

**Eagle Carports**

*"Flying High with Great Deals"*



**STRUCTURAL DESIGN**

**FULLY OPEN (CARPORT) BUILDING**

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

**19 August 2021**

**Revision 9**

**M&A Project No. 16166S/17207S/17293S/18012S/18260S/19320S/21169S**

**Prepared for:**

**Eagle Carports  
210 Airport Road  
Mount Airy, NC 27030**

**Prepared by:**

**Moore and Associates Engineering and Consulting, Inc.**

**1009 East Avenue  
North Augusta, SC 29841**

**401 S. Main Street, Suite 200  
Mount Airy, NC 27030**









**MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING**

		<p>I HAVE RESEARCHED THIS CHAPTER AND THE LOUISIANA STATE UNIFORM CONSTRUCTION CODE AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, THESE DRAWINGS ARE IN COMPLIANCE THEREWITH. I TAKE FULL RESPONSIBILITY FOR THE CONTENTS OF THESE PLANS.</p>	

<b>MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.</b>	<b>DRAWN BY:</b> LT	<b>EAGLE CARPORTS</b> 210 AIRPORT ROAD MOUNT AIRY, NC 27030 30'-0"x20'-0" SP FULLY OPEN STRUCTURE		
	<b>CHECKED BY:</b> PDH			
<b>PROJECT MGR:</b> WSM	<b>DATE:</b> 8-19-21	<b>SCALE:</b> NTS	<b>JOB NO:</b> 16166S/ 18260S/19320S/21169S	
<b>CLIENT:</b> EAGLE CARPORTS	<b>SHT.</b> 1	<b>DWG. NO:</b> SK-1	<b>REV:</b> 9	

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	<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>6/22/2022</u></p>		
			
			
			

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## INSTALLATION NOTES AND SPECIFICATIONS

1. DESIGN IS FOR MAXIMUM 30'-0" WIDE x 20'-0" EAVE HEIGHT OPEN CARPORT STRUCTURES.
2. DESIGN WAS DONE IN ACCORDANCE WITH ALL THE APPLICABLE BUILDING CODES LISTED ON SHEET 3A.
3. DESIGN LOADS ARE AS FOLLOWS:
  - A) DEAD LOAD = 15 PSF
  - B) LIVE LOAD = 12 PSF
  - C) GROUND SNOW LOAD = 35 PSF

NOTE: UNBALANCED LOADING DUE TO SNOW DRIFTING FROM AN ADJACENT TALLER STRUCTURE HAS NOT BEEN EVALUATED
4. 3-SECOND GUST ULTIMATE WIND SPEED ( $V_{ULT}$ ) 105 TO 140 MPH (NOMINAL WIND SPEED 81 TO 108 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/C.
9. SPECIFICATIONS APPLICABLE TO 29 GAUGE METAL PANELS FASTENED DIRECTLY TO 2 1/2"x2 1/2"-14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS.
10. AVERAGE PANEL FASTENER SPACING ON-CENTERS = 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 AT OR WITHIN 6" OF EVERY RAFTER COLUMN.
13. STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBAR W/ WELDED NUT x 36" LONG AND MAY BE USED IN SUITABLE SOILS. OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED.
14. CONTRACTOR TO PROVIDE ADEQUATE BRACING FOR STRUCTURE SO THAT IT WILL BE STABLE DURING ALL STAGES OF CONSTRUCTION. THE STRUCTURE AND FOUNDATION ARE DESIGNED FOR A COMPLETED CONDITION ONLY AND, THEREFORE, REQUIRE ADDITIONAL SUPPORT TO MAINTAIN STABILITY BEFORE COMPLETION.
15. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:
  - SOIL SITE CLASS = D
  - RISK CATEGORY I
  - R = 3.25                       $I_e = 1.0$
  - $S_{DS} = 2.039 g$                $V = C_s W$
  - $S_{D1} = 1.258 g$

Oct22-1449

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## LIST OF APPLICABLE BUILDING CODES

2018 INTERNATIONAL BUILDING CODE (IBC 2018)

2015 INTERNATIONAL BUILDING CODE (IBC 2015)

2012 INTERNATIONAL BUILDING CODE (IBC 2012)

2009 INTERNATIONAL BUILDING CODE (IBC 2009)

2006 INTERNATIONAL BUILDING CODE (IBC 2006)

BUILDING CODE 2015 OF ALABAMA  
(ADOPTS THE IBC 2015 WITH AMENDMENTS)

2020 FLORIDA BUILDING CODE, 7TH EDITION

GEORGIA STATE MINIMUM STANDARD BUILDING CODE  
(ADOPTS THE IBC 2018 WITH AMENDMENTS)

INDIANA BUILDING CODE, 2014 EDITION  
(ADOPTS THE IBC 2012 WITH AMENDMENTS)

BUILDING CODE 2018 OF KANSAS  
(ADOPTS THE IBC 2018 WITH AMENDMENTS)

2018 KENTUCKY BUILDING CODE  
(ADOPTS THE IBC 2015 WITH AMENDMENTS)

BUILDING CODE 2015 OF LOUISIANA  
(ADOPTS THE IBC 2015 WITH AMENDMENTS)

BUILDING CODE 2018 OF MARYLAND  
(ADOPTS THE IBC 2018 WITH AMENDMENTS)

BUILDING CODE 2015 OF NEW MEXICO  
(ADOPTS THE IBC 2015 WITH AMENDMENTS)

2018 NORTH CAROLINA BUILDING CODE  
(ADOPTS THE IBC 2015 WITH AMENDMENTS)

OHIO BUILDING CODE 2017  
(ADOPTS THE 2015 WITH AMENDMENTS)

BUILDING CODE 2015 OF OKLAHOMA  
(ADOPTS THE IBC 2015 WITH AMENDMENTS)

BUILDING CODE 2015 OF PENNSYLVANIA  
(ADOPTS THE IBC 2015 WITH AMENDMENTS)

2018 SOUTH CAROLINA BUILDING CODE  
(ADOPTS THE IBC 2018 WITH AMENDMENTS)

BUILDING CODE 2012 OF TENNESSEE  
(ADOPTS THE IBC 2012 WITH AMENDMENTS)

BUILDING CODE OF THE TEXAS INDUSTRIALIZED  
HOUSING AND BUILDINGS PROGRAM  
(ADOPTS THE IBC 2015 WITH AMENDMENTS)

2018 VIRGINIA CONSTRUCTION CODE  
(ADOPTS THE IBC 2015 WITH AMENDMENTS)

BUILDING CODE 2015 OF WEST VIRGINIA  
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EAGLE CARPORTS  
210 AIRPORT ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP FULLY OPEN STRUCTURE

**DATE:** 8-19-21

**SCALE:** NTS

**SHT.** 3A

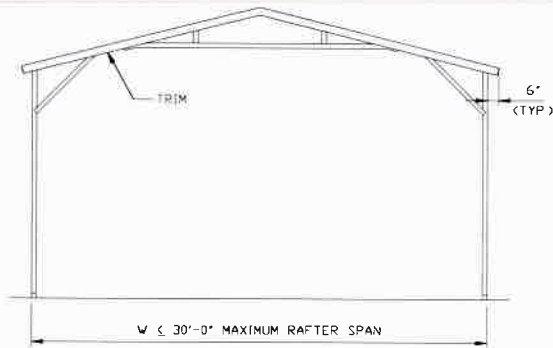
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18260S/19320S/21169S

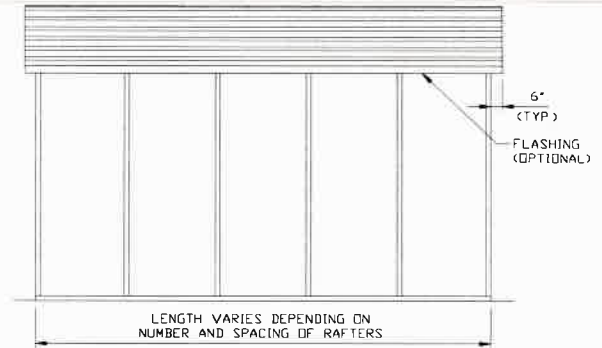
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**BOX EAVE FRAME RAFTER STRUCTURE**

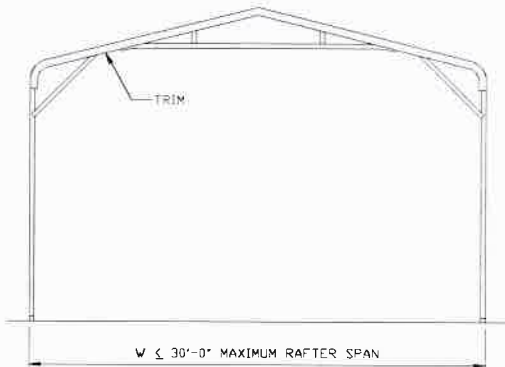


**TYPICAL END ELEVATION**  
SCALE: NTS

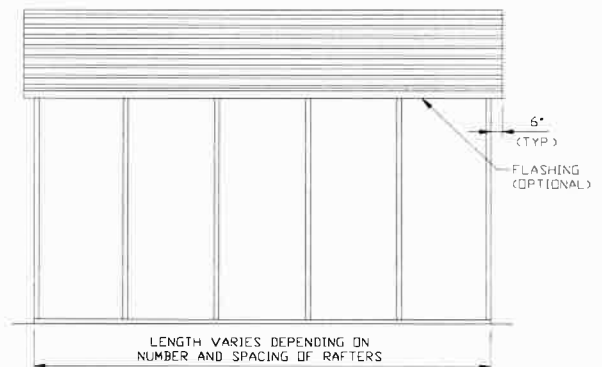


**TYPICAL SIDE ELEVATION**  
SCALE: NTS

**BOW EAVE FRAME RAFTER STRUCTURE**



**TYPICAL END ELEVATION**  
SCALE: NTS



**TYPICAL SIDE ELEVATION**  
SCALE: NTS

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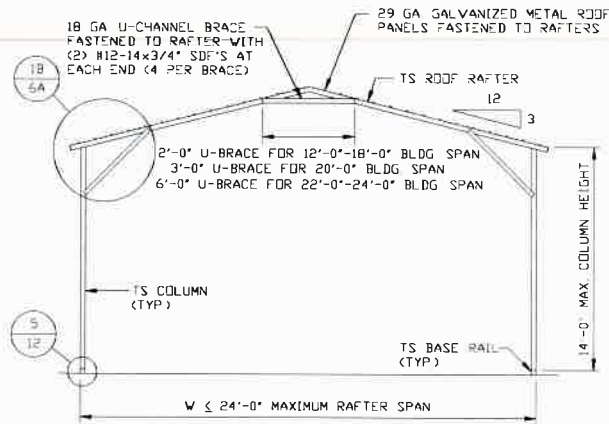
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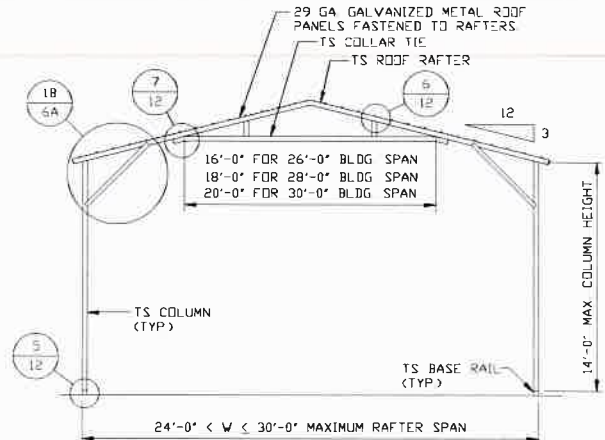
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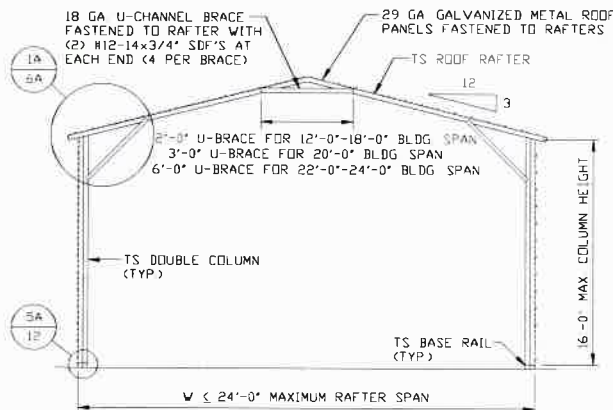
**TYPICAL RAFTER/COLUMN END FRAME SECTION**

SCALE: NTS



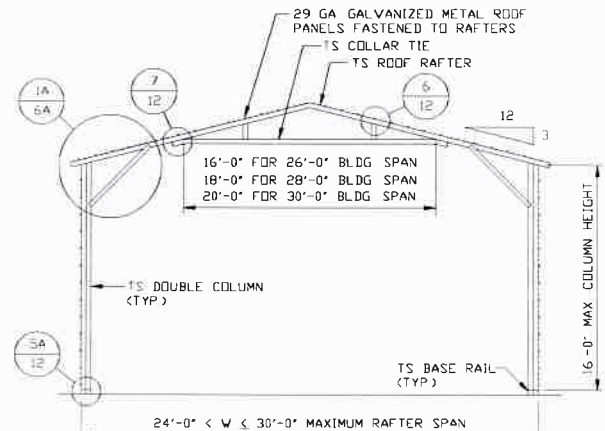
**TYPICAL RAFTER/COLUMN END FRAME SECTION**

SCALE: NTS



**TYPICAL RAFTER/COLUMN END FRAME SECTION**

SCALE: NTS



**TYPICAL RAFTER/COLUMN END FRAME SECTION**

SCALE: NTS

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210 AIRPORT ROAD  
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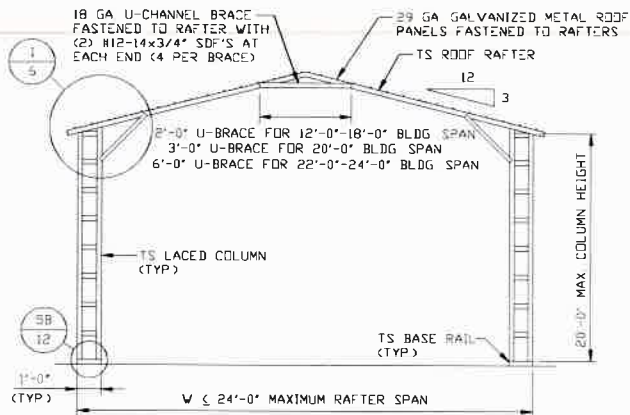
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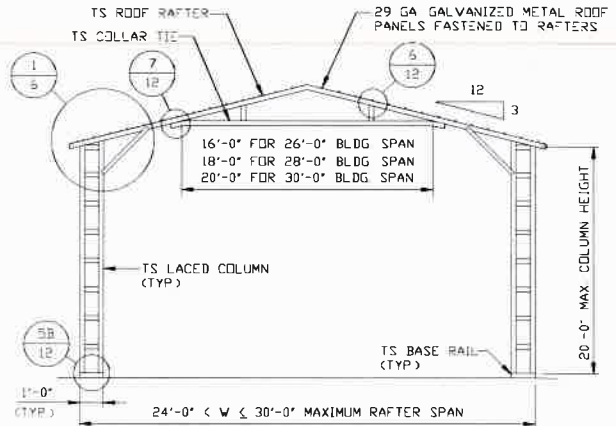
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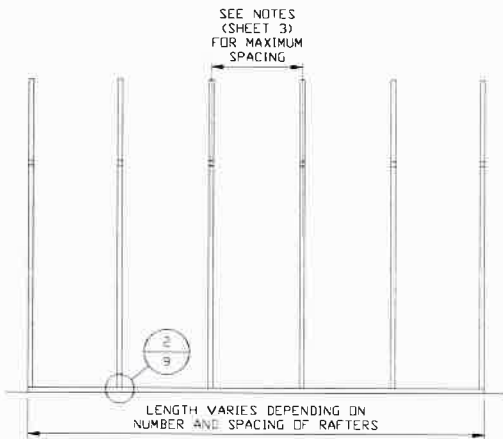
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SCALE: NTS



**TYPICAL RAFTER/COLUMN END FRAME SECTION**

SCALE: NTS



**TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION**

SCALE: NTS

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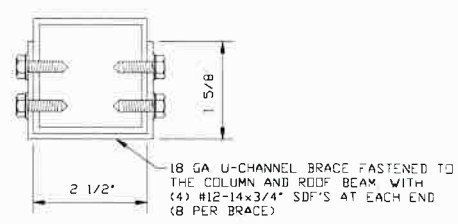
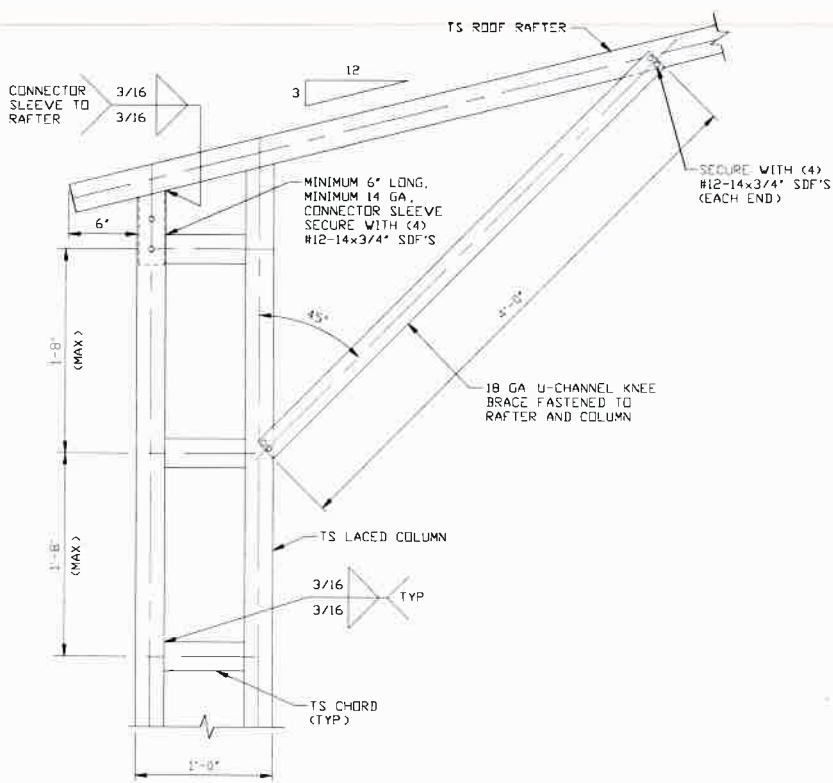
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**JOB NO: 16166S/  
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**BRACE SECTION**  
SCALE: NTS

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

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**CHECKED BY: PDH**

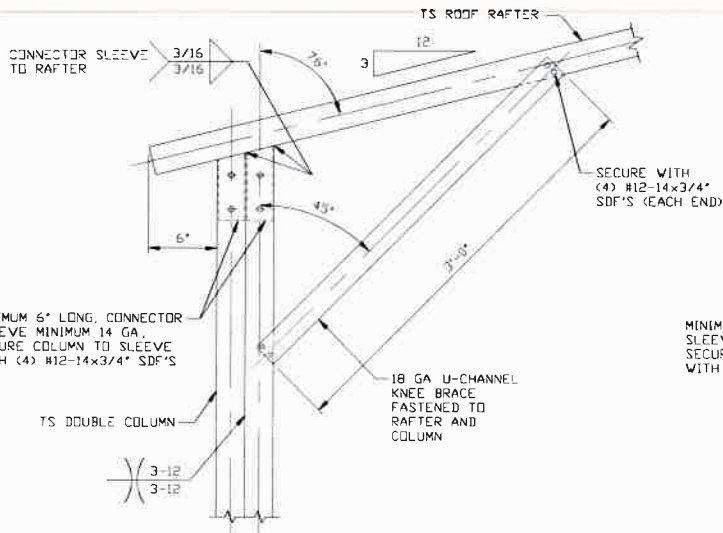
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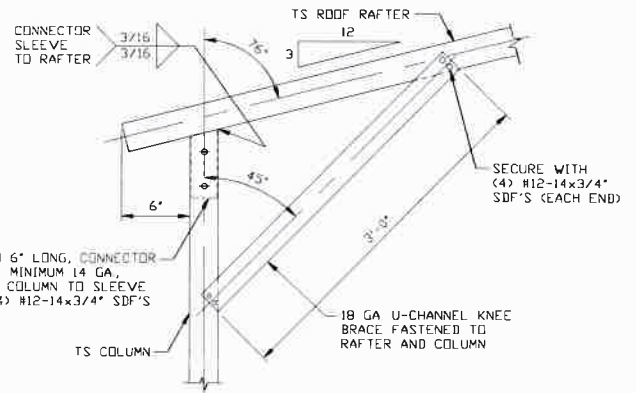
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**SHT. 6**

**SCALE: NTS**  
**DWG. NO: SK-1**  
**JOB NO: 16166S/18260S/19320S/21169S**  
**REV: 9**



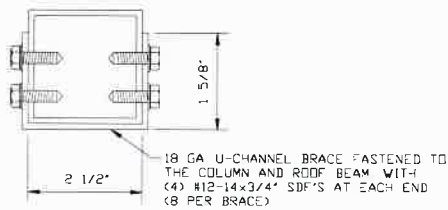
**1A**  
**BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 14'-0" < TO <= 16'-0"**

SCALE: NTS



**1B**  
**BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS <= 14'-0"**

SCALE: NTS



**BRACE SECTION**

SCALE: NTS

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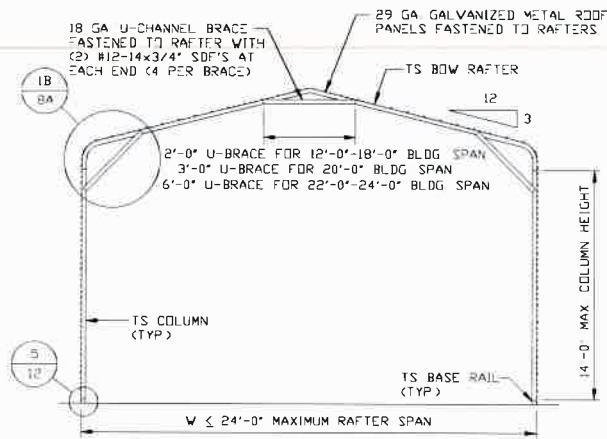
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**JOB NO: 16166S/  
 18260S/19320S/21169S**

**SHT. 6A**

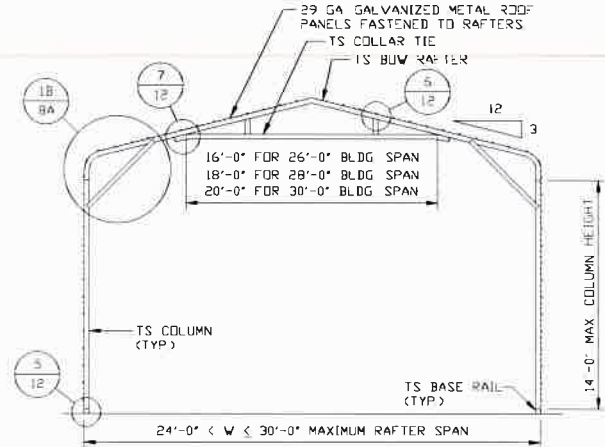
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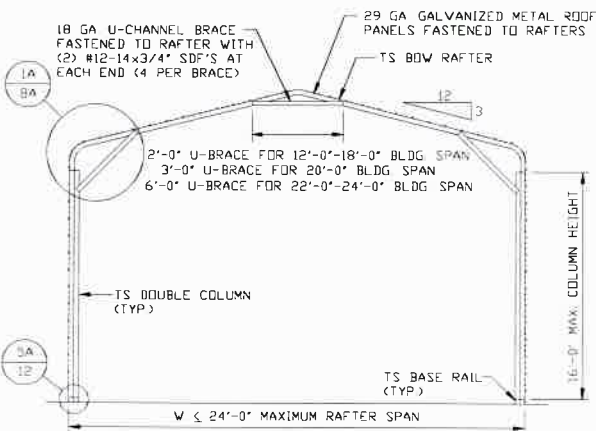
**TYPICAL RAFTER/COLUMN END FRAME SECTION**

SCALE: NTS



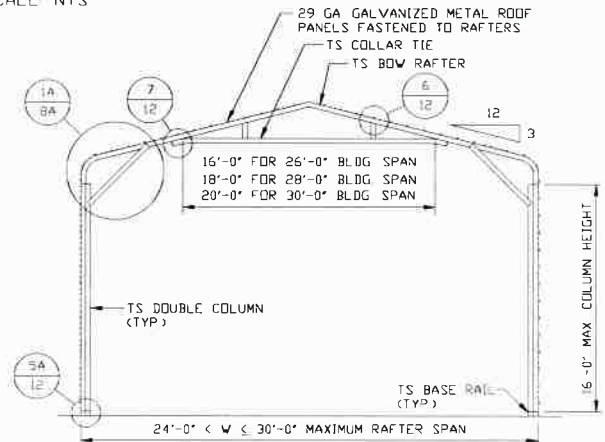
**TYPICAL RAFTER/COLUMN END FRAME SECTION**

SCALE: NTS



**TYPICAL RAFTER/COLUMN END FRAME SECTION**

SCALE: NTS



**TYPICAL RAFTER/COLUMN END FRAME SECTION**

SCALE: NTS

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**SHT. 7**

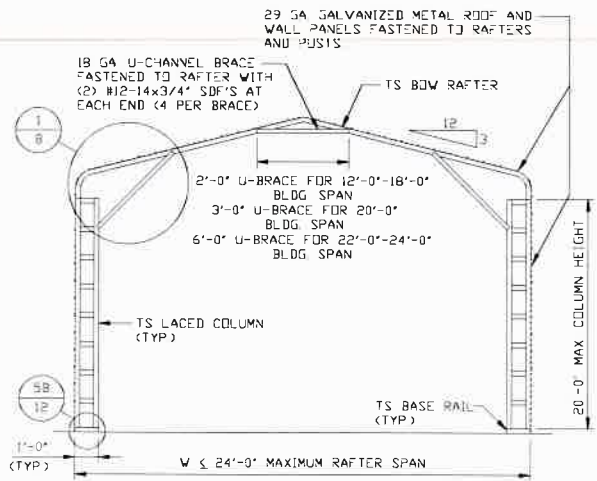
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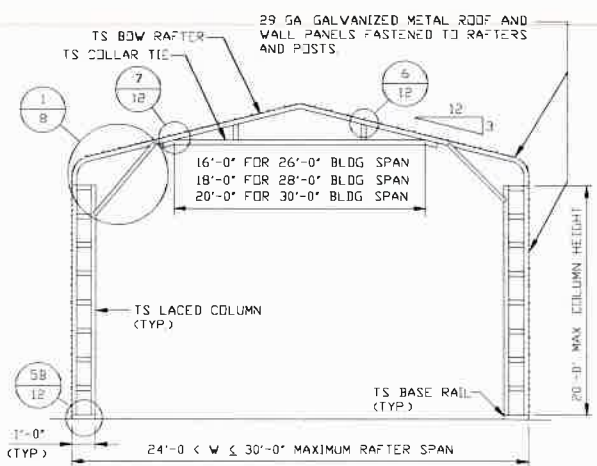
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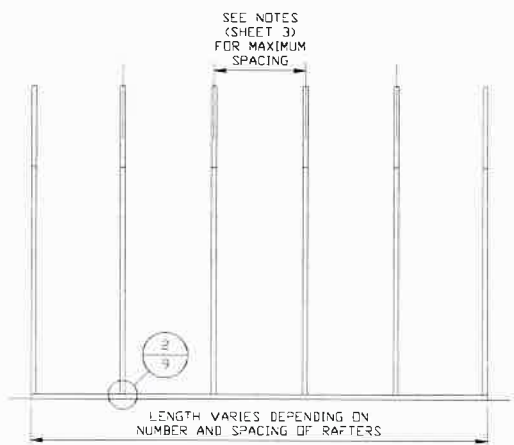
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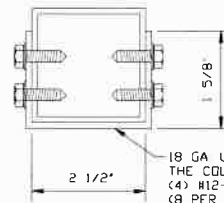
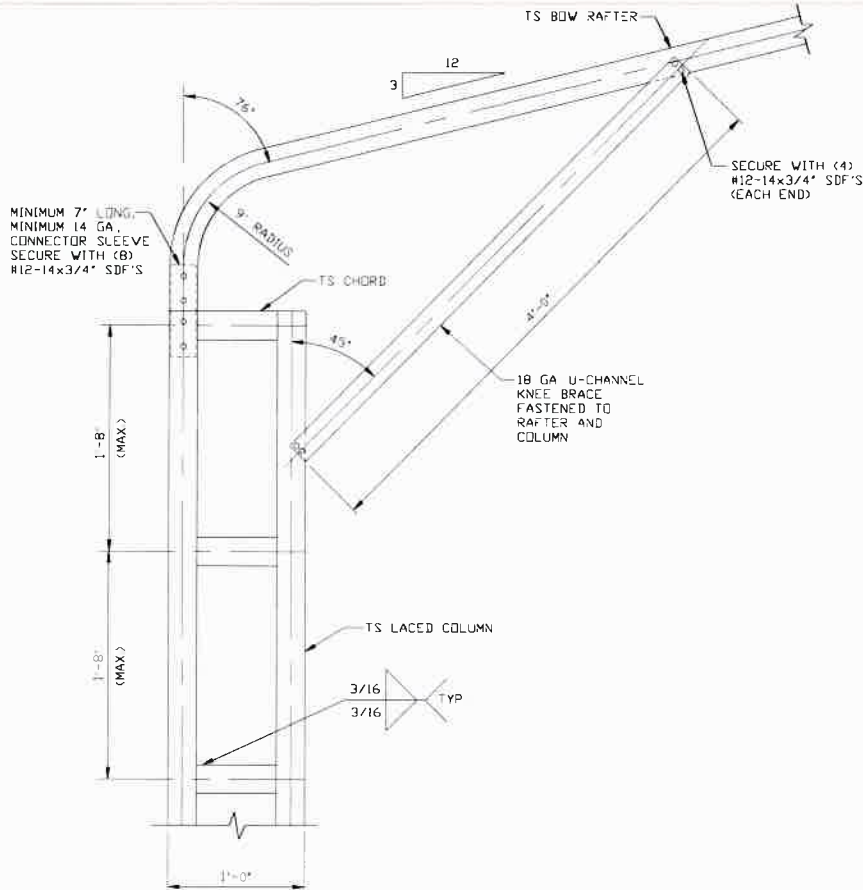


**TYPICAL RAFTER/COLUMN END FRAME SECTION**  
 SCALE: NTS



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

<b>MOORE AND ASSOCIATES          ENGINEERING AND CONSULTING, INC.</b>	<b>DRAWN BY:</b> LT	EAGLE CARPORTS 210 AIRPORT ROAD MOUNT AIRY, NC 27030 30'-0"x20'-0" SP FULLY OPEN STRUCTURE		
	<b>CHECKED BY:</b> PDH			
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	<b>CLIENT:</b> EAGLE CARPORTS	<b>SHT:</b> 7A	<b>DWG. NO:</b> SK-1	<b>REV:</b> 9



**BRACE SECTION**

SCALE: NTS

**BOW EAVE RAFTER COLUMN  
CONNECTION DETAIL FOR  
HEIGHTS 16'-0" < TO ≤ 20'-0"**

1

SCALE: NTS

**MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING, INC.**

**DRAWN BY: LT**

**CHECKED BY: PDH**

**PROJECT MGR: WSM**

**CLIENT: EAGLE CARPORTS**

**EAGLE CARPORTS  
210 AIRPORT ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP FULLY OPEN STRUCTURE**

**DATE: 8-19-21**

**SCALE: NTS**

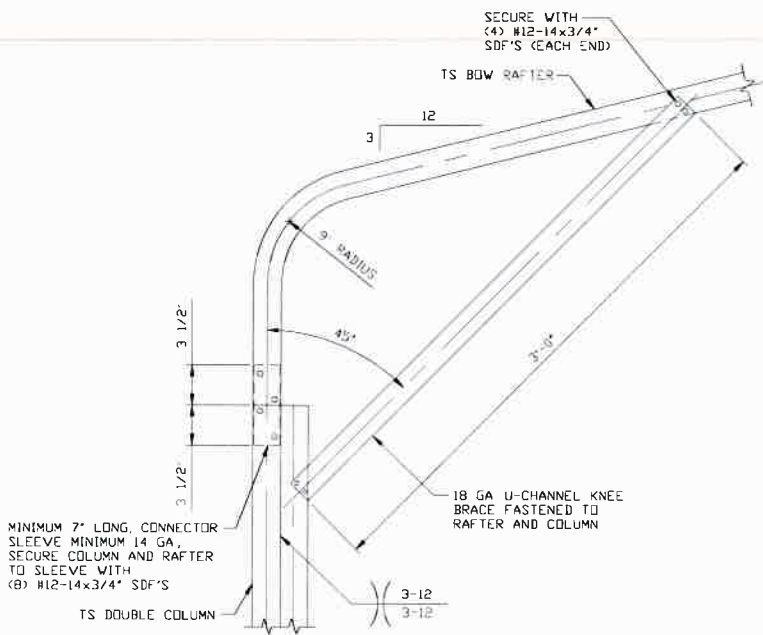
**SHT. 8**

**DWG. NO: SK-1**

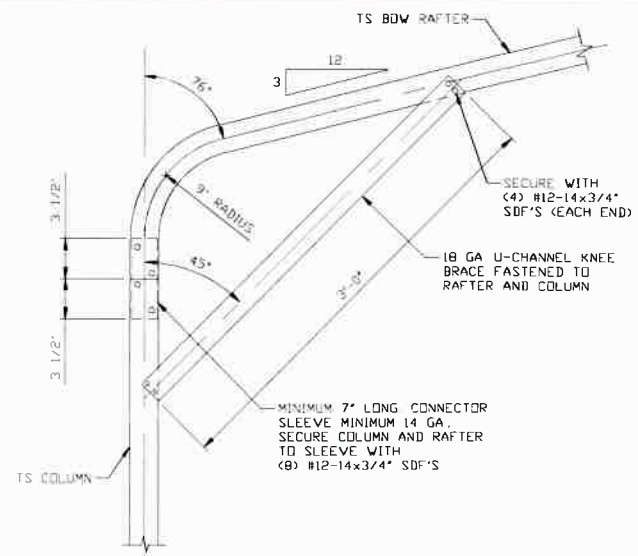
**JOB NO: 16166S/  
18260S/19320S/21169S**

**REV: 9**

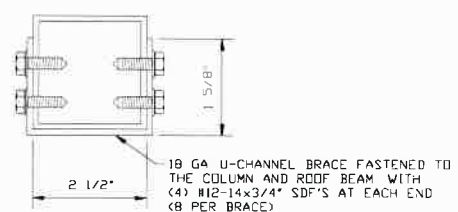
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**1A**  
**BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 14'-0" < TO <= 16'-0"**  
 SCALE: NTS



**1B**  
**BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS <= 14'-0"**  
 SCALE: NTS



**BRACE SECTION**  
 SCALE: NTS

**MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.**

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**EAGLE CARPORTS**  
 210 AIRPORT ROAD  
 MOUNT AIRY, NC 27030  
 30'-0"x20'-0" SP FULLY OPEN STRUCTURE

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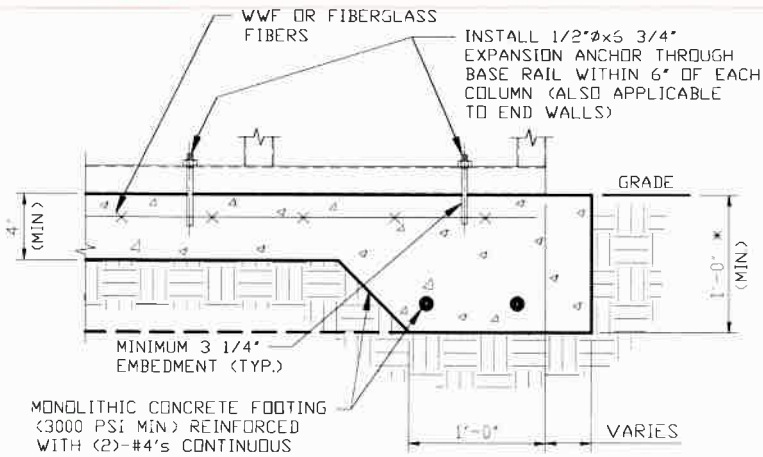
**PROJECT MGR: WSM**  
**CLIENT: EAGLE CARPORTS**

**DATE: 8-19-21**  
**SHT. 8A**

**SCALE: NTS**  
**DWG. NO: SK-1**

**JOB NO: 16166S/18260S/19320S/21169S**  
**REV: 9**

## BASE RAIL ANCHORAGE OPTIONS



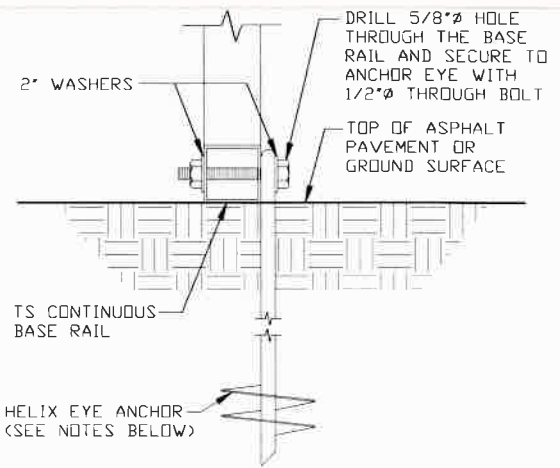
2

### CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS

MINIMUM ANCHOR EDGE DISTANCE IS 4"

\* COORDINATE WITH LOCAL BUILDING CODES/ORD REGARDING REQUIRED FOOTING DEPTH



2A

### GROUND BASE HELIX ANCHORAGE

SCALE: NTS (CAN BE USED FOR ASPHALT)

\* COORDINATE WITH LOCAL CODES/ORD. REGARDING REQUIRED ANCHOR 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 50" EMBEDMENT.

**MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING, INC.**

**DRAWN BY:** LT

**CHECKED BY:** PDH

**PROJECT MGR:** WSM

**CLIENT:** EAGLE CARPORTS

EAGLE CARPORTS  
210 AIRPORT ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP FULLY OPEN STRUCTURE

**DATE:** 8-19-21

**SHT.** 9

**SCALE:** NTS

**DWG. NO:** SK-1

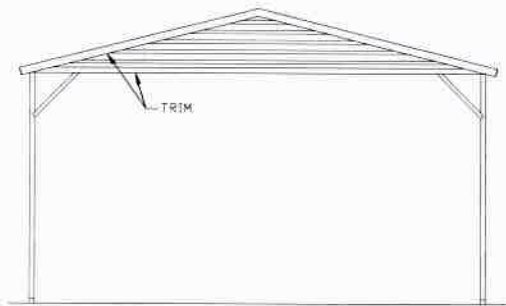
**JOB NO:** 16166S/  
18260S/19320S/21169S

**REV:** 9

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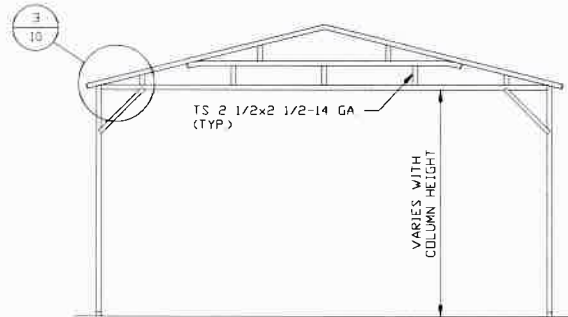


## BOX EAVE RAFTER GABLE END OPTION



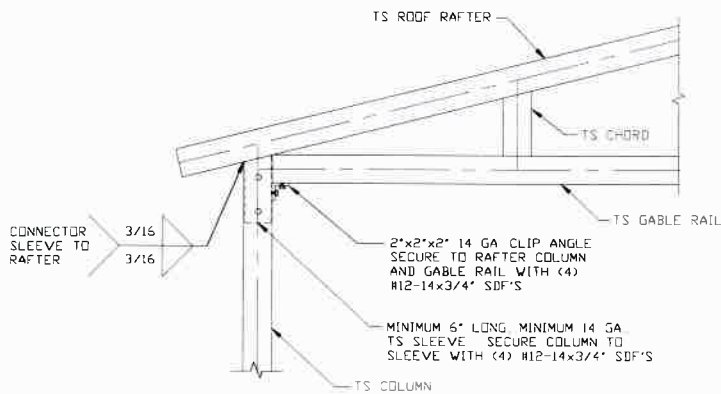
**TYPICAL BOX EAVE RAFTER  
GABLE END ELEVATION**

SCALE: NTS



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

SCALE: NTS



**BOX EAVE RAFTER GABLE RAIL TO  
RAFTER COLUMN CONNECTION DETAIL**

SCALE: NTS

NOTE: KNEE BRACE NOT SHOWN FOR CLARITY

3

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**EAGLE CARPORTS  
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MOUNT AIRY, NC 27030  
30'-0" x 20'-0" SP FULLY OPEN STRUCTURE**

**DATE: 8-19-21**

**SCALE: NTS**

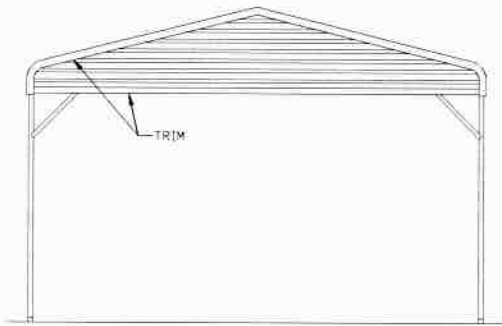
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**JOB NO: 16166S/  
18260S/19320S/21169S**

**REV: 9**

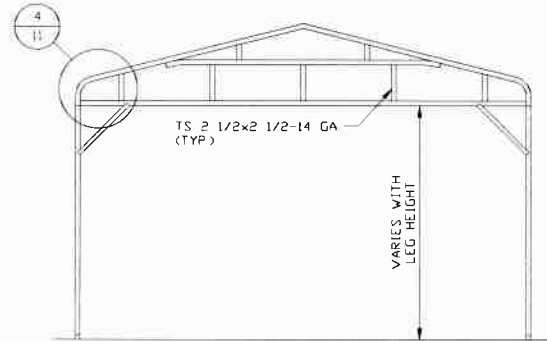
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## BOW EAVE RAFTER GABLE END OPTION



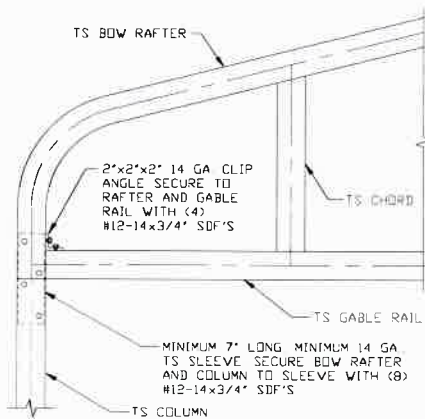
**TYPICAL BOW RAFTER  
GABLE END ELEVATION**

SCALE: NTS



**TYPICAL BOW RAFTER GABLE  
END FRAMING SECTION**

SCALE: NTS



**4 BOW RAFTER GABLE RAIL TO  
RAFTER/COLUMN CONNECTION DETAIL**

SCALE: NTS

NOTE: KNEE BRACE NOT SHOWN FOR CLARITY

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**PROJECT MGR: WSM**

**CLIENT: EAGLE CARPORTS**

EAGLE CARPORTS  
210 AIRPORT ROAD  
MOUNT AIRY, NC 27030  
30'-0" x 20'-0" SP FULLY OPEN STRUCTURE

**DATE: 8-19-21**

**SCALE: NTS**

**DWG. NO: SK-1**

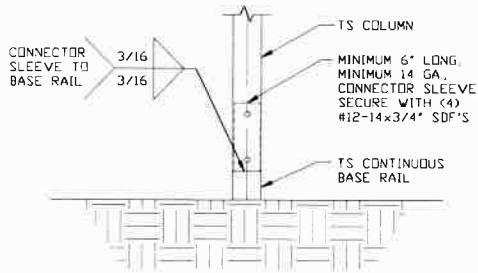
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**SHT. 11**

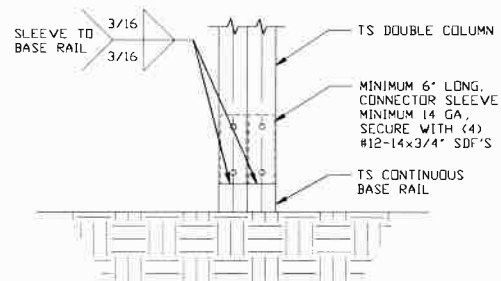
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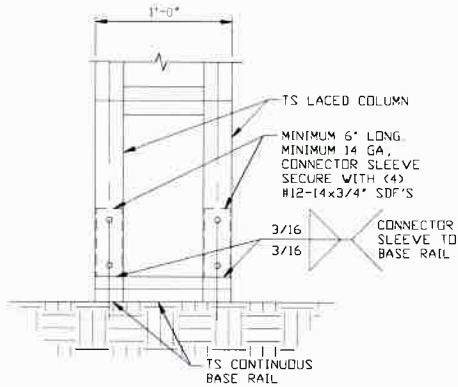
## CONNECTION DETAILS



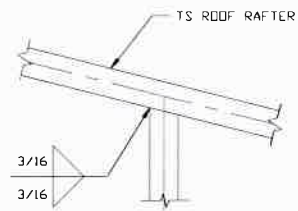
**5** RAFTER COLUMN/BASE RAIL CONNECTION DETAIL  
SCALE: NTS



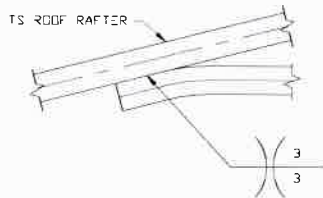
**5A** RAFTER COLUMN/BASE RAIL CONNECTION DETAIL  
SCALE: NTS



**5B** RAFTER COLUMN/BASE RAIL CONNECTION DETAIL  
SCALE: NTS



**6** RAFTER TO CHORD CONNECTION DETAIL  
SCALE: NTS



**7** COLLAR TIE CONNECTION DETAIL  
SCALE: NTS

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**EAGLE CARPORTS  
210 AIRPORT ROAD  
MOUNT AIRY, NC 27030  
30'-0\"/>**

**DATE: 8-19-21**

**SHT. 12**

**SCALE: NTS**

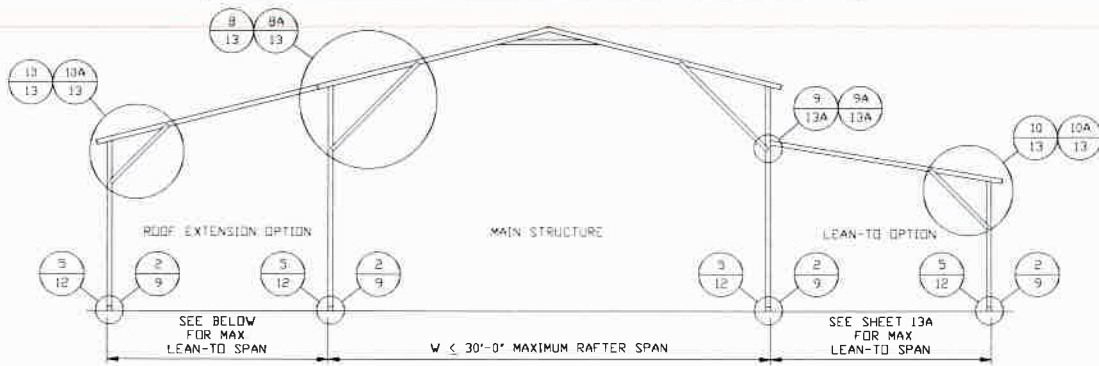
**DWG. NO: SK-1**

**JOB NO: 16166S/  
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# BOX EAVE RAFTER LEAN-TO OPTIONS



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

SCALE: NTS

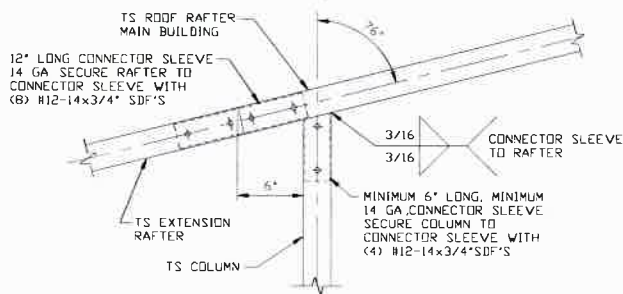
MAXIMUM WIDTH OF SINGLE MEMBER (RAFTER AND COLUMN) ROOF EXTENSION AND LEAN-TO IS 12'-0"

MAXIMUM WIDTH OF DOUBLE MEMBER (RAFTER AND COLUMN) ROOF EXTENSION AND LEAN-TO IS 15'-0"

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE LACED COLUMNS FOR EAVE HEIGHTS 16'-0" < TO < 20'-0"

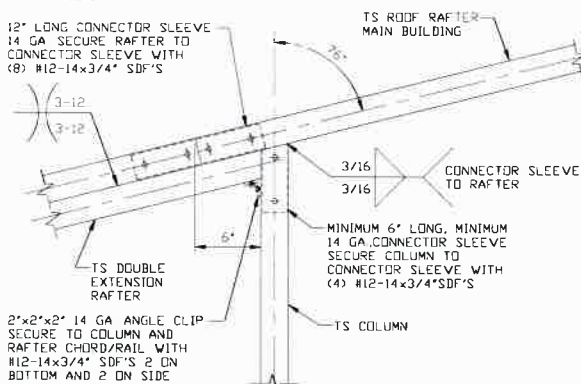
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS 14'-0" < TO < 16'-0"

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS < 14'-0"



### 8 SIDE EXTENSION RAFTER/ COLUMN DETAIL FOR RAFTER SPANS $\leq 12'-0"$

SCALE: NTS



### 8A SIDE EXTENSION RAFTER/ COLUMN DETAIL FOR RAFTER SPANS $12'-0" < TO \leq 15'-0"$

SCALE: NTS

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**PROJECT MGR: WSM**

**CLIENT: EAGLE CARPORTS**

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210 AIRPORT ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP FULLY OPEN STRUCTURE**

**DATE: 8-19-21**

**SHT. 13**

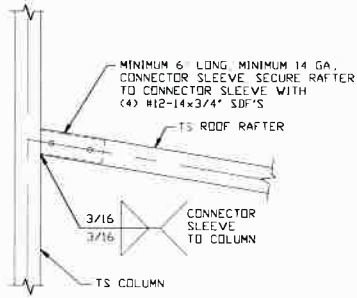
**SCALE: NTS**

**DWG. NO: SK-1**

**JOB NO: 16166S/  
18260S/19320S/21169S**

**REV: 9**

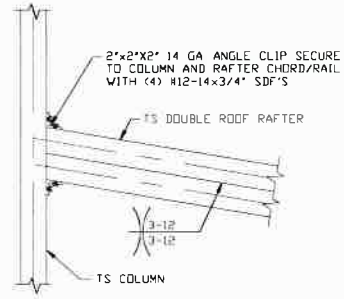
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**LEAN-TO RAFTER TO RAFTER  
COLUMN CONNECTION DETAIL  
FOR RAFTER SPANS  $\leq 12'-0"$**

SCALE: NTS  
NOTE: ROOF PITCH OF 2:12 AND 1:12 ARE  
ADEQUATE FOR LEAN-TO RAFTER.

9



**LEAN-TO RAFTER TO RAFTER  
COLUMN CONNECTION DETAIL  
FOR RAFTER SPANS  $12'-0" < TO \leq 15'-0"$**

SCALE: NTS  
NOTE: ROOF PITCH OF 2:12 AND 1:12 ARE  
ADEQUATE FOR LEAN-TO RAFTER

9A

**MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING, INC.**

DRAWN BY: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: EAGLE CARPORTS

EAGLE CARPORTS  
210 AIRPORT ROAD  
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DATE: 8-19-21

SHT. 13A

SCALE: NTS

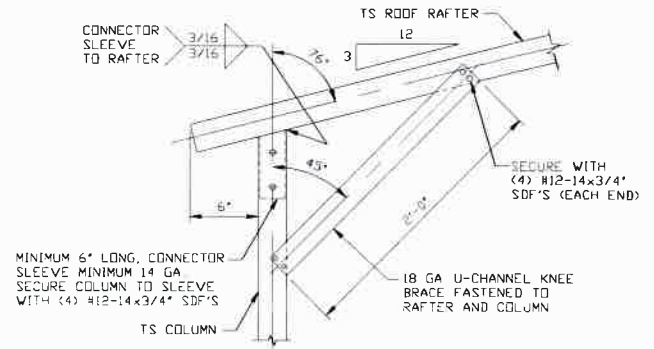
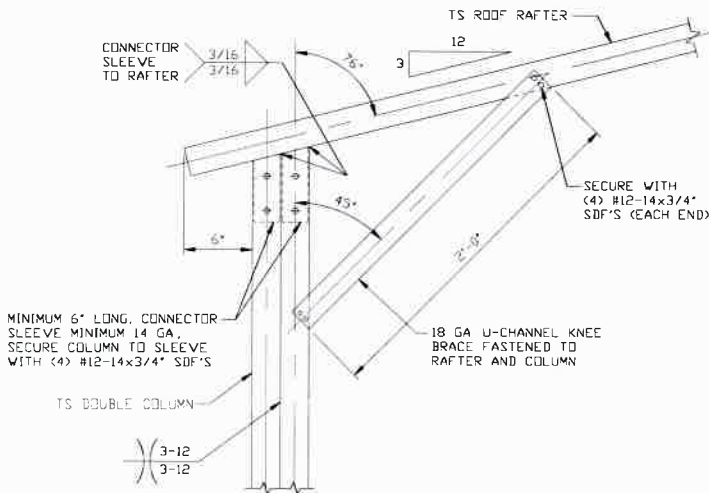
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JOB NO: 16166S/  
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## BOX EAVE RAFTER LEAN-TO OPTION - EXPOSURE B

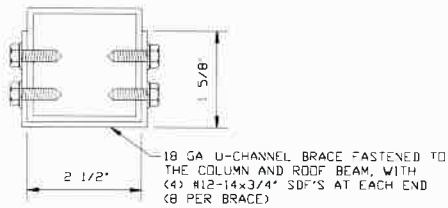


### 10 BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 14'-0" < TO <= 16'-0"

SCALE: NTS  
HORSE BARN OPTION (REQUIRES A LEAN-TO ON BOTH SIDES OF THE MAIN BUILDING)

### 10A BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS <= 14'-0"

SCALE: NTS  
HORSE BARN OPTION (REQUIRES A LEAN-TO ON BOTH SIDES OF THE MAIN BUILDING)



### BRACE SECTION

SCALE: NTS

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**DRAWN BY: LT**

**CHECKED BY: PDH**

**PROJECT MGR: WSM**

**CLIENT: EAGLE CARPORTS**

**EAGLE CARPORTS  
210 AIRPORT ROAD  
MOUNT AIRY, NC 27030  
30'-0" x 20'-0" SP FULLY OPEN STRUCTURE**

**DATE: 8-19-21**

**SHT. 13B**

**SCALE: NTS**

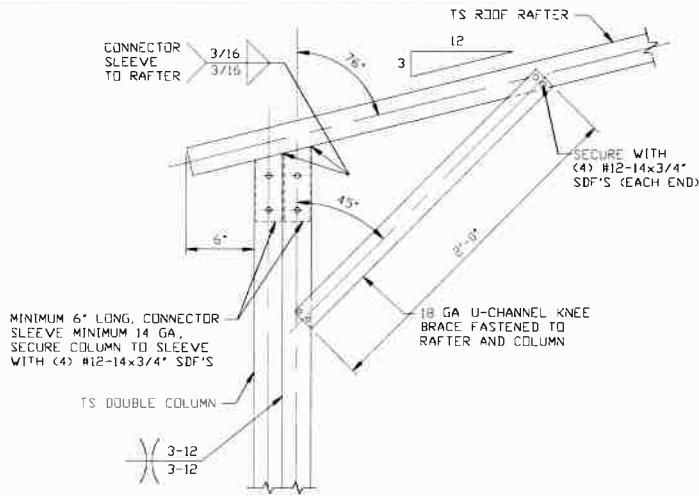
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**JOB NO: 16166S/  
10260S/19320S/21169S**

**REV: 9**

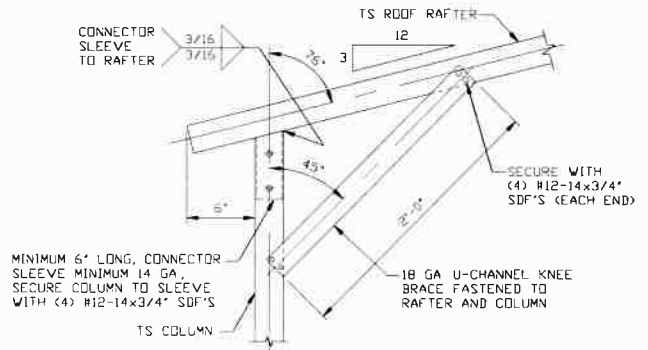
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# BOX EAVE RAFTER LEAN-TO OPTION - EXPOSURE C



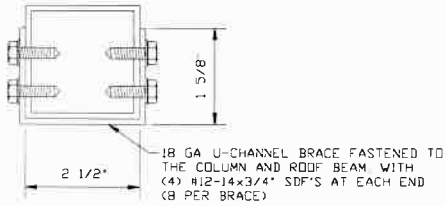
**10B**  
**BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 14'-0" < TO ≤ 16'-0"**

SCALE: NTS  
 HORSE BARN OPTION (REQUIRES A LEAN-TO ON BOTH SIDES OF THE MAIN BUILDING)



**10C**  
**BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 14'-0"**

SCALE: NTS  
 HORSE BARN OPTION (REQUIRES A LEAN-TO ON BOTH SIDES OF THE MAIN BUILDING)



**BRACE SECTION**  
 SCALE: NTS

**MOORE AND ASSOCIATES  
 ENGINEERING AND CONSULTING, INC.**

**DRAWN BY: LT**

**CHECKED BY: PDH**

**PROJECT MGR: WSM**

**CLIENT: EAGLE CARPORTS**

**EAGLE CARPORTS  
 210 AIRPORT ROAD  
 MOUNT AIRY, NC 27030  
 30'-0" x 20'-0" SP FULLY OPEN STRUCTURE**

**DATE: 8-19-21**

**SCALE: NTS**

**DWG. NO: SK-1**

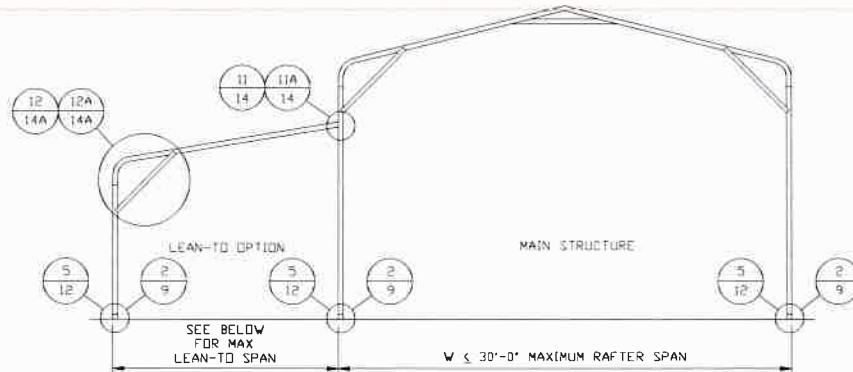
**SHT. 13C**

**JOB NO: 16166S/  
 18260S/19320S/21169S**

**REV: 9**

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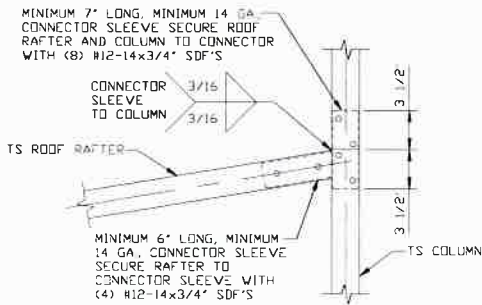
# BOW RAFTER LEAN-TO OPTION



## TYPICAL BOW RAFTER LEAN-TO OPTION FRAMING SECTION

SCALE: NTS

MAXIMUM WIDTH OF SINGLE MEMBER (RAFTER AND COLUMN) ROOF EXTENSION AND LEAN-TO IS 12'-0"  
 MAXIMUM WIDTH OF DOUBLE MEMBER (RAFTER AND COLUMN) ROOF EXTENSION AND LEAN-TO IS 15'-0"  
 MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE LACED COLUMNS FOR EAVE HEIGHTS 16'-0" < TO < 20'-0"  
 MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS 14'-0" < TO < 16'-0"  
 MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS < 14'-0"

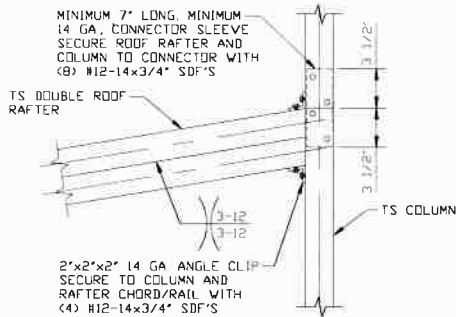


### LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS ≤ 12'-0"

11

SCALE: NTS

NOTE: ROOF PITCH OF 2:12 AND 1:12 ARE ADEQUATE FOR LEAN-TO RAFTER.



### LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 12'-0" < TO ≤ 15'-0"

11A

SCALE: NTS

NOTE: ROOF PITCH OF 2:12 AND 1:12 ARE ADEQUATE FOR LEAN-TO RAFTER.

**MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING, INC.**

**DRAWN BY: LT**

**CHECKED BY: PDH**

**PROJECT MGR: WSM**

**CLIENT: EAGLE CARPORTS**

**EAGLE CARPORTS  
210 AIRPORT ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP FULLY OPEN STRUCTURE**

**DATE: 8-19-21**

**SHT. 14**

**SCALE: NTS**

**DWG. NO. SK-1**

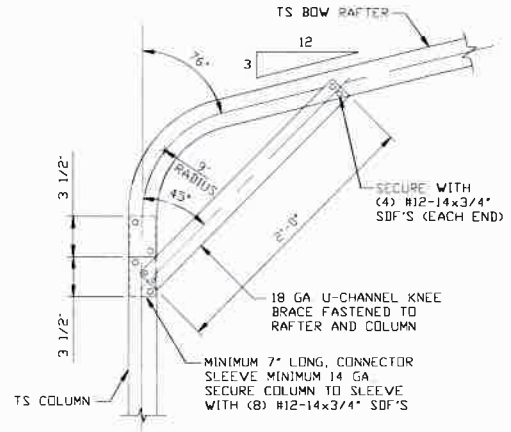
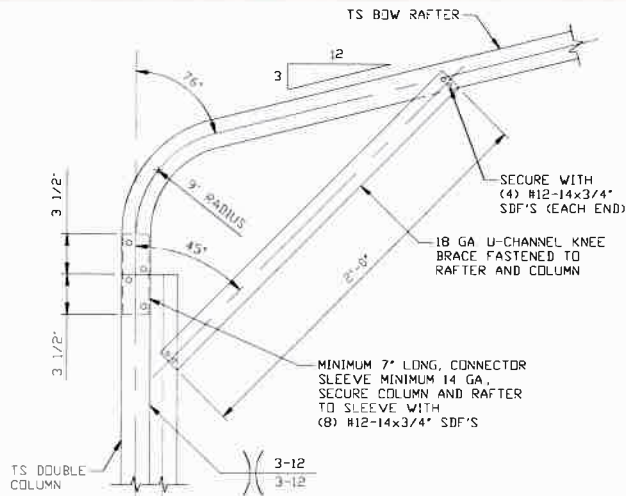
**JOB NO. 16166S/  
18260S/19320S/21169S**

**REV: 9**

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## BOW RAFTER LEAN-TO OPTION - EXPOSURE B



12

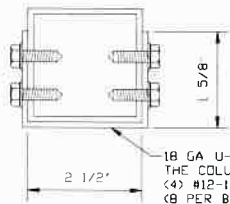
### BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 14'-0" < TO <= 16'-0"

SCALE: NTS  
HORSE BARN OPTION (REQUIRES A LEAN-TO ON BOTH SIDES OF THE MAIN BUILDING)

12A

### BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS <= 14'-0"

SCALE: NTS  
HORSE BARN OPTION (REQUIRES A LEAN-TO ON BOTH SIDES OF THE MAIN BUILDING)



18 GA U-CHANNEL BRACE FASTENED TO THE COLUMN AND ROOF BEAM, WITH (4) #12-14x3/4" SDF'S AT EACH END (8 PER BRACE)

### BRACE SECTION

SCALE: NTS

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EAGLE CARPORTS  
210 AIRPORT ROAD  
MOUNT AIRY, NC 27030  
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DATE: 8-19-21

SHT. 14A

SCALE: NTS

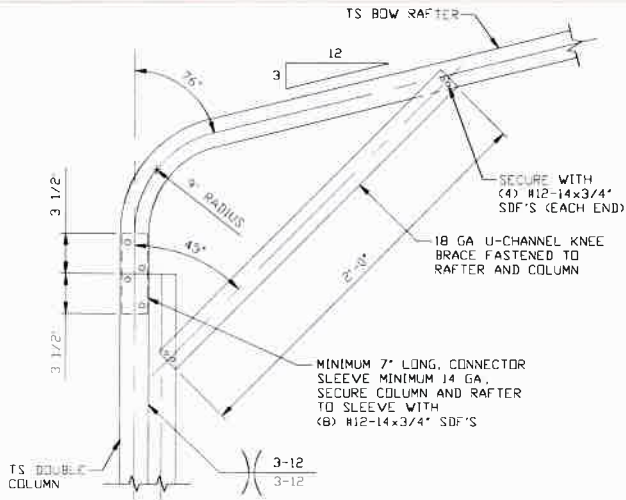
DWG. NO: SK-1

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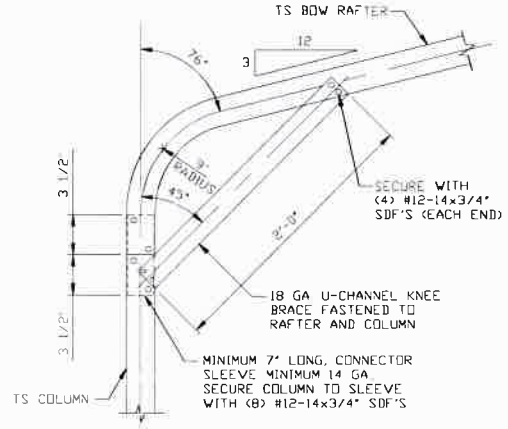
# BOW RAFTER LEAN-TO OPTION - EXPOSURE C



**12B**

## BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 14'-0" < TO ≤ 16'-0"

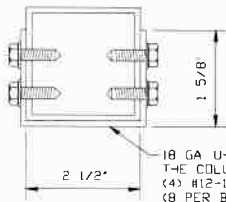
SCALE: NTS  
HORSE BARN OPTION (REQUIRES A LEAN-TO  
ON BOTH SIDES OF THE MAIN BUILDING)



**12C**

## BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 14'-0"

SCALE: NTS  
HORSE BARN OPTION (REQUIRES A LEAN-TO  
ON BOTH SIDES OF THE MAIN BUILDING)



### BRACE SECTION

SCALE: NTS

18 GA U-CHANNEL BRACE FASTENED TO  
THE COLUMN AND ROOF BEAM WITH  
(4) #12-14x3/4" SDF'S AT EACH END  
(8 PER BRACE)

**MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING, INC.**

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CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: EAGLE CARPORTS

EAGLE CARPORTS  
210 AIRPORT ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP FULLY OPEN STRUCTURE

DATE: 8-19-21

SHT. 14B

SCALE: NTS

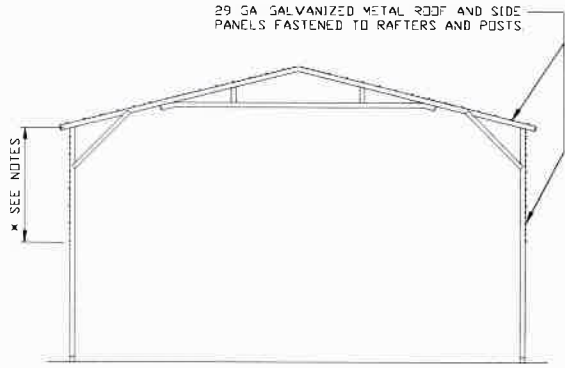
DWG NO: SK-1

JOB NO: 16166S/  
18260S/19320S/21169S

REV: 9

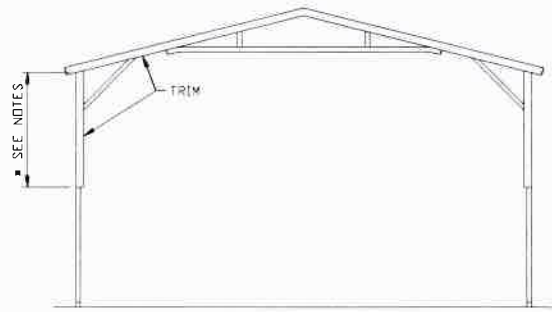
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## BOX EAVE RAFTER EXTRA SIDE PANEL OPTION



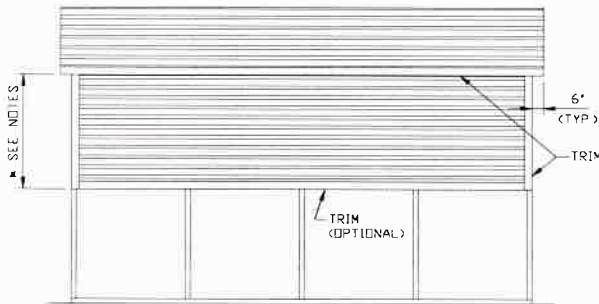
**TYPICAL RAFTER/COLUMN FRAME SECTION - EXTRA SIDE PANELS**

SCALE: NTS



**TYPICAL END ELEVATION EXTRA SIDE PANELS**

SCALE: NTS



**TYPICAL SIDE ELEVATION EXTRA SIDE PANELS**

SCALE: NTS

**NOTES**

- \* 9'-0" MAX FOR EAVE HEIGHT 14'-0" < TO < 20'-0"
- \* NO ADDITIONAL SIDING ALLOWED FOR HEIGHT < 14'-0"

**MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING, INC.**

**DRAWN BY: LT**

**CHECKED BY: PDH**

**PROJECT MGR: WSM**

**CLIENT: EAGLE CARPORTS**

**EAGLE CARPORTS  
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**DATE: 8-19-21**

**SCALE: NTS**

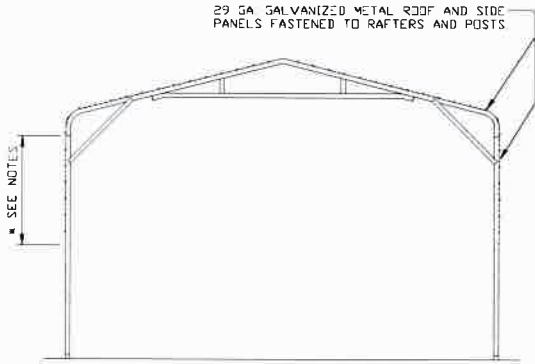
**DWG. NO: SK-1**

**JOB NO: 16166S/  
18260S/19320S/21169S**

**REV: 9**

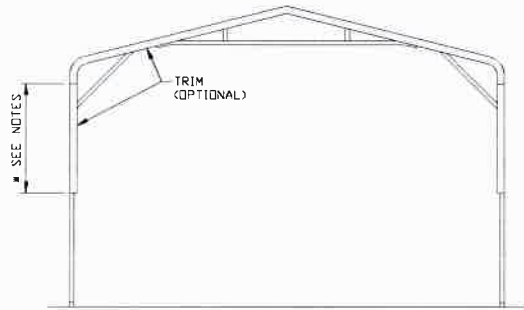
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## BOW RAFTER EXTRA SIDE PANEL OPTION



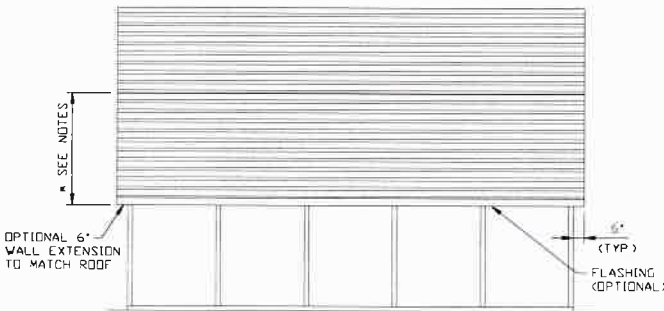
**TYPICAL RAFTER/COLUMN FRAME SECTION - EXTRA SIDE PANELS**

SCALE: NTS



**TYPICAL END ELEVATION EXTRA SIDE PANELS**

SCALE: NTS



**TYPICAL SIDE ELEVATION EXTRA SIDE PANELS**

SCALE: NTS

**NOTES**

- \* 9'-0" MAX FOR EAVE HEIGHT 14'-0" < TO ≤ 20'-0"
- \* NO ADDITIONAL SIDING ALLOWED FOR HEIGHT ≤ 14'-0"

**MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING, INC.**

**DRAWN BY: LT**

**CHECKED BY: PDH**

**PROJECT MGR: WSM**

**CLIENT: EAGLE CARPORTS**

**EAGLE CARPORTS  
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MOUNT AIRY, NC 27030  
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**DATE: 8-19-21**

**SCALE: NTS**

**DWG. NO: SK-1**

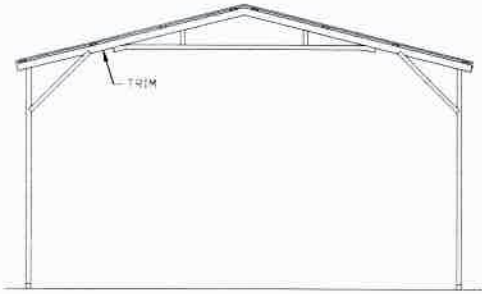
**JOB NO: 16166S/  
18260S/19320S/21169S**

**SHT. 16**

**REV: 9**

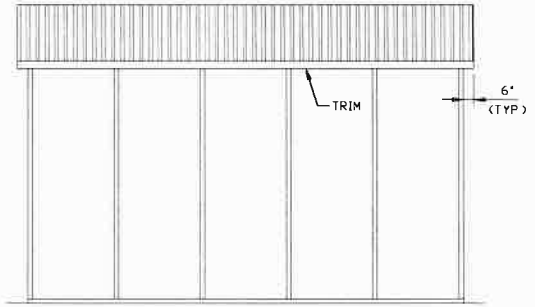
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# BOX EAVE RAFTER VERTICAL ROOF OPTION



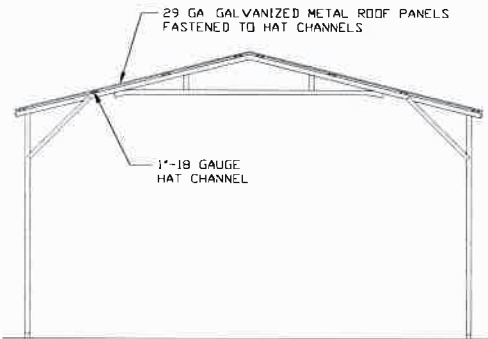
**TYPICAL END ELEVATION  
VERTICAL ROOF**

SCALE: NTS



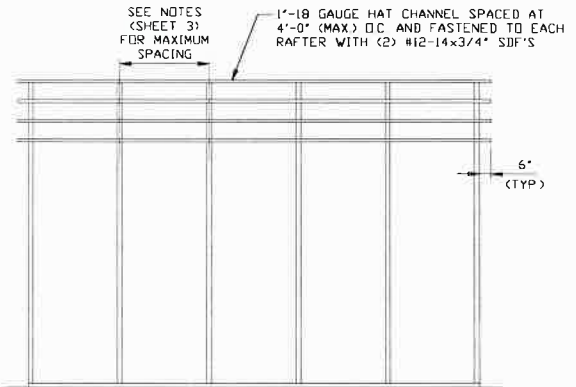
**TYPICAL SIDE ELEVATION  
VERTICAL ROOF**

SCALE: NTS



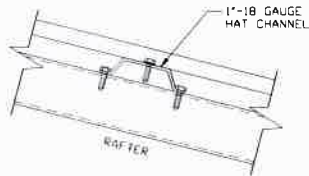
**TYPICAL SECTION  
VERTICAL ROOF OPTION**

SCALE: NTS



**TYPICAL FRAMING SECTION  
VERTICAL ROOF OPTION**

SCALE: NTS



**PANEL ATTACHMENT**

(ALTERNATE FOR VERTICAL ROOF PANELS)  
SCALE: NTS

**MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING, INC.**

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