

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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SHEET 21	
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TUBULAR BUILDING SYSTEMS

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DRAWN BT: JU	LAKE CITY, FLORIDA 32025					
CHECKED BY: PDH		30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		B ND: 16022S/		
CLIENT: TBS	SHT, 2	DAC' NO 2K-3	J.F.	REV. 5		

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:

A) DEAD LOAD

= 1.5 PSF

B) LIVE LOAD

= 15 PSF

- C) GROUND SNOW LOAD = 10 PSF
- 4. LOW ULTIMATE WIND SPEED 105 TO 140 MPH (NOMINAL WIND SPEED B) 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.
- IZ. STANDARD ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6° OF EACH COLUMN.
- 13. STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBAR W/WELDED NUT × 30' LONG IN SUITABLE SOIL CONDITIONS MAY BE USED FOR LOW (≤ 108 MPH NOMINAL) WIND SPEEDS ONLY. □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:

SDIL SITE CLASS = D RISK CATEGORY I

R= 3.25

 $I_{\epsilon}=1.0$

Sps= 1.522 g V= CsW

 $S_{DI} = 0.839 g$



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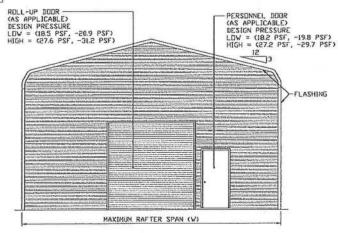
	DRAWN BY: JG CHECKED BY: PDH	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
-	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		005/203525 005/203525	
	CLIENT: TBS	знт. з	DWG. NO SK-3		REV. 5	

BOX EAVE FRAME RAFTER ENCLOSED BUILDING ROLL-UP DOOR (AS APPLICABLE) DESIGN PRESSURE LOV = (18.5 PSF, -20.9 PSF) HIGH = (27.6 PSF, -31.2 PSF) HIGH = (27.6 PSF, -31.2 PSF) (TYP.) MAXIBUM RAFTER SPAN (V)

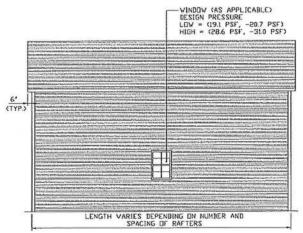
TYPICAL END ELEVATION

SCALE! NTS

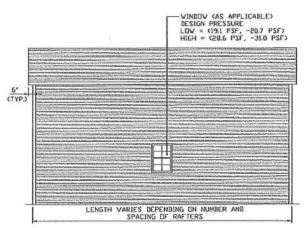
BOW FRAME RAFTER ENCLOSED BUILDING



TYPICAL END ELEVATION SCALE: NTS

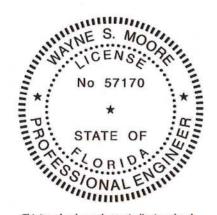


TYPICAL SIDE ELEVATION



TYPICAL SIDE ELEVATION

SCALE: NTS



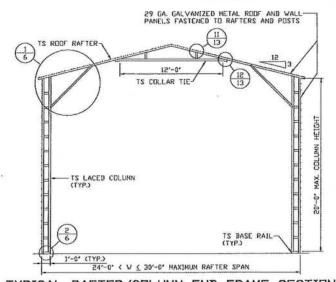
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PROJECT MGR: WSM	DATE: 1-8-21	SCALE) NTS		00S/20352S			
CLIENT: TBS	SHT. 4	DWG. NO SK-3		REV. 5			



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

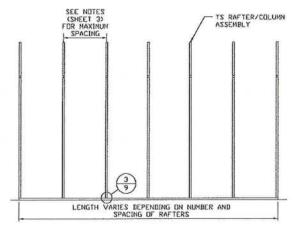
24' 18 GA. U-CHANNEL
BRACE FASTENED TO
RAFTER WITH (4)
BI2-14×3/4' SDF'S AT
EACH END (8 PER BRACE)

TS LACED COLUMN
(TYP.)

V (24'-0' MAXIMUM RAFTER SPAN

TYPICAL RAFTER/COLUMN END FRAME SECTION

TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS



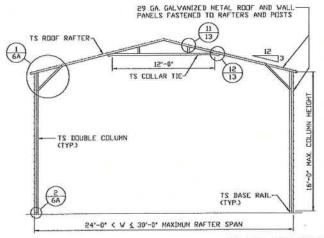
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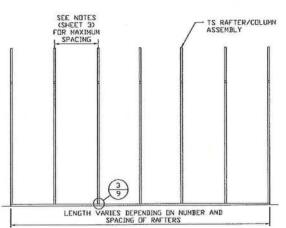
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PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 00S/20352S		
CHECKED BY: PDH		AKE CITY, FLOI '-0" ENCLOSED				
DRAWN BYI JG	63	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE				



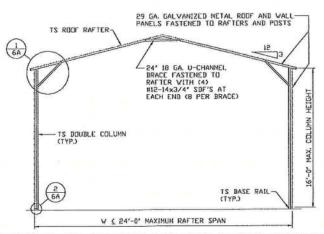
TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



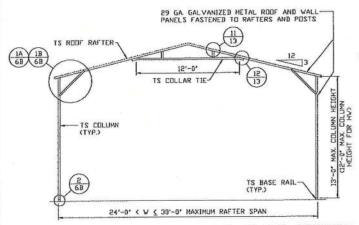
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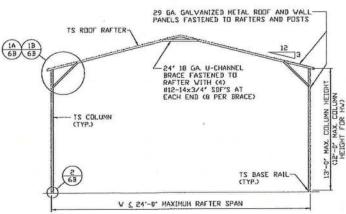
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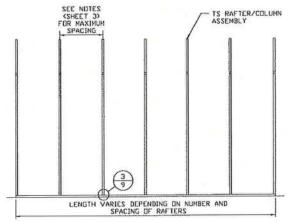
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PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 00S/20352S	
CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
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TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

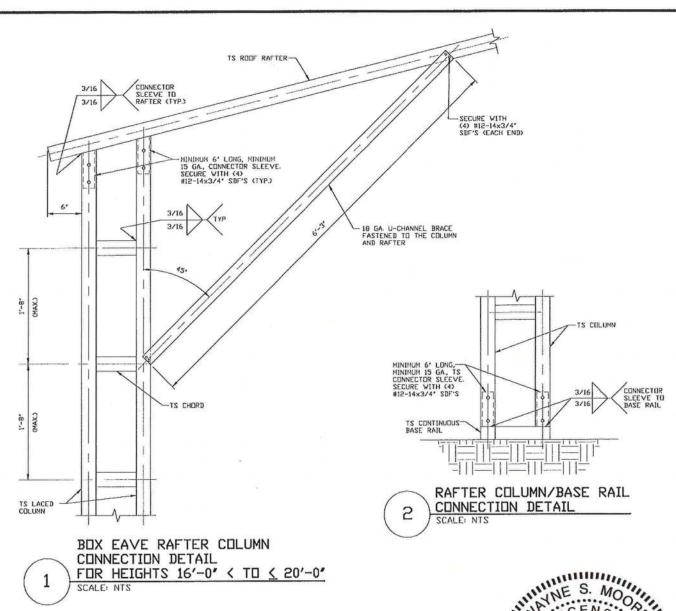


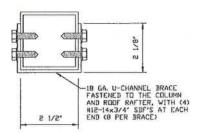
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-	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		002\503252 002\503252
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BRACE SECTION
SCALE: NTS



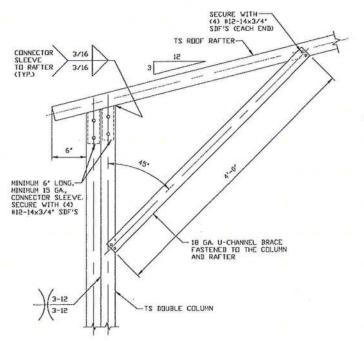
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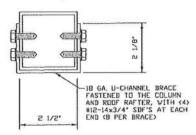
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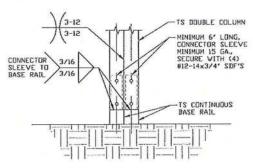
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 13'-0" < TO < 16'-0"

1) SCALE: NTS

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



BRACE SECTION



RAFTER COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS

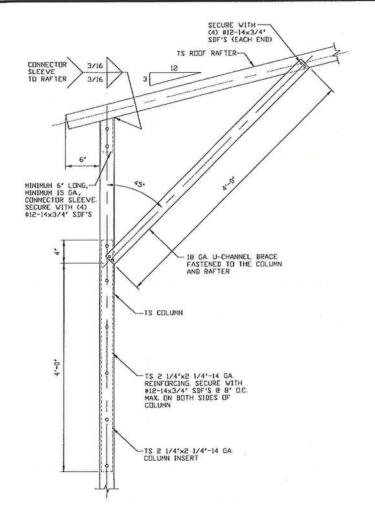
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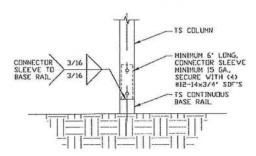
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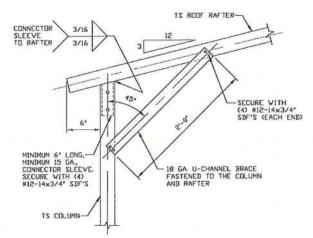
BOX EAVE RAFTER COLUMN CONNECTION DETAIL

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

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

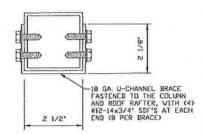


2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL SCALE, NTS



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

SCALE: NTS



BRACE SECTION
SCALE: NTS

1B



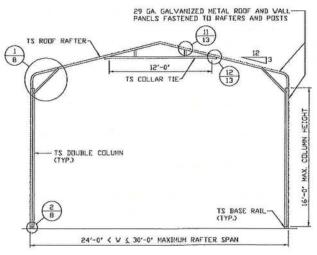
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_	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 160225/ 005/203525	
	CLIENT: TBS	SHT. 6B	DWG. NO: SK-3		REV. 5	



29 GA. GALVANIZED METAL ROOF AND VALL PANELS FASTENED TO RAFTERS AND POSTS IS ROOF RAFTER -24' 18 GA. U-CHANNEL BRACE FASTENED TO RAFTER WITH (4) #12-14×3/4' SDF'S AT EACH END (8 PER BRACE) COLUMN HEIGHT TS DOUBLE COLUMN (TYP.) MAX. 16'-0" (B) TS BASE RAIL V € 24'-0' MAXIMUM RAFTER SPAN

TYPICAL RAFTER/COLUMN END FRAME SECTION

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

SCALE: NTS

SEE NOTES (SHEET 3) FOR MAXIMUM SPACING TS RAFTER/COLUMN ASSEMBLY $\binom{3}{9}$ VARIES DEPENDING ON NUMBER AND SPACING OF RAFTERS

TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

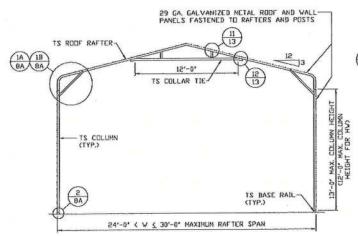


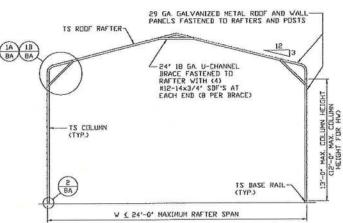
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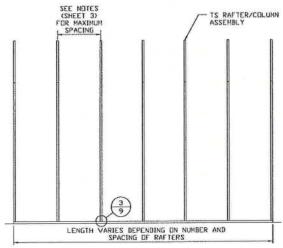




TYPICAL RAFTER/COLUMN END FRAME SECTION

TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

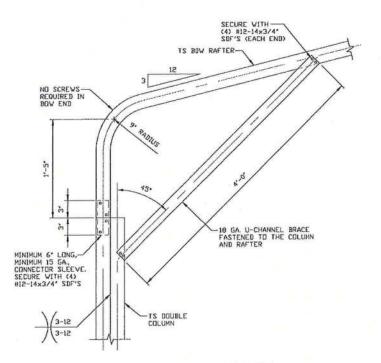


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PROJECT MGR: WSM	DATE: 1-8-21			JOB NO: 160225/ 73005/203525	
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CONNECTOR 3/16

CONNECTOR 3/16

SLEEVE TO BASE RAIL 3/16

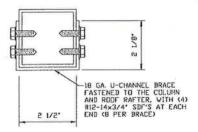
TS DOUBLE COLUMN
MINIMUM 15 GA,
SECURE VITH (4)
B12-14x3/4' SDF'S

TS CONTINUOUS
BASE RAIL

2 RAFTER COLUMN/BASE RAIL

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.



BRACE SECTION

1



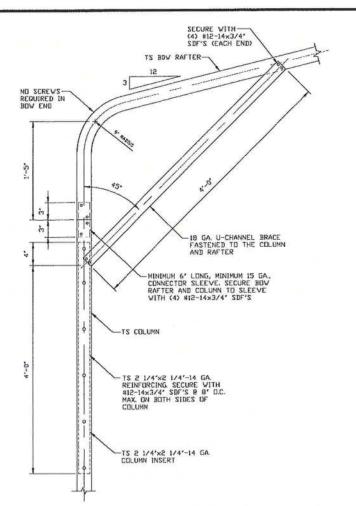
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DRAWN BY: JG	TUBULAR BUILDING SYSTEMS - 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B			
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JOE	ND: 16022S/ 00S/20352S
CLIENT: TBS	знт, в	DWG. NO SK-3		REV,1 5

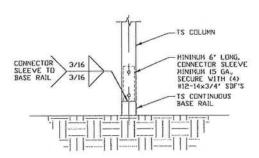


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO ≤ 13'-0"

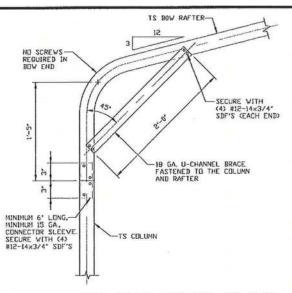
SCALE: NTS

1A

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



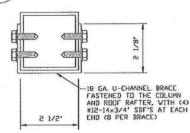
RAFTER COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS



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

SCALE: NTS

1B



BRACE SECTION



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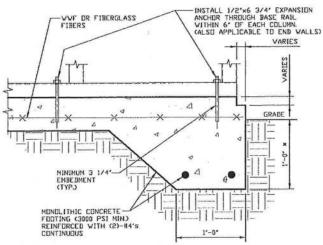
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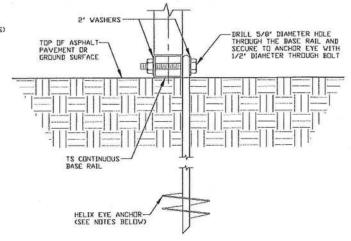
DRAWN BY: JG	63	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025				
CHECKED BY: PDH		'-0" ENCLOSED				
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		8 NO: 16022S/ 100S/20352S		
CLIENT: TBS	SHT. BA	DWG. NO SK-3		REV. 5		

BASE RAIL ANCHORAGE OPTIONS FOR LOW AND HIGH WIND SPEED



CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE SCALE: NTS

MINIMUM ANCHOR EDGE DISTANCE IS 4' * COURDINATE 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.

CUNCRETE

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 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.
- REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT.

HELIX ANCHOR NOTES:

- 1. FOR VERY DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS USE MINIMUM (2) 4' HELICES WITH MINIMUM 30 INCH EMBEDMENT.
- 2. FOR CORAL USE MINIMUM (2) 4' HELICES WITH MINIMUM 30 INCH EMBEDMENT.
- 3. FOR MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS, AND CLAYS USE MINIMUM (2) 4' HELICES WITH MINIMUM 30 INCH EMBEDMENT.
- 4. FOR LODSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS ALLUVIAL FILL USE MINIMUM (2) 6' HELICES WITH MINIMUM 50 INCH EMBEDMENT.
- 5. FUR VERY LOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER CLAYS AND SILTS, ALLUVIAL FILL USE MINIMUM (2) 8' HELICES WITH MINIMUM 60 INCH EMBEDMENT.



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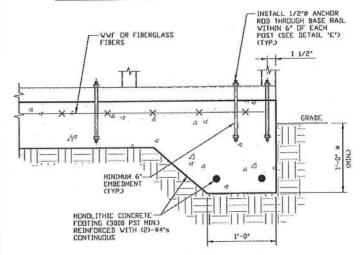
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PROJECT MGR/ WSM	DATE: 1-8-21			JDB ND: 16022S/ 7300S/20352S	
CLIENT: TBS	SHT. 9	DWG. NO: SK-3		REV. 5	

OPTIONAL FOUNDATION ANCHORAGE FOR LOW AND HIGH WIND SPEED



30

CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS MINIMUM ANCHOR EDGE DISTANCE IS 1 1/2'
* COORDINATE WITH LOCAL CODES/DRD.
REGARDING MINIMUM FROST DEPTH REQ.

GENERAL NOTES

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

CONCRETE

CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.

COVER OVER REINFORCING STEEL

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

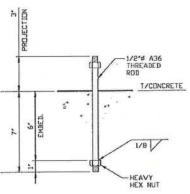
REINFORCING STEEL

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

REINFORCEMENT MAY BE BENT IN THE SHOP OR THE FIELD PROVIDED

1. REINFORCEMENT IS BENT COLD.
2. THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETERS.
3. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT

BE FIELD BENT.



ANCHOR ROD THROUGH BASE RAIL DETAIL

SCALE: NTS

ЗD



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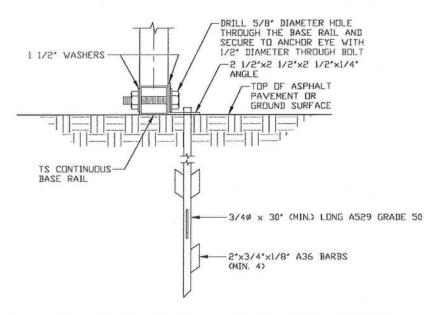
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PROJECT MGR: WSM	DATE: 1-8-21	SCALE NTS	JDB ND 160225/ 173005/203525	
CLIENT: TBS	SHT. 9A	DWG. NO SK-3		REV. 5

BASE RAIL ANCHORAGE OPTION



ASPHALT BASE 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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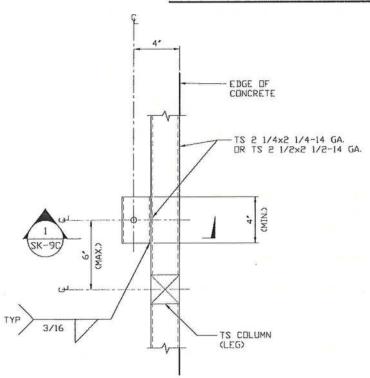
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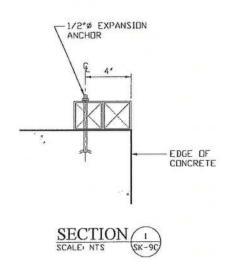
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CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 00S/20352S	
CLIENT: TBS	sнт. 9в	DWG. NO SK-3		REV. 5	

BASE RAIL ANCHORAGE OPTIONS





TYPICAL ANCHUR DETAIL WHEN BASE RAIL IS NEAR EDGE OF CONCRETE

SCALE: NTS



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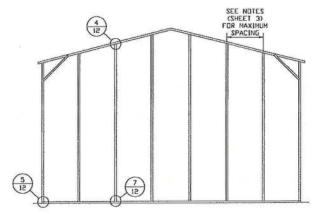
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	TUBULAR BUILDING SYSTEMS
AWN BYI JG	631 SE INDUSTRIAL CIRCLE
	LAKE CITY, FLORIDA 32025
ECKED BY PDH	30'-0"x20'-0" ENCLOSED BUILDING EXP. B

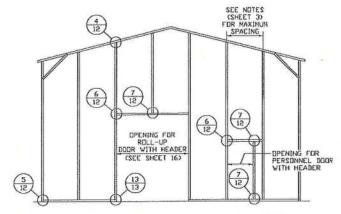
CLIENT: TBS	SHT, 9C	DWG. NO: SK-3	REV. 5
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JDB ND: 16022S/ 17300S/20352S

BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



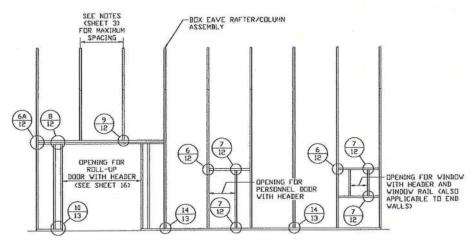
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

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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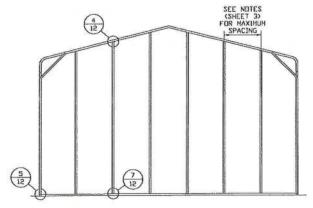
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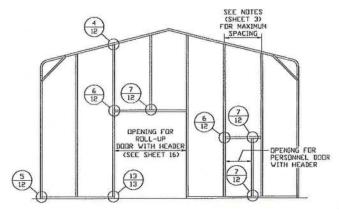
DRAWN BY: JG CHECKED BY: PDH	63 L	BULAR BUILDIN BI SE INDUSTRIA AKE CITY, FLOI '-0" ENCLOSED	AL CIR RIDA 3	CLE 2025	
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		JOB NO: 16022S/ 17300S/20352S	
CLIENT: TBS	SHT. 10	DMG. NO SK-3		REV. 5	

BOW RAFTER END WALL AND SIDE WALL OPENINGS



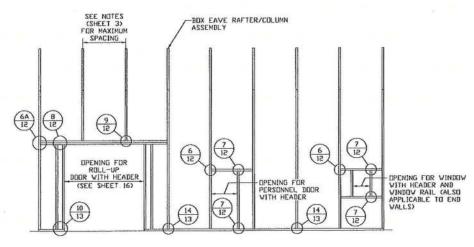
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

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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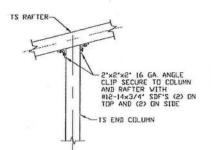
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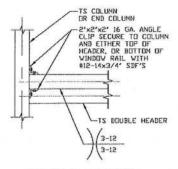
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PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JOB NO 17300S/	16022S/ 20352S	
CLIENT: TRS	SHT, 11	DWG. NO: SK-3	RE	V.1 5	

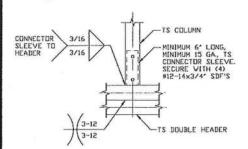
CONNECTION DETAILS



END COLUMN/RAFTER CONNECTION DETAIL SCALE: NTS

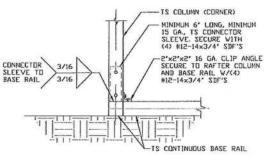


DOUBLE HEADER TO COLUMN CONNECTION DETAIL 6A SCALE: NTS



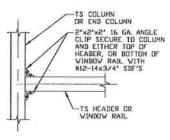
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COLUMN/DOUBLE HEADER CONNECTION DETAIL SCALE: NTS



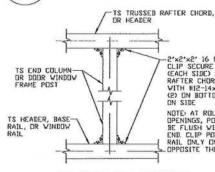
END COLUMN/BASE RAIL CONNECTION DETAIL 5

SCALE: NTS



HEADER OR WINDOW RAIL TO COLUMN CONNECTION DETAIL

6 SCALE: NTS



-2'x2'x2' 16 GA. ANGLE CLIP SECURE TO COLUMN (EACH SIDE) AND RAFTER CHORD/RAIL VITH HI2-14x3/4' SDF'S (2) ON BOTTOM AND (2) ON SIDE

NOTE: AT ROLL-UP DOOR OPENINGS, POST SHOULD BE FLUSH WITH RAIL END. CLIP POST TO RAIL DNLY ON SIDE.

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

No 57170

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STATE OF

ORIOA

ONALEMIN SO/ORIDA CHILL

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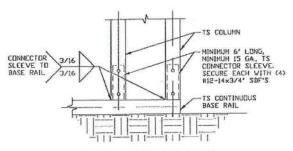
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	CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B					
-	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JOB NO 16022S/ 17300S/20352S			
	CLIENT: TBS	SHT. 12	DWG. NO SK-3	REV. 5			

CONNECTION DETAILS



TS ROOF RAFTER 3/16

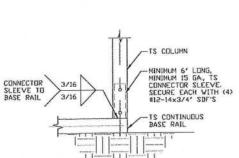
TS ROOF RAFTER TS COLLAR TH

COLUMN/BASE RAIL CONNECTION DETAIL 10 SCALE: NTS

RAFTER TO CHORD CONNECTION DETAIL 11 SCALE: NTS

TS TRUSSED RAFTER CHORD, OR HEADER

COLLAR TIE CONNECTION DETAIL 12 SCALE: NTS



TS END COLUMN— OR DOOR VINDOV FRAME POST MINIMUM 6' LONG, MINIMUM 15 GA., TS CONNECTOR SLEEVE. SECURE EACH WITH (4) #12-14×3/4' SDF'S TS HEADER, BASE RAIL, OR WINDOW RAIL COLUMN TO HEADER,

COLUMN/BASE RAIL CONNECTION DETAIL 13

SCALE: NTS

BASE RAIL CONNECTION DETAIL

14 SCALE: NTS



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

BOX EAVE RAFTER LEAN-TO OPTIONS | STANDARD | LEAN-TO IDPTION | LEAN-TO IDP

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

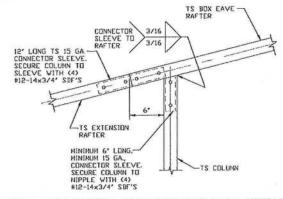
SCALE: NTS
MAIN BUILDING COLUMNS WITH LEAN-TO OR RODF EXTENSION ATTACHED ARE REQUIRED TO BE LACED COLUMNS FOR
EAVE HEIGHTS 16'-0' < TO \(\) 20'-0'.

MAIN BUILDING COLUMNS WITH LEAN-TO OR RODF 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 RODF 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 RODF 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 SCALE: NTS

CONNECTOR SLEEVE TO 3/16

RAFTER

CONNECTOR SLEEVE TO 3/16

SLEEVE WITH (4)

BIZ-14x3/4" SDF'S

AMNIMUM 6' LONG, MINIMUM 15 GA, CONNECTOR SLEEVE. SCOWE COLUMN TO NIFPLE VITH (4)

BIZ-14x3/4" SDF'S

CLIP SECURE TO COLUMN AND RAFTER CHORD/RAIL WITH (4)

BIZ-14x3/4" SDF'S

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



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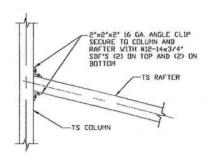
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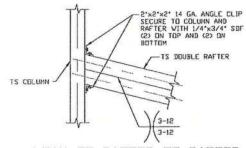
 DRAWN BY: JG	63 L	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
 PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 00S/20352S		
CLIENT: TBS	SHT. 14	DWG. NO: SK-3		REV.1 5		

BOX EAVE RAFTER LEAN-TO OPTIONS



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

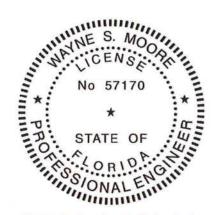
16 SCALE: NTS



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

SCALE: NTS

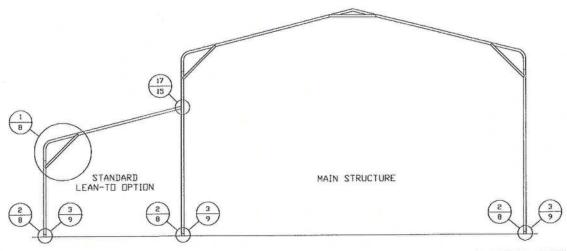
16A



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ENCRIPEDING AND CONGULTING INC	CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
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BOW RAFTER LEAN-TO OPTIONS



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

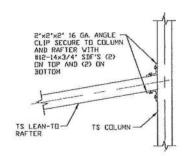
SCALE: NTS

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).

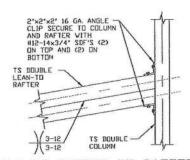
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS < 10'-0'.

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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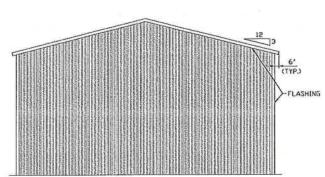
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DE SIR ECT TO LEGAL ACTION	

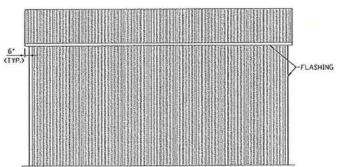
CLIENT: TBS	SHT. 15	DWG. NO: SK-3		REV. 5		
PROJECT MGR: WSM				ND: 16022S/ 00S/20352S		
CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B					
DRAWN BYI JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE					

BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



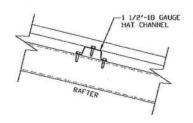
TYPICAL END ELEVATION VERTICAL ROOF/SIDING OPTION

SCALE: NTS



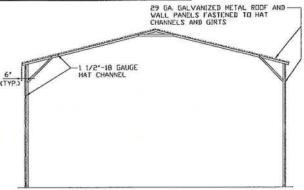
TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING OPTION

SCALE: NTS



ROOF PANEL ATTACHMENT

(ALTERNATE FOR VERTICAL ROOF PANELS) SCALE: NTS



TYPICAL SECTION VERTICAL ROOF/SIDING OPTION

SCALE: NTS

SEE NOTES

CSHEET 3)
FUR MAXIMUM
SPACING

1 1/2'-18 GAUGE HAT CHANNEL SPACED AT
4'-0' D.C. AND FASTENED TO EACH RAFTER
WITH (2) H12-14x3/4' 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.) D.C.



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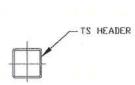
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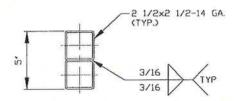
DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025				
CHECKED BY: PDH		'-0" ENCLOSED			
PROJECT MGR: WSM	T MGRI WSM DATE: 1-8-21			9 ND: 16022S/ 100S/20352S	
CLIENT: TRS	SHT. 16	DWG. NO: SK-3		REV. 5	

SIDE WALL HEADER OPTIONS



HEADER DETAIL FOR DOOR OPENINGS \(\) 10'-0"

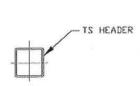
SCALE: NTS



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

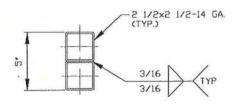
SCALE: NTS

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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PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 00S/20352S	
CLIENT: TBS	SHT. 17	DWG. NO: SK-3		REV. 5	

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

TYPICAL FLOOD VENT DETAIL SCALE: NTS

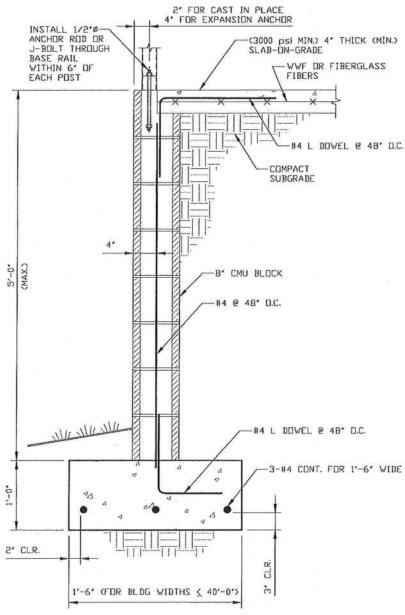
- MINIMUM VENT SPACE REQUIRED = 1 SQ. INCH OF OPEN VENT AREA PER SQ. FOOT OF BUILDING AREA.
- 2. THERE SHALL BE A MINIMUM OF TWO OPENINGS ON DIFFERENT SIDES FOR EACH ENCLOSED BUILDING.
- 3. APPLY L3 FACTOR WHEN CALCULATING TOTAL OPEN AREA WHEN USING 1/2"-18GA S OR F EXPANDED METAL.
- 4. TOTAL OPEN AREA 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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	CLIENT: TBS	SHT. 18	DWG, NO: SK-3	REVA 5

STAND -ALONE STEM WALL DETAIL



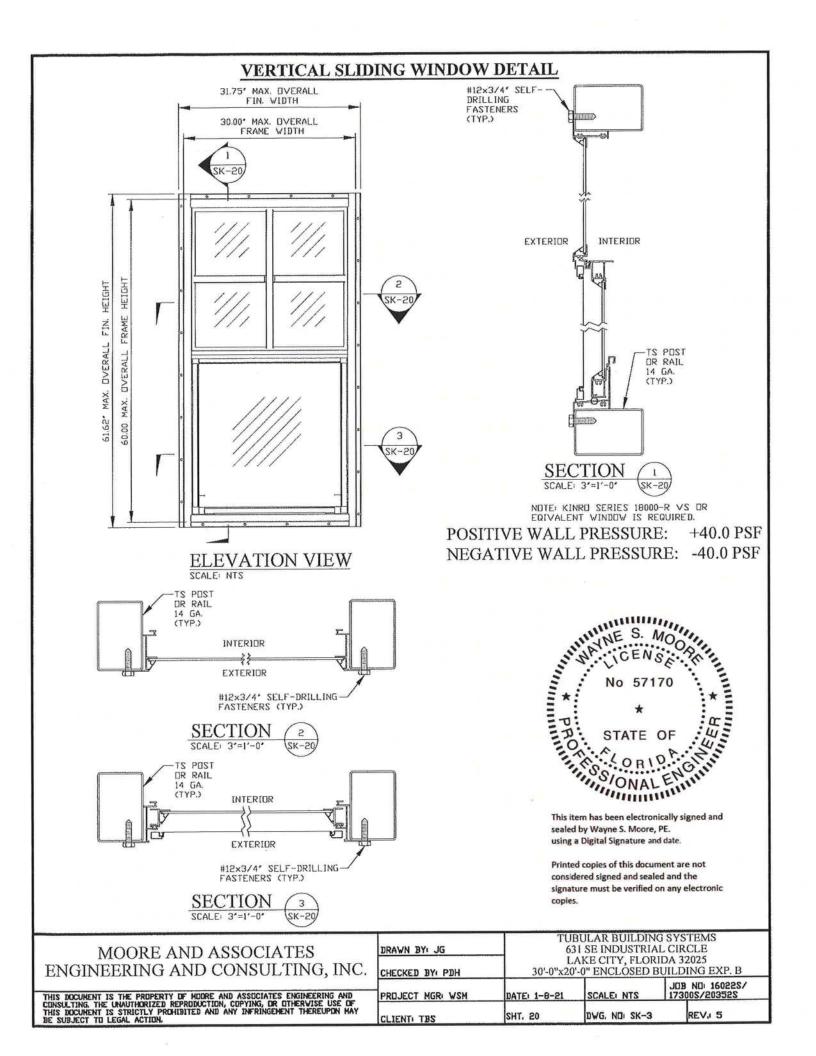
STAND-ALDNE CONCRETE MASONRY UNIT (CMU) FOUNDATION STEM WALL DETAIL

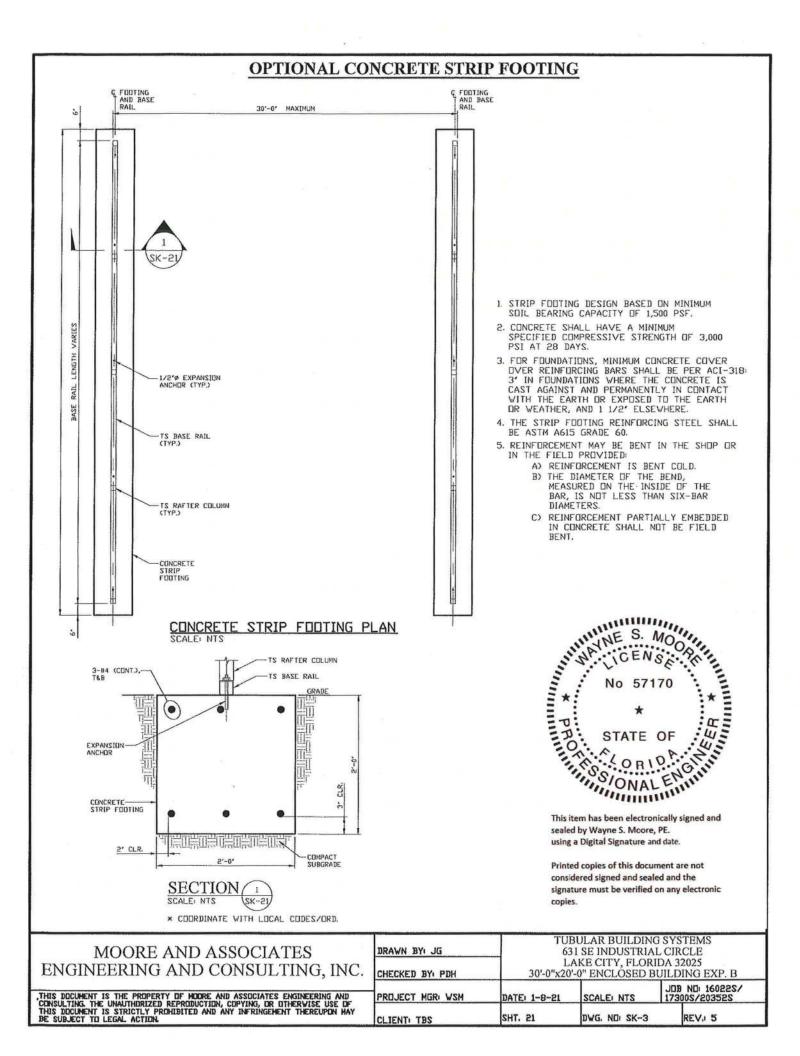
SCALE: NTS



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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. 19	DWG, ND: SK-3	REVa 5





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 NOT in these spaces provided Record Measurements See Sheet 3 of 3 for Detail of Building corner configuration Footing as shown in Foundation Engineering NCLUDE the 3-1/2" TYPICAL WALL SECTION Siding Basic Building Dimension to-outside of Base Rail plus Seven (7) inches Outside messurement of foundation Equals Basic Building Dimension BUILDING FOUNDATION MEASUREMENTS Basic Building Dimension to outside of Base Rail for COP Code Compliance 3-1/2" wide x 1-1/2" high Notch's in Concrete outside of basic building dimensions TYPICAL BUII 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 Building Base Rail Outside edge of foundation / footing

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—

Herd Schilling of State of the State of the

See Sheet 3 of 3 for Detail of Building corner configuration

See Corner
Detail Sheet 3

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

Base Rail

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

Basic Building Dimension to outside of Base Rail Footing as shown in Foundation Engineering

TYPICAL WALL SECTION



TYPICAL BUILDING

FOUNDATION MEASUREMENTS
DIAGONALS

Outside edge of foundation / footing