I USE ONIY









Robert Brown 2590 Mclean Chapel Church Rd Bunnlevel NC 28323

## STRUCTURAL DESIGN

## **ENCLOSED BUILDING**

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

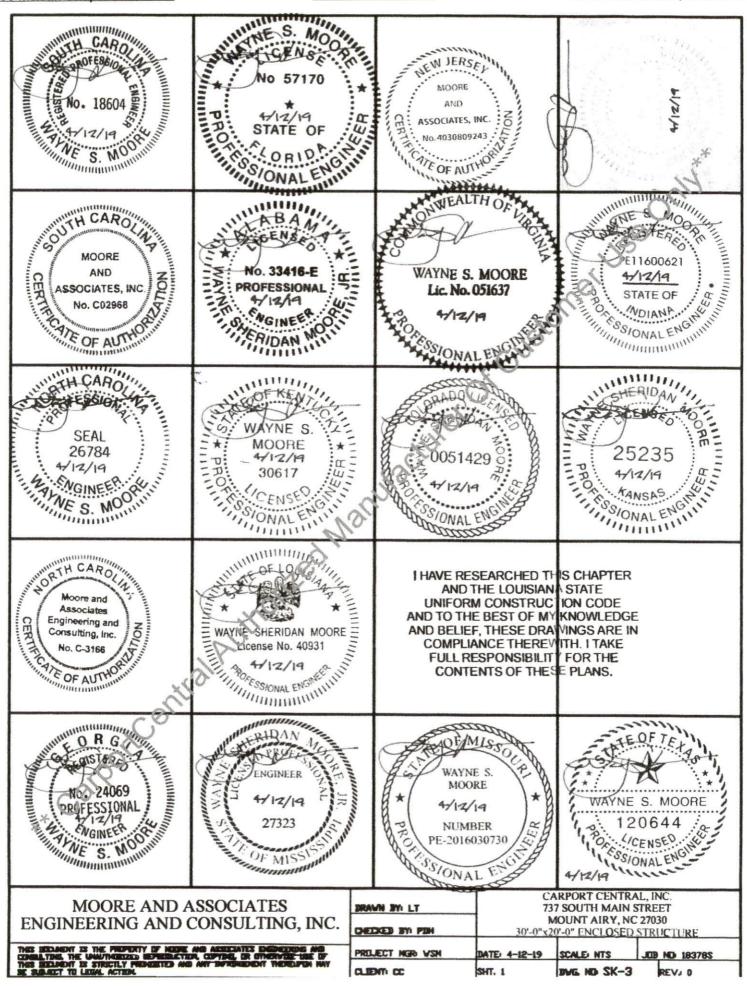
> 12 April 2019 Revision 0 M&A Project No. 18378S

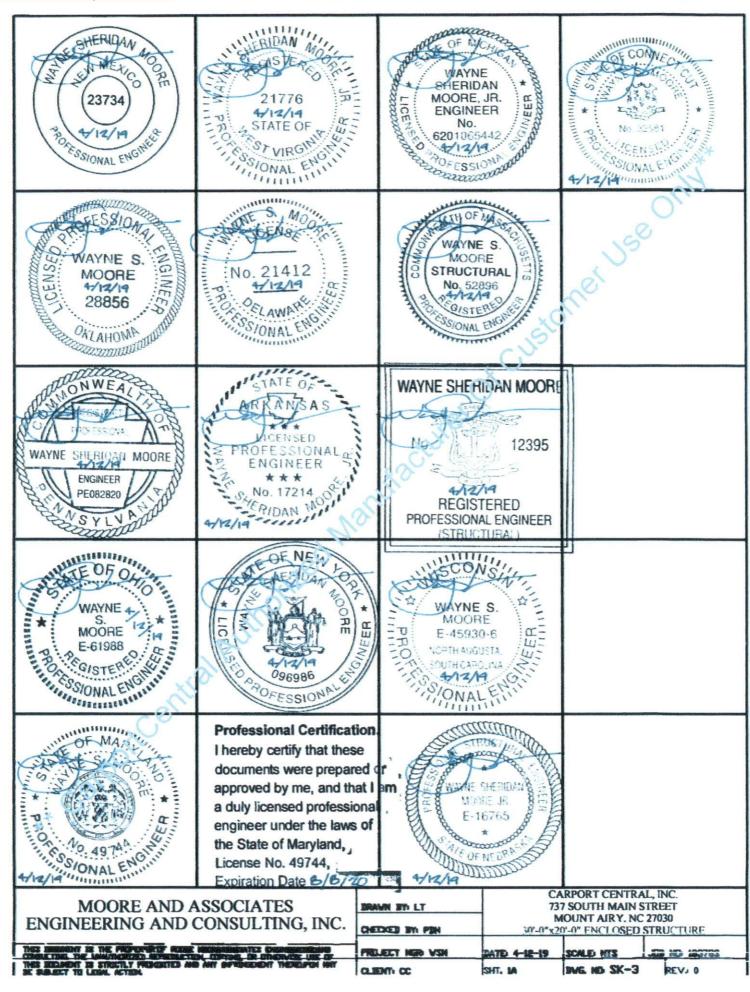
> > pared for:

Carport Central, Inc. Prepared by:

1009 East Avenue
North Augusta, SC 2994-







#### 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 BUILDING CODE (IBC), 2006 IBC, 2009 IBC, 2012 IBC, 2015 IBC, AND 2018 IBC.
- 3. DESIGN LUADS ARE AS FULLOWS:

A) DEAD LOAD

= 1.5 PSF = 12 PSF

B) LIVE LUAD

C) GROUND SNOW LOAD = 33 PSF AT 5'-0' DC SPACING

= 42 PSF AT 4'-0" D.C. SPACING.

30 PSF (WITH U-CHANNEL PEAK BRACE) W & 26'-0"

CUNBALANCED 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 VIND SPEED 144 TO 155 MPH (NOMINAL VIND 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 DTHERWISE.
- 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) FRANING MEMBERS CUNLESS NOTED OTHERWISE).
- 10 AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR HAT CHANNELS, AND COLUMNS CINTERIOR OR EXTRACT
- 11. FASTENERS CONSIST OF \$12-14×3/4" (UNLESS OTHERVISE 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 VAS:
- 12 ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6' DF EACH COLUMN
- 13. STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBAR W/ WELDED NUT x 36' LONG STIL 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 ARE ARE LORDA ARE CARDON CONTROL AND ANALYSIS ANALYSIS AND ANALYSIS ANA

CLEDAN CC

14 VIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:

15. DOOR AND VINDOV PRESSURES APPLICABLE TO THE STATE OF FLORIDA.

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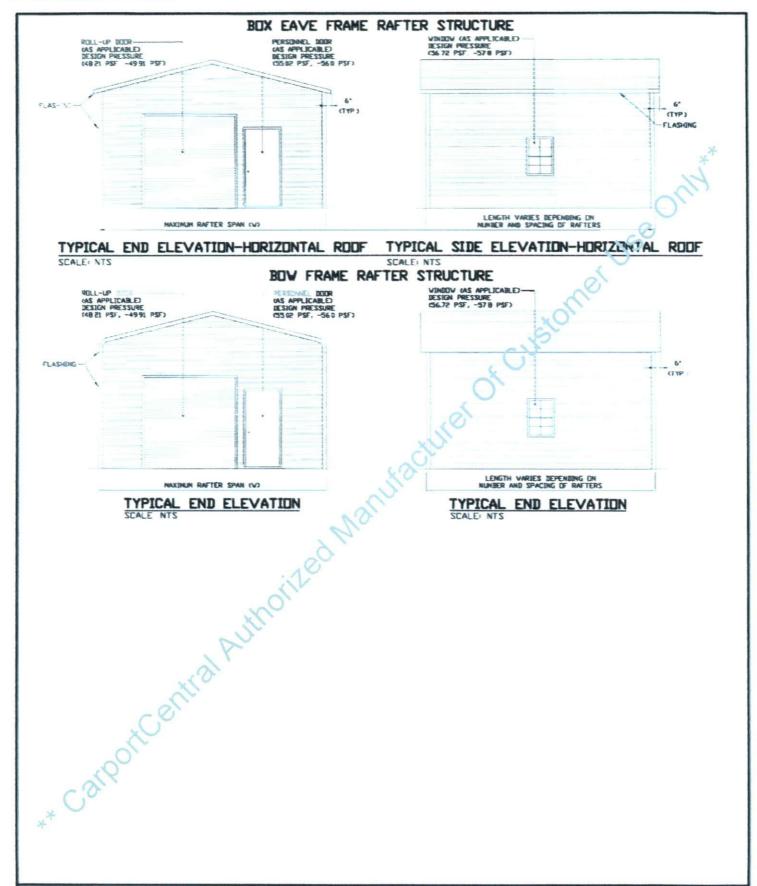
|                | DATE 4-12-19   |  | JUB NO 193795 |  |  |  |
|----------------|--|--|---------------|--|--|--|
| DIEDRED BY PIN | MOUNT AIRY, NC 27030<br>30'-0"x20'-0" ENCLOSED STRUCTURE |  |               |  |  |  |
| DRAWN BY: LT   | 737 SOUTH MAIN STREET                                    |  |               |  |  |  |

SMT. 3

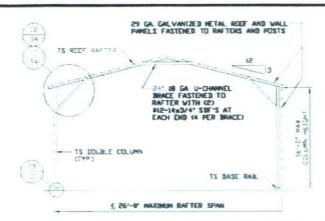
CARPORT CENTRAL, INC.

DVG ND SK-3

REV. 0



| ENGINEERING AND CONSULTING INC   | DRAWN BY LT      | 73°<br>M      | CARPORT CENTRAL, INC. 737 SOUTH MAIN STREET MOUNT AIRY, NC 27030 30'-0"*20'-0" ENCLOSED STRUCTURE |                |  |  |  |
|--|------------------|---------------|---|----------------|--|--|--|
| THES EXCLAPENT 23 THE PROPERTY OF NEEDE AND ASSESSATES ORGANIZATED OF DESCRIPTION AND CONGLETION THE CHARACTERS PROPERTIES THE COPYING, OR DIVERSALE USE OF THES EXCLAPENT 25 STRUCTLY PROPERTIES AND ANY OFFERENCENT THERESPOR MAY BE SUBJECT TO LIGHT, ACTION. | PROLECT MERO VSM | DATE: 4-12-19 |   | J038 ND 18378S |  |  |  |



# TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

29 GA GALVANIZED NETAL ROOF AND VALL
PANELS FASTENED TO RAFTERS AND POSTS

12 ROOF

24' 18 GA U-CHANNEL
BRACE FASTENED TO
RAFTER VITH (2)
12-14-32/4" SBF'S AT
EACH END (4 PER BRACE)

24 TS BASE RAD

15 BASE RAD

( 26'-8" MAXIMUM RAFTER SPAN

# TYPICAL RAFTER/COLUMN END FRAME SECTION

SEE NOTES
CSMEET 30
FOR HAXBUM
SPACING

LENUTA VARIES DEPENDING ON
NUMBER AND SPACING OF RAFTERS

# TYPICAL RATTER/COLUMN SIDE FRAMING SECTION

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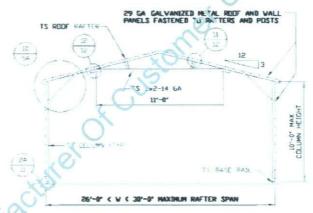
CARPORT CENTRAL, INC.
737 SOUTH MAIN STREET
MOUNT AIRY, NC 27030
CHECKED BY POH 30'-0"x20'-0" ENCLOSED STRUCTURE

PRELECT HIR VSM DATE 4-12-19 SCALE NTS JUB ND 18378S
CLIEDTI CC SHT. 4A DVG. ND SK-3 REV. 0

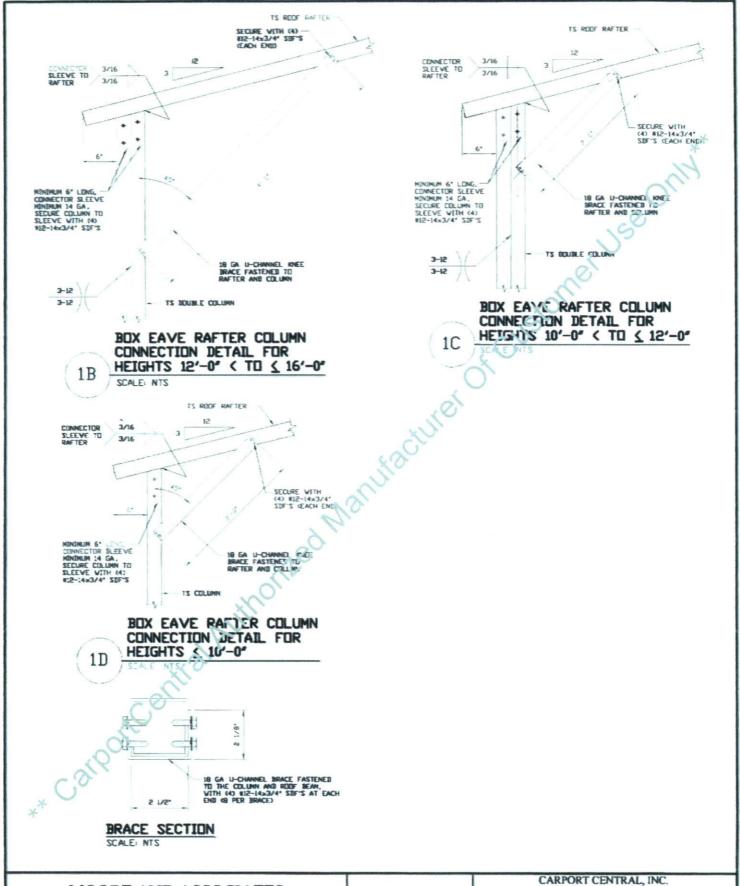
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### TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



# SPALE: NTS



| MOORE AND ASSOCIATES   | BRAWN 3M LT     | CARPORT CENTRAL, INC.<br>737 SOUTH MAIN STREET        |             |               |  |  |
|--|-----------------|---|-------------|---------------|--|--|
| ENGINEERING AND CONSULTING, INC.   | CHEDRED BY: PIN | MOUNT AIRY, NC 27030 30'-0"x20'-0" ENCLOSED STRUCTURE |             |               |  |  |
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| THIS EXCLUSIVE IS STRUCTLY PRODUCTED AND ANY DIFFERENCE IN THEREPON MAY BE SHELET TO LOGAL ACTUM   | CLIEDITI CC     | SHT. SA   | DAC NO 2K-3 | REVJ 0        |  |  |

## BASE RAIL ANCHORAGE OPTIONS INSTALL 1/2°x6 1/2° EXPANSION ANCHOR THROUGH BASE RAIL VITHIN 6' OF FIBERS REINF ACH COLUMN GRADE MINIMUM 3 1/4" EMBEDMENT MONOLITHIC CONCRETE FOOTING (3000 PSI MIN.) REINFURCED WITH (2)-#4's CONTINUOUS VARIES

CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE MINIMUM ANCHOR EDGE DISTANCE IS 4

\* COORDINATE WITH LOCAL CODES/ORD

### GENERAL NOTES

NOTE: CONCRETE MONOLITHIC SLAB DESIGN BASED ON MINIMUM SUIL BEARING CAPACITY OF 1,500 PSF.

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

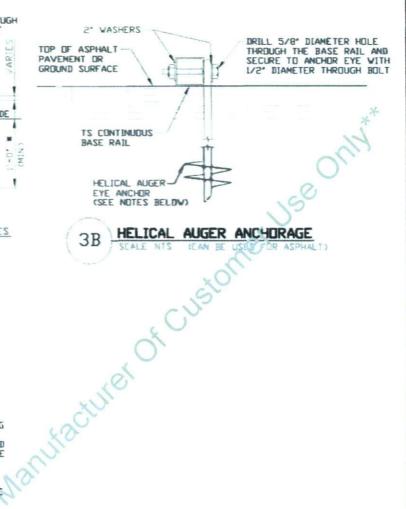
THE TURNDOWN REINFORCING STEEL SHALL BE ASTM AGIS GRANGE OF THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT.

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

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

#### HELICAL AUGER ANCHUR NUTESI

- 1 FOR VERY DENSE AND/OR CEMENT'D SANDS, CDARSE GRAVEL AND COBBLES, CALICHE, PRELTATED SILTS AND CLAYS, USE MINIMUM (2) 4" HELICES WI'H MINIMUM 30" EMBEDMENT OR SINGLE 6" HELIX WITH MINIMUM 50" EMBEDMENT
- 2 FOR CORAL USE MINIMUM CET 4" HELICES WITH MINIMUM 30" EMBEDMENT OR SINGLE 6" HELIX WITH MINIMUM SC" EMBEDMENT
- 3 FOR MEDIUM CEMS, COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS, AND CLAYS USE MINIMUM (2) 4° HELICES WITH MINIMUM 30 (NCH EMBEDMENT OR SINGLE 6° HELIX WITH MINIMUM EMBEDHEN
- FOR LOUSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SIL'S ALLUVIAL FILL, USE MINIMUM (2) 6' HELICES WITH MINIMUM 50' EMBEDMENT
- STEDR VERY LOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER CLAYS AND SILTS, ALLUVIAL FILL, USE MINIMUM (2) B' HELICES WITH MINIMUM 60° EMBEDMENT.



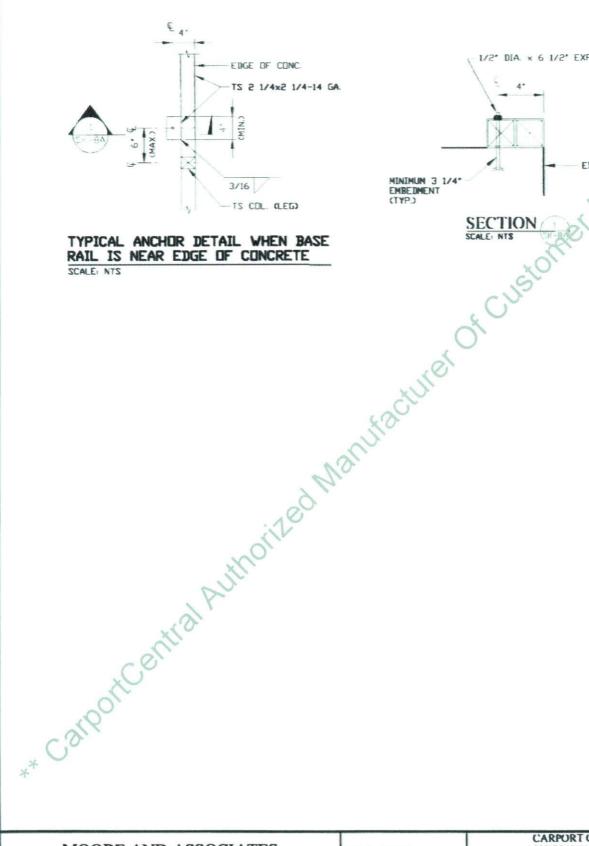
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CARPORT CENTRAL, INC. 737 SOUTH MAIN STREET **MOUNT AIRY, NC 27030** 30'-0"x20'-0" ENCLOSED STRUCTURE

PROJECT NEW YSH DATE 4-12-19 SCALD NTS ND 183765 BAC NO 2K-3 CLIEDITI CC SHT. 8 REVA B

### **BASE RAIL ANCHORAGE OPTIONS**

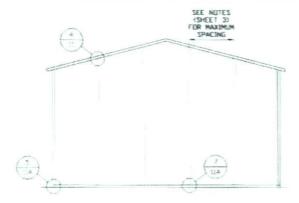


1/2" DIA. x 6 1/2" EXP ANCHOR EDGE OF CONC. MINIMUM 3 1/4" -EMBEDMENT

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.

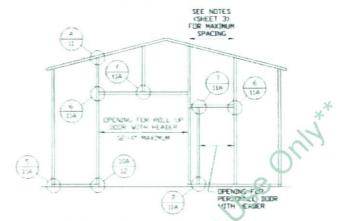
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|---|------------------|---------------|---|---|-----------|--|--|
| 4 | PROJECT MGR: VSM | DATE: 4-12-19 | SCALE NTS   | T | ND 18378S |  |  |
| - | CLIENT: CC       | SHT. 8A       | DVG. ND SK-   | 3 | REV. 0    |  |  |



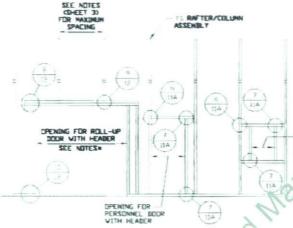
### TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



#### TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS er Of Cust



### TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS

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

\*\* CarportCentral

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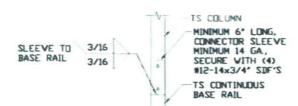
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MTE 4-12-19 SHT. 9

SCALE NTS DVG. NO SK-3

JUB ND 18378S REV. 0

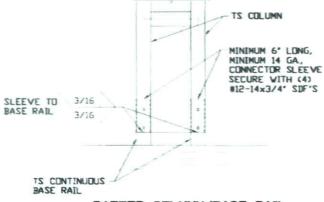
### CONNECTION DETAILS



TS DOUBLE COLUMN MINIMUM 6' LONG, CONNECTOR SLEEVE MINIMUM 14 GA., SLEEVE TO 3/16 BASE RAIL 3/16 SECURE WITH (4) #12-14x3/4" SDF'S TS CONTINUOUS BASE RAIL

#### RAFTER CULUMN/BASE RAIL CONNECTION DETAIL SCALE: NTS

RAFTER COLUMN/BASE RAIL CONNECTION DETAIL **SB** SCALE: NTS



2"x2"x2" 16 GA. ANGLE CLIP SECURE TO COLUMN AND RAFTER WITH #12-14x3/4" SDF'S 2 DN SOLE NO S CINA PLOT TS END COLLINA

> END COLUMN/RAFTER CONNECTION DETAIL

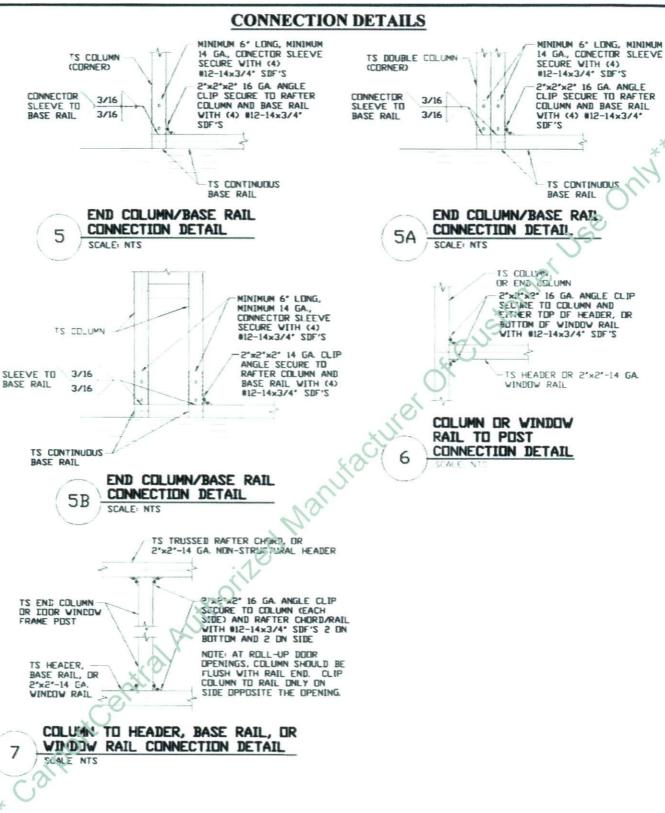
TS ROOF RAFTER

Carport Central Authorized Manufact

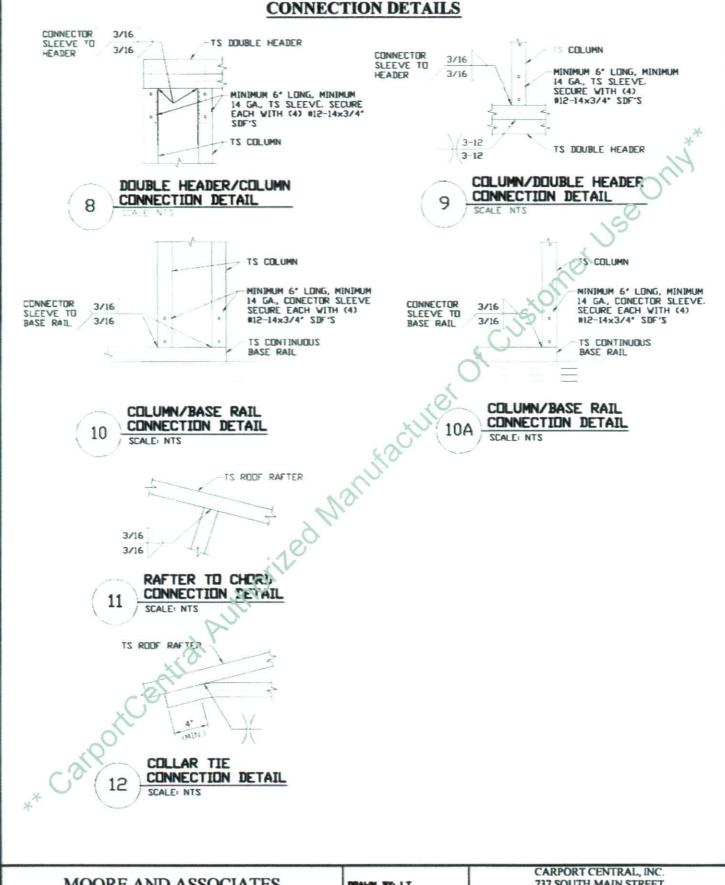
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| PROJECT HGR: VSH              | DATE 4-12-19 | SCALE NTS   | JOB ND 18378S |  |  |  |



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| THES GEOLIECHT'S THE PROPERTY OF HOUSE AND ASSECIATES DIGINGANG AND CONGRETING THE CONSTRUCTED REPRODUCTION, COPYERS, OR UTHERWISE USE OF | PROLECT NEW VSN | DATE: 4-12-19 | SCALE NTS   | JOH NO | 18378\$ |  |  |
| THE BELDENT IS STRUCTLY PROCESTED AND ANY TOPYCHEENT THEREFOR MAY BE SHEATT TO LEGAL ACTION   | CLEDIFI CC      | SHT. 12       | DVG. ND SK-3  | REV    | /4 0    |  |  |