

GENERAL NOTES

1. DESIGN IS FOR MAXIMUM 30'-0" WIDE X 20'-0" EAVE HEIGHT FULLY OPEN 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. AISC 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 RAFTER/POST AND END POST SPACING = 5.0 FEET.

HIGH ULTIMATE WIND SPEED 151 TO 180 MPH (NOMINAL WIND SPEED 117 TO 139 MPH): MAXIMUM RAFTER/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 (TS) 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 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.
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/II/III

R = 3.25 Ie = 1.0

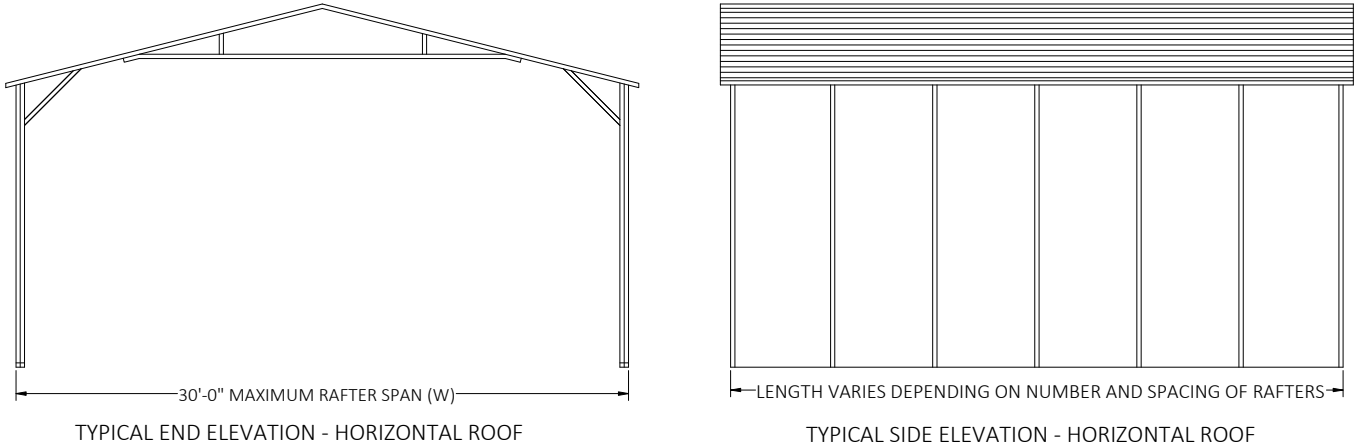
Sds = 0.087 g V = CsW

Sdi = 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.

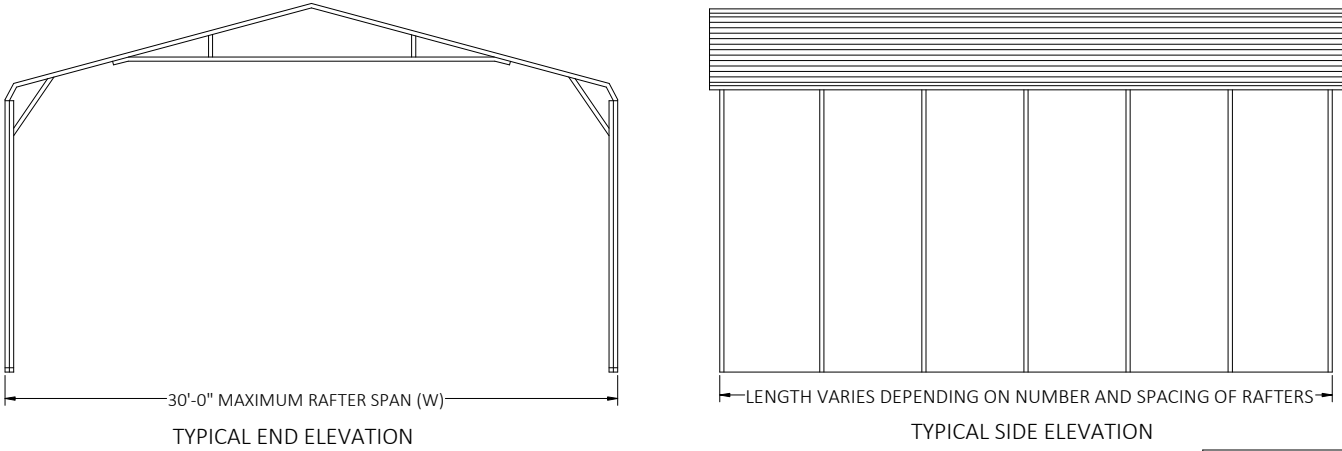
OPEN METAL BUILDING DESIGN

MAXIMUM 30'-0" WIDE X 20'-0" EAVE HEIGHT

BOX/BOW EAVE FRAME



BOX EAVE FRAME RAFTER OPEN BUILDING



BOW FRAME RAFTER OPEN BUILDING

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

DIGITAL CERTIFICATION NOTES:

1. THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SHALL REMAIN IN DIGITAL FORMAT, SHALL BE VERIFIED BY ELECTRONIC MEANS & PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED.

2. THIS DOCUMENT HAS BEEN CREATED BY FLORIDA ENGINEERING LLC FOR TUBULAR BUILDING SYSTEMS ONLY. IT SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF FLORIDA ENGINEERING LLC AND TUBULAR BUILDING SYSTEMS.

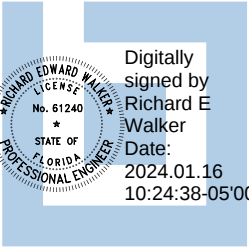
3. ALTERATIONS, ADDITIONS OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE FLORIDA ENGINEERING LLC'S CERTIFICATION.

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.

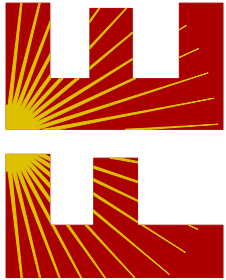
5. CONTRACTOR MUST NOT DEVIATE FROM THE CONDITIONS DETAILED ON THESE PLANS.

6. CONSTRUCTION SAFETY AT THE SITE IS THE CONTRACTOR'S RESPONSIBILITY.

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FLORIDA ENGINEERING LLC
4161 TAMiami TRAIL, UNIT 101
PORT CHARLOTTE, FLORIDA 33952
(941) 391-5980
FLEng.com
Orders@FLEng.com



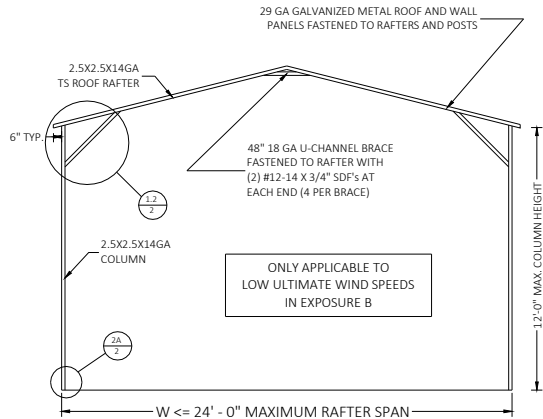
CA CERT. #30782

PROJECT NO. 2322771-30-O

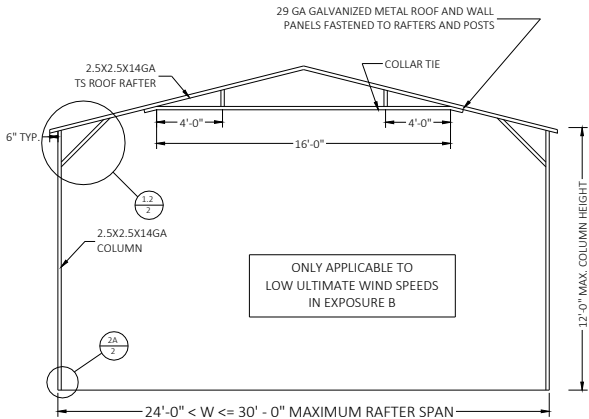
CONTRACTOR:
TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE,
LAKE CITY, FL 32025

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

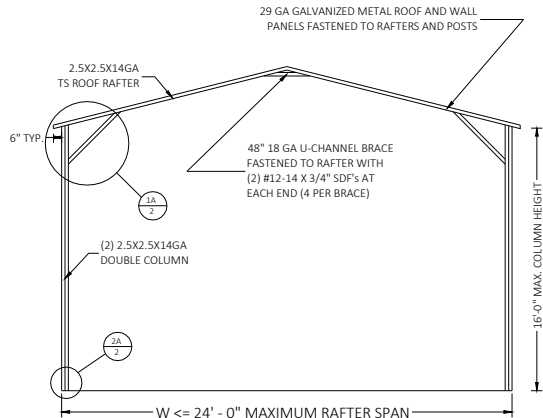
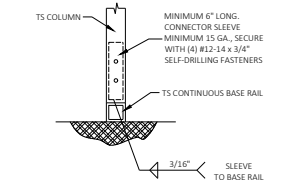
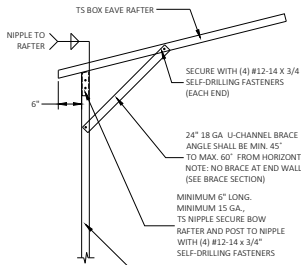
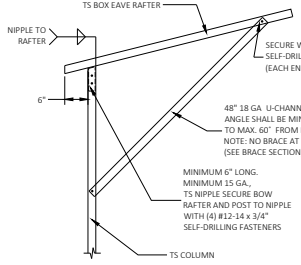
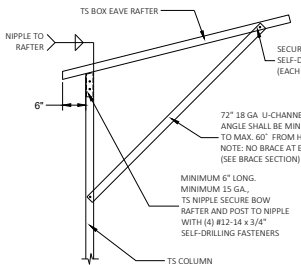
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REVISION 1:	DATE
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SCALE:	NTS



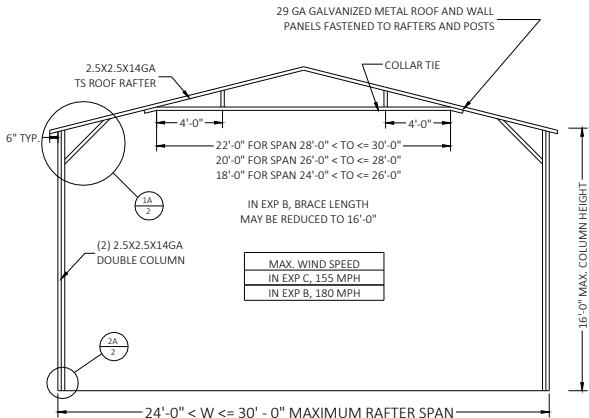
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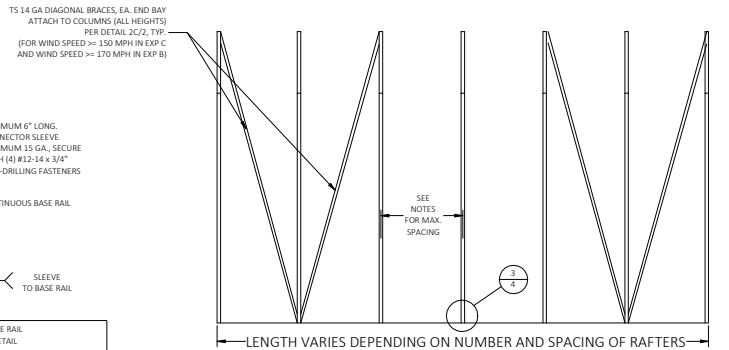
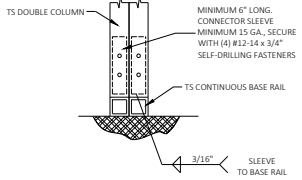
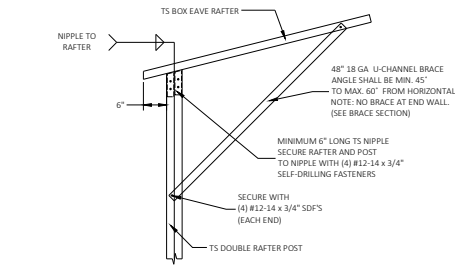
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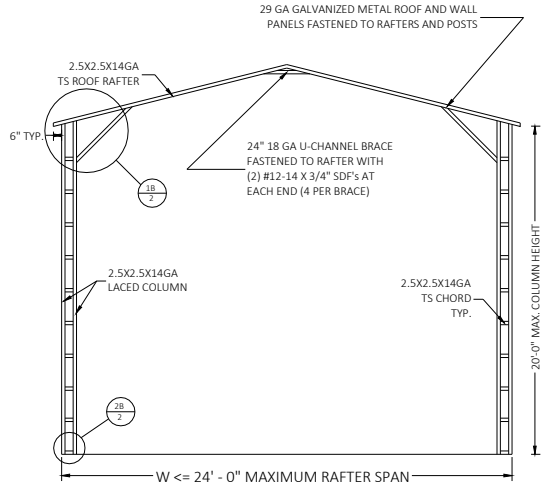
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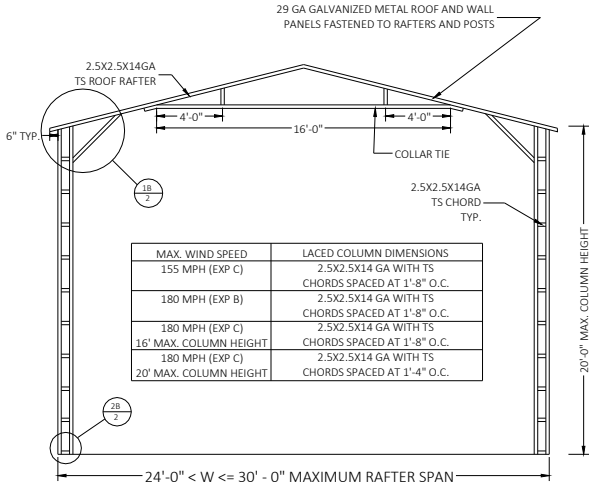
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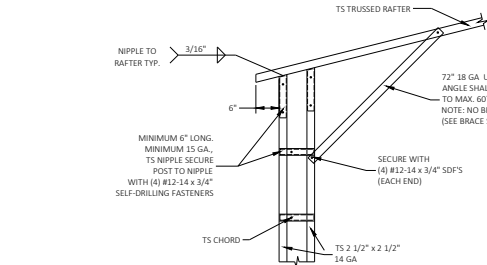
TYPICAL RAFTER/COLUMN SIDE FRAME SECTION



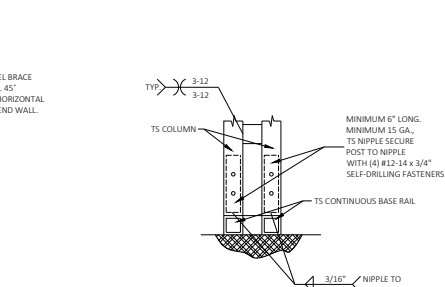
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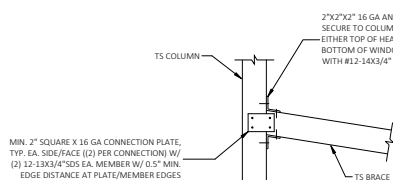
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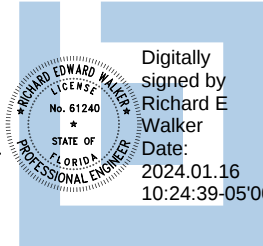


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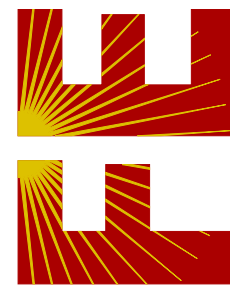


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4161 TAMiami TRAIL, UNIT 101
PORT CHARLOTTE, FLORIDA 33952
(941) 391-5980
FLEng.com
Orders@FLEng.com



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

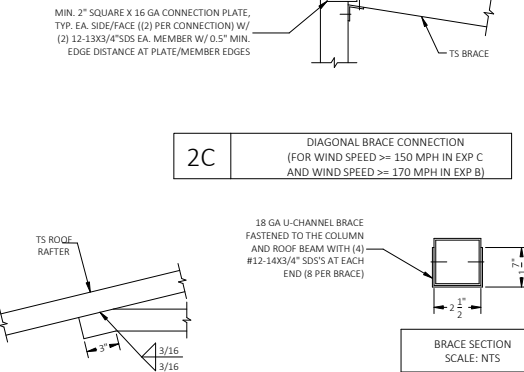
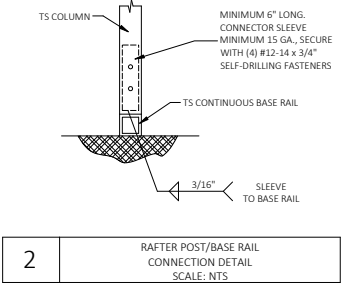
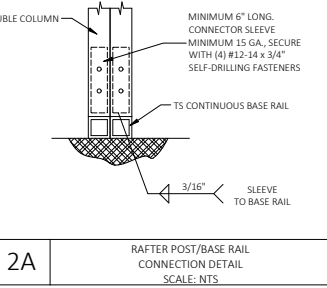
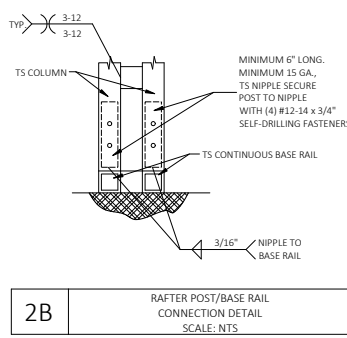
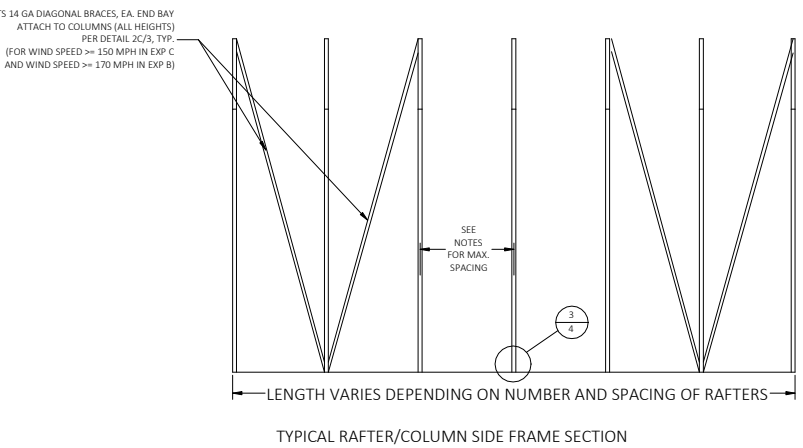
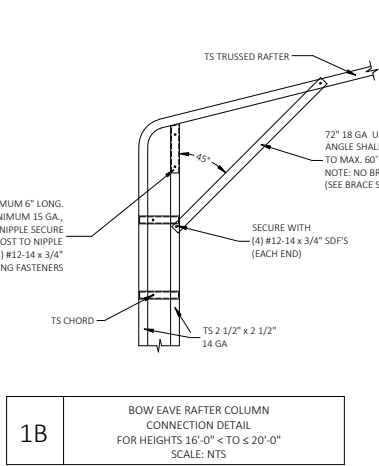
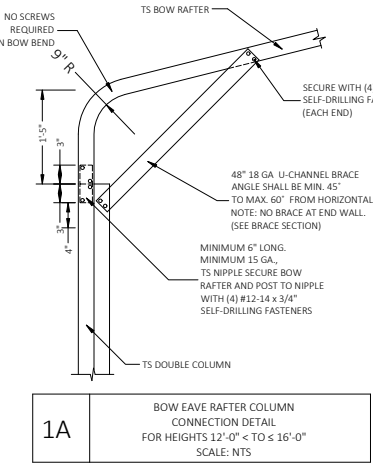
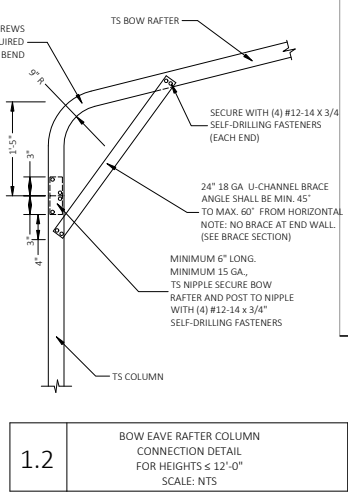
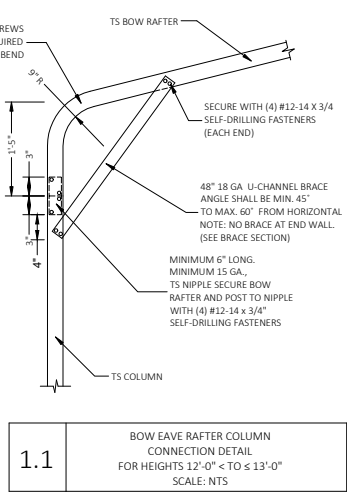
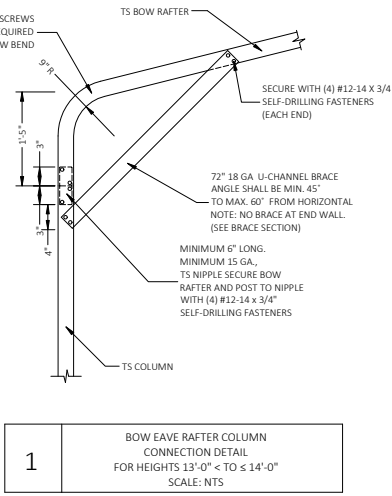
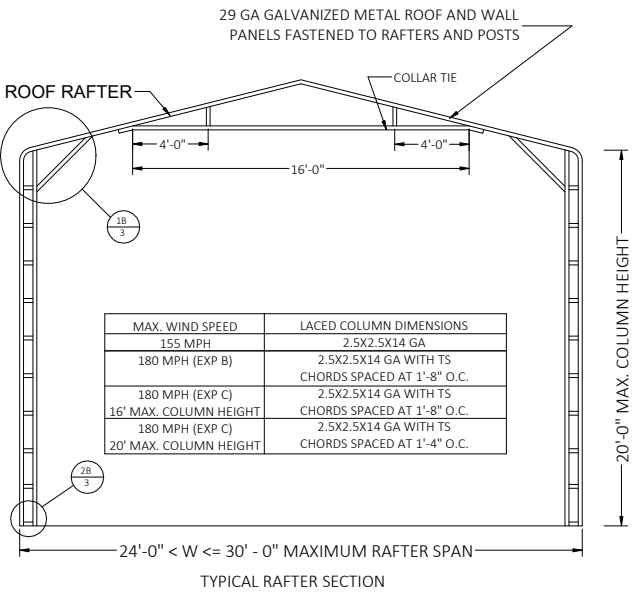
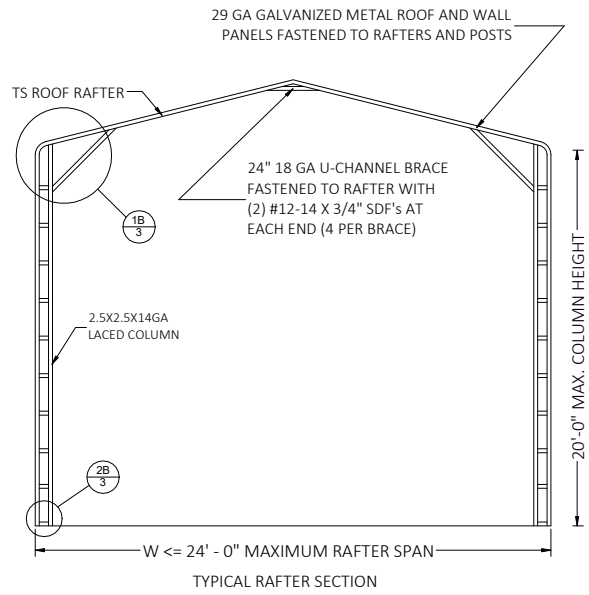
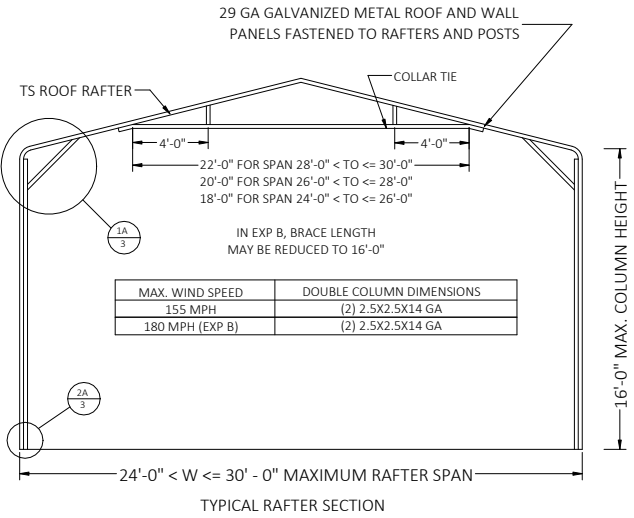
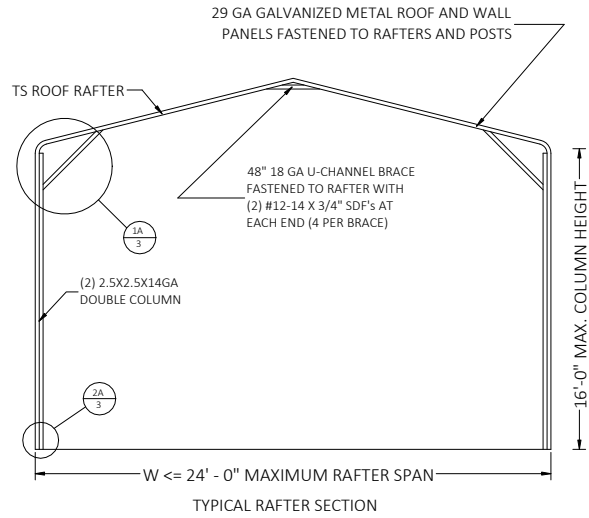
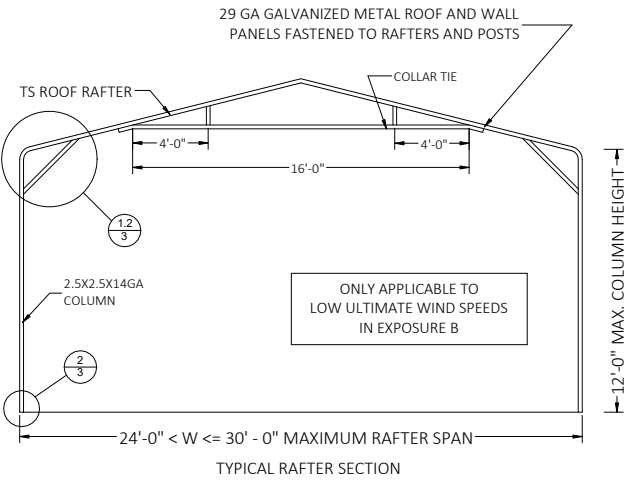
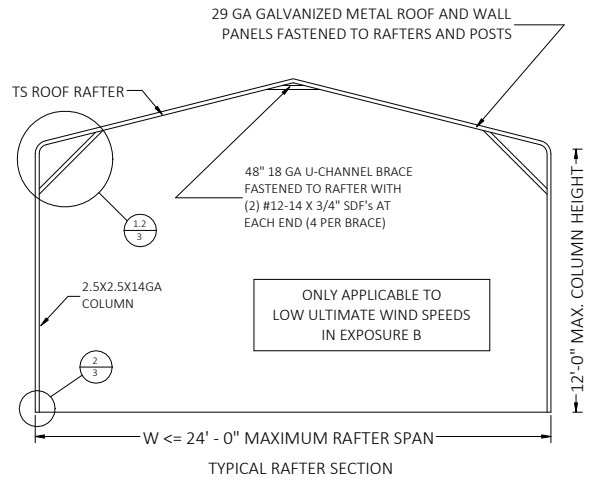
PROJECT DESCRIPTION:

30' WIDE X 20' HIGH
OPEN STRUCTURE

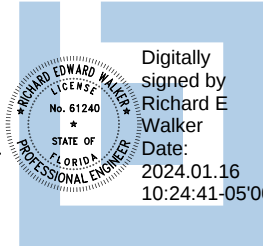
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REVISION 1:	DATE	2
REVISION 2:	DATE	
SCALE:	NTS	

CA CERT. #30782

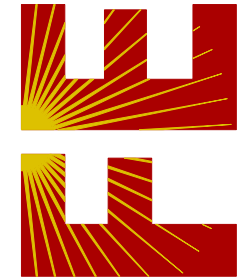
PROJECT NO. 2322771-30-O



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4161 TAMiami TRAIL, UNIT 101
PORT CHARLOTTE, FLORIDA 33952
(941) 391-5980
FLEng.com
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CONTRACTOR:
TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE,
LAKE CITY, FL 32025

PROJECT DESCRIPTION:

30' WIDE X 20' HIGH
OPEN STRUCTURE

DESIGN DATE:	12/14/2023	PAGE :
REVISION 1:	DATE	3
REVISION 2:	DATE	
SCALE:	NTS	

CA CERT. #30782

PROJECT NO. 2322771-30-0

BASE RAIL ANCHORAGE OPTIONS FOR LOW AND HIGH WIND SPEED

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

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 1-1/2 INCHES.

REINFORCING STEEL:

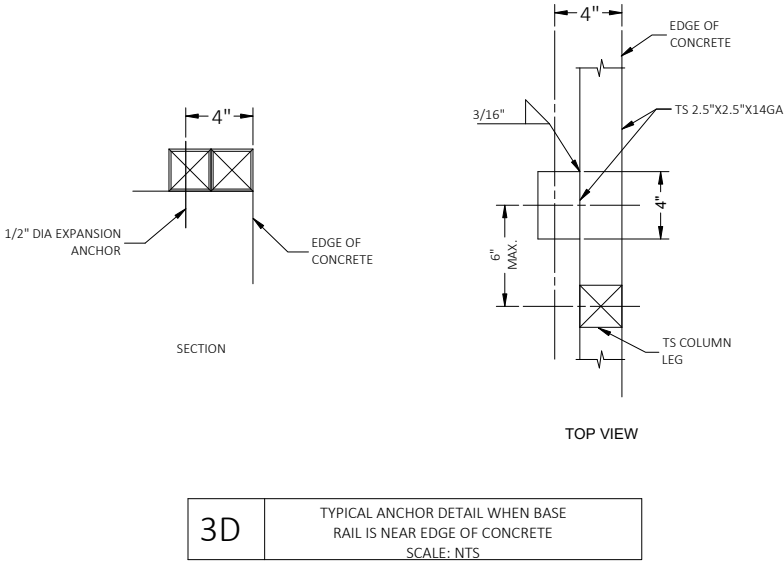
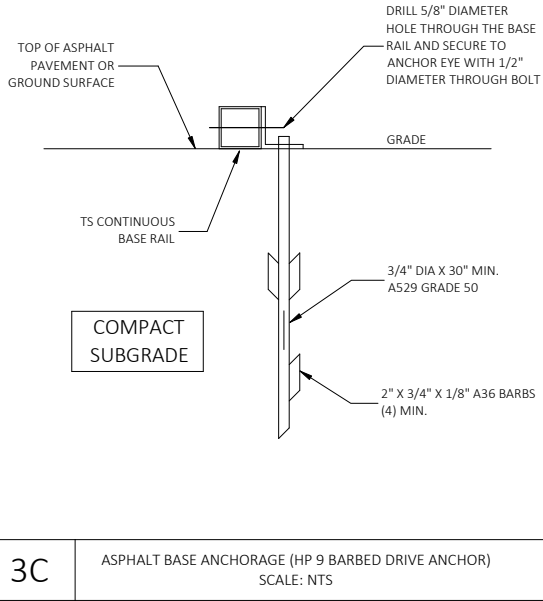
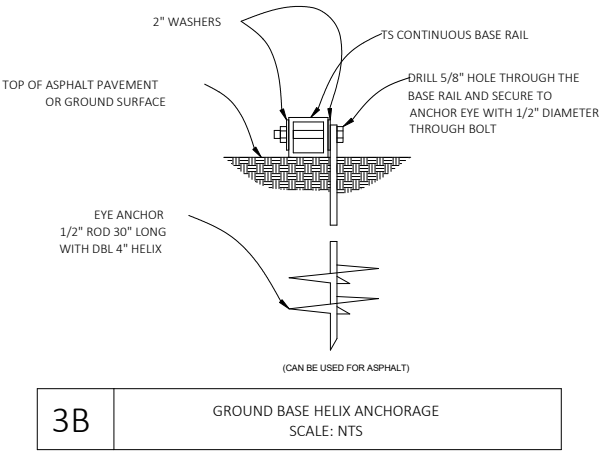
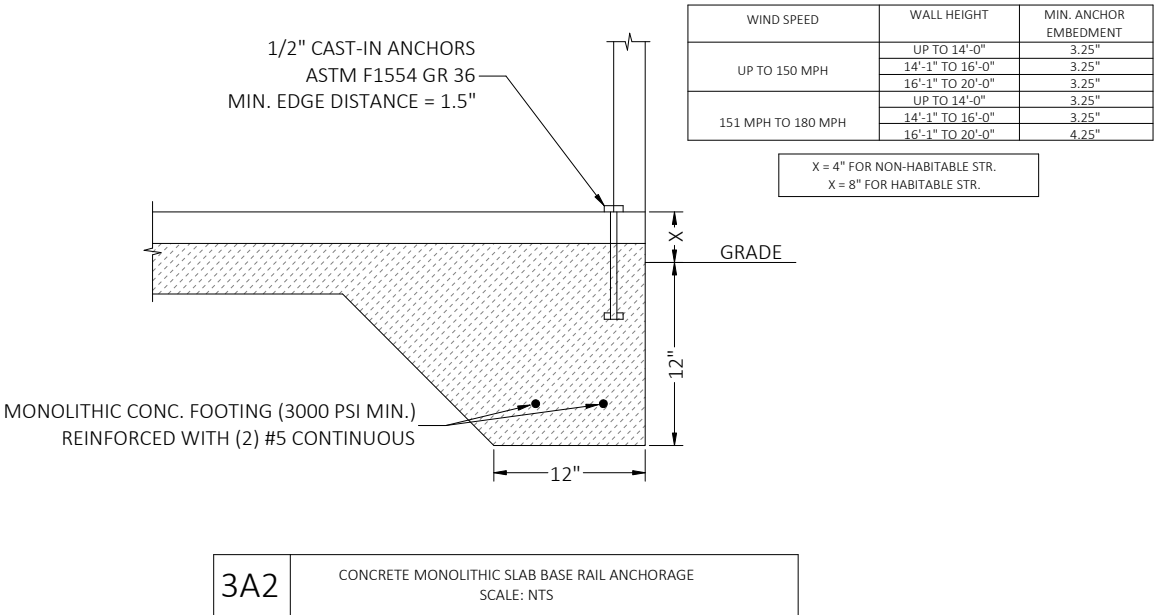
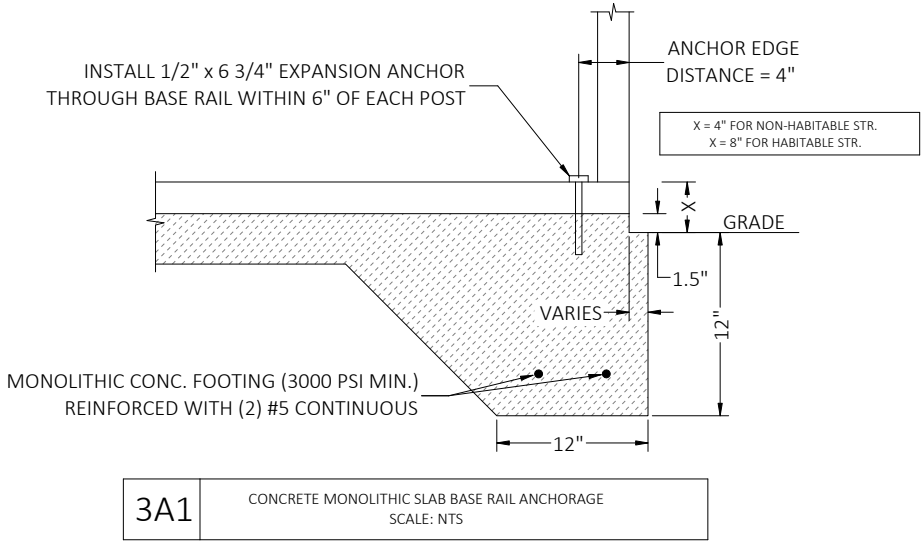
THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT.

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

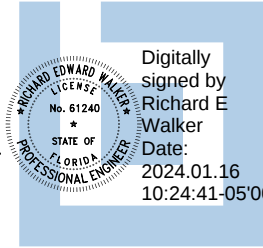
1. IT IS BENT COLD;
2. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT;
3. THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETERS.
4. MINIMUM REQUIRED LAP LENGTH SHALL NOT BE LESS THAN 57-BAR DIAMETERS.

HELIX ANCHOR NOTES

1. FOR VERY DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT.
2. FOR CORAL USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT.
3. FOR MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS AND CLAYS USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT.
4. FOR LOOSE TO MEDIUM DENSE COARSE SANDS, FIRM TO STIFF CLAYS AND SILTS ALLUVIAL FILL USE MINIMUM (2) 6" HELICES WITH MINIMUM 50 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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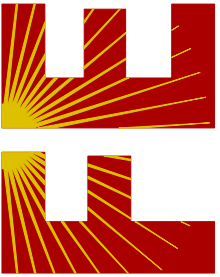
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CA CERT. #30782



PROJECT NO. 2322771-30-O

CONTRACTOR:

TUBULAR BUILDING SYSTEMS

631 SE INDUSTRIAL CIRCLE,

LAKE CITY, FL 32025

PROJECT DESCRIPTION:

30' WIDE X 20' HIGH

OPEN STRUCTURE

DESIGN DATE:

12/14/2023

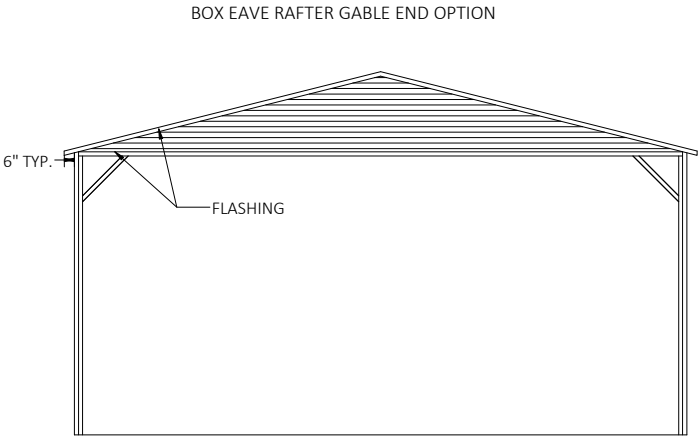
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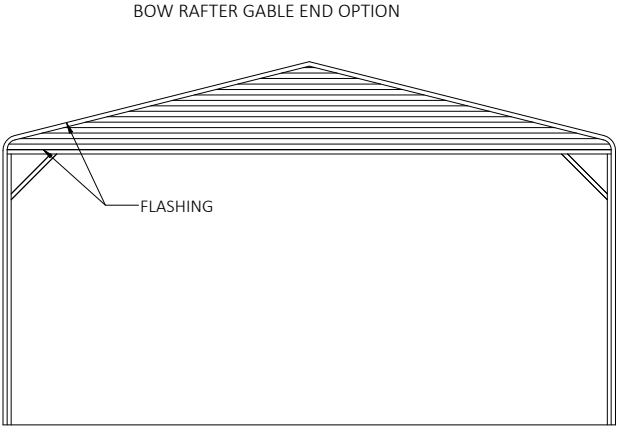
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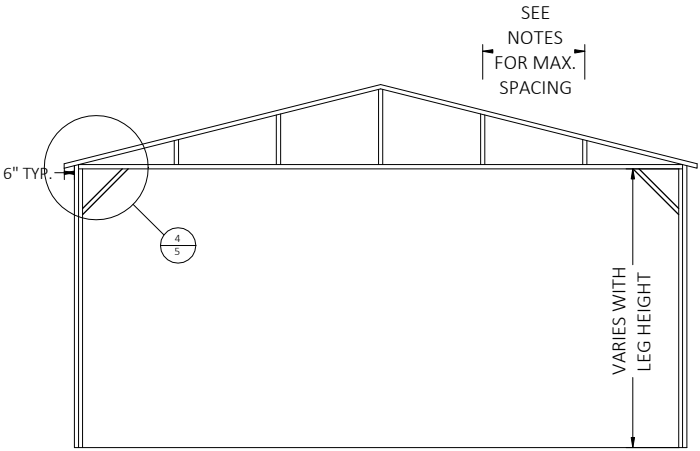
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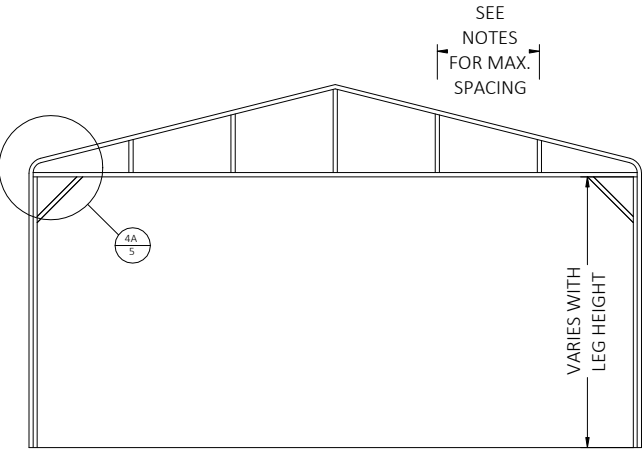
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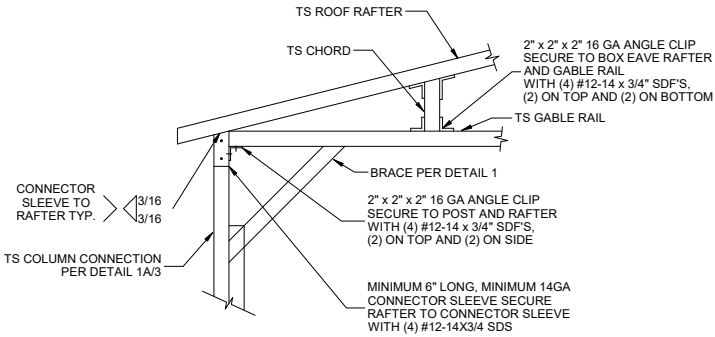
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END WALL FRAMING SECTION



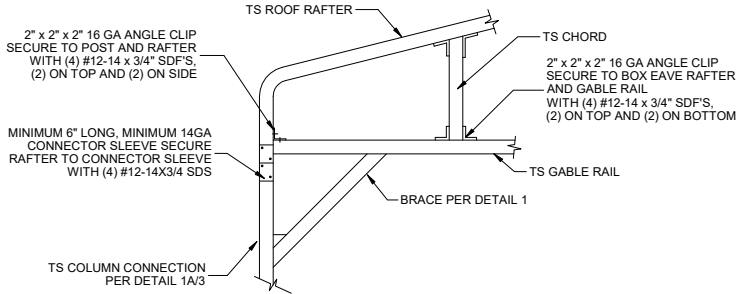
TYPICAL BOX EAVE RAFTER
END WALL OPENINGS FRAMING SECTION



TYPICAL BOW EAVE RAFTER
END WALL OPENINGS FRAMING SECTION

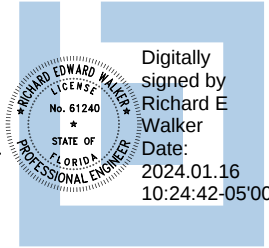


4 BOX EAVE RAFTER GABLE RAIL TO RAFTER POST
CONNECTION DETAIL
SCALE: NTS

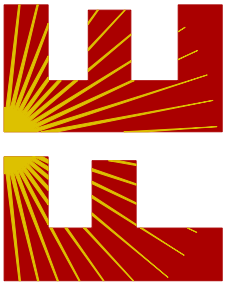


4A BOW EAVE RAFTER GABLE RAIL TO RAFTER POST
CONNECTION DETAIL
SCALE: NTS

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4161 TAMiami TRAIL, UNIT 101
PORT CHARLOTTE, FLORIDA 33952
(941) 391-5980
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CA CERT. #30782

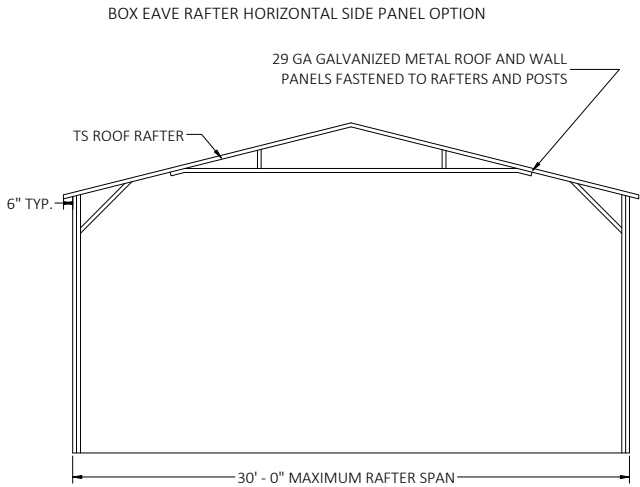
PROJECT NO. 2322771-30-O

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

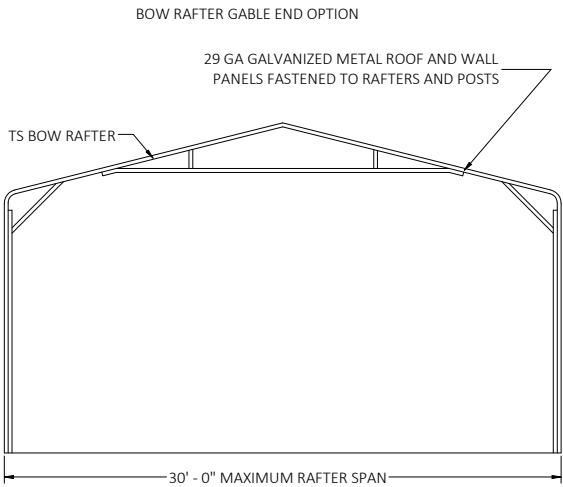
PROJECT DESCRIPTION:

30' WIDE X 20' HIGH
OPEN STRUCTURE

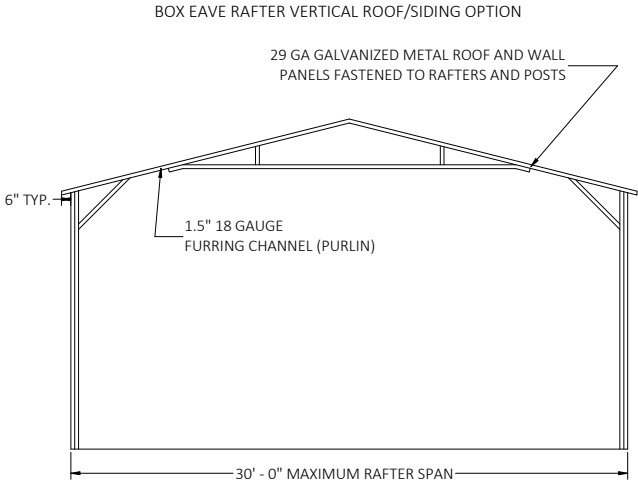
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REVISION 1:	DATE	PAGE : 5
REVISION 2:	DATE	
SCALE:	NTS	



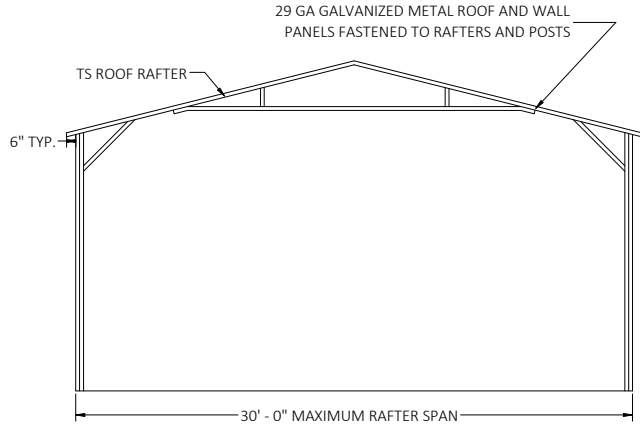
TYPICAL RAFTER/POST FRAME
SECTION EXTRA SIDE PANELS



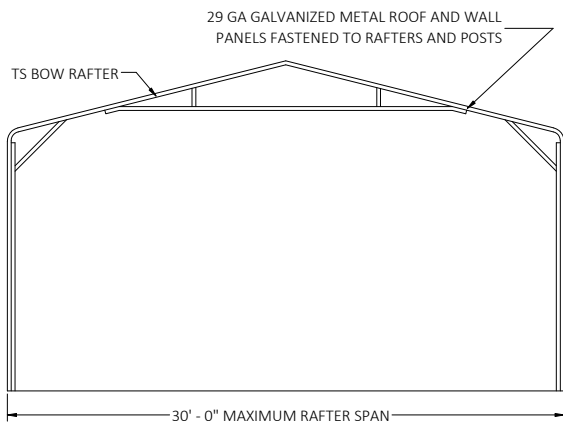
TYPICAL RAFTER/POST FRAME
SECTION EXTRA SIDE PANELS



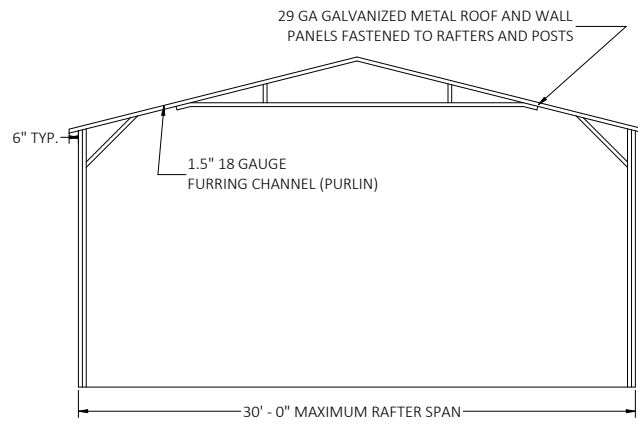
TYPICAL SECTION VERTICAL
ROOF/SIDING OPTION



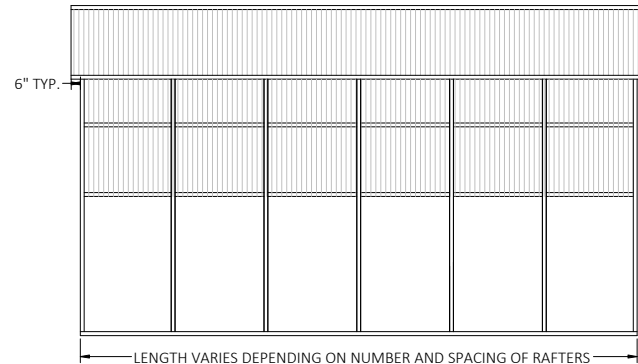
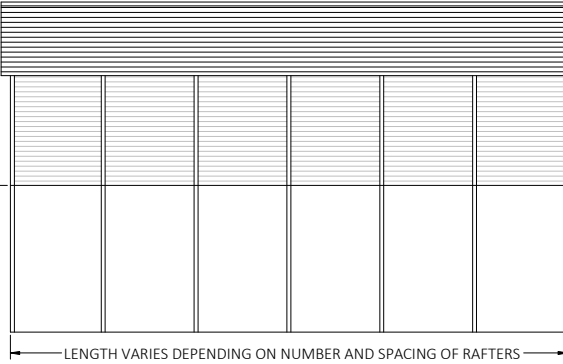
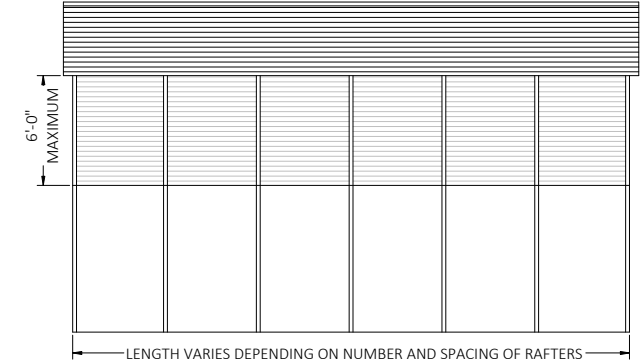
TYPICAL END ELEVATION
EXTRA SIDE PANELS



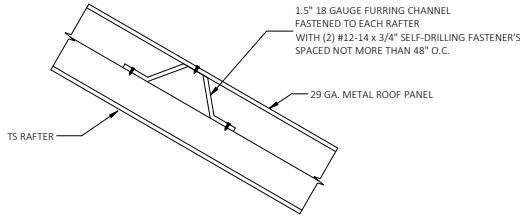
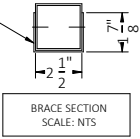
TYPICAL END ELEVATION
EXTRA SIDE PANELS



TYPICAL END ELEVATION
VERTICAL ROOF/EXTRA SIDE PANEL OPTION

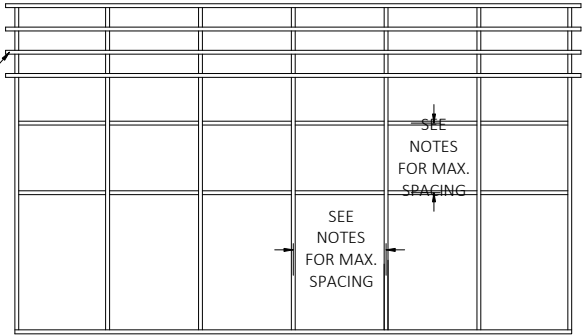


18 GA U-CHANNEL BRACE
FASTENED TO THE COLUMN
AND ROOF BEAM WITH (4)
#12-14X3/4" SDS'S AT EACH
END (8 PER BRACE)



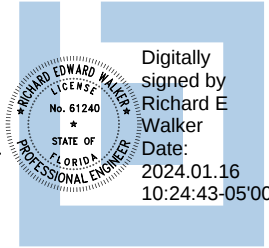
ROOF PANEL ATTACHMENT
SCALE: NTS

1.5" 18 GAUGE FURRING CHANNEL FASTENED TO
EACH RAFTER WITH (2) #12-14 x 3/4" SELF-DRILLING
FASTENER SPACED NOT MORE THAN 48" O.C

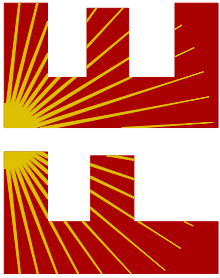


TYPICAL FRAMING SECTION - VERTICAL ROOF/SIDING OPTION

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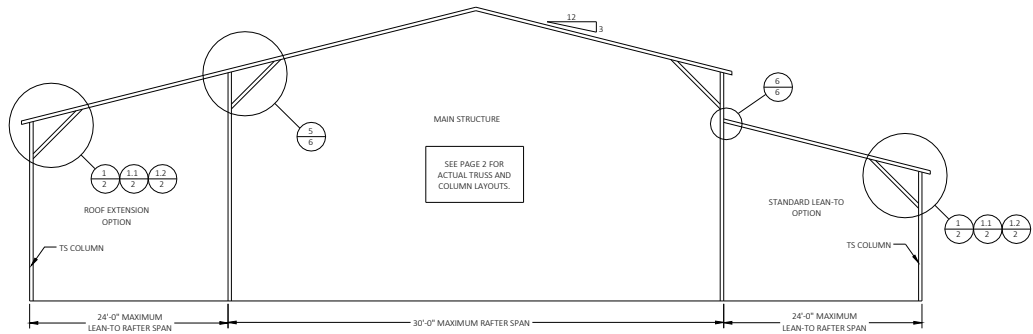
CONTRACTOR:
TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE,
LAKE CITY, FL 32025

PROJECT DESCRIPTION:

30' WIDE X 20' HIGH
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BOX EAVE RAFTER LEAN-TO OPTIONS

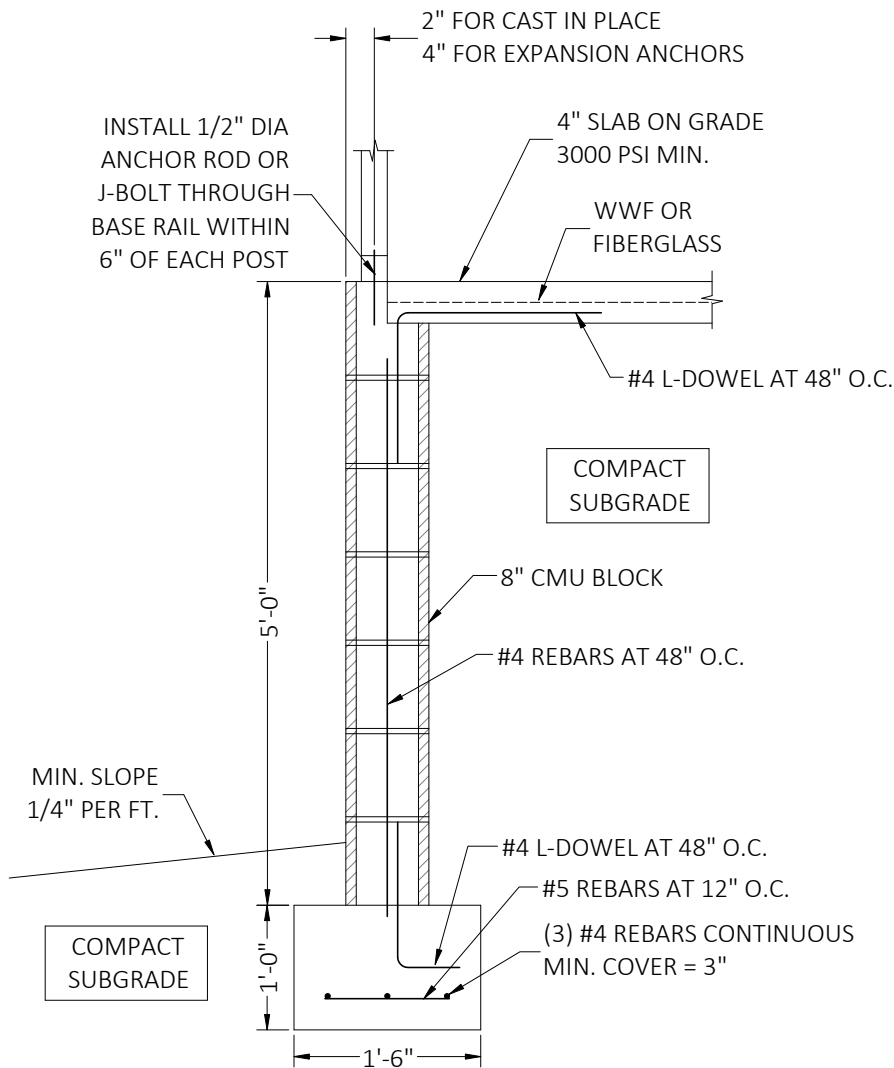




TYPICAL FLOOD VENT DETAIL

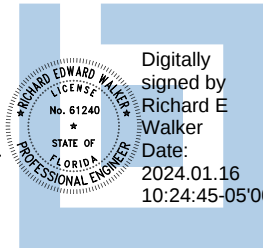
NOTES:

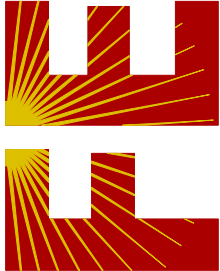
1. MINIMUM VENT SPACE REQUIRED = 1 SQ. IN. OF FREE OPEN VENT AREA PER SQ. FT. OF BUILDING AREA.
2. PROVIDE A MINIMUM OF TWO OPENINGS ON DIFFERENT SIDES OF EACH ENCLOSED BUILDING.
3. APPLY A 1.3 FACTOR WHEN CALCULATING TOTAL OPEN AREA WHEN USING 1/2"-18GA S OR F EXPANDED METAL.
4. TOTAL OPEN AREA OF VENT = 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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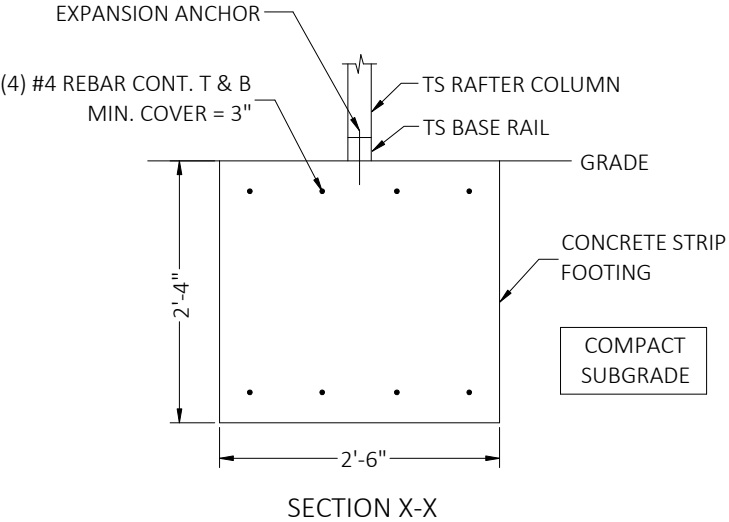
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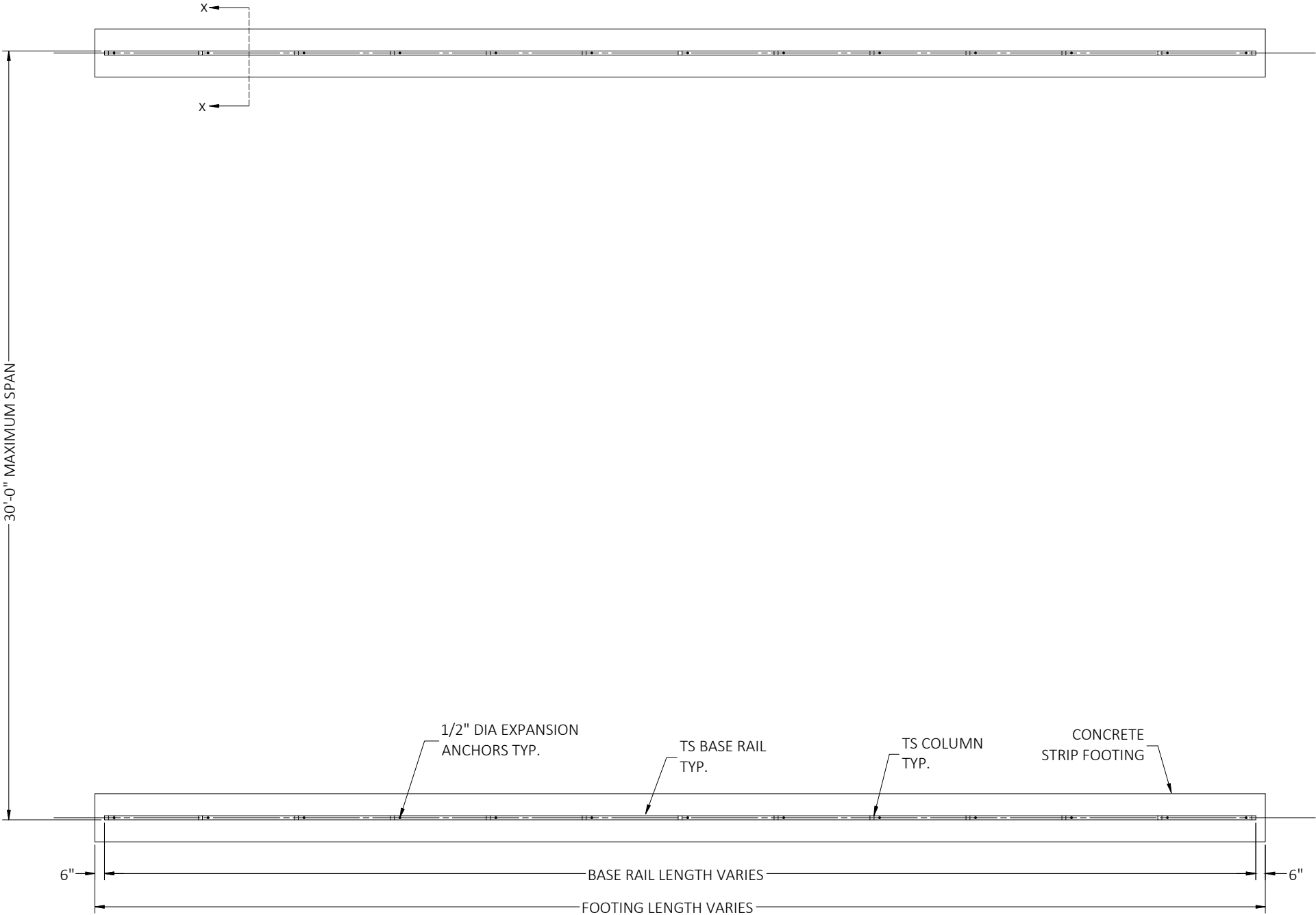
GENERAL NOTES
CONCRETE MONOLITHIC SLAB DESIGN IS BASED ON A MINIMUM SOIL BEARING CAPACITY OF 1500 PSF.

CONCRETE
MINIMUM 28-DAY SPECIFIED COMPRESSIVE STRENGTH = 3000 PSI

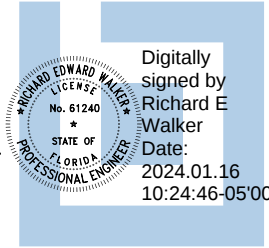
- REINFORCING STEEL
1. TURNDOWN REINFORCING STEEL = ASTM A615 GRADE 60
 2. SLAB REINFORCEMENT = WELDED WIRE FABRIC PER ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT
 3. REINFORCING STEEL COVER = 3” WHERE CASE AGAINST AND PERMENTLY EXPOSED TO SOIL OR WATER, 1.5” EVERYWHERE ELSE.
 4. REINFORCEMENT IS BENT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

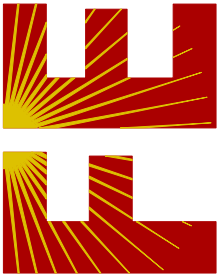


OPTIONAL CONCRETE STRIP FOOTING



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