



#### 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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MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: JG	— 63 L	BULAR BUILDIN 31 SE INDUSTRIA AKE CITY, FLOR 1'-0" ENCLOSED F	L CIRCLE
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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

= 1.5 PSF = 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
- 6. END WALL COLUMNS (POSTS) AND SIDE WALL COLUMNS ARE EQUIVALENT IN SIZE AND SPACING (UNLESS NOTED OTHERWISE).
- 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 #12-14x3/4" 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.
- 12. STANDARD ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6' OF EACH COLUMN.
- 13. STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBAR W/VELDED NUT × 30' LONG IN SUITABLE SOIL CONDITIONS MAY BE USED FOR LOW ( < 108 MPH NOMINAL) VIND 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:

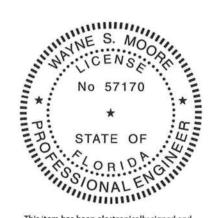
SDIL SITE CLASS = D RISK CATEGORY I

R= 3.25

I<sub>E</sub>= 1.0 V= CSM

Sps= 1.522 g

 $S_{D1} = 0.839 g$ 



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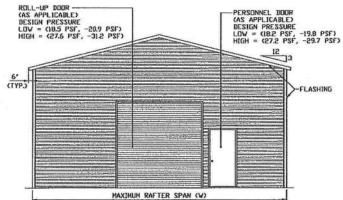
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DRAWN BY: JG	63	BULAR BUILDIN 11 SE INDUSTRI AKE CITY, FLOI	AL CIR	CLE
CHECKED BY: PDH		'-0" ENCLOSED		
 PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND 160225/
CLIENT: TBS	sнт, з	DWG. ND: SK-3		REV.: 5

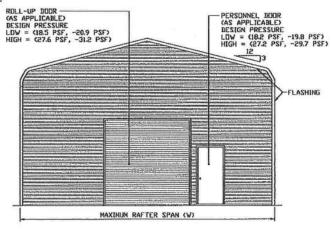
# BOX EAVE FRAME RAFTER ENCLOSED BUILDING ROLL-UP DOOR— (AS APPLICABLE) PERSONNEL BOOR (AS APPLICABLE)



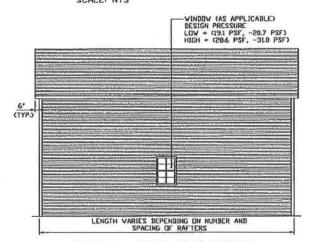
#### TYPICAL END ELEVATION

SCALE: NTS

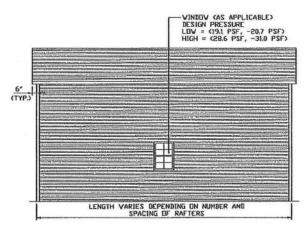
#### BOW FRAME RAFTER ENCLOSED BUILDING



#### TYPICAL END ELEVATION SCALE: NTS



TYPICAL SIDE ELEVATION
SCALE: NTS



#### TYPICAL SIDE ELEVATION

SCALE: NTS



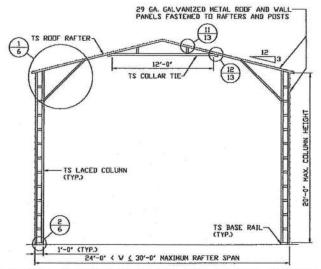
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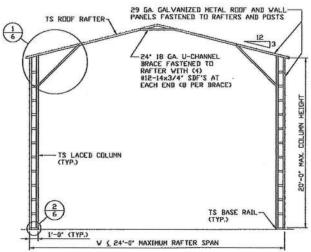
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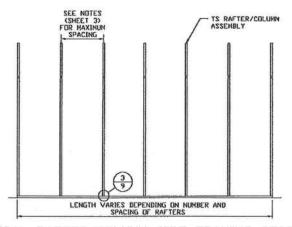
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CHECKED BY: PDH		AKE CITY, FLOI '-0" ENCLOSED	
PROJECT MGR: VSM	DATE: 1-8-21	SCALE: NTS	ND 16022S/ 00S/20352S
CI IENT. TDO	SHT. 4	DWG. NO SK-3	REV. 5



TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE NTS

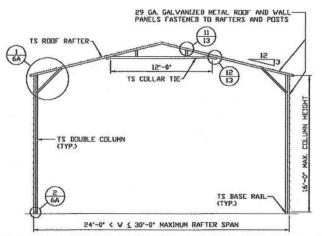


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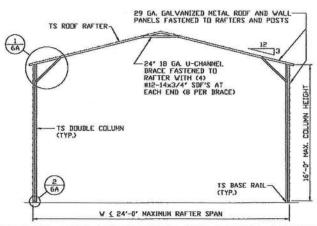
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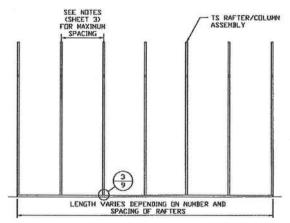
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CHECKED BY: PBH	30'-0"x20'-0" ENCLOSED BUILDING EXP. B					
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 160225/ 005/203525		
CLIENT: TBS	SHT. 5	DWG. ND: SK-3	E	REV# 5		



#### TYPICAL RAFTER/COLUMN END FRAME SECTION



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS

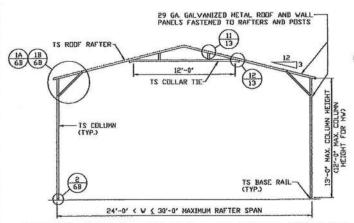


TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS



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TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS

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

TS ROOF RAFTER

24' 18 GA. U-CHANNEL
BRACE FASTENED TO
RAFTER WITH (4)
HIS-1432/4' SDF'S AT
EACH END (8 PER BRACE)

TS COLUMN

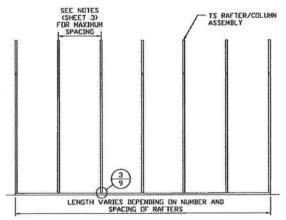
(TYP.)

TS BASE RAIL

(TYP.)

V & 24'-D' MAXIMUM RAFTER SPAN

TYPICAL RAFTER/COLUMN END FRAME SECTION



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE NTS



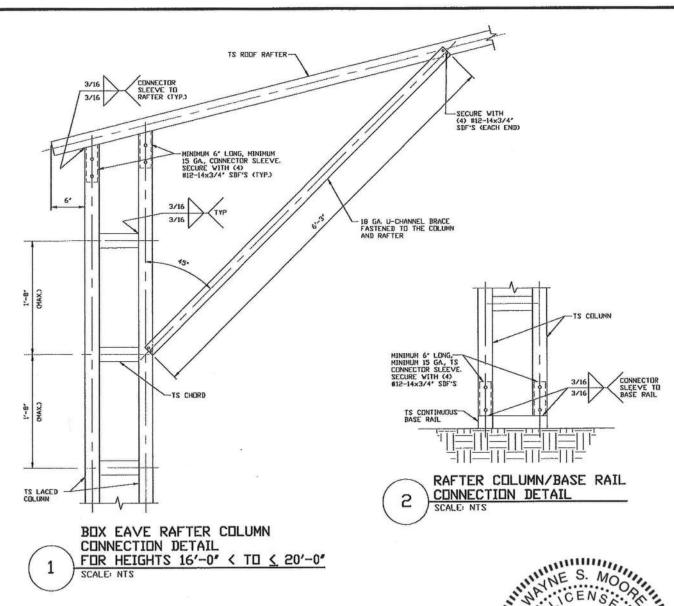
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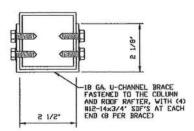
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	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND 16022S/ 00S/20352S			
117	CHECKED BY: PDH		AKE CITY, FLOR 2-0" ENCLOSED					
	DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025						





BRACE SECTION SCALE: NTS



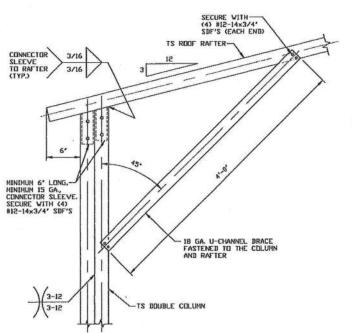
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PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 00S/20352S	_	
CHECKED BY: PDH		AKE CITY, FLOI '-0" ENCLOSED			_	
DRAWN BY: JG	631 SE INDUSTRIAL CIRCLE					



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

SCALE: NTS NDTE: CDLUMN HEIGHTS 12'-0' < TO \( \) 16'-0" FOR HIGH WIND. CONNECTOR SLEEVE MINIMUM 15 GA., SECURE WITH (4) BASE RAIL

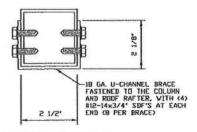
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MINIMUM 6 LONG, CONNECTOR SLEEVE MINIMUM 15 GA., SECURE WITH (4) B12-14x3/4' SDF'S

TS CONTINUOUS BASE RAIL

TS DOUBLE COLUMN

RAFTER CULUMN/BASE RAIL
CUNNECTION DETAIL
SCALE: NTS



BRACE SECTION
SCALE: NTS

1



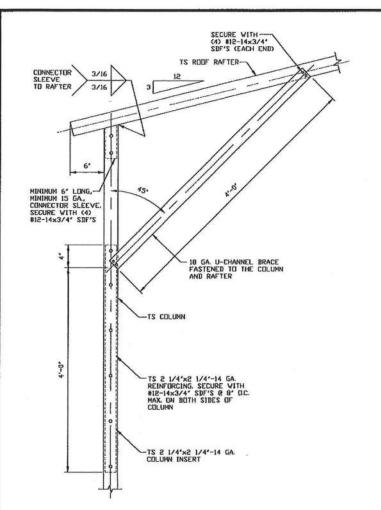
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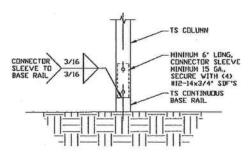
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 PROJECT MGR: VSM	DATE: 1-8-21	SCALE: NTS		ND 16022S/ 00S/20352S		
CLIENT: TBS	SHT. 6A	DWG. NO: SK-3		REV.: 5		



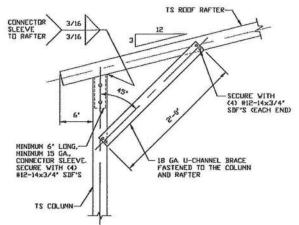
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO ≤ 13'-0"

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

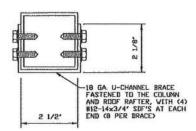


1A

RAFTER COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS



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



BRACE SECTION
SCALE: NTS



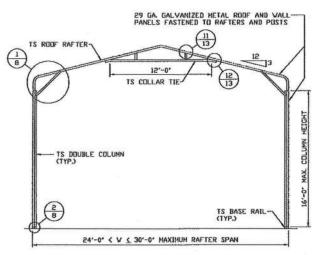
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CHECKED BY: PDH	30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
PROJECT MGR: WSM	DATE: 1-8-21			ND: 160225/ 005/203525	
CLIENT: TBS	знт, бв	DWG. NO SK-3		REV. 5	



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS

TS ROOF RAFTER

TS DOUBLE COLUMN

18

29 GA. GALVANIZED METAL ROOF AND VALUPANELS FASTENED TO RAFTERS AND POSTS

TS BASE RAIL

COLUMN

16'-0" MAX.

-24' 18 GA. U-CHANNEL BRACE FASTENED TO RAFTER VITH (4) #12-14x3/4' SDF'S AT EACH END (8 PER BRACE)



SEE NOTES
(SHEET 3)
FOR MAXIMUM
SPACING

LENGTH VARIES DEPENDING ON NUMBER AND
SPACING OF RAFTERS

TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION
SCALE: NTS



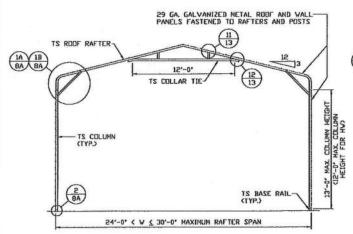
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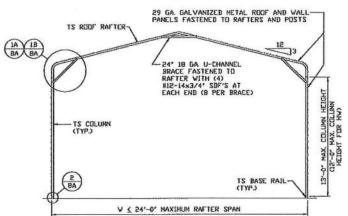
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PROJECT MGR: WSM	DATE: 1-8-21			DB ND: 16022\$/ 300\$/20352\$	
CLIENT: TBS	SHT. 7	DWG, NO: SK-3		REVa 5	





#### TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE, NTS

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

SEE NOTES
(SHEET 3)
FOR MAXIMUM
SPACING

SPACING

LENGTH VARIES DEPENDING ON NUMBER AND
SPACING OF RAFTERS

TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS



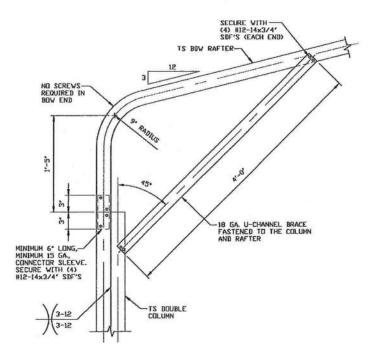
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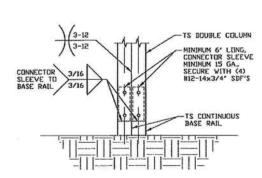
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	PROJECT MGR: VSM	DATE: 1-8-21	SCALE) NTS		ND: 160225/ 005/203525		
	CLIENT: TBS	SHT. 7A	DWG. NO: SK-3		REV. 5		

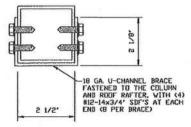


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 13'-0" < TO ≤ 16'-0"

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



2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL SCALE: NTS



BRACE SECTION
SCALE: NTS

1



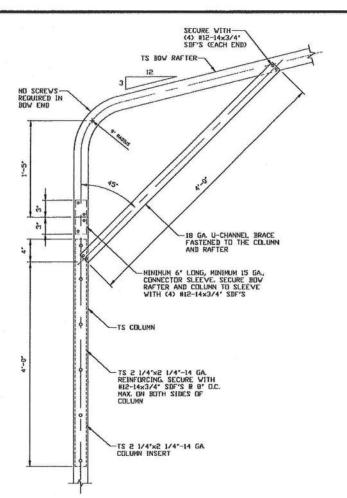
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CLIENT: TBS	SHT. 8	DWG. NO SK-3		REV. 5		
PROJECT MGR: VSM	DATE: 1-8-21	SCALE: NTS		B ND: 16022S/ 300S/20352S		
CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B					
DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE					



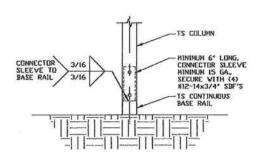
BOX EAVE RAFTER COLUMN CONNECTION DETAIL

FOR HEIGHTS 10'-0" < TO ≤ 13'-0"

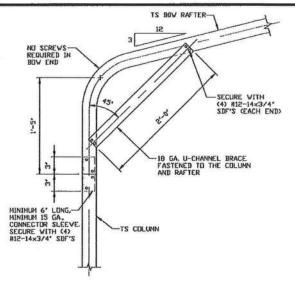
SCALE: NTS

1A

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



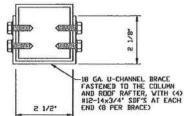
RAFTER COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS



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

) SCHEE NIS

1B



BRACE SECTION SCALE: NTS



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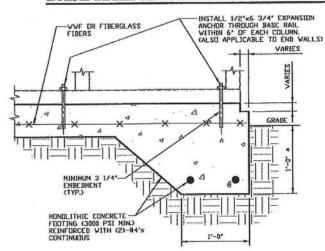
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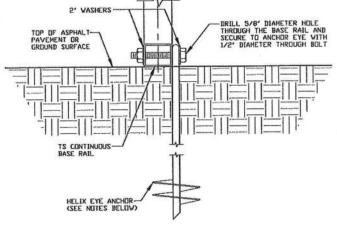
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CLIENT: TBS	SHT. BA	DWG. NO SK-3		REV.I 5			
PROJECT MGR: WSM	DATE: 1-8-21	SCALE) NTS		9 ND: 16022S/ 100S/20352S	_		
CHECKED BY: PDH		AKE CITY, FLOI '-0" ENCLOSED					
DRAWN BY: JG	631 SE INDUSTRIAL CIRCLE						

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





3A

#### CONCRETE MONOLITHIC SLAB BASE RAIL ANCHURAGE

SCALE: NTS MINIMUM ANCHOR EDGE DISTANCE IS 4" COORDINATE WITH LOCAL CODES/ORD. REGARDING MINIMUM FROST DEPTH REQ.

#### GROUND BASE HELIX ANCHORAGE **3B**

SCALE: NTS (CAN BE USED FOR ASPHALT) \* 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 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 AGIS 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.
- 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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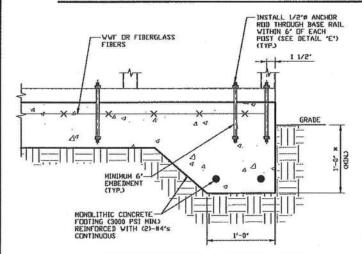
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DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B			
PROJECT MGR: WSM	DATE: 1-8-21	SCALE NTS	JOE	ND 16022S/ 00S/20352S
CLIENT: TBS	SHT. 9	DWG. ND: SK-3		REV. 5

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



30

#### CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

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.

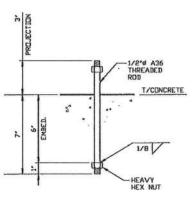
#### REINFORCING STEEL

THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE 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.



ANCHUR ROD THROUGH BASE RAIL DETAIL

SCALE: NTS



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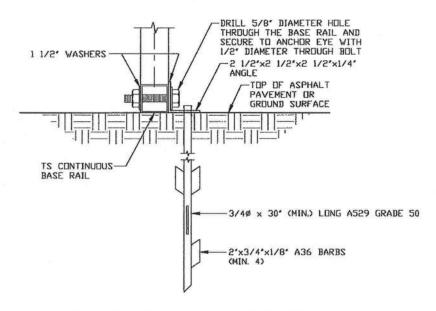
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CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B					
PREJECT MGR: VSM	DATE: 1-8-21	SCALE) NTS		ND: 16022S/ 00S/20352S		
CLIENT: TBS	SHT. 9A	DAC NO 2K-3		REV. 5		

#### BASE RAIL ANCHORAGE OPTION



ASPHALT BASE ANCHORAGE (HP 9 BARBED DRIVE ANCHOR)

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



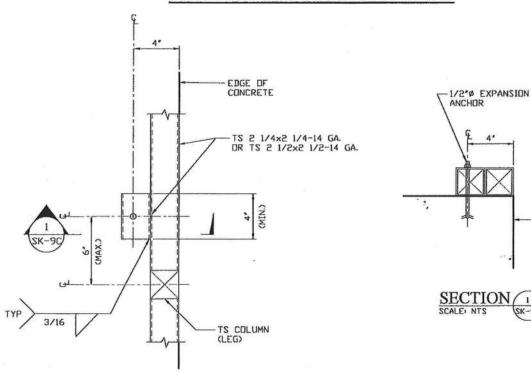
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	PROJECT MGR: VSM	DATE: 1-8-21	SCALE: NTS		ND: 160225/ 005/203525	
	CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
	DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE				

#### **BASE RAIL ANCHORAGE OPTIONS**



TYPICAL ANCHOR DETAIL WHEN BASE RAIL IS NEAR EDGE OF CONCRETE

SCALE: NTS



EDGE OF CONCRETE

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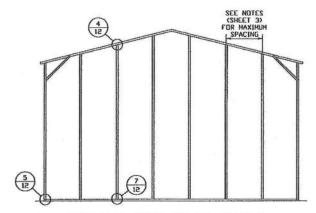
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	CLIENTI TBS	SHT, 9C	DWG. NO: SK-3		REV. 5		
_	PROJECT MGR: WSM	DATE: 1-8-21	SCALE NTS		ND: 16022S/ 000S/20352S		
	CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B					
	DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE					

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



TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SEE NOTES
(SHEET 3)
FOR MAXIMUM
SPACING

DPENING FOR
ROLL-UP
DOOR VITH HEADER
(SEE SHEET 16)

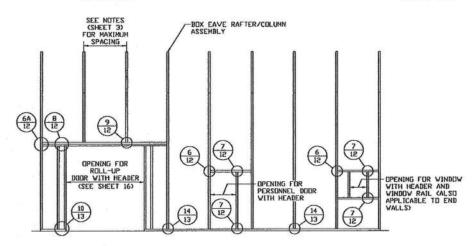
TO THE PERSONNEL DOOR
VITH HEADER

TO THE PERSONNEL DOOR
VITH HEADER

TO THE PERSONNEL DOOR
VITH HEADER

TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS

SCALE: NTS



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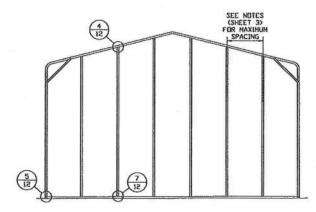
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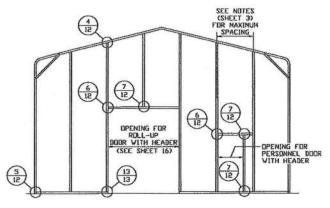
DRAWN BY: JG		631 SE INDUSTRIAL CIRCLE			
CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 00S/20352S	
CLIENT: TBS	SHT. 10	DVG. ND: SK-3		REV. 5	

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



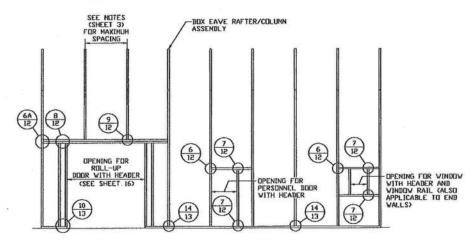
#### TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

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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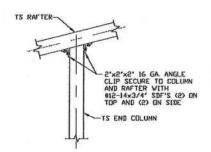
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	DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025					
	CHECKED BY: PDH		'-0" ENCLOSED				
_	PROJECT MGR: VSM	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 00S/20352S		
	CLIENT: TBS	SHT. 11	DWG. NO: SK-3		REV. 5		

#### CONNECTION DETAILS



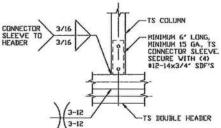
#### END COLUMN/RAFTER CONNECTION DETAIL

TS COLUMN OR END COLUMN 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 DOUBLE HEADER 3-15

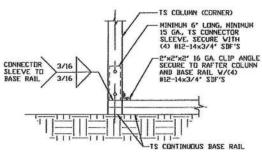
#### DOUBLE HEADER TO COLUMN CONNECTION DETAIL

3-12

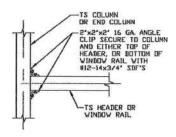
6A SCALE: NTS



COLUMN/DOUBLE HEADER CONNECTION DETAIL



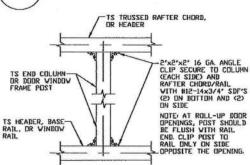
#### END COLUMN/BASE RAIL CONNECTION DETAIL



HEADER OR WINDOW RAIL TO COLUMN CONNECTION DETAIL

SCALE: NTS

6



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

CONNECTOR SLEEVE TO HEADER 3/16 3/16 HINIMUM 6' LONG, HINIMUM 15 GA., TS CONNECTOR SLEEVE. SECURE EACH VITH (4) #12-14×3/4' SDF'S TS COLUMN

DOUBLE HEADER/COLUMN CONNECTION DETAIL 8 SCALE: NTS

No 57170

\*

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ORIDAGINAL

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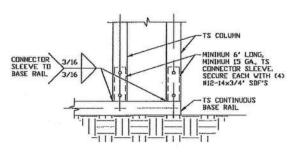
# 9

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TUBULAR BUILDING SYSTEM DRAWN BY JG 631 SE INDUSTRIAL CIRCLE				Control of the Contro
CHECKED BY: PDH	KE CITY, FLORIDA 32025 0" ENCLOSED BUILDING EXP, B			
PROJECT MGR: WSM	DATE: 1-8-21	SCALE) NTS	JOB NO 16022S/ 17300S/20352S	
CLIENT) TBS	SHT. 12	DWG. NO SK-3		REV. 5

#### **CONNECTION DETAILS**



TS ROOF RAFYER

3/16

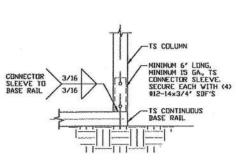
TS CHORD

TS ROOF RAFTER

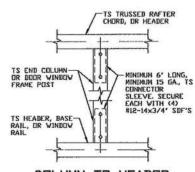
10 COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS

RAFTER TO CHORD CONNECTION DETAIL SCALE NTS

12 COLLAR TIE CONNECTION DETAIL



13 COLUMN/BASE RAIL CONNECTION DETAIL



COLUMN TO HEADER, BASE RAIL CONNECTION DETAIL

SCALE: NTS



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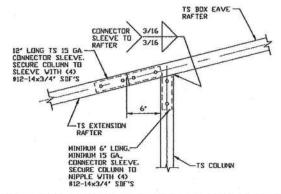
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CHECKED BY: PDH				
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 160225/ 005/203525
CLIENT: TBS	SHT. 13	DWG. NO: SK-3		REV. 5

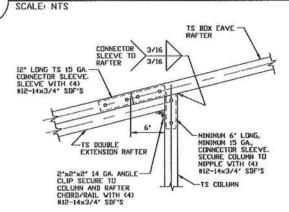
#### 

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'



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



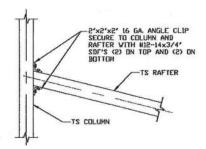
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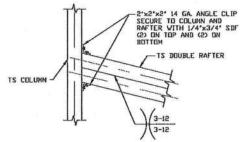
DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025				
CHECKED BY: PDH		IAKE CITY, FLOI 1'-0" ENCLOSED			
PROJECT MGR: WSM	DATE: 1-8-21	SCALE) NTS		8 ND 16022S/ 00S/20352S	
CLIENT: TBS	SHT. 14	DWG. NO: SK-3		REV. 5	

#### 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" < TO ≤ 24'-0"

SCALE: NTS

16A



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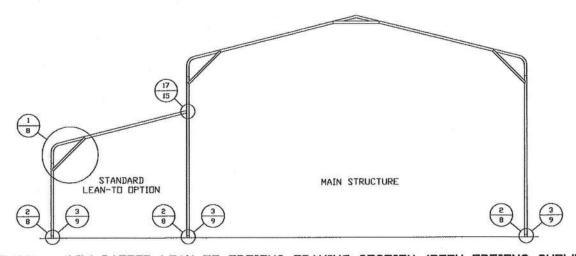
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CHECKED BY: PDH		LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B JDB ND 160225/			
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		008/203528	
CLIENT: TBS	SHT. 14A	DWG. NO: SK-3		REV. 5	

#### **BOW RAFTER LEAN-TO OPTIONS**



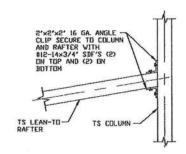
#### BOW RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN) TYPICAL

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 EAVE HEIGHTS (10'-0') < TO < 10'-0' FOR HIGH WIND) (WITH 4'-4' INSERT). EAVE HEIGHTS ≤ 10'-0'.

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

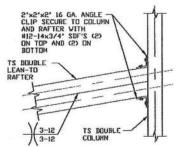


LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 

≤ 15'-0"

SCALE: NTS

17



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS

15'-0" < T□ <u><</u> 24'-0" 17A SCALE: NTS

NA CENS

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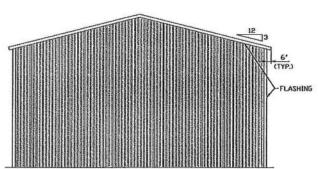
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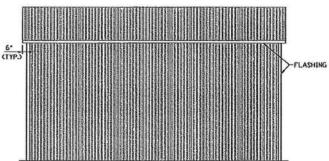
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DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
CHECKED BY: PDH					
PROJECT MGR: VSM	DATE: 1-8-21	SCALE: NTS		ND: 160225/ 005/203525	
CLIENT: TBS	SHT. 15	DWG. ND: SK-3		REV. 5	

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

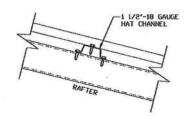


TYPICAL END ELEVATION VERTICAL ROOF/SIDING OPTION SCALE: NTS

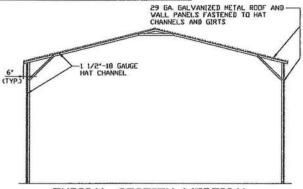


TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING OPTION

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 NAXIMIM
SPACING

-1 1/2'-18 GAUGE HAT CHANNEL SPACED AT
4'-0' D.C. AND FASTENED TO EACH RAFTER

VITH (2) 812-14x3/4' SDF'S

(TYP)

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

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



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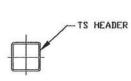
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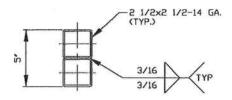
CLIENT) TBS	SHT. 16	DWG. NO: SK-3		REV. 5
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 100S/20352S
CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B			
DRAWN BY: JG	631 SE INDUSTRIAL CIRCLE			

#### SIDE WALL HEADER OPTIONS



HEADER DETAIL FOR DOOR OPENINGS ≤ 10'-0"

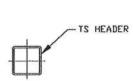
SCALE: NTS



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

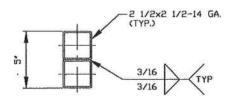
SCALE, NTS

#### 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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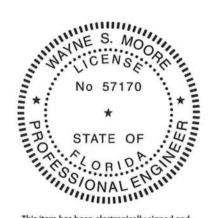
	DRAWN BY: JG		TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025				
	CHECKED BY: PDH	30'-0"x20'-0" ENCLOSED BUILDING EXP. B					
	PROJECT MGR: VSM	DATE: 1-8-21			008/203528		
	CLIENT: TBS	SHT. 17			REV. 5		

#### 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. 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

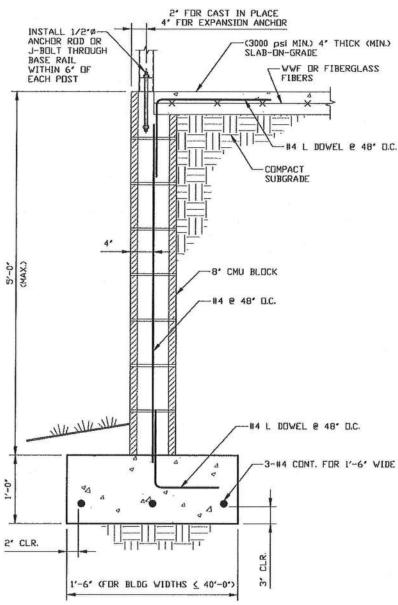
- 2. THERE SHALL BE A MINIMUM OF TWO OPENINGS ON DIFFERENT SIDES FOR EACH ENCLOSED BUILDING.
- 3, APPLY 1.3 FACTOR WHEN CALCULATING TOTAL OPEN AREA WHEN USING  $1/2^\prime{\rm -}18{\rm GA}$  S OR F EXPANDED METAL.
- 4. TOTAL OPEN AREA OF VENT = LxH(MIN. 12").
- 5. FLOOD VENT DETAIL COMPLIES WITH FEMA/NFIP.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



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	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 16022S/ 17300S/20352S		
	CLIENT: TBS	SHT. 18	DWG, NO: SK-3	REV. 5		

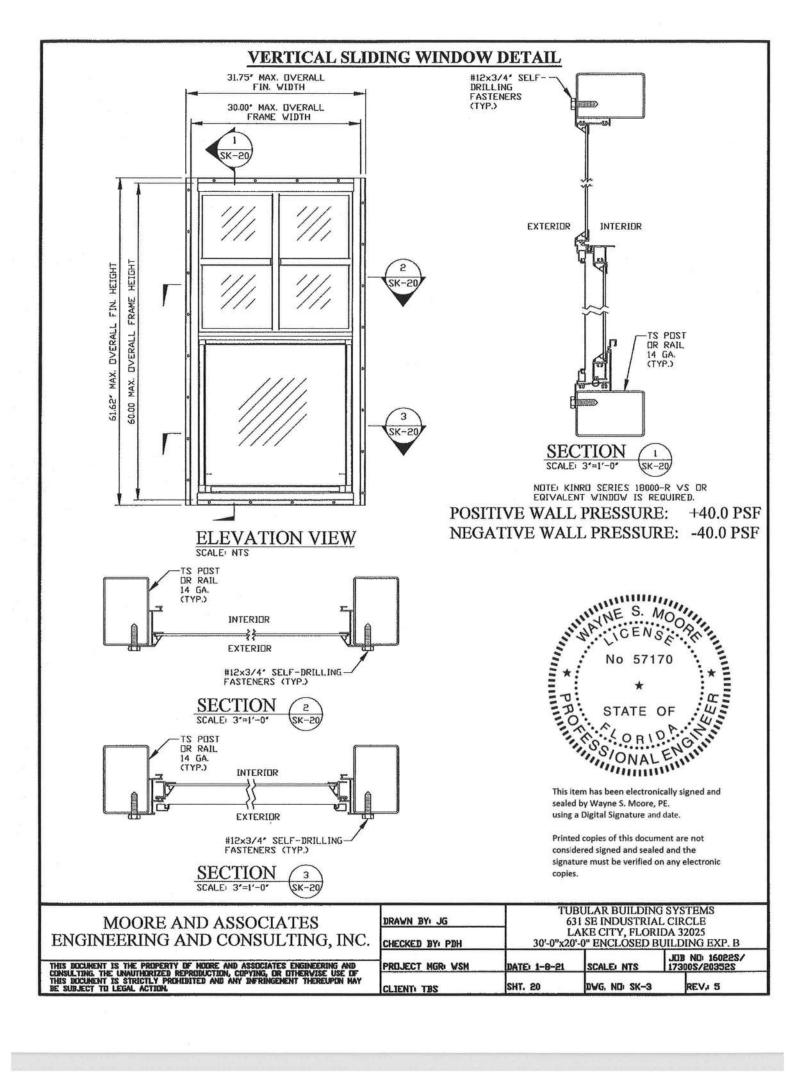
#### STAND -ALONE STEM WALL DETAIL

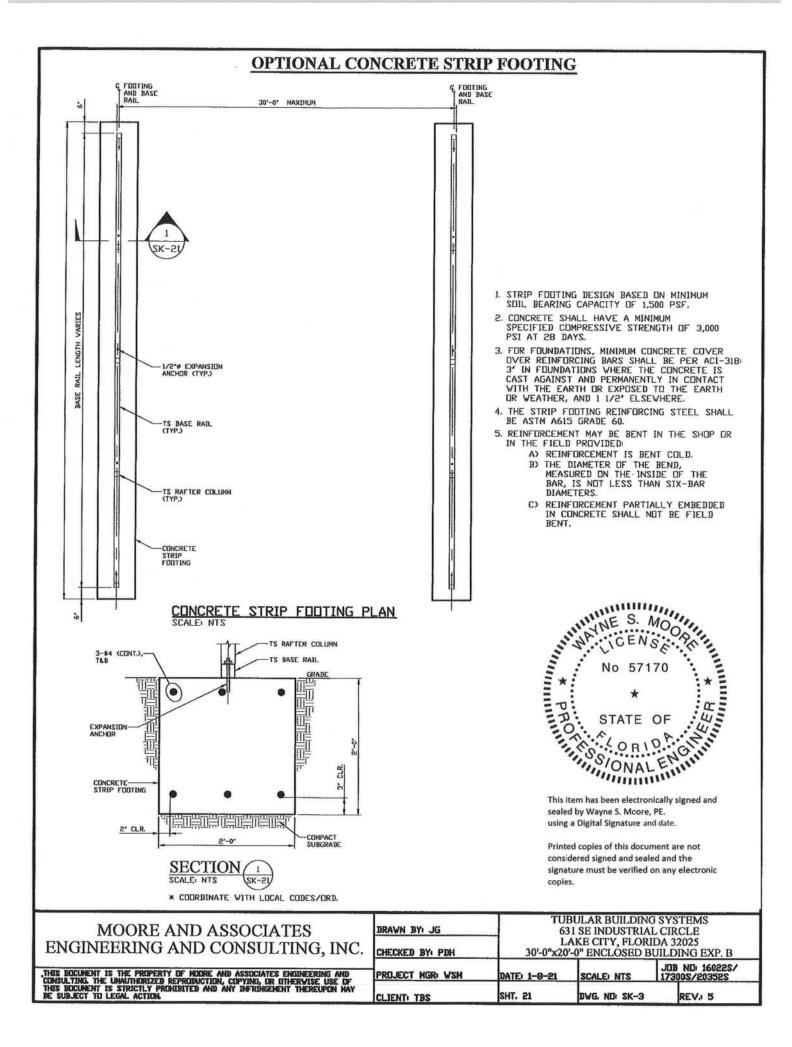


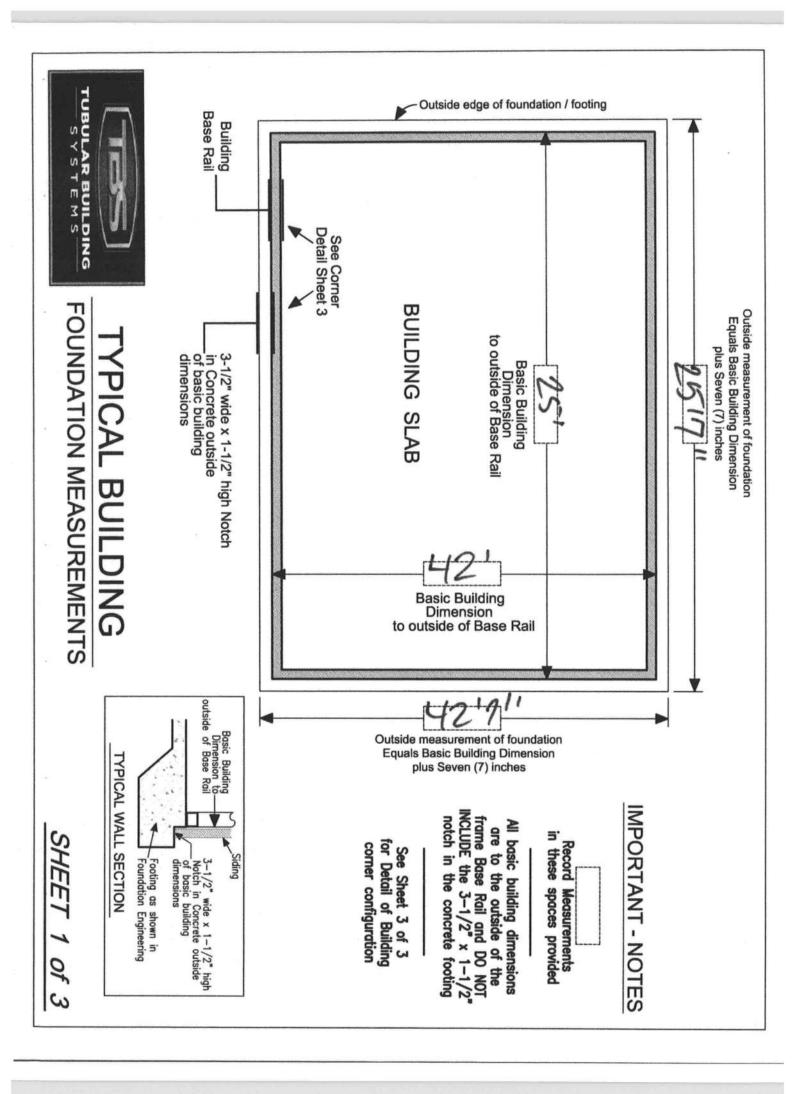
STAND-ALDNE CONCRETE MASONRY UNIT (CMU) FOUNDATION STEM WALL DETAIL

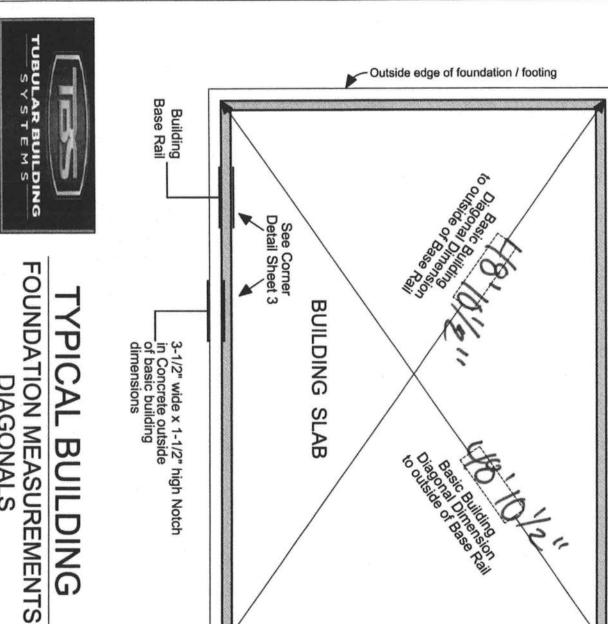
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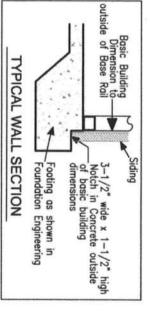
# **IMPORTANT - NOTES**

Record Measurements in these spaces provided

All basic 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 building diagonal dimensions

for Detail of Building corner configuration See Sheet 3 of 3

DIAGONALS



SHEET 2 of 3

