STRUCTURAL DESIGN

ENCLOSED BUILDING

MAXIMUM 30-0" WIDE X 20'-0" EAVE HEIGHT-BOX EAVE FRAME AND BOW FRAME

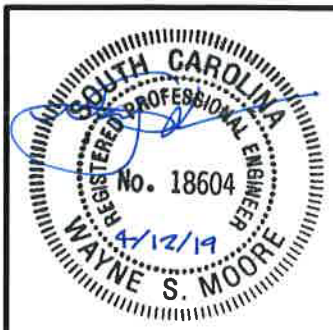
12 April 2019
Revision 0
M&A Project No. 18378S

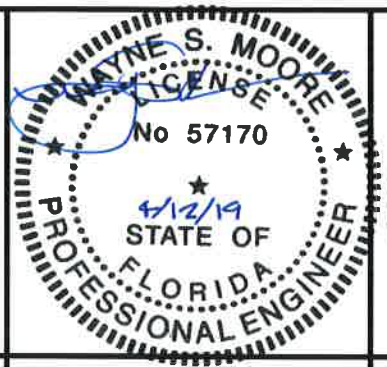
Prepared by:

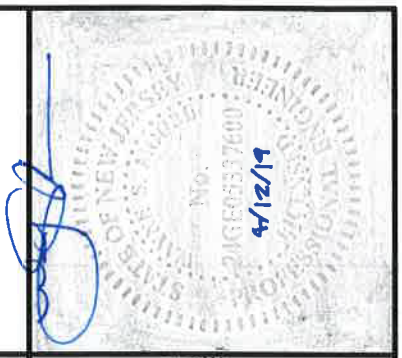
Moore and Associates Engineering and Consulting, Inc.

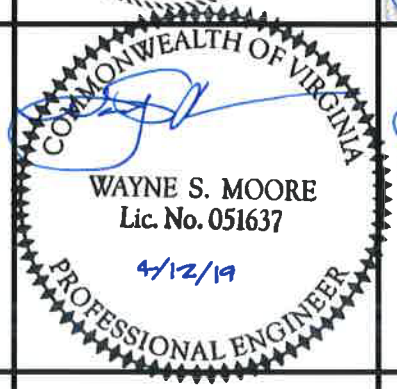
1009 East Avenue
North Augusta, SC 29841

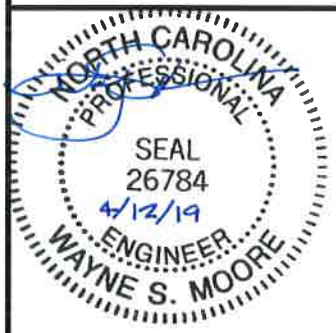
MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING

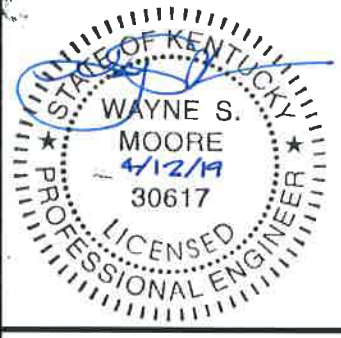


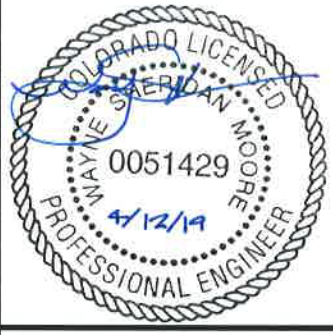




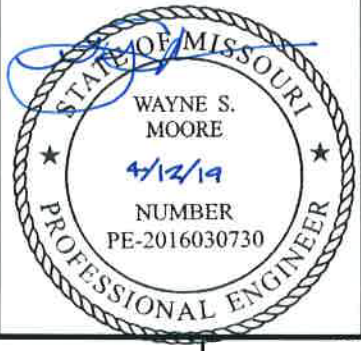








I HAVE RESEARCHED THIS CHAPTER AND THE LOUISIANA STATE UNIFORM CONSTRUCTION CODE AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, THESE DRAWINGS ARE IN COMPLIANCE THEREWITH. I TAKE FULL RESPONSIBILITY FOR THE CONTENTS OF THESE PLANS.



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PROJECT MGR: WSM	DATE: 4-12-19	SCALE: NTS	JOB NO: 18378S
CLIENT: CC	SHT. 1	DWG. NO: SK-3	REV.: 0

INSTALLATION NOTES AND SPECIFICATIONS

1. DESIGN IS FOR MAXIMUM 30'-0" WIDE x 20'-0" EAVE HEIGHT ENCLOSED STRUCTURES.
2. DESIGN WAS DONE IN ACCORDANCE WITH THE 2018 NORTH CAROLINA BUILDING CODE, 2017 FLORIDA BUILDING CODE (FBC) 6TH EDITION, 2018 INTERNATIONAL BUIDLING CODE (IBC), 2006 IBC, 2009 IBC, 2012 IBC, 2015 IBC, AND 2018 IBC.
3. DESIGN LOADS ARE AS FOLLOWS:
   A) DEAD LOAD = 1.5 PSF
   B) LIVE LOAD = 12 PSF
   C) GROUND SNOW LOAD = 33 PSF AT 5'-0" O.C. SPACING.
   = 42 PSF AT 4'-0" O.C. SPACING.
   30 PSF (WITH U-CHANNEL PEAK BRACE) W $\leq$ 26'-0"
   (UNBALANCED SNOW LOADS DUE TO DRIFTING HAVE NOT BEEN EVALUATED.)
4. ULTIMATE WIND SPEED 105 TO 143 MPH (NOMINAL WIND SPEED 82 TO 110 MPH).
   MAXIMUM RAFTER/COLUMN AND END COLUMN SPACING = 5.0 FEET
5. ULTIMATE WIND SPEED 144 TO 155 MPH (NOMINAL WIND SPEED 111 TO 120 MPH).
   MAXIMUM RAFTER/COLUMN AND END COLUMN SPACING = 4.0 FEET
6. END WALL COLUMNS (POSTS) ARE SIMILAR TO SIDE WALL POSTS IN SIZE AND SPACING UNLESS NOTED OTHERWISE.
7. LOW HAZARD RISK CATEGORY I.
8. WIND EXPOSURE CATEGORY B.
9. SPECIFICATIONS APPLICABLE TO 29 GAUGE METAL PANELS FASTENED DIRECTLY TO 2 1/4" x 2 1/4" - 14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS (UNLESS NOTED OTHERWISE).
10. AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR HAT CHANNELS, AND COLUMNS (INTERIOR OR END) = 8 INCHES.
11. FASTENERS CONSIST OF #12-14x3/4" (UNLESS OTHERWISE NOTED) SELF-DRILLING FASTENER (SDF), USE CONTROL SEAL WASHER WITH EXTERIOR FASTENERS. SPECIFICATIONS APPLICABLE ONLY FOR MEAN ROOF HEIGHT OF 20 FEET OR LESS, AND ROOF SLOPES OF 14° (3:12) PITCH OR LESS SPACING REQUIREMENTS FOR OTHER ROOF HEIGHTS AND/OR SLOPES MAY VARY.
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 36" LONG. SOIL NAILS MAY BE USED FOR MAXIMUM WIND V = 145 MPH AND IN SUITABLE SOIL CONDITIONS. OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED FOR WIND V > 145 MPH AND/OR IN UNSUITABLE SOILS AS NOTED.
14. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:
    SOIL SITE CLASS = D
    RISK CATEGORY I/II/III
    R= 3.25 I_E= 1.0
    S_{DS}= 2.039 g V= C_SW
    S_{D1}= 1.258 g
15. DOOR AND WINDOW PRESSURES APPLICABLE TO THE STATE OF FLORIDA.

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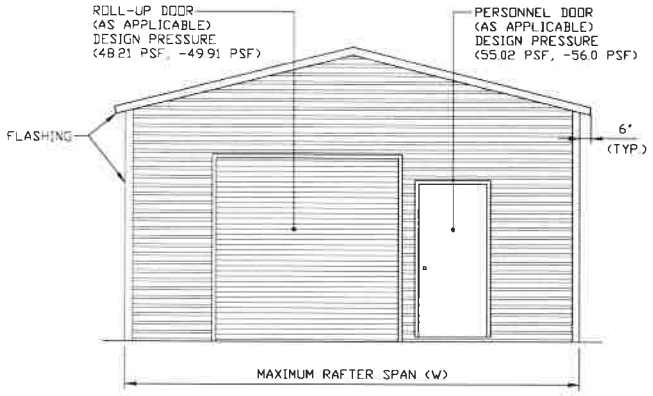
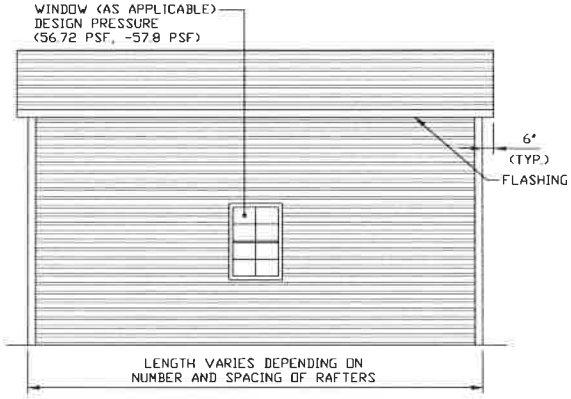
CLIENT: CC	SHT. 3	DWG. NO: SK-3	REV.: 0	

BOX EAVE FRAME RAFTER STRUCTURE



TYPICAL END ELEVATION-HORIZONTAL ROOF

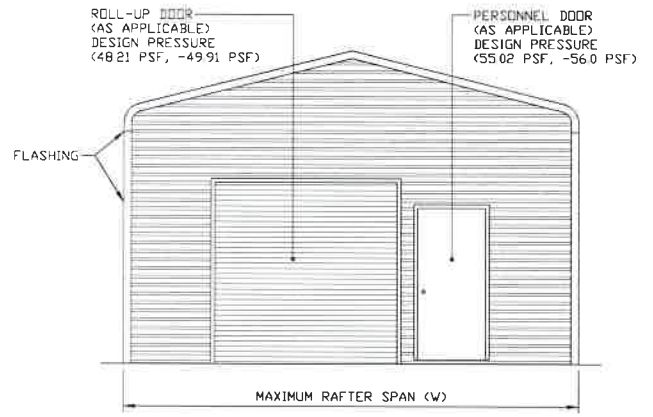
SCALE: NTS



TYPICAL SIDE ELEVATION-HORIZONTAL ROOF

SCALE: NTS

BOW FRAME RAFTER STRUCTURE



TYPICAL END ELEVATION

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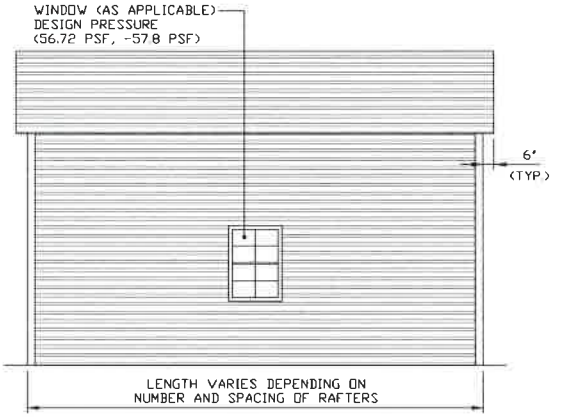

TYPICAL END ELEVATION

SCALE: NTS

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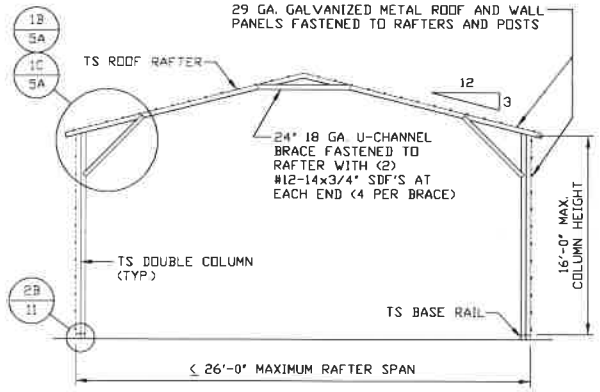
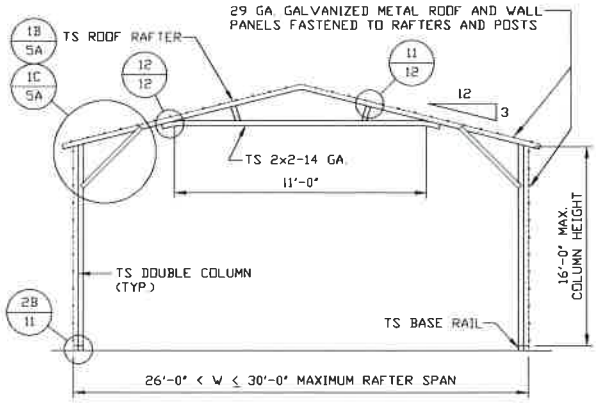
	CLIENT: CC	SHT. 3A	DWG. NO: SK-3	REV.: 0



TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION

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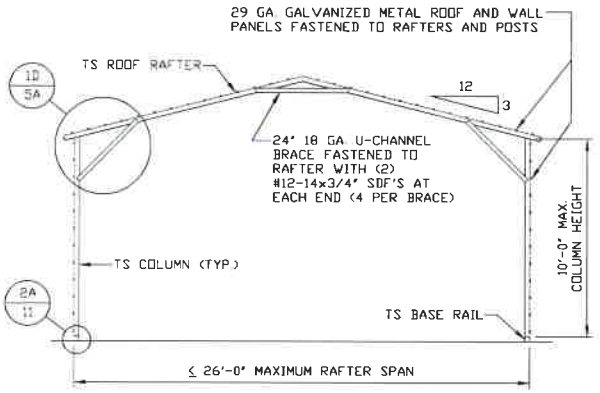

TYPICAL RAFTER/COLUMN END FRAME SECTION

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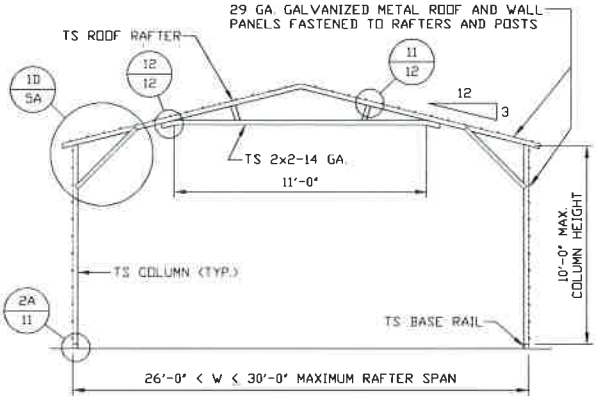

TYPICAL RAFTER/COLUMN END FRAME SECTION

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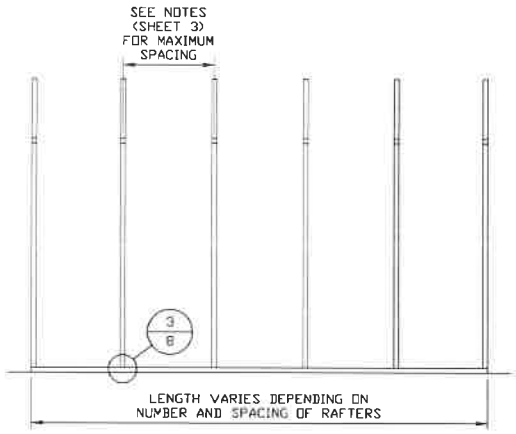

TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

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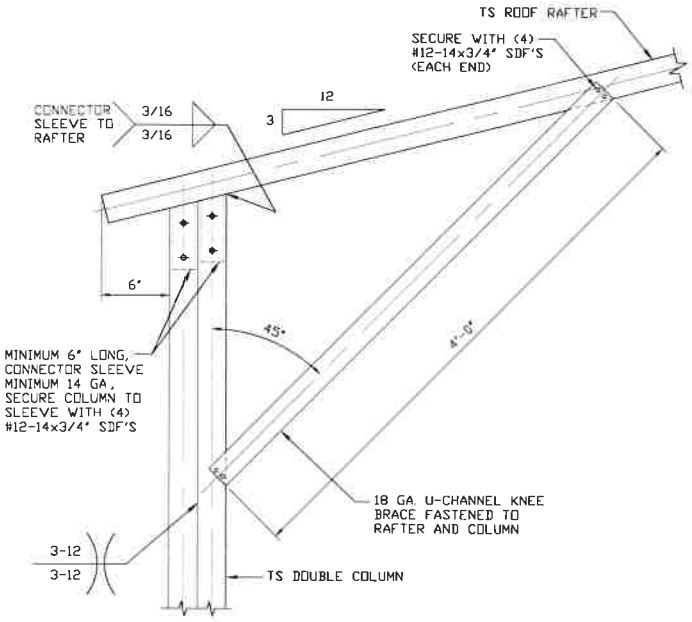
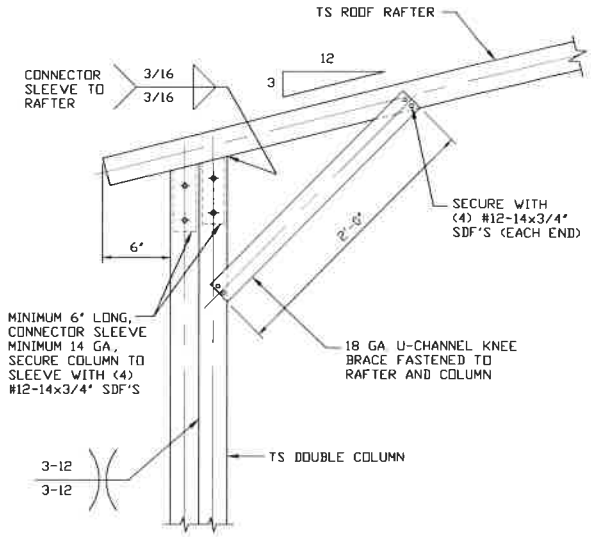


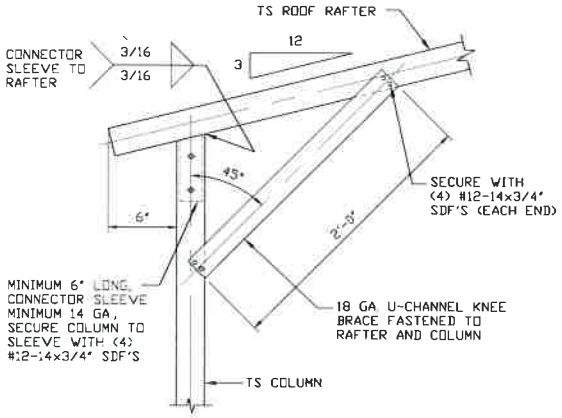
1B BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 12'-0" < TO ≤ 16'-0"

SCALE: NTS



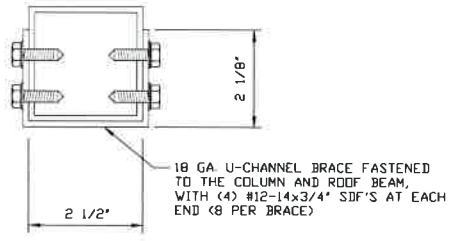
1C BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO ≤ 12'-0"

SCALE: NTS



1D BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 10'-0"

SCALE: NTS



BRACE SECTION

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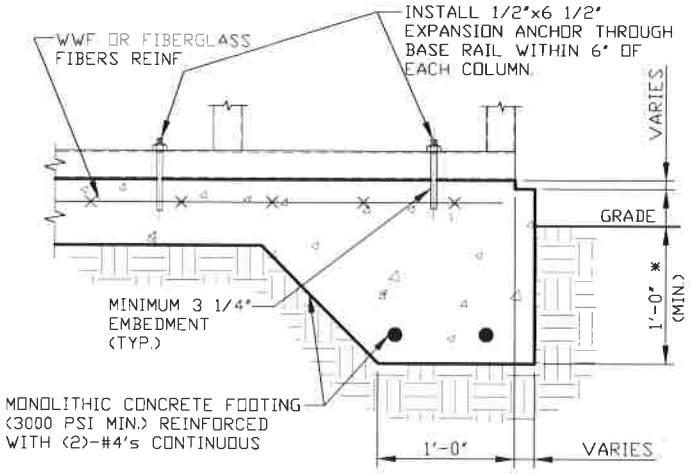
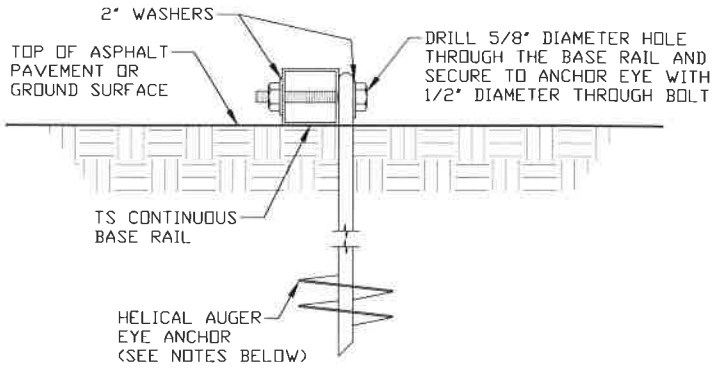
	CLIENT: CC	SHT. 5A	DWG. NO: SK-3	REV: 0

BASE RAIL ANCHORAGE OPTIONS



3A **CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE**
SCALE: NTS
MINIMUM ANCHOR EDGE DISTANCE IS 4".
* COORDINATE WITH LOCAL CODES/ORD.



3B **HELICAL AUGER ANCHORAGE**
SCALE: NTS (CAN BE USED FOR ASPHALT)

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 DIAMETERS.
3. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT.

HELICAL AUGER 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 INCH EMBEDMENT OR SINGLE 6" HELIX WITH MINIMUM 50" EMBEDMENT.
4. FOR LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS ALLUVIAL FILL, USE MINIMUM (2) 6" HELICES WITH MINIMUM 50" EMBEDMENT.
5. FOR VERY LOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER CLAYS AND SILTS, ALLUVIAL FILL, USE MINIMUM (2) 8" HELICES WITH MINIMUM 60" EMBEDMENT.

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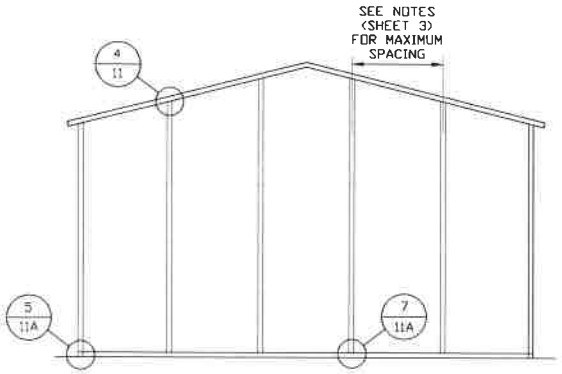
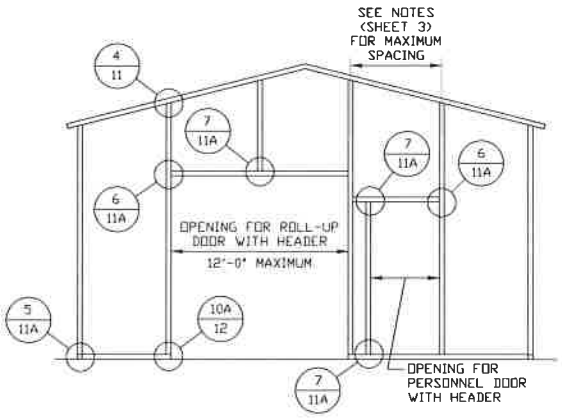
BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

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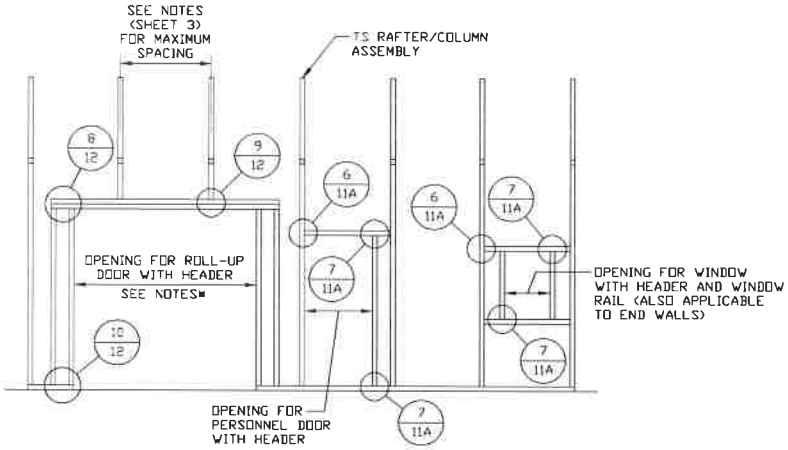

TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS

NOTES:

* 10'-0" MAX. FOR 5'-0" O.C. RAFTER/COLUMN SPACING.
* 9'-0" MAX. FOR 4'-0" O.C. RAFTER/COLUMN SPACING.

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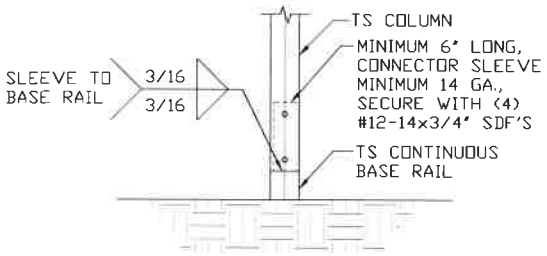
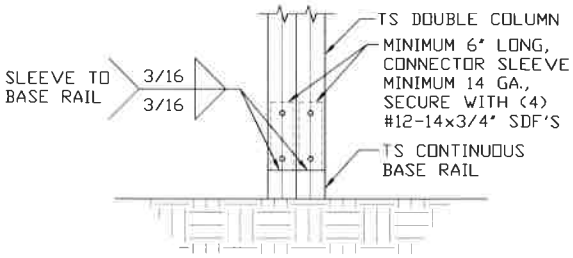
CONNECTION DETAILS



2A **RAFTER COLUMN/BASE RAIL CONNECTION DETAIL**
SCALE: NTS



2B **RAFTER COLUMN/BASE RAIL CONNECTION DETAIL**
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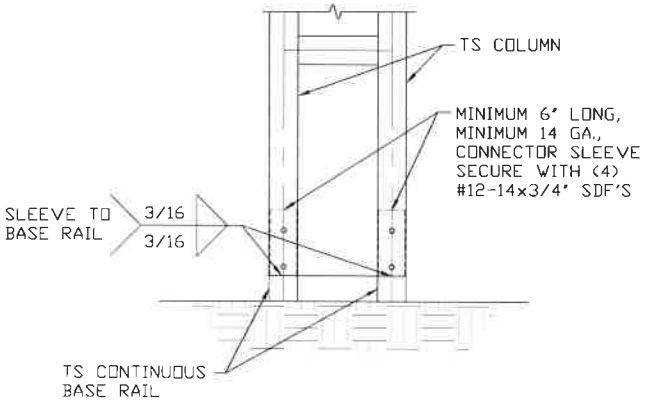

2C **RAFTER COLUMN/BASE RAIL CONNECTION DETAIL**
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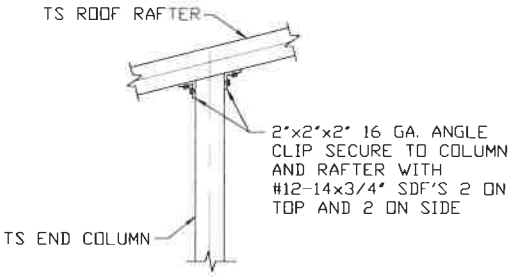

4 **END COLUMN/RAFTER CONNECTION DETAIL**
SCALE: NTS

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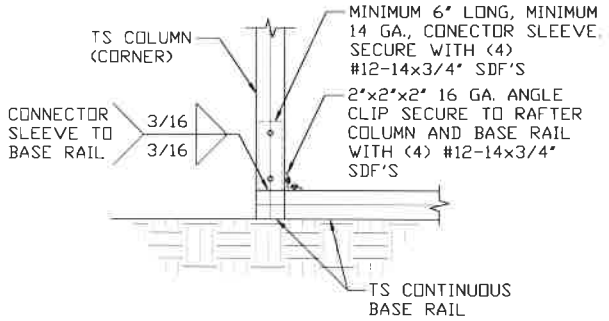
CLIENT: CC	SHT. 11	DWG. NO: SK-3	REV.: 0

CONNECTION DETAILS



5 END COLUMN/BASE RAIL CONNECTION DETAIL

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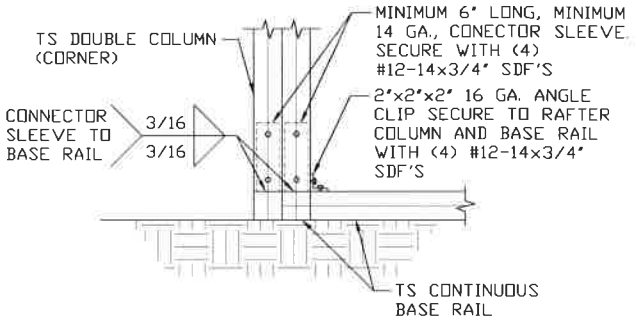

5A END COLUMN/BASE RAIL CONNECTION DETAIL

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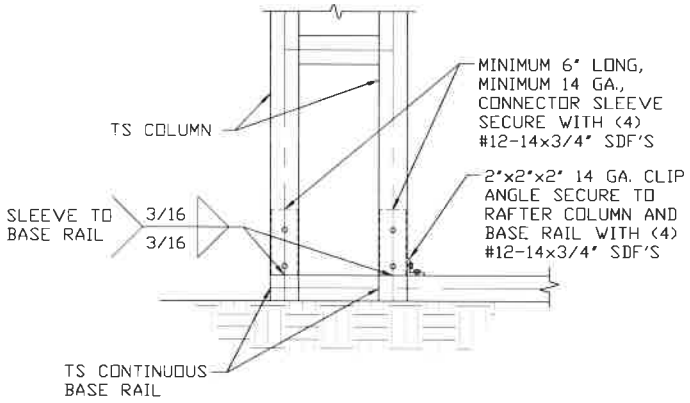

5B END COLUMN/BASE RAIL CONNECTION DETAIL

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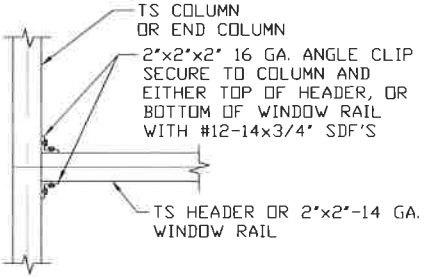
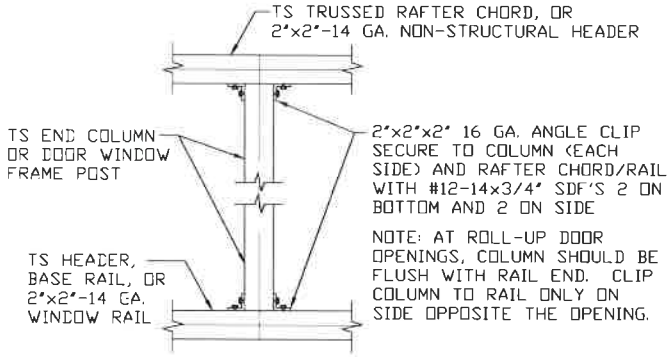


6 COLUMN OR WINDOW RAIL TO POST CONNECTION DETAIL

SCALE: NTS



7 COLUMN TO HEADER, BASE RAIL, OR WINDOW RAIL CONNECTION DETAIL

SCALE: NTS

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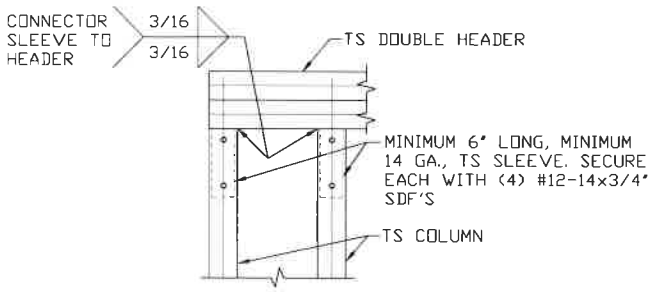
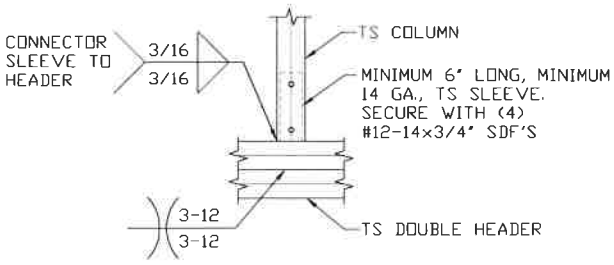
	CLIENT: CC	SHT. 11A	DWG. NO: SK-3	REV: 0

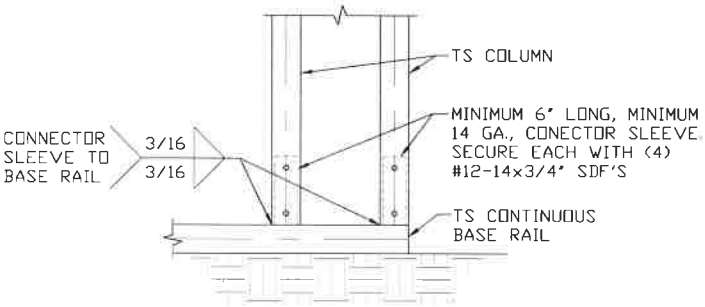
CONNECTION DETAILS



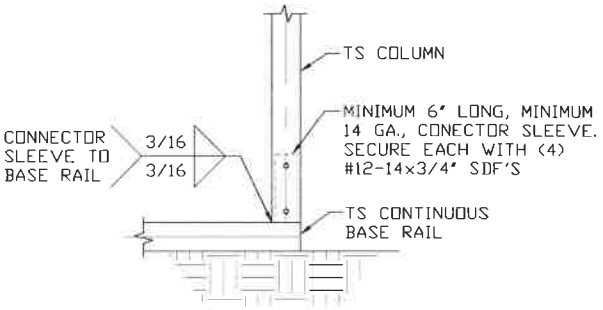
8 **DOUBLE HEADER/COLUMN CONNECTION DETAIL**
SCALE: NTS



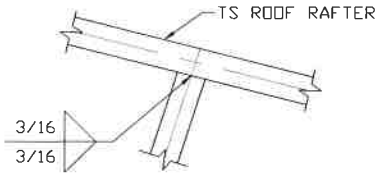
9 **COLUMN/DOUBLE HEADER CONNECTION DETAIL**
SCALE: NTS



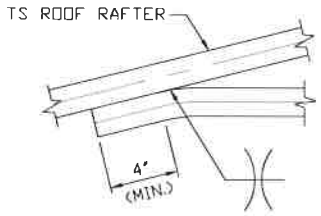
10 **COLUMN/BASE RAIL CONNECTION DETAIL**
SCALE: NTS



10A **COLUMN/BASE RAIL CONNECTION DETAIL**
SCALE: NTS



11 **RAFTER TO CHORD CONNECTION DETAIL**
SCALE: NTS



12 **COLLAR TIE CONNECTION DETAIL**
SCALE: NTS

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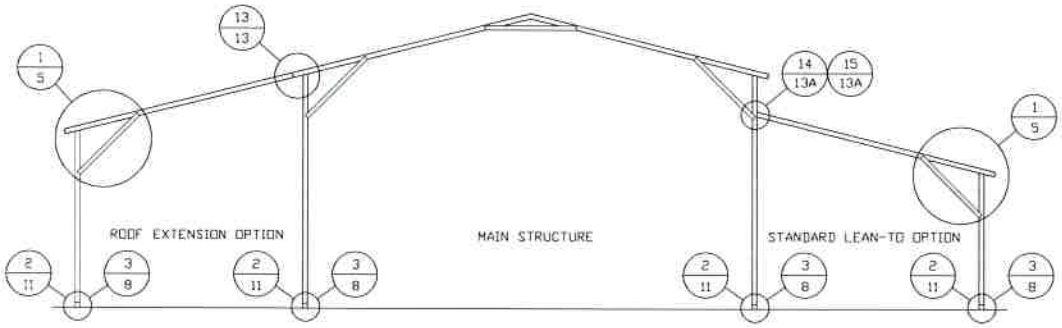
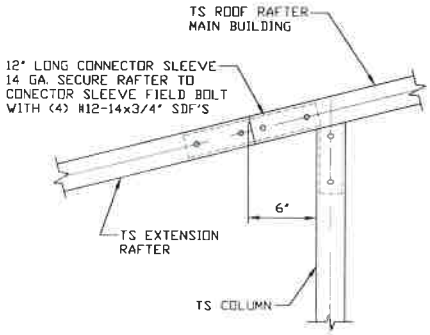
CLIENT: CC	SHT. 12	DWG. NO: SK-3	REV: 0

BOX EAVE RAFTER LEAN-TO OPTIONS



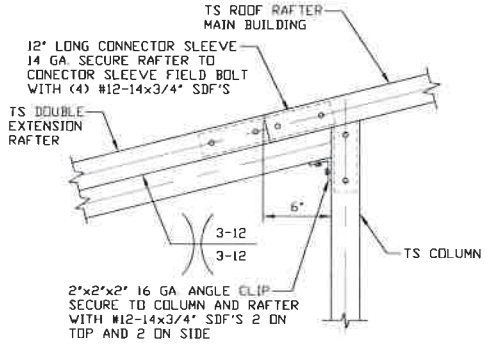
TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

SCALE: NTS



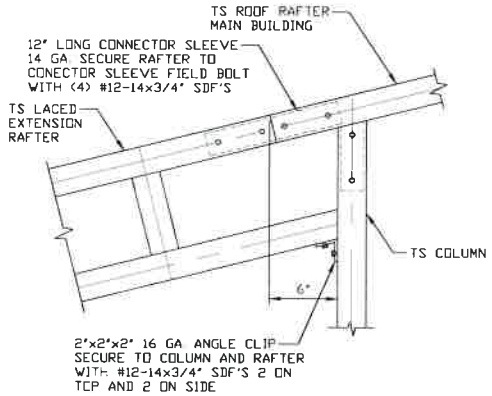
13 SIDE EXTENSION RAFTER/COLUMN DETAIL FOR SPAN ≤ 12'-0"

SCALE: NTS



13A SIDE EXTENSION RAFTER/COLUMN DETAIL FOR SPAN 12'-0" < L ≤ 16'-0"

SCALE: NTS



13B SIDE EXTENSION RAFTER/COLUMN DETAIL FOR SPAN 16'-0" < L ≤ 20'-0"

SCALE: NTS

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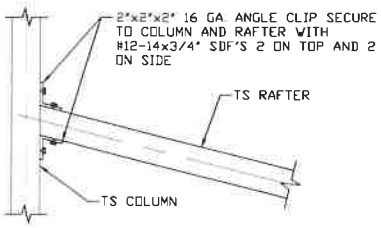
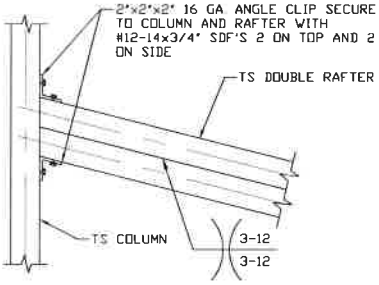
	CLIENT: CC	SHT. 13	DWG. NO: SK-3	REV: 0

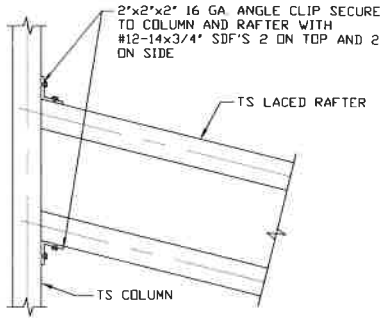
LEAN-TO OPTIONS



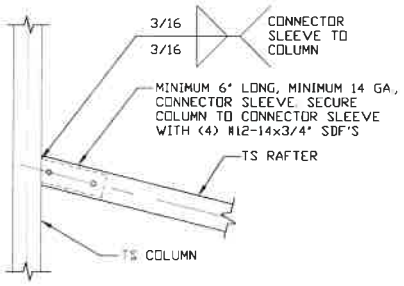
14 LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR SPAN ≤ 12'-0"
SCALE: NTS



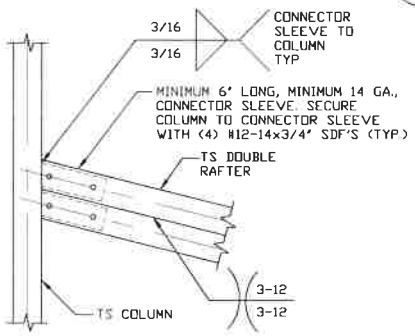
14A LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR SPAN 12'-0" < L ≤ 16'-0"
SCALE: NTS



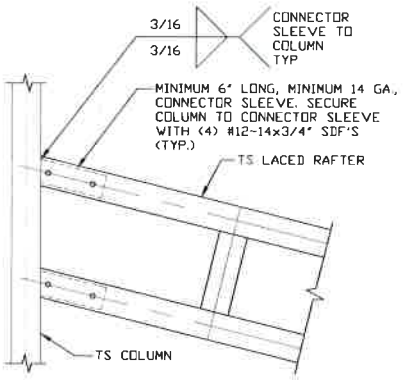
14B LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR SPAN 16'-0" < L ≤ 20'-0"
SCALE: NTS



15 LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR SPAN ≤ 12'-0"
SCALE: NTS



15A LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR SPAN 12'-0" < L ≤ 16'-0"
SCALE: NTS



15B LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR SPAN 16'-0" < L ≤ 20'-0"
SCALE: NTS

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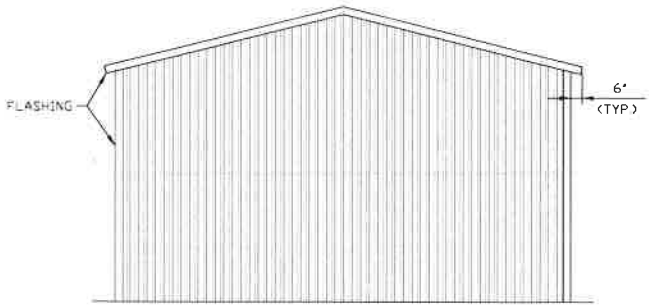
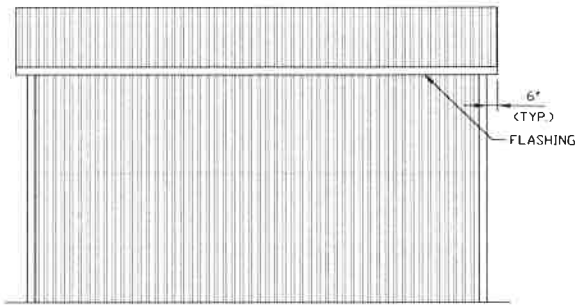
	CLIENT: CC	SHT. 13A	DWG. NO: SK-3	REV: 0

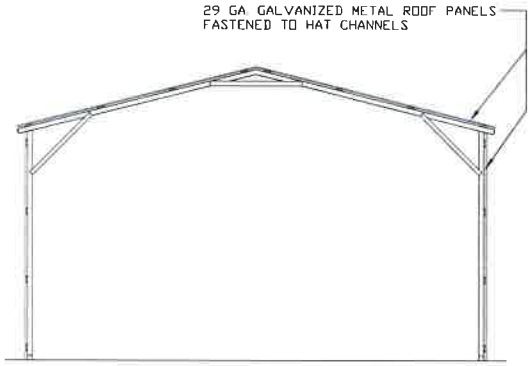
BOX EAVE RAFTER VERTICAL ROOF OPTION



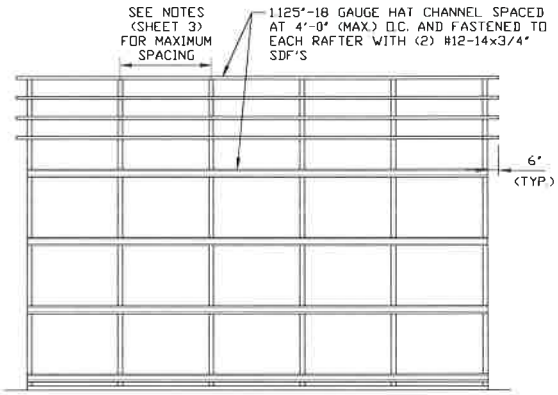
TYPICAL END ELEVATION
VERTICAL ROOF
SCALE: NTS



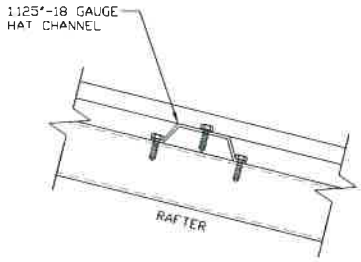
TYPICAL SIDE ELEVATION
VERTICAL ROOF
SCALE: NTS



TYPICAL SECTION
VERTICAL ROOF OPTION
SCALE: NTS



TYPICAL FRAMING SECTION
VERTICAL ROOF OPTION
SCALE: NTS



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

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