

GENERAL NOTES

1. DESIGN IS FOR MAXIMUM 30'-0" WIDE X 20'-0" EAVE HEIGHT FULLY ENCLOSED STRUCTURES.

2. APPLICABLE CODES, REGULATIONS, & STANDARDS:

A. 2023 FLORIDA BUILDING CODE (8TH EDITION)

B. 2024 INTERNATIONAL BUILDING CODE

C. AISC 360 STEEL DESIGNATION AND OTHER STRUCTURES

D. AISC 358 STEEL CONSTRUCTION MANUAL (15TH EDITION)

E. ACI 318-19 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE

F. TMS 402-16 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES

G. AWS D1.1: STRUCTURAL WELDING

2. RISK CATEGORY: I

3. EXPOSURE CATEGORY: C

LOW ULTIMATE WIND SPEED 105 TO 150 MPH (NOMINAL WIND SPEED 81 TO 116 MPH); MAXIMUM WIND SPEED 120 TO 155 MPH (NOMINAL WIND SPEED 78 TO 108 MPH); MAXIMUM WIND SPEED 130 TO 160 MPH (NOMINAL WIND SPEED 89 TO 119 MPH); MAXIMUM HIGH ULTIMATE WIND SPEED 151 TO 180 MPH (NOMINAL WIND SPEED 117 TO 139 MPH); MAXIMUM RAEFER/POST AND END POST SPACING = 4.0 FEET.

4. DEAD LOAD = 10 PSF

5. LIVE LOAD = 10 PSF

6. SPECIFICATIONS APPLICABLE TO 29 GAUGE METAL PANELS FASTENED DIRECTLY TO 2 1/2" x 2 1/2" - 14 GAUGE TUBE STEEL (S) FRAMING MEMBERS FOR VERTICAL PANELS; 29 GAUGE METAL PANELS SHALL BE FASTENED TO 18 GAUGE RAE CHANNELS (UNLESS OTHERWISE NOTED).

7. OPTIONAL BASE RAIL ANCHORAGE MAY BE USED FOR LOW AND MUST BE USED FOR HIGH WIND SPEEDS.

8. FASTENERS CONSIST OF #12-14 x 3/4" 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° (1:12 PITCH) OR LESS SPACING REQUIREMENTS FOR OTHER ROOF HEIGHTS AND/OR SLOPES MAY VARY.

9. AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR PURLINS, AND POSTS, INTERIOR = 9" OR END = 6", (MAX).

10. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:

SOIL SITE CLASS = D

RISK CATEGORY I/IIII

R = 3.25

le = 1.0

S_{DS} = 0.087 g

V = GSW

S_{DI} = 0.084 g

11. GROUND ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6" OF EACH RAFTER COLUMN ALONG SIDES.

12. GROUND ANCHOR (SOIL NAILS) CONSIST OF #5 REBAR W/ WELDED NUT X 30" LONG IN SUITABLE SOIL CONDITIONS MAY BE USED FOR LOW (≤ 108 MPH NOMINAL) WIND SPEEDS ONLY. OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USE IN UNSUITABLE SOILS AS NOTED.

13. MIN. LAP REQUIREMENT FOR REBAR IN FOOTER IS 25".

14. SOIL TO BE COMPACTED TO 95% OF ITS MAXIMUM DRY DENSITY, AT OPTIMUM MOISTURE CONTENT, IN ACCORDANCE WITH ASTM D1557-93.

15. PRIOR TO PLACING CONCRETE, TREAT THE ENTIRE SUBSURFACE AREA FOR TERMITES IN COMPLIANCE WITH THE FBC.

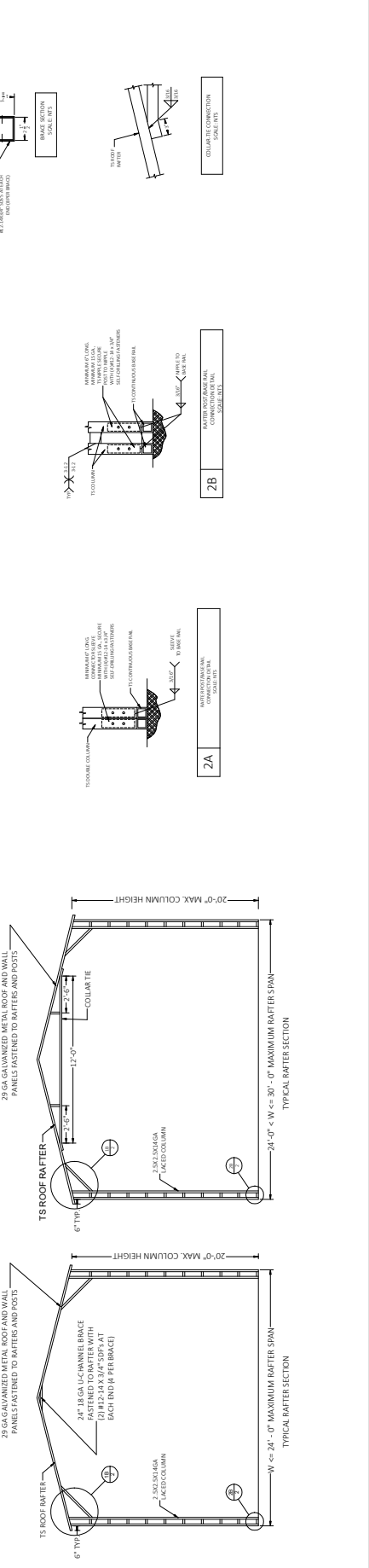
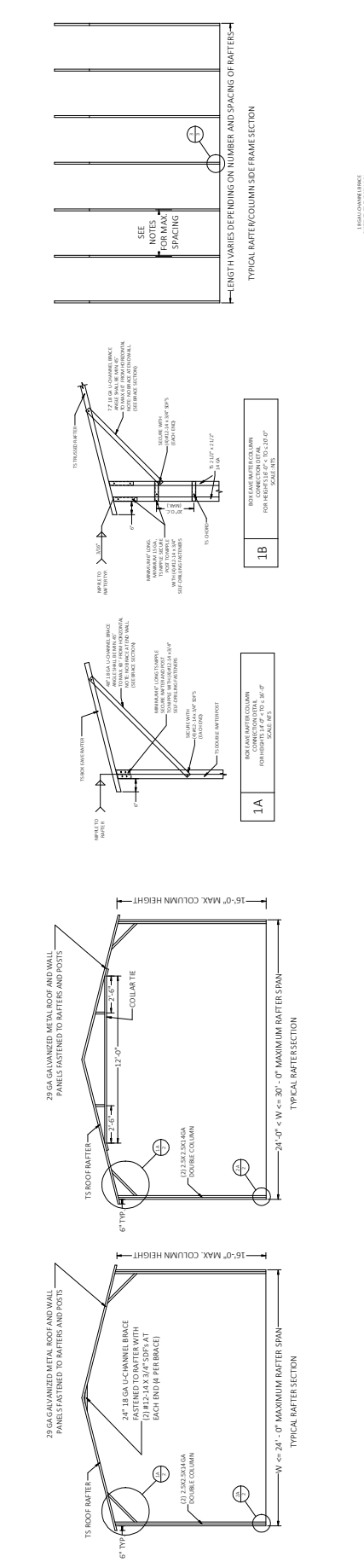
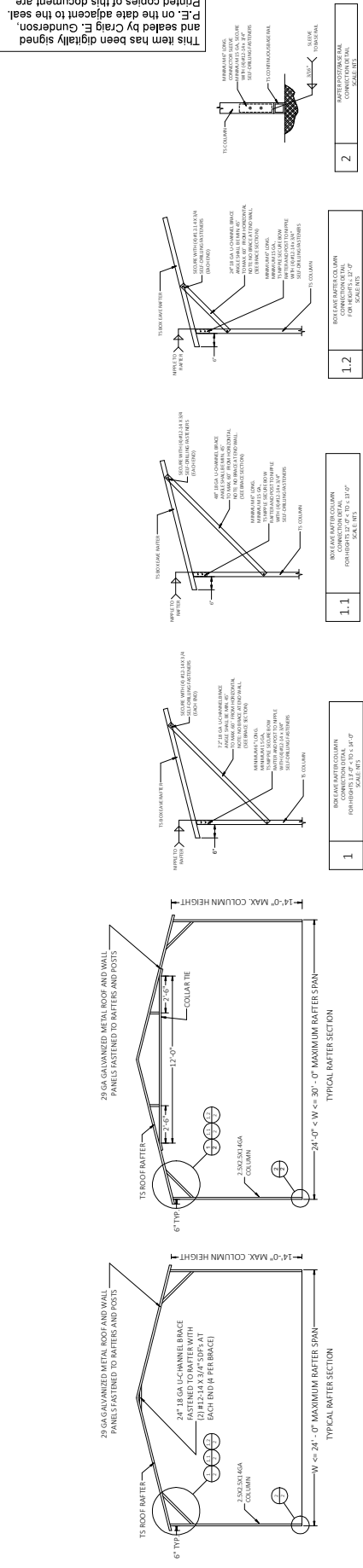
16. A LANDING OF MIN. 36" WIDTH IN THE DIRECTION OF TRAVEL SHALL BE PROVIDED AT THE EXTERIOR DOORS. SLOPE OF LANDING NOT TO EXCEED 1/4"-1". LANDING LEVEL NOT TO BE LOWER THAN 1-1/2" (FOR EGRESS DOORS) & 7-3/4" (FOR OTHER EXTERIOR DOORS) BELOW THE TOP OF THRESHOLD.
- | PAGE NO. | DESCRIPTION |
|----------|---|
| 1 | NOTES AND SPECIFICATIONS |
| 2 | BOX EAVE FRAME RAFTER ENCLOSED BUILDING |
| 3 | BOW EAVE FRAME RAFTER ENCLOSED BUILDING |
| 4 | BOX/BOW EAVE RAFTER LEAN TO OPTIONS |
| 5 | BOW/BOW EAVE RAFTER LEAN TO OPTIONS |
| 6 | BOX/BOW EAVE RAFTER LEAN TO OPTIONS |
| 7 | BOX EAVE RAFTER END WALL, SIDE WALL AND OPENING FRAMING |
| 8 | VENT AND CML STEM WALL DETAIL |
| 9 | OPTIONAL CONCRETE STRIP FOOTING |
- DRAWING INDEX
- | PRODUCT CATEGORY | SUB CATEGORY | MANUFACTURER | APPROVAL No. & DATE |
|-----------------------|------------------|---|----------------------------|
| STRUCTURAL COMPONENTS | ROOF DECK | CAPITAL METAL SUPPLY, INC.
29 GA. CAPITAL RIB ROOF PANEL | FL20147-2-R2
10/13/2020 |
| STRUCTURAL COMPONENTS | STRUCTURAL WALL | CAPITAL METAL SUPPLY, INC.
29 GA. CAPITAL RIB WALL PANEL | FL20148-2-R2
10/13/2020 |
| EXTERIOR DOORS | ROLL-UP | JANUS INTERNATIONAL GROUP, LLC
SERIES 3652 | FL14425-1-R6
12/15/21 |
| EXTERIOR DOORS | ROLL-UP | JANUS INTERNATIONAL GROUP, LLC
SERIES 750 | FL21450-10-R8
12/15/22 |
| EXTERIOR DOORS | ROLL-UP | JANUS INTERNATIONAL GROUP, LLC
SERIES 3100 | FL12765-4-R6
10/12/20 |
| EXTERIOR DOORS | SWINGING | ELWIR DOOR AND METAL COMPANY
SERIES 407 | FL17996-5-R2
02/28/21 |
| WINDOWS | SINGLE HUNG | KINRO, INC
9750 SH | FL993-5-R18
05/20/19 |
| WINDOWS | VERTICAL SLIDING | KINRO, INC
18600-R VS | FL993-R18
08/11/20 |
- DIGITAL CERTIFICATION NOTES:

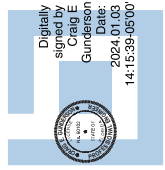
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 2. THIS DOCUMENT HAS BEEN CREATED BY FLORIDA ENGINEERING LLC FOR TUBULAR BUILDING SYSTEMS AND IS NOT VALID FOR ANY OTHER PROJECT OR PART WITHOUT THE WRITTEN CONSENT OF FLORIDA ENGINEERING LLC AND TUBULAR BUILDING SYSTEMS.
 3. ALTE RATIONS, ADDITIONS OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE FLORIDA ENGINEERING LLC'S CERTIFICATION.
 4. THESE PLANS ARE GENERIC AND DO NOT PROVIDE INFORMATION FOR A SITE-SPECIFIC PROJECT WHERE THE SITE CONDITIONS DEVIATE FROM WHAT HAS BEEN CALLED OUT ON THESE PLANS.
 5. THESE PLANS ARE NOT DESIGNED FROM THE CONDITIONS DETAILED ON THESE PLANS.
 6. CONTRACTOR SAFETY AT THE SITE IS THE CONTRACTOR'S RESPONSIBILITY.
- ENCLOSED METAL BUILDING DESIGN
MAXIMUM 30'-0" WIDE X 20'-0" EAVE HEIGHT
BOX/BOW EAVE FRAME
-
- BOX EAVE FRAME RAFTER ENCLOSED BUILDING
-
- BOW FRAME RAFTER ENCLOSED BUILDING
- TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE,
LAKE CITY, FL 32025
- CONTRACTOR:
- PROJECT DESCRIPTION:
- 30' WIDE X 20' HIGH
ENCLOSED STRUCTURE
- | DESIGN DATE: | 12/14/2023 |
|--------------|------------|
| REVISION 1: | DATE |
| REVISION 2: | DATE |
| SCALE: | NTS |
| PAGE: 1 | |
- FLORIDA ENGINEERING LLC
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FL.Eng.com
Orders@FL.Eng.com
CA CERT. #30782
PROJECT NO. 2322771-30-E
-
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DN: cn=Craig E. Gunderson, o=FLORIDA ENGINEERING LLC, email=Craig.E.Gunderson@FLEng.com, c=US
2024.01.03 14:15:38-0500

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TUBULAR BUILDING SYSTEMS
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LAKE CITY, FL 32025
PROJECT DESCRIPTION:
30" WIDE X 20" HIGH
ENCLOSED STRUCTURE



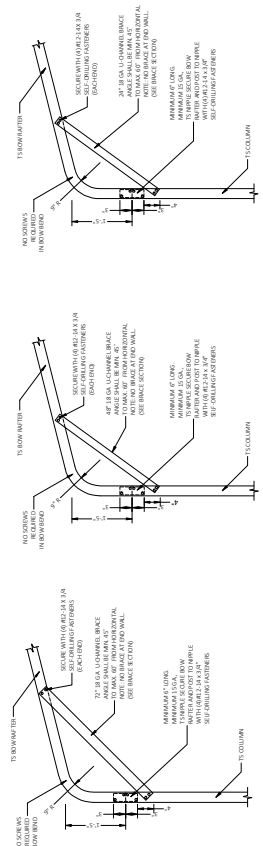


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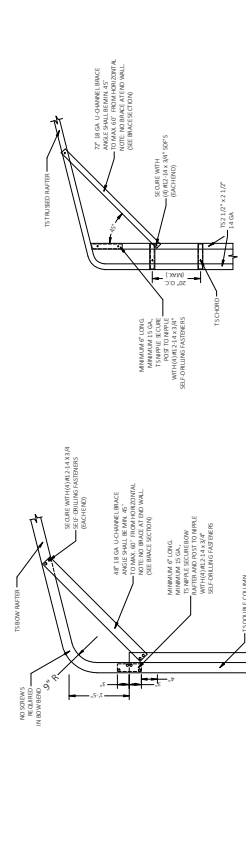


CONTRACTOR:
TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE,
LAKE CITY, FL 32025
PROJECT DESCRIPTION:
30' WIDE X 20' HIGH
ENCLOSED STRUCTURE

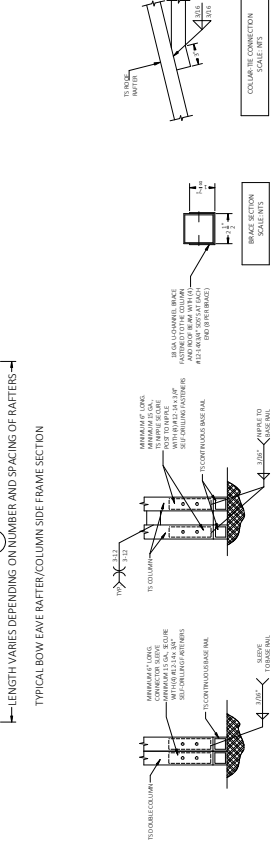
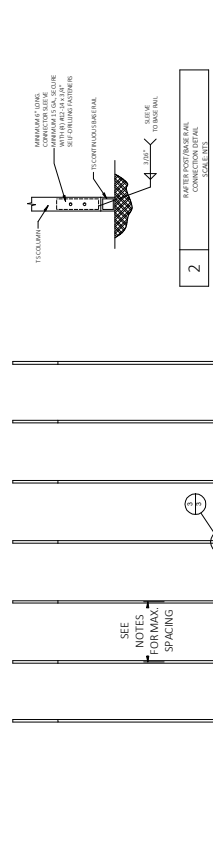
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REVISION 1:	DATE
REVISION 2:	DATE
SCALE:	NTS



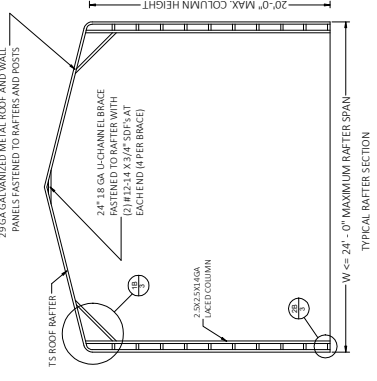
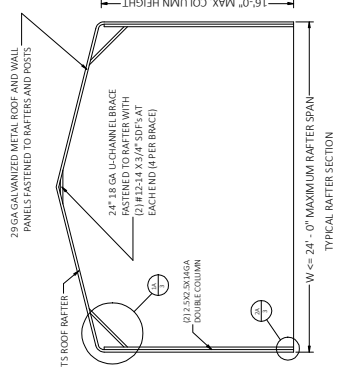
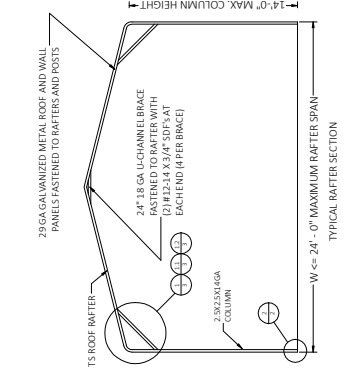
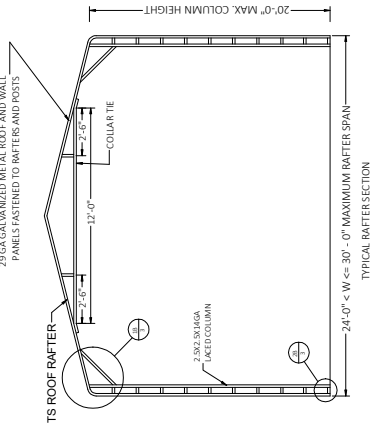
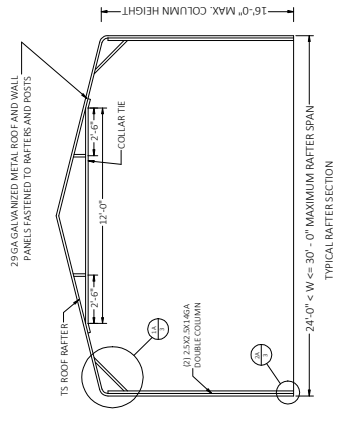
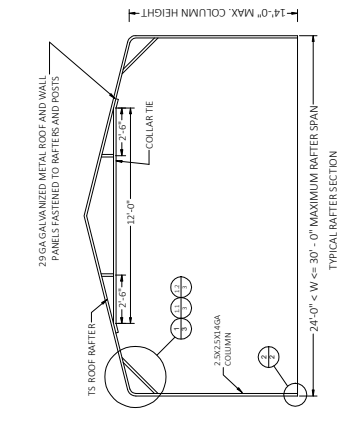
1.2
BOW EAVE AFTER COLUMN
FOR HEIGHTS 13'-0" TO 17'-0"
SCALE: NTS



1B
BOW EAVE AFTER COLUMN
FOR HEIGHTS 16'-0" TO 20'-0"
SCALE: NTS



2B
RAFTER SECTION FOR
HEIGHTS 20'-0" TO 30'-0"
SCALE: NTS



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Digitally signed by Craig E. Gunderson
Date: 2024.01.03 14:15:39-05'00'

A circular digital signature seal from the State of North Carolina. It contains the text "STATE OF NORTH CAROLINA" around the perimeter, "JAN 03 2024" in the center, and "CRAIG E GUNDERSON" around the inner circle.

GENERAL NOTES

CONCRETE:

1. CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.
2. PRIOR TO PLACING CONCRETE, TREAT THE ENTIRE SUBSURFACE AREA FOR TERMITES IN COMPLIANCE WITH THE FBC.
3. MINIMUM SOIL BEARING CAPACITY OF COMPACTED GRADE= 2000 PSF.

COVER AGE OF THE REINFORCED STEEL •

FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-318: 3 INCHES WHERE THE CONCRETE IS POURED AGAINST AND TEMPORARY IN CONTACT WITH THE EARTH OR UNPROTECTED FROM THE EARTH OR WEATHER, OTHERWISE 1-3/2 INCHES.

REINFORCING STEEL:

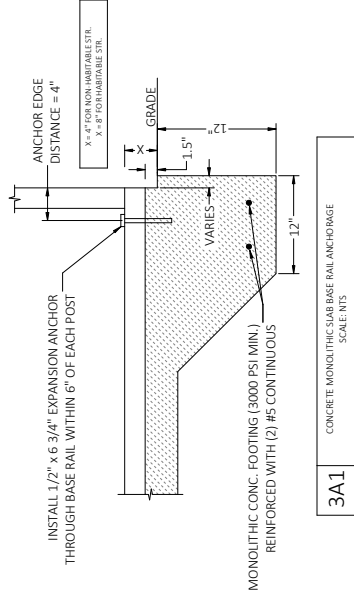
THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT.

REINFORCEMENT MAY BE BENT IN THE FIELD OR SHOP AS LONG AS:

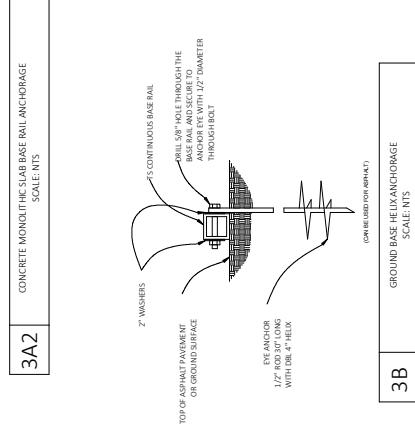
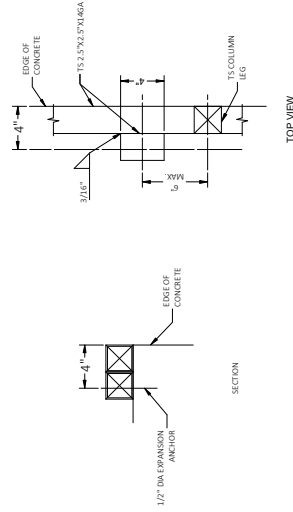
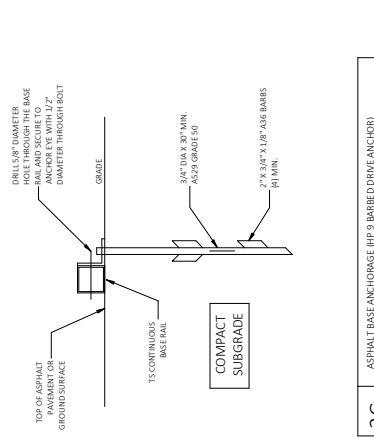
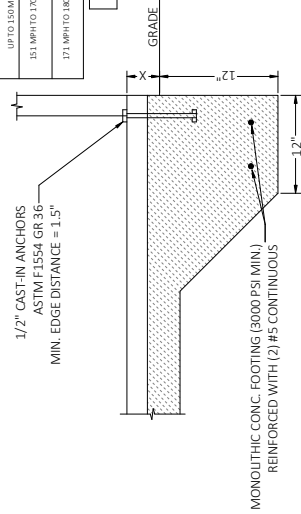
1. IT IS BENT COLD;
2. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT;
3. THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN 8K-BAR DIAMETERS.
4. MINIMUM REQUIRED LAP LENGTH SHALL NOT BE LESS THAN 57-BAR DIAMETERS.

HEI IX ANCHOR NOTES

- FOR VERY COARSE AND/OR CEMENTED SANDS, COARSE GRAVEL
AND CORRIE, CALICHE, PRELOADED SETS AND CLAYS USE MINIMUM
(2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT.
- FOR CORAL USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT.
- FOR MEDIUM DENSE, COARSE SANDS, SANDY GRAVELS, VERY STIFF CLAYS
AND CLAYS USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT.
- FOR LOOSE TO MEDIUM DENSE COARSE SANDS, FIRM TO STIFF CLAYS
AND SILTS ALLOW A FULL USE MINIMUM (2) 6" HELICES
WITH MINIMUM 50 INCH EMBEDMENT.
- FOR VERY COARSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS
AND SILTS ALLOW A FULL USE MINIMUM (2) 8" HELICES
WITH MINIMUM 60 INCH EMBEDMENT.



WIND SPEED	WALL HEIGHT	MIN. ANCHOR EMBEDMENT
UP TO 150 MPH	UP TO 16'-0"	3'-25"
	16'-1' TO 20'-0"	5'-00"
	UP TO 16'-0"	3'-25"
151 MPH TO 170 MPH	16'-1' TO 16'-0"	5'-00"
	16'-1' TO 20'-0"	5'-00"
	UP TO 16'-0"	3'-25"
171 MPH TO 180 MPH	16'-1' TO 16'-0"	5'-00"
	16'-1' TO 20'-0"	5'-00"



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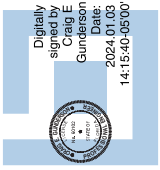
CONTRACTOR:
TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE,
LAKE CITY, FL 32025

PROJECT DESCRIPTION:

30" WIDE X 20" HIGH
ENCLOSED STRUCTURE

DESIGN DATE:	12/14/2023	PAGE:	4
REVISION 1:	DATE		
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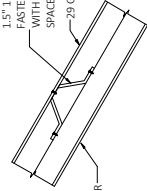
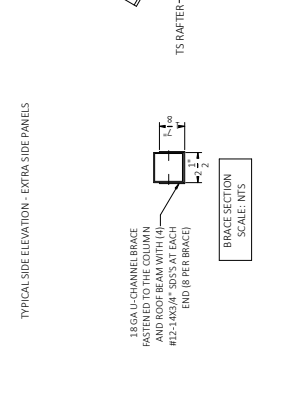
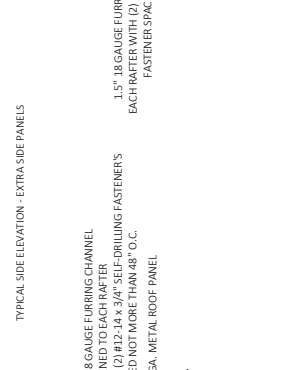
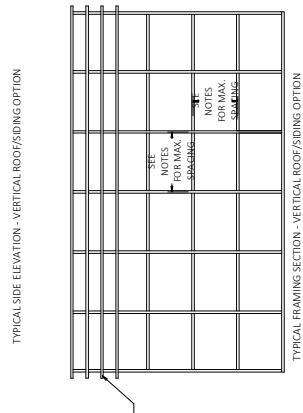
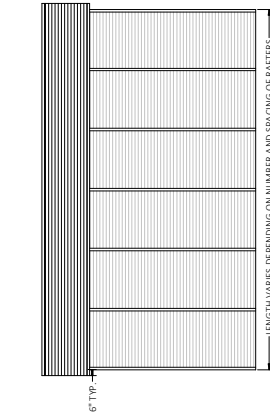
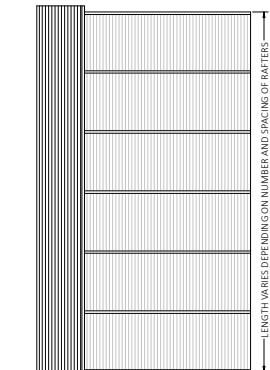
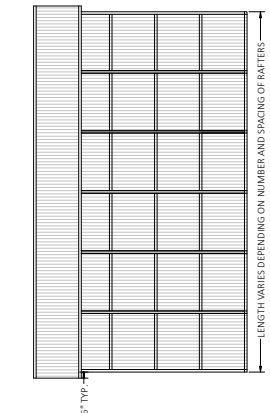
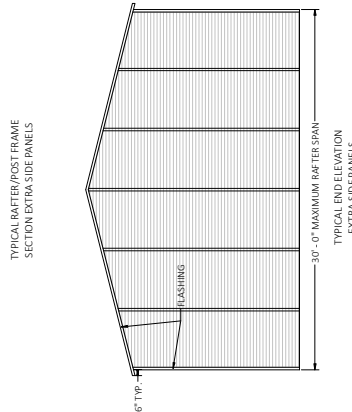
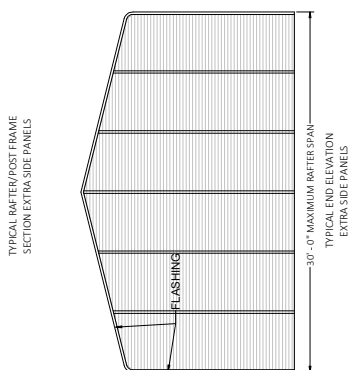
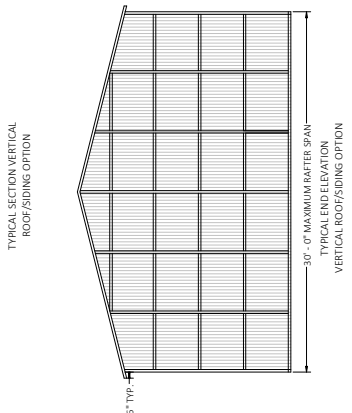
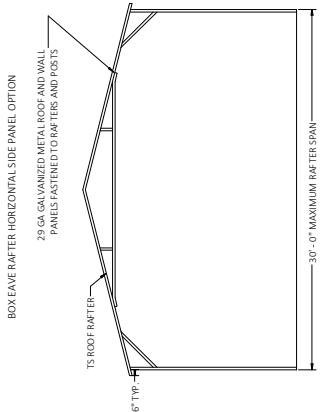
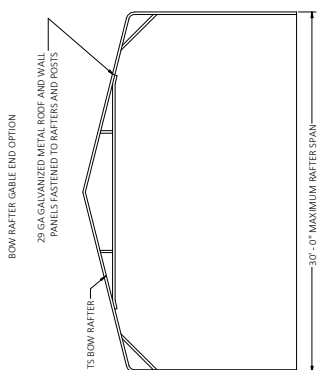
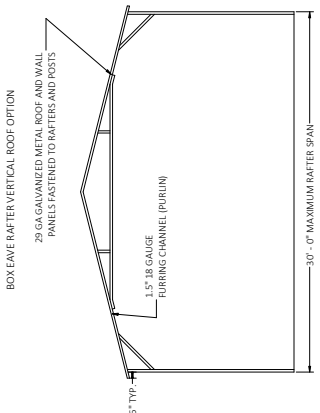


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PROJECT NO. 2322771-30-E



CONTRACTOR:
TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE,
LAKE CITY, FL 32025
PROJECT DESCRIPTION:
30' WIDE X 20' HIGH
ENCLOSED STRUCTURE

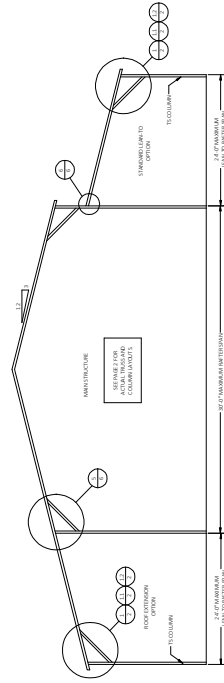
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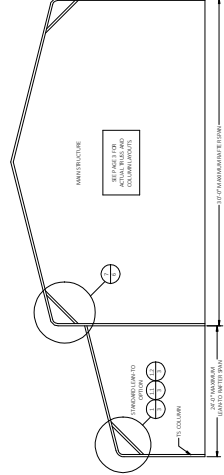
BRACE SECTION
SCALE: NTS

ROOF PANEL ATTACHMENT
SCALE: NTS

BOX LEAVE RAFTER LEAN-TO OPTIONS

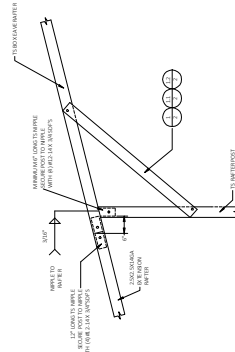


BOW RAFTER LEAN-TO OPTIONS



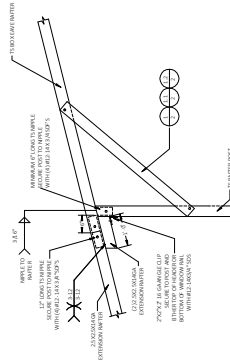
TYPICAL BOX LEAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

TYPICAL BOW RAFTER LEAN-TO OPTIONS FRAMING SECTION



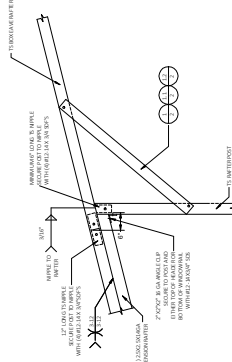
5A

SIZE: SEE EXTENSION MATERIAL CONNECTION DETAIL.
FOR LEAN-TO RAFTER SPAN $W \leq 12'$ OR $W \leq 12'$ OF THE RAFTER IS PER DETAIL 1.1.2. FOR LEAN-TO RAFTER SPAN $W > 12'$ OR $W > 12'$ OF THE RAFTER IS PER DETAIL 1.1.2. FOR LEAN-TO RAFTER SPAN $W > 12'$ OR $W > 12'$ OF THE RAFTER IS PER DETAIL 1.1.2. FOR LEAN-TO RAFTER SPAN $W > 12'$ OR $W > 12'$ OF THE RAFTER IS PER DETAIL 1.1.2.



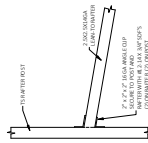
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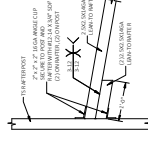
5C

SIZE: SEE EXTENSION MATERIAL CONNECTION DETAIL.
FOR LEAN-TO RAFTER SPAN $W \leq 12'$ OR $W \leq 12'$ OF THE RAFTER IS PER DETAIL 1.1.2. FOR LEAN-TO RAFTER SPAN $W > 12'$ OR $W > 12'$ OF THE RAFTER IS PER DETAIL 1.1.2. FOR LEAN-TO RAFTER SPAN $W > 12'$ OR $W > 12'$ OF THE RAFTER IS PER DETAIL 1.1.2. FOR LEAN-TO RAFTER SPAN $W > 12'$ OR $W > 12'$ OF THE RAFTER IS PER DETAIL 1.1.2.



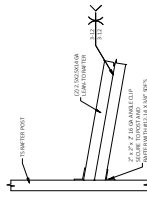
6A

SIZE: SEE EXTENSION MATERIAL CONNECTION DETAIL.
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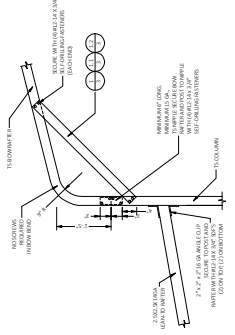
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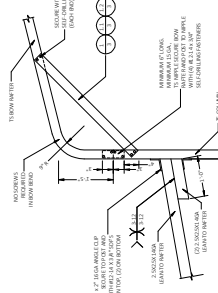
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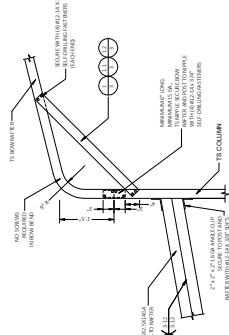
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SIZE: SEE EXTENSION MATERIAL CONNECTION DETAIL.
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7B

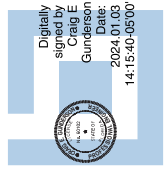
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7C

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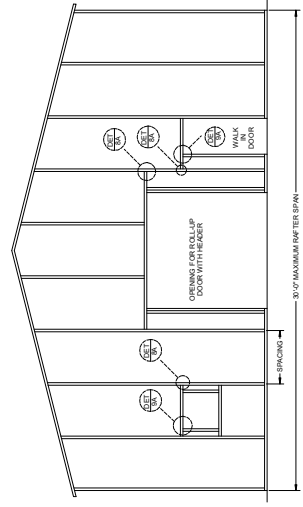
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Orders@FLeng.com
CA CERT. #30782
PROJECT NO. 2322771-30-E

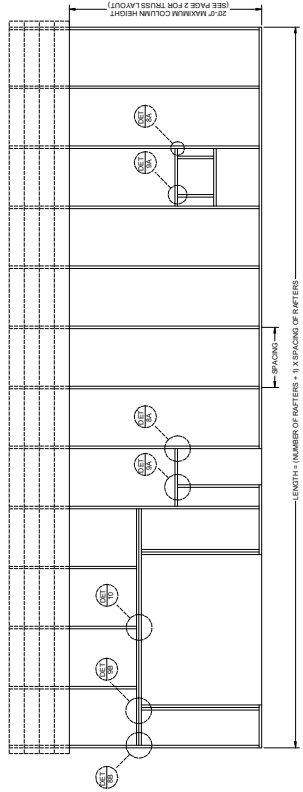


CONTRACTOR:		PROJECT DESCRIPTION:	
TUBULAR BUILDING SYSTEMS		30" WIDE X 20" HIGH ENCLOSED STRUCTURE	
LAKE CITY, FL 32025			
DESIGN DATE:	12/14/2023	REVISION 1:	DATE
REVISION 2:	DATE	REVISION 3:	DATE
SCALE:	NTS	REVISION 4:	DATE



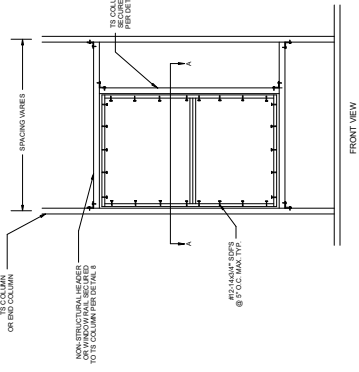
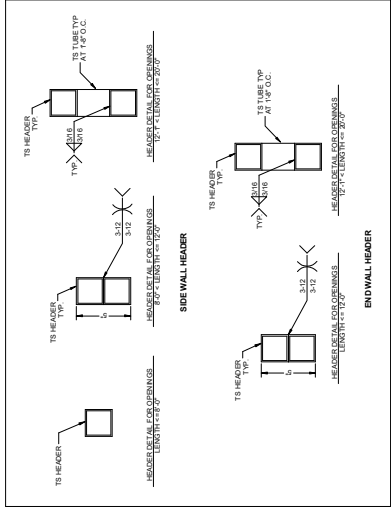
SPACING = 6'-0" FOR WIND SPEEDS BETWEEN 10 MPH AND 100 MPH
SPACING = 4'-0" FOR WIND SPEEDS BETWEEN 100 MPH AND 150 MPH
SPACING = 3'-0" FOR WIND SPEEDS BETWEEN 150 MPH AND 160 MPH

TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION



LENGTH = (NUMBER OF RAFTERS - 1) SPACING OF RAFTERS
SPACING = 6'-0" FOR WIND SPEEDS BETWEEN 10 MPH AND 100 MPH
SPACING = 4'-0" FOR WIND SPEEDS BETWEEN 100 MPH AND 150 MPH
SPACING = 3'-0" FOR WIND SPEEDS BETWEEN 150 MPH AND 160 MPH

TYPICAL BOX EAVE RAFTER SIDE WALL FRAMING SECTION



SPACING VARIES

TS COLUMN OR END COLUMN

TS COLUMN OR END COLUMN

TS COLUMN OR END COLUMN

TS COLUMN OR END COLUMN

TS COLUMN OR END COLUMN

TS COLUMN OR END COLUMN

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Digitally signed by
Craig E. Gunderson
DN: cn=Craig E. Gunderson, o=FLORIDA ENGINEERING LLC, email=craig.gunderson@fleng.com, c=US
2024.01.03 14:15:41 -0500



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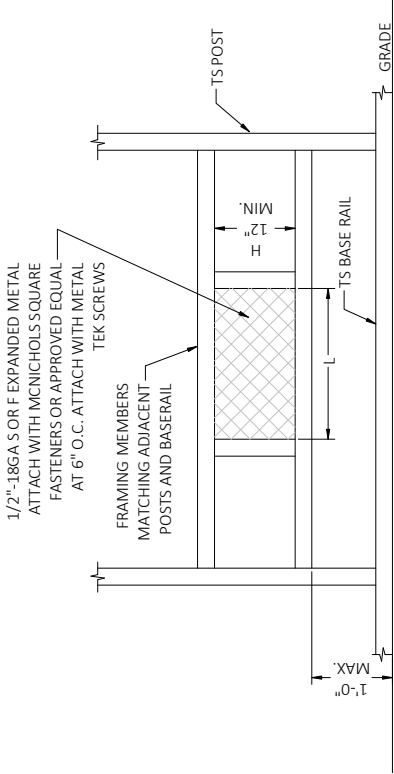
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CA CERT. #30782

PROJECT NO. 2322771-30-E

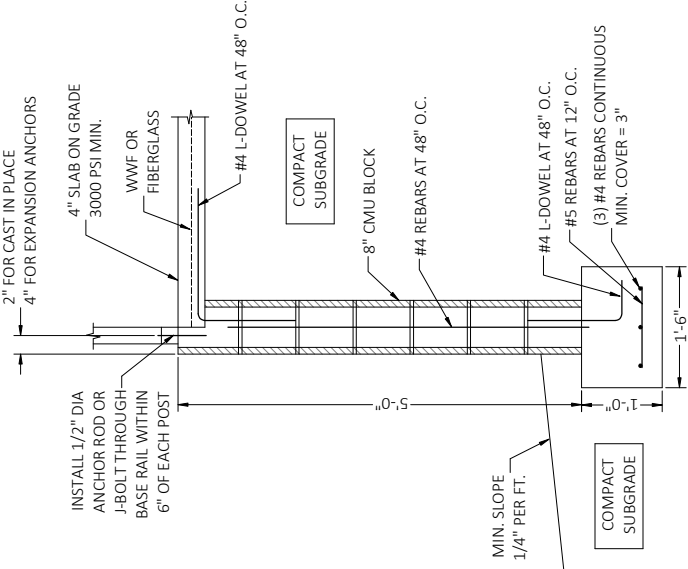
CONTRACTOR:		PROJECT DESCRIPTION:	
TUBULAR BUILDING SYSTEMS		30" WIDE X 20" HIGH ENCLOSED STRUCTURE	
631 SE INDUSTRIAL CIRCLE, LAKE CITY, FL 32025			
DESIGN DATE:	12/14/2023	REVISION 1:	DATE
REVISION 2:	DATE	REVISION 3:	DATE
SCALE:	NTS	SCALE:	NTS

11 WINDOW INSTALLATION DETAILS
SCALE: NTS



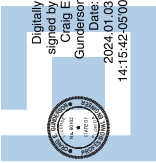
TYPICAL FLOOD VENT DETAIL

- NOTES:
1. MINIMUM VENT SPACE REQUIRED = 1 SQ. IN. OF OPEN VENT AREA PER SQ. FT. OF BUILDING AREA.
 2. PROVIDE A MINIMUM OF TWO OPENINGS ON DIFFERENT SIDES OF EACH ENCLOSED BUILDING.
 3. APPLY A 1.3 FACTOR WHEN CALCULATING TOTAL OPEN AREA WHEN USING 1/2"-18GA S OR F EXPANDED METAL.
 4. TOTAL OPEN AREA OF VENT = L X H (MIN. 12").
 5. FLOOD VENT DETAIL COMPLIES WITH FEMA/NFIP.
 6. PREFABRICATED FLOOD VENTS MEETING THE REQUIREMENTS OF FEMA/NFIP MAY BE USED.



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

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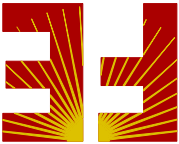
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CONTRACTOR:

TUBULAR BUILDING SYSTEMS

631 SE INDUSTRIAL CIRCLE,

LAKE CITY, FL 32025

PROJECT DESCRIPTION:

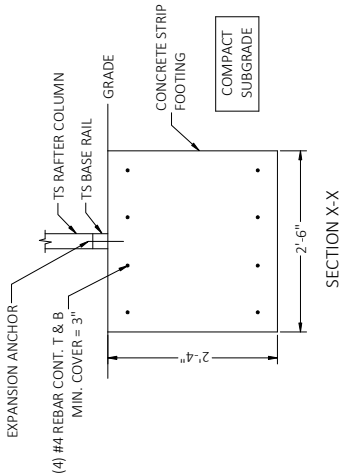
30' WIDE X 20' HIGH

ENCLOSED STRUCTURE

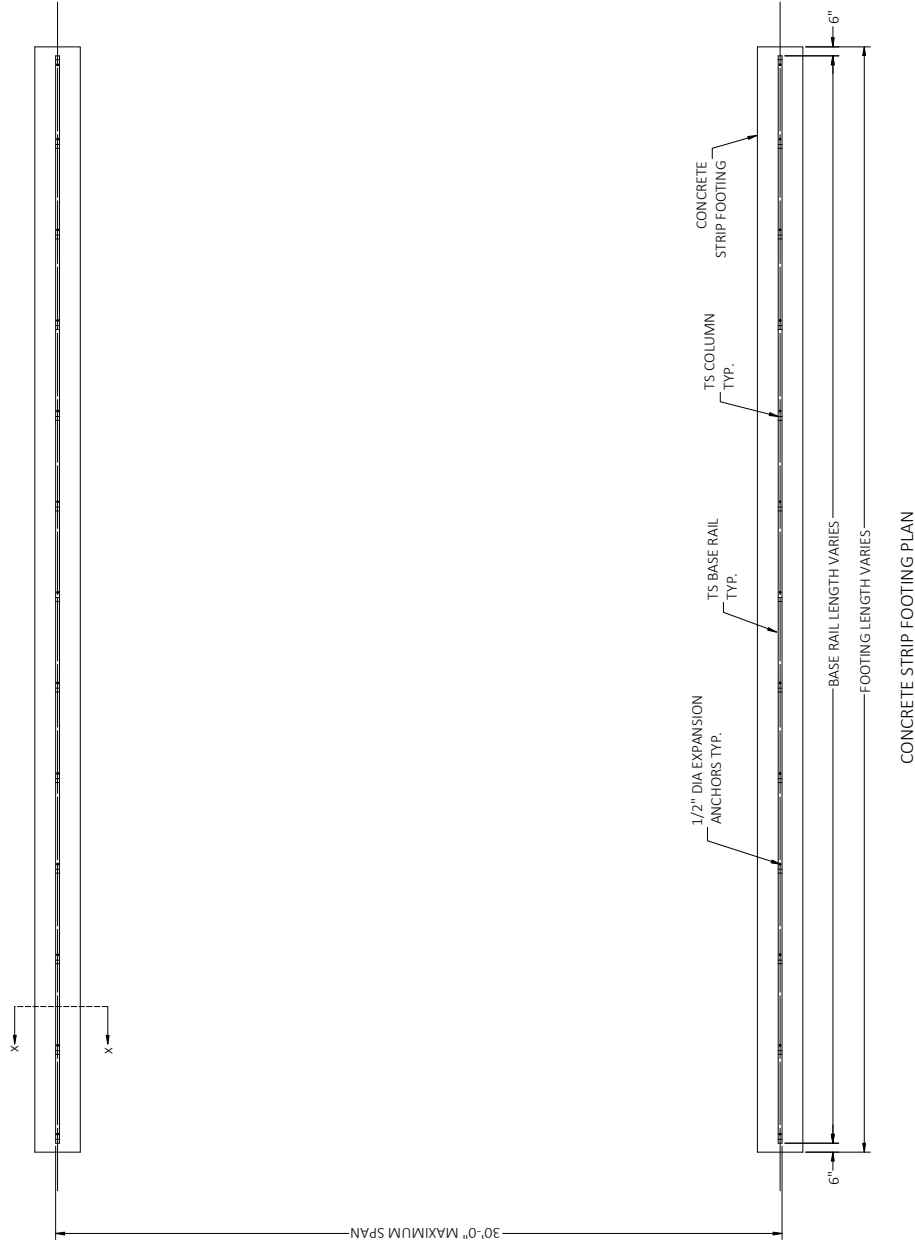
DESIGN DATE:	12/14/2023
REVISION 1:	DATE
REVISION 2:	DATE
SCALE:	NTS

GENERAL NOTES
CONCRETE MONOLITHIC SLAB DESIGN IS BASED ON A MINIMUM SOIL BEARING CAPACITY OF 1500 PSF.

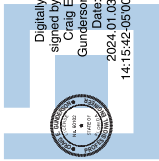
- CONCRETE
MINIMUM 28-DAY SPECIFIED COMPRESSIVE STRENGTH = 3000 PSI
- REINFORCING STEEL
1. TURNDOWN REINFORCING STEEL = ASTM A615 GRADE 60
2. SLAB REINFORCEMENT = WELDED WIRE FABRIC PER ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT
3. REINFORCING STEEL COVER = 3" WHERE CASE AGAINST AND PERMANENTLY EXPOSED TO SOIL OR WATER, 1.5" EVERYWHERE ELSE.
4. REINFORCEMENT IS BENT COLD.
5. MINIMUM INSIDE DIAMETER OF BEND = (6) BAR DIAMETERS
6. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT.



OPTIONAL CONCRETE STRIP FOOTING



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