



STRUCTURAL DESIGN

**STANDARD PACKAGE
ENCLOSED BUILDING**

**MAXIMUM 30'- 0" WIDE X 14'- 0" HEIGHT-
BOX EAVE FRAME AND BOW FRAME**

5 February 2018

Revision 0

M&A Project No. 17259S

Prepared for:

5-Star Metal Structures

9283 US 601

Dobson, NC 27017

Prepared by:

Moore and Associates Engineering and Consulting, Inc.

1009 East Avenue

North Augusta, SC 29841

401 South Main Street

Mount Airy, NC 27030



**MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING**

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

DRAWN BY: AT
 CHECKED BY: PDH
 PROJECT MGR: VSM
 CLIENT: FIVE STAR

FIVE STAR METAL STRUCTURES
 9283 US 601
 DOBSON, NC 27017
 30'-0" x 14'-0" SP ENCLOSED STRUCTURE
 DATE: 2-5-18
 SCALE: NTS
 JOB NO: 172595
 SHT. 1
 DWG. NO: SK-3
 REV: 0

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

DRAWING INDEX

SHEET 1	PE SEAL COVER SHEET
SHEET 2	DRAWING INDEX
SHEET 3	INSTALLATION NOTES AND SPECIFICATIONS
SHEET 3A	TYPICAL SIDE AND END ELEVATIONS
SHEET 4	TYPICAL RAFTER/COLUMN END AND SIDE FRAMING SECTION (BOX EAVE RAFTER)
SHEET 5A	COLUMN CONNECTION DETAILS (BOX EAVE STRUCTURE)
SHEET 5B	COLUMN CONNECTION DETAILS (BOX EAVE STRUCTURE)
SHEET 6	TYPICAL RAFTER/COLUMN END AND SIDE FRAMING SECTION (BOW RAFTER)
SHEET 7A	COLUMN CONNECTION DETAILS (BOW RAFTER STRUCTURE)
SHEET 7B	COLUMN CONNECTION DETAILS (BOW RAFTER STRUCTURE)
SHEET 8	BASE RAIL ANCHORAGE OPTIONS
SHEET 8A	BASE RAIL ANCHORAGE OPTIONS
SHEET 9	TYPICAL END WALL AND SIDE WALL FRAMING SECTIONS (BOX EAVE)
SHEET 10	TYPICAL END WALL AND SIDE WALL FRAMING SECTIONS (BOW RAFTER)
SHEET 11	CONNECTION DETAILS
SHEET 12	CONNECTION DETAILS
SHEET 13	LEAN-TO OPTIONS (BOX EAVE RAFTER)
SHEET 13A	LEAN-TO OPTIONS (BOX EAVE RAFTER)
SHEET 14	LEAN-TO OPTIONS (BOW RAFTER)
SHEET 15	BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: AT	FIVE STAR METAL STRUCTURES 9283 US 601 DOBSON, NC 27017		
	CHECKED BY: PDM	30'-0" x 14'-0" SP ENCLOSED STRUCTURE		
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.	PROJECT MGR: WSM	DATE: 2-5-18	SCALE: NTS	JOB NO: 17259S
	CLIENT: FIVE STAR	SHT. 2	DWG. NO: SK-3	REV: 0

INSTALLATION NOTES AND SPECIFICATIONS

- 1 DESIGN IS FOR MAXIMUM 30'-0" WIDE x 14'-0" EAVE HEIGHT ENCLOSED STRUCTURES
- 2 DESIGN WAS DONE IN ACCORDANCE WITH THE 2012 NORTH CAROLINA BUILDING CODE, 2009 INTERNATIONAL BUILDING CODE (IBC), 2012 IBC AND THE 2015 IBC
- 3 DESIGN LOADS ARE AS FOLLOWS
 - A) DEAD LOAD = 15 PSF
 - B) LIVE LOAD = 12 PSF
 - C) GROUND SNOW LOAD = 35 PSF
- 4 3-SECOND GUST ULTIMATE WIND SPEED (V_{ULT}) 105 TO 145 MPH (NOMINAL WIND SPEED 81 TO 112 MPH).
- 5 MAXIMUM RAFTER/POST SPACING = 5.0 FEET ($W \leq 24'-0"$) AND SPACING = 4.0 FEET ($24'-0" < W \leq 30'-0"$) (UNLESS NOTED OTHERWISE)
- 6 END POST SPACING = 5.0 FEET
- 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
- 10 AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR HAT CHANNELS, AND COLUMNS (INTERIOR OR END) = 10" OC (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.
- 12 GROUND ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6" OF EACH RAFTER COLUMN ALONG SIDES AND ENDS
- 13 GROUND ANCHORS CONSIST OF #4 REBAR W/ WELDED NUT x 36" LONG IN SUITABLE SOIL CONDITIONS. OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED.
- 14 WIND FORCES GOVERN OVER SEISMIC FORCES SEISMIC PARAMETERS ANALYZED ARE:
 - SOIL SITE CLASS = D
 - RISK CATEGORY I/II/III
 - R = 325 $I_E = 10$
 - $S_{DS} = 1.522$ $V = C_s W$
 - $S_{D1} = 0.839$

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

DRAWN BY: AT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: FIVE STAR

FIVE STAR METAL STRUCTURES

9283 US 601

DOBSON, NC 27017

30'-0" x 14'-0" SP ENCLOSED STRUCTURE

DATE: 2-5-18

SCALE: NTS

JOB NO: 17259S

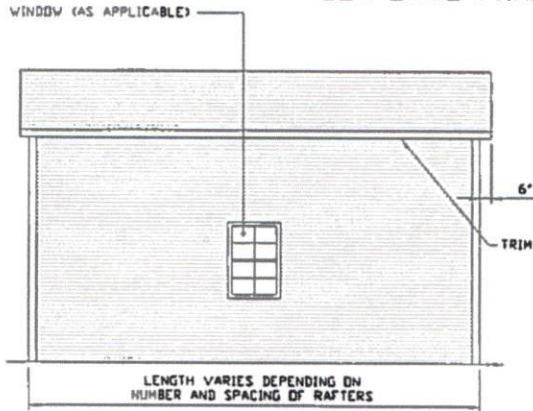
SHT. 3

DWG. NO: SK-3

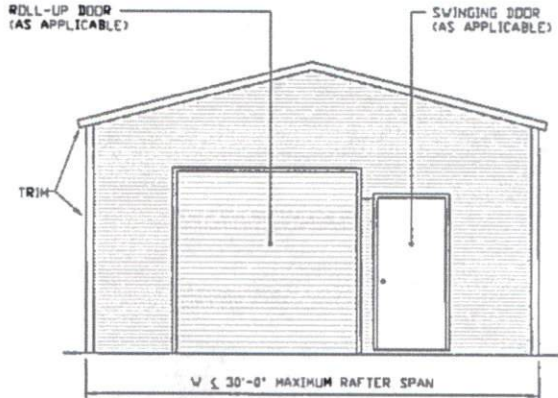
REV: 0

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

BOX EAVE FRAME RAFTER STRUCTURE

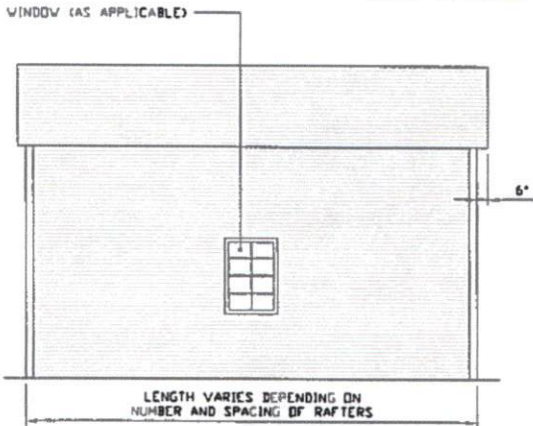


TYPICAL SIDE ELEVATION
SCALE: NTS

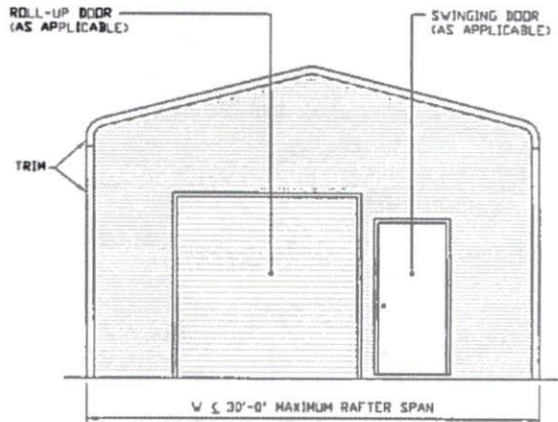


TYPICAL END ELEVATION
SCALE: NTS

BOW FRAME RAFTER STRUCTURE



TYPICAL SIDE ELEVATION
SCALE: NTS



TYPICAL END ELEVATION
SCALE: NTS

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

DRAWN BY: AT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: FIVE STAR

FIVE STAR METAL STRUCTURES

9283 US 601

DOBSON, NC 27017

30'-0" x 14'-0" SP ENCLOSED STRUCTURE

DATE: 2-5-18

SHT. 3A

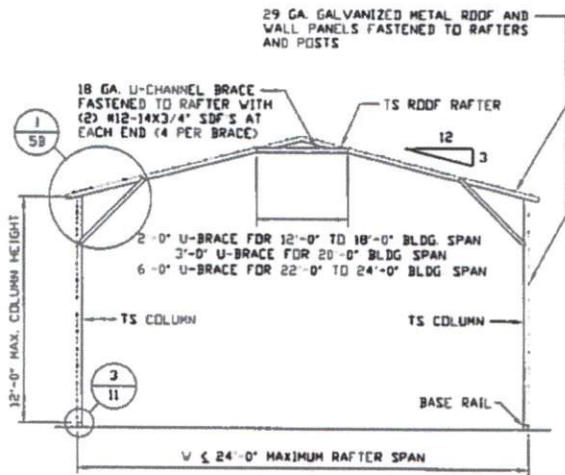
SCALE: NTS

DWG. NO: SK-3

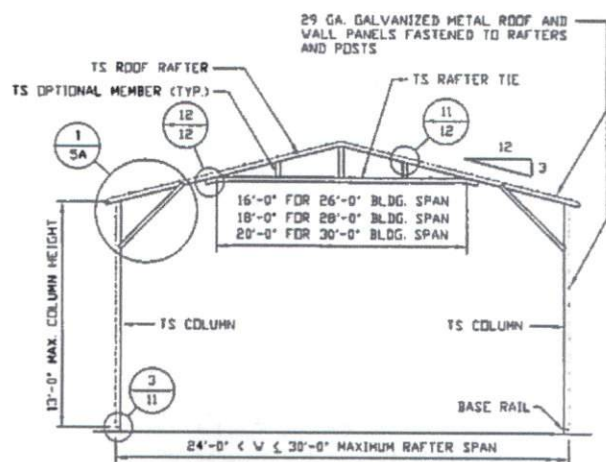
JOB NO: 17259S

REV: 0

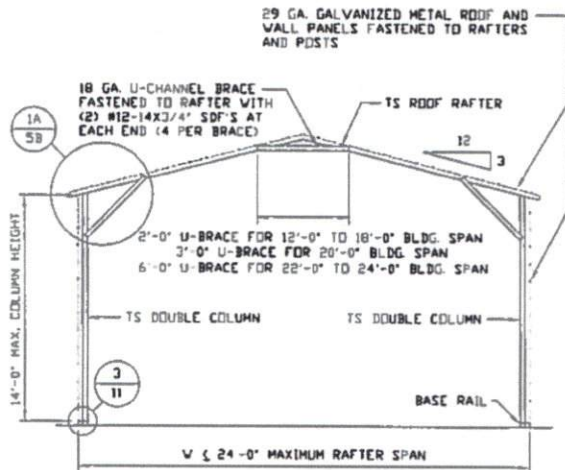
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.



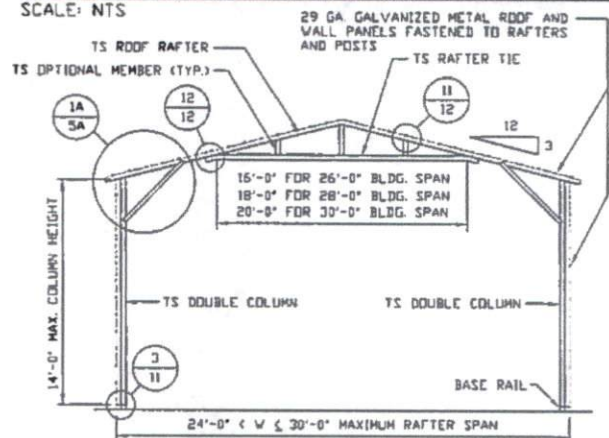
TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



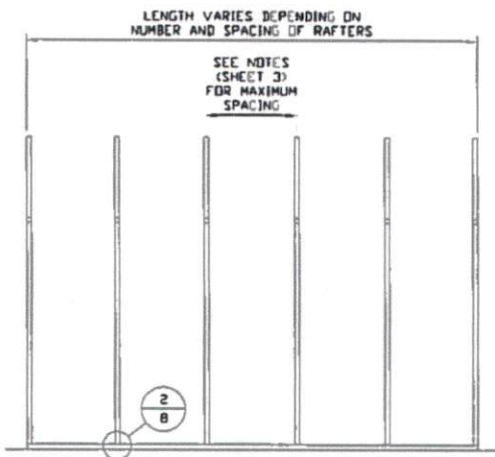
TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION
SCALE: NTS

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

DRAWN BY: AT

CHECKED BY: PDH

PROJECT MGR: WSH

CLIENT: FIVE STAR

FIVE STAR METAL STRUCTURES

9283 US 601

DOBSON, NC 27017

30'-0" x 14'-0" SP ENCLOSED STRUCTURE

DATE: 2-5-18

SHT. 4

SCALE: NTS

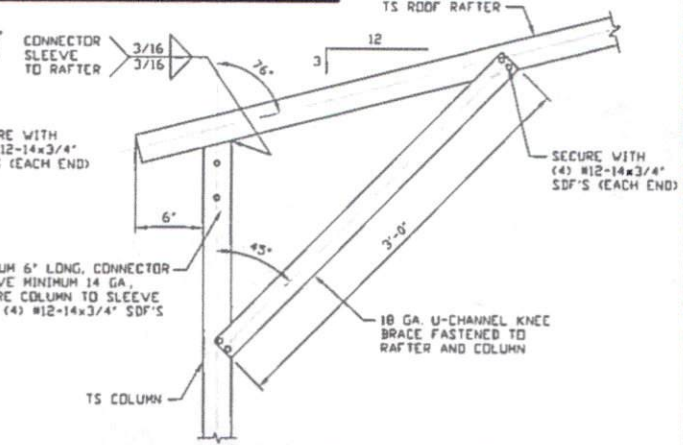
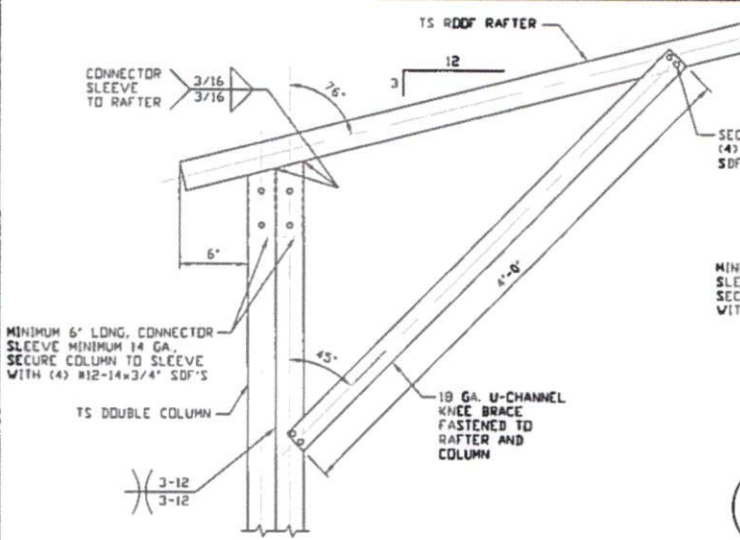
DWG. NO: SK-3

JOB NO: 17259S

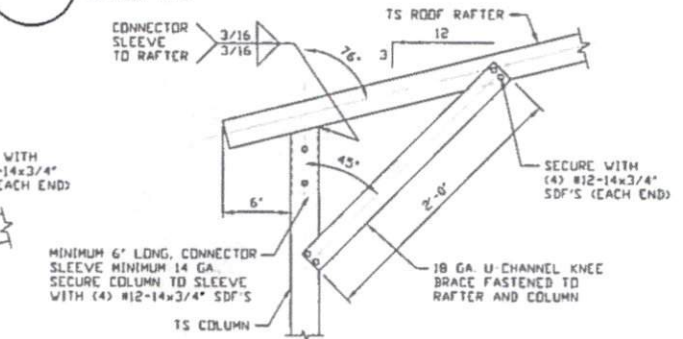
REV: 0

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

24'-0" < W ≤ 30'-0" MAXIMUM RAFTER SPAN

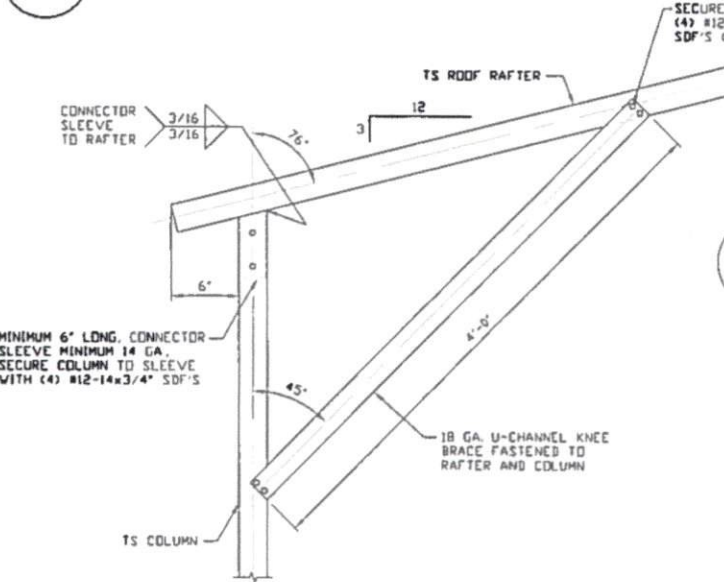


**1C BOX EAVE RAFTER COLUMN CONNECTION
DETAIL FOR HEIGHTS 8'-0" < TD ≤ 12'-0"**
SCALE: NTS

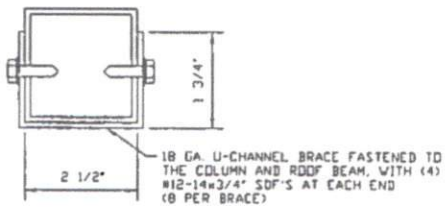


**1D BOX EAVE RAFTER COLUMN CONNECTION
DETAIL FOR HEIGHTS ≤ 8'-0"**
SCALE: NTS

**1A BOX EAVE RAFTER COLUMN CONNECTION
DETAIL FOR HEIGHTS 13'-0" < TD ≤ 14'-0"**
SCALE: NTS



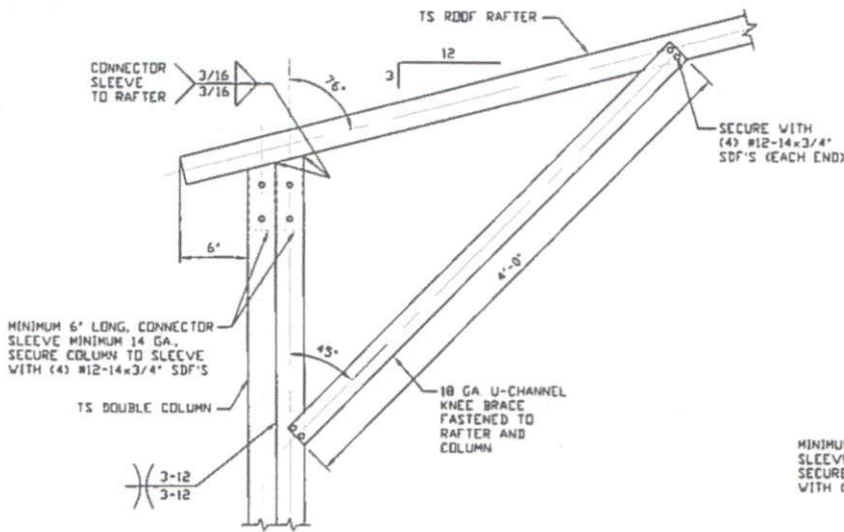
**1B BOX EAVE RAFTER COLUMN CONNECTION
DETAIL FOR HEIGHTS 12'-0" < TD ≤ 13'-0"**
SCALE: NTS



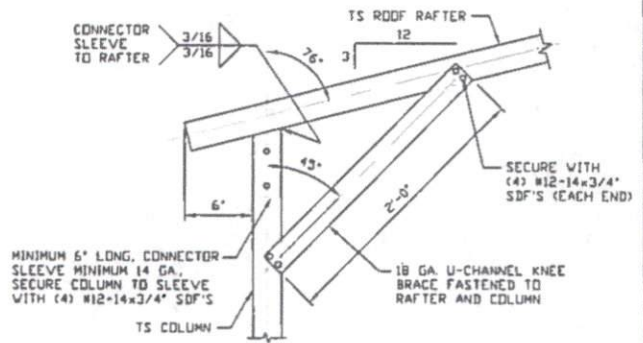
BRACE SECTION
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: AT		FIVE STAR METAL STRUCTURES 9283 US 601 DOBSON, NC 27017 30'-0" x 14'-0" SP ENCLOSED STRUCTURE	
	CHECKED BY: PDH		PROJECT MGR: WSH	DATE: 2-5-18
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.	CLIENT: FIVE STAR	SHT. 5A	DWG. NO: SK-3	JOB NO: 17259S
				REV: 0

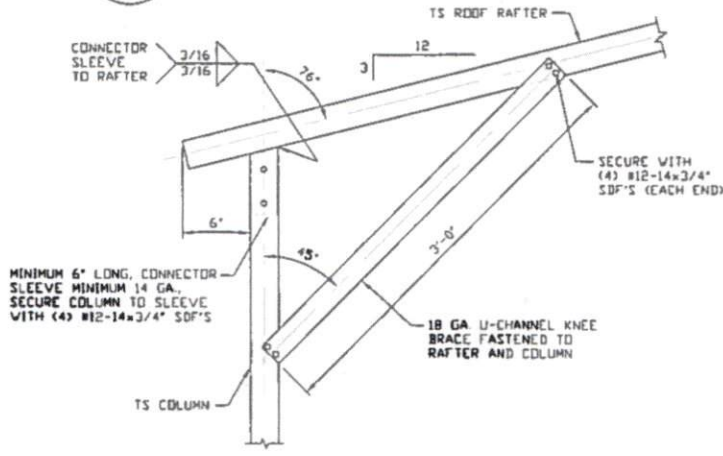
W ≤ 24'-0" MAXIMUM RAFTER SPAN



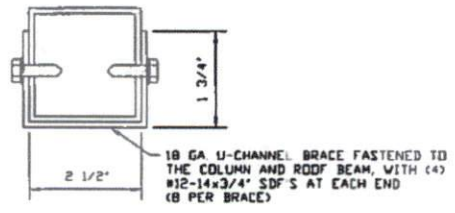
1A
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 12'-0" < TO ≤ 14'-0"
 SCALE: NTS



1C
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 8'-0"
 SCALE: NTS



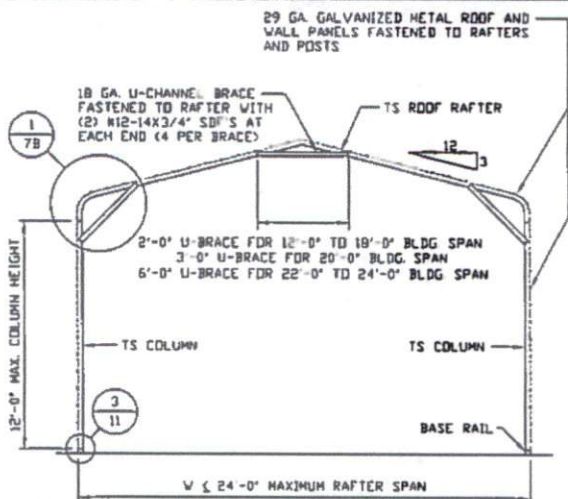
1B
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 8'-0" < TO ≤ 12'-0"
 SCALE: NTS



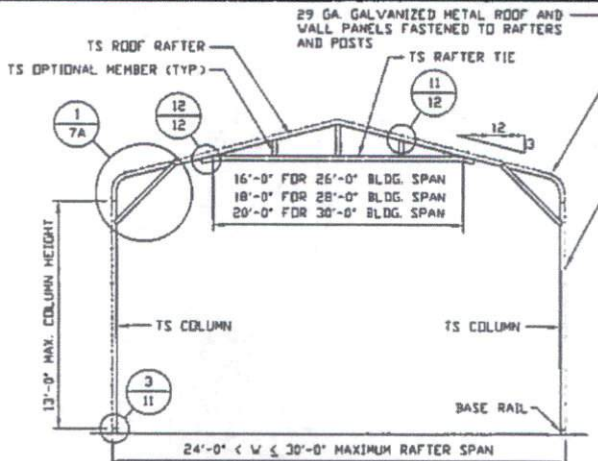
BRACE SECTION
 SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: AT	FIVE STAR METAL STRUCTURES 9283 US 601 DOBSON, NC 27017 30'-0" x 14'-0" SP ENCLOSED STRUCTURE		
	CHECKED BY: PDH			
PROJECT MGR: WSM	DATE: 2-5-18	SCALE: NTS	JOB NO: 172595	
CLIENT: FIVE STAR	SHT. 5B	DWG. NO: SK-3	REV: 0	

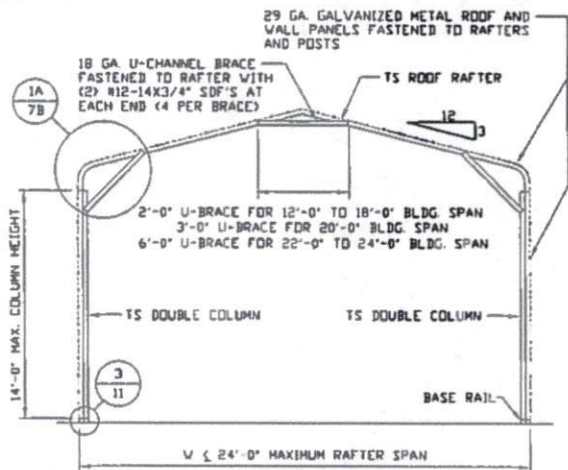
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.



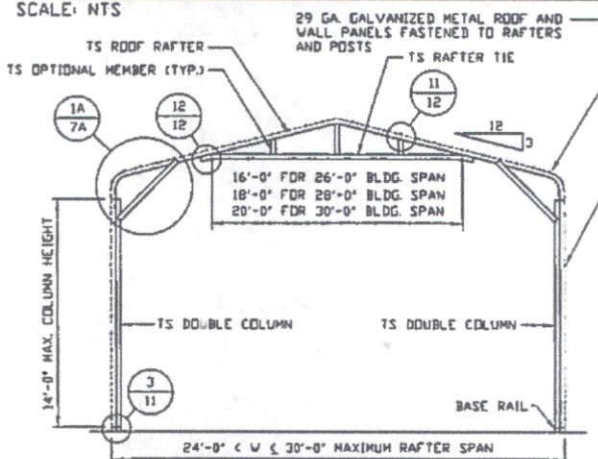
TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



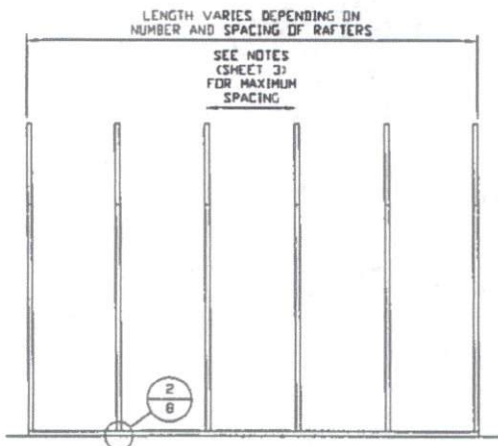
TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN FRAMING SIDE SECTION
SCALE: NTS

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

DRAWN BY: AT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: FIVE STAR

FIVE STAR METAL STRUCTURES

9283 US 601

DOBSON, NC 27017

30'-0" x 14'-0" SP ENCLOSED STRUCTURE

DATE: 2-5-18

SHT. 6

SCALE: NTS

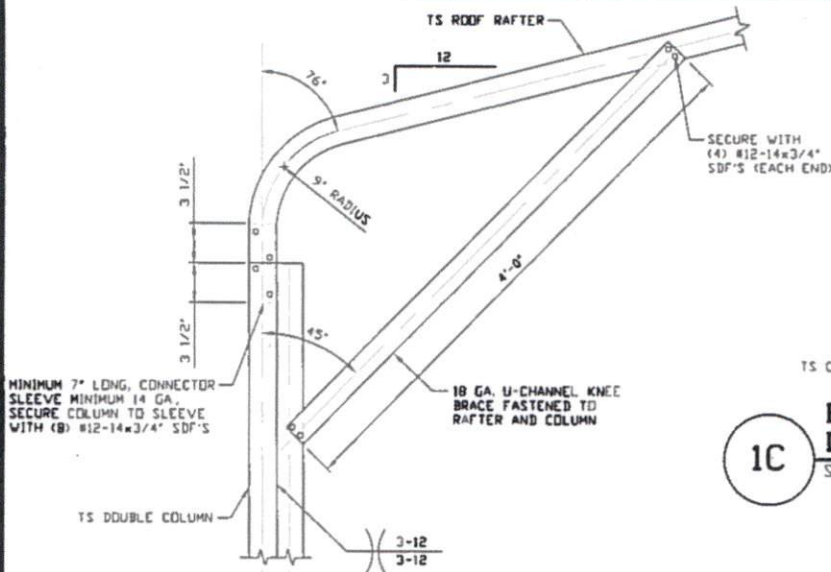
DWG. NO: SK-3

JOB NO: 17259S

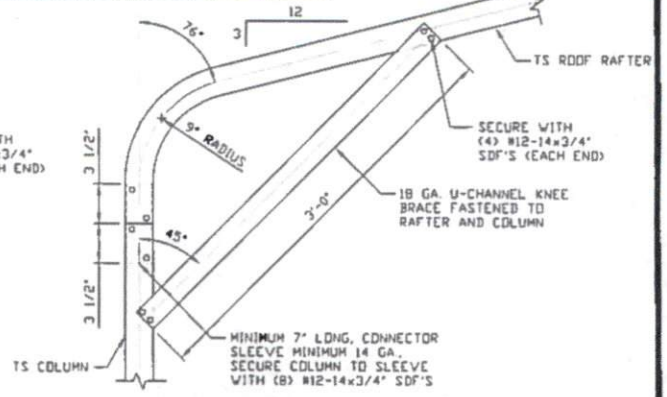
REV: 0

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

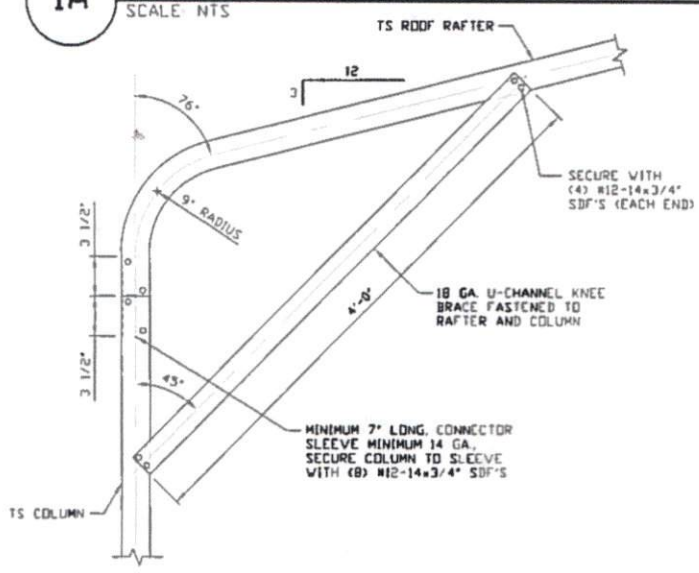
24'-0" < W ≤ 30'-0" MAXIMUM RAFTER SPAN



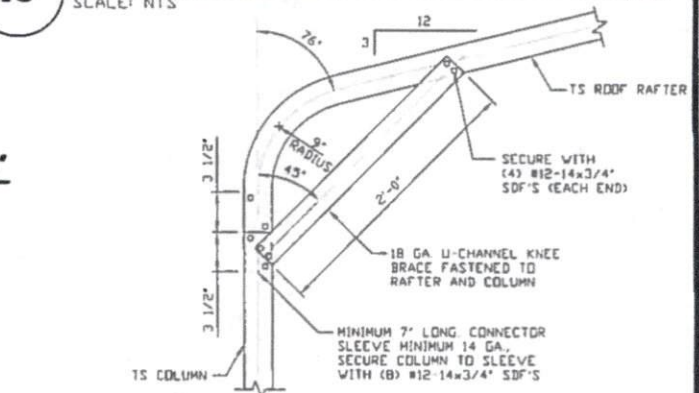
1A
BOW EAVE RAFTER COLUMN CONNECTION
DETAIL FOR HEIGHTS 13'-0" < TO ≤ 14'-0"
 SCALE: NTS



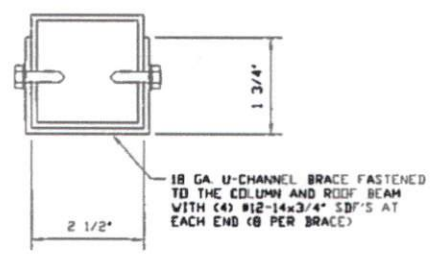
1C
BOW EAVE RAFTER COLUMN CONNECTION
DETAIL FOR HEIGHTS 8'-0" < TO ≤ 12'-0"
 SCALE: NTS



1B
BOW EAVE RAFTER COLUMN CONNECTION
DETAIL FOR HEIGHTS 12'-0" < TO ≤ 13'-0"
 SCALE: NTS



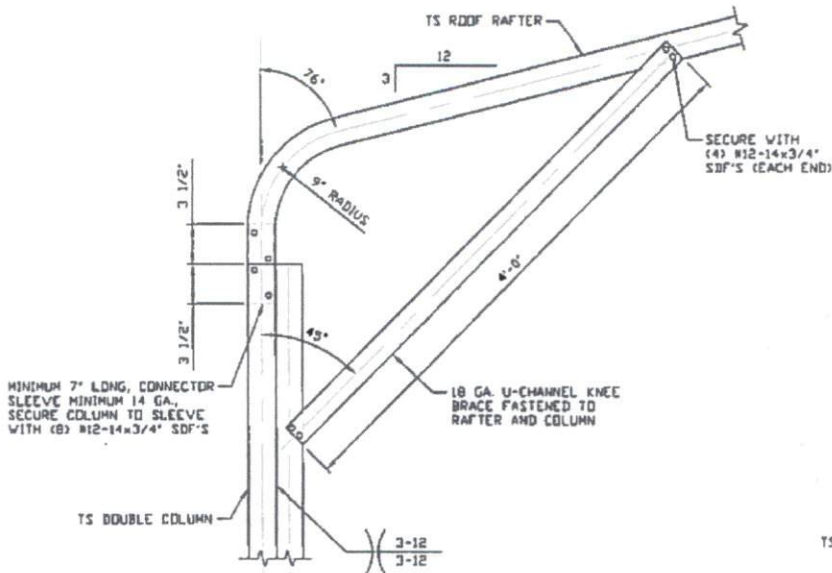
1D
BOW EAVE RAFTER COLUMN CONNECTION
DETAIL FOR HEIGHTS ≤ 8'-0"
 SCALE: NTS



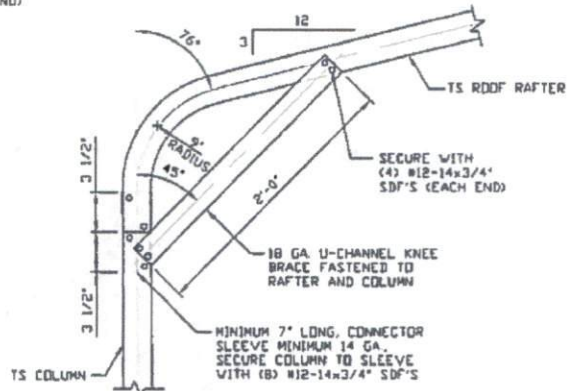
BRACE SECTION
 SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: AT	FIVE STAR METAL STRUCTURES 9283 US 601 DOBSON, NC 27017 30'-0" x 14'-0" SP ENCLOSED STRUCTURE		
	CHECKED BY: PDH	PROJECT MGR: WSH	DATE: 2-5-18	SCALE: NTS
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.	CLIENT: FIVE STAR	SHT. 7A	DWG. NO: SK-3	JOB NO: 17259S REV: 0

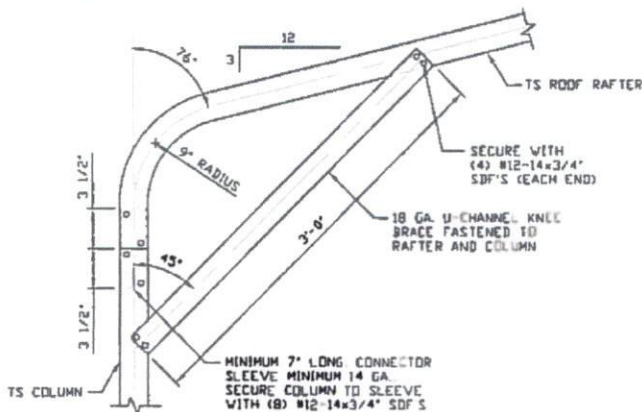
W ≤ 24'-0" MAXIMUM RAFTER SPAN



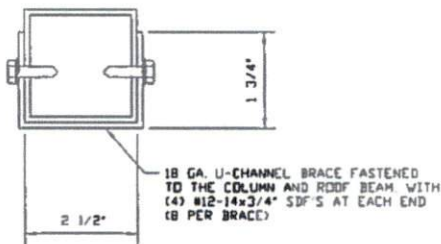
1A
BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 12'-0" < TO ≤ 14'-0"
 SCALE: NTS



1C
BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 8'-0"
 SCALE: NTS



1B
BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 8'-0" < TO ≤ 12'-0"
 SCALE: NTS



BRACE SECTION
 SCALE: NTS

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

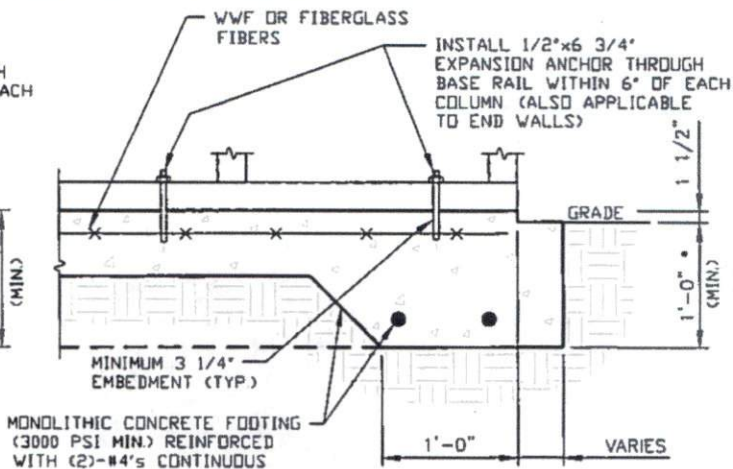
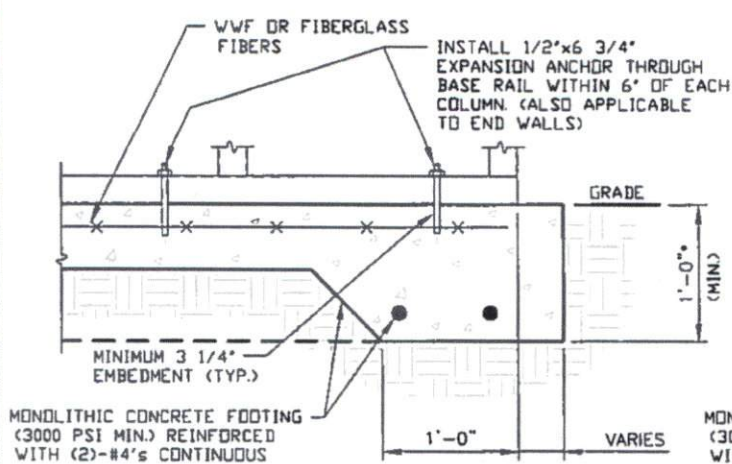
DRAWN BY: AT
CHECKED BY: PDH

FIVE STAR METAL STRUCTURES
 9283 US 601
 DOBSON, NC 27017
 30'-0" x 14'-0" SP ENCLOSED STRUCTURE

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

PROJECT MGR: WSM **DATE: 2-5-18** **SCALE: NTS** **JOB NO: 172595**
CLIENT: FIVE STAR **SHT. 7B** **DWG. NO: SK-3** **REV: 0**

BASE RAIL ANCHORAGE OPTIONS



2A

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.

2B

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.

GENERAL NOTES

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" 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.

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

DRAWN BY: AT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: FIVE STAR

FIVE STAR METAL STRUCTURES

9283 US 601

DOBSON, NC 27017

30'-0"x14'-0" SP ENCLOSED STRUCTURE

DATE: 2-5-18

SCALE: NTS

JOB NO: 172595

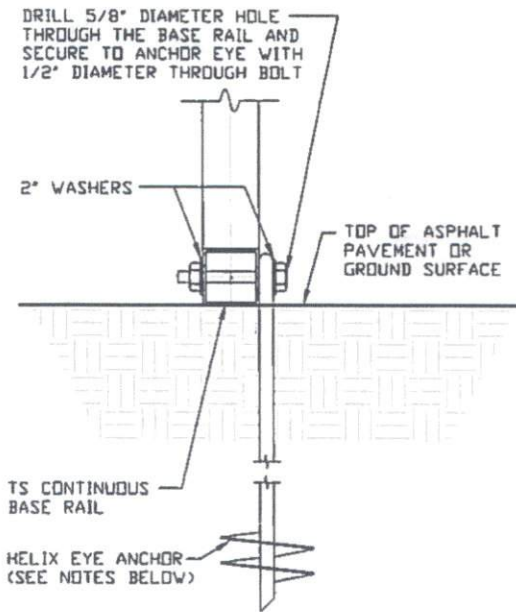
SHT. 8

DWG. NO: SK-3

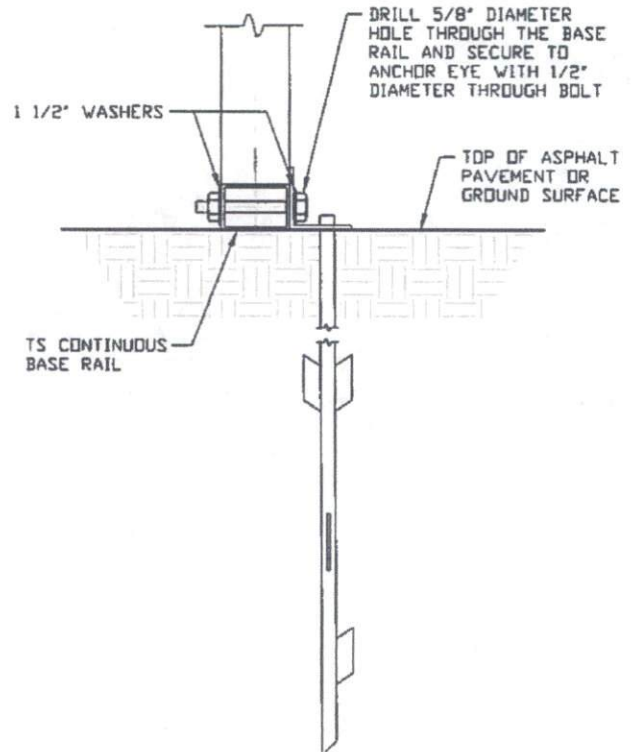
REV: 0

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

BASE RAIL ANCHORAGE OPTIONS



2C GROUND BASE HELIX ANCHORAGE
SCALE: NTS (CAN BE USED FOR ASPHALT)



2D ASPHALT BASE ANCHORAGE
SCALE: NTS

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

DRAWN BY: AT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: FIVE STAR

FIVE STAR METAL STRUCTURES

9283 US 601

DOBSON, NC 27017

30'-0" x 14'-0" SP ENCLOSED STRUCTURE

DATE: 2-5-18

SHT. 8A

SCALE: NTS

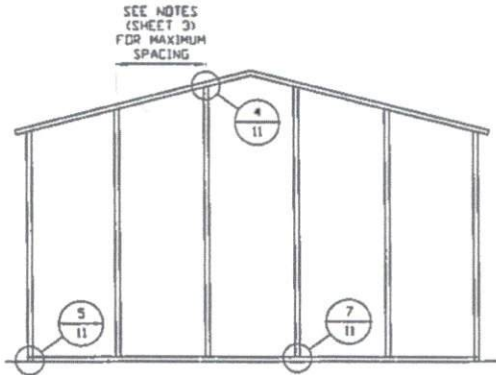
DWG. NO: SK-3

JOB NO: 17259S

REV: 0

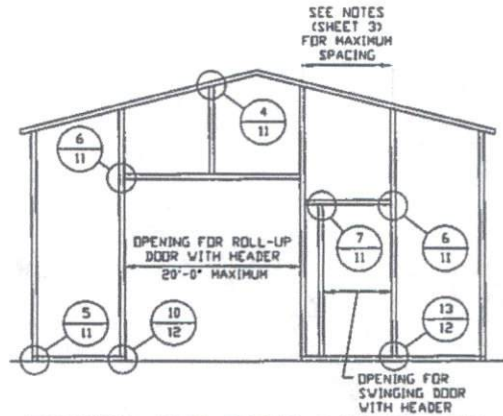
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



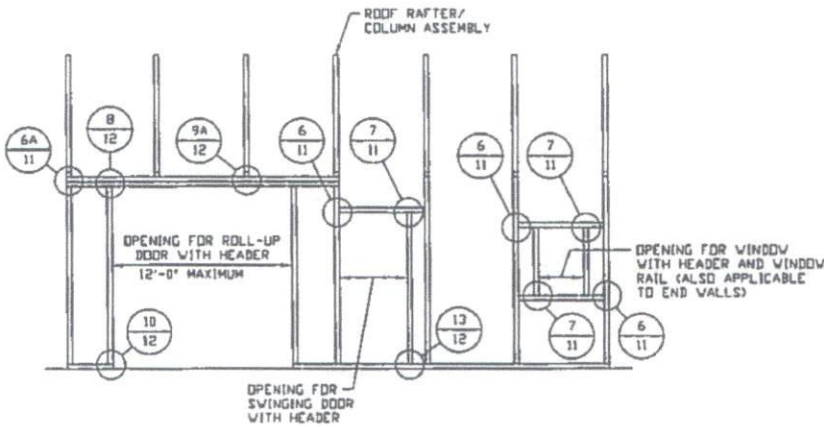
**TYPICAL BOX EAVE RAFTER
END WALL FRAMING SECTION**

SCALE: NTS



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

SCALE: NTS



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

SCALE: NTS

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

DRAWN BY: AT

CHECKED BY: PDH

PROJECT MGR: VSM

CLIENT: FIVE STAR

FIVE STAR METAL STRUCTURES
9283 US 601
DOBSON, NC 27017
30'-0" x 14'-0" SP ENCLOSED STRUCTURE

DATE: 2-5-18

SHT. 9

SCALE: NTS

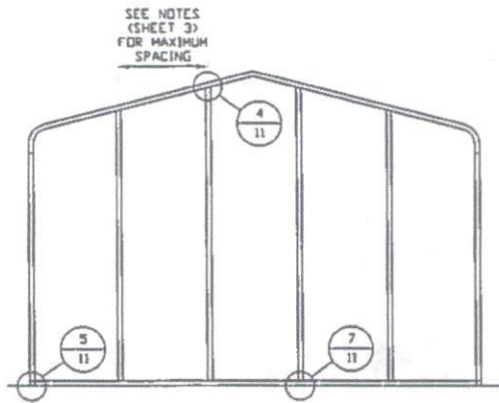
DWG. NO: SK-3

JOB NO: 172595

REV: 0

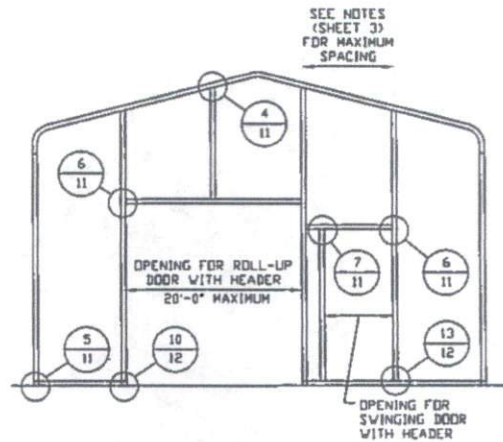
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

BOW RAFTER END WALL AND SIDE WALL OPENINGS



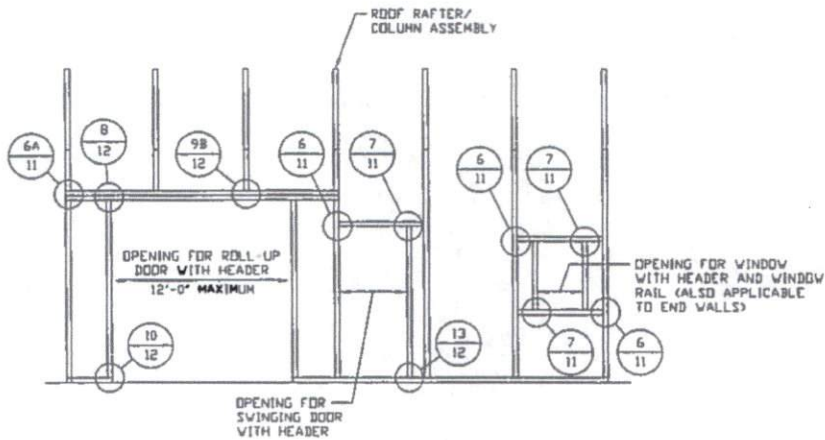
**TYPICAL BOW RAFTER
END WALL FRAMING SECTION**

SCALE: NTS



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

SCALE: NTS



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

SCALE: NTS

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

DRAWN BY: AT

CHECKED BY: PDH

PROJECT MGR: VSM

CLIENT: FIVE STAR

FIVE STAR METAL STRUCTURES

9283 US 601

DOBSON, NC 27017

30'-0"x14'-0" SP ENCLOSED STRUCTURE

DATE: 2-5-18

SHT. 10

SCALE: NTS

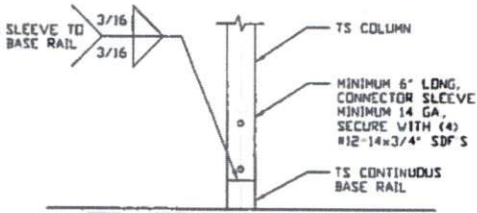
DWG. NO: SK-3

JOB NO: 17259S

REV: 0

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

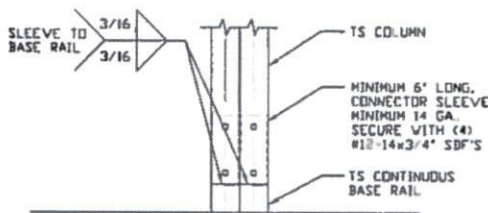
CONNECTION DETAILS



3

RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

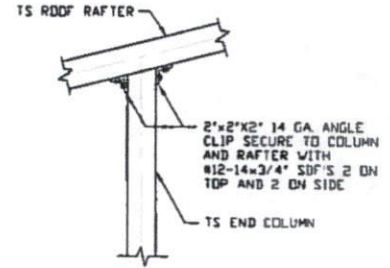
SCALE: NTS



3A

RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

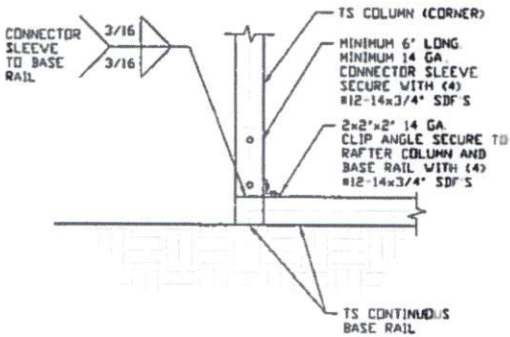
SCALE: NTS



4

END COLUMN/Rafter CONNECTION DETAIL

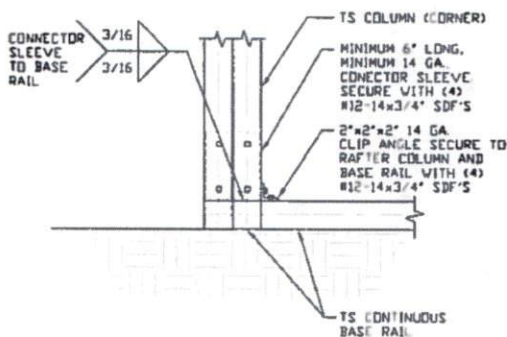
SCALE: NTS



5

END COLUMN/BASE RAIL CONNECTION DETAIL

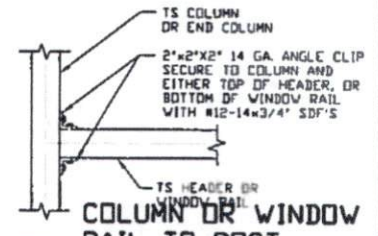
SCALE: NTS



5A

END COLUMN/BASE RAIL CONNECTION DETAIL

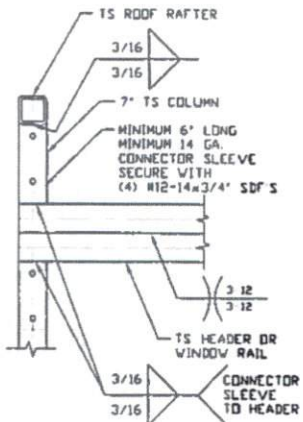
SCALE: NTS



6

COLUMN OR WINDOW RAIL TO POST CONNECTION DETAIL

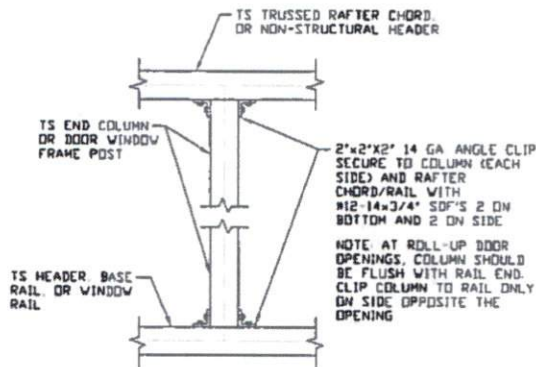
SCALE: NTS



6A

COLUMN OR WINDOW RAIL TO POST CONNECTION DETAIL

SCALE: NTS



7

COLUMN TO WINDOW RAIL CONNECTION DETAIL

SCALE: NTS

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

DRAWN BY: AT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: FIVE STAR

FIVE STAR METAL STRUCTURES

9283 US 601

DOBSON, NC 27017

30'-0" x 14'-0" SP ENCLOSED STRUCTURE

DATE: 2-5-18

SCALE: NTS

JOB NO: 172595

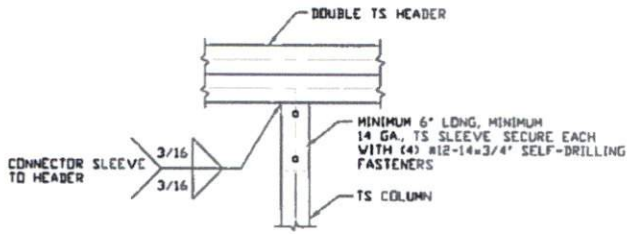
SHT. 11

DWG. NO: SK-3

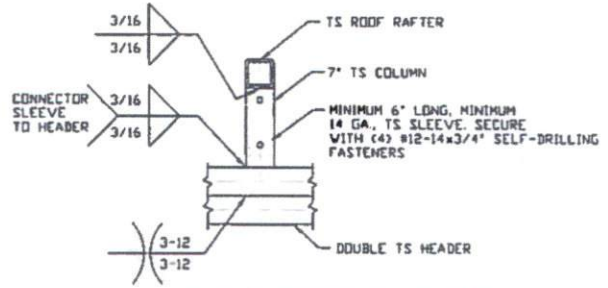
REV: 0

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

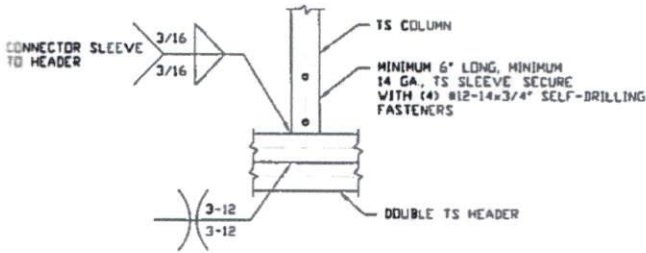
CONNECTION DETAILS



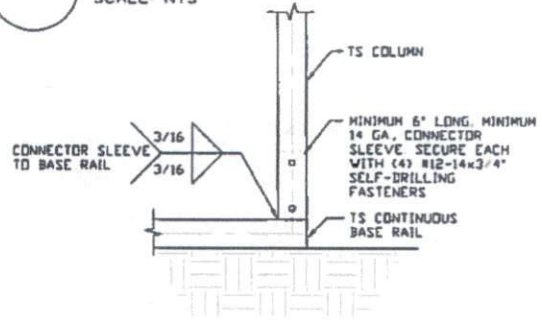
8 DOUBLE HEADER/COLUMN CONNECTION DETAIL
SCALE: NTS



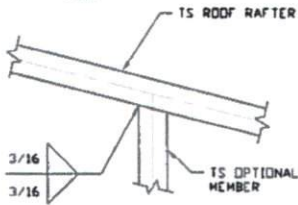
9A COLUMN/DOUBLE HEADER CONNECTION DETAIL
SCALE: NTS



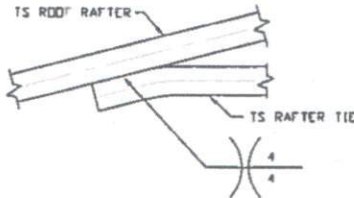
9B COLUMN/DOUBLE HEADER CONNECTION DETAIL
SCALE: NTS



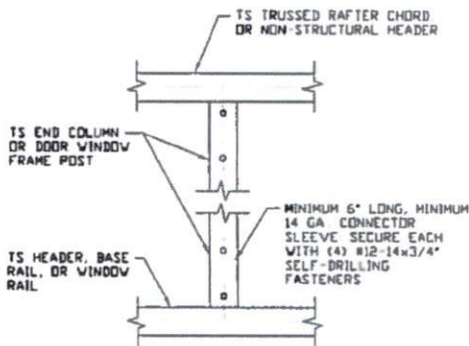
10 COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS



11 RAFTER TO OPTIONAL MEMBER CONNECTION DETAIL
SCALE: NTS



12 RAFTER TIE CONNECTION DETAIL
SCALE: NTS



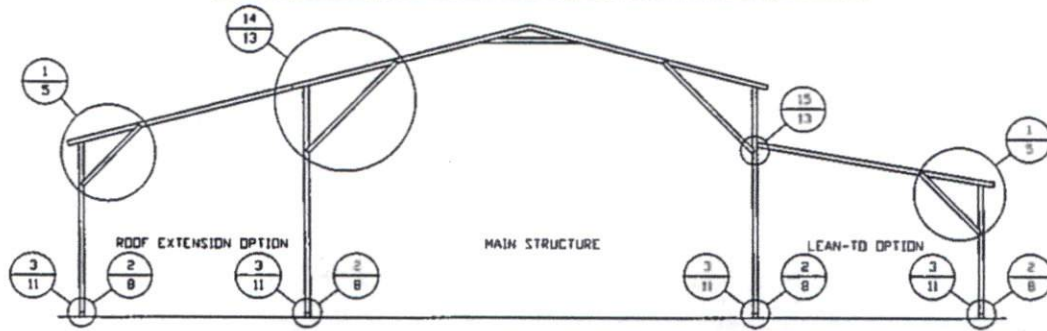
13 COLUMN TO HEADER OR BASE RAIL CONNECTION DETAIL
SCALE: NTS

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

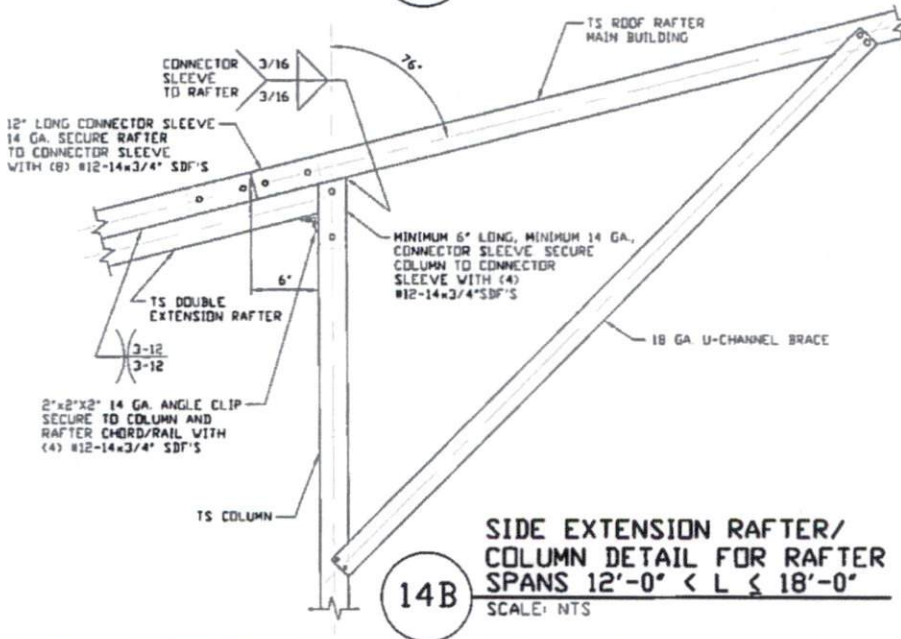
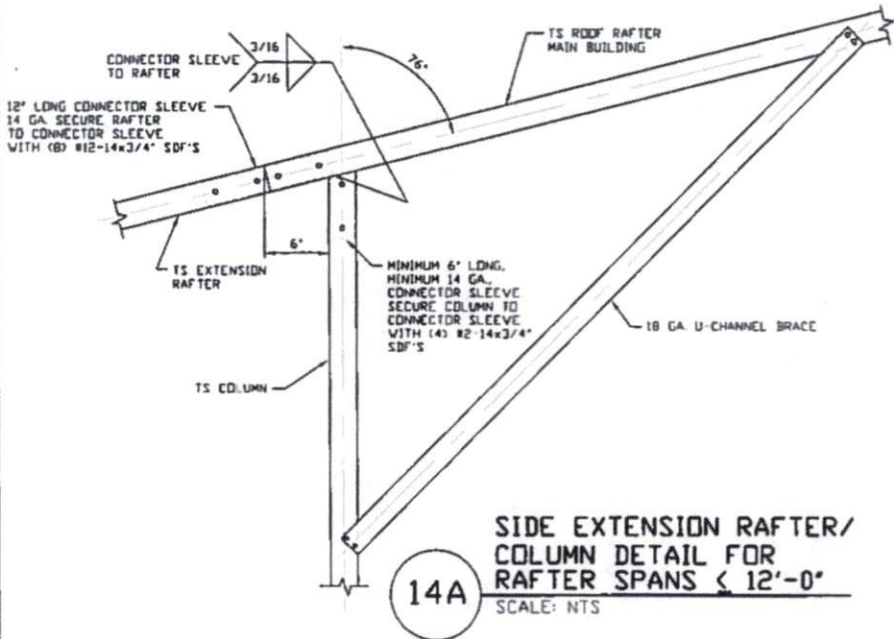
DRAWN BY: AT	FIVE STAR METAL STRUCTURES 9283 US 601 DOBSON, NC 27017 30'-0" x 14'-0" SP ENCLOSED STRUCTURE		
CHECKED BY: PBH			
PROJECT MGR: WSM	DATE: 2-5-18	SCALE: NTS	JOB NO: 17259S
CLIENT: FIVE STAR	SHT. 12	DWG. NO: SK-3	REV.: 0

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

BOX EAVE RAFTER LEAN-TO OPTIONS



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



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

DRAWN BY: AT

CHECKED BY: PDM

PROJECT MGR: WSM

CLIENT: FIVE STAR

FIVE STAR METAL STRUCTURES

9283 US 601

DOBSON, NC 27017

30'-0" x 14'-0" SP ENCLOSED STRUCTURE

DATE: 2-5-18

SCALE: NTS

JOB NO: 17259S

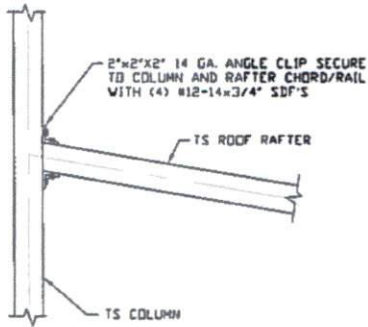
SHT. 13

DWG. NO: SK-3

REV: 0

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

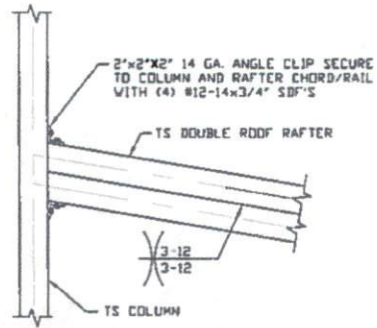
BOX EAVE RAFTER LEAN-TO OPTIONS



15A

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

SCALE: NTS



15B

**LEAN-TO RAFTER TO RAFTER
COLUMN CONNECTION DETAIL
FOR RAFTER SPANS $12'-0'' < L \leq 18'-0''$**

SCALE: NTS

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

DRAWN BY: AT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: FIVE STAR

FIVE STAR METAL STRUCTURES

9283 US 601

DOBSON, NC 27017

30'-0" x 14'-0" SP ENCLOSED STRUCTURE

DATE: 2-5-18

SHT. 13A

SCALE: NTS

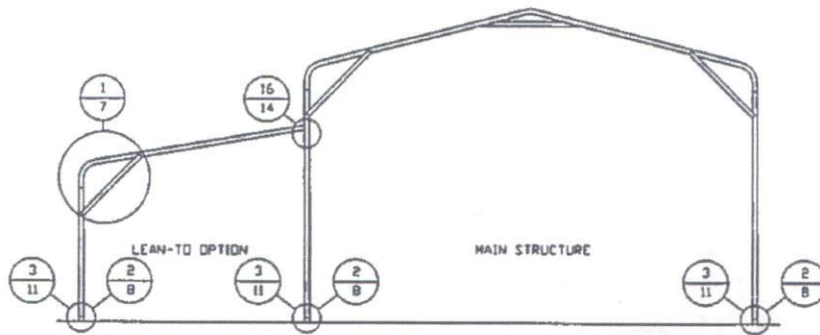
DWG. NO: SK-3

JOB NO: 17259S

REV: 0

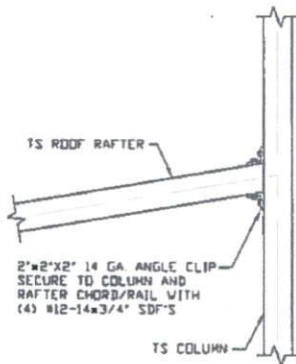
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

BOW RAFTER LEAN-TO OPTION



TYPICAL BOW RAFTER LEAN-TO OPTION FRAMING SECTION

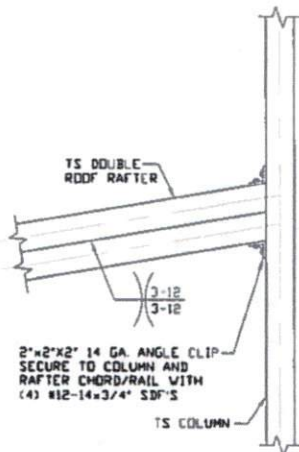
SCALE: NTS



**LEAN-TO RAFTER TO RAFTER
COLUMN CONNECTION DETAIL
FOR RAFTER SPANS < 12'-0"**

SCALE NTS

16A



**LEAN-TO RAFTER TO RAFTER
COLUMN CONNECTION DETAIL
FOR RAFTER SPANS 12'-0" < L < 18'-0"**

SCALE NTS

16B

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

DRAWN BY: AT

CHECKED BY: PDH

PROJECT MGR: VSH

CLIENT: FIVE STAR

FIVE STAR METAL STRUCTURES

9283 US 601

DOBSON, NC 27017

30'-0" x 14'-0" SP ENCLOSED STRUCTURE

DATE: 2-5-18

SHT. 14

SCALE: NTS

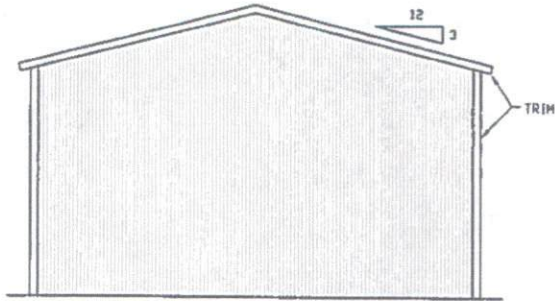
DWG. NO: SK-3

JOB NO: 17259S

REV: 0

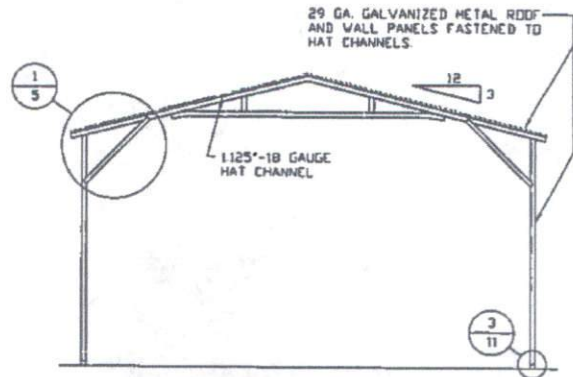
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



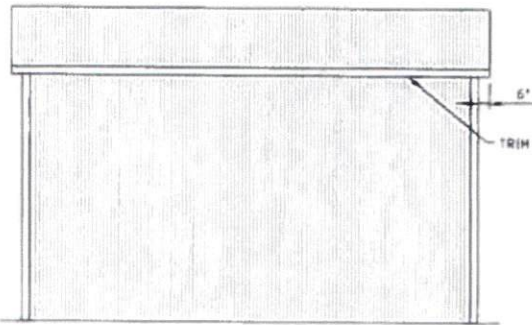
**TYPICAL END ELEVATION
VERTICAL ROOF/SIDING**

SCALE: NTS



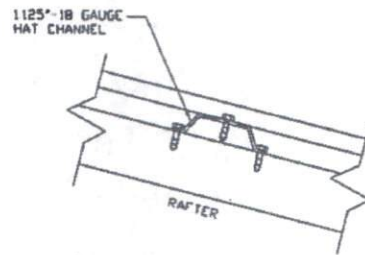
**TYPICAL SECTION VERTICAL
ROOF/SIDING OPTION**

SCALE: NTS



**TYPICAL SIDE ELEVATION
VERTICAL ROOF/SIDING**

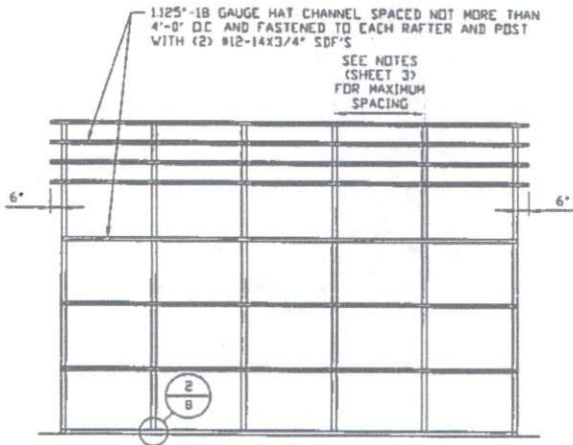
SCALE: NTS



PANEL ATTACHMENT

(ALTERNATE FOR VERTICAL ROOF PANELS)

SCALE: NTS



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

SCALE: NTS

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

DRAWN BY: AT

CHECKED BY: PDH

PROJECT MGR: WSH

CLIENT: FIVE STAR

FIVE STAR METAL STRUCTURES

9283 US 601

DOBSON, NC 27017

30'-0" x 14'-0" SP ENCLOSED STRUCTURE

DATE: 2-5-18

SCALE: NTS

JOB NO: 17259S

SHT. 15

DWG. NO: SK-3

REV: 0

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.