

ENCLOSED BUILDING EXPOSURE B

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

18 December 2017 Revision 4 M&A Project No. 16022S/17300S

Prepared for:

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

Prepared by:

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	MOORE AND A ENGINEERING AND	ASSOCIATES CONSULTING, INC.	DRAWN BY: LT		30'-0"x20'-0	JLAR BUILDING S D'' ENCLOSED BUI E SEAL COVER SI	ILDING EXP. B HEET
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INSTALLATION NOTES AND SPECIFICATIONS

- 1. DESIGN IS FOR A MAXIMUM 30'-0" WIDE imes 20'-0" EAVE HEIGHT ENCLOSED STRUCTURES
- 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 A) DEAD LOAD = 12 PSF B) LIVE LOAD
- 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 (WIND).
- 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 DN-CENTERS ALONG RAFTERS OR PURLINS, AND POSTS, INTERIOR = 9° OR END = 6°, (MAX.)
- 10. FASTENERS CONSIST OF #12-14×3/4° SELF-DRILLING FASTENER (SDF), USE CONTROL SEAL WASHER WITH EXTERIOR FASTENERS.

 SPECIFICATIONS APPLICABLE DNLY 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 × 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 USE 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:

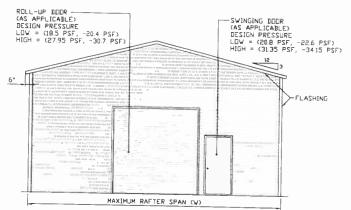
SOIL SITE CLASS = D RISK CATEGORY I/II/III R= 3.25 I_E= 1.0 Sps= 1.522 $V = C_S W$

Sp:= 0.839

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MOORE AND ASSOCIATES	DRAWN BY: LT	TUBU 30'-0"x20'-	JLAR BUILDING)" ENCLOSED B	G SYSTEMS UILDING EXP. B
ENGINEERING THE COLUMN	1	DATE: 12-18-17	SCALE: NTS	JOB NO: 160225/173005
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BOX EAVE FRAME RAFTER ENCLOSED BUILDING

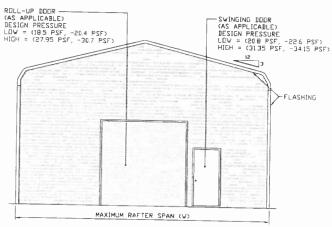


TYPICAL END ELEVATION-HORIZONTAL ROOF

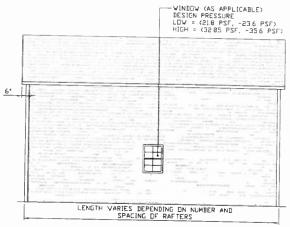
TYPICAL SIDE ELEVATION-HORIZONTAL ROOF

WINDOW (AS APPLICABLE)
DESIGN PRESSURE
LDW = (218 PSF, -236 PSF)
HIGH = (3285 PSF, -35.6 PSF)

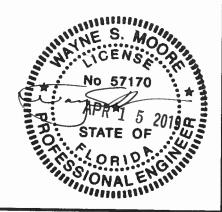
BOW FRAME RAFTER ENCLOSED BUILDING



TYPICAL END ELEVATION



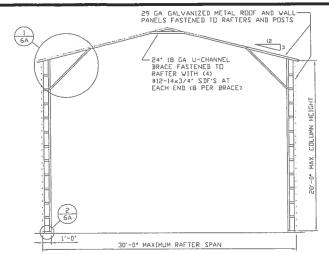
TYPICAL SIDE ELEVATION
SCALE: NTS



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RE SUBJECT TO LEGAL ACTION

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PROJECT MGR: VSM	DATE: 12-18-17	SCALE: NTS	JOB NO: 16022\$/17300\$			



E e ors

TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS

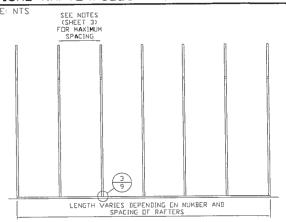
29 GA GALVANIZED METAL ROOF AND WALL
PANELS FASTENED TO RAFTERS AND POSTS

24' 18 GA U-CHANNEL
BRACE FASTENED TO
RAFTER WITH (4)
H12-14x3/4' SIF'S AT
EACH END (8 PER BRACE)

30'-0' MAXIMUM RAFTER SPAN

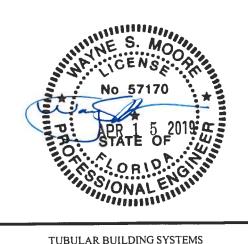
TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

TYPICAL RAFTER/COLUMN END FRAME SECTION



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

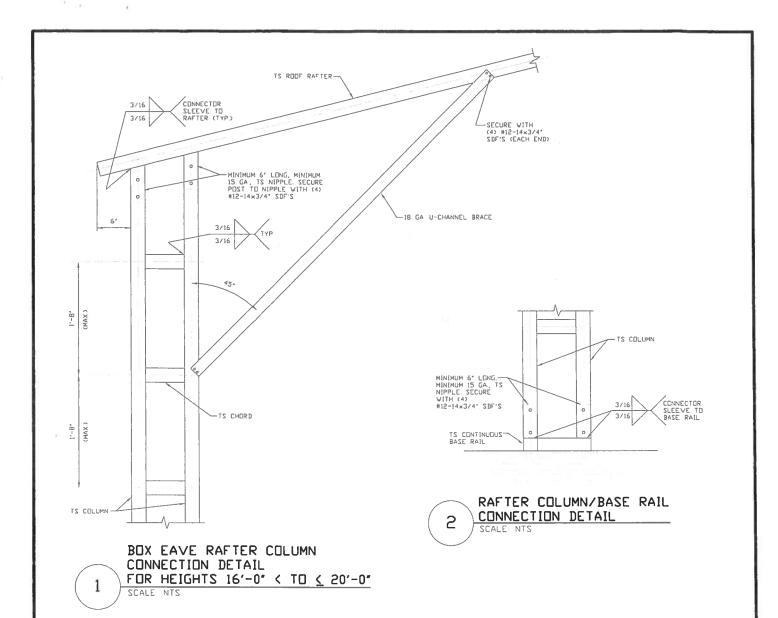
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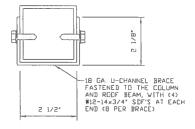


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CLIENT: TBS	SHT. 5	DWG. ND: SK-3 REV.: 4				

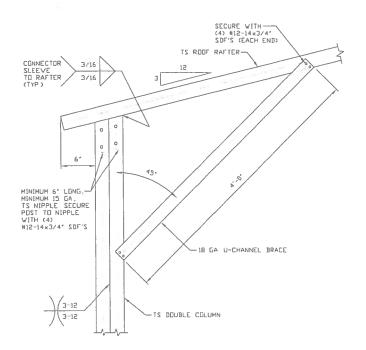




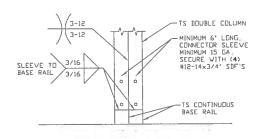
BRACE SECTION SCALE: NTS



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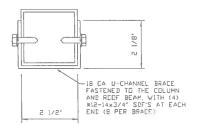


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 14'-0" < TO < 16'-0" SCALE: NTS



RAFTER COLUMN/BASE RAIL CONNECTION DETAIL SCALE NTS

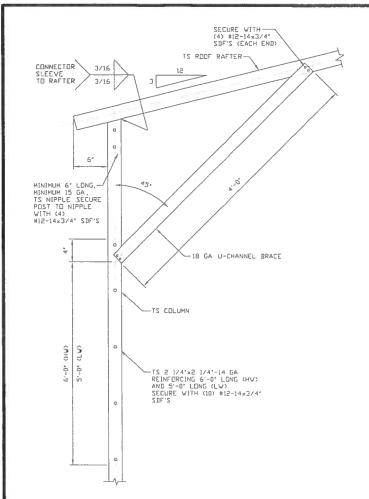
2



BRACE SECTION
SCALE NTS

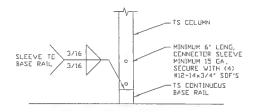


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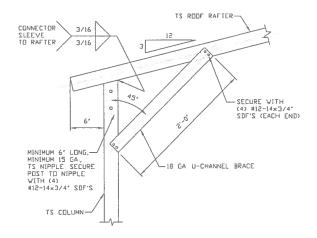


BOX EAVE RAFTER COLUMN
CONNECTION DETAIL
FOR HEIGHTS 10'-0" < TO < 14'-0"

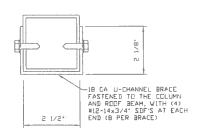
SCALE NTS



2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL
SCALEFINIS



BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS < 10'-0"

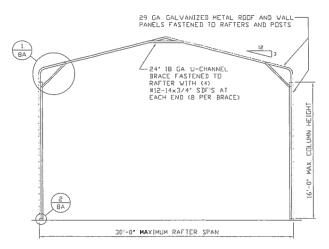


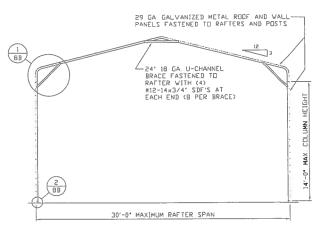
BRACE SECTION SCALE NTS

1B



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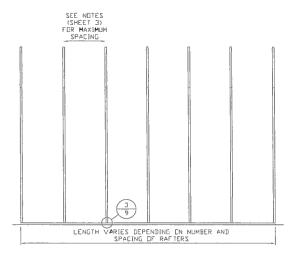




TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE NTS

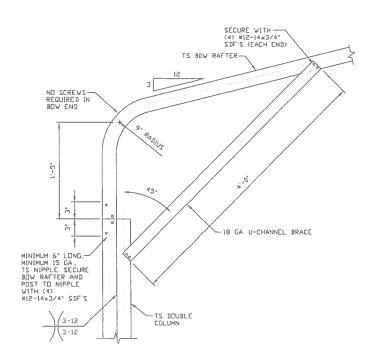
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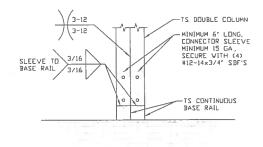
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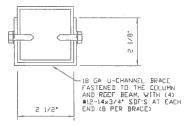
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BOX EAVE RAFTER COLUMN
CONNECTION DETAIL
FOR HEIGHTS 14'-0' < TO < 16'-0"
SCALE NTS

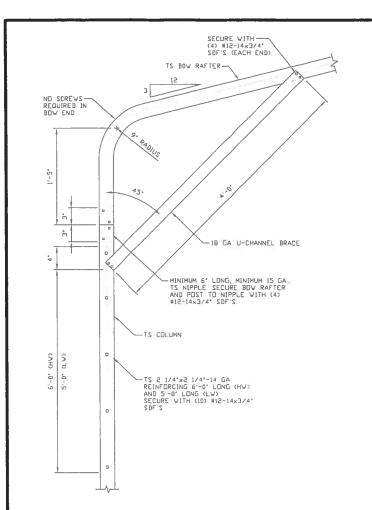
2 RAFTER COLUMN/BASE RAIL
SCALE NTS



BRACE SECTION



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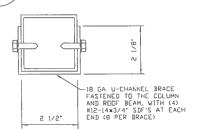
ND SCREWS
REQUIRED IN
BDW END

SECURE WITH
(4) H12-14x3/4*
SDF'S (EACH END)

TS NPPLE SECURE
BDW RAFTER AND
PDST TD NIPPLE
WITH (4)
H12-14x3/4* SDF'S

BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 10'-0"

1B) FUR HE!



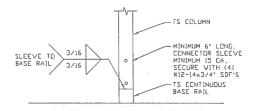
BRACE SECTION

SCALE: NTS

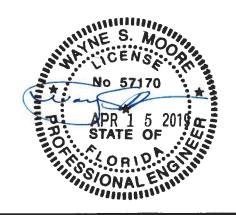
BOX EAVE RAFTER COLUMN
CONNECTION DETAIL
FOR HEIGHTS 10'-0' < TO <

FOR HEIGHTS 10'-0" < TO ≤ 14'-0"

SCALE NTS



2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS

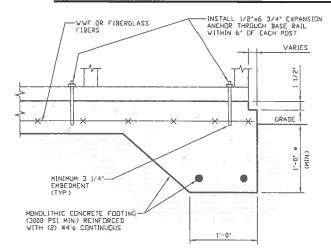


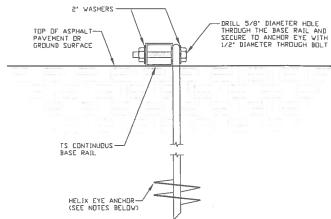
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BASE RAIL ANCHORAGE OPTIONS FOR LOW AND HIGH WIND SPEED





3A

CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS MINIMUM ANCHOR EDGE DISTANCE IS 4")
* COORDINATE WITH LOCAL CODES/ORD 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 FOR FDUNDATIONS, MINIMUM LUNCKETE COVER OVER RETURN DISCUSSION 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:

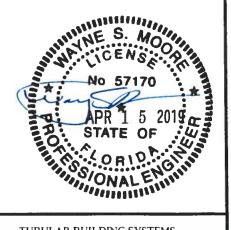
THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT

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

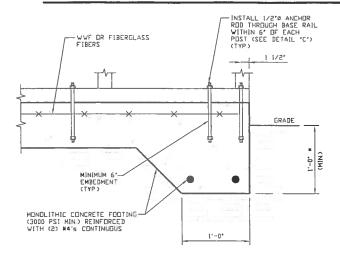
HELIX ANCHOR NOTES:

- 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 LODSE 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.



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OPTIONAL FOUNDATION ANCHORAGE FOR LOW & HIGH WIND SPEED





CONCRETE MONOLITHIC SLAB ANCHORAGE BASE RAIL

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

INSTALL 1/2'# ANCHOR— RDD THROUGH BASE RAIL WITHIN 6' DF EACH POST (SEE DETAIL 'C') (TYP) WWF DR FIBERGLASS FIBERS GRADE CMIMO 1,-0, MINIMUM 6' EMBEDMENT MENDLITHIC CONCRETE FOOTING-(3000 PSI MIN) REINFORCED WITH (2) #4's CONTINUOUS 1'-0"

1B

CONCRETE MONOLITHIC SLAB BASE RAIL ANCHURAGE

(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:

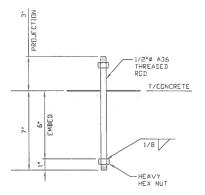
FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-318
3 INCHES IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH OR WEATHER, AND 1 1/2 INCHES ELSEWHERE

REINFORCING STEEL:

THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 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.





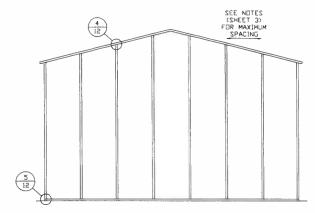
ANCHOR ROD THROUGH BASE RAIL DETAIL

SCALE: NTS

SHINA CENSE SA PR 1 5 2019 CE STATE OF WAR ON ALEMANIA

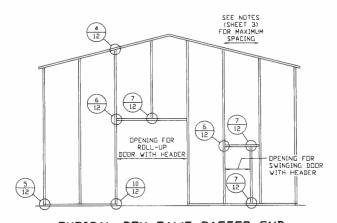
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BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



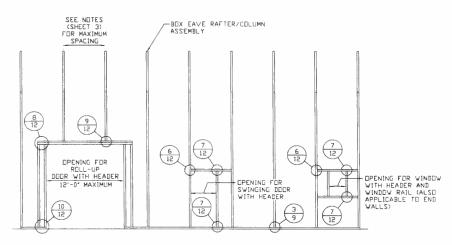
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



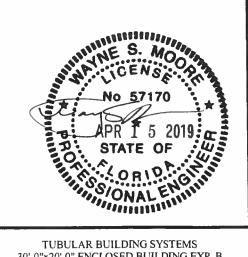
TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS



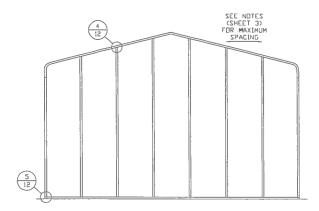
TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS



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BOW RAFTER END WALL AND SIDE WALL OPENINGS



TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SEE NOTES
(SHEET 3)
FOR MAXIMUM
SPACING

OPENING FOR
ROLL-UP
DOOR WITH HEADER

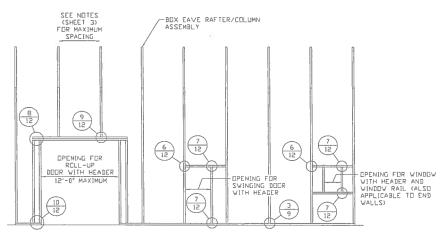
TO THE SWINGING DOOR
WITH HEADER

TO THE SUMMING DOOR
WITH HEADER

TO THE SUMMING DOOR
WITH HEADER

TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE NTS

No 57170

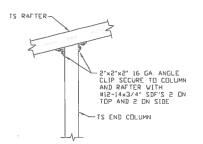
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		DATE: 12-18-17 SHT. 11	SCALE: NTS DVG. NO: SK-3	JOB NO: 16022\$/17300\$ REV.: 4

BOW AND BOX EAVE RAFTER WALL OPENING DETAILS



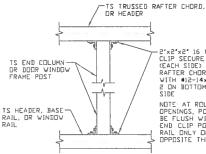
TS COLUMN (CORNER) MINIMUM 6' LDNG, MINIMUM 15 GA., TS NIPPLE SECURE WITH (4) #12-14×3/4' SDF'S 2'x2'x2' 16 GA CLIP ANGLE SECURE TO RAFTER COLUMN AND BASE RAIL W/(4) #12-14x3/4" SDF'S NIPPLE TO BASE RAIL 3/16 TS CONTINUOUS BASE RAIL

TS COLUMN OR END COLUMN -R CAD COLONG -2 x2'x2' 16 GA ANGLE CLIP SECURE TO COLUMN AND EITHER TOP OF HEADER, OR BOTTOM OF WINDOW RAIL WITH #12-14x3/4' SDF'S TS HEADER OR WINDOW RAIL

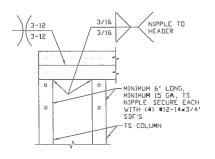
END COLUMN/RAFTER CONNECTION DETAIL 4 SCALE NTS

END COLUMN/BASE RAIL CONNECTION DETAIL SCALE: NTS

HEADER OR WINDOW RAIL TO COLUMN CONNECTION DETAIL 6 SCALE: NTS



2'x2'x2' 16 GA ANGLE CLIP SECURE TO COLUMN (EACH SIDE) AND RAFTER CHORD/RAIL WITH #12-14x3/4' SDF'S 2 DN BOTTOM AND 2 DN SIDE NOTE AT ROLL-UP DOOR OPENINGS, POST SHOULD BE FLUSH WITH RAIL END CLIP POST TO RAIL ONLY ON SIDE OPPOSITE THE OPENING.

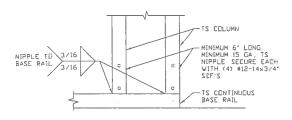


TS COLUMN NIPPLE TO HEADER MINIMUM 6' LDNG, MINIMUM 15 GA, TS NIPPLE SECURE WITH (4) #12-14x3/4' SDF'S 3/16 TS DOUBLE HEADER

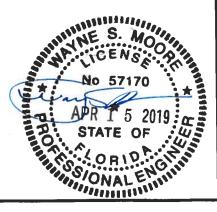
COLUMN TO HEADER, BASE RAIL, OR WINDOW RAIL CONNECTION DETAIL SCALE: NTS

DOUBLE HEADER/COLUMN CONNECTION DETAIL 8

COLUMN/DOUBLE HEADER CONNECTION DETAIL 9



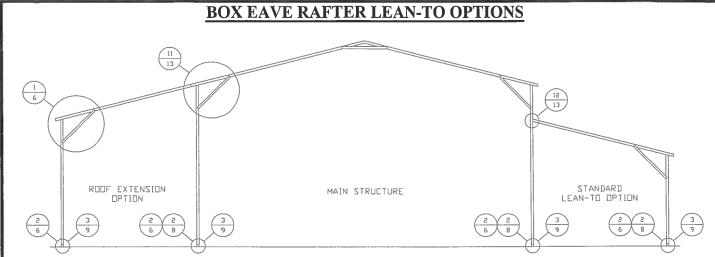
COLUMN/BASE RAIL CONNECTION DETAIL 10 SCALE: NTS



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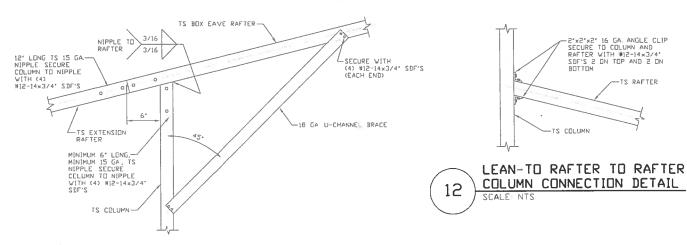
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CLIENT: TBS	SHT. 12	DVG. NO: SK-3	REV.: 4				



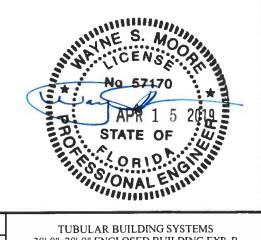
TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

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



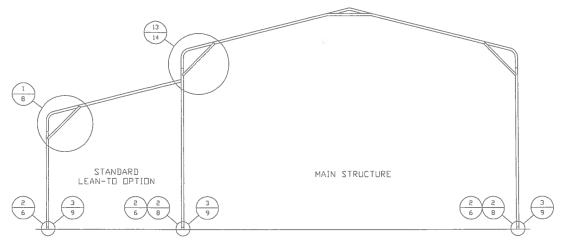
SIDE EXTENSION RAFTER/COLUMN DETAIL

SCALE NTS



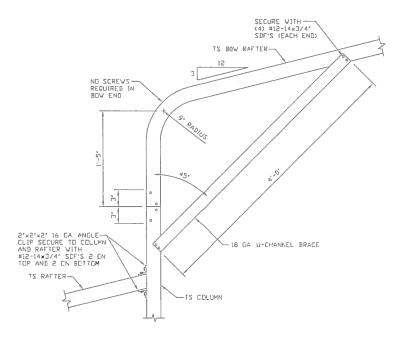
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BOW RAFTER LEAN-TO OPTIONS



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

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

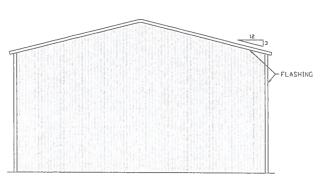


13 SIDE EXTENSION RAFTER/COLUMN DETAIL

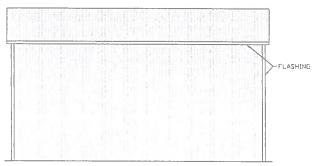


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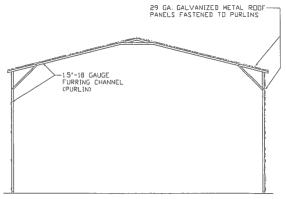
BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



TYPICAL END ELEVATION VERTICAL ROOF/SIDING OPTION



TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING OPTION

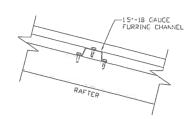


TYPICAL SECTION VERTICAL ROOF/SIDING OPTION

SCALE: NTS

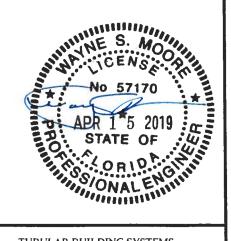
SEE NOTES (SHEET 3) FOR MAXIMUM SPACING -15'-18 GAUGE FURRING CHANNEL SPACED NOT MORE THAN 4'-0' DC. AND FASTENED TO EACH RAFTER WITH (2) #12-14×3/4' SDF'S

TYPICAL FRAMING SECTION VERTICAL ROOF/SIDING OPTION



ROOF PANEL ATTACHMENT

(ALTERNATE FOR VERTICAL ROOF PANELS)

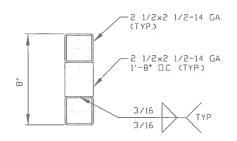


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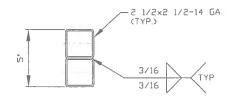
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PROJECT MGR: VSM	DATE: 12-18-17	SCALE: NTS	JOB NO: 160225/173005		
CLIENT: TRS	SHT. 15	DVG. NO: SK-3	REV.: 4		

OPTIONAL DOOR HEADER



HEADER DETAIL FOR DOOR □PENINGS 12'-0" < LENGTH ≤ 15'-0"

SCALE NTS



HEADER DETAIL FOR DOOR OPENINGS LENGTH < 12'-0'

SCALE: NTS



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Florida Product Approval Codes

Roll-Up Doors:

Janus International Corporation Model 750: 21450.8

EXP 12/31/2019

Walk-In Door:

Elixir Door & Metal Company blank (no window): 17996.5

EXP 9/14/2020

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 on concern, please contact Donald Little at 386-961-0006 or at tubularbuildingsystems@gmail.com.