

STRUCTURAL DESIGN

ENCLOSED BUILDING

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

20 January 2022 Revision 0 M&A Project No. 21263S

Prepared for:

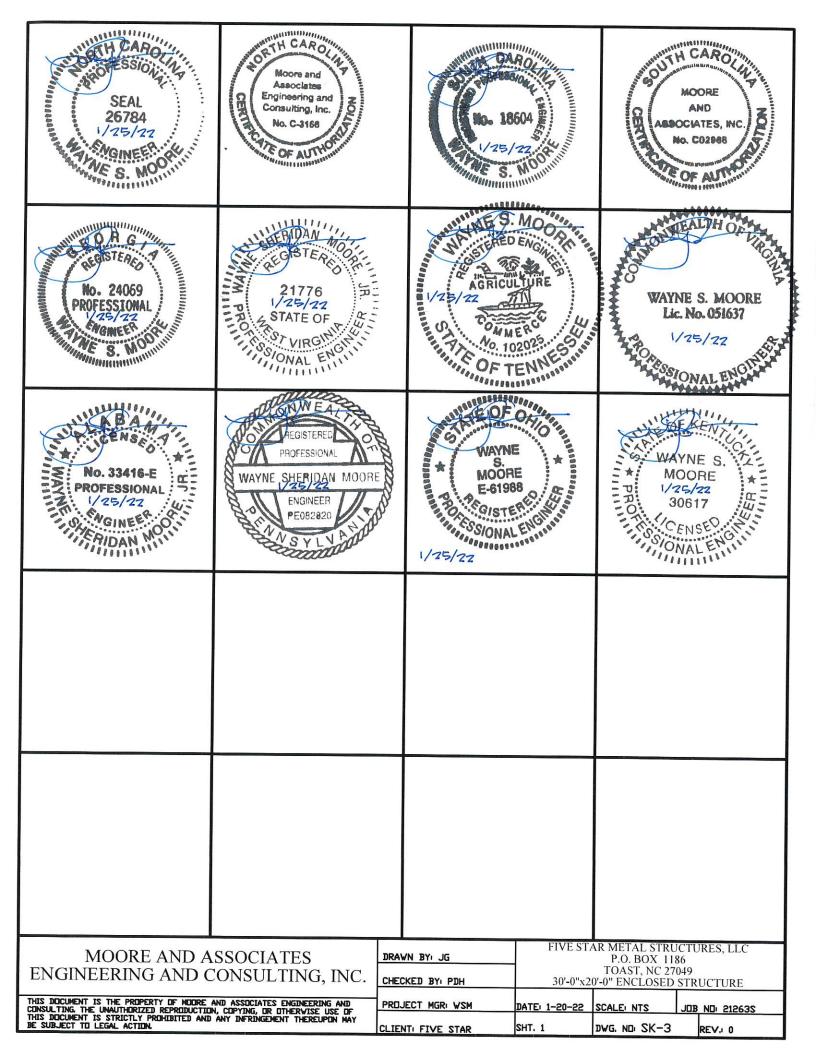
Five Star Metal Buildings, LLC P.O. Box 1186 Toast, NC 27049

Prepared by:

Moore and Associates Engineering and Consulting, Inc. 1009 East Avenue North Augusta, SC 29841

> 401 S. Main Street, Suite 200 Mt. Airy, NC 27030





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MOORE AND ASSOCIATES	DRAWN BY: JG	FÎVE STA	AR METAL STRU P.O. BOX 11	86
ENGINEERING AND CONSULTING, INC.	CHECKED BY: PDH	30'-0"x2	TOAST, NC 27 0'-0" ENCLOSED	
ILLUNGULLUNG THE UNMUTHERIZED REPRIDEETING CHRYDNE TO THEOTYPE DE	PROJECT MGR: WSM	DATE: 1-20-22	SCALE: NTS	JOB NO: 21263\$
THIS DUCLMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY	CLIENT: FIVE STAR	SHT, 2	DWG. NO SK-3	REV. 0

INSTALLATION NOTES AND SPECIFICATIONS

- 1. DESIGN IS FOR MAXIMUM 30'-0" WIDE \times 20'-0" EAVE HEIGHT ENCLOSED STRUCTURES.
- 2. DESIGN WAS DONE IN ACCORDANCE WITH ALL APPLICABLE BUILDING CODES LISTED ON SHEET 3A.
- 3. DESIGN LOADS ARE AS FOLLOWS:

A) ROOF DEAD LOAD

SELF-WEIGHT = 1.5 PSF

MEP = 10 PSF COLLATERAL = 0 PSF

B) ROOF LIVE LOAD = 20 PSF

C) FLOOR LIVE LOAD = 100 PSF (4" CONCRETE SLAB-ON-GRADE)

D) GROUND SNOW LOAD = 40 PSF

= 30 PSF WITH U-CHANNEL PEAK BRACE (W < 24'-0" (RISK CATEGORY I DNLY))

(NDTE: UNBALANCED LOADING DUE TO SNOW DRIFTING FROM AN ADJACENT TALLER STRUCTURE HAS NOT BEEN EVALUATED).

- 4. 3-SECOND GUST ULTIMATE WIND SPEED (V_{ULT}) \leq 140 MPH (NOMINAL WIND SPEED \leq 108 MPH).
- 5. MAXIMUM RAFTER/COLUMN AND END COLUMN SPACING = 4.0 FEET (UNLESS NOTED OTHERWISE).
- 6. ENDWALL COLUMNS (COLUMNS) AND SIDE WALL COLUMNS ARE EQUIVALENT IN SIZE AND SPACING (UNLESS NOTED OTHERWISE).
- 7. RISK CATEGORY I/II (RISK CATEGORY I NOT FOR HUMAN HABITATION).
- 8. WIND EXPOSURE CATEGORY B/C.
- 9. STRUCTURAL ANALYSIS/DESIGN IS BASED ON TS MEETING THE REQUIREMENTS OF ASTM A653 GRADE 50 WITH MINIMUM YIELD STRENGTH (FY) OF 54 KSI AND GALVANIZING MEETING THE REQUIREMENTS OF G60.
- 10. SPECIFICATIONS APPLICABLE TO 26 GAUGE OR 29 GAUGE METAL PANELS FASTENED DIRECTLY TO 2 1/2" x 2 1/2" 14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS (UNLESS NOTED OTHERWISE). 2 1/4" x 2 1/4" 12 GAUGE TS MAY BE USED AS OPTIONAL FRAMING MEMBERS.
- 11. CONNECTOR SLEEVES ARE MINIMUM 6" LONG, 2 1/4"x2 1/4"-14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS (UNLESS NOTED OTHERWISE).
- 12. AVERAGE PANEL FASTENER SPACING ON-CENTERS = 6 INCHES
- 13. FASTENERS CONSIST OF #12-14×3/4" SELF-DRILLING FASTENER (SDF), USE CONTROL SEAL WASHER WITH EXTERIOR FASTENERS.

 SPECIFICATIONS APPLICABLE ONLY FOR MEAN ROOF HEIGHT OF 16 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 JOINT SEALANT.
- 14. GROUND ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL AT OR WITHIN 6° OF EVERY COLUMN,
- 15. 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.
- 16. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:

SDIL SITE CLASS = D RISK CATEGORY I/II

B- 332

R = 3.25 $I_E = 1.0$ $V = C_S W$

 $S_{DS} = 2.625 g$ $S_{DI} = 2.13 g$

- 17. MAXIMUM THRESHOLD HEIGHT IS 1/2" FOR PERSONNEL DOORS UTILIZED AS MEANS OF EGRESS (RISK CATEGORY II ONLY).
- 18. 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.

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

DRAWN BY: JG

CHECKED BY: PDH

CLIENT FIVE STAR

FIVE STAR METAL STRUCTURES, LLC P.O. BOX 1186 TOAST, NC 27049 30'-0"x20'-0" ENCLOSED STRUCTURE

DAC NO 2K-3

PROJECT MGR: WSM DATE: 1-20-22 SCALE: NTS

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<u>JDB ND: 21263S</u> REV.: 0

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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)

BUILDING CODE 2015 OF ALABAMA
(ADOPTS THE IBC 2015 WITHOUT AMENDMENTS)

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

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

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

OHIO BUILDING CODE 2017 (ADOPTS THE IBC 2015 WITH AMENDMENTS)

BUILDING CODE 2015 OF PENNSYLVANIA (ADDPTS THE IBC 2015 WITH AMENDMENTS) 2018 PHILADELPHIA BUILDING CODE (ADDPTS THE IBC 2018 WITH AMENDMENTS)

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

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

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

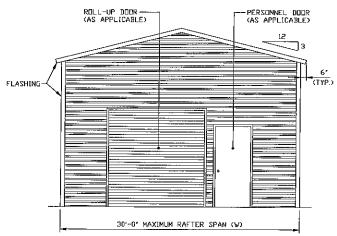
BUILDING CODE 2015 OF WEST VIRGINIA (ADOPTS THE IBC 2015 WITH AMENDMENTS)

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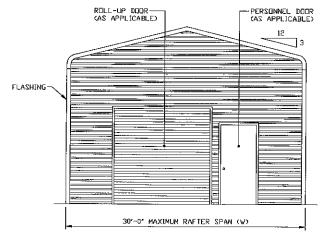
CLIENT: FIVE STAR	SHT. 3A	DVG. NO SK-	3 REV. 0			
PROJECT MGR: WSM	DATE: 1-20-22	SCALE: NTS	JDB ND 21263S			
CHECKED BY: PDH	30'-0"x2	30'-0"x20'-0" ENCLOSED STRUCTURE				
DRAWN BYI JG	FIVE ST.	FIVE STAR METAL STRUCTURES, LLC P.O. BOX 1186 TOAST, NC 27049				

BOX EAVE FRAME RAFTER STRUCTURE

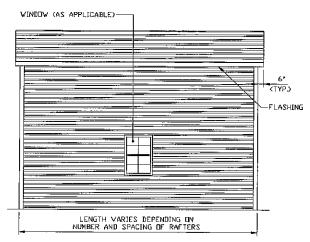


TYPICAL END ELEVATION
SCALE: NTS

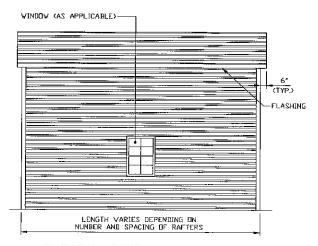
BOW EAVE FRAME RAFTER STRUCTURE



TYPICAL END ELEVATION
SCALE: NTS



TYPICAL SIDE ELEVATION
SCALE: NTS

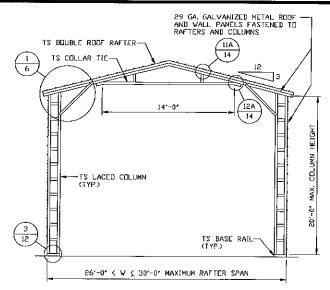


TYPICAL SIDE ELEVATION SCALE: NTS

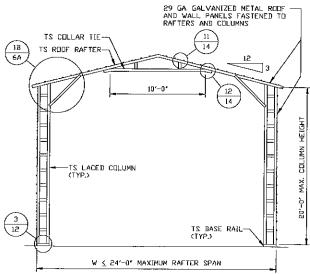
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PRUJECT MGR: WSM	DATE: 1-20-22		JUB NO: 21263S	

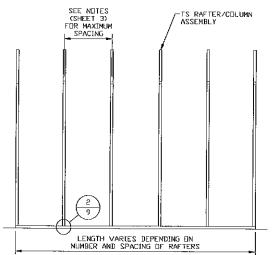


TYPICAL RAFTER/COLUMN FRAME SECTION



TYPICAL RAFTER/COLUMN FRAME SECTION

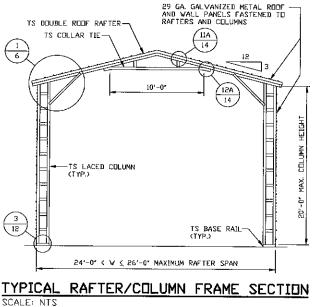
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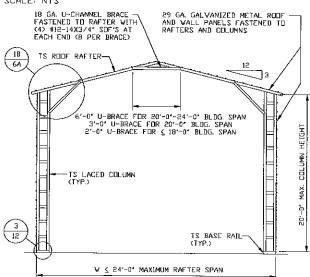


TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS

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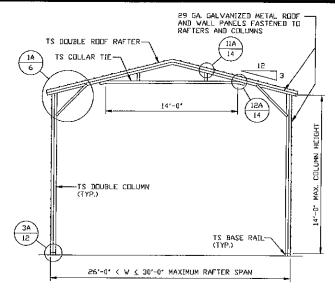
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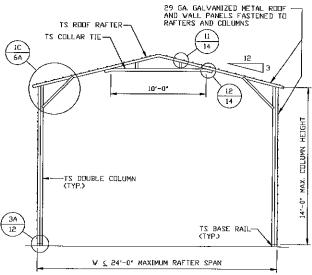


TYPICAL RAFTER/COLUMN FRAMING SECTION

DRAWN BYI JG	FIVE ST	FIVE STAR METAL STRUCTURES, LLC P.O. BOX 1186 TOAST NG 27040				
CHECKED BY: PDH	30'-0"x2	TOAST, NC 27049 30'-0"x20'-0" ENCLOSED STRUCTURE				
PROJECT MGRI WSM	DATE: 1-20-22	SCALE: NTS	JOB NO: 212635			
CLIENT: FIVE STAR	SHT. 5	DWG. ND: SK-3	REV₄ 0			



TYPICAL RAFTER/COLUMN FRAME SECTION



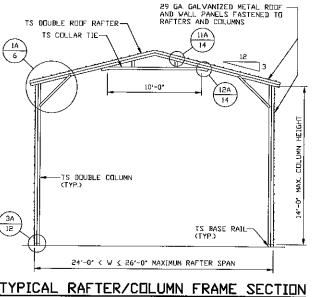
TYPICAL RAFTER/COLUMN FRAME SECTION SCALE: NTS

SEE NOTES (SHEET 3) FOR MAXIMUM SPACING TS RAFTER/COLUMN ASSEMBLY 2 9 LENGTH VARIES DEPENDING ON NUMBER AND SPACING OF RAFTERS

TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS

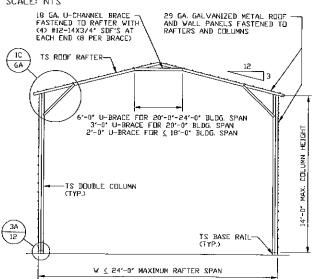
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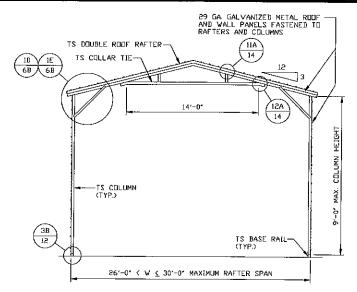
TYPICAL

SCALE: NTS



TYPICAL RAFTER/COLUMN FRAME SECTION

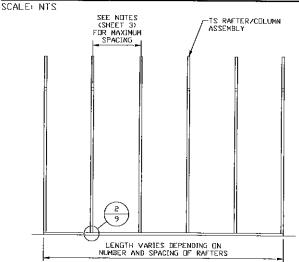
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Ž.	CHECKED BY: PDH	30'-0"x2	TOAST, NC 27049 30'-0"x20'-0" ENCLOSED STRUCTURE			
	PROJECT MGR: WSM	DATE: 1-20-22	SCALE: NTS	JDB	ND: 21263S	
	CLIENT: FIVE STAR	SHT. 5A	DVG. NO SK-3		REV. 0	



TYPICAL RAFTER/COLUMN FRAME SECTION SCALE: NTS

29 GA. GALVANIZED METAL ROOF AND WALL PANELS FASTENED TO RAFTERS AND COLUMNS 11 TS COLLAR TIE-14 IF 6C 1G 6C TS ROOF RAFTER 12 _ 3 14 M 딍 NMUJUO 2T-(SYT) 3B 12 TS BASE RAIL-W < 24'-0" MAXIMUM RAFTER SPAN

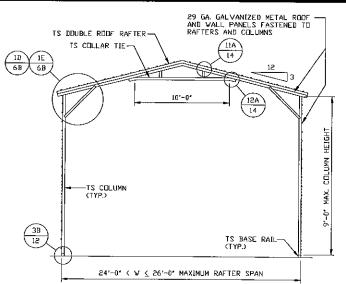
TYPICAL RAFTER/COLUMN FRAME SECTION



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS

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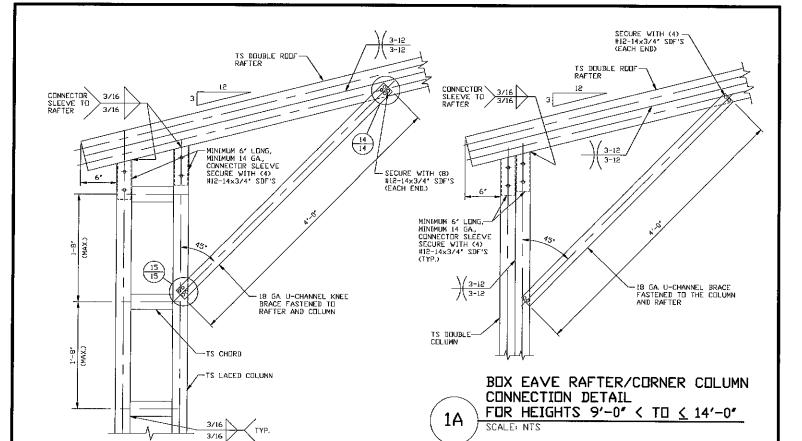
TYPICAL RAFTER/COLUMN FRAME SECTION

SCALE: NTS 18 GA. U-CHANNEL BRACE — FASTENED TO RAFTER WITH (4) #12-14X3/4' SDF'S AT EACH END (8 PER BRACE) 29 GA. GALVANIZED METAL ROOF AND WALL PANELS FASTENED TO RAFTERS AND COLUMNS TS ROOF RAFTER 1F 6C 1G 12 -0" U-BRACE FOR 20'-0'-24'-0" BLDG. SPAN 3'-0" U-BRACE FOR 20'-0" BLDG. SPAN 2'-0" U-BRACE FOR ≤ 18'-0" BLDG. SPAN COLUMN TS COLUMN YAN. 2,-0, 3B 12 TS BASE RAIL (TYP.) W < 24'-0" MAXIMUM RAFTER SPAN

TYPICAL RAFTER/CULUMN FRAMING SECTION

SCALE: NTS

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	FIVE STA	AR METAL STI	RUCTURES, LLC
DRAWN BY: JG		P.O. BOX	1186
		TOAST, NC	27049
CHECKED BY: PDH	30'-0"x2		D STRUCTURE
PROJECT MGR: WSM	DATE: 1-20-22	SCALE: NTS	JDB ND: 212635
CLIENT: FIVE STAR	SHT. 5B	DWG, ND: SK-	3 REV. 0

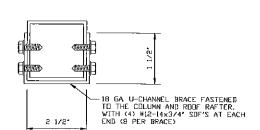


BOX EAVE RAFTER/CORNER COLUMN CONNECTION DETAIL FOR HEIGHTS 14'-0" < TO < 20'-0"

18 GA. U-CHANNEL BRACE FASTENED
TIO THE COLLUMN AND RODE RAFTER,
WITH (8) #12-14-3/4' SDF'S AT EACH
END (16 PER BRACE)

BRACE SECTION
SCALE: NTS

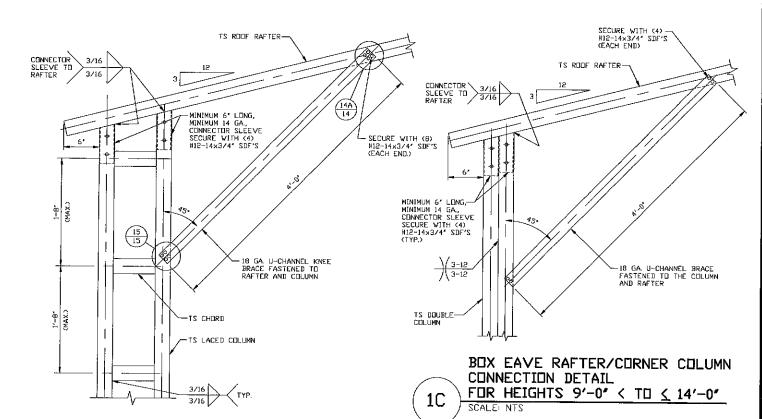
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BRACE SECTION SCALE: NTS

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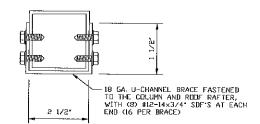
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	PROJECT MGR: VSM	DATE: 1-20-22	SCALE: NTS	JUB	ND: 21263S		
	CLIENT: FIVE STAR	SHT. 6	שעק, אם SK−3 מא		REV. 0		



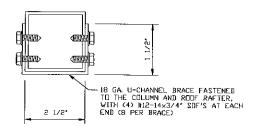
BOX EAVE RAFTER/CORNER COLUMN CONNECTION DETAIL

FOR HEIGHTS 14'-0" < TO < 20'-0"

SCALE: NTS



BRACE SECTION
SCALE: NTS

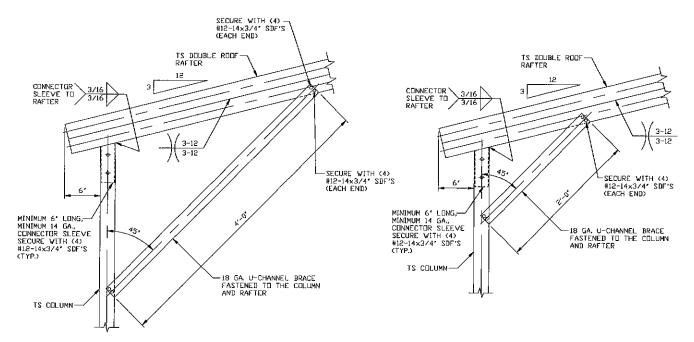


BRACE SECTION SCALE: NTS

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DRAWN BY: JG	FIVE STAR METAL STRUCTURES, LLC P.O. BOX 1186 TOAST, NC 27049						
CHECKED BY: PDH	30'-0"x20'-0" ENCLOSED STRUCTURE						
PREJECT MGR: VSM	DATE: 1-20-22	SCALE: NTS	JDB	ND: 21263S			
CLIENT: FIVE STAR	SHT. 6A	DWG. NO SK-3		REV. 0			



BOX EAVE RAFTER/CORNER COLUMN CONNECTION DETAIL FOR HEIGHTS 8'-0" < TO < 9'-0"

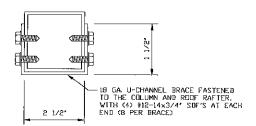
SCALE: NTS

1D

NOTE: MAXIMUM SINGLE TUBE COLUMN HEIGHT IS 8'-0" WHEN A LEAN-TO IS ATTACHED FOR GROUND SNOW > 10 PSF. A 2'-0" LONG KNEE BRACE IS REQUIRED FOR THIS SCENARIO.

NOTE: MAXIMUM SINGLE TUBE COLUMN HEIGHT IS 12'-0' FOR RISK CATEGORY I, WIND EXPOSURE CATEGORY B STRUCTURES WITH WIND SPEEDS ≤ 138 MPH AND GROUND SNOW ≤ 10 PSF.

MAXIMUM SINGLE TUBE COLUMN HEIGHT IS 14'-0' FOR RISK CATEGORY I, WIND EXPOSURE CATEGORY B STRUCTURES WITH WIND SPEEDS \$ 107 MPH AND GROUND SNOW \$ 10 PSF.



BRACE SECTION

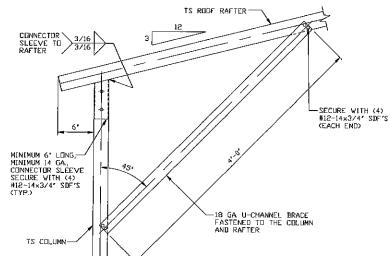
SCALE: NTS

BOX EAVE RAFTER/CORNER COLUMN CONNECTION DETAIL FOR HEIGHTS < 8'-0"

1E SCALE: NTS

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CLIENT: FIVE STAR



BOX EAVE RAFTER/CORNER COLUMN CONNECTION DETAIL FOR HEIGHTS 8'-0" < TO < 9'-0"

SCALE: NTS

1F

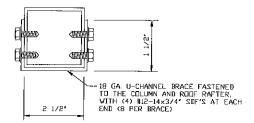
NOTE: MAXIMUM SINGLE TUBE COLUMN HEIGHT IS 8'-0" WHEN A LEAN-TO IS ATTACHED FOR GROUND SNOW > 10 PSF. A 2'-0" LONG KNEE BRACE IS REQUIRED FOR THIS SCENARIO.

NDTE: MAXIMUM SINGLE TUBE COLUMN HEIGHT IS
12'-0' FOR RISK CATEGORY I, WIND EXPOSURE
CATEGORY B STRUCTURES WITH WIND SPEEDS
\$\(\) 138 MPH AND GROUND SNOW \$\(\) 10 PSF.

MAXIMUM SINGLE TUBE COLUMN HEIGHT IS 14'-0' FOR RISK CATEGORY I, WIND EXPOSURE CATEGORY B STRUCTURES WITH WIND SPEEDS

107 MPH AND GROUND SNOW

10 PSF.



BRACE SECTION SCALE: NTS

TS ROUF RAFTER

CONNECTOR 3/16
SLEEVE TD 3/16
RAFTER

3/16
SECURE WITH (4)
H12-14×3/4' SDF'S
(EACH END)

MINIMUM 14 GA,
CONNECTOR SLEEVE
SECURE WITH (4)
H12-14×3/4' SDF'S
(EACH END)

TS COLUMN

TS COLUMN

BOX EAVE RAFTER/CORNER COLUMN CONNECTION DETAIL FOR HEIGHTS \(8'-0"

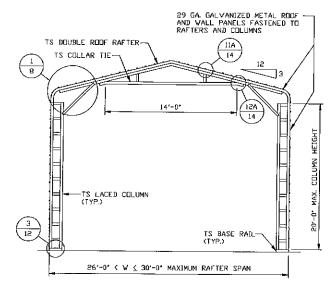
SCALE: NTS

1G

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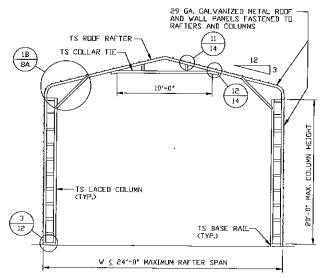
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DRAWN BY: JG	FIVE STAR METAL STRUCTURES, LLC P.O. BOX 1186						
CHECKED BY PDH	30'-0"x2	<u>UC</u> TURE					
PROJECT MGR: WSM	DATE: 1-20-22	SCALE: NTS	JDB	ND: 21263S			
CLIENT: FIVE STAR	SHT. 6C	DWG, ND; SK-3		REV. 0			

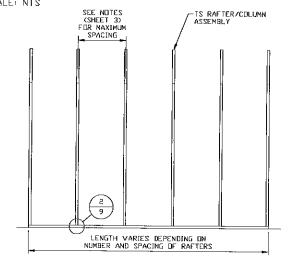


TYPICAL RAFTER/COLUMN FRAME SECTION

SCALE: NTS



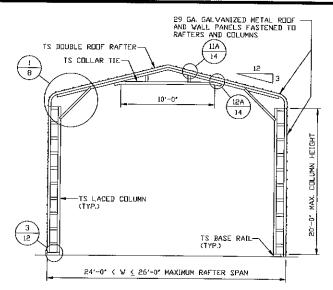
TYPICAL RAFTER/COLUMN FRAME SECTION



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS

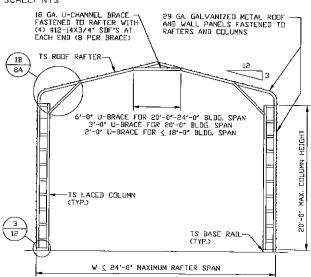
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TYPICAL RAFTER/COLUMN FRAME SECTION

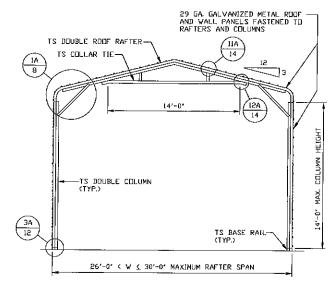
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TYPICAL RAFTER/COLUMN FRAME SECTION

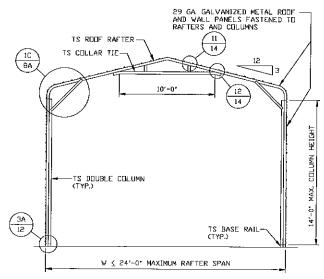
SCALE: NI

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	CHECKED BY: PDH	30'-0"x2	0'-0" ENCLOSED			
_	PROJECT MGR: VSM	DATE: 1-20-22	SCALE: NTS	JDB ND: 21263S		
	CLIENT: FIVE STAR	SHT. 7	DWG. NO SK-3	RE√₁ 0		



TYPICAL RAFTER/COLUMN FRAME SECTION

SCALE: NTS



TYPICAL RAFTER/COLUMN FRAME SECTION SCALE: NTS

SEE NOTES
(SHEET 3)
FOR MAXIMIM
SPACING

LENGTH VARIES DEPENDING ON
NUMBER AND SPACING OF RAFTERS

TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS

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TS BASE RAIL TS BASE RAIL

29 GA. GALVANIZED METAL ROOF AND WALL PANELS FASTENED TO RAFTERS AND COLUMNS

(IIA)

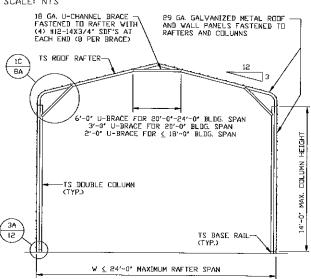
14

TYPICAL RAFTER/COLUMN FRAME SECTION

SCALE: NTS

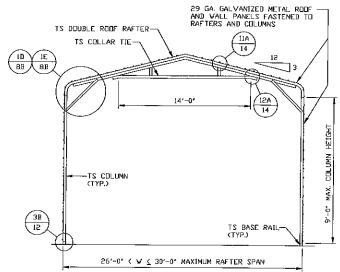
TS DOUBLE ROOF RAFTER

TS COLLAR TIE

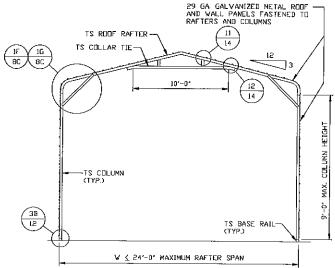


TYPICAL RAFTER/COLUMN FRAME SECTION

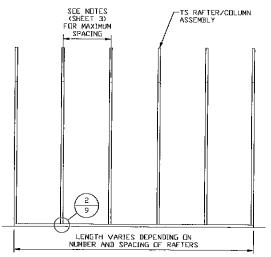
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TYPICAL RAFTER/COLUMN FRAME SECTION



TYPICAL RAFTER/COLUMN FRAME SECTION SCALE: NTS



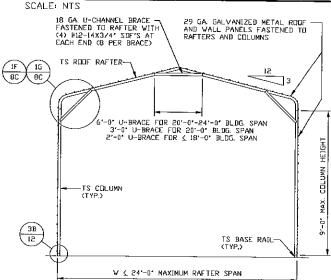
TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

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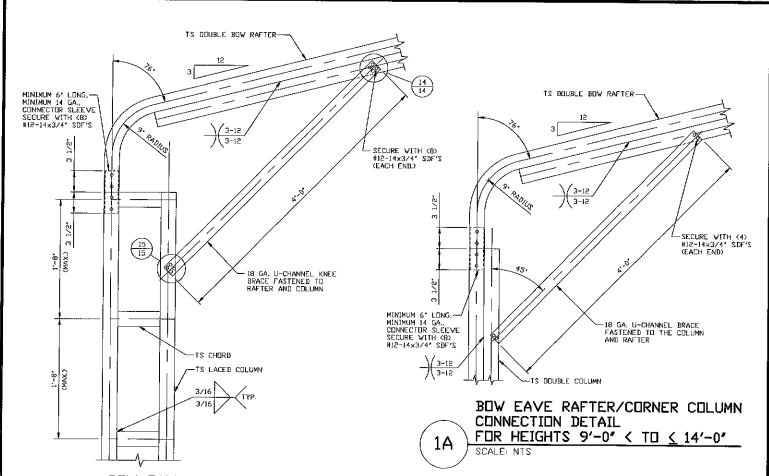
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29 GA. GALVANIZED METAL RODF AND WALL PANELS FASTENED TO RAFTERS AND COLUMNS TS DOUBLE ROOF RAFTER 11A TS COLLAR TIE 14 12 8B \ 8B 10'-0" 12A 14 COLUMN TS COLUMN MAX. 9'-0 3B 12 TS BASE RAIL-(TYP.) 24'-0' < ₩ < 26'-0' MAXIMUM RAFTER SPAN

TYPICAL RAFTER/COLUMN FRAME SECTION



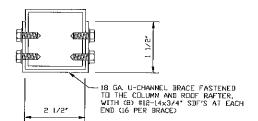
TYPICAL RAFTER/COLUMN FRAME SECTION



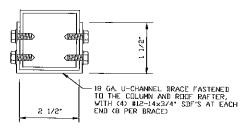
BOW EAVE RAFTER/CORNER COLUMN CONNECTION DETAIL

FOR HEIGHTS 14'-0" < TO < 20'-0"

SCALE: NTS

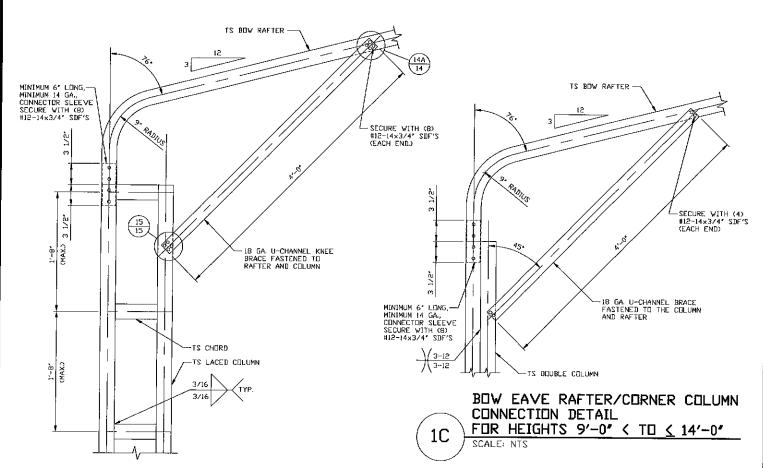


BRACE SECTION
SCALE: NTS



BRACE SECTION SCALE: NTS

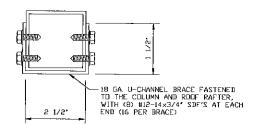
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: JG CHECKED BY: PDH		AR METAL STRU P.O. BOX 111 TOAST, NC 27 0'-0" ENCLOSED	86 049
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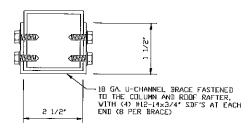
BOW EAVE RAFTER/CORNER COLUMN CONNECTION DETAIL

FOR HEIGHTS 14'-0' < TO < 20'-0"

SCALE: NTS

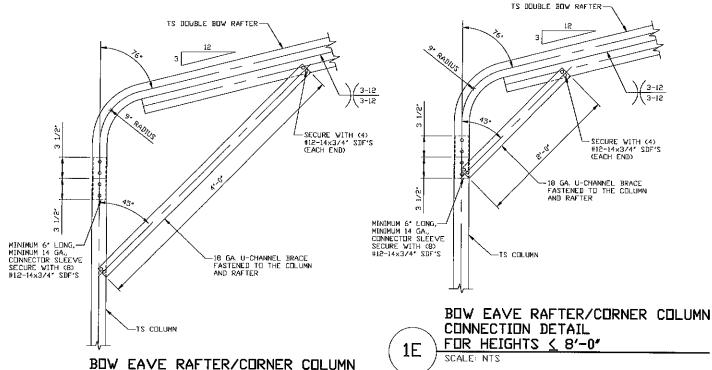


BRACE SECTION



BRACE SECTION

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CONNECTION DETAIL
FOR HEIGHTS 8'-0" < TO < 9'-0"

SCALE: NTS

1D

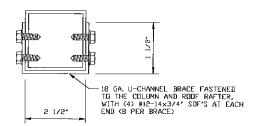
NOTE: MAXIMUM SINGLE TUBE COLUMN HEIGHT IS 8'-0' WHEN A LEAN-TO IS ATTACHED FOR GROUND SNOW > 10 PSF, A 2'-0' LONG KNEE BRACE IS REQUIRED FOR THIS SCENARIO.

NOTE: MAXIMUM SINGLE TUBE COLUMN HEIGHT IS

12'-0' FOR RISK CATEGORY I, WIND EXPOSURE
CATEGORY B STRUCTURES WITH WIND SPEEDS

\$\leq\$ 138 MPH AND GROUND SNOW \$\leq\$ 10 PSF.

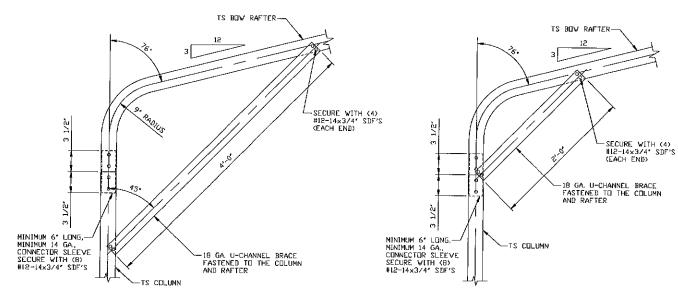
MAXIMUM SINGLE TUBE COLUMN HEIGHT IS 14'-0' FOR RISK CATEGORY I, WIND EXPOSURE CATEGORY B STRUCTURES WITH WIND SPEEDS \subseteq 107 MPH AND GROUND SNOW \subseteq 10 PSF.



BRACE SECTION

SCALE: NTS

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1G

SCALE: NTS

BOW EAVE RAFTER/CORNER COLUMN CONNECTION DETAIL

FOR HEIGHTS 8'-0" < TO < 9'-0"

SCALE: NTS

1F

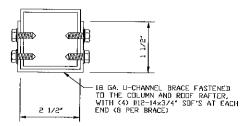
NOTE: MAXIMUM SINGLE TUBE COLUMN HEIGHT IS 8'-0' WHEN A LEAN-TO IS ATTACHED FOR GROUND SNOW > 10 PSF. A 2'-0' LONG KNEE BRACE IS REQUIRED FOR THIS SCENARIO.

NOTE: MAXIMUM SINGLE TUBE COLUMN HEIGHT IS

12'-0" FOR RISK CATEGORY I, WIND EXPOSURE
CATEGORY B STRUCTURES WITH WIND SPEEDS

\$ 138 MPH AND GROUND SNOW < 10 PSF.

MAXIMUM SINGLE TUBE COLUMN HEIGHT IS 14'-0' FOR RISK CATEGORY I, WIND EXPOSURE CATEGORY B STRUCTURES WITH WIND SPEEDS ≤ 107 MPH AND GROUND SNOW ≤ 10 PSF.



BRACE SECTION SCALE: NTS

BOW EAVE RAFTER/CORNER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 8'-0"

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PROJECT MGR: WSM

DATE: 1-20-22 SCALE NTS

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PROJECT MGR: WSM

DATE: 1-20-22 SCALE NTS

DIB NO: 21263S

CLIENT: FIVE STAR

SHT. 8C

DRAWN BY: JG

PROJECT MGR: WSM

DATE: 1-20-22 SCALE NTS

DATE: 1-20-22 SCALE NTS

DIB NO: 21263S

REV.: 0

WWF OR FIBERGLASS INSTALL 1/2"0x6 1/2" EXPANSION ANCHOR THROUGH FIBERS BASE RAIL WITHIN 6' DF EVERY COLUMN, (ALSO APPLICABLE TO END WALLS) VARI GRADE MINIMUM 3 1/4 7 EMBEDMENT MUNULITHIC CONCRETE FOOTING (3000 PSI MIN.)



CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

1'-0"

VARIES

MINIMUM ANCHOR EDGE DISTANCE IS 4°.

* COORDINATE WITH LOCAL BUILDING CODE AND/ORD REGARDING MINIMUM FROST DEPTH (LENGTH).

GENERAL NOTES

REINFORCED WITH

(2)-#4's CONTINUOUS

NOTE: CONCRETE MONOLITHIC SLAB DESIGN BASED ON MINIMUM SDIL 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:

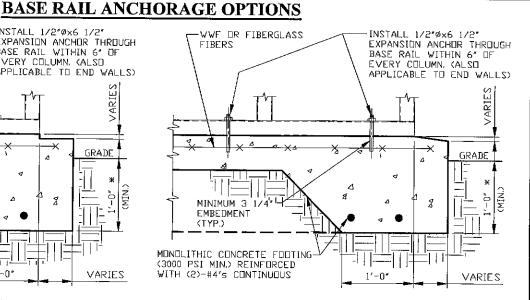
THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT.

REINFURCEMENT 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. FUR CURAL USE MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT UR 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
- 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.





CONCRETE SLAB BASE RAIL ANCHORAGE

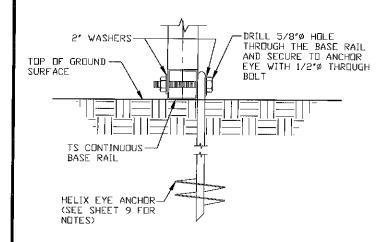
SCALE: NTS MINIMUM ANCHOR EDGE DISTANCE IS 4".

* COORDINATE WITH LOCAL BUILDING CODE
AND/ORD REGARDING MINIMUM FROST DEPTH

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BASE RAIL ANCHORAGE OPTIONS

1 1/2" WASHERS



TOP OF ASPHALT PAVEMENT

TS CONTINUOUS
BASE RAIL

TS CONTAINING SOILS

5/8*Ø × 36* (MIN.)
BARBED DRIVE ANCHOR

DRILL 5/8°Ø HOLE THROUGH THE BASE RAIL AND SECURE TO ANCHOR EYE WITH 1/2°Ø

THROUGH BOLT

GROUND BASE HELIX ANCHORAGE

SCALE: NTS

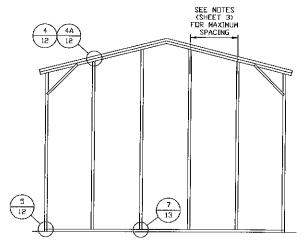
* COORDINATE WITH LOCAL BUILDING
CODE AND/ORD REGARDING MINIMUM
FROST DEPTH (LENGTH).

2B

SCALE: NTS
* COORDINATE WITH LOCAL BUILDING CODE AND/ORD REGARDING MINIMUM
FROST DEPTH (LENGTH).

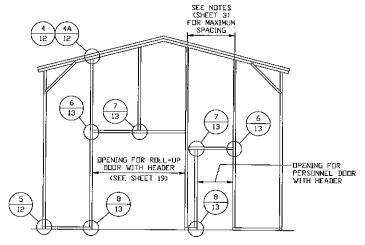
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BOX EAVE RAFTER END WALL AND SIDE WALL FRAMING SECTIONS



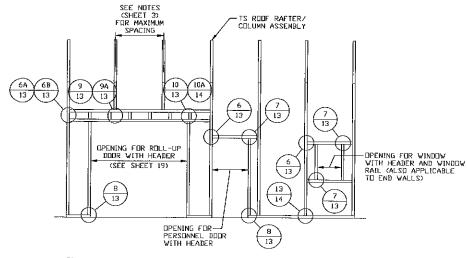
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS



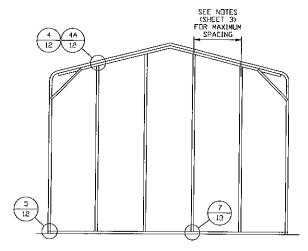
TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS

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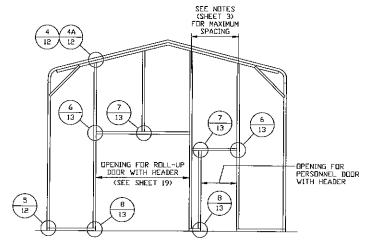
	DRAWN BY: JG	FIVE STA	AR METAL STRU P.O. BOX 118	86	JRES, LLC
	CHECKED BY: PDH	TOAST, NC 27049 30'-0"x20'-0" ENCLOSED STRUCTURE			
_	PROJECT MGR: WSM	DATE: 1-20-22	SCALE: NTS	JDB	ND 21263S
	CLIENT: FIVE STAR	SHT. 10	DWG. NO SK-3		REV.i 0

BOW EAVE RAFTER END WALL AND SIDE WALL FRAMING SECTIONS



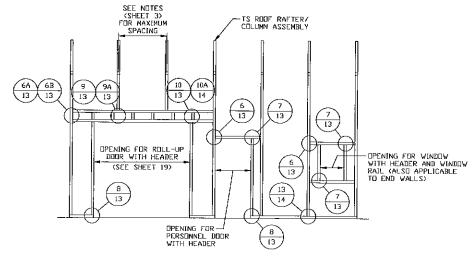
TYPICAL BOW EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOW EAVE RAFTER END WALL OPENINGS FRAMING SECTION

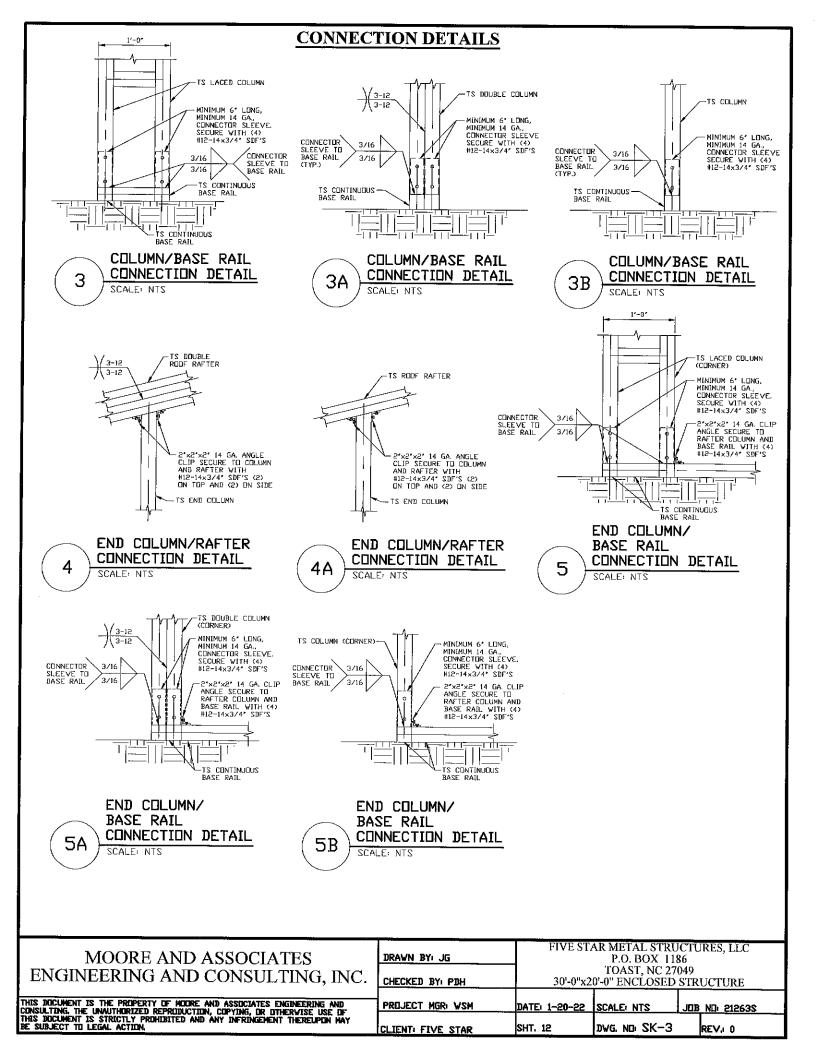
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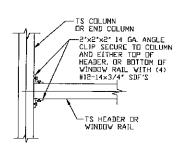
TYPICAL BOW EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS

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	CHECKED BY: PDH	30'-0"x2	TOAST, NC 27 0'-0" ENCLOSED		
	PROJECT MGR: WSM	DATE: 1-20-22	SCALE: NTS	JOB NO 212635	
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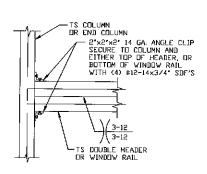
CONNECTION DETAILS



COLUMN OR WINDOW RAIL/WALL GIRT TO COLUMN CONNECTION DETAIL

SCALE: NTS

6



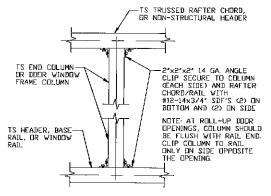
DOUBLE HEADER
TO COLUMN
CONNECTION DETAIL
SCALE: NTS

TS CDLUMN
OR END COLUMN

2'x2'x2' 14 GA. ANGLE CLIP
SECURE TO COLUMN AND
EITHER TIP DF HEADER, OR
BUTTOM OF WINDOW RAIL
WITH (4) #12-14x3/4' SDF'S

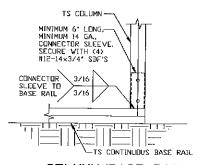
TS LACED HEADER

LACED HEADER
TO COLUMN
CONNECTION DETAIL
SCALE: NTS

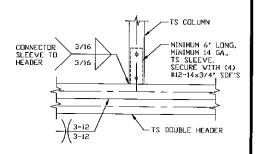


COLUMN TO HEADER, BASE RAIL, OR WINDOW RAIL CONNECTION DETAIL

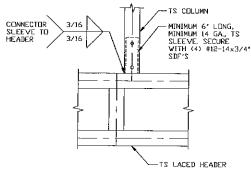
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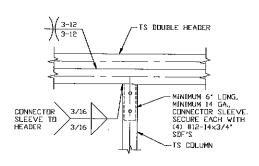
8 COLUMN/BASE RAIL CONNECTION DETAIL SCALE: NTS



9 COLUMN/ DOUBLE HEADER CONNECTION DETAIL SCALE: NTS



PA SCALE: NTS



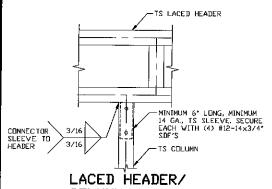
10 DOUBLE HEADER/
COLUMN
CONNECTION DETAIL
SCALE: NTS

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	ν.

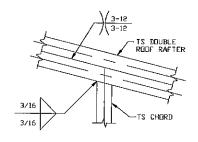
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	DATE: 1-20-22 SHT. 13	SCALE: NTS DWG. ND: SK-3		ND: 21263S REV: 0

CONNECTION DETAILS



TS ROOF RAFTER 3/16 CADHO 2T 3/16

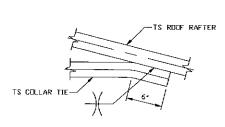


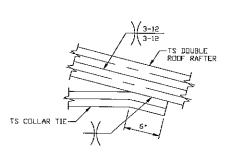
CULUMN CONNECTION DETAIL SCALE: NTS

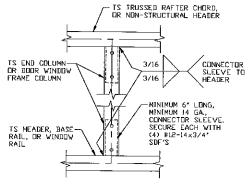
10A

RAFTER TO CHURD CONNECTION DETAIL 11

DOUBLE RAFTER TO CHORD CONNECTION DETAIL 11A SCALE: NTS



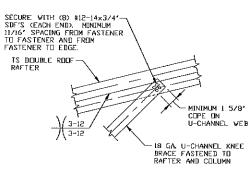


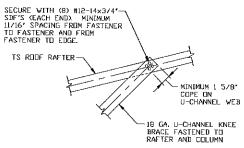


COLLAR TIE CONNECTION DETAIL SCALE: NTS

COLLAR TIE CONNECTION DETAIL 12A

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





U-CHANNEL TO RAFTER CONNECTION DETAIL SCALE: NTS

U-CHANNEL TO RAFTER CONNECTION DETAIL SCALE: NTS

DRAWN BY: JG

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FIVE STAR METAL STRUCTURES, LLC P.O. BOX 1186 TOAST, NC 27049 30'-0"x20'-0" ENCLOSED STRUCTURE

<u>Project Mgr. Wsm</u>

DATE: 1-20-22 SCALE: NTS DWG. ND: SK-3

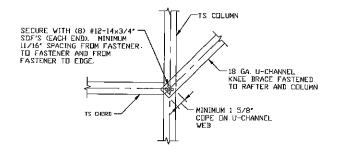
ND: 21263S

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SHT. 14 CLIENT: FIVE STAR

REV. 0

CONNECTION DETAILS



U-CHANNEL TO COLUMN CONNECTION DETAIL

SCALE: NTS

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PROJECT MGR: WSM	DATE: 1-20-22	SCALE: NTS	JDB ND: 21263S	
CHECKED BY: PDH	TOAST, NC 27049 30'-0"x20'-0" ENCLOSED STRUCTURE			
DRAWN BY: JG	FIVE STA	AR METAL STRU P.O. BOX 11		

DWG. ND: SK-3

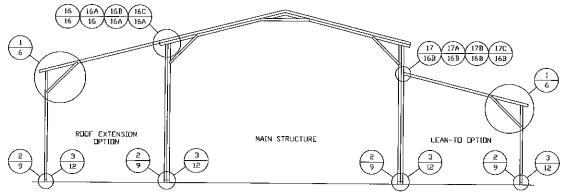
REV. 0

SHT. 15

CLIENT: FIVE STAR

BOX EAVE RAFTER LEAN-TO OPTIONS

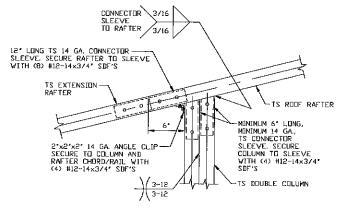
NOTE: DOUBLE TUBE RAFTER SHOWN. PLEASE REFER TO SHEETS 5, 5A AND 5B FOR ACTUAL RAFTER SIZE.



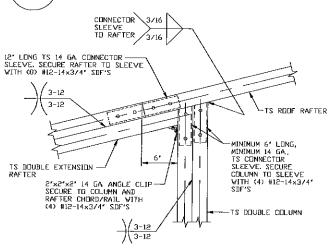
TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

SCALE: NTS

NOTE: REFER TO SHEETS 6, 6A, 6B AND 6C FOR COLUMN HEIGHTS.



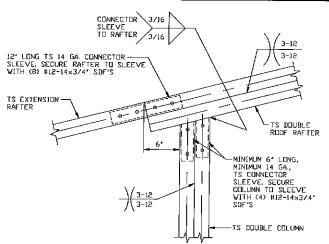
SIDE EXTENSION RAFTER/COLUMN DETAIL FOR SPANS \(\) 10'-0"



SIDE EXTENSION RAFTER/COLUMN DETAIL FOR SPANS 10'-0" < TO \(\) 12'-0"

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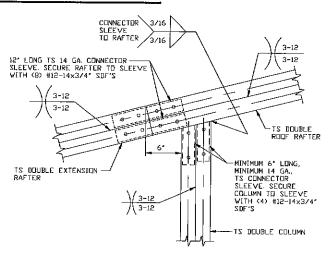
BOX EAVE RAFTER LEAN-TO OPTIONS



SIDE EXTENSION RAFTER/COLUMN DETAIL FOR SPANS ≤ 10'-0"

SCALE: NTS

16B



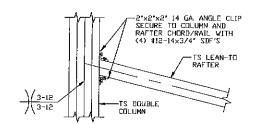
SIDE EXTENSION RAFTER/COLUMN
DETAIL FOR SPANS 10'-0" < TO \(\) 12'-0"

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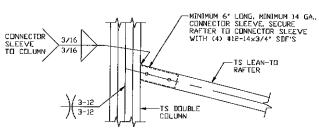
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-	CHECKED BY: PDH	TOAST, NC 27049 30'-0"×20'-0" ENCLOSED STRUCTURE				
	PROJECT MGR: VSM	DATE: 1-20-22	SCALE: NTS	JOB NO: 212635		
	CLIENT: FIVE STAR	SHT. 16A	DAC' ND: 2K-3	REV₁ 0		

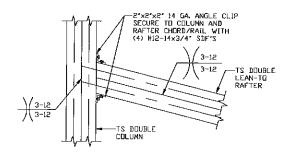
BOX EAVE RAFTER LEAN-TO OPTIONS



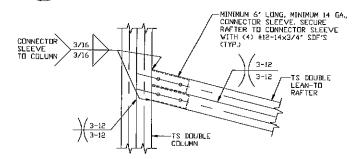
LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS & 10'-0"



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS & 10'-0"



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 10'-0' < TO < 12'-0"



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 10'-0' < TO < 12'-0' SCALE: NTS

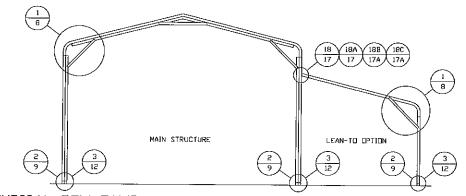
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CHECKED BY: PDH						
PREJECT MGR: WSM	DATE: 1-20-22	SCALE: NTS	JDB	ND: 21263S		
CLIENT: FIVE STAR	SHT. 16B	DVG. NO SK-3		REV. 0		

BOW EAVE RAFTER LEAN-TO OPTIONS

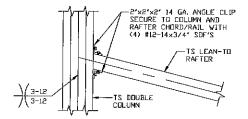
NOTE: DOUBLE TUBE RAFTER SHOWN.
PLEASE REFER TO SHEETS 7, 7A AND 7B FOR ACTUAL RAFTER SIZE.



TYPICAL BOW EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION

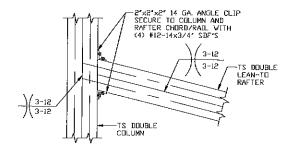
SCALE: NTS

NOTE: REFER TO SHEETS 8, 8A, 8B AND 8C FOR COLUMN HEIGHTS.



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS < 10'-0"

18 SCALE: NTS

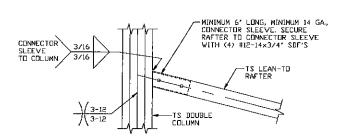


LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 10'-0" < T□ < 12'-0" 18A

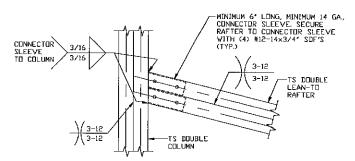
SCALE: NTS

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BOW EAVE RAFTER LEAN-TO OPTIONS



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS & 10'-0"



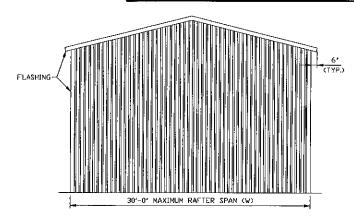
LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 10'-0" < TO < 12'-0"

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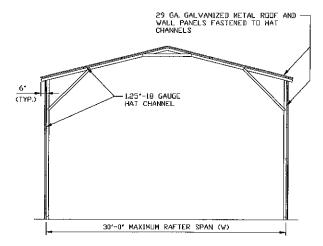
DRAWN BY: JG	FIVE STAR METAL STRUCTURES, LLC P.O. BOX 1186				
CHECKED BY: PDH	30'-0"x2	049 STR	RUCTURE		
PREJECT MGR: VSM	<u>Date: 1-20-22</u>	SCALE: NTS	JDB	ND: 21263S	
CLIENT, FIVE STAP	SHT. 17A	DWG. NEI SK-3		REV. 0	

BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



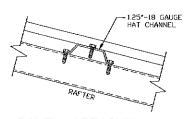
TYPICAL END ELEVATION VERTICAL ROOF/SIDING

SCALE: NTS



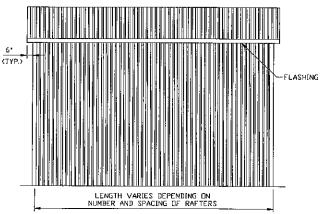
TYPICAL SECTION VERTICAL ROOF/SIDING OPTION

SCALE: NTS



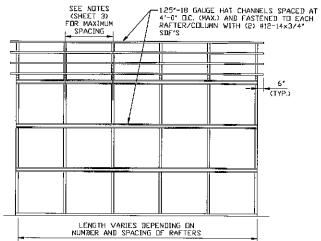
PANEL ATTACHMENT

(ALTERNATE FOR VERTICAL ROOF PANELS) SCALE: NTS



TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING

SCALE: NTS



TYPICAL FRAMING SECTION VERTICAL ROOF/SIDING OPTION WITH TS GIRTS

SCALE: NTS

NOTE: TUBE STEEL (TS) IS ALLOWED TO BE USED IN LIEU OF HAT CHANNEL FOR ROOF PURLINS AND/OR WALL

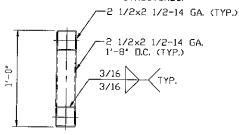
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CHECKED BY: PDH	30'-0"x2	049 STRUCTURE			
PROJECT MGR: WSM	DATE: 1-20-22	SCALE: NTS	JOB NO: 21263S		
CLIENT: FIVE STAR	SHT. 18	DWG. NO SK-3	REV. 0		

SIDE WALL HEADER OPTIONS

NOTE: HEADER DESIGN DOES NOT TAKE IN TO ACCOUNT ADDITIONAL ROOF LOADING FROM ATTACHED LEAN-TO STRUCTURES.



TS DOUBLE HEADER

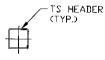
HEADER DETAIL FOR SIDE WALL DOOR OPENINGS 8'-0" < LENGTH ≤ 14'-0"

SCALE: NTS

HEADER DETAIL FOR SIDE WALL DOOR OPENINGS 5'-0" < LENGTH ≤ 8'-0"

SCALE: NTS



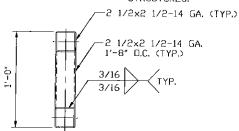


HEADER DETAIL FOR SIDE WALL DOOR OPENINGS & 5'-0'

SCALE: NTS

END WALL HEADER OPTIONS

NOTE: HEADER DESIGN DOES NOT TAKE IN TO ACCOUNT ADDITIONAL ROOF LOADING FROM ATTACHED LEAN-TO STRUCTURES.



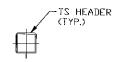
TS DOUBLE HEADER

HEADER DETAIL FOR SIDE WALL DOOR OPENINGS 12'-0" < LENGTH < 14'-0"

SCALE: NTS

HEADER DETAIL FOR SIDE WALL DOOR OPENINGS 7'-0" < LENGTH < 12'-0"

SCALE: NTS



HEADER DETAIL FOR END WALL DOOR OPENINGS < 7'-0"

SCALE: NTS

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