



**STRUCTURAL DESIGN  
STANDARD PACKAGE  
ENCLOSED BUILDING**

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

**23 June 2020  
Revision 0  
M&A Project No. 20126S**

**Prepared for:**

**TNT Carports, Inc.  
170 Holly Springs Road  
Mount Airy, NC 27030**

**Prepared by:**

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

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

**401 South Main Street, Suite 200  
Mount Airy, NC 27030**



**MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING**

		I HAVE RESEARCHED THIS CHAPTER AND THE LOUISIANA STATE UNIFORM CONSTRUCTION CODE AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, THESE DRAWINGS ARE IN COMPLIANCE THEREWITH. I TAKE FULL RESPONSIBILITY FOR THE CONTENTS OF THESE PLANS.	
			<b>Professional Certification.</b> I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 49744, Expiration Date 6/6/20
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	WAYNE SHERIDAN MOORE  No. 12395 6/23/20 REGISTERED PROFESSIONAL ENGINEER (STRUCTURAL)		
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## DRAWING INDEX

SHEET 1	PE SEAL COVER SHEET (1 OF 2)
SHEET 1A	PE SEAL COVER SHEET (2 OF 2)
SHEET 2	DRAWING INDEX
SHEET 3	INSTALLATION NOTES AND SPECIFICATIONS
SHEET 4	TYPICAL SIDE AND END ELEVATIONS
SHEET 5	TYPICAL RAFTER/COLUMN END FRAMING SECTION (BOX EAVE RAFTER)
SHEET 5A	TYPICAL RAFTER/COLUMN END AND SIDE FRAMING SECTION (BOX EAVE RAFTER)
SHEET 6	COLUMN CONNECTION DETAILS (BOX EAVE STRUCTURE)
SHEET 6A	COLUMN CONNECTION DETAILS (BOX EAVE STRUCTURE)
SHEET 7	TYPICAL RAFTER/COLUMN END FRAMING SECTION (BOW RAFTER)
SHEET 7A	TYPICAL RAFTER/COLUMN END AND SIDE FRAMING SECTION (BOW RAFTER)
SHEET 8	COLUMN CONNECTION DETAILS (BOW RAFTER STRUCTURE)
SHEET 8A	COLUMN CONNECTION DETAILS (BOW RAFTER STRUCTURE)
SHEET 9	BASE RAIL ANCHORAGE OPTIONS
SHEET 10	TYPICAL END WALL AND SIDE WALL FRAMING SECTIONS (BOX EAVE)
SHEET 11	TYPICAL END WALL AND SIDE WALL FRAMING SECTIONS (BOW RAFTER)
SHEET 12	CONNECTION DETAILS
SHEET 13	CONNECTION DETAILS
SHEET 14	CONNECTION DETAILS
SHEET 15	CONNECTION DETAILS
SHEET 16	LEAN-TO OPTIONS (BOX EAVE RAFTER)
SHEET 17	LEAN-TO OPTIONS (BOX EAVE RAFTER)
SHEET 17A	LEAN-TO OPTIONS (BOX EAVE RAFTER)
SHEET 17B	LEAN-TO OPTIONS (BOX EAVE RAFTER)
SHEET 17C	LEAN-TO OPTIONS (BOX EAVE RAFTER)
SHEET 18	LEAN-TO OPTIONS (BOW RAFTER)
SHEET 18A	LEAN-TO OPTIONS (BOW RAFTER)
SHEET 18B	LEAN-TO OPTIONS (BOW RAFTER)
SHEET 18C	LEAN-TO OPTIONS (BOW RAFTER)
SHEET 18D	LEAN-TO OPTIONS (BOW RAFTER)
SHEET 19	VERTICAL ROOF/SIDING OPTION END AND SIDE ELEVATION AND SECTION
SHEET 20	HEADER OPTIONS

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**PROJECT NGR VSM**

**CLIENT: TNT**

**TNT CARPORTS, INC.  
170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP ENCLOSED STRUCTURE**

**DATE: 6-23-20**

**SCALE: NTS**

**JOB NO: 20126S**

**SHT. 2**

**DWG. NO: SK-3**

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## INSTALLATION NOTES AND SPECIFICATIONS

1. DESIGN IS FOR MAXIMUM 30'-0" WIDE x 20'-0" EAVE HEIGHT ENCLOSED STRUCTURES.
2. DESIGN WAS DONE IN ACCORDANCE WITH THE 2018 NORTH CAROLINA BUILDING CODE (NCBC), 2018 IBC, 2015 IBC, 2012 IBC, 2009 IBC, AND 2006 IBC.
3. DESIGN LOADS ARE AS FOLLOWS:
  - A) DEAD LOAD = 1.5 PSF
  - B) LIVE LOAD = 12 PSF
  - C) GROUND SNOW LOAD = 35 PSF (UNBALANCED SNOW LOAD DUE TO DRIFTING HAS NOT BEEN EVALUATED).
4. ULTIMATE WIND SPEED 105 TO 145 MPH (NOMINAL WIND SPEED 81 TO 112 MPH); MAXIMUM RAFTER/POST AND END COLUMN SPACING = 50 FEET.
5. END WALL COLUMNS (POST) ARE EQUIVALENT IN SIZE AND SPACING TO SIDE WALL POSTS (UNLESS NOTED OTHERWISE).
6. RISK CATEGORY I.
7. WIND EXPOSURE CATEGORY B.
8. SPECIFICATIONS APPLICABLE TO 29 GAUGE METAL PANELS FASTENED DIRECTLY TO 2 1/2"x2 1/2"-14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS (UNLESS NOTED OTHERWISE). WHERE TS 2 1/2" x 2 1/2" - 14 GAUGE IS SPECIFIED, TS 2 1/4" x 2 1/4" - 12 GAUGE MAY BE USED AS AN OPTION.
9. AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR HAT CHANNELS, AND COLUMNS (INTERIOR OR END) = 10" O.C. (MAX.)
10. 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. ROOFING WITH SLOPES LESS THAN 3:12 MUST BE LAP SEALANT.
11. ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6" OF EACH RAFTER COLUMN ALONG SIDES.
12. GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBAR W/ WELDED NUT x 36" LONG AND MAY ONLY BE USED IN SUITABLE SOILS. HELIX ANCHORS, SEE DETAIL 2B, MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED.
13. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:  
 SOIL SITE CLASS = D  
 RISK CATEGORY I  
 R = 3.25                      I<sub>E</sub> = 1.0  
 S<sub>DS</sub> = 2.339                V = C<sub>s</sub>W  
 S<sub>DI</sub> = 1.258

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170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP ENCLOSED STRUCTURE

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SCALE: NTS

JOB NO: 201265

SHT. 3

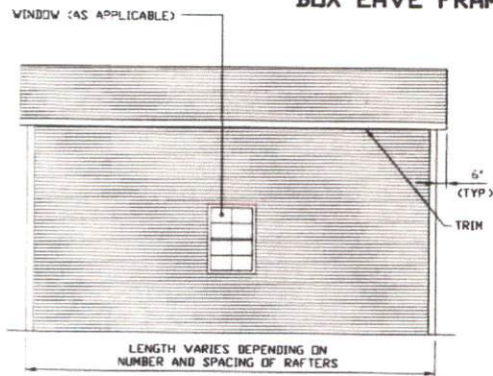
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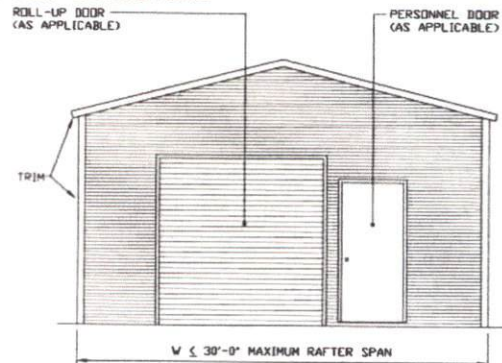
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### BOX EAVE FRAME RAFTER STRUCTURE

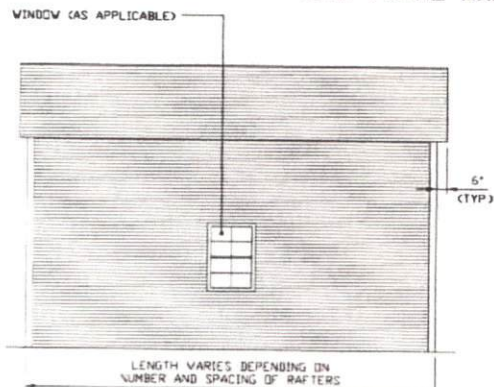


**TYPICAL SIDE ELEVATION**  
SCALE: NTS

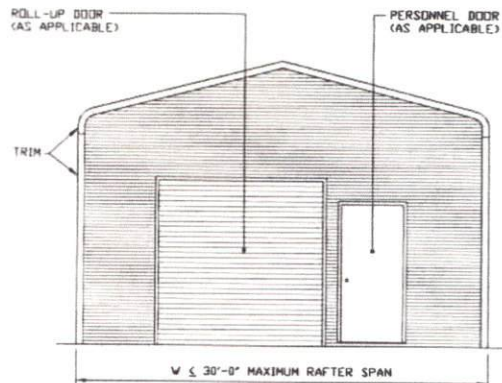


**TYPICAL END ELEVATION**  
SCALE: NTS

### BOW FRAME RAFTER STRUCTURE



**TYPICAL SIDE ELEVATION**  
SCALE: NTS



**TYPICAL END ELEVATION**  
SCALE: NTS

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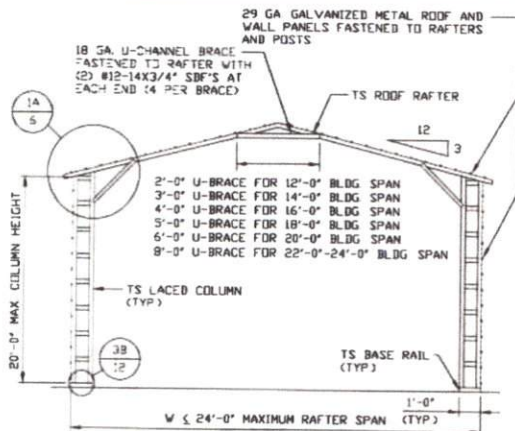
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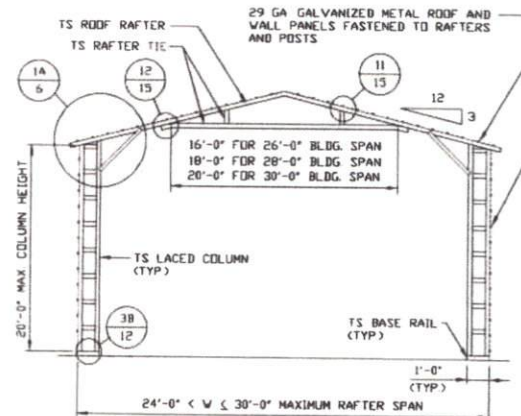
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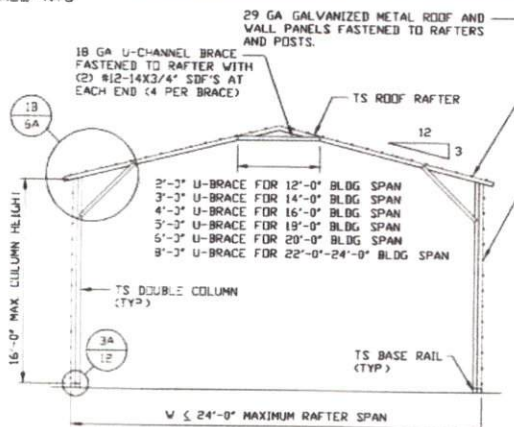
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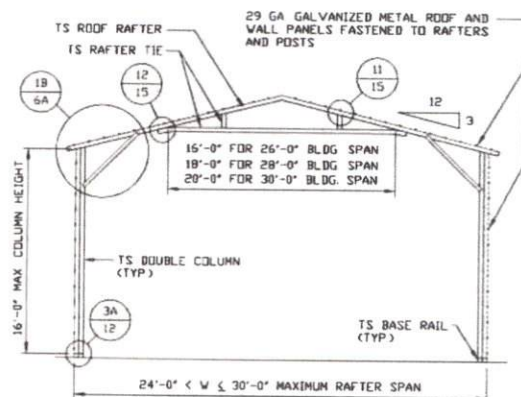
**TYPICAL RAFTER/COLUMN END FRAME SECTION**  
SCALE: NTS



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



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



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

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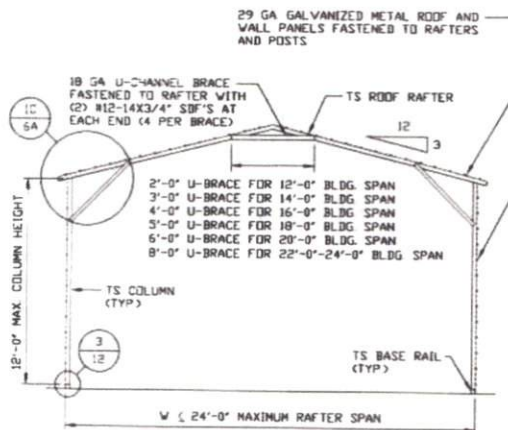
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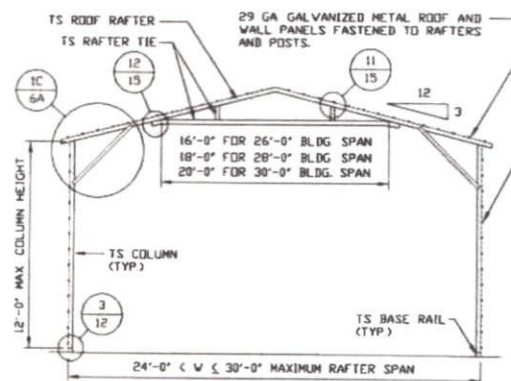
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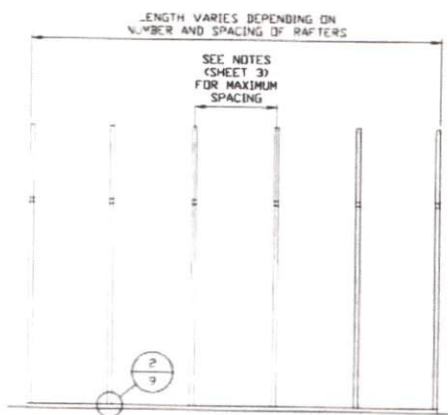
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**TYPICAL RAFTER/COLUMN END FRAME SECTION**  
SCALE: NTS



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



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

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**SHT. 3A**

**SCALE: NTS**

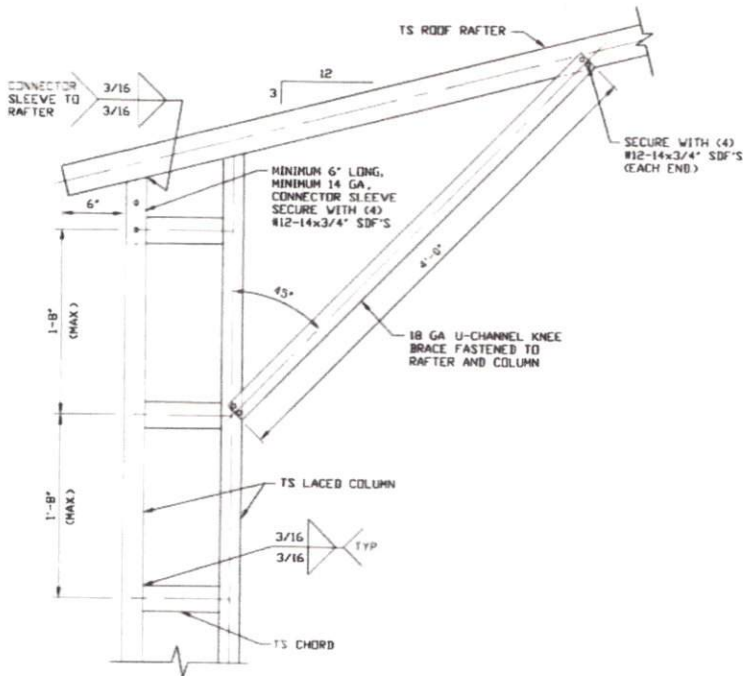
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**JOB NO: 201265**

**REV: 0**

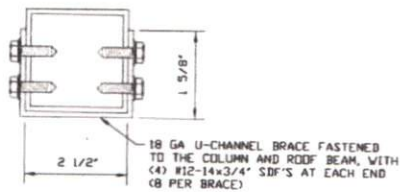
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1A

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



**BRACE SECTION**  
SCALE: NTS

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**SHT. 6**

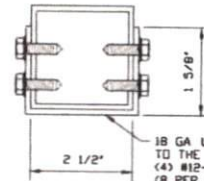
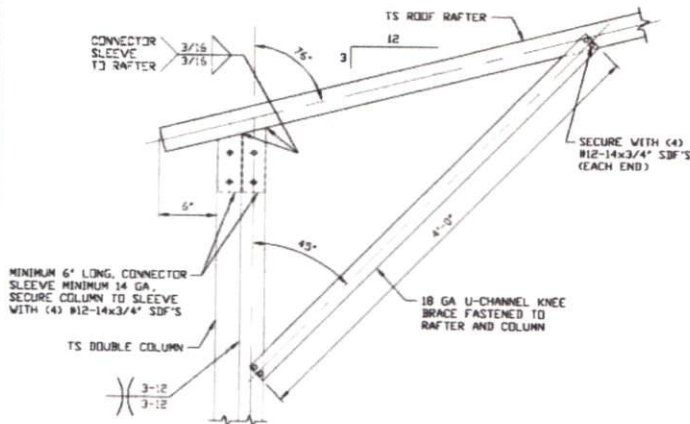
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**DWG. NO: SK-3**

**JOB NO: 201265**

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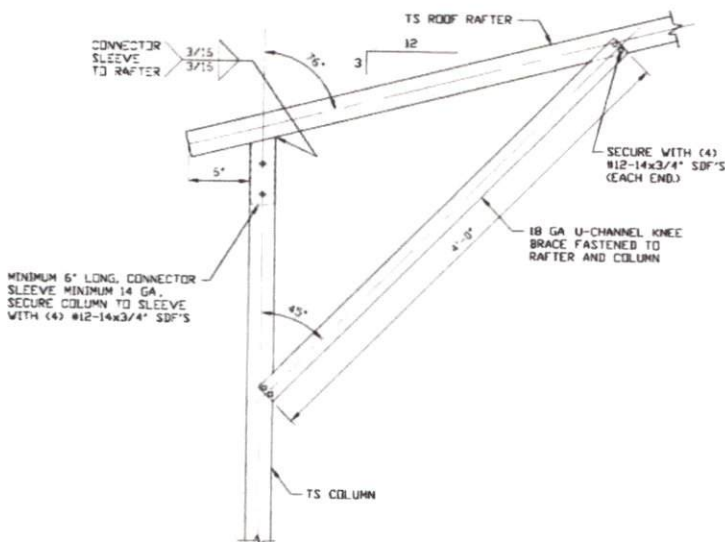
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**BRACE SECTION**  
SCALE: NTS

**BOX EAVE RAFTER COLUMN  
CONNECTION DETAIL FOR  
HEIGHTS 12'-0" < TO ≤ 16'-0"**  
SCALE: NTS

1B



**BOX EAVE RAFTER COLUMN  
CONNECTION DETAIL FOR  
HEIGHTS ≤ 12'-0"**  
SCALE: NTS

1C

NOTE: 2'-0" KNEE BRACE MAY BE USED  
FOR BUILDING WIDTHS < 24'-0".

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**SHT. 6A**

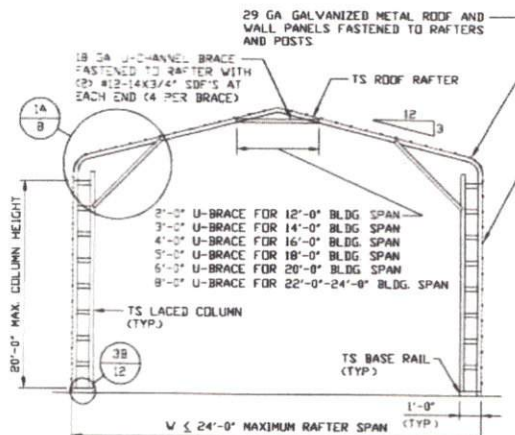
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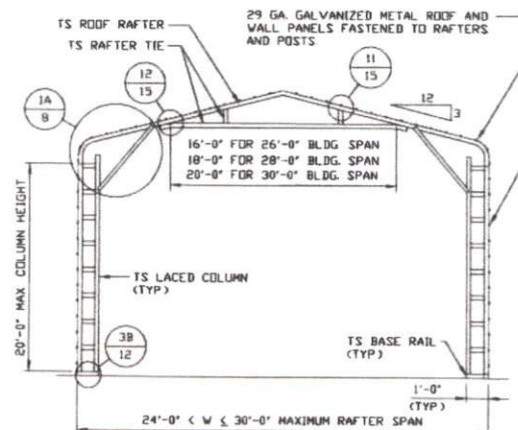
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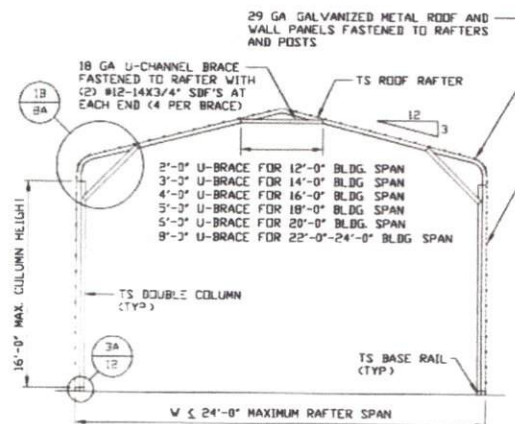
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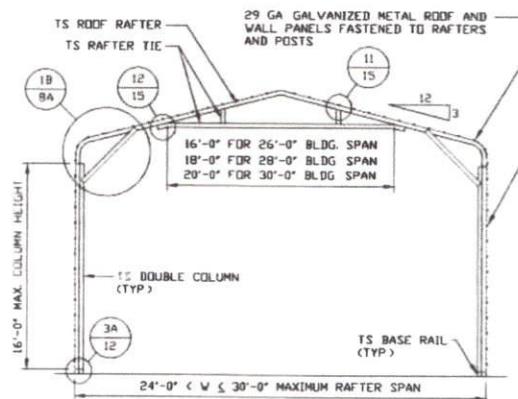
**TYPICAL RAFTER/COLUMN END FRAME SECTION**  
SCALE: NTS



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



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



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

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**SHT. 7**

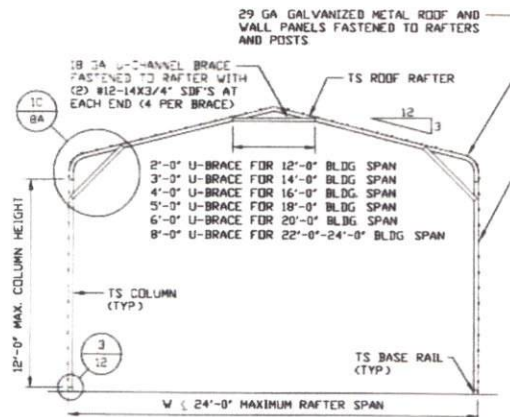
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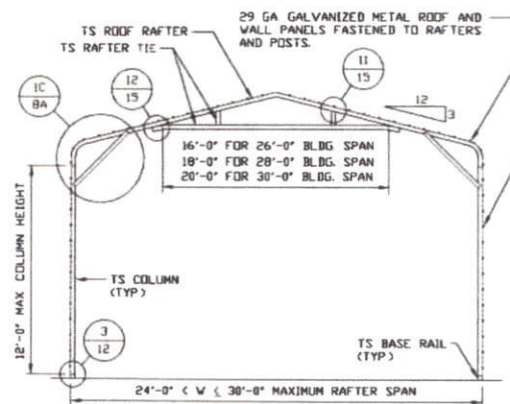
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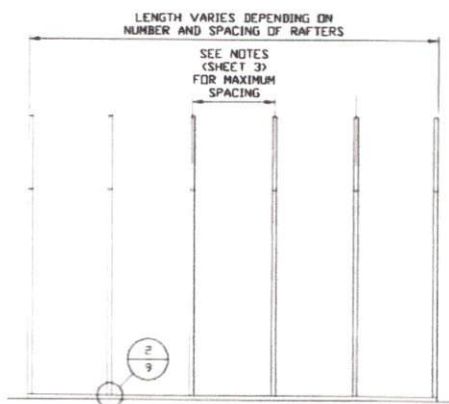




**TYPICAL RAFTER/COLUMN END FRAME SECTION**  
SCALE: NTS



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



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

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**SHT. 7A**

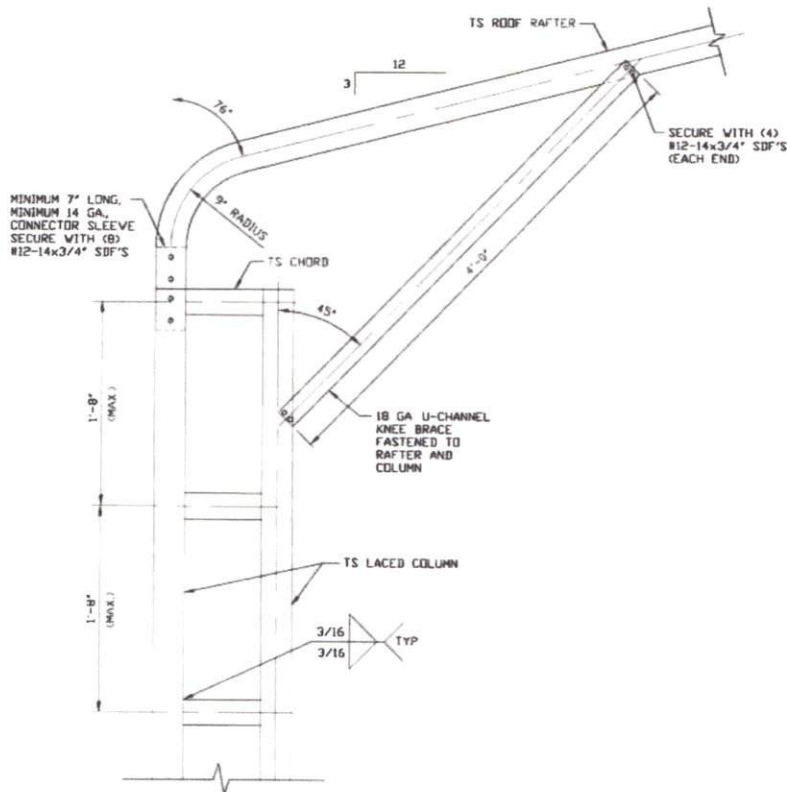
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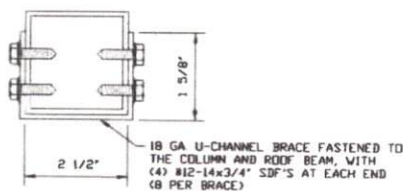
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1A

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



**BRACE SECTION**  
SCALE: NTS

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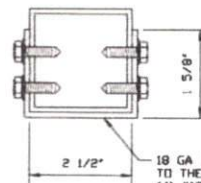
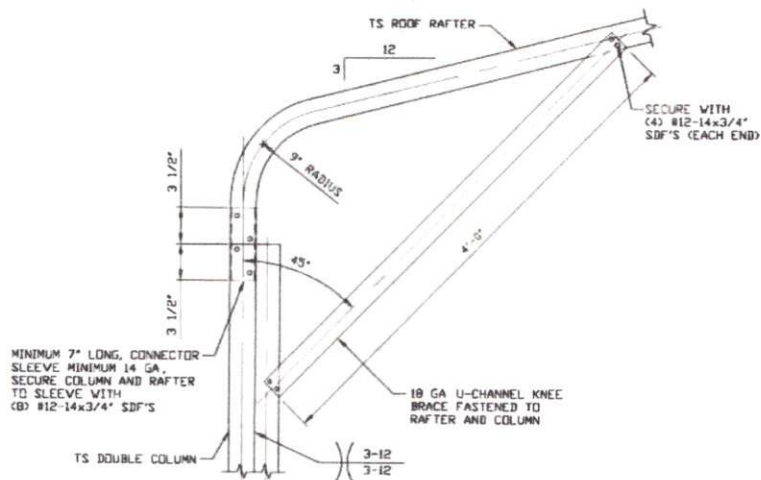
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170 HOLLY SPRINGS ROAD  
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30'-0" x 20'-0" SP ENCLOSED STRUCTURE

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**CLIENT: TNT**

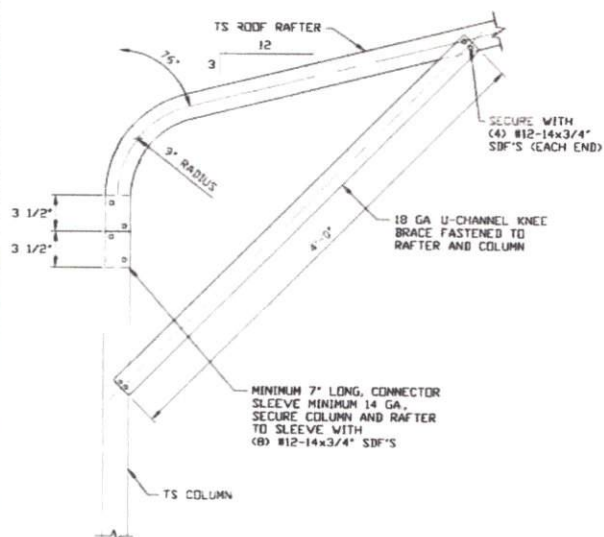
**DATE: 6-23-20**  
**SHT. 8**

**SCALE: NTS**  
**DWG. NO: SK-3**  
**JOB NO: 201265**  
**REV: 0**



**BRACE SECTION**  
SCALE: NTS

**1B**  
**BOW EAVE RAFTER COLUMN**  
**CONNECTION DETAIL FOR**  
**HEIGHTS 12'-0" < TO ≤ 16'-0"**  
SCALE: NTS



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

NOTE: 2'-0" KNEE BRACE MAY BE USED  
FOR BUILDING WIDTHS < 24'-0".

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**SHT. 0A**

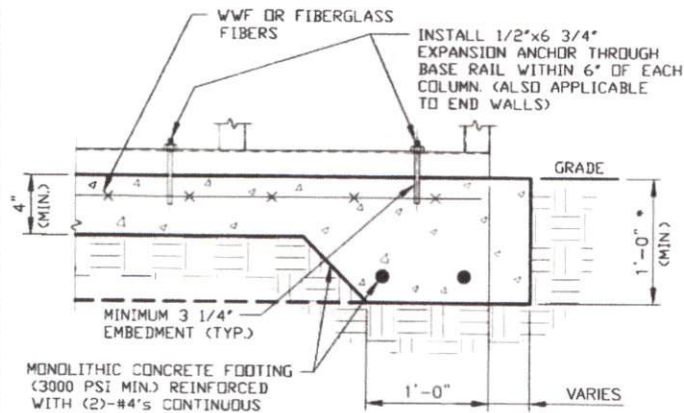
**DWG NO SK-3**

**REV: 0**

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## BASE RAIL ANCHORAGE OPTIONS



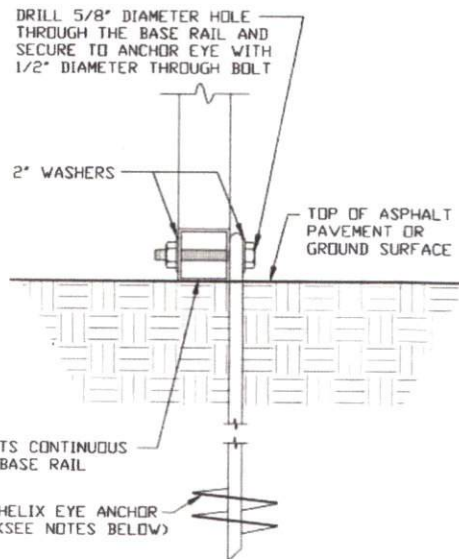
2A

### CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS

MINIMUM ANCHOR EDGE DISTANCE IS 4"

\* COORDINATE WITH LOCAL BUILDING CODE  
AND/OR BUILDING OFFICIAL REGARDING  
REQUIRED FOOTING DEPTH.



2B

### GROUND BASE HELIX ANCHORAGE

SCALE: NTS (CAN BE USED FOR ASPHALT)

\* COORDINATE WITH LOCAL BUILDING CODE  
AND/OR BUILDING OFFICIAL REGARDING  
REQUIRED FOOTING DEPTH.

## GENERAL NOTES

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

### CONCRETE:

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

### COVER OVER REINFORCING STEEL:

FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING  
BARS SHALL BE PER ACI-318:

3" IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND  
PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE  
EARTH OR WEATHER, AND 1 1/2" ELSEWHERE.

### REINFORCING STEEL:

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

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

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

### HELIX ANCHOR NOTES:

- 1 FOR VERY DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL  
AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS, USE  
MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT OR  
SINGLE 6" HELIX WITH MINIMUM 50" EMBEDMENT
- 2 FOR CORAL USE MINIMUM (2) 4" HELICES WITH MINIMUM  
30" EMBEDMENT OR SINGLE 6" HELIX WITH MINIMUM  
50" EMBEDMENT
- 3 FOR MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY  
STIFF SILTS, AND CLAYS USE MINIMUM (2) 4" HELICES WITH  
MINIMUM 30 INCH EMBEDMENT OR SINGLE 6" HELIX WITH MINIMUM  
50" EMBEDMENT.
- 4 FOR LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND  
SILTS ALLUVIAL FILL, USE MINIMUM (2) 6" HELICES WITH MINIMUM  
50" EMBEDMENT
- 5 FOR VERY LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER  
CLAYS AND SILTS, ALLUVIAL FILL, USE MINIMUM (2) 8" HELICES  
WITH MINIMUM 60" EMBEDMENT.

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CHECKED BY: PMH

PROJECT MGR: VSM

CLIENT: TNT

TNT CARPORTS, INC.  
170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP ENCLOSED STRUCTURE

DATE: 6-23-20

SCALE: NTS

JOB NO: 201265

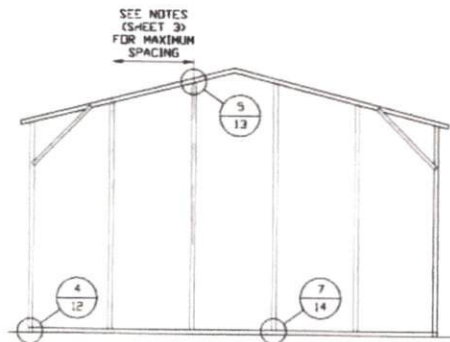
SHT. 9

DWG. NO: SK-3

REV: 0

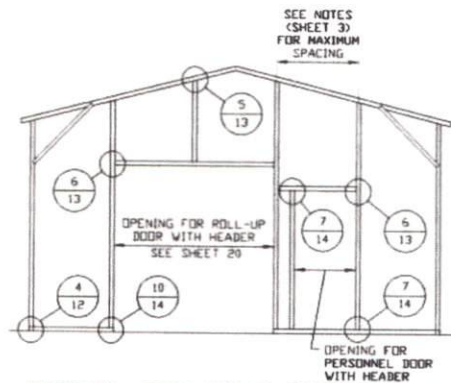
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## BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



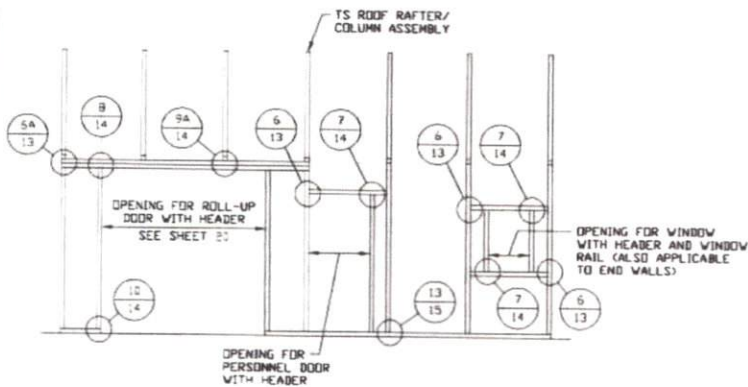
**TYPICAL BOX EAVE RAFTER  
END WALL FRAMING SECTION**

SCALE: NTS



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

SCALE: NTS



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

SCALE: NTS

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**PROJECT MGR:** VSM

**CLIENT:** TNT

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170 HOLLY SPRINGS ROAD  
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30'-0" x 20'-0" SP ENCLOSED STRUCTURE

**DATE:** 6-23-20

**SHT.** 10

**SCALE:** NTS

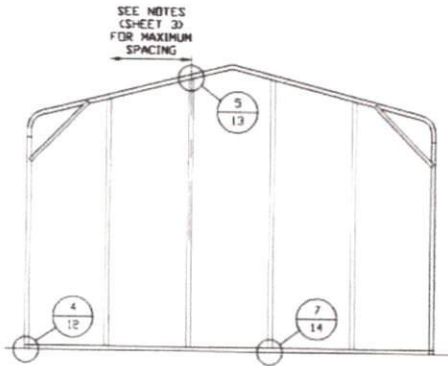
**DWG. NO:** SK-3

**JOB NO:** 20126S

**REV:** 0

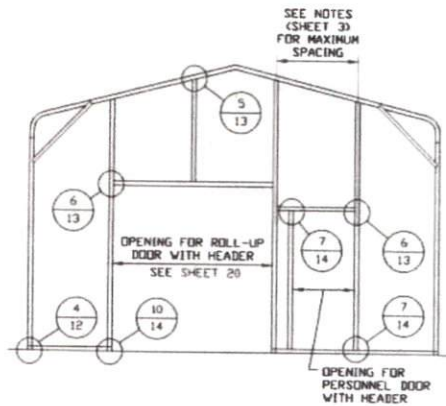
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## BOW RAFTER END WALL AND SIDE WALL OPENINGS



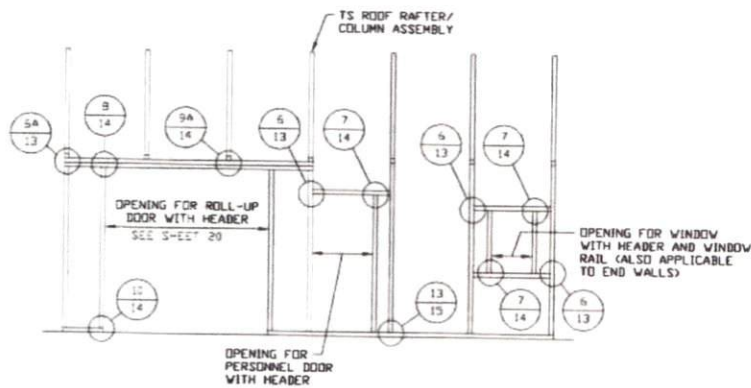
**TYPICAL BOW RAFTER  
END WALL FRAMING SECTION**

SCALE: NTS



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

SCALE: NTS



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

SCALE: NTS

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**PROJECT NO: VSM**

**CLIENT: TNT**

**TNT CARPORTS, INC.  
170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP ENCLOSED STRUCTURE**

**DATE: 6-23-20**

**SHT. 11**

**SCALE: NTS**

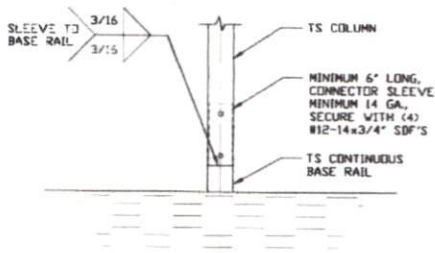
**DWG. NO SK-3**

**JOB NO: 201265**

**REV: 0**



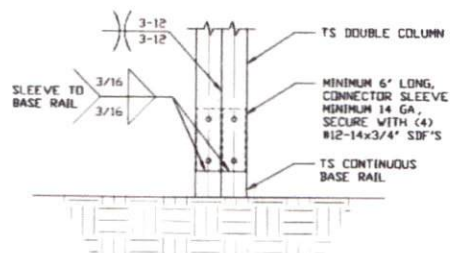
## CONNECTION DETAILS



3

### RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

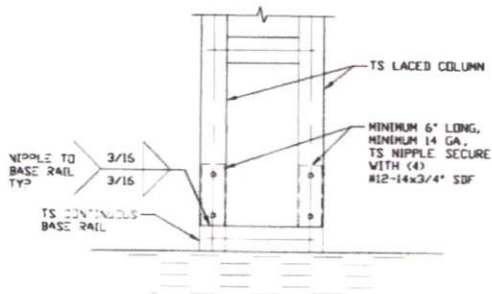
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3A

### RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

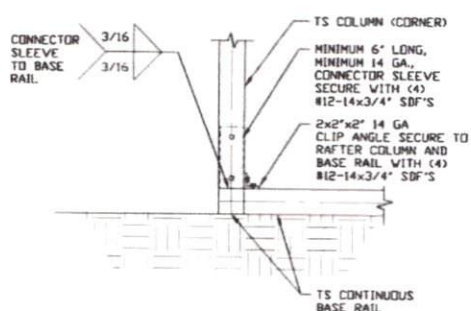
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3B

### RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

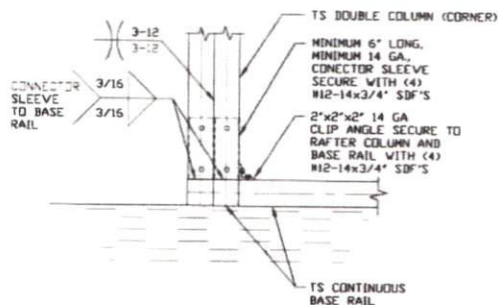
SCALE: NTS



4

### END COLUMN/BASE RAIL CONNECTION DETAIL

SCALE: NTS



4A

### END COLUMN/BASE RAIL CONNECTION DETAIL

SCALE: NTS

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PROJECT NO: VSM

CLIENT: TNT

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170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
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DATE: 6-23-20

SHT. 12

SCALE: NTS

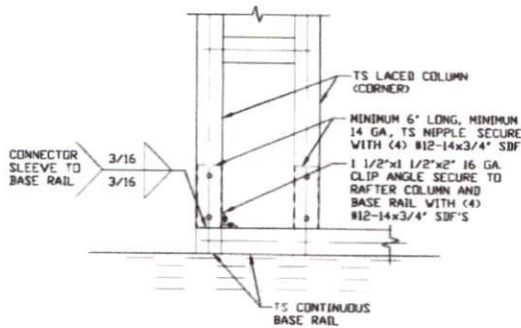
DWG. NO. SK-3

JOB NO. 201265

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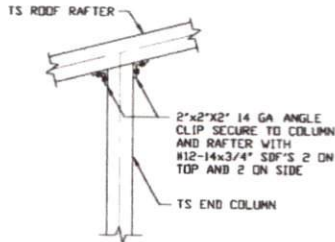
## CONNECTION DETAILS



4B

### END COLUMN/BASE RAIL CONNECTION DETAIL

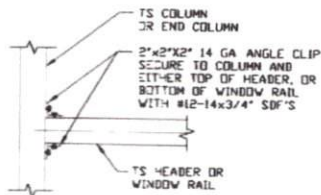
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5

### END COLUMN/RAFTER CONNECTION DETAIL

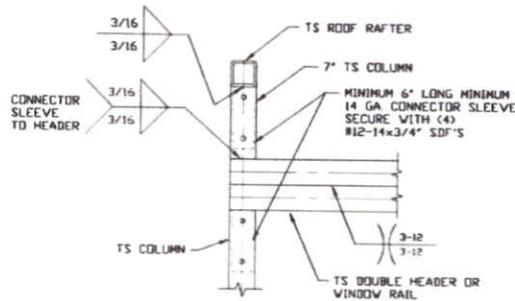
SCALE: NTS



6

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

SCALE: NTS



6A

### COLUMN OR WINDOW RAIL TO POST CONNECTION DETAIL

SCALE: NTS

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CLIENT: TNT

TNT CARPORTS, INC.  
170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0" x 20'-0" SP ENCLOSED STRUCTURE

DATE: 6-23-20

SHT. 13

SCALE: NTS

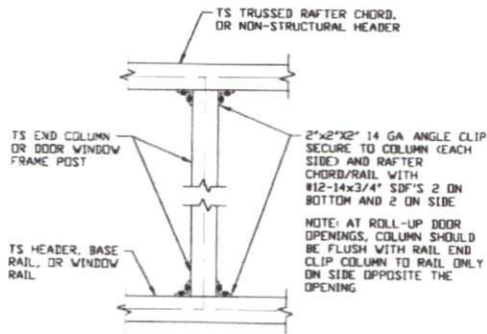
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JOB NO: 200265

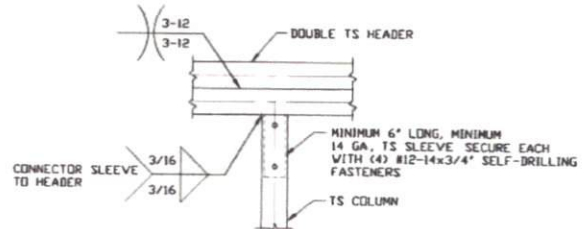
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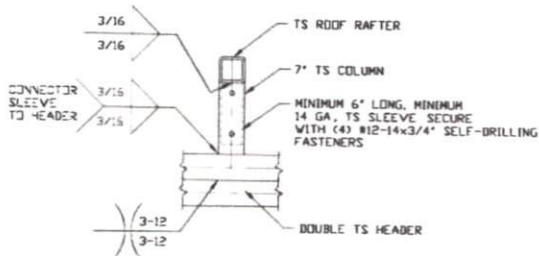
## CONNECTION DETAILS



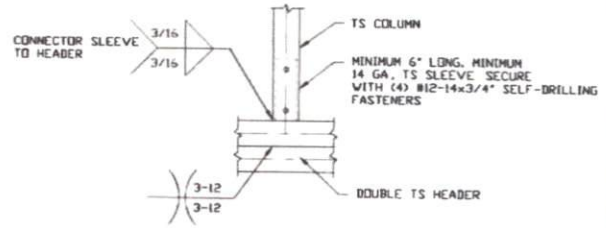
**7** COLUMN TO WINDOW RAIL  
SCALE: NTS



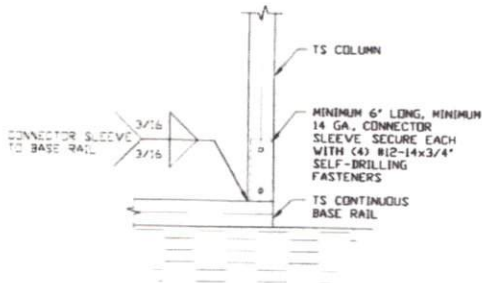
**8** DOUBLE HEADER/COLUMN  
SCALE: NTS



**9A** COLUMN/DOUBLE HEADER  
SCALE: NTS



**9B** COLUMN/DOUBLE HEADER  
SCALE: NTS



**10** COLUMN/BASE RAIL  
SCALE: NTS

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170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0" x 20'-0" SP ENCLOSED STRUCTURE

**DATE: 6-23-20**

**SHT. 14**

**SCALE: NTS**

**DWG. NO: SK-3**

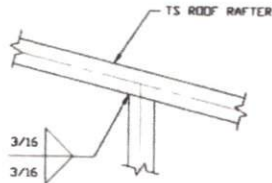
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**REV: 0**

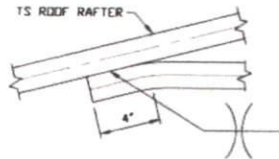
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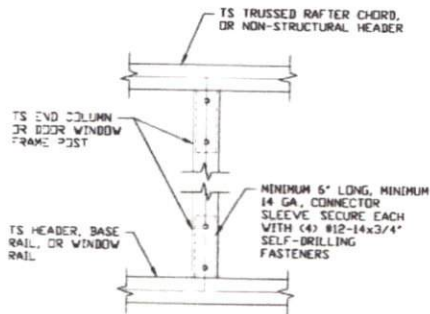
## CONNECTION DETAILS



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



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



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

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30'-0" x 20'-0" SP ENCLOSED STRUCTURE

**DATE: 6-23-20**

**SHT. 15**

**SCALE: NTS**

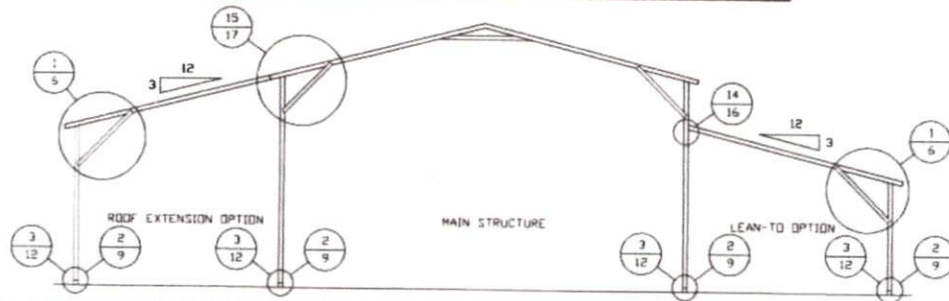
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**JOB NO: 201265**

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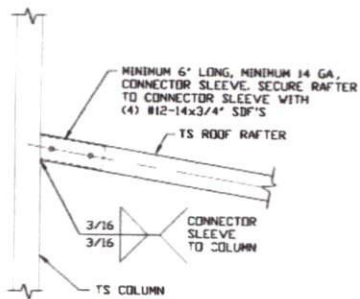
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## BOX EAVE RAFTER LEAN-TO OPTIONS



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

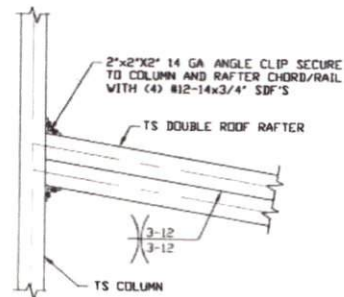
SCALE: NTS



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

SCALE: NTS

14A



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

SCALE: NTS

14B

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CLIENT: TNT

TNT CARPORTS, INC.  
170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP ENCLOSED STRUCTURE

DATE: 6-23-20

SHT. 16

SCALE: NTS

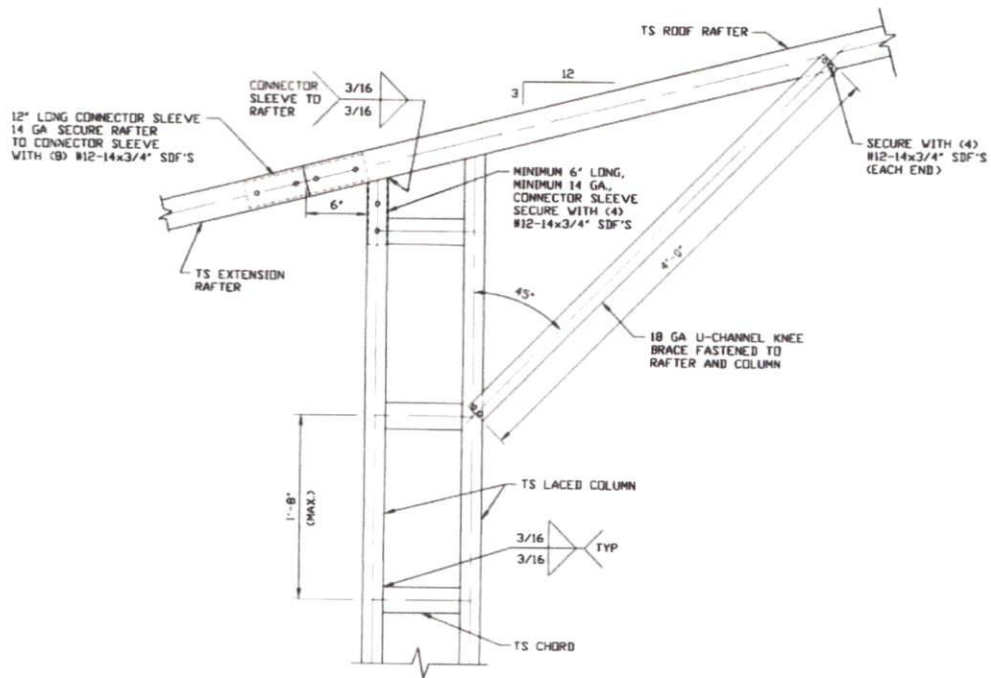
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# **BOX EAVE RAFTER LEAN-TO OPTIONS FOR RAFTER SPANS $\leq 12'-0"$**



**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 16'-0" < TO  $\leq$  20'-0"**  
SCALE: NTS

15A

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**PROJECT MGR: VSM**

**CLIENT: TNT**

**TNT CARPORTS, INC.  
170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP ENCLOSED STRUCTURE**

**DATE: 6-23-20**

**SHT. 17**

**SCALE: NTS**

**DWG. NO: SK-3**

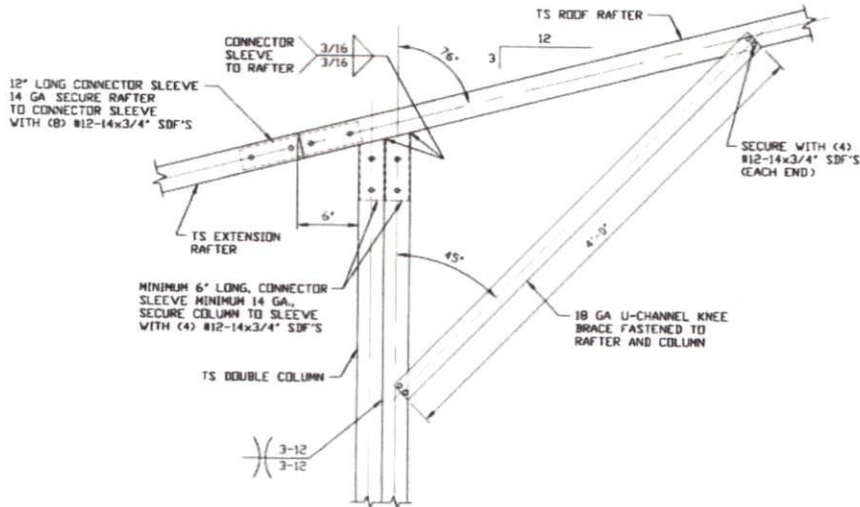
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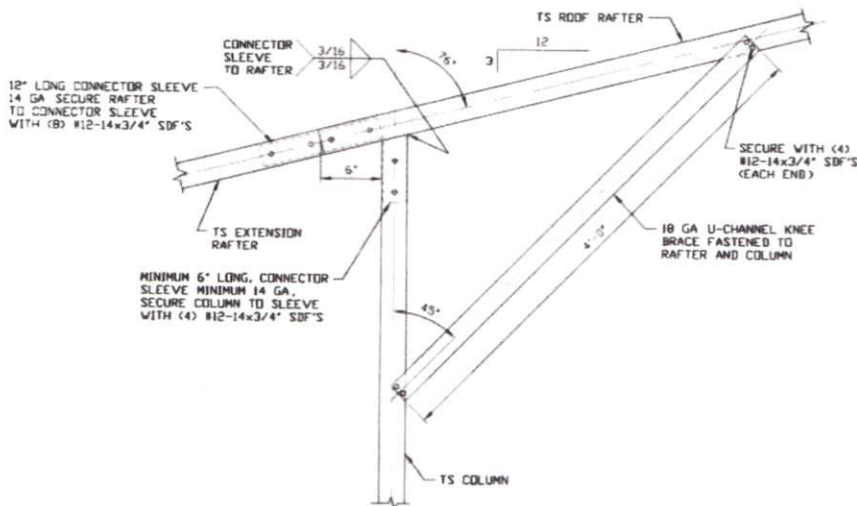
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# **BOX EAVE RAFTER LEAN-TO OPTIONS FOR RAFTER SPANS $\leq 12'-0"$**



**15B**  
**SIDE EXTENSION RAFTER/  
 COLUMN DETAIL FOR  
 HEIGHTS 12'-0" < TO < 16'-0"**  
 SCALE: NTS



**15C**  
**SIDE EXTENSION RAFTER/  
 COLUMN DETAIL FOR  
 HEIGHTS  $\leq 12'-0"$**   
 SCALE: NTS

NOTE: 2'-0" KNEE BRACE MAY BE USED  
 FOR BUILDING WIDTHS  $\leq 24'-0"$

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**CHECKED BY: PDH**

**PROJECT MGR: VSM**

**CLIENT: TNT**

**TNT CARPORTS, INC.**  
 170 HOLLY SPRINGS ROAD  
 MOUNT AIRY, NC 27030  
 30'-0"x20'-0" SP ENCLOSED STRUCTURE

**DATE: 6-23-20**

**SHT. 17A**

**SCALE: NTS**

**DWG. NO: SK-3**

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12" LONG CONNECTOR SLEEVE  
14 GA SECURE RAFTER TO  
CONNECTOR SLEEVE WITH  
(8) #12-14x3/4" SDF'S

CONNECTOR SLEEVE TO  
RAFTER

3/16

3/16

3-12

3-12

6"

TS DOUBLE EXTENSION  
RAFTER

2"x2"x2" 14 GA ANGLE CLIP  
SECURE TO COLUMN AND  
RAFTER CHORD/RAIL WITH  
(4) #12-14x3/4" SDF'S 2 ON  
BOTTOM AND 2 ON SIDE

1'-8" (MAX)

TS LACED COLUMN

3/16

3/16

TYP

TS CHORD

TS ROOF RAFTER

12

3

MINIMUM 6" LONG,  
MINIMUM 14 GA,  
CONNECTOR SLEEVE  
SECURE WITH (4)  
#12-14x3/4" SDF'S

45°

18 GA U-CHANNEL KNEE  
BRACE FASTENED TO  
RAFTER AND COLUMN

4'-10"

SECURE WITH (4)  
#12-14x3/4" SDF'S  
(EACH END.)

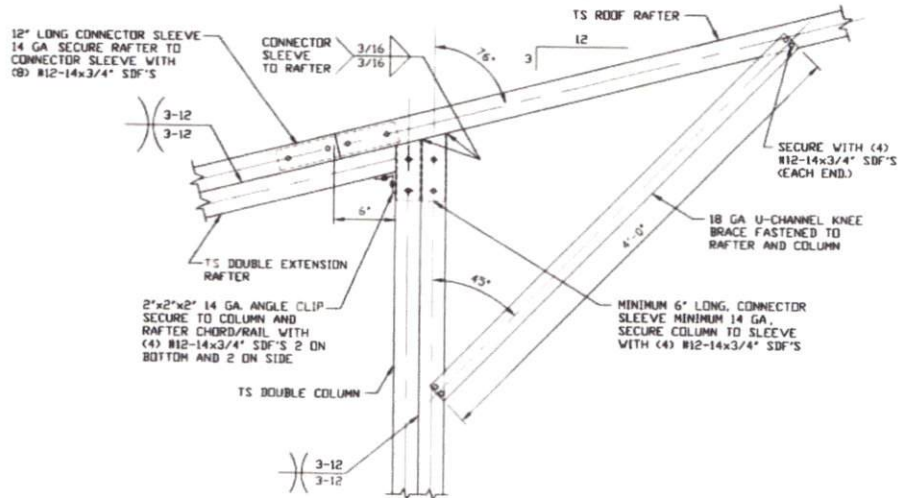
15D

**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 16'-0" < TO ≤ 20'-0"**  
SCALE NTS

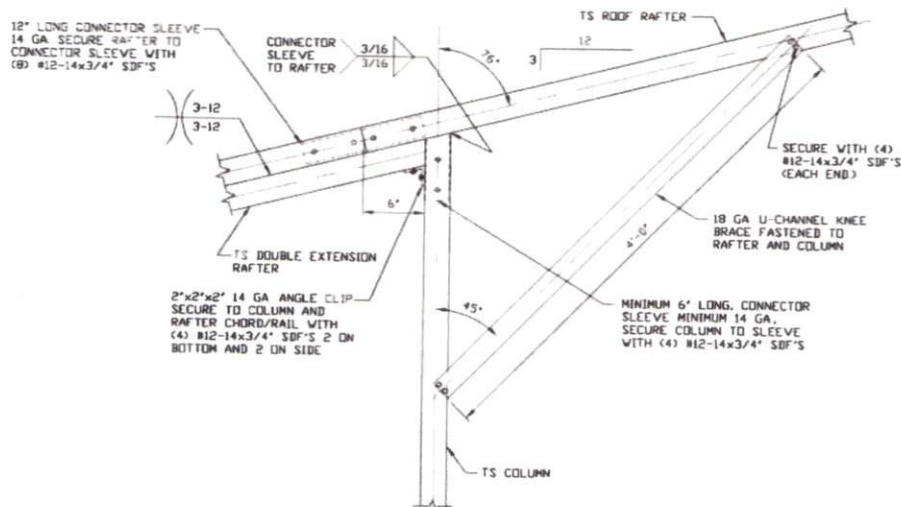
REV. 8

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



**15E** SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 12'-0" < TO ≤ 16'-0"  
SCALE: NTS



**15F** SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS ≤ 12'-0"  
SCALE: NTS

NOTE: 2'-0" KNEE BRACE MAY BE USED  
FOR BUILDING WIDTHS < 24'-0".

MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING, INC.

DRAWN BY: AT

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: TNT

TNT CARPORTS, INC.  
170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP ENCLOSED STRUCTURE

DATE: 6-23-20

SCALE: NTS

DWG. NO. SK-3

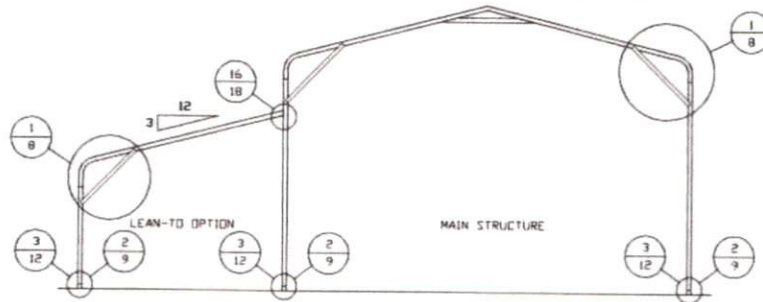
JOB NO: 201265

REV: 0

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## BOW EAVE RAFTER LEAN-TO OPTION



TYPICAL BOW RAFTER LEAN-TO OPTION FRAMING SECTION

SCALE: NTS

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**CHECKED BY: PDH**

**PROJECT MGR: WSM**

**CLIENT: TNT**

**TNT CARPORTS, INC.  
170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0" x 20'-0" SP ENCLOSED STRUCTURE**

**DATE: 6-23-20**

**SCALE: NTS**

**JOB NO: 201265**

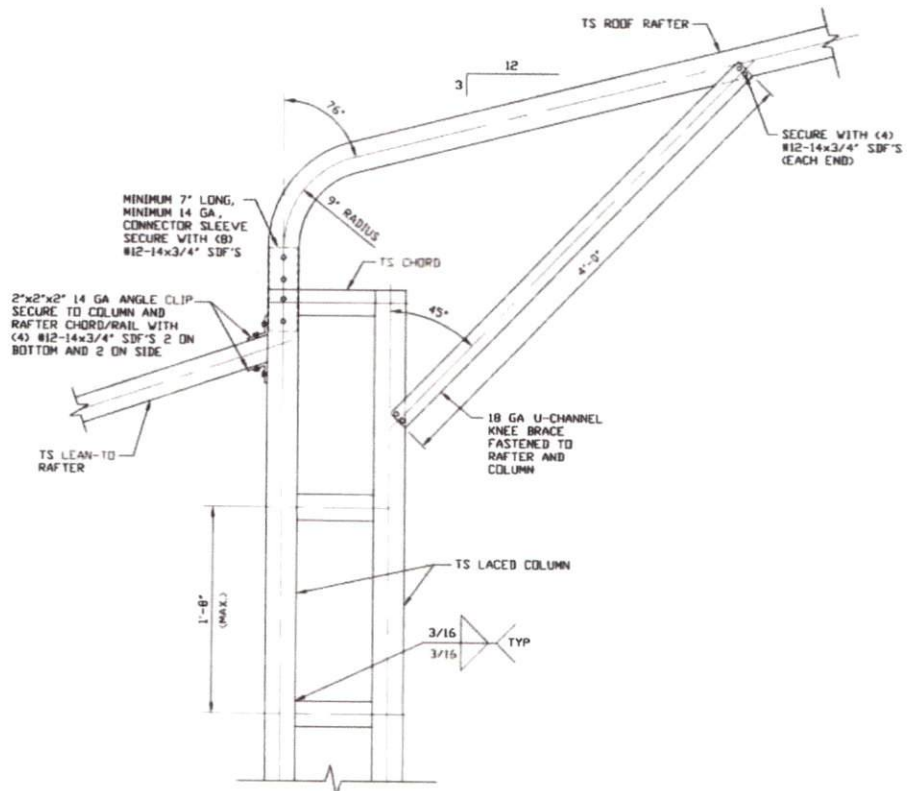
**SHT. 18**

**DWG. NO SK-3**

**REV: 0**

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**BOW EAVE RAFTER LEAN-TO OPTIONS FOR RAFTER SPANS  $\leq 12'-0"$**



**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 16'-0" < TO  $\leq$  20'-0"**

**16A**

SCALE: NTS

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

**DRAWN BY: AT**

**CHECKED BY: PDH**

**PROJECT MGR: VSM**

**CLIENT: TNT**

**TNT CARPORTS, INC.  
170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP ENCLOSED STRUCTURE**

**DATE: 6-23-20**

**SHT. 18A**

**SCALE: NTS**

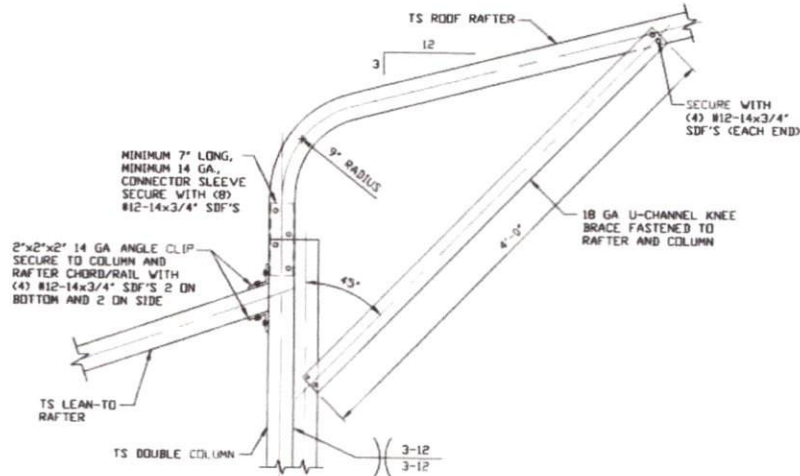
**DWG. NO. SK-3**

**JOB NO. 201265**

**REV. 0**

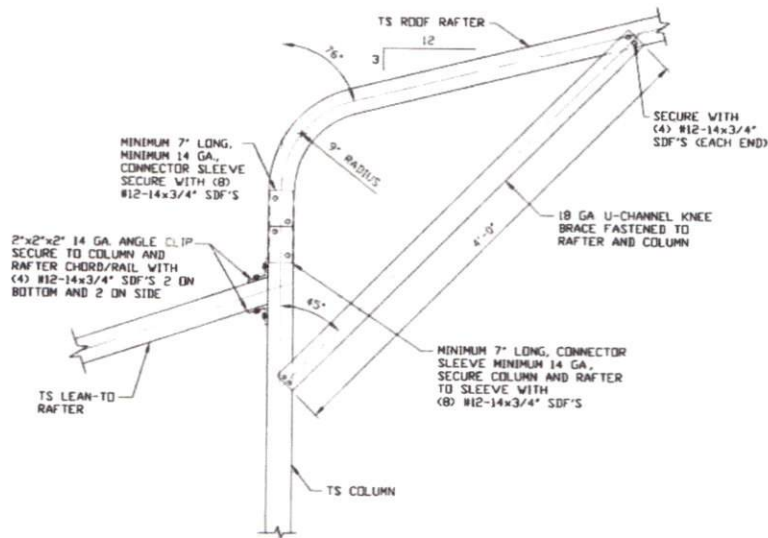
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# **BOW EAVE RAFTER LEAN-TO OPTIONS FOR RAFTER SPANS $\leq 12'-0"$**



**16B**

**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 12'-0" < TO < 16'-0"**  
SCALE: NTS



**16C**

**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS < 12'-0"**  
SCALE: NTS

NOTE: 2'-0" KNEE BRACE MAY BE USED  
FOR BUILDING WIDTHS < 24'-0".

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**PROJECT MGR: VSM**

**CLIENT: TNT**

**TNT CARPORTS, INC.  
170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP ENCLOSED STRUCTURE**

**DATE: 6-23-20**

**SHT. 188**

**SCALE: NTS**

**DWG. NO: SK-3**

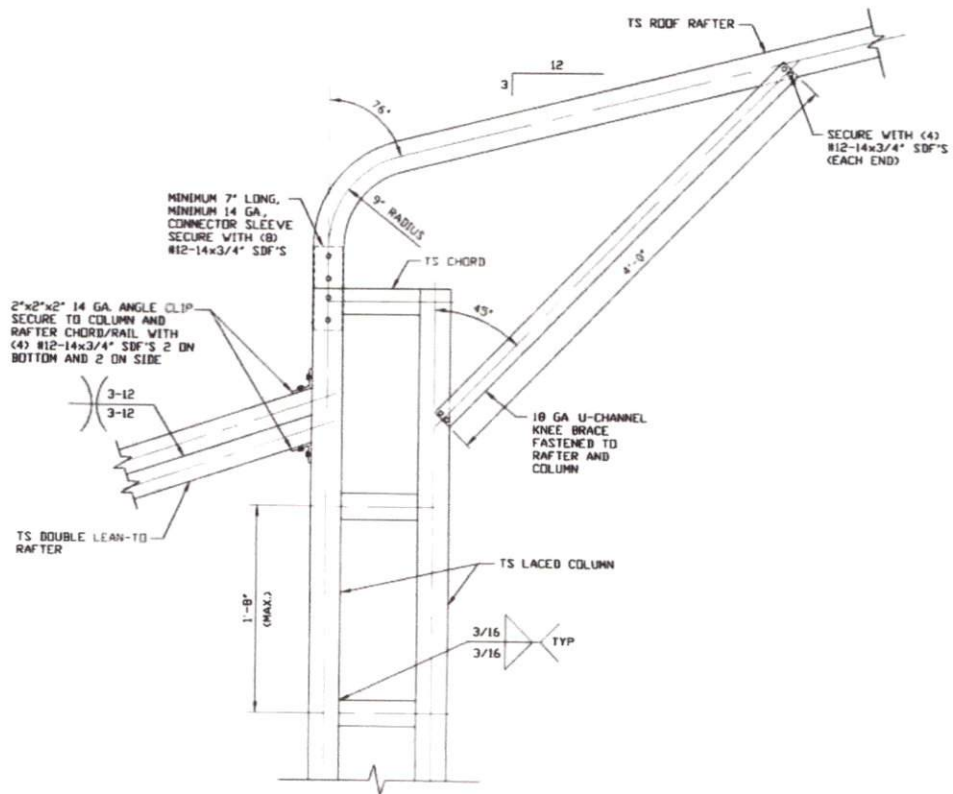
**JOB NO: 201265**

**REV: 0**

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



**SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 16'-0" < TO ≤ 20'-0"**

16D

SCALE: NTS

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PROJECT MGR: VSM

CLIENT: TNT

TNT CARPORTS, INC.  
170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP ENCLOSED STRUCTURE

DATE: 6-23-20

SCALE: NTS

JOB NO: 201265

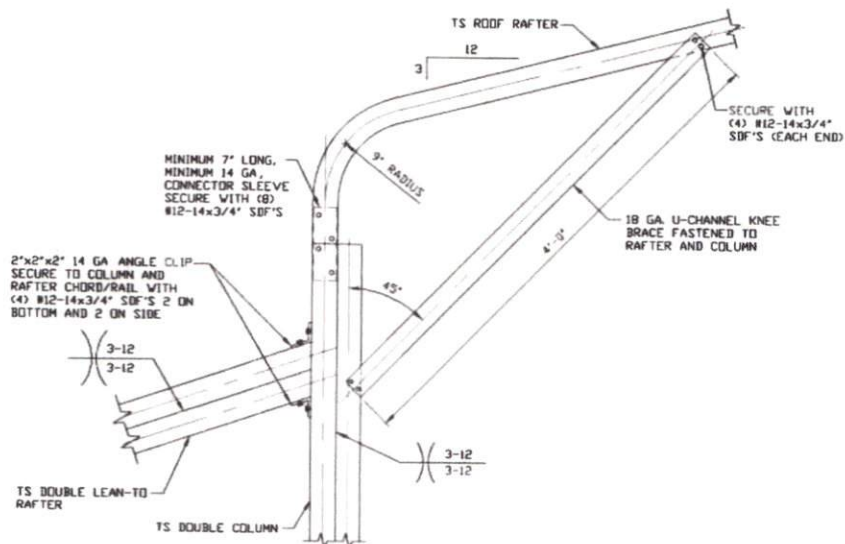
SHT. 18C

DWG. NO: SK-3

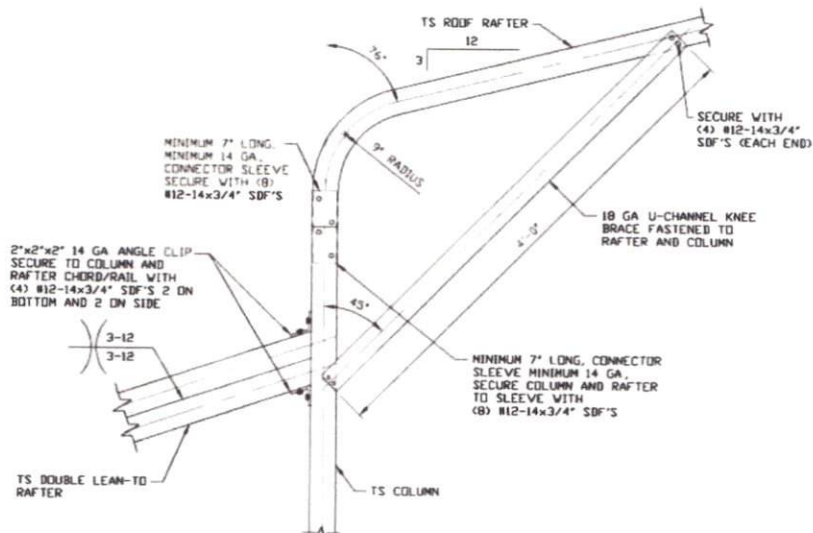
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# BOW EAVE RAFTER LEAN-TO OPTIONS FOR RAFTER SPANS 12'-0" < TO ≤ 16'-0"



**16E** SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS 12'-0" < TO ≤ 16'-0"  
SCALE: NTS



**16F** SIDE EXTENSION RAFTER/  
COLUMN DETAIL FOR  
HEIGHTS ≤ 12'-0"  
SCALE: NTS

NOTE: 2'-0" KNEE BRACE MAY BE USED  
FOR BUILDING WIDTHS < 24'-0".

MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING, INC.

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PROJECT MGR: VSM

CLIENT: TNT

TNT CARPORTS, INC.  
170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0"x20'-0" SP ENCLOSED STRUCTURE

DATE: 6-23-20

SHT. 180

SCALE: NTS

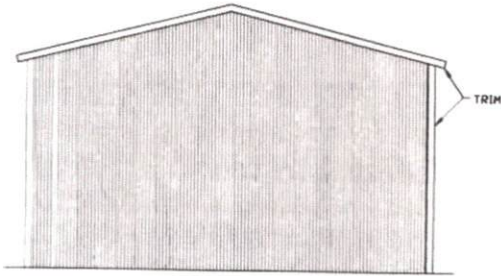
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JOB NO. 201265

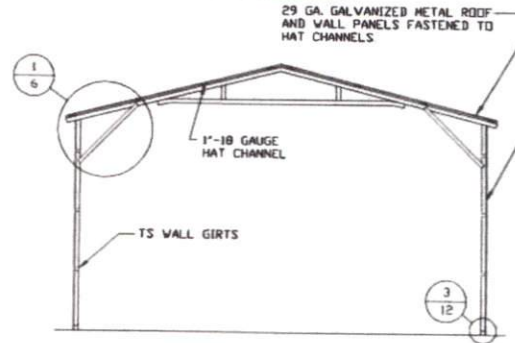
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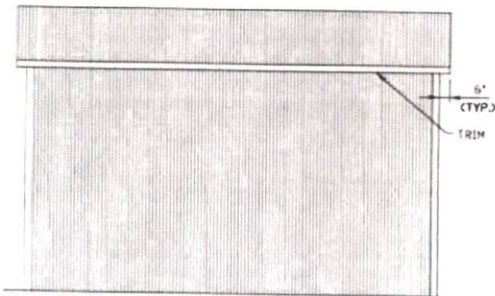
## BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



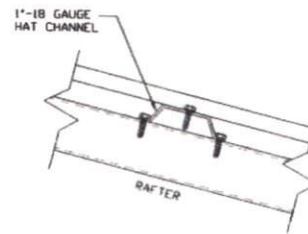
**TYPICAL END ELEVATION  
VERTICAL ROOF/SIDING**  
SCALE: NTS



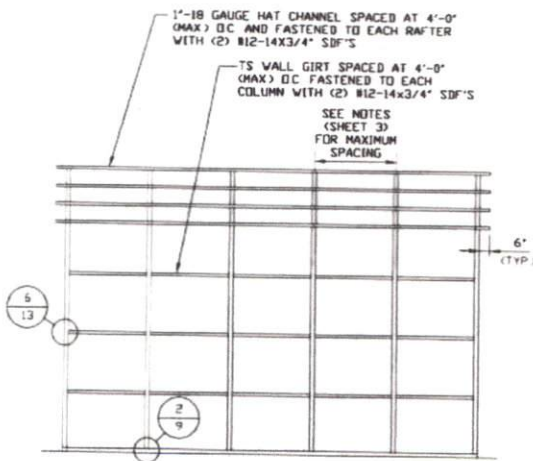
**TYPICAL SECTION VERTICAL  
ROOF/SIDING OPTION**  
SCALE: NTS



**TYPICAL SIDE ELEVATION  
VERTICAL ROOF/SIDING**  
SCALE: NTS



**PANEL ATTACHMENT**  
(ALTERNATE FOR VERTICAL ROOF PANELS)  
SCALE: NTS



**TYPICAL FRAMING SECTION  
VERTICAL ROOF/SIDING OPTION**  
SCALE: NTS

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**CHECKED BY: PMH**

**PROJECT MGR: VSM**

**CLIENT: TNT**

TNT CARPORTS, INC.  
170 HOLLY SPRINGS ROAD  
MOUNT AIRY, NC 27030  
30'-0" x 20'-0" SP ENCLOSED STRUCTURE

**DATE: 6-23-20**

**SCALE: NTS**

**JOB NO: 201265**

**SHT. 19**

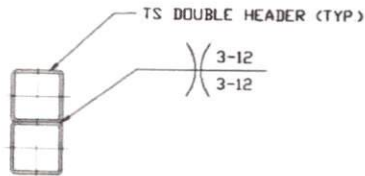
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**REV: 0**

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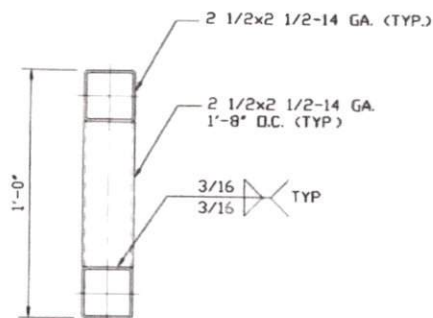


## SIDE WALL HEADER OPTIONS



### HEADER DETAIL FOR LENGTHS $\leq 12'-0''$

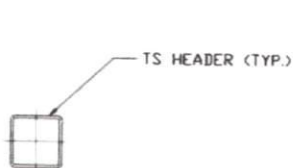
SCALE: NTS



### HEADER DETAIL FOR LENGTHS $12'-0'' < \text{TO } \leq 14'-0''$

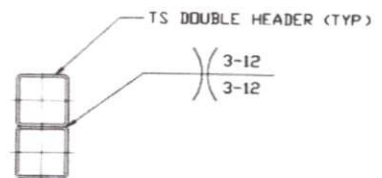
SCALE: NTS

## END WALL HEADER OPTION



### HEADER DETAIL FOR LENGTHS $\leq 12'-0''$

SCALE: NTS



### HEADER DETAIL FOR LENGTHS $12'-0'' < \text{TO } \leq 14'-0''$

SCALE: NTS

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

**DRAWN BY: AT**

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**DWG NO: SK-3**

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