

1. 2021 INTERNATIONAL BUILDING CODE
2. 2018 INTERNATIONAL BUILDING CODE
3. 2015 INTERNATIONAL BUILDING CODE
4. 2018 NORTH CAROLINA BUILDING CODE
5. 2021 SOUTH CAROLINA BUILDING CODE
6. 2018 VIRGINIA CONSTRUCTION CODE

1. ASCE 7-16: MINIMUM DESIGN LOADS ON BUILDINGS AND OTHER STRUCTURES
2. AISC STEEL CONSTRUCTION MANUAL (15TH EDITION)
3. ACI 318-14: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
4. TMS 402-16: BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES
5. AWS D1.1: STRUCTURAL WELDING

1. DEAD LOAD = 15 PSF
2. ROOF LIVE LOAD = 12 PSF
3. FLOOR LIVE LOAD = 100 PSF
4. GROUND SNOW LOAD = 35 PSF
4. WIND LOAD
  - A. RISK CATEGORY = I
  - B. WIND EXPOSURE CATEGORY = C
  - C. ULTIMATE WIND SPEED = 110 MPH TO 160 MPH  
NOMINAL WIND SPEED = 85 MPH TO 124 MPH

1. 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 INTERNATIONAL BUILDING CODE APPROVED 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 SPACING U.N.O.
5. SPECIFICATIONS APPLICABLE TO 29 GA METAL PANELS FASTENED DIRECTLY TO 2.5"x2.5"x14 GA 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 26.6° (6:12 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 COLUMN ALONG SIDES AND ENDS.
9. STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBARS WITH WELDED NUT X 30" 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 160 MPH.
11. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:  
SOIL TYPE CLASS = D  
RISK CATEGORY I/II/III  
 $R = 3.25$     $I_e = 1.0$     $S_{ds} = 0.087 \text{ g}$     $V = C_s W$     $S_{di} = 0.084 \text{ g}$

PAGE NO.	DESCRIPTION
1	TITLE PAGE WITH INDEX
2	ELEVATION VIEWS
3	TRUSS DESIGN FOR RAFTER SPAN
4	CONNECTION DETAILS (1-2)
5	BASE RAIL AND FOUNDATION ANCHORAGE
6	RAFTER END WALL, SIDE WALL AND OPENING FRAMING
7	CONNECTION DETAILS (4-15)
8	BOX EAVE RAFTER LEAN-TO OPTIONS
9	CONNECTION DETAILS (17-19)
10	BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION
11	OPTIONAL HELICAL ANCHORING 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.

FLORIDA ENGINEERING LLC (AL)  
DBA: LIGHTNING ENGINEERING LLC (GA, TN, VA)  
GUNDERSON ENGINEERING (SC, NC)  
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PROJECT NO. 2410381

CONTRACTOR:  
PRE-BUILT  
STRUCTURES LLC  
P.O. BOX. 350,  
MOUNT AIRY, NC 27030

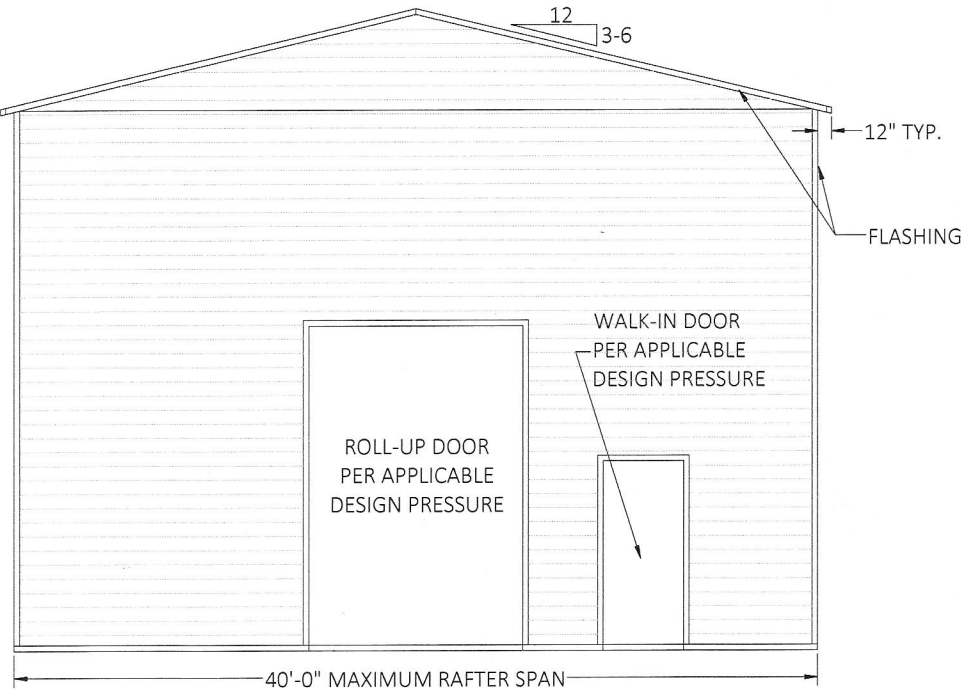
GENERIC PLANS  
32'-40' WIDE ENCLOSED

DESIGN DATE:	04/15/2024	
REVISION 1:	DATE	
REVISION 2:	DATE	PAGE <b>1</b> OF
DRAWN BY:	NRB	
SCALE:	NTS	

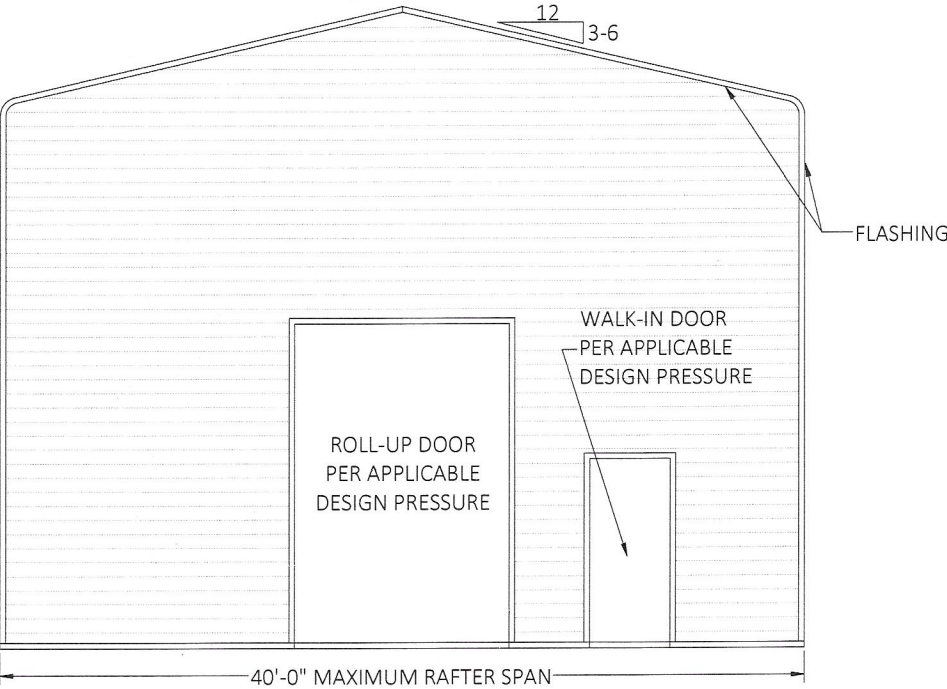
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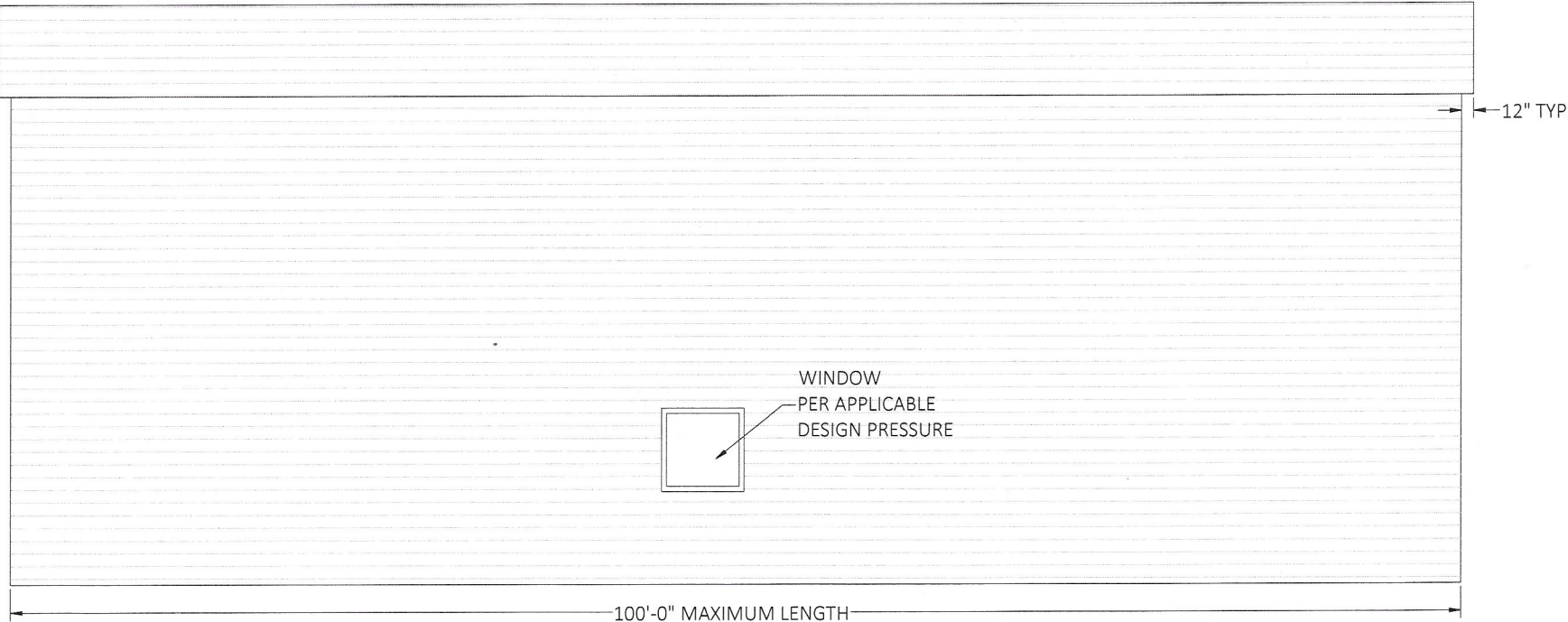
ENCLOSED METAL BUILDING DESIGN  
MAXIMUM 40'-0" WIDE X 100'-0" LONG X 20'-0" HIGH (EAVE)  
BOX EAVE FRAME / BOW EAVE FRAME



TYPICAL END ELEVATION - BOX EAVE



TYPICAL END ELEVATION - BOW EAVE



TYPICAL SIDE ELEVATION - HORIZONTAL ROOF

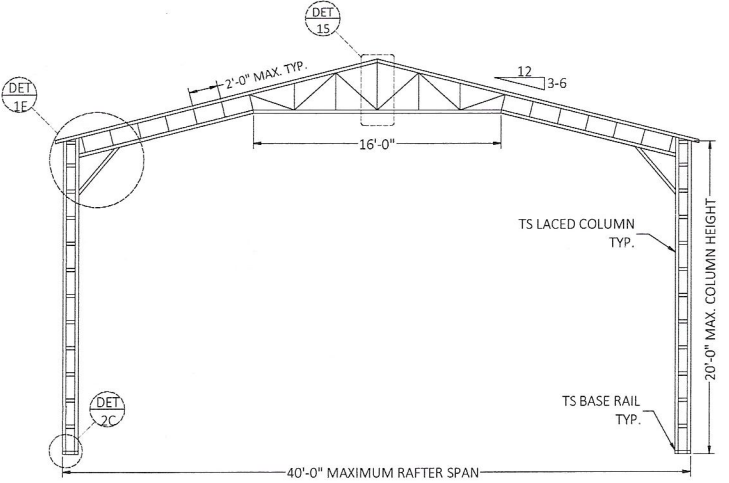
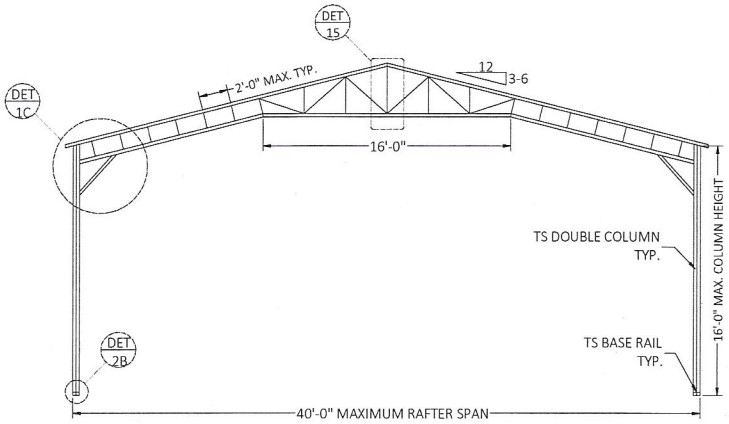
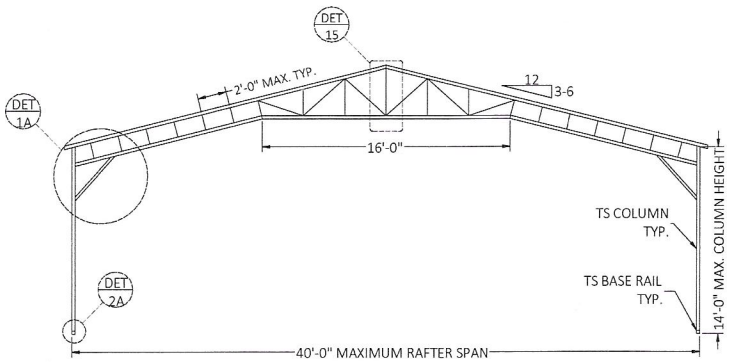
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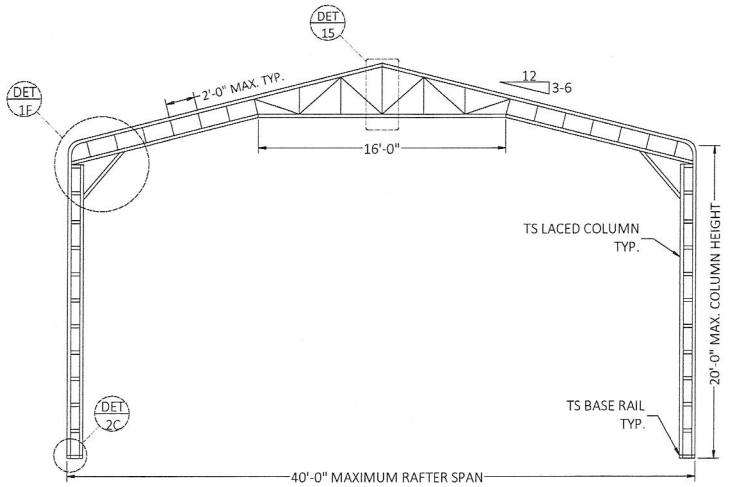
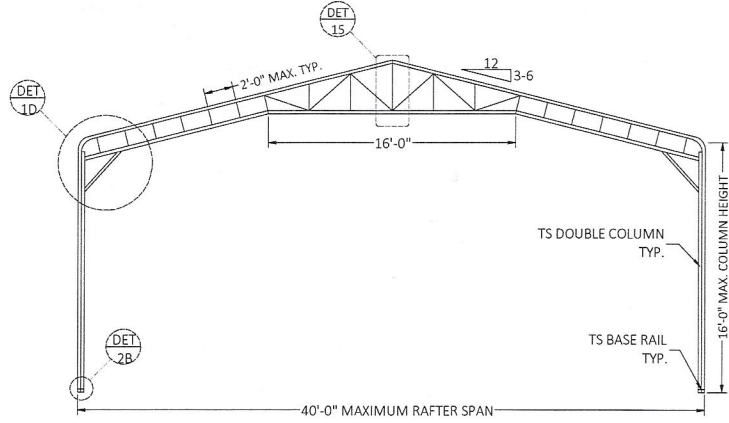
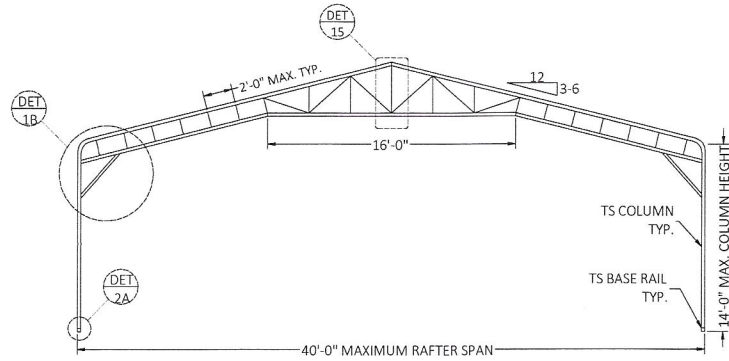
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- MEMBER LEGEND:
- 1. TS COLUMN = 2.5X2.5X14GA U.N.O. OR 2.25X2.25X12GA U.N.O.
  - 2. TS DOUBLE COLUMN = (2)2.5X2.5X14GA OR (2) 2.25X2.25X12GA U.N.O.
  - 3. TRUSS MEMBERS = 2.5X2.5X14GA U.N.O.
  - 4. KNEE-BRACE = 2.5"X2"X18GA CHANNEL
  - 5. PURLIN = 1.5"X18GA HAT CHANNEL



TRUSS LAYOUT- BOX EAVE



TRUSS LAYOUT- BOW EAVE



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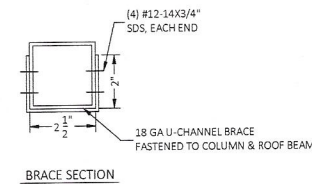
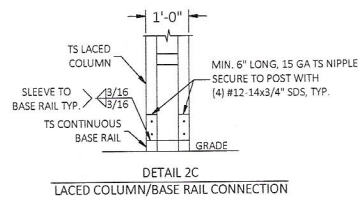
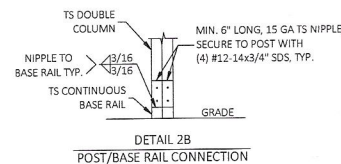
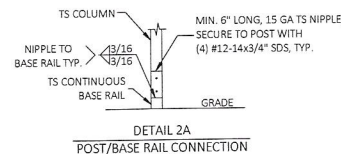
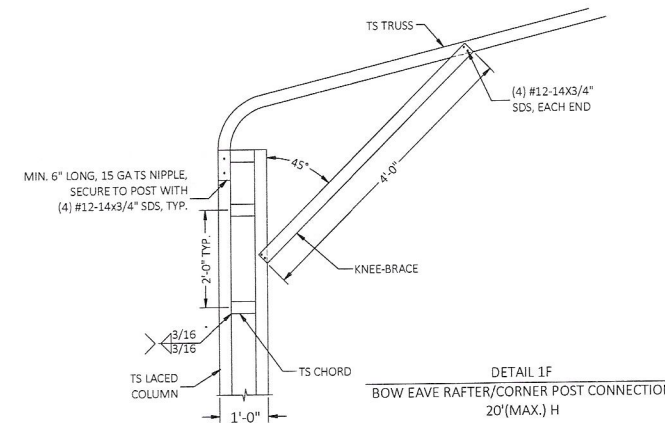
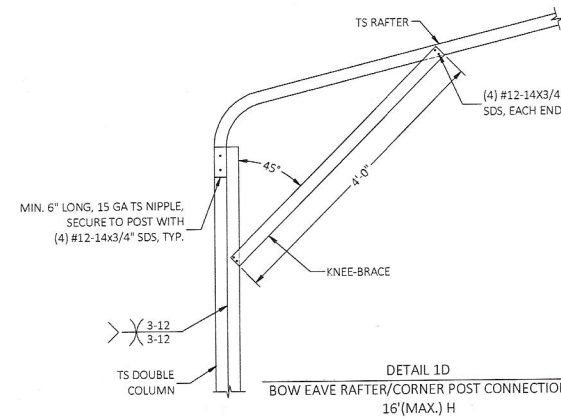
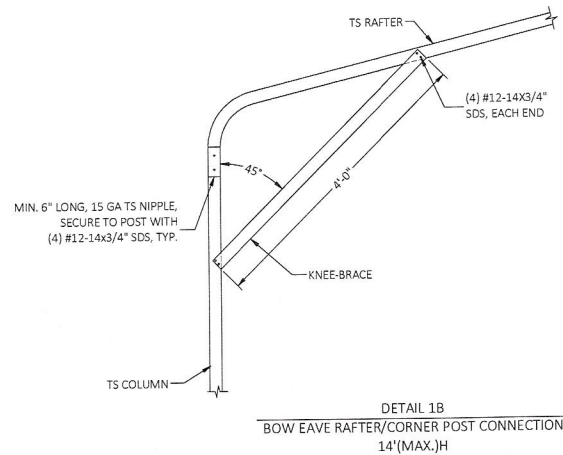
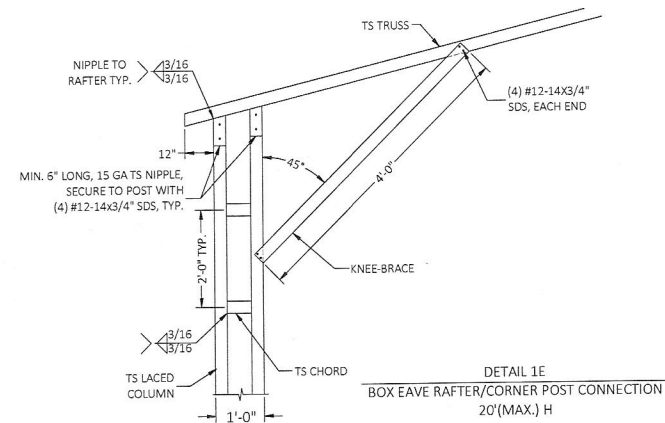
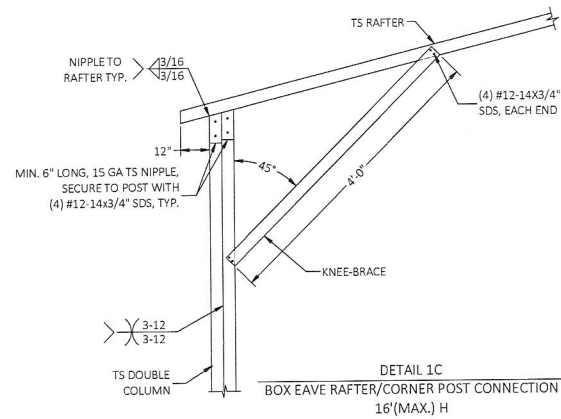
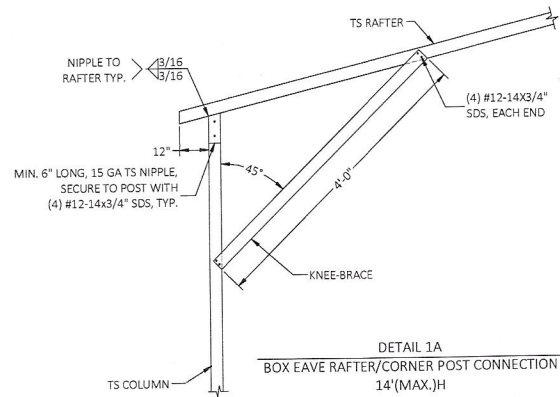
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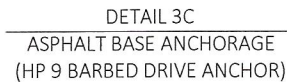
CONCRETE MONOLITHIC SLAB DESIGN IS BASED ON A MINIMUM SOIL BEARING CAPACITY OF 2500 PSF.

MINIMUM 28-DAY SPECIFIED COMPRESSIVE STRENGTH = 3000 PSI

1. TURNDOWN REINFORCING STEEL = ASTM A615 GRADE 60

- ### 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.



### BASE RAIL ANCHORAGE OPTION





FLORIDA  
ENGINEERING  
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PLLC

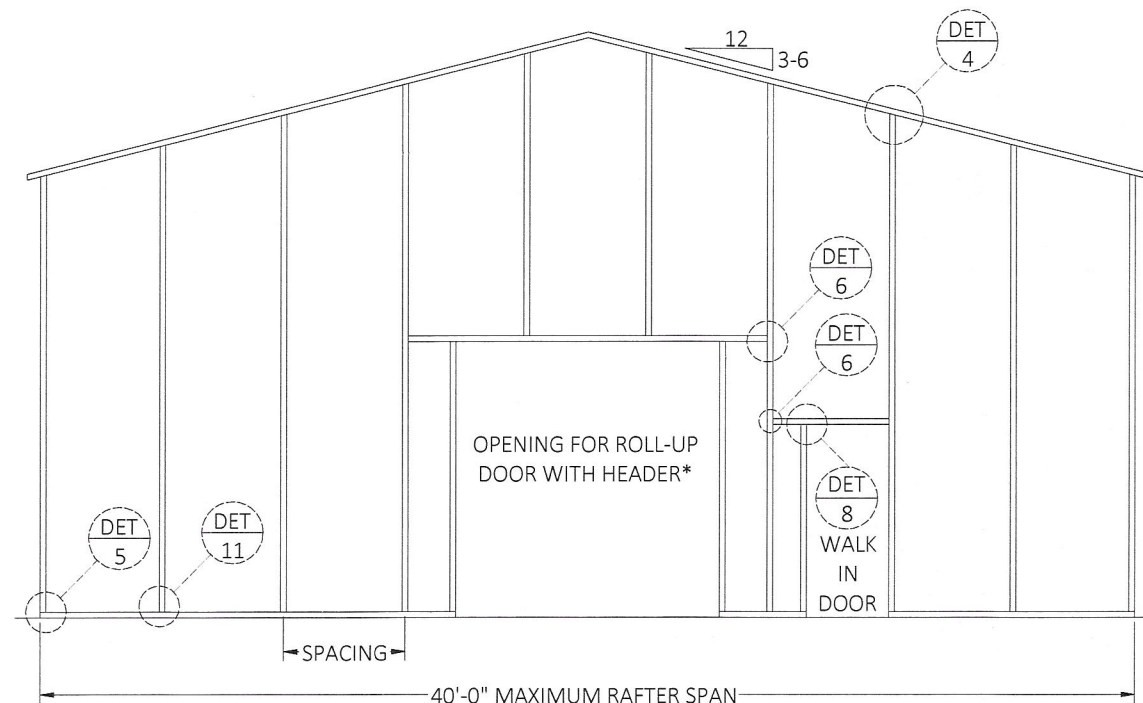
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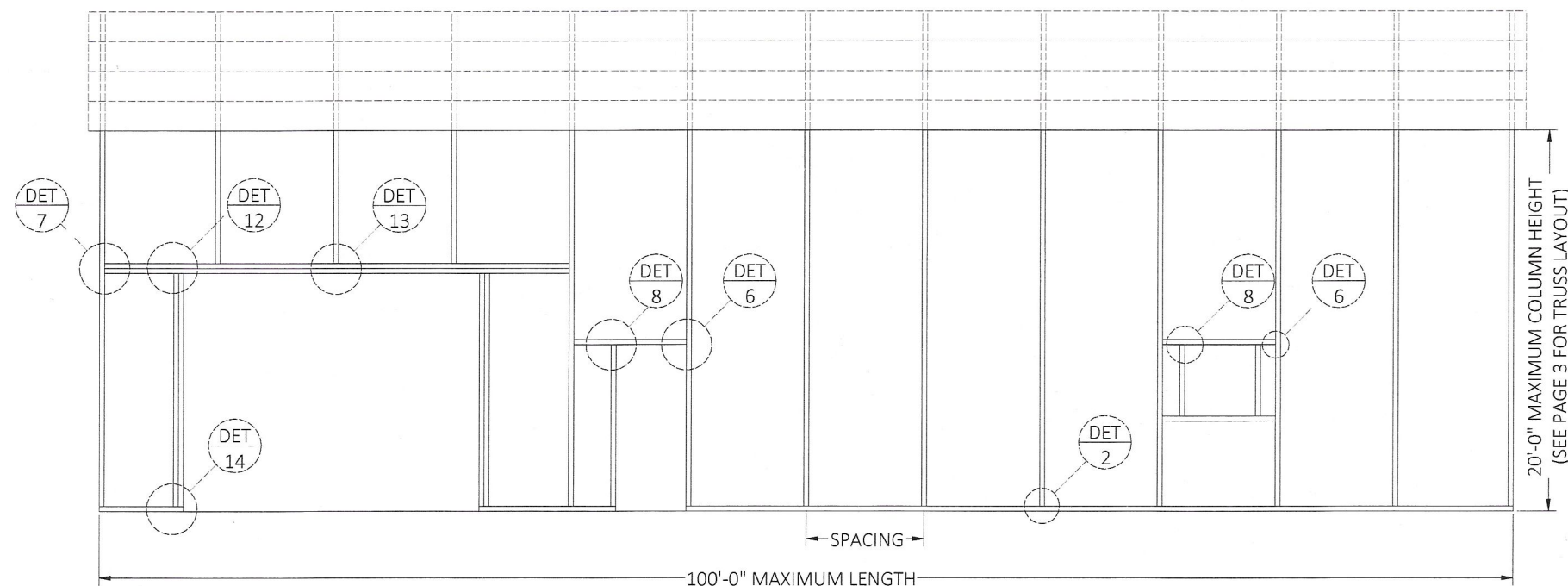
AGE :

OF 11

\*SEE PAGE 10 FOR  
HEADER REQUIREMENT



SPACING = 5'-0" FOR WIND SPEEDS BETWEEN 110 MPH AND 140 MPH  
SPACING = 4'-0" FOR WIND SPEEDS BETWEEN 140 MPH AND 160 MPH  
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION



SPACING = 5'-0" FOR WIND SPEEDS BETWEEN 110 MPH AND 140 MPH  
SPACING = 4'-0" FOR WIND SPEEDS BETWEEN 140 MPH AND 160 MPH  
TYPICAL BOX EAVE RAFTER SIDE WALL FRAMING SECTION

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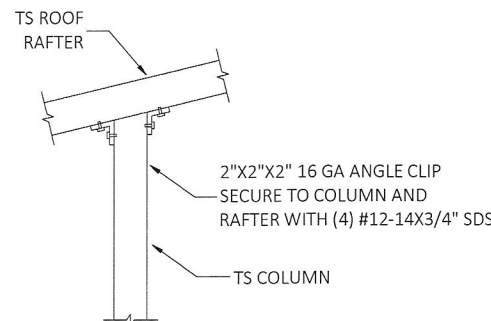
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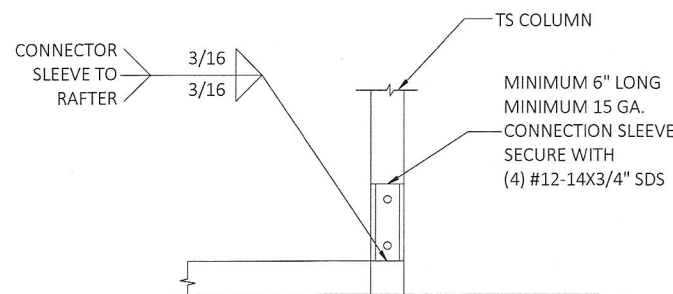
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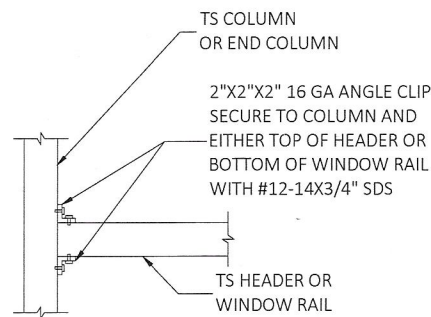
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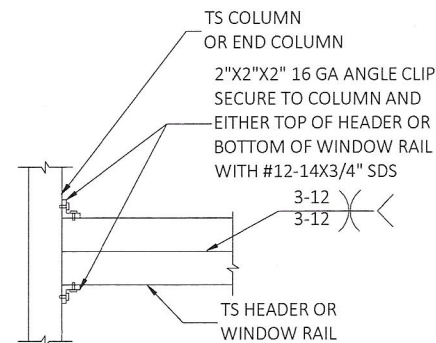
DETAIL 4  
END COLUMN/RAFTER CONNECTION



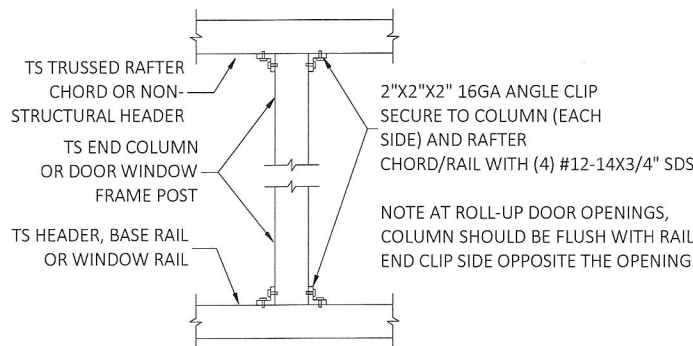
DETAIL 5  
END POST/BASE RAIL CONNECTION



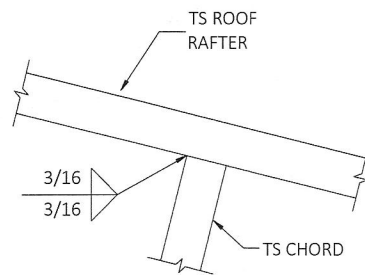
DETAIL 6  
HEADER TO COLUMN CONNECTION



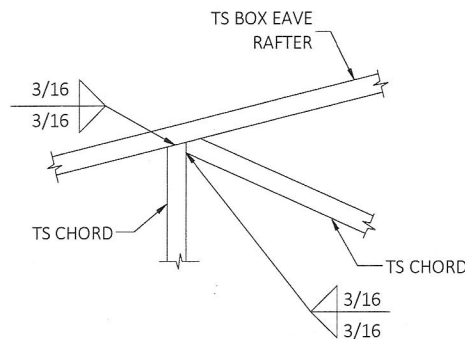
DETAIL 7  
DOUBLE HEADER TO COLUMN CONNECTION



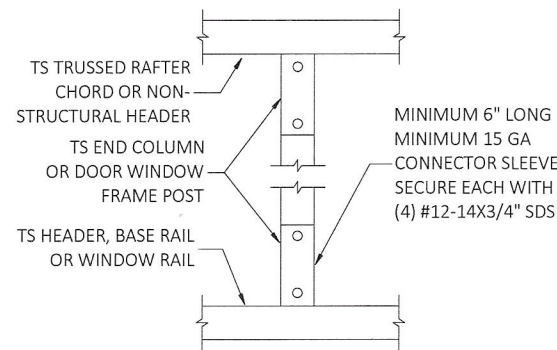
DETAIL 8  
POST TO HEADER, BASE RAIL OR WINDOW RAIL CONNECTION



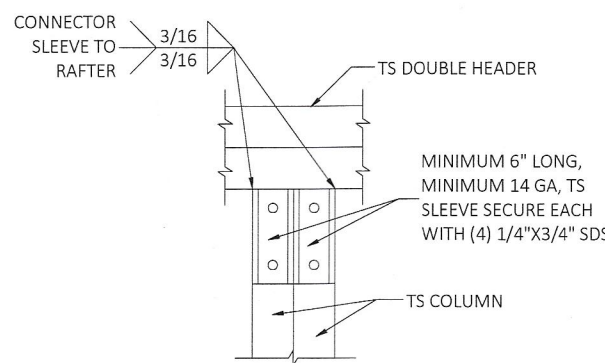
DETAIL 9  
RAFTER TO CHORD CONNECTION



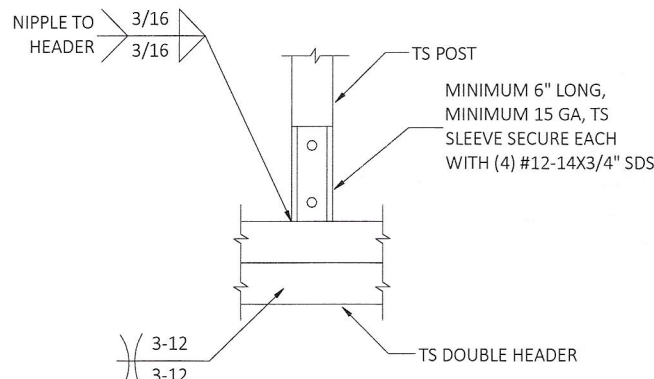
DETAIL 10  
TRUSS POST AND CHORD TO RAFTER CONNECTION



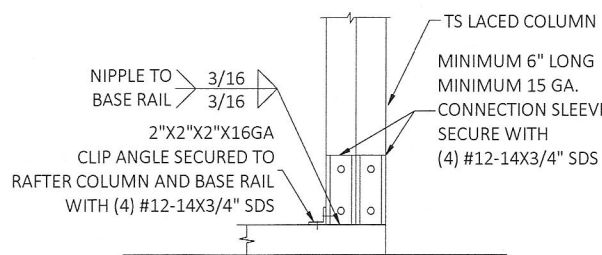
DETAIL 11  
POST TO HEADER, BASE RAIL CONNECTION



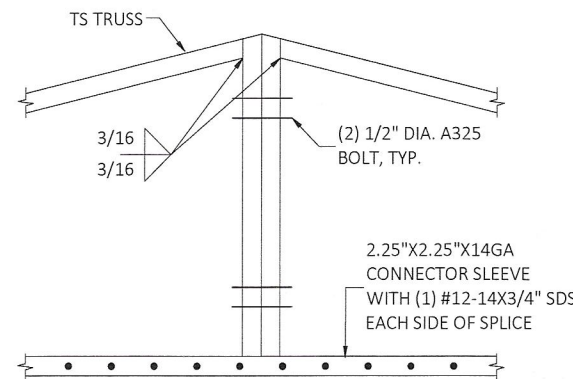
DETAIL 12  
DOUBLE HEADER TO COLUMN CONNECTION



DETAIL 13  
POST/DOUBLE HEADER CONNECTION



DETAIL 14  
POST/BASE RAIL CONNECTION



DETAIL 15  
SPLICE CONNECTION

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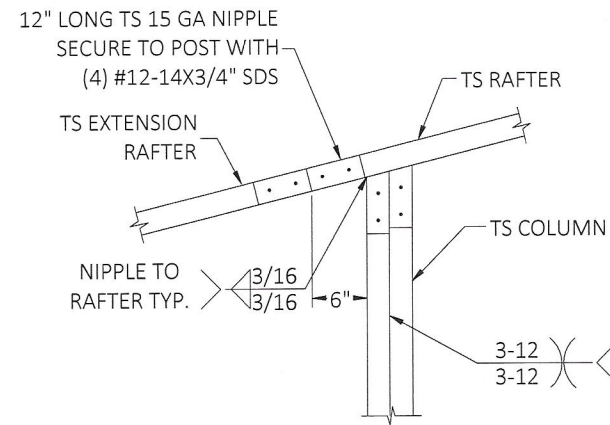
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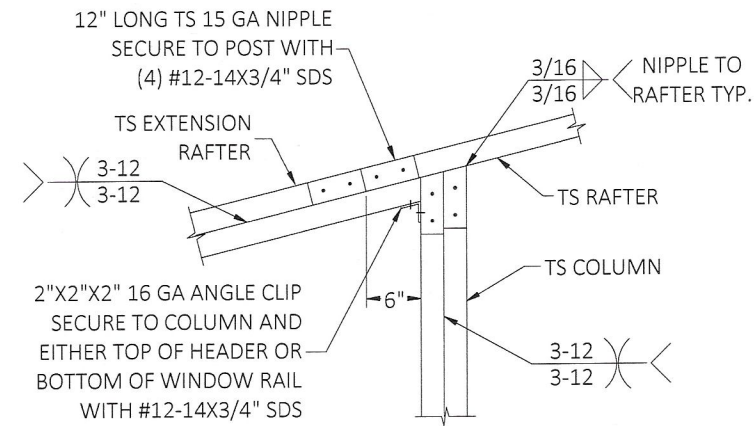




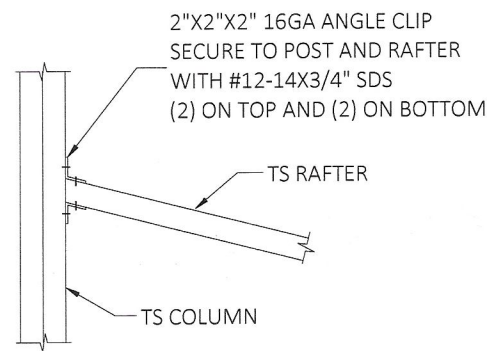
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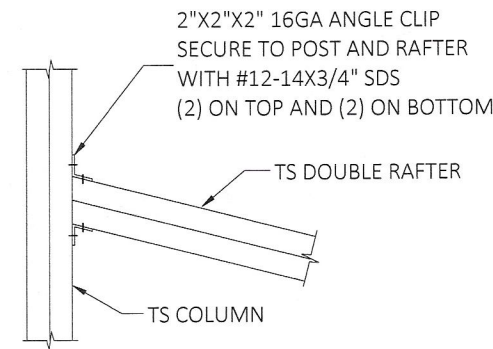
DETAIL 17A  
SIDE EXTENSION RAFTER/COLUMN CONNECTION  
FOR RAFTER SPANS  $\leq 12'-0"$



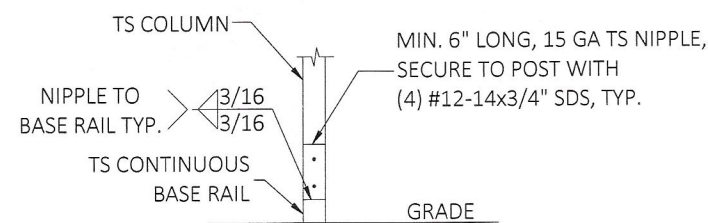
DETAIL 17B  
SIDE EXTENSION RAFTER/COLUMN CONNECTION  
FOR RAFTER SPANS  $12'-0" < \text{TO} \leq 20'-0"$



DETAIL 18A  
LEAN TO RAFTER/COLUMN CONNECTION  
FOR RAFTER SPANS  $\leq 12'-0"$



DETAIL 18B  
LEAN TO RAFTER/COLUMN CONNECTION  
FOR RAFTER SPANS  $12'-0" < \text{TO} \leq 20'-0"$



DETAIL 19  
LEAN-TO POST CONNECTION

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