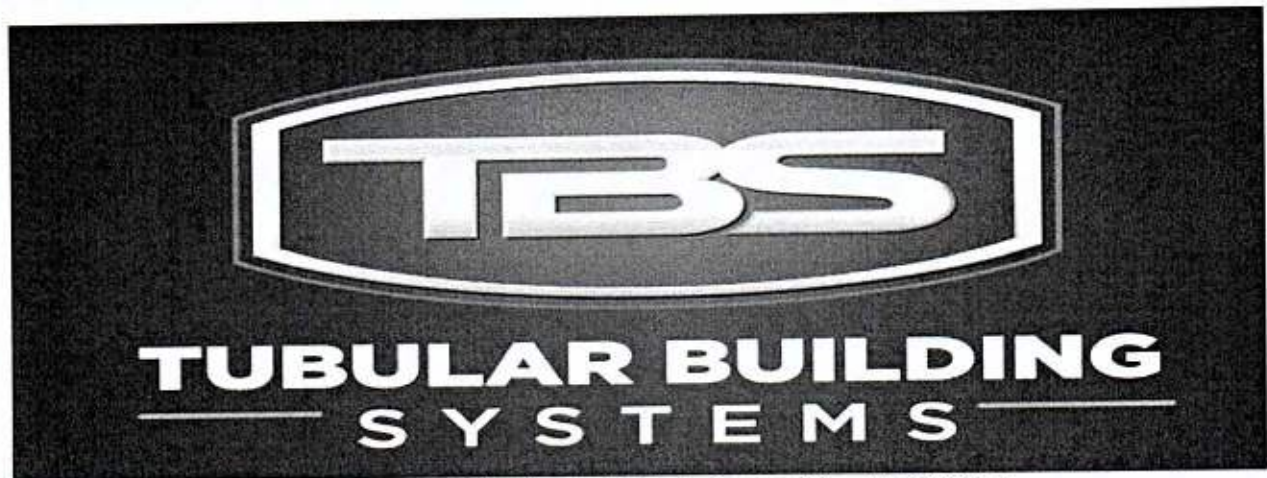




631 SE Industrial Circle Lake City, FL 32025  
Phone: 386.961.0006 Fax: 386.961.0008

Dear Customer –

To help us in our efforts of getting your building up in a timely manner we would appreciate you giving our office a call @ 386-961-0006 as soon as your concrete is complete (if applicable) and the required permits have been obtained.

We look forward to working with you and are here if you have any questions during the permitting process.

Thank you,

Tubular Building Systems



## **Florida Product Approval Codes**

### **Roof Deck:**

Capital Metal Supply Inc. Ag Panel: 20147.1

EXP 07/20/2020

### **Wall Panel:**

Capital Metal Supply Inc. Ag Panel: 20148.1

EXP 07/20/2020

If you have any questions or concern, please contact Donald Little at 386-961-0006 or at [tubularbuildingsystems@gmail.com](mailto:tubularbuildingsystems@gmail.com).

Outside measurement of foundation  
Equals Basic Building Dimension  
plus Seven (7) inches

46'7"

Basic Building  
Dimension  
to  
outside of Base Rail

46'

BUILDING SLAB

20'  
Basic Building  
Dimension  
to outside of Base Rail

20'7"

Outside measurement of foundation  
Equals Basic Building Dimension  
plus Seven (7) inches

See Corner  
Detail Sheet 3

Building  
Base Rail

3-1/2" wide x 1-1/2" high Notch  
in Concrete outside  
of basic building  
dimensions



TUBULAR BUILDING  
SYSTEMS

# TYPICAL BUILDING FOUNDATION MEASUREMENTS

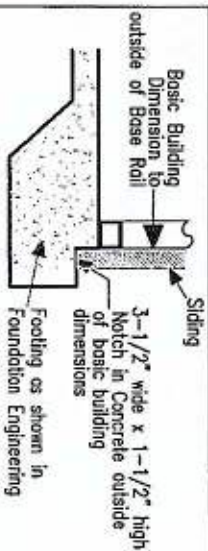
## IMPORTANT - NOTES

Record Measurements  
in these spaces provided

All basic building dimensions  
are to the outside of the  
frame Base Rail and DO NOT  
INCLUDE the 3-1/2" x 1-1/2"  
notch in the concrete footing

See Sheet 3 of 3  
for Detail of Building  
corner configuration

## TYPICAL WALL SECTION

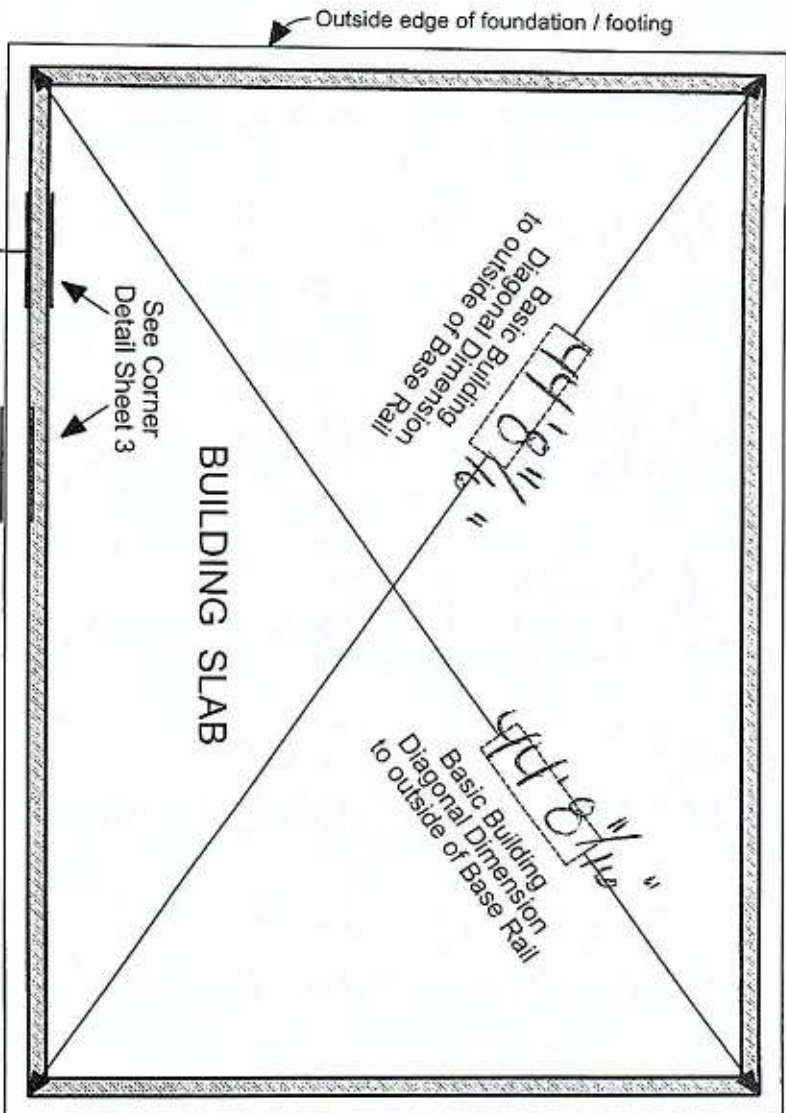


## IMPORTANT - NOTES

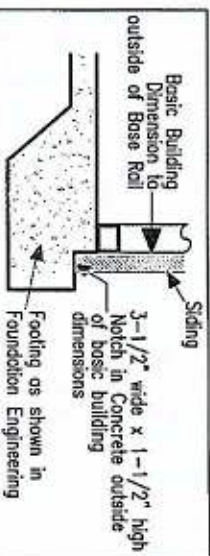
Record Measurements  
in these spaces provided

All basic building diagonal dimensions  
are to the outside corner of the  
frame Base Rail and DO NOT  
INCLUDE the 3-1/2" x 1-1/2"  
notch in the concrete footing

See Sheet 3 of 3  
for Detail of Building  
corner configuration



3-1/2" wide x 1-1/2" high Notch  
in Concrete outside  
of basic building  
dimensions

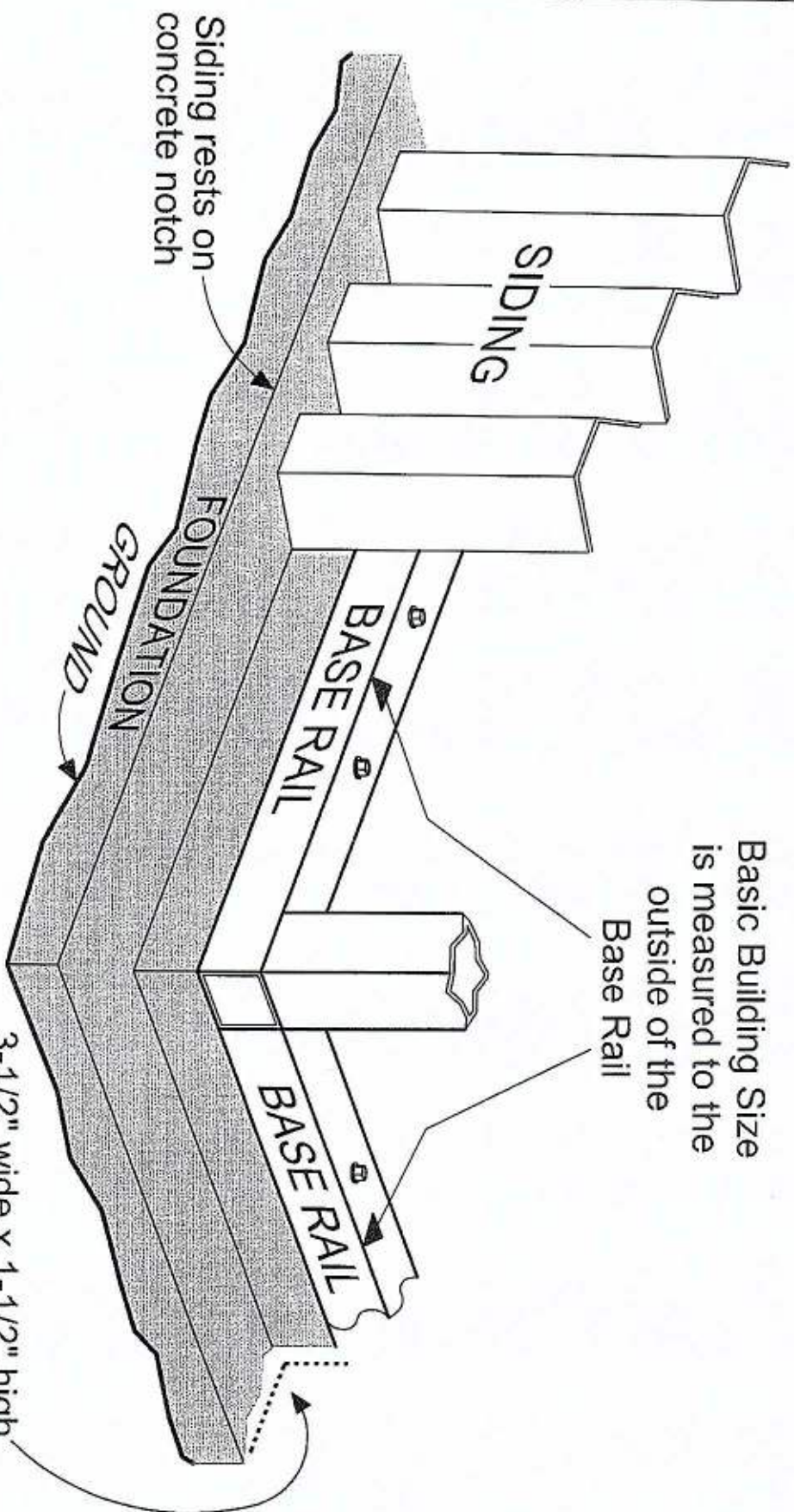


TYPICAL WALL SECTION

## TYPICAL BUILDING

## FOUNDATION MEASUREMENTS DIAGONALS





## TYPICAL BUILDING

CORNER DETAIL



## STRUCTURAL DESIGN

# FULLY OPEN CARPORT BUILDING EXPOSURE B

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

20 February 2018

Revision 5

M&A Project No. 16022S/17300S/18028S

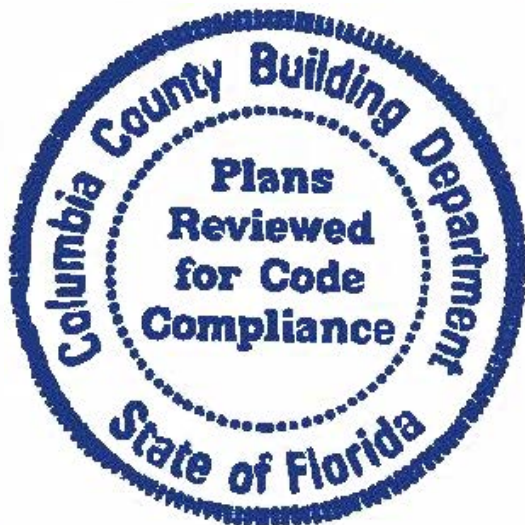
Prepared for:

Tubular Building Systems, LLC  
631 SE Industrial Circle  
Lake City, Florida 32025

Prepared by:

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

401 S. Main Street, Suite 200  
Mount Airy, NC 27030



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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--|--------------------------------------------------------------------------------------------|---------------|---------------------------------|
| MOORE AND ASSOCIATES<br>ENGINEERING AND CONSULTING, INC.                                                                                                                                                                                          | DRAWN BY: JRS    |  | TUBULAR BUILDING SYSTEMS<br>30'-0"x20'-0" FULLY OPEN CARPORT EXP. B<br>PE SEAL COVER SHEET |               |                                 |
|                                                                                                                                                                                                                                                   | CHECKED BY: PDH  |  |                                                                                            |               |                                 |
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|                                                                                                                                                                                                                                                   | CLIENT: TBS      |  | SHT. 1                                                                                     | DWG. NO: SK-1 | REV: 5                          |

# DRAWING INDEX

|          |                                                                       |
|----------|-----------------------------------------------------------------------|
| SHEET 1  | PE SEAL COVER SHEET                                                   |
| SHEET 2  | DRAWING INDEX                                                         |
| SHEET 3  | INSTALLATION NOTES AND SPECIFICATIONS                                 |
| SHEET 4  | TYPICAL SIDE AND END ELEVATIONS                                       |
| SHEET 5  | TYPICAL RAFTER COLUMN END AND SIDE FRAMING SECTIONS (BOX EAVE RAFTER) |
| SHEET 6A | TYPICAL RAFTER COLUMN CONNECTION DETAILS (LACED COLUMN)               |
| SHEET 6B | TYPICAL RAFTER COLUMN CONNECTION DETAILS (DOUBLE COLUMN)              |
| SHEET 6C | TYPICAL RAFTER COLUMN CONNECTION DETAILS (SINGLE COLUMN)              |
| SHEET 7  | TYPICAL RAFTER COLUMN END AND SIDE FRAMING SECTIONS (BOW RAFTER)      |
| SHEET 8A | TYPICAL RAFTER COLUMN CONNECTION DETAILS (DOUBLE COLUMN)              |
| SHEET 8B | TYPICAL RAFTER COLUMN CONNECTION DETAILS (SINGLE COLUMN)              |
| SHEET 9A | BASE RAIL ANCHORAGE OPTIONS                                           |
| SHEET 9B | OPTIONAL FOUNDATION ANCHORAGE                                         |
| SHEET 10 | BOX EAVE RAFTER GABLE END OPTION                                      |
| SHEET 11 | BOW RAFTER GABLE END OPTION                                           |
| SHEET 12 | BOX EAVE RAFTER EXTRA SIDE PANEL OPTION                               |
| SHEET 13 | BOW RAFTER EXTRA SIDE PANEL OPTION                                    |
| SHEET 14 | BOX EAVE RAFTER VERTICAL ROOF OPTION                                  |
| SHEET 15 | LEAN-TO OPTIONS (BOX EAVE RAFTER)                                     |
| SHEET 16 | LEAN-TO OPTIONS (BOW RAFTER)                                          |



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PROJECT MGR: VSM

CLIENT: TBS

TUBULAR BUILDING SYSTEMS  
30'-0"x20'-0" FULLY OPEN CARPORT EXP. B

DATE: 2-20-18

SHT. 2

SCALE: NTS

DWG. NO: SK-1

JOB NO:  
16022S/17300S/18028S

REV: 5

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## INSTALLATION NOTES AND SPECIFICATIONS

1. DESIGN IS FOR A MAXIMUM 30'-0" WIDE x 20'-0" EAVE HEIGHT FULLY OPEN CARPORT.
2. DESIGN WAS DONE IN ACCORDANCE WITH THE 2017 FLORIDA BUILDING CODE (FBC) 6TH EDITION, 2012 INTERNATIONAL BUILDING CODE (IBC) AND 2015 IBC.
3. DESIGN LOADS ARE AS FOLLOWS:
  - A) DEAD LOAD = 1.5 PSF
  - B) LIVE LOAD = 12 PSF
  - C) GROUND SNOW LOAD = 10 PSF
4. LOW ULTIMATE WIND SPEED 105 TO 140 MPH (NOMINAL WIND SPEED 81 TO 108 MPH) MAXIMUM RAFTER/POST AND END POST SPACING = 5.0 FEET.
5. HIGH ULTIMATE WIND SPEED 141 TO 170 MPH (NOMINAL WIND SPEED 109 TO 132 MPH) MAXIMUM RAFTER/POST AND END POST SPACING = 4.0 FEET.
6. LOW HAZARD RISK CATEGORY I.
7. WIND EXPOSURE CATEGORY B.
8. SPECIFICATIONS APPLICABLE TO 29 GAUGE METAL PANELS FASTENED DIRECTLY TO 2 1/2" x 2 1/2" - 14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS. FOR VERTICAL PANELS, 29 GAUGE METAL PANELS SHALL BE FASTENED TO 18 GAUGE HAT CHANNELS (UNLESS OTHERWISE NOTED).
9. AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR PURLINS, AND POSTS, INTERIOR = 9' OR END = 6', (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.
11. GROUND 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 30" LONG IN SUITABLE SOIL CONDITIONS MAY BE USED FOR LOW (< 108 MPH NOMINAL) WIND SPEEDS ONLY. OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED.
13. OPTIONAL BASE RAIL ANCHORAGE MAY BE USED FOR LOW AND MUST BE USED FOR HIGH WIND SPEEDS.
14. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:
 

SOIL SITE CLASS = D  
 RISK CATEGORY I/II/III  
 R = 3.25      I<sub>e</sub> = 1.0  
 S<sub>DS</sub> = 1.522      V = C<sub>s</sub>W  
 S<sub>DI</sub> = 0.839



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**DRAWN BY: JRS**

**CHECKED BY: PDH**

**PROJECT MGR: WSM**

**CLIENT: TBS**

**TUBULAR BUILDING SYSTEMS  
30'-0"x20'-0" FULLY OPEN CARPORT EXP. B**

**DATE: 2-20-18**

**SHT. 3**

**SCALE: NTS**

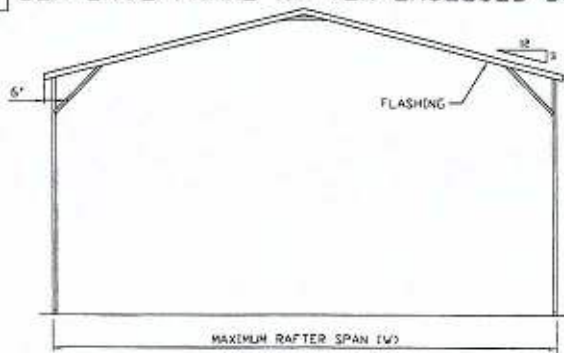
**DWG. NO: SK-1**

**JOB NO:  
16022S/17300S/18028S**

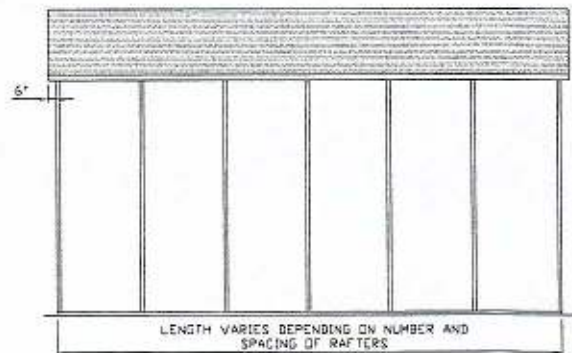
**REV: 5**

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☐ BOX EAVE FRAME RAFTER ENCLOSED BUILDING

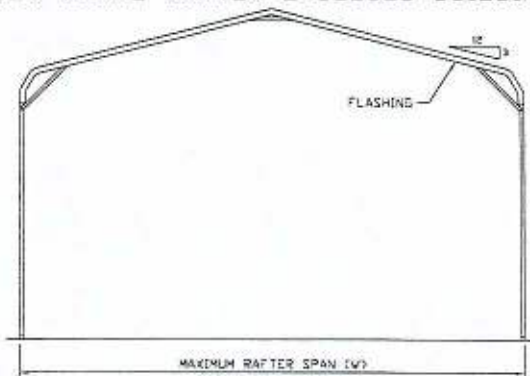


**TYPICAL END ELEVATION-HORIZONTAL ROOF**  
SCALE: NTS

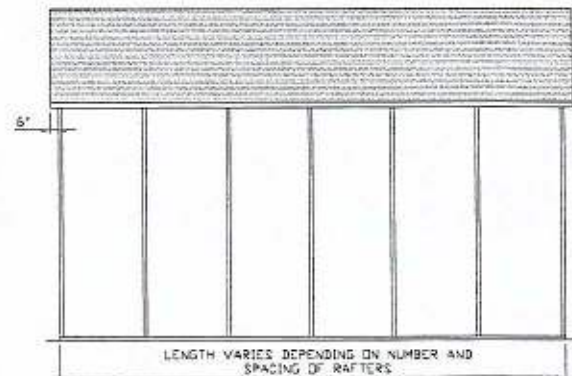


**TYPICAL SIDE ELEVATION-HORIZONTAL ROOF**  
SCALE: NTS

☐ BOW FRAME RAFTER ENCLOSED BUILDING



**TYPICAL END ELEVATION**  
SCALE: NTS



**TYPICAL SIDE ELEVATION**  
SCALE: NTS



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30'-0"X20'-0" FULLY OPEN CARPORT EXP. B

DATE: 2-20-18

SHT. 4

SCALE: NTS

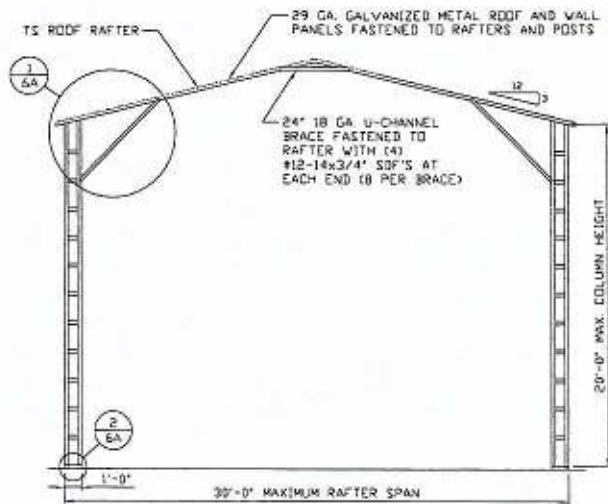
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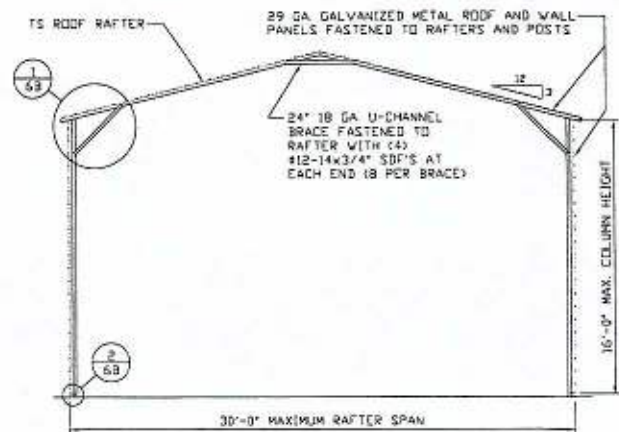
16022S/17300S/18028S

REV: 5

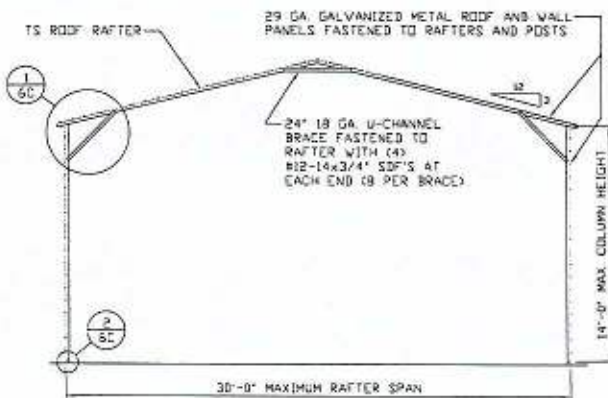
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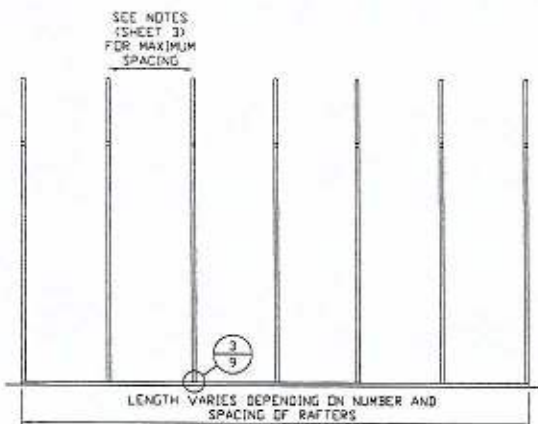
**TYPICAL RAFTER/COLUMN END FRAME SECTION**  
SCALE: NTS



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



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



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



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PROJECT MGR: VSM

CLIENT: TBS

**TUBULAR BUILDING SYSTEMS**  
30'-0"x20'-0" FULLY OPEN CARPORT EXP. B

DATE: 2-20-18

SHT. 5

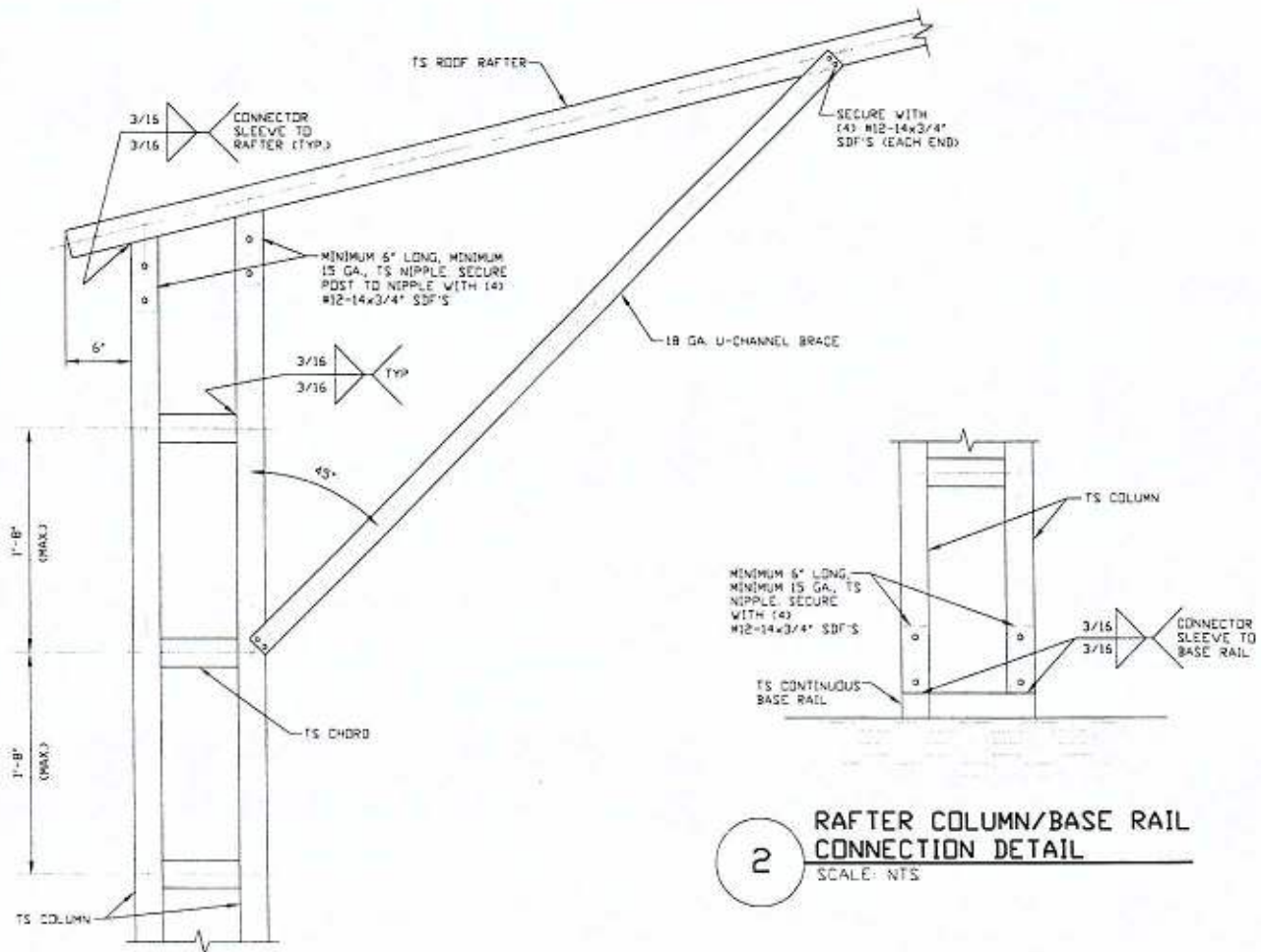
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JOB NO:  
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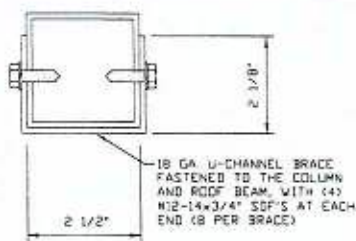
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**2** RAFTER COLUMN/BASE RAIL  
CONNECTION DETAIL  
SCALE: NTS

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



**BRACE SECTION**  
SCALE: NTS



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CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: TBS

TUBULAR BUILDING SYSTEMS  
30'-0"x20'-0" FULLY OPEN CARPORT EXP. B

DATE: 2-20-18

SHT. 6A

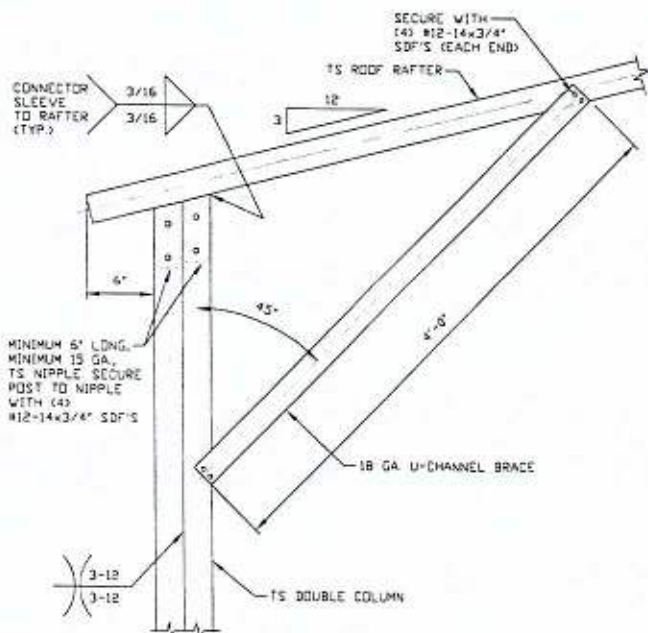
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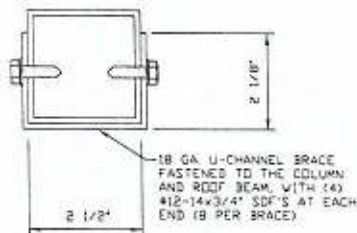
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REV: 5

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**BOX EAVE RAFTER COLUMN  
CONNECTION DETAIL  
FOR HEIGHTS 14'-0" < TO ≤ 16'-0"**  
SCALE: NTS



**RAFTER COLUMN/BASE RAIL  
CONNECTION DETAIL**  
SCALE: NTS

**BRACE SECTION**  
SCALE: NTS



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**TUBULAR BUILDING SYSTEMS  
30'-0"x20'-0" FULLY OPEN CARPORT EXP. B**

DATE: 2-20-18

SHT. 6B

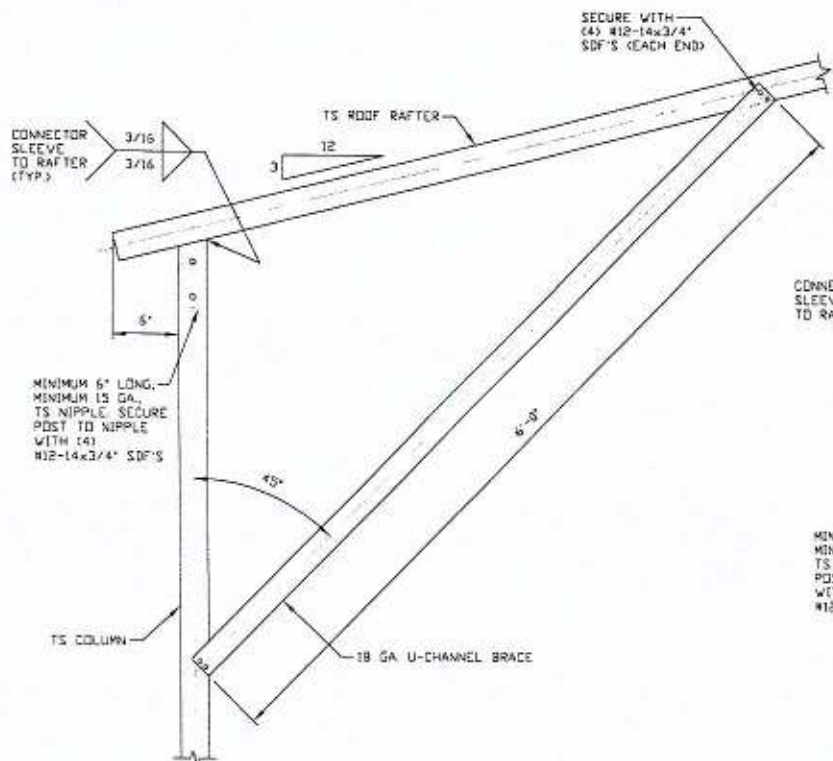
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DWG. NO: SK-1

JOB NO:  
16022S/17300S/18028S

REV: 5

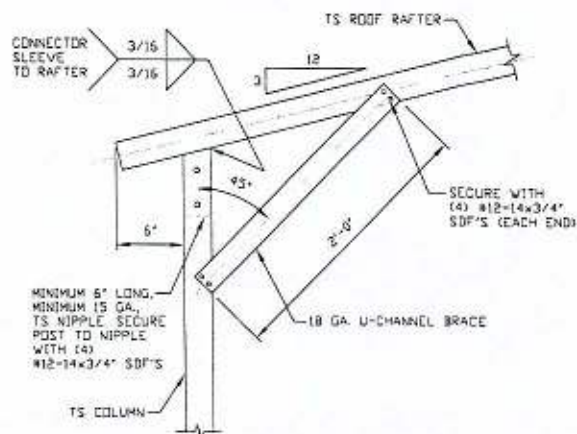
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BOX EAVE RAFTER COLUMN  
CONNECTION DETAIL  
FOR HEIGHTS 12'-0" < TO ≤ 14'-0"

1A

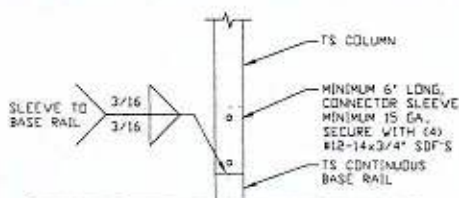
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BOX EAVE RAFTER COLUMN  
CONNECTION DETAIL  
FOR HEIGHTS  $\leq 12'-0"$

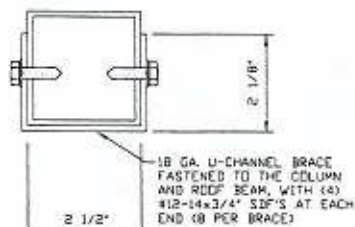
1B

SCALE: NTS



RAFTER COLUMN/BASE RAIL  
CONNECTION DETAIL

SCALE: NTS



BRACE SECTION

SCALE: NTS



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ENGINEERING AND CONSULTING, INC.

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PROJECT MGR: VSM

CLIENT: TBS

TUBULAR BUILDING SYSTEMS  
30'-0"x20'-0" FULLY OPEN CARPORT EXP. B

DATE: 2-20-18

SHT. 6C

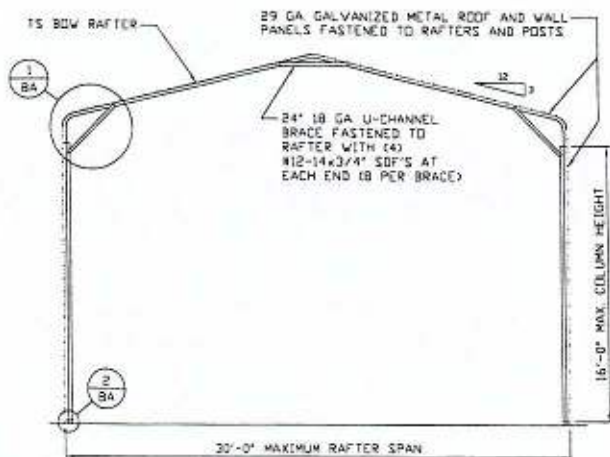
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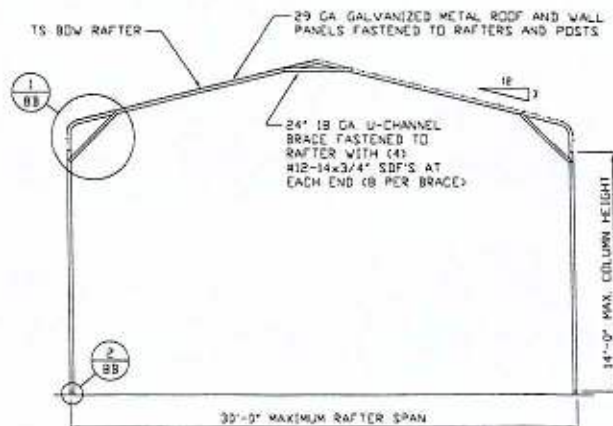
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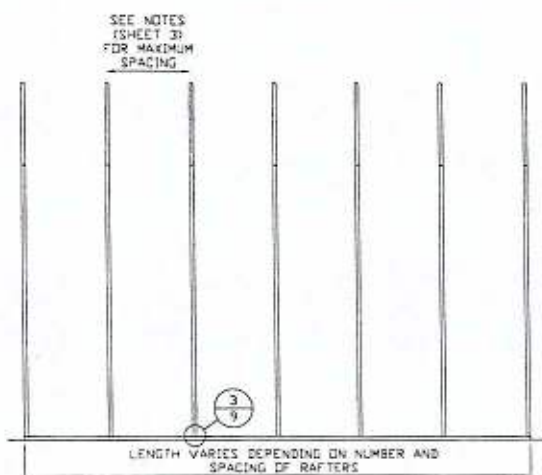
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**TYPICAL RAFTER/COLUMN END FRAME SECTION**  
SCALE: NTS



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



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



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ENGINEERING AND CONSULTING, INC.**

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CHECKED BY: PDH

PROJECT MGR: WSH

CLIENT: TBS

**TUBULAR BUILDING SYSTEMS**  
30'-0"x20'-0" FULLY OPEN CARPORT EXP. B

DATE: 2-20-18

SHT. 7

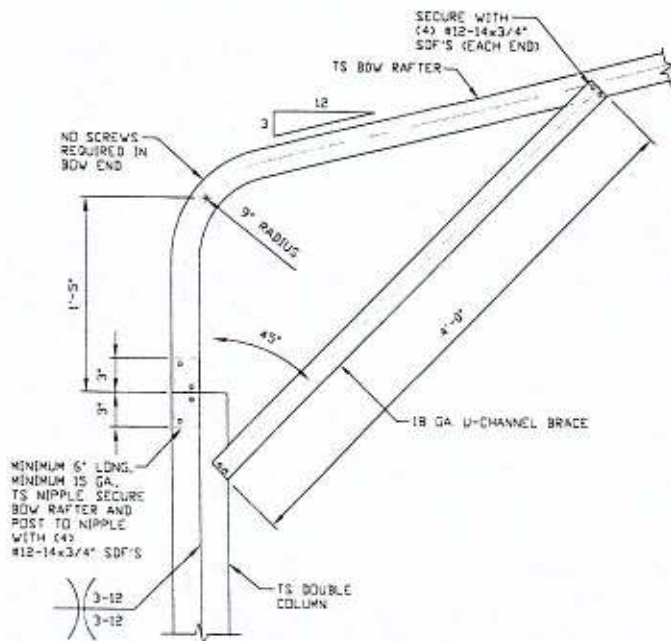
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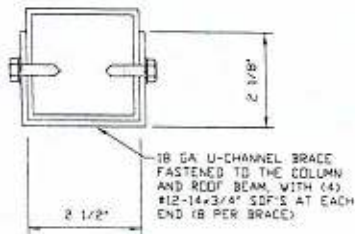
JOB NO:  
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REV: 5

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**1** BOX EAVE RAFTER COLUMN  
CONNECTION DETAIL  
FOR HEIGHTS 14'-0" < TO ≤ 16'-0"  
SCALE: NTS



**2** RAFTER COLUMN/BASE RAIL  
CONNECTION DETAIL  
SCALE: NTS

**BRACE SECTION**  
SCALE: NTS



MOORE AND ASSOCIATES  
ENGINEERING AND CONSULTING, INC.

DRAWN BY: JRS

CHECKED BY: PDH

PROJECT MGR: VSM

CLIENT: TBS

TUBULAR BUILDING SYSTEMS  
30'-0"x20'-0" FULLY OPEN CARPORT EXP. B

DATE: 2-20-18

SCALE: NTS

SHT. BA

DWG. NO: SK-1

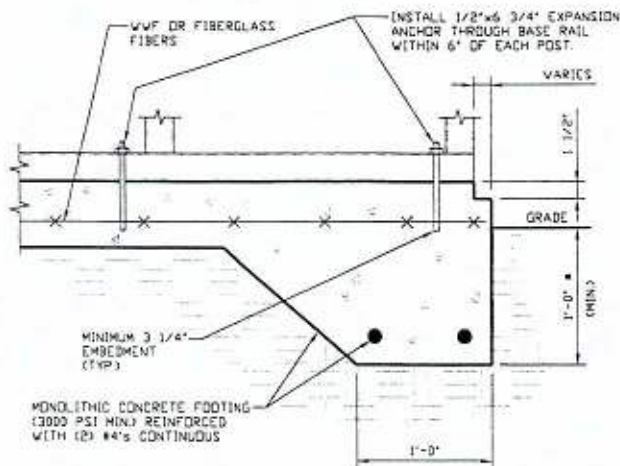
JOB NO:  
160225/173005/180285

REV: 5

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## BASE RAIL ANCHORAGE OPTIONS FOR LOW AND HIGH WIND SPEED



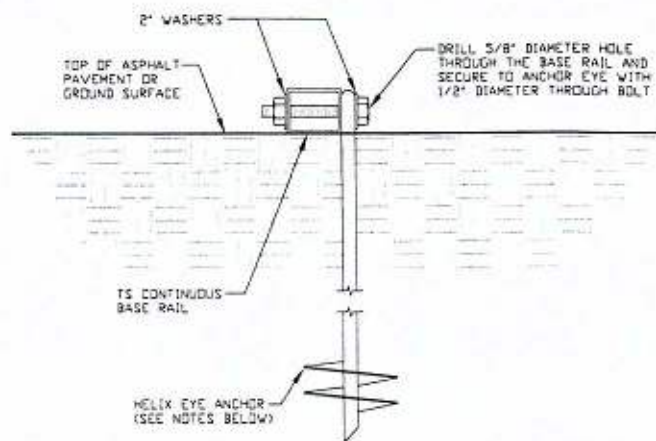
3A

### CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS

(MINIMUM ANCHOR EDGE DISTANCE IS 4")

\* COORDINATE WITH LOCAL CODES/ORD.



3B

### GROUND BASE HELIX ANCHORAGE

SCALE: NTS (CAN BE USED FOR ASPHALT)

## GENERAL NOTES

### CONCRETE:

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

### COVER OVER REINFORCING STEEL:

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

3 INCHES 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 INCHES 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 INCH EMBEDMENT.
2. FOR CORAL USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT.
3. FOR MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS, AND CLAYS USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT.
4. FOR LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS ALLUVIAL FILL USE MINIMUM (2) 6" HELICES WITH MINIMUM 50 INCH 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 INCH EMBEDMENT.



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

DRAWN BY: JRS

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: TBS

TUBULAR BUILDING SYSTEMS  
30'-0"x20'-0" FULLY OPEN CARPORT EXP. B

DATE: 2-20-18

SHT. 9A

SCALE: NTS

DWG. NO: SK-1

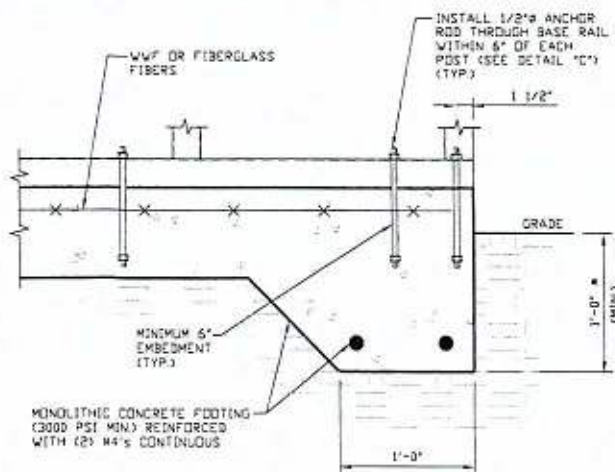
JOB NO:

16022S/17300S/18028S

REV: 5

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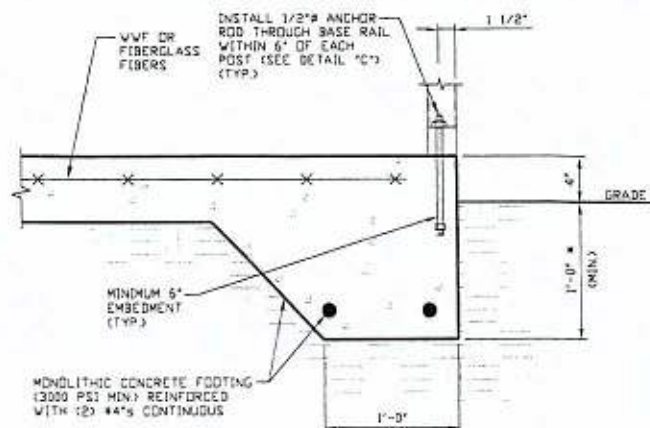
## OPTIONAL FOUNDATION ANCHORAGE FOR LOW & HIGH WIND SPEED



3A

### CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS  
(MINIMUM ANCHOR EDGE DISTANCE IS 1 1/2")  
\* COORDINATE WITH LOCAL CODES/ORD.



3B

### CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS  
(MINIMUM ANCHOR EDGE DISTANCE IS 1 1/2")  
\* COORDINATE WITH LOCAL CODES/ORD.

## GENERAL NOTES

### CONCRETE:

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

### COVER OVER REINFORCING STEEL:

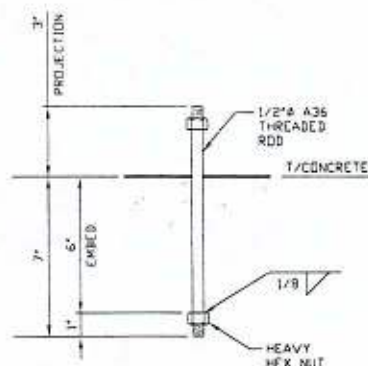
FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-318:  
3 INCHES IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH OR WEATHER, AND 1 1/2 INCHES ELSEWHERE.

### REINFORCING STEEL:

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

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

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



3C

### ANCHOR ROD THROUGH BASE RAIL DETAIL

SCALE: NTS



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DRAWN BY: JRS

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: TBS

TUBULAR BUILDING SYSTEMS  
30'-0"x20'-0" FULLY OPEN CARPORT EXP. B

DATE: 2-20-18

SHT. 9B

SCALE: NTS

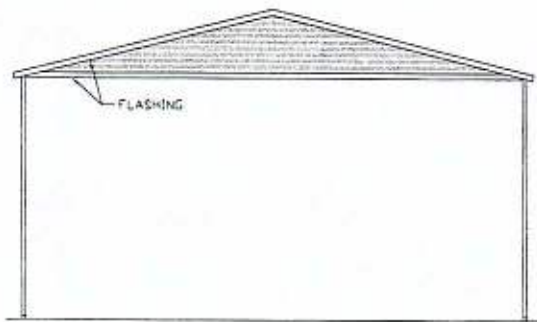
DWG. NO: SK-1

JOB NO:  
16022S/17300S/18026S

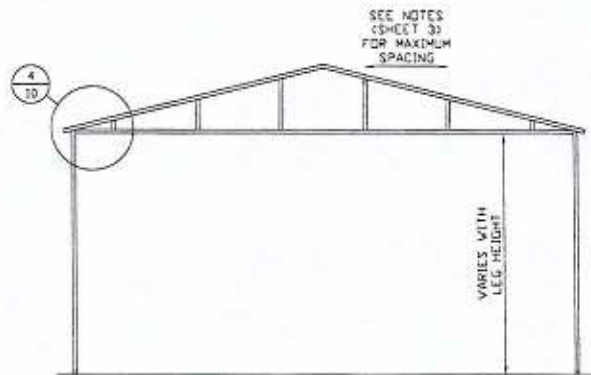
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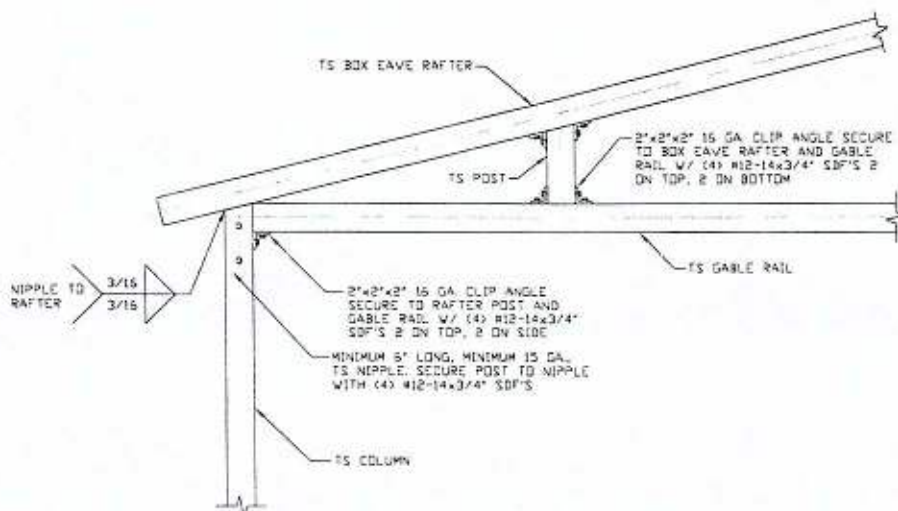
## BOX EAVE RAFTER GABLE END OPTION



**TYPICAL BOX EAVE RAFTER  
END WALL FRAMING SECTION**  
SCALE: NTS



**TYPICAL BOX EAVE RAFTER END  
WALL OPENINGS FRAMING SECTION**  
SCALE: NTS



**BOX EAVE RAFTER GABLE RAIL TO  
RAFTER POST CONNECTION DETAIL**  
SCALE: NTS



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

**DRAWN BY: JRS**

**CHECKED BY: PDH**

**PROJECT MGR: WSM**

**CLIENT: TBS**

**TUBULAR BUILDING SYSTEMS  
30'-0"X20'-0" FULLY OPEN CARPORT EXP. B**

**DATE: 2-20-18**

**SHT. 10**

**SCALE: NTS**

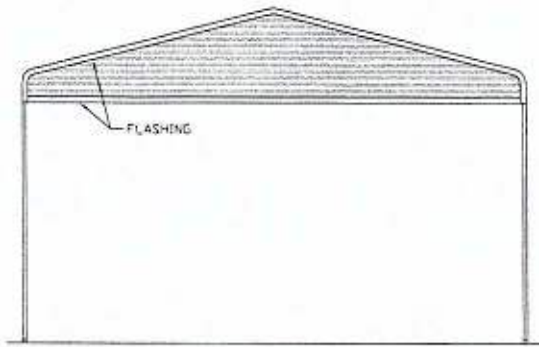
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**JOB NO:  
16022S/17300S/18028S**

**REV: 5**

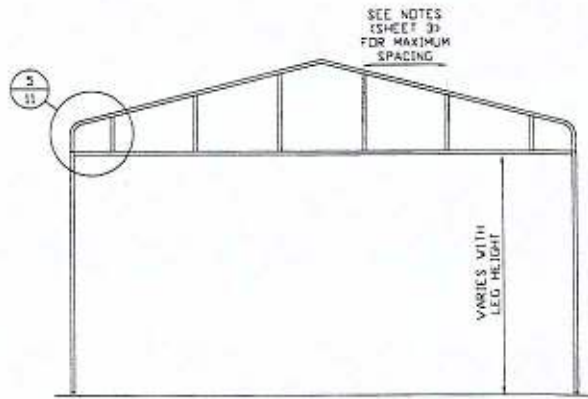
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## BOW RAFTER GABLE END OPTION



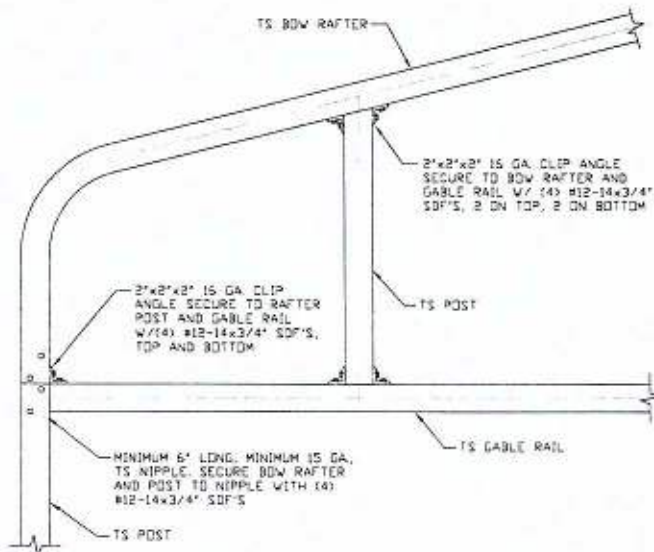
**TYPICAL BOX EAVE RAFTER  
END WALL FRAMING SECTION**

SCALE: NTS



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

SCALE: NTS



5

**BOW RAFTER GABLE RAIL TO  
RAFTER/POST CONNECTION DETAIL**

SCALE: NTS



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PROJECT MGR: WSM

CLIENT: TBS

TUBULAR BUILDING SYSTEMS  
30'-0"x20'-0" FULLY OPEN CARPORT EXP. B

DATE: 2-20-18

SHT. 11

SCALE: NTS

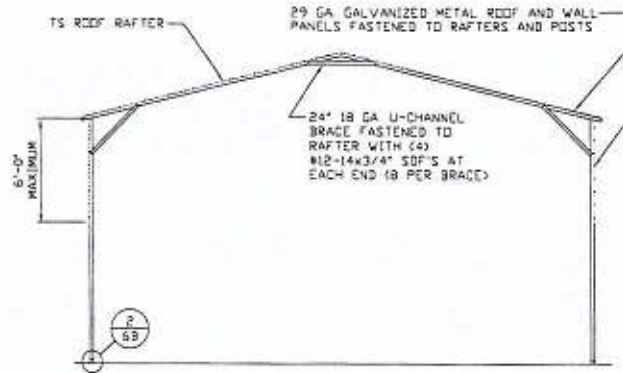
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JOB NO:  
16022S/17300S/18028S

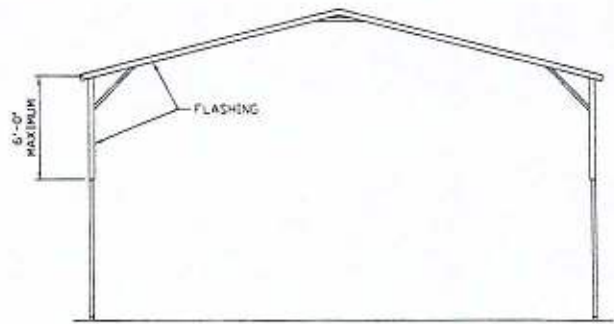
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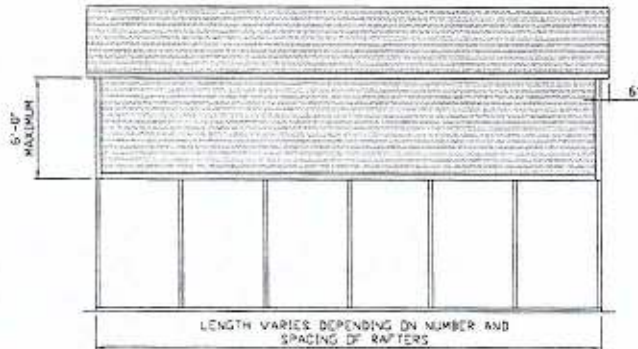
## BOX EAVE RAFTER EXTRA SIDE PANEL OPTION



**TYPICAL RAFTER/POST FRAME  
SECTION EXTRA SIDE PANELS**  
SCALE: NTS



**TYPICAL END ELEVATION  
EXTRA SIDE PANELS**  
SCALE: NTS



**TYPICAL SIDE ELEVATION  
EXTRA SIDE PANELS**  
SCALE: NTS



**MOORE AND ASSOCIATES  
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**DRAWN BY: JRS**

**CHECKED BY: PDH**

**PROJECT MGR: WSM**

**CLIENT: TBS**

**TUBULAR BUILDING SYSTEMS  
30'-0"x20'-0" FULLY OPEN CARPORT EXP. B**

**DATE: 2-20-18**

**SHT. 12**

**SCALE: NTS**

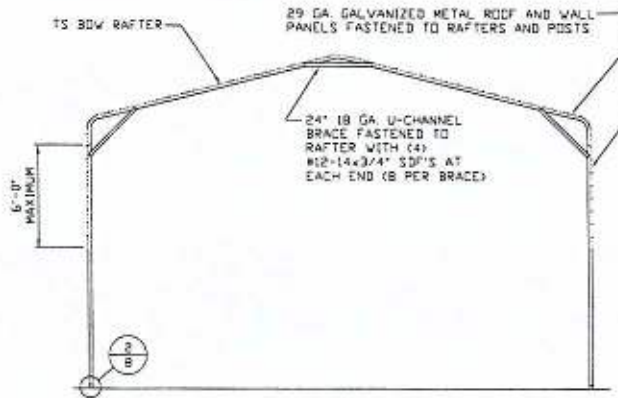
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**JOB NO:  
16022S/17300S/18028S**

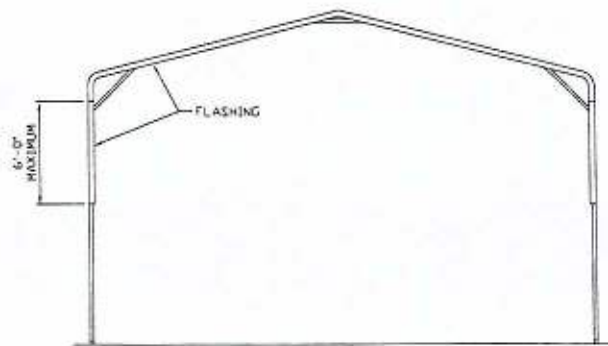
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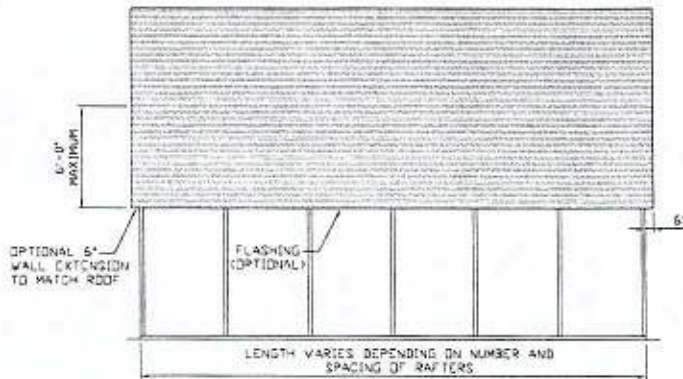
## BOW RAFTER EXTRA SIDE PANEL OPTION



**TYPICAL RAFTER/POST FRAME  
SECTION EXTRA SIDE PANELS**  
SCALE: NTS



**TYPICAL END ELEVATION  
EXTRA SIDE PANELS**  
SCALE: NTS



**TYPICAL SIDE ELEVATION  
EXTRA SIDE PANELS**  
SCALE: NTS



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

**DRAWN BY: JRS**

**CHECKED BY: PDH**

**PROJECT MGR: WSM**

**CLIENT: TBS**

**TUBULAR BUILDING SYSTEMS  
30'-0"X20'-0" FULLY OPEN CARPORT EXP. B**

**DATE: 2-20-18**

**SHT. 13**

**SCALE: NTS**

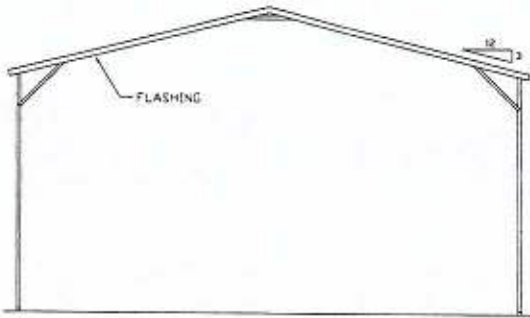
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**JOB NO:  
16022S/17300S/18028S**

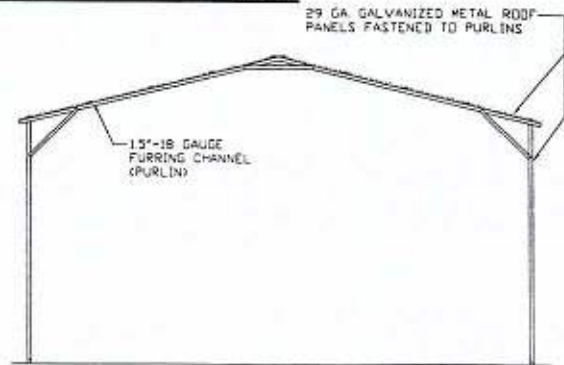
**REV: 5**

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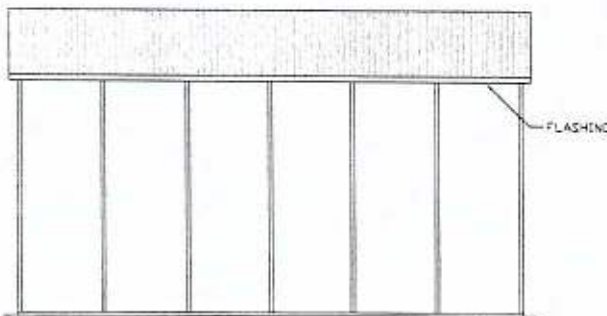
## BOX EAVE RAFTER VERTICAL ROOF OPTION



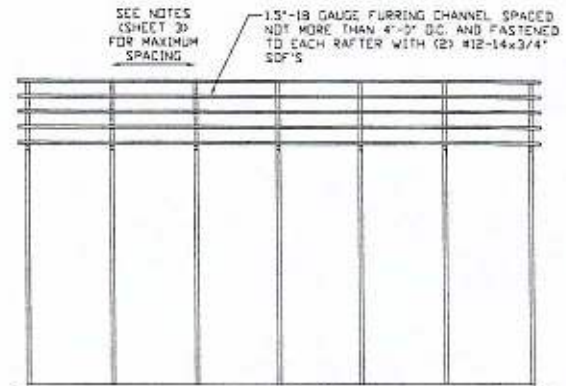
**TYPICAL END ELEVATION  
VERTICAL ROOF/SIDING OPTION**  
SCALE: NTS



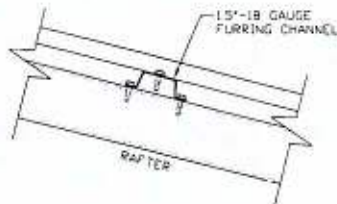
**TYPICAL SECTION VERTICAL  
ROOF/SIDING OPTION**  
SCALE: NTS



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



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



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



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

DRAWN BY: JRS

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PROJECT MGR: WSM

CLIENT: TBS

**TUBULAR BUILDING SYSTEMS**  
30'-0" x 20'-0" FULLY OPEN CARPORT EXP. B

DATE: 2-20-18

SHT. 14

SCALE: NTS

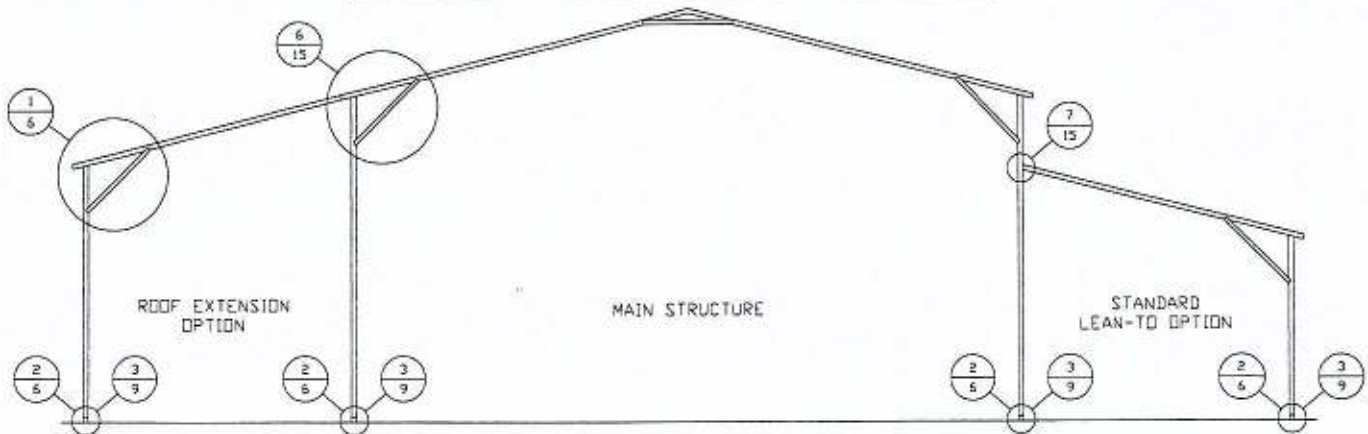
DWG. NO: SK-1

JOB NO:  
16022S/17300S/18028S

REV: 5

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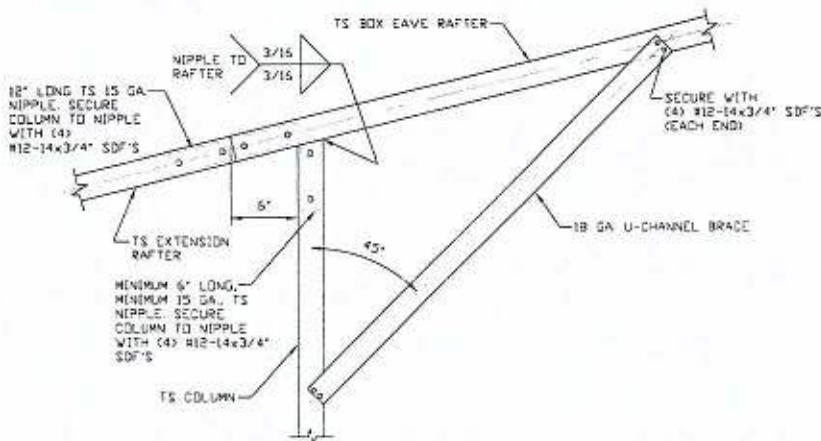
## BOX EAVE RAFTER LEAN-TO OPTIONS



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

SCALE: NTS

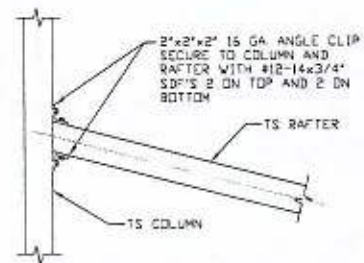
MAXIMUM WIDTH OF SINGLE MEMBER RAFTER LEAN-TO IS 16'-0".



6

**SIDE EXTENSION RAFTER/COLUMN DETAIL**

SCALE: NTS



7

**LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL**

SCALE: NTS



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

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CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: TBS

**TUBULAR BUILDING SYSTEMS**  
30'-0"x20'-0" FULLY OPEN CARPORT EXP. B

DATE: 2-20-18

SHT. 15

SCALE: NTS

DWG. NO: SK-1

JOB NO:

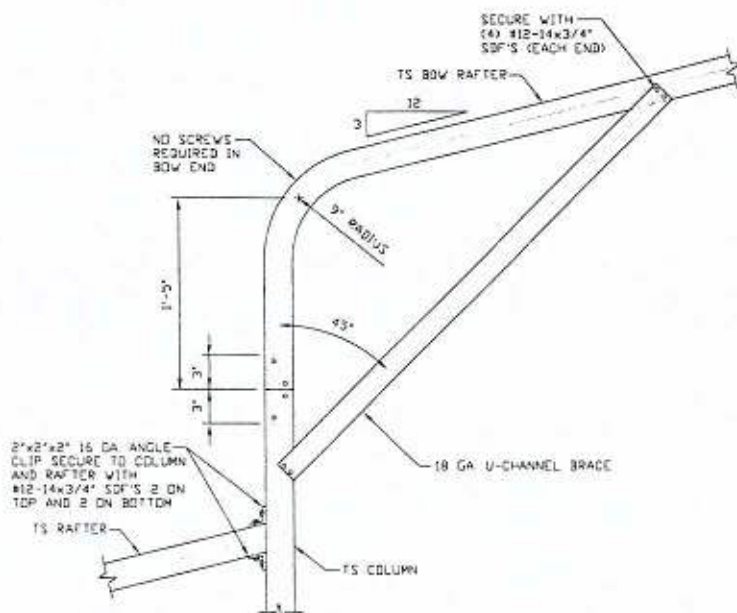
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The diagram illustrates a lean-to roof structure. The 'STANDARD LEAN-TO OPTION' is shown on the left, featuring a gable end with a roof slope indicated by a triangle with '1' over '8'. The 'MAIN STRUCTURE' is the larger building to the right. Callouts include: '1' over '8' at the lean-to ridge; '2' over '8' and '3' over '9' at the base of the lean-to wall; '8' over '15' at the junction of the lean-to roof and the main structure's roof; and '2' over '8' and '3' over '9' at the base of the main structure's wall.

SCALE: NTS  
MAXIMUM WIDTH OF SINGLE MEMBER RAFTER LEAN-TO IS 16'-0"



SIDE EXTENSION RAFTER/COLUMN DETAIL

SCALE NTS



REV. 5