

STRUCTURAL DESIGN

ENCLOSED BUILDING

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

3 April 2019 Revision 5 M&A Project No. 17232S/18070S/18094S/19050S

> Prepared for: Steel Building Garages 1804 River Street Wilkesboro, NC 28697

> > Prepared by:

Moore and Associates Engineering and Consulting, Inc.

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



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4/4/18

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WE S. MOUITINE STATE OF VIRGINITY STEEL BUILDING GARAGES MOORE AND ASSOCIATES DRAWN BY AT 1804 RIVER STREET WILKESBORO, NC 28697 ENGINEERING AND CONSULTING, INC. CHECKED BY: PDH 30'x16' ENCLOSED BUILDING JUB NO 172325/180705/ 180945/190505 THIS DOCUMENT IS THE PROPERTY OF MODRE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRUCTLY PROHOBITED AND ANY INFRINGEMENT THERSUPON MAY BE SUBJECT TO LEGAL ACTION. PROJECT MGR: VSM DATE: 4-3-19 SCALE: NTS SHT. 1 DAC ND 2K-3 REV. 5 CLIENTI ES

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INSTALLATION NOTES AND SPECIFICATIONS

- 1 DESIGN IS FOR MAXIMUM 30'-0' WIDE \times 16'-0' EAVE HEIGHT ENCLOSED STRUCTURES.
- 2. DESIGN WAS DONE IN ACCORDANCE WITH THE 2018 NORTH CAROLINA BUILDING CODE, 2006 INTERNATIONAL BUILDING CODE (IBC), 2009 IBC, 2012 IBC AND 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 (MAXIMUM 45 PSF AT 4'-0' D.C. RAFTER/POST SPACING.)
 - = 30 PSF WITH U-CHANNEL PEAK BRACE (W & 24'-0').
 - CUNBALANCED SNOW LOADS DUE TO DRIFTING HAVE NOT BEEN EVALUATED.)
- 4 3-SECOND GUST ULTIMATE WIND SPEED (V_{ULT}) 105 TO 150 MPH (NOMINAL WIND SPEED 81 TO 116 MPH).
- 5. MAXIMUM RAFTER/POST AND END POST SPACING = 5.0 FEET (UNLESS NOTED OTHERWISE).
- 6. END WALL COLUMNS/POSTS ARE EQUIVALENT TO SIDE WALL COLUMNS/POSTS IN SIZE AND SPACING UNLESS NOTED OTHERWISE.
- 7. RISK CATEGORY I.
- 8 WIND EXPOSURE CATEGORY B.
- 9. SPECIFICATIONS APPLICABLE TO 29 GAUGE METAL PANELS FASTENED DIRECTLY TO 2' x 3' 14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS (UNLESS NOTED OTHERWISE).
- AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR HAT CHANNELS, AND COLUMNS (INTERIOR OR END) = 10° O.C. (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.
- 12. ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6' OF EACH RAFTER COLUMN ALONG SIDES.
- 13. STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBAR W/ WELDED NUT x 30' LONG IN SUITABLE SOIL CONDITIONS MAY BE USED FOR WIND SPEEDS ≤ 145 MPH OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AND WIND SPEEDS > 145 MPH.
- WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:

SDIL SITE CLASS = D RISK CATEGORY I/II/III

R= 3.25

V= C_SW

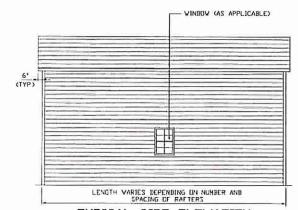
 $S_{DS} = 2.039$ S_{DI}= 1.258

15. APPLY LAP SEALANT TO METAL ROOF PANELS FOR 1:12 ROOF SLOPES.

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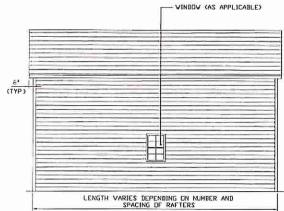
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STEEL RIHLDING CARACES

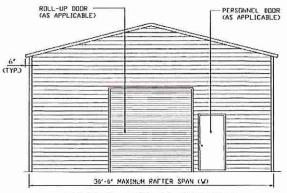


TYPICAL SIDE ELEVATION

SCALE: NTS

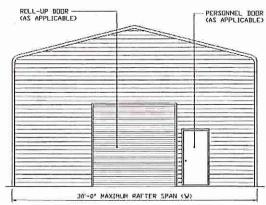


TYPICAL SIDE ELEVATION SCALE: NTS



TYPICAL END ELEVATION

SCALE: NTS

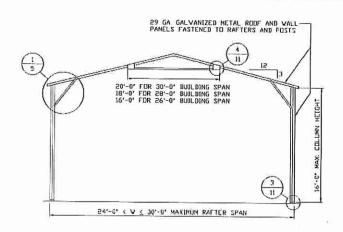


TYPICAL END ELEVATION
SCALE: NTS

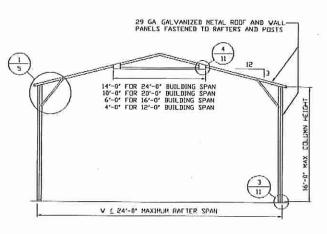
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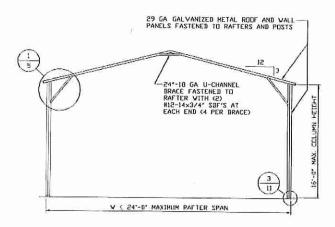
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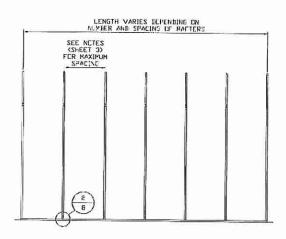
TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

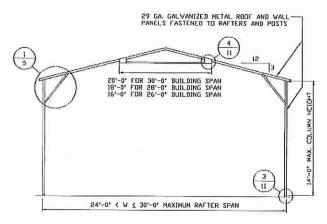


TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

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TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

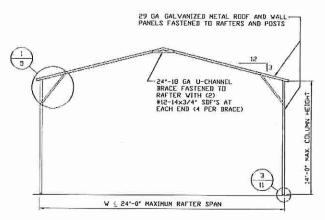
29 GA GALVANIZED METAL ROOF AND VALL
PANELS FASTENED TO RAFTERS AND POSTS

4 11

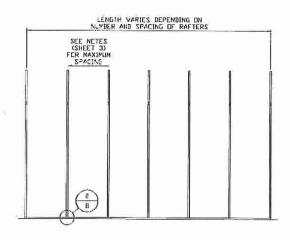
12

14'-0' FOR 24'-0' BUILDING SPAN
10'-0' FOR 10'-0' BUILDING SPAN
6'-0' FOR 12'-0' BUILDING SPAN
4'-0' FOR 12'-0' BUILDING SPAN

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



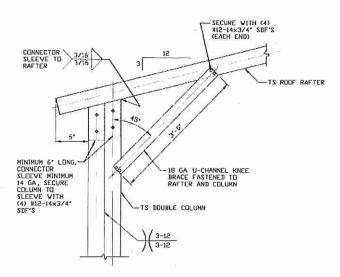
TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS

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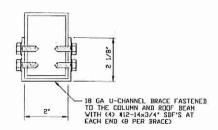
COLUMN CONNECTION DETAILS FOR WIND SPEEDS 105 < TO ≤ 150 MPH



BOX EAVE RAFTER COLUMN CONNECTION DETAIL HEIGHTS 14'-0" < TO < 16'-0"

1A) SCALE: NTS

SCALE: NTS NOTE: 2'-0' KNEE BRACE MAY BE USED FOR BUILDING WIDTHS < 26'-0'

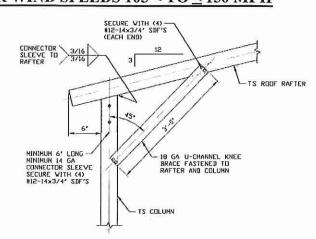


BRACE SECTION

SCALE: NTS

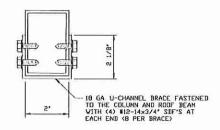
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COLUMN CONNECTION DETAILS FOR WIND SPEEDS 105 < TO ≤ 150 MPH SECURE WITH (4) -#12-14x3/4' SDF'S (EACH END) CONNECTOR 3/16 SLEEVE TO 3/16 RAFTER 3/16 TS ROOF RAFTER 18 GA U-CHANNEL KNEE BRACE FASTENED TO RAFTER AND COLUMN MINIMUM 6' LONG MINIMUM 14 GA CONNECTOR SLEEVE SECURE WITH (4) H12-14x3/4' SDF'S TS COLUMN SECURE COLUMN TO COLUMN INSERT VITH #12-14x3/4" SDF'S SPACED AT 10" DC. MAXIMUM TS 1 3/4*x2 3/4*-14 GA COLUMN INSERT



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

SCALE: NTS NOTE: 2'-0' KNEE BRACE MAY BE USED FOR BUILDING WIDTHS & 26'-0'



BRACE SECTION SCALE: NTS

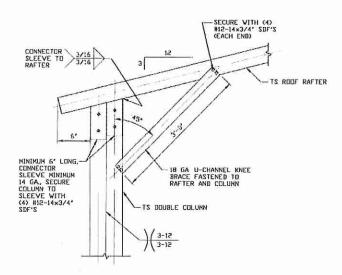
BOX EAVE RAFTER COLUMN CONNECTION DETAIL HEIGHTS 10'-0" < T□ ≤ 14'-0" 1B SCALE: NTS

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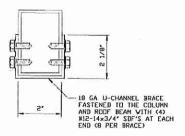
COLUMN CONNECTION DETAILS FOR WIND SPEEDS \leq 105 MPH



BOX EAVE RAFTER COLUMN CONNECTION DETAIL HEIGHTS 14'-0" < T□ ≤ 16'-0"

1A

SCALE: NTS NDTE: 2'-0' KNEE BRACE MAY BE USED FOR BUILDING WIDTHS & 26'-0'

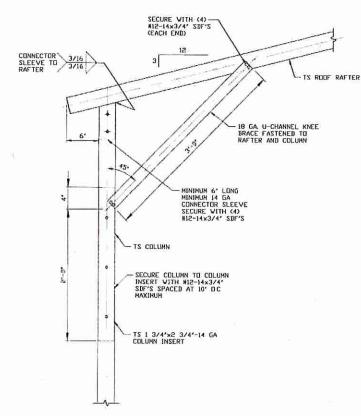


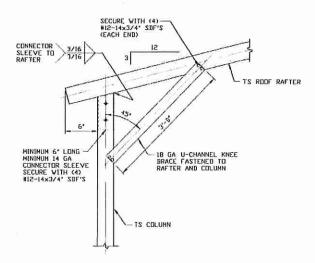
BRACE SECTION

SCALE: NTS

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COLUMN CONNECTION DETAILS FOR WIND SPEEDS ≤ 105 MPH



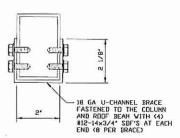


BOX EAVE RAFTER COLUMN CONNECTION DETAIL HEIGHTS < 13'-0"

1C HEIGHTS ≤ 13'-0"

SCALE: NTS NDTE: 2'-0' KNEE BRACE MAY BE USED FOR BUILDING WIDTHS & 26'-0'

BOX EAVE RAFTER COLUMN CONNECTION DETAIL HEIGHTS 13'-0" < TO < 14'-0"

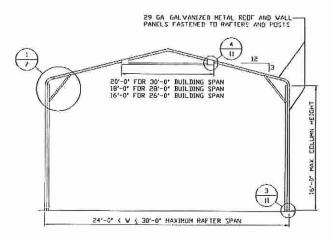


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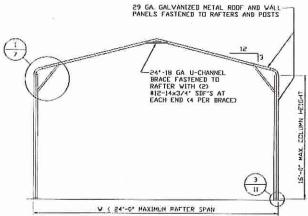
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	CLIENT: ES	SHT. 5D	DAC" NO! 2K-3		REV. 5			



TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

12



TYPICAL RAFTER/COLUMN END FRAME SECTION

LENGTH VARIES DEPENDING ON NUMBER AND SPACING OF RAFTERS (2 B)

TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

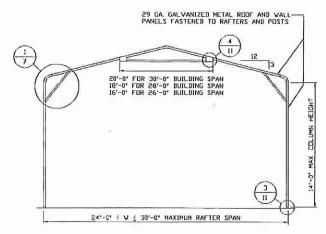
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29 GA. GALVANIZED METAL ROOF AND WALL PANELS PASTENED TO PAFTERS AND POSTS (3) ¥ € 24'-0' MAXIMUM RAFTER SPAN

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



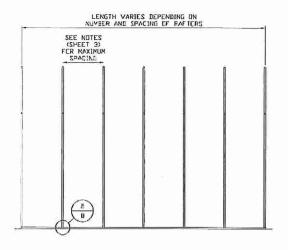
TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE NTS

29 GA. GAL VANIZED METAL REUET AND WALL
PANELS FASTENED TO RAFTERS AND PIESTS

12

14'-18 GA U-CHANNEL
BRACE FASTENED TO
RAFTER VITH (2)
MI2-14x3/4' SDF'S AT
EACH END (4 PER BRACE)

TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

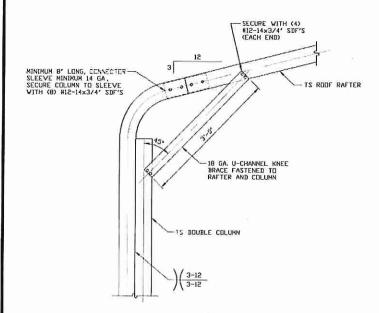
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29 GA GALVANIZED METAL RODF AND VALL PANELS FASTENED TO RAFTERS AND POSTS 11'-0' FOR 24'-0' BUILDING SPAN 10'-0' FOR 20'-0' BUILDING SPAN 6'-0' FOR 12'-0' BUILDING SPAN 4'-0' FOR 12'-0' BUILDING SPAN

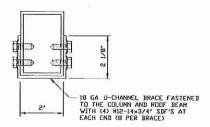
TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS

COLUMN CONNECTION DETAILS FOR WIND SPEEDS 105 < TO \leq 150 MPH



BOW EAVE RAFTER COLUMN CONNECTION DETAIL HEIGHTS 14'-0" < T□ ≤ 16'-0" 1A

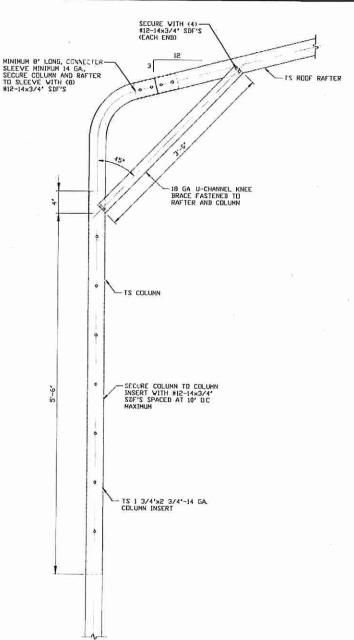
SCALE: NTS
NOTE: 2'-0' KNEE BRACE MAY BE USED FOR BUILDING WIDTHS & 26'-0'

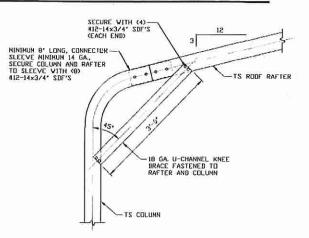


BRACE SECTION
SCALE: NTS

MOORE AND ASSOCIATES	DRAWN BY: AT	STE	STEEL BUILDING GARAGES 1804 RIVER STREET				
ENGINEERING AND CONSULTING, INC.	CHECKED BY: PDH		VILKESBORO (16' ENCLOSE				
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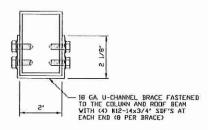
COLUMN CONNECTION DETAILS FOR WIND SPEEDS 105 < TO ≤ 150 MPH





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

SCALE: NTS NDTE: 2'-0' KNEE BRACE MAY BE USED FOR BUILDING WIDTHS < 26'-0'



BRACE SECTION

SCALE: NTS

BOW EAVE RAFTER COLUMN CONNECTION DETAIL

HEIGHTS 10'-0' < TO < 14'-0"

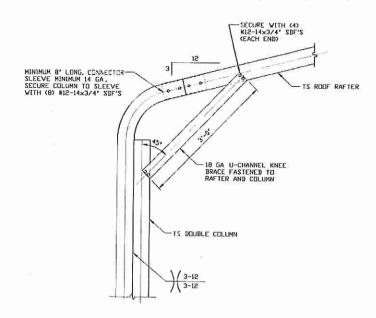
SCALE: NTS

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ENGINEERING AND CONSULTING, INC.

THES	DOCUMENT	IS TH	PROPERTY	OF MOOR	E AMD	ASSOCIATES E	NGDREEDING A	an.
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E S	ULECT TO	LEGAL	ACTION.		TED (MIL)	TAL KTACKELISCH	1 THE POST OF LIFE	PWI

Ţ.	DRAWN BY AT	STEEL BUILDING GARAGES 1804 RIVER STREET						
	CHECKED BY: PDH		WILKESBORO, NC 28697 30'x16' ENCLOSED BUILDING					
	PROJECT MGRI WSM	DATE: 4-3-19	SCALE: NTS	JOB NO	17232\$/18070\$/ 18094\$/19050\$			
	CLIENTI ES	SHT. 7B	DAC NO 2K	-3	REV. 5			

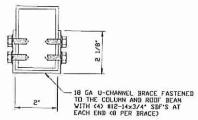
COLUMN CONNECTION DETAILS FOR WIND SPEEDS ≤ 105 MPH



BOW EAVE RAFTER COLUMN CONNECTION DETAIL HEIGHTS 14'-0" < T□ ≤ 16'-0"

1A

SCALE: NTS NDTE: 2'-0' KNEE BRACE MAY BE USED FOR BUILDING WIDTHS & 26'-0'



BRACE SECTION
SCALE: NTS

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THIS DISCHENT IS STRICTLY PROPULITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.	CLIENTI ES	SHT, 7C	DWG. NO SK	-3	REV. 5	

COLUMN CONNECTION DETAILS FOR WIND SPEEDS ≤ 105 MPH SECURE WITH (4) — #12-14×3/4' SDF'S (EACH END) MINIMUM B' LONG, CENNECTUR-SLEEVE MINIMUM 14 GA, SECURE COLUMN AND RAFTER TO SLEEVE VITH (B) #12-14x3/4' SDF'S TS ROOF RAFTER SECURE VITH (4)-MI2-14×3/4' SDF'S (EACH END) 3 MINIMUM 8' LONG, CONNECTOR-SLEEVE MINIMUM 14 GA, SECURE COLUNN AND RAFTER TO SLEEVE VITH (8) #12-14x3/4' SDF'S TS ROOF RAFTER 18 GA U-CHANNEL KNEE BRACE FASTENED TO RAFTER AND COLUMN 18 GA U-CHANNEL KNEE BRACE FASTENED TO RAFTER AND COLUMN TS COLUMN SECURE COLUMN TO COLUMN INSERT WITH #12-14×3/4' SDF'S SPACED AT 10' DC MAXIMUM TS COLUMN TS 1 3/4'x2 3/4'-14 GA COLUMN INSERT BOW EAVE RAFTER COLUMN CONNECTION DETAIL

HEIGHTS <u><</u> 13'-0"

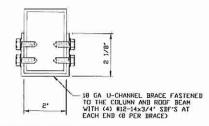
SCALE: NTS NOTE: 2'-0' KNEE BRACE MAY BE USED FOR BUILDING WIDTHS & 26'-0'

1C

BOW EAVE RAFTER COLUMN CONNECTION DETAIL

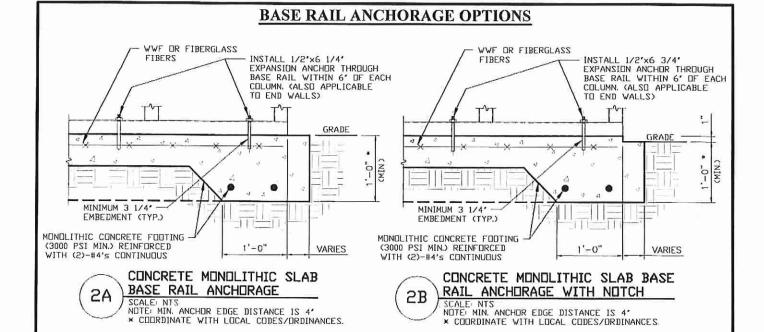
HEIGHTS 13'-0" < TO < 14'-0"

SCALE: NTS



BRACE SECTION SCALE: NTS

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NOTE: MIN. ANCHOR EDGE DISTANCE IS 4' * COORDINATE WITH LOCAL CODES/ORDINANCES.

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 DVER 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 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

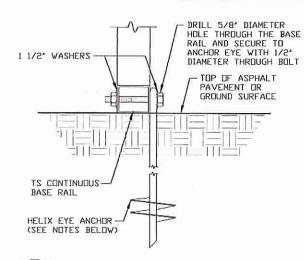
- 1. REINFORCEMENT IS BENT COLD.
 2. THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETERS.
 3. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT
- BE FIELD BENT.

HELIX ANCHOR NOTES:

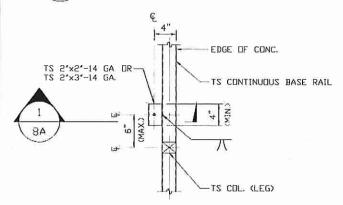
- FOR VERY BENSE AND/OR CEMENTED SANDS, COARSE GRAVEL AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS, USE MINIMUM (2) 4' HELICES WITH MINIMUM 30' EMBEDMENT OR SINGLE 6' HELIX WITH MINIMUM 50' EMBEDMENT
- 2. FOR CORAL USE MINIMUM (2) 4' HELICES WITH MINIMUM 30' EMBEDMENT OR SINGLE 6' HELIX WITH MINIMUM 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
- 4 FOR LODSE 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.

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BASE RAIL ANCHORAGE OPTIONS

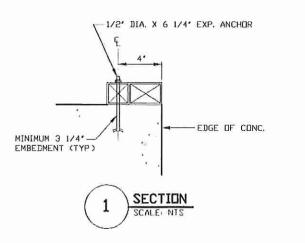


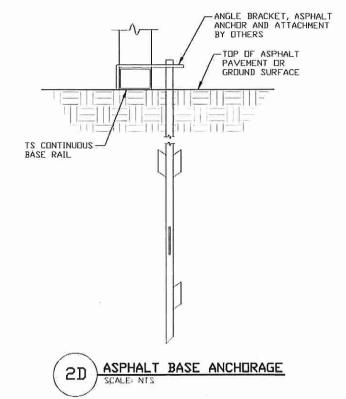
2C GROUND BASE HELIX ANCHORAGE
SCALE: NTS (CAN BE USED FOR ASPHALT)



TYPICAL ANCHOR DETAIL WHEN BASE RAIL IS NEAR EDGE OF CONCRETE

SCALE: NTS



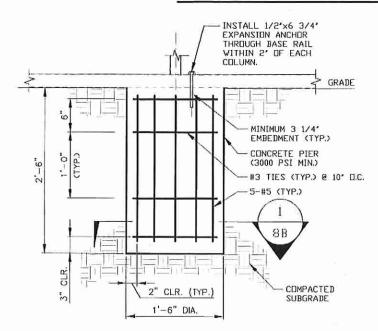


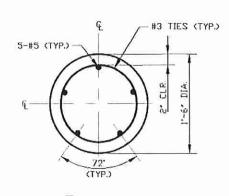
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CHECKED BY: PDH	WILKESBORO, NC 28697 30'x16' ENCLOSED BUILDING DATE: 4-3-19 SCALE: NTS 18094S/19050S						
PROJECT MGR: VSM							
CLIENTI ES	SHT. ØA	DAG NO 2K	(-3	REV: 5			

BASE RAIL ANCHORAGE OPTIONS





1 SECTION SCALE: NTS

2E DRILLED CONCRETE PIER BASE RAIL ANCHORAGE

SCALE: NTS (NOTE: MIN. ANCHOR EDGE DISTANCE IS 4')

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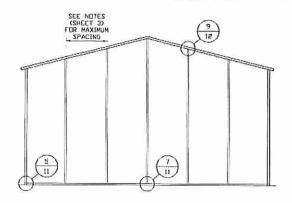
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PRILECT MED VSM	TATE: 4-2-19	SCALE, NTS	JIIB NO	172325/180 180945/190		
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DRAWN BY AT		STEEL BUILDING GARAGES 1804 RIVER STREET				

PROJECT MGR: VSM DATE: 4-3-19 SCALE: NTS 100945/19050S

CLIENT: ES SHT. 8B DVG. ND: SK-3 REV. 5

BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS

SEE NOTES
(SHEET 3)
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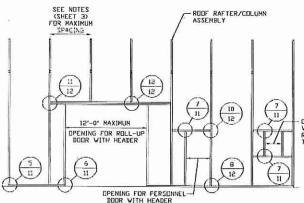
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TYPICAL BOX EAVE RAFTER END WALL OPENING FRAMING SECTION

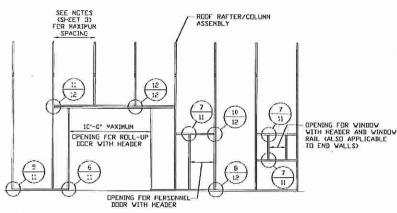
SCALE: NTS



- OPENING FOR VINDOW VITH HEADER AND WINDOW RAIL (ALSO APPLICABLE TO END WALLS)

TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION FOR GROUND SNOW LOADS & 35 PSF

SCALE: NTS



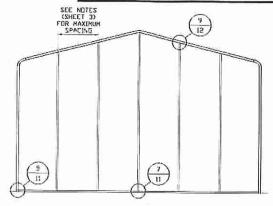
TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION FOR GROUND SNOW LOADS 35 PSF < TO < 45 PSF SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.

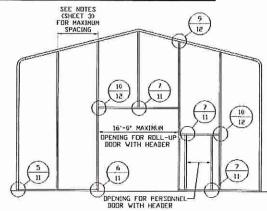
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PROJECT MGR: VSM	DATE: 4-3-19	SCALE: NTS	JUB NO 172325/180705/ 180945/190505				
CLIENT: ES	SHT. 9	DVG. NO SK-3 REV. 5					

BOW EAVE RAFTER END WALL AND SIDE WALL OPENINGS

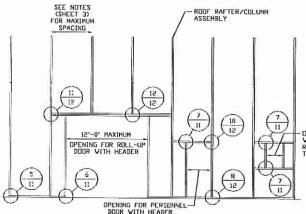


TYPICAL BOW EAVE RAFTER END WALL FRAMING SECTION SCALE: NTS



TYPICAL BOW EAVE RAFTER END WALL OPENING FRAMING SECTION

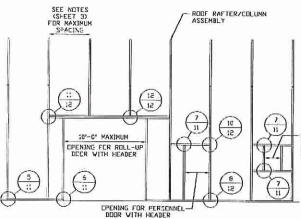
SCALE: NTS



OPENING FOR VINDOW VITH HEADER AND VINDOW RAIL (ALSO APPLICABLE TO END WALLS)

TYPICAL BOW EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION FOR GROUND SNOW LOADS & 35 PSF

SCALE: NTS



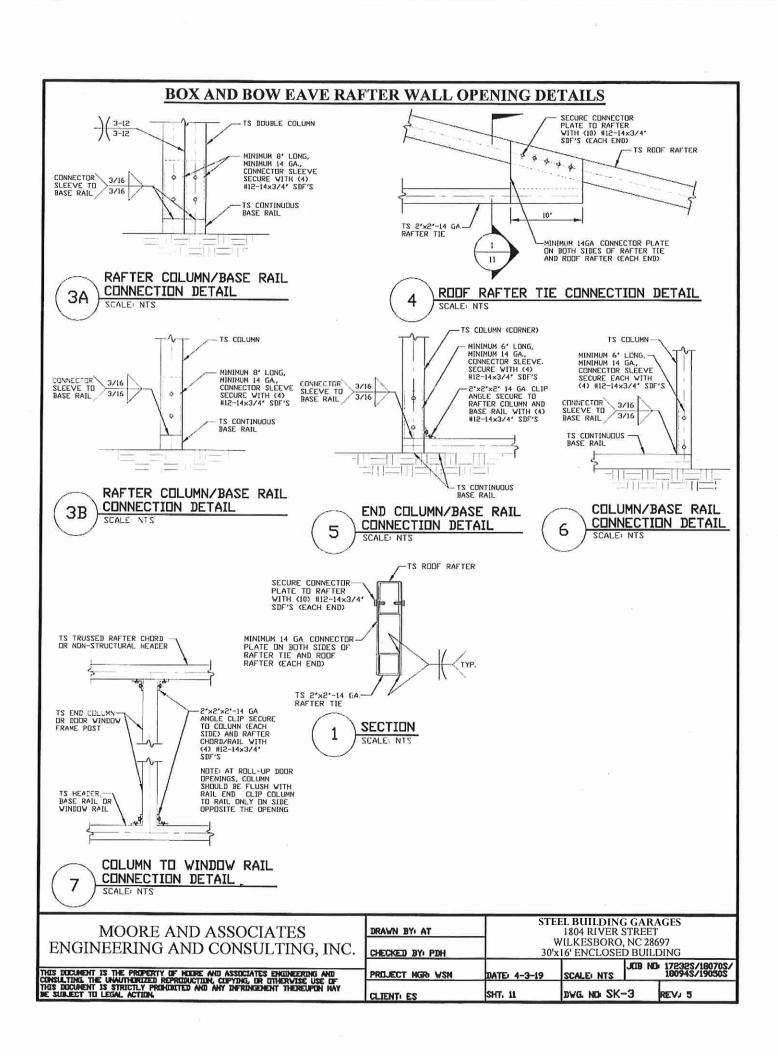
OPENING FOR VINDOW WITH HEADER AND VINDOW RAIL (ALSO APPLICABLE TO END WALLS)

TYPICAL BOW EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION FOR GROUND SNOW LOADS 35 PSF < TO \(\) 45 PSF

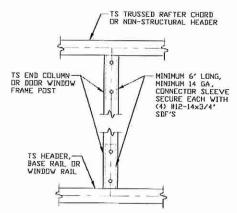
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CHECKED BY: PDH		WILKESBORG 'x16' ENCLOSE					
PROJECT MGR: WSM	DATE: 4-3-19	SCALE: NTS	JUB NO 17232\$/16070\$ 18094\$/19050\$				
CLIENT: ES	SHT. 10	DAC NO 2K	(-3 REV. 5				

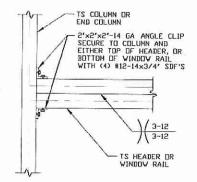


BOX AND BOW EAVE RAFTER WALL OPENING DETAILS

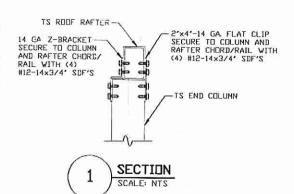


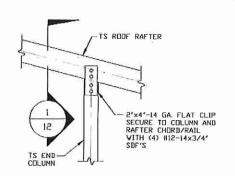
COLUMN TO HEADER OR BASE RAIL
CONNECTION DETAIL
SCALE NTS

8

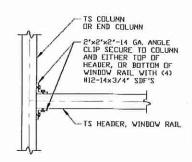


11 HEADER TO COLUMN CONNECTION DETAIL
SCALE: NTS



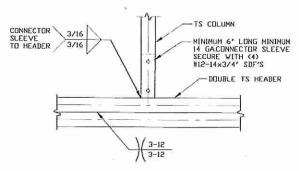


9 RAFTER TO POST CONNECTION DETAIL
SCALE NTS



COLUMN OR WINDOW RAIL TO POST CONNECTION DETAIL

SCALE: NTS



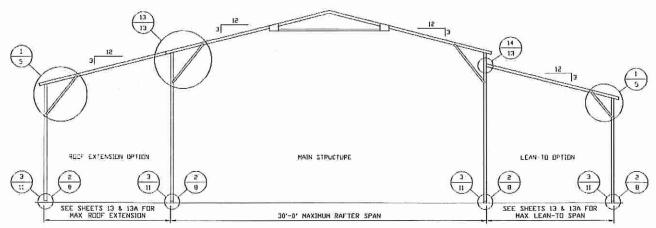
12 COLUMN TO HEADER CONNECTION DETAIL
SCALE: NTS

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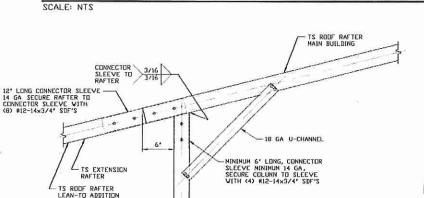
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CHECKED BY PDH		WILKESBORO, NC 28697 30'x16' ENCLOSED BUILDING				
PROJECT MGR: WSM	DATE: 4-3-19	4-3-19 SCALE NTS JUB NO 172325/1				
CLIENTI ES	SHT. 12	DAC NO 2K	-3	REV. 5		

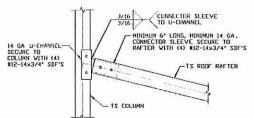
BOX EAVE RAFTER LEAN-TO OPTIONS



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



TS COLUMN



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS < 12'-0" 14A SCALE: NTS

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

13A SCALE: NTS

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ENGIN	EERING	AND C	ONSUL	TING,	INC.
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PROJECT MGR: VSM	DATE: 4-3-19	SCALE: NTS	JOB NO	172325/19070 180945/19050		
CHECKED BY: PDH	WILKESBORO, NC 28697 30'x16' ENCLOSED BUILDING					
DRAWN BY: AT		STEEL BUILDING GARAGES 1804 RIVER STREET				

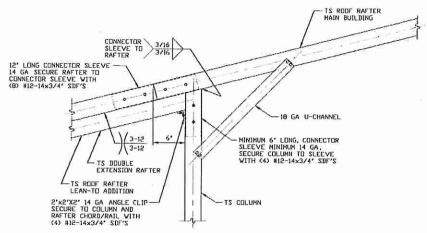
DAC NO 2K-3

REV. 5

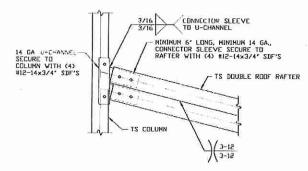
SHT. 13

CLIENT: ES

BOX EAVE RAFTER LEAN-TO OPTIONS



SIDE EXTENSION RAFTER/COLUMN DETAIL FOR RAFTER SPANS 12'-0" < TO < 15'-0"



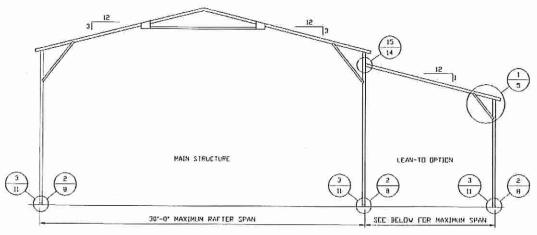
LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 12'-0" < TO < 15'-0"

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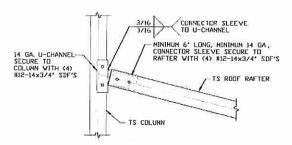
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CHECKED BY: PDH					
PROJECT NGR: VSN	DATE: 4-3-19	SCALE: NTS	J03 N0	172325/180705/ 180945/190505	
CLIENT: ES	SHT. 13A	DVG ND SK	(-3	REV. 5	

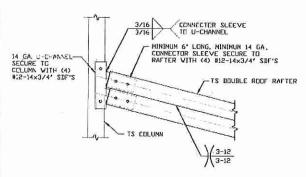
BOX EAVE RAFTER LEAN-TO OPTIONS



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



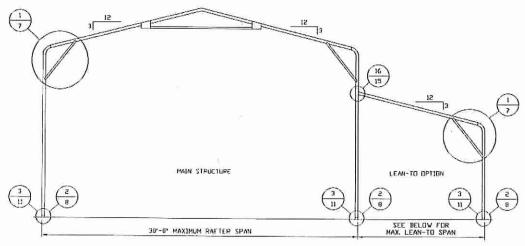
LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS & 11'-0"



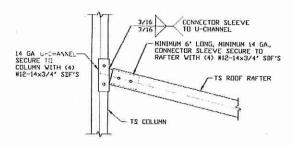
LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 11'-0" < TO < 15'-0"

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: AT	- ,	STEEL BUILDING GARAGES 1804 RIVER STREET WILKESBORO, NC 28697				
ENGINEERING AND CONSULTING, INC.	CHECKED BY: PDH	30':	x16' ENCLOSE	D BUIL	DING		
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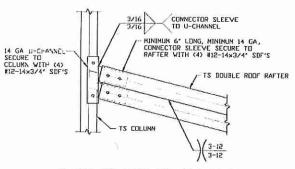
BOW EAVE RAFTER LEAN-TO OPTIONS



TYPICAL BOW RAFTER LEAN-TO OPTION FRAMING SECTION SCALE: NTS



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS < 12'-0"



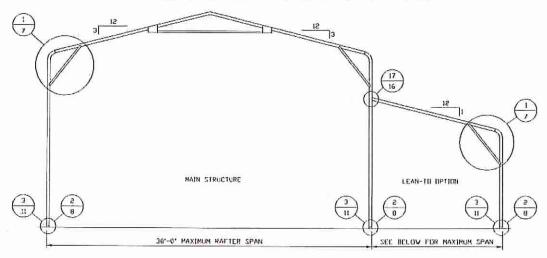
LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 12'-0" < TO < 15'-0"

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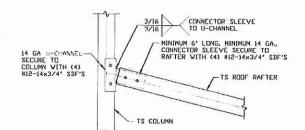
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	CHECKED BY: PDH		WILKESBORG x16' ENCLOSE				
_	PROJECT MGR: VSM	DATE: 4-3-19	SCALE: NTS	JOB NO	17232S/18070S/ 18094S/19050S		
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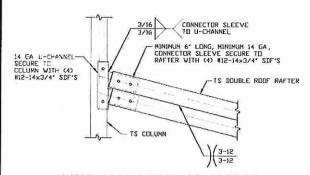
BOW EAVE RAFTER LEAN-TO OPTIONS



TYPICAL BOW RAFTER LEAN-TO OPTION FRAMING SECTION



LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS ≤ 11'-0" 17A

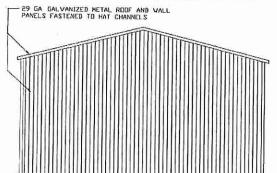


LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 11'-0" < TO < 15'-0" 17B SCALE: NTS

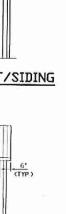
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ENGINEERING AND CONSULTING, INC.	CHECKED BY: PDH	30'x
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BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



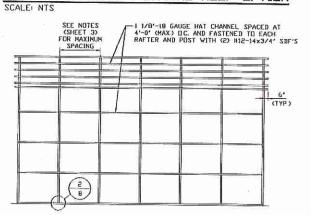
TYPICAL END ELEVATION VERTICAL ROOF/SIDING



29 GA GALVANIZED METAL ROOF AND VALL
PANELS FASTENED TO HAT CHANNELS

6'
(TYP)

TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING



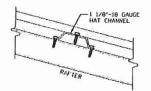
TYPICAL SECTION VERTICAL ROOF OPTION

1 1/8'-18 GAUGE HAT CHANNEL

29 GA GALVANIZED METAL ROOF AND WALL-PANELS FASTENED TO HAT CHANNELS

11

TYPICAL FRAMING SECTION
VERTICAL ROOF/SIDING OPTION
SCALE, NTS



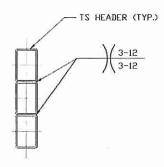
PANEL ATTACHMENT
(ALTERNATE FOR VERTICAL ROOF PANELS)
SCALE: NTS

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	PROJECT MGRI WSM	DATE: 4-3-19	SCALE: NTS	172325/180705/ 180945/19050S			
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HEADER OPTION



HEADER DETAIL FOR SPANS 10'-0" < TO \(\subseteq 16'-0" \)

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