PAUL Wilson

ORDERINS Thursday

ORDERINS Thursday

QUALITY Commercial Structures

### STRUCTURAL DESIGN

## **ENCLOSED BUILDING**

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

24 January 2018 Revision 0 M&A Project No. 17275S

Prepared for:

Quality Commercial Structures P.O. Box 1448 Pilot Mountain, NC 27041

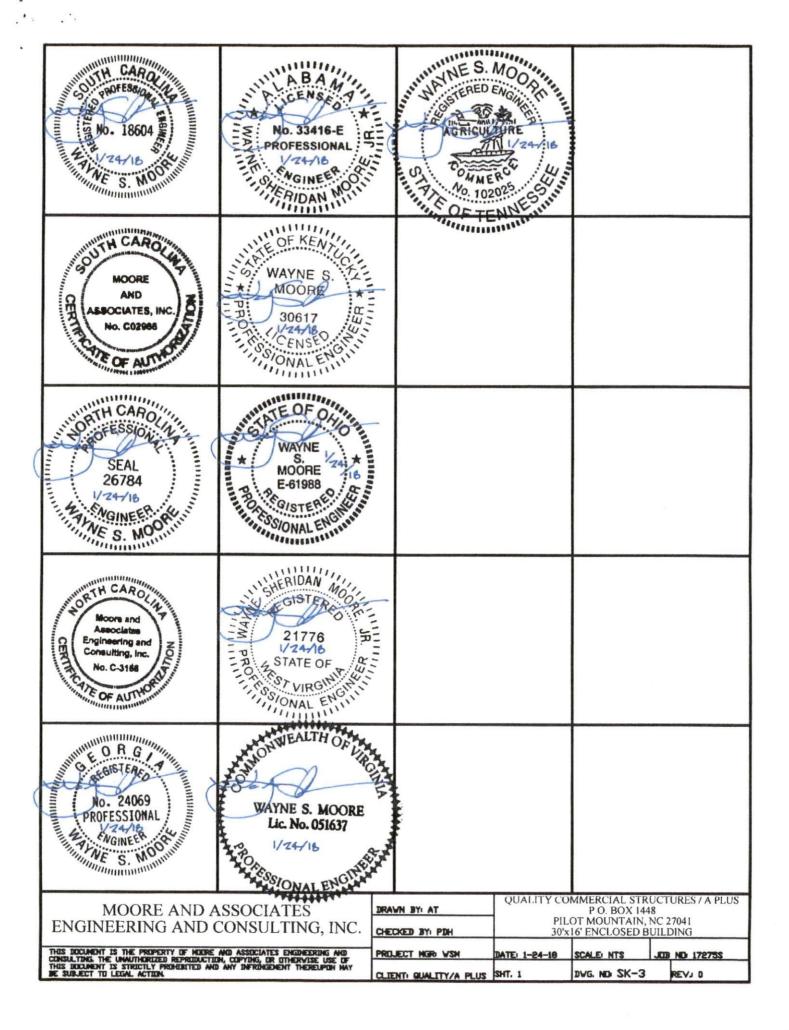
Prepared by:

Moore and Associates Engineering and Consulting, Inc.

1009 East Avenue North Augusta, SC 29841

401 S. Main Street Mount Airy, NC 27030





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| SHEET | 17        | ELEVATION AND SECTION HEADER OPTION                          |
| 3,100 | . /       | THE DESCRIPTION  |

| THUS BECLEENT IS STREETLY PREFERRED AND ANY INFROMEDENT THERESPON MAY  | CLIENT: QUALITY/A PLUS | SHT. 2   | DWG. ND SK-3                   | RE    | 0 د۷      |
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#### INSTALLATION NOTES AND SPECIFICATIONS

- 1. DESIGN IS FOR MAXIMUM 30'-0" WIDE x 16'-0" EAVE HEIGHT ENCLOSED STRUCTURES.
- 2. DESIGN WAS DONE IN ACCORDANCE WITH THE 2012 NORTH CAROLINA BUILDING CODE, 2009 INTERNATIONAL BUILDING CODE (IBC), 2012 IBC, AND THE 2015 IBC.
- 3. DESIGN LOADS ARE AS FOLLOWS:

A) DEAD LOAD

= 1.5 PSF

B) LIVE LOAD

= 12 PSF

- C) GROUND SNOW LOAD = 35 PSF (GROUND SNOW LOAD = 45 PSF FOR RAFTER/POST SPACING = 4.0 FEET.)
  - 30 PSF WITH U-CHANNEL PEAK BRACE (W ( 24'-0')
- 4. 3-SECOND GUST ULTIMATE WIND SPEED (VULT) 105 TO 145 MPH (NOMINAL WIND SPEED 81 TO 112 MPH).
- 5 MAXIMUM RAFTER/POST AND END POST SPACING = 50 FEET.
- 6. RISK CATEGORY I.
- 7. WIND EXPOSURE CATEGORY B.
- 8. SPECIFICATIONS APPLICABLE TO 29 GAUGE METAL PANELS FASTENED DIRECTLY TO 2 1/2' x 2 1/2' 14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS (UNLESS NUTED OTHERWISE.)
- 9. AVERAGE FASTENER SPACING UN-CENTERS ALONG RAFTERS OR HAT CHANNELS, AND COLUMNS (INTERIOR OR END) = 10' D.C. (MAX.)
- 10. 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 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
- 11. GROUND ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6' DF EACH RAFTER COLUMN ALONG SIDES.
- 12 GROUND ANCHORS CONSIST OF #4 REBAR W/ WELDED NUT x 36' LONG IN SUITABLE SUIL CONDITIONS OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED.
- 13. WIND FORCES GOVERN OVER SEISMIC FORCES SEISMIC PARAMETERS ANALYZED ARE SDIL SITE CLASS = D RISK CATEGORY I/II/III

R = 3.25

V= CsW

S<sub>DS</sub>= 1.522

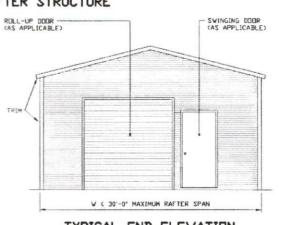
S<sub>BI</sub>= 0.839

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| PRELIECT HER VSN       | DATE: 1-24-18                          | SCALE: NTS     | JUB | ND 17275S |  |
| CHECKED BY: PDH        |  | 16' ENCLOSED B |     |           |  |
| DRAWN BY: AT           | P.O. BOX 1448 PILOT MOUNTAIN, NC 27041 |                |     |           |  |

OLIALITY COMMEDIAL STRUCTURES LA DILL

# BOX EAVE FRAME RAFTER STRUCTURE RILL-UP DOOR (AS APPLICABLE) TRIM LENGTH VARIES DEPENDING DN NUMBER AND SPACING OF RAFTERS

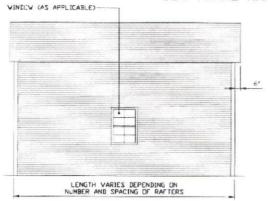


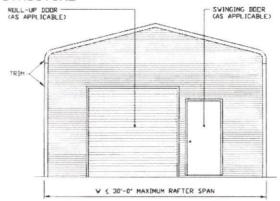
#### TYPICAL SIDE ELEVATION

TYPICAL END ELEVATION
SCALE: NTS

SCALE: NTS

#### BOW FRAME RAFTER STRUCTURE





TYPICAL SIDE ELEVATION

TYPICAL END ELEVATION
SCALE: NTS

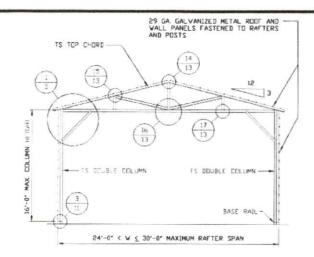
DVG. ND SK-3

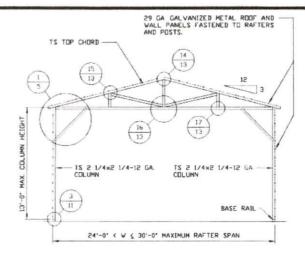
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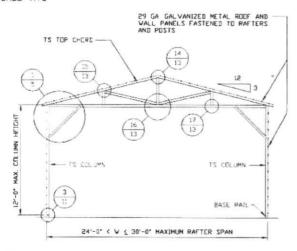
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#### TYPICAL RAFTER/COLUMN END FRAME SECTION

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

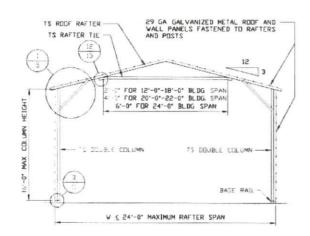


TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE NTS

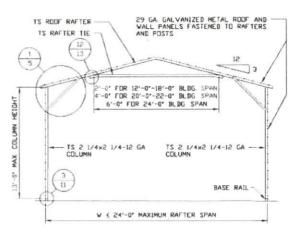
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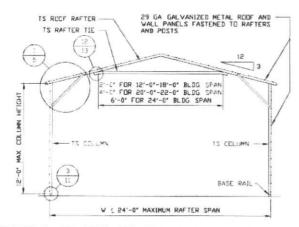
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|   | DRAWN BY: AT           |               | P.O. BOX 14      | 448 |           |



### TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION

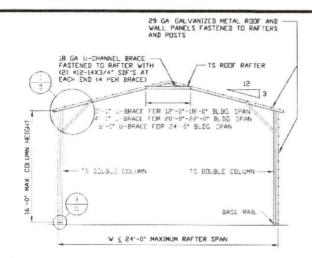


TYPICAL RAFTER/COLUMN END FRAME SECTION

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|--|------------------------------|---------------|---|---------------|--|--|--|
| -  | PROJECT HGR VSH              | DATE: 1-24-18 | SCALE: NTS  | JUB NO 17275S |  |  |  |
|  | CLIENT: QUALITY/A PLUS       | SHT. 4A       | DAC NO 2K-3   | REV. 0        |  |  |  |



29 GA GALVANIZED METAL RODE AND VALL PANELS FASTENED TO RAFTERS AND POSTS.

18 GA. U-CHANNEL BRACE FASTENED TO RAFTER VITH
(2) N12-14X3/4\* SDF'S AT
1 EACH END (4 PER BRACE)

2'-0' U-BRACE FOR 12'-0'-18'-0' BLDG SPAN
4'-0' U-BRACE FOR 24'-0' BLDG SPAN
6'-0' U-BRACE FOR 24'-0' BLDG SPAN

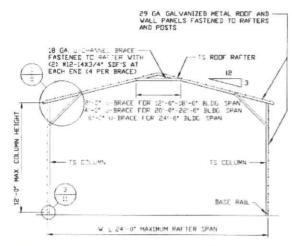
TS 2 1/4x2 1/4-12 GA
COLUMN

3
11
BASE RAIL

V ( 24'-0' MAXIMUM RAFTER SPAN

#### TYPICAL RAFTER/COLUMN END FRAME SECTION

TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS

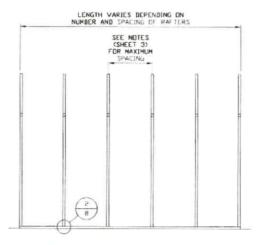


TYPICAL RAFTER/COLUMN END FRAME SECTION

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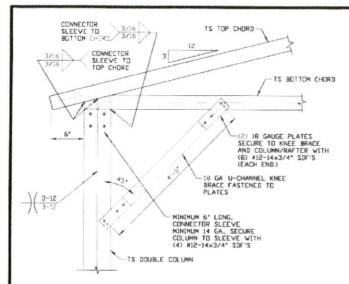


TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS

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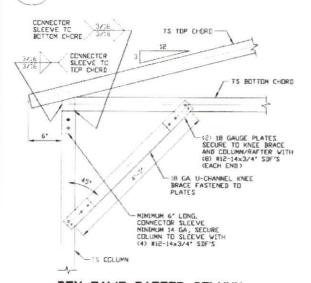
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| 1000000 | CHECKED BY: PDH        |   | OT MOUNTAIN,<br>(16' ENCLOSED E |     |           |  |  |  |  |
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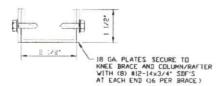


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 13'-0" < T□ < 16'-0" 1A

SCALE: NTS



BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0' < TO < 12'-0' 1C SCALE: NTS



#### BRACE SECTION

SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.

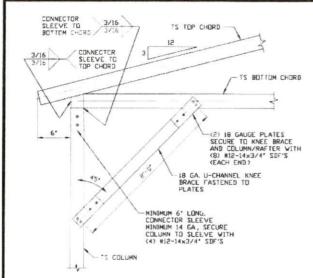
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| QUALITY COMMERCIAL STRUCTURES / A PLUS<br>P.O. BOX 1448<br>PILOT MOUNTAIN, NC 27041<br>30'x16' ENCLOSED BUILDING |               |   |  |  |  |  |
|--|---------------|---|--|--|--|--|
|  |               | JUB NO 17275S   |  |  |  |  |
|  | PILC<br>30'x1 | P.O. BOX 1448 PILOT MOUNTAIN, N 30'x16' ENCLOSED BU  DATE: 1-24-18 SCALE: NTS |  |  |  |  |

| CONNECTOR SLEEVE TO BOTTOM CHORTI  3/16  CONNECTOR 3/16  CONNECTOR 3/16  TS TOP CHORD 12 |
|--|
| /-TS BUTTOM CHORD  |
|  |
| ATT / B  |
|  |
| 6' 18 GAUGE PLATES.  |
| SECURE TO KNEE BRACE<br>AND COLUMN/RAFTER VITH   |
| (9) #12-14×3/4" SDF'S  |
| (3/)   |
| 15. BRACE FASTENED TO PLATES   |
| /2/X   |
| MINIMUM 6" LONG,   |
| CONNECTOR SLEEVE<br>MINIMUM 14 GA., SECURE   |
| COLUMN TO SLEEVE WITH  |
| (4) #12-14x3/4' SDF'S  |
| TS 2 1/4×2 1/4-12GA. COLUNN  |
| T-V-T  |

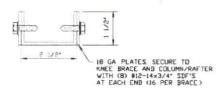
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 12'-0' < TO < 13'-0" 1B

SCALE: NTS



BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS < 10'-0'

1D SCALE: NTS

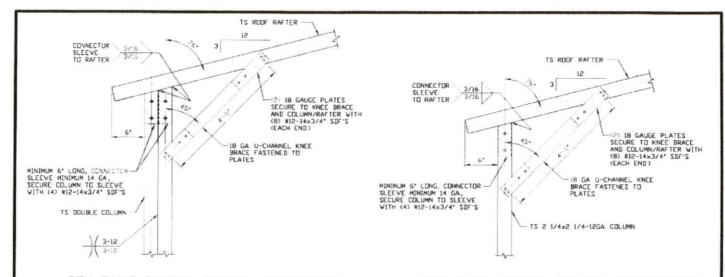


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| _ | PROJECT NGR VSN        | DATE: 1-24-18   | SCALE: NTS   | JUB ND 17275S |  |  |  |  |  |
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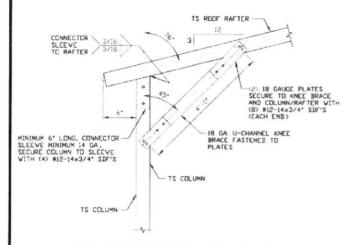


BOX EAVE RAFTER COLUMN CONNECTION

DETAIL FOR HEIGHTS 13'-0' < TO < 16'-0'

SCALE: NTS

1F BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 12'-0' < TO < 13'-0'



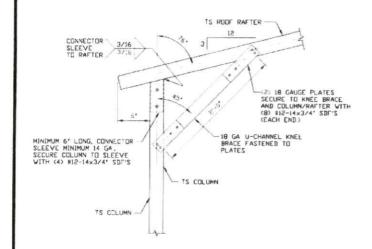
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18 GA PLATES SECURE TO
KNEE BRACE AND COLUMN/RAFTER
VITH (8) NI2-143/4\* SDF'S
AT EACH END (16 PER BRACE)

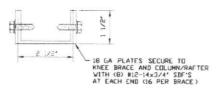
## BRACE SECTION SCALE: NTS

BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0' < TO < 12'-0'

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BOX EAVE RAFTER COLUMN CONNECTION
DETAIL FOR HEIGHTS & 10'-0'

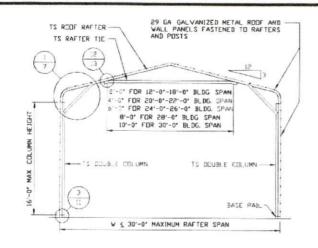


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SCALE: NTS

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| _ | PROJECT NGR VSN              | DATE: 1-24-18  | SCALE: NTS   | JUB NO 17275S |        |  |  |
|   | CLIENT: QUALITY/A PLUS       | SHT. 5C  | DVG. ND SK-3 |               | REVJ 0 |  |  |

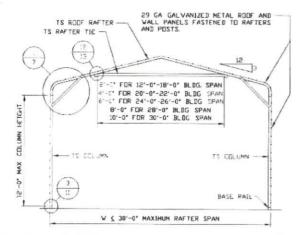


# TS RODE RAFTER AND POSTS 1S RAFTER TIE 12 13 12 13 12 13 12 13 12 13 12 13 14-0' FOR 12'-0'-18'-0' BLDG SPAN 4'-0' FOR 20'-0'-22'-0' BLDG SPAN 6'-0' FOR 20'-0'-86'-0' BLDG SPAN 10'-0' FOR 30'-0' BLDG SPAN 10'-0'

#### TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE

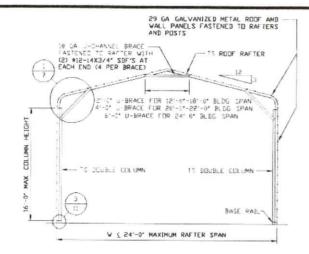
TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



#### TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS

| MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.   | QUALITY COMMERCIAL STRUCT P.O. BOX 1448 PILOT MOUNTAIN, NC CHECKED BY: PDH 30'x16' ENCLOSED BUIL |  | 8<br>NC 27041 |               |
|---|--|--|---------------|---------------|
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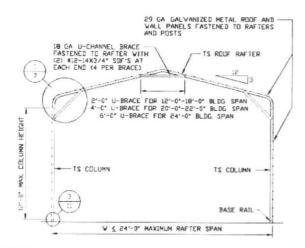


# 29 GA GALVANIZED METAL ROOF AND WALL PANELS FASTENED TO RAFTERS AND POSTS 18 GA. U-CHANNEL BRACE FASTENED TO RAFTER VITH (2) BIZ-14374' SUF'S AT EACH END (4 PER BRACE) 2'-0' U-BRACE FOR 12'-0'-18'-0' BLDG SPAN 4'-0' U-BRACE FOR 24'-0' BLDG SPAN 6'-0' U-BRACE

#### TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS

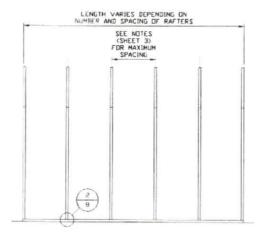
TYPICAL RAFTER/COLUMN END FRAME SECTION



#### TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS

| MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.   | DRAVN BY: AT CHECKED BY: PDH             | PIL | MMERCIAL STRU<br>P.O. BOX 144<br>OT MOUNTAIN, N<br>16' ENCLOSED BU | NC 27041         |
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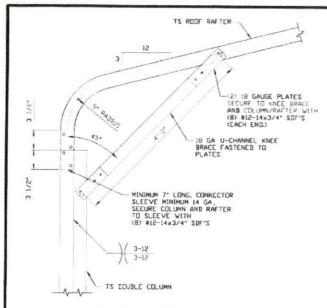


## TYPICAL RAFTER/COLUMN FRAMING SIDE SECTION SCALE: NTS

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|--------------------------------|-----|
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|------------------------------|--|--------------|---------------|--|--|
| PROJECT HGR VSN              | DATE: 1-24-18  | SCALE: NTS   | JOB NO 17275S |  |  |
| CLIENTI QUALITY/A PLUS       | SHT. 6B  | DWG. NO SK-3 | REV. 0        |  |  |



1A

IS ROOF RAFTER

(2) IB GAUGE PLATES.
SECURE TO KNEE BRACE
AND COLUMN/RAFTER WITH
(9) BI2-14x3/4' SDF'S
(EACH END)

MINIMUM 7' LDNG, CONNECTOR
SLEEVE MINIMUM 14 GA,
SECURE COLUMN TO SLEEVE
WITH (8) BI2-14x3/4' SDF'S

TS 2 1/4x2 1/4-12GA COLUMN

BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 13'-0' < TO ≤ 16'-0'

1B

BOW EAVE RAFTER COLUMN CONNECTION
DETAIL FOR HEIGHTS 12'-0" < TO < 13'-0"

TS ROOF RAFTER

12

3

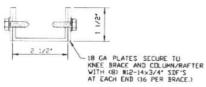
SECURE TO KNEE BRACE AND COLUMN/RAFTER VITH

(B) #12-14x3/4' SDF'S

FS COLUMN

TS COLUM

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

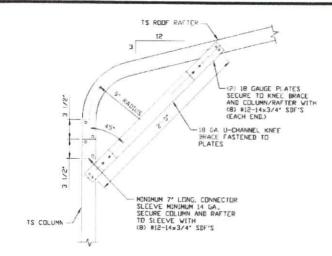


#### BRACE SECTION

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| CHECKED BY: PDH PROJECT MGR VSM | PILOT MOUNTAIN, NC 27041<br>30'x16' ENCLOSED BUILDING |             |     |           |  |
|---------------------------------|---|-------------|-----|-----------|--|
| LIGHTON HOLD ASM                | BATE: 1-24-18   | SCALE: NTS  | Jus | NO 17275S |  |
| CLIENT: QUALITY/A PLUS          | SHT. 7  | DWG. NO SK- | 3   | REV. 0    |  |



BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS & 10'-0"

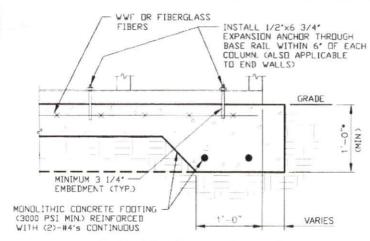
1D

IB GA PLATES SECURE TO KNEE BRACE AND COLUMN/RAFTER WITH (B) W12-14×3/4' SDF'S AT EACH END (16 PER BRACE)

# BRACE SECTION SCALE: NTS

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|---|------------------------|---------------|--------------------------------|--------|-------------|
| THIS DOCUMENT IS THE PROPERTY OF NOORE AND ASSOCIATES ENGINEERING AND   | PRELIECT NGR VSN       | DATE: 1-24-18 | SCALE: NTS                     | FTD ME | 172755      |
| ENGINEERING AND CONSULTING, INC.  | CHECKED BY: PDH        |               | OT MOUNTAIN,<br>16' ENCLOSED B |        |             |
| MOORE AND ASSOCIATES  | DRAWN BY: AT           | QUALITY CO    | MMERCIAL STR<br>P.O. BOX 14    |        | ES / A PLUS |

#### BASE RAIL ANCHORAGE OPTIONS



#### CONCRETE MONOLITHIC SLAB BASE RAIL ANCHURAGE

MINIMUM ANCHOR EDGE DISTANCE IS 4"

\* COORDINATE WITH LOCAL BUILDING CODE AND/OR BUILDING OFFICIAL REGARDING REQUIRED FOOTING DEPTH.

#### **GENERAL NOTES**

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 I 1/2' ELSEWHERE.

#### REINFORCING STEEL

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

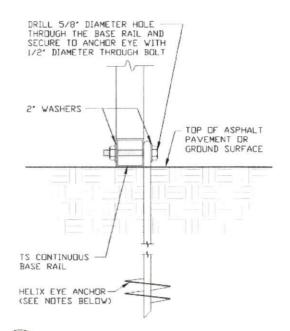
#### REINFORCEMENT MAY BE BENT IN THE SHOP OR THE FIELD PROVIDED:

- 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

#### 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 3C INCH EMBEDMENT OR SINGLE 6' HELIX WITH MINIMUM 50" EMBEDMENT
- 4 FOR LODSE 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.



#### GROUND BASE HELIX ANCHORAGE

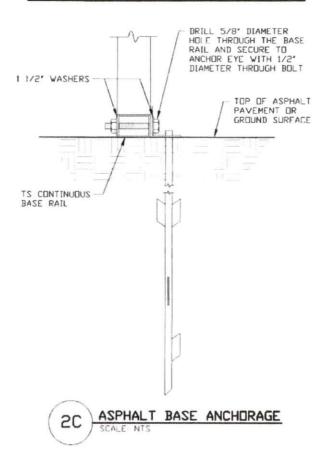
SCALE NTS (CAN BE USED FOR ASPHALT)

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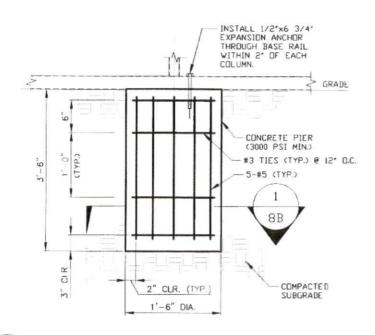
| DRAWN BY: AT           | QUALITY COMMERCIAL STRUCTURES / A PLUS<br>P.O. BOX 1448<br>PILOT MOUNTAIN, NC 27041<br>30'x16' ENCLOSED BUILDING |              |   |           |
|------------------------|--|--------------|---|-----------|
| PROJECT HGR: VSN       | DATE: 1-24-18  | SCALE: NTS   | T | NO 17275S |
| CLIENT: QUALITY/A PLUS | SHT. 8   | DVG. NO SK-3 | 3 | REV. 0    |

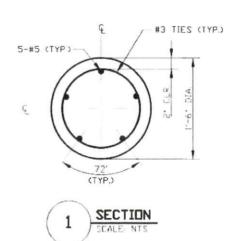
#### BASE RAIL ANCHORAGE OPTIONS



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|--|------------------------|---------------|--------------------------------|------------------------|---|
| THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING AND  | PROJECT MGR VSM        | DATE: 1-24-18 | SCALE: NTS                     | JOB ND 172758          |   |
| ENGINEEDING AND CONCULTING INC   | CHECKED BY: PDH        |               | OT MOUNTAIN,<br>16' ENCLOSED B |                        |   |
| MOORE AND ASSOCIATES   | DRAWN BY: AT           | QUALITY CO    | MMERCIAL STR<br>P.O. BOX 144   | UCTURES / A PLUS<br>18 | S |

#### **BASE RAIL ANCHORAGE OPTIONS**





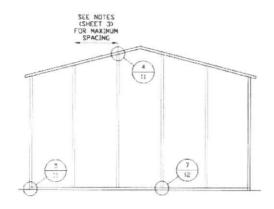
2D DRILLED CONCRETE PIER BASE RAIL ANCHORAGE
SCALE: NTS
(NOTE: MIN. ANCHOR EDGE DISTANCE IS 4')

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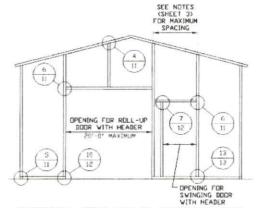
| DRAWN BY: AT           | PII           | QUALITY COMMERCIAL STRUCTURES / A PI<br>P.O. BOX 1448<br>PILOT MOUNTAIN, NC 27041<br>30'x16' ENCLOSED BUILDING |     |           |  |
|------------------------|---------------|--|-----|-----------|--|
| PROJECT NGR: VSM       | DATE: 1-24-18 | SCALE NTS  | JOB | ND 17275S |  |
| CLIENT: QUALITY/A PLUS | SHT. 83       | DWG ND SK-3  |     | REV. 0    |  |

#### **BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS**



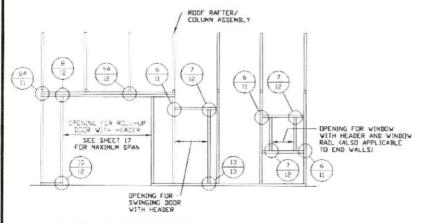
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS

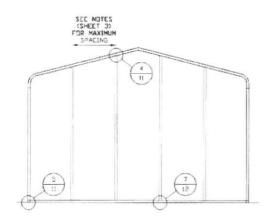


TYPICAL BOX EAVE RAFTER
SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS

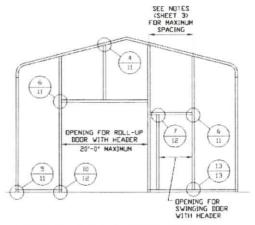
| MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.   | DRAWN BY: AT<br>CHECKED BY: PDH        | PIL | MMERCIAL STRU<br>P.O. BOX 1448<br>OT MOUNTAIN, N<br>16' ENCLOSED BU | C 27041 |
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#### **BOW RAFTER END WALL AND SIDE WALL OPENINGS**



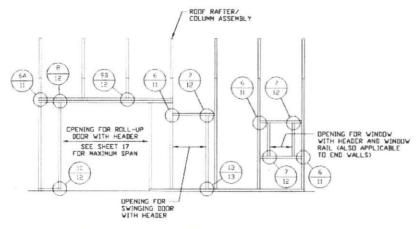
# TYPICAL BOW RAFTER END WALL FRAMING SECTION

SCALE: NTS



## TYPICAL BOW RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS

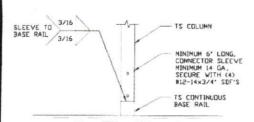


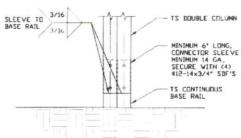
# TYPICAL BOW RAFTER SIDE WALL OPENINGS FRAMING SECTION

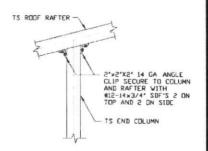
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|---|------------------------|---------------|-----------------------------------|---------------|
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| ENGINEERING AND CONSULTING, INC.  | CHECKED BY: PDH        |               | OT MOUNTAIN, I<br>16' ENCLOSED BI |               |
| MOORE AND ASSOCIATES  | DRAWN BY: AT           |               | P.O. BOX 144                      |               |

#### **CONNECTION DETAILS**





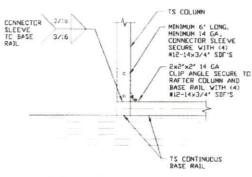


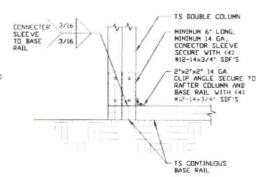
RAFTER COLUMN/BASE RAIL CONNECTION DETAIL 3

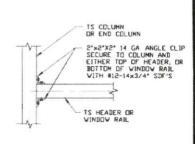
SCALE: NTS

RAFTER COLUMN/BASE RAIL CONNECTION DETAIL **3A** SCALE: NTS

END COLUMN/RAFTER CONNECTION DETAIL SCALE: NTS







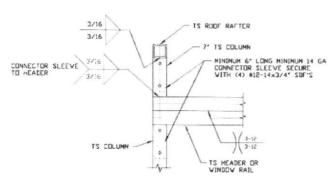
END COLUMN/BASE RAIL CONNECTION DETAIL

5

END COLUMN/BASE RAIL CONNECTION DETAIL

COLUMN OR WINDOW RAIL TO POST CONNECTION DETAIL

6



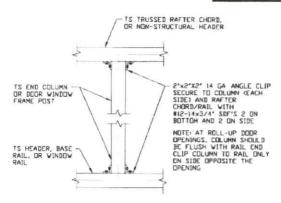
COLUMN OR WINDOW RAIL TO POST CONNECTION DETAIL 6A SCALE: NTS

| MOORE AND ASSOCIATES             |  |
|----------------------------------|--|
| ENGINEERING AND CONSULTING, INC. |  |

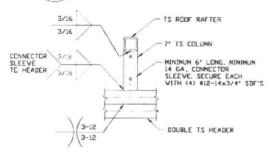
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|   | CLIENT: QUALITY/A PLUS |   | DVG. NO SK- |        | REV. 0    |  |  |
|---|------------------------|---|-------------|--------|-----------|--|--|
| - | PRELIECT HIGH WISH     | DATE: 1-24-18   | SCALE: NTS  | , arra | ND 17275S |  |  |
|   | CHECKED BY: PDH        | PILOT MOUNTAIN, NC 27041<br>30'x16' ENCLOSED BUILDING   |             |        |           |  |  |
|   | DRAWN BY: AT           | QUALITY COMMERCIAL STRUCTURES / A PLUS<br>P.O. BOX 1448 |             |        |           |  |  |

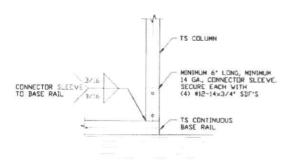
#### **CONNECTION DETAILS**



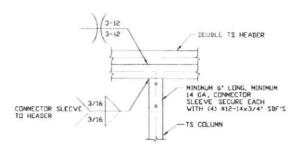
# 7 COLUMN TO WINDOW RAIL CONNECTION DETAIL SCALE: NTS



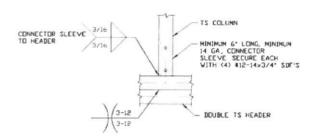
# 9A COLUMN/DOUBLE HEADER CONNECTION DETAIL SCALE: NTS



# 10 COLUMN/BASE RAIL CONNECTION DETAIL



# 8 DOUBLE HEADER/COLUMN CONNECTION DETAIL SCALE NTS



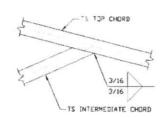
9B CONNECTION DETAIL
SCALE: NTS

| MOORE AND ASSOCIAT      | ES        |
|-------------------------|-----------|
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|      |             | LEGAL ACTION     | LITELIED MAT | HALL THE KUNCEPET | II INEMELUPUR PRAT |

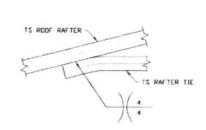
|   | DRAWN BY: AT           | PII           | OMMERCIAL STR<br>P.O. BOX 144<br>OT MOUNTAIN,<br>k16' ENCLOSED B | 18<br>NC 2 | 27041     |
|---|------------------------|---------------|--|------------|-----------|
| _ | PROJECT MGR VSM        | DATE: 1-24-18 | SCALE: NTS   | JUB        | ND 172758 |
|   | CLIENT: QUALITY/A PLUS | SHT. 12       | DWG. NO SK-3   |            | REV. 0    |

#### **CONNECTION DETAILS**



TOP CHORD TO INTERMEDIATE CHORD CONNECTION DETAIL

11



RAFTER TIE CONNECTION DETAIL 12

SCALE: NTS

TS TRUSSED RAFTER CHORD, OR NON-STRUCTURAL HEADER TS END COLUMN -OR DOOR WINDOW FRAME POST TS HEADER, BASE RAIL, OR VINDOV RAIL

COLUMN TO HEADER OR BASE RAIL CONNECTION DETAIL

13

TS TOP CHERE TS INTERMEDIATE

TOP CHORD TO INTERMEDIATE CHORD CONNECTION DETAIL

14 SCALE: NTS

17

TS TOP CHORD TS INTERMEDIATE 3/16 3/16 TS INTERMEDIATE

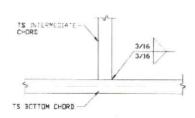
> TOP CHORD TO INTERMEDIATE CHORD CONNECTION DETAIL

15

3/16 TYP TS BOTTOM CHORD

> BOTTOM CHORD TO INTERMEDIATE CHURD CONNECTION DETAIL

16 SCALE: NTS



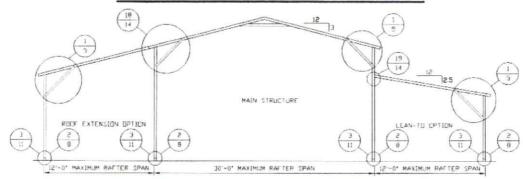
BOTTOM CHORD TO CHORD CONNECTION DETAIL

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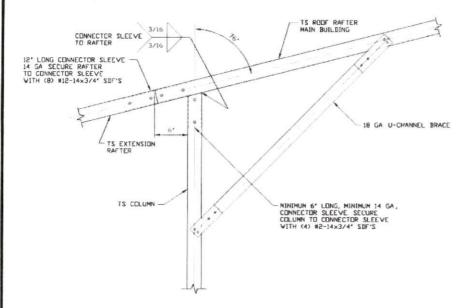
| DRAWN BY: AT           |               | MMERCIAL ST<br>P.O. BOX 1<br>OT MOUNTAIN | 448 |           |
|------------------------|---------------|--|-----|-----------|
| CHECKED BY: PDH        |               | 16' ENCLOSED                             |     |           |
| PROJECT MGR VSM        | DATE: 1-24-19 | SCALE NTS                                | JOB | ND 17275S |
| CLIENT: QUALITY/A PLUS | SHT. 13       | DVG. NO SK-                              | 3   | REVJ 0    |

#### BOX EAVE RAFTER LEAN-TO OPTION

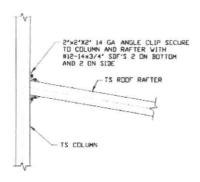


#### TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

SCALE: NTS



# 18 SIDE EXTENSION RAFTER/COLUMN DETAIL

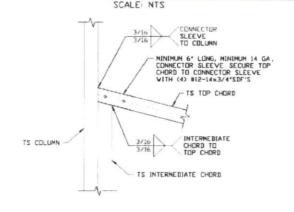


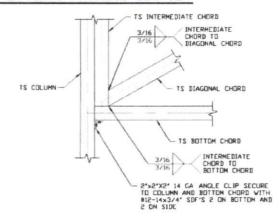
# 19 COLUMN CONNECTION DETAIL SCALE NTS

| CONSULTING, THE UNWITHORIZED REPRODUCTION, COPYING, OR OTHERVISE USE OF<br>THIS DOCUMENT IS STRUCTLY PROHORITED AND ANY INFRINGEMENT THEREUPON MAY<br>BE SUBJECT TO LEGAL ACTION. | CLIENT: QUALITY/A PLUS | SHT. 14       | DWG. NO SK-3 | 3   | REV. 0    |
|---|------------------------|---------------|--------------|-----|-----------|
| THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING AND   | PROJECT MGR: VSM       | DATE: 1-24-18 | SCALE: NTS   | JOB | ND 17275S |
| ENGINEERING AND CONSULTING, INC.  | CHECKED BY: PDH        |               | OT MOUNTAIN  |     |           |
| MOORE AND ASSOCIATES  | DRAWN BY: AT           |               | P.O. BOX 14  | 448 |           |

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#### TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION





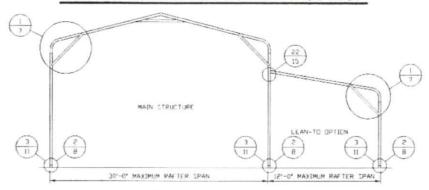
20 LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL

21 LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL

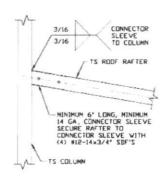
SCALE: NTS

| MOORE AND ASSOCIATES  | DRAWN BY: AT           | QUALITY CO    | MMERCIAL STR<br>P.O. BOX 144   | UCTURES / A PLUS |
|---|------------------------|---------------|--------------------------------|------------------|
| ENGINEERING AND CONSULTING, INC.  | CHECKED BY: PDH        |               | OT MOUNTAIN,<br>16' ENCLOSED B |                  |
| THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING AND   | PROJECT MGR VSM        | DATE: 1-24-18 | SCALE: NTS                     | JUB ND 17275S    |
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#### **BOW EAVE RAFTER LEAN-TO OPTION**



 $\frac{ \mbox{TYPICAL BOW RAFTER LEAN-TO OPTION FRAMING SECTION}}{\mbox{SCALE: NTS}}$ 



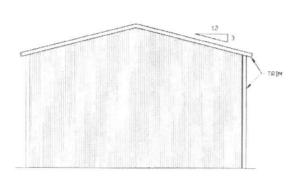
22 COLUMN CONNECTION DETAIL
SCALE NTS

| MOORE AND ASSOCIATES            |  |
|---------------------------------|--|
| ENGINEERING AND CONSULTING, INC |  |

| THE DEPOSIT IS THE REPORTY OF METER AND ASSISTATES CHEMETONIC  | AMED  |
|--|-------|
| THE MANNETT IS THE PROPERTY OF PERSON HOSE CHARLES CHARLES CHARLES   | LEAD  |
| THIS DICLMENT IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERVISE US  | FIF   |
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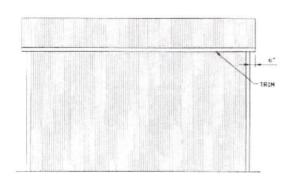
| DRAWN BY: AT           | PII           | P.O. BOX 14<br>OT MOUNTAIN, | 48<br>NC 2 | 27041      |
|------------------------|---------------|-----------------------------|------------|------------|
| PROJECT MGR VSM        | DATE: 1-24-18 | SCALE NTS                   |            | ND 17275\$ |
| CLIENT: QUALITY/A PLUS | SHT. 15       | DVG. ND SK-3                |            | REVJ 0     |

#### **BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION**



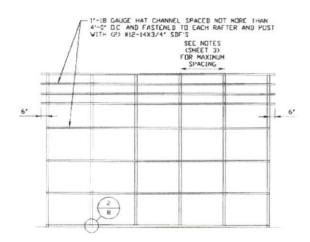
TYPICAL END ELEVATION VERTICAL ROOF/SIDING

SCALE: NTS



TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING

SCALE: NIS



TYPICAL FRAMING SECTION VERTICAL ROOF/SIDING OPTION

SCALE: NTS

# MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.

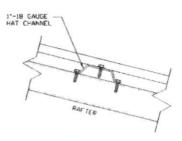
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| н                          | AT CHANNELS |             |
|----------------------------|-------------|-------------|
| FI                         |             | 3 /         |
| 1'-18 GAUGE<br>HAT CHANNEL |             |             |
|                            |             | V           |
|                            |             |             |
|                            |             | (3)         |
|                            | 1'-18 GAUGE | I'-18 GAUGE |

29 GA GALVANIZED METAL ROOF-AND WALL PANELS FASTENED TO

## TYPICAL SECTION VERTICAL ROOF/SIDING OPTION

SCALE: NTS

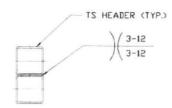


#### PANEL ATTACHMENT

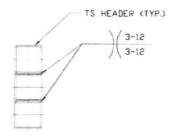
(ALTERNATE FOR VERTICAL ROOF PANELS) SCALE: NTS

| CLIENT) QUALITY/A PLUS | SHT. 16   | DWG. NO SK-  | 3 REV. 0      |  |  |  |
|------------------------|---|--------------|---------------|--|--|--|
| PROJECT NGR VSM        | DATE: 1-24-18   | SCALE: NTS   | JUB NO 17275S |  |  |  |
| CHECKED BY: PDH        |   | 16' ENCLOSED |               |  |  |  |
| DRAWN BY: AT           | QUALITY COMMERCIAL STRUCTURES / A PLUS<br>P.O. BOX 1448<br>PILOT MOUNTAIN, NC 27041 |              |               |  |  |  |

#### **HEADER OPTION**

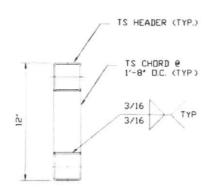


HEADER DETAIL FOR SPANS: \( \frac{12'-0'}{\text{CFOR}} \) GROUND SNOW LOAD \( \frac{35}{35} \) PSF\( \frac{10'-0'}{\text{CFOR}} \) GROUND SNOW LOAD \( \frac{35}{35} \) PSF \( \frac{10}{\text{LOAD}} \) \( \frac{45}{\text{PSF}} \)



HEADER DETAIL FOR SPANS: 12'-0' < TO  $\leq$  16'-0' (FOR GROUND SNOW LOAD  $\leq$  35 PSF) 10'-0' < TO  $\leq$  14'-0' (FOR GROUND SNOW LOAD 35 PSF < TO  $\leq$  45 PSF)

SCALE: NTS



HEADER DETAIL FOR SPANS;
16'-0' < TO ≤ 20'-0' (FOR GROUND SNOW LOAD ≤ 35 PSF)
14'-0' < TO ≤ 20'-0' (FOR GROUND SNOW LOAD
35 PSF < TO ≤ 45 PSF)

SCALE: NTS

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

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| PROJECT MGR WSM  CLIENTI QUALITY/A PLUS | DATE: 1-24-18   | SCALE: NTS |  | ND 17275S |  |
|---|---|------------|--|-----------|--|
| CHECKED BY: PDH                         | 30'x16' ENCLOSED BUILDING   |            |  |           |  |
| DRAWN BY: AT                            | QUALITY COMMERCIAL STRUCTURES / A PLUS<br>P.O. BOX 1448<br>PILOT MOUNTAIN, NC 27041 |            |  |           |  |