



STRUCTURAL DESIGN

PARTIALLY OPEN (UTILITY) BUILDING

**MAXIMUM 30'- 0" WIDE X 16'- 0" HEIGHT-
BOX EAVE FRAME AND BOW FRAME**

**9 June 2020
Revision 0
M&A Project No. 20110S**

Prepared for:

**Star Buildings and Carports
3007 NW Stallings Drive
Nacogdoches, TX 75964**






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**



			
			
			
			
	<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>		

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

DRAWN BY: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

**STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0"x16'-0" UTILITY STRUCTURE**

DATE: 6-9-20

SHT. 1

SCALE: NTS

DWG. NO: SK-2

JOB NO: 20110S

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 4	TYPICAL SIDE AND END ELEVATIONS
SHEET 5	TYPICAL RAFTER/COLUMN END AND SIDE FRAMING SECTION (BOX EAVE RAFTER)
SHEET 6	COLUMN CONNECTION DETAILS (BOX EAVE RAFTER)
SHEET 7	TYPICAL RAFTER/COLUMN END AND SIDE FRAMING SECTION (BOW EAVE RAFTER)
SHEET 8	COLUMN CONNECTION DETAILS (BOW EAVE RAFTER)
SHEET 9	BASE RAIL ANCHORAGE OPTIONS
SHEET 10	TYPICAL END WALL AND SIDE WALL FRAMING SECTIONS (BOX EAVE RAFTER)
SHEET 11	TYPICAL END WALL AND SIDE WALL FRAMING SECTIONS (BOW EAVE RAFTER)
SHEET 12	CONNECTION DETAILS
SHEET 13	CONNECTION DETAILS
SHEET 14	LEAN-TO OPTIONS (BOX EAVE RAFTER)
SHEET 14A	LEAN-TO OPTIONS (BOX EAVE RAFTER)
SHEET 14B	LEAN-TO OPTIONS (BOX EAVE RAFTER)
SHEET 15	LEAN-TO OPTIONS (BOW EAVE RAFTER)
SHEET 15A	LEAN-TO OPTIONS (BOW EAVE RAFTER)
SHEET 15B	LEAN-TO OPTIONS (BOW EAVE RAFTER)
SHEET 16	BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION
SHEET 17	SIDE WALL AND END WALL HEADER OPTIONS

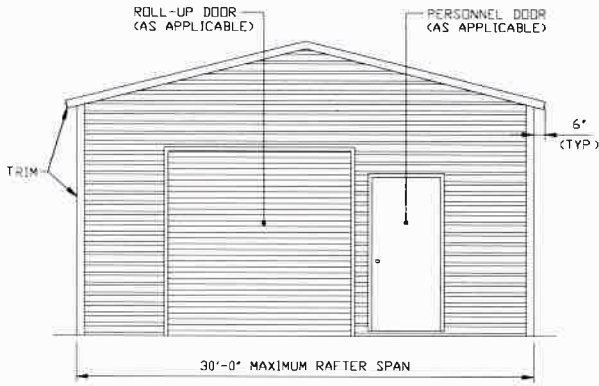
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	STAR BUILDINGS AND CARPORTS 3007 NW STALLINGS DRIVE NACOGDOCHES, TX 75964 30'-0" x 16'-0" UTILITY STRUCTURE		
	CHECKED BY: PDH			
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.	PROJECT MGR: WSM	DATE: 6-9-20	SCALE: NTS	JOB NO: 20110S
	CLIENT: STAR BUILDINGS	SHT. 2	DWG. NO SK-2	REV. 0

INSTALLATION NOTES AND SPECIFICATIONS

1. DESIGN IS FOR MAXIMUM 30'-0" WIDE x 16'-0" EAVE HEIGHT PARTIALLY OPEN UTILITY STRUCTURES.
2. DESIGN WAS DONE IN ACCORDANCE WITH THE 2018 INTERNATIONAL BUILDING CODE (IBC), 2015 IBC, 2012 IBC, 2009 IBC, AND 2006 IBC.
3. DESIGN LOADS ARE AS FOLLOWS:
 - A) DEAD LOAD = 15 PSF
 - B) LIVE LOAD = 12 PSF
 - C) GROUND SNOW LOAD = 25 PSF
4. 3-SECOND GUST ULTIMATE WIND SPEED (V_{ULT}) = 140 MPH (NOMINAL WIND SPEED = 108 MPH).
5. MAXIMUM RAFTER/POST SPACING = 50 FEET
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), 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 SOIL NAIL FOUNDATION SYSTEM CONSISTS OF #4 REBAR W/ WELDED NUT x 36" LONG AND ARE APPLICABLE ONLY IN MEDIUM TO STIFF (SUITABLE) SOILS. OPTIONAL FOUNDATION SYSTEMS MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS. 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 = 3.25 $I_E = 1.0$
 - $S_{DS} = 2.039 g$ $V = C_S W$
 - $S_{D1} = 1.258 g$

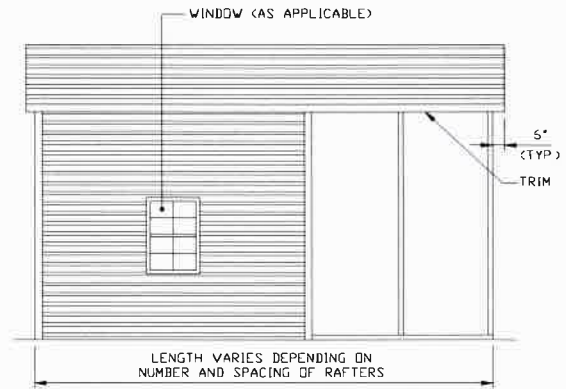
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	STAR BUILDINGS AND CARPORTS 3007 NW STALLINGS DRIVE NACOGDOCHES, TX 75964 30'-0" x 16'-0" UTILITY STRUCTURE		
	CHECKED BY: PDH			
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.	PROJECT MGR: WSM	DATE: 6-9-20	SCALE: NTS	JOB NO: 20110S
	CLIENT: STAR BUILDINGS	SHT. 3	DWG. NO SK-2	REV: 0

BOX EAVE FRAME RAFTER STRUCTURE



TYPICAL END ELEVATION

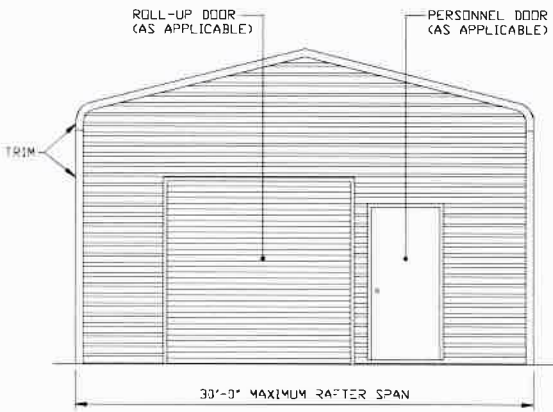
SCALE: NTS



TYPICAL SIDE ELEVATION

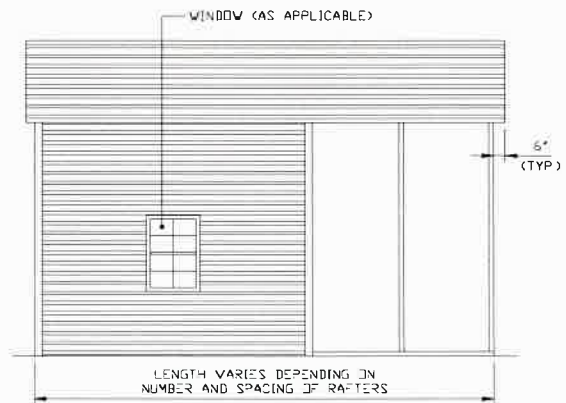
SCALE: NTS

BOW EAVE FRAME RAFTER STRUCTURE



TYPICAL END ELEVATION

SCALE: NTS



TYPICAL SIDE ELEVATION

SCALE: NTS

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

DRAWN BY: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

**STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0" x 16'-0" UTILITY STRUCTURE**

DATE: 6-9-20

SHT. 4

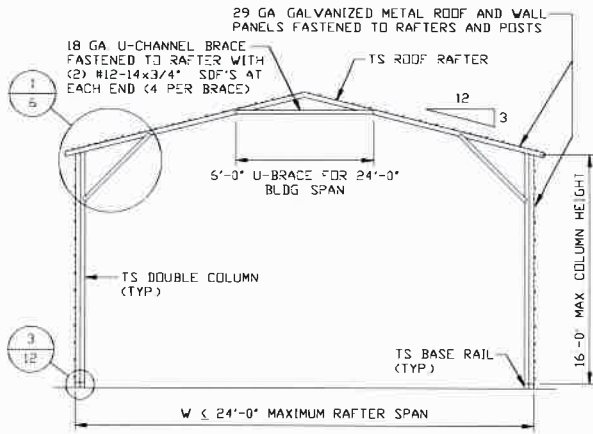
SCALE: NTS

DWG. NO: SK-2

JOB NO: 20110S

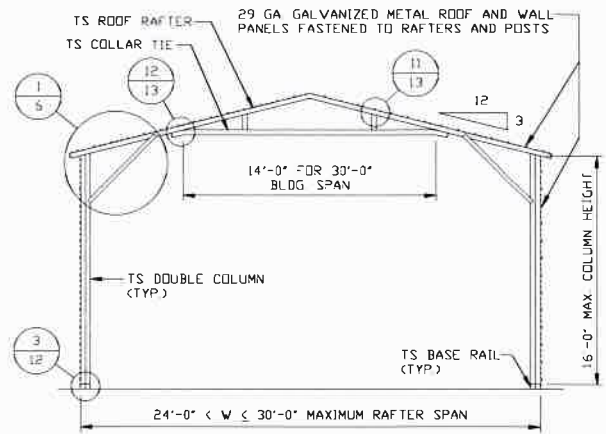
REV: 0

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.



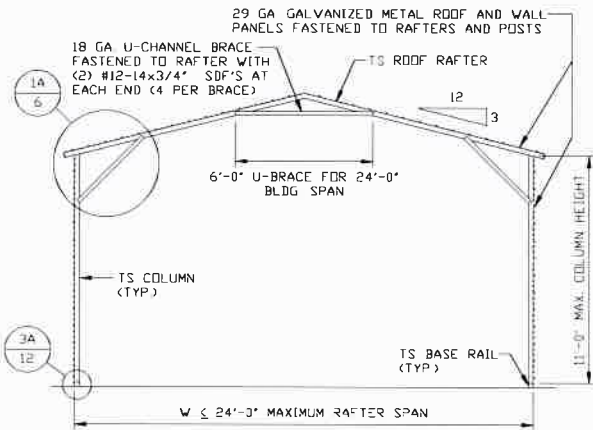
TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



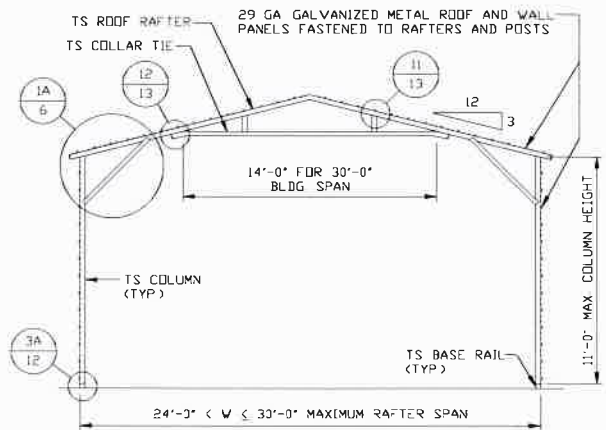
TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



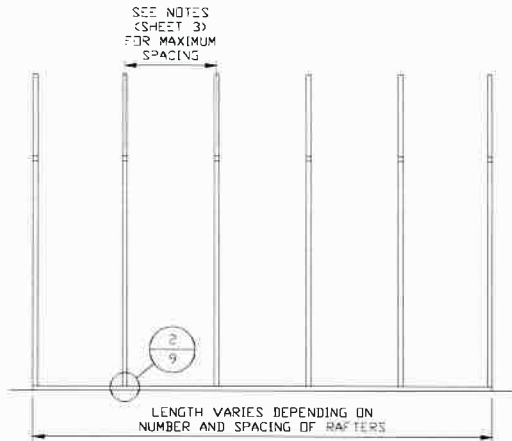
TYPICAL RAFTER/COLUMN END FRAME SECTION

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: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

**STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0" x 16'-0" UTILITY STRUCTURE**

DATE: 6-9-20

SCALE: NTS

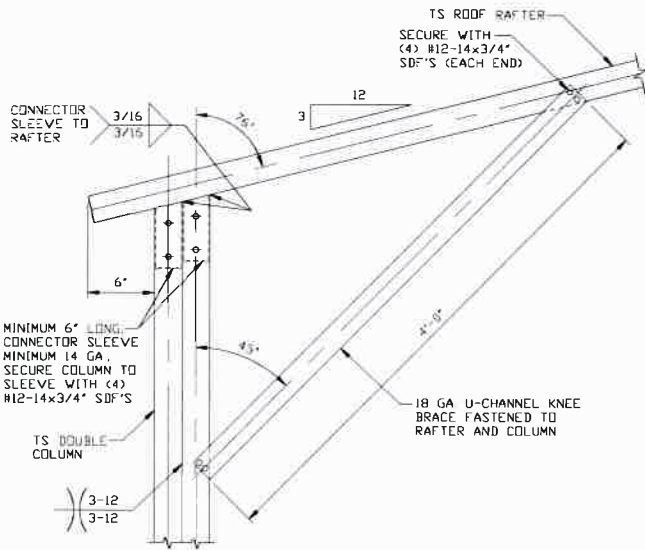
JOB NO: 20110S

SHT. 5

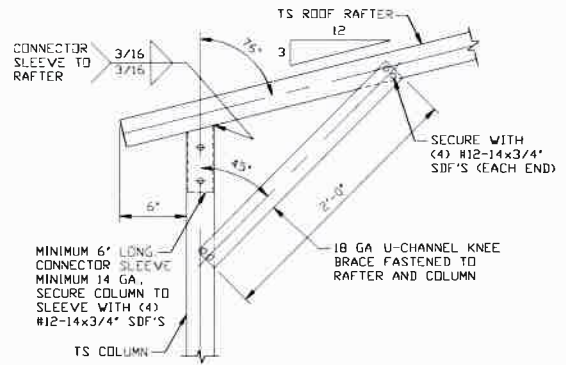
DWG. NO: SK-2

REV: 0

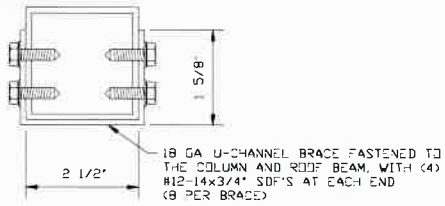
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.



1
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 11'-0" < TO <= 16'-0"
 SCALE: NTS



1A
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS <= 11'-0"
 SCALE: NTS



BRACE SECTION
 SCALE: NTS

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

DRAWN BY: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

**STAR BUILDINGS AND CARPORTS
 3007 NW STALLINGS DRIVE
 NACOGDOCHES, TX 75964
 30'-0" x 16'-0" UTILITY STRUCTURE**

DATE: 6-9-20

SCALE: NTS

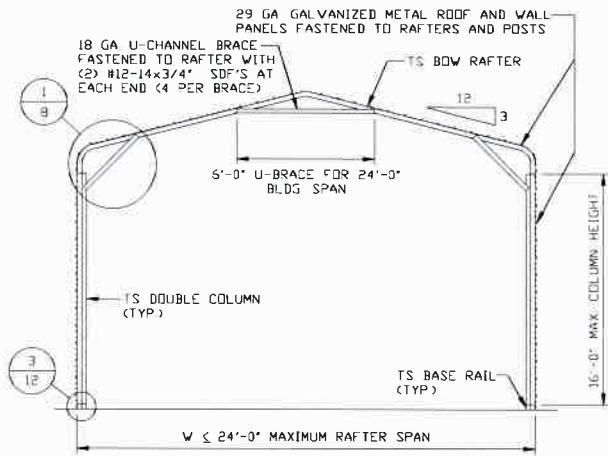
JOB NO: 20110S

SHT. 6

DWG. NO: SK-2

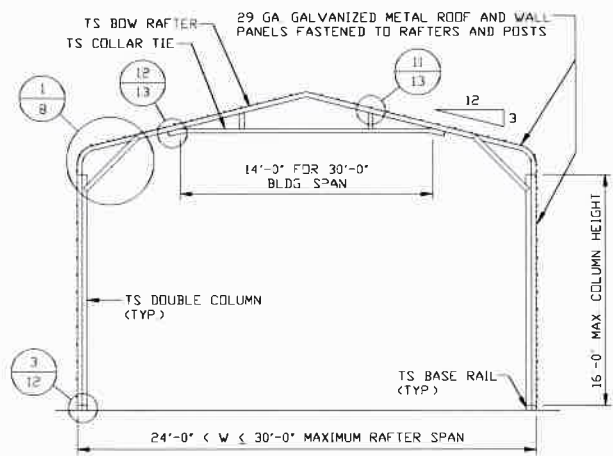
REV: 0

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.



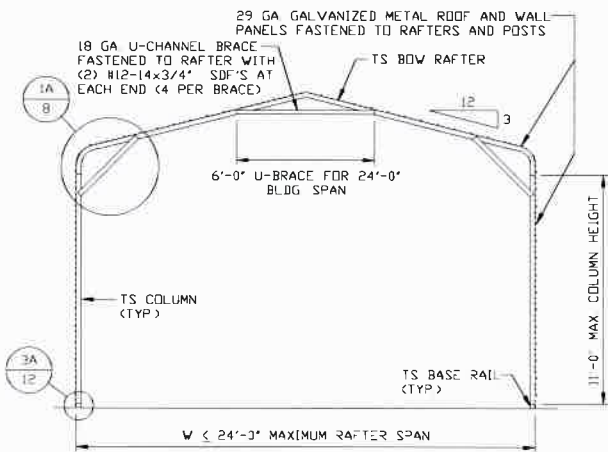
TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



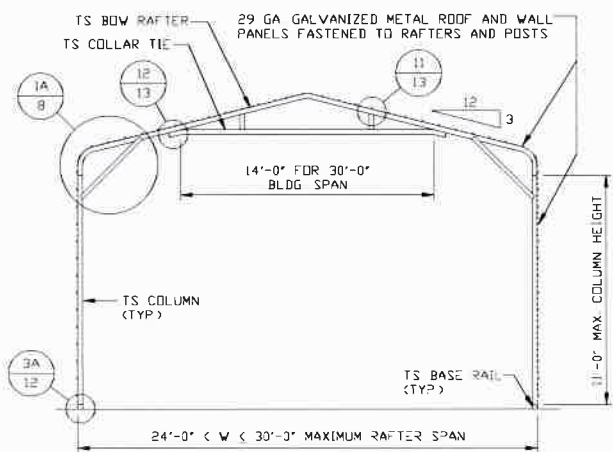
TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



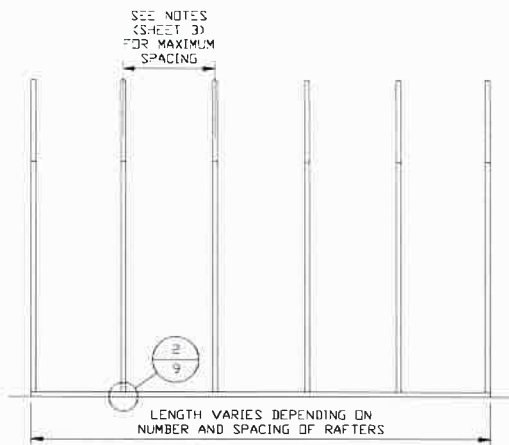
TYPICAL RAFTER/COLUMN END FRAME SECTION

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: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

**STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0" x 16'-0" UTILITY STRUCTURE**

DATE: 6-9-20

SHT. 7

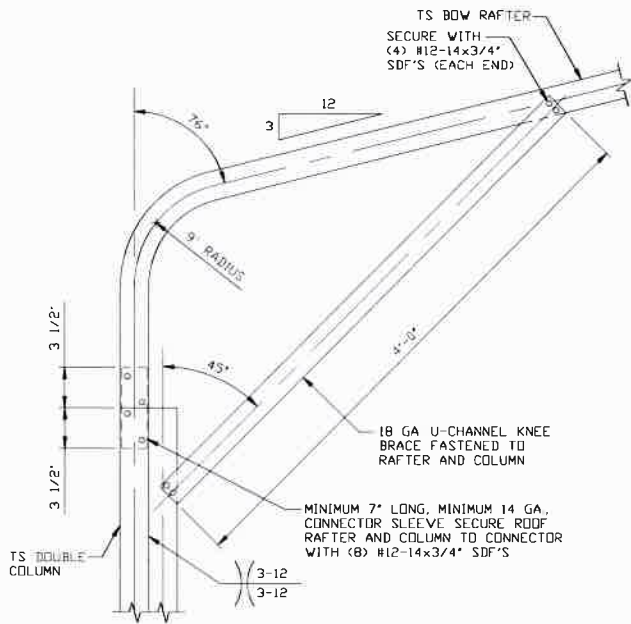
SCALE: NTS

DWG. NO: SK-2

JOB NO: 20110S

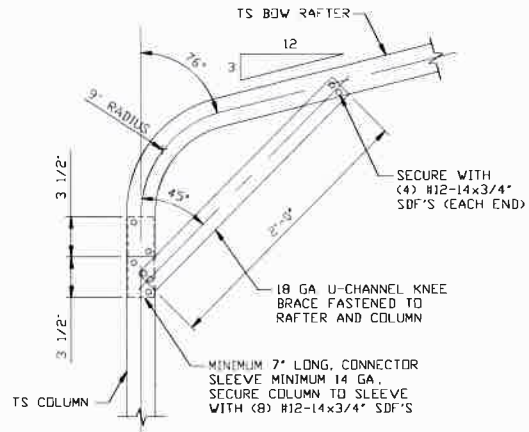
REV: 0

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.



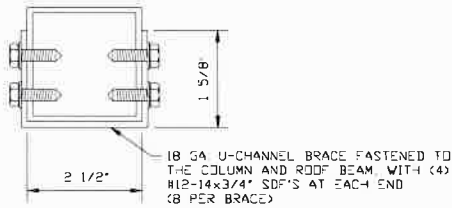
1 BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 11'-0" < TO <= 16'-0"

SCALE: NTS



1A BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS <= 11'-0"

SCALE: NTS



BRACE SECTION

SCALE: NTS

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

DRAWN BY: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0" x 16'-0" UTILITY STRUCTURE

DATE: 6-9-20

SHT. 8

SCALE: NTS

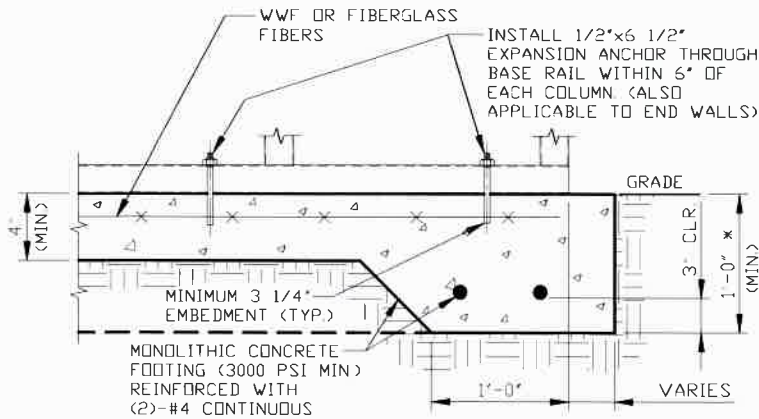
DWG. NO: SK-2

JOB NO: 20110S

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.

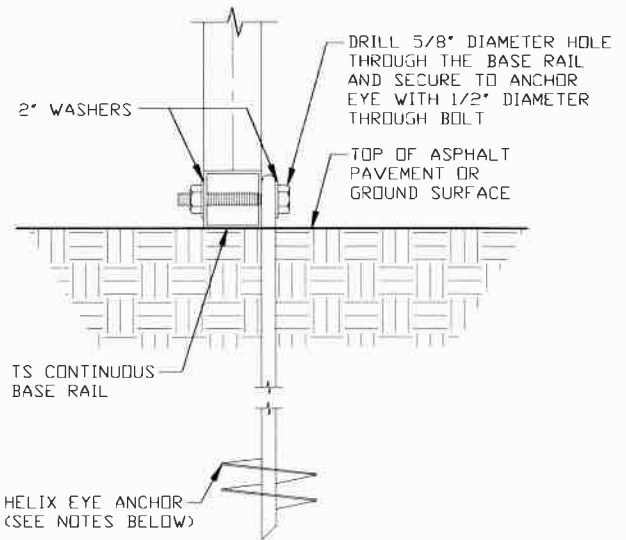
BASE RAIL ANCHORAGE OPTIONS



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 A515 GRADE
 SO 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 LOSE 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: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

STAR BUILDINGS AND CARPORTS
 3007 NW STALLINGS DRIVE
 NACOGDOCHES, TX 75964
 30'-0" x 16'-0" UTILITY STRUCTURE

DATE: 6-9-20

SHT. 9

SCALE: NTS

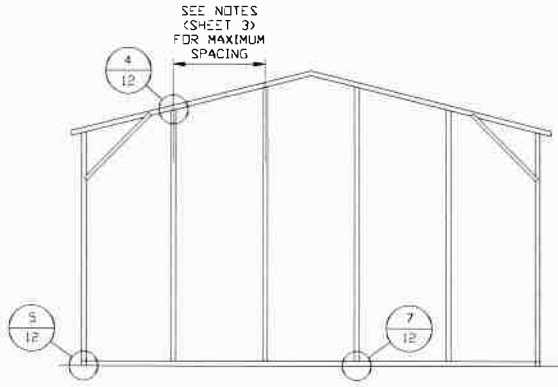
DWG. NO: SK-2

JOB NO: 20110S

REV: 0

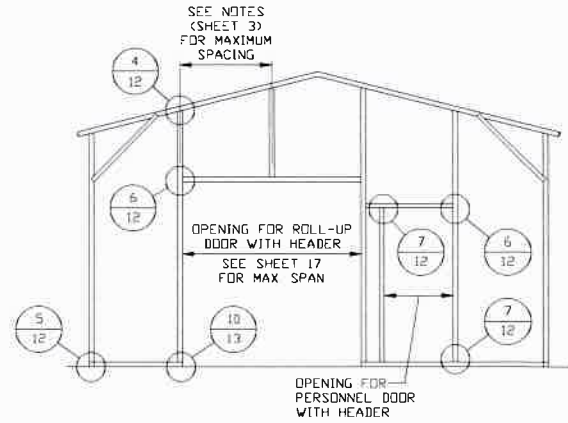
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND
 CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF
 THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY
 BE SUBJECT TO LEGAL ACTION.

BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



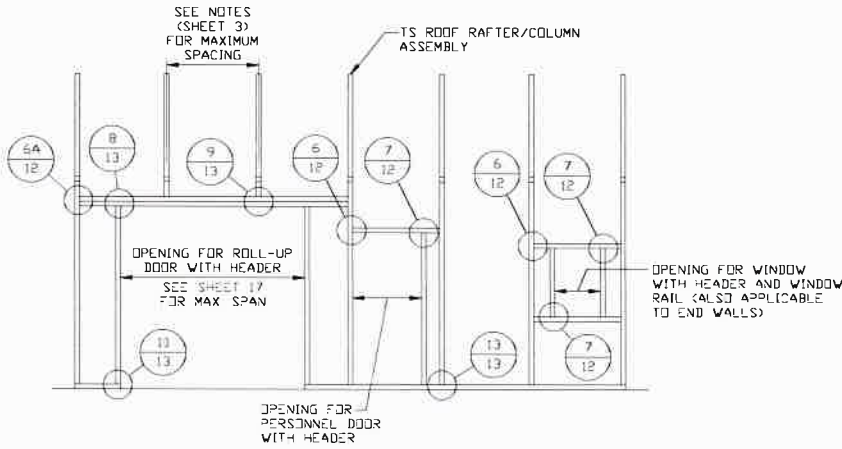
**TYPICAL BOX EAVE RAFTER
END WALL FRAMING SECTION**

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: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

**STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0" x 16'-0" UTILITY STRUCTURE**

DATE: 6-9-20

SCALE: NTS

JOB NO: 20110S

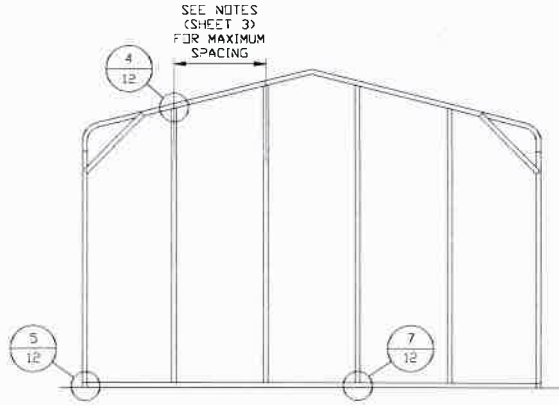
SHT. 10

DWG. NO: SK-2

REV: 0

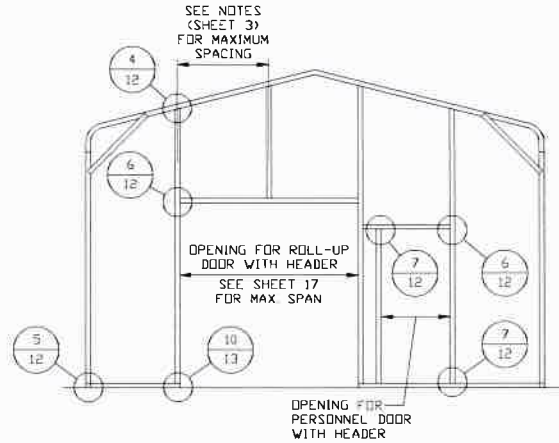
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

BOW EAVE RAFTER END WALL AND SIDE WALL OPENINGS



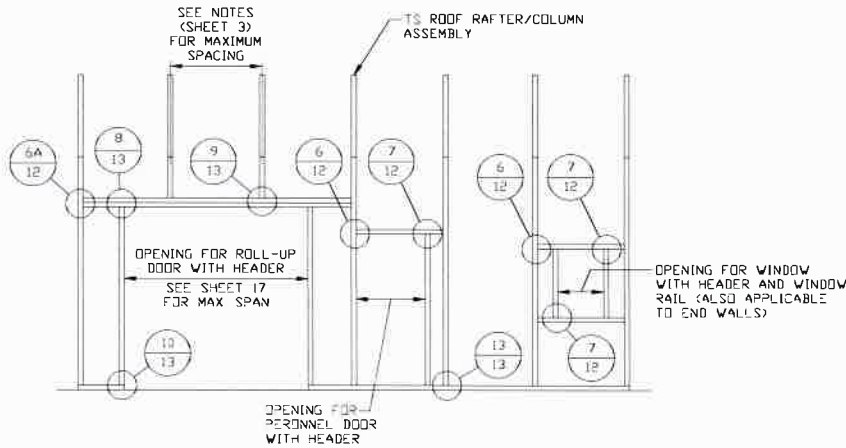
**TYPICAL BOW EAVE RAFTER
END WALL FRAMING SECTION**

SCALE: NTS



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

SCALE: NTS



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

SCALE: NTS

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

DRAWN BY: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0" x 16'-0" UTILITY STRUCTURE

DATE: 6-9-20

SCALE: NTS

JOB NO: 20110S

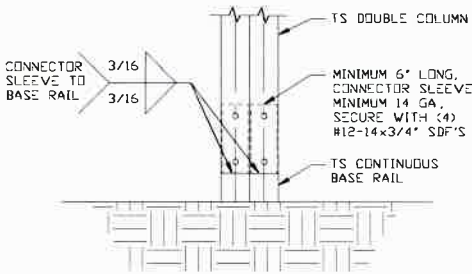
SHT. 11

DWG. NO: SK-2

REV: 0

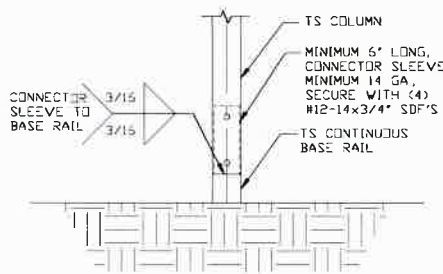
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

CONNECTION DETAILS



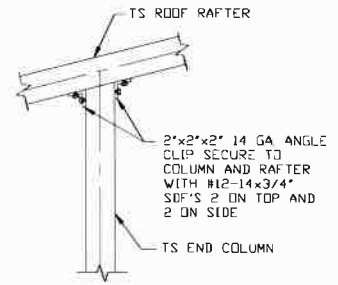
3 RAFTER COLUMN/
BASE RAIL
CONNECTION DETAIL

SCALE: NTS



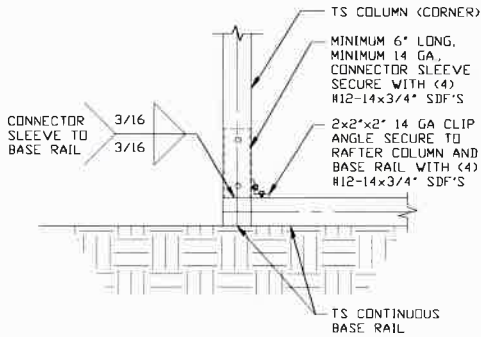
3A RAFTER COLUMN/
BASE RAIL
CONNECTION DETAIL

SCALE: NTS



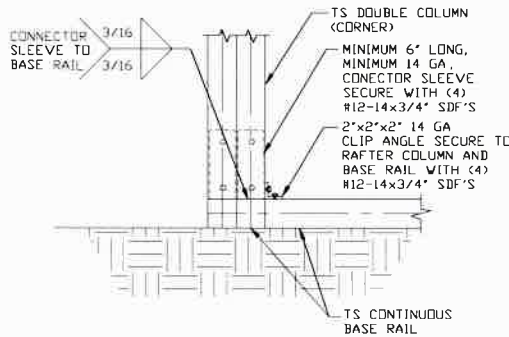
4 END COLUMN/RAFTER
CONNECTION DETAIL

SCALE: NTS



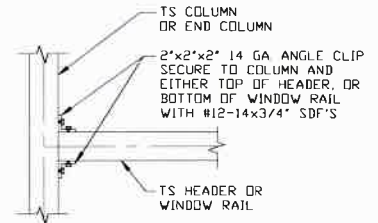
5 END COLUMN/BASE RAIL
CONNECTION DETAIL

SCALE: NTS



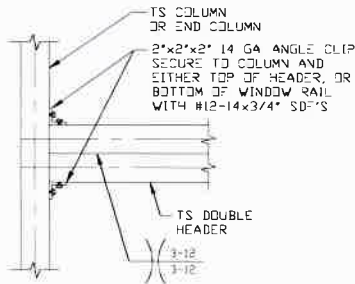
5A END COLUMN/BASE RAIL
CONNECTION DETAIL

SCALE: NTS



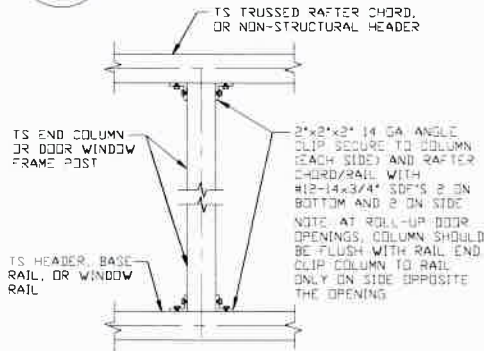
6 COLUMN OR WINDOW
RAIL/WALL GIRT
TO POST
CONNECTION DETAIL

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: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

**STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0"X16'-0" UTILITY STRUCTURE**

DATE: 6-9-20

SCALE: NTS

JOB NO: 20110S

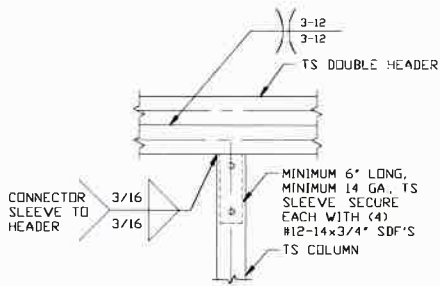
SHT. 12

DWG. NO: SK-2

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.

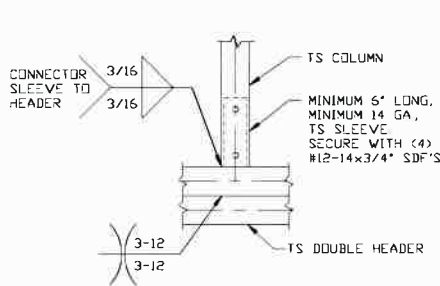
CONNECTION DETAILS



8

DOUBLE HEADER/COLUMN CONNECTION DETAIL

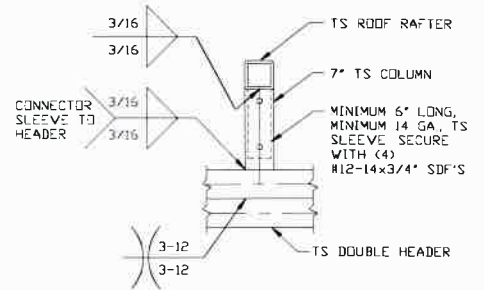
SCALE: NTS



9A

COLUMN/DOUBLE HEADER CONNECTION DETAIL

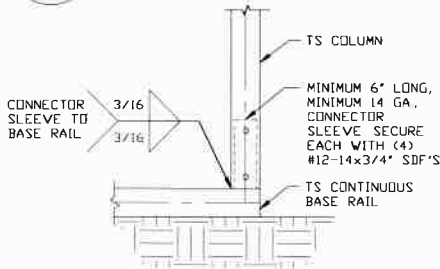
SCALE: NTS



9B

COLUMN/DOUBLE HEADER CONNECTION DETAIL

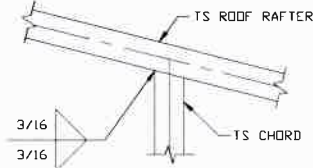
SCALE: NTS



10

COLUMN/BASE RAIL CONNECTION DETAIL

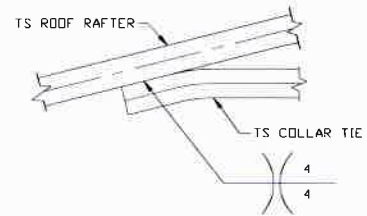
SCALE: NTS



11

RAFTER TO CHORD CONNECTION DETAIL

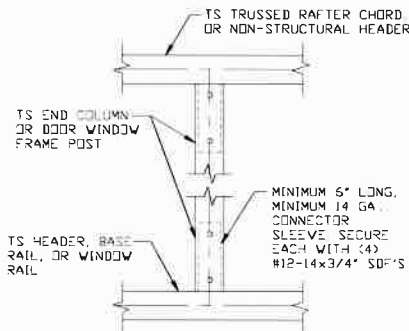
SCALE: NTS



12

COLLAR 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: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0" x 16'-0" UTILITY STRUCTURE

DATE: 6-9-20

SCALE: NTS

JOB NO: 20110S

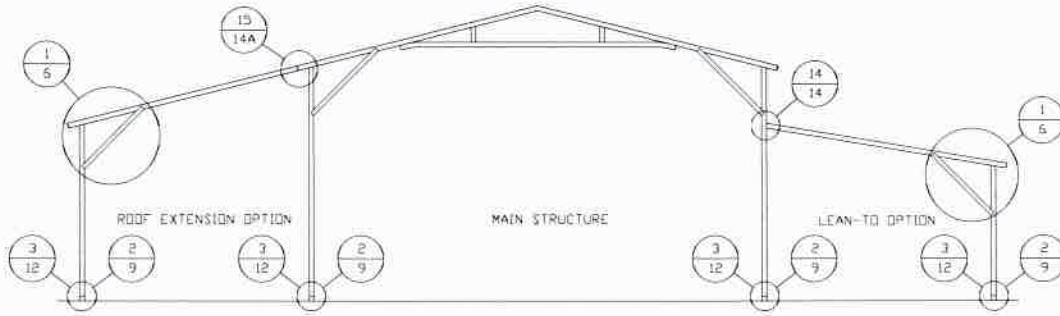
SHT. 13

DWG. NO: SK-2

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



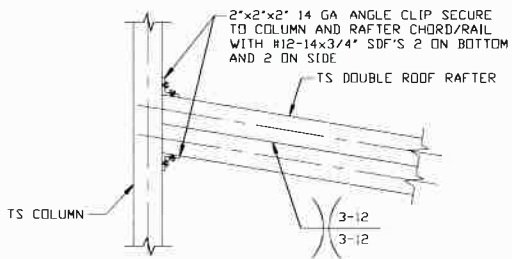
TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

SCALE: NTS

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

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

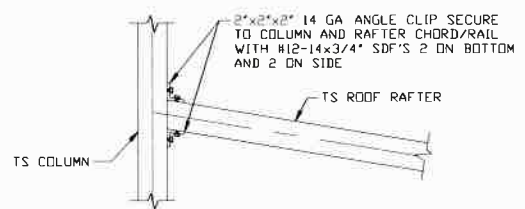
FOR SHARED COLUMN HEIGHTS REFERENCE RAFTER COLUMN CONNECTION DETAILS FOR APPROPRIATE COLUMN HEIGHT AND TUBING SPECIFICATIONS



**LEAN-TO RAFTER TO RAFTER
COLUMN CONNECTION DETAIL FOR
RAFTER SPANS 12'-0' < TO <= 16'-0'**

14

SCALE: NTS



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

14A

SCALE: NTS

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

DRAWN BY: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

**STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0" x 16'-0" UTILITY STRUCTURE**

DATE: 6-9-20

SCALE: NTS

JOB NO: 20110S

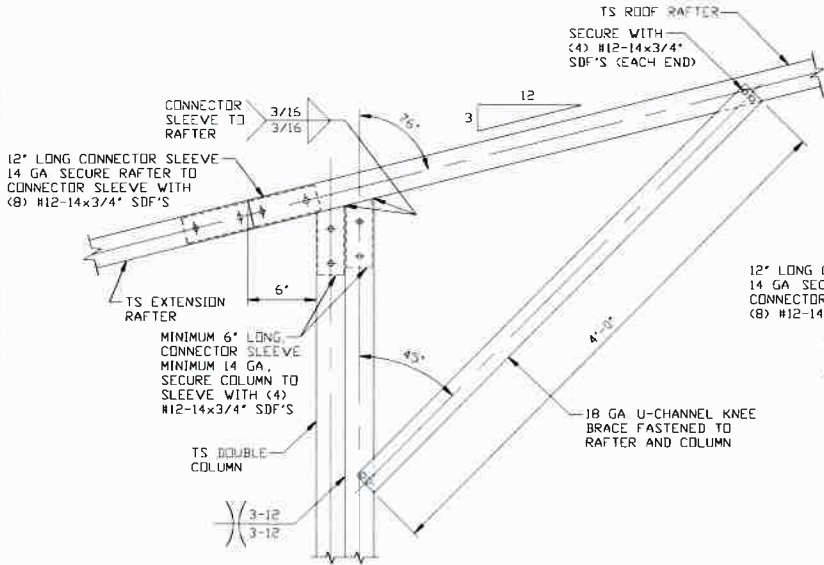
SHT. 14

DWG. NO: SK-2

REV: 0

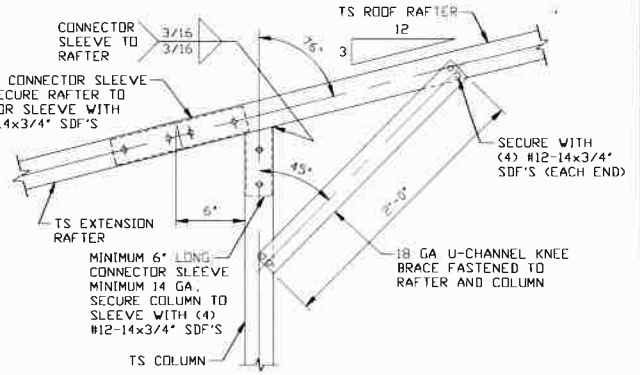
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

BOX EAVE RAFTER LEAN-TO OPTIONS FOR RAFTER SPANS $\leq 12'-0''$



15
**SIDE EXTENSION RAFTER/
 COLUMN DETAIL FOR
 HEIGHTS 11'-0" < TO \leq 16'-0"**

SCALE: NTS



15A
**SIDE EXTENSION RAFTER/
 COLUMN DETAIL FOR
 HEIGHTS \leq 11'-0"**

SCALE: NTS

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

DRAWN BY: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

STAR BUILDINGS AND CARPORTS
 3007 NW STALLINGS DRIVE
 NACOGDOCHES, TX 75964
 30'-0" x 16'-0" UTILITY STRUCTURE

DATE: 6-9-20

SHT. 14A

SCALE: NTS

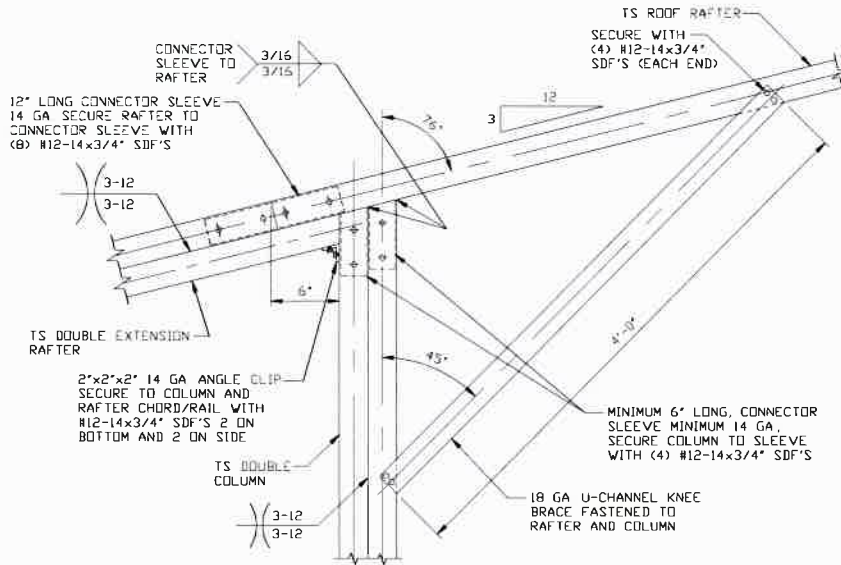
DWG. NO: SK-2

JOB NO: 20110S

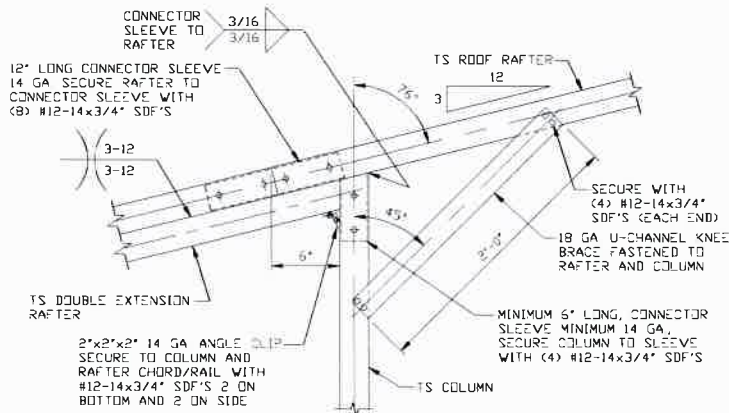
REV: 0

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 FOR RAFTER SPANS 12'-0" < TO ≤ 16'-0"



15B SIDE EXTENSION RAFTER/
COLUMN DETAIL FOR
HEIGHTS 11'-0" < TO ≤ 16'-0"
SCALE: NTS



15C SIDE EXTENSION RAFTER/
COLUMN DETAIL FOR
HEIGHTS ≤ 11'-0"
SCALE: NTS

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

DRAWN BY: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0" x 16'-0" UTILITY STRUCTURE

DATE: 6-9-20

SCALE: NTS

JOB NO: 20110S

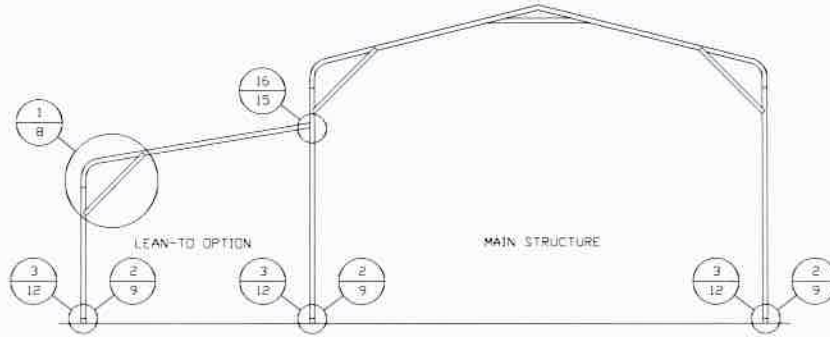
SHT. 14B

DWG. NO: SK-2

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 EAVE RAFTER LEAN-TO OPTION



TYPICAL BOW EAVE 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 ROOF EXTENSION AND LEAN-TO IS 16'-0"

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

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

DRAWN BY: LT

CHECKED BY: PDH

STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0" x 16'-0" UTILITY 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

CLIENT: STAR BUILDINGS

DATE: 6-9-20

SHT. 15

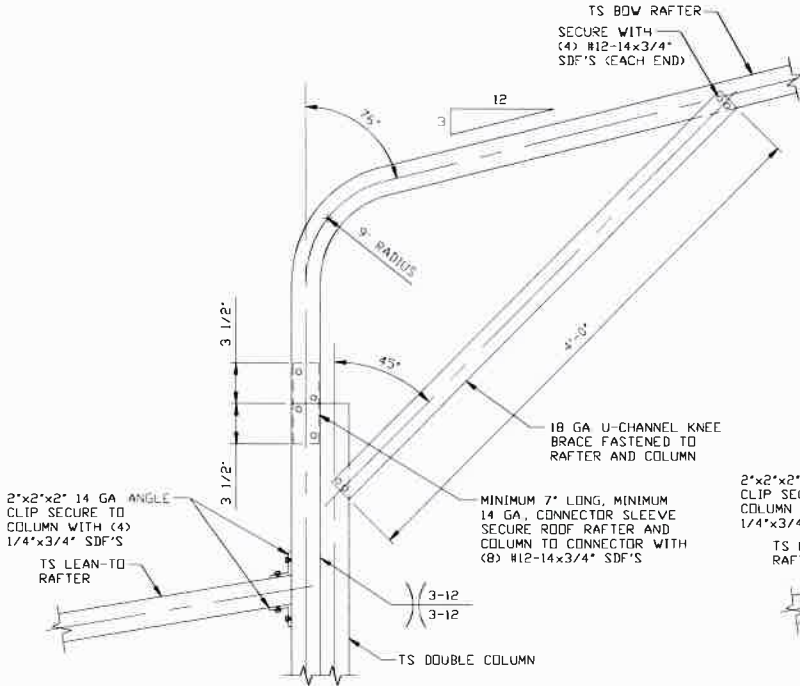
SCALE: NTS

DWG. NO: SK-2

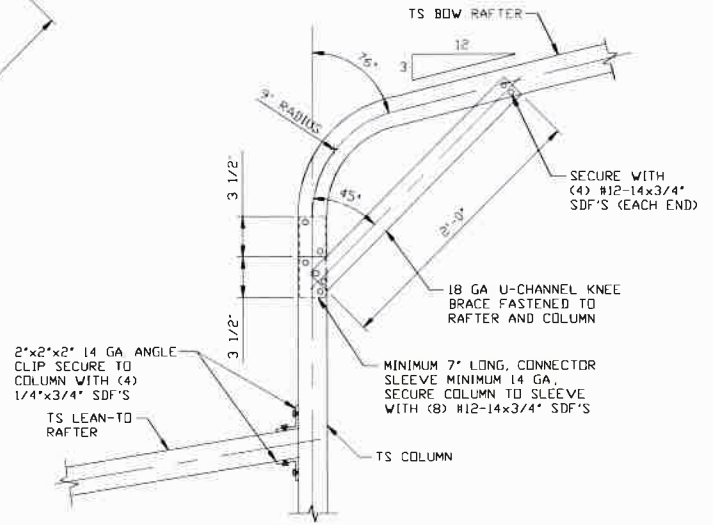
JOB NO: 20110S

REV: 0

BOW EAVE RAFTER LEAN-TO OPTIONS FOR RAFTER SPANS ≤ 12'-0"



16
LEAN-TO RAFTER TO RAFTER POST CONNECTION DETAIL FOR HEIGHTS 11'-0" < TO ≤ 16'-0"
 SCALE: NTS



16A
LEAN-TO RAFTER TO RAFTER POST CONNECTION DETAIL FOR HEIGHTS ≤ 11'-0"
 SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.

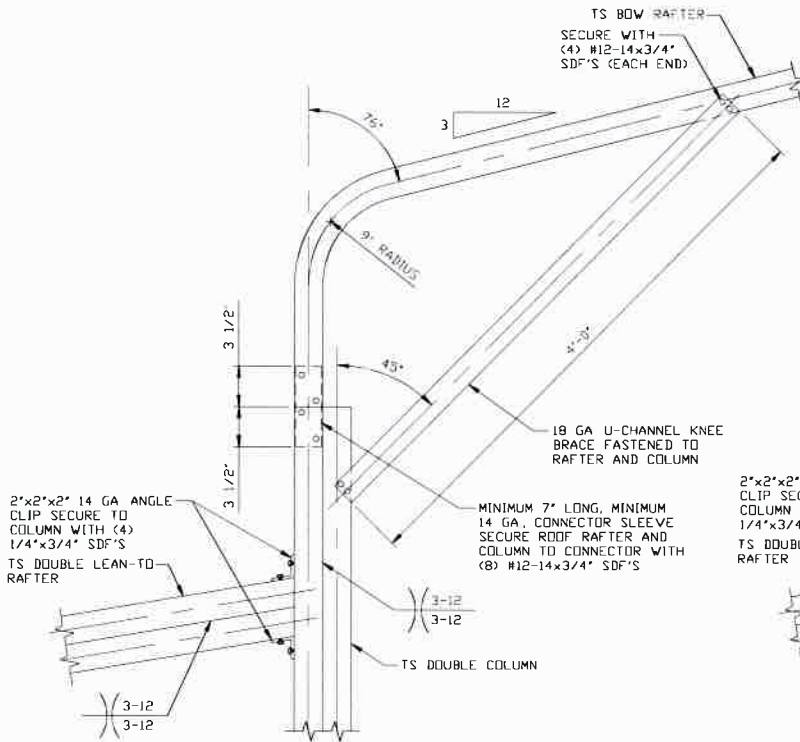
DRAWN BY: LT
CHECKED BY: PDH
PROJECT MGR: WSM
CLIENT: STAR BUILDINGS

STAR BUILDINGS AND CARPORTS
 3007 NW STALLINGS DRIVE
 NACOGDOCHES, TX 75964
 30'-0" x 16'-0" UTILITY STRUCTURE

DATE: 6-9-20 **SCALE: NTS** **JOB NO: 20110S**
SHT. 15A **DWG. NO SK-2** **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.

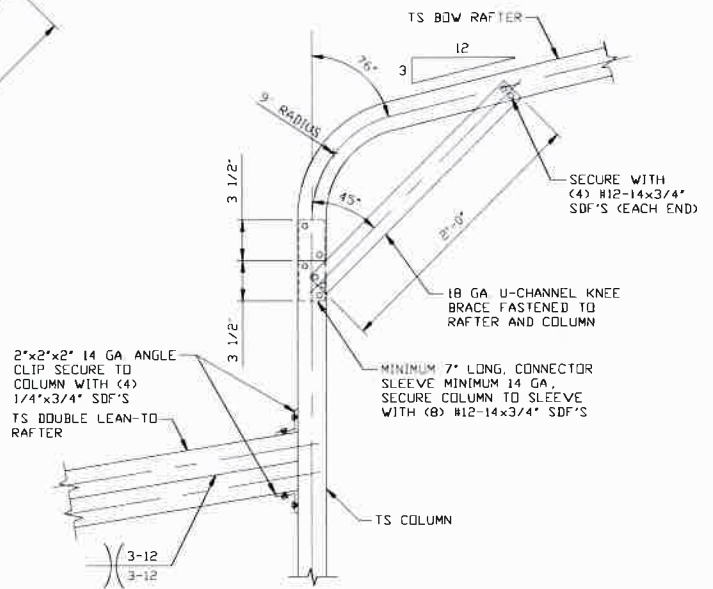
BOW EAVE RAFTER LEAN-TO OPTIONS FOR RAFTER SPANS 12'-0" < TO ≤ 16'-0"



**LEAN-TO RAFTER TO RAFTER
POST CONNECTION DETAIL FOR
HEIGHTS 11'-0" < TO ≤ 16'-0"**

16

SCALE: NTS



**LEAN-TO RAFTER TO RAFTER
POST CONNECTION DETAIL
FOR HEIGHTS ≤ 11'-0"**

16A

SCALE: NTS

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

DRAWN BY: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

**STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0" x 16'-0" UTILITY STRUCTURE**

DATE: 6-9-20

SCALE: NTS

JOB NO: 20110S

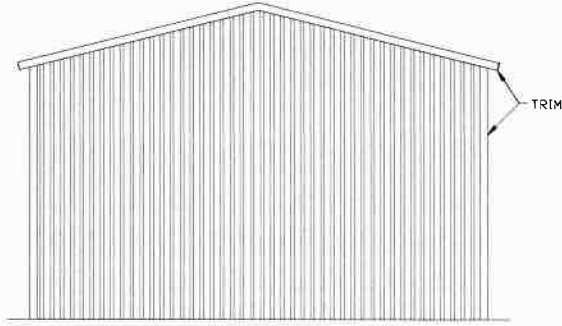
SHT. 15B

DWG. NO: SK-2

REV: 0

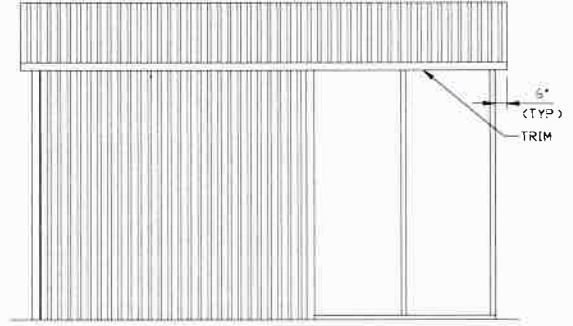
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



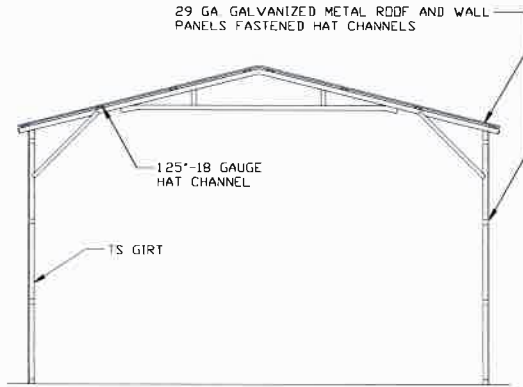
**TYPICAL END ELEVATION
VERTICAL ROOF/SIDING**

SCALE: NTS



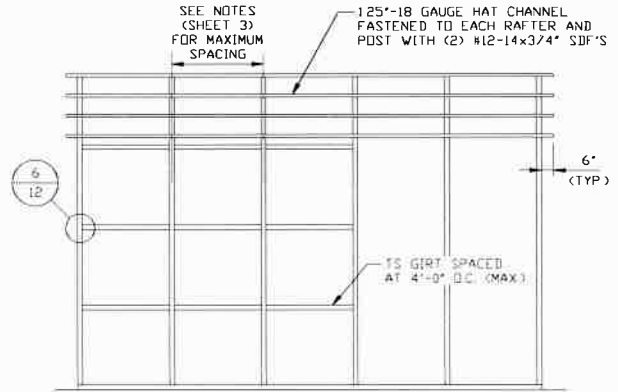
**TYPICAL SIDE ELEVATION
VERTICAL ROOF/SIDING**

SCALE: NTS



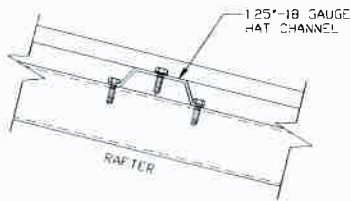
**TYPICAL SECTION VERTICAL
ROOF/SIDING OPTION**

SCALE: NTS



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

SCALE: NTS



ROOF PANEL ATTACHMENT

(ALTERNATE FOR VERTICAL ROOF PANELS)
SCALE: NTS

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

DRAWN BY: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0" x 16'-0" UTILITY STRUCTURE

DATE: 6-9-20

SHT. 16

SCALE: NTS

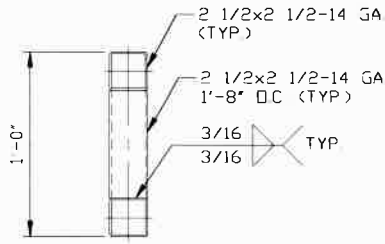
DWG. NO SK-2

JOB NO: 20110S

REV: 0

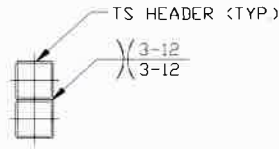
THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

SIDE WALL HEADER OPTIONS



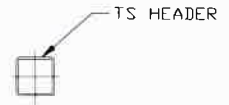
**HEADER DETAIL FOR
SPANS 13'-0" < TO ≤ 16'-0"**

SCALE: NTS



**HEADER DETAIL FOR
SPANS 8'-0" < TO ≤ 13'-0"**

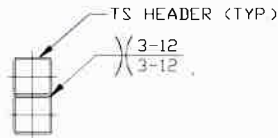
SCALE: NTS



**HEADER DETAIL FOR
SPANS ≤ 8'-0"**

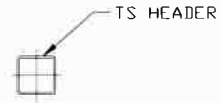
SCALE: NTS

END WALL HEADER OPTIONS



**HEADER DETAIL FOR
SPANS 12'-0" < TO ≤ 16'-0"**

SCALE: NTS



**HEADER DETAIL FOR
SPANS ≤ 12'-0"**

SCALE: NTS

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

DRAWN BY: LT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: STAR BUILDINGS

STAR BUILDINGS AND CARPORTS
3007 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964
30'-0" x 16'-0" UTILITY STRUCTURE

DATE: 6-9-20

SCALE: NTS

JOB NO: 20110S

SHT. 17

DWG. NO: SK-2

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.