

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. ASCE 7-22: MINIMUM DESIGN LOADS ON BUILDINGS AND OTHER STRUCTURES
 - D. ACI 308-14: CONCRETE STRUCTURES FOR DURABLE PERFORMANCE
 - 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
3. RISK CATEGORY: I
4. EXPOSURE CATEGORY: C
5. WIND SPEED: 150 MPH (NOMINAL WIND SPEED 81 TO 116 MPH); MAXIMUM RATES/POST AND END POST SPACING = 5.0 FEET
6. HATCH/CLIMATE WIND SPEED 151 TO 180 MPH (NOMINAL WIND SPEED 117 TO 139 MPH); MAXIMUM RATES/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" x 1/4" GAUGE LIGHT GAUGE STEEL (L) FRAMING MEMBERS FOR VERTICAL PANELS. 29 GAUGE METAL PANELS SHALL BE FASTENED TO 18 GAUGE HAT 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 WASHERS TO PREVENT CORROSION. SEE SECTION 05110 FOR FASTENERS. PROVIDE FASTENERS TO MEET MINIMUM HEIGHTS AND/OR SLOPES OF 14" (3:1 PITCH) OR LESS SPACING REQUIREMENTS FOR OTHER ROOF TYPES 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:
RISK CATEGORY II/III
R = 3.25 Ie = 1.0
S_{DS} = 0.087 g V = CSW
S_{DI} = 0.084 g
11. GROUND ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6" OF EACH RAFTER COLUMN AROUND SIDES.
12. GROUND ANCHORS (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. OPTIMAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED 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.

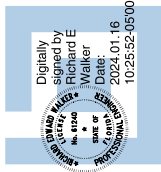
PAGE NO.	DESCRIPTION
1	NOTES AND SPECIFICATIONS
2	BOX EAVE FRAME RAFTER ENCLOSED BUILDING
3	BOW EAVE FRAME RAFTER ENCLOSED BUILDING/WIND PRESSURES
4	BASE RAIL AND FOUNDATION ANCHORAGE
5	BOX/BOW EAVE VERTICAL ROOF/SIDING OPTION
6	BOX/BOW EAVE RAFTER LEAN-TO OPTIONS
7	BOX EAVE RAFTER END WALL, SIDE WALL AND OPENING FRAMING
8	VENT AND CHIMNEY STEM WALL DETAIL
9	OPTIONAL CONCRETE STRIP FOOTING

PRODUCT CATEGORY	SUB CATEGORY	MANUFACTURER	APPROVAL No. & DATE
STRUCTURAL COMPONENTS	ROOF DECK	CAPITAL METAL SUPPLY, INC. 29 GA. CAPITAL RIB ROOF PANEL	FL20147.2-R3 12/13/2023
STRUCTURAL COMPONENTS	STRUCTURAL WALL	CAPITAL METAL SUPPLY, INC. 29 GA. CAPITAL RIB WALL PANEL	FL20148.2-R3 12/13/2023
EXTERIOR DOORS	ROLL-UP	JANUS INTERNATIONAL GROUP, LLC SERIES 3652	FL14425.1-R6 1/7/15/21
EXTERIOR DOORS	ROLL-UP	JANUS INTERNATIONAL GROUP, LLC SERIES 750	FL21450.10-R11 10/17/23
EXTERIOR DOORS	ROLL-UP	JANUS INTERNATIONAL GROUP, LLC SERIES 3100	FL12765.4-R6 10/12/20
EXTERIOR DOORS	SWINGING	ELVIR DOOR AND METAL COMPANY SERIES 407	FL17996.5-R3 12/26/23
WINDOWS	SINGLE HUNG	KINRO, INC 9750 SH	FL993.5-R19 11/01/23
WINDOWS	VERTICAL SLIDING	KINRO, INC 18000-R V5	FL993.8-R19 11/01/23

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

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

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222771-30-E
VC CERT #30782



PROJECT NO. 2322771-30-E

Orders@FLEng.com

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CA CERT. #30782

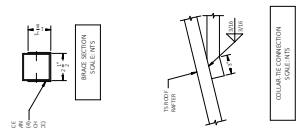
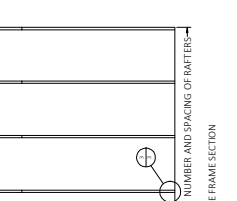
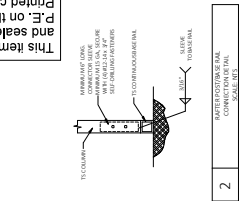
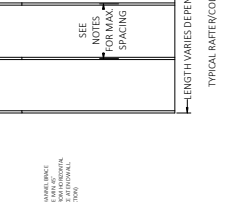
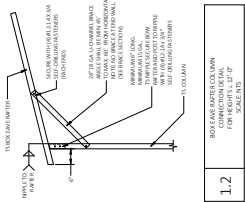
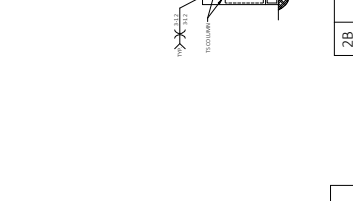
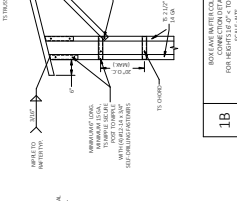
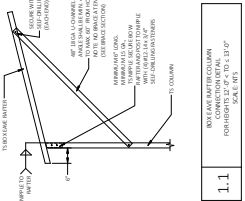
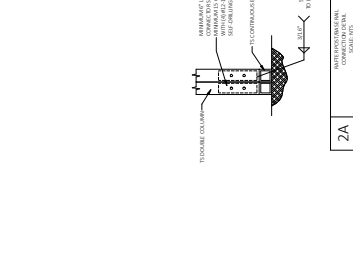
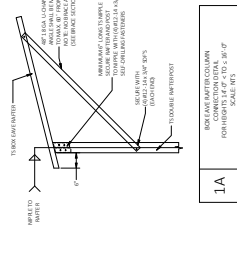
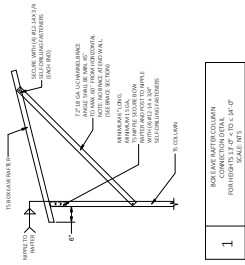
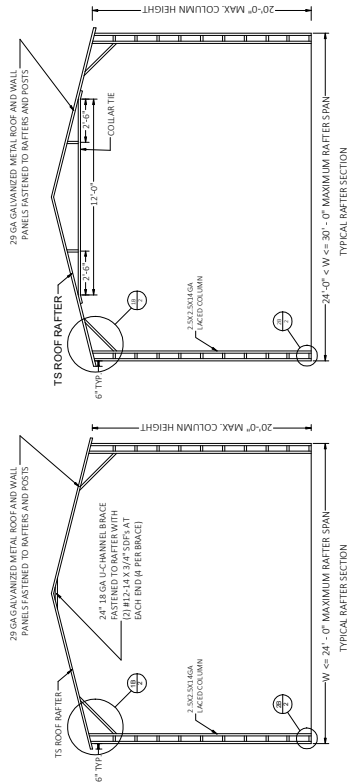
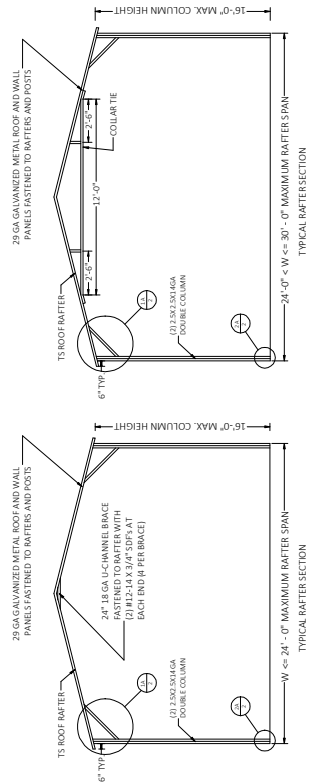
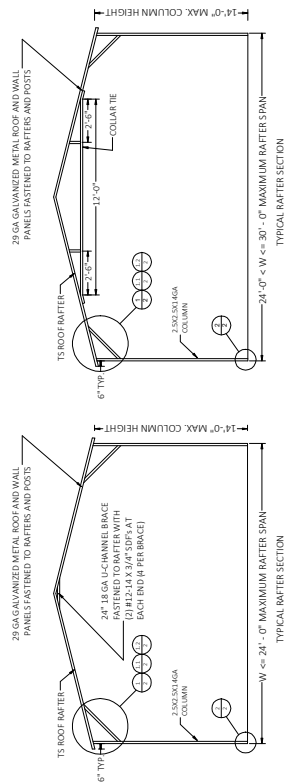
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2024.01.16
10:25:54-0500
SEAL
STATE OF FLORIDA
Professional Engineer
No. 81040
Richard E. Walker
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PROJECT NO. 2322771-30-E

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

DESIGN DATE: 12/14/2023
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PAGE: 2



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Date: 2023.01.16 10:25:55-0500

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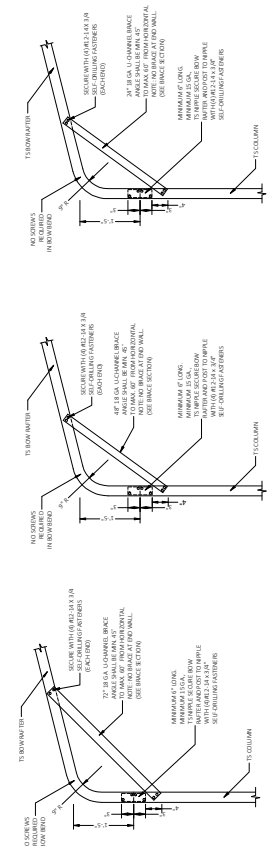
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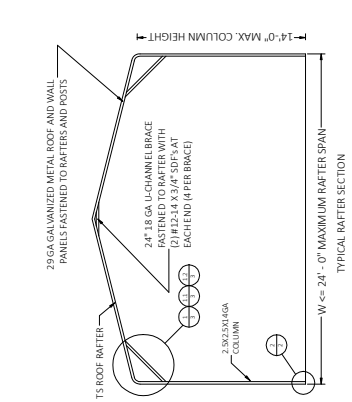
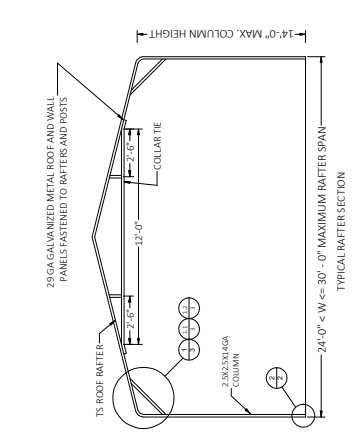
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LAKE CITY, FL 32025

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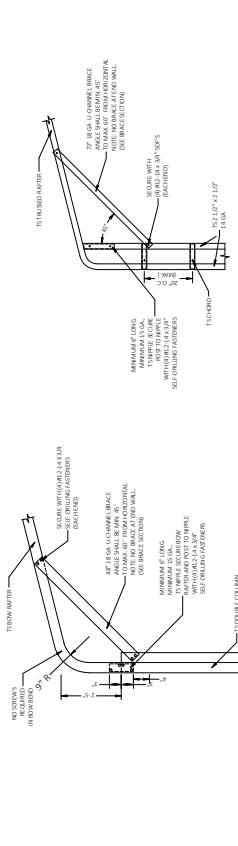


1 BOW EAVE AFTER COLUMN FOR HEIGHTS 21'-0" TO 24'-0" SCALE: NTS

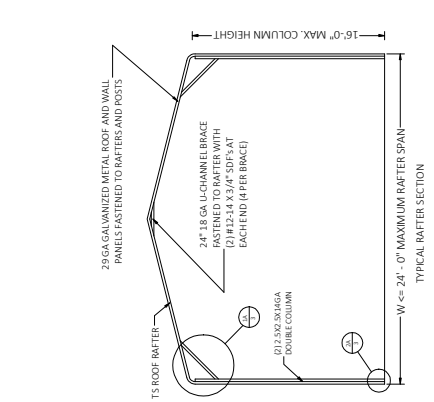
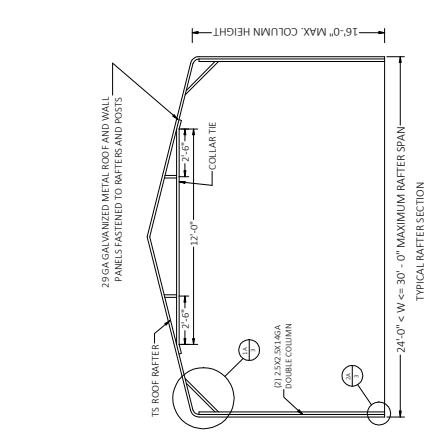


1.1 BOW EAVE AFTER COLUMN FOR HEIGHTS 21'-0" TO 24'-0" SCALE: NTS

1.2 BOW EAVE AFTER COLUMN FOR HEIGHTS 21'-0" TO 24'-0" SCALE: NTS

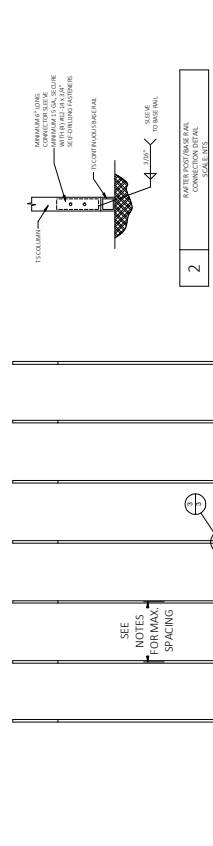


2 BOW EAVE AFTER COLUMN FOR HEIGHTS 25'-0" TO 30'-0" SCALE: NTS

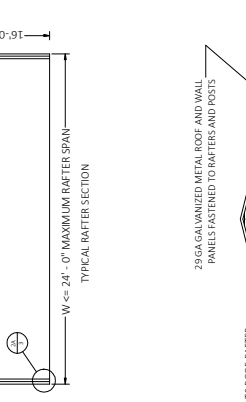
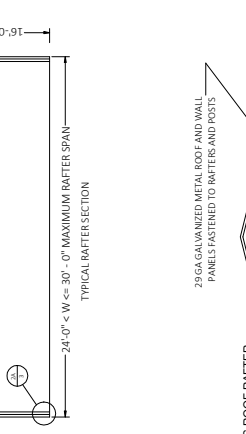


2A BOW EAVE AFTER COLUMN FOR HEIGHTS 25'-0" TO 30'-0" SCALE: NTS

2B BOW EAVE AFTER COLUMN FOR HEIGHTS 25'-0" TO 30'-0" SCALE: NTS

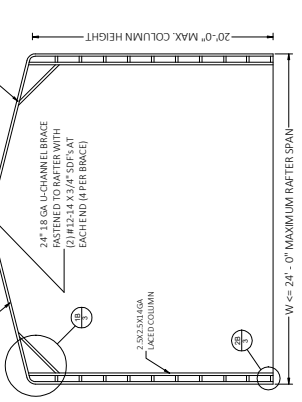
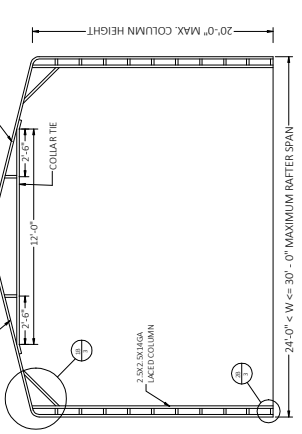
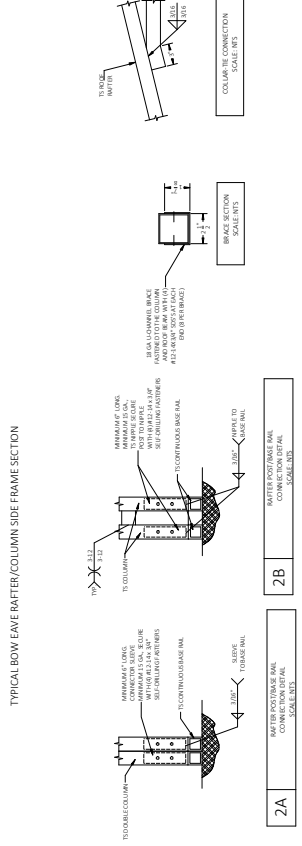


2C BOW EAVE AFTER COLUMN FOR HEIGHTS 25'-0" TO 30'-0" SCALE: NTS



2D BOW EAVE AFTER COLUMN FOR HEIGHTS 25'-0" TO 30'-0" SCALE: NTS

2E BOW EAVE AFTER COLUMN FOR HEIGHTS 25'-0" TO 30'-0" SCALE: NTS



3 TYPICAL BOW EAVE RAFTER/COLUMN SIDE FRAME SECTION

3A TYPICAL BOW EAVE RAFTER/COLUMN SIDE FRAME SECTION

3B TYPICAL BOW EAVE RAFTER/COLUMN SIDE FRAME SECTION

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Date: 2024.01.16 10:25:56-0500

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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

COVERAGE 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 FELD BENT;
3. THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN 8X-BAR DIAMETERS.
4. MINIMUM REQUIRED LAP LENGTH SHALL NOT BE LESS THAN 57-BAR DIAMETERS.

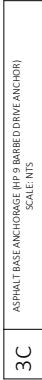
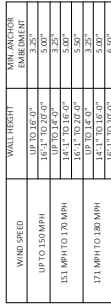
FOR VERY COARSE, OR FINE-COMBED SANDS, COARSE GRAVEL,
AND CORBELS, CALCIE, PRELOADED SIFTS, AND CLAYS USE MINIMUM
(2 1/4" HEELCES WITH MINIMUM 30 INCH EMBEDMENT.

FOR COARSE USE MINIMUM (2 1/4" HEELCES WITH MINIMUM 30 INCH EMBEDMENT.

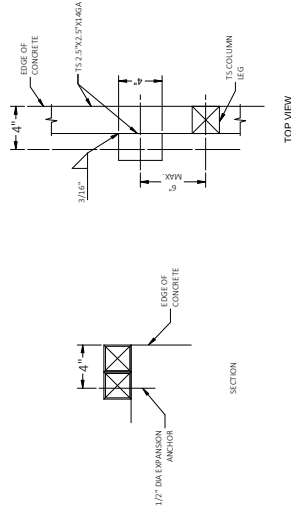
FOR MEDIUM COARSE, COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS,
AND CLAYS USE MINIMUM (2 1/4" HEELCES WITH MINIMUM 30 INCH EMBEDMENT.

FOR LOOSE TO MEDIUM COARSE SANDS, FIRM TO STIFF CLAYS
AND SILTS ALLOW A FULL USE MINIMUM (2 1/2" HEELCES
WITH MINIMUM 50 INCH EMBEDMENT.

FOR VERY LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER CLAYS
AND SILTS ALLOW A FULL USE MINIMUM (2 8" HEELCES
WITH MINIMUM 60 INCH EMBEDMENT.



WIND SPEED	WALL HEIGHT	MIN. ANCHOR EMBEDMENT
UP TO 150 MPH	UP TO 16" 0"	3" 25"
	16" 11" TO 26" 0"	5" 0"
	UP TO 18" 0"	3" 25"
151 MPH TO 170 MPH	16" 11" TO 16" 0"	5" 0"
	16" 11" TO 26" 0"	3" 25"
	UP TO 18" 0"	5" 0"
171 MPH TO 180 MPH	16" 11" TO 16" 0"	5" 0"
	16" 11" TO 26" 0"	6" 50"



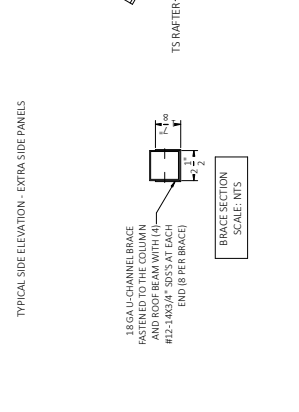
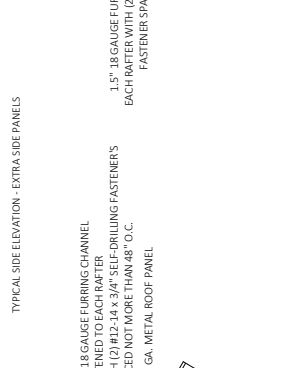
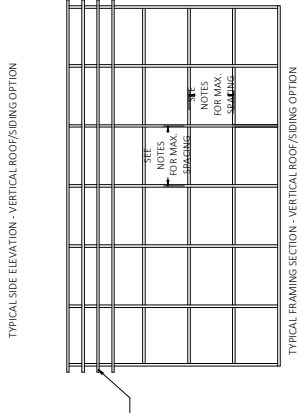
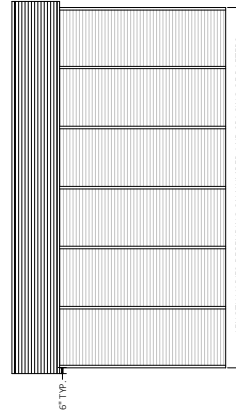
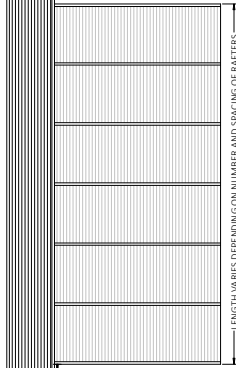
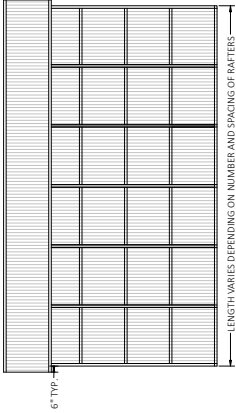
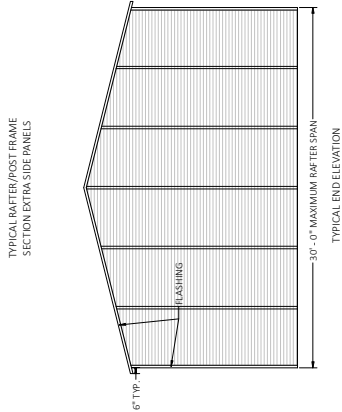
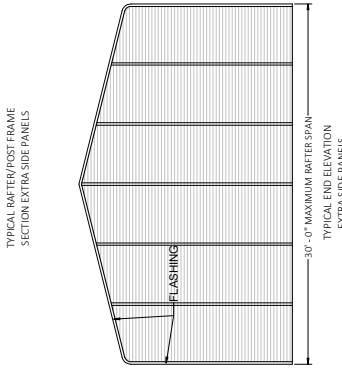
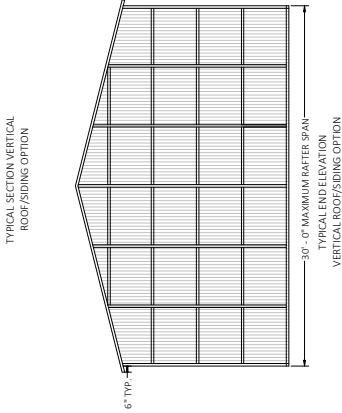
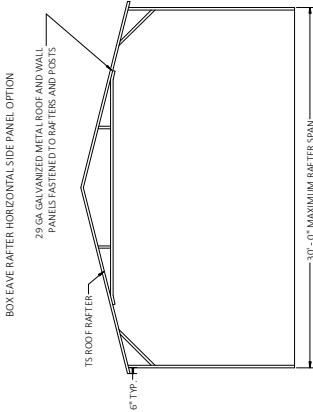
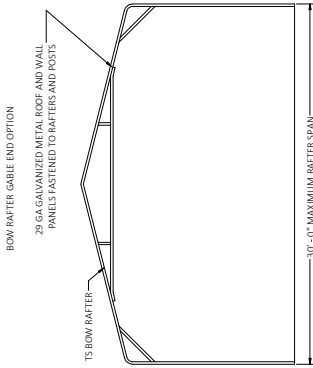
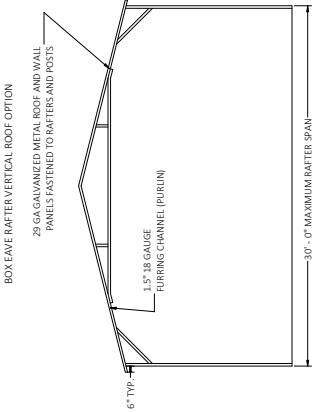
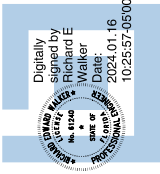
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PROJECT NO. 2322771-30-E
CA CERT. #30782

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

PROJECT DESCRIPTION:

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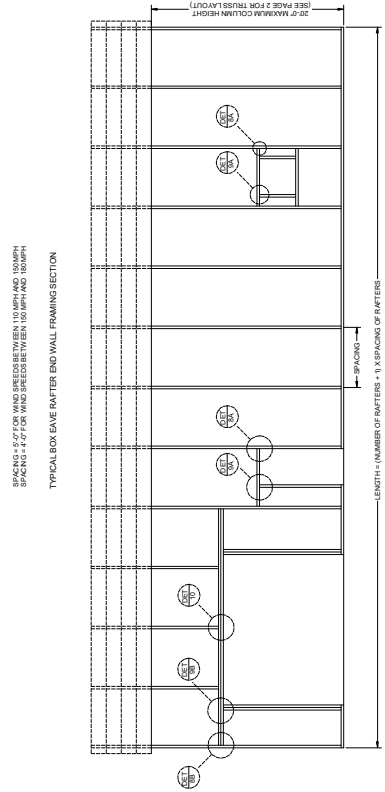
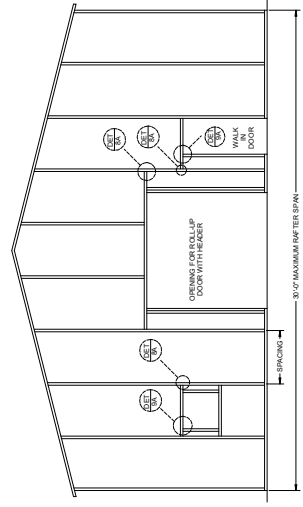
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18 GA U-CHANNEL BRACE FASTENED TO THE COLUMN AND ROOF BEAM WITH (4) #12-14x24\"/>

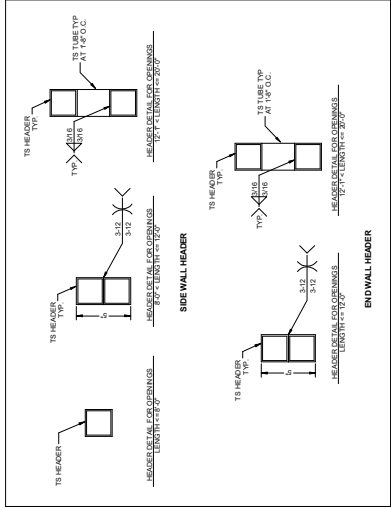
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BRACE SECTION
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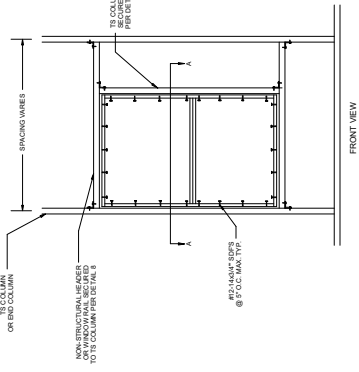
ROOF PANEL ATTACHMENT
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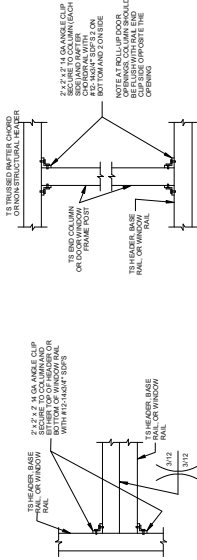
TYPICAL BOX EAVE RAFTER SIDE WALL FRAMING SECTION



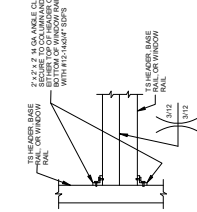
SIDE WALL HEADER and END WALL HEADER



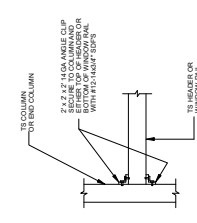
FRONT VIEW



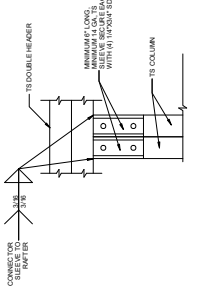
8A NON-STRUCTURAL HEADER OR WINDOW RAIL TO POST CONNECTION DETAIL SCALE: N.T.S.



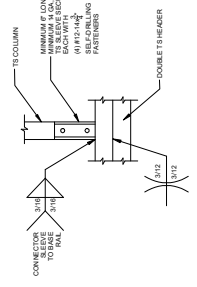
8B DOUBLE HEADER OR WINDOW RAIL TO POST CONNECTION DETAIL SCALE: N.T.S.



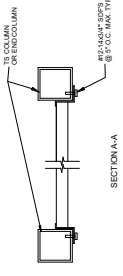
9A POST TO NON-STRUCTURAL HEADER BASE DETAIL SCALE: N.T.S.



9B DOUBLE HEADER/ COLUMN CONNECTION SCALE: N.T.S.



10 POST TO DOUBLE HEADER BASE DETAIL SCALE: N.T.S.



SECTION A-A

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

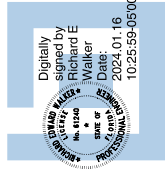
PROJECT DESCRIPTION:
30' WIDE X 20' HIGH
ENCLOSED STRUCTURE

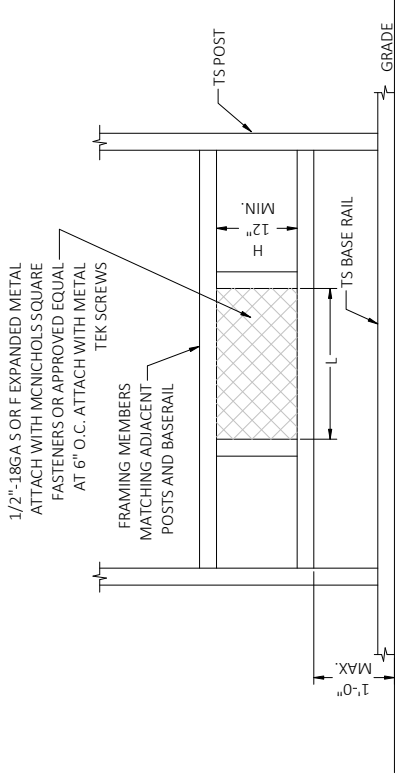
DESIGN DATE:	12/14/2023
REVISION 1:	DATE
REVISION 2:	DATE
SCALE:	NTS

FLORIDA ENGINEERING LLC
4161 TAMAMI TRAIL, UNIT 101
PORT CHARLOTTE, FLORIDA 33952
(941) 391-5980
FLeng.com
Orders@FLeng.com
CA CERT. #30782



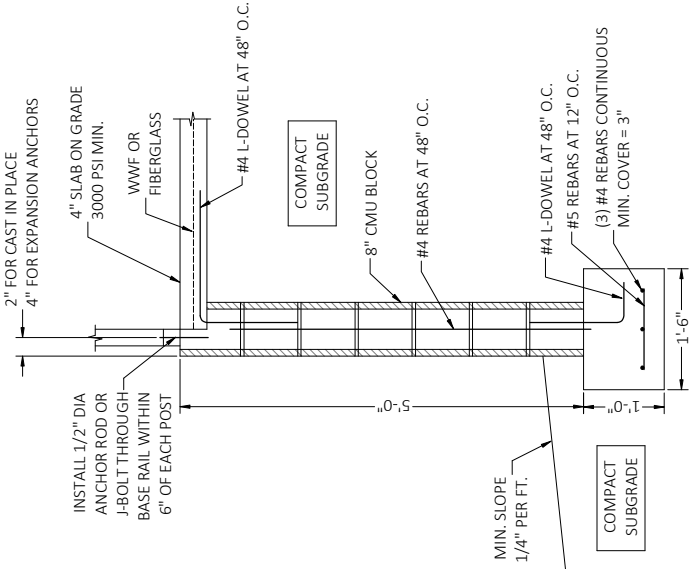
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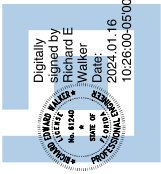
TYPICAL FLOOD VENT DETAIL

- 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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PROJECT NO. 2322771-30-E

CA CERT. #30782

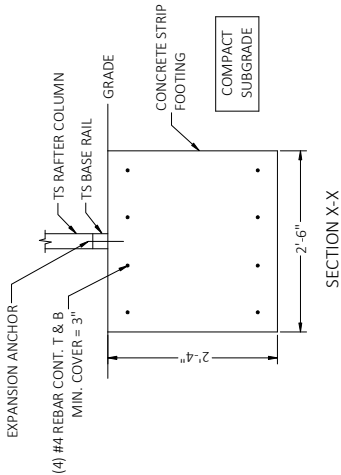
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FLORIDA ENGINEERING LLC

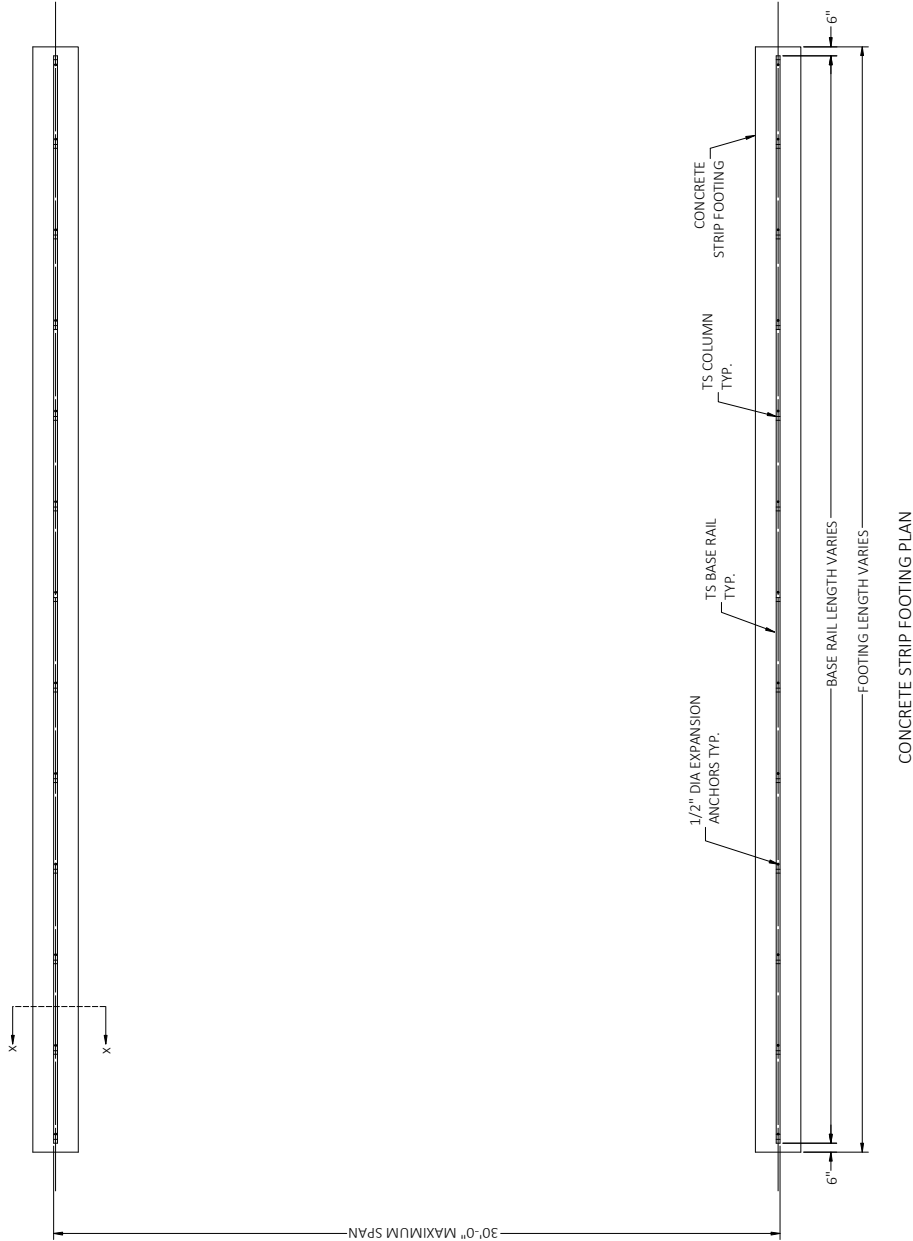
CONTRACTOR:		TUBULAR BUILDING SYSTEMS	
PROJECT DESCRIPTION:		30' WIDE X 20' HIGH ENCLOSED STRUCTURE	
DESIGN DATE:	12/14/2023	REVISION 1:	DATE
REVISION 2:	DATE	REVISION 1:	DATE
SCALE:	NTS	REVISION 2:	DATE

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

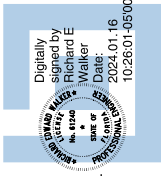
- CONCRETE:
MINIMUM 28-DAY SPECIFIED COMPRESSIVE STRENGTH = 3000 PSI
- REINFORCING STEEL:
1. TURNDOWN REINFORCING STEEL = ASTM A615 GRADE 60
2. SLAB REINFORCEMENT = WELDED WIRE FABRIC PER ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT
3. REINFORCING STEEL COVER = 3" WHERE CASE AGAINST AND PERMANENTLY EXPOSED 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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PROJECT NO. 2322771-30-E

CA CERT. #30782

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
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SCALE:	NTS