

## **STRUCTURAL DESIGN ENCLOSED BUILDING**

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

**29 February 2024  
Revision 1  
M&A Project No. 23184S**

**Prepared for:**

**First Generation Metal Buildings, LLC  
790 Long Hill Road  
Pilot Mountain, NC 27041**

**Prepared by:**

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

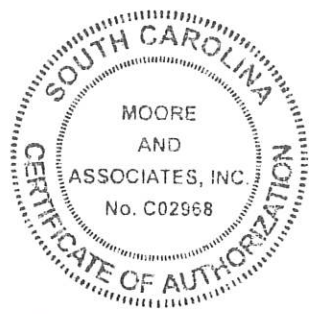
**1009 East Avenue  
North Augusta, SC 29841**

**401 S. Main St., Suite 200  
Mt. Airy, NC 27030**

**Validity Notice  
Plans Expiration Date: 1 March 2025  
Plans are valid for one year from issuance date**



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**DRAWN BY: JG**

**CHECKED BY: AM**

**PROJECT MGR: JRP**

**CLIENT: FGMB**

**FIRST GENERATION METAL BUILDINGS, LLC**  
790 LONG HILL ROAD  
PILOT MOUNTAIN, NC 27041  
30'-0" x 16'-0" ENCLOSED STRUCTURE

**DATE: 2-29-24**

**SHT. 1**

**SCALE: NTS**

**DWG. NO: SK-3**

**JOB NO: 23184S**

**REV: 1**



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## INSTALLATION NOTES AND SPECIFICATIONS

1. DESIGN IS FOR MAXIMUM 30'-0" WIDE x 16'-0" EAVE HEIGHT ENCLOSED STRUCTURES.
  2. DESIGN WAS DONE IN ACCORDANCE WITH ALL THE APPLICABLE BUILDING CODES LISTED ON SHEET 3A.
  3. DESIGN LOADS ARE AS FOLLOWS:
    - A) ROOF DEAD LOADS:
      - SELF-WEIGHT = 1.5 PSF
      - MEP = 0 PSF
      - COLLATERAL = 0 PSF
    - B) ROOF LIVE LOAD = 12 PSF
    - C) FLOOR LIVE LOAD = 100 PSF (4" CONCRETE SLAB-ON-GRADE)
    - D) GROUND SNOW LOAD = 35 PSF  
= 20 PSF WITH U-CHANNEL PEAK BRACE (W < 16'-0")
- NOTE: UNBALANCED LOADING DUE TO SNOW DRIFT/SLIDING FROM AN ADJACENT TALLER STRUCTURE HAS NOT BEEN EVALUATED. DROP-DOWN LEAN-TO'S (THOSE CAUSING A HEIGHT DIFFERENTIAL FROM THE MAIN STRUCTURE) SHALL ONLY BE USED FOR GROUND SNOW LOADS  $\leq$  20 PSF.
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 = 5.0 FEET (UNLESS NOTED OTHERWISE).
  6. END WALL COLUMNS (POSTS) ARE EQUIVALENT TO SIDE WALL COLUMNS IN SIZE AND SPACING (UNLESS NOTED OTHERWISE).
  7. RISK CATEGORY I (NOT FOR HUMAN OCCUPANCY).
  8. WIND EXPOSURE CATEGORY B.
  9. STRUCTURAL ANALYSIS/DESIGN IS BASED ON TS MEETING THE REQUIREMENTS OF ASTM A653 TYPE SS GRADE 50 WITH MINIMUM YIELD STRENGTH ( $F_y$ ) OF 50 KSI AND GALVANIZING MEETING THE MINIMUM REQUIREMENTS OF G60.
  10. 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).
  11. CONNECTOR SLEEVES ARE MINIMUM 6' LONG, TS 2 1/4" x 2 1/4" - 14 GAUGE FOR 2 1/2" x 2 1/4"-14 GAUGE FRAMING MEMBERS (UNLESS NOTED OTHERWISE).
  12. AVERAGE FASTENER SPACING ON-CENTERS = 10 INCHES.
  13. 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.
  14. GROUND ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL AT OR WITHIN 6" OF EACH 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:
    - SOIL SITE CLASS = D
    - RISK CATEGORY I
    - $R = 3.25$                        $I_E = 1.0$
    - $S_{DS} = 2.625 g$                  $V = C_s W$
    - $S_{DI} = 2.13 g$
  17. 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.
  18. IF MORE THAN 50% OF COLUMNS (LEGS) ARE REMOVED IN ANY LONGITUDINAL (SIDE) WALLS OF A BUILDING, THE ENGINEER IS TO BE NOTIFIED TO DETERMINE WHETHER PORTAL FRAMES OR OTHER LONGITUDINAL STABILITY ELEMENTS WILL BE REQUIRED.
  19. **THIS MASTER DESIGN IS A GENERIC MASTER DESIGN PRIMARILY INTENDED FOR PLANT FABRICATION AND ERECTION AKIN TO SHOP DRAWINGS. THE MASTER DESIGN IS NOT PRIMARILY INTENDED FOR CONSTRUCTION PERMIT. WHEN APPLYING FOR BUILDING PERMIT, THE CERTIFIED BUILDING OFFICIAL MUST BE CONSULTED TO VERIFY WHETHER THE USE OF THE MASTER DESIGN IS ADEQUATE OR IF A SITE-SPECIFIC DESIGN IS REQUIRED FOR BUILDING PERMIT. ANY VARIATION FROM THE ANALYSIS/DESIGN PARAMETERS OF THE MASTER DESIGN REQUIRES THE DEVELOPMENT OF A SITE-SPECIFIC DESIGN.**

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CLIENT: FGMB

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30'-0"x16'-0" ENCLOSED STRUCTURE

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SCALE: NTS

JOB NO: 23184S

SHT. 3

DWG. NO: SK-3

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## LIST OF APPLICABLE BUILDING CODES

2021 INTERNATIONAL BUILDING CODE (IBC 2021)

2018 INTERNATIONAL BUILDING CODE (IBC 2018)

2015 INTERNATIONAL BUILDING CODE (IBC 2015)

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

2021 SOUTH CAROLINA BUILDING CODE  
(ADOPTS THE IBC 2021 WITH AMENDMENTS)

VIRGINIA UNIFORM STATEWIDE BUILDING CODE, PART I, CONSTRUCTION  
(ADOPTS THE IBC 2021 WITH AMENDMENTS)

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SHT. 3A

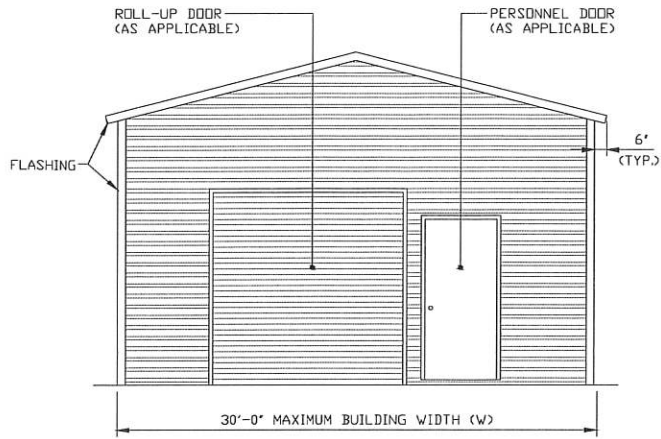
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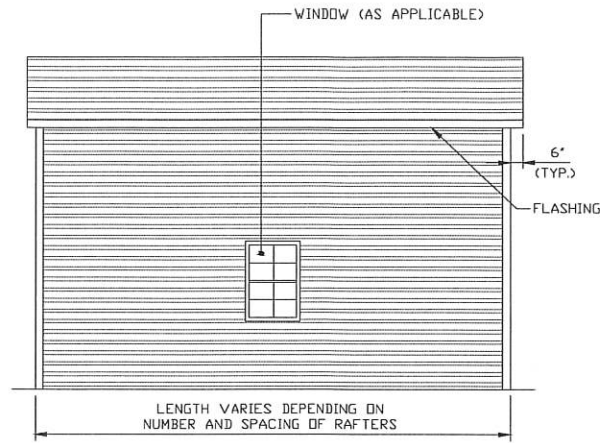


## BOX EAVE FRAME RAFTER STRUCTURE



**TYPICAL END ELEVATION**

SCALE: NTS



**TYPICAL SIDE ELEVATION**

SCALE: NTS

NOTE: HORIZONTAL ROOF PANELING ONLY APPLICABLE  
FOR WIND SPEEDS  $\leq 130$  MPH AND GROUND SNOW  
LOAD  $\leq 30$  PSF.

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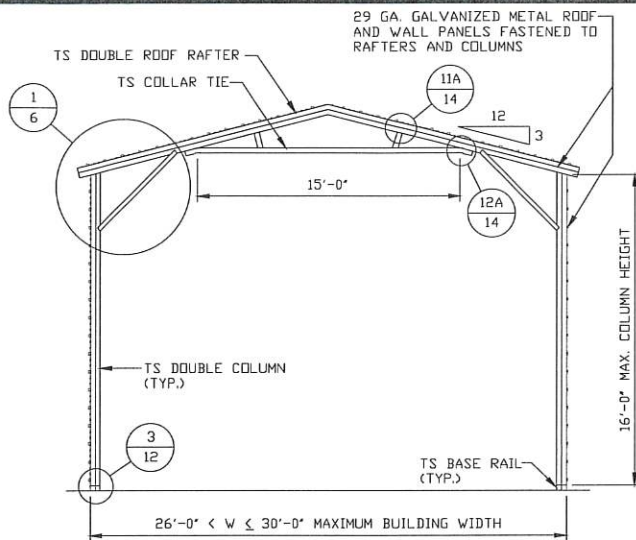
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SHT. 4

DWG. NO: SK-3

REV: 1

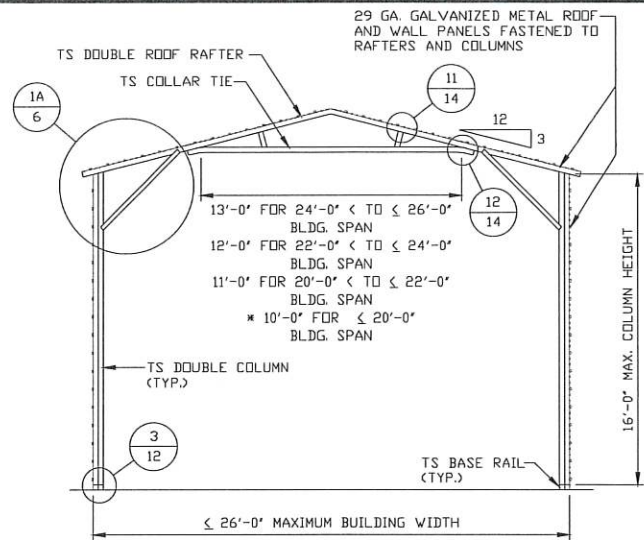
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### TYPICAL INTERIOR RAFTER/ COLUMN FRAME SECTION

SCALE: NTS

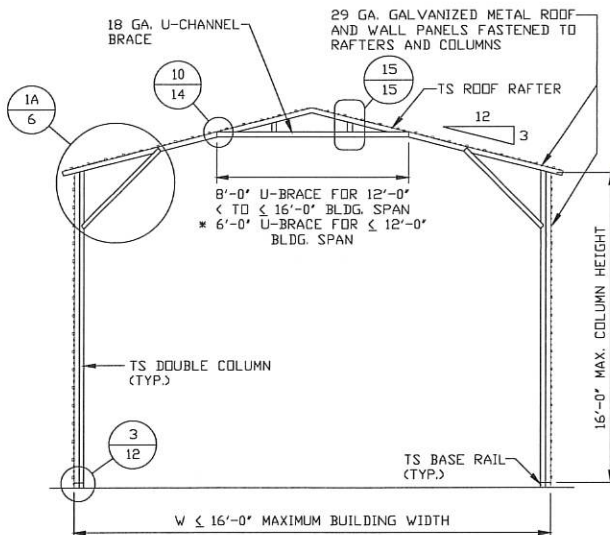
\* NOTE: SINGLE TUBE RAFTER CAN BE USED  
FOR GROUND SNOW LOAD  $\leq 20$  PSF.



### TYPICAL INTERIOR RAFTER/ COLUMN FRAME SECTION

SCALE: NTS

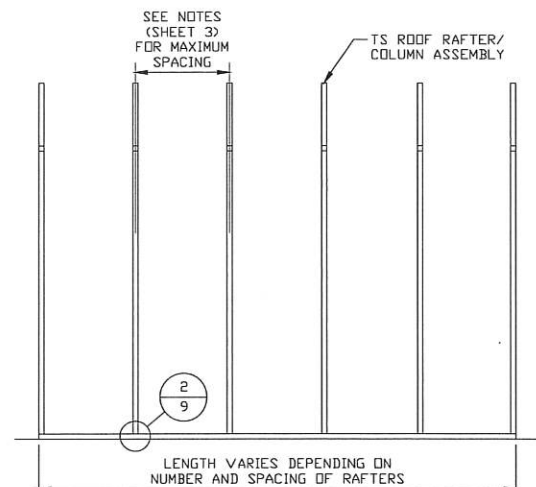
\* NOTE: VERTICAL STRUTS NOT REQUIRED  
FOR THESE TIE LENGTHS.



### TYPICAL INTERIOR RAFTER/ COLUMN FRAME SECTION

SCALE: NTS

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### TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

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SHT. 5

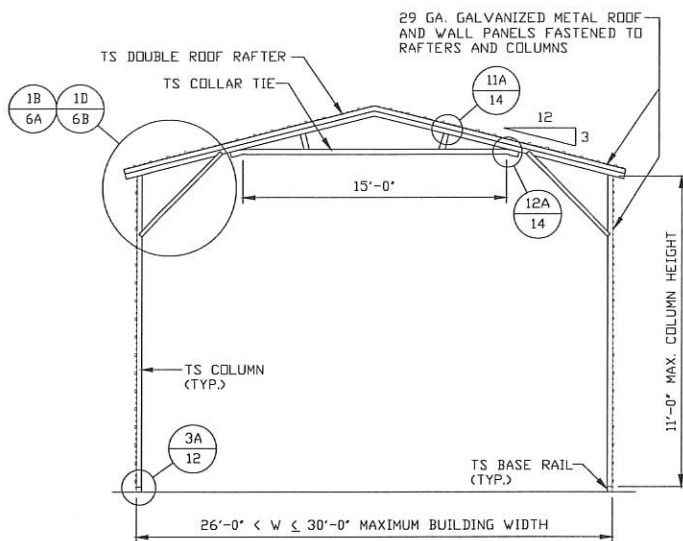
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DWG. NO: SK-3

JOB NO: 23104S

REV: 1

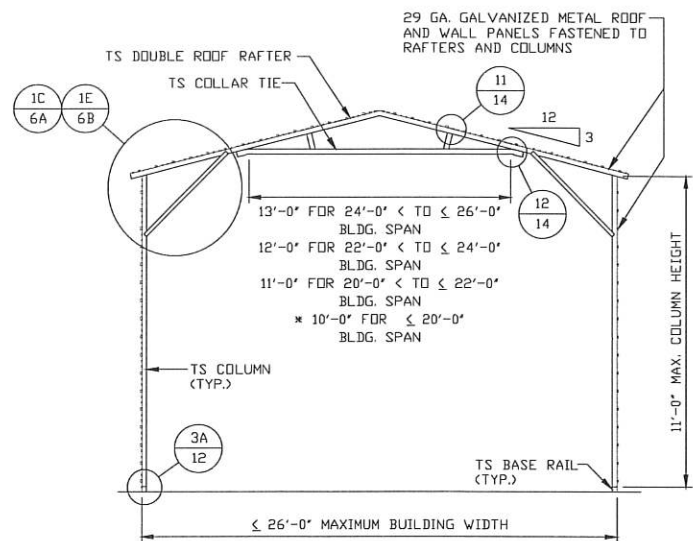
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### TYPICAL INTERIOR RAFTER/ COLUMN FRAME SECTION

SCALE: NTS

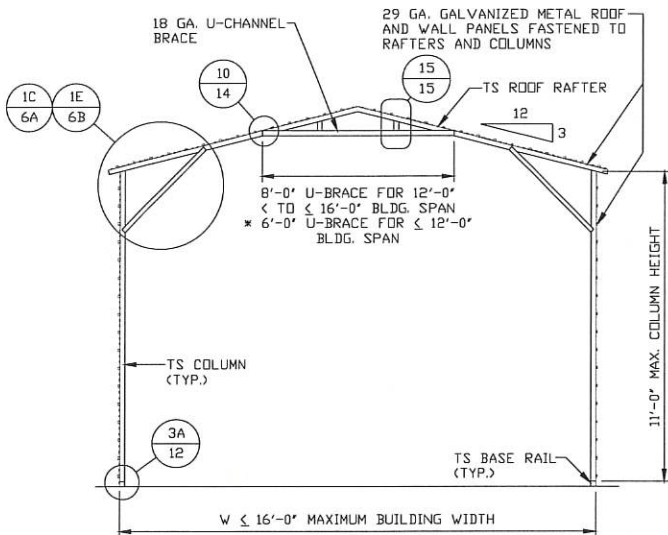
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### TYPICAL INTERIOR RAFTER/ COLUMN FRAME SECTION

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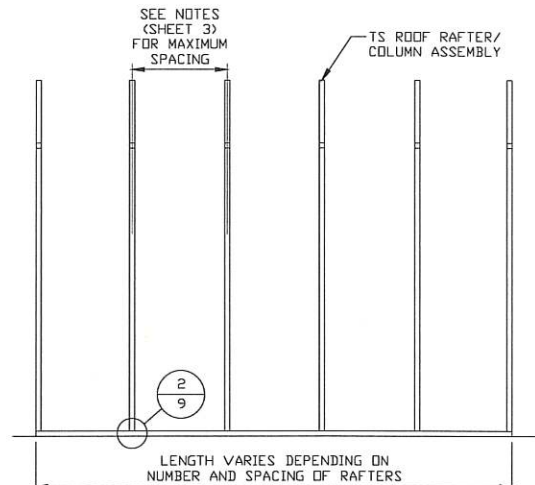
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### TYPICAL INTERIOR RAFTER/ COLUMN FRAME SECTION

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### TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

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SHT. 5A

SCALE: NTS

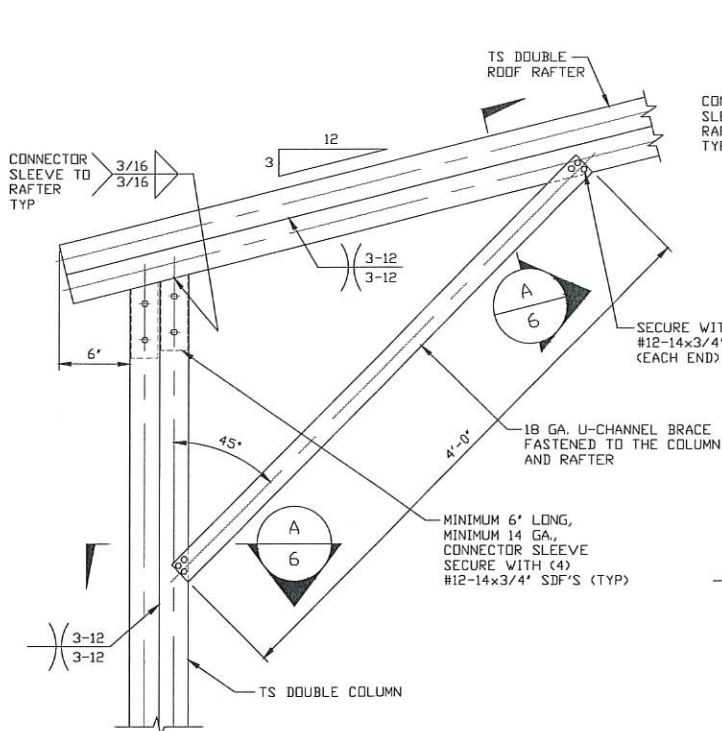
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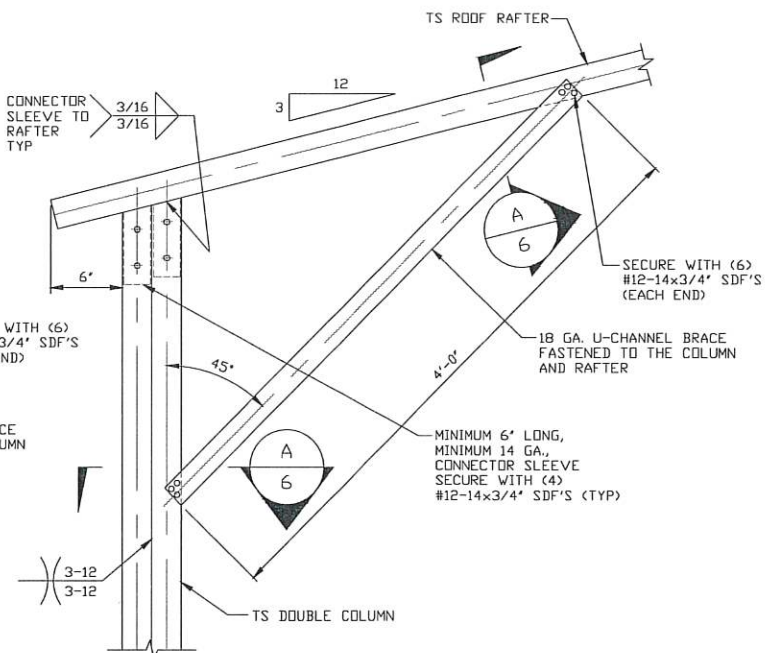
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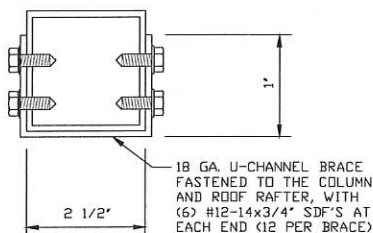




**1** BOX EAVE RAFTER/CORNER POST  
CONNECTION DETAIL  
FOR HEIGHTS 11'-0" < TO ≤ 16'-0"  
SCALE: NTS



**1A** BOX EAVE RAFTER/CORNER POST  
CONNECTION DETAIL  
FOR HEIGHTS 11'-0" < TO ≤ 16'-0"  
SCALE: NTS



**A** BRACE SECTION  
SCALE: NTS  
NOTE: DOUBLE COLUMN AND DOUBLE  
RAFTER NOT SHOWN FOR CLARITY.

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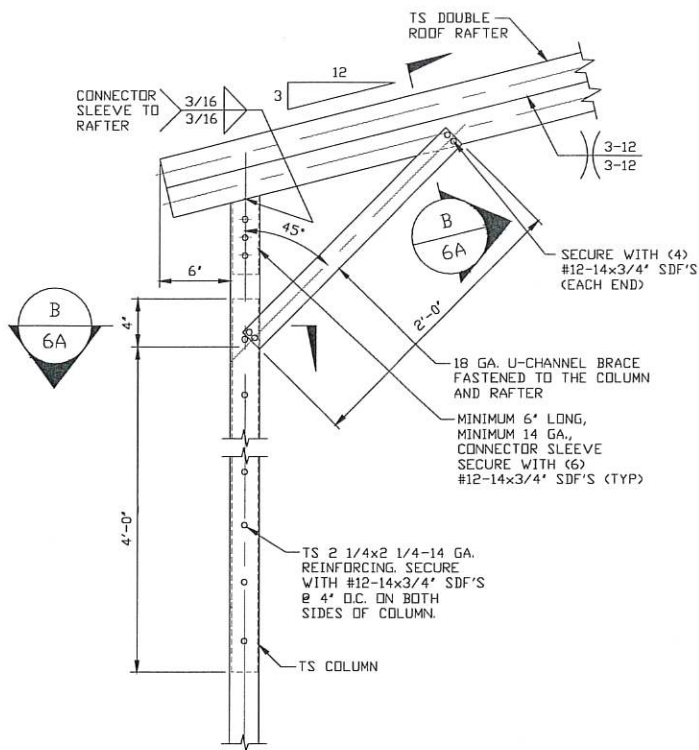
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SHT. 6

DWG. NO: SK-3

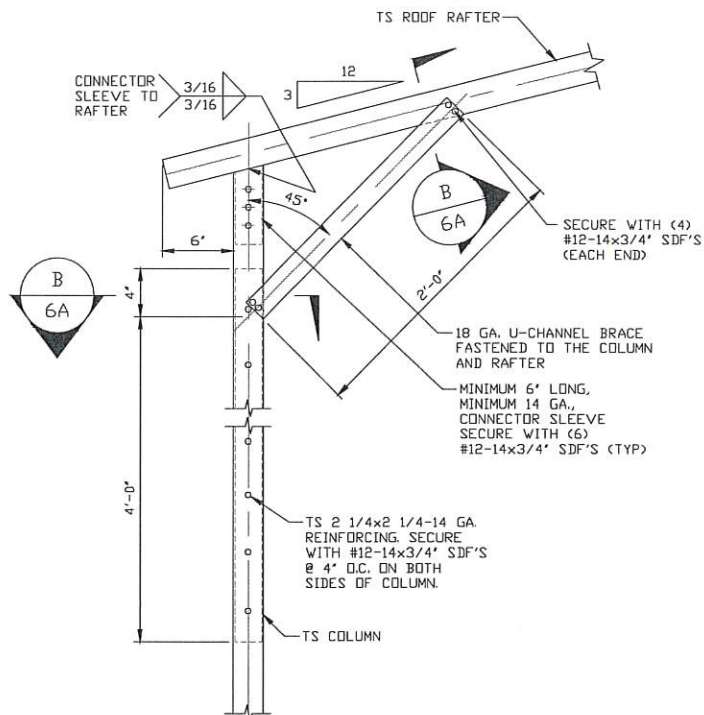
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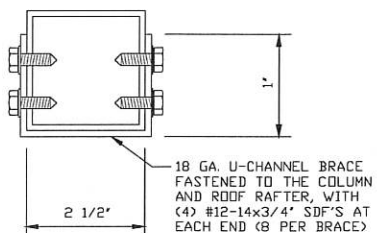
**1B** BOX EAVE RAFTER/CORNER POST  
CONNECTION DETAIL  
FOR HEIGHTS 9'-0" < TO ≤ 11'-0"

SCALE: NTS



**1C** BOX EAVE RAFTER/CORNER POST  
CONNECTION DETAIL  
FOR HEIGHTS 9'-0" < TO ≤ 11'-0"

SCALE: NTS



**B** BRACE SECTION

SCALE: NTS

NOTE: DOUBLE RAFTER NOT SHOWN  
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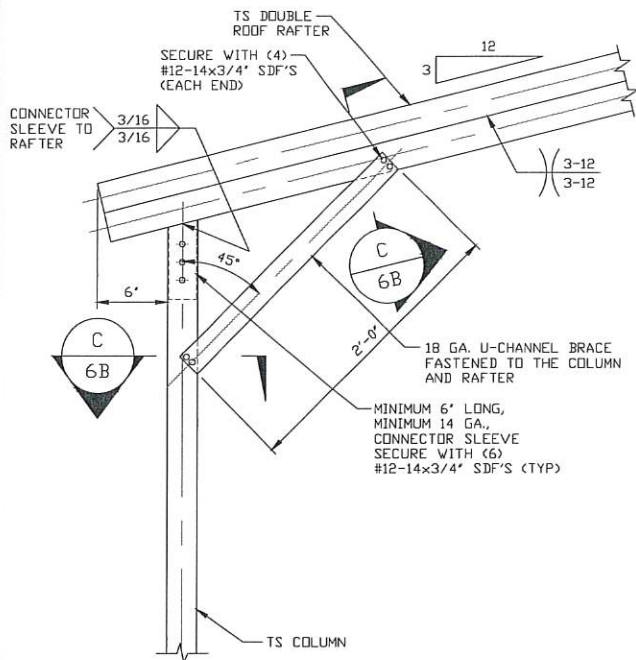
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SHT. 6A

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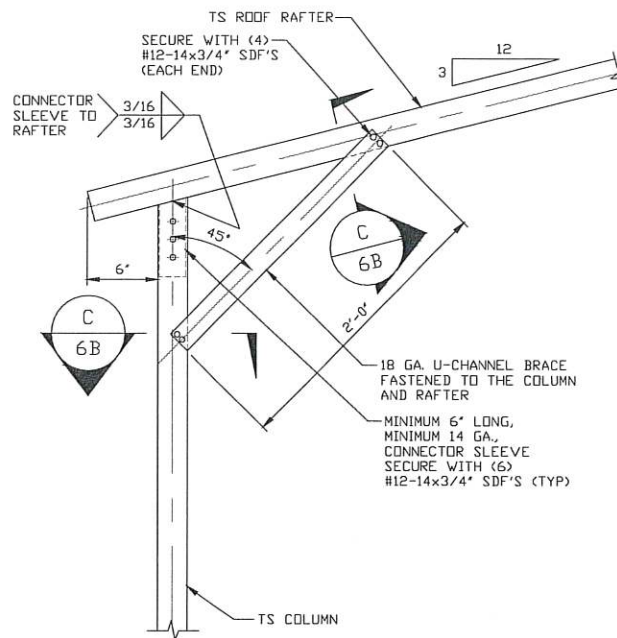
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**BOX EAVE RAFTER/CORNER  
POST CONNECTION DETAIL  
FOR HEIGHTS ≤ 9'-0"**

**1D**

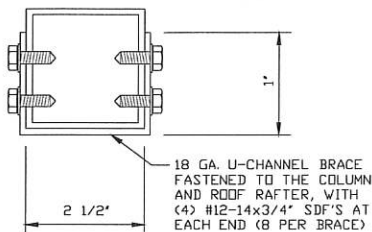
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**BOX EAVE RAFTER/CORNER  
POST CONNECTION DETAIL  
FOR HEIGHTS ≤ 9'-0"**

**1E**

SCALE: NTS



**C**

**BRACE SECTION**

SCALE: NTS

NOTE: DOUBLE RAFTER NOT SHOWN  
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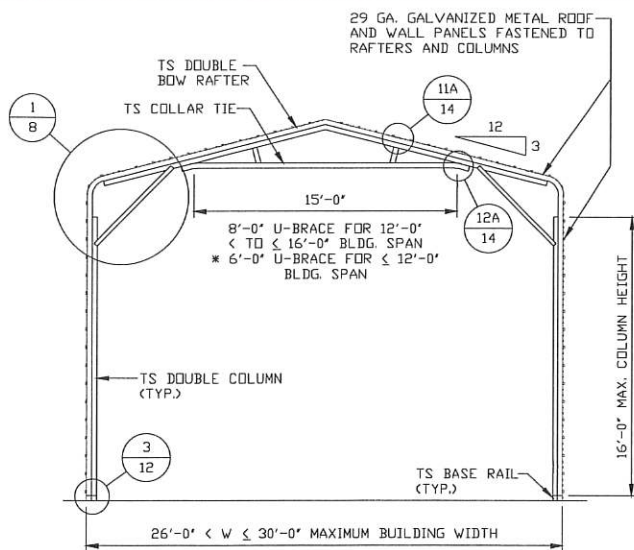
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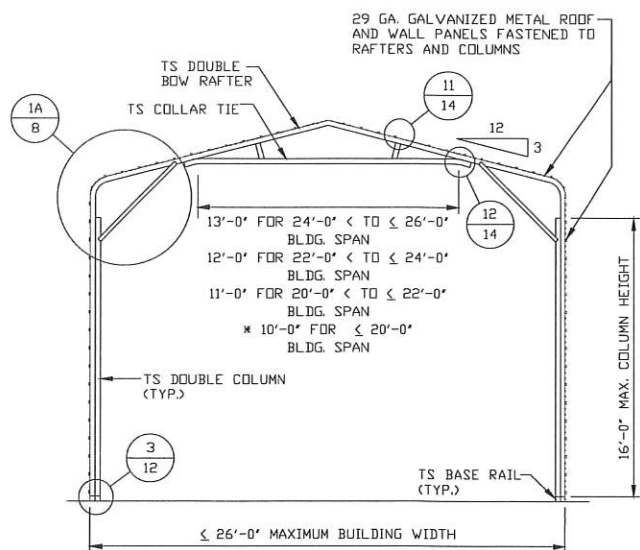




### TYPICAL INTERIOR RAFTER/ COLUMN FRAME SECTION

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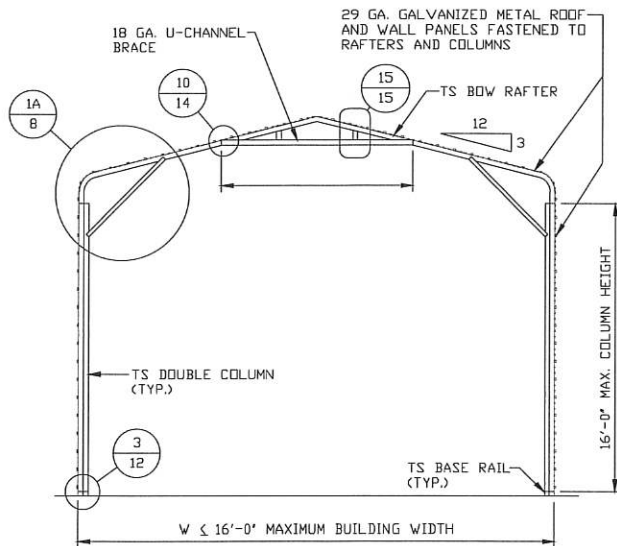
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### TYPICAL INTERIOR RAFTER/ COLUMN FRAME SECTION

SCALE: NTS

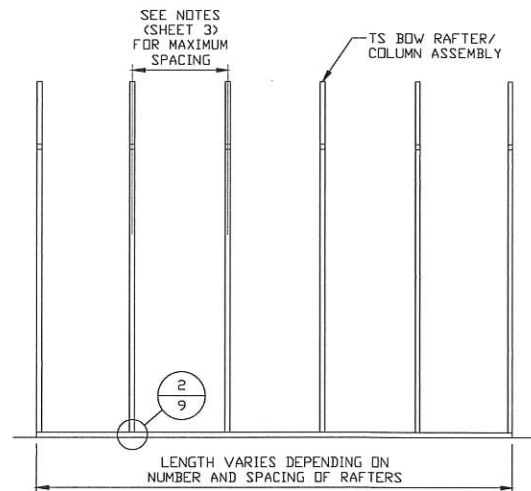
\* NOTE: VERTICAL STRUTS NOT REQUIRED  
FOR THESE TIE LENGTHS.



### TYPICAL INTERIOR RAFTER/ COLUMN FRAME SECTION

SCALE: NTS

\* NOTE: VERTICAL STRUTS NOT REQUIRED  
FOR THESE TIE LENGTHS.



### TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

#### Validity Notice

Plans Expiration Date:

1 March 2025

MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING, INC.

DRAWN BY: JG

CHECKED BY: AM

PROJECT MGR: JRP

CLIENT: FGMB

FIRST GENERATION METAL BUILDINGS, LLC  
790 LONG HILL ROAD  
PILOT MOUNTAIN, NC 27041  
30'-0"x16'-0" ENCLOSED STRUCTURE

DATE: 2-29-24

SCALE: NTS

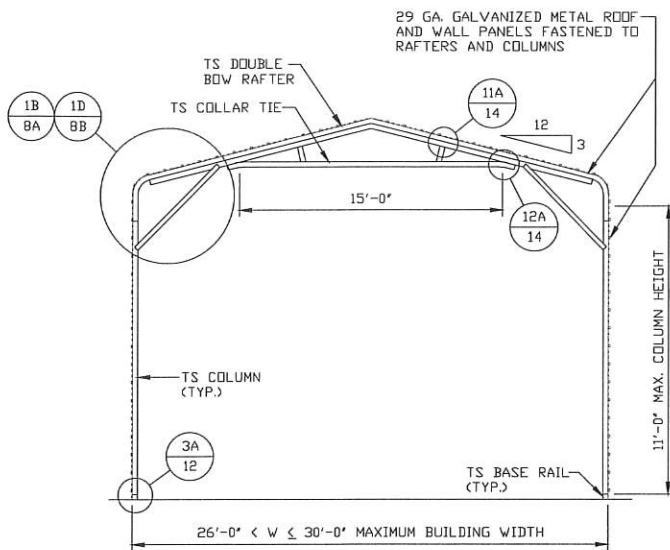
JOB NO: 23184S

SHT. 7

DWG. NO: SK-3

REV: 1

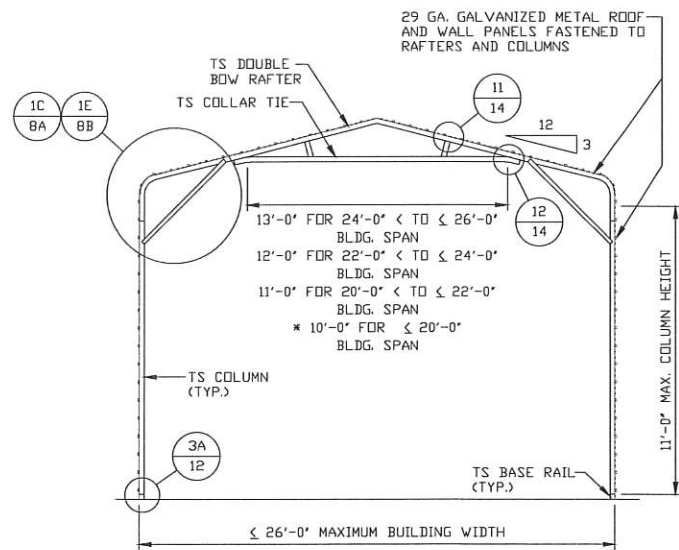
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### TYPICAL INTERIOR RAFTER/ COLUMN FRAME SECTION

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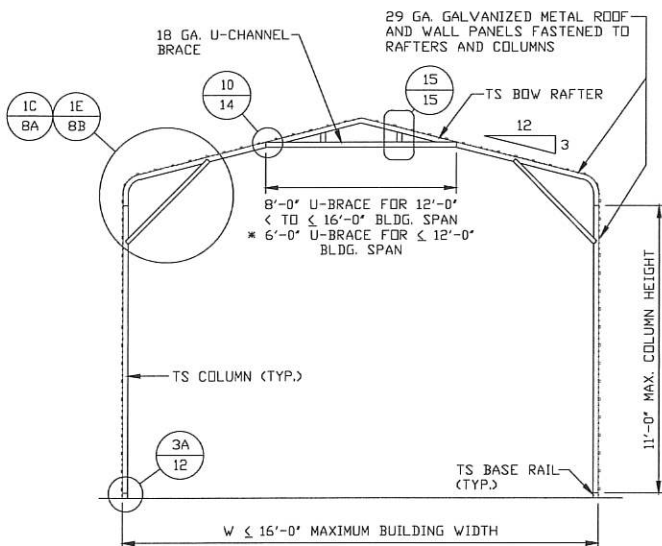
\* NOTE: SINGLE TUBE RAFTER CAN BE USED  
FOR GROUND SNOW LOAD  $\leq 20$  PSF.



### TYPICAL INTERIOR RAFTER/ COLUMN FRAME SECTION

SCALE: NTS

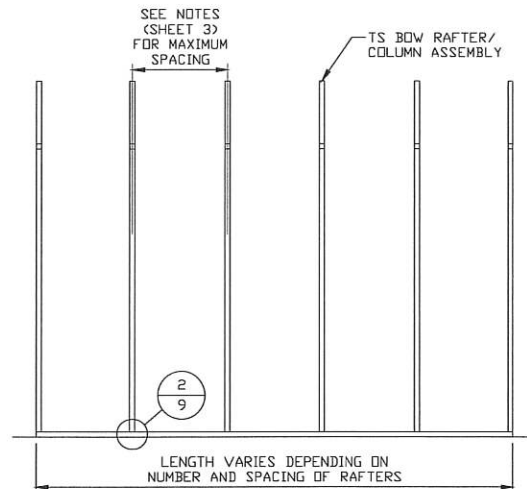
\* NOTE: VERTICAL STRUTS NOT REQUIRED  
FOR THESE TIE LENGTHS.



### TYPICAL INTERIOR RAFTER/ COLUMN FRAME SECTION

SCALE: NTS

\* NOTE: VERTICAL STRUTS NOT REQUIRED  
FOR THESE TIE LENGTHS.



### TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

#### Validity Notice

Plans Expiration Date:

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ENGINEERING AND CONSULTING, INC.

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790 LONG HILL ROAD  
PILOT MOUNTAIN, NC 27041  
30'-0" x 16'-0" ENCLOSED STRUCTURE

DATE: 2-29-24

SCALE: NTS

JOB NO: 23184S

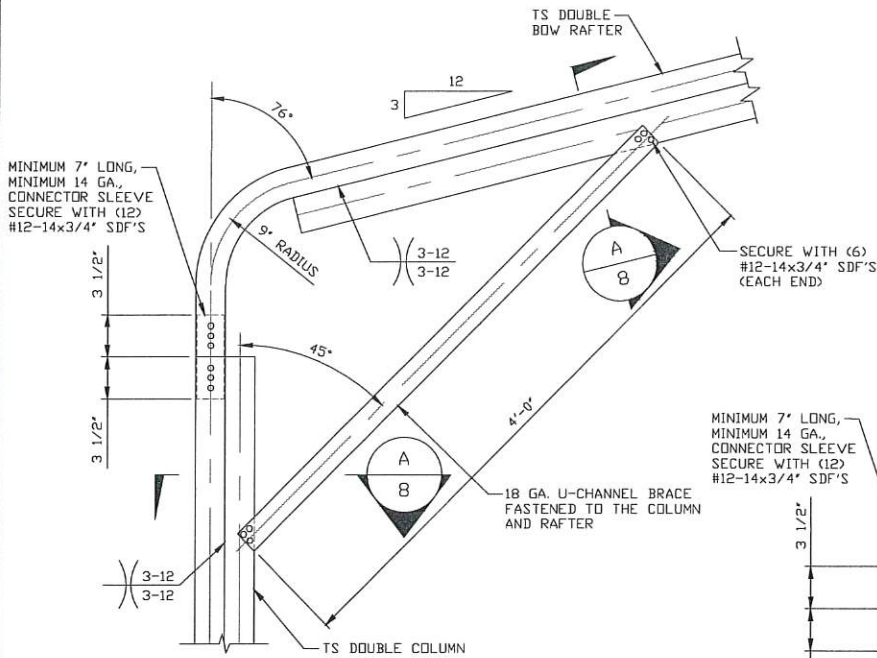
SHT. 7A

DWG. NO: SK-3

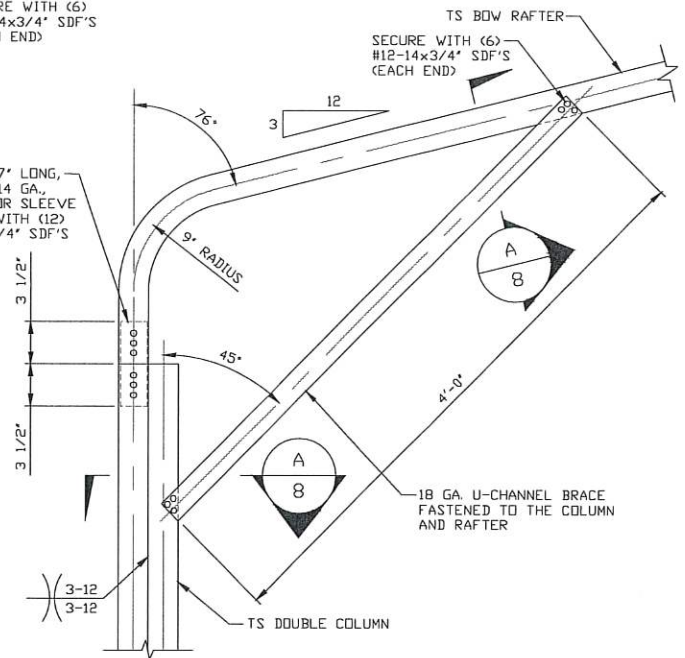
REV: 1

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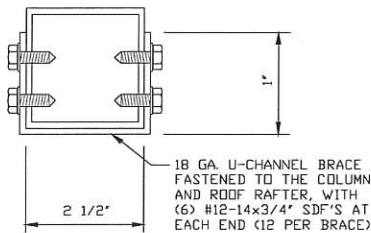




**1** BOX EAVE RAFTER/CORNER POST  
CONNECTION DETAIL  
FOR HEIGHTS 11'-0" < TO ≤ 16'-0"  
SCALE: NTS



**1A** BOX EAVE RAFTER/CORNER POST  
CONNECTION DETAIL  
FOR HEIGHTS 11'-0" < TO ≤ 16'-0"  
SCALE: NTS



**A** BRACE SECTION  
SCALE: NTS  
NOTE: DOUBLE COLUMN AND DOUBLE  
RAFTER NOT SHOWN FOR CLARITY.

### Validity Notice

Plans Expiration Date:

**1 March 2025**

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

**DRAWN BY: JG**

**CHECKED BY: AM**

**PROJECT MGR: JRP**

**CLIENT: FGMB**

FIRST GENERATION METAL BUILDINGS, LLC  
790 LONG HILL ROAD  
PILOT MOUNTAIN, NC 27041  
30'-0" x 16'-0" ENCLOSED STRUCTURE

**DATE: 2-29-24**

**SCALE: NTS**

**JOB NO: 23184S**

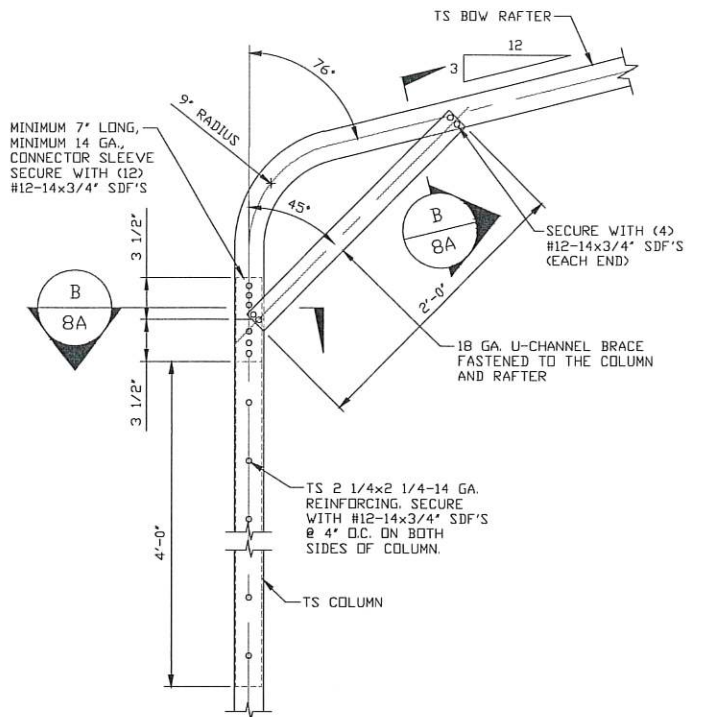
**SHT. 8**

**DWG. NO: SK-3**

**REV: 1**

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BOW EAVE RAFTER/CORNER POST  
CONNECTION DETAIL  
FOR HEIGHTS 9'-0" < TO ≤ 11'-0"



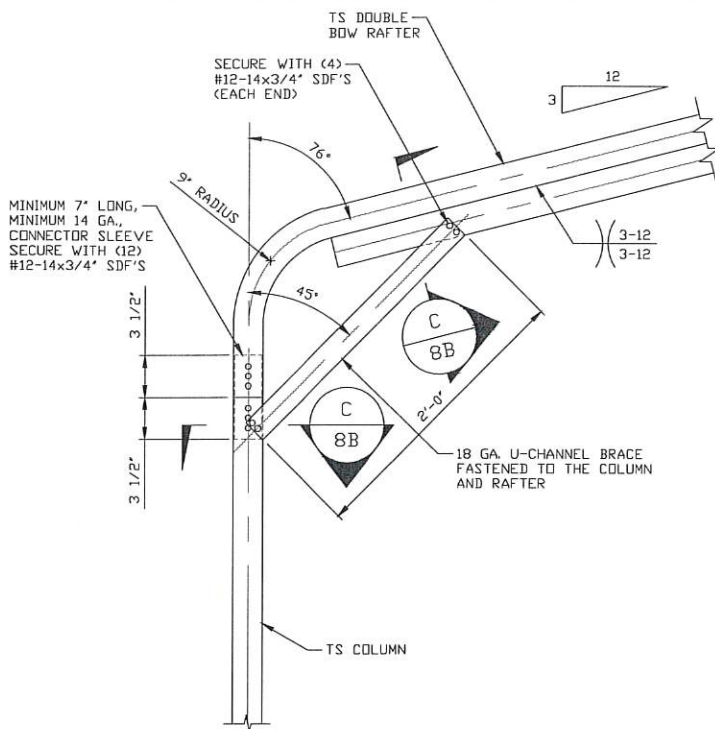
## SCALE: NTS

NOTE: DOUBLE RAFTER NOT SHOWN  
FOR CLARITY.

**1 March 2025**

REV. 1

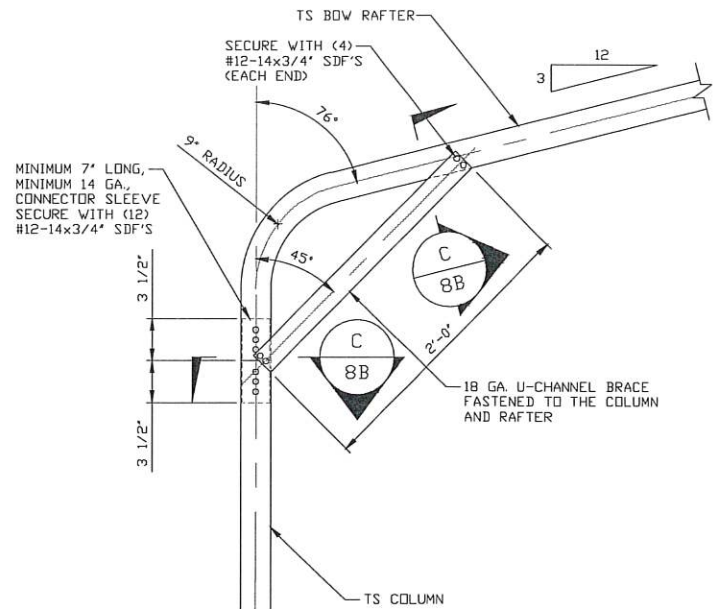
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**BOW EAVE RAFTER/CORNER  
POST CONNECTION DETAIL  
FOR HEIGHTS  $\leq 9'-0''$**

**1D**

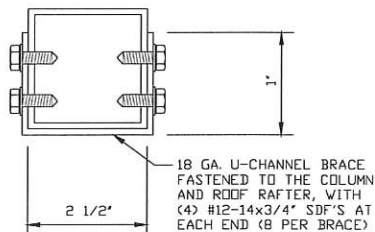
SCALE: NTS



**BOW EAVE RAFTER/CORNER  
POST CONNECTION DETAIL  
FOR HEIGHTS  $\leq 9'-0''$**

**1E**

SCALE: NTS



**C**

**BRACE SECTION**

SCALE: NTS

NOTE: DOUBLE RAFTER NOT SHOWN  
FOR CLARITY.

**Validity Notice**

**Plans Expiration Date:**

**1 March 2025**

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

**DRAWN BY: JG**

**CHECKED BY: AM**

**PROJECT MGR: JRP**

**CLIENT: FGMB**

**FIRST GENERATION METAL BUILDINGS, LLC**  
790 LONG HILL ROAD  
PILOT MOUNTAIN, NC 27041  
30'-0" x 16'-0" ENCLOSED STRUCTURE

**DATE: 2-29-24**

**SCALE: NTS**

**JOB NO: 23184S**

**SHT. 8B**

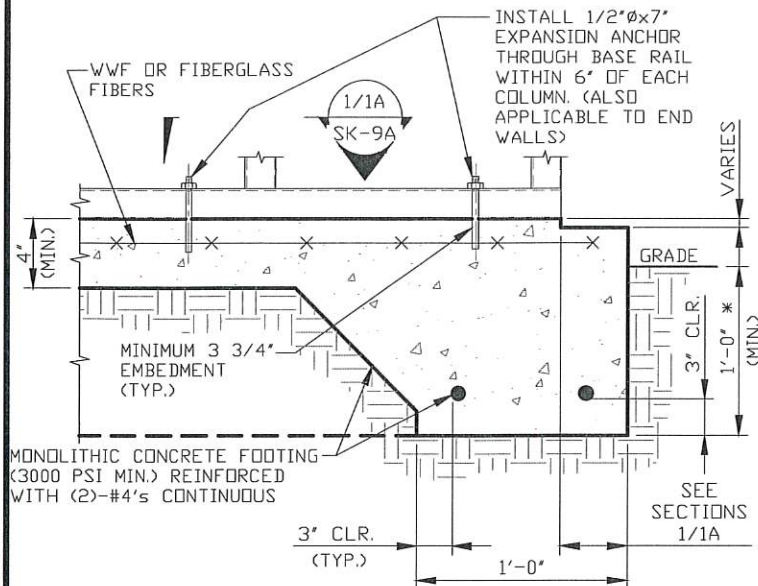
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**REV: 1**

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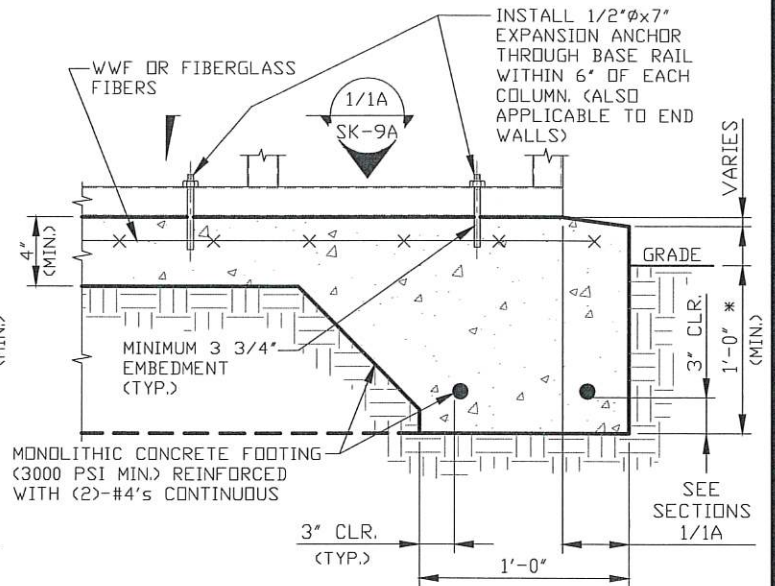
## BASE RAIL ANCHORAGE OPTIONS



2

### CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS  
MINIMUM ANCHOR EDGE DISTANCE IS 4".  
\* COORDINATE WITH LOCAL CODES/ORD.



2A

### CONCRETE SLAB BASE RAIL ANCHORAGE

SCALE: NTS  
MINIMUM ANCHOR EDGE DISTANCE IS 4".  
\* COORDINATE WITH LOCAL CODES/ORD.

## GENERAL NOTES

NOTE: CONCRETE MONOLITHIC SLAB DESIGN BASED ON MINIMUM SOIL BEARING CAPACITY OF 1,500 PSF.

### CONCRETE:

CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.

### COVER OVER REINFORCING STEEL:

FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-318:  
3" IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH OR WEATHER, AND 1 1/2" ELSEWHERE.

### REINFORCING STEEL:

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

### REINFORCEMENT MAY BE BENT IN THE SHOP OR THE FIELD PROVIDED:

1. REINFORCEMENT IS BENT COLD.
2. THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETERS.
3. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT.

### Validity Notice

Plans Expiration Date:

1 March 2025

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

**DRAWN BY: JG**

**CHECKED BY: AM**

**PROJECT MGR: JRP**

**CLIENT: FGMB**

FIRST GENERATION METAL BUILDINGS, LLC  
790 LONG HILL ROAD  
PILOT MOUNTAIN, NC 27041  
30'-0" x 16'-0" ENCLOSED STRUCTURE

**DATE: 2-29-24**

**SCALE: NTS**

**JOB NO: 23184S**

**SHT. 9**

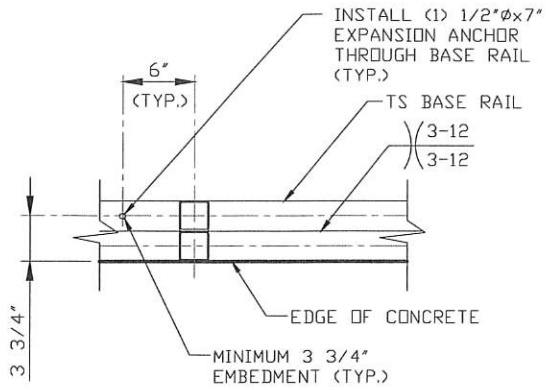
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**REV: 1**

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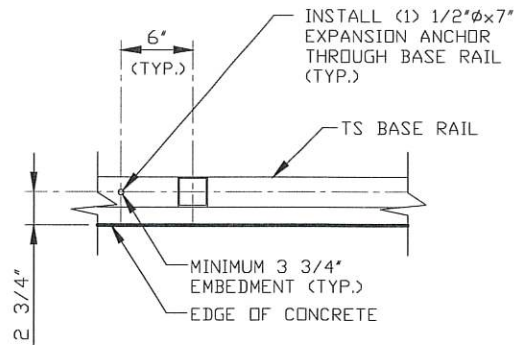


## BASE RAIL ANCHORAGE OPTIONS



1

SECTION  
SCALE: NTS



1A

SECTION  
SCALE: NTS

### Validity Notice

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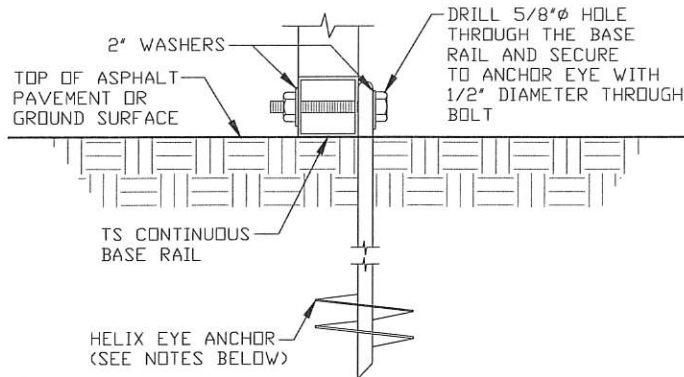
SHT. 9A

DWG. NO: SK-3

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## ADDITIONAL BASE RAIL ANCHORAGE OPTION



2B

### GROUND BASE HELIX ANCHORAGE

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

## GENERAL NOTES

### 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.

### Validity Notice

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DATE: 2-29-24

SCALE: NTS

JOB NO: 23184S

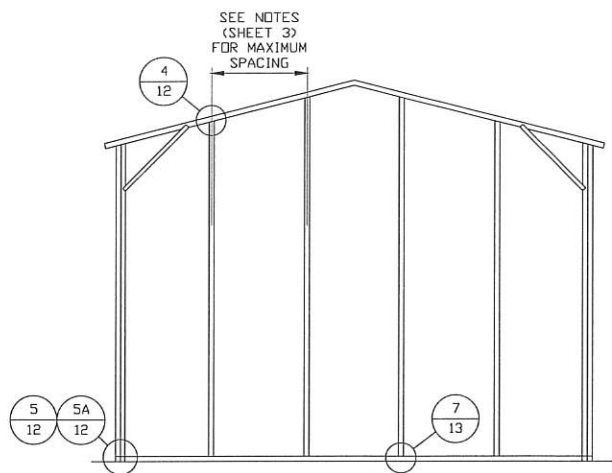
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DWG. NO: SK-3

REV: 1

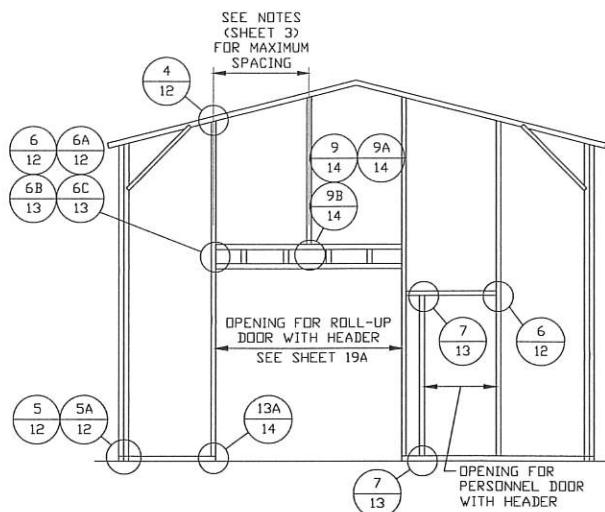
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# BOX EAVE RAFTER END WALL AND SIDE WALL FRAMING SECTIONS



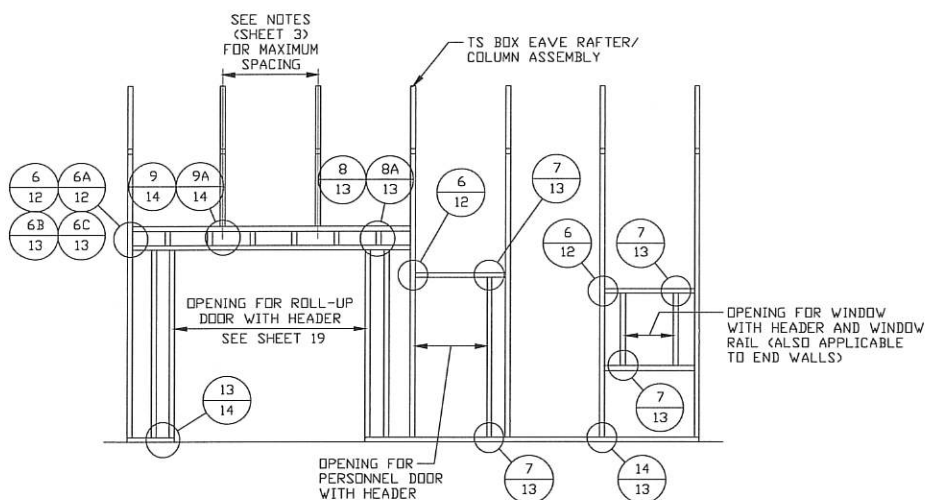
**TYPICAL BOX EAVE RAFTER  
END WALL FRAMING SECTION**

SCALE: NTS



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

SCALE: NTS



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

SCALE: NTS

## Validity Notice

Plans Expiration Date:

1 March 2025

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

**DRAWN BY: JG**

**CHECKED BY: AM**

**PROJECT MGR: JRP**

**CLIENT: FGMB**

**FIRST GENERATION METAL BUILDINGS, LLC**  
790 LONG HILL ROAD  
PILOT MOUNTAIN, NC 27041  
30'-0" x 16'-0" ENCLOSED STRUCTURE

**DATE: 2-29-24**

**SCALE: NTS**

**JOB NO: 23184S**

**SHT. 10**

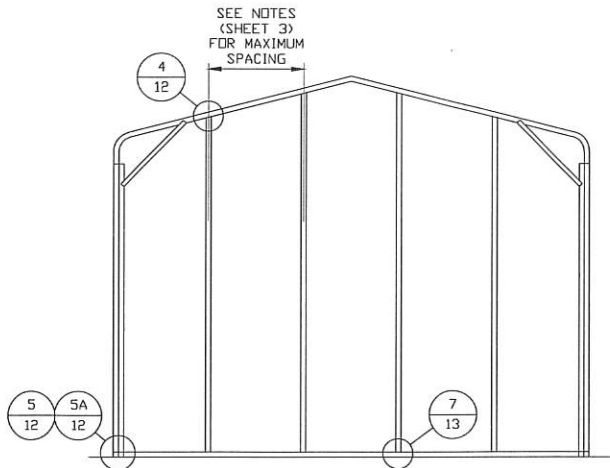
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**REV: 1**

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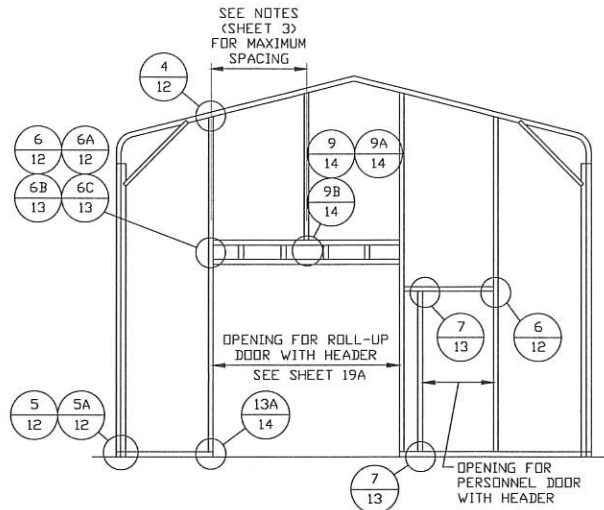


# BOW EAVE RAFTER END WALL AND SIDE WALL FRAMING SECTIONS



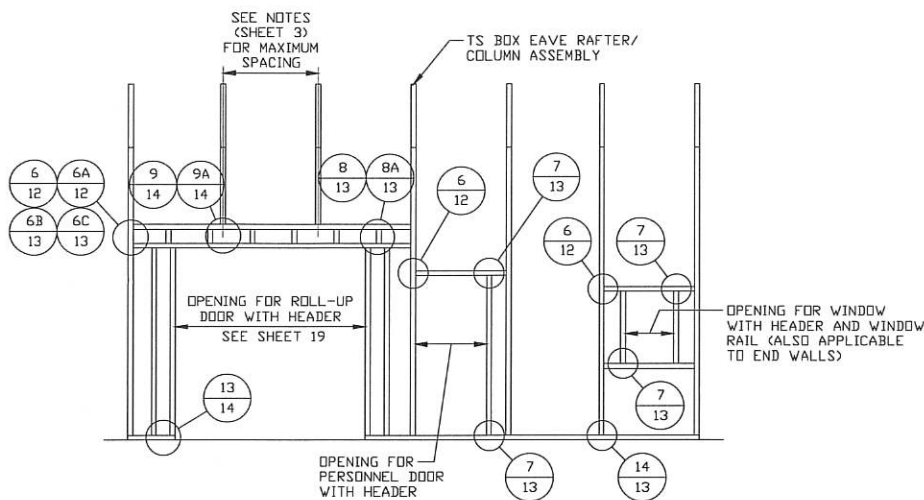
**TYPICAL BOX EAVE RAFTER  
END WALL FRAMING SECTION**

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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790 LONG HILL ROAD  
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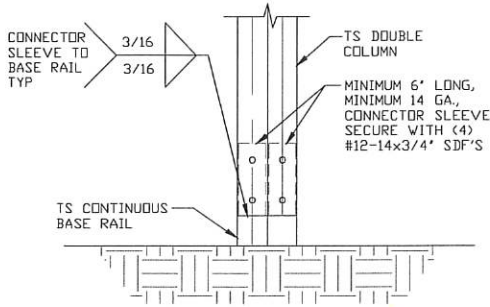
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**DWG. NO: SK-3**

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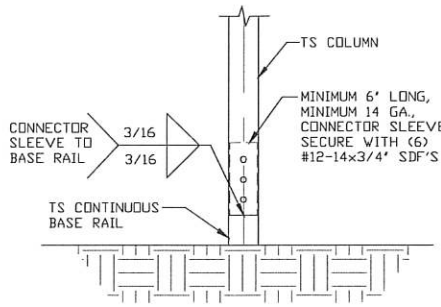
# CONNECTION DETAILS



3

## POST/BASE RAIL CONNECTION DETAIL

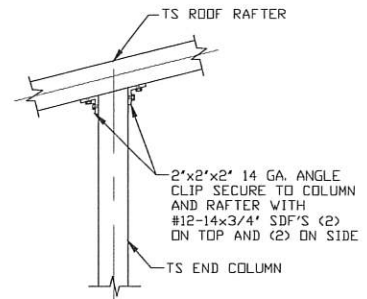
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3A

## POST/BASE RAIL CONNECTION DETAIL

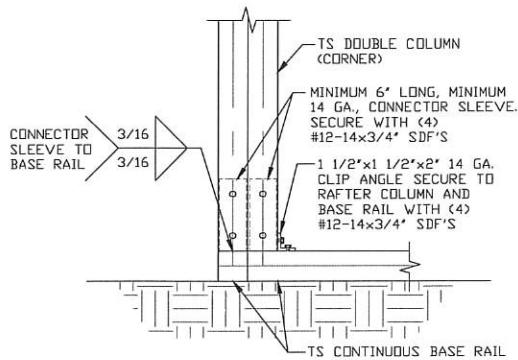
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4

## END COLUMN/RAFTER CONNECTION DETAIL

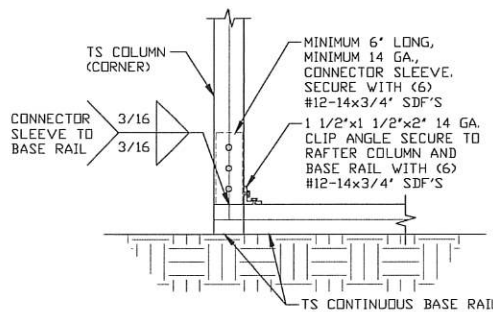
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5

## END COLUMN/BASE RAIL CONNECTION DETAIL

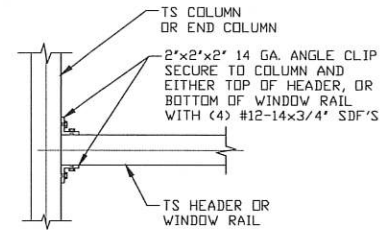
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5A

## END COLUMN/BASE RAIL CONNECTION DETAIL

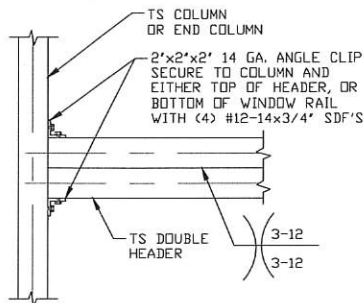
SCALE: NTS



6

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

SCALE: NTS



6A

## DOUBLE HEADER TO COLUMN CONNECTION DETAIL

SCALE: NTS

**Validity Notice**

**Plans Expiration Date:**

**1 March 2025**

MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING, INC.

DRAWN BY: JG

CHECKED BY: AM

PROJECT MGR: JRP

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FIRST GENERATION METAL BUILDINGS, LLC  
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30'-0" x 16'-0" ENCLOSED STRUCTURE

DATE: 2-29-24

SHT. 12

SCALE: NTS

DWG. NO: SK-3

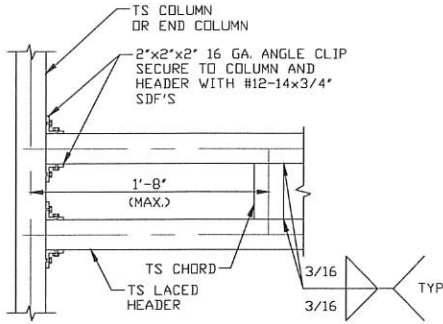
JOB NO: 23184S

REV: 1

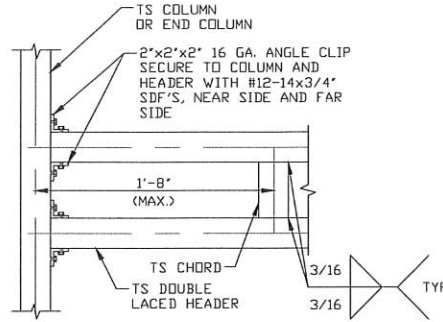
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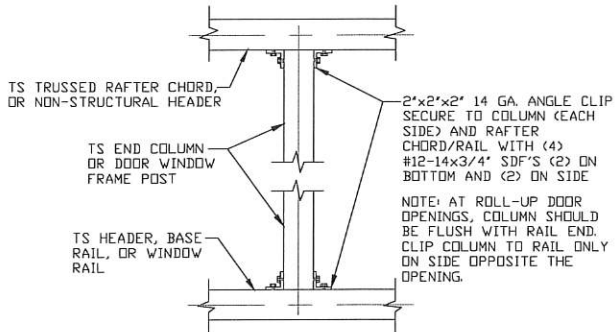
## CONNECTION DETAILS



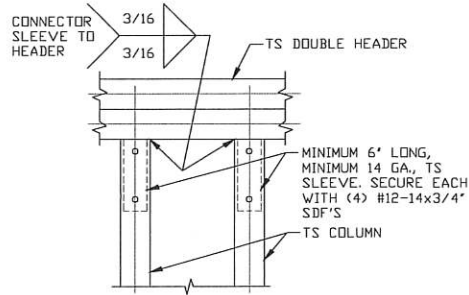
**6B**  
**LACED HEADER  
TO COLUMN  
CONNECTION DETAIL**  
SCALE: NTS



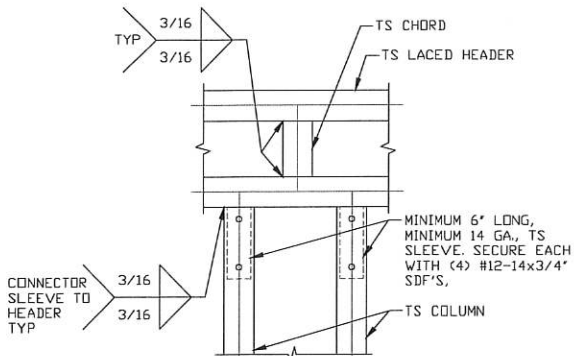
**6C**  
**DOUBLE LACED  
HEADER TO COLUMN  
CONNECTION DETAIL**  
SCALE: NTS



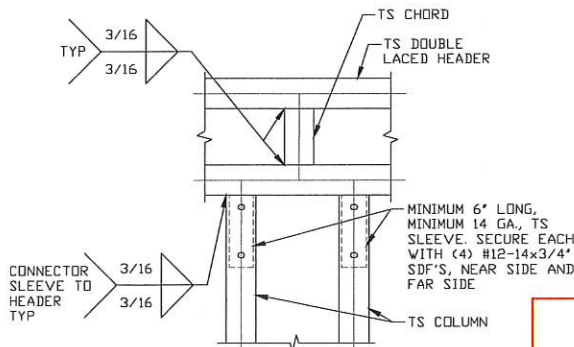
**7**  
**COLUMN TO HEADER,  
BASE RAIL, OR  
WINDOW RAIL  
CONNECTION DETAIL**  
SCALE: NTS



**8**  
**DOUBLE HEADER/  
COLUMN  
CONNECTION DETAIL**  
SCALE: NTS



**8A**  
**LACED HEADER/  
COLUMN  
CONNECTION DETAIL**  
SCALE: NTS



**8B**  
**DOUBLE LACED  
HEADER/COLUMN  
CONNECTION DETAIL**  
SCALE: NTS

**Validity Notice**

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**1 March 2025**

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

**DRAWN BY: JG**

**CHECKED BY: AM**

**PROJECT MGR: JRP**

**CLIENT: FGMB**

**FIRST GENERATION METAL BUILDINGS, LLC**  
790 LONG HILL ROAD  
PILOT MOUNTAIN, NC 27041  
30'-0"x16'-0" ENCLOSED STRUCTURE

**DATE: 2-29-24**

**SHT. 13**

**SCALE: NTS**

**DWG. NO: SK-3**

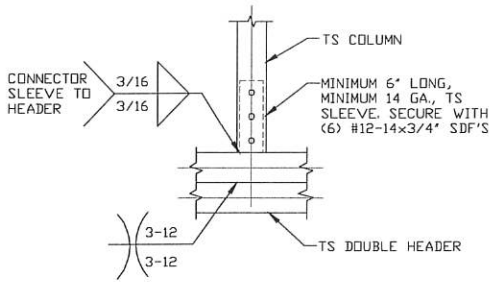
**JOB NO: 23184S**

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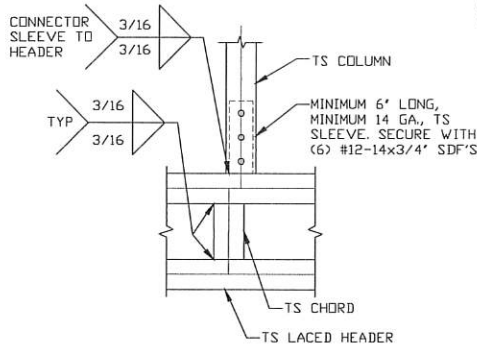


# CONNECTION DETAILS



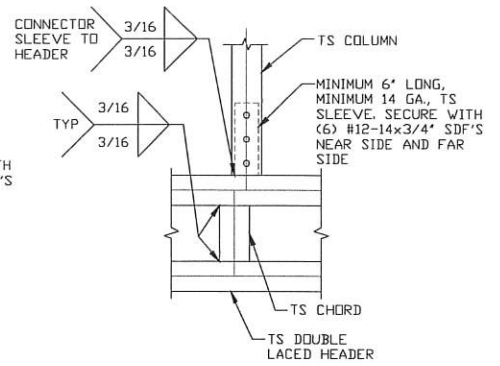
**9 COLUMN/DOUBLE HEADER CONNECTION DETAIL**

SCALE: NTS



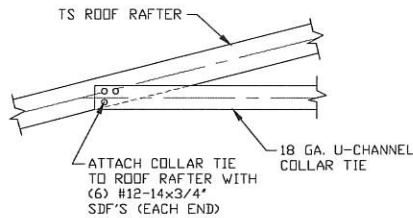
**9A COLUMN/LACED HEADER CONNECTION DETAIL**

SCALE: NTS



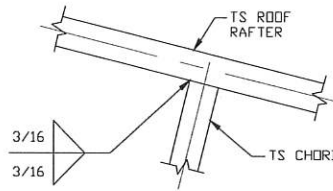
**DOUBLE COLUMN/LACED HEADER CONNECTION DETAIL**

SCALE: NTS



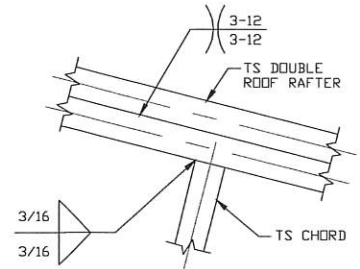
**10 COLLAR TIE CONNECTION DETAIL**

SCALE: NTS



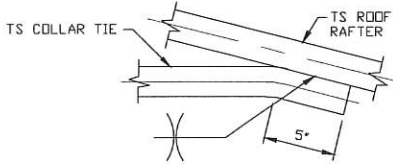
**11 RAFTER TO CHORD CONNECTION DETAIL**

SCALE: NTS



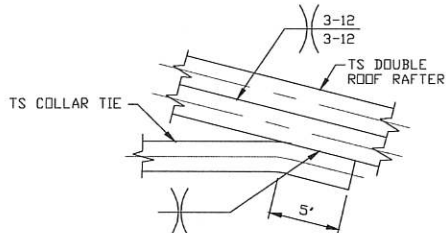
**11A RAFTER TO CHORD CONNECTION DETAIL**

SCALE: NTS



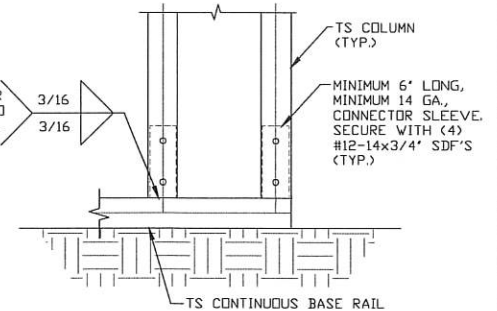
**12 COLLAR TIE CONNECTION DETAIL**

SCALE: NTS



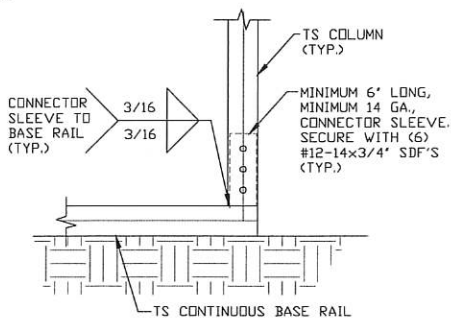
**12A COLLAR TIE CONNECTION DETAIL**

SCALE: NTS



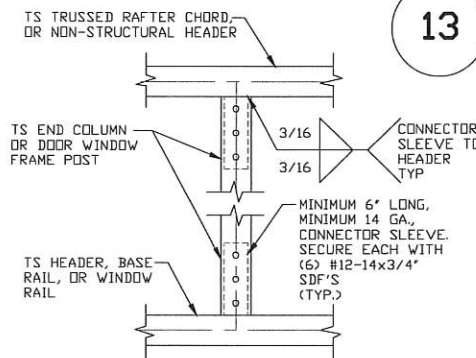
**13 COLUMN/BASE RAIL CONNECTION DETAIL**

SCALE: NTS



**13A COLUMN/BASE RAIL CONNECTION DETAIL**

SCALE: NTS



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

SCALE: NTS

**Validity Notice**

**Plans Expiration Date:**

**1 March 2025**

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

**DRAWN BY: JG**

**CHECKED BY: AM**

**PROJECT MGR: JRP**

**CLIENT: FGMB**

**FIRST GENERATION METAL BUILDINGS, LLC  
790 LONG HILL ROAD  
PILOT MOUNTAIN, NC 27041  
30'-0"x16'-0" ENCLOSED STRUCTURE**

**DATE: 2-29-24**

**SHT. 14**

**SCALE: NTS**

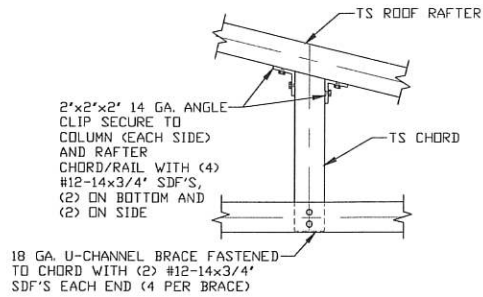
**DWG. NO: SK-3**

**JOB NO: 23184S**

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## CONNECTION DETAILS



15

### **RAFTER/U-CHANNEL TO CHORD CONNECTION DETAIL**

SCALE: NTS

#### Validity Notice

Plans Expiration Date:

1 March 2025

**MOORE AND ASSOCIATES  
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**CLIENT: FGMB**

FIRST GENERATION METAL BUILDINGS, LLC  
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30'-0" x 16'-0" ENCLOSED STRUCTURE

**DATE: 2-29-24**

**SHT. 15**

**SCALE: NTS**

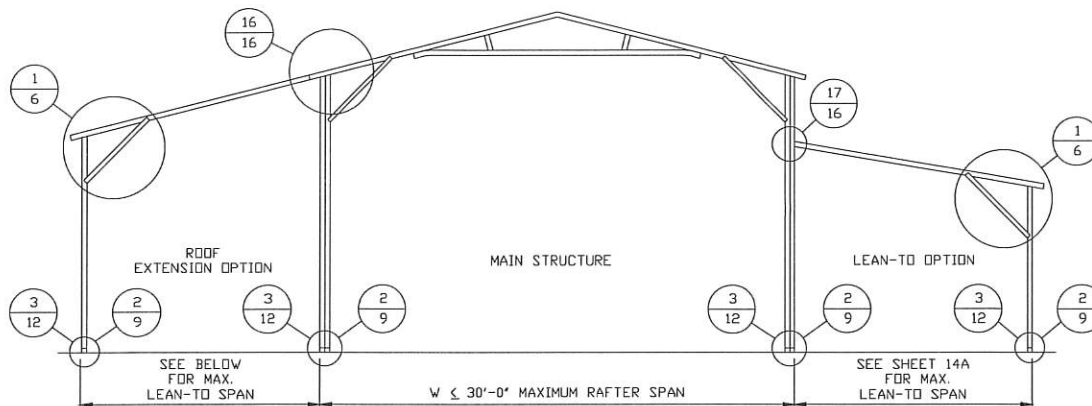
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# BOX EAVE RAFTER LEAN-TO OPTIONS



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

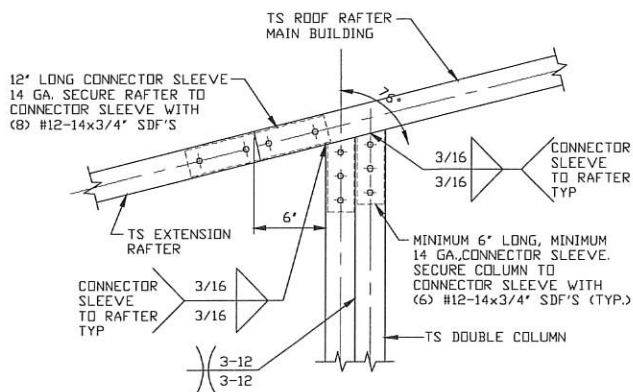
SCALE: NTS

MAXIMUM WIDTH OF SINGLE TS ROOF EXTENSION LEAN-TO IS 12'-0".

MAXIMUM DOUBLE COLUMN HEIGHT FOR MAIN BUILDING WITH ROOF EXTENSION LEAN-TO ATTACHED IS 11'-0" < TO ≤ 16'-0".

MAXIMUM SINGLE COLUMN WITH INSERT HEIGHT FOR MAIN BUILDING WITH ROOF EXTENSION LEAN-TO ATTACHED IS 9'-0" < TO ≤ 11'-0".

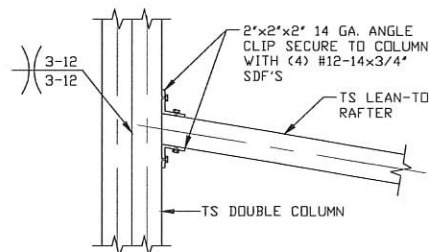
MAXIMUM SINGLE COLUMN HEIGHT FOR MAIN BUILDING WITH ROOF EXTENSION LEAN-TO ATTACHED IS ≤ 9'-0".



### SIDE EXTENSION RAFTER/ COLUMN DETAIL FOR RAFTER SPANS ≤ 12'-0"

SCALE: NTS

16



### LEAN-TO RAFTER TO RAFTER POST CONNECTION DETAIL FOR WIDTHS ≤ 12'-0"

SCALE: NTS

17

### Validity Notice

Plans Expiration Date:

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FIRST GENERATION METAL BUILDINGS, LLC  
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DATE: 2-29-24

SCALE: NTS

JOB NO: 23184S

SHT. 16

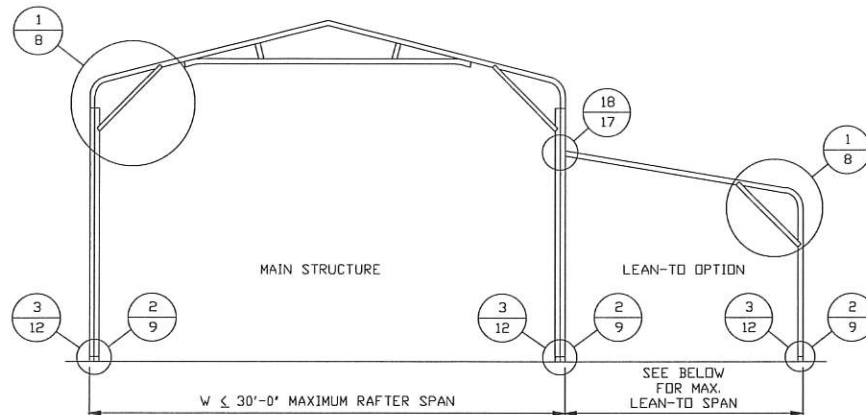
DWG. NO: SK-3

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## BOW EAVE RAFTER LEAN-TO OPTIONS



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

SCALE: NTS

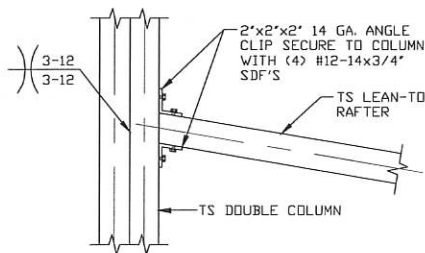
MAXIMUM WIDTH OF SINGLE TS ROOF EXTENSION LEAN-TO IS 12'-0".

MAXIMUM WIDTH OF SINGLE TS ROOF EXTENSION LEAN-TO IS 12'-0".

MAXIMUM DOUBLE COLUMN HEIGHT FOR MAIN BUILDING WITH ROOF EXTENSION LEAN-TO ATTACHED IS 11'-0" < TO ≤ 16'-0".

MAXIMUM SINGLE COLUMN WITH INSERT HEIGHT FOR MAIN BUILDING WITH ROOF EXTENSION LEAN-TO ATTACHED IS 9'-0" < TO ≤ 11'-0".

MAXIMUM SINGLE COLUMN HEIGHT FOR MAIN BUILDING WITH ROOF EXTENSION LEAN-TO ATTACHED IS ≤ 9'-0".



### LEAN-TO RAFTER TO RAFTER POST CONNECTION DETAIL FOR WIDTHS ≤ 12'-0"

SCALE: NTS

18

#### Validity Notice

Plans Expiration Date:

1 March 2025

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

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**CHECKED BY: AM**

**PROJECT MGR: JRP**

**CLIENT: FGMB**

FIRST GENERATION METAL BUILDINGS, LLC  
790 LONG HILL ROAD  
PILOT MOUNTAIN, NC 27041  
30'-0"x16'-0" ENCLOSED STRUCTURE

**DATE: 2-29-24**

**SHT. 17**

**SCALE: NTS**

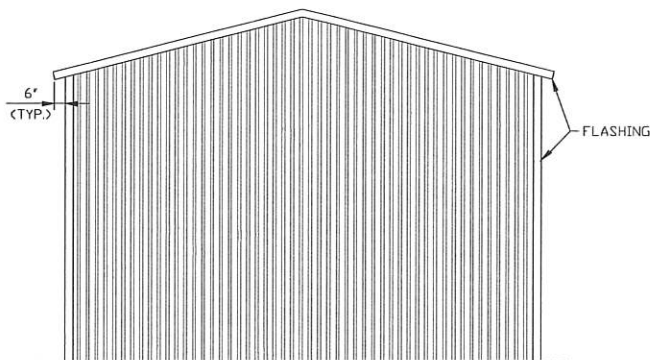
**DWG. NO: SK-3**

**JOB NO: 23184S**

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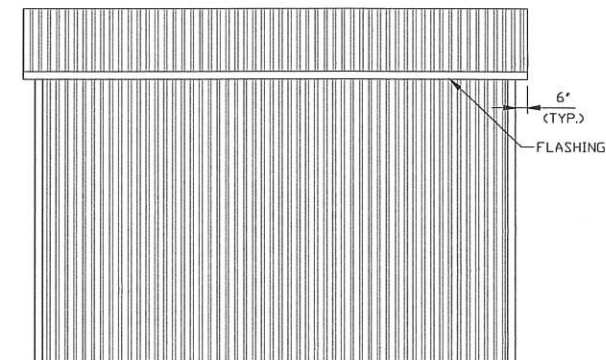
## BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



**TYPICAL END ELEVATION  
VERTICAL ROOF/SIDING**

SCALE: NTS

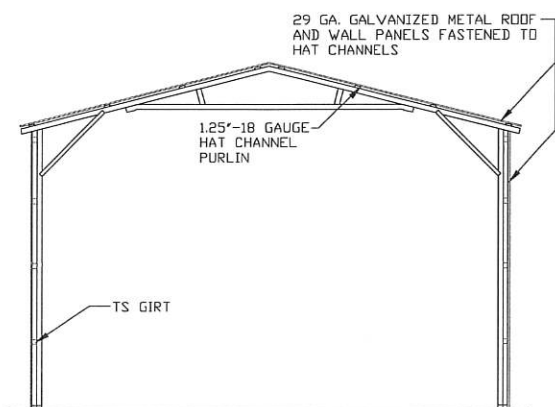
NOTE: HORIZONTAL ROOF ONLY APPLICABLE  
TO GROUND SNOW LOADS  $\leq$  30 PSF.



**TYPICAL SIDE ELEVATION  
VERTICAL ROOF/SIDING**

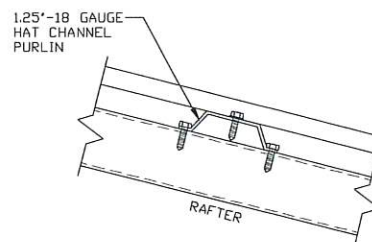
SCALE: NTS

NOTE: HORIZONTAL ROOF ONLY APPLICABLE  
TO GROUND SNOW LOADS  $\leq$  30 PSF.



**TYPICAL SECTION  
VERTICAL ROOF/SIDING OPTION**

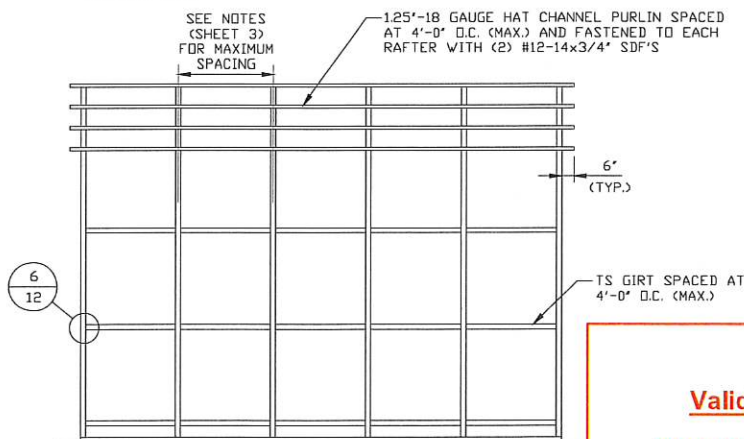
SCALE: NTS



**PANEL ATTACHMENT**

(ALTERNATE FOR VERTICAL ROOF PANELS)

SCALE: NTS



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

SCALE: NTS

NOTE: HAT CHANNELS CAN BE USED AS  
AN OPTION IN PLACE OF TS WALL  
GIRTS. HAT CHANNELS MUST BE  
SPACED AT 4'-0" O.C. MAX.

### Validity Notice

Plans Expiration Date:

1 March 2025

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

**DRAWN BY: JG**

**CHECKED BY: AM**

**PROJECT MGR: JRP**

**CLIENT: FGMB**

**FIRST GENERATION METAL BUILDINGS, LLC  
790 LONG HILL ROAD  
PILOT MOUNTAIN, NC 27041  
30'-0" x 16'-0" ENCLOSED STRUCTURE**

**DATE: 2-29-24**

**SCALE: NTS**

**JOB NO: 23184S**

**SHT. 18**

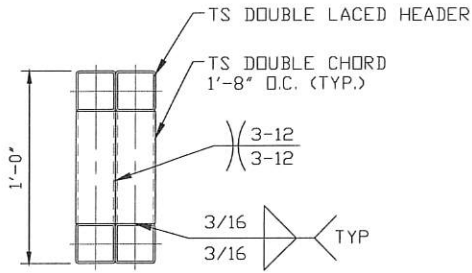
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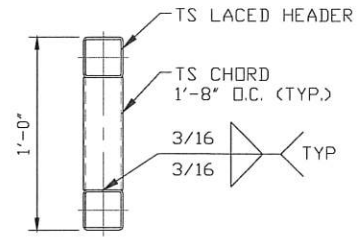
## SIDE WALL HEADER OPTIONS

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



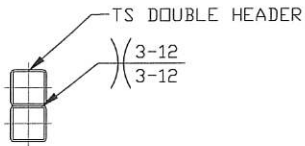
**DOUBLE LACED HEADER DETAIL FOR DOOR OPENINGS 15'-0" < LENGTH ≤ 16'-0" WIDE**

SCALE: NTS



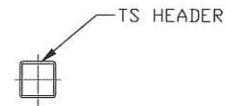
**LACED HEADER DETAIL FOR DOOR OPENINGS 9'-0" < LENGTH ≤ 15'-0" WIDE**

SCALE: NTS



**DOUBLE HEADER DETAIL FOR DOOR OPENINGS 6'-0" < LENGTH ≤ 9'-0" WIDE**

SCALE: NTS



**SINGLE HEADER DETAIL FOR DOOR OPENINGS LENGTH ≤ 6'-0" WIDE**

SCALE: NTS

### Validity Notice

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1 March 2025

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**CLIENT: FGMB**

FIRST GENERATION METAL BUILDINGS, LLC  
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PILOT MOUNTAIN, NC 27041  
30'-0"X16'-0" ENCLOSED STRUCTURE

**DATE: 2-29-24**

**SCALE: NTS**

**JOB NO: 23184S**

**SHT. 19**

**DWG. NO: SK-3**

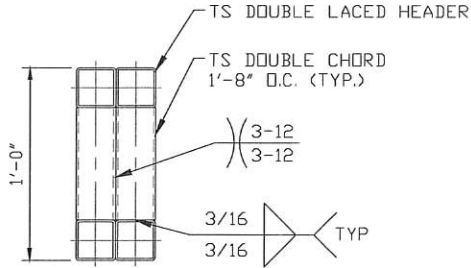
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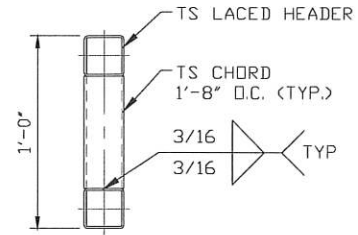
## END WALL HEADER OPTIONS

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



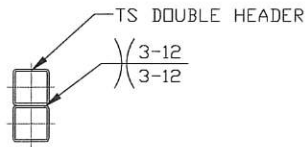
**DOUBLE LACED HEADER DETAIL FOR DOOR OPENINGS 12'-0" < LENGTH ≤ 16'-0" WIDE**

SCALE: NTS



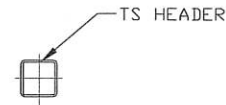
**LACED HEADER DETAIL FOR DOOR OPENINGS 11'-0" < LENGTH ≤ 12'-0" WIDE**

SCALE: NTS



**DOUBLE HEADER DETAIL FOR DOOR OPENINGS 8'-0" < LENGTH ≤ 11'-0" WIDE**

SCALE: NTS



**SINGLE HEADER DETAIL FOR DOOR OPENINGS LENGTH ≤ 8'-0" WIDE**

SCALE: NTS

### Validity Notice

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SHT. 19A

SCALE: NTS

DWG. NO: SK-3

JOB NO: 23184S

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