

### 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

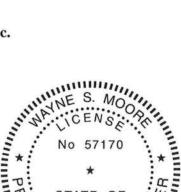
Prepared by:

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 15:40:40 -05'00'





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	CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B			
	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JUB NO: 160225/ 173005/203525	
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#### INSTALLATION NOTES AND SPECIFICATIONS

- I. 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:
  - = 1.5 PSF A) DEAD LOAD
  - B) LIVE LOAD
- = 12 PSF
- = 10 PSF C> GROUND SNOW LOAD
- 4. LOW ULTIMATE WIND SPEED 105 TO 140 MPH (NOMINAL WIND SPEED 8) 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" × 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 DN-CENTERS ALONG RAFTERS OR PURLINS, AND POSTS, INTERIOR = 9° OR END = 6°, (MAX.)
- 11. FASTENERS CONSIST OF #12-14×3/4" 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.
- 12. STANDARD ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6' OF EACH COLUMN.
- 13. STANDARD GROUND ANCHORS (SDIL NAILS) CONSIST OF #4 REBAR W/WELDED NUT x 30° LONG IN SUITABLE SDIL CONDITIONS MAY BE USED FOR LOW ( ≤ 108 MPH NOMINAL) WIND SPEEDS ONLY. OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SDILS AND MUST BE USED IN UNSUITABLE SDILS 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

 $I_{\epsilon} = 1.0$ V= CSM Sps= 1.522 g

Spt= 0.839 g

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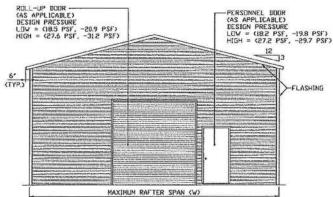
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INC.	CHECKED BY: PDH

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

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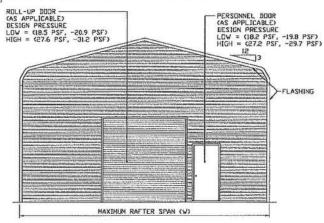
## BOX EAVE FRAME RAFTER ENCLOSED BUILDING



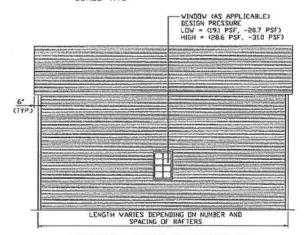
#### TYPICAL END ELEVATION

SCALE: NTS

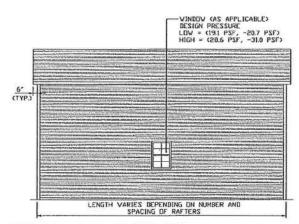
#### BOW FRAME RAFTER ENCLOSED BUILDING



### TYPICAL END ELEVATION

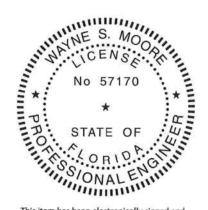


TYPICAL SIDE ELEVATION



#### TYPICAL SIDE ELEVATION

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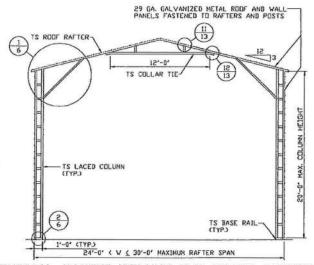
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			JDB ND: 160225/				
CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EX						
DRAWN BYI JG		631 SE INDUSTRIAL CIRCLE					



TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

TS ROUT RAFTER

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

12

24' IB GA. U-CHANNEL
BRACE FASTENED TO
RAFTER WITH (4)
BIZ-143/4' SD'S AT
EACH END (8 PER BRACE)

TS LACED COLUMN

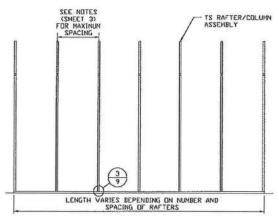
(TYP.)

TS BASE RAIL

(TYP.)

V & 24'-0' MAXIMUM RAFTER SPAN

TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE NTS

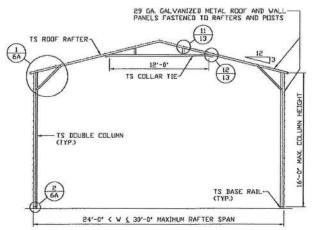


TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS



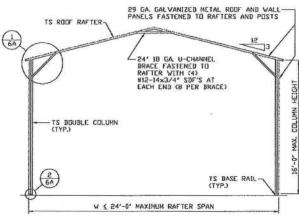
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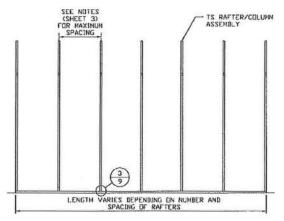


TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS

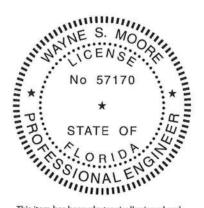


TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



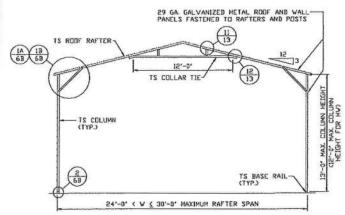
TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE! NTS

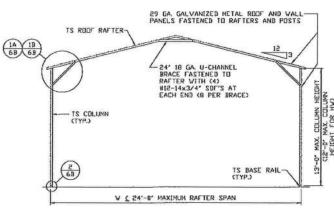


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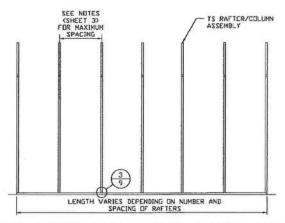
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TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

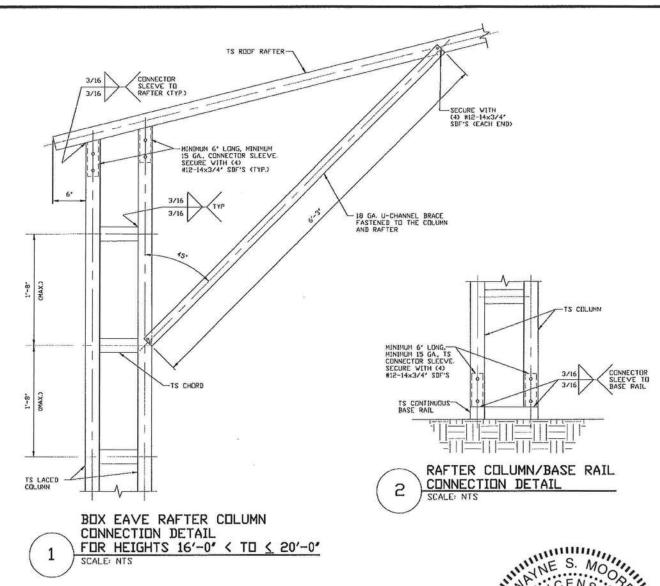


TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS



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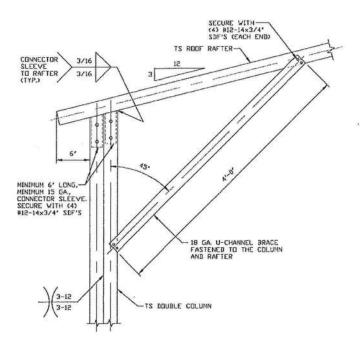
18 GA. U-CHANNEL BRACE
FASTENED TO THE COLUNN
AND ROUF RAFTER, WITH (4)
HIZ-14x3/4' SUF'S AT EACH
END (8) FCF BRACE)

BRACE SECTION



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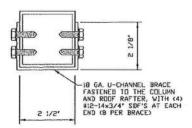
	DRAWN BYI JG	63 LA	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"×20'-0" ENCLOSED BUILDING EXP. B			
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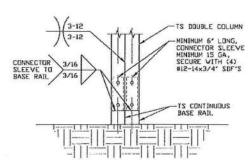
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 13'-0" < TO < 16'-0"

1

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



BRACE SECTION SCALE: NTS



RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

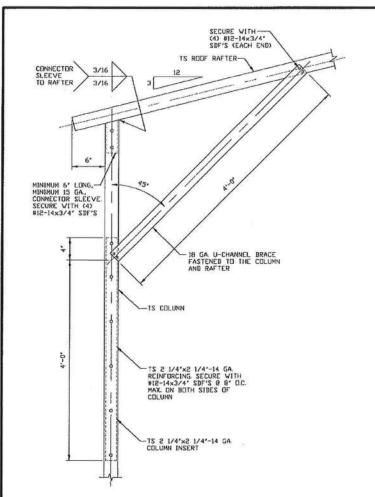
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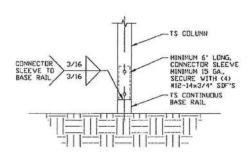
MOORE AND ASSOCIATES	DRAWN BYI JG	6	BULAR BUILDIN 31 SE INDUSTRI AKE CITY, FLOI	AL CIRCLE
ENGINEERING AND CONSULTING, INC.	CHECKED BY: PDH	30'-0"x20	)'-0" ENCLOSED	BUILDING EXP. B
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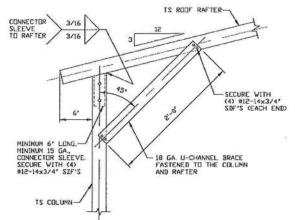
BOX EAVE RAFTER COLUMN
CONNECTION DETAIL

FOR HEIGHTS 10'-0' < TO \( \) 13'-0"

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

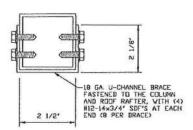


2 RAFTER COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS



BOX EAVE RAFTER COLUMN CONNECTION DETAIL

FOR HEIGHTS \(\frac{1}{2}\) 10'-0'



BRACE SECTION



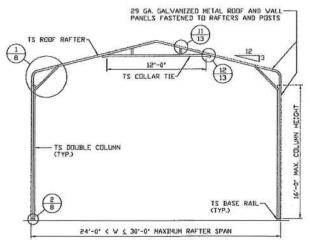
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631 SE INDUSTRIAL CIRCLE
LAKE CITY, FLORIDA 32025
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PROJECT MGR: WSM DATE: 1-8-21 SCALE: NTS 17300S/20352S
CLIENT: TBS SHT. 6B DWG: NO: SK-3 REV. 5



29 GA GALVANIZED METAL RODF AND VALL
PANELS FASTENED TO RAFTERS AND POSTS

12

24' 18 GA U-CHANNEL
BRACE FASTENED TO
RAFTER VITH (4)
#12-14-374' SDF'S AT
EACH END (8 PER BRACE)

15 BOUBLE COLUMN
(TYP.)

V S 24'-0' MAXIMUM RAFTER SPAN

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE NTS

SEE NOTES
CSHEET 39
FOR MAXINUM
L SPACING

SPACING

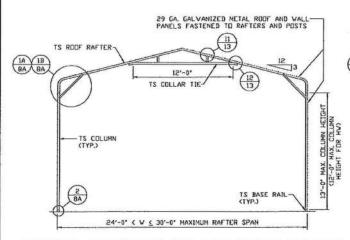
TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION
SCALE: NTS

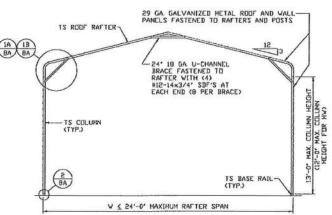
LENGTH VARIES DEPENDING ON NUMBER AND SPACING OF RAFTERS



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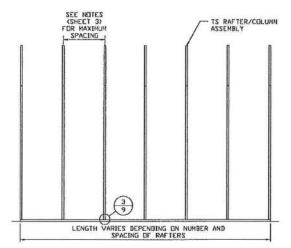
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TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS



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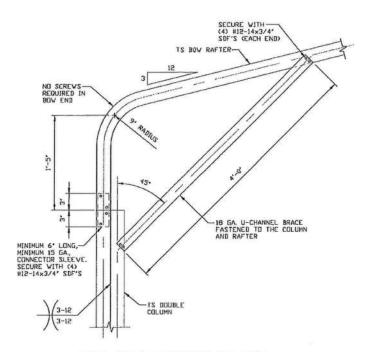
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CHECKED BY: PDH		LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B					
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JDB ND: 16022S/ 17300S/20352S				
CLIENT: TRS	SHT. 7A	DWG. NO SK-3	REV. 5				



CONNECTOR 3/16
SLEEVE TO BASE RAIL

3-12

TS DOUBLE COLUMN
MINIMUM 6' LING,
CONNECTOR SLEEVE
MINIMUM 15 GA,
SECURE WITH (4)
B12-14x3/4' SDF'S

TS CONTINUOUS
BASE RAIL

RAFTER COLUMN/BASE RAIL

CONNECTION DETAIL

SCALE: NTS

2

BOX EAVE RAFTER COLUMN
CONNECTION DETAIL

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

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

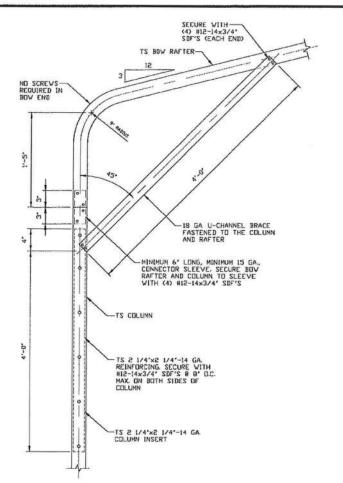
18 GA. U-CHANNEL BRACE
FASTENED TO THE COLLUM
AND RODE RAFTER, WITH (4)
#112-143/4/ 2015 AT EACH
END (8 PER BRACE)

BRACE SECTION



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MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BYI JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025			
	CHECKED BY: PDH	30'-0"x20	30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
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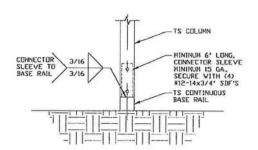
BOX EAVE RAFTER COLUMN CONNECTION DETAIL

FOR HEIGHTS 10'-0' < TO ≤ 13'-0'

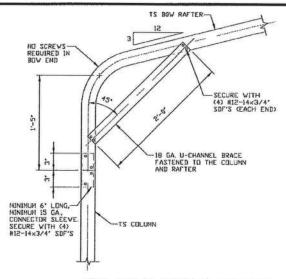
SCALE: NTS

1A

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

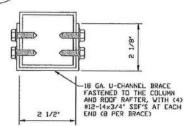


2 RAFTER COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS



BOX EAVE RAFTER COLUMN CONNECTION DETAIL | FOR HEIGHTS \( \) 10'-0'

1B SCALE: NTS



BRACE SECTION



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CHECKED BY: PDH		AKE CITY, FLOR '-0" ENCLOSED B					
PROJECT MGR: WSM	DATE: 1-8-21		JOB NO 16022S/ 17300S/20352S				
CLIENT: TBS	SHT. BA	DWG. NO: SK-3		REV.I 5			

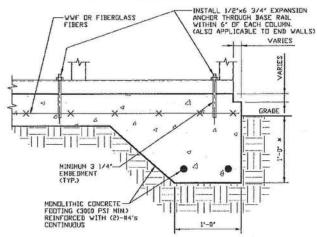
#### BASE RAIL ANCHORAGE OPTIONS FOR LOW AND HIGH WIND SPEED

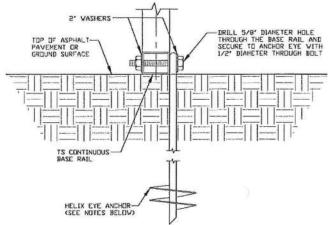
ЗВ

SCALE: NTS

(CAN BE USED FOR ASPHALT)

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





GROUND BASE HELIX ANCHORAGE

3A

#### CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS MINIMUM ANCHUR EDGE DISTANCE IS 4' \* COURDINATE WITH LOCAL CODES/ORD.
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-3180
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:

- L 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.



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CHECKED BY: PDH

DRAWN BY: JG

CLIENT: TBS

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

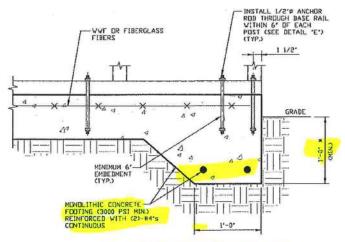
JDB ND 160225/ PROJECT MGR: WSM SCALE: NTS DATE: 1-8-21 173005/203525

SHT. 9

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DWG. NO SK-3 REV. 5

#### OPTIONAL FOUNDATION ANCHORAGE FOR LOW AND HIGH WIND SPEED



30

#### CONCRETE MONOLITHIC SLAB ANCHORAGE BASE RAIL

SCALE: NTS MINIMUM ANCHOR EDGE DISTANCE IS 1 1/2' \* COORDINATE WITH LOCAL CODES/ORD. 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!

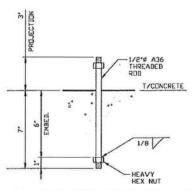
FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-318:
3 INCHES IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH OR WEATHER, AND 1 1/2 INCHES ELSEWHERE.

#### REINFORCING STEEL!

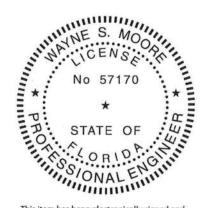
THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE VELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT.

#### 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



ANCHOR ROD THROUGH BASE RAIL DETAIL 3DSCALE: NTS



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DWG. NO SK-3

REV. 5

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ENGINEERING AND CONSULTING, I	NC.

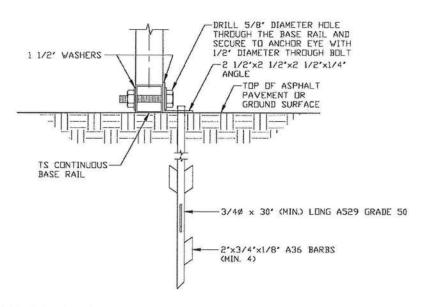
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	UBJECT TI								
DE 2	OBJECT II	n reauc	WC I TOUR						

DRAWN BY: JG		TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE				
CHECKED BY: PDH		AKE CITY, FLOI '-0" ENCLOSED	RIDA 32025 BUILDING EXP. B			
PROJECT MGRI WSM	DATE: 1-8-21	SCALE NTS	JDB ND 16022S/ 17300S/20352S			

SHT. 9A

CLIENT: TBS

#### BASE RAIL ANCHORAGE OPTION



3E ASPHALT BASE ANCHORAGE (HP 9 BARBED DRIVE ANCHOR)

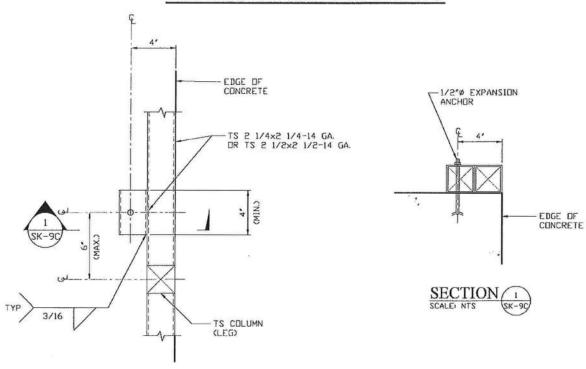
SCALE: NTS
(CAN BE USED FOR ASPHALT)
\* COORDINATE WITH LOCAL CODES/ORD.
REGARDING MINIMUM FROST DEPTH REQ.



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MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: JG CHECKED BY: PDH	63	BULAR BUILDING  1 SE INDUSTRIA  AKE CITY, FLORI  -0" ENCLOSED B	L CIRCLE IDA 32025 UILDING EXP. B
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#### BASE RAIL ANCHORAGE OPTIONS



TYPICAL ANCHOR DETAIL WHEN BASE RAIL IS NEAR EDGE OF CONCRETE

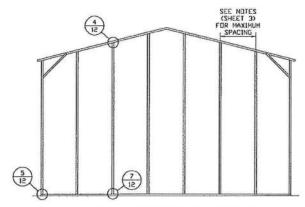
SCALE: NTS



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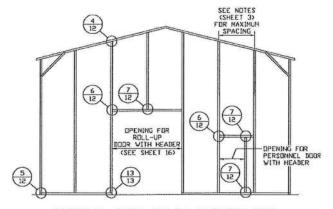
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#### BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



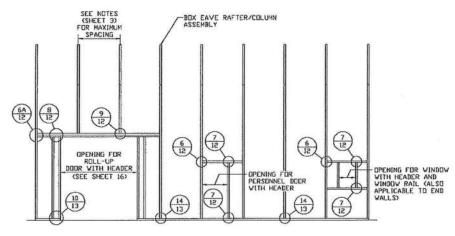
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

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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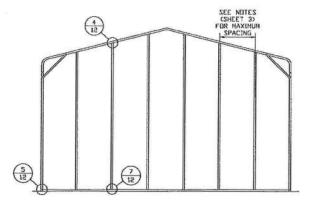
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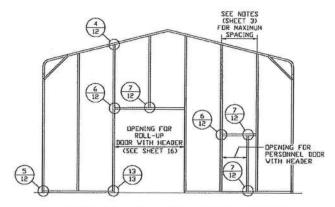
DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE					
CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP.					
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		9 NO: 16022S/ 100S/20352S		
CLIENT: TBS	SHT. 10	DWG. NO: SK-3		REV. 5		

#### BOW RAFTER END WALL AND SIDE WALL OPENINGS



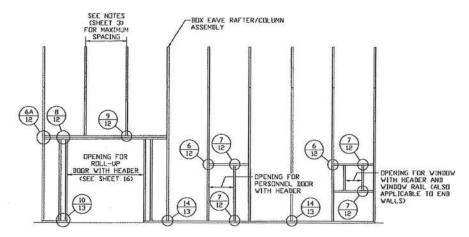
## TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

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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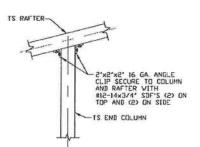
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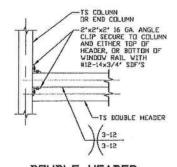
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CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B							
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND 16022S/ 00S/20352S				
CLIENT: TBS	SHT. 11	DWG. NO: SK-3		REV. 5				

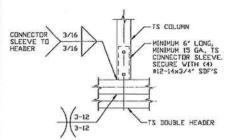
#### CONNECTION DETAILS



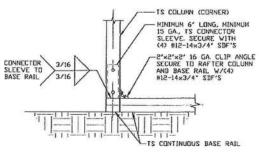
## 4 END COLUMN/RAFTER CONNECTION DETAIL SCALE NTS



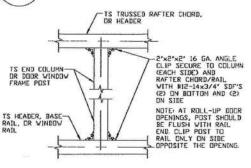
DOUBLE HEADER
TO COLUMN
CONNECTION DETAIL
SCALE: NTS



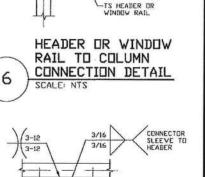
9 COLUMN/DOUBLE HEADER
CONNECTION DETAIL
SCALE: NTS



5 END COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS



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



TS COLUMN DR END COLUMN

2'x2'x2' 16 GA. ANGLE CLIP SECURE TO COLUMN AND EITHER TOP OF HEADER, OR BOTTOM OF WINDOW RAIL VITH #12-14x3/4' SDF'S

> MINIMUM 6' LONG, MINIMUM 15 GA., TS CONNECTOR SLEEVE. SECURE EACH VITH (4) H12-14x3/4' SDF'S

TS COLUMN

8 DOUBLE HEADER/COLUMN
SCALE: NTS



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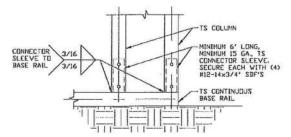
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631 SE INDUSTRIAL CIRCLE
LAKE CITY, FLORIDA 32025
30'-0"x20'-0" ENCLOSED BUILDING EXP. B

PROJECT MGRI WSM DATE: 1-8-21 SCALE: NTS 17300S/20352S

CLIENT: TBS SHT. 12 DWG. NO: SK-3 REV.: 5

#### CONNECTION DETAILS



3/16

TS ROOF RAFYER

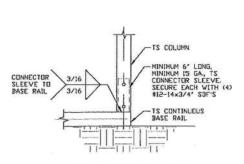
TS CHORD

TS COLLAR TIE

10 COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS

RAFTER TO CHORD CONNECTION DETAIL SCALE: NTS

12 COLLAR TIE CONNECTION DETAIL



COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS

13

TS TRUSSED RAFTER
CHORD, OR HEADER

TS END COLUMN
OR BOOR VINDOV
FRAME POIST

TS HEADER, BASE
RAIL, OR VINDOV
RAIL

COLUMN TO HEADER, BASE RAIL CONNECTION DETAIL

SCALE: NTS

14



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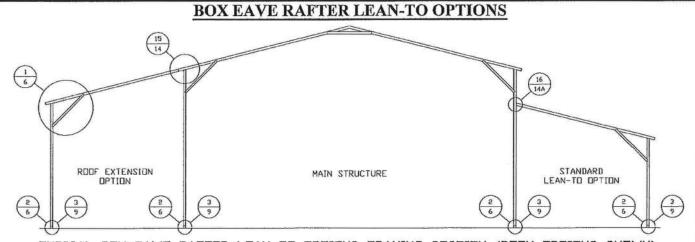
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 PRIJECT MGR: WSM
 DATE: 1-8-21
 SCALE: NTS
 JOB ND: 16022S/17300S/20352S

 CLIENT: TBS
 SHT. 13
 DWG. ND: SK-3
 REV.: 5



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

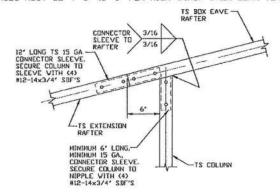
SCALE: NTS
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE LACED COLUMNS FOR
EAVE HEIGHTS 16'-0' < TO < 20'-0'.

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).

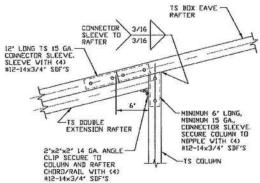
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR
EAVE HEIGHTS (10'-0'.

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



SIDE EXTENSION RAFTER/COLUMN DETAIL
FOR RAFTER SPANS & 15'-0'

SCALE: NTS



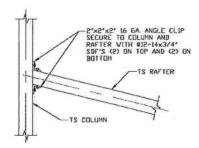
SIDE EXTENSION RAFTER/COLUMN DETAIL FOR RAFTER SPANS 15'-0" < TO < 24'-0"



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ENGINEERING AND CONGULTING INC	CHECKED BY: PDH		AKE CITY, FLOR '-0" ENCLOSED I	IDA 32025 BUILDING EXP. B		
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#### **BOX EAVE RAFTER LEAN-TO OPTIONS**



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

TS COLUMN

LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 15'-0" < TO < 24'-0"

SCALE: NTS

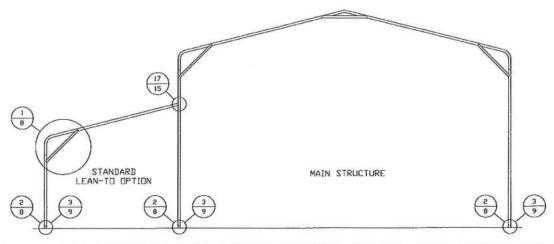
16A



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MOORE AND ASSOCIATES	DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
ENGINEERING AND CONSULTING, INC.	CHECKED BY: PDH	30'-0"x20	'-0" ENCLOSED B	JOB ND 16022S/
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#### BOW RAFTER LEAN-TO OPTIONS



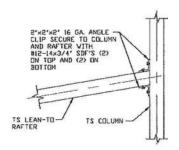
#### BOW RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

SCALE! NTS

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR 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'.

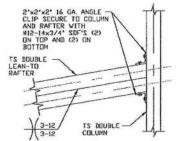
KNEE BRACES MUST BE 4'-0' (5'-0' FOR HIGH WIND) WHEN LEAN-TO'S ARE ADDED.



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

17

SCALE: NTS



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

17A

SCALE: NTS



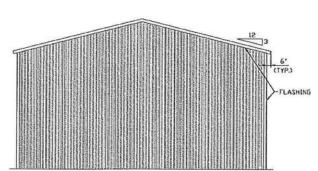
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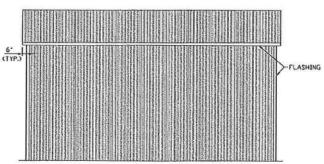
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#### BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION

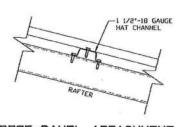


TYPICAL END ELEVATION VERTICAL ROOF/SIDING OPTION SCALE: NTS

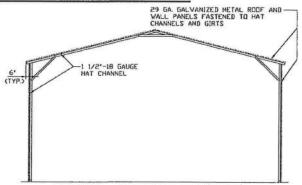


TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING OPTION

SCALE: NTS

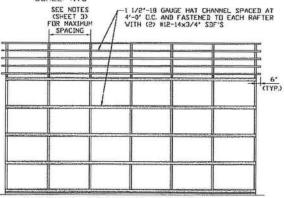


ROOF PANEL ATTACHMENT (ALTERNATE FOR VERTICAL ROOF PANELS) SCALE: NTS



#### TYPICAL SECTION VERTICAL ROOF/SIDING OPTION

SCALE: NTS



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

NOTE: TS WALL GIRTS CAN BE USED AS AN OPTION IN PLACE OF HAT CHANNELS. TS GIRTS MUST BE SPACD AT 4'-0' (MAX.) D.C.



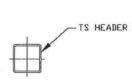
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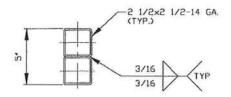
D	RAWN BYI JG		BULAR BUILDIN BI SE INDUSTRIA			
c	HECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
P	PROJECT MGRI WSM DATE: 1-8		SCALE: NTS		ND: 160225/ 005/203525	
c	LIENT: TBS	SHT. 16	DWG. NO SK-3		REV. 5	

#### SIDE WALL HEADER OPTIONS



HEADER DETAIL FOR DOOR OPENINGS ≤ 10'-0"

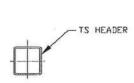
SCALE: NTS



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

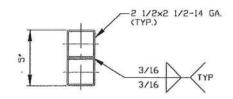
SCALE: NTS

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

בחבנונע סוי דעה	30 -0 XZ0	30-0 X20-0 ENCLOSED BUILDING EXF. B				
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JOB NO: 16022S/ 17300S/20352S			
CLIENT: TRS	SHT. 17	DVG. 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 DR F EXPANDED METAL. ATTACH W/ McNICHOLS SQUARE FASTENERS OR APPROVED EQUAL AT 6" D.C. ATTACH W/ METAL TEK SCREWS. TS POST (MIN. I TS BASE RAIL GRADE GRADE

TYPICAL FLOOD VENT DETAIL

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

SCALE: NTS

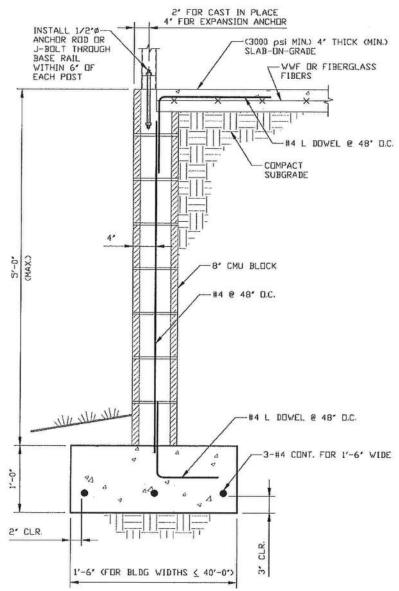
- 2. THERE SHALL BE A MINIMUM OF TWO OPENINGS ON DIFFERENT SIDES FOR EACH ENCLOSED BUILDING.
- 3. APPLY 1.3 FACTOR WHEN CALCULATING TOTAL OPEN AREA WHEN USING 1/2"-18GA S OR F EXPANDED METAL.
- 4. TOTAL OPEN AREA OF VENT = LxH(MIN. 12').
- 5. FLOOD VENT DETAIL COMPLIES WITH FEMA/NFIP.
- PREFABRICATED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



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#### STAND -ALONE STEM WALL DETAIL

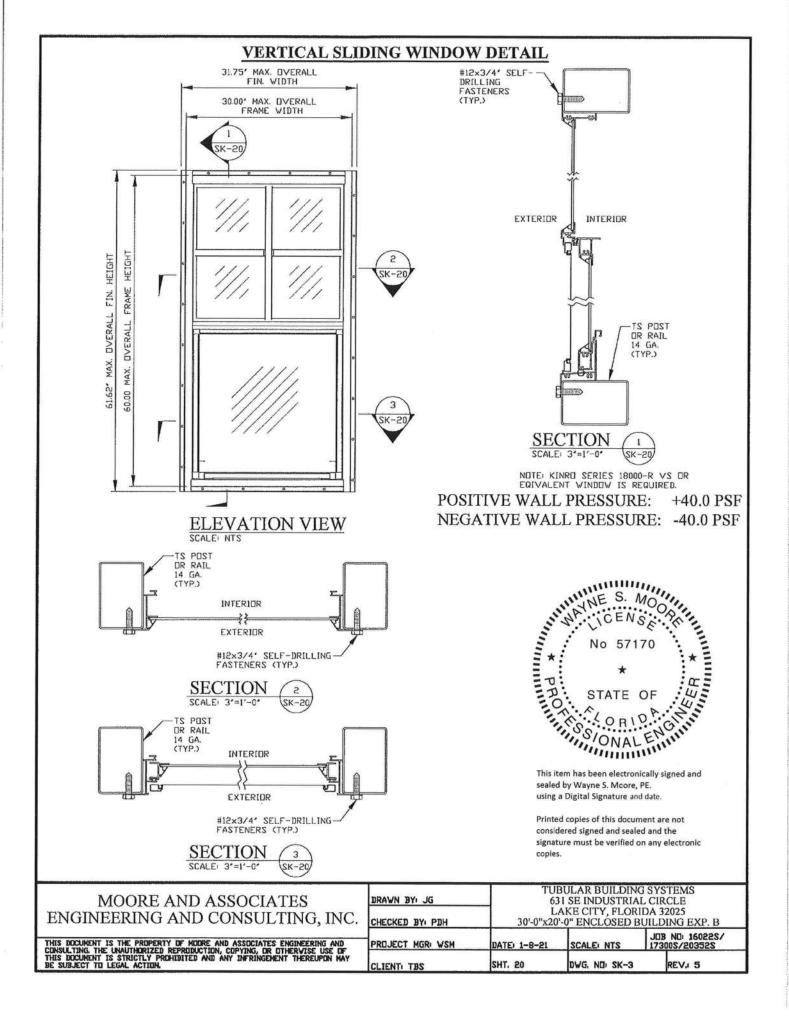


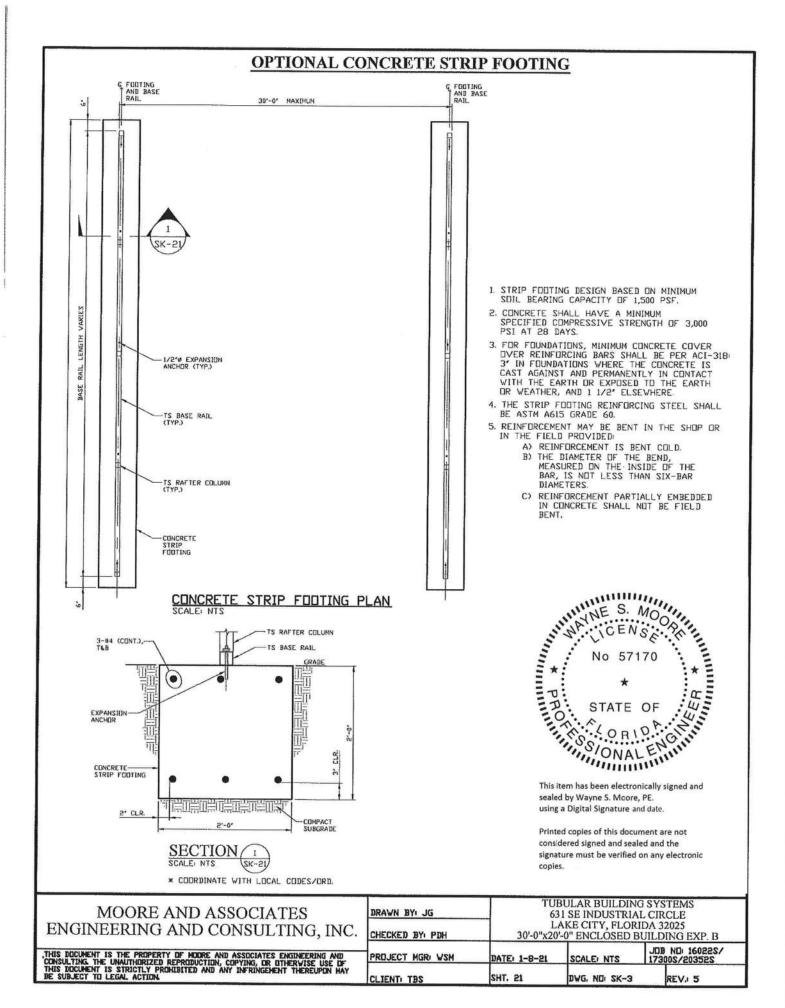
STAND-ALONE CONCRETE MASONRY UNIT (CMU) FOUNDATION STEM WALL DETAIL
SCALE: NTS



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	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JOB NO 160225/ 173005/203525		
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### **Florida Product Approval Codes**

Roll-Up Doors:

Janus International Corporation Model 750: 21450.10 EXP 12/31/2021

Walk-In Door:

Elixir Door & Metal Company blank (no window): 17996.5 EXP 08/26/2025

Window:

Kinro 993.7 EXP 10/19/2021

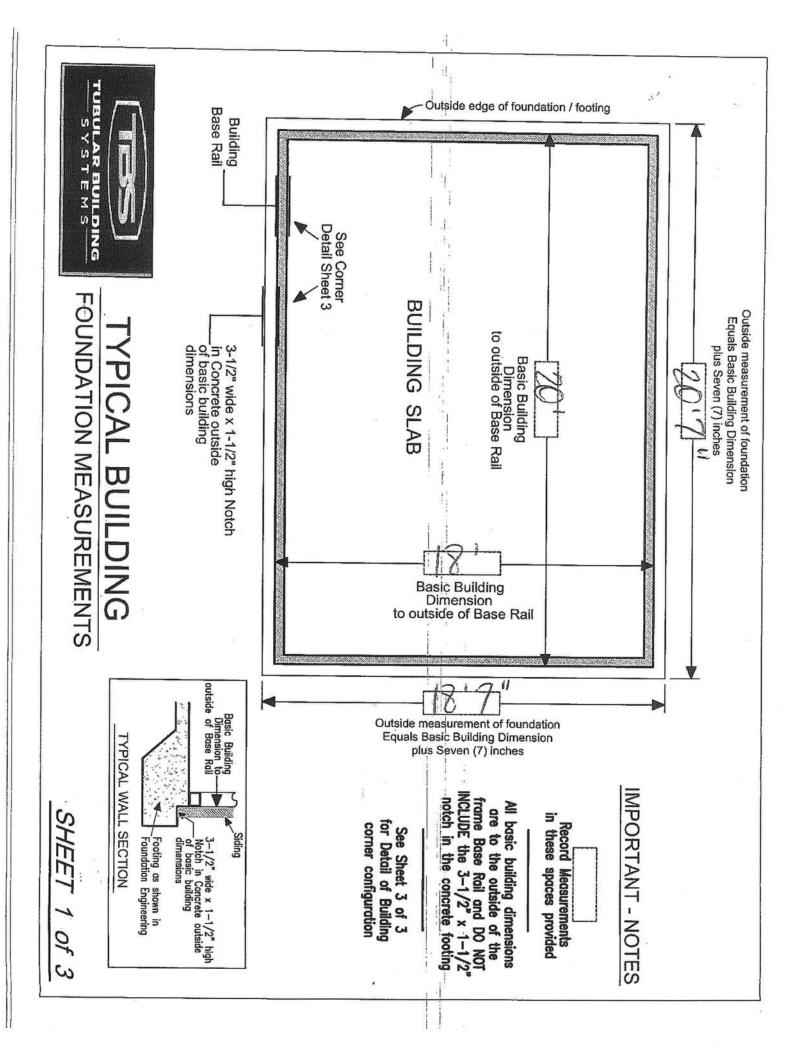
Roof Deck:

Capital Metal Supply Inc. Ag Panel: 20147.2 EXP 03/04/2025

Wall Panel:

Capital Metal Supply Inc. Ag Panel: 20148.2 EXP 03/04/2025

If you have any questions on concern, please contact Donald Little at 386-961-0006 or at tubularbuildingsystems@gmail.com.



TUBULAR BUILDING Outside edge of foundation / footing Base Rail Building Constant of the constant of th See Corner Detail Sheet 3 FOUNDATION MEASUREMENTS TYPICAL BUILDING **BUILDING SLAB** 3-1/2" wide x 1-1/2" high Notch in Concrete outside of basic building dimensions to outside of pase Pair

**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

comer configuration for Detail of Building See Sheet 3 of 3

DIAGONALS

Basic Building Dimension to-outside of Base Rail TYPICAL WALL SECTION 3-1/2" wide x 1-1/2" high Notch in Concrete outside of basic building dimensions Footing as shown in Foundation Engineering

SHEET 2 of 3

