

STRUCTURAL DESIGN

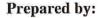
ENCLOSED BUILDING EXPOSURE B

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



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 A	SSOCIATES		/N BYI JG	30'-0"x20'-0	LAR BUILDING S "ENCLOSED BUIL SEAL COVER SH	DING EXP. B
ENGINEERING AND C			KED BY: PDH ECT MGR: WSM			DB NO: 16022S/ 7300S/20352S
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SHEEL 50	VERTICAL SLIDING WINDOW DETAIL *
SHEET 21	STRIP FOOTING OPTION STATE OF



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ENCHIEEDING AND CONGULTING INC	DRAWN BY: JG	631 LA	JLAR BUILDING SE INDUSTRIAL KE CITY, FLORII D'' ENCLOSED BU	CIRCLE DA 32025
		DATE: 1-8-21	SCALE: NTS	JUB NO 16022S/ 17300S/20352S
BE SUBJECT TO LEGAL ACTION.	CLIENT: TBS	SHT, 2	DAC' NO 2K-3	REV. 5

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

B) LIVE LOAD

= 15 b2L

- C) GROUND SNOW LOAD
- = 10 PSF
- 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 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.
- 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/WELDED NUT × 30' LONG IN SUITABLE SOIL CONDITIONS MAY BE USED FOR LOW (≤ 108 MPH NUMINAL) WIND SPEEDS ONLY. □PTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED. COURDINATE WITH LOCAL CODES/ORDINANCES REGARDING MINIMUM LENGTH FOR FROST DEPTH PROTECTION.
- 14. WIND FORCES GOVERN OVER SEISMIC FORCES, SEISMIC PARAMETERS ANALYZED ARE: SOIL SITE CLASS = D

RISK CATEGORY I

R= 3.25 S_{DS}= 1.522 g

S_{DI}= 0.839 g

I_ε= 1.0 V= C_sW



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DRAWN BYI JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025					
CHECKED BY: PDH	30'-0"x20'-0" ENCLOSED BUILDING EXP. B					
 PREIJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 160225/ 05/203525		
CLIENT: TBS	SHT, 3	DWG. NO: SK-3		REV. 5		

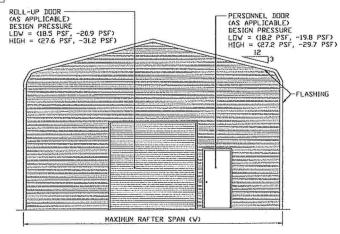
BOX EAVE FRAME RAFTER ENCLOSED BUILDING ROLL-UP DOOR (AS APPLICABLE) DESIGN PRESSURE LDV = (18.5 PSF, -20.9 PSF) HIGH = (27.6 PSF, -31.2 PSF) HIGH = (27.6 PSF, -31.2 PSF) 12 3 4 (TYP.) FLASHING

TYPICAL END ELEVATION

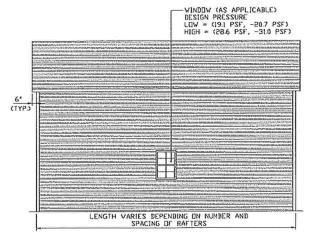
SCALE: NTS

BOW FRAME RAFTER ENCLOSED BUILDING

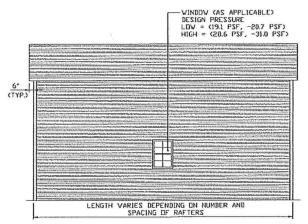
MAXIMUM RAFTER SPAN (W)



TYPICAL END ELEVATION SCALE: NTS

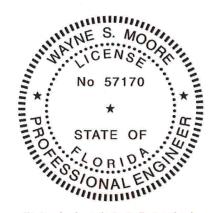


TYPICAL SIDE ELEVATION



TYPICAL SIDE ELEVATION

SCALE: NTS



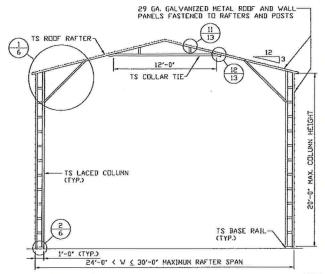
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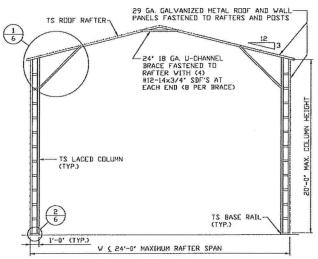
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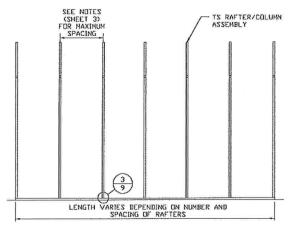
	-		TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE					
DRAWN BY	<u>u</u>							
CHECKED BY	PDH		LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B					
PROJECT MGF	NZW 15	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 00S/20352S			
CLIENT: TBS		SHT. 4	DWG. NO SK-3		REV. 5			



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

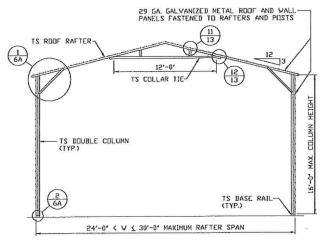


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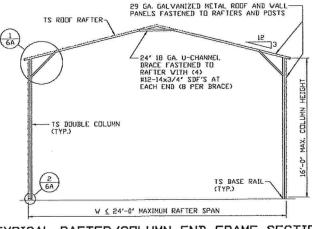
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_	PROJECT MGRI WSM	DATE: 1-8-21	SCALE: NTS	JOI	9 ND: 16022S/ 100S/20352S			
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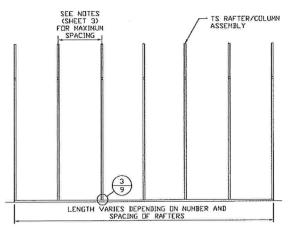


TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS



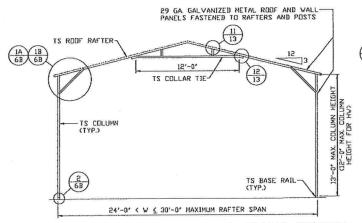
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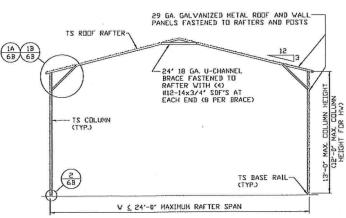
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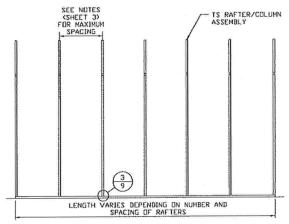
	DRAWN BYI JG		TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025				
	CHECKED BY: PDH	30'-0"x20	30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
-	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 160225/ 005/203525		
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TYPICAL RAFTER/COLUMN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



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



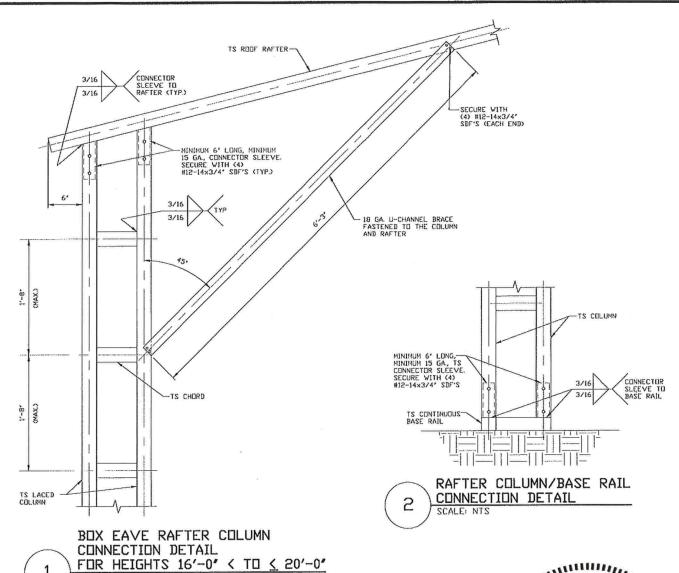
TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

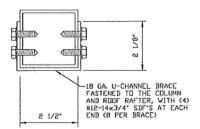


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1 SCALE: NTS



BRACE SECTION
SCALE: NTS



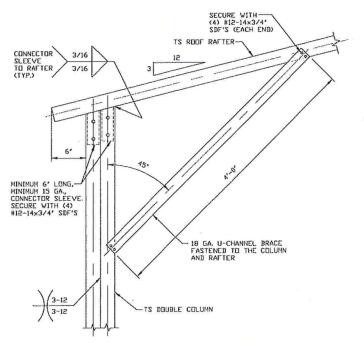
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PROJECT MGR: WSM CLIENT: TBS	DATE: 1-8-21 SHT: 6	SCALE: NTS	173	ND: 16022S/ 00S/20352S REV.: 5			

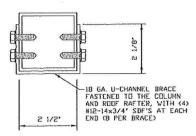


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 13'-0" < TO < 16'-0"

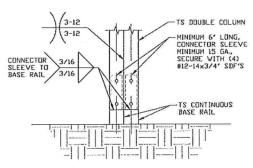
SCALE: NTS

1

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



BRACE SECTION



RAFTER COLUMN/BASE RAIL CONNECTION DETAIL SCALE: NTS

2



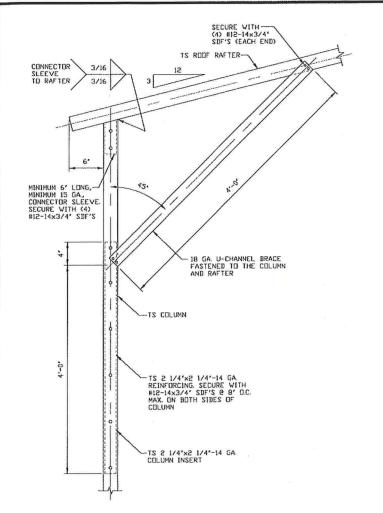
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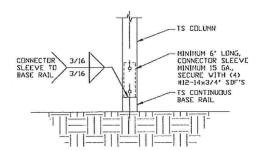
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DRAWN BY: JG	63	UBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025			

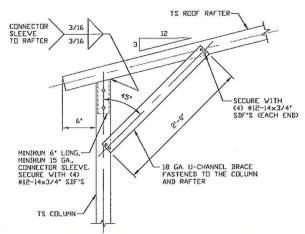


BOX EAVE RAFTER COLUMN
CONNECTION DETAIL
FOR HEIGHTS 10'-0" < TO < 13'-0"

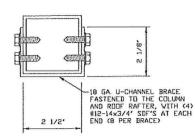
SCALE: NTS NDTE: MAXIMUM COLUMN HEIGHT IS 12'-0" FOR HIGH WIND.



2 RAFTER COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE, NTS



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



BRACE SECTION
SCALE: NTS

1B



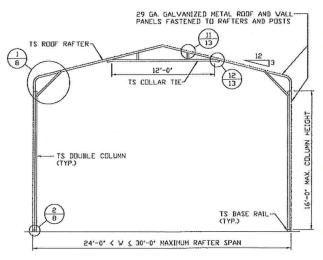
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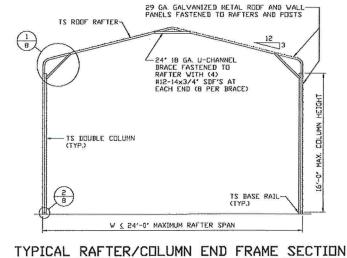
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CLIENT: TBS	SHT. 6B	DWG. NO SK-3		REV. 5	

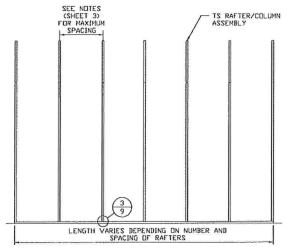




TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS

SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION
SCALE: NTS

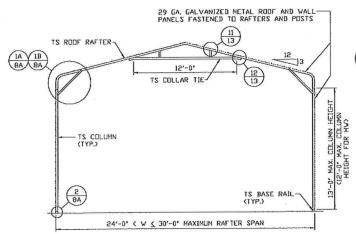
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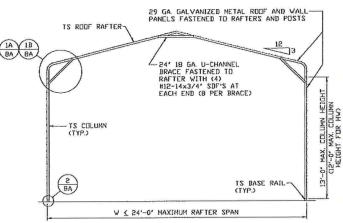
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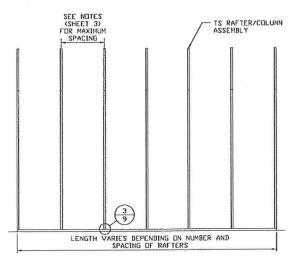




TYPICAL RAFTER/COLUMN END FRAME SECTION

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

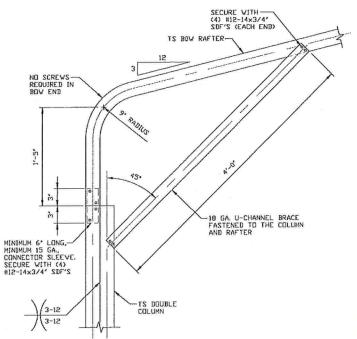


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		BULAR BUILDIN			
DRAWN BYI JG		631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025			
CHECKED BY: PDH		'-0" ENCLÓSED			
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 00S/20352S	
CLIENT: TBS	SHT. 7A	DWG. NO: SK-3	11	REV. 5	



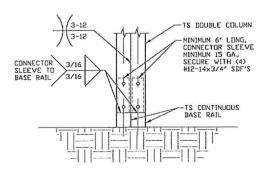
BOX EAVE RAFTER COLUMN
CONNECTION DETAIL
FOR HEIGHTS 13'-0" < TO < 16'-0"

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

18 GA. U-CHANNEL BRACE
FASTENED TO THE COLUMN
AND RODF RAFTER, VITH (4)
BIZ-14-3/4* SDF's AT EACH
END (8 PER BRACE)

BRACE SECTION

1



RAFTER COLUMN/BASE RAIL



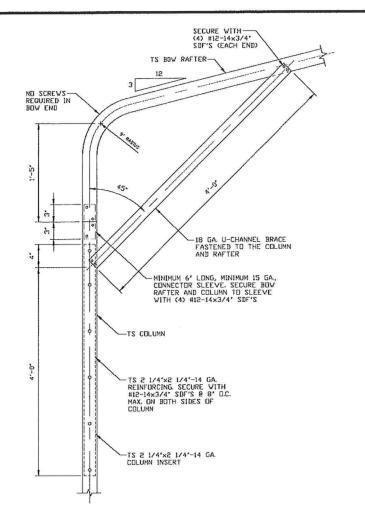
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DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"×20'-0" ENCLOSED BUILDING EXP. B			
 PREJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	173	ND: 160225/ 005/203525
CLIENT: TBS	SHT. 8	DMG. NO SK-3		REV. 5

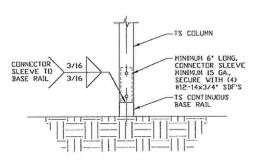


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO ≤ 13'-0"

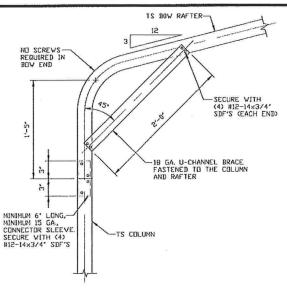
SCALE: NTS

1A

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



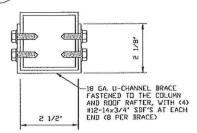
RAFTER COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS



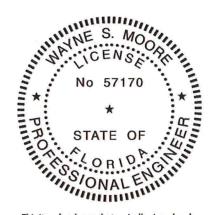
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS < 10'-0"

SCALE: NTS

1B



BRACE SECTION SCALE: NTS



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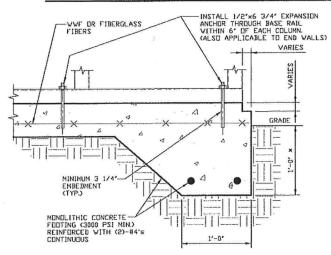
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_	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 160225/ 005/203525			
	CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP.						
	DRAWN BY: JG	631 SE INDUSTRIAL CIRCLE						

BASE RAIL ANCHORAGE OPTIONS FOR LOW AND HIGH WIND SPEED



2' WASHERS DRILL 5/8' DIAMETER HOLE THROUGH THE BASE RAIL AND SECURE TO ANCHOR EYE WITH 1/2' DIAMETER THROUGH BOLT TOP OF ASPHALT-PAVEMENT OR GROUND SURFACE 町 HELIX EYE ANCHOR-

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) * 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-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.
- 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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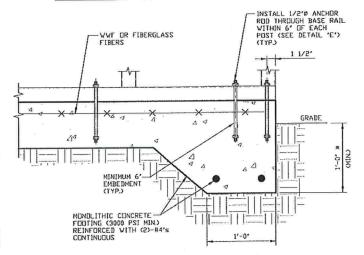
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-	DRAWN BYI JG	63	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE					
LAKE CITY, FLOI CHECKED BY: PDH 30'-0"x20'-0" ENCLOSED								
	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 00S/20352S			
	CLIENT: TBS	SHT. 9	DWG. NO: SK-3		REV. 5			

OPTIONAL FOUNDATION ANCHORAGE FOR LOW AND HIGH WIND SPEED



30

CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

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.

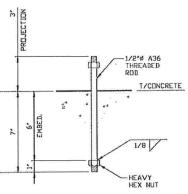
REINFORCING STEEL!

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.



ANCHOR ROD THROUGH BASE RAIL DETAIL

SCALE: NTS

3D



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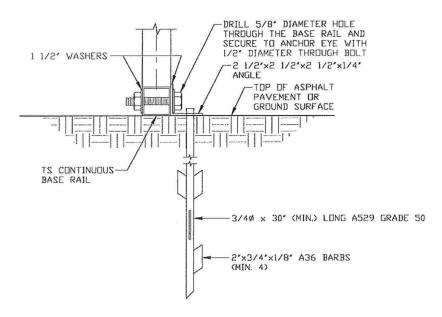
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CHECKED BY PDH	30'-0"x20	BUILD	JILDING EXP. B		
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 160225/ 005/203525	
CLIENT: TBS	SHT. 9A	DWG. NO SK-3		REV. 5	

BASE RAIL ANCHORAGE OPTION



ASPHALT BASE ANCHORAGE (HP 9 BARBED DRIVE ANCHOR)

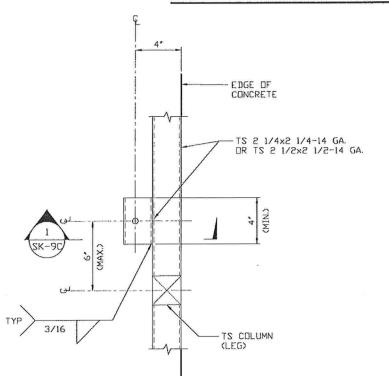
SCALE: NTS
(CAN BE USED FOR ASPHALT)
* COORDINATE WITH LOCAL CODES/ORD.
REGARDING MINIMUM FROST DEPTH REQ.

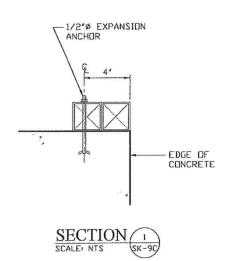


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BASE RAIL ANCHORAGE OPTIONS





TYPICAL ANCHOR DETAIL WHEN BASE RAIL IS NEAR EDGE OF CONCRETE

SCALE: NTS



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DWG. NO SK-3

REV. 5

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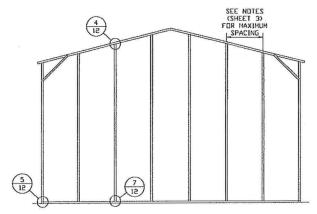
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CHECKED BY: PDH	30'-0"x20'-0" ENCLÓSED BUILDIN			
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JDB ND: 16022S/ 17300S/20352S	

SHT, 9C

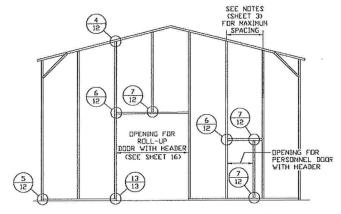
CLIENT: TBS

BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



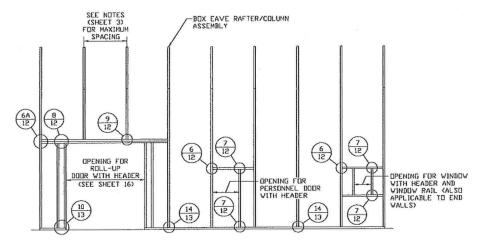
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

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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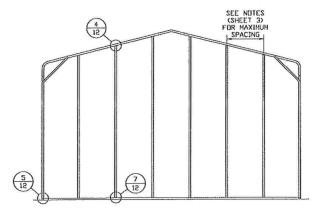
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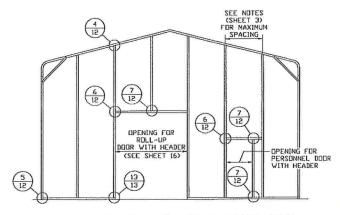
	DRAWN BY: JG CHECKED BY: PDH	631 LAI	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 9'-0"x20'-0" ENCLOSED BUILDING EXP. B			
_			SCALE: NTS	173	ND: 16022S/ 00S/20352S REV: 5	

BOW RAFTER END WALL AND SIDE WALL OPENINGS



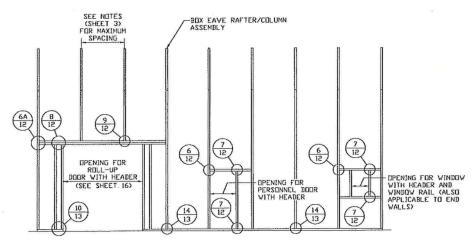
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

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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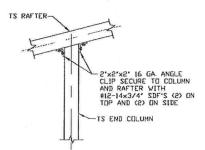
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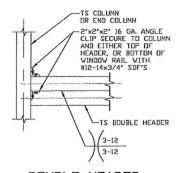
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PROJECT MGR: WSM	DATE: 1-8-21	JUB		3 ND: 16022S/ 00S/20352S			
CLIENTI TBS	SHT. 11	DWG. NO SK-3		REV. 5			

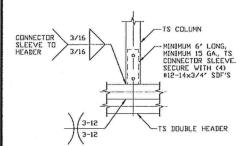
CONNECTION DETAILS



END COLUMN/RAFTER CONNECTION DETAIL 4 SCALE: NTS

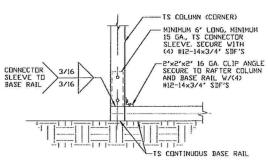


DOUBLE HEADER TO COLUMN CONNECTION DETAIL 6A SCALE: NTS



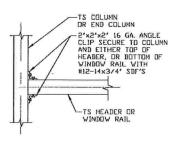
9

COLUMN/DOUBLE HEADER CONNECTION DETAIL SCALE: NTS



END COLUMN/BASE RAIL CONNECTION DETAIL 5

SCALE: NTS



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

TS TRUSSED RAFTER CHORD, DR HEADER -2'x2'x2' 16 GA. ANGLE CLIP SECURE TO COLUMN (EACH SIDE) AND RAFTER CHORD/RAIL VITH #12-14x3/4' SDF'S (2) ON BOTTOM AND (2) ON SIDE TS END COLUMN— OR DOOR VINDOV FRAME POST NOTE: AT ROLE-UP DOOR
OPENINGS, POST SHOULD
BE FLUSH WITH RAIL
END. CLIP POST TO
RAIL ONLY ON SIDE
OPPOSITE THE OPENING. TS HEADER, BASE RAIL, DR WINDOW RAIL

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

CONNECTOR SLEEVE TO HEADER 3/16 3-12 3/16 3-12 MINIMUM 6' LONG, MINIMUM 15 GA., TS CONNECTOR SLEEVE. SECURE EACH WITH (4) #12-14x3/4' SDF'S TS COLUMN

DOUBLE HEADER/COLUMN CONNECTION DETAIL 8 SCALE: NTS

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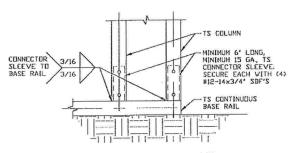
SONAL ENGINE

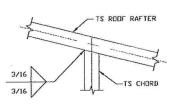
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	DRAWN BYI JG	3 SYS L CIR DA 3				
	CHECKED BY: PDH	30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
	PROJECT MGR: WSM	DATE: 1-8-21	SCALE) NTS		ND: 160225/ 005/203525	
The state of the s	CLIENT: TBS	SHT. 12	DWG. NO SK-3		REV. 5	

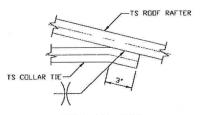
CONNECTION DETAILS





RAFTER TO CHORD

CONNECTION DETAIL

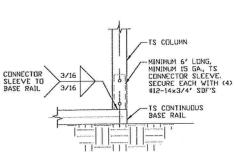


COLUMN/BASE RAIL CONNECTION DETAIL 10

11 SCALE: NTS

COLLAR TIE CONNECTION DETAIL 12 SCALE: NTS

SCALE: NTS



CONNECTION DETAIL

SCALE: NTS

13

COLUMN/BASE RAIL

TS TRUSSED RAFTER CHORD, OR HEADER TS END COLUMN— OR DOOR WINDOW FRAME POST MINIMUM 6' LUNG, MINIMUM 15 GA., TS CUNNECTUR SLEEVE. SECURE EACH WITH (4) #12-14×3/4' SDF'S TS HEADER, BASE RAIL, OR WINDOW RAIL

COLUMN TO HEADER, BASE RAIL CONNECTION DETAIL

SCALE: NTS

14

S. MO No 57170 STATE OF

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PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JOB	ND: 16022S/ 00S/20352S			
CLIENT: TBS	SHT. 13	DWG. NO: SK-3		REV.: 5			

BOX EAVE RAFTER LEAN-TO OPTIONS 15 6 16 14A STANDARD ROOF EXTENSION MAIN STRUCTURE LEAN-TO OPTION DPTION 3 6 3 (E

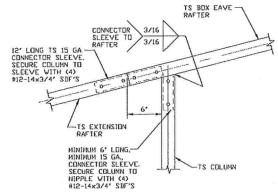
BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN) TYPICAL

SCALE: NTS
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE LACED COLUMNS FOR MAIN BUILDING COLUMNS WITH LEAN-TO DR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE 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'.

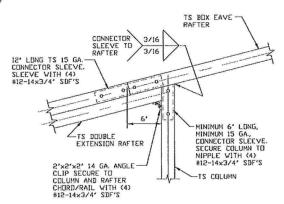
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS 10'-0' < TO \(\) 13'-0' (12'-0' FOR HIGH WIND) (VITH 4'-4' INSERT).

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS (10'-0' VITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS \le 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" 15

SCALE: NTS



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

SCALE: NTS

15A



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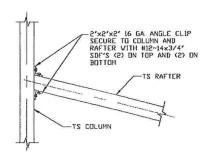
TUBULAR BUILDING SYSTEMS

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 PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	ND: 16022S/ 00S/20352S	
CHECKED BY: PDH		KE CITY, FLORII)" ENCLOSED BU		
DRAWN BY: JG		SE INDUSTRIAL		

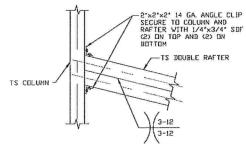
BOX EAVE RAFTER LEAN-TO OPTIONS



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

SCALE: NTS

16



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

SCALE: NTS

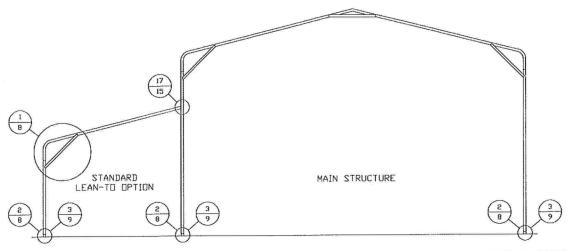
16A



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MOOKE AND ASSOCIATES	DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025			
ENGINEERING AND CONSULTING, INC.	CHECKED BY PDH		30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING AND	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JDB ND: 16022S/ 17300S/20352S	
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BOW RAFTER LEAN-TO OPTIONS



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

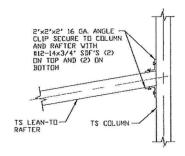
SCALE: NTS

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).

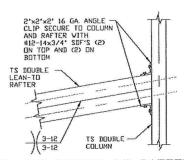
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS < 10'-0'.

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



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

SCALE: NTS

17A



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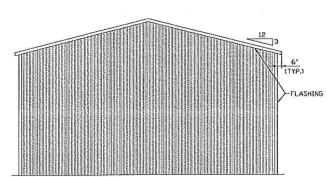
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BE SUBJECT TO LEGAL ACTION.	

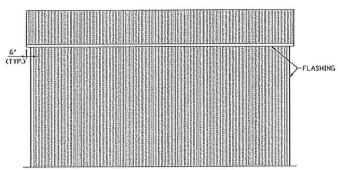
DRAWN BY: JG	63	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025				
CHECKED BY: PDH		30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 0S/20352S		
CLIENT: TBS	SHT. 15	DWG. NO. SK-3		REV. 5		

BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



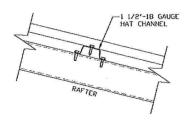
TYPICAL END ELEVATION VERTICAL ROOF/SIDING OPTION

SCALE: NTS



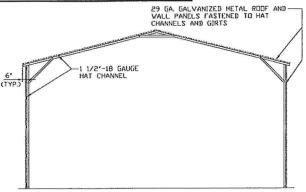
TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING OPTION

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 MAXIMUM SPACING -1 1/2'-18 GAUGE HAT CHANNEL SPACED AT 4'-0' D.C. AND FASTENED TO EACH RAFTER WITH (2) #12-14×3/4' SDF'S 6' (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.) D.C.



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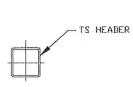
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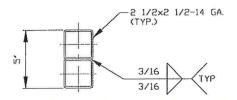
		TUBULAR BUILDING SYSTEMS				
DRAWN BY: JG	63	631 SE INDUSTRIAL CIRCLE				
CHECKED BY PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B					
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 160225/ 005/203525		
CLIENT: TRS	SHT, 16	DWG, NO: SK-3		REV. 5		

SIDE WALL HEADER OPTIONS



HEADER DETAIL FOR DOOR OPENINGS < 10'-0"

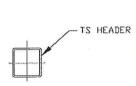
SCALE: NTS



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

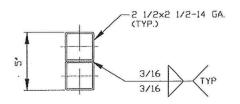
SCALE: NTS

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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	TUE	BULAR BUILDIN	IG SYS	STEMS		
DRAWN BYI JG	63	631 SE INDUSTRIAL CIRCLE				
CHECKED BY: PDH		AKE CITY, FLOF '-0" ENCLOSED				
 PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 00S/20352S		
CLIENT: TBS	SHT. 17	DWG. NO: SK-3		REV. 5		

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" O.C. ATTACH W/ METAL TEK SCREWS.

TYPICAL FLOOD VENT DETAIL SCALE: NTS

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

GRADE

- 5. FLOOD VENT DETAIL COMPLIES WITH FEMA/NFIP.
- PREFABRICATED FLOOD VENTS MEETING THE REQUIREMENTS OF FEMA/NIFIP MAY BE USED.



TS BASE RAIL

EIII:

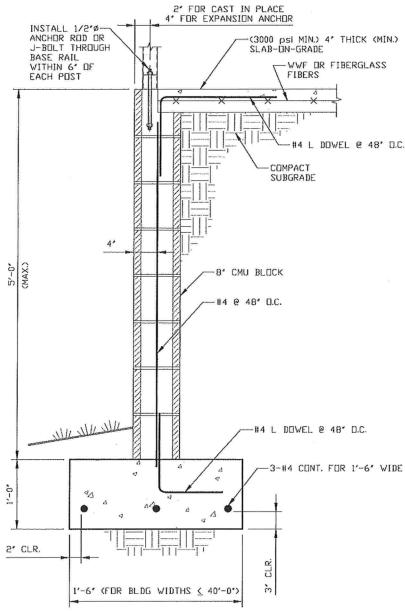
GRADE

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STAND -ALONE STEM WALL DETAIL



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



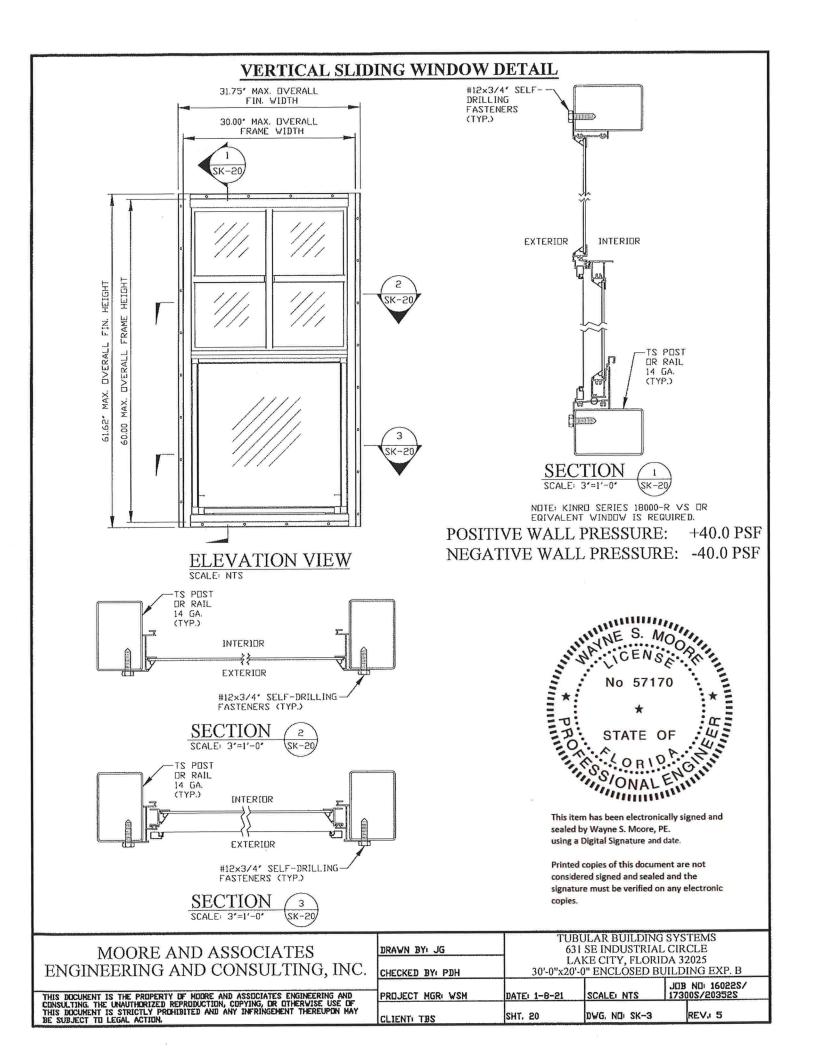
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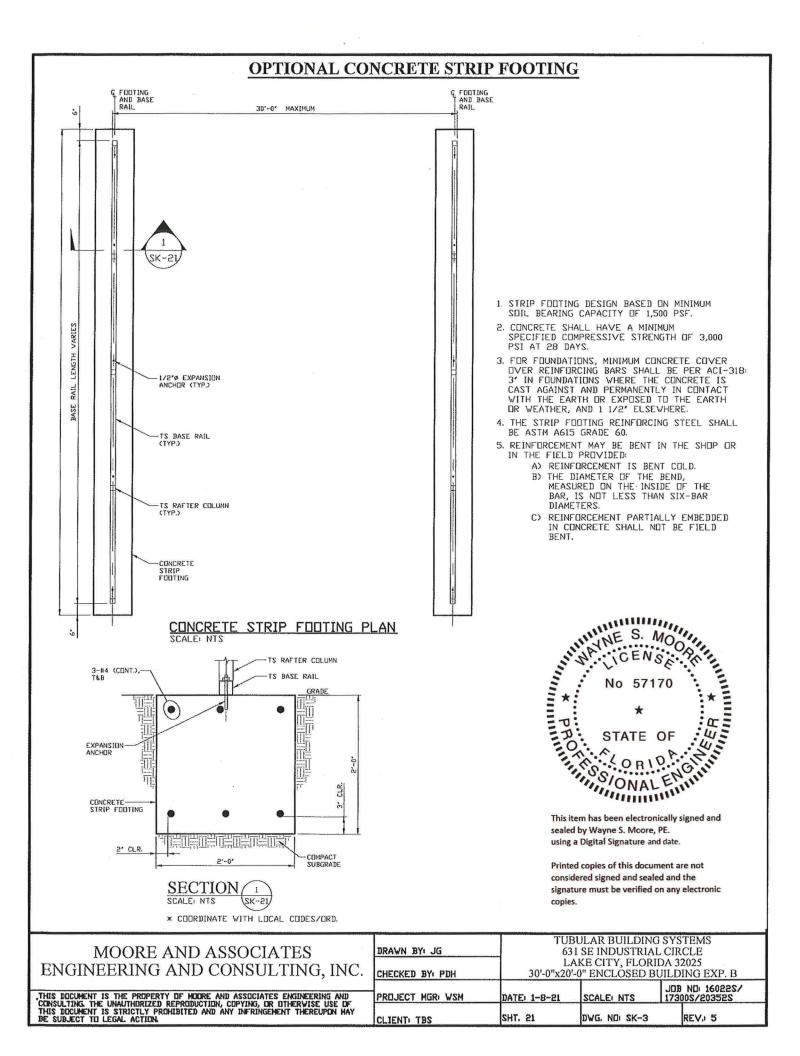
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				JDB ND: 160
ENGINEERING AND CONSULTING, INC.	CHECKED BY: PDH	and the second s	KE CITY, FLOR 0" ENCLOSED E	
MOORE AND ASSOCIATES	DRAWN BY: JG	631	ULAR BUILDIN SE INDUSTRIA	L CIRCLE

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CLÓSED BUILDING EXP. B JOB NO 16022S/ 17300S/20352S E NTS SHT. 19 DWG, NO SK-3 REV. 5 CLIENT: TBS





IMPORTANT - NOTES SHEET 1 of 3 3-1/2" wide x 1-1/2" high Notch in Concrete outside of basic building dimensions notch in the concrete footing All basic building dimensions are to the outside of the frame Base Rail and DO NO INCLUDE the 3-1/2" x 1-1/ in these spaces provided Record Measurements See Sheet 3 of 3 for Detail of Building corner configuration Footing as shown in Foundation Engineering TYPICAL WALL SECTION Siding Basic Building Dimension to-outside of Base Rail plus Seven (T) inches Outside measurement of foundation Equals Basic Building Dimension BUILDING FOUNDATION MEASUREMENTS Basic Building Dimension to outside of Base Rail for UMBI COP Code Compliance 3-1/2" wide x 1-1/2" high Notch of in Concrete outside of basic building dimensions TYPICAL BUIL Outside measurement of foundation Equals Basic Building Dimension Basic Building Dimension to outside of Base Rail plus Seven (7) inches BUILDING SLAB See Corner Detail Sheet 3 TUBULAR BUILDING SYSTEMS Building Base Rail Outside edge of foundation / footing

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

Basic Building Dimension to outside of Base Rail

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

Building Base Rail Footing as shown in Foundation Engineering

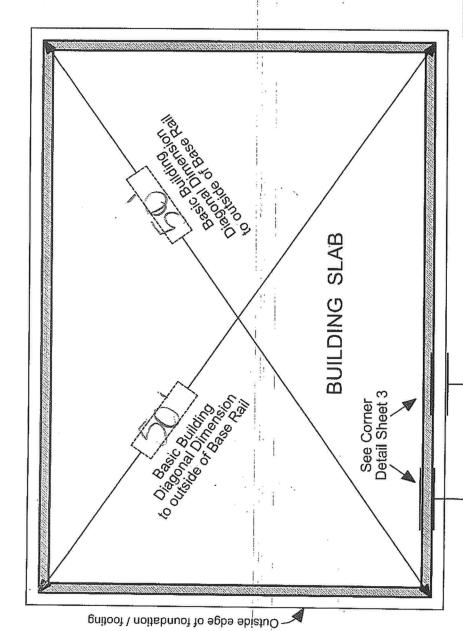
TYPICAL WALL SECTION

IMPORTANT - NOTES

in these spaces provided Record Measurements

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

See Sheet 3 of 3 for Detail of Building corner configuration



FYPICAL BUILDING

FOUNDATION MEASUREMENTS DIAGONALS

TUBULAR BUILDING SYSTEMS

