

Patricia Doorman
2547 Christian Light Road

Fuquay Varina NC 27526

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2547 Christian Light Road



STRUCTURAL DESIGN

FULLY OPEN (CARPORT) BUILDING

**MAXIMUM 30'-0" WIDE X 16'- 0" EAVE HEIGHT-
BOX EAVE FRAME AND BOW FRAME**

28 October 2020

Revision 9

M&A Project No. 20217S

Prepared for:

Pre-Built Structures
1330 W Jake Alexander Blvd.
Salisbury, NC 28417

Prepared by:

Moore and Associates Engineering and Consulting, Inc.
1009 East Avenue
North Augusta, SC 29841

401 S. Main Street, Suite 200
Mount Airy, NC 27030


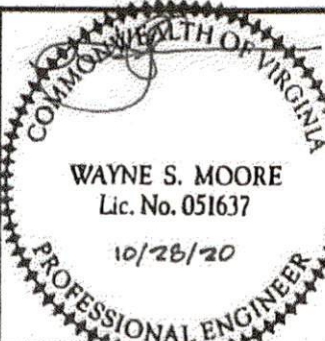


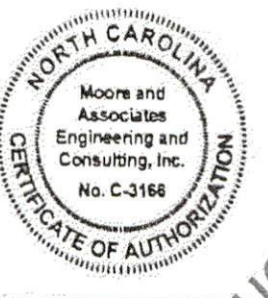



MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING

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Pre-Built Structure Authorized Partner For Customer Use Only**

<p>MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.</p>	<p>DRAWN BY: LT CHECKED BY: PDH</p>	<p>PRE-BUILT STRUCTURES 1330 W JAKE ALEXANDER BLVD. SALISBURY, NC 28417 30'-0" x 16'-0" FULLY OPEN STRUCTURE</p>		
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INSTALLATION NOTES AND SPECIFICATIONS

- 1 DESIGN IS FOR MAXIMUM 30'-0" WIDE x 16'-0" EAVE HEIGHT OPEN CARPORT STRUCTURES
- 2 DESIGN WAS DONE IN ACCORDANCE WITH THE 2018 NORTH CAROLINA BUILDING CODE, 2018 INTERNATIONAL BUILDING CODE (IBC) AND 2015 IBC
- 3 DESIGN LOADS ARE AS FOLLOWS:
 - A) DEAD LOAD = 15 PSF
 - B) LIVE LOAD = 12 PSF
 - C) GROUND SNOW LOAD = 35 PSF
 - = 30 PSF (WITH U-CHANNEL RAFTER TIE)

NOTE: UNBALANCED SNOW LOAD DUE TO DRIFTING HAS NOT BEEN EVALUATED
- 4 3-SECOND GUST ULTIMATE WIND SPEED (V_{ULT}) = \leq 145 MPH (NOMINAL WIND SPEED = \leq 112 MPH)
- 5 MAXIMUM RAFTER/COLUMN AND END COLUMN SPACING = 5.0 FEET (UNLESS NOTED OTHERWISE)
- 6 ENDWALL COLUMNS (POSTS) AND SIDE WALL COLUMNS ARE EQUIVALENT IN SIZE AND SPACING (UNLESS NOTED OTHERWISE)
- 7 RISK CATEGORY I
- 8 WIND EXPOSURE CATEGORY B.
- 9 SPECIFICATIONS APPLICABLE TO 29 GAUGE METAL PANELS FASTENED DIRECTLY TO 2 1/2" x 2 1/2" - 14 GAUGE THIN STEEL (TS) FRAMING MEMBERS (UNLESS NOTED OTHERWISE) 2 1/4" x 2 1/4" - 12 GAUGE TS MAY BE USED AS OPTIONAL FRAMING MEMBERS
- 10 AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR HAT CHANNELS, AND COLUMNS (INTERIOR OR END) = 10 INCHES
- 11 FASTENERS CONSIST OF #12-14x3/4" SELF-DRILLING FASTENER (SDF). USE CONTROL SEAL WASHER WITH EXTERIOR FASTENERS. SPECIFICATIONS APPLICABLE ONLY FOR MEAN ROOF HEIGHT OF 16 FEET OR LESS, AND ROOF SLOPES OF 3:12 (3:12 PITCH) OR LESS SPACING REQUIREMENTS FOR OTHER ROOF HEIGHTS AND/OR SLOPES MAY VARY. ROOF SLOPES LESS THAN 3:12 REQUIRE USE OF JOINT SEALANT
- 12 ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6" OF EACH COLUMN
- 13 STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBAR W/ WELDED NUT x 30" LONG AND MAY ONLY BE USED IN CONJUNCTION WITH OTHER (OPTIONAL) ANCHOR DEVICES AND ONLY IN SUITABLE SOILS. OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED. COORDINATE WITH LOCAL CODES/ORDINANCES REGARDING MINIMUM LENGTH FOR FROST DEPTH PROTECTION
14. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:
 - SOIL SITE CLASS = D
 - RISK CATEGORY I
 - R = 325 $I_e = 1.0$
 - $S_{BS} = 2.039 g$ $V = C_s W$
 - $S_{D1} = 1.258 g$

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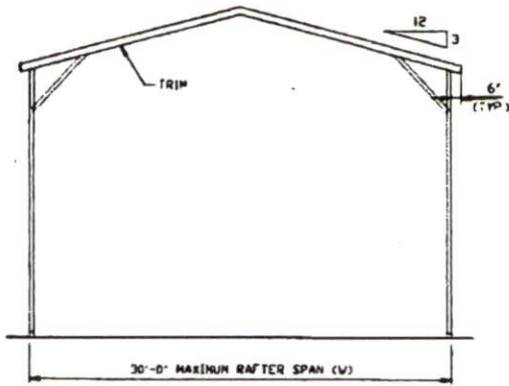
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	CLIENT: PRE-BUILT	SHT. 3	DWG NO SK-1	REV: 0

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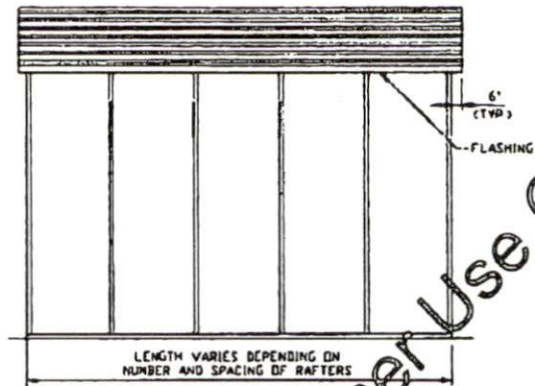
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BOX EAVE FRAME RAFTER STRUCTURE

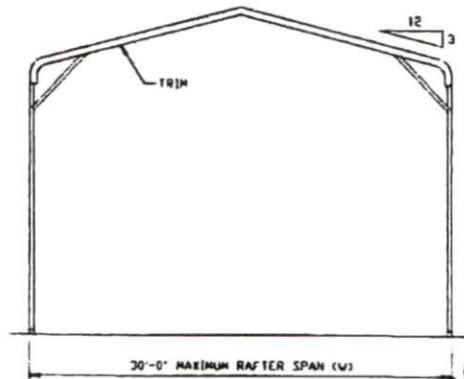


TYPICAL END ELEVATION
SCALE: NTS

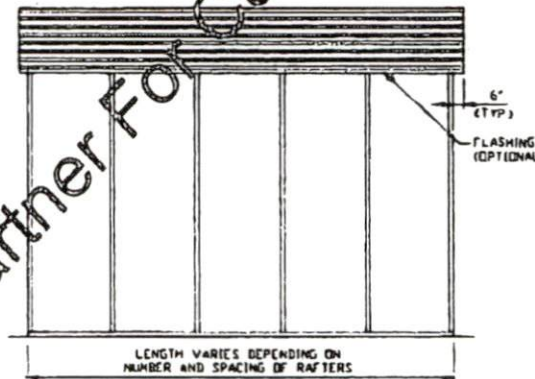


TYPICAL SIDE ELEVATION
SCALE: NTS

BOX EAVE FRAME RAFTER STRUCTURE



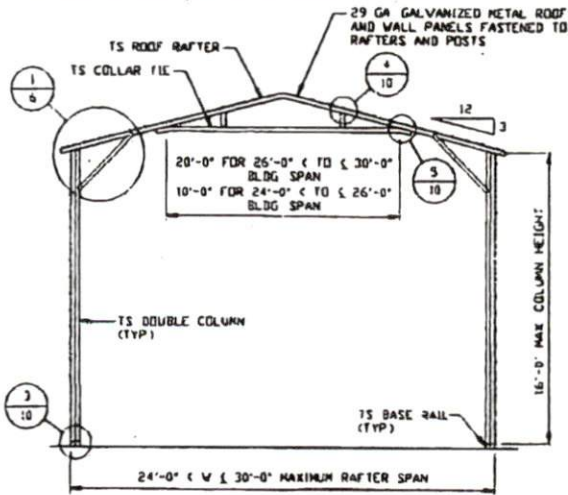
TYPICAL END ELEVATION
SCALE: NTS



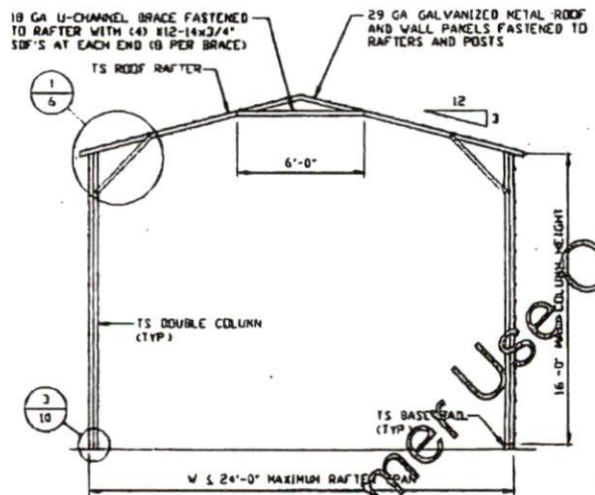
TYPICAL SIDE ELEVATION
SCALE: NTS

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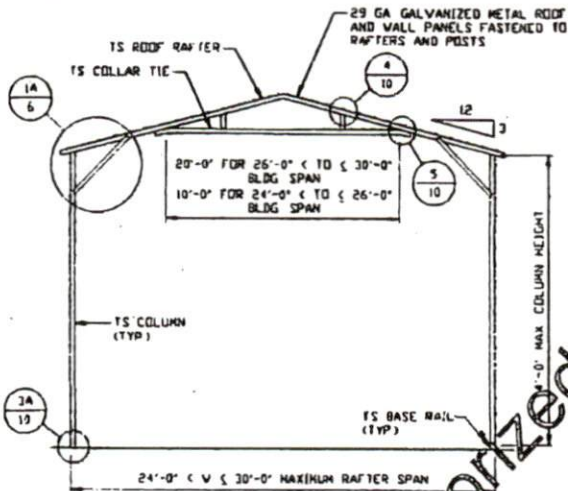
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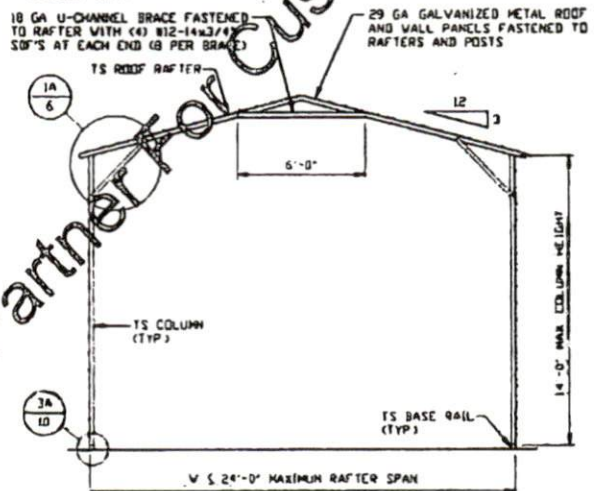
TYPICAL RAFTER/COLUMN FRAME SECTION
SCALE: NTS



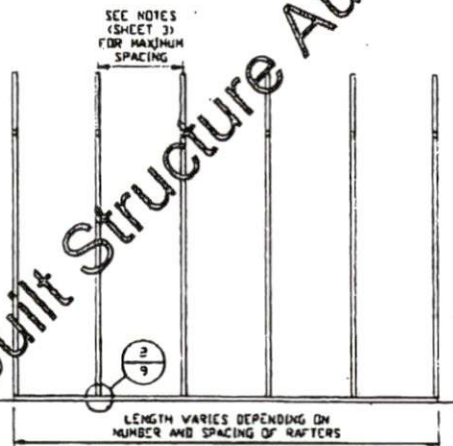
TYPICAL RAFTER/COLUMN FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION
SCALE: NTS

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PRE-BUILT STRUCTURES
1330 W JAKE ALEXANDER BLVD.
SALISBURY, NC 28417
30'-0" x 16'-0" FULLY OPEN STRUCTURE

DATE: 10-08-20
SCALE: NTS
JOB NO: 202175

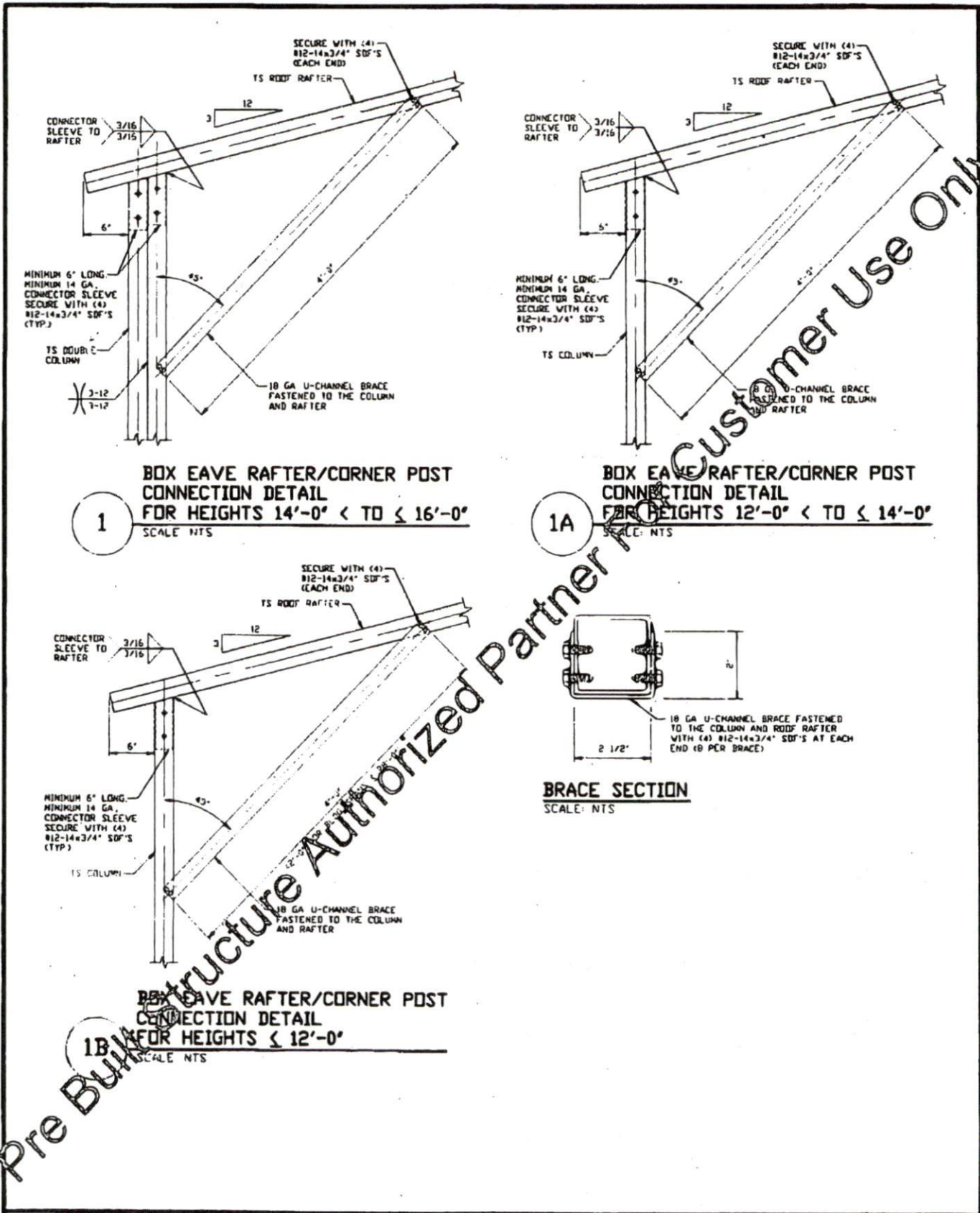
SHT. 5
DWG. NO: SK-1
REV: 0

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	CHECKED BY: DM	30'-0" x 16'-0" FULLY OPEN STRUCTURE		
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CLIENT: PRE-BUILT	SHT. 6	DWG. NO: SK-1	REV: 0	

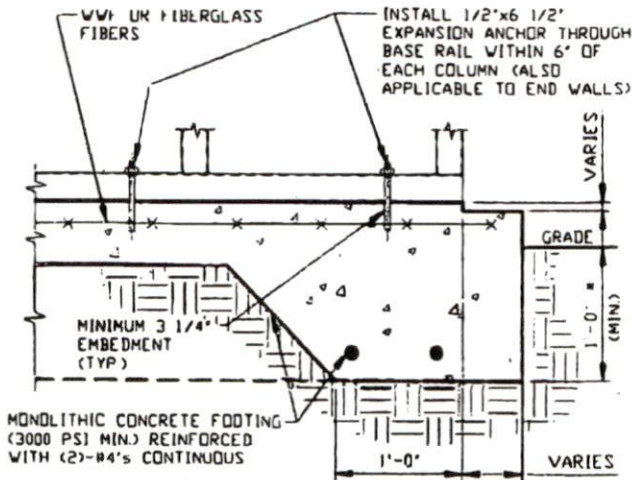
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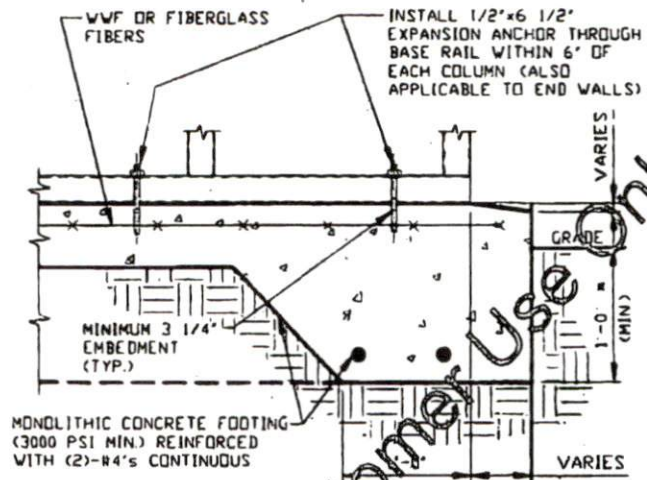
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BASE RAIL ANCHORAGE OPTIONS



2 CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE
 SCALE: NTS
 MINIMUM ANCHOR EDGE DISTANCE IS 4"
 * COORDINATE WITH LOCAL CODES/ORD. REGARDING MINIMUM FROST DEPTH REQ



2A CONCRETE SLAB BASE RAIL ANCHORAGE
 SCALE: NTS
 MINIMUM ANCHOR EDGE DISTANCE IS 4"
 * COORDINATE WITH LOCAL CODES/ORD. REGARDING MINIMUM FROST DEPTH REQ

GENERAL NOTES

NOTE CONCRETE MONOLITHIC SLAB DESIGN BASED ON MINIMUM SOIL BEARING CAPACITY OF 1,500 PSF

CONCRETE:

CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3,000 PSI 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 OR WEATHER, AND 1 1/2" ELSEWHERE.

REINFORCING STEEL:

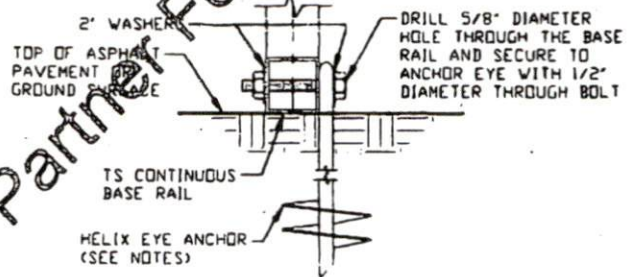
THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT.

REINFORCEMENT MAY BE BENT IN THE SHOP OR THE FIELD PROVIDED:

- 1 REINFORCEMENT IS BENT COLD
- 2 THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETER.
- 3 REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT

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" EMBEDMENT OR SINGLE 6" HELIX WITH MINIMUM 50" EMBEDMENT
- 2 FOR CORAL USE MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT OR SINGLE 6" HELIX WITH MINIMUM 50" EMBEDMENT.
- 3 FOR MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS AND CLAYS USE MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT OR SINGLE 6" HELIX WITH MINIMUM 50" EMBEDMENT
- 4 FOR MEDIUM TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS ALLUVIAL FILL, USE MINIMUM (2) 6" HELICES WITH MINIMUM 30" EMBEDMENT
- 5 FOR VERY LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER CLAYS AND SILTS, ALLUVIAL FILL, USE MINIMUM (2) 8" HELICES WITH MINIMUM 60" EMBEDMENT



2B GROUND BASE HELIX ANCHORAGE
 SCALE: NTS
 (CAN BE USED FOR ASPHALT)
 * COORDINATE WITH LOCAL CODES/ORD. REGARDING MINIMUM FROST DEPTH REQ

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CLIENT: PRE-BUILT

PRE-BUILT STRUCTURES
1330 W JAKE ALEXANDER BLVD.
SALISBURY, NC 28417
30'-0" x 16'-0" FULLY OPEN STRUCTURE

DATE: 10-29-20

SCALE: NTS

JOB NO: 202175

SHT. 9

DWG. NO: SK-1

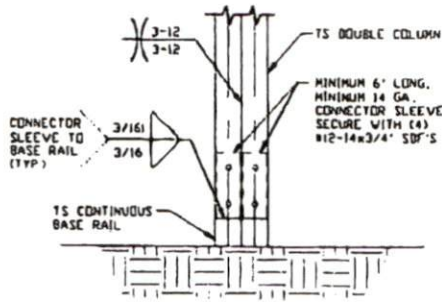
REV: 0

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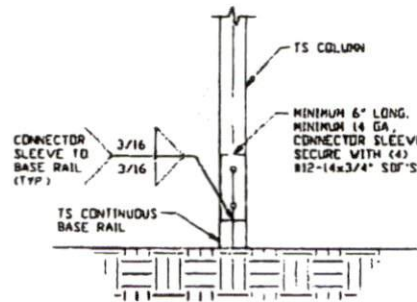
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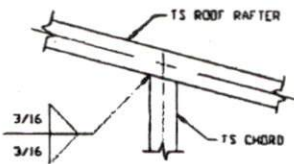
CONNECTION DETAILS



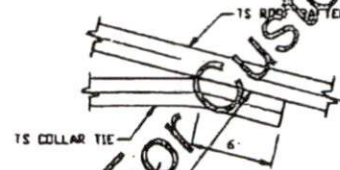
3 POST/BASE RAIL CONNECTION DETAIL
SCALE: NTS



3A POST/BASE RAIL CONNECTION DETAIL
SCALE: NTS



4 RAFTER TO CHORD CONNECTION DETAIL
SCALE: NTS



COLLAR TIE CONNECTION DETAIL
SCALE: NTS

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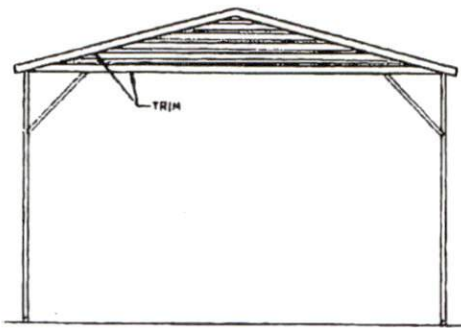
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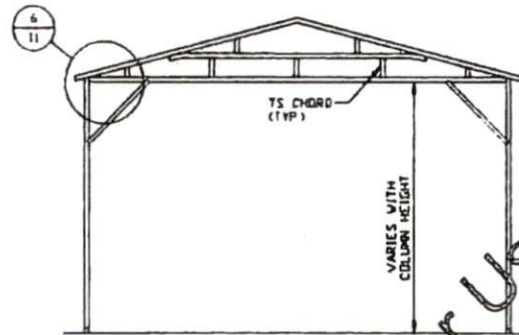
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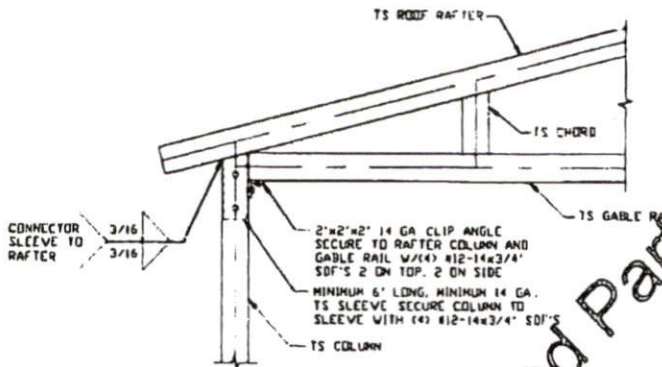
BOX EAVE RAFTER GABLE END OPTION



TYPICAL BOX EAVE RAFTER GABLE END ELEVATION
SCALE: NTS



TYPICAL BOX EAVE RAFTER GABLE END FRAMING SECTION
SCALE: NTS



6 BOX EAVE RAFTER GABLE RAIL TO RAFTER COLUMN CONNECTION DETAIL
SCALE: NTS
NOTE: KNEE BRACE NOT SHOWN FOR CLARITY

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PRE-BUILT STRUCTURES
1330 W JAKE ALEXANDER BLVD.
SALISBURY, NC 28417
30'-0" x 16'-0" FULLY OPEN STRUCTURE

DATE: 10-20-20

SHT. 11

SCALE: NTS

DWG. NO: SK-1

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REV. 0

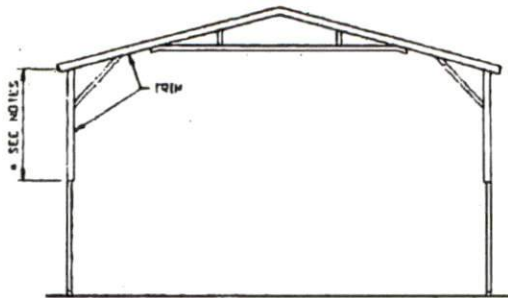
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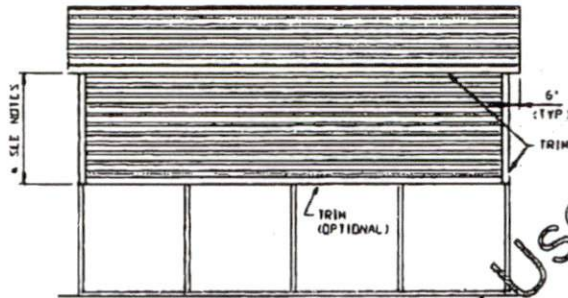
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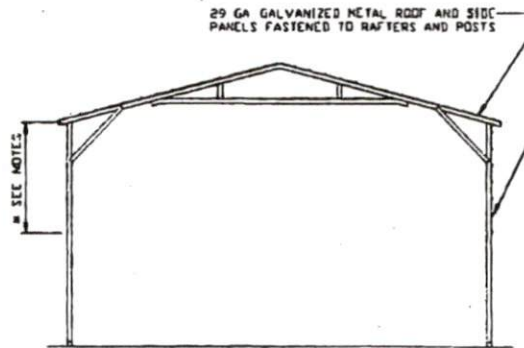
BOX EAVE RAFTER EXTRA SIDE PANEL OPTION



**TYPICAL END ELEVATION
EXTRA SIDE PANELS**
SCALE: NTS



**TYPICAL SIDE ELEVATION
EXTRA SIDE PANELS**
SCALE: NTS



**TYPICAL RAFTER/COLUMN FRAME
SECTION - EXTRA SIDE PANELS**
SCALE: NTS

NOTES:

- * 16'-0" PANEL (FOR EAVE HEIGHTS 14'-0" ≤ EAVE ≤ 16'-0")
- * NO PANELS (FOR EAVE HEIGHTS < 14'-0")

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PRE-BUILT STRUCTURES

1330 W JAKE ALEXANDER BLVD.

SALISBURY, NC 28417

30'-0" x 16'-0" FULLY OPEN STRUCTURE

DATE: 10-28-20

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SHT. 15

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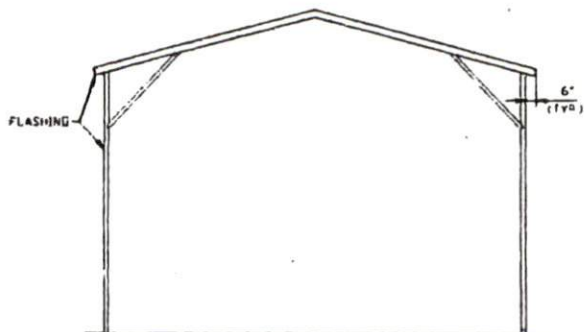
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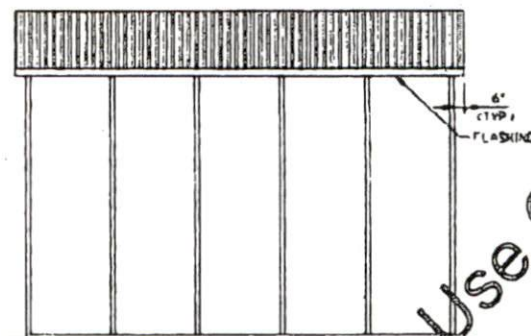
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BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



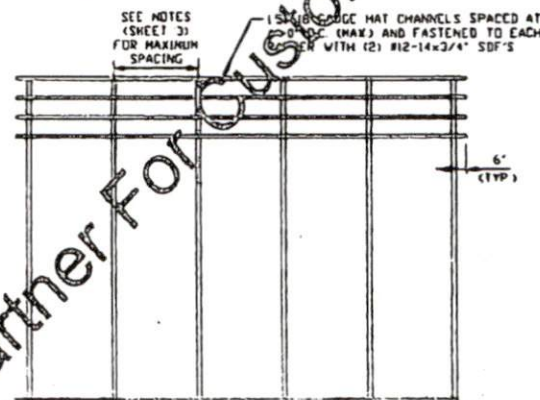
TYPICAL END ELEVATION
VERTICAL ROOF/SIDING
SCALE: NTS



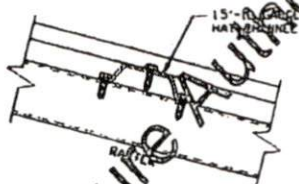
TYPICAL SIDE ELEVATION
VERTICAL ROOF/SIDING
SCALE: NTS



TYPICAL SECTION VERTICAL
ROOF/SIDING OPTION
SCALE: NTS



TYPICAL FRAMING SECTION VERTICAL
ROOF/SIDING OPTION WITH TS GIRTS
SCALE: NTS



ROOF PANEL ATTACHMENT
(ALTERNATIVE FOR VERTICAL ROOF PANELS)
SCALE: NTS

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30'-0" x 16'-0" FULLY OPEN STRUCTURE

DATE: 10-28-20

SCALE: NTS

JOB NO: 202175

SHT. 17

DWG NO: SK-1

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