# **AUTHORIZED USER:**

MICHAEL KESICK TBD SUGGS RD ERWIN, NC 28339

# **BUILDING SIZE:**

20'W x 50'L x 12'H MAIN BUILDING w/ TWO 12'W x 50'L x 11'H LEAN-TO'S



# ENCLOSED GABLE END BUILDING

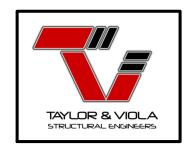
MAXIMUM 30'-0" WIDE X 16'-0" EAVE HEIGHT WITH BOX FRAME / 135 M.P.H. WIND ZONE - 30 P.S.F. SNOW LOAD

FOR:

FRONTLINE STEEL STRUCTURES, LLC MT. AIRY, NORTH CAROLINA

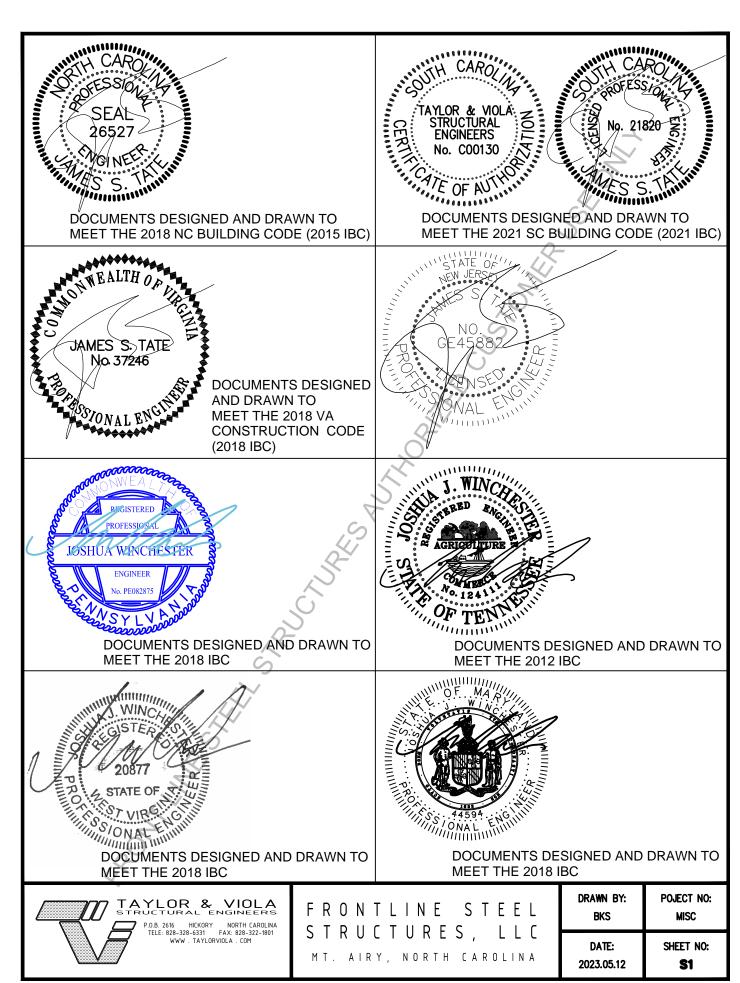
ISSUE DATE: MAY 12, 2023

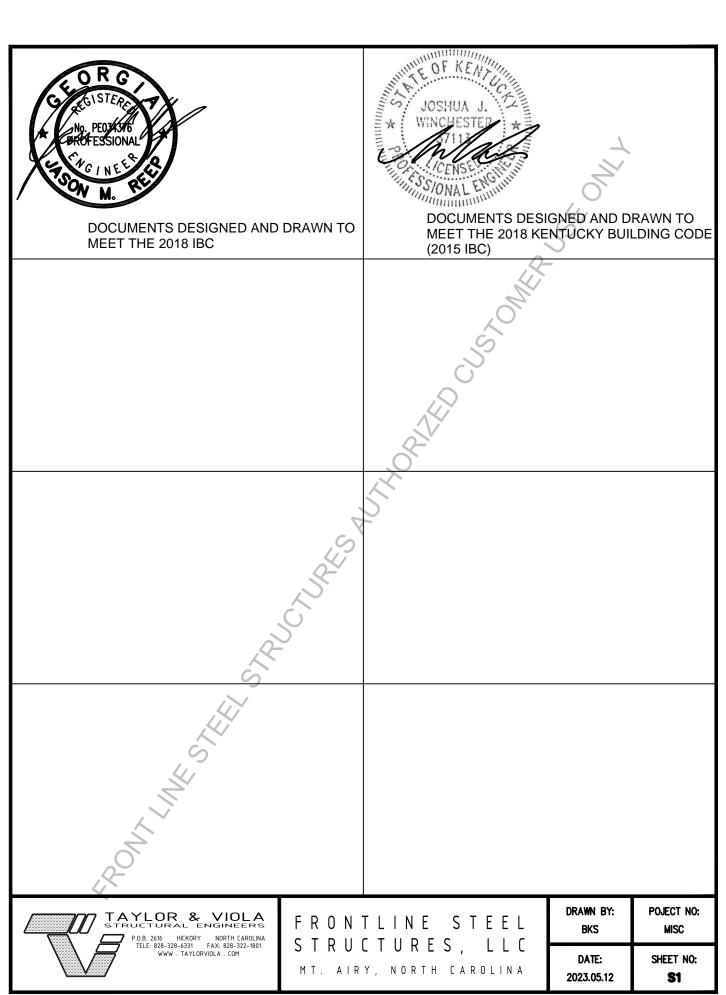






NOTE: THESE DRAWINGS ARE VALID FOR (1) CALENDAR YEAR AFTER THE ISSUE DATE LISTED ON THIS SHEET.





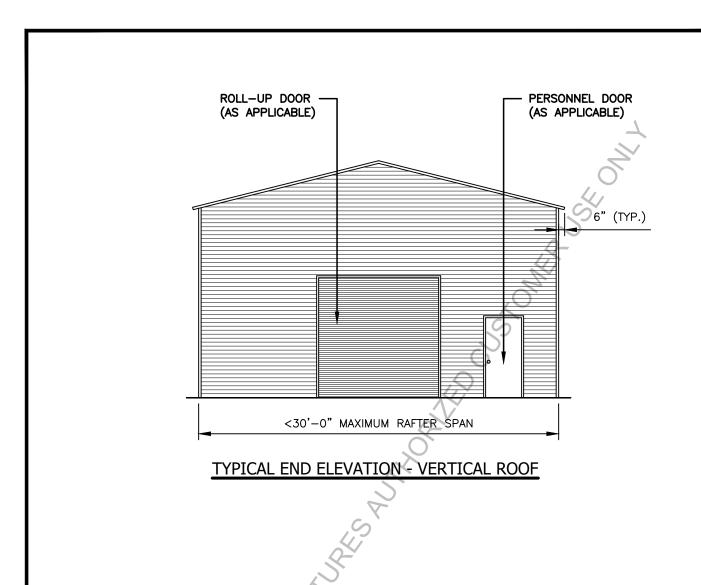
# SHEET INDEX

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S1	SEALS
S1A	SEALS
S2	SEALS INDEX GENERAL NOTES END ELEVATION SIDE ELEVATION FRAME SECTIONS FRAME SECTIONS COLUMN CONNECTIONS
S3	GENERAL NOTES
S4	END ELEVATION
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S5	FRAME SECTIONS
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S7	COLUMN CONNECTIONS
S7A	COLUMN CONNECTIONS
S8	BASE RAIL ANCHORAGE
S8A	BASE RAIL ANCHORAGE
S8B	BASE RAIL ANCHORAGE
S8C	BASE RAIL ANCHORAGE
S9	END WALL SECTIONS
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S15	END ELEVATION — VERTICAL SIDING
S15A	SIDE ELEVATION — VERTICAL SIDING
S16	WALL SECTION - VERTICAL SIDING
S16A	WALL SECTION — VERTICAL SIDING
S17	HEADER INFORMATION
S17A	HEADER INFORMATION
\$18	U-CHANNEL BRACE



DESIGN LOADS:				4
IMPORTANCE FACTORS	WIND SNOW SEISMIC	(1w) 1.00 (1s) 1.00 (1e) 1.00		
DEAD LOADS	ROOF COLLATERAL	13 0	PSF PSF	5
LIVE LOADS	ROOF	_20	PSF	
GROUND SNOW LOAD:		_30	PSF	47
GROUND LOAD:	BASIC WIND SPEED EXPOSURE CATAGO		mph (ASCE 7-16)	* DRIFT LOAD HAS NOT BEEN CALCULATED
SEISMIC DESIGN CATAGORY	A		5	
COMPLIANCE WITH SECTION	1616.4?	X NO	☐ YES	
PROVIDE THE FOLLOWING SE	EISMIC DESIGN PARAI	METERS:	,0	
OCCUPANCY CATEGORY	<u>                                     </u>		1	
SPECTRAL RESPONSE ACCE	LERATION Ss	20.5 <b>%g</b>	S1 <u>8.8</u> %g	
SITE CLASSIFICATION D	FIELD 1	EST P	RESUMPTIVE H	IISTORICAL DATA
BASIC STRUCTURAL SYSTEM	(CHECK ONE)			
BEARING WALL  BUILDING FRAME MOMENT FRAME	DUAL	W.	L MOMENT FRAME NATE R/C OR SPECI M	al steel
ANALYSIS PROCEDURE	SIMPLIFIED _	X EQUIVAL	ANT LATERAL FORC	EMODAL
LATERAL DESIGN CONTROL?	EARTHQUAK	E <u>X</u>	WIND	
SOIL BEARING CAPACITIES: PRESUMPTIVE BEARING CAP	ACITIES:	2,000	_PSF	
GENERAL NOTES:				
1. MAX FRAME SPACING S	SHALL BE 60"oc UNI	LESS NOTED (	OTHERWISE.	
2. MAX. END-WALL COLUI	MN SPACING SHALL	BE 60"oc UN	LESS NOTED OTHERV	MSE.
3. TUBE MATERIAL SHALL	BE 2-1/2" x 2-1/	'2" x 14 GA.	50 KSI MIN. UNLESS	NOTED OTHERWISE.
4. ALL FASTENERS SHALL	. BE #12 SELF TAPP	ING UNLESS 1	NOTED OTHERWISE.	
5. 2,000 PSF ASSUMED B	BEARING CAPACITY U	nless noted	OTHERWISE.	

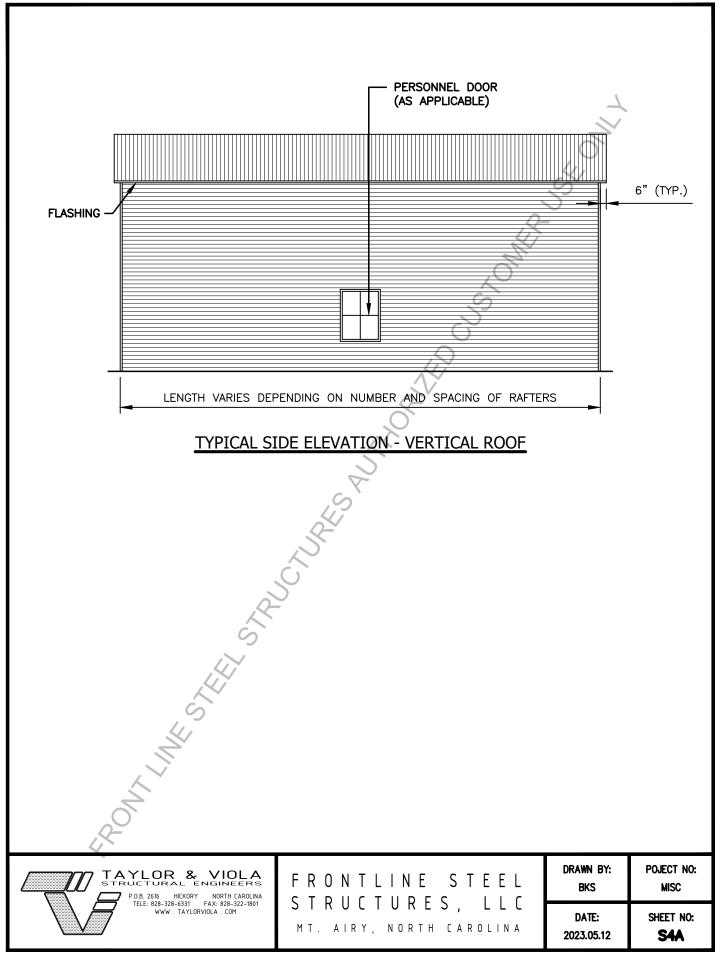
TAYLOR & VIOLA STRUCTURAL ENGINEERS P.O.B. 2616 POR SON PORT CAPOLINA	FRONTLINE STEEL	DRAWN BY: BKS	POJECT NO: MISC
P.O.B. 2616 HICKORY NORTH CAROLINA TELE: 828-328-6331 FAX: 828-322-1801 WWW . TAYLORVIOLA . COM	SIRULIURES, LLL MT. AIRY, NORTH CAROLINA	DATE: 2023.05.12	SHEET NO:

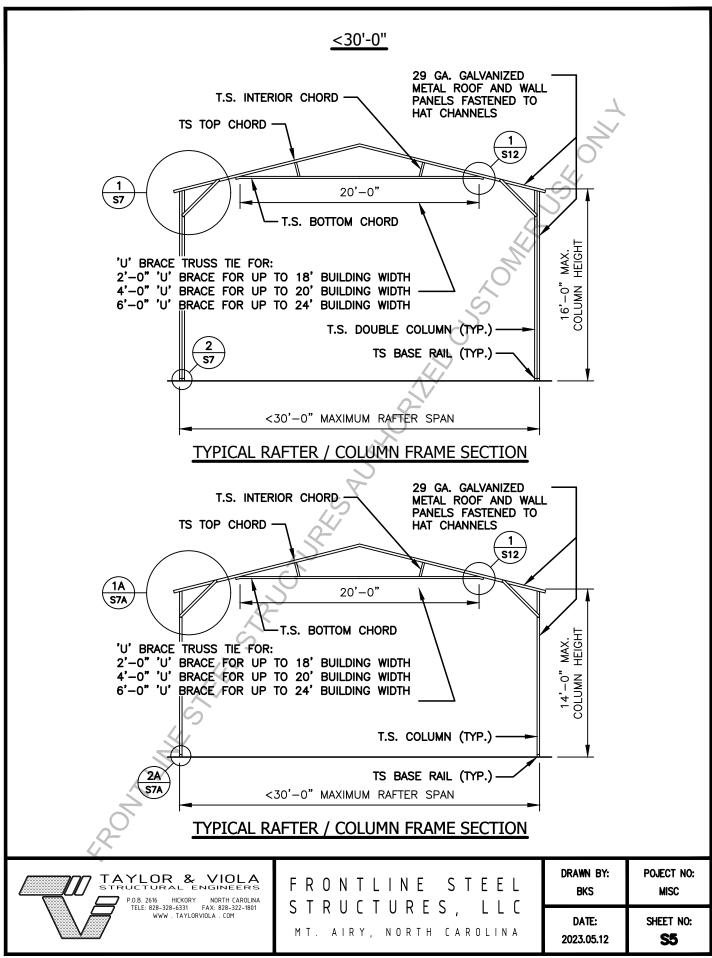


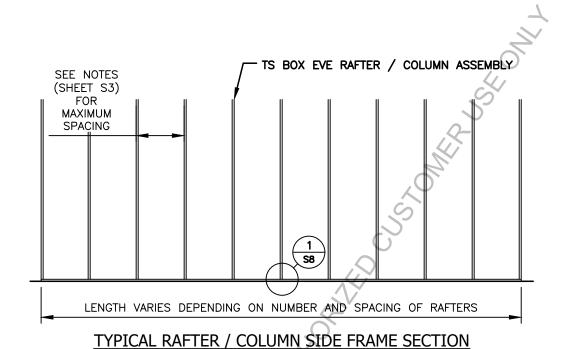
TAYLOR & VIOLA
STRUCTURAL ENGINEERS

P.O.B. 2616 HICKORY NORTH CAROLINA
TELE: 828-328-6331 FAX: 828-322-1801
WWW . TAYLORVIOLA . COM

FRONTLINE STEEL STRUCTURES, LLC MT. AIRY, NORTH CAROLINA

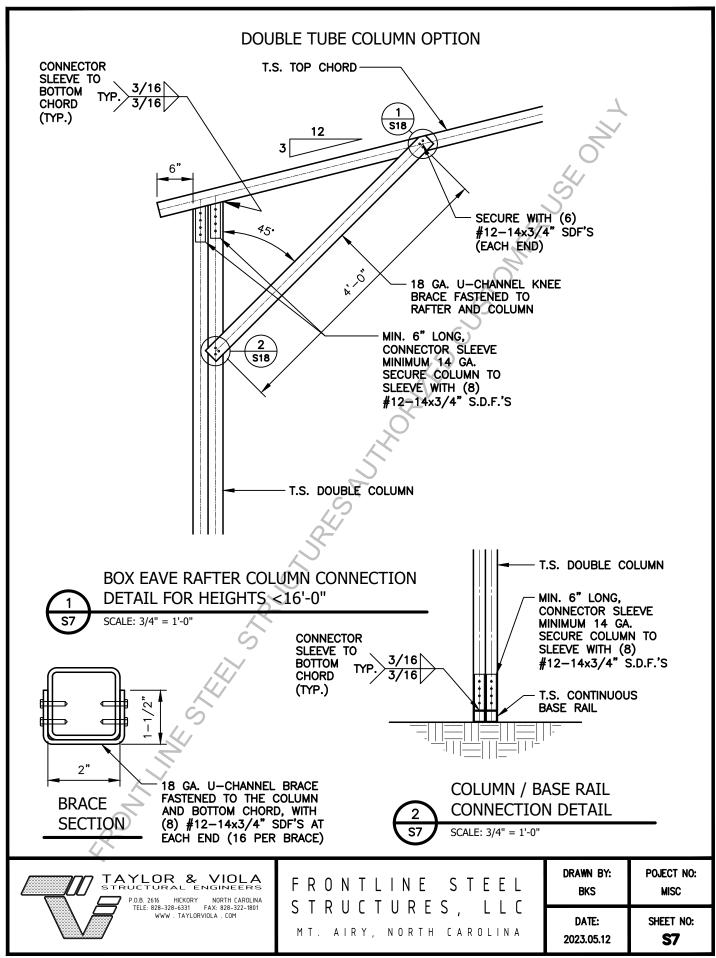


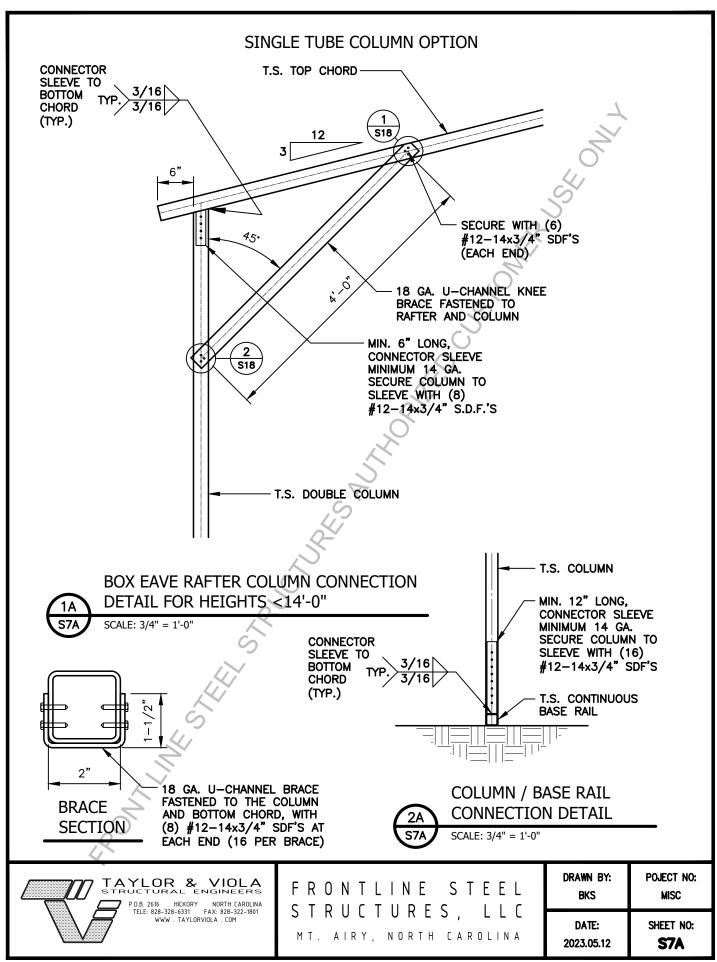




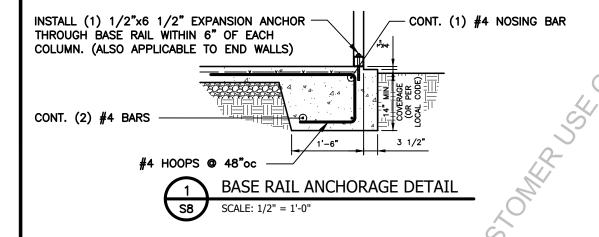
TAYLOR & VIOLA
STRUCTURAL ENGINEERS
P.O.B. 2616 HICKORY NORTH CAROLINA
TELE: 828-328-6331 FAX: 828-322-1801
WWW . TAYLORVIOLA . COM

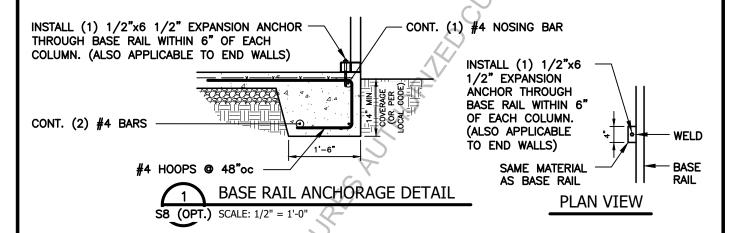
FRONTLINE STEEL STRUCTURES, LLC MT. AIRY, NORTH CAROLINA





#### BASE RAIL ANCHORAGE





**GENERAL NOTES:** 

ALL CONCRETE MONOLITHIC SLAB DESIGN BASED ON MINIMUM SOIL BEARING CAPACITY OF 2,000 PSF

#### CONCRETE

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 AND WEATHER AND 1-1/2" ELSEWHERE.

#### REINFORCING STEEL:

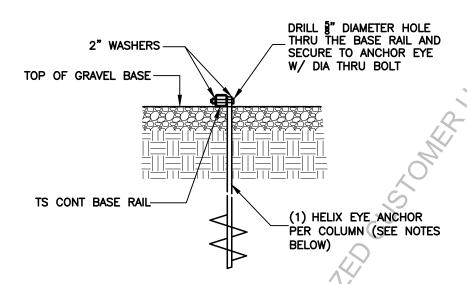
THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT.

REINFORCEMENT MAT BE BENT IN THE SHOP OF 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.



#### BASE RAIL ANCHORAGE



# 1 S8A

# BASE RAIL ANCHORAGE DETAIL

SCALE: 3/4" = 1'-0"

HELIX EMBEDMENT INFORMATION:
FOR VERY DENSE OR CEMETED SANDS, COARSE
GRAVEL, COBBLES, CALICHE, PRELOADED SILTS
AND CLAYS, USE MIN (2) 4" HELICES WITH
MINIMUM 30" EMBEDMENT OR SINGLE 6" HELIX
WITH 50" EMBEDMENT

FOR CORAL, USE MIN (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT OR SINGLE 6" HELIX WITH 50" EMBEDMENT

FOR MED DENSE COARSE SANDS, SANDY GRAVEL, VERY STIFF SILTS, AND CLAYS, USE MIN (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT OR SINGLE 6" HELIX WITH 50" EMBEDMENT

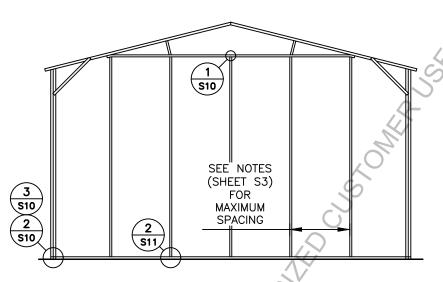
FOR LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS, USE MIN (2) 6" HELICES WITH MINIMUM 50" EMBEDMENT

FOR VERY LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER CLAYS AND SILTS AND ALLUVIAL FILL, USE MIN (2) 8" HELICES WITH MINIMUM 60" EMBEDMENT



FRONTLINE STEEL STRUCTURES, LLC MT. AIRY, NORTH CAROLINA

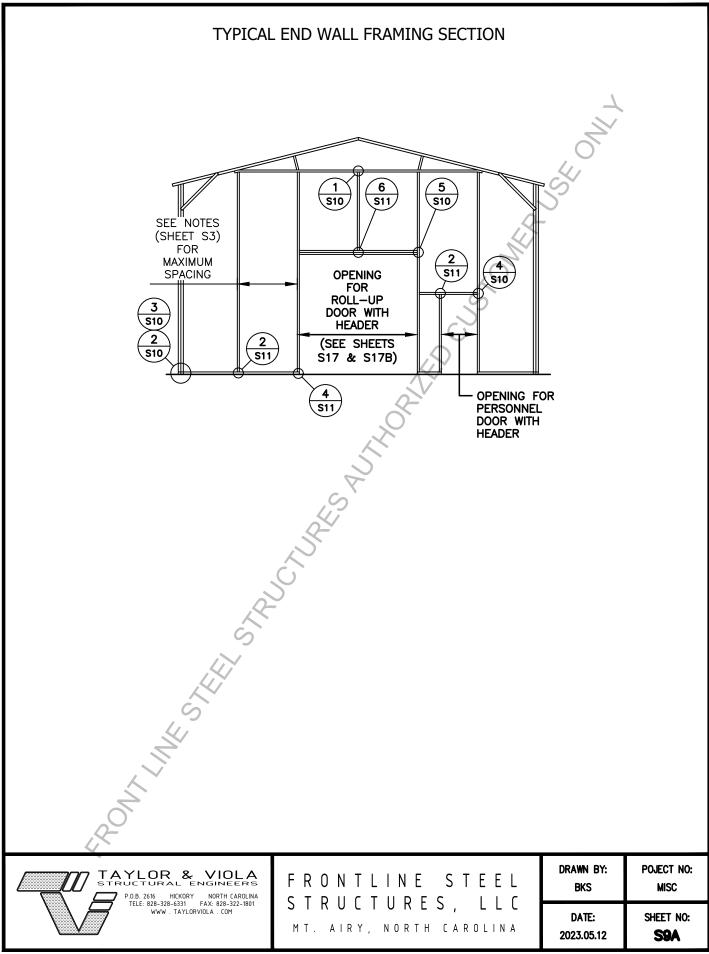
# TYPICAL END WALL FRAMING SECTION



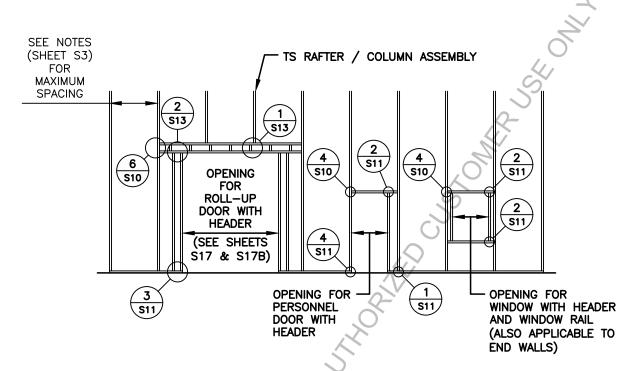
TYPICAL END WALL FRAMING SECTION

P.O.B. 2616 HICKORY NORTH CAROLINA
TELE: 828-328-6331 FAX: 828-322-1801
WWW . TAYLORVIOLA . COM

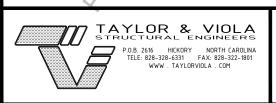
FRONTLINE STEELSTRUCTURES, LLC



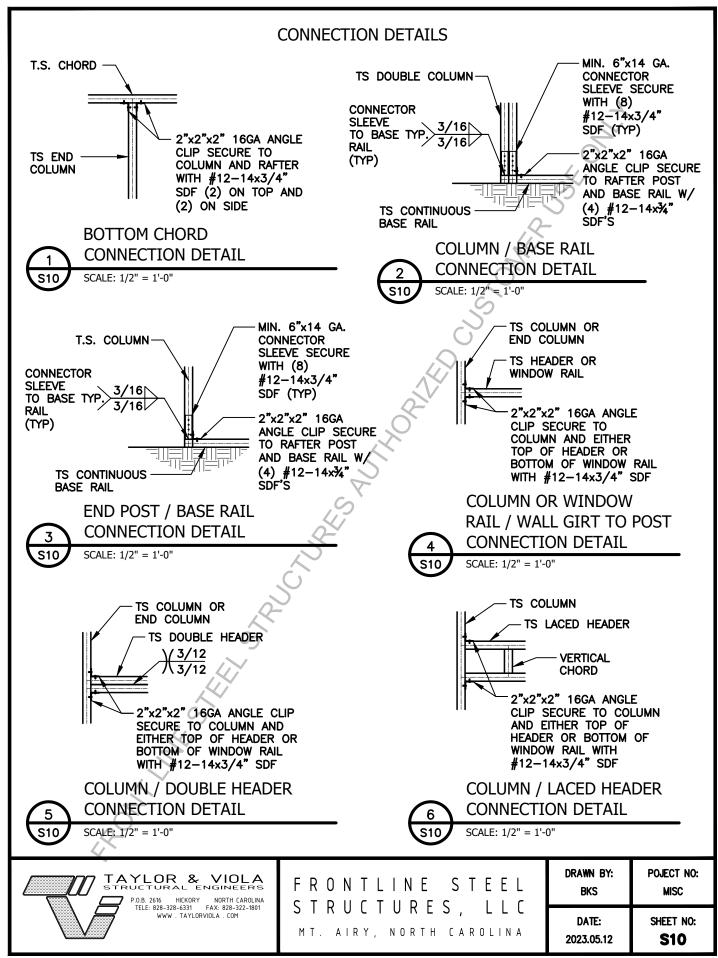
# TYPICAL SIDE WALL OPENING FRAMING SECTION

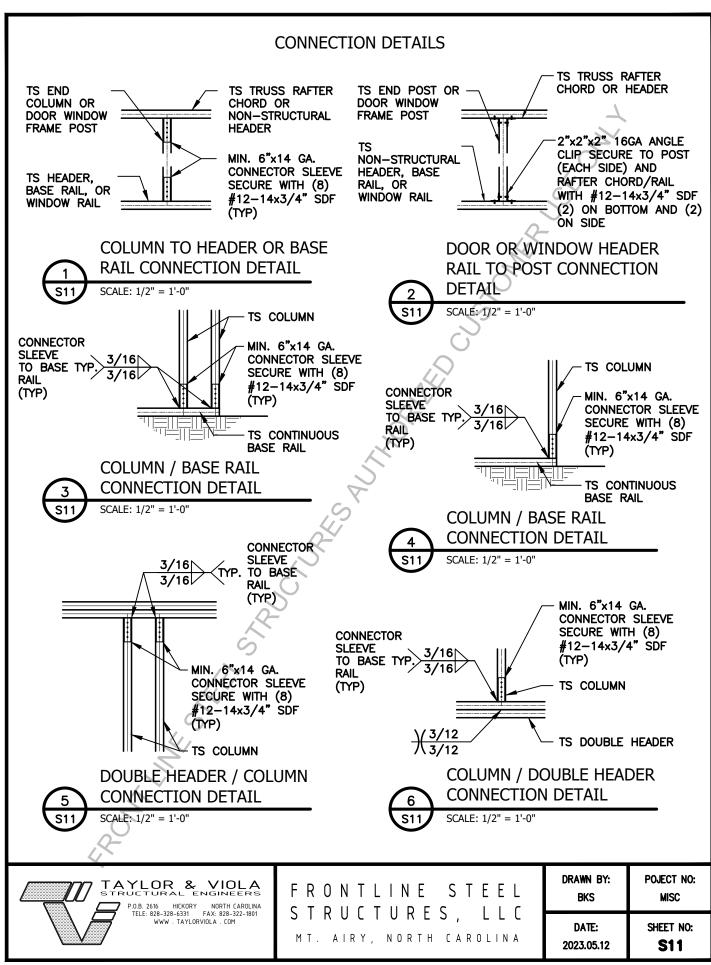


# TYPICAL SIDE WALL OPENINGS FRAMING SECTION



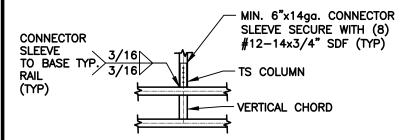
FRONTLINE STEEL STRUCTURES, LLC MT. AIRY, NORTH CAROLINA

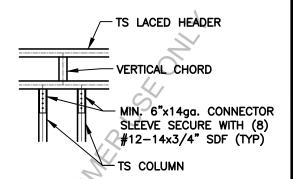




# MIN TO SERVICE THE **CONNECTION DETAILS** TS INTERIOR CHORD TS TRUSS TIE DRAWN BY: POJECT NO: TAYLOR & VIOLA FRONTLINE STEEL BKS MISC P.O.B. 2616 HICKORY NORTH CAROLINA TELE: 828–328–6331 FAX: 828–322–1801 WWW . TAYLORVIOLA . COM STRUCTURES, LLC SHEET NO: DATE: MT. AIRY, NORTH CAROLINA 2023.05.12 **S12**

# **CONNECTION DETAILS**





1 S13 COLUMN / LACED HEADER CONNECTION DETAIL

SCALE: 1/2" = 1'-0"

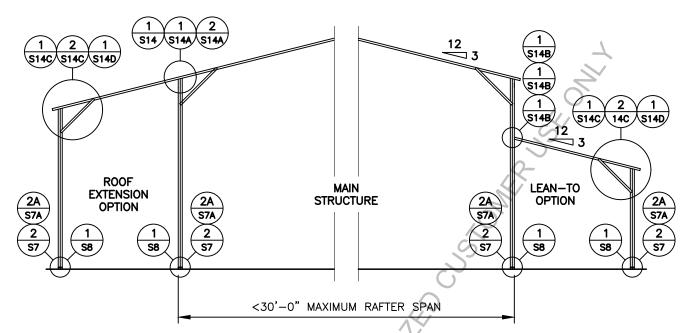
LACED HEADER / COLUMN CONNECTION DETAIL

SCALE: 1/2" = 1'-0"



FRONTLINE STEEL STRUCTURES, LLC MT. AIRY, NORTH CAROLINA

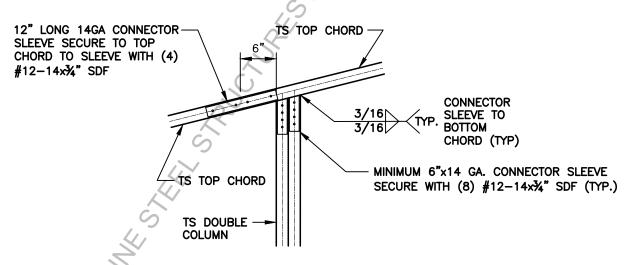
# **LEAN-TO OPTIONS**



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

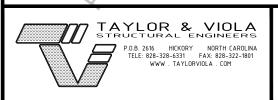
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS <14'-1" TO <16'-0"

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMN FOR EAVE HEIGHTS <14'-0"



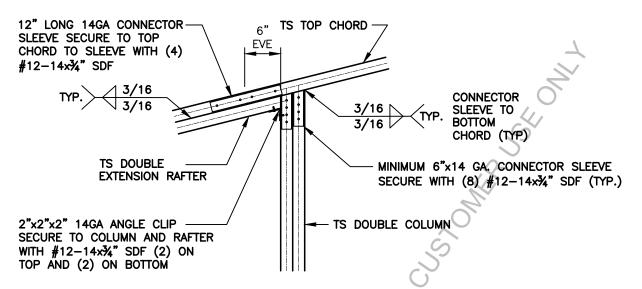
SIDE EXTENSION RAFTER / CORNER POST DETAIL FOR RAFTER SPAN <12'-0"

SCALE: 3/4" = 1'-0"



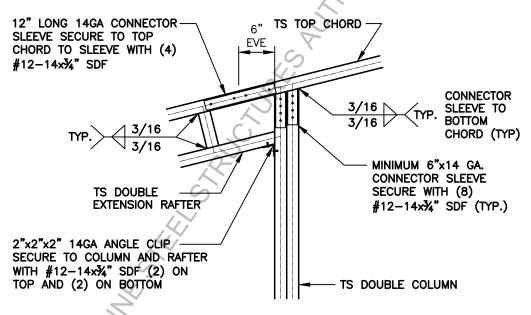
FRONTLINE STEEL STRUCTURES, LLC MT. AIRY, NORTH CAROLINA

## LEAN-TO OPTIONS FOR 41'-0" TO 50'-0"



SIDE EXTENSION RAFTER / CORNER POST
DETAIL FOR RAFTER SPAN <14'-1" TO <15'-0"

SCALE: 3/4" = 1'-0"

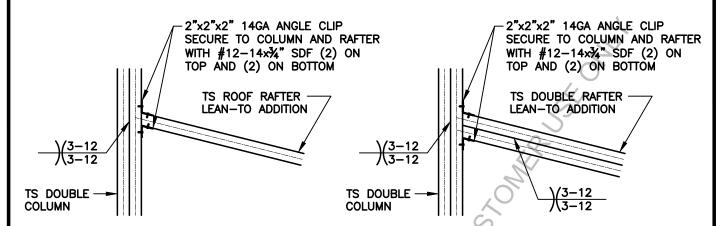


SIDE EXTENSION RAFTER / CORNER POST DETAIL FOR RAFTER SPAN <15'-1" TO <20'-0" SCALE: 3/4" = 1'-0"



F R O N T L I N E S T E E L S T R U C T U R E S , L L C M T . A I R Y , N O R T H C A R O L I N A

# LEAN-TO OPTIONS FOR 41'-0" TO 50'-0"



LEAN-TO RAFTER TO RAFTER POST CONNECTION DETAIL FOR RAFTER SPAN <12'-0"

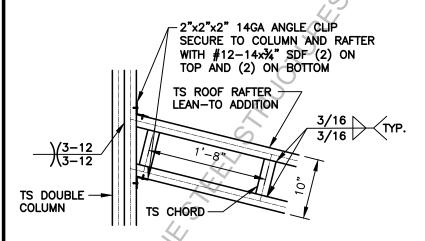
\$14B

SCALE: 3/4" = 1'-0"

LEAN-TO RAFTER TO RAFTER
POST CONNECTION DETAIL FOR
RAFTER SPAN <12'-1" TO <15'-0"

S14B SC

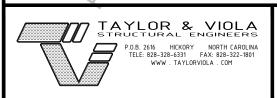
SCALE: 3/4" = 1'-0"



LEAN-TO RAFTER TO RAFTER POST CONNECTION DETAIL FOR RAFTER SPAN <15'-1" TO <20'-0"

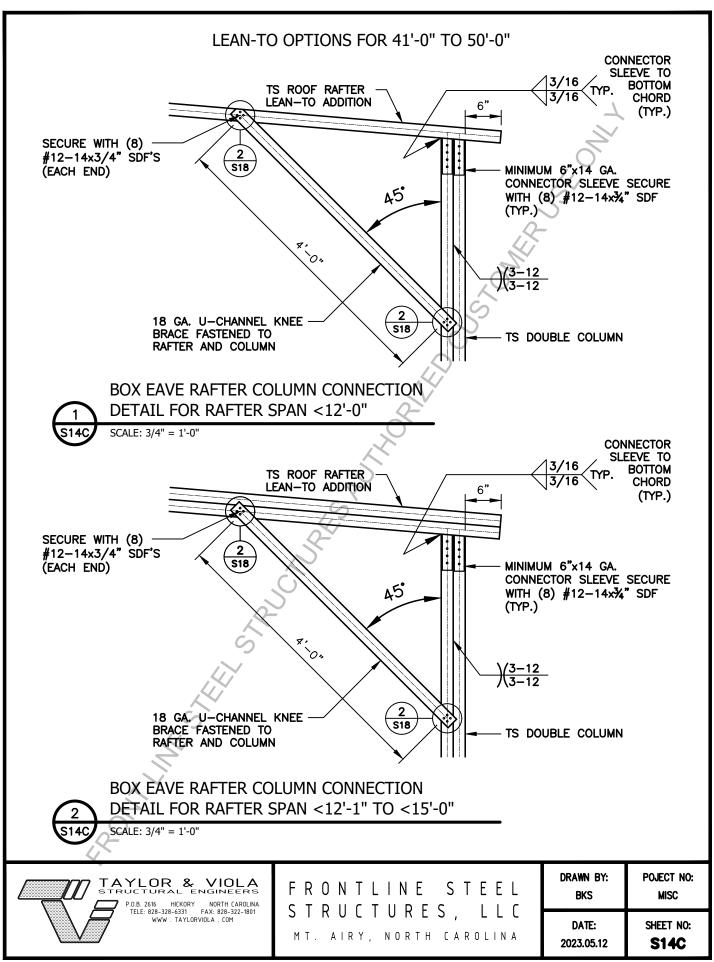
3 S14B

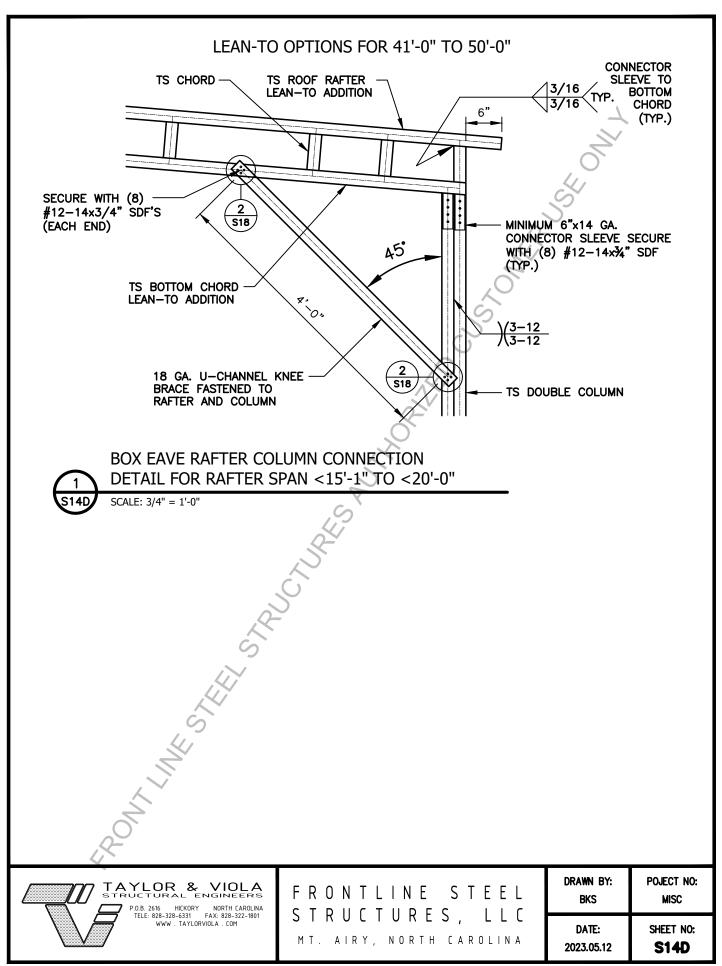
SCALE: 3/4" = 1'-0"



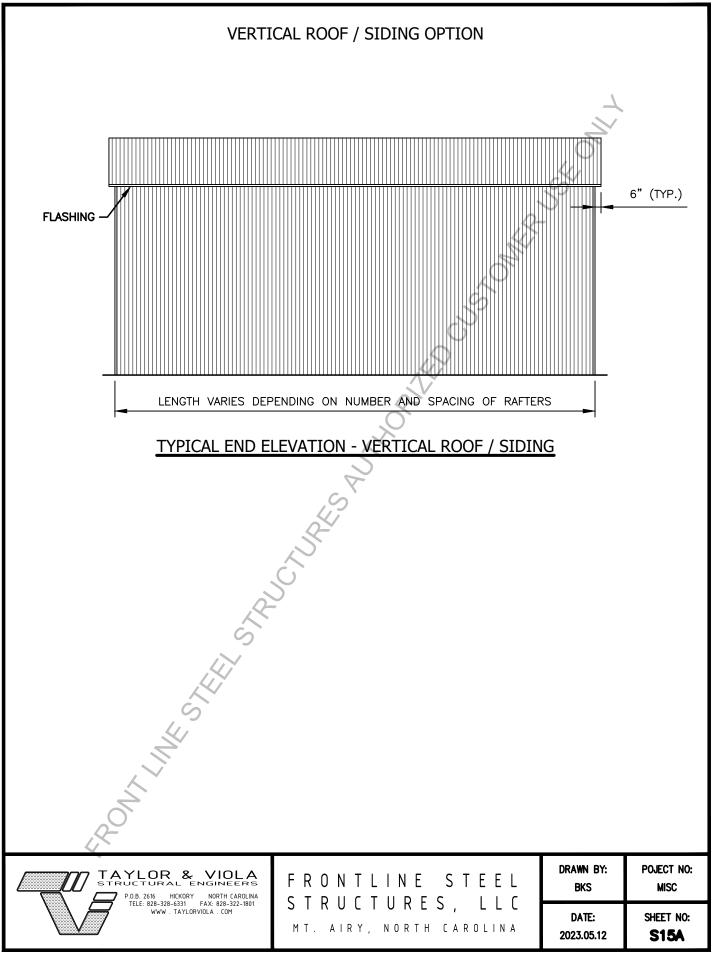
F R O N T L I N E S T E E L S T R U C T U R E S , L L C

DRAWN BY:	POJECT NO:
BKS	MISC
DATE:	SHEET NO:
2023.05.12	S14B

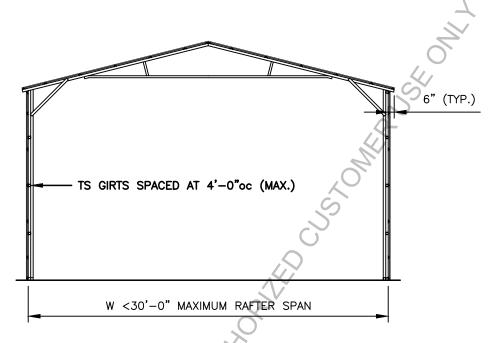




# **VERTICAL ROOF / SIDING OPTION** FLASHING -<30'-0" MAXIMUM RAFTER SPAN TYPICAL END ELEVATION - VERTICAL ROOF / SIDING DRAWN BY: POJECT NO: TAYLOR & VIOLA STRUCTURAL ENGINEERS FRONTLINE STEEL BKS MISC P.O.B. 2616 HICKORY NORTH CAROLINA TELE: 828–328–6331 FAX: 828–322–1801 WWW . TAYLORVIOLA . COM STRUCTURES, LLC SHEET NO: DATE: MT. AIRY, NORTH CAROLINA **S15** 2023.05.12



# VERTICAL ROOF / SIDING OPTION



# TYPICAL SECTION VERTICAL ROOF / SIDING OPTION

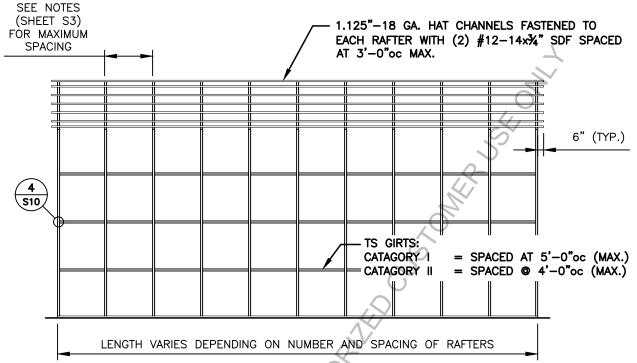
MAIN BUILDING COLUMNS TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS <14'-1" TO <16'-0"

MAIN BUILDING COLUMNS TO BE SINGLE COLUMNS FOR EAVE HEIGHTS <14'-0"



FRONTLINE STEEL STRUCTURES, LLC MT. AIRY, NORTH CAROLINA

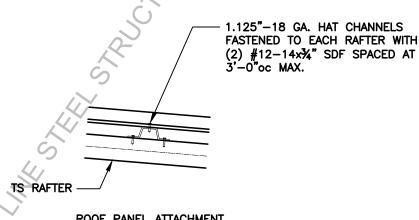
# VERTICAL ROOF / SIDING OPTION



# TYPICAL SIDE FRAMING SECTION VERTICAL ROOF / SIDING OPTION

NOTE:

1.125"-18 GA. HAT CHANNELS CAN BE USED AS AN OPTION IN PLACE OF TUBE STEEL (TS) WALL GIRTS. HAT CHANNELS MUST BE SPACED AT 3'-0"oc MAX.



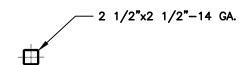
ROOF PANEL ATTACHMENT NTS



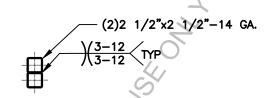
FRONTLINE STEEL STRUCTURES, LLC MT. AIRY, NORTH CAROLINA

DRAWN BY:	POJECT NO:
BKS	MISC
DATE:	SHEET NO:
2023.05.12	S16A

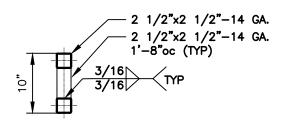
## SIDE WALL HEADER OPTIONS



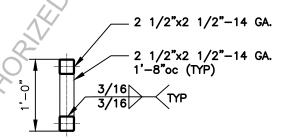
HEADER DETAIL FOR DOOR OPENINGS < 4'-0" NTS



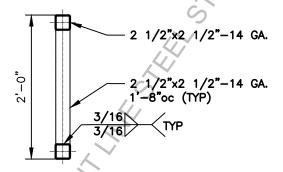
DOUBLE HEADER DETAIL FOR DOOR OPENINGS 4'-1" < TO < 9'-0" NTS



LACED HEADER DETAIL FOR DOOR OPENINGS 9'-1" < TO < 13'-0"



LACED HEADER DETAIL FOR DOOR OPENINGS 13'-1" < TO < 15'-0"



LACED HEADER DETAIL FOR DOOR OPENINGS 15'-1" < TO < 20'-0"

### **GENERAL NOTE:**

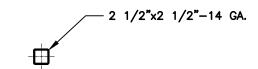
PROVIDE DOUBLE WYTHE HEADER ON DOUBLE COLUMNS AND LACED COLUMNS



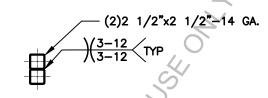
FRONTLINE	STEEL
STRUCTURE	S , $L$ $L$ $C$
MT. AIRY, NORTH	CAROLINA

DRAWN BY:	POJECT NO:
BKS	MISC
DATE:	SHEET NO:
2023.05.12	\$17

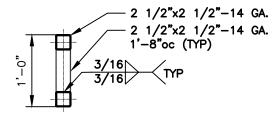
# **END WALL HEADER OPTIONS**



HEADER DETAIL FOR DOOR OPENINGS < 10'-0"
NTS



DOUBLE HEADER DETAIL FOR DOOR OPENINGS 10'-1" < TO < 16'-0" NTS



LACED HEADER DETAIL FOR DOOR OPENINGS 16'-1" < TO < 20'-0" NTS

**GENERAL NOTE:** 

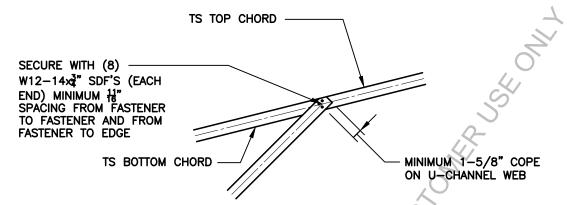
PROVIDE DOUBLE WYTHE HEADER ON DOUBLE COLUMNS AND LACED COLUMNS



FRONTLINE STEEL STRUCTURES, LLC MT. AIRY, NORTH CAROLINA

DRAWN BY:	POJECT NO:
BKS	MISC
DATE: 2023.05.12	SHEET NO:

#### U-CHANNEL CONNECTION DETAILS





# U-CHANNEL TO RAFTER CONNECTION DETAIL

SCALE: 3/4" = 1'-0"

SECURE WITH (8)
W12-14x2" SDF'S (EACH
END) MINIMUM 11"
SPACING FROM FASTENER
TO FASTENER AND FROM
FASTENER TO EDGE

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

MINIMUM 1-5/8" COPE
ON U-CHANNEL WEB



# U-CHANNEL TO COLUMN CONNECTION DETAIL

SCALE:  $3/4'' \neq 1'-0''$ 



FRONTLINE STEEL STRUCTURES, LLC MT. AIRY, NORTH CAROLINA