

STRUCTURAL DESIGN

ENCLOSED BUILDING

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

19 May 2020 Revision 4 M&A Project No. 17257S/18241S/19326S/20102S

Prepared for:

Twin Carports
781 W. Lebanon St.
Building B
Mt. Airy, NC 27030

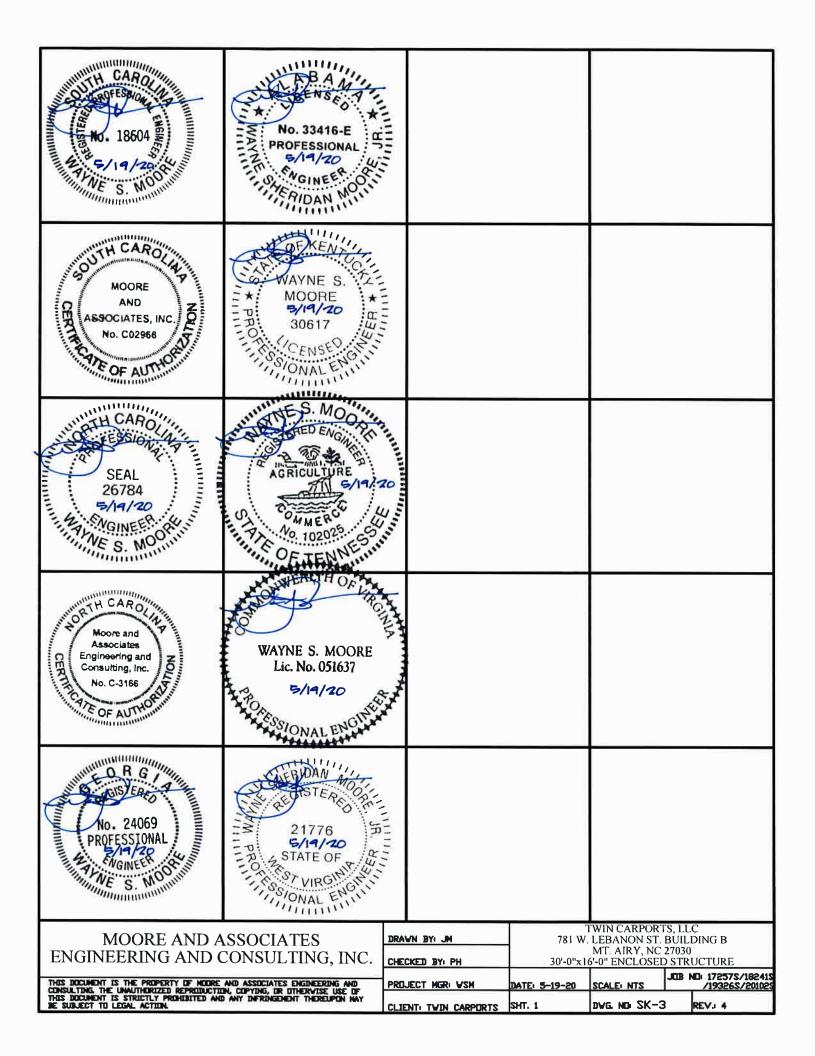
Prepared by:

Moore and Associates Engineering and Consulting, Inc.

1009 East Avenue North Augusta, SC 29841

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





DRAWING INDEX

SHEET	1	PE SEAL COVER SHEET
SHEET	2	DRAWING INDEX
SHEET	3	INSTALLATION NOTES AND SPECIFICATIONS
SHEET	4	TYPICAL END AND SIDE ELEVATIONS
SHEET	5	TYPICAL RAFTER/COLUMN FRAME AND SIDE FRAMING SECTIONS (BOX EAVE RAFTER)
SHEET	5A	TYPICAL RAFTER/COLUMN FRAME AND SIDE FRAMING SECTIONS (BOX EAVE RAFTER)
SHEET	6	COLUMN CONNECTION DETAILS (BOX EAVE RAFTER)
SHEET	7	TYPICAL RAFTER/COLUMN FRAME AND SIDE FRAMING SECTIONS (BOW RAFTER)
SHEET	7A	TYPICAL RAFTER/COLUMN FRAME AND SIDE FRAMING SECTIONS (BOW RAFTER)
SHEET	8	COLUMN CONNECTION DETAILS (BOW RAFTER)
SHEET	9	OPTIONAL BASE RAIL ANCHORAGE
SHEET	10	TYPICAL END WALL AND SIDE WALL FRAMING SECTIONS (BOX EAVE)
SHEET	11	TYPICAL END WALL AND SIDE WALL FRAMING SECTIONS (BOW RAFTER)
SHEET	12	WALL DPENING DETAILS
SHEET	13	WALL OPENING DETAILS
SHEET	14	WALL OPENING DETAILS
SHEET	15	BOX EAVE RAFTER LEAN-TO OPTIONS
SHEET	15A	BOX EAVE RAFTER LEAN-TO OPTIONS
SHEET	16	BOW RAFTER LEAN-TO OPTIONS
SHEET	17	VERTICAL ROOF/SIDING OPTION END AND SIDE ELEVATION AND SECTION
SHEET	18	DPTIONAL HEADERS

MOORE AND ASSOCIATES	DRAWN BY: JM
ENGRIEERRIG AND CONGULTARIG RIC	CHECKED BY PH
	PROJECT MGR: VSM
THIS DOCUMENT IS STRICTLY PROHUBITED AND ANY DIFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.	CLIENT: TWIN CARPO

	TWIN CARPORTS, LLC
RAWN BYI JM	781 W. LEBANON ST. BUILDING B
	MT, AIRY, NC 27030
HECKED BY: PH	30'-0"x16'-0" ENCLOSED STRUCTURE

PROJECT MGRI VSM	DATE: 5-19-20		JOB NO: 172575/182415 /193265/201025
CLIENT: TWIN CARPERTS	SHT. 2	DWG. ND: SK-3	3 REV.14

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 2018 NORTH CAROLINA BUILDING CODE, 2018 INTERNATIONAL BUILDING CODE (IBC), 2015 IBC AND 2012 IBC.
- 3. DESIGN LOADS ARE AS FOLLOWS:

A) DEAD LOAD = 1.5 PSF B) LIVE LOAD = 12 PSF

C) GROUND SNOW LOAD = 45 PSF (MAXIMUM RAFTER/POST SPACING = 40 FEET)

= 35 PSF (MAXIMUM RAFTER/POST SPACING = 50 FEET)

NOTE: DIFFERENTIAL LOADING DUE TO SNOW DRIFTING NOT ANALYZED

- 4 ULTIMATE LOW WIND SPEED (LW) 105 TO 140 MPH (NOMINAL WIND SPEED 81 TO 109 MPH).
- 5, END WALL COLUMNS (POST) ARE EQUIVALENT IN SIZE AND SPACING TO SIDE WALL POSTS UNLESS NOTED OTHERWISE.
- 6. MAXIMUM RAFTER/POST AND END POST SPACING = 5.0 FEET (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" × 2 1/2" 14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS (FOR MAXIMUM 35 PSF GROUND SNOW LOAD) OR 2 1/4" × 2 1/4" 12 GAUGE TS FRAMING MEMBERS (FOR MAXIMUM 45 PSF GROUND SNOW LOAD) (UNLESS NOTED OTHERWISE)
- 10 AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR HAT CHANNELS, AND COLUMNS (INTERIOR OR END) = 10° OC (MAX)
- 11. FASTENERS CONSIST OF #12-14×3/4' 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, ROOFING WITH SLOPE LESS THAN 3:12 MUST BE LAP SEALANT.
- 12. ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6' OF EACH RAFTER COLUMN ALONG SIDES AND ENDS.
- 13 STANDARD GROUND ANCHORS CONSIST OF #4 REBAR W/ WELDED NUT x 30' LONG AND MAY BE USED IN SUITABLE SOIL CONDITIONS OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED.
- 14 WIND FORCES GOVERN OVER SEISMIC FORCES, SEISMIC PARAMETERS ANALYZED ARE:

SOIL SITE CLASS = D RISK CATEGORY I/II

R= 3.25 $I_E= 1.0$ $V= C_SW$

S_{D1}= 1.2589

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAVN BY: JH CHECKED BY: PH	781 W	TWIN CARPOR /. LEBANON ST MT. AIRY, NC 16'-0" ENCLOSE	. BÚILDING B
THIS DOCUMENT IS THE PROPERTY OF MOURE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF	PROJECT MGR: VSM	DATE: 5-19-20	SCALE: NTS	JUB NO 17257\$/18241\$ /19326\$/201025
CONSULTING THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SIDLECT TO LEGAL ACTION.	CHIENT, TURN CARROTTE	SHT. 3	DVG ND SK-	3 REV. 4

ROLL-UP DOOR (AS APPLICABLE) PERSONNEL DOOR (AS APPLICABLE) FOR STRUCTURE VINDOV (AS APPLICABLE)

LENGTH VARIES DEPENDING ON NUMBER AND SPACING OF RAFTERS

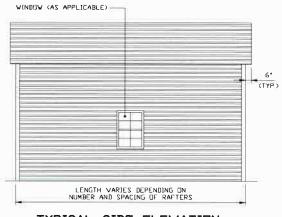
TYPICAL END ELEVATION SCALE: NTS

S SCALE: NTS

TYPICAL SIDE ELEVATION

ROLL-UP DOOR (AS APPLICABLE) TRIM V © 30'-0' MAXIMUM RAFTER SPAN

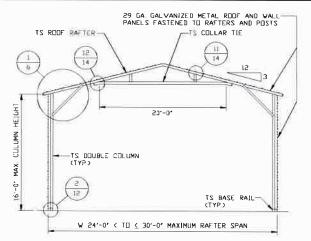
BOW FRAME RAFTER STRUCTURE



TYPICAL END ELEVATION SCALE NTS

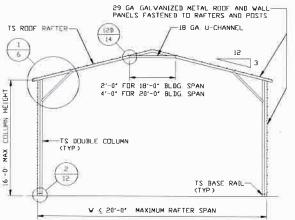
TYPICAL SIDE ELEVATION SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: JM CHECKED BY: PH	781 W.	TWIN CARPOR' LEBANON ST. MT. AIRY, NC 6'-0" ENCLOSEI T	BUILDING B 27030 STRUCTURE	
THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERVISE USE OF	PROJECT MGR: VSM	DATE: 5-19-20	SCALE: NTS	JOB NO 17257S. /19326S	
THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY DIFFINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.	CLIENT: TWIN CARPORTS	SHT. 4	DVG ND SK-3	3 REV. 4	

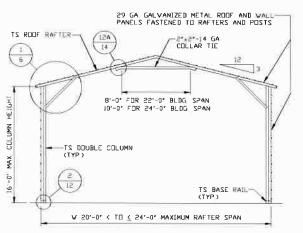


TYPICAL RAFTER/COLUMN FRAME SECTION

SCALE: NTS



TYPICAL RAFTER/COLUMN FRAME SECTION



TYPICAL RAFTER/COLUMN FRAME SECTION SCALE: NTS

SEE NOTES
(SHEET 3)
FOR MAXIMUM
SPACING

SPACING

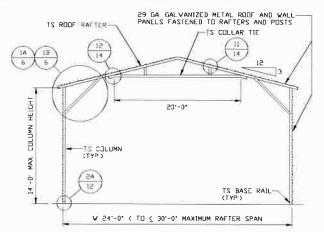
BERNSTH VARIES DEPENDING ON

TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS

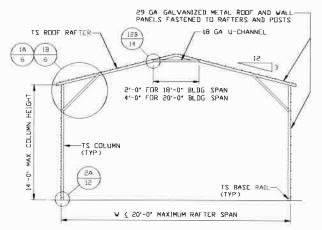
MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING AND CONSULTING THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHOBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

CLIENT: TWIN CARPURTS	SHT. 5	DVG. NO SK-	-3	REV.1 4
PRELJECT MGR: VSM	DATE: 5-19-20	SCALE: NTS	NOB	ND: 17257S/18241S /19326S/20102S
CHECKED BY: PH	30'-0"x	MI, AIRY, NO 16'-0" ENCLOSE		
DRAVN BY: JM	TWIN CARPORTS, LLC 781 W. LEBANON ST. BUILDING B MT. AIRY, NC 27030			



TYPICAL RAFTER/COLUMN FRAME SECTION



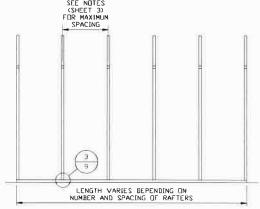
TYPICAL RAFTER/COLUMN FRAME SECTION

CULUMN HEIGHT TS COLUMN MAX 12 12 ₩ 20'-0" < TD < 24'-0" MAXIMUM RAFTER SPAN TYPICAL RAFTER/COLUMN FRAME SECTION SCALE: NTS SEE NOTES (SHEET 3) FOR MAXIMUM SPACING

(12A

TS ROOF RAFTER-

1B



29 GA GALVANIZED METAL ROOF AND WALL PANELS FASTENED TO RAFTERS AND POSTS

2 x2 14 GA COLLAR TIE

8'-0" FOR 22'-0" BLDG SPAN 10'-0" FOR 24'-0" BLDG SPAN

12

TS BASE RAIL

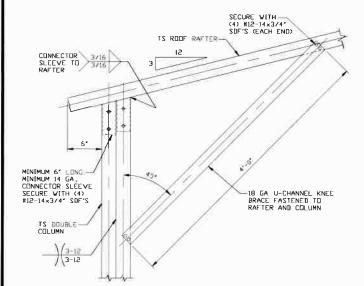
3

TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS

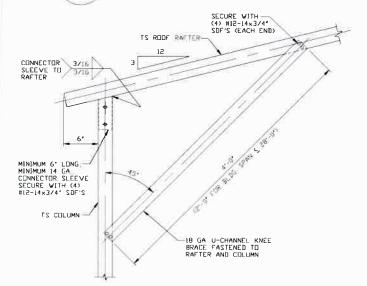
MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

THIS DOCUMENT IS THE PROPERTY OF MOURE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERVISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY DIFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

DRAWN BY: JM		TWIN CARPORTS, LLC 781 W. LEBANON ST. BUILDING B MT. AIRY, NC 27030			
CHECKED BY: PH		30'-0"x16'-0" ENCLOSED STRUCTURE			
	PROJECT MGR: VSM	DATE: 5-19-20	SCALE: NTS	JOB	ND: 17257\$/18241\$ /19326\$/20102\$
	CLIENT: TWIN CARPORTS	SHT. 5A	DWG. ND: SK-	3	REV.: 4



BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 14'-0' < TO \(\) 16'-0'



BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS & 12'-0'

MINIMUM 6' LUNG
RAFTER

MINIMUM 6' LUNG
RAFTER

MINIMUM 14 GA,
CUNNECTOR SI/16
SECURE WITH

(4) H12-14×3/4'
SDF'S (EACH END)

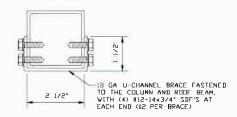
12

18 GA U-CHANNEL KNEE
BRACE FASTENED TO
RAFTER AND COLUMN

2 1/4*×2 1/4*-12 UA

2 1/4*×2 1/4*-12 UA

BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 12'-0' < TO \(\) 14'-0'



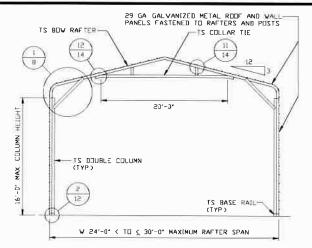
BRACE SECTION

SCALE: NTS

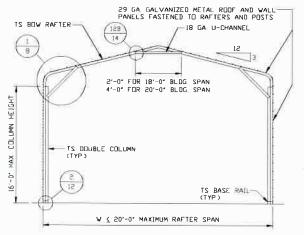
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, IN	C.
·	

THIS DOCUMENT IS THE PROPERTY OF HOURE AND ASSOCIATES ENGINEERING AND
CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERVISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY
BE SUBJECT TO LEGAL ACTION.

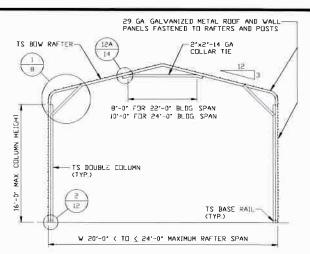
	CLIENT: TWIN CARPORTS	SHT. 6	DWG. NO SK-	-3	REV. 4
	PROJECT MGR: VSM	DATE: 5-19-20	SCALE: NTS	J03	ND 17257S/18241S /19326S/20102S
•	CHECKED BY: PH	MT. AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE			
	DRAWN BY: JM		TWIN CARPOR	r. BÚIL	DING B



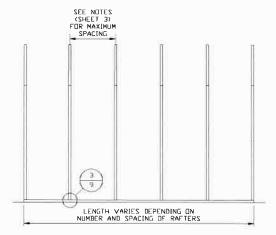
TYPICAL RAFTER/COLUMN FRAME SECTION



TYPICAL RAFTER/COLUMN FRAME SECTION



TYPICAL RAFTER/COLUMN FRAME SECTION SCALE: NTS

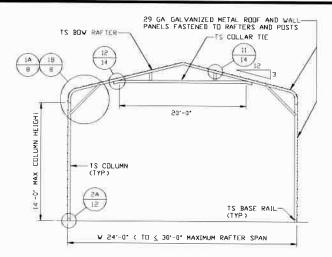


TYPICAL RAFTER/COLUMN FRAMING SIDE SECTION
SCALE: NTS

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

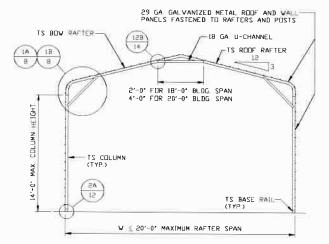
THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRIDUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

CLIENT: TVIN CARPURTS	SHT. 7	DWG. ND: SK-	-3	REV.i 4	
PROJECT MGR: VSM	DATE: 5-19-20	SCALE: NTS	JOB	ND 17257S/18241S /19326S/20102S	
CHECKED BY: PH	30'-0"x	MT. AIRY, No 16'-0" ENCLOSI			
DRAWN BY: JM	TWIN CARPORTS, LLC 781 W. LEBANON ST. BUILDING B				



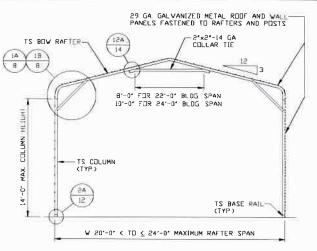
TYPICAL RAFTER/COLUMN FRAME SECTION

SCALE: NTS

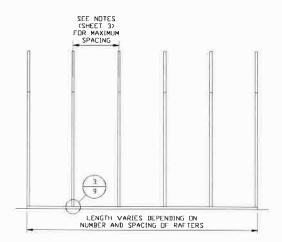


TYPICAL RAFTER/COLUMN FRAME SECTION

SCALE: NTS



TYPICAL RAFTER/COLUMN FRAME SECTION



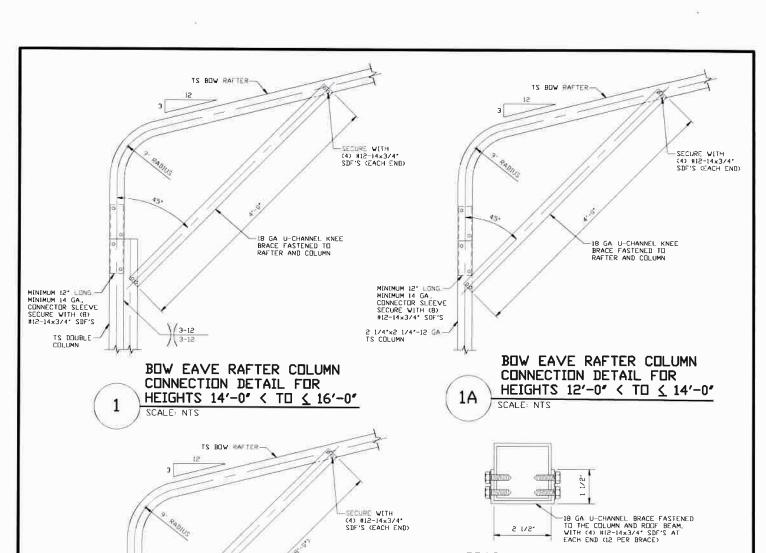
TYPICAL RAFTER/COLUMN FRAMING SIDE SECTION

SCALE: NT

THE DOCUMENT IS THE DOCUMENT OF WINDS AND ACCOUNTS CHARLESTONS AN	
ENGINEERING AND CONSULTING, I	NC,
ENGINEERING AND CONSULTING, I	NIC
MOORE AND ASSOCIATES	
MOODE AND AGGOGIATES	

THIS DOCUME	AT IS THE PRO	PERTY OF M	DORE AND	ASSDCIATES	ENGINEERING	AND
CONSULTING.	THE UNAUTHOR	UZED REPROI	DUCTION, CI	JPYING, OR	OTHERVISE US	
THIS DOCUME	IT IS STRICTL	Y PROMIRITE	T AND ANY	INFRINGEM	INT THEREUPON	HAY
BE SUBJECT	TO LEGAL ACT	IIN.			the demonstrate	

CLIENT: TWIN CARPURTS	SHT. 7A	DVG. ND SK-	-3	REV. 4	
PROJECT MGR: VSM	DATE: 5-19-20	SCALE: NTS	JOB	ND: 17257S/18241 /19326S/20102	
CHECKED BY: PH	MT. AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE				
DRAWN BYI JM	TWIN CARPORTS, LLC 781 W. LEBANON ST. BUILDING B				



BRACE SECTION

BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS <u><</u> 12'-0"

BRACE FASTENED TO RAFTER AND COLUMN

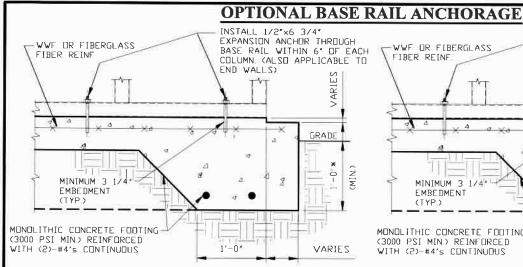
SCALE: NTS

MINIMUM 12' LUNG — MINIMUM 14 GA CUNNECTUR SLEEVE SECURE WITH (8) #12-14x3/4' SDF'S

TS COLUMN

1B

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAVN BY: JM	781 W.	TWIN CARPORT LEBANON ST. MT. AIRY, NC	BUILDING B 27030
	CHECKED BY: PH			JOB NO 172575/182415
CURSULTING THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERVISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY			DWG. ND: SK-3	/19326S/20102S REV.: 4



3A

CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NT * COURDINATE WITH LOCAL CODES/ORD

GENERAL NOTES

NOTE: CONCRETE MONOLITHIC SLAB DESIGN BASED ON MINIMUM SOIL 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:

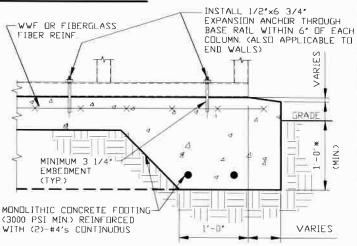
THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT

REINFORCEMENT MAY BE BENT IN THE SHOP OR THE FIELD PROVIDED

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

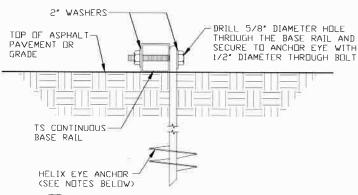
HELIX ANCHOR NOTES:

- 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 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
- 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



CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE **3B**

(MINIMUM ANCHOR EDGE DISTANCE IS 4") * COORDINATE WITH LOCAL CODES/ORD



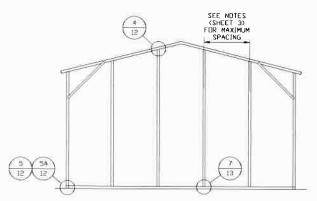
GROUND BASE HELIX ANCHORAGE 30 SCALE: NTS (CAN BE USED FOR ASPHALT)

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

_								
THES	DOCUMENT	IS THE P	ROPERTY D	F HOORE	AND ASSI	CIATES EN	GINEERING	AND
CONS	IN TING. TH	E INALITH	OPIZED PER	POTE ICTIT	M CHRY	NG DD CT	ERVISE US	- 75
THIS	TYPENT	TO OTDIC	TI V DOCUM	TTED AND	ALIV THE	au, un ull	THEREUPO	- 11
W- 6	ID POT T	19 311110	TET FRUITUS	TIED WAT	MAL TIME	KTATELETAI	INFIGURDA	MAT
DF 2	DBJECT II	LEGAL A	CILIN					

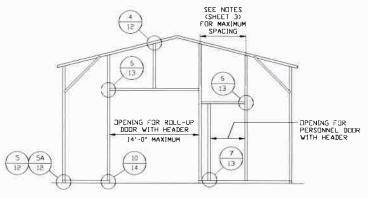
CLIENT: TWIN CARPORTS	SHT. 9	DVG ND SK-3		REV.1 4
PROJECT MGR: VSM	DATE: 5-19-20	SCALE: NTS	J03 1	17257S/18241S /19326S/201025
CHECKED BY: PH	30'-0"x1	MT. AIRY, NC 6'-0" ENCLOSED		
DRAWN BY: JM		ΓWIN CARPORT LEBANON ST.		

BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



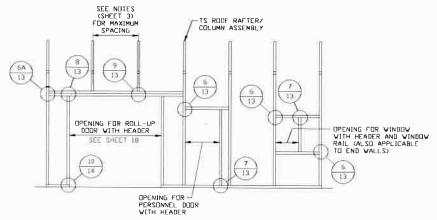
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS

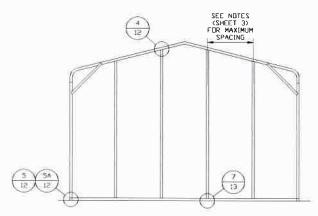


TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: JM CHECKED BY: PH	781 W	TWIN CARPORT LEBANON ST. 1 MT. AIRY, NC 2 6'-0" ENCLOSED	BUILDING B 27030
THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.			SCALE: NTS DVG. ND: SK-3	JUB NO: 17257\$/1824 /19326\$/2010 REV.: 4

BOW RAFTER END WALL AND SIDE WALL OPENINGS

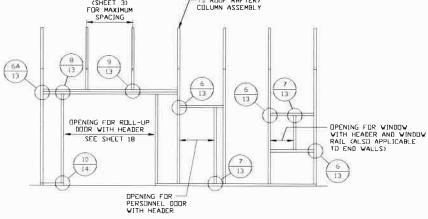


TYPICAL BOW RAFTER END WALL FRAMING SECTION SCALE: NTS

SEE NOTES (SHEET 3) FOR MAXIMUM SPACING 4 (5) 13) 6 13 DPENING FOR ROLL-UP DOOR WITH HEADER OPENING FOR PERSONNEL DOOR WITH HEADER 5 5A 12 10 [13]

TYPICAL BOW RAFTER END WALL OPENINGS FRAMING SECTION SCALE: NTS

SEE NOTES (SHEET 3) FOR MAXIMUM SPACING TE ROOF RAFTER/ COLUMN ASSEMBLY



TYPICAL BOW RAFTER SIDE WALL OPENINGS FRAMING SECTION

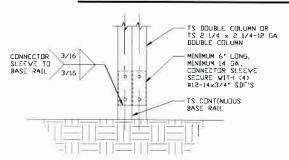
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.

THIS DISCUME	NT IS THE PROPERTY OF HOURE AND ASSOCIATES ENGINEERING AND
CONSID TIME	THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF
THE WAY	THE CHARLETED KENGTHOCHTER, CONTINUE DE DIMERAISE USE IN
IMPR TOTOME	NT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON HAY
BE SUBJECT	TO LEGAL ACTION.

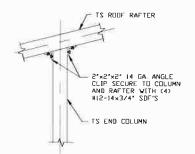
CLICATA TATAL CARRIEDTS	SHT. 11	DVG ND SK-	3	REV. 4
PROJECT MGR: VSM	DATE: 5-19-20	SCALE: NTS	JOB	ND: 17257\$/18241\$ /19326\$/20102\$
CHECKED BY: PH	MT. AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE			
DRAWN BY: JM	TWIN CARPORTS, LLC 781 W. LEBANON ST. BUILDING B			

BOW AND BOX EAVE RAFTER WALL OPENING DETAILS

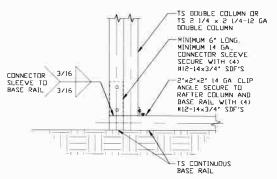


RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

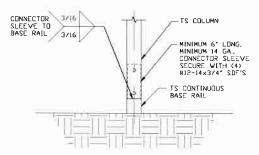
SCALE: NTS



4 END COLUMN/RAFTER CONNECTION DETAIL SCALE NTS

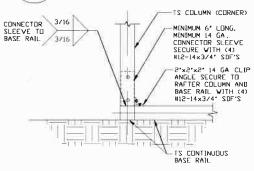






RAFTER COLUMN/BASE RAIL

SCALE: NTS



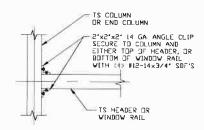
5 END COLUMN/BASE RAIL CONNECTION DETAIL SCALE: NTS

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

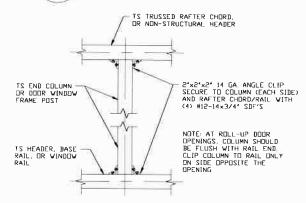
THUS DUCUMENT	IS THE PROPERTY OF MOURE AND ASSOCIATES ENGINEERING AND
	THE PARTY IS NOTICE IN INSCRIPTING CHARACTER SERVING
CONSULTING T	E UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERVISE USE OF
OCH TOOL I SITTLE I	STATES OF THE PROPERTY OF THE
THIS DOCUMENT	IS STRICTLY PROHIBITED AND ANY INFRINCEMENT THEREUPON MAY
	THE PERSON NAMED IN THE PE
BE SUBJECT T	LEGAL ACTION
	Marie III I I I I I I I I I I I I I I I I I

DRAWN BY: JM		TWIN CARPOR	RTS, LLC I. BUILDING B	
	MT: AIRY, NC 27030			
CHECKED BY: PH	30'-0"x	30'-0"x16'-0" ENCLOSED STRUCTURE		
PROJECT MGR: VSM	DATE: 5-19-20	SCALE: NTS	JOB .	ND: 17257S/18241S /19326S/20102S
CLIENT: TWIN CARPURTS	SHT. 12	DAC NO 2K-	3	REV.I 4

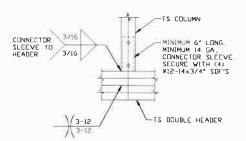
BOW AND BOX EAVE RAFTER WALL OPENING DETAILS



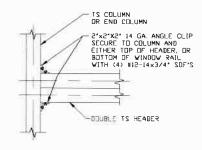
COLUMN OR WINDOW RAIL TO POST CONNECTION DETAIL SCALE NTS



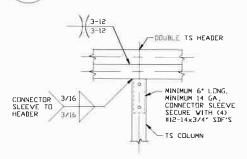
7 COLUMN TO HEADER, BASE RAIL OR WINDOW RAIL CONNECTION DETAIL



9 HEADER/COLUMN CONNECTION DETAIL
SCALE NTS



COLUMN OR WINDOW RAIL TO POST CONNECTION DETAIL



8 HEADER/COLUMN CONNECTION DETAIL
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.
THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERVISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

781 W	TWIN CARPORTS, LLC 781 W. LEBANON ST. BUILDING B			
30'-0"x	MT. AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE			
DATE: 5-19-20	SCALE: NTS	JOB NO 17257S/18241S /19326S/20102S		
	30'-0"x	781 W. LEBANON S' MT. AIRY, N 30'-0"x16'-0" ENCLOSI		

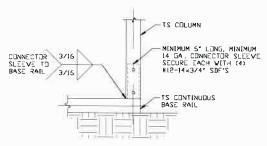
DAC NO 2K-3

SHT. 13

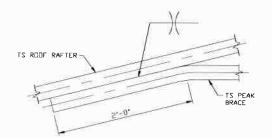
CLIENT: TWIN CARPORTS

REV. 4

BOW AND BOX EAVE RAFTER WALL OPENING DETAILS

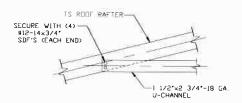


10 COLUMN/BASE RAIL CONNECTION DETAIL

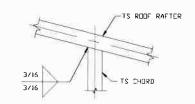


PEAK BRACE CONNECTION DETAIL

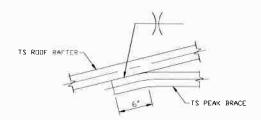
SCALE: NTS



ROOF RAFTER TIE CONNECTION DETAIL
SCALE: NTS



RAFTER TO CHORD CONNECTION DETAIL
SCALE NTS



PEAK BRACE CUNNECTION DETAIL
SCALE: NTS

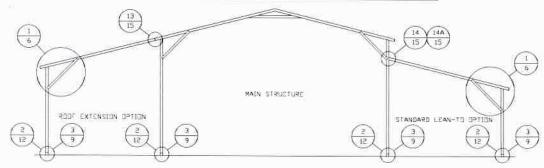
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.
THE WEIGHT IN THE CONTROL OF LABOUR AND ADDRESS OF THE CONTROL OF

THIS DOCUMENT	IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING AND
CONSULTING TH	E UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF IS STRICTLY PROHOBITED AND ANY INFRINGEMENT THEREUPON MAY
DE SUBJECT TO	LEGAL ACTION

	TWIN CARPORTS, LLC
DRAVN BY: JM	781 W. LEBANON ST. BUILDING B
	MT. AIRY, NC 27030
CHECKED BY: PH	30'-0"x16'-0" ENCLOSED STRUCTURE
	ITR NO. 172579

ŀ	TRESCOT TREAT TON	DATE S 17 EU	SUNLLY NIS	1173203720102
ŀ	PROJECT MGR: VSM	DATE: 5-19-20	SCALE: NTS	/19326S/20102



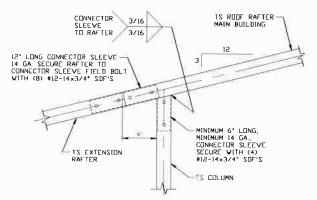


TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

13

14

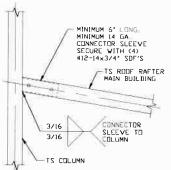
MAXIMUM STANDARD LEAN-TO WIDTH IS 12'-0'



CDNNECTOR SLEEVE TO 3/16 RAFTER 12' LONG CONNECTOR SLEEVE-14 GA SECURE RAFTER TO CONNECTOR SLEEVE WITH (B) #12-14x3/4' SDF'S TS TOP CHORD EXTENSION ROOF RAFTER MAIN BUILDING MINIMUM 6' LONG, MINIMUM 14 GA, CONNECTOR SLEEVE SECURE WITH (4) #12-14×3/4" SDF'S 3-12 TS BOTTOM CHORD EXTENSION TS COLUMN

SIDE EXTENSION RAFTER/ COLUMN DETAIL FOR RAFTER SPANS ≤ 12'-0" FOR SNOW L□ADS & 35 PSF AND SPANS & 10'-0" FOR SNOW LOADS 35 PSF < TO < 45 PSF

SIDE EXTENSION RAFTER/ COLUMN DETAIL FOR RAFTER SPANS 10'-0" < TO ≤ 12'-0" FOR SNOW LOADS 35 PSF < TO < 45 PSF SCALE: NTS



LEAN-TO RAFTER TO

RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS ≤ 12'-0" FOR SNOW LOADS < 35 PSF AND SPANS < 10'-0" FOR SNOW LOADS 35 PSF < T□ < 45 PSF

2°x2°x2° 14 GA ANGLE CLIP SECURE TO COLUMN WITH (4) #12-14x3/4° SDF'S TS LEAN-TO RAFTER IS COLUMN

OPTIONAL LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SNOW LOADS < 35 PSF AND SPANS < 10'-0' FOR SNOW LOADS 35 PSF < TO < 45 PSF

14A

SCALE: NTS

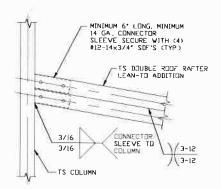
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC. |

THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSOCIAT	THE PARTMETPHE AND
CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, I	D ULTREDUTER HEE DE
THIS DOCUMENT IS STRICTLY PROPERTIES AND ANY INCOME	ENERT THERE INCH MAY
THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRING BE SUBJECT TO LEGAL ACTION.	CHEMI INCREUTUR RAI

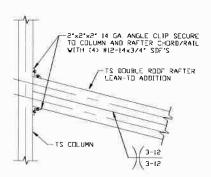
	TWIN CARPORTS, LLC				
DRAWN BY: JM	781 W. LEBANON ST. BUILDING B				
	MT: AIRY, NC 27030				
CHECKED BY: PH	30'-0"x16'-0" ENCLOSED STRUCTURE				

CLIENT: TWIN CARPORTS	SHT. 15	DVG. ND: SK-3	3 REV.1 4			
PROJECT MGR: VSM	DATE: 5-19-20	SCALE: NTS	JUB NO 17257S/18241S /19326S/20102S			
CHECKED BIT FIT	30-0 X10-0 ENCLOSED STRUCTURE					

BOX EAVE RAFTER LEAN-TO OPTIONS



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS $10'-0'' < TO \le 12'-0'' FOR$ SNOW LOADS 35 PSF $< TO \le 45 PSF$

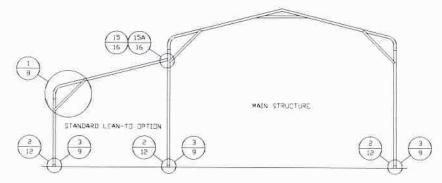


OPTIONAL LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 10'-0' < TO < 12'-0' FOR SNOW LOADS 35 PSF < TO < 45 PSF

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.
THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSICIATES ENGINEERING AND CONSULTING THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGIAL ACTION.

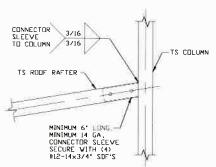
DRAWN BY: JM	TWIN CARPORTS, LLC 781 W. LEBANON ST. BUILDING B				
CHECKED BY: PH	MT. AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE				
PROJECT MGR: VSM	DATE: 5-19-20	SCALE: NTS	JOB	ND 17257\$/18241\$ /19326\$/20102\$	
CLIENT: TWIN CARPORTS	SHT. 15A	DVG. ND: SK-	3	REV. 4	

BOW RAFTER LEAN-TO OPTION



TYPICAL BOW RAFTER LEAN-TO OPTION FRAMING SECTION

SCALE: NTS MAXIMUM STANDARD LEAN-TO WIDTH IS 12'-0"



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS \(\) 12'-0' FOR SNOW LOADS \(\) 35 PSF AND SPANS \(\) 10'-0' FOR SNOW LOADS \(\) 55 PSF \(\) TO \(\) 45 PSF

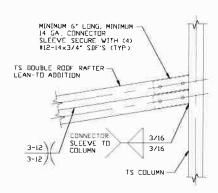
2'x2'x2' 14 GA ANGLE CLIP
SECURE TD COLUMN VITH (4)
#12-14x3/4' SDF'S

TS LEAN-TO
RAFTER

OPTIONAL LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS ≤ 12'-0" FOR SNOW LOADS ≤ 35 PSF AND SPANS ≤ 10'-0" FOR SNOW LOADS 35 PSF < TO ≤ 45 PSF"

(15A

SCALE: NTS



15

15B

LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 10'-0" < TO \(\) 12'-0" FOR SNOW LOADS 35 PSF \(\) TO \(\) 45 PSF

2'x2'x2' 14 GA ANGLE CLIP SECURE
TO COLUMN AND RAFTER CHORD/RAIL
VITH (4) #12-14x3/4' SDF'S

TS DOUBLE ROOF RAFTER
LEAN-TO ADDITION

TS COLUMN

3-12
3-12

OPTIONAL LEAN-TO
RAFTER TO RAFTER
COLUMN CONNECTION
DETAIL FOR RAFTER
SPANS 10'-0" < TO
12'-0" FOR SNOW LOADS
35 PSF < TO
45 PSF

15C) 35 PSF

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.

NC. CHECKED BY: JM

TWIN CARPORTS, LLC 781 W. LEBANON ST. BUILDING B MT. AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE

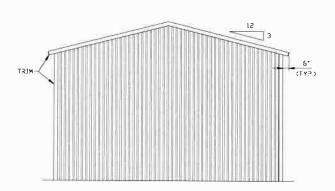
THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR ITHERVISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

 CHECKED BY: PH
 30'-0"x16'-0" ENCLOSED STRUCTURE

 PROJECT MGR: VSM
 DATE: 5-19-20 SCALE: NTS
 JOB ND: 172575/182415 /193265/201025

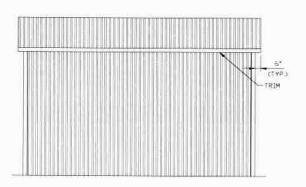
 CLIENT: TVIN CARPORTS
 SHT. 16
 DVG. ND: SK-3
 REV.: 4

BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



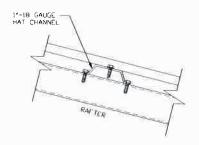
TYPICAL END ELEVATION VERTICAL ROOF/SIDING

SCALE: NTS



TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING

SCALE: NTS



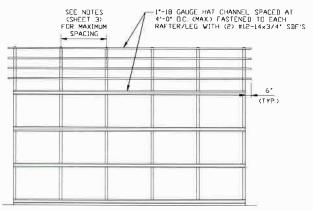
PANEL ATTACHMENT

(ALTERNATE FOR VERTICAL ROOF PANELS) SCALE NTS

29 GA GALVANIZED METAL ROOF AND WALL PANELS FASTENED HAT CHANNELS 12 3 I'-18 GAUGE HAT CHANNEL

TYPICAL SECTION VERTICAL ROOF/SIDING OPTION

SCALE NTS



TYPICAL FRAMING SECTION VERTICAL ROOF/SIDING OPTION

THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING AND CONSULTING THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERVISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY DIFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.

NG AND USE OF PON MAY	PROJECT MGR: VSM
	CLIENT: TWIN CARPURTS

DRAWN BY: JM CHECKED BY: PH

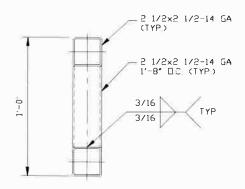
	TWIN CARPORTS, LLC
	781 W. LEBANON ST. BUILDING B
	MT. AIRY, NC 27030
_ :	<u>30'-0"x16'-0" ENCLOSED STRUCTURE</u>

DAC NO 2K-3

ROJECT MGR: WSM SCALE: NTS DATE: 5-19-20 SHT. 17

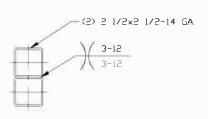
JOB NO 172575/182415 /193265/201025 REV.14

OPTIONAL HEADERS



HEADER DETAIL FOR OPENINGS 12'-0' < LENGTH \(\(\) 16'-0' \)

SCALE: NTS



HEADER DETAIL FOR DPENINGS LENGTH & 12'-0'

THIS BUCUMENT IS STRUCTLY PROMUNTED AND ANY DIFREMEDIANT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.	CLIENT: TWIN CARPORTS	SHT. 19	DWG. NO SK-	3	REV. 4
THIS DOCUMENT IS THE PROPERTY OF MODIFE AND ASSOCIATES ENGINEERING AND CONSULTING, THE UNAUTHURIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF	PROJECT MGR: VSM	DATE: 5-19-20	SCALE: NTS	JOB N	0 17257\$/18241 /19326\$/20108
ENGINEEDING AND CONCULTING INC	CHECKED BY: PH	MT. AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE			
MOORE AND ASSOCIATES	DRAWN BY: JM	TWIN CARPORTS, LLC 781 W. LEBANON ST. BUILDING B			