

STRUCTURAL DESIGN ENCLOSED BUILDING

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

14 December 2018 Revision 7 M&A Project No. 16062S/16155S/16207S/17155S/17200S/18068S/18156S/18290S

Prepared for:

Steel Buildings and Structures, Inc. P.O. Box 1287 Mt. Airy, NC 27030

Prepared by:

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INSTALLATION NOTES AND SPECIFICATIONS

- 1. DESIGN IS FOR MAXIMUM 30'-0' WIDE \times 20'-0' EAVE HEIGHT ENCLOSED STRUCTURES.
- 2. DESIGN WAS DONE IN ACCORDANCE WITH THE 2017 FLORIDA BUILDING CODE (FBC) 6TH EDITION, 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

B) LIVE LOAD

- = 12 PSF
- C) GROUND SNOW LOAD = 30 PSF (\leq 26'-0"), 35 PSF (26'-0" \langle W \leq 30'-0")
 - (UNBALANCED SNOW LOADS DUE TO DRIFTING HAVE NOT BEEN EVALUATED.)
- 4. 3-SECOND GUST ULTIMATE WIND SPEED (V_{ULT}) 105 TO 145 MPH (NOMINAL WIND SPEED 82 TO 112 MPH): MAXIMUM RAFTER/COLUMN AND END COLUMN SPACING = 5.0 FEET (UNLESS NOTED OTHERWISE).
- 5. END WALL COLUMNS (POST) ARE EQUIVALENT TO SIDE WALL POSTS UNLESS NOTED OTHERWISE.
- 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 NOTED OTHERWISE).
- 9. AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR HAT CHANNELS, AND COLUMNS (INTERIOR OR END) = 8 INCHES.
- 10. FASTENERS CONSIST OF 1/4"x3/4" 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" OF EACH COLUMN.
- 12. GROUND ANCHORS CONSIST OF #4 REBAR W/ WELDED NUT x 36' LONG IN SUITABLE SOIL 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

S_{DS}= 2.039

 $I_E = 1.0$ $V = C_S W$

S_{D1}= 1.258

14. WINDOW AND DOOR DESIGN PRESSURES ARE APPLICABLE TO THE STATE OF FLORIDA ONLY.



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	CHECKED BY: PDH	30'-0"x2	30'-0"x20'-0" ENCLOSED STRUCTURE	
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BUX EAVE FRAME RAFTER STRUCTURE WINDOW (AS APPLICABLE) DESIGN PRESSURE (21.8 PSF, -23.6 PSF) LENGTH VARIES DEPENDING ON NUMBER AND SPACING OF RAFTERS BUX EAVE FRAME RAFTER STRUCTURE ROLL-UP DOOR (AS APPLICABLE) DESIGN PRESSURE (17.5 PSF, -19.9 PSF) FLASHING STRUCTURE ROLL-UP DOOR (AS APPLICABLE) DESIGN PRESSURE (17.5 PSF, -19.9 PSF) STRUCTURE ROLL-UP DOOR (AS APPLICABLE) DESIGN PRESSURE (17.5 PSF, -19.9 PSF) STRUCTURE ROLL-UP DOOR (AS APPLICABLE) DESIGN PRESSURE (17.5 PSF, -19.9 PSF) STRUCTURE ROLL-UP DOOR (AS APPLICABLE) DESIGN PRESSURE (17.5 PSF, -19.9 PSF) STRUCTURE ROLL-UP DOOR (AS APPLICABLE) DESIGN PRESSURE (17.5 PSF, -19.9 PSF) STRUCTURE ROLL-UP DOOR (AS APPLICABLE) DESIGN PRESSURE (17.5 PSF, -19.9 PSF)

RDLL-UP DODR
(AS APPLICABLE)
DESIGN PRESSURE
(17.5 PSF, -19.9 PSF)

FLASHING

PERSONNEL DODR
(AS APPLICABLE)
DESIGN PRESSURE
(20.8 PSF, -22.6 PSF)

(TYP.)

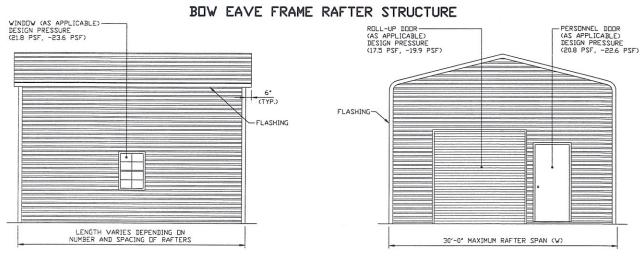
TYPICAL SIDE ELEVATION

SCALE: NTS

TYPICAL END ELEVATION



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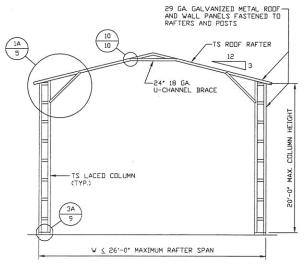
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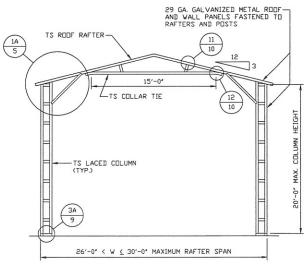
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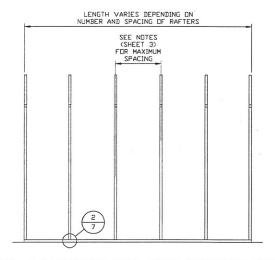
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TYPICAL RAFTER/COLUMN FRAME SECTION
SCALE: NTS



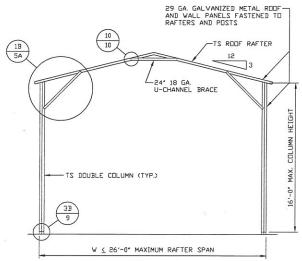
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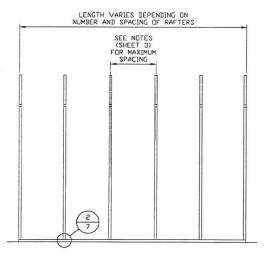
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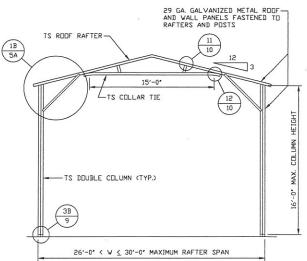
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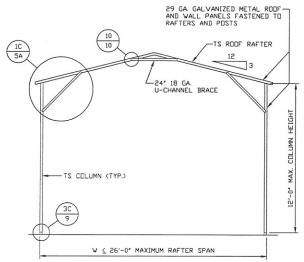
TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN FRAME SECTION
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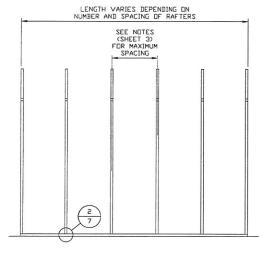
29 GA. GALVANIZED METAL RODF
AND WALL PANELS FASTENED TO
RAFTERS AND POSTS

TS RODF RAFTER

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26'-0' (V ≤ 30'-0' MAXIMUM RAFTER SPAN

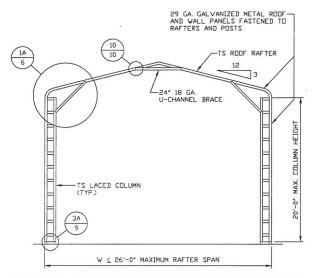
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SCALE: NTS



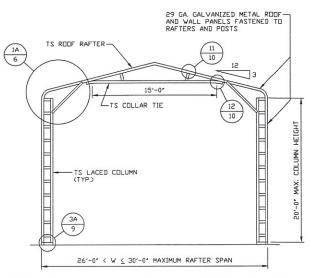
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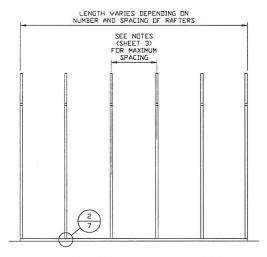
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TYPICAL RAFTER/COLUMN FRAME SECTION



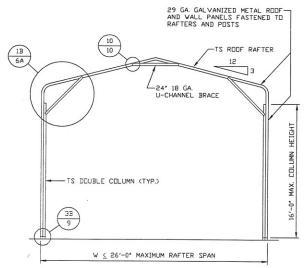
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TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION



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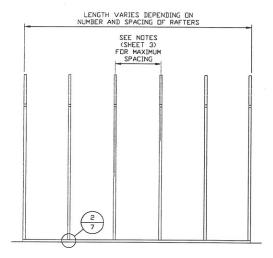
29 GA. GALVANIZED METAL ROOF
AND WALL PANELS FASTENED TO
RAFTERS AND POSTS

TS ROOF RAFTER

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12
31
15'-0'
TS COLLAR TIE
12
15'-0'
TS DOUBLE COLUMN (TYP.)

38
9
9
26'-0' < W \(\) 30'-0' MAXIMUM RAFTER SPAN

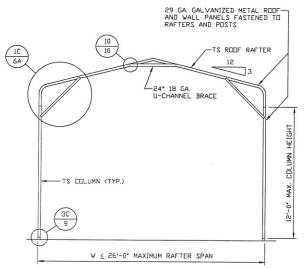
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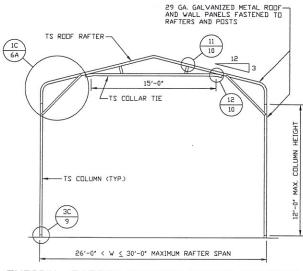
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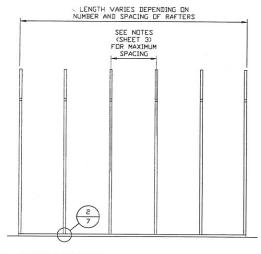
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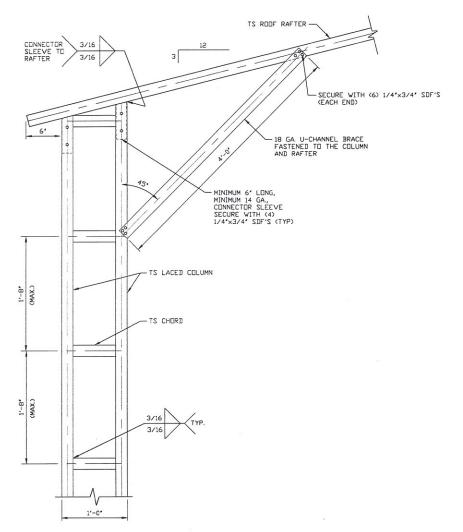
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TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS

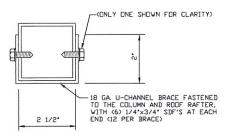


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BOX EAVE RAFTER/CORNER POST CONNECTION DETAIL
FOR HEIGHTS 16'-0" < TO < 20'-0"

SCALE: NTS



BRACE SECTION

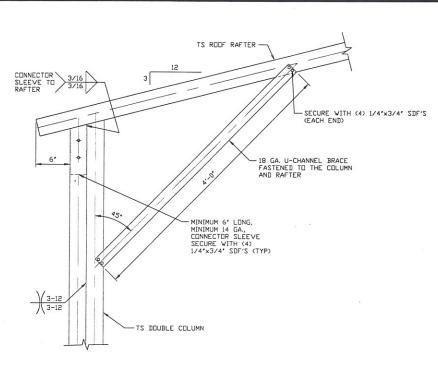


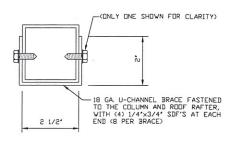
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	18068 DATE: 12-14-18 SCALE: NTS JOB NO: 18156								
PROJECT MGR: WSM	DATE: 12-14-18	SCALE: NTS	JUB 1	TI 181292\185302					
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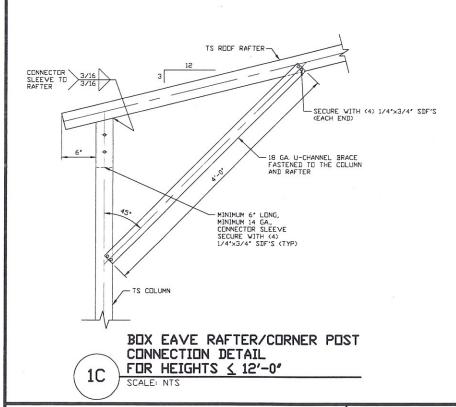


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BOX EAVE RAFTER/CORNER POST CONNECTION DETAIL

FOR HEIGHTS 12'-0" < TO < 16'-0"

SCALE: NTS

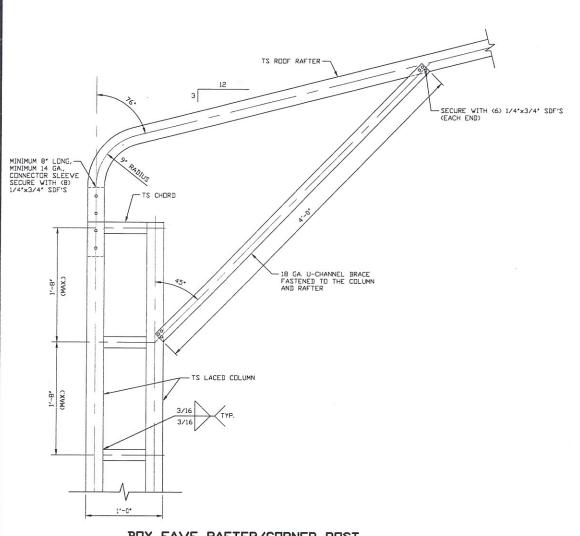




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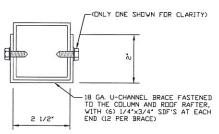
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	CHECKED BY: PDH	MOUNT AIRY, NC 27030 30'-0"x20'-0" ENCLOSED STRUCTURE						
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BUX EAVE RAFTER/CURNER PUST CUNNECTION DETAIL
FOR HEIGHTS 16'-0" < TO \(\leq \) 20'-0"

SCALE: NTS

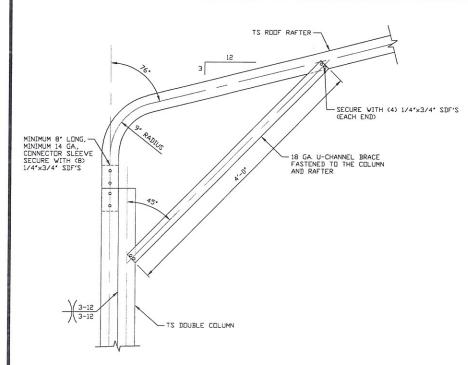
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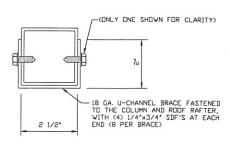


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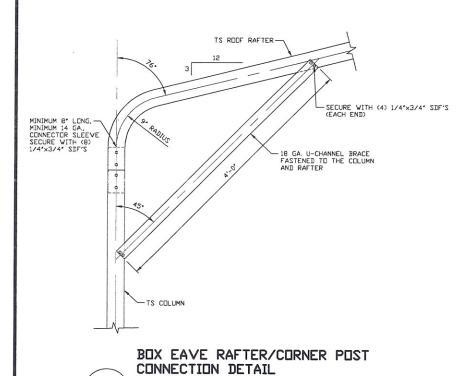


BRACE SECTION

SCALE: NTS

BOX EAVE RAFTER/CORNER POST CONNECTION DETAIL

| FOR HEIGHTS 12'-0" < TO < 16'-0" |





MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.

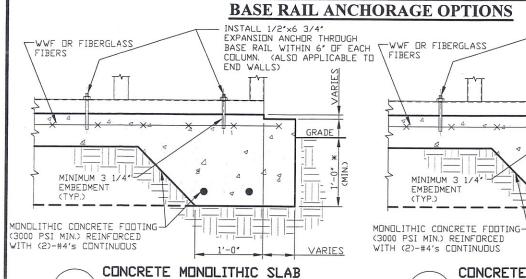
FOR HEIGHTS ≤ 12'-0"

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SCALE: NTS

1C

	CLIENT: SBSI	SHT. 6A	DVG. NO SK-	3	REV. 7			
_	PREJECT MGR: VSM	DATE: 12-14-18	SCALE: NTS	JOB 1	180685/ IDI 181565/182905			
	CHECKED BY: PDH	MOUNT AIRY, NC 27030 HECKED BY: PDH 30'-0"x20'-0" ENCLOSED STRUCTURE						
	DRAWN BY: AT	P.O. BOX 1287,						



ANCHURAGE

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

GENERAL NOTES

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

CONCRETE:

CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.

COVER OVER REINFORCING STEEL:

BASE RAIL

SCALE: NTS

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.
- 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 30 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
- 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 SLAB BASE ANCHURAGE RAIL

2B

SCALE: NTS MINIMUM ANCHOR EDGE DISTANCE IS 4". * COORDINATE WITH LOCAL CODES/ORD.

1

1'-0"

INSTALL 1/2"x6 3/4"

8

(2 LIAW GNA

EXPANSION ANCHOR THROUGH BASE RAIL WITHIN 6' OF EACH

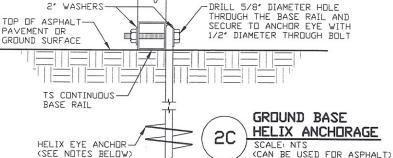
COLUMN. (ALSO APPLICABLE TO

VARIES

(MIN.)

GRADE

VARIES



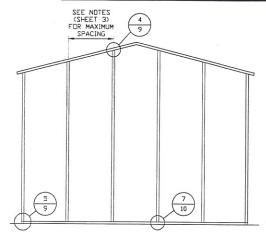


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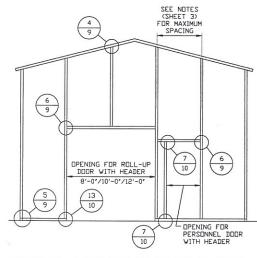
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	CHECKED BY: PDH		MOUNT AIRY, NC 27030 30'-0"x20'-0" ENCLOSED STRU					
1	PROJECT NGR: VSN	DATE: 12-14-18	180685/ 181565/182905					
	CLIENT: SBSI	SHT. 7	DWG. ND: SK-	3 R	EV. 7			

BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



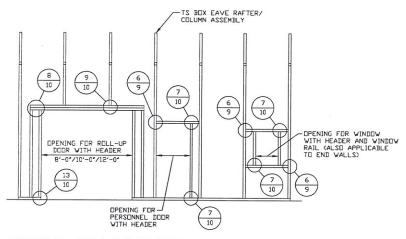
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS

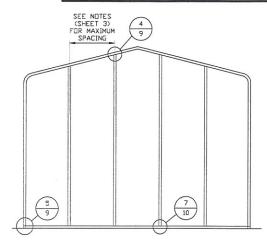


TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION



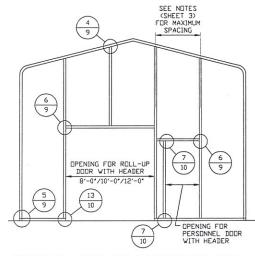
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ENGINEEDING AND CONCILITING INC	CHECKED BY: PDH	MOUNT AIRY, NC 27030 30'-0"x20'-0" ENCLOSED STRUCTURE			- 1
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BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



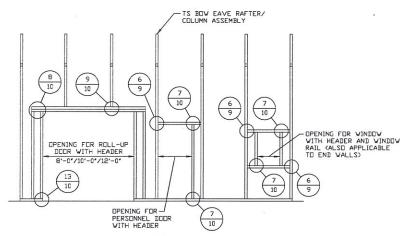
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

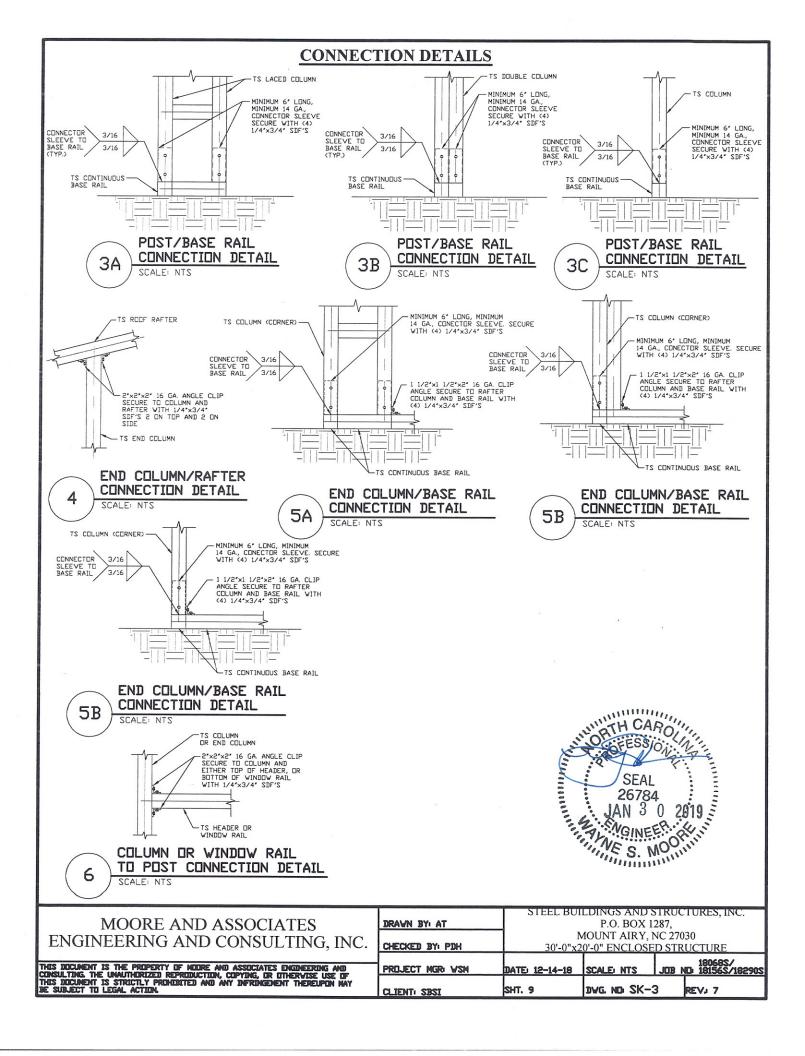
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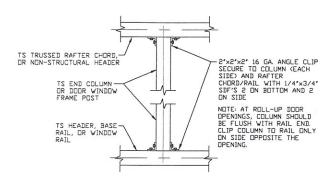
TYPICAL BOX EAVE RAFTER
SIDE WALL OPENINGS FRAMING SECTION



MOORE AND ASSOCIATES	DRAWN BY: AT		LDINGS AND S P.O. BOX 1: MOUNT AIRY. N	287,	
ENGINEERING AND CONSULTING, INC.	CHECKED BY: PDH	7	30'-0"x20'-0" ENCLOSED STRUCTURE 18068S DATE: 12-14-18 SCALE: NTS JUB ND: 18156S/		
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CONNECTION DETAILS



CONNECTOR
SLEEVE TO
SLEEVE TO
3/16

TS DOUBLE HEADER

TS DOUBLE HEADER

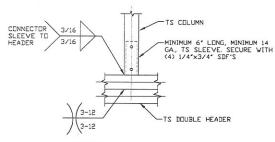
ANNIMUM 6' LONG, MINIMUM
14 GA., TS SLEEVE. SECURE
EACH WITH (4) 1/4'x3/4' SDF'S

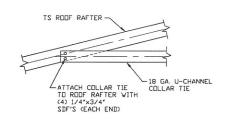
TS COLUMN

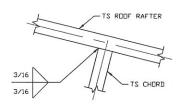
7 COLUMN TO HEADER, BASE RAIL, OR WINDOW RAIL CONNECTION DETAIL

SCALE: NTS

8 DOUBLE HEADER/COLUMN CONNECTION DETAIL
SCALE: NTS



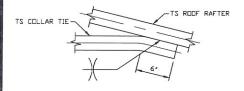




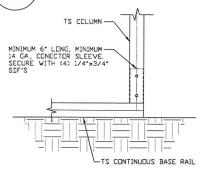
9 COLUMN/DOUBLE HEADER
CONNECTION DETAIL
SCALE: NTS

10 COLLAR TIE CONNECTION DETAIL
SCALE: NTS

RAFTER TO CHORD CONNECTION DETAIL SCALE: NTS



12 COLLAR TIE CONNECTION DETAIL
SCALE: NTS





13 COLUMN/BASE RAIL CONNECTION DETAIL

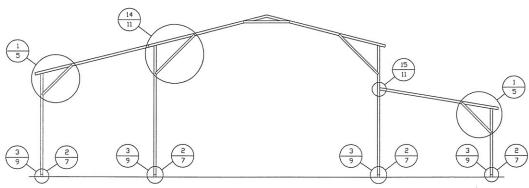
SCALE: NTS

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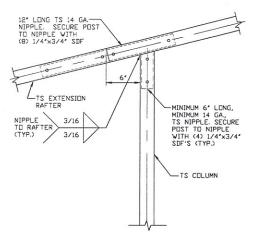
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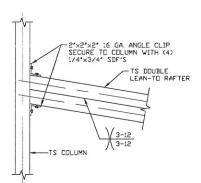
BOX EAVE RAFTER LEAN-TO OPTIONS



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



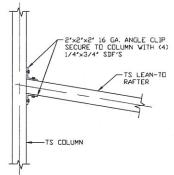
SIDE EXTENSION RAFTER/ CORNER POST DETAIL 14 SCALE: NTS



LEAN-TO RAFTER TO RAFTER POST CONNECTION DETAIL FOR WIDTHS

12'-0" < T□ ≤ 16'-0" SCALE: NTS

15A



LEAN-TO RAFTER TO RAFTER POST CONNECTION DETAIL FOR WIDTHS ≤ 12'-0" SCALE: NTS

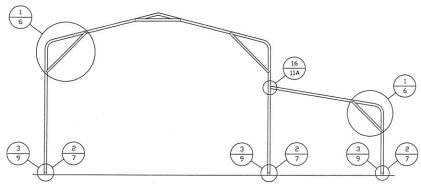
15B

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ENGINEERING AND CONSULTING, INC.

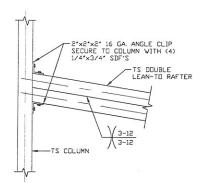
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CLIENT: SBSI	SHT. 11	DWG. NO: SK-3	3	REV. 7		
 PROJECT MGR: WSM	Date: 12-14-18	SCALE: NTS	JOB N	18068S/ ID: 18156S/18290S		
CHECKED BY: PDH	MOUNT AIRY, NC 27030 30'-0"x20'-0" ENCLOSED STRUCTURE					
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BOW EAVE RAFTER LEAN-TO OPTIONS



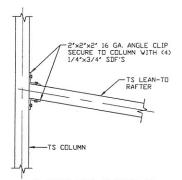
TYPICAL BOW EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION



LEAN-TO RAFTER TO RAFTER POST CONNECTION DETAIL FOR WIDTHS 12'-0" < T□ ≤ 16'-0"

SCALE: NTS

16A



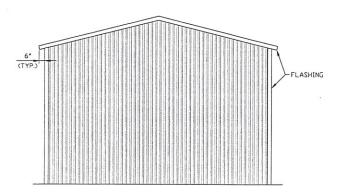
LEAN-TO RAFTER TO RAFTER POST CONNECTION DETAIL FOR WIDTHS ≤ 12'-0" SCALE: NTS

16B



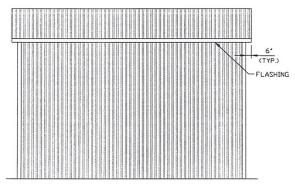
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MOORE AND ASSOCIATES	DRAWN BY: AT	P.O. BOX 1287,			

BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



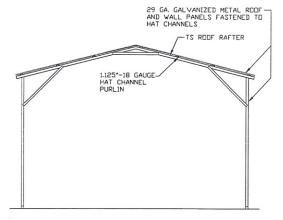
TYPICAL END ELEVATION VERTICAL ROOF/SIDING

SCALE: NTS



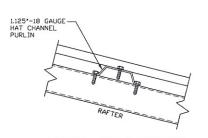
TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING

SCALE: NTS

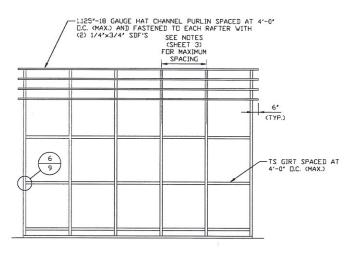


TYPICAL SECTION VERTICAL ROOF/SIDING OPTION

SCALE: NTS



PANEL ATTACHMENT (ALTERNATE FOR VERTICAL ROOF PANELS)



TYPICAL FRAMING SECTION VERTICAL ROOF/SIDING OPTION SCALE: NTS

SEAL 26784
JAN 3 0 2019

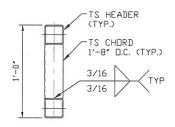
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CHECKED BY	PDH	MOUNT AIRY, NC 27030 30'-0"x20'-0" ENCLOSED STRUCTURE						
DRAWN BY AT		STEEL BUILDINGS AND STRUCTURES, INC. P.O. BOX 1287,						

OPTIONAL HEADER



HEADER DETAIL FOR DOOR

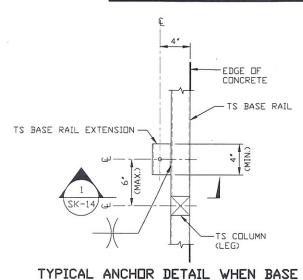
OPENINGS 12'-0" < LENGTH < 20'-0"

SCALE: NTS

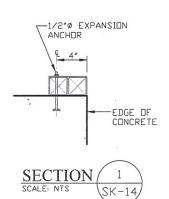


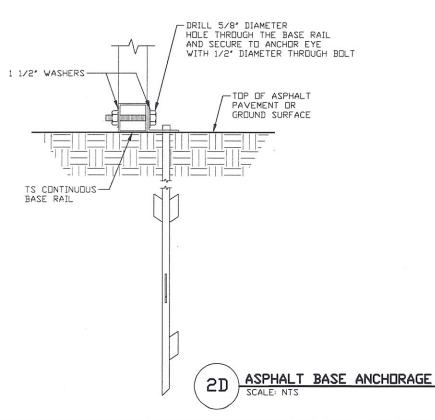
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MOORE AND ASSOCIATES	DRAWN BY: AT	STEEL BUI	P.O. BOX 1		TURES, INC.

ADDITIONAL BASE RAIL ANCHORAGE OPTION



RAIL IS NEAR EDGE OF CONCRETE





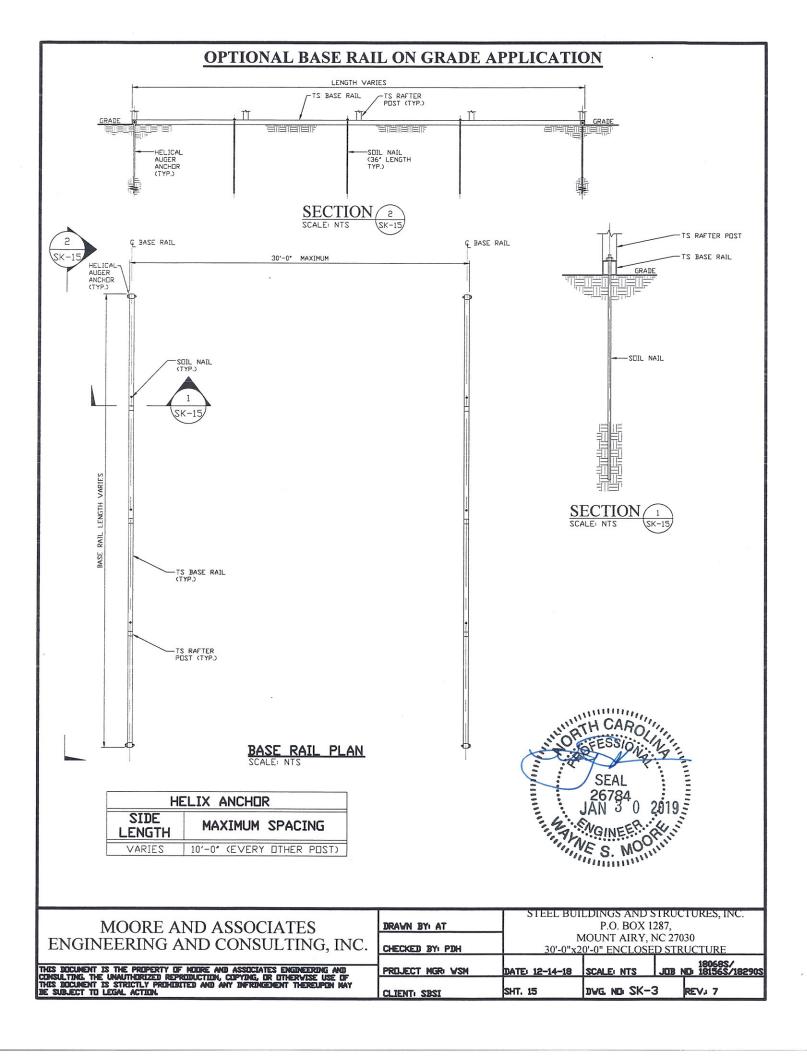


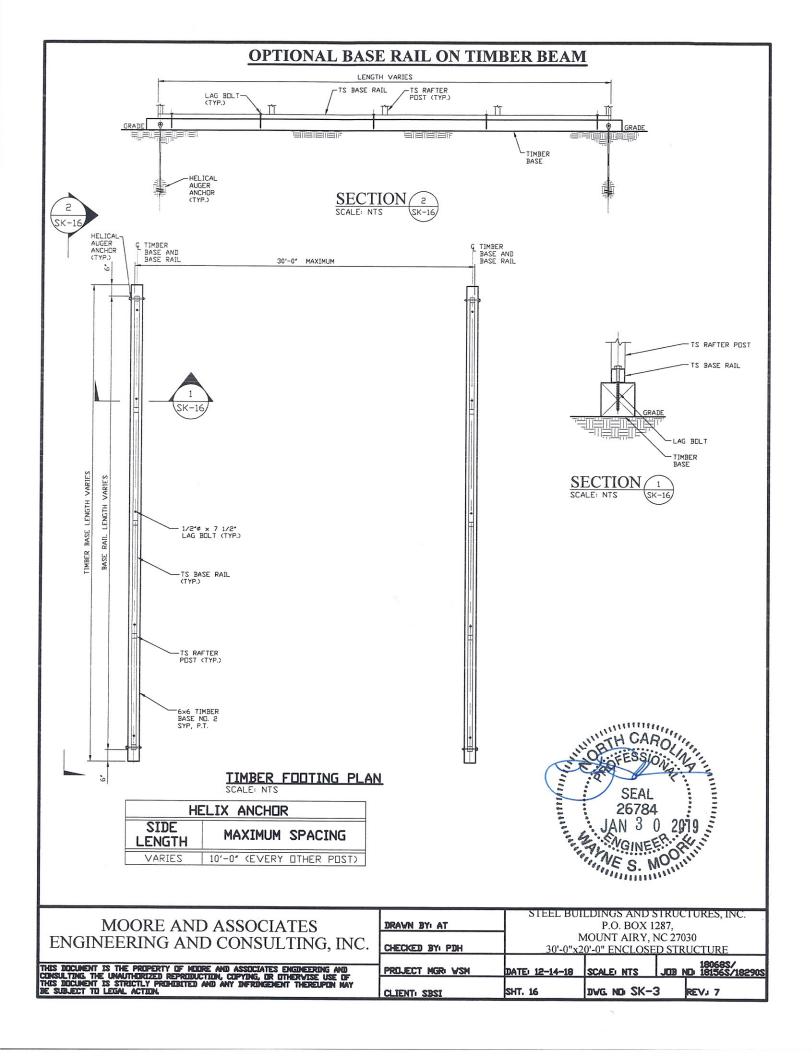
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC
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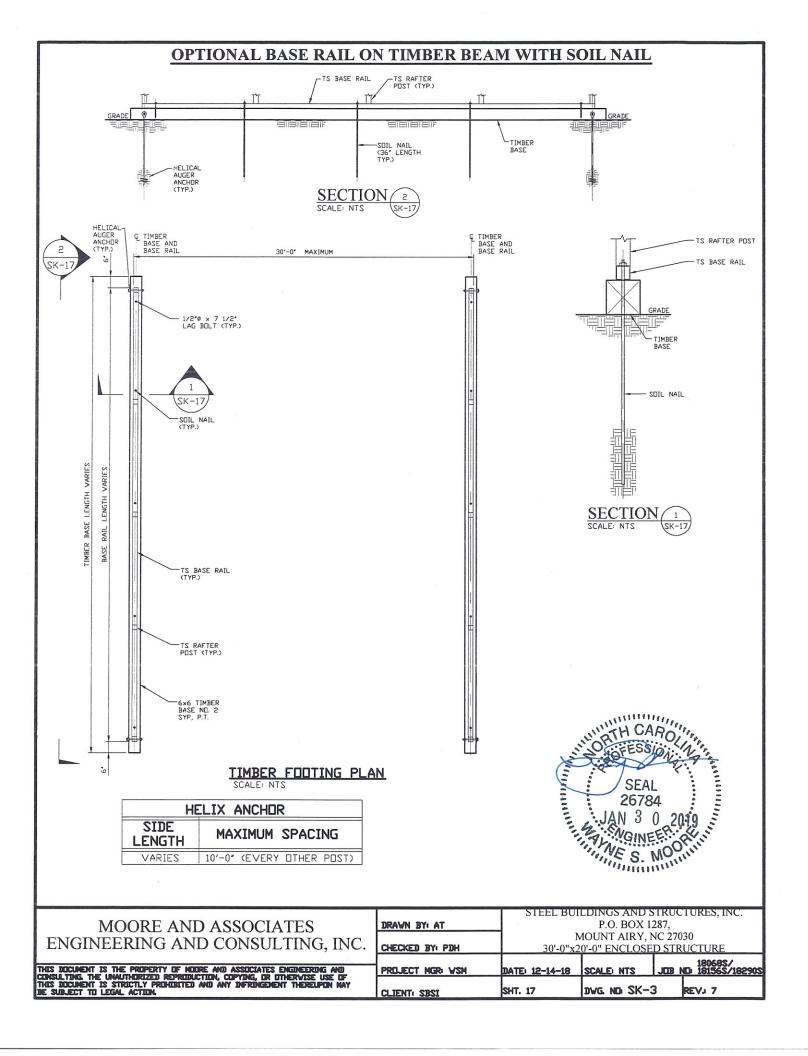
					ASSOCIATES		
					JPYING, DR INFRINGENE		
UBJECT T		BULLET	IED HELL) MM1	THE KTHOCKE	THE INFIRE	PUR MAY

		1906957
DRAWN BY: AT P.O. BOX 1287,	CKED BY: PDH	OSED STRUCTURE
		RY, NC 27030
STEEL BEIEDINGS IN BUINCE FOR	WN BY AT	OX 1287,
STEEL BUILDINGS AND STRUCTURE		ND STRUCTURES, INC

	CHECKED BY: PDH	30'-0"x2	0'-0" ENCLOSE	D STRUCTURE
_	PROJECT MGR: WSM	Date: 12-14-18	SCALE: NTS	JUB ND 180685/ JUB ND 181565/182905
	CLIENT: SBSI	SHT. 14	DWG. NO SK-3	3 REV. 7







OPTIONAL CONCRETE STRIP FOOTING FOOTING AND BASE RAIL 30'-0' MAXIMUM .9 LENGTH VARIES FOOTING LENGTH VARIES RAIL BASE TS BASE RAIL (TYP.) TS RAFTER POST (TYP.) CONCRETE STRIP FOOTING PLAN TS RAFTER POST TS BASE RAIL GRADE 1,-0,× CMIN.) INSTALL 1/2'x6 3/4' EXPANSION ANCHOR THROUGH BASE RAIL WITHIN 6' OF EACH COLUMN. MINIMUM 3 1/4' EMBEDMENT (TYP.) CLR. 2' CLR. CDMPACT SUBGRADE SECTION 1 SK-18 * COORDINATE WITH LOCAL CODES/ORD. STEEL BUILDINGS AND STRUCTURES, INC. MOORE AND ASSOCIATES P.O. BOX 1287. DRAWN BY AT MOUNT AIRY, NC 27030 ENGINEERING AND CONSULTING, INC. CHECKED BY: PDH 30'-0"x20'-0" ENCLOSED STRUCTURE 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. PREJECT MGR: WSM DATE: 12-14-18 SCALE: NTS SHT. 18 DWG. NO SK-3 REV. 7 CLIENT: SBSI