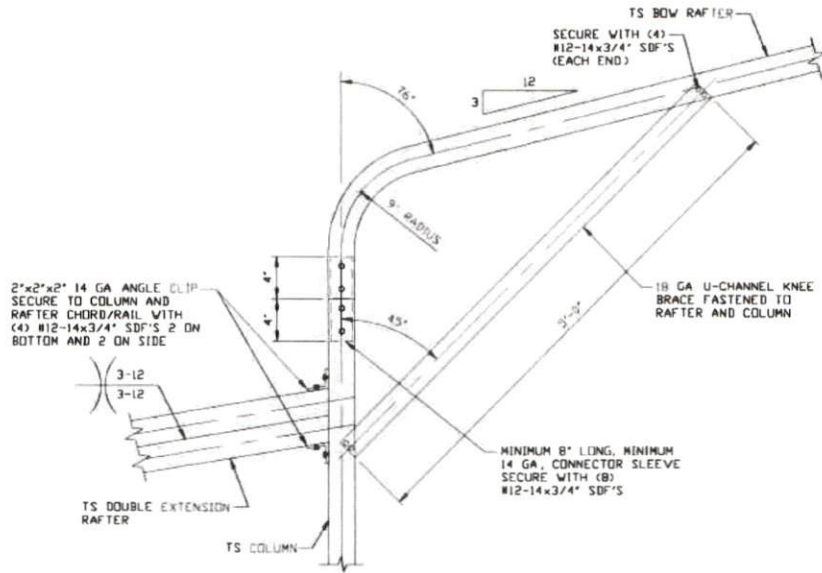
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**BOW EAVE RAFTER LEAN-TO OPTIONS FOR RAFTER SPANS 10'-0" < TO ≤ 16'-0"**



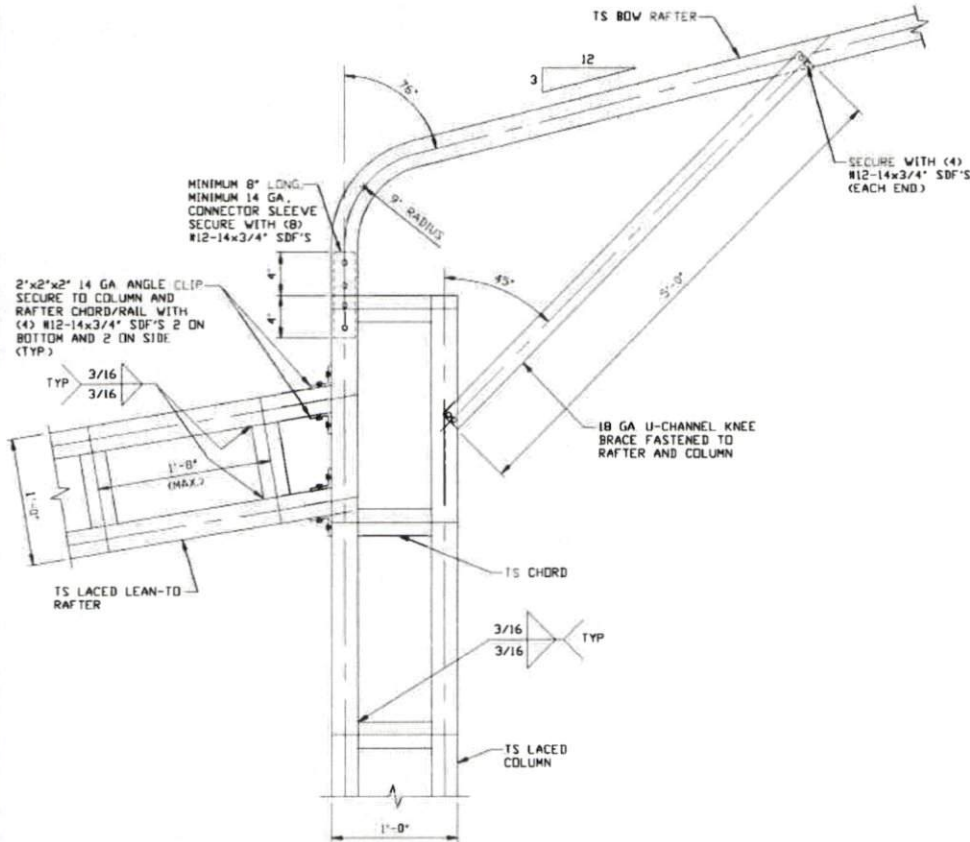
**16D** SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 12'-0" < TO ≤ 16'-0"  
SCALE: NTS



**16E** SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS ≤ 12'-0"  
SCALE: NTS

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	CHECKED BY: PDH			
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	CLIENT: VEGA METAL	SHT. 15D	DWG. NO: SK-3	REV: 0

**BOW EAVE RAFTER LEAN-TO OPTION FOR RAFTER SPANS 16'-0" < TO ≤ 20'-0"**



**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 16'-0" < TO ≤ 20'-0"**  
SCALE: NTS

16F

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CLIENT: VEGA METAL

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SHT. 15E

SCALE: NTS

DWG. NO: SK-3

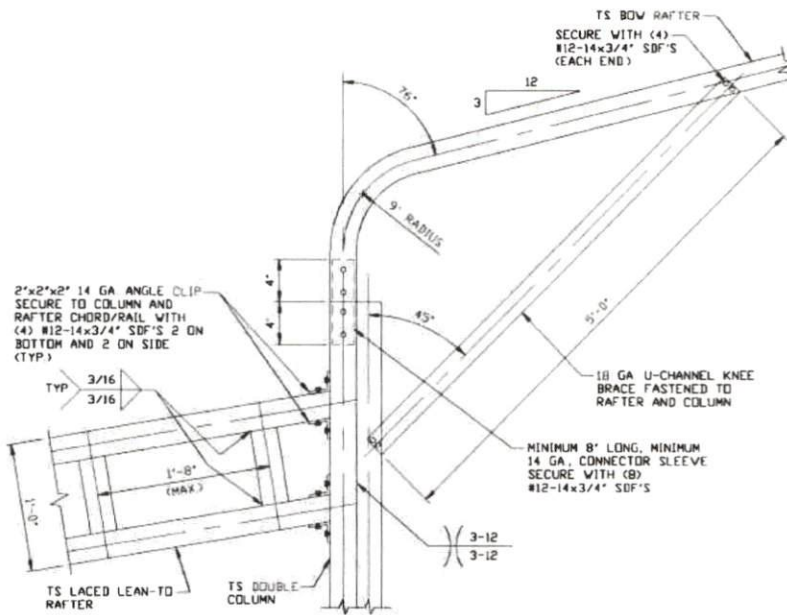
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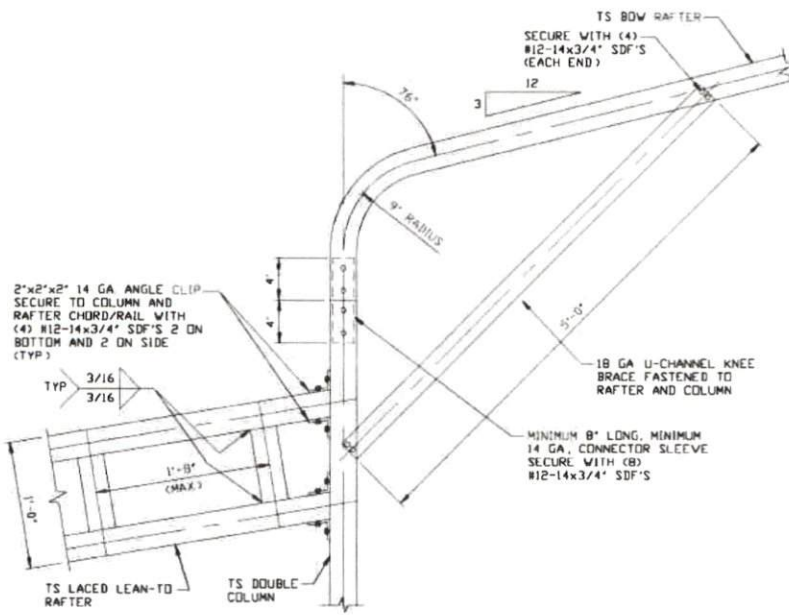
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# BOW EAVE RAFTER LEAN-TO OPTIONS FOR RAFTER SPANS 16'-0" < TO ≤ 20'-0"



**16G**  
 SIDE EXTENSION RAFTER/  
 COLUMN DETAIL FOR  
 HEIGHTS 12'-0" < TO ≤ 16'-0"  
 SCALE: NTS



**16H**  
 SIDE EXTENSION RAFTER/  
 COLUMN DETAIL FOR  
 HEIGHTS ≤ 12'-0"  
 SCALE: NTS

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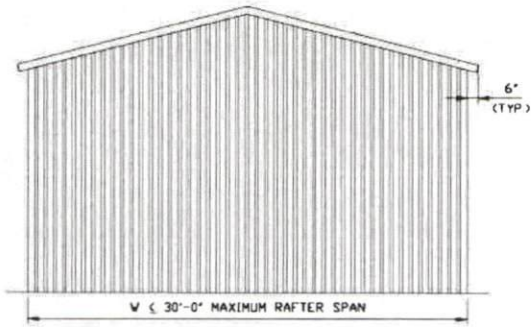
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**CHECKED BY: PDH**

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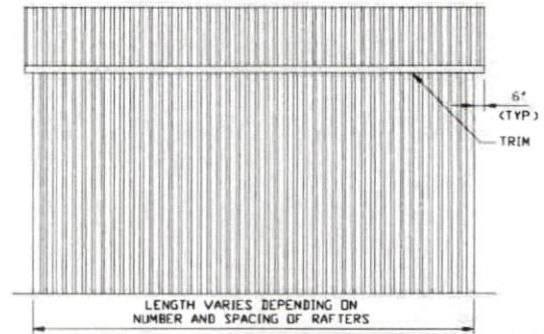
<b>PROJECT MGR: VSM</b>	<b>DATE: 10-23-20</b>	<b>SCALE: NTS</b>	<b>JOB NO: 20193S</b>
<b>CLIENT: VEGA METAL</b>	<b>SHT. 15F</b>	<b>DWG. NO: SK-3</b>	<b>REV: 0</b>

## BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



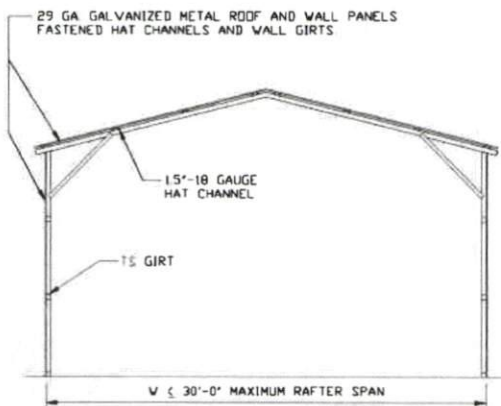
**TYPICAL END ELEVATION  
VERTICAL ROOF/SIDING**

SCALE: NTS



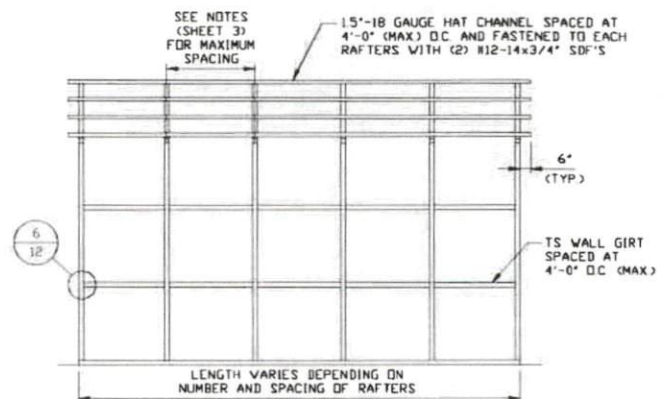
**TYPICAL SIDE ELEVATION  
VERTICAL ROOF/SIDING**

SCALE: NTS



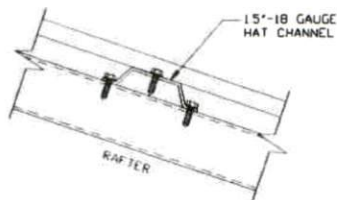
**TYPICAL SECTION VERTICAL  
ROOF/SIDING OPTION**

SCALE: NTS



**TYPICAL FRAMING SECTION  
VERTICAL ROOF/SIDING OPTION**

SCALE: NTS



### PANEL ATTACHMENT

(ALTERNATE FOR VERTICAL ROOF PANELS)  
SCALE: NTS

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**PROJECT MGR:** VSM

**CLIENT:** VEGA METAL

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30'-0" x 20'-0" ENCLOSED STRUCTURE

**DATE:** 10-23-20

**SHT.** 16

**SCALE:** NTS

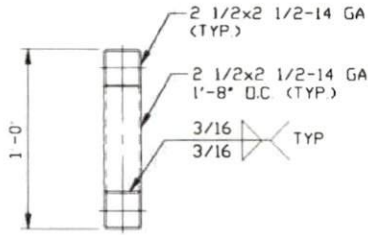
**DWG. NO:** SK-3

**JOB NO:** 20193S

**REV.:** 0

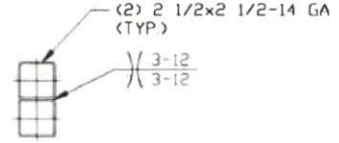
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## SIDE WALL HEADER OPTIONS



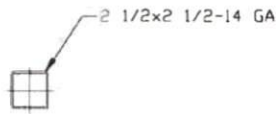
**HEADER DETAIL FOR DOOR OPENINGS  
10'-0" < LENGTHS ≤ 16'-0"**

SCALE: NTS



**HEADER DETAIL FOR DOOR OPENINGS  
6'-0" < LENGTHS ≤ 10'-0"**

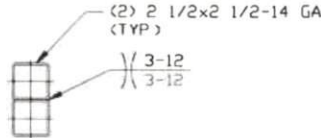
SCALE: NTS



**HEADER DETAIL FOR DOOR OPENINGS  
LENGTHS < 6'-0"**

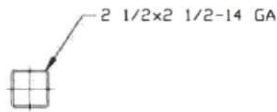
SCALE: NTS

## END WALL HEADER OPTIONS



**HEADER DETAIL FOR DOOR OPENINGS  
13'-0" < LENGTHS ≤ 16'-0"**

SCALE: NTS



**HEADER DETAIL FOR DOOR OPENINGS  
LENGTHS < 13'-0"**

SCALE: NTS

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CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: VEGA METAL

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SHT. 17

SCALE: NTS

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JOB NO: 20193S

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