



STRUCTURAL DESIGN

ENCLOSED BUILDING EXPOSURE B

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

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

Prepared for:

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

Prepared by:

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

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

Digitally signed by Wayne S Moore Date: 2021.01.12 15:40:40 -05'00'







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	CHECKED BY: PDH		AKE CITY, FLOR -0" ENCLOSED B	IDA 32025 BUILDING EXP. B		
	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JUB NO 16022S/ 17300S/20352S		
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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
- B) LIVE LOAD
- = 12 PSF
- 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 SPACING = 4.0 FEET.
- 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 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 (SDIL NAILS) CONSIST OF #4 REBAR W/WELDED NUT x 30' LONG IN SUITABLE SDIL CONDITIONS MAY BE USED FOR LOW (\$\(\sigma\) 108 MPH NOMINAL) WIND SPEEDS ONLY. OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SDILS AND MUST BE USED IN UNSUITABLE SDILS AS NOTED. COORDINATE WITH LOCAL CODES/ORDINANCES REGARDING MINIMUM LENGTH FOR FROST DEPTH PROTECTION.
- 14. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE: SOIL SITE CLASS = D RISK CATEGORY I

R= 3.25

= 3.25 $I_{\epsilon} = 1.0$

Sps= 1.522 g V= CsW

 $S_{DI} = 0.839 g$



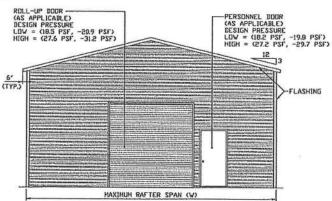
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DRAWN BYI JG		BULAR BUILDIN 31 SE INDUSTRI				
CHECKED BY: PDH		LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B DATE: 1-8-21 SCALE: NTS 17300S/20352S				
PROJECT MGR: WSM	DATE: 1-8-21					
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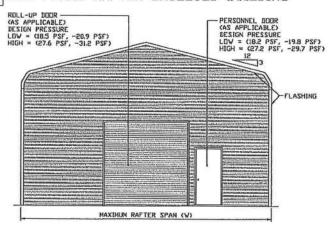
BOX EAVE FRAME RAFTER ENCLOSED BUILDING



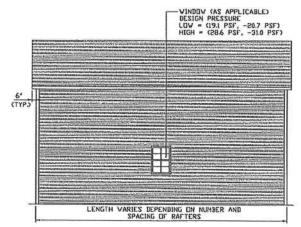
TYPICAL END ELEVATION

SCALE: NTS

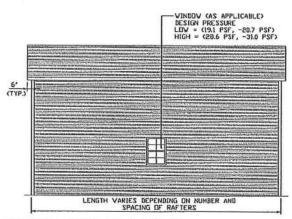
BOW FRAME RAFTER ENCLOSED BUILDING



TYPICAL END ELEVATION SCALE: NTS



TYPICAL SIDE ELEVATION
SCALE: NTS



TYPICAL SIDE ELEVATION

SCALE: NTS

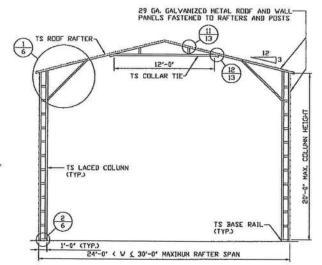


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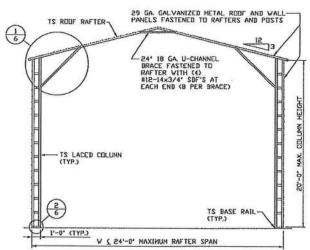
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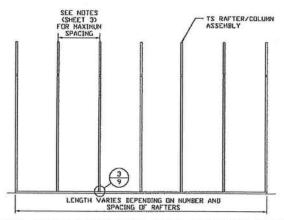
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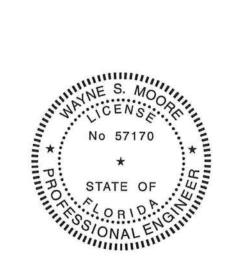
TYPICAL RAFTER/COLUMN END FRAME SECTION



TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE NTS

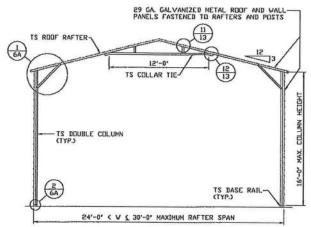


TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS

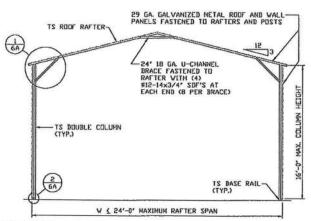


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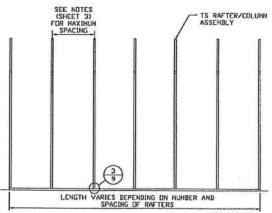
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TYPICAL RAFTER/COLUMN END FRAME SECTION



TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

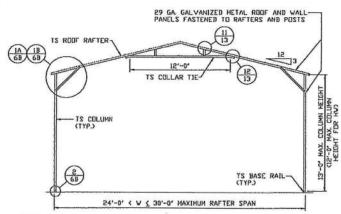


TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION



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TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE NTS

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

15 ROOF RAFTER

16 B 6B 6B

24' 18 GA. U-CHANNEL
BRACE FASTENED TO
RAFTER VITH (4)
H12-14x3/4' SDF'S AT
EACH END (8 PER BRACE)

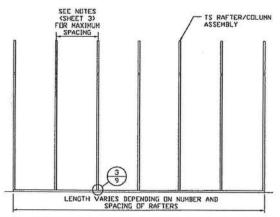
TS COLUMN

(TYP.)

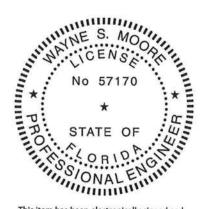
TS BASE RAIL
(TYP.)

W £ 24'-0' MAXIMUM RAFTER SPAN

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

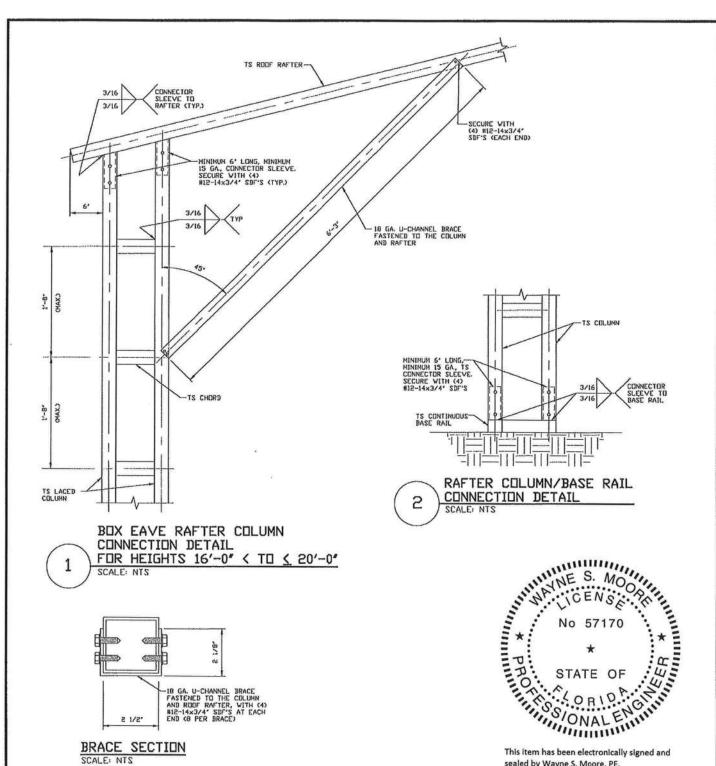


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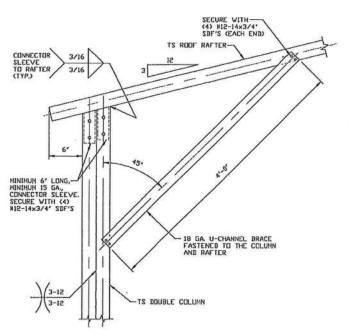
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_	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 160225/ 005/203525	
	CLIENT: TBS	SHT. 5B	DWG. NO: SK-3		REV. 5	



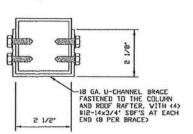
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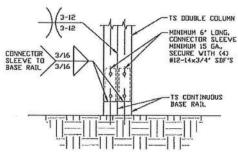


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 13'-0" < TO < 16'-0"

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



BRACE SECTION
SCALE NTS



RAFTER COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE, NTS

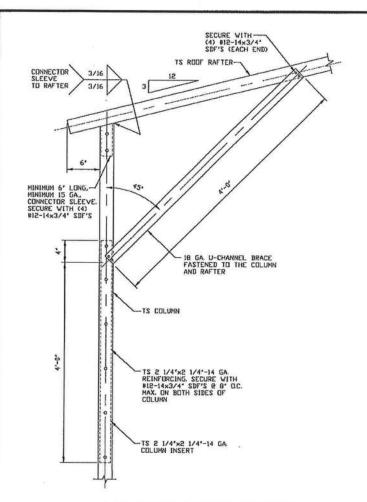


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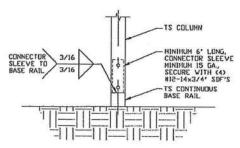
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CHECKED BY: PDH		AKE CITY, FLOI '-0" ENCLOSED					
DRAWN BY JG	7770	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE					



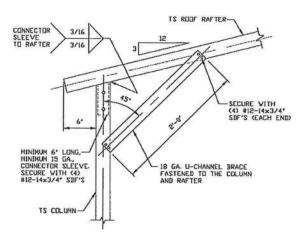
BOX EAVE RAFTER COLUMN
CONNECTION DETAIL
FOR HEIGHTS 10'-0' < TO < 13'-0'

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

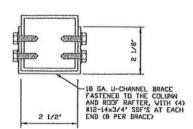


1A

2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL SCALE, NTS



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



BRACE SECTION

1B

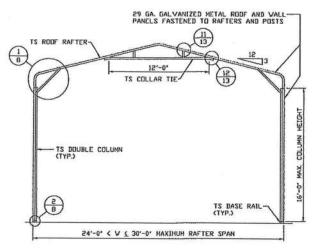


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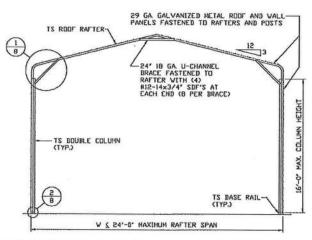
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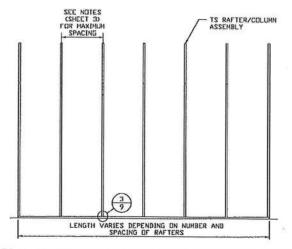
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TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

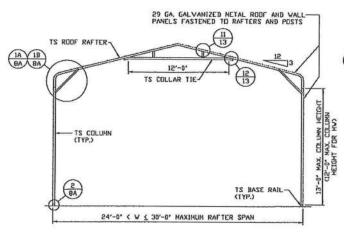


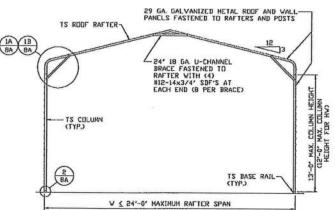
TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS



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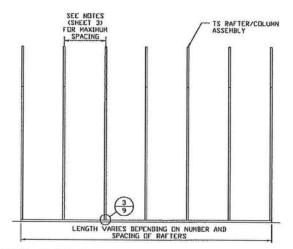
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TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE NTS

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS

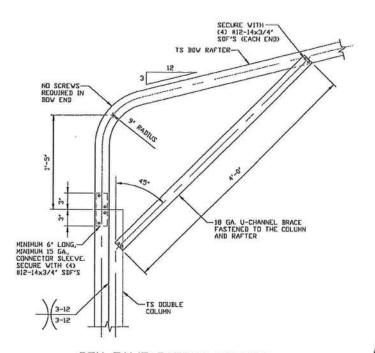


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	PROJECT MGR: WSM	DATE: 1-8-21	SCALE NTS	JOX	ND: 160225/	
	CLIENTI TBS	SHT. 7A	DAC NO 2K-3		00\$/20352\$ REV.: 5	



CONNECTOR 3/16
SLEEVE TO 3/16
BASE RAIL

TS DOUBLE COLUMN
MINIMUM 6' LDNG,
CONNECTOR SLEEVE
MINIMUM 15 GA,
SECURE VITH (4)
H12-14×3/4' SDF'S

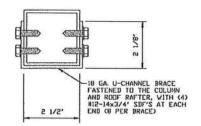
TS CONTINUOUS
BASE RAIL

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.

2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL SCALE, NTS

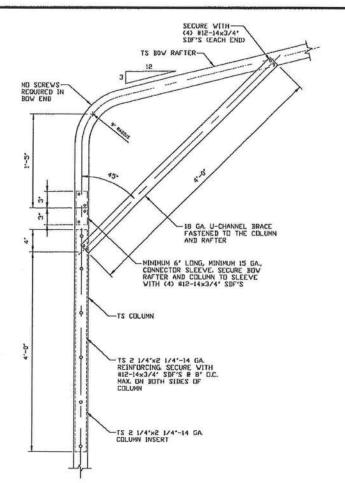


BRACE SECTION
SCALE: NTS



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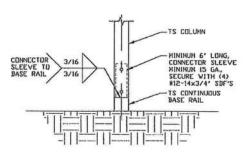
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	CHECKED BY: PDH		KE CITY, FLORI -0" ENCLOSED B	UILDING EXP. B
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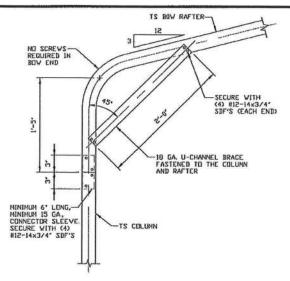
BOX EAVE RAFTER COLUMN CONNECTION DETAIL

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

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

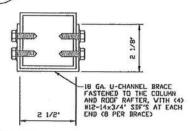


RAFTER COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE NTS

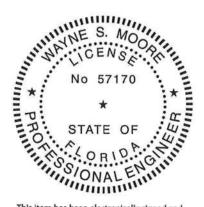


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 10'-0"

1B) FUR HE



BRACE SECTION



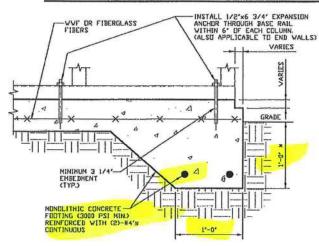
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_	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		NO: 160225/ 005/203525		
	CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP.					
	DRAWN BYI JG	63	BULAR BUILDIN BI SE INDUSTRI	AL CIF	RCLE		

BASE RAIL ANCHORAGE OPTIONS FOR LOW AND HIGH WIND SPEED



2' VASHERS DRILL 5/6' DIAMETER HOLE THROUGH THE BASE RAIL AND SECURE TO ANCHOR EYE WITH 1/2' DIAMETER THROUGH BOLT TS CONTINUOUS BASE RAIL HELIX EYE ANCHOR-

ЗА

CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

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-3181
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 OR FIBERGLASS FIBER REINFORCEMENT.

REINFORCEMENT MAY BE BENT IN THE SHOP OR THE FIELD PROVIDED

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

HELIX ANCHOR NOTES:

- FOR VERY DENSE AND/OR CEMENTED SANDS, CDARSE 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 LOUSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS ALLUVIAL FILL USE MINIMUM (2) 6' HELICES WITH MINIMUM 50
- 5. FOR 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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DWG. NO SK-3

REV. 5

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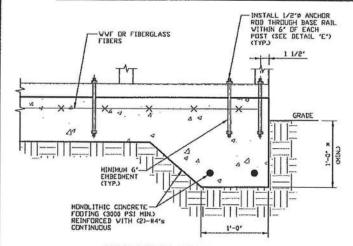
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PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JOB NO 16022S/ 17300S/20352S

SHT. 9

CLIENT: TBS

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' * 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 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:

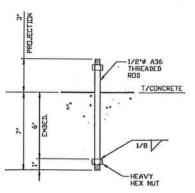
3 INCHES IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST
AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO
THE EARTH OR WEATHER, AND 1 1/2 INCHES ELSEWHERE.

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 3D

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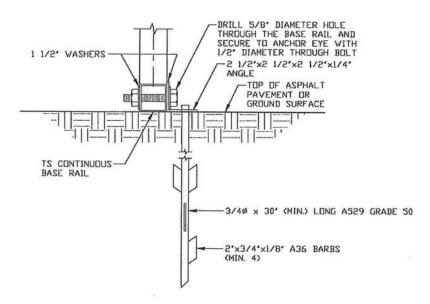
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TUBULAR BUILDING SYSTEMS DRAWN BYI JG 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 CHECKED BY PDH 30'-0"x20'-0" ENCLOSED BUILDING EXP. B JDB ND: 160225/ 173005/203525 PROJECT MGRI WSM SCALE NTS DATE: 1-8-21 SHT. 9A DWG. NO SK-3 REV. 5 CLIENT: TBS

BASE RAIL ANCHORAGE OPTION



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

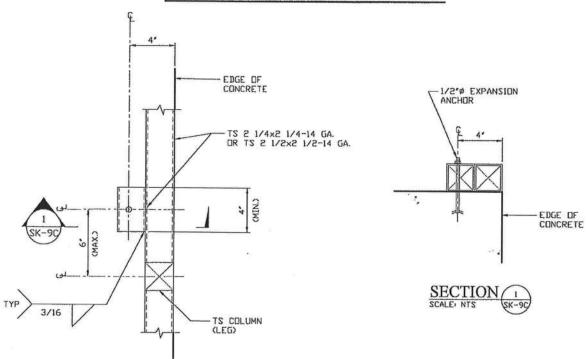
SCALE: NTS
(CAN BE USED FOR ASPHALT)
* COORDINATE WITH LOCAL CODES/ORD.
REGARDING MINIMUM FROST DEPTH REQ.



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MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BYI JG	9-2000	BULAR BUILDING	
	CHECKED BY: PDH	L.	AKE CITY, FLOR	
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BASE RAIL ANCHORAGE OPTIONS



TYPICAL ANCHUR DETAIL WHEN BASE RAIL IS NEAR EDGE OF CONCRETE



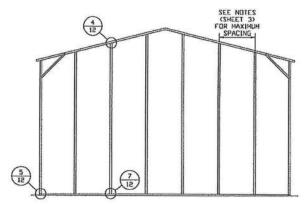
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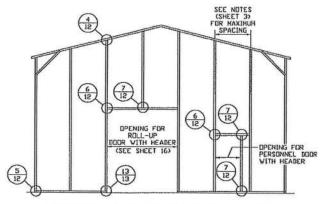
	CLIENT: TBS	SHT. 9C	DWG, NO SK-3		REV. 5			
-	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 16022S/ 00S/20352S			
	CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B						
	DRAWN BYI JG	631 SE INDUSTRIAL CIRCLE						

BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



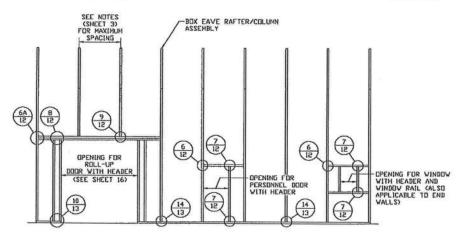
TYPICAL BOX EAVE RAFTER

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



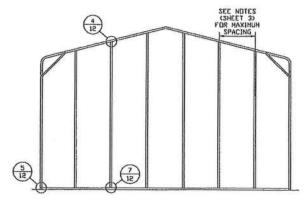
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	CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B							
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BOW RAFTER END WALL AND SIDE WALL OPENINGS



TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

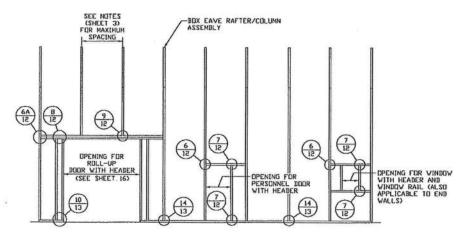
SEE NOTES
(SHEET 3)
FOR MAXIMUM
LSPACING

DPENING FOR
ROLL-UP
BOOR WITH HEADER
(SEE SHEET 16)

13
13
13

TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS



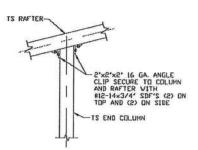
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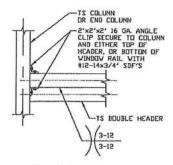
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PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND: 160225/ 005/203525		
CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. I					
DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE					

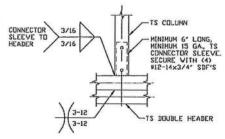
CONNECTION DETAILS



END COLUMN/RAFTER CONNECTION DETAIL SCALE, NTS

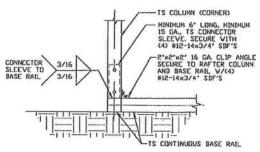


DOUBLE HEADER
TO COLUMN
CONNECTION DETAIL
SCALE NTS

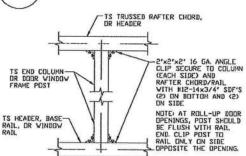


9

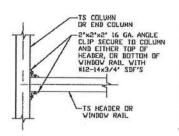
COLUMN/DOUBLE HEADER
CONNECTION DETAIL
SCALE: NTS



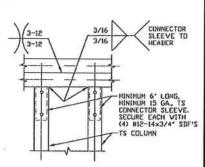
5 END COLUMN/BASE RAIL CONNECTION DETAIL
SCALE NTS



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



HEADER OR WINDOW RAIL TO COLUMN CONNECTION DETAIL SCALE NTS



8 DOUBLE HEADER/COLUMN
CONNECTION DETAIL
SCALE: NTS



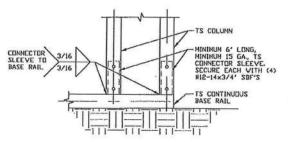
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CHECKED BY: PDH		2025 ING EXP, B				
PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS		ND 160225/ 005/203525		
CLIENT: TBS	SHT. 12	DWG. NO SK-3		REV. 5		

CONNECTION DETAILS



3/16

TS ROOF RAFTER

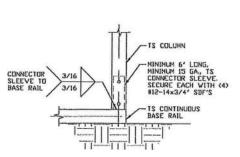
TS CHORD

TS COLLAR TIE 3

10 COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS

RAFTER TO CHORD CONNECTION DETAIL
SCALE NTS

12 COLLAR TIE CONNECTION DETAIL



COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS

13

TS TRUSSED RAFTER
CHORD, OR HEADER

TS END COLUMN
OR BOOK VINDOV
FRAME POST

TS HEADER, BASE
RAIL, OR VINDOV
RAIL

COLUMN TO HEADER, BASE RAIL CONNECTION DETAIL SCALE: NTS

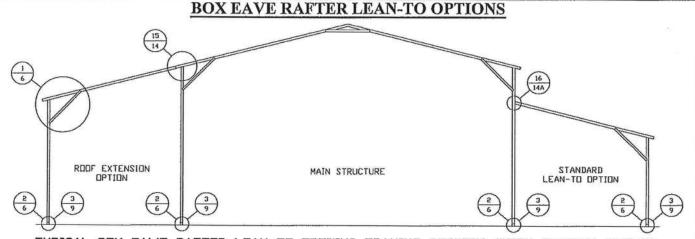
14

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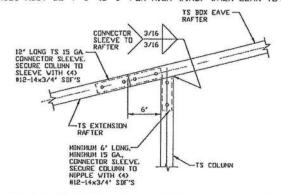
TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

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'.

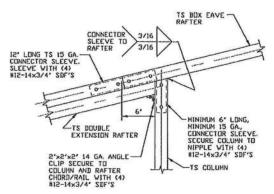
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR
EAVE HEIGHTS 13'-0' (12'-0' FOR HIGH WIND) < TO < 16'-0'.

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) < VITH 4'-4' INSERT).

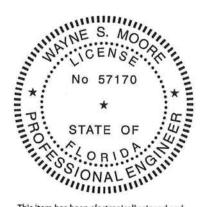
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR
EAVE HEIGHTS (0'-0' < TO < 13'-0' (12'-0' FOR HIGH WIND) (VITH 4'-4' INSERT). EAVE HEIGHTS (10'-0'. KNEE BRACES MUST BE 4'-0' (5'-0' FOR HIGH WIND) WHEN LEAN-TO'S ARE ADDED.



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



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



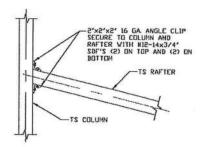
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_	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JOE	8 ND: 16022S/ 00S/20352S	
	CLIENT: TRS	SHT. 14	DVG, ND: SK-3		REV. 5	

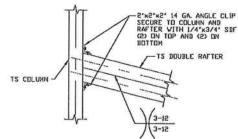
BOX EAVE RAFTER LEAN-TO OPTIONS



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

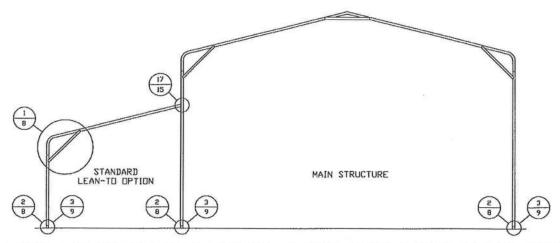
16A



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	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JDB ND: 16022S/ 17300S/20352S
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BOW RAFTER LEAN-TO OPTIONS



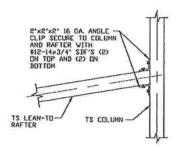
BOW RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN) TYPICAL

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).

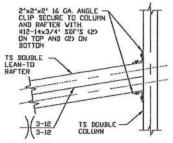
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS < 10'-0'.

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" 17

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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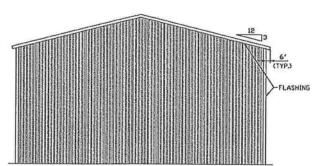
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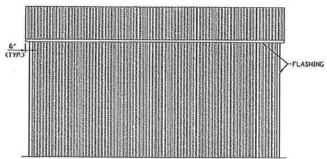
DRAWN BY! JG CHECKED BY! PDH	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE
	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B
	308 ND 160225

PROJECT MGRI WSM 173005/203525 DATE: 1-8-21 SCALE: NTS SHT. 15 DWG. NO SK-3 REV. 5 CLIENT: TBS

BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION

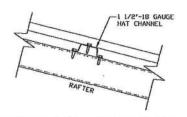


TYPICAL END ELEVATION VERTICAL ROOF/SIDING OPTION



TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING OPTION

SCALE: NTS



ROOF PANEL ATTACHMENT

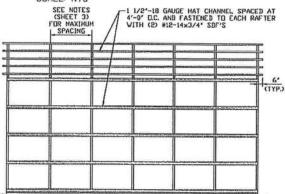
(ALTERNATE FOR VERTICAL ROOF PANELS) SCALE: NTS

1 1/2'-18 GAUGE HAT CHANNEL (TYP.) TYPICAL SECTION VERTICAL

29 GA. GALVANIZED METAL ROOF AND WALL PANELS FASTENED TO HAT CHANNELS AND GIRTS

ROOF/SIDING OPTION

SCALE: NTS



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.



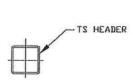
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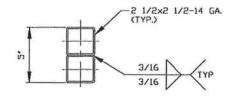
DRAWN BY: JG	0.000	BULAR BUILDIN		Control of the Control
CHECKED BY PDH	L	AKE CITY, FLOI '-0" ENCLOSED	RIDA 3	2025
PROJECT MGR: WSM	DATE: 1-8-21	SCALE NTS		ND: 16022S/ 00S/20352S
CLIENT: TBS	SHT. 16	DWG. NO SK-3		REV. 5

SIDE WALL HEADER OPTIONS



HEADER DETAIL FOR DOOR OPENINGS ≤ 10'-0"

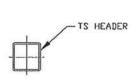
SCALE: NTS



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

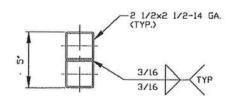
SCALE: NTS

END WALL HEADER OPTIONS



HEADER DETAIL FOR DOOR OPENINGS ≤ 12'-0"

SCALE: NTS



HEADER DETAIL FOR DOOR OPENINGS 12'-0' < LENGTH \(\) 15'-0'

SCALE: NTS



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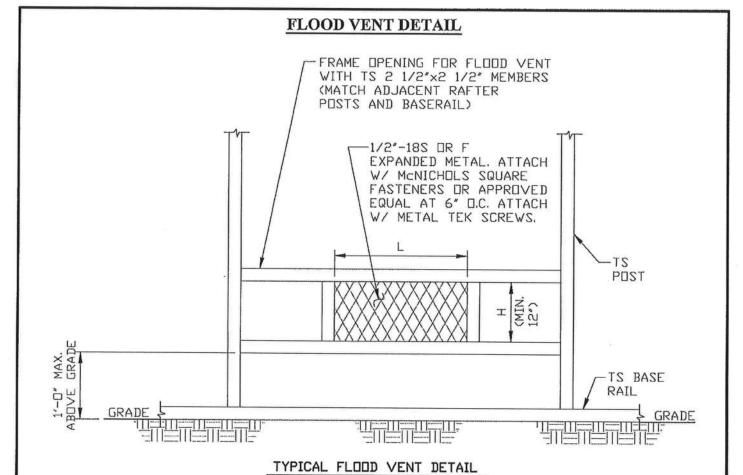
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	TUBULAR BUILDING SYSTEMS		
DDALMI DV. IF			
DRAWN BY: JG	631 SE INDUSTRIAL CIRCLE		
CHECKED BY: PDH	LAKE CITY, FLORIDA 32025		
	30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	IDB NU 160225/		

 PROJECT MGR: WSM
 DATE: 1-8-21
 SCALE: NTS
 JOB NO: 160225/173005/203525

 CLIENT: TBS
 SHT. 17
 DWG. NO: SK-3
 REV.: 5



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

SCALE: NTS

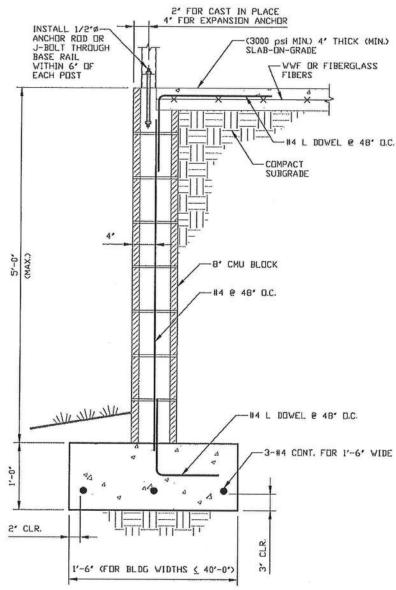
- THERE SHALL BE A MINIMUM OF TWO OPENINGS ON DIFFERENT SIDES FOR EACH ENCLOSED BUILDING.
- 3. APPLY 1.3 FACTOR WHEN CALCULATING TOTAL OPEN AREA WHEN USING $1/2^\prime 18 \text{GA}$ S OR F EXPANDED METAL.
- 4. TOTAL OPEN AREA OF VENT = LxH(MIN, 12").
- 5. FLOOD VENT DETAIL COMPLIES WITH FEMA/NFIP.
-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



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MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: JG CHECKED BY: PDH	TUBULAR BUILDING SYSTEM 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"×20'-0" ENCLOSED BUILDING		L CIRCLE DA 32025
E CONSULTING, THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERVISE USE OF	PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JUB NO: 160225/ 173005/203525
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STAND -ALONE STEM WALL DETAIL



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



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DWG. NO SK-3

REV. 5

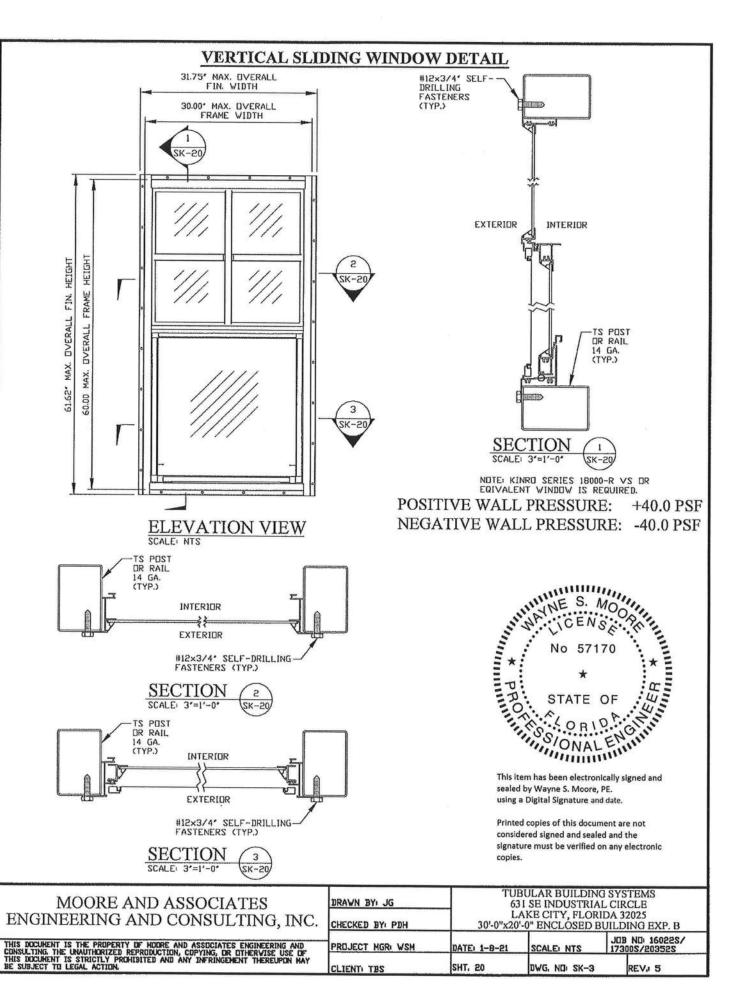
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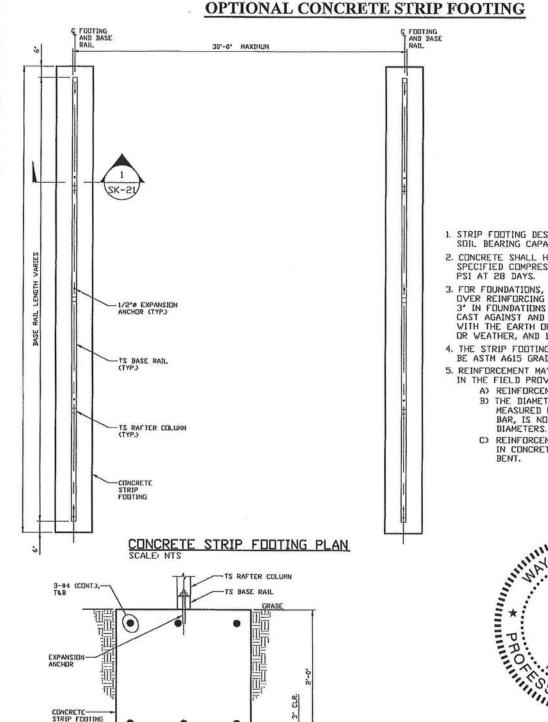
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BE SUBJECT TO LEGAL ACTION.

PROJECT MGR: WSM	30'-0"x20	SCALE: NTS	BUILDING EXP. B JOB NO: 160225/ 173005/203525	
DRAWN BY: JG	631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025			
	TUBULAR BUILDING SYSTEMS			

SHT. 19

CLIENT: TBS





STRIP FOOTING DESIGN BASED ON MINIMUM SOIL BEARING CAPACITY OF 1,500 PSF.

2. CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3,000

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

4. THE STRIP FOOTING REINFORCING STEEL SHALL BE ASTM A615 GRADE 60.

5. REINFORCEMENT MAY BE BENT IN THE SHOP OR IN THE FIELD PROVIDED

A) REINFORCEMENT IS BENT COLD. B) THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR

REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD



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SECTION I SK-2

2' CLR.

ZK-51

* COORDINATE WITH LOCAL CODES/ORD.

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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: VSM DATE: 1-8-21 SHT. 21 CLIENT: TBS

1225091 IDN BUL SCALE: NTS 173005/203525 DWG. NO SK-3 REV. 5