



STRUCTURAL DESIGN

ENCLOSED BUILDING EXPOSURE B



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

29 July 2021 Revision 6 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

Wayne Digitally signed by Wayne S Moore Date: 2021.10.21 08:30:02 -04'00'





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THIS DIVINCUIT TO THE OPPOSITION OF LINES AND ADDRESS AND	PROJECT MGR: WSM	30'-0"x20'-	7-0" ENCLOSED BUILDING EXP. II JUB ND: 160225 SCALE: NTS 173005/203525			
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SHEET 21

STRIP FOOTING OPTION

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

= 15 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 = 50 FEET
- 5 HIGH ULTIMATE WIND SPEED 141 TO 170 MPH (NOMINAL WIND SPEED 109 TO 132 MPH): MAXIMUM RAFTER/POST AND END POST SPACING = 40 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" x 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 EN-CENTERS ALONG RAFTERS OR PURLINS AND POSTS INTERIOR = 9° DR END = 6° (MAX)
- 11 FASTENERS CONSIST OF #12-14×3/4" SELF-DRILLING FASTENER (SDF), USE CONTROL SEAL WASHER WITH EXTERIOR FASTENERS
 SPECIFICATIONS APPLICABLE DNLY 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 S' OF EACH COLUMN
- 13 STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBAR W/WELDED NUT x 30" LONG IN SUITABLE SOIL CONDITIONS MAY BE USED FOR LOW (& 138 MPH NOMINAL) WIND SPEEDS ONLY OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED COORDINATE WITH LOCAL CODES/ORDINANCES REGARDING MINIMUM LENGTH FOR FROST DEPTH PROTECTION
- 14 WIND FORCES SOVERN OVER SEISMIC FORCES SEISMIC PARAMETERS ANALYZED ARE: SOIL SITE CLASS = D

RISK CATEGORY I

R= 325

R = 3.25 $I_E = 1.3$ $S_{DS} = 1.522 g$ V = 0.5 W

Spt= 3839 9

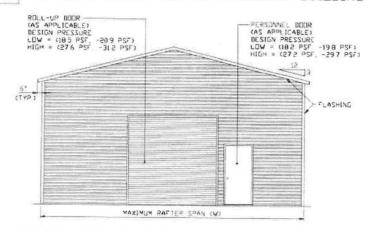
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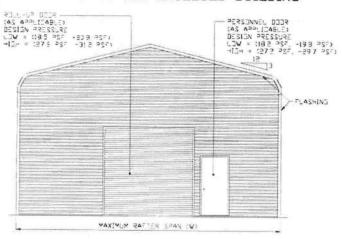
BOX EAVE FRAME RAFTER ENCLOSED BUILDING



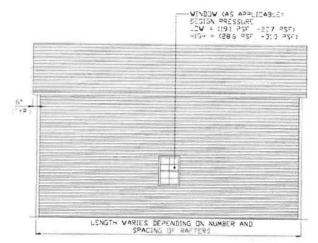
TYPICAL END ELEVATION

SCALE NTS

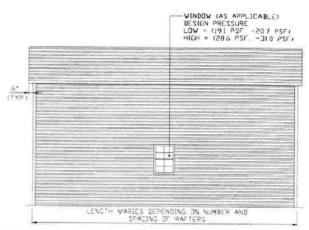
BOW FRAME RAFTER ENCLOSED BUILDING



TYPICAL END ELEVATION



TYPICAL SIDE ELEVATION



TYPICAL SIDE ELEVATION

SCALE NT



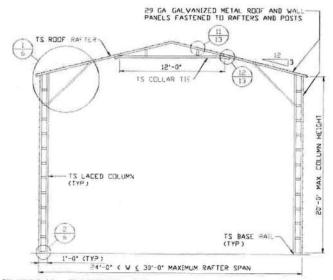
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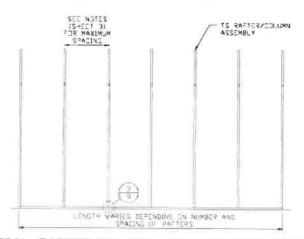
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TYPICAL RAFTER/COLUMN END FRAME SECTION

29 GA GALVANIZED METAL ROOF AND WALL PANELS FASTENED TO RAFTERS AND POSTS TS ROOF RAFTER -24" 18 GA U-CHANNEL BRACE FASTENED TO RAFTER WITH (4) HI2-14×3/4" SDF'S AT EACH END (8 PER BRACE) COLUMN HEIGHT TS LACED COLUMN MAX 50.-0 TS BASE RAIL W € 24'-0" MAXIMUM RAFTER SPAN

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

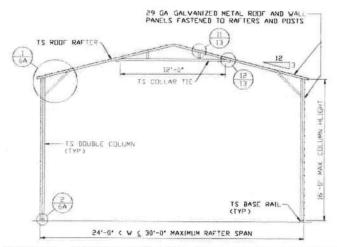


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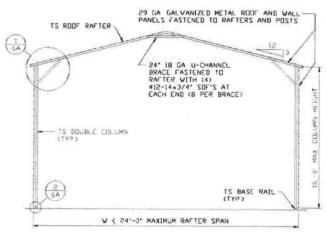
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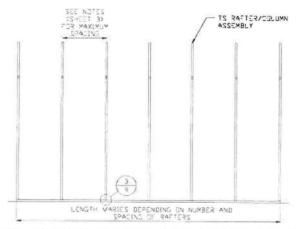
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TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION

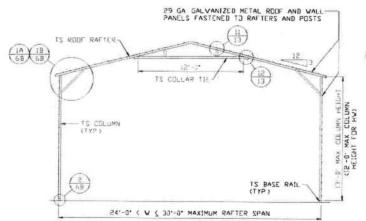


TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION



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TYPICAL RAFTER/COLUMN END FRAME SECTION

29 GA GALVANIZED METAL ROOF AND VALL
PANELS FASTENED TO RAFTER SHAD POSTS

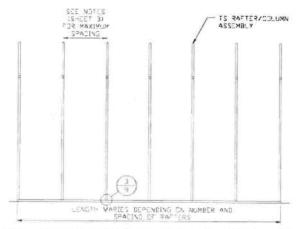
24' IB GA U-CHANNEL
BRACE FASTENED TO
RAFTER VITH (4)
412-14-3/3/-5 SDF'S AT
EACH END (8 PER BRACE)

TS COLUMN
(TYP)

TS BASE RAIL
(TYP)

V § 24'-0' MAXIMUM RAFTER SPAN

TYPICAL RAFTER/COLUMN END FRAME SECTION



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

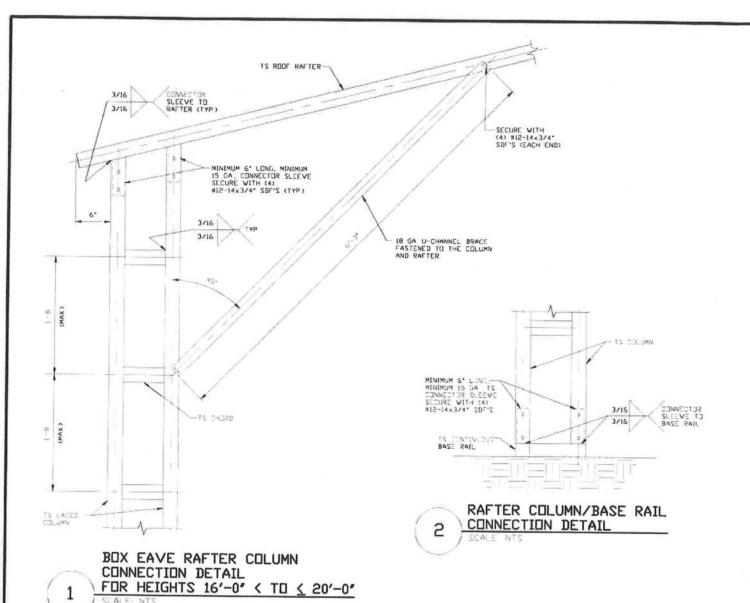


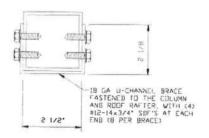
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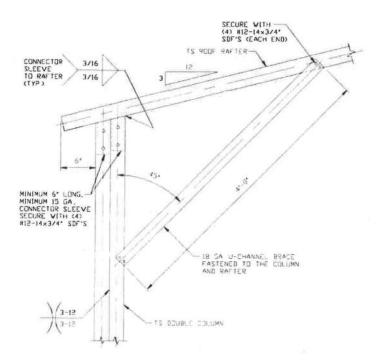


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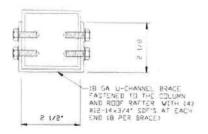
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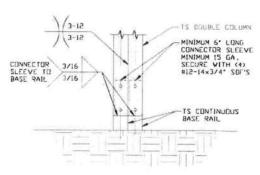
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 13'-0" < TO < 16'-0"

1

NOTE COLUMN HEIGHTS 12'-3' C TO C 15'-3" FOR HIGH WIND



BRACE SECTION



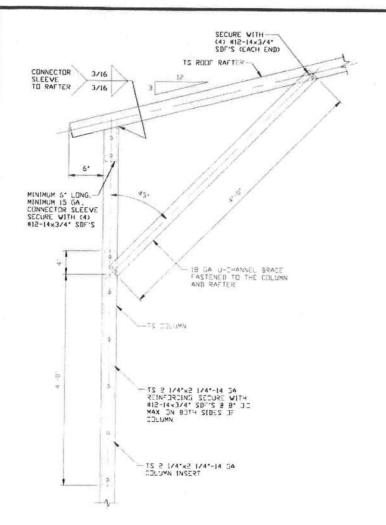
RAFTER COLUMN/BASE RAIL CONNECTION DETAIL 2 STALE NTS

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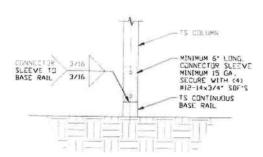
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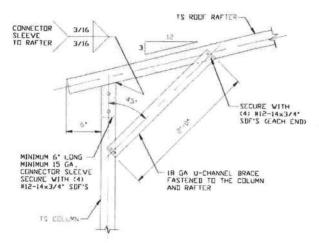
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO < 13'-0"

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



1A

2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL



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

IS DA U-CHANNEL BRACE
FASTENED ID 145 COLUMN
AND RODF RATTER WITH (40)
BIC-1433/4* SD'S AT EACH
END (9 PER BRACE)

BRACE SECTION



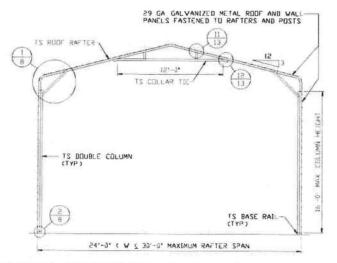
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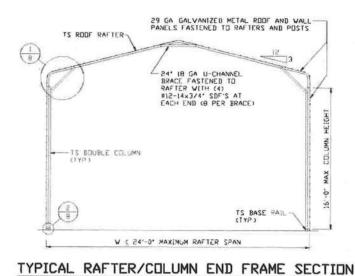
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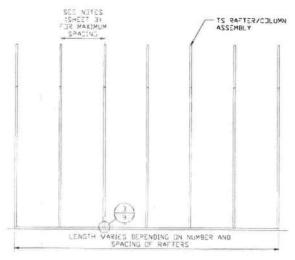




TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE- NTS

SCALE NTS



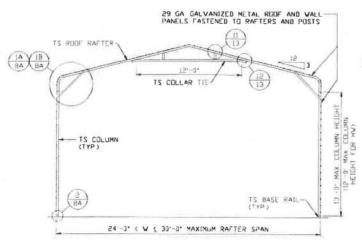
TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

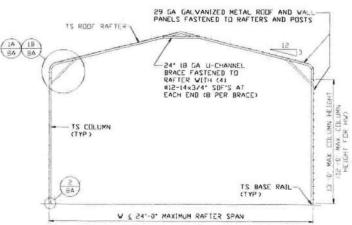
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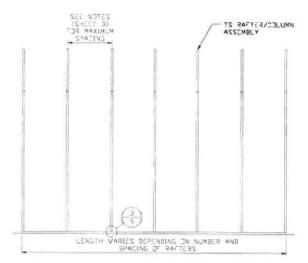
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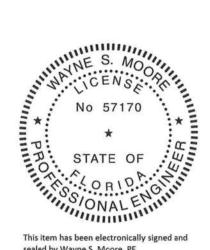


TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE NTS

TYPICAL RAFTER/COLUMN END FRAME SECTION



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

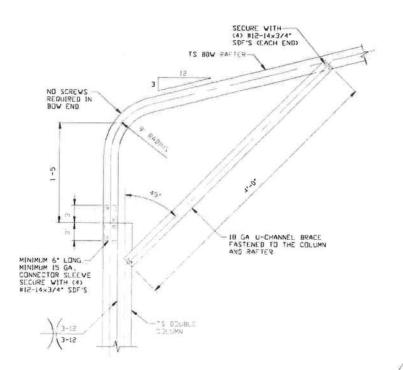


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	CLIENT, TRO	SHT. 7A	DVG. ND: SK-3	R	EV. 6		



MINIMUM 6' LONG, CONNECTOR SLEEVE MINIMUM 15 GA. SECURE WITH (4) #12-14x3/4' SDF'S CONNECTOR SLEEVE TO BASE RAIL 3/15 TS CONTINUOUS BASE RAIL RAFTER COLUMN/BASE RAIL

CONNECTION DETAIL

TS DOUBLE COLUMN

13-12

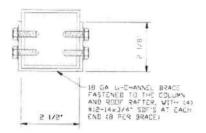
/ 3-15

2

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

1

NOTE COLUMN HEIGHTS 12'-0" < TO < 15'-0" FOR HIGH WIND



BRACE SECTION SCALE NIS



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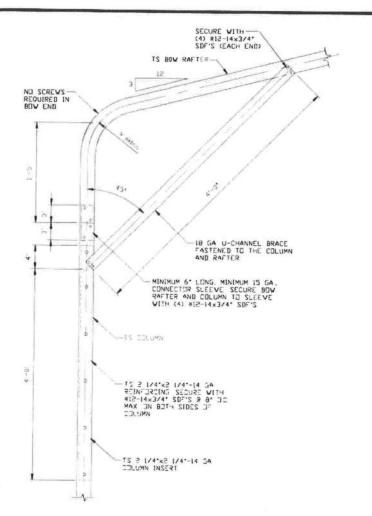
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PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JUB NO: 16022S/ 17300S/20352S			
CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP, B					
DRAWN BYI JG		TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE				

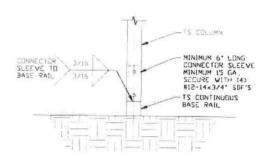
SHT. 8 DWG. NO SK-3 CLIENT: TBS

REV. 6



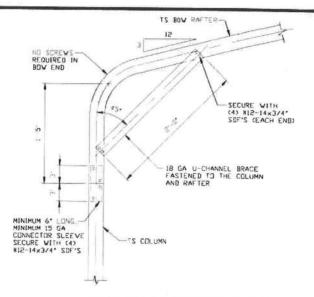
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO <u>(</u> 13'-0"

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

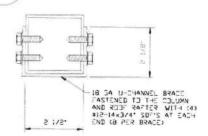


1A

2 RAFTER COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS

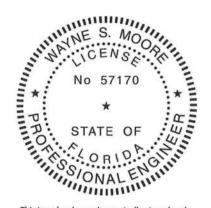


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 10'-0'



BRACE SECTION

1B



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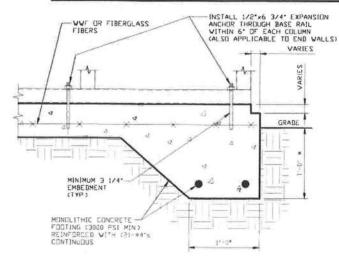
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PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS		ND: 160225/ 005/203525
CLIENT: TBS	SHT. BA	DWG. NO: SK-3		REV. 6

BASE RAIL ANCHORAGE OPTIONS FOR LOW AND HIGH WIND SPEED



2. MASHERS BRILL 5/8' DIAMETER HOLE THROUGH THE BASE RAIL AND SECURE TO ANCHOR EYE WITH 1/2' DIAMETER THROUGH BOLT TOP OF ASPHALT-GROUND SURFACE oCher TS CONTINU HELIX EYE ANCHOR-

3A

CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

MINIMUM ANCHOR EDGE DISTANCE IS 4" * COORDINATE WITH LOCAL CODES/ORD RESARDING MINIMUM FROST DEPTH REC

3B

GROUND BASE HELIX ANCHORAGE

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

GENERAL NOTES

NOTE: CONCRETE MONGLITHIC SLAB DESIGN ON MINIMUM SOIL BEARING CAPACITY OF 1500 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 50 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:

- REINFORCEMENT IS BENT COLD
 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:

THIS DOD

- 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 LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS ALLUVIAL FILL USE MINIMUM (2) 6' HELICES WITH MINIMUM SO INCH EMBEDMENT
- 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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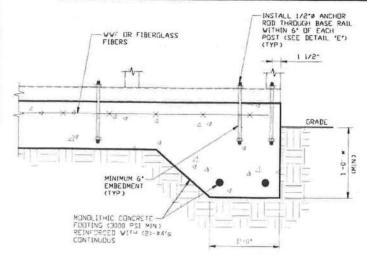
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TUBULAR BUILDING SYSTEMS

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

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CINEEDING AND CONCULTING INC	CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
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OPTIONAL FOUNDATION ANCHORAGE FOR LOW AND HIGH WIND SPEED



30

CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

MINIMUM ANCHOR EDGE DISTANCE IS 1 1/2. C3R HT90 T20R7 MUMINIM ENIGRES

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 I IZZ INCHES ELSEWHERE

REINFORCING STEEL

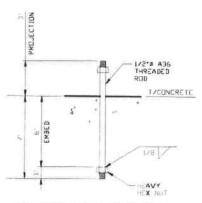
THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT

REINFORCEMENT MAY BE BENT IN THE SHOP OR THE FIELD PROVIDED

REINFORCEMENT IS BENT COLD

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



ANCHOR ROD THROUGH BASE RAIL DETAIL

3D



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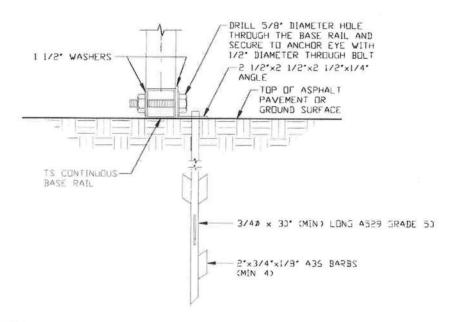
١.	CHECKED BY: PDH	LAKE CITY, F 30'-0"x20'-0" ENCLOS		
	PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	
	CLIENT: TBS	SHT. 9A	DVG. ND S	

DRAWN BY: JG

631 SE INDUSTRIAL CIRCLE LORIDA 32025 SED BUILDING EXP. B JDB NO: 160225/ 173005/203525

DWG. NO SK-3 REV. 6

BASE RAIL ANCHORAGE OPTION



ASPHALT BASE ANCHORAGE (HP 9 BARBED DRIVE ANCHOR)

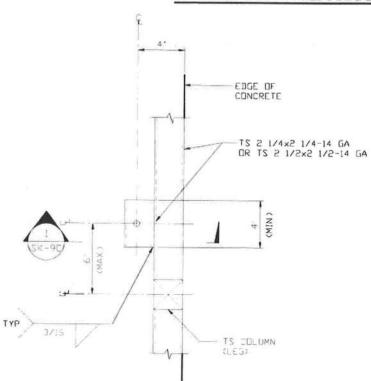
SCALE NTS
(CAN BE USED FOR ASPHALT)
* COORDINATE WITH LOCAL CODES/ORD
REGARDING MINIMUM FROST DEPTH REC

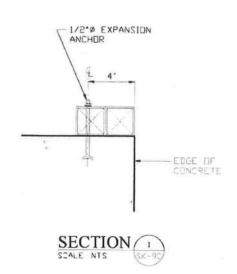


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	CHECKED BY: PDH				
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BASE RAIL ANCHORAGE OPTIONS





TYPICAL ANCHOR DETAIL WHEN BASE RAIL IS NEAR EDGE OF CONCRETE

SCALE NIS



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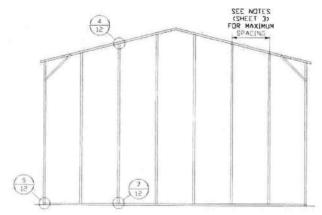
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CHECKED BY: PDH	LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B			
	7.252091 1DM MDL 160222			

PROJECT NGR: VSM DATE: 7-29-21 SCALE: NTS 17300S/20352S

CLIENT: TBS SHT. 9C DWG. ND: SK-3

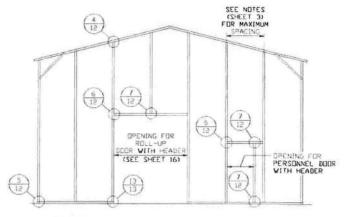
REV. 6

BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



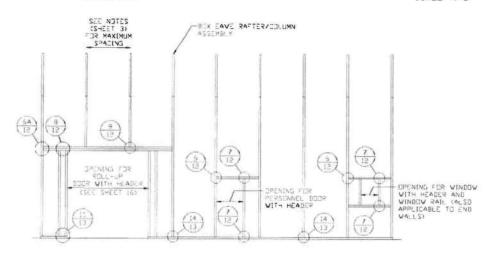
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE NTS



TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE NTS



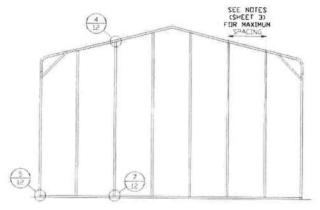
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Erion Lebidito Milb Combolinio, Mc.	

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CLIENT: TBS	SHT. 10	DWG. NO SK-3		REV. 6	
PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS		ND: 160225/ 005/203525	
CHECKED BY: PDH		KE CITY, FLOR 0" ENCLOSED			
DRAWN BY: JG	63	631 SE INDUSTRIAL CIRCLE			

BOW RAFTER END WALL AND SIDE WALL OPENINGS



TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SEE NOTES
CSHEET 3)
FOR MAXIMUM
SPACING

DPENING FOR
ROLL-19
DEEP VITH HEADER

(SEE SHEET 16)

12

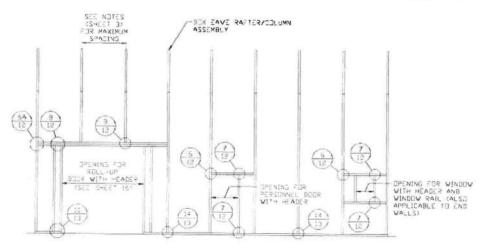
13

13

13

TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE NTS



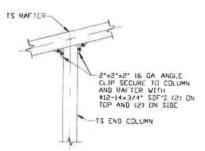
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PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS		ND: 16022S/ 00S/20352S	
CLIENT: TBS	SHT. 11	DWG. NO: SK-3		REV. 6	

CONNECTION DETAILS



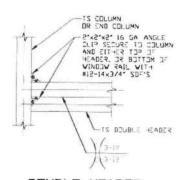
END COLUMN/RAFTER CONNECTION DETAIL

SCALE: NTS

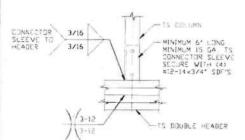
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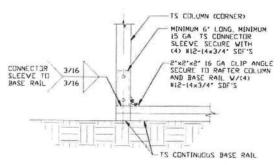
9



DOUBLE HEADER TO COLUMN CONNECTION DETAIL

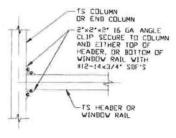


COLUMN/DOUBLE HEADER CONNECTION DETAIL SCALE NTS



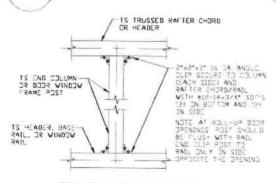
END COLUMN/BASE RAIL CONNECTION DETAIL 5

SCALE: NTS



HEADER OR WINDOW RAIL TO COLUMN CONNECTION DETAIL

6



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

CONNECTOR SLEEVE TO HEADER 3/16 MINIMUM 6' LONS, MINIMUM 15 54. TS CONNECTOR SCEEVE SECURE EACH WITH (4) #12-14-374' SDF'S TS COLUMN

DOUBLE HEADER/COLUMN CONNECTION DETAIL

8

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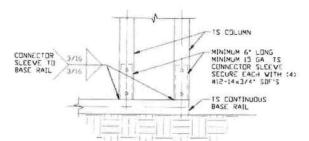
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	PROJECT MGR: VSM	DATE: 7-29-21	SCALE: NTS	JOB NO 16022S/ 17300S/20352S	
	CLIENT: TBS	SHT. 12	DWG. ND: SK-3		REV. 6

CONNECTION DETAILS



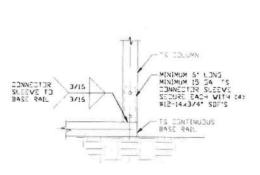
TS ROOF RAFTER 3/16 3/16

TS RIME RAFTER TS COLLAR TIE

COLUMN/BASE RAIL CONNECTION DETAIL 10

RAFTER TO CHORD CONNECTION DETAIL 11

COLLAR TIE CONNECTION DETAIL 12



COLUMN/BASE RAIL CONNECTION DETAIL SCALE NTS

13

S TRUSSED RAFTER CHEADER ORCH 04080 MOUDES BUE ST VEGINIV SEED SE TRES EMASS MINIMUM 6" LONG, MINIMUM 15 GA, IS CONNECTOR SLEEVE SECURE EACH WITH (4) #12-14x3/4" SDF'S TS HEADER BASE WEDNIN SE LIAS VALL

COLUMN TO HEADER, BASE RAIL CONNECTION DETAIL

No 57170

*
STATE OF
ORIO

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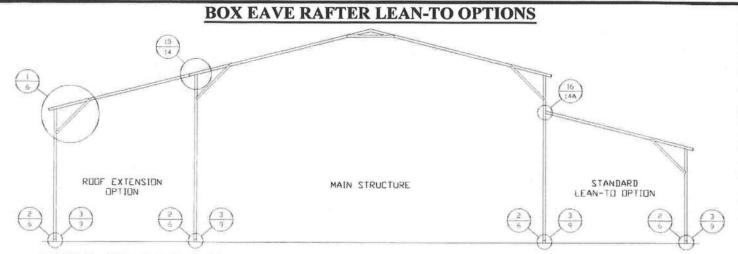
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TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"x20'-0" ENCLOSED BUILDING EXP. B

PROJECT MGR: WSM DATE: 7-29-21 SCALE: NTS SHT. 13 DWG. ND: SK-3 CLIENT: TBS

JDB ND 16022S/ 17300S/20352S REV. 6



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

SCALE: NTS

MAIN BUILDING COLUMNS WITH LEAN-TO DR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE LACED COLUMNS FOR

EAVE HEIGHTS 16'-0' < TO < 20'-0'

MAIN BUILDING COLUMNS WITH LEAN-TO DR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR

EAVE HEIGHTS 13'-0' (12'-0' FOR HIGH WIND) < TO < 15'-0'

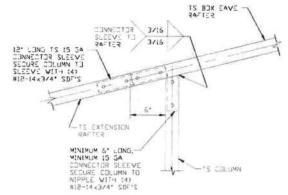
MAIN BUILDING COLUMNS WITH LEAN-TO DR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR

EAVE HEIGHTS 13'-0' < TO < 13'-0' (12'-0' FOR HIGH WIND) (WITH 4'-4' INSERT)

MAIN BUILDING COLUMNS WITH LEAN-TO DR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR

EAVE HEIGHTS (13'-0') < TO < 13'-0' FOR HIGH WIND) WHEN LEAN-TO ARE REQUIRED TO BE SINGLE COLUMNS FOR

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"

CONNECTOR SLEEVE SLEEVE TO 3/16

IS' LONG TS 15 GA
CONNECTOR SLEEVE
SLEEVE VITH (4)
BI2-14×3/4' SDF'S

ANNIMUM 6' LONG,
MINIMUM 15 GA,
CONNECTOR SLEEVE
SECURE COLUMN TO
NIPPLE VITH (4)
BI2-14×3/4' SDF'S

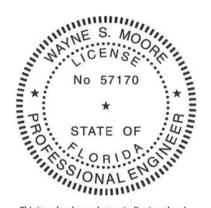
TS DOUBLE
CUNNECTOR SLEEVE
SECURE COLUMN TO
NIPPLE VITH (4)
BI2-14×3/4' SDF'S

TS COLUMN

TS COLUMN

TS COLUMN

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



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TUBULAR BUILDING SYSTEMS

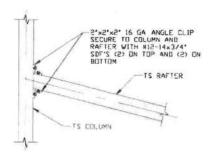
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ENGINEERING AND CONSULTING, INC.	

15A

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	CHECKED BY PDH				
_	PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16022S/ 17300S/20352S	
	CLIENT, TRE	SHT. 14	DVG. NO SK-3	REV. 6	

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BOX EAVE RAFTER LEAN-TO OPTIONS



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

16

TS COLUMN

2°*2°*2° 14 GA ANGLE CLIP
SECURE TO COLUMN AND
RAFTER VITH 1/4"*3/4" SOF
(2) ON TOP AND (2) ON
BOTTOM

TS DOUBLE RAFTER

3-12

3-12

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

16A) IS

SCALE: NTS



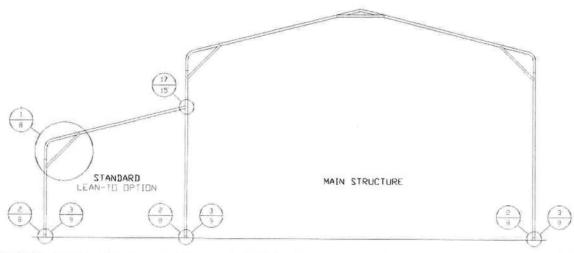
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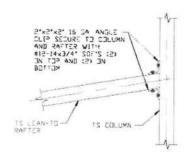
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CHECKED BY: PDH	30'-0"x20'	30'-0"x20'-0" ENCLOSED BUILDING EXP. B				
PROJECT MGR: VSM	DATE: 7-29-21	SCALE: NTS	JDB ND: 16022S/ 17300S/20352S			
CLIENT: TBS	SHT. 14A	DWG. NO: SK-3	REV. 6			

BOW RAFTER LEAN-TO OPTIONS



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

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS 13"-3" (12"-5" FOR HIGH WIND) < TO < 15"-5" MAIN BUILDING COLUMNS WITH LEAN-TO DR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR MAIN BUILDING COLUMNS WITH LEAN-TO DR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR MAIN BUILDING COLUMNS WITH LEAN-TO DR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS < 10"-3" (5"-3" FOR HIGH WIND) WHEN LEAN-TO'S ARE ADDED



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

2'x2'x2' 16 GA ANGLE CLIP SECURE TO COLUMN AND RAFTER WITH H12-14x3/4' SDF'S (2) ON TOP AND (2) ON BOTTOM TS DOUBLE LEAN-TO RAFTER TS DOUBLE

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

17A SCALE: NTS

17



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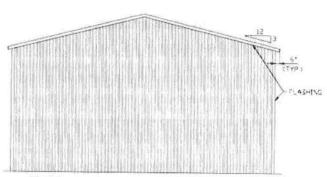
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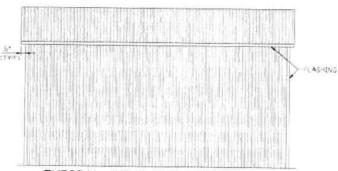
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PROJECT MGR: VSM	DATE: 7-29-21	SCALE: NTS		ND: 160225/ 005/203525		
CLIENT: TBS	SHT. 15	DWG. NO: SK-3		REV. 6		

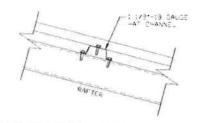
BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



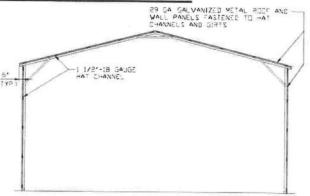
TYPICAL END ELEVATION
VERTICAL ROOF/SIDING OPTION



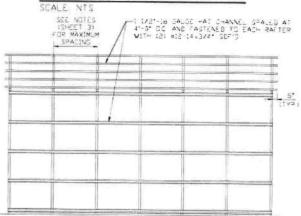
TYPICAL SIDE ELEVATION
VERTICAL ROOF/SIDING OPTION



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



TYPICAL SECTION VERTICAL ROOF/SIDING OPTION



TYPICAL FRAMING SECTION VERTICAL ROOF/SIDING OPTION

SCALE NTS NOTE IS WALL GIRTS CAN BE USED AS AN OPTION IN PLACE OF HAT CHANNELS TS SIRTS MUST BE SPAID AT 4"-0"



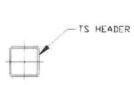
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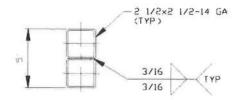
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SIDE WALL HEADER OPTIONS



HEADER DETAIL FOR DOOR OPENINGS ≤ 10'-0"

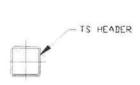
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HEADER DETAIL FOR DOOR OPENINGS 10'-0" < LENGTH ≤ 15'-0"

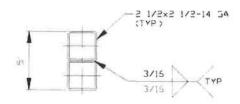
SCALE NTS

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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PRILIFCT MGP: VSM	DATE: 7-29-21	SCALE, NTS	JOB NO: 160225/

CLIENT: TBS SHT. 17 DWG. ND: SK-3 REV.: 6

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

TYPICAL FLOOD VENT DETAIL

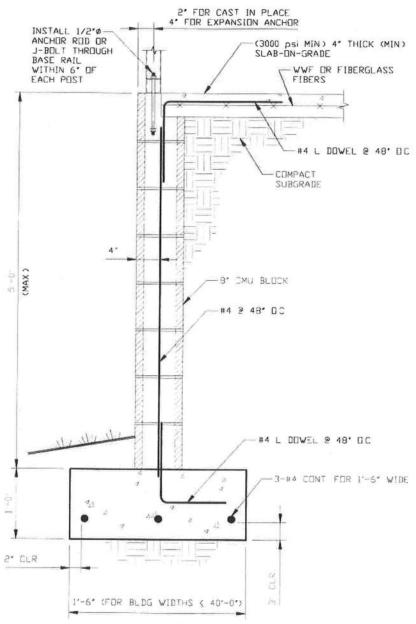
- 1 MINIMUM VENT SPACE REQUIRED = 1 SQ INCH OF JPEN VENT AREA PER SQ FOOT OF BUILDING AREA
- 2 THERE SHALL BE A MINIMUM OF TWO OPENINGS ON DIFFERENT SIDES FOR EACH ENCLOSED BUILDING
- 3 APPLY 13 FACTOR WHEN CALCULATING TOTAL OPEN AREA WHEN USING 1/2'-18GA S OR F EXPANDED METAL.
- 4 TOTAL OPEN AREA OF VENT = LxH(MIN 12")
- 5 FLOOD VENT DETAIL COMPLIES WITH FEMAINFIP
- 6 PREFABRICATED FLOOD VENTS MEETING THE REQUIREMENTS OF FEMA/NIFIP MAY BE USED



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STAND -ALONE STEM WALL DETAIL



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

SCALE: NTS



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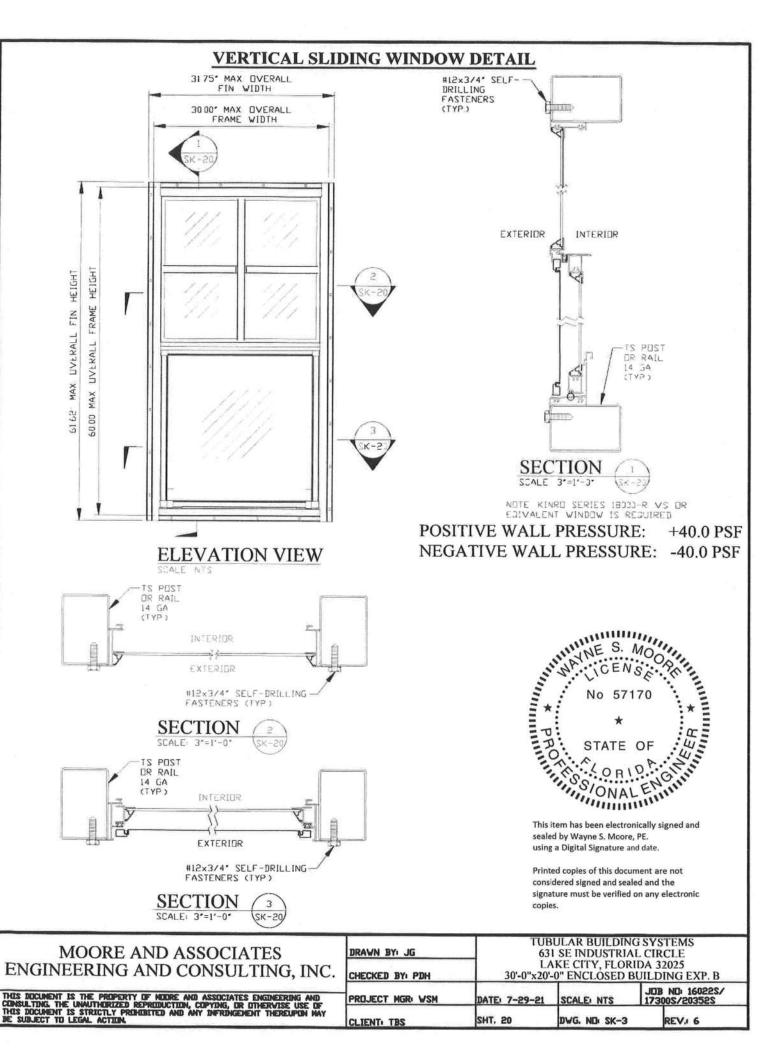
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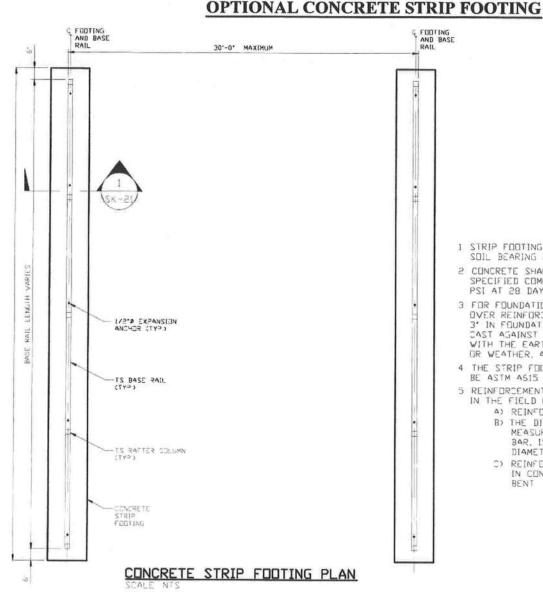
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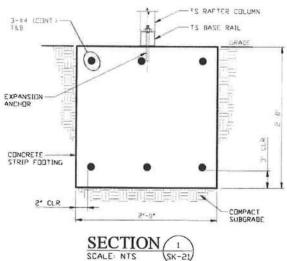
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17300\$/20352\$ PROJECT MGR: WSM DATE: 7-29-21 SCALE: NTS SHT. 19 DVG. NO: SK-3 REV. 6





- 1 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 PSI AT 28 DAYS
- 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 OR WEATHER, AND 1 1/2' ELSEWHERE
- 4 THE STRIP FOOTING REINFORCING STEEL SHALL BE ASTM ASI5 GRADE 53
- 5 REINFORCEMENT MAY BE BENT IN THE SHOP OR IN THE FIELD PROVIDED
 - A) REINFERCEMENT IS BENT COLD
 B) THE DIAMETER OF THE BEND,
 MEASURED ON THE INSIDE OF THE
 BAR, IS NOT LESS THAN SIX-BAR
 DIAMETERS
 - C) REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT



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