

STRUCTURAL DESIGN

ENCLOSED BUILDING EXPOSURE B

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

8 January 2021 Revision 5 M&A Project No. 16022S/17300S/20352S

Prepared for:

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

Prepared by:

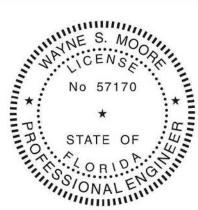
Moore and Associates Engineering and Consulting, Inc. 1009 East Avenue North Augusta, SC 29841

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

Digitally signed by Wayne S Moore Date: 2021.01.12

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	DRAWN BY: JG CHECKED BY: PDH	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
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INSTALLATION NOTES AND SPECIFICATIONS

- 1. DESIGN IS FOR A MAXIMUM 30'-0" WIDE x 20'-0" EAVE HEIGHT ENCLOSED STRUCTURES.
- 2. DESIGN WAS DONE IN ACCORDANCE WITH THE 2020 FLORIDA BUILDING CODE (FBC) 7TH EDITION, 2012 INTERNATIONAL BUILDING CODE (IBC), 2015 IBC, AND 2018 IBC.
- 3. DESIGN LOADS ARE AS FOLLOWS: A) DEAD LOAD = 12 PSF B) LIVE LOAD

= 10 PSF

- C) GROUND SNOW LOAD 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. END WALL COLUMNS (POSTS) AND SIDE WALL COLUMNS ARE EQUIVALENT IN SIZE AND SPACING (UNLESS NOTED DTHERWISE).
- 7. RISK CATEGORY I.
- 8. WIND EXPOSURE CATEGORY B.
- 9, 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).
- 10. AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR PURLINS, AND POSTS, INTERIOR = 9" OR END = 6", (MAX.)
- 11. FASTENERS CONSIST OF #12-14x3/4° SELF-DRILLING FASTENER (SDF), USE CONTROL SEAL WASHER WITH EXTERIOR FASTENERS.

 SPECIFICATIONS APPLICABLE ONLY FOR MEAN ROOF HEIGHT OF 20 FEET OR LESS, AND ROOF SLOPES OF 14° (3:12 PITCH) OR LESS

 SPACING REQUIREMENTS FOR OTHER ROOF HEIGHTS AND/OR SLOPES MAY VARY, ROOF SLOPES LESS THAN 3:12 REQUIRE USE OF JOINT SEALANT.
- IZ. STANDARD ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6° OF EACH COLUMN.
- 13. STANDARD 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 USED IN UNSUITABLE SOILS AS NOTED. COORDINATE WITH LOCAL CODES/ORDINANCES REGARDING MINIMUM LENGTH FOR FROST DEPTH PROTECTION.
- 14. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:

SDIL SITE CLASS = D RISK CATEGORY I

R= 3.25 $I_{E} = 1.0$ S_{DS}= 1.522 g $\wedge = C^2 M$

 $S_{D1} = 0.839 g$



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TUBULAR BUILDING SYSTEMS	
631 SE INDUSTRIAL CIRCLE	
LAKE CITY, FLORIDA 32025	
0'-0"x20'-0" ENCLOSED BUILDING EXP	. E

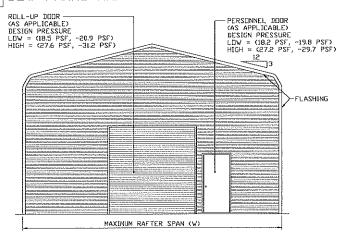
CHECKED BY: PDH	30'-0"x20'-0" ENCLOSED BUILDING EXP. B			
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JOB NO 16022S/ 17300S/20352S	
CLIENT: TBS	SHT. 3	DWG. NO: SK-3	REV₁ 5	

TYPICAL END ELEVATION

SCALE: NTS

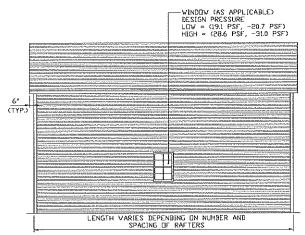
BOW FRAME RAFTER ENCLOSED BUILDING

(W) MAYZ RATTAR MUMIXAM

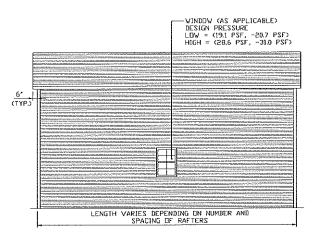


TYPICAL END ELEVATION

SCALE: NTS



TYPICAL SIDE ELEVATION SCALE: NTS



TYPICAL SIDE ELEVATION

SCALE: NTS

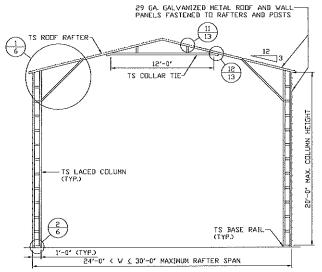


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				JOB	ND: 160225/	
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TYPICAL RAFTER/COLUMN END FRAME SECTION

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

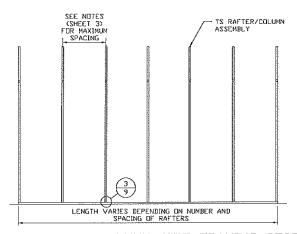
24' 18 GA. U-CHANNEL
BRACE FASTENED TO
RAFTER WITH (4)
1812-143/34' SDF'S AT
EACH END (8 PER BRACE)

TS LACED COLUMN
(TYP.)

TS BASE RAIL
(TYP.)

V (24'-0' MAXIMUM RAFTER SPAN

TYPICAL RAFTER/COLUMN END FRAME SECTION

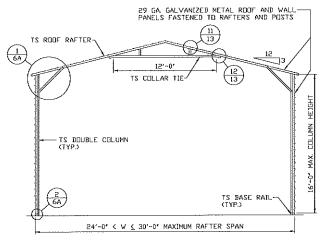


TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS



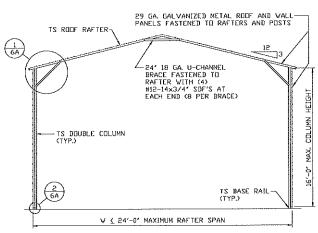
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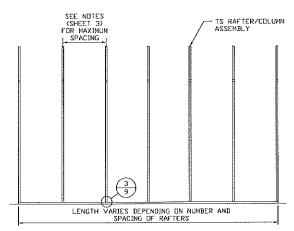


TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION



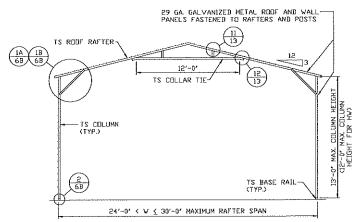
TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

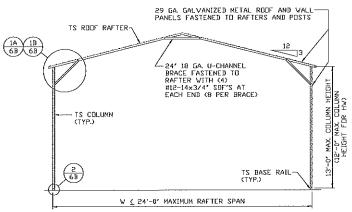
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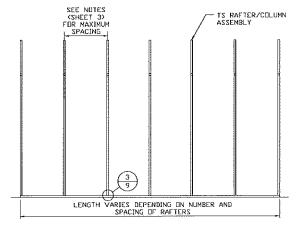




TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NIS

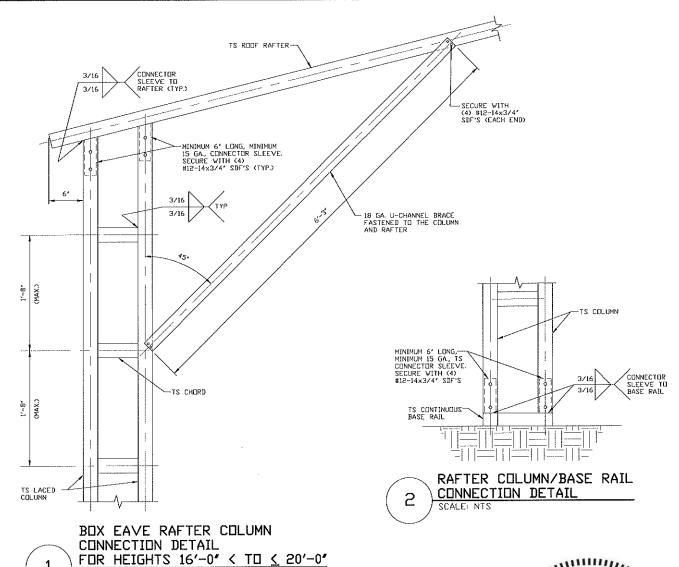


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CLIENT: TBS	SHT. 5B	DWG, NO: SK-3		REV.: 5		
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CHECKED BY PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP.					
DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE					



, , Q. -18 GA. U-CHANNEL BRACE FASTENED TO THE COLUMN AND REOF RAFTER, WITH (4) #12-14x3/4' SDF'S AT EACH END (8 PER BRACE)

> BRACE SECTION SCALE: NTS

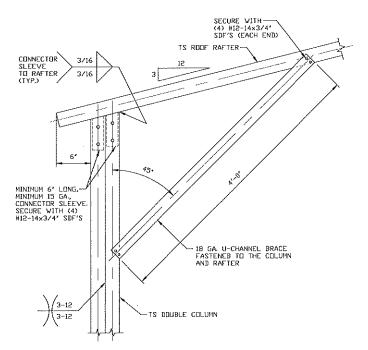
2 1/2"

1



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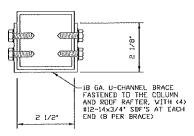
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MOORE AND ASSOCIATES	DRAWN BY: JG		JLAR BUILDING SE INDUSTRIAL	



BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 13'-0" < TO < 16'-0"

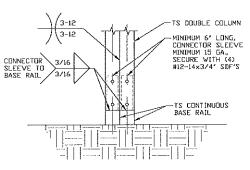
1 SCALE: NTS

NDTE: COLUMN HEIGHTS 12'-0" < TO < 16'-0" FOR HIGH WIND.



BRACE SECTION

SCALE: NTS



RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

SCALE: NTS

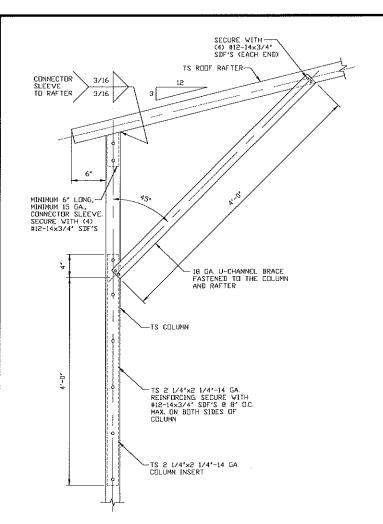


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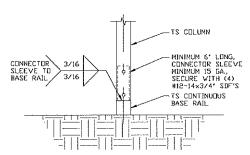
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	LAI	KE CITY, FLORIE	A 32025				
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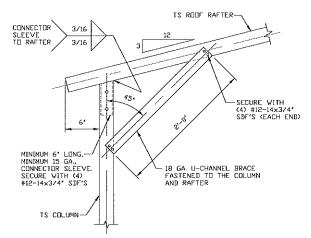
BOX EAVE RAFTER COLUMN CONNECTION DETAIL 1A

FOR HEIGHTS 10'-0" < TO < 13'-0"

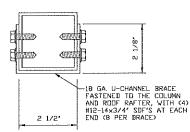
SCALE: NTS NOTE: MAXIMUM COLUMN HEIGHT IS 12'-0" FOR HIGH WIND.



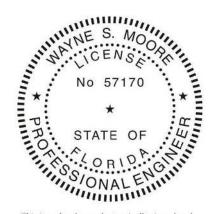
RAFTER COLUMN/BASE RAIL CONNECTION DETAIL 2 SCALE: NTS



BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS < 10'-0" 1B SCALE: NTS



BRACE SECTION



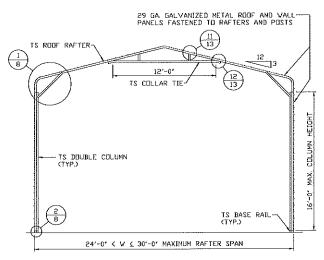
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W. W. L. W. L. W.	LAI	AKE CITY, FLORIDA 32025				
CHECKED BY: PDH	30'-0"x20'-0	" ENCLOSED BU	BUILDING EXP. B			
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 160225/ 005/203525		
 CLIENT: TBS	SHT, 6B	DWG. NO: SK-3		REV. 5		



TYPICAL RAFTER/COLUMN END FRAME SECTION

TS ROOF RAFTER

24' 18 GA U-CHANNEL
BRACE FASTENED TO
RAFTER WITH (4)
#12-14×3/4' SDF'S AT
EACH END (8 PER BRACE)

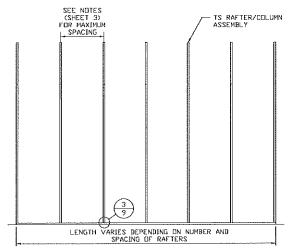
TS BOUBLE COLUMN
(TYP.)

TS BASE RAIL
(TYP.)

V \(\) 24'-0' MAXIMUM RAFTER SPAN

29 GA. GALVANIZED METAL ROOF AND VALL PANELS FASTENED TO RAFTERS AND POSTS

TYPICAL RAFTER/COLUMN END FRAME SECTION



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION
SCALE: NTS



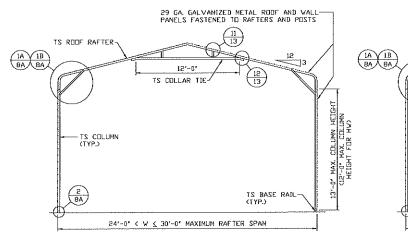
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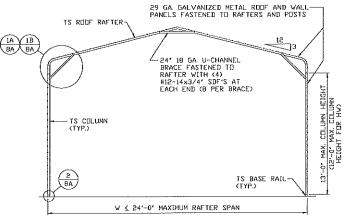
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CHECKED BY: PDH		AKE CITY, FLORIDA 32025 -0" ENCLOSED BUILDING EXP. B		
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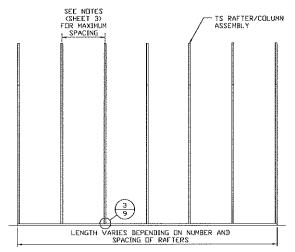




TYPICAL RAFTER/COLUMN END FRAME SECTION

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

SCALE: NTS



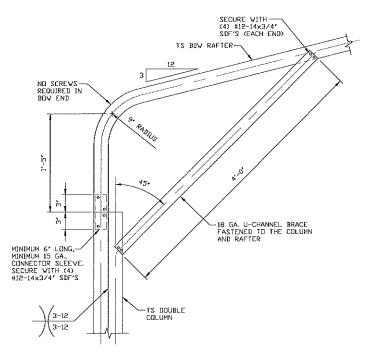
TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

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	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JDB ND: 16022\$/ 17300\$/20352\$
ENICHIEFDING AND CONGILITING INC	CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
MOORE AND ASSOCIATES	DRAWN BY: JG		JLAR BUILDING SE INDUSTRIAL	



MINIMUM 6' LENG, CONNECTOR SLEEVE MINIMUM 15 GA., SECURE WITH (4) #12-14x3/4' SDF'S CONNECTOR SLEEVE TO BASE RAIL 3/16 TS CONTINUOUS BASE RAIL RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

3/16

SCALE: NTS

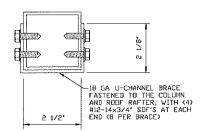
2

TS DOUBLE COLUMN

BOX EAVE RAFTER COLUMN CONNECTION DETAIL

FOR HEIGHTS 13'-0" < TO < 16'-0"

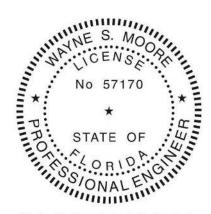
SCALE: NTS NOTE: COLUMN HEIGHTS 12'-0" < TO ≤ 16'-0" FOR HIGH WIND.



BRACE SECTION

SCALE: NTS

1



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TUBULAR BUILDING SYSTEMS

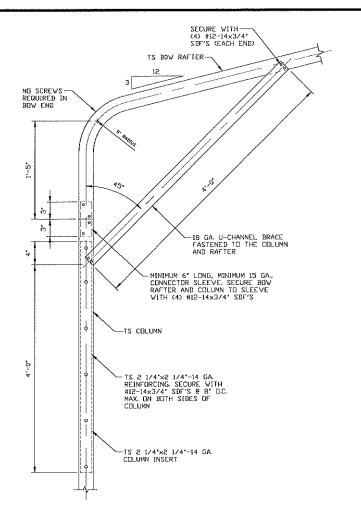
631 SE INDUSTRIAL CIRCLE

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.
, and the second

	CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLÓSED BUILDING EXP. B			
_	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JOB NO: 160225/ 173005/203525	
	CLIENT: TBS	SHT. 8	DAC' ND 2K-3	REV.i 5	

DRAWN BY: JG

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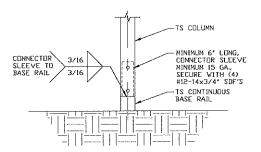


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO ≤ 13'-0"

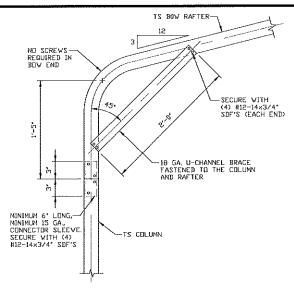
SCALE: NTS

1A

NOTE: MAXIMUM COLUMN HEIGHT IS 12'-0" FOR HIGH WIND.



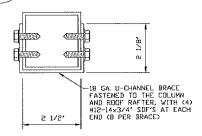
2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS



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

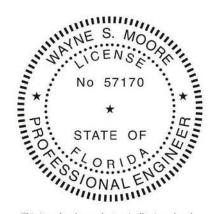
SCALE: NTS

1B



BRACE SECTION

SCALE: NTS



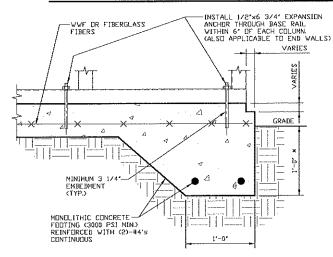
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 CLIENT: TBS	SHT, BA	DWG. NO: SK-3		REV.: 5
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		NO: 16022S/ 00S/20352S
CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B			
DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE			

BASE RAIL ANCHORAGE OPTIONS FOR LOW AND HIGH WIND SPEED





CONCRETE MONOLITHIC SLAB BASE RAIL ANCHURAGE

SCALE: NTS MINIMUM ANCHOR EDGE DISTANCE IS 4" * COURDINATE WITH LOCAL CODES/CIRD, REGARDING MINIMUM FROST DEPTH REQ.

GENERAL NOTES

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

CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH DF 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

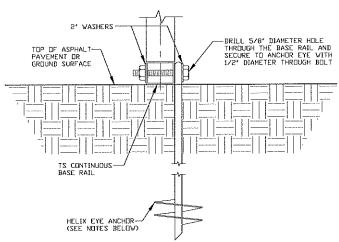
THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 DR FIBERGLASS FIBER REINFORCEMENT.

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. FUR VERY LOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER CLAYS AND SILTS, ALLUVIAL FILL USE MINIMUM (2) 8' HELICES WITH MINIMUM 60 INCH EMBEDMENT.



3B

GROUND BASE HELIX ANCHORAGE

SCALE: NTS (CAN BE USED FOR ASPHALT) * COORDINATE WITH LOCAL CODES/ORD. REGARDING MINIMUM FROST DEPTH REQ.



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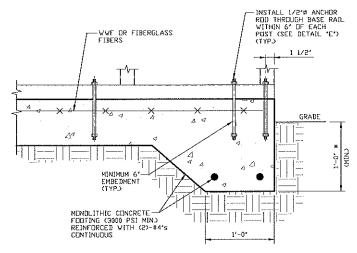
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	LAKE CITY, FLORIDA 32025		
CHECKED BY: PDH	30'-0"x20'-0"	" ENCLOSED BU	ILDING EXP. B
			JOB NO 16022S/

СН 225/ PROJECT MGR: WSM 173005/203525 DATE: 1-8-21 SCALE: NTS REV. 5 SHT. 9 DWG. ND: SK-3 CLIENT: TBS

OPTIONAL FOUNDATION ANCHORAGE FOR LOW AND HIGH WIND SPEED





CONCRETE MONOLITHIC SLAB BASE RAIL ANCHURAGE

SCALE: NTS MINIMUM ANCHOR EDGE DISTANCE IS 1 1/2"

* COORDINATE WITH LOCAL CODES/DRD. REGARDING MINIMUM FROST DEPTH REQ.

GENERAL NOTES

NOTE: CONCRETE MONOLITHIC SLAB DESIGN 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!

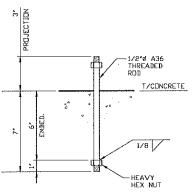
FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-318: 3 INCHES IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH OR WEATHER, AND 1 1/2 INCHES ELSEWHERE.

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.

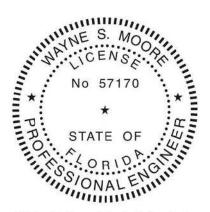
REINFORCEMENT MAY BE BENT IN THE SHOP OR THE FIELD PROVIDED:

- 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 RE FIFLD BENT.



ANCHOR ROD THROUGH BASE RAIL DETAIL 3D

SCALE: NTS



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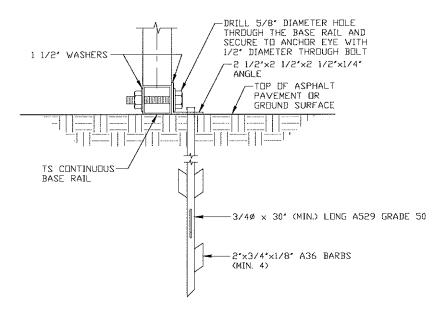
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CHECKED BY: PDH	30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
 PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JDB ND: 160225/ 173005/203525
CLIENT: TBS	SHT. 9A	DWG, NO: SK-3	REV.: 5

BASE RAIL ANCHORAGE OPTION



ASPHALT BASE ANCHURAGE (HP 9 BARBED DRIVE ANCHUR)

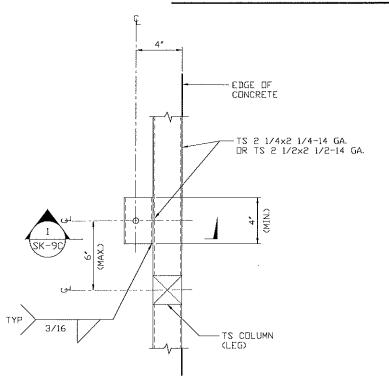
SCALE: NTS
(CAN BE USED FOR ASPHALT)
* COURDINATE WITH LOCAL CODES/ORD.
REGARDING MINIMUM FROST DEPTH REQ.

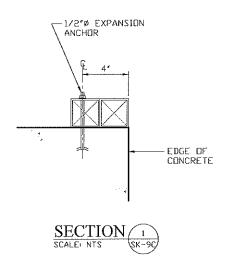


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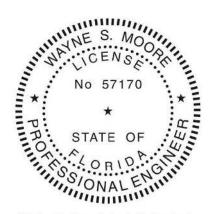
BASE RAIL ANCHORAGE OPTIONS





TYPICAL ANCHUR DETAIL WHEN BASE RAIL IS NEAR EDGE OF CONCRETE

SCALE: NTS



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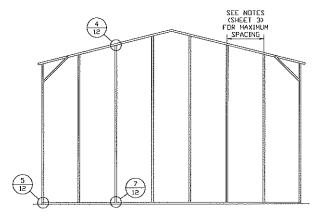
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	LAKE CITY, FLORIDA 32025
DRAWN BYI JG	631 SE INDUSTRIAL CIRCLE
	TUBULAR BUILDING SYSTEMS

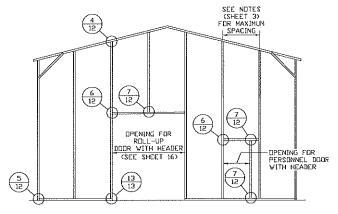
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JDB ND: 16022S/ 17300S/20352S
CLIENT: TBS	SHT. 9C	DWG. NO: SK-3	REV.i 5

BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



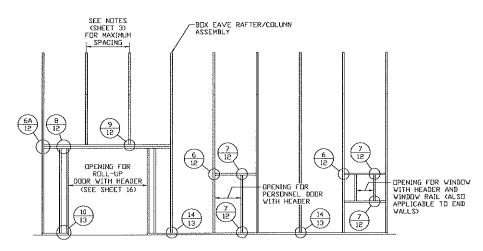
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

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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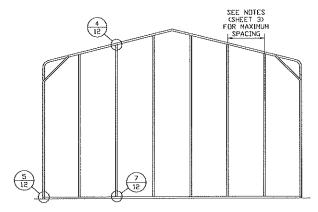
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			JOB NO: 160225/

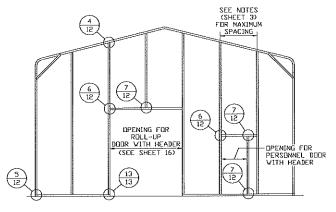
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 PREJECT MGR: VSM	DATE: 1-8-21	SCALE: NTS	JOB NO: 16022S/ 17300S/20352S
CLIENT: TRS	SHT. 10	DWG. NO: SK-3	REV.₁ 5

BOW RAFTER END WALL AND SIDE WALL OPENINGS



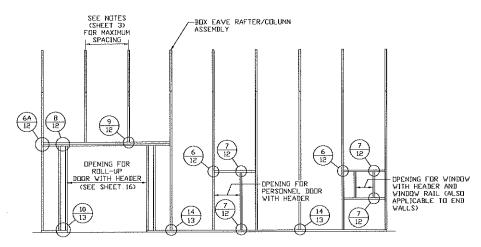
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

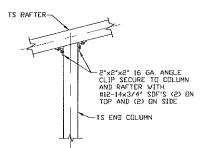
SCALE: NTS



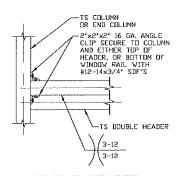
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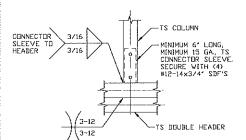
CONNECTION DETAILS



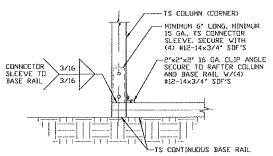
END COLUMN/RAFTER CONNECTION DETAIL 4 SCALE: NTS



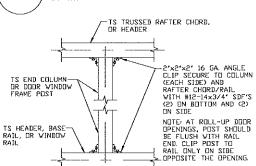
DOUBLE HEADER TO COLUMN CONNECTION DETAIL 6A SCALE: NTS



COLUMN/DOUBLE HEADER CONNECTION DETAIL 9 SCALE: NTS



END COLUMN/BASE RAIL CONNECTION DETAIL 5 SCALE: NTS

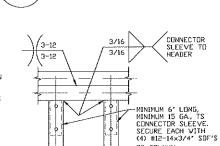


COLUMN TO HEADER, BASE RAIL, OR WINDOW RAIL CONNECTION DETAIL 7 SCALE: NTS

-TS COLUMN
DR END COLUMN
-2'x2'x2' 16 GA ANGLE
CLIP SECURE 1D COLUMN
AND EITHER TOP OF
HEABER, OR BOTTOM DF
WINDOW RAIL WITH
#12-14x3/4' SDF'S TS HEADER OR WINDOW RAIL

HEADER OR WINDOW RAIL TO COLUMN CONNECTION DETAIL SCALE: NTS

6



TS COLUMN

DOUBLE HEADER/COLUMN CONNECTION DETAIL 8 SCALE: NTS

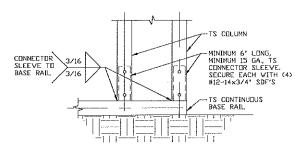


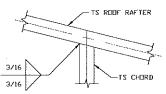
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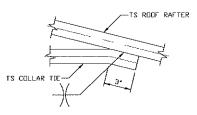
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CONNECTION DETAILS



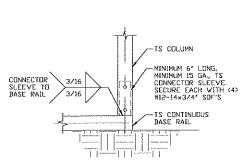




10 COLUMN/BASE RAIL CONNECTION DETAIL SCALE: NTS

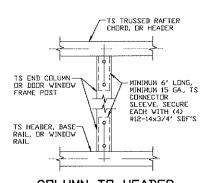
RAFTER TO CHORD CONNECTION DETAIL
SCALE: NTS

12 COLLAR TIE CONNECTION DETAIL
SCALE: NTS





13



COLUMN TO HEADER, BASE RAIL CONNECTION DETAIL

14) SCALE: NTS



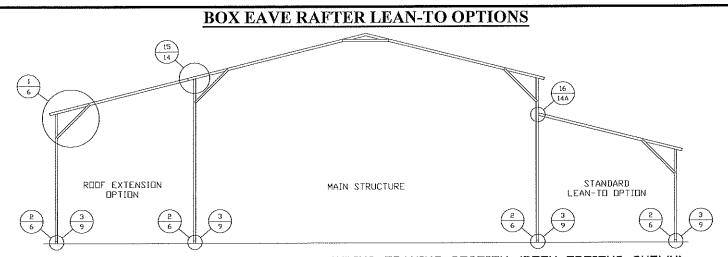
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CHECKED BY: PDH	631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B			
DRAWN BY: JG				



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

SCALE: NTS
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE LACED COLUMNS FOR
EAVE HEIGHTS 16'-0' < TO < 20'-0'.

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR
EAVE HEIGHTS 13'-0' (12'-0' FOR HIGH WIND) < TO < 16'-0'.

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR
EAVE HEIGHTS 10'-0' < TO < 13'-0' (12'-0' FOR HIGH WIND) < WITH 4'-4' INSERT).

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR
EAVE HEIGHTS < 10'-0'.

KNEE BRACES MUST BE 4'-0' (5'-0' FOR HIGH WIND) WHEN LEAN-TO'S ARE ADDED.

TS BOX EAVE
RAFTER

CONNECTOR SLEEVE
SCURE COLUMN TO
SLEEVE WITH (4)
#12-14x3/4' SDF'S

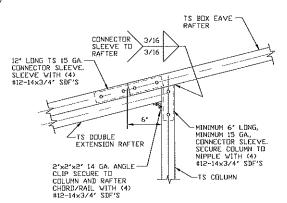
MINIMUM 6' LONG,
MINIMUM 6' LONG,
MINIMUM 15 GA,
CONNECTOR SLEEVE.
SECURE COLUMN TO
NIPPLE WITH (4)
#12-14x3/4' SDF'S

SIDE EXTENSION RAFTER/COLUMN DETAIL

FOR RAFTER SPANS <u>(</u> 15'-0'

SCALE: NTS

15A



SIDE EXTENSION RAFTER/COLUMN DETAIL FOR RAFTER SPANS 15'-0" < TO < 24'-0"

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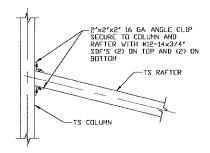
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DRAWN BY: JG	
CHECKED BY: PDH	
	Г

TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE
LAKE CITY, FLORIDA 32025
30'-0"x20'-0" ENCLOSED BUILDING EXP. B

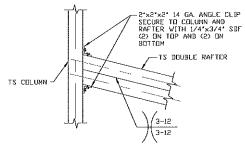
	4,144,144			
4	PROJECT MGR: WSM	DATE: 1-8-21	J	IB NO: 16022S/ 300S/20352S
	CLIENT: TBS		DWG. NO: SK-3	REV.: 5

BOX EAVE RAFTER LEAN-TO OPTIONS



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS ≤ 15'-0" 16

SCALE: NTS



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 15'-0" < T□ ≤ 24'-0"

SCALE: NTS

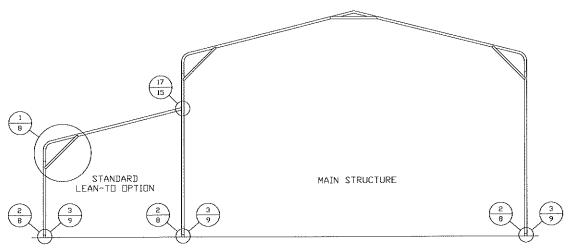
16A



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MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: JG	631 LAI	10BULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B	
THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING AND	PROJECT MGR: WSM			JUB NU 16022S/ 17300S/20352S
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BOW RAFTER LEAN-TO OPTIONS



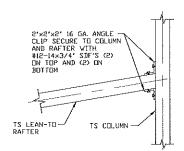
TYPICAL BOW RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

SCALE: NTS

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS 13'-0' (12'-0' FOR HIGH WIND) < TO < 16'-0'.

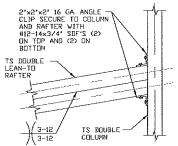
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS 10'-0' < TO < 13'-0' (12'-0' FOR HIGH WIND) (WITH 4'-4' INSERT).

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR KNEE BRACES MUST BE 4'-0' (5'-0' FOR HIGH WIND) WHEN LEAN-TO'S ARE ADDED.



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS < 15'-0"

SCALE: NTS



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 15'-0" < T□ < 24'-0"

17A

17

SCALE: NTS



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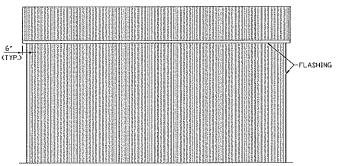
	IUBU	ILAK BUILDING	9191EM9	
DRAWN BY: JG	631	SE INDUSTRIAL	CIRCLE	
	LAKE CITY, FLORIDA 32025			
CHECKED BY: PDH	30'-0"x20'-0" ENCLOSED BUILDING EXP. B			
			JDB ND: 16022S/	
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	173005/203525	
CLIENT: TBS	SHT. 15	DVG. ND: SK-3	5 ر،REV	

12 3 -FLASHING

BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION

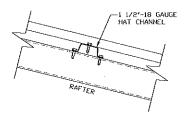
TYPICAL END ELEVATION VERTICAL ROOF/SIDING OPTION

SCALE: NTS



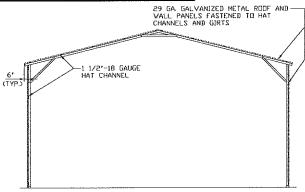
TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING OPTION

SCALE: NTS



ROOF PANEL ATTACHMENT

(ALTERNATE FOR VERTICAL ROOF PANELS) SCALE: NTS



TYPICAL SECTION VERTICAL ROOF/SIDING OPTION

SCALE: NTS

SEE NOTES

(SHEET 3)
FOR MAXIMUM
SPACING

WITH (2) #12-14x3/4' SDF'S

(TYP.)

TYPICAL FRAMING SECTION VERTICAL ROOF/SIDING OPTION

SCALE: NTS

OF HAT CHANNELS. TS GIRTS MUST BE SPACD AT 4'-0' (MAX.) (J.C.)



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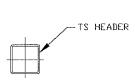
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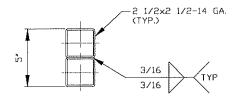
CLIENT: TBS	SHT. 16	DWG. NO: SK-3	REV₁ 5		
 PROJECT MGR: WSM	DATE: 1-8-21		JDB ND 160225/ 173005/203525		
CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE				

SIDE WALL HEADER OPTIONS



HEADER DETAIL FOR DOOR OPENINGS ≤ 10'-0"

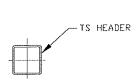
SCALE: NTS



HEADER DETAIL FOR DOOR OPENINGS 10'-0" < LENGTH ≤ 15'-0"

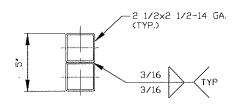
SCALE: NTS

END WALL HEADER OPTIONS



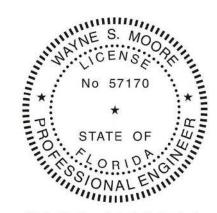
HEADER DETAIL FOR DOOR OPENINGS ≤ 12'-0"

SCALE: NTS



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

SCALE: NTS



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	TUBU	LAR BUILDING:	SYSTEMS	
DRAVN BY: JG	631 SE INDUSTRIAL CIRCLE			
	LAKE CITY, FLORIDA 32025			
CHECKED BY: PDH	30'-0"x20'-0" ENCLOSED BUILDING EXP. B			
PROJECT MGR: WSM	DATE: 1-8-21		JOB NO 16022S/ 17300S/20352S	
CLIENT: TBS	SHT. 17	DWG. NO: SK-3	REV. 5	

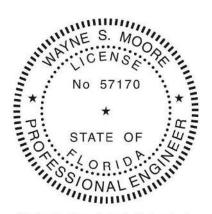
FLOOD VENT DETAIL FRAME OPENING FOR FLOOD VENT WITH TS 2 1/2"x2 1/2" MEMBERS (MATCH ADJACENT RAFTER POSTS AND BASERAIL) ·1/2"-18S OR F EXPANDED METAL, ATTACH W/ McNICHOLS SQUARE FASTENERS OR APPROVED EQUAL AT 6" D.C. ATTACH W/ METAL TEK SCREWS, TS POST MIN. I MAX. GRADE TS BASE RAIL 1'-0" BOVE GRADE GRADE Œ.

TYPICAL FLOOD VENT DETAIL

1. MINIMUM VENT SPACE REQUIRED = 1 SQ. INCH OF OPEN VENT AREA PER SQ. FOOT OF BUILDING AREA.

SCALE: NTS

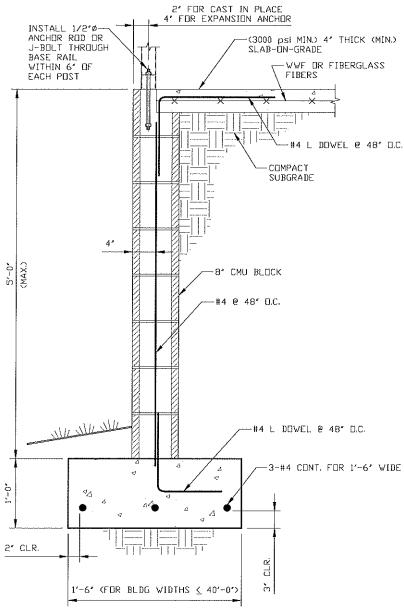
- 2. THERE SHALL BE A MINIMUM OF TWO OPENINGS ON DIFFERENT SIDES FOR EACH ENCLOSED BUILDING.
- 3. APPLY 1.3 FACTOR WHEN CALCULATING TOTAL OPEN AREA WHEN USING $1/2^{\prime\prime}{\rm -18GA}$ S OR F EXPANDED METAL.
- 4. TOTAL OPEN AREA OF VENT = LxH(MIN. 12").
- 5. FLOOD VENT DETAIL COMPLIES WITH FEMA/NFIP.
- 6. PREFABRICATED FLOOD VENTS MEETING THE REQUIREMENTS OF FEMA/NIFIP MAY BE USED.



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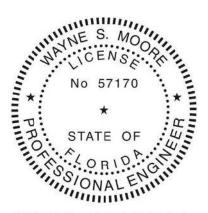
ENCINEEDING AND CONGULTING INC	DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025		
	CHECKED BY: PDH	30'-0"x20'-0	" ENCLOSED BU	JOB NO: 16022\$/
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STAND -ALONE STEM WALL DETAIL



STAND-ALONE CONCRETE MASONRY UNIT (CMU) FOUNDATION STEM WALL DETAIL

SCALE: NTS



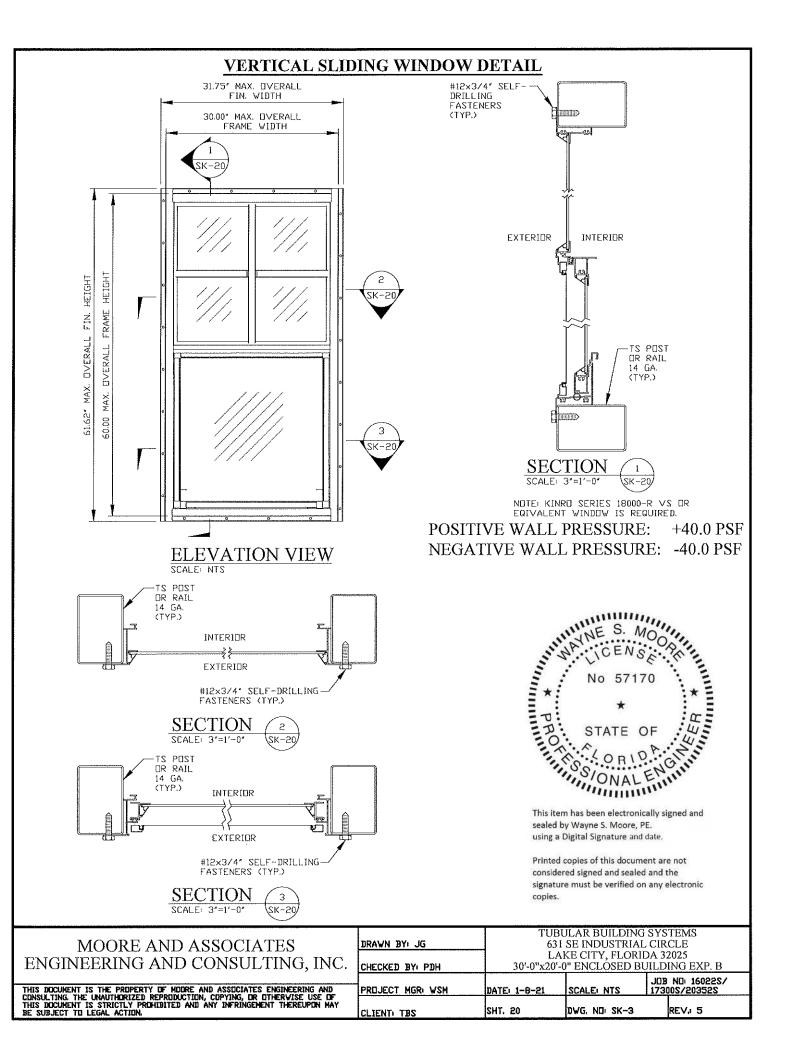
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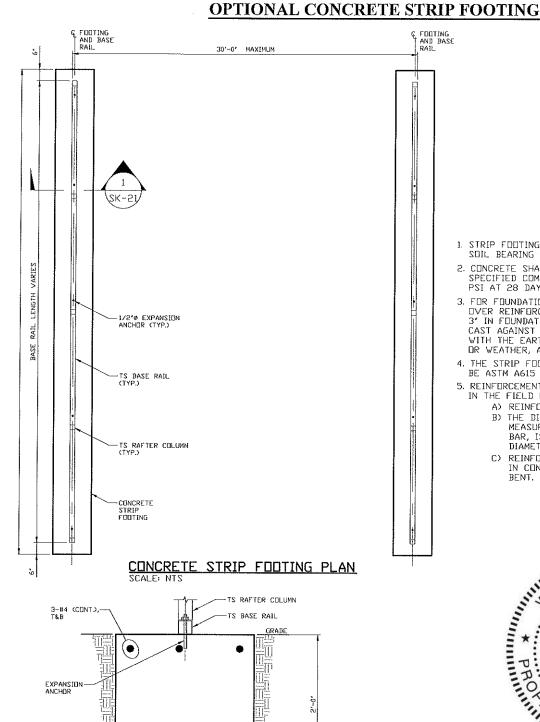
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CHECKED BY PDH	30-0 X20-0 ENCLOSED BUILDING EAF. B
CUCCUCD DV. DDU	30'-0"x20'-0" ENCLÓSED BUILDING EXP. B
	LAKE CITY, FLORIDA 32025
DRAWN BY: JG	631 SE INDUSTRIAL CIRCLE
	TUBULAR BUILDING SYSTEMS

			JOB NO: 160225/
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	173005/203525
 CLIENT: TBS	SHT. 19	DWG. ND: SK-3	REV.: 5





- 1. STRIP FOOTING DESIGN BASED ON MINIMUM SOIL BEARING CAPACITY OF 1,500 PSF.
- 2. CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.
- 3. FOR FOUNDATIONS, MINIMUM CONCRETE COVER
 OVER REINFURCING 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" ELSEVHERE
- 4. THE STRIP FOOTING REINFORCING STEEL SHALL BE ASTM A615 GRADE 60.
- 5. REINFORCEMENT MAY BE BENT IN THE SHOP OR IN THE FIELD PROVIDED:
 - A) REINFORCEMENT IS BENT COLD.
 - B) THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETERS.
 - REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD



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SECTION/

SK-21

* COORDINATE WITH LOCAL CODES/ORD.

2'-0'

CONCRETE—— STRIP FOOTING

2' CLR.

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DRAWN BYI JG		SYSTEMS CIRCLE	
CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JOB NO: 160225/ 173005/203525
CLIENT: TBS	SHT. 21	DWG. NO: SK-3	REV. 5