- 1. AISC STEEL CONSTRUCTION MANUAL (15TH EDITION)
- 2. TMS 402-16: BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES
- 3. AWS D1.1: STRUCTURAL WELDING
- 4. ASCE 7-22: MINIMUM DESIGN LOADS ON BUILDINGS AND OTHER STRUCTURES
- 5. ACI 318-19: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE

DESIGN LOADS

- 1. DEAD LOAD = 1.5 PSF
- 2. ROOF LIVE LOAD = 12 PSF
- 3. WIND LOAD
- A. RISK CATEGORY = II
- B. WIND EXPOSURE CATEGORY = C C. ULTIMATE WIND SPEED = 120 MPH
 - NOMINAL WIND SPEED = 94 MPH

DRAWING INDEX

PAGE NO.	DESCRIPTION
1	TITLE PAGE WITH INDEX
2	TRUSS DESIGN FOR RAFTER SPAN
3	CONNECTION DETAILS (1-3)
4	BASE RAIL AND FOUNDATION ANCHORAGE
5	RAFTER END WALL, SIDE WALL AND OPENING FRAMING
6	CONNECTION DETAILS (5-17)
7	BOX EAVE RAFTER LEAN-TO OPTIONS
8	CONNECTION DETAILS (19-21)
9	BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION
10	OPTIONAL HELICAL ANCHORING ON GRADE DETAIL

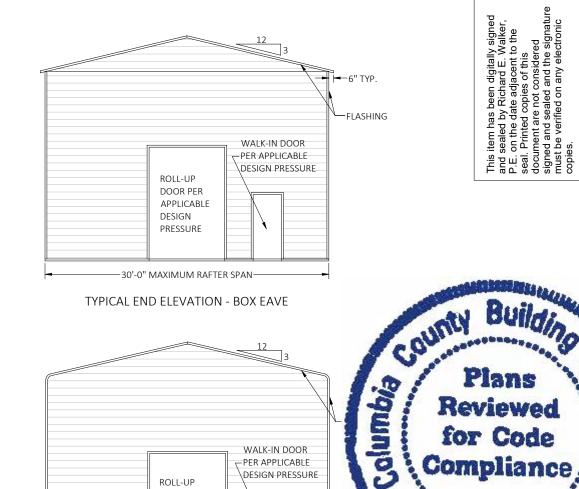
INSTALLATION NOTES AND SPECIFICATIONS

- THESE PLANS BELONG EXCLUSIVELY TO THE STRUCTURE, INCLUDING MAIN WIND FORCE RESISTING SYSTEM (MWFRS), COMPONENTS AND CLADDING (C&C), AND BASE RAIL ANCHORAGE OTHER DESIGN ISSUES INCLUDING BUT NOT LIMITED TO PROPERTY SET-BACKS ELECTRICAL, PLUMBING, INGRESS/EGRESS, FINISH FLOOR SLOPES AND ELEVATIONS, OR OTHER LOCAL ZONING REQUIREMENTS ARE THE LIABILITY OF OTHERS.
- 2. THESE STRUCTURES ARE ENGINEERED AS CAPABLE OF SUPPORTING DEAD LOAD OF THE STRUCTURE AND LIVE AND WIND LOADS. UPGRADES NOT SPECIFICALLY ADDRESSED HEREIN, SUCH AS WINDOWS, DOORS, OR ANOTHER COMPONENT NOT LISTED IN THE BUILDING CODE APROVED PRODUCT LIST, AND NOT PROVIDED AND INSTALLED BY THE CONTRACTOR, WHICH CAUSE ADDITIONAL LOADS ON THE STRUCTURE SHALL BE AT THE OWNER'S RISK. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR FAILURE OR STRUCTURAL DAMAGE DUE TO THE EXTRA LOAD.
- 3. ALL STEEL TUBING SHALL BE 50 KSI GALVANIZED STEEL WITH MINIMUM YIELD STRENGTH OF 54 KSI, ALL FASTENERS SHALL BE ZINC COATED HARDWARE
- 4. END WALL COLUMNS (POST) AND SIDE WALL COLUMNS ARE EQUIVALENT IN SIZE AND
- 5. SPECIFICATIONS APPLICABLE TO 29 GA DUTCH LAP METAL PANELS FASTENED DIRECTLY TO 2.5"X2.5"X14 GA/2.5"X2.5"X12GA TUBE STEEL (TS) FRAMING MEMBERS FOR VERTICAL PANELS. 29 GA METAL PANELS SHALL BE FASTENED DIRECTLY TO 18 GA HAT CHANNELS U.N.O.
- 6. AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR PURLINS, AND POSTS, INTERIOR = 9" AND END = 6" MAX.
- 7. FASTENERS CONSIST OF #12-14X3/4" SELF-DRILLING SCREWS (SDS), USE CONTROL SEAL WASHER WITH EXTERIOR FASTENERS. SPECIFICATIONS APPLICABLE ONLY FOR MEAN ROOF HEIGHT OF 20'-0" OR LESS, AND ROOF SLOPES OF 14° (3:12 PITCH) OR LESS. SPACING REQUIREMENTS FOR OTHER ROOF HEIGHTS AND/OR SLOPES MAY VARY
- 8. ANCHORS SHALL BE INSTALLED THROUGH THE BASE RAIL WITHIN 6" OF EACH RAFTER
- 9. STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBARS WITH WELDED NUT X 36" LONG AND MAY BE USED IN SUITABLE SOILS, OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED. SOIL NAILS MAY BE USED FOR WIND SPEEDS LESS THAN OR EQUAL TO 145 MPH.
- 10. RAFTER SPACING IS 5'-0" FOR WIND SPEEDS BETWEEN 110 MPH AND 140 MPH AND 4'-0" FOR WIND SPEEDS BETWEEN 140 MPH AND 170 MPH.
- 11. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE: SOIL SITE CLASS = D

RISK CATEGORY I

le = 1.0 Sds = 0.066 g V = CsW Sdi = 0.053 g

ENCLOSED METAL BUILDING DESIGN MAXIMUM 30'-0" WIDE X 100'-0" LONG X 20'-0" HIGH (EAVE) BOX EAVE FRAME / BOW EAVE FRAME



WALK-IN DOOR

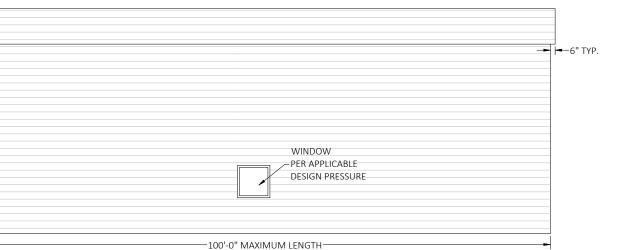
PER APPLICABLE

DESIGN PRESSURE

TYPICAL END ELEVATION - BOW EAVE

-30'-0" MAXIMUM RAFTER SPAN-

ROLL-UP DOOR PER APPLICABLE DESIGN PRESSURE



TYPICAL SIDE ELEVATION - HORIZONTAL ROOF

THE ENGINEERING ON THESE PLANS IS SITE SPECIFIC FOR (1) STRUCTURE ONLY AT THE PROVIDED ADDRESS(ES).

for Code

Compliance :

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

Digitally

signed by

Richard E

2024.08.22

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Walker

Date:

2423289

PROJECT NO.

BEST METAL BUILDINGS LLC 484 NW TURNER AVE LAKE CITY FL 32055 PERRY 699 SW SABRE AVE. LAKE CITY, FL. 32024 JECT ADDRESS

DESIGN DATE: 08/20/2024 08/21/2024 REVISION 1: **REVISION 2:** DATE SHEET: DRAWN BY: SCALE:

This item has been digitally signed and sealed by Richard E. Walker, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies. No. 61240 MEMBER LEGEND: 1. TS COLUMN = 2.5X2.5X14 GA U.N.O. 2. TRUSS MEMBERS = 2.5X2.5X14 GA U.N.O. 3. KNEE-BRACE = 2.5"X2"X18GA CHANNEL 4. PURLIN = 1.125"X18GA HAT CHANNEL STATE OF ORIDANIA STATE OF 5. TS BRACE = 2.5"X2.5"X14GA TUBE 6. U-BRACE = 2.5"X2"X18GA CHANNEL TRUSS LAYOUT- BOX EAVE TRUSS LAYOUT- BOW EAVE 7. END WALL COLUMN = (2)2.5X2.5X14GA U.N.O. TS BRACE TS BRACE FLORIDA ENGINEERING LLC 4161 TAMIAMI TRAIL, UNIT 101 PORT CHARLOTTE, FLORIDA 33952 (941) 391-5980 FLEng.com Orders@FLEng.com REST 2.5X2.5X14 GA AL COLUMNS TO BE (2). REST 2.5X2.5X14 GA DET 2A DET 2A DET 2A (DET) TS BASE RAIL TS BASE RAIL TS BASE RAIL TS BASE RAIL <24'-0" MAXIMUM RAFTER SPAN -24'-1" TO 30'-0" MAXIMUM RAFTER SPAN-<24'-0" MAXIMUM RAFTER SPAN--24'-1" TO 30'-0" MAXIMUM RAFTER SPAN-TS BRACE TS DOUBLE COLUMN TS DOUBLE COLUMN TS DOUBLE COLUMN TS DOUBLE COLUMN DET 2B DET 2B DET 2B TS BASE RAIL TS BASE RAIL TS BASE RAIL TS BASE RAIL <24'-0" MAXIMUM RAFTER SPAN--24'-1" TO 30'-0" MAXIMUM RAFTER SPAN -<24'-0" MAXIMUM RAFTER SPAN--24'-1" TO 30'-0" MAXIMUM RAFTER SPAN TS BRACE (DET) BEST METAL BUILDINGS LLC 484 NW TURNER AVE LAKE CITY FL 32055 TS LADDER COLUMN TS LADDER COLLIMN TS LADDER COLUMN TS LADDER COLUMN TS BASE RAII TS BASE RAII TS BASE RAIL TS BASE RAIL -24'-1" TO 30'-0" MAXIMUM RAFTER SPAN-<24'-0" MAXIMUM RAFTER SPAN--24'-1" TO 30'-0" MAXIMUM RAFTER SPAN-<24'-0" MAXIMUM RAFTER SPAN-

PERRY 699 SW SABRE AVE. LAKE CITY, FL. 32024 PROJECT ADDRESS: 08/20/2024 08/21/2024

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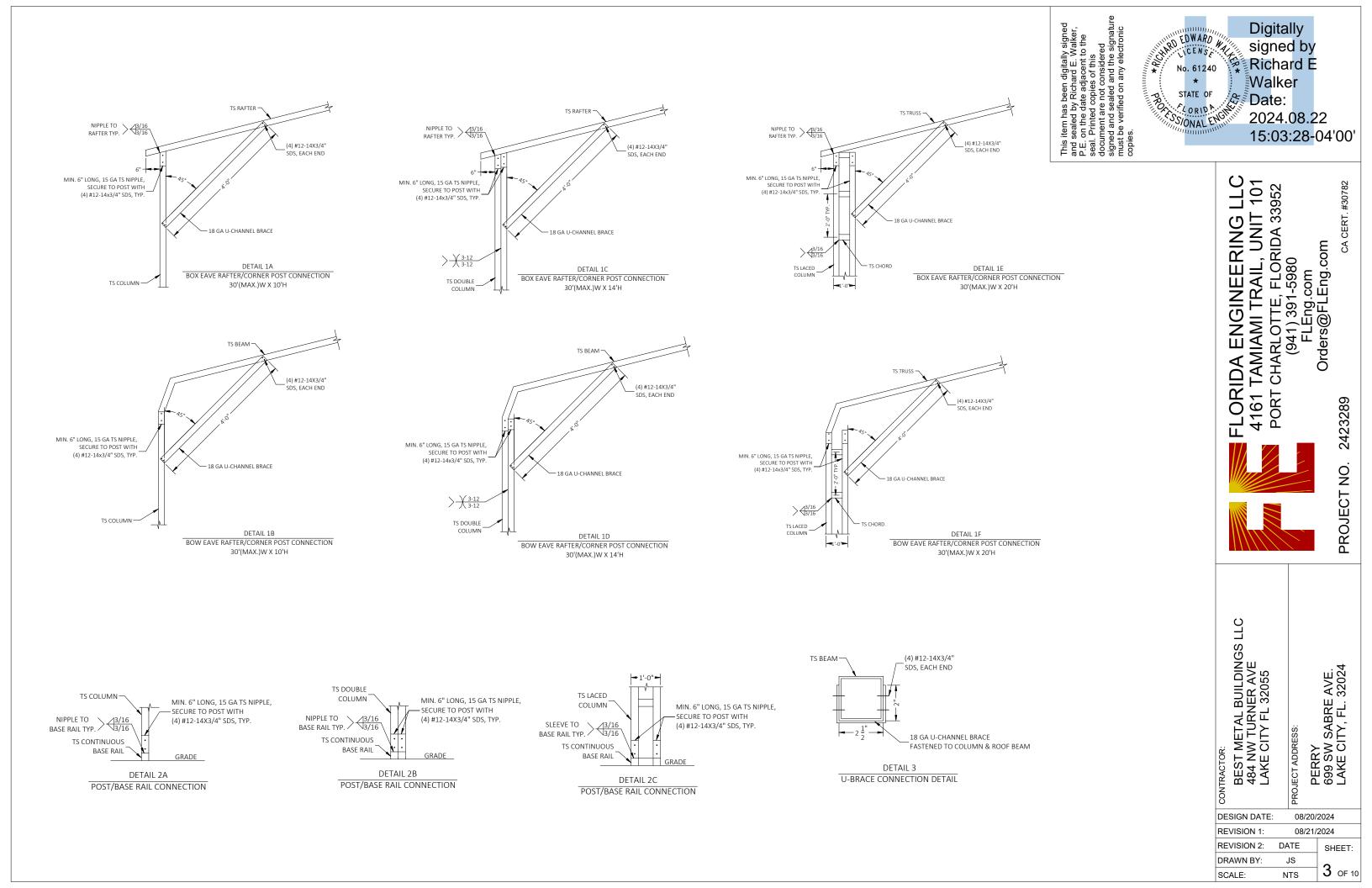
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Date:

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2 OF 10 NTS



- CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS
- 2. ALL OPEN AREAS OF CONCRETE OUTSIDE OF THE PROPOSED STRUCTURE SHALL BE DESIGNED TO SLOPE AWAY FROM THE STRUCTURE.
- 3. WHERE CONCRETE SPECIFICATIONS ARE REQUIRED, BY ONE OR MORE REGULATORY
- AGENCY, THE FOLLOWING SPECIFICATIONS ARE APPLICABLE:
 a. CONCRETE SHALL CONFORM TO ASTM C94 FOR THE FOLLOWING COMPONENTS:
- i. PORTLAND CEMENT TYPE 1 ASTM C 150
- i AGGREGATES LARGE AGGREGATE 3/4 MAX. ASTM C 33
- iii. AIR ENTRAINING +/- 1 % ASTM C 260
- iv. WATER REDUCING AGENT ASTM C 494
- v. CLEAN POTABLE WATER vi. OTHER ADMIXTURES NOT PERMITTED
- b. CONCRETE SLUMP AT DISCHARGE CHUTE NOT LESS THAN 3" OR MORE THAN 5". WATER ADDED AFTER BATCHING IS NOT PERMITTED.
- c. PREPARE & PLACE CONCRETE PER AMERICAN CONCRETE INSTITUTE MANUAL OF STANDARD PRACTICE, PART 1, 2, & 3 INCLUDING HOT WEATHER RECOMMENDATIONS.
- d. MOIST CURE OR POLYETHYLENE CURING PERMITTED.
- e. PRIOR TO PLACING CONCRETE, TREAT THE ENTIRE SUBSURFACE AREA FOR TERMITES IN COMPLIANCE WITH THE BUILDING CODE (FOR RISK CATEGORY II, III, & IV STRUCTURES
- f. CONCRETE SLAB SHALL BE PLACED OVER A POLYETHYLENE VAPOR BARRIER (SLAB ONLY)

REINFORCING STEEL:

- 1. THE REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT
- 2. REINFORCEMENT MAY BE BENT IN THE FIELD OR SHOP AS LONG AS:
- b. REINFRCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT;
- c. THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETERS
- 3. 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.

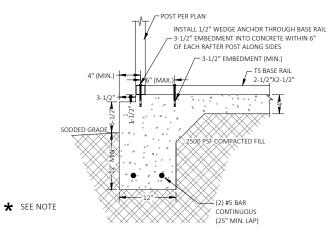
1 FOLINDATION SHALL BE PROTECTED AGAINST FROST LISING RIGID FOAM INSULATION (EPS OR EQUIVALENT). FOR NO FROST PROTECTION OPTION, COORDINATE WITH LOCAL BUILDING CODE AND/OR BUILDING OFFICIAL REGARDING REQUIRED FOOTING DEPTH BASED ON FROST LINE DEPTH.

HELIX ANCHOR NOTES:

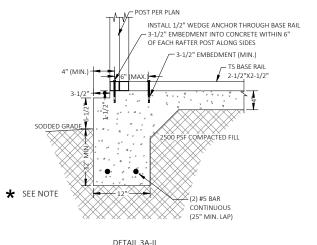
- 1. FOR VERY DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS, CORALS, MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFE SILTS AND CLAYS MEDIUM TO VERY LOOSE DENSE SANDS. FIRM TO STIFE CLAYS AND SILTS, ALLUVIAL FILL USE MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT @ EVERY POST(LEG).
- 2. THE UPLIFT/BEARING CAPACITY OF EACH ANCHOR MUST BE EQUAL TO OR GREATER THAN 8 5 KIPS

HP 9 BARBED DRIVE ANCHOR NOTES:

- ANCHOR TO BE 3/4" DIA (A529 GRADE 50) WITH 30" MIN. EMBEDMENT & (4) MIN. BARBS AS SHOWN IN DETAIL 3C
- 2. FOR VERY DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL AND COBBLES, CALICHE PRELOADED SILTS AND CLAYS, CORALS, MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS AND CLAYS, MEDIUM TO VERY LOOSE DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS, ALLUVIAL FILL USE MINIMUM (2) 3/8" DIA RODS WITH MINIMUM 30' EMBEDMENT @ EVERY POST(LEG).
- 3. THE UPLIFT/BEARING CAPACITY OF EACH ANCHOR MUST BE EQUAL TO OR GREATER THAN 8.5 KIPS

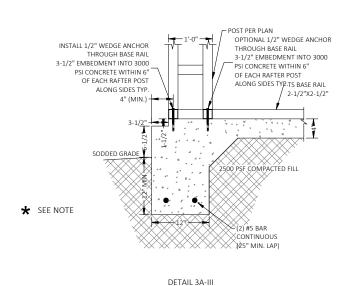


DETAIL 3V-I CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE



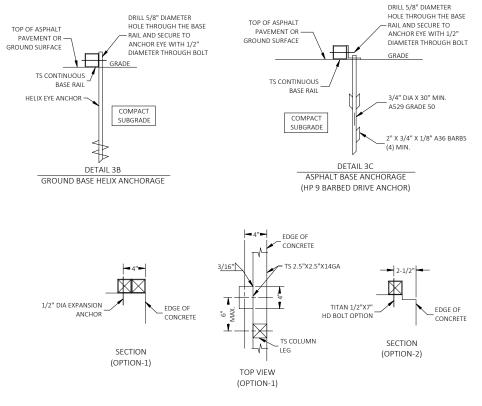
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CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE



CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

= COORDINATE WITH LOCAL BUILDING CODE AND/OR BUILDING OFFICIAL REGARDING REQUIRED FOOTING DEPTH BASED ON FROST LINE DEPTH



TYPICAL ANCHOR DETAIL WHEN BASE RAIL IS NEAR EDGE OF CONCRETE

BASE RAIL ANCHORAGE OPTION

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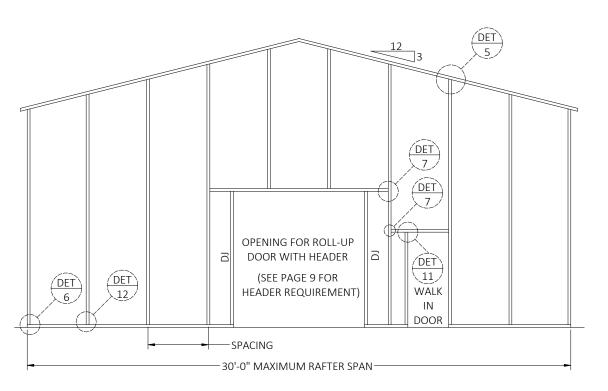
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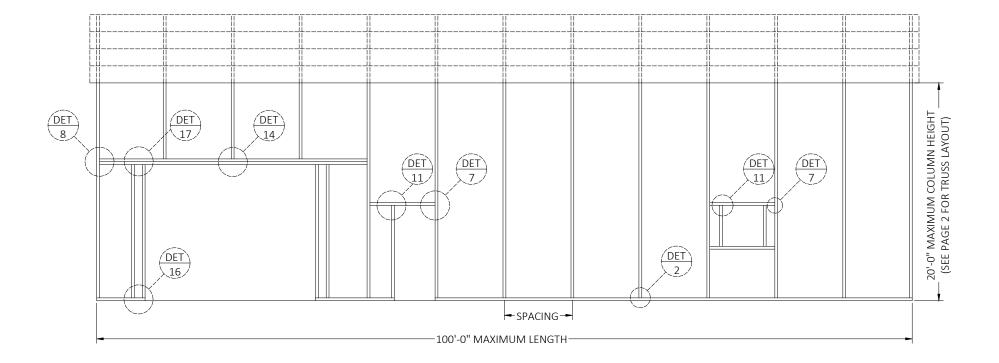
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TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SPACING = 5'-0" FOR WIND SPEEDS BETWEEN 110 MPH AND 150 MPH SPACING = 4'-0" FOR WIND SPEEDS BETWEEN 151 MPH AND 170 MPH

(SEE PG-09 FOR HEADER DETAILS)



TYPICAL BOX EAVE RAFTER SIDE WALL FRAMING SECTION

SPACING = 5'-0" FOR WIND SPEEDS BETWEEN 110 MPH AND 150 MPH SPACING = 4'-0" FOR WIND SPEEDS BETWEEN 151 MPH AND 170 MPH This item has been digitally signed and sealed by Richard E. Walker, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies. Digitally DEDWARD WARD ICENS signed by Richard E Walker STATE OF CORIDA CHANGE STATE OF Date: 2024.08.22 15:03:30-04'00'

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

CA CERT. #30782

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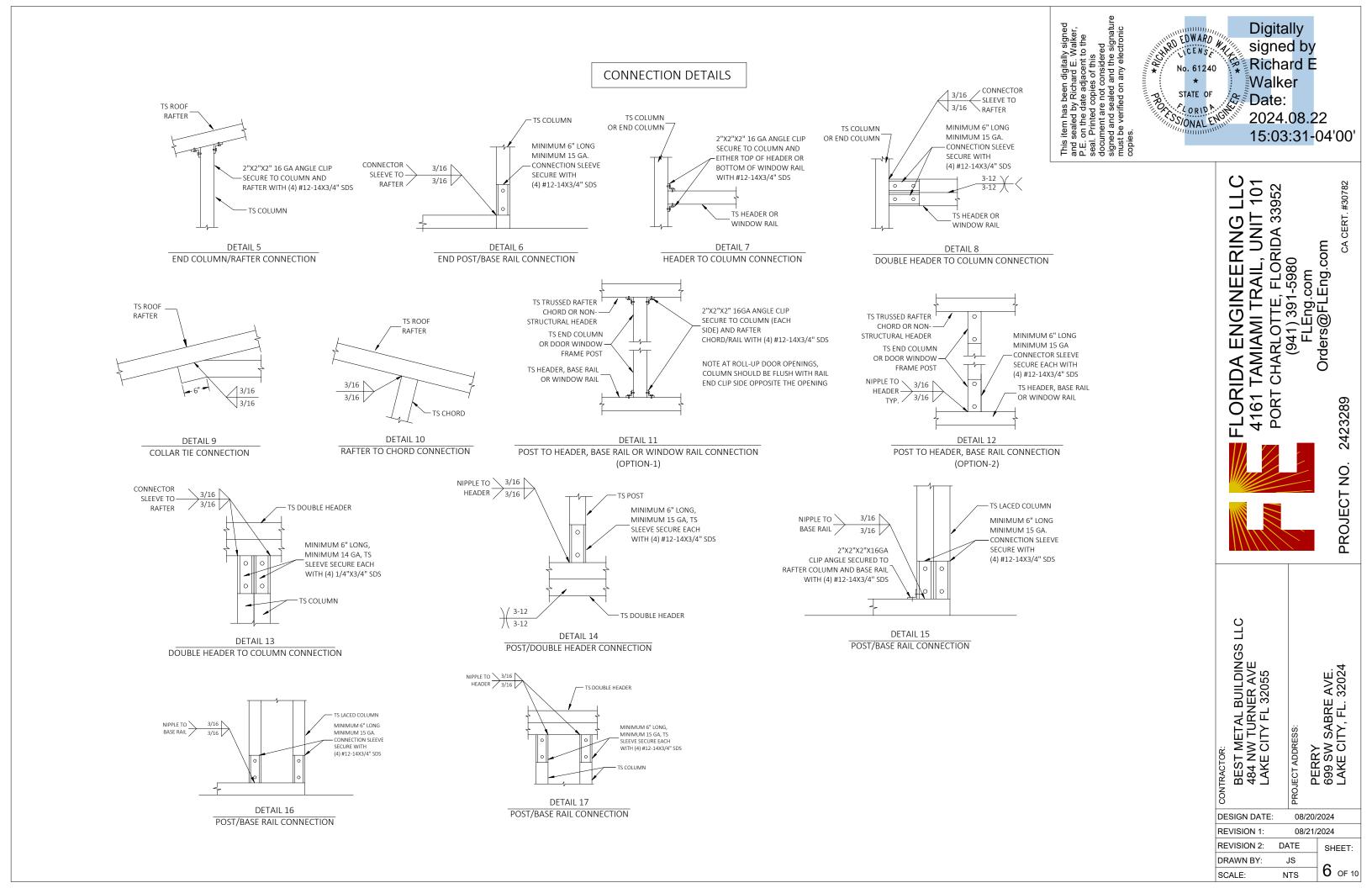
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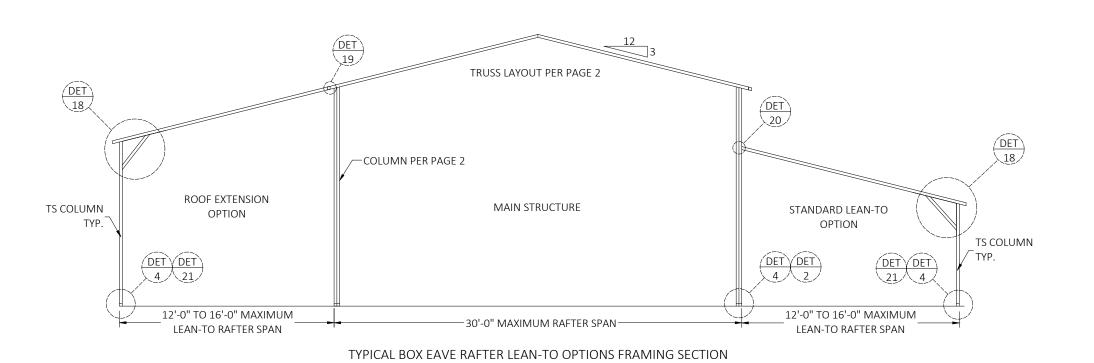




BEST METAL BUILDINGS LLC 484 NW TURNER AVE LAKE CITY FL 32055 PERRY 699 SW SABRE AVE. LAKE CITY, FL. 32024 PROJECT ADDRESS:

DESIGN DATE: 08/20/2024 08/21/2024 REVISION 1: REVISION 2: DATE SHEET: DRAWN BY: JS **5** OF 10 SCALE: NTS







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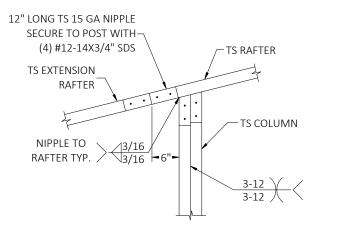
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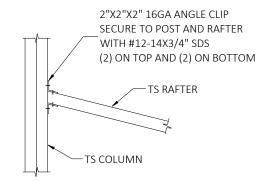
TS BOX EAVE RAFTER NIPPLE TO 3/16 RAFTER TYP. / (4) #12-14X3/4" SDS, EACH END MIN. 6" LONG, 15 GA TS NIPPLE, SECURE TO POST WITH (4) #12-14x3/4" SDS, TYP. 18 GA U-CHANNEL BRACE DETAIL 18

LEAN-TO RAFTER/CORNER POST CONNECTION

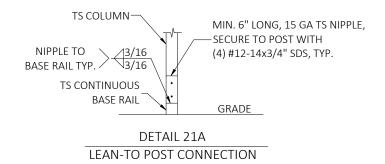
CONNECTION DETAILS

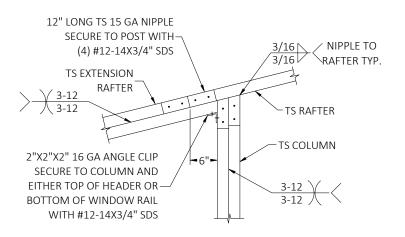


DETAIL 19A SIDE EXTENSION RAFTER/COLUMN CONNECTION FOR RAFTER SPANS LESS THAN 12'-0"

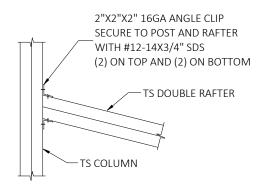


DETAIL 20A LEAN TO RAFTER/COLUMN CONNECTION FOR RAFTER SPANS LESS THAN 12'-0"

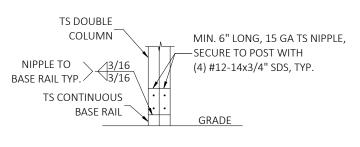




DETAIL 19B SIDE EXTENSION RAFTER/COLUMN CONNECTION FOR RAFTER SPANS BETWEEN 12'-0" AND 16'-0"



DETAIL 20B LEAN TO RAFTER/COLUMN CONNECTION FOR RAFTER SPANS BETWEEN 12'-0" AND 16'-0"



DETAIL 21B LEAN-TO DOUBLE POST CONNECTION

No. 61240 STATE OF Date: 2024.



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2024.08.22

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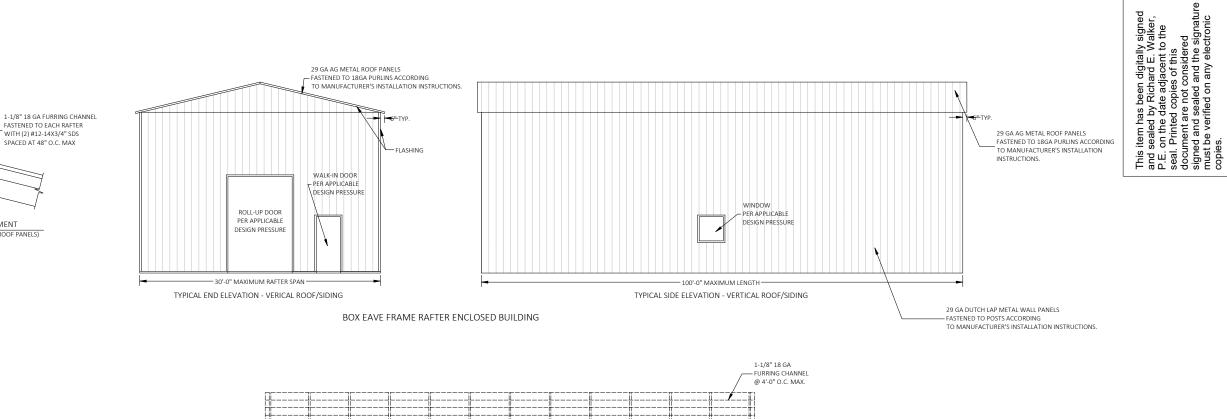
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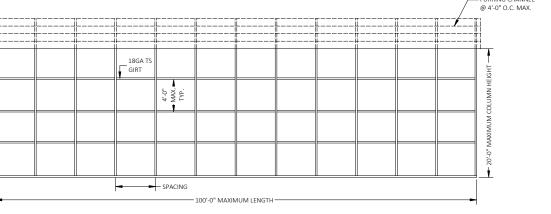
PROJECT NO.

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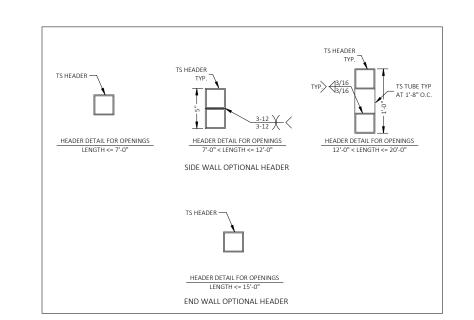




PANEL ATTACHMENT

(ALTERNATE FOR VERTICAL ROOF PANELS)

SPACING = 5'-0" FOR WIND SPEEDS BETWEEN 110 MPH AND 150 MPH SPACING = 4'-0" FOR WIND SPEEDS BETWEEN 151 MPH AND 170 MPH



TYPICAL RAFTER/POST SIDE FRAME SECTION



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Walker

Date:

signed by Richard E

2024.08.22

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No. 61240

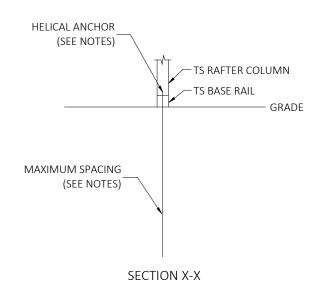
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BEST METAL BUILDINGS LLC 484 NW TURNER AVE LAKE CITY FL 32055 PERRY 699 SW SABRE AVE. LAKE CITY, FL. 32024 PROJECT ADDRESS:

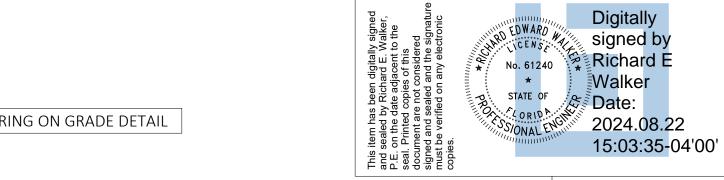
DESIGN DATE: 08/20/2024 08/21/2024 REVISION 1: REVISION 2: DATE SHEET: DRAWN BY: JS 9 OF 10 SCALE: NTS

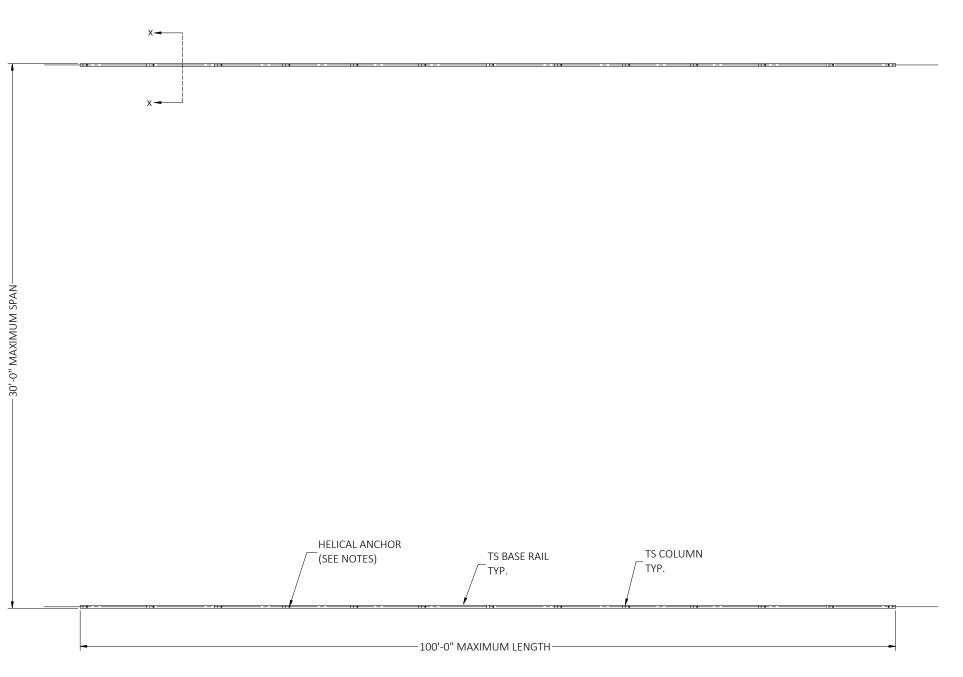
HELIX ANCHOR NOTES

- 1. FOR VERY DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS, CORALS, MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS AND CLAYS, USE MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT EVERY 10'.
- 2. FOR MEDIUM TO VERY LOOSE DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS, ALLUVIAL FILL, USE MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT EVERY 5' OR EVERY POST (LEG).
- 3. THE UPLIFT/BEARING CAPACITY OF EACH ANCHOR MUST BE EQUAL TO OR GREATER THAN 8.5 KIPS.



OPTIONAL HELICAL ANCHORING ON GRADE DETAIL





FLORIDA ENGINEERING LLC
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PROJECT NO.



BEST METAL BUILDINGS LLC 484 NW TURNER AVE LAKE CITY FL 32055

PERRY 699 SW SABRE AVE. LAKE CITY, FL. 32024 PROJECT ADDRESS:

10 OF 10

DESIGN DATE: 08/20/2024 08/21/2024 REVISION 1: REVISION 2: DATE SHEET: DRAWN BY: JS

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SCALE:

BASE RAIL PLAN