

APPLICABLE CODES AND STANDARDS

- 2021 SOUTH CAROLINA BUILDING CODE
- ASCE 7-16 MINIMUM DESIGN LOADS ON BUILDINGS AND OTHER STRUCTURES
- ABC STEEL CONSTRUCTION MANUAL (13TH EDITION)
- ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
- 5TH AISC 360 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES
- AWS D1.1 STRUCTURAL WELDING

DESIGN LOADS

- DEAD LOAD = 15 PSF
 - ROOF LIVE LOAD = 12 PSF
 - GROUND SNOW LOAD = 15 PSF
 - WIND LOAD
- A. RISK CATEGORY = 1
 B. WIND EXPOSURE CATEGORY = C
 C. ULTIMATE WIND SPEED = 110 MPH TO 150 MPH
 NOMINAL WIND SPEED = 86 MPH TO 116 MPH

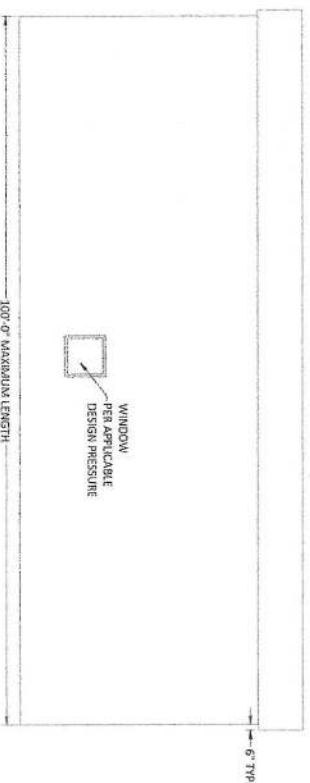
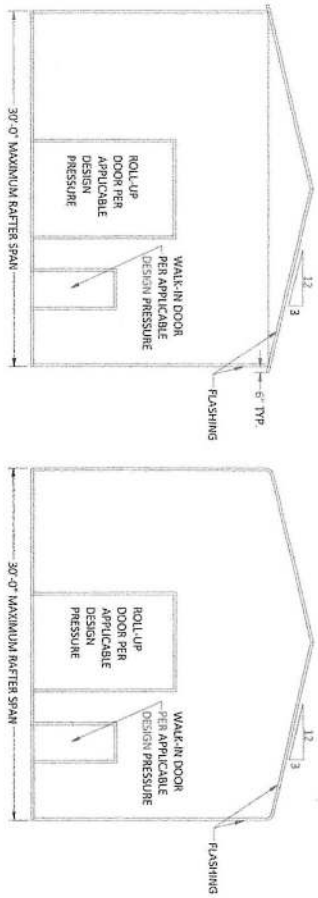
INSTALLATION NOTES AND SPECIFICATIONS

- THESE PLANS BELONG EXCLUSIVELY TO THE STRUCTURE, INCLUDING MAIN WIND FORCE RESISTING SYSTEM (WAFRS), COMPONENTS AND CLADDING (CACI), AND BASE RAIL ANCHORAGE. OTHER DESIGN ISSUES, INCLUDING BUT NOT LIMITED TO PROPERTY SETBACKS, ELECTRICAL, PLUMBING, INGRESS/EGRESS, FINISH FLOOR SIZES AND ELEVATIONS, OR OTHER LOCAL ZONING REQUIREMENTS ARE THE LIABILITY OF OTHERS.
- THESE STRUCTURES ARE ENGINEERED AS CANOPY OR SUPPORTING DEAD LOAD OF THE STRUCTURE AND LIVE AND WIND LOADS. (WINDLOADS NOT LISTED IN THE BUILDING CODE APPROVED PRODUCT LIST, AND NOT PROVIDED AND INSTALLED IN ACCORDANCE WITH THE BUILDING CODE, SHALL NOT BE RESPONSIBLE FOR FAILURE OR STRUCTURAL DAMAGE TO THE DETAILED LOAD.)
- ALL STEEL TUBING SHALL BE 30 PSI GALVANIZED STEEL. ALL FASTENERS SHALL BE ZINC COATED HARDWARE.
- END WALL COLUMNS (POST) AND SIDE WALL COLUMNS ARE EQUIVALENT IN SIZE AND SPACING UNLESS NOTED.
- SPECIFICATIONS APPLICABLE TO 29 GA METAL PANELS FASTENED DIRECTLY TO 2"x2"x1/4" GA TUBE STEEL (TS) FRAMING MEMBERS FOR VERTICAL PANELS. 29 GA METAL PANELS SHALL BE FASTENED DIRECTLY TO 1.8 GA IWT CHANNELS UNLESS NOTED.
- AVERAGE FASTENER SPACING ON CENTERS ALONG RAFTERS OR PURLINS, AND POSTS, INTERIOR = 9" AND END = 6" MAX.
- FASTENERS CONSIST OF #12-1.4x3/4" 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.
- ANCHORS SHALL BE INSTALLED THROUGH THE DUCT WALL WITHIN 6" OF EACH RAFTER COLUMN ALONG SIDES AND ENDS.
- STANDARD GROUND ANCHORS SOIL NAILS CONSIST OF #4 REBAR 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 WALLS MAY BE USED FOR WIND SPEEDS LESS THAN OR EQUAL TO 145 MPH.
- RAFTER SPACING IS 5'-0" MAX.
- PURLIN SPACING IS 4'-0" MAX.
- WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE: SOIL SITE CLASS = D
 RISK CATEGORY I
 I_e = 1.0 S_{ds} = 0.087 g V = CSW S_{d1} = 0.084 g
 R = 3.25

DRAWING INDEX

PAGE NO.	TITLE
1	TITLE PAGE WITH INDEX
2	CROSS SECTION FOR RAFTER SPAN
3	CROSS SECTION FOR POST SPAN
4	BASE RAILING AND ANCHORAGE
5	RAFTER END WALL SIDE WALL AND GROUND FRAMING
6	CONNECTION DETAILS (R-14)
7	BOX EAVE RAFTER LEAN-TO OPTIONS
8	CONNECTION DETAILS (R-18)
9	BOX EAVE RAFTER VERTICAL HOUSING OPTION
10	OPTIONAL METAL ANCHORING ON GRADE DETAIL
11	OPTIONAL CONCRETE STRIP FOOTING
12	OPTIONAL METAL ANCHORING ON UNDER GRADE DETAIL

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



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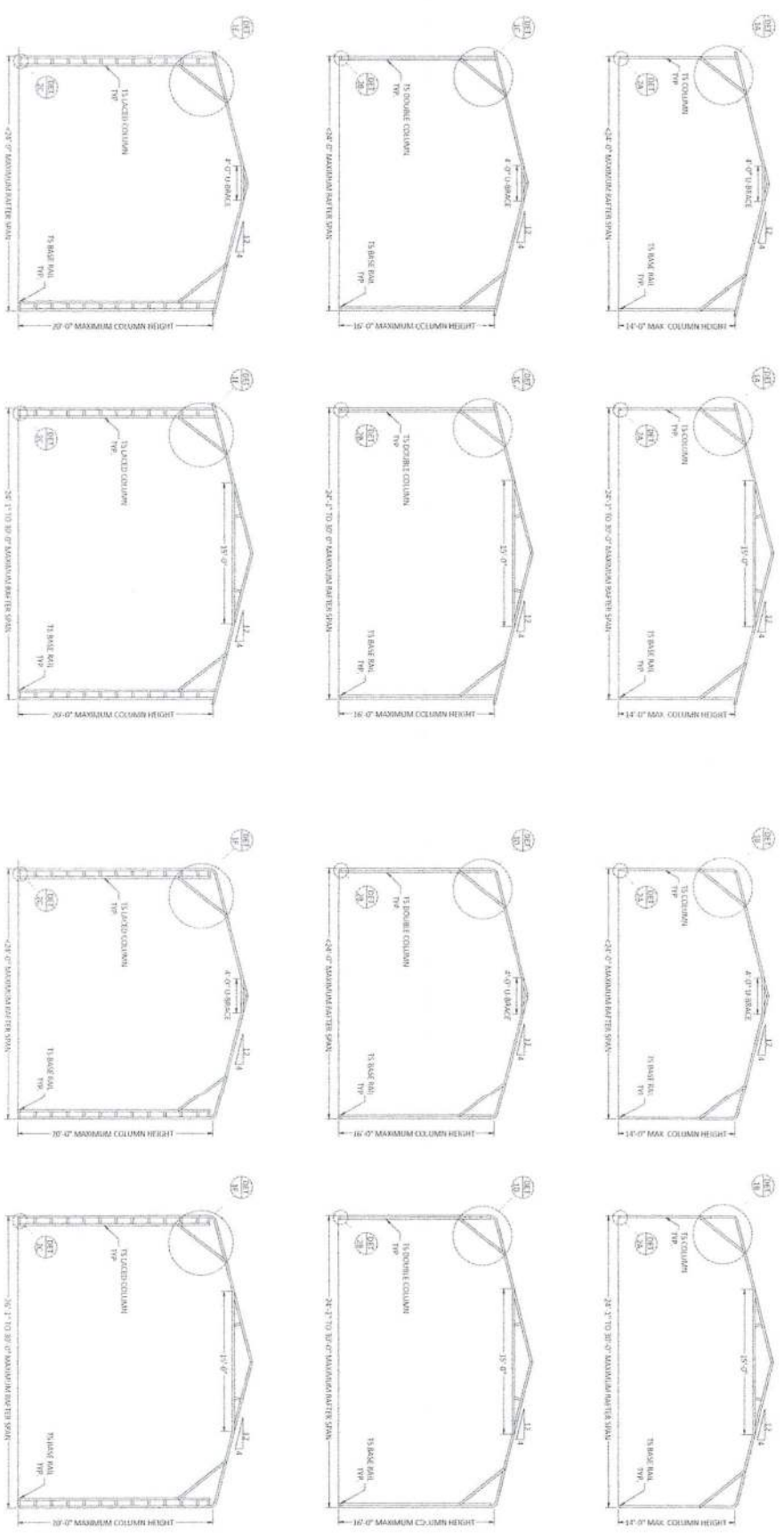
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 DATE: 02/12/2024

- MEMBER LEGEND
- 1. 10" SQUARE COLUMN
 - 2. 15" SQUARE COLUMN
 - 3. TRUSS MEMBERS - 2.00x10x1/4 GALV. UNO
 - 4. TRUSS BRACE - 2.00x10x1/4 GALV. UNO
 - 5. PURLIN - 1.125"x10"x1/4" HAT CHANNEL
 - 6. U BRACE - 2.375"x10"x1/4" CHANNEL

TRUSS LAYOUT - BOX EAVE

TRUSS LAYOUT - BOW EAVE



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GENERAL NOTES:
 CONCRETE MONOLITHIC SLAB DESIGN IS BASED ON A MINIMUM SOIL BEARING CAPACITY OF 2500 PSF.

MINIMUM 28-DAY SPECIFIED COMPRESSIVE STRENGTH = 3000 PSI CONCRETE

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 BENT COUPLERS = 18" MINIMUM DEVELOPMENT LENGTH
5. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE HELD BENT

HELIX ANCHOR NOTES:

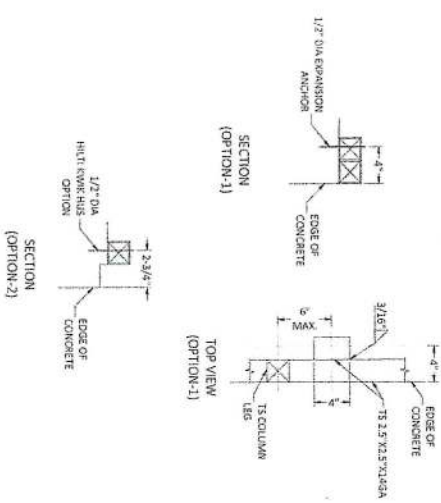
1. FOR VERY DENSE SAND OR GENTLE SANDS, COARSE GRAVEL AND COBBLES CALICHE, PRELOADED SILTS AND CLAYS, CORALS, MEDIUM DENSE SANDS SANDY GRAVELS, VERY STIFF SILTS AND CLAYS, USE MINIMUM (2) #4 HELICES WITH MINIMUM 30" EMBEDMENT EVEN TO
2. FOR MEDIUM TO VERY LOOSE DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS, USE MINIMUM (2) #4 HELICES WITH MINIMUM 30" EMBEDMENT
3. THE UPRIGHT BEARING CAPACITY OF EACH ANCHOR MUST BE EQUAL TO OR GREATER THAN 8.5 KIPS.

HP 9 BARBED DRIVE ANCHOR NOTES:

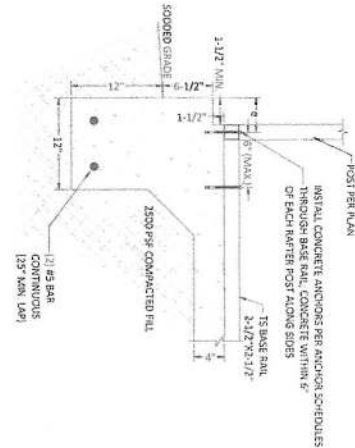
1. ANCHOR TO BE 3/4" DIA. (A529 GRADE 50) WITH 30" MIN. EMBEDMENT & 14" MIN. BARS AS SHOWN IN DETAIL 3C.
2. FOR VERY DENSE SAND OR GENTLE SANDS, COARSE GRAVEL AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS, CORALS, MEDIUM DENSE SANDS SANDY GRAVELS, VERY STIFF SILTS AND CLAYS, USE MINIMUM (2) #4 HELICES WITH MINIMUM 30" EMBEDMENT EVEN TO
3. THE UPRIGHT BEARING CAPACITY OF EACH ANCHOR MUST BE EQUAL TO OR GREATER THAN 8.5 KIPS.

ANCHOR SCHEDULES:

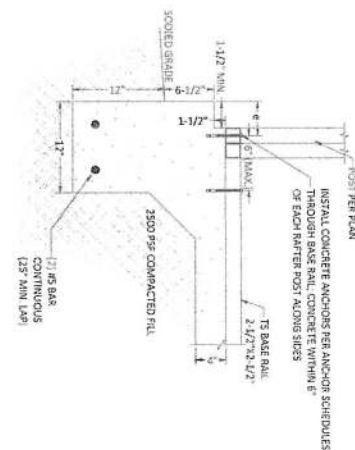
ANCHOR TYPE #1	1/2" DIA WEDGE ANCHOR WITH 5" MIN. EMBEDMENT INTO 3000 MIN. CONCRETE, 4" MIN. EDGE DISTANCE (6)
ANCHOR TYPE #2	1/2" DIA HELIX ANCHOR WITH 4.5" MIN. EMBEDMENT INTO 3000 MIN. CONCRETE, 2.25" MIN. EDGE DISTANCE (9)



TYPICAL ANCHOR DETAIL WHEN BASE RAIL IS NEAR EDGE OF CONCRETE
 BASE RAIL ANCHORAGE OPTION

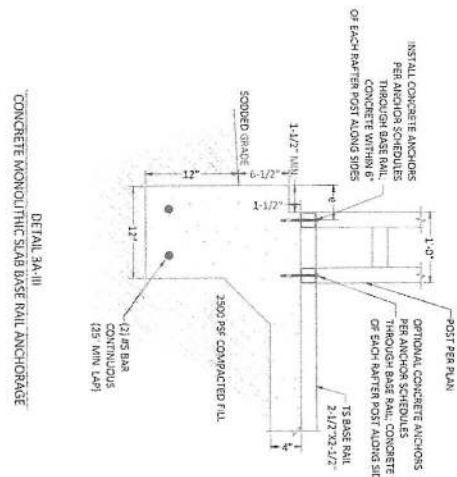


DETAIL 3A-I
 CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

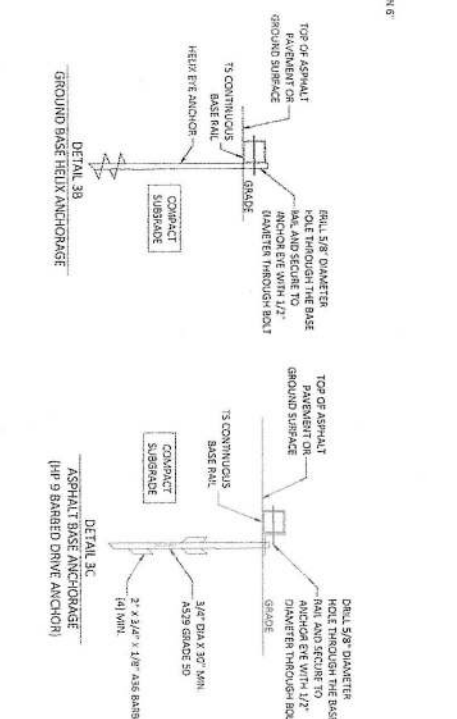


DETAIL 3A-II
 CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

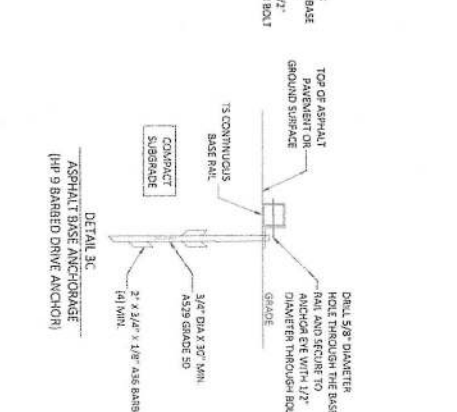
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DETAIL 3A-III
 CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE



DETAIL 3B
 GROUND BASE HELIX ANCHORAGE



DETAIL 3C
 ASPHALT BASE ANCHORAGE (HP 9 BARBED DRIVE ANCHOR)

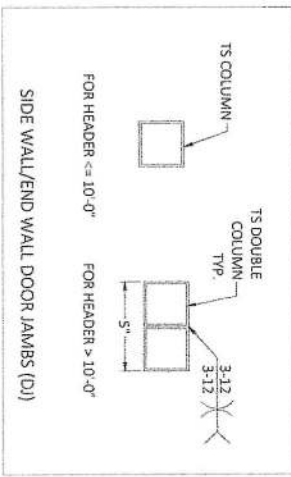
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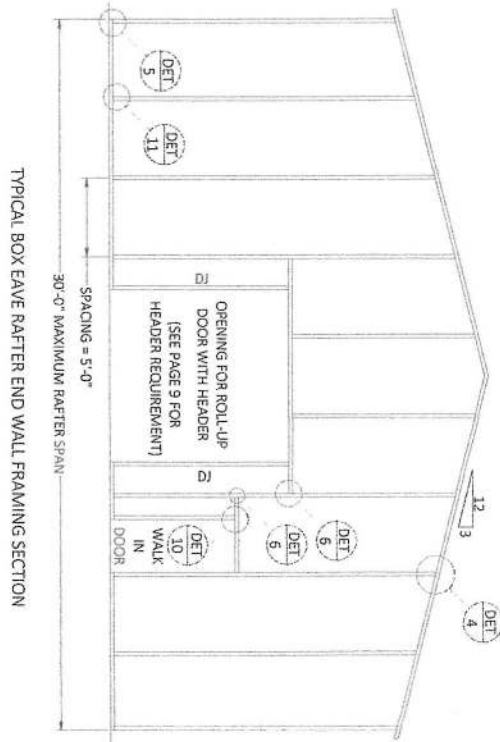
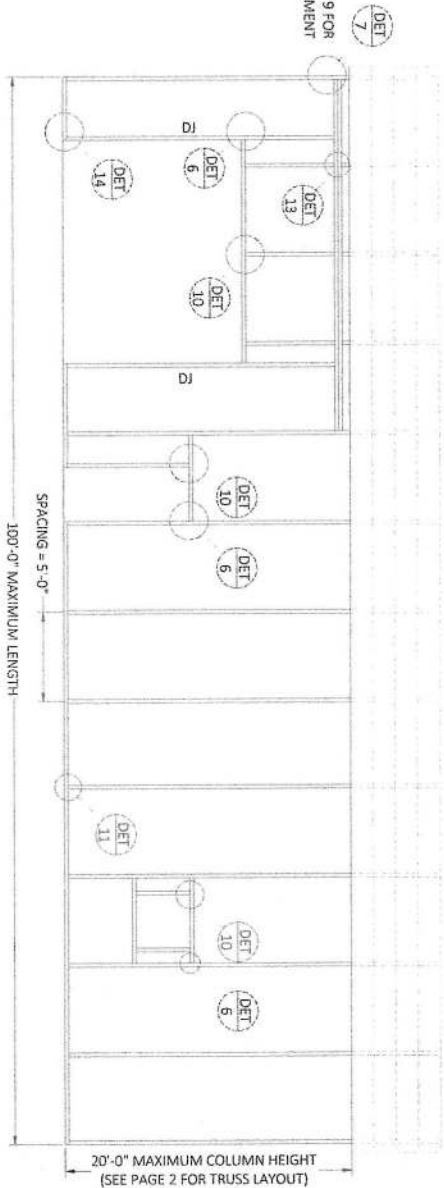
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*SEE PAGE 9 FOR HEADER REQUIREMENT



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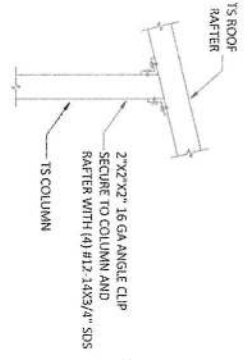
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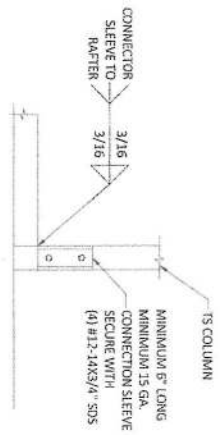
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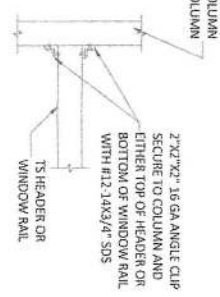
CONNECTION DETAILS



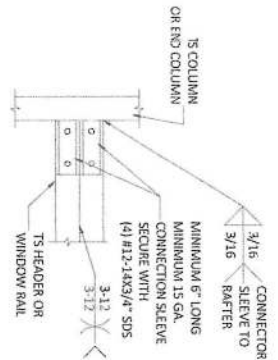
DETAIL 4
END COLUMN/RAFTER CONNECTION



DETAIL 5
END POST/BASE RAIL CONNECTION

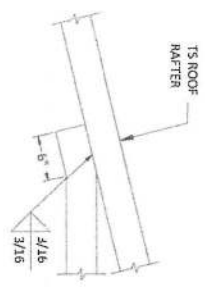


DETAIL 6
HEADER TO COLUMN CONNECTION

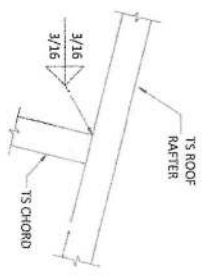


DETAIL 7
DOUBLE HEADER TO COLUMN CONNECTION

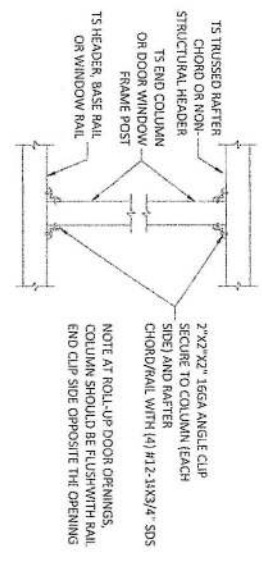
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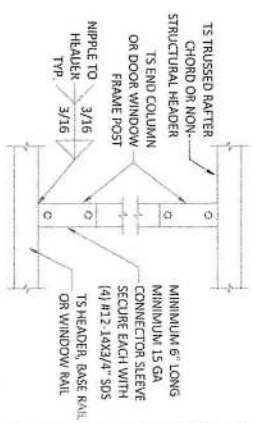
DETAIL 8
COLLAR TIE CONNECTION



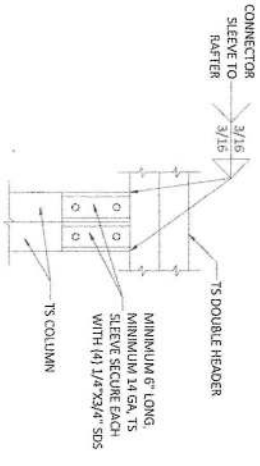
DETAIL 9
RAFTER TO CHORD CONNECTION



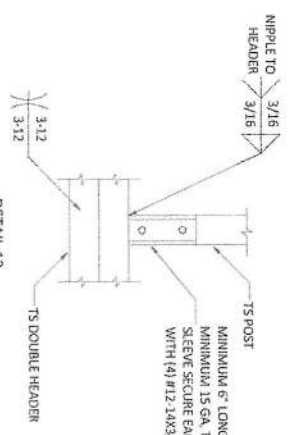
DETAIL 10
POST TO HEADER, BASE RAIL OR WINDOW RAIL CONNECTION (OPTION-1)



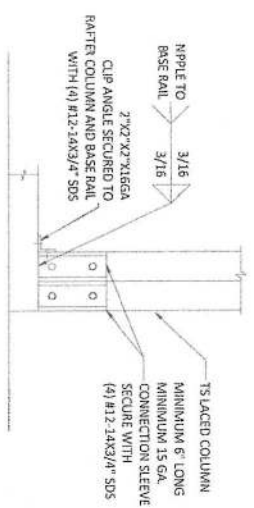
DETAIL 11
POST TO HEADER, BASE RAIL CONNECTION (OPTION-2)



DETAIL 12
DOUBLE HEADER TO COLUMN CONNECTION



DETAIL 13
POST/DOUBLE HEADER CONNECTION

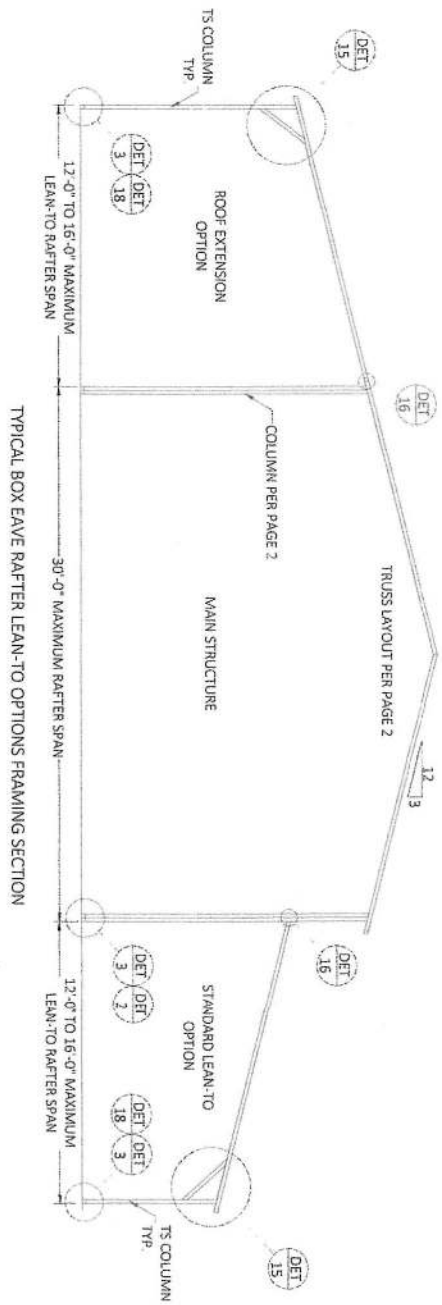


DETAIL 14
POST/BASE RAIL CONNECTION

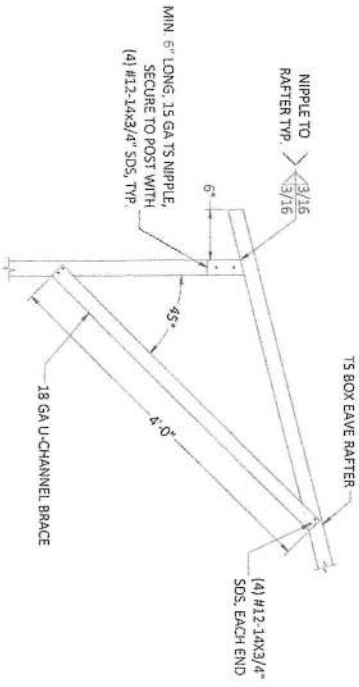
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TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION



DETAIL 15 LEAN-TO RAFTER/CORNER POST CONNECTION

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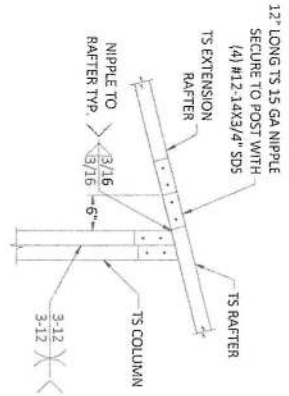
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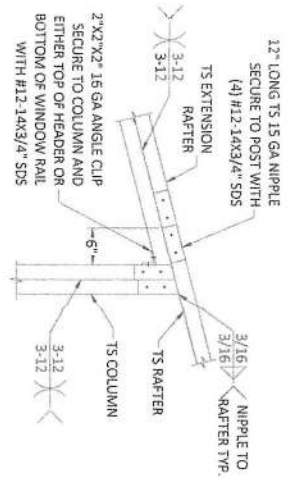
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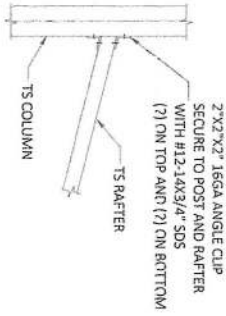
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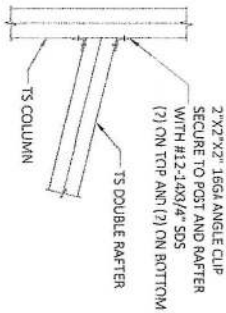
DETAIL 16A
SIDE EXTENSION RAFTER/COLUMN CONNECTION
FOR RAFTER SPANS LESS THAN 12'-0"



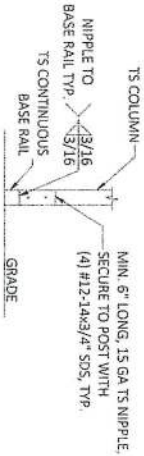
DETAIL 16B
SIDE EXTENSION RAFTER/COLUMN CONNECTION
FOR RAFTER SPANS BETWEEN 12'-0" AND 16'-0"



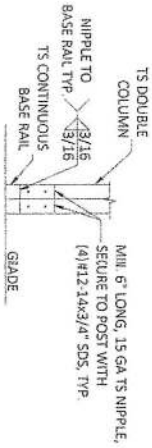
DETAIL 17A
LEAN TO RAFTER/COLUMN CONNECTION
FOR RAFTER SPANS LESS THAN 12'-0"



DETAIL 17B
LEAN TO RAFTER/COLUMN CONNECTION
FOR RAFTER SPANS BETWEEN 12'-0" AND 16'-0"



DETAIL 18A
LEAN TO POST CONNECTION



DETAIL 18B
LEAN TO DOUBLE POST CONNECTION

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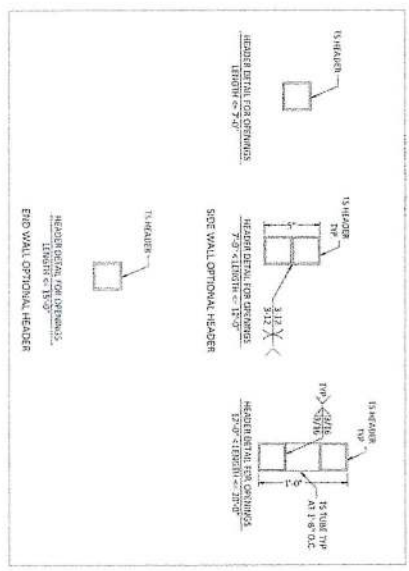
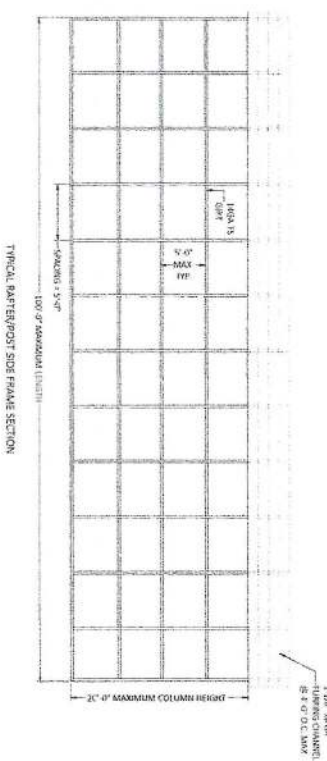
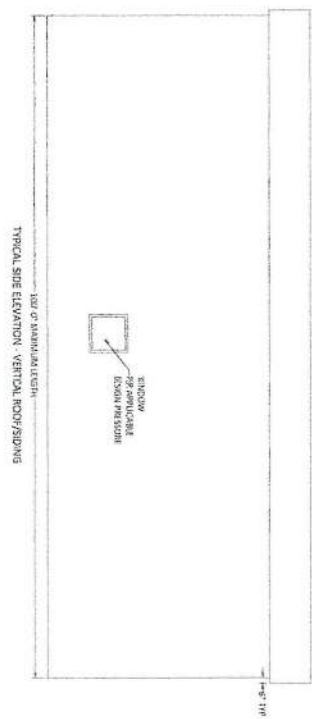
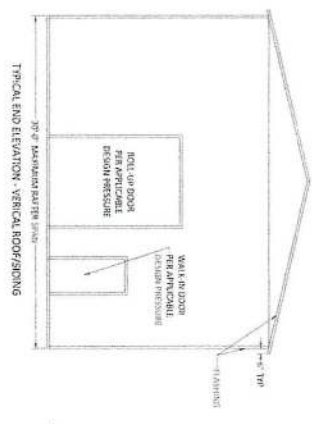
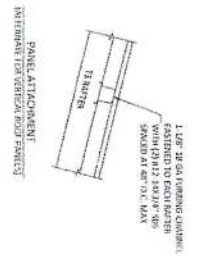
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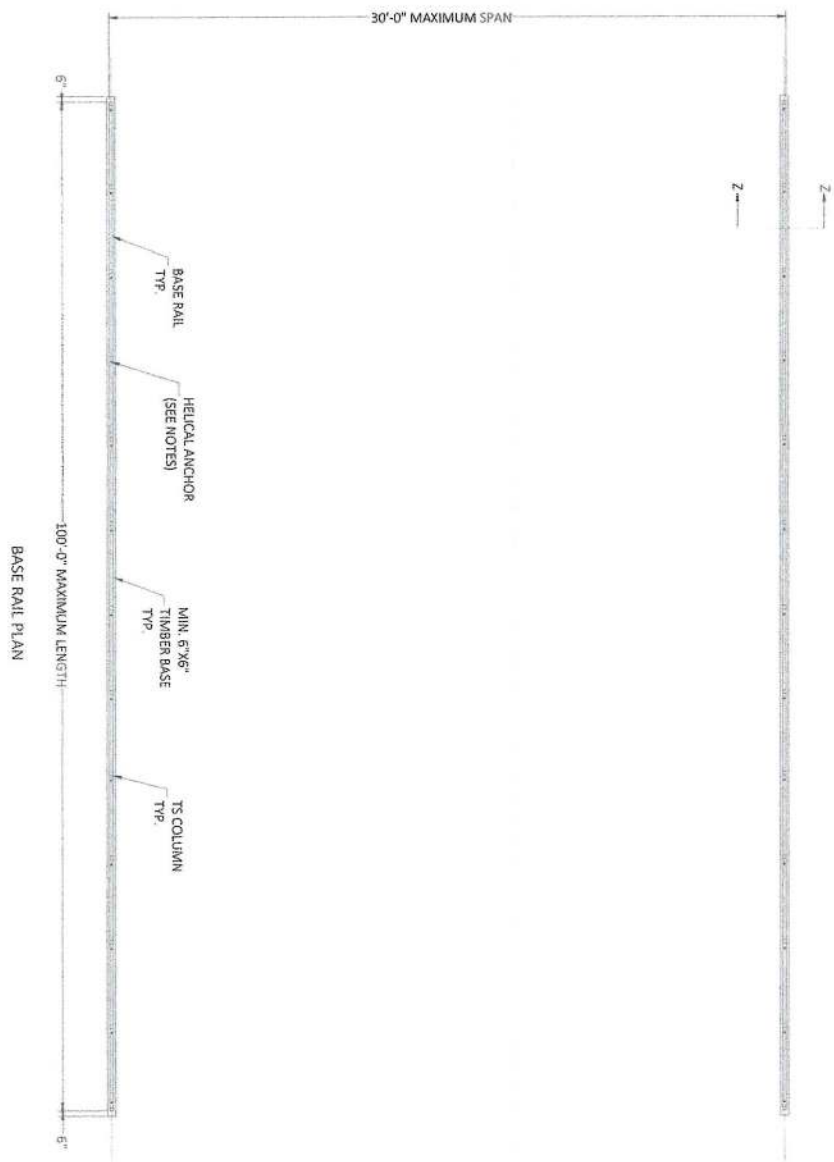
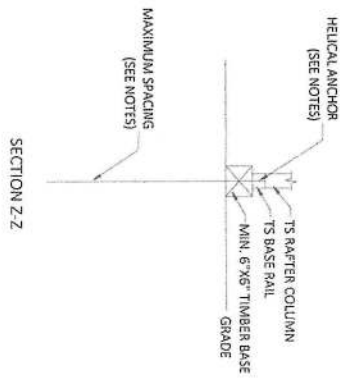
[Signature]
 Craig E. Gunderson, P.E. #36740

TIMBER NOTES:
 1. TIMBER BASE TO BE NO. 2 SYP PT OR EQUIVALENT.

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 TIMBER BEAM DETAIL



GENERIC PLANS ARE NOT VALID WITHOUT A RAISED SEAL & BLUE INK SIGNATURE.
 (1) SET OF SIGNED AND SEALED GENERIC ENGINEERING IS VALID FOR (1) STRUCTURE ONLY.

[Signature]
 Craig E. Gunderson, P.E. #36740
 DATE: 02/12/2024

CONTRACTOR:	
STEEL BUILDINGS AND STRUCTURES INC. 800PIEDMONT TRIAD WEST DR., MOUNT AIRY, NC 27030	
PROJECT DESCRIPTION:	
GENERIC COPIES 12'-30' WIDE ENCLOSED	
DESIGN DATE:	02/08/2024
REVISION 1:	DATE
REVISION 2:	DATE
DRAWN BY:	NRB
SCALE:	NTS
PAGE:	12 OF 12

GE GUNDERSON ENGINEERING PLLC
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 PORT CHARLOTTE, FLORIDA 33952
 (866)-476-5130
 www.gundersonengineering.com

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