# STRUCTURAL PLANS

**FOR** 

# JAMIE PETREE CALDERON CARPORTS AND METAL BUILDINGS, INC 24' X 45' X 10' METAL BUILDING

407 PINE WOOD RD

HARNETT COUNTY - SANFORD TOWNSHIP - NORTH CAROLINA

PROJECT NO.: E-10445



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## GENERAL STRUCTURAL NOTES

SENERAL NOTES:
ALL WORK SHALL CONFORM TO THE NORTH CAROLINA STATE BUILDING CODE, LATEST REVISION. AS WELL AS ALL LOCAL AND FEDERAL REQUIREMENTS.
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LAYOUT OF FOUNDATIONS AND SHALL CORDINATE THE LOCATIONS OF ALL FOOTINGS, ANCHOR BOLTS, AND OTHER EMBEDDED ITEMS WITH THESE DRAWINGS.

ANY CHANGES IN FIELD WHICH MAY AFFECT LOCATION AND/OR REACTIONS OF THE FOUNDATION MEMBERS SHALL BE BROUGHT TO THE FOUNDATION ENGINEER'S ATTENTION IMMEDIATELY

ATTENTION IMMEDIATELY.
THE LOCATIONS AND DIMENSIONS OF THE STRUCTURAL MEMBERS WE OBTAINED FROM
THE CONSTRUCTION DRAWINGS OF THE PRE-ENGINEERED BUILDING MANUFACTURER.
ORIENTATION OF THE BUILDING SHALL BE DETERMINED BY THE OWNER.
FOUNDATION ENGINEER SHALL NOT BE RESPONSIBLE FOR EXISTING SLAB OR OTHER.

FLOOR MATERIALS, FOOTINGS WERE DESIGNED INDEPENDENT OF EXISTING BUILDING

DESIGN CRITERIA: NORTH CAROLINA BUILDING CODE, 2018 EDITION SUPERIMPOSED DEAD LOAD:

A) DEAD LOAD 3 00 PSF B) COLLATERAL LOAD. 5.00 PSF DESIGN LIVE LOAD A) ROOF LIVE LOAD 12.0 PSF B) FLOOR LIVE LOAD 125 PSF SNOW LOAD: A) ROOF SNOW LOAD 10.00 PSF B) IMPORTANCE FACTOR 1.00 WIND: A) BASIC WIND SPEED . 118 MPH B) MWFRS ANALYSIS PROCEDURE C) WIND EXPOSURE CATEGORY D) IMPORTANCE FACTOR 1.00 6 SFISMIC: A) SEISMIC DESIGN CATEGORY

B) SPECTRAL RESPONSE ACCELERATION SHORT PERIOD: S<sub>S</sub> = 14.6 % G S<sub>DS</sub> = 15.6 % G S<sub>1</sub> = 6.9 % G S<sub>D1</sub> = 11.1 % G 1-SECOND PERIOD: C) SITE CLASSIFICATION D) IMPORTANCE FACTOR

E) BASIC STRUCTURAL SYSTEM (CHECK ONE): BEARING WALL DUAL WITH SPECIAL MOMENT FRAME BUILDING FRAME DUAL WITH INTERM. R/C OR SPECIAL STEEL

MOMENT FRAME INVERTED PENDULUM F) ANALYSIS PROCEDURE: SIMPLIFIED \_ EQUIVALENT LATERAL FORCE MODAL

ARCHITECTURAL, MECHANICAL, COMPONENTS ANCHORED? \_\_

LATERAL DESIGN CONTROL: EARTHQUAKE \_\_\_\_ WIND \_\_\_\_

#### CONCRETE

- CONCRETE WORK SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318-11, INCLUDING SUPPLEMENTS.
- CONCRETE SHALL REACH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28

#### FOUNDATIONS:

- MAXIMUM ALLOWABLE SOIL PRESSURE 2,000 PSF (PRESUMPTIVE). THIS SHALL BE VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER BEFORE FOOTINGS ARE PLACED.
- ALL FILL INSIDE BUILDING SHALL BE SELECT MATERIAL FREE FROM ROOTS, TRASH, WOOD SCRAPS, AND OTHER EXTRANEOUS MATERIAL FREE FROM ROOTS, TRASH, WOOD SCRAPS, AND OTHER EXTRANEOUS MATERIALS, PLACE FILL IN LIFTS NOT EXCEEDING 12 INCHES AND COMPACT EACH EXCEEDING LIFT TO 95% DENSITY AT OPTIMUM MOISTURE CONTENT AS MEASURED BY ASTM D-698.

- FLOOR SLAB CONCRETE THICKNESS SHALL BE INSTALLED OVER A 6 MIL. VAPOR BARRIER OVER 4-INCH CRUSHED STONE FLOOR. (STONE OPTIONAL)
- PROVIDE CONSTRUCTION OR CONTROL JOINTS IN SLAB-ON-GRADE AT OFFSETS, COLUMN GRIDS, CHANGES IN DIRECTION AND AT 12 FEET MAXIMUM, OR AS SHOWN ON
- SAW CUT JOINTS SOON AFTER CONCRETE HARDENED JUST ENOUGH TO PREVENT

RAVELING OUT OF THE AGGREGATE AND DAMAGE TO EDGES, BUT NOT LATER THAN 36 HOURS AFTER THE CONCRETE WAS PLACED. AT CONSTRUCTION JOINTS WHERE BOND IS BROKEN BETWEEN TWO POURS, SAW CUTTING MAY BE DELAYED AS NECESSARY.

AFTER SAW CUTTING, CLEAN ALL THE CONTAMINANTS IN THE JOINTS WITH A MINIMUM 1000 PSI PRESSURE WATER BLASTER JOINT SEALANT TO BE SUITABLE FOR TRUCK LOADING AND FORK LIFT LOADS ON SLAB. SEALANT TO BE INSTALLED IN ACCORDANCE TO MANUFACTURER'S

#### REINFORCING STEEL:

- BARS SHALL BE ROLLED FROM NEW BILLET-STEEL CONFORMING TO THE "STANDARD SPECIFICATION FOR DEFORMED AND PLAIN BILLET-STEEL BARS FOR CONCRETE
  REINFORCEMENT," ASTM A-615. GRADE 60. AND SUPPLEMENTARY REQUIREMENT S1. WELDED WIRE FABRIC SHALL CONFORM TO THE "STANDARD SPECIFICATION FOR
- WELDED STEEL WIRE FABRIC FOR CONCRETE REINFORCEMENT," ASTM A-185.

  DETAIL AND FABRICATE REINFORCING STEEL IN ACCORDANCE WITH THE AMERICAN
- CONCRETE INSTITUTE, "ACI DETAILING MANUAL 1988," PUBLICATION SP-66(88).
- MINIMUM CONCRETE COVER, UNLESS NOTED OTHERWISE: A) UNFORMED SURFACES IN CONTACT WITH THE GROUND. B) FORMED SURFACES EXPOSED TO EARTH OR WEATHER . .. 2.0" C) FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER .
- PROVIDE BARS AT CORNERS AND INTERSECTIONS OF THE SAME NUMBER AND SIZE AS LONGITUDINAL BARS IN FOOTINGS AND WALLS

.. 1.5"

MINIMUM LAP OF REINFORCING BARS SHALL BE 40 X BAR DIAMETER.

#### MISCELL ANEOUS:

- STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THEIR SHOP DRAWINGS.
- NO CHANGE IN SIZE OF THE DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE
- 4. DO NOT SCALE THESE DRAWINGS; USE DIMENSIONS.

#### .I DIMENSIONS

1.00

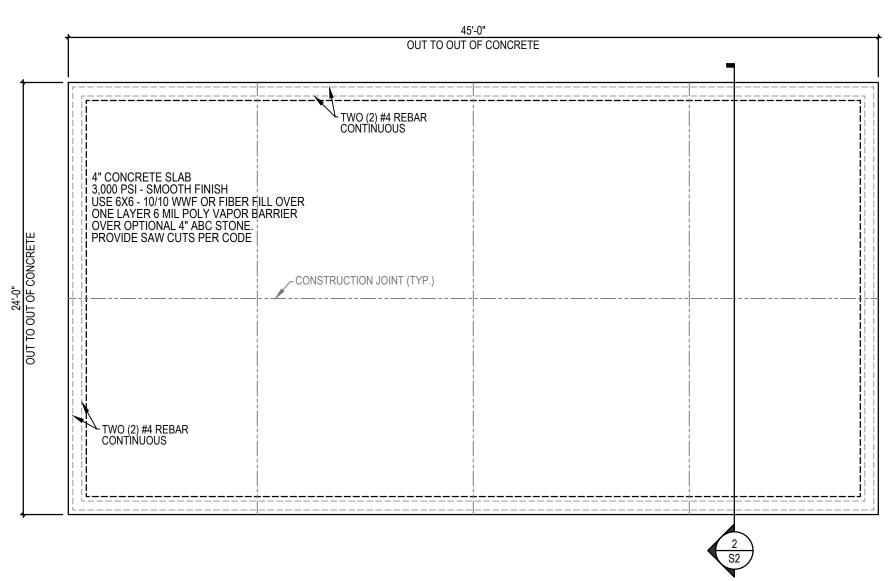
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THE DIMENSIONS OF THE STRUCTURAL DRAWINGS AND ADVISING THE ENGINEER OF ANY DIFFERENCES IN DIMENSIONS BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO COMMENCING CONSTRUCTION.
- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO INSTALLATION.
  CONTRACTOR SHALL BE RESPONSIBLE TO INFORM FOUNDATION ENGINEER OF ANY
  DIMENSIONAL DISCREPANCIES BETWEEN ARCHITECTURAL, STRUCTURAL, AND/OR
  PRE-ENGINEERING BUILDING PLANS AND FOUNDATION PLANS PRIOR TO

#### CONSTRUCTION SAFETY:

THESE STRUCTURAL DRAWINGS DO NOT CONTAIN NECESSARY COMPONENTS FOR SAFETY DURING CONSTRUCTION. BRACE ALL WALLS DURING CONSTRUCTION TO PREVENT DAMAGE FROM WIND AND WATER AND FROM CONSTRUCTION LOADS UNTIL ALL SUPPORTING WALLS AND ROOF DIAPHRAGM ARE IN PLACE

L. PROJECT INFORMATION: CONTRACTOR TO VERIFY ALL DIMENSIONAL REQUIREMENTS FOR BUILDING PLACEMENT AND ORIENTATION OF ANCHOR BOLTS PRIOR TO POURING CONCRETE.

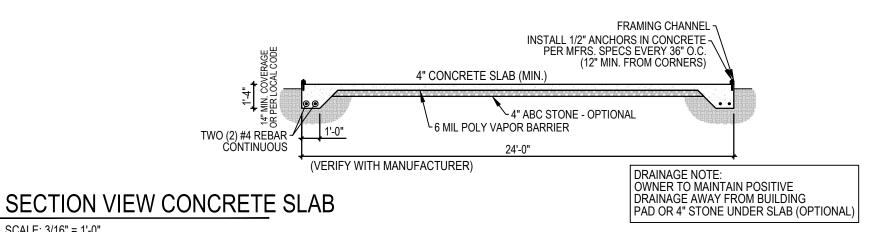
THESE PLANS ARE FOR STRUCTURAL DESIGN ONLY. CONTRACTOR TO CONFORM TO ALL APPLICABLE CODES FOR ANY OTHER DESIGN CRITERIA.



# PLAN VIEW CONCRETE SLAB

SCALE: 3/16" = 1'-0"

SCALE: 3/16" = 1'-0"





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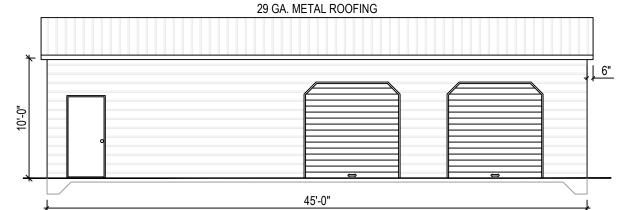
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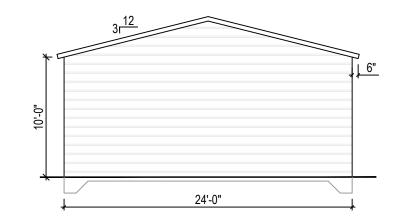
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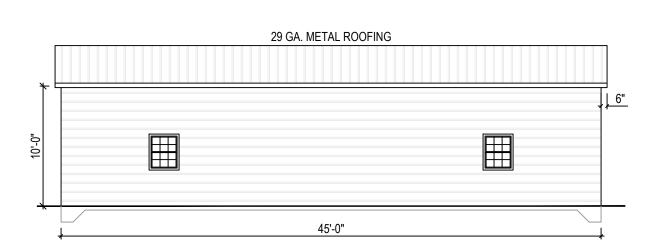
RIGHT ELEVATION SCALE: 1/8" = 1'-0"



FRONT ELEVATION SCALE: 1/8" = 1'-0"



**REAR ELEVATION** SCALE: 1/8" = 1'-0"



LEFT ELEVATION SCALE: 1/8" = 1'-0"

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Summey Engineering Associates,

FRAMING SECTIONS

JAMIE PETREE

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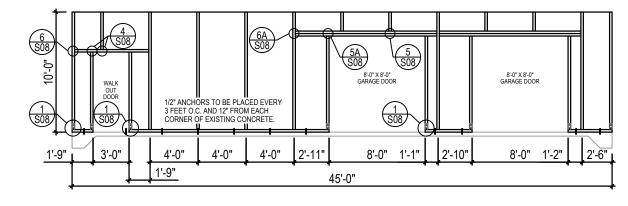
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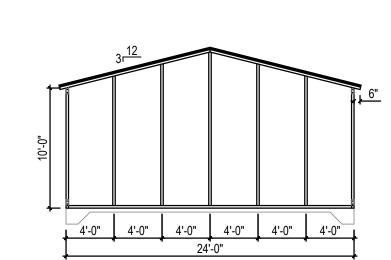
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**RIGHT WALL** SCALE: 1/8" = 1'-0"



**REAR WALL** SCALE: 1/8" = 1'-0"

10'-0"

4'-0"

FRONT WALL

SCALE: 1/8" = 1'-0"

4'-0"

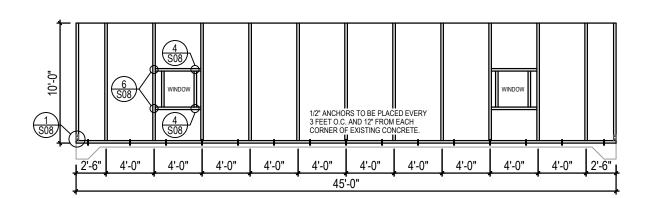
4'-0"

24'-0"

4'-0"

4'-0"

4'-0"



**LEFT WALL** SCALE: 1/8" = 1'-0"

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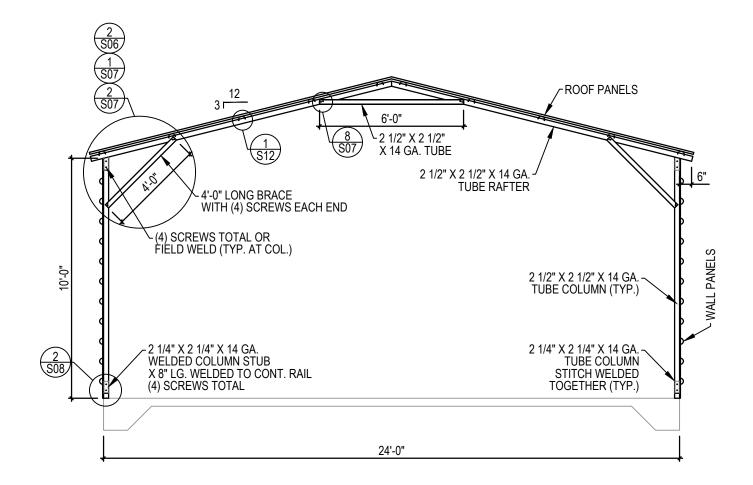
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TYPICAL CROSS SECTION JAMIE PETREE

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TYPICAL CROSS SECTION SCALE: 1/4" = 1'-0"

## MATERIAL NOTE:

SCREWS TO BE #12 X 3/4" HEX WASH WITH SEAL, METAL OR EQUIV.
TUBING = 2 1/2" X 2 1/2" X 14 GA. UNLESS NOTED OTHERWISE
CONCRETE ANCHORS TO BE 1/2" X 6 1/2" RAWL POWER STUD WEDGE ANCHORS OR EQUAL 2-1/4" (MIN) EMBEDMENT INTO 3,000 PSI CONCRETE

ROOFING AND SIDING TO BE 29 GA. MAC-RIB PANELS

**GAUGE THICKNESS** 

14 GA. - 0.083 12 GA. - 0.109

**DETAIL** 

BASE RAIL ANCHORAGE / JAMIE PETREE

CONCRETE

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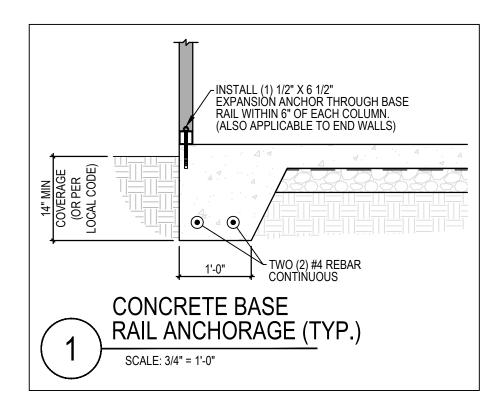
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#### **GENERAL NOTES:**

ALL CONCRETE MONOLITHIC SLAB DESIGN BASED ON MINIMUM SOIL BEARING CAPACITY OF 2,000 P.S.F.

#### CONCRETE:

CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3,000 P.S.I. AT 28 DAYS.

#### COVER OVER REINFORCING STEEL

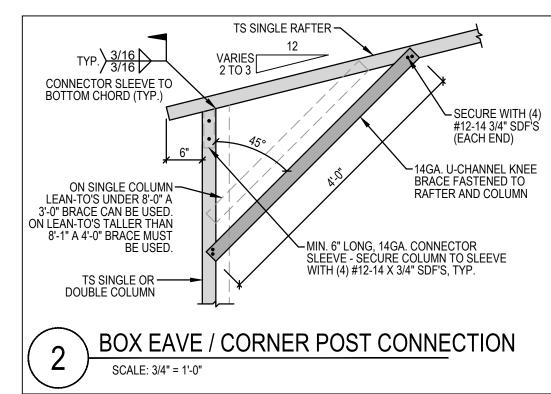
FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-318: 3" IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH AND WEATHER AND 1-1/2" ELSEWHERE.

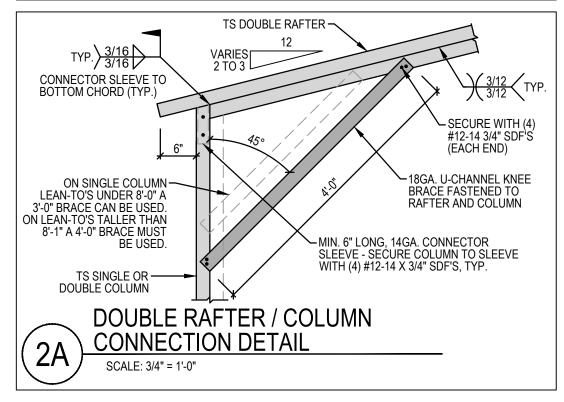
#### REINFORCING STEEL

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.

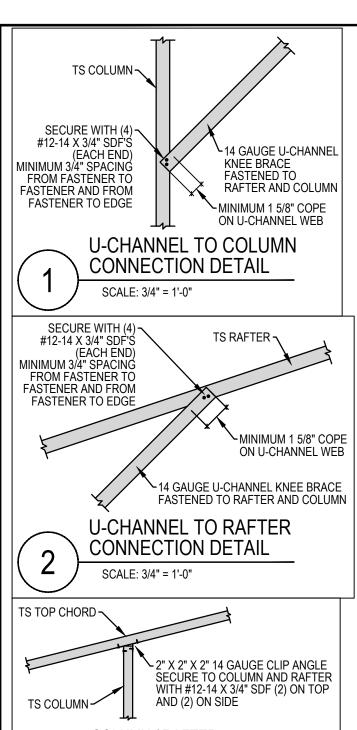
## REINFORCEMENT MAY BE BENT IN THE SHOP OR IN THE FIELD PROVIDED: 1. REINFORCEMENT IS BENT COLD

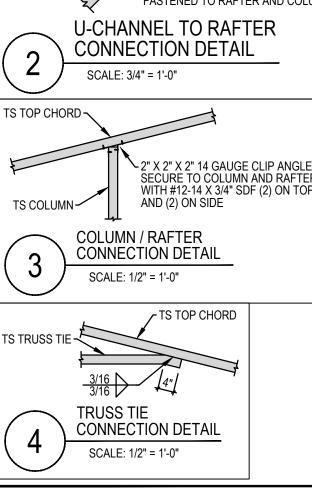
- THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAT SIX-BAR DIAMETERS. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT.

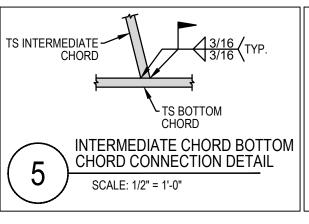












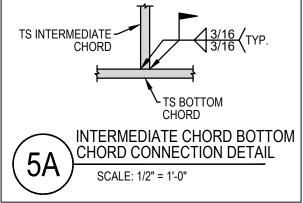
**CHORD CONNECTION DETAIL** 

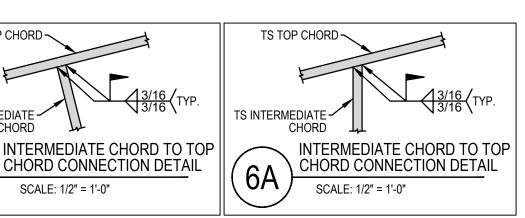
SCALE: 1/2" = 1'-0"

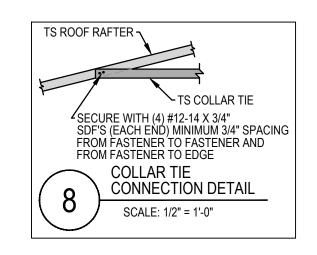
TS TOP CHORD:

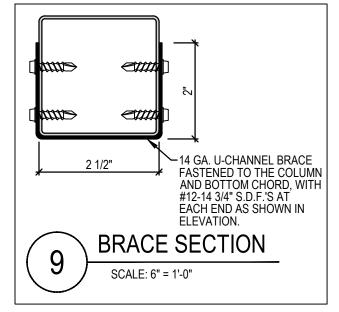
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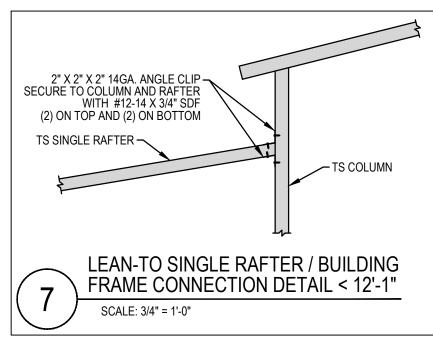
CHORD

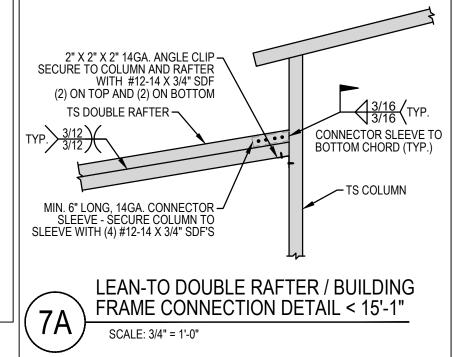






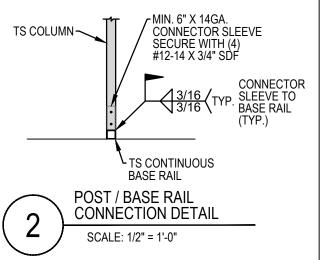


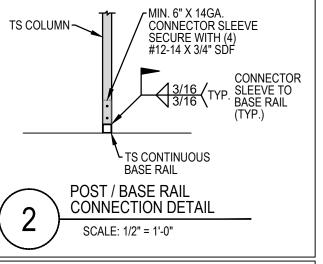


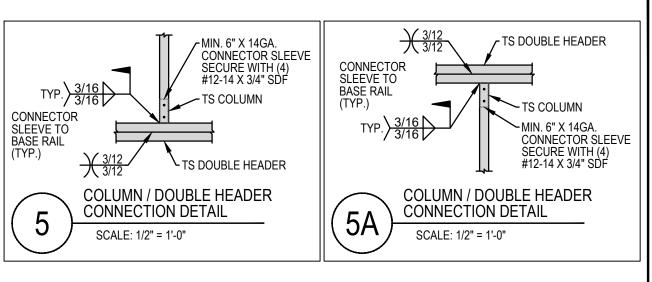


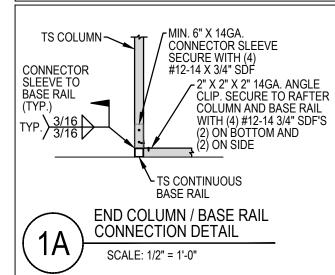


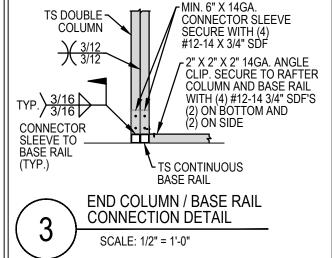
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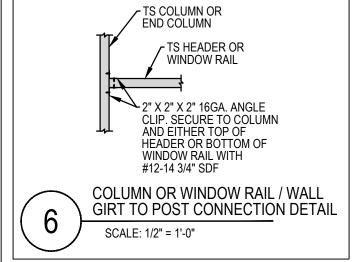


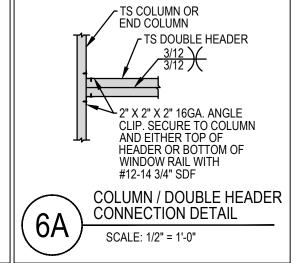


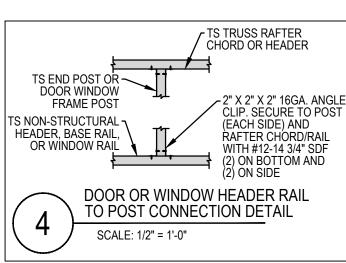


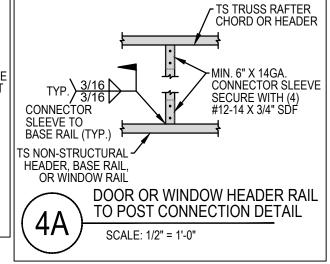


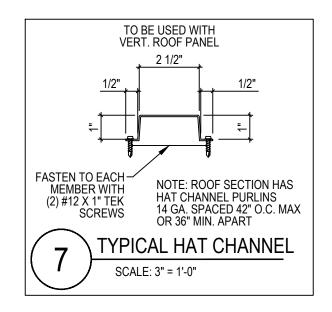






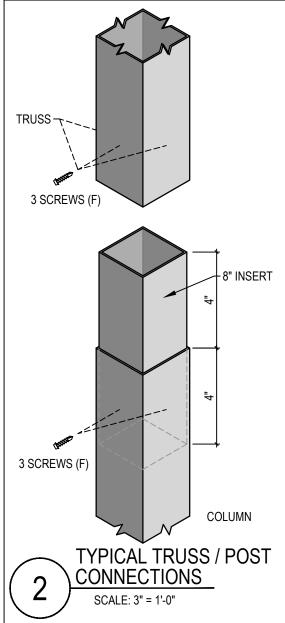


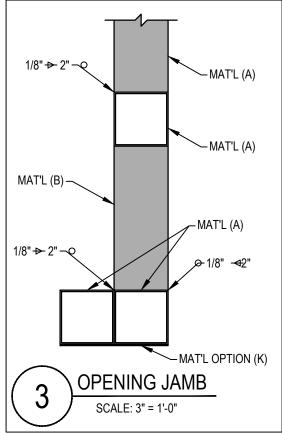






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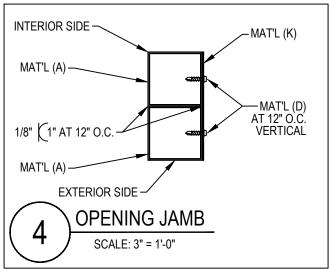
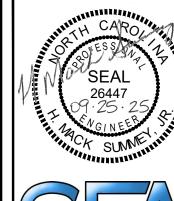


	CHART OF MATERIAL
Α	2 1/4" X 2 1/4" X 14 GA. TUBING
В	4" X 4" X 1/4" ANGLE MIN. A-36 STEEL
О	NOT USED
D	#12 X 3/4" TEK SCREW
Ε	#12 X 3/4" TEK SCREW / LAP SCREW
F	#14 X 1 1/4" TEK SCREW / LAP SCREW
G	29 GAUGE METAL ROOF PANELS *
H	20 GA. GALVANIZED TP15 TIE PLATE 1 13/16" X 5" OR SIMPSON STRONG TIE A-21
J	2" X 2" X 3/16" 36 KSI STEEL ANGLE
K	4" X 12" GAUGE BAR
L	29 GAUGE METAL WALL PANELS *
М	2 1/4" X 2 1/4" X 14 GA. NESTED WITH 2" X 2" X 12 GA. TUBING

\* COMMERCIAL BUILDING MUST HAVE A MINIMUM OF 26 GAUGE PANELS





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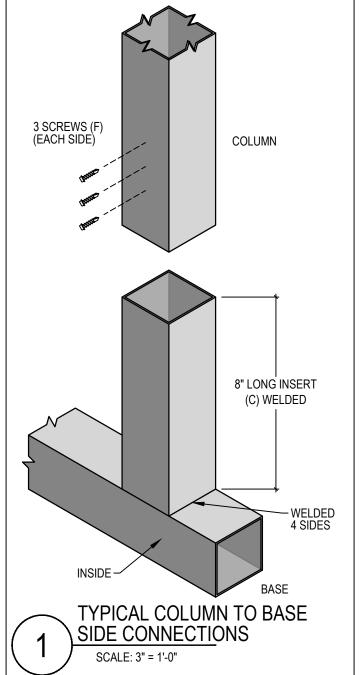
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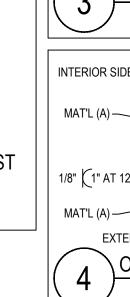
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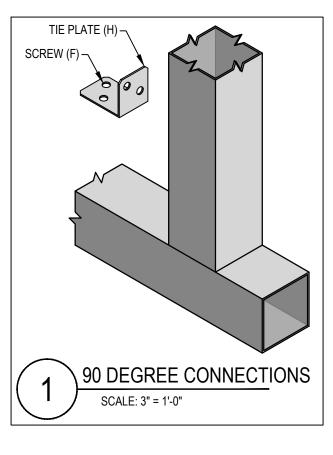
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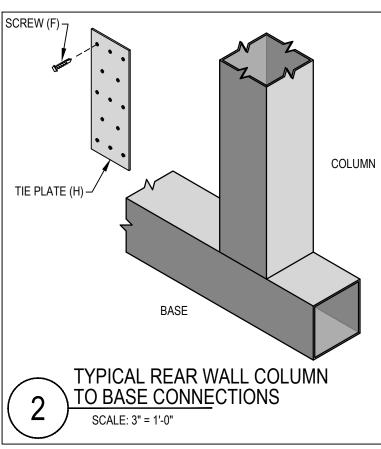
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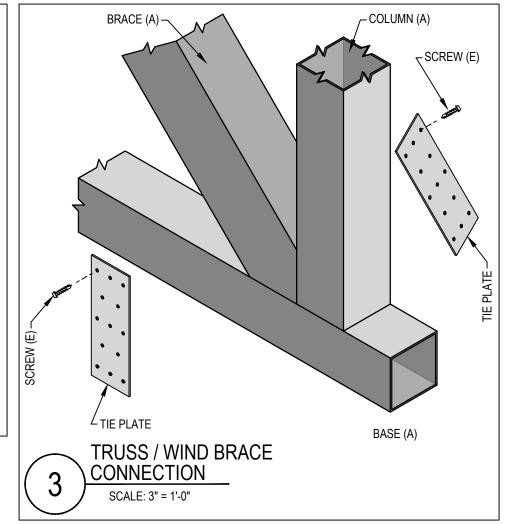
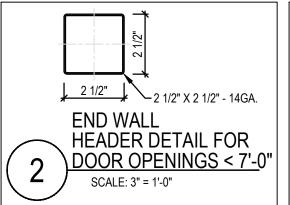
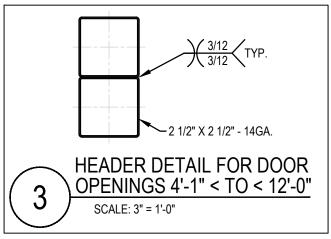
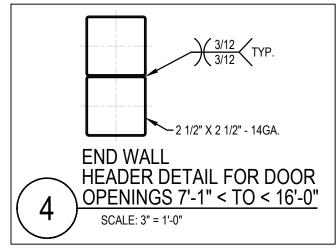


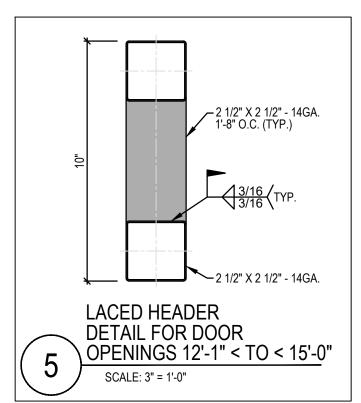
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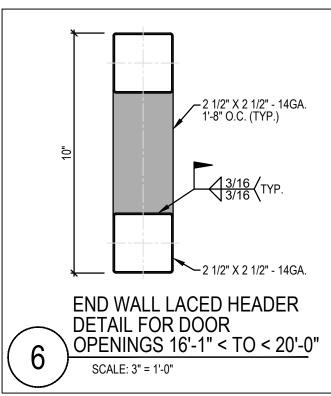
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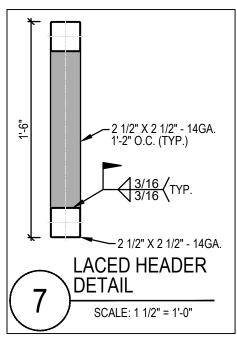


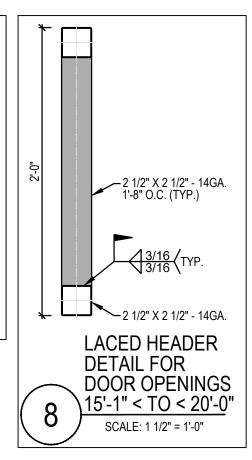


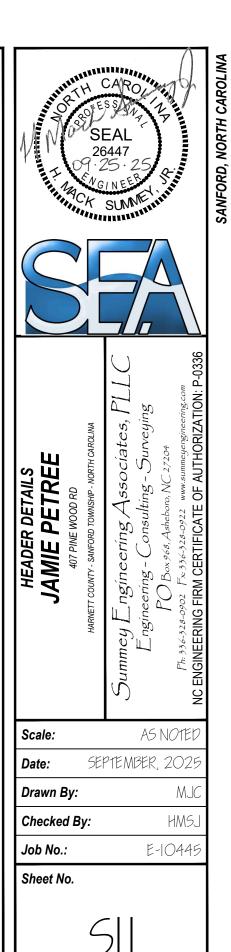








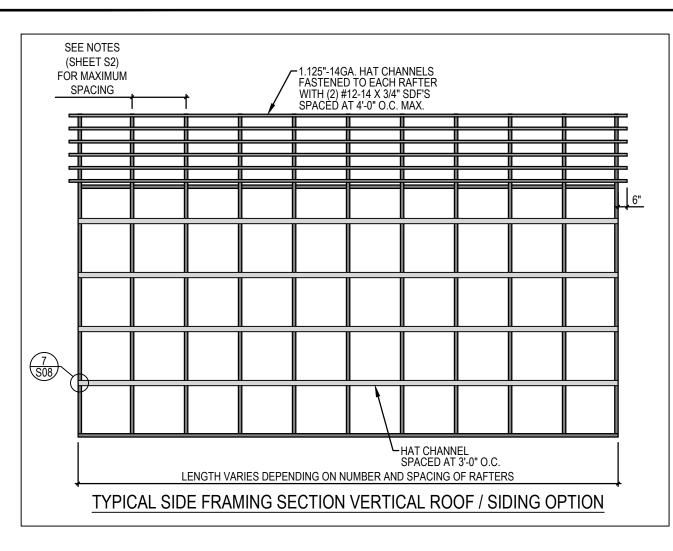




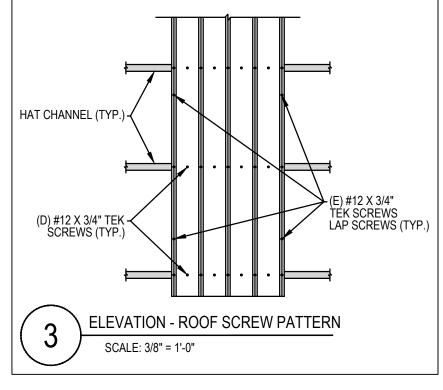
|2 of |3

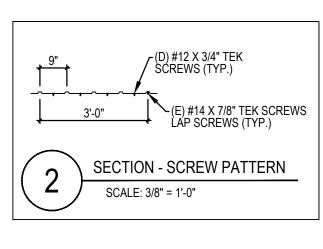
HEREN CAROLAND

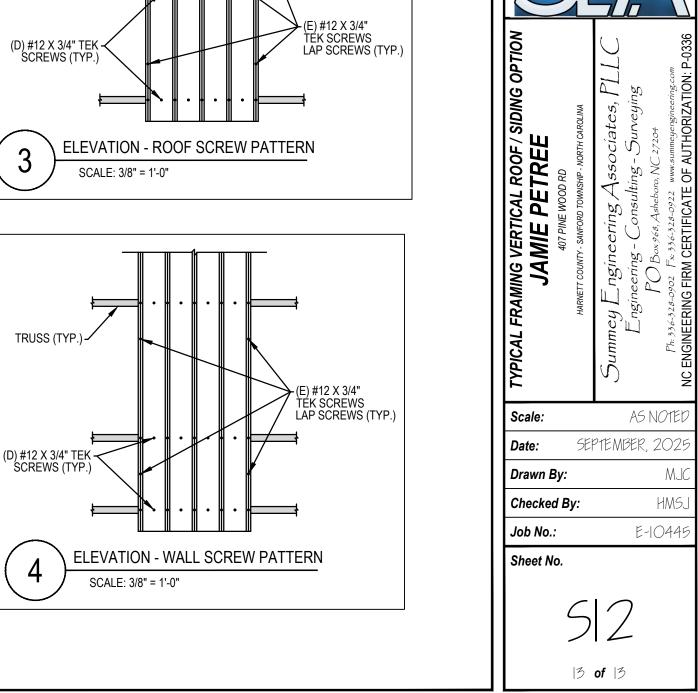
SANFORD, NORTH CAROLINA



TS RAFTER







1.125"-14GA. HAT CHANNELS — FASTENED TO EACH RAFTER WITH (2) #12-14 X 3/4" SDF'S SPACED AT 4'-0" O.C. (MAX.)

**ROOF PANEL** 

ATTACHMENT (TYP.)

SCALE: 3/4" = 1'-0"