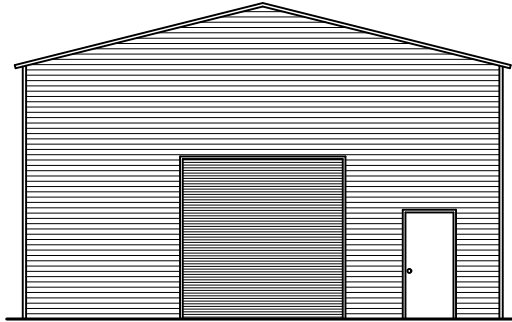


AUTHORIZED CUSTOMER:
KH MOTORSPORT / BENNY HOWARD
1741 MATTHEWS MILL POND RD.
ANGIER, NC 27501

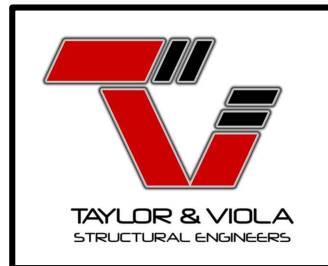


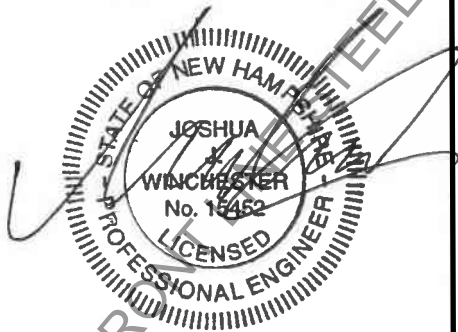
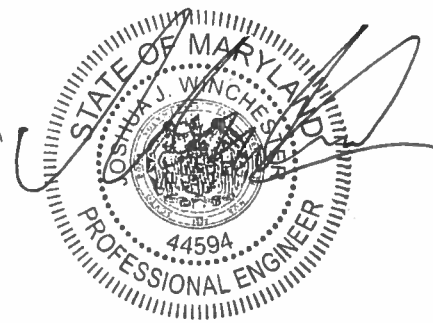
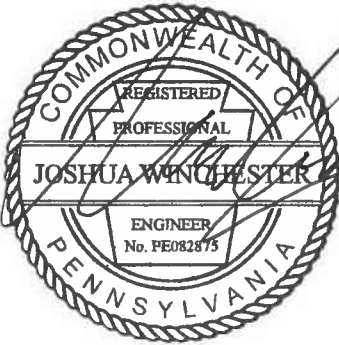
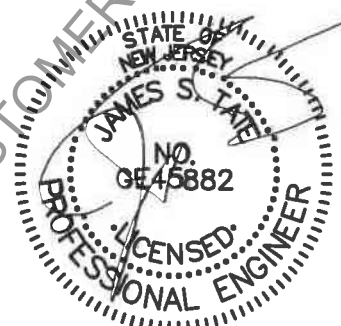
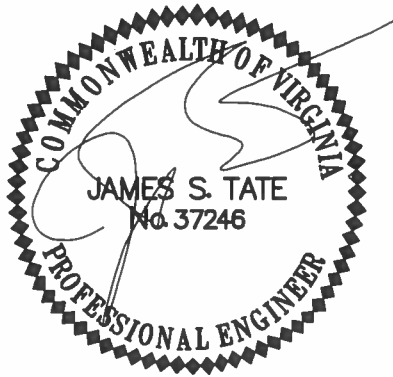
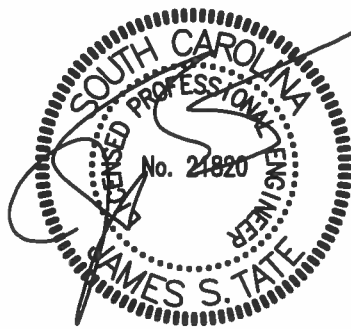
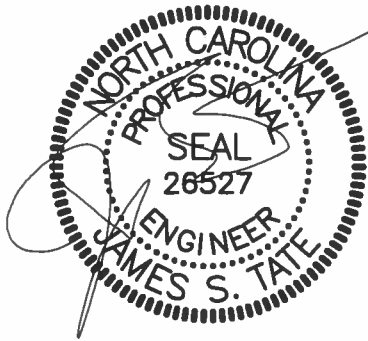
ENCLOSED GABLE END BUILDING
MAXIMUM 30'-0" WIDE X 16'-0" EAVE HEIGHT WITH BOX FRAME (135 MPH WIND ZONE)

FOR:

FRONTLINE STEEL STRUCTURES, LLC
MT. AIRY, NORTH CAROLINA

ISSUE DATE: AUGUST 01, 2022





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

DRAWN BY:
BKS

PROJECT NO:
MISC

DATE:
2022.08.01

SHEET NO:
S1

SHEET INDEX

SHEET NUMBER	SHEET TITLE
S1	SEALED COVER SHEET
S2	INDEX
S3	GENERAL NOTES
S4	END ELEVATION
S4A	SIDE ELEVATION
S5	FRAME SECTIONS
S6	FRAME SECTIONS
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
S9A	END WALL SECTIONS
S9B	END WALL SECTIONS
S10	CONNECTION DETAILS
S11	CONNECTION DETAILS
S12	CONNECTION DETAILS
S13	CONNECTION DETAILS
S14	LEAN-TO OPTIONS
S14A	LEAN-TO OPTIONS
S14B	LEAN-TO OPTIONS
S14C	LEAN-TO OPTIONS
S14D	LEAN-TO OPTIONS
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S16	WALL SECTION – VERTICAL SIDING
S16A	WALL SECTION – VERTICAL SIDING
S17	HEADER INFORMATION
S17A	HEADER INFORMATION
S18	U-CHANNEL BRACE

FRONT LINE STEEL STRUCTURES, LLC (NOT FOR CUSTOMER USE ONLY)



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S2

DESIGN LOADS:

IMPORTANCE FACTORS WIND (1w) 1.00
 SNOW (1s) 1.00
 SEISMIC (1e) 1.00

DEAD LOADS ROOF 13 PSF
 ROOF COLLATERAL 0 PSF

LIVE LOADS ROOF 20 PSF

GROUND SNOW LOAD: 30 PSF

GROUND LOAD: BASIC WIND SPEED V 135 mph (ASCE 7-10)
 EXPOSURE CATAGORY B

SEISMIC DESIGN CATAGORY A

COMPLIANCE WITH SECTION 1616.4? NO YES

PROVIDE THE FOLLOWING SEISMIC DESIGN PARAMETERS:

OCCUPANCY CATEGORY I / II

SPECTRAL RESPONSE ACCELERATION Ss 20.5 %g S1 8.8 %g

SITE CLASSIFICATION D FIELD TEST PRESUMPTIVE HISTORICAL DATA

BASIC STRUCTURAL SYSTEM (CHECK ONE)

BEARING WALL DUAL W/ SPECTRAL MOMENT FRAME
 BUILDING FRAME DUAL W/ INTERMEDIATE R/C OR SPECIAL STEEL
 MOMENT FRAME INVERTED PENDULUM

ANALYSIS PROCEDURE SIMPLIFIED EQUIVALANT LATERAL FORCE MODAL

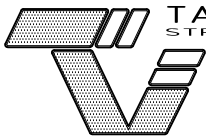
LATERAL DESIGN CONTROL? EARTHQUAKE WIND

SOIL BEARING CAPACITIES:
 PRESUMPTIVE BEARING CAPACITIES: 2,000 PSF

GENERAL NOTES:

1. MAX FRAME SPACING SHALL BE 60"oc UNLESS NOTED OTHERWISE.
2. MAX. END-WALL COLUMN SPACING SHALL BE 60"oc UNLESS NOTED OTHERWISE.
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 TAPPING UNLESS NOTED OTHERWISE.
5. 2,000 PSF ASSUMED BEARING CAPACITY UNLESS NOTED OTHERWISE.

FRONTLINE STEEL STRUCTURES AUTHORIZED CUSTOMER USE ONLY



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 WWW . TAYLORVIOLA . COM

JMCT ASSOCIATES
 211 STONE DRIVE / PILOT MOUNTAIN, NC 27041

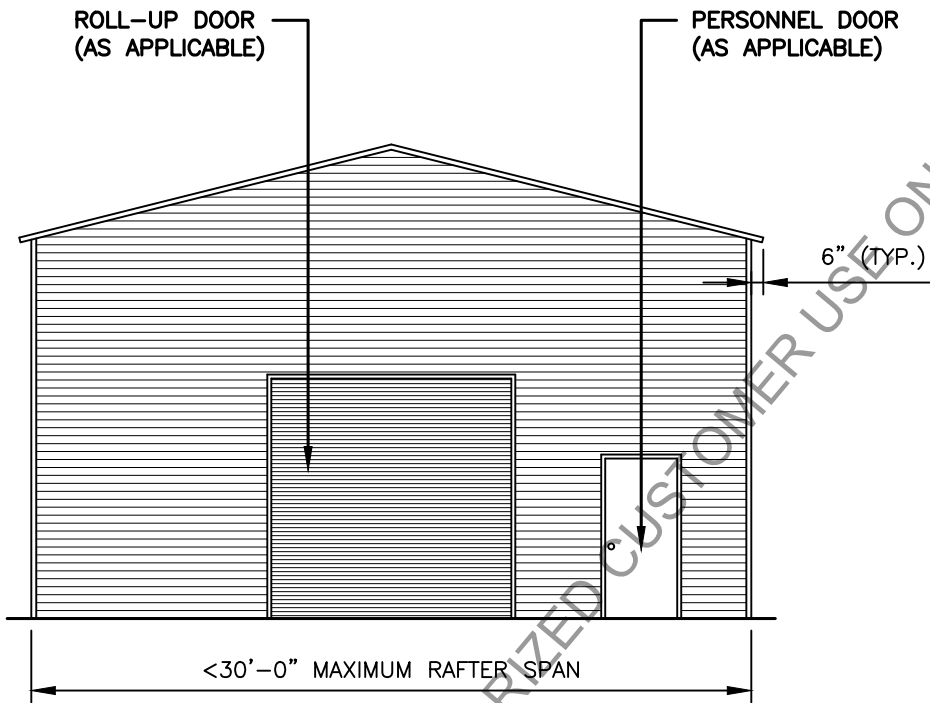
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PROJECT NO:
 MISC

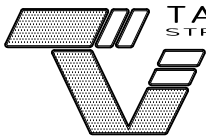
DATE:
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SHEET NO:
S3



TYPICAL END ELEVATION - VERTICAL ROOF

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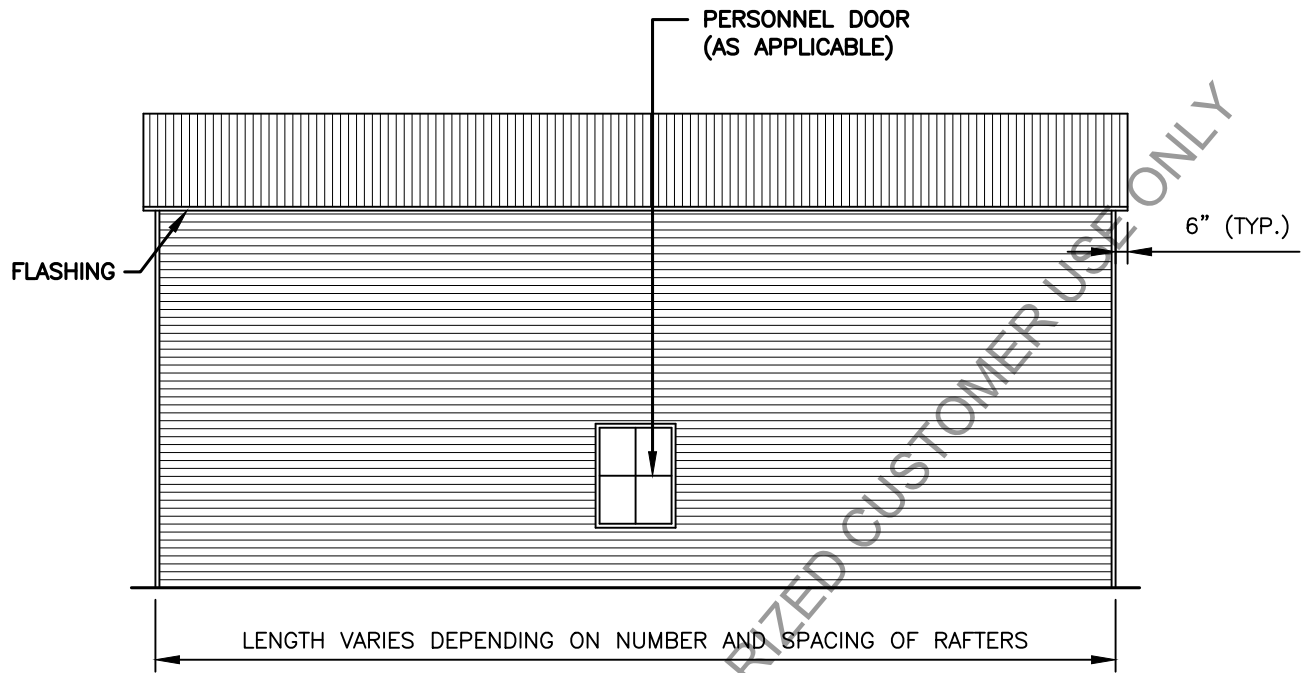
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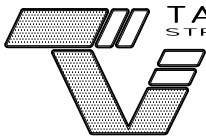
DATE:
2022.08.01

SHEET NO:
S4



TYPICAL SIDE ELEVATION - VERTICAL ROOF

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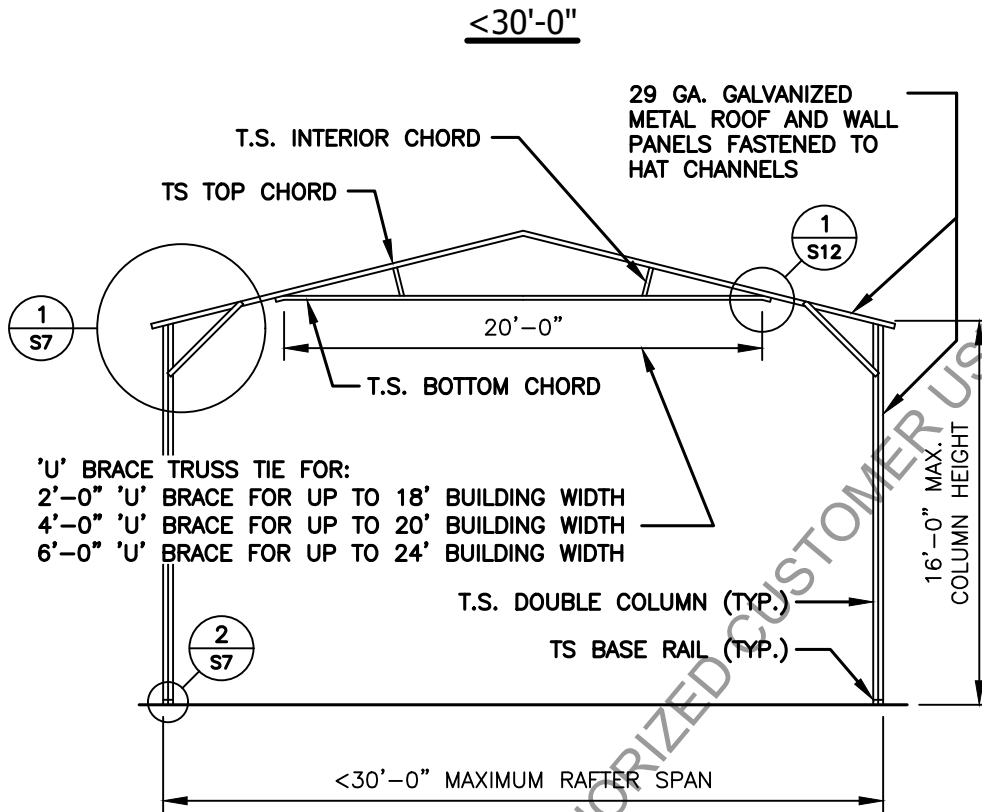
FRONTLINE STEEL
STRUCTURES, LLC
MT. AIRY, NORTH CAROLINA

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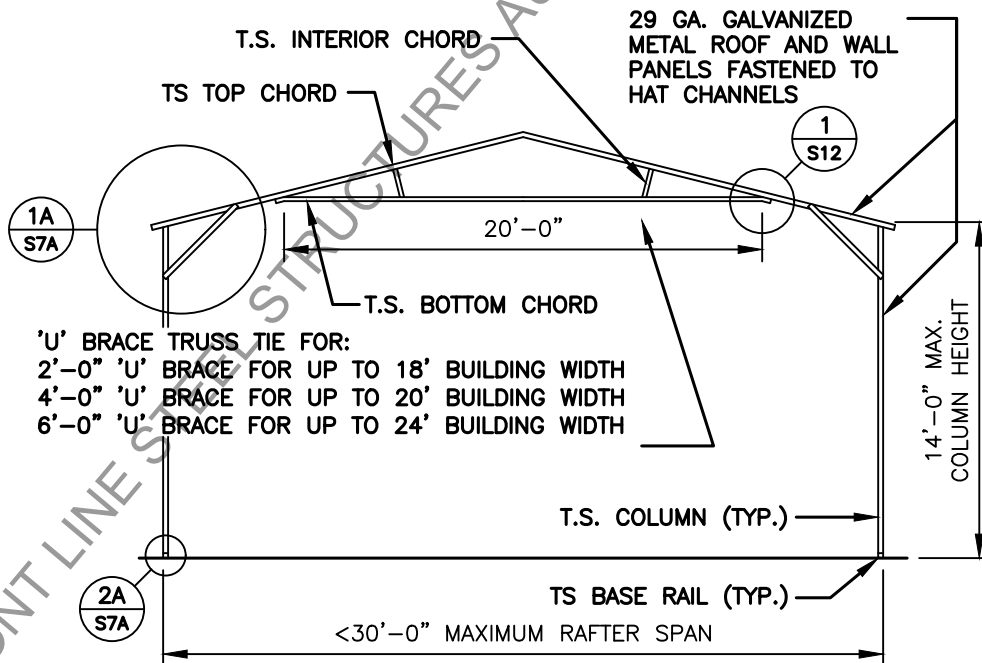
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DATE:
2022.08.01

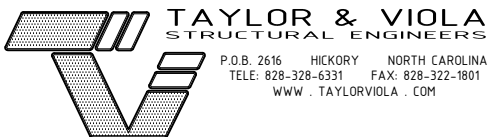
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S4A



TYPICAL RAFTER / COLUMN FRAME SECTION

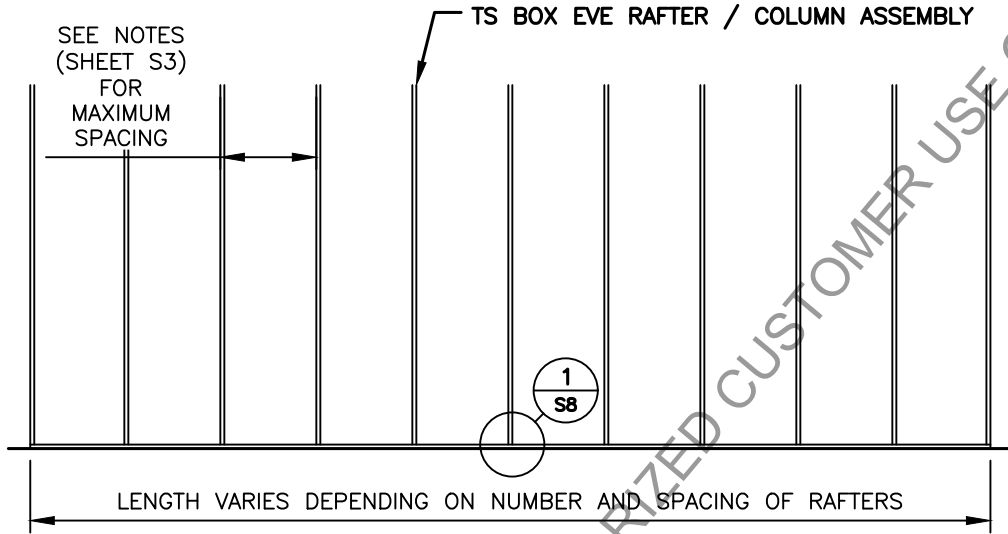


TYPICAL RAFTER / COLUMN FRAME SECTION



FRONTLINE STEEL
 STRUCTURES, LLC
 MT. AIRY, NORTH CAROLINA

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DATE: 2022.08.01	SHEET NO: S5



TYPICAL RAFTER / COLUMN SIDE FRAME SECTION

FRONT LINE STEEL STRUCTURES AUTHORIZED CUSTOMER USE ONLY



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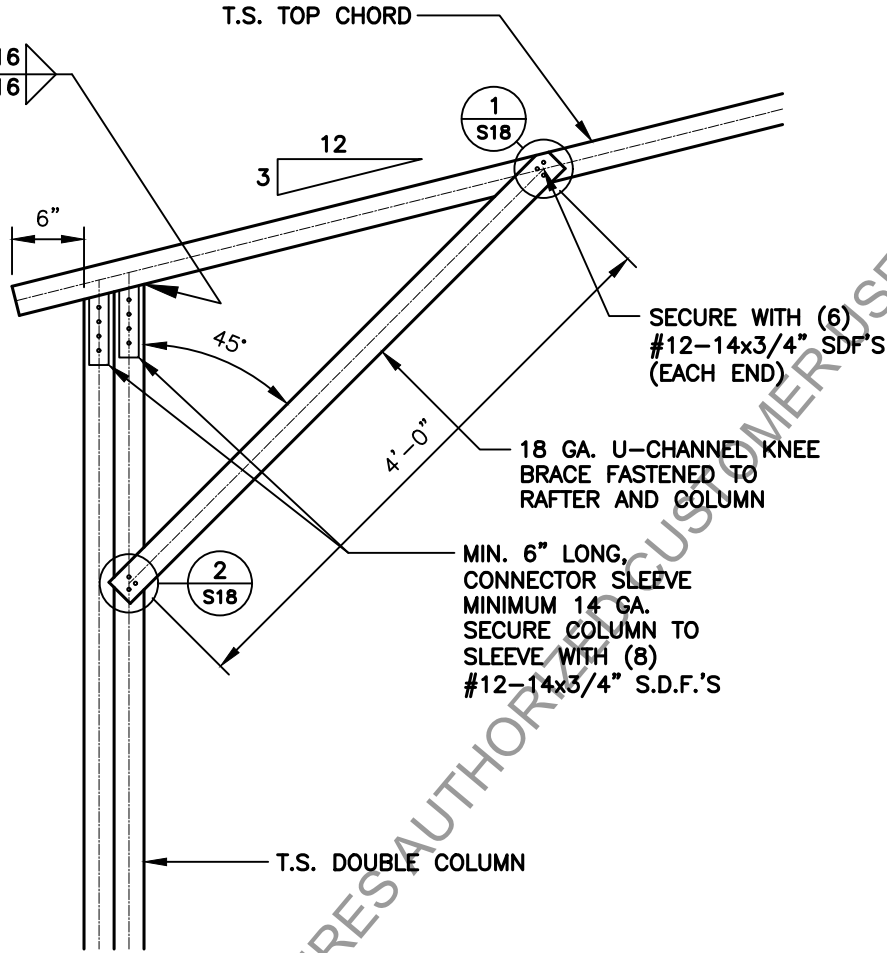
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2022.08.01

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S6

DOUBLE TUBE COLUMN OPTION

CONNECTOR SLEEVE TO BOTTOM CHORD (TYP.)

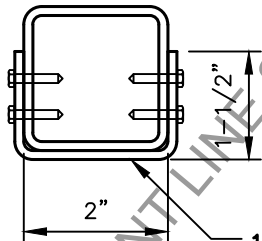
TYP. $\frac{3}{16}$ / $\frac{3}{16}$



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

1
S7

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

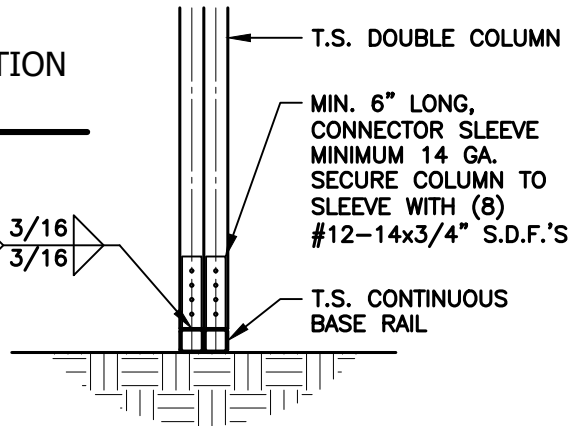


BRACE SECTION

18 GA. U-CHANNEL BRACE FASTENED TO THE COLUMN AND BOTTOM CHORD, WITH (8) #12-14x3/4" SDF'S AT EACH END (16 PER BRACE)

CONNECTOR SLEEVE TO BOTTOM CHORD (TYP.)

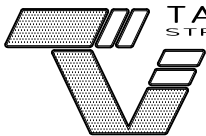
TYP. $\frac{3}{16}$ / $\frac{3}{16}$



COLUMN / BASE RAIL CONNECTION DETAIL

2
S7

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



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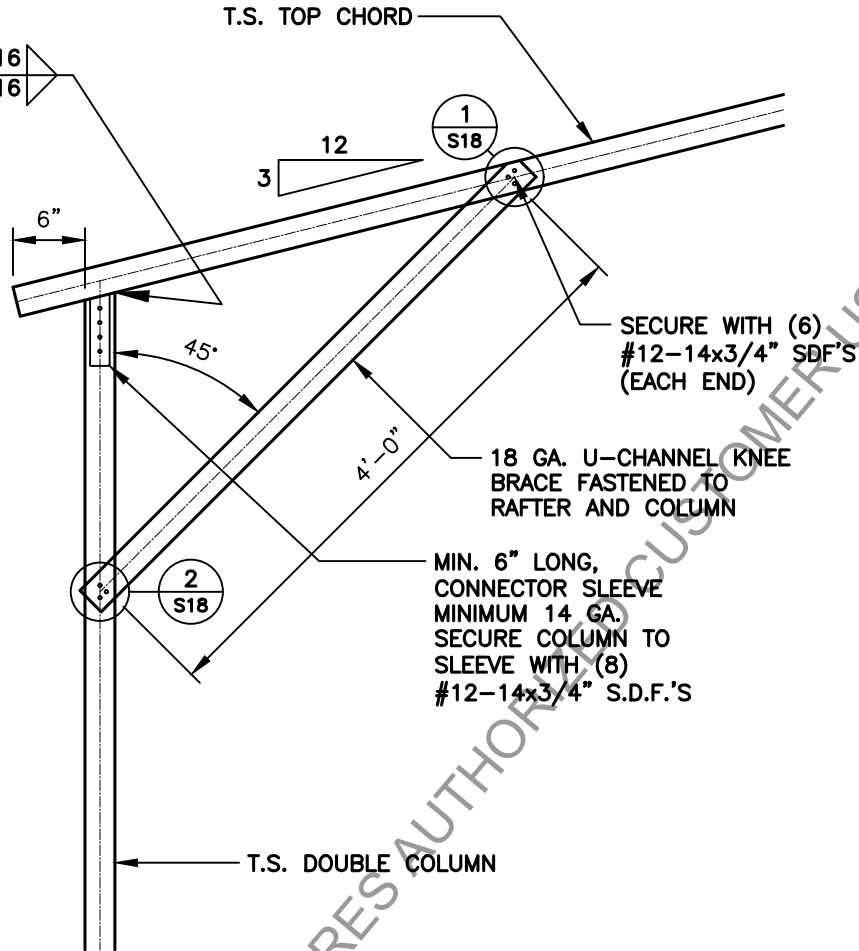
DATE:
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SHEET NO:
S7

SINGLE TUBE COLUMN OPTION

CONNECTOR SLEEVE TO BOTTOM CHORD (TYP.)

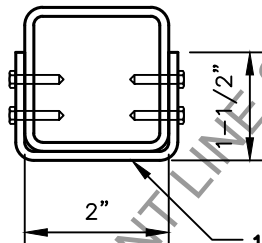
TYP. $\frac{3}{16}$ / $\frac{3}{16}$



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

1A
S7A

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

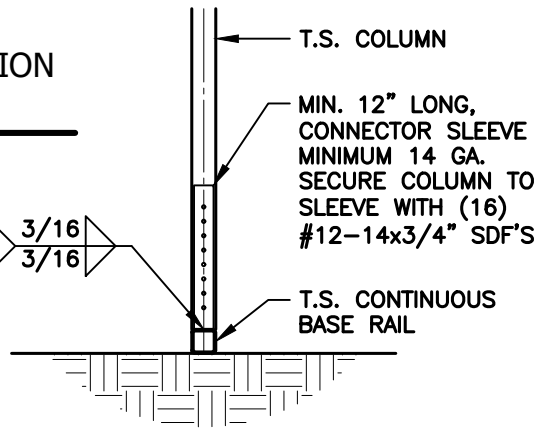


BRACE SECTION

18 GA. U-CHANNEL BRACE FASTENED TO THE COLUMN AND BOTTOM CHORD, WITH (8) #12-14x3/4" SDF'S AT EACH END (16 PER BRACE)

CONNECTOR SLEEVE TO BOTTOM CHORD (TYP.)

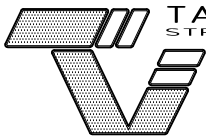
TYP. $\frac{3}{16}$ / $\frac{3}{16}$



2A
S7A

COLUMN / BASE RAIL CONNECTION DETAIL

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



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S7A

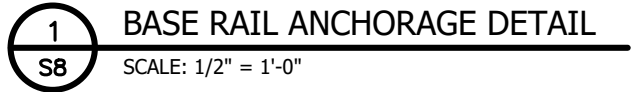
BASE RAIL ANCHORAGE

INSTALL (1) 1/2"x6 1/2" EXPANSION ANCHOR THROUGH BASE RAIL WITHIN 6" OF EACH COLUMN. (ALSO APPLICABLE TO END WALLS)

CONT. (1) #4 NOSING BAR

CONT. (2) #4 BARS

#4 HOOPS @ 48"oc



1 BASE RAIL ANCHORAGE DETAIL

S8 SCALE: 1/2" = 1'-0"

INSTALL (1) 1/2"x6 1/2" EXPANSION ANCHOR THROUGH BASE RAIL WITHIN 6" OF EACH COLUMN. (ALSO APPLICABLE TO END WALLS)

CONT. (1) #4 NOSING BAR

CONT. (2) #4 BARS

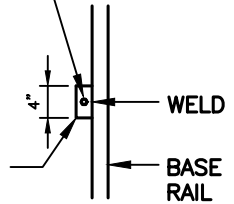
#4 HOOPS @ 48"oc



1 BASE RAIL ANCHORAGE DETAIL

S8 (OPT.) SCALE: 1/2" = 1'-0"

INSTALL (1) 1/2"x6 1/2" EXPANSION ANCHOR THROUGH BASE RAIL WITHIN 6" OF EACH COLUMN. (ALSO APPLICABLE TO END WALLS)



PLAN VIEW

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.



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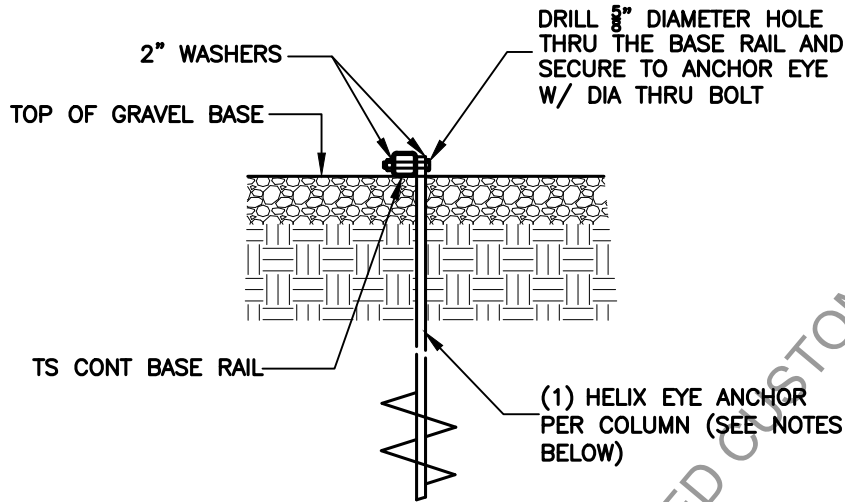
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S8

BASE RAIL ANCHORAGE

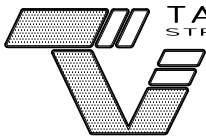


1
S8A

BASE RAIL ANCHORAGE DETAIL

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

HELIX EMBEDMENT INFORMATION:
 FOR VERY DENSE OR CEMENTED 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



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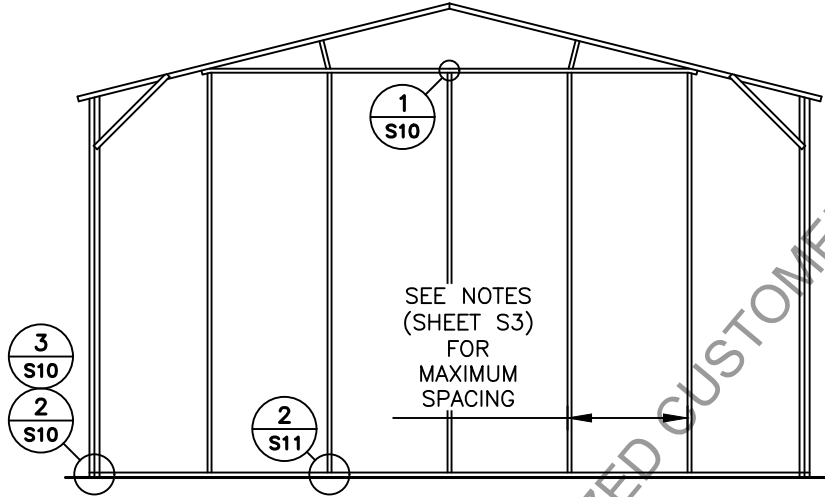
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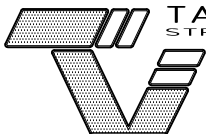
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S8A

TYPICAL END WALL FRAMING SECTION



TYPICAL END WALL FRAMING SECTION

FRONT LINE STEEL STRUCTURES AUTHORIZED CUSTOMER USE ONLY



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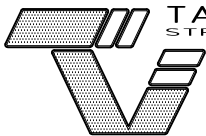
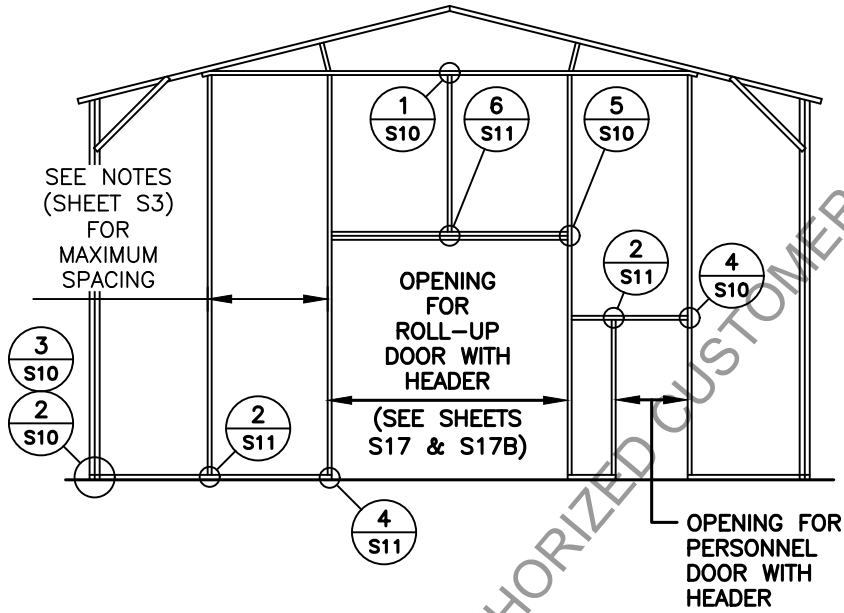
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MISC

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S9

TYPICAL END WALL FRAMING SECTION



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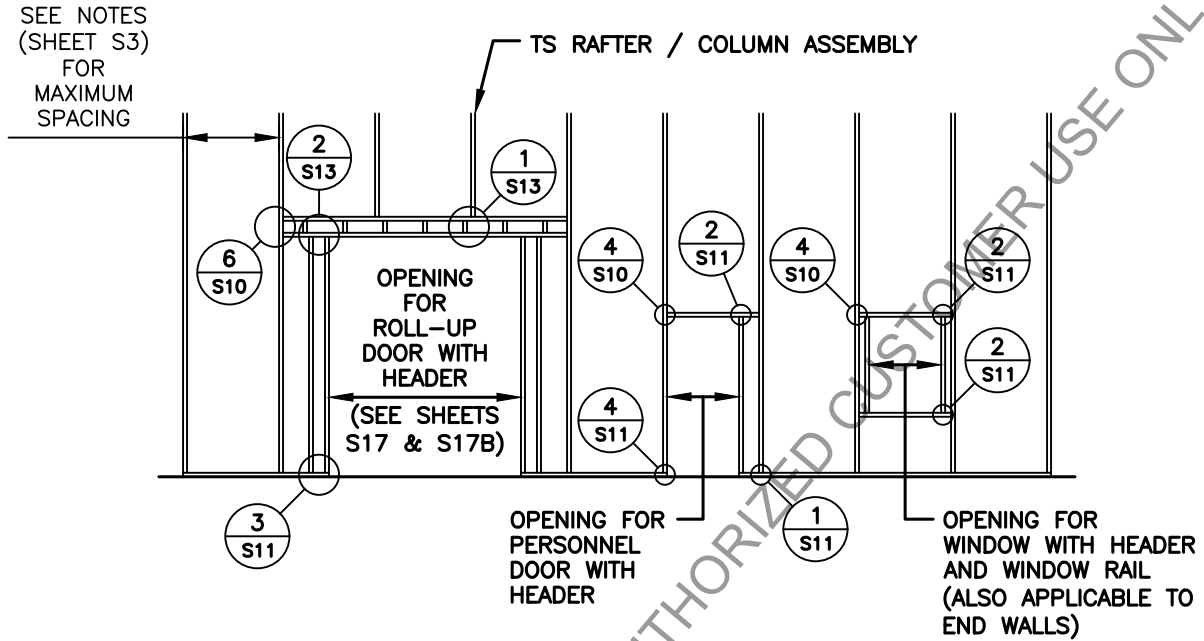
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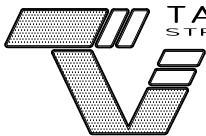
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S9A

TYPICAL SIDE WALL OPENING FRAMING SECTION



TYPICAL SIDE WALL OPENINGS FRAMING SECTION



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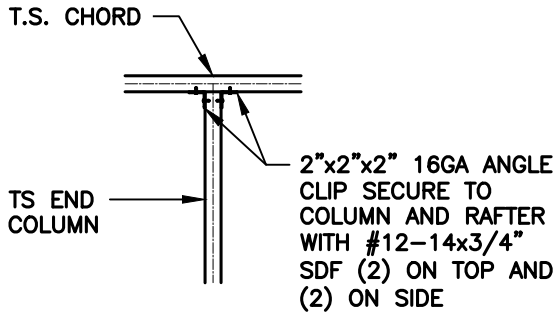
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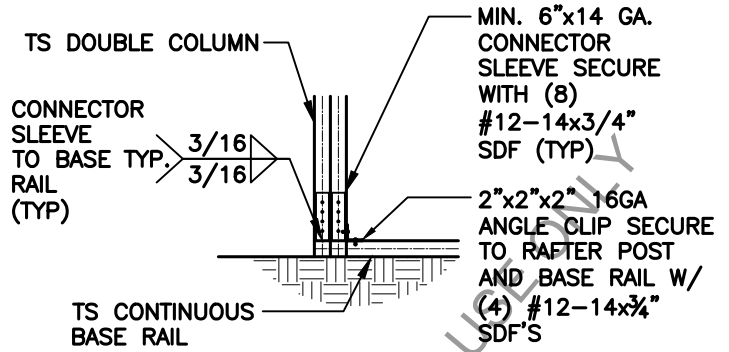
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S9B

CONNECTION DETAILS



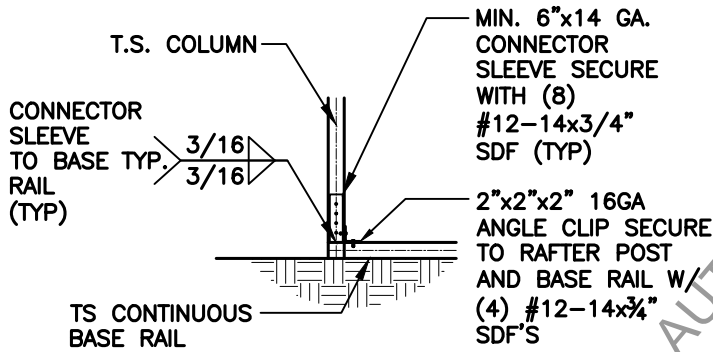
1
BOTTOM CHORD CONNECTION DETAIL

S10 SCALE: 1/2" = 1'-0"



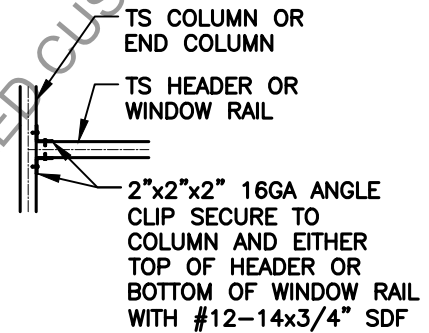
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COLUMN / BASE RAIL CONNECTION DETAIL

S10 SCALE: 1/2" = 1'-0"



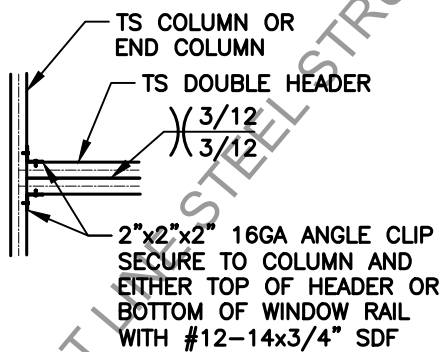
3
END POST / BASE RAIL CONNECTION DETAIL

S10 SCALE: 1/2" = 1'-0"



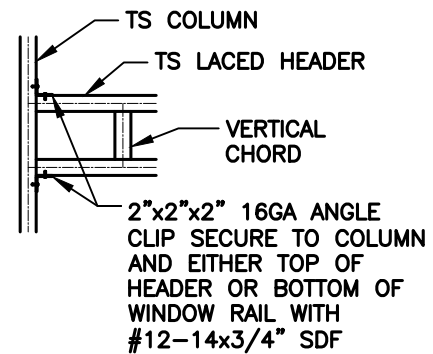
4
COLUMN OR WINDOW RAIL / WALL GIRTS TO POST CONNECTION DETAIL

S10 SCALE: 1/2" = 1'-0"



5
COLUMN / DOUBLE HEADER CONNECTION DETAIL

S10 SCALE: 1/2" = 1'-0"



6
COLUMN / LACED HEADER CONNECTION DETAIL

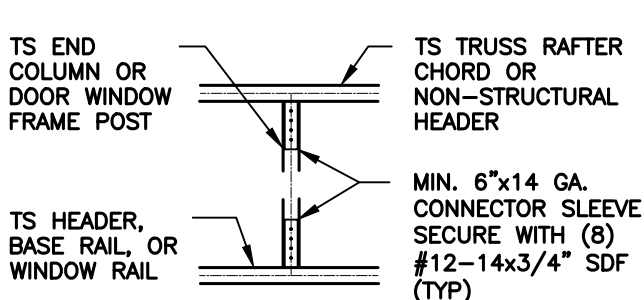
S10 SCALE: 1/2" = 1'-0"



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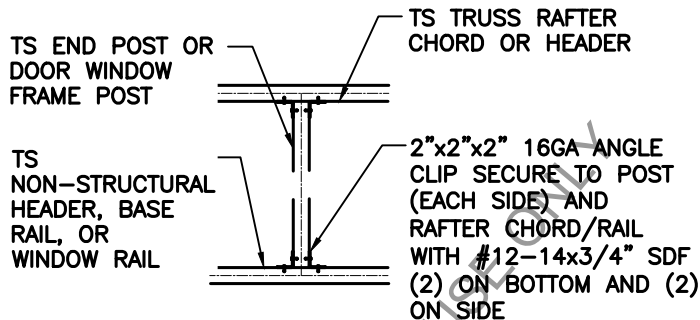
CONNECTION DETAILS



1
COLUMN TO HEADER OR BASE RAIL CONNECTION DETAIL

S11

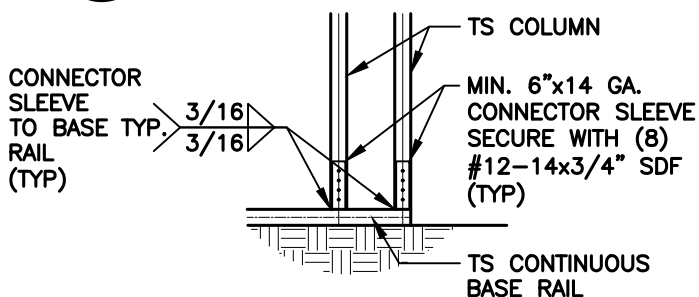
SCALE: 1/2" = 1'-0"



2
DOOR OR WINDOW HEADER RAIL TO POST CONNECTION DETAIL

S11

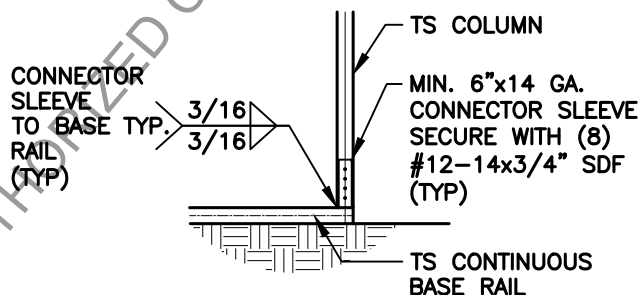
SCALE: 1/2" = 1'-0"



3
COLUMN / BASE RAIL CONNECTION DETAIL

S11

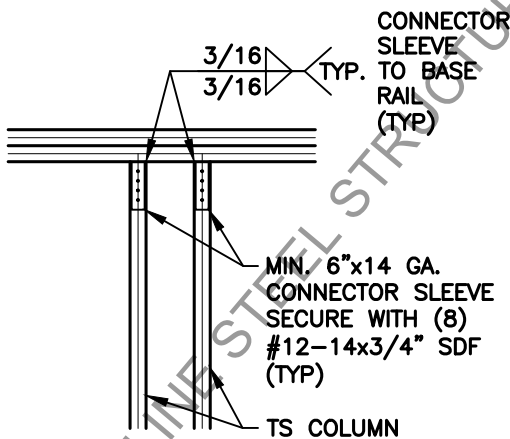
SCALE: 1/2" = 1'-0"



4
COLUMN / BASE RAIL CONNECTION DETAIL

S11

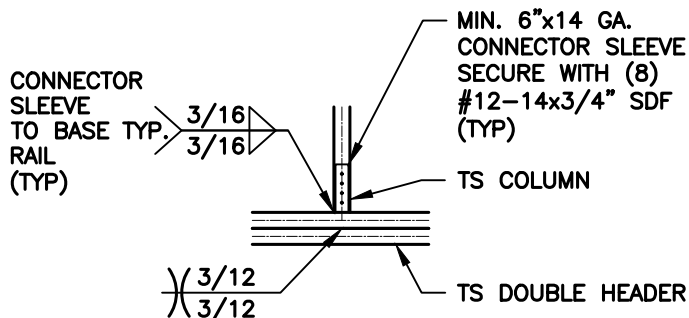
SCALE: 1/2" = 1'-0"



5
DOUBLE HEADER / COLUMN CONNECTION DETAIL

S11

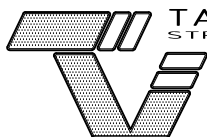
SCALE: 1/2" = 1'-0"



6
COLUMN / DOUBLE HEADER CONNECTION DETAIL

S11

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



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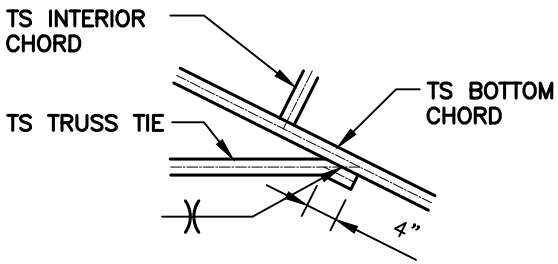
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SHEET NO:
S11

CONNECTION DETAILS

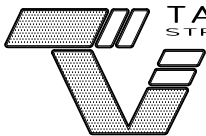


TRUSS TIE
CONNECTION DETAIL



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

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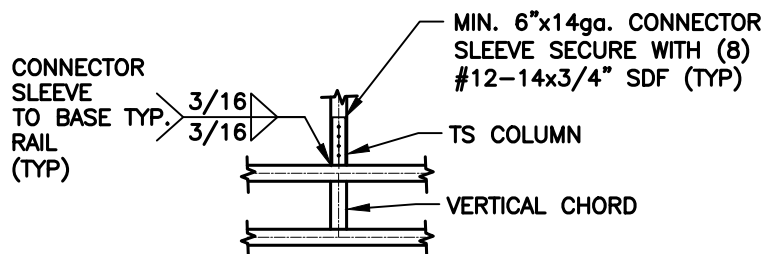
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DATE:
2022.08.01

SHEET NO:
S12

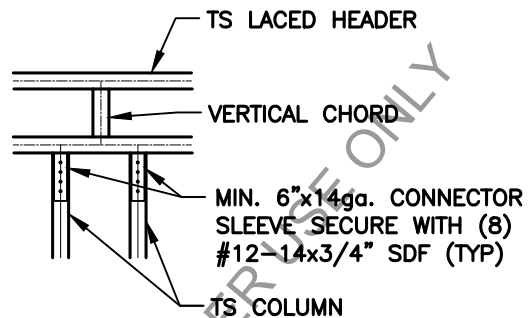
CONNECTION DETAILS



1
S13

COLUMN / LACED HEADER
CONNECTION DETAIL

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

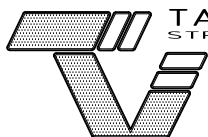


1
S13

LACED HEADER / COLUMN
CONNECTION DETAIL

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

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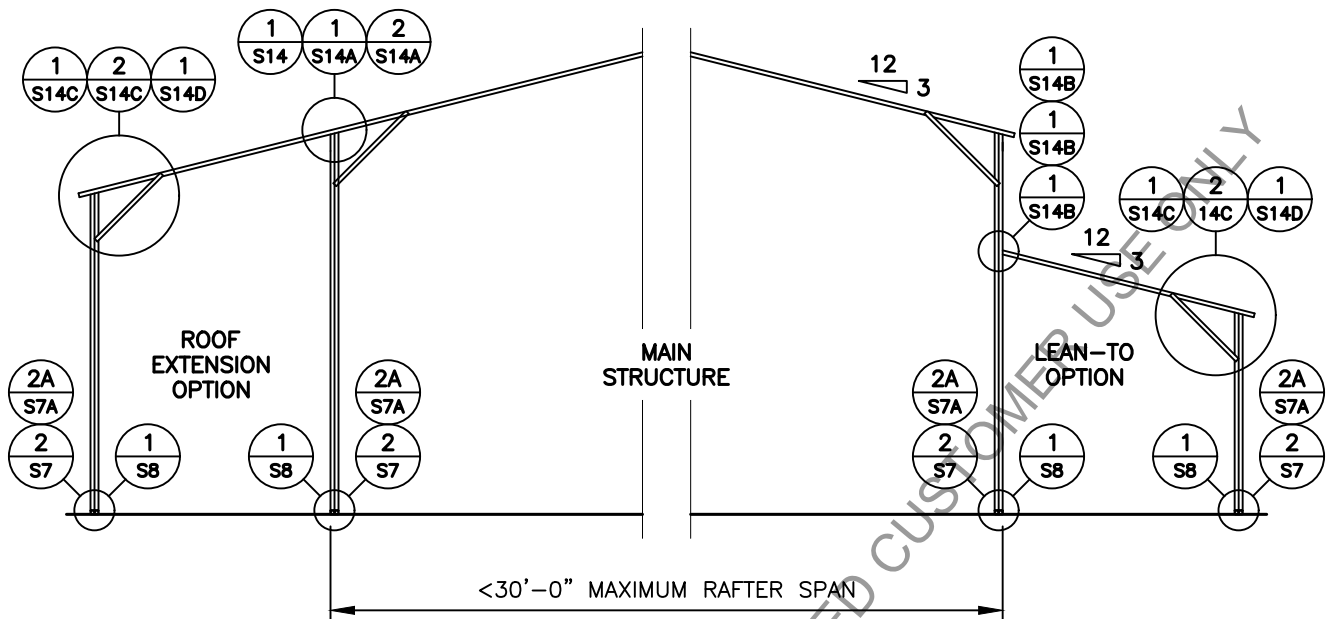
DRAWN BY:
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PROJECT NO:
MISC

DATE:
2022.08.01

SHEET NO:
S13

LEAN-TO OPTIONS

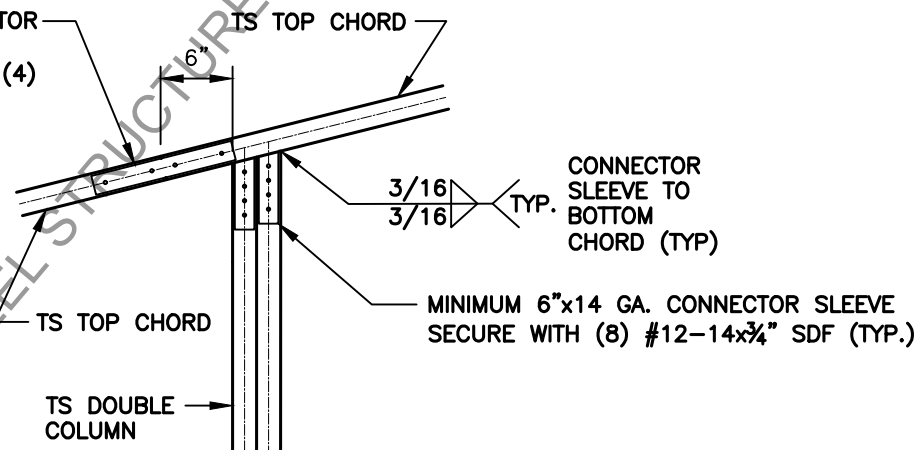


TYPICAL LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

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"

12" LONG 14GA CONNECTOR SLEEVE SECURE TO TOP CHORD TO SLEEVE WITH (4) #12-14x3/4" SDF



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

1
S14

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



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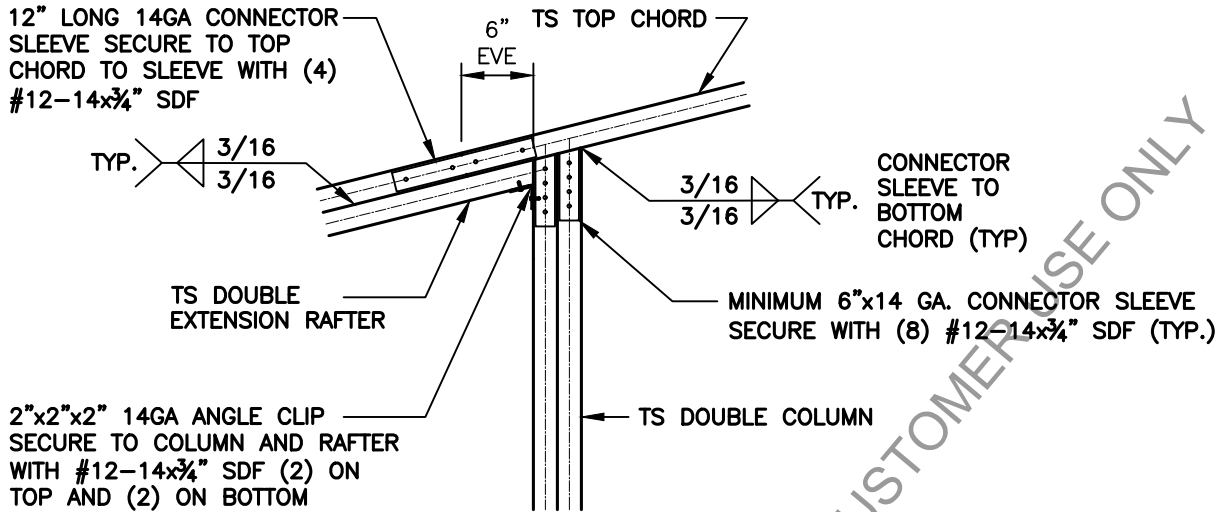
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PROJECT NO:
MISC

DATE:
2022.08.01

SHEET NO:
S14

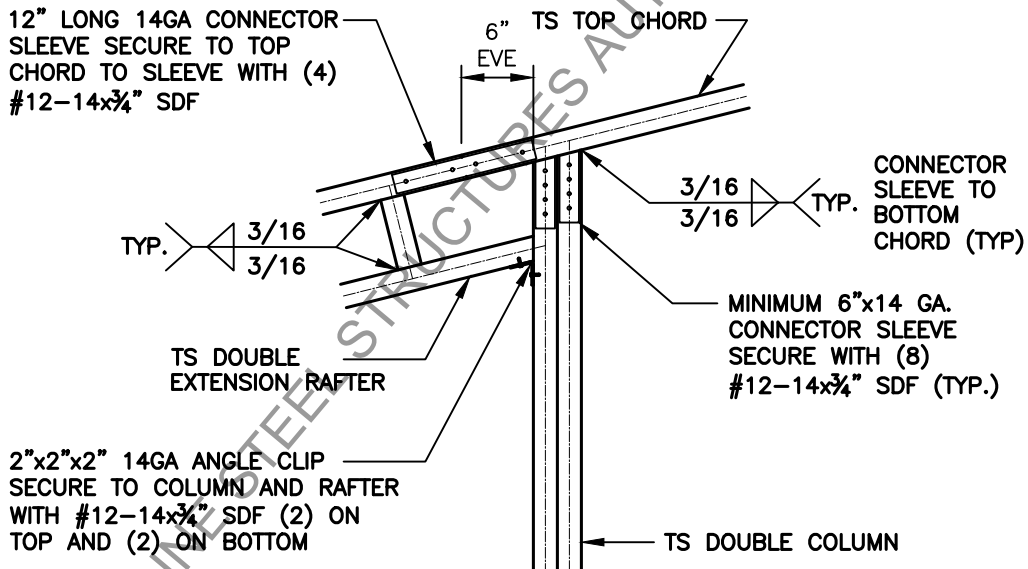
LEAN-TO OPTIONS FOR 41'-0" TO 50'-0"



1
S14A

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

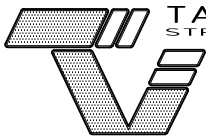
SCALE: $\frac{3}{4}'' = 1'-0''$



2
S14A

SIDE EXTENSION RAFTER / CORNER POST
DETAIL FOR RAFTER SPAN $<15'-1''$ TO $<20'-0''$

SCALE: $\frac{3}{4}'' = 1'-0''$



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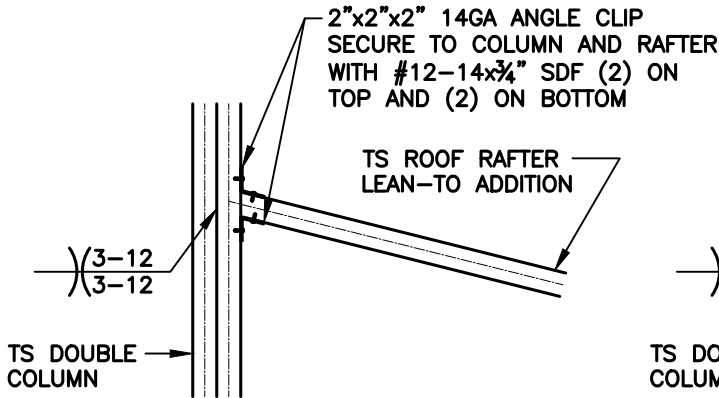
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PROJECT NO:
MISC

DATE:
2022.08.01

SHEET NO:
14A

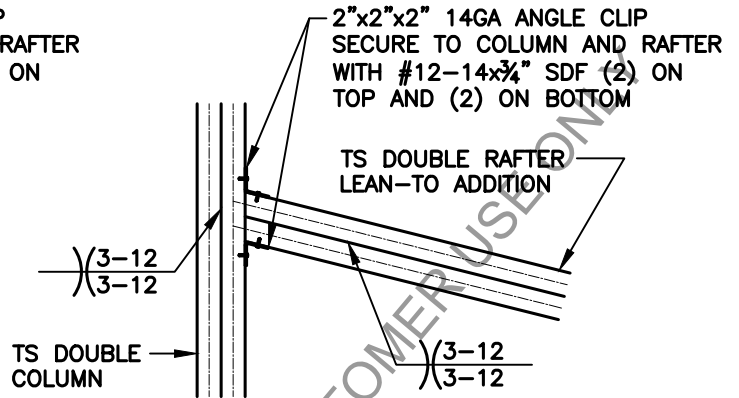
LEAN-TO OPTIONS FOR 41'-0" TO 50'-0"



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

1
S14B

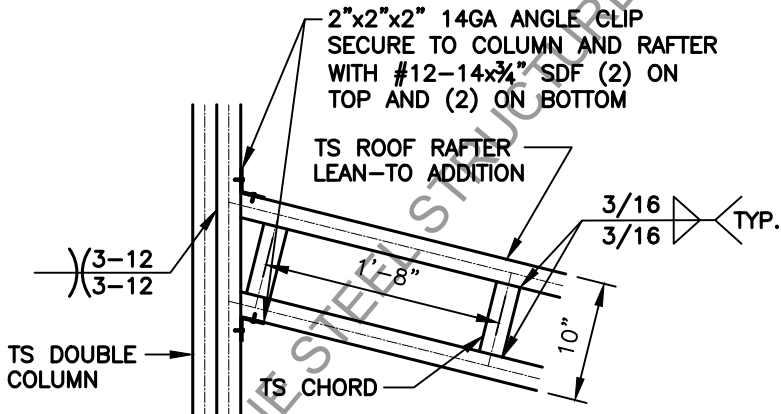
SCALE: 3/4" = 1'-0"



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

2
S14B

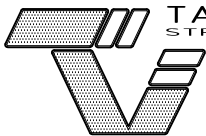
SCALE: 3/4" = 1'-0"



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

3
S14B

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



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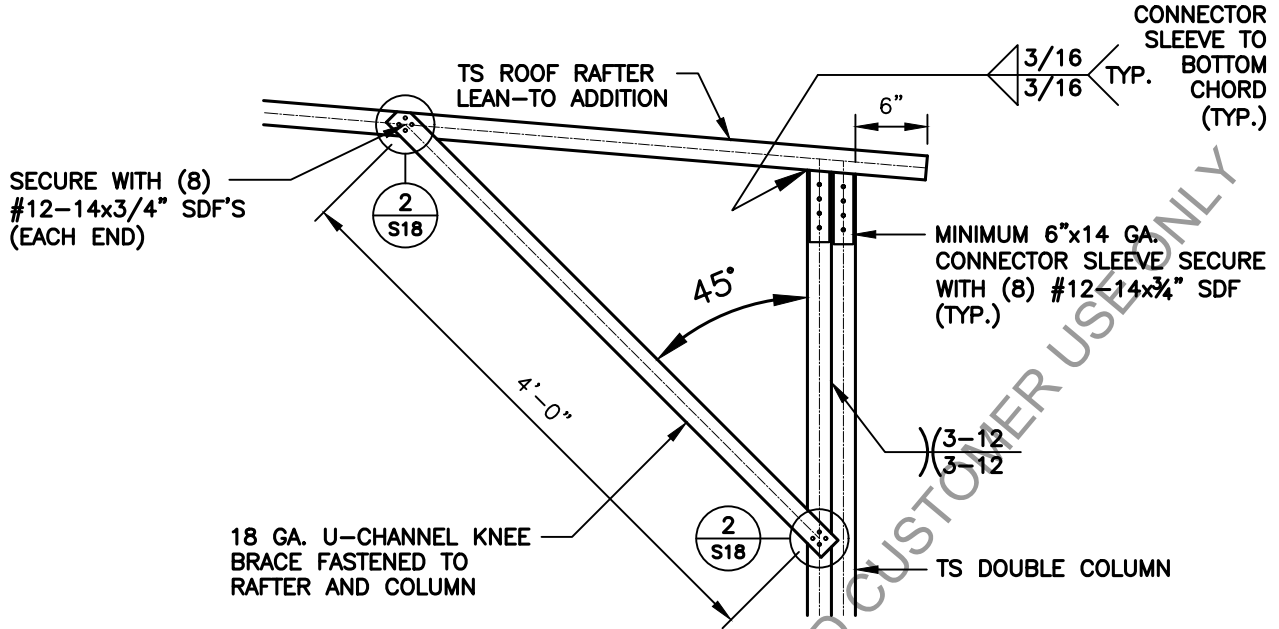
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DATE:
2022.08.01

SHEET NO:
S14B

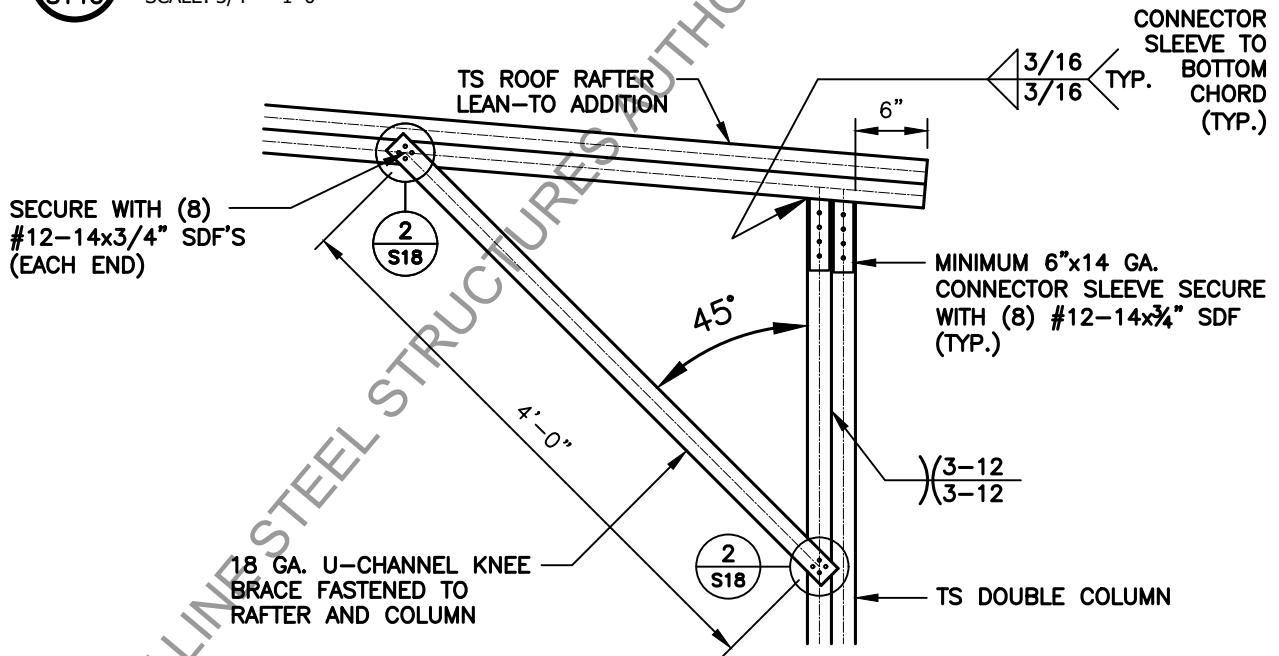
LEAN-TO OPTIONS FOR 41'-0" TO 50'-0"



BOX EAVE RAFTER COLUMN CONNECTION
DETAIL FOR RAFTER SPAN <12'-0"

1
S14C

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



BOX EAVE RAFTER COLUMN CONNECTION
DETAIL FOR RAFTER SPAN <12'-1" TO <15'-0"

2
S14C

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



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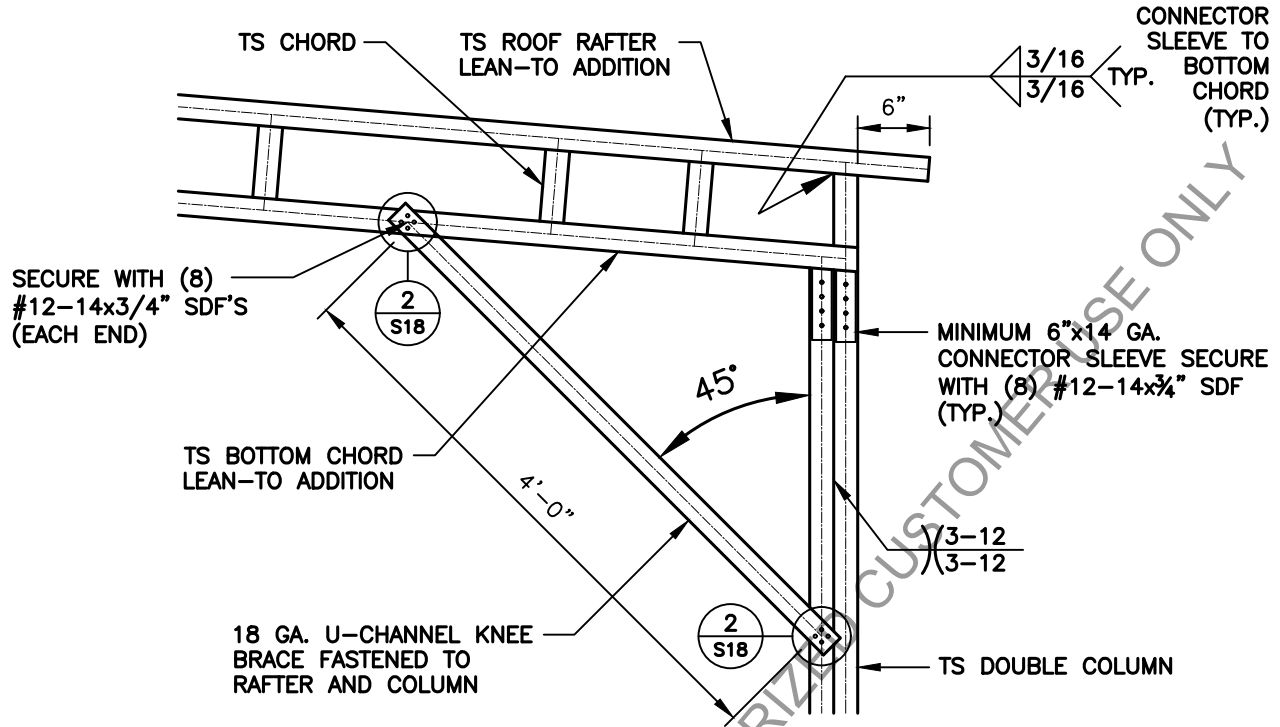
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PROJECT NO:
MISC

DATE:
2022.08.01

SHEET NO:
S14C

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

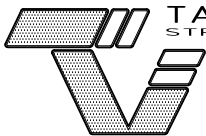


BOX EAVE RAFTER COLUMN CONNECTION
 DETAIL FOR RAFTER SPAN <15'-1" TO <20'-0"

1
 S14D

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

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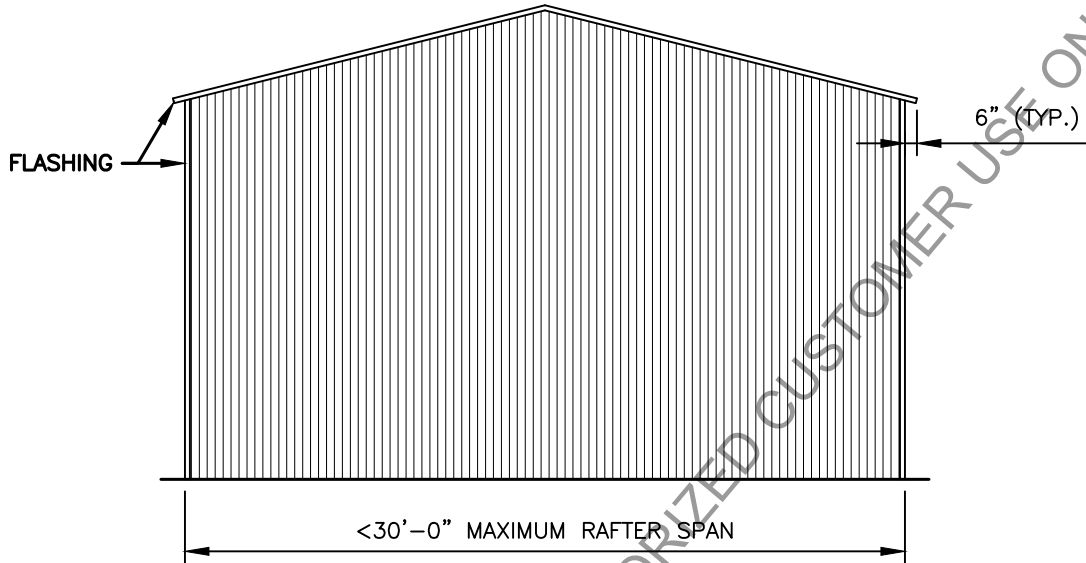
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PROJECT NO:
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DATE:
 2022.08.01

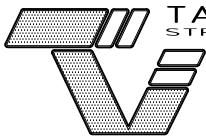
SHEET NO:
S14D

VERTICAL ROOF / SIDING OPTION



TYPICAL END ELEVATION - VERTICAL ROOF / SIDING

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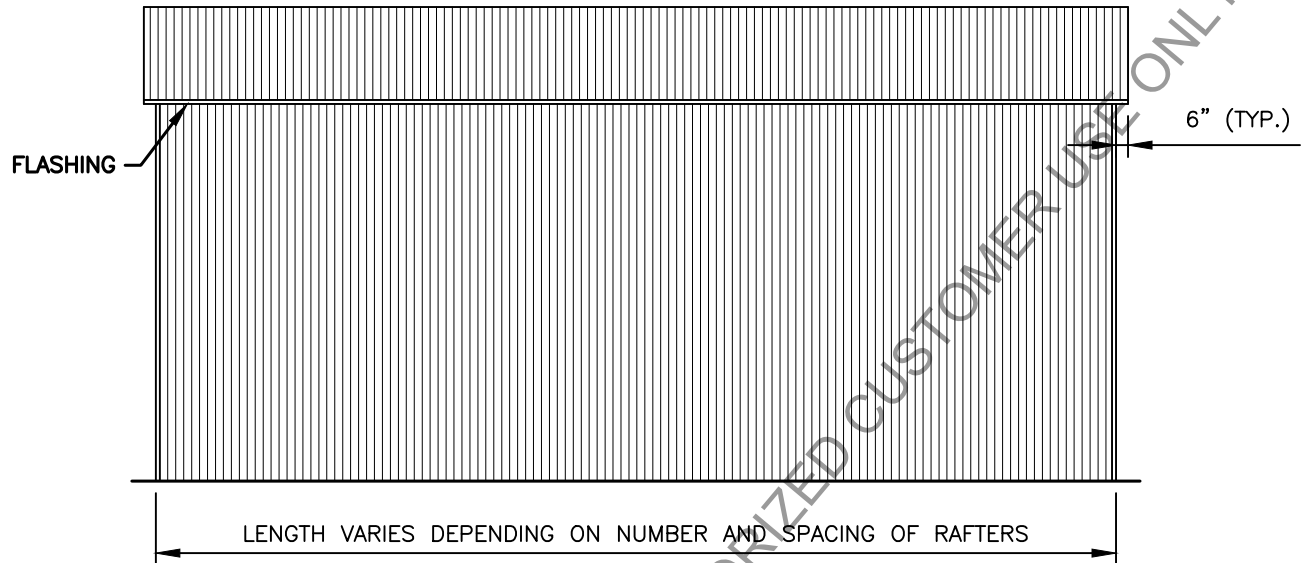
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PROJECT NO:
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DATE:
2022.08.01

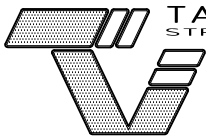
SHEET NO:
S15

VERTICAL ROOF / SIDING OPTION



TYPICAL END ELEVATION - VERTICAL ROOF / SIDING

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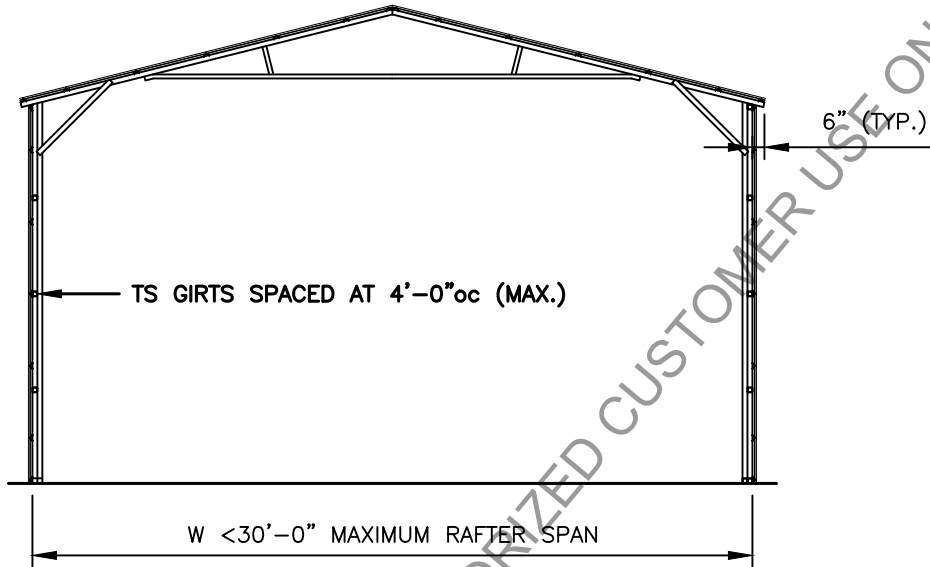
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PROJECT NO:
MISC

DATE:
2022.08.01

SHEET NO:
S15A

VERTICAL ROOF / SIDING OPTION

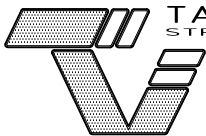


TYPICAL SECTION VERTICAL ROOF / SIDING OPTION

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"

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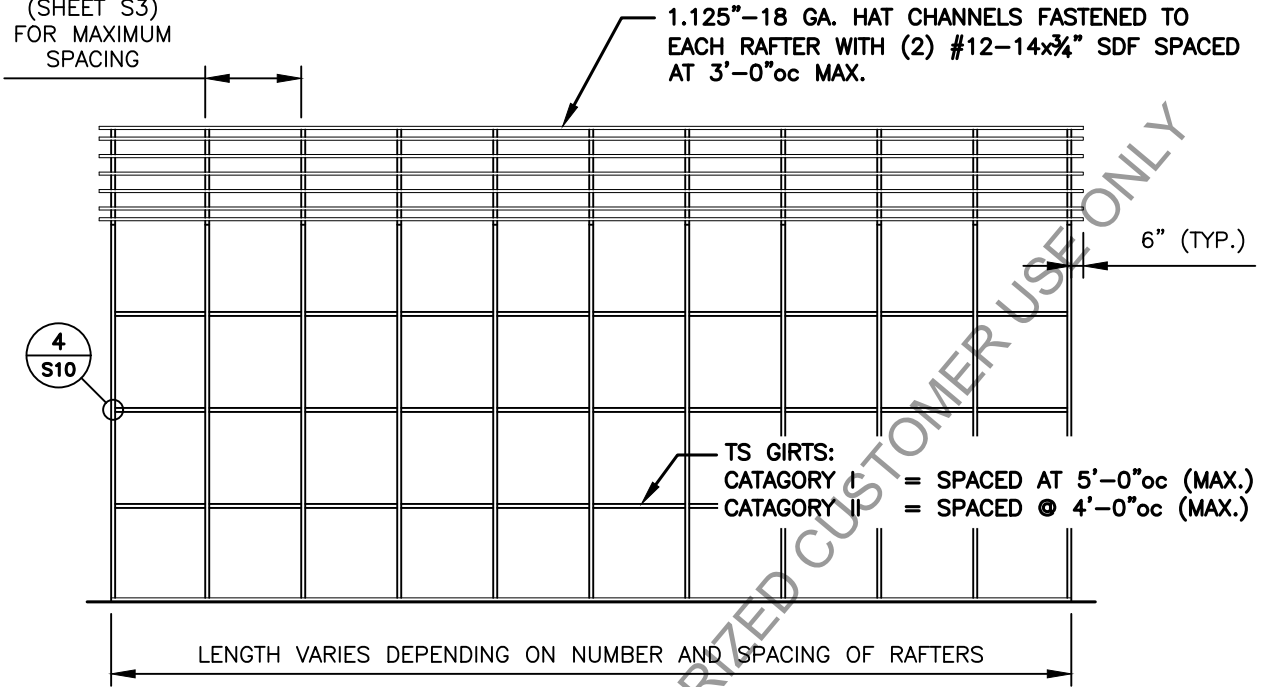
PROJECT NO:
MISC

DATE:
2022.08.01

SHEET NO:
S16

VERTICAL ROOF / SIDING OPTION

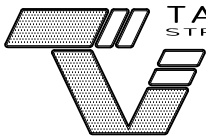
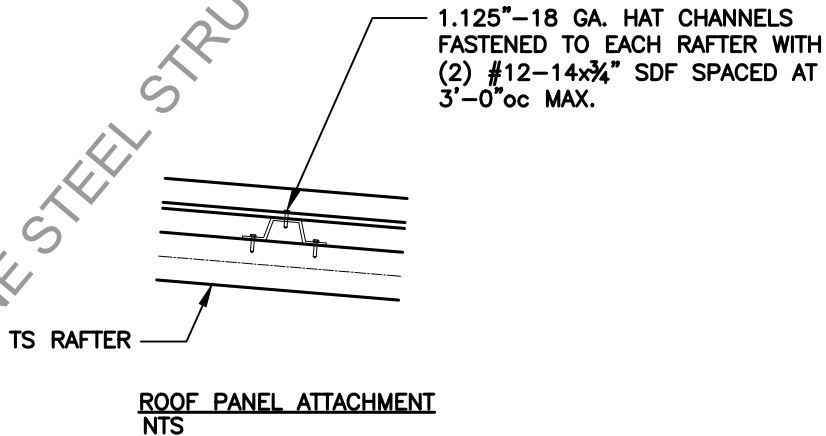
SEE NOTES
(SHEET S3)
FOR MAXIMUM
SPACING



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.



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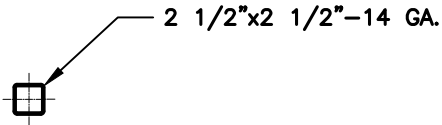
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PROJECT NO:
MISC

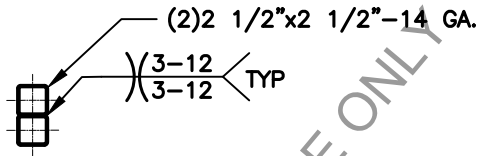
DATE:
2022.08.01

SHEET NO:
S16A

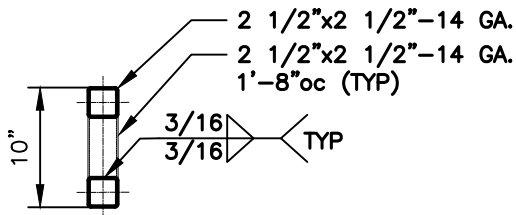
SIDE WALL HEADER OPTIONS



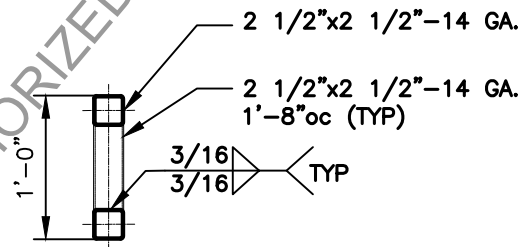
**HEADER DETAIL FOR DOOR
OPENINGS < 4'-0"**
NTS



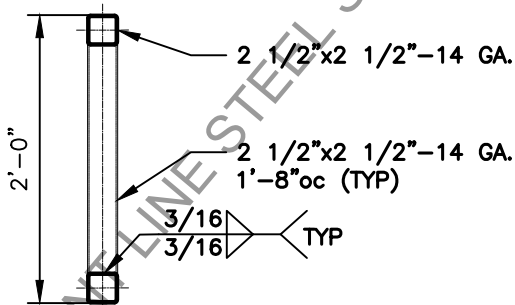
**DOUBLE HEADER DETAIL FOR DOOR
OPENINGS 4'-1" < TO < 9'-0"**
NTS



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



**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



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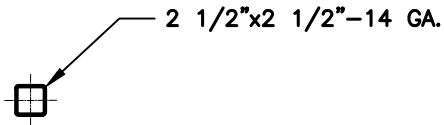
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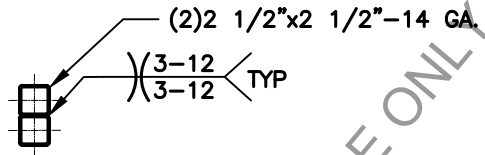
DATE:
2022.08.01

SHEET NO:
S17

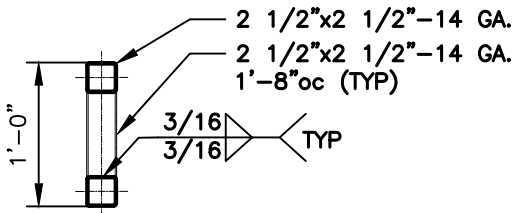
END WALL HEADER OPTIONS



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

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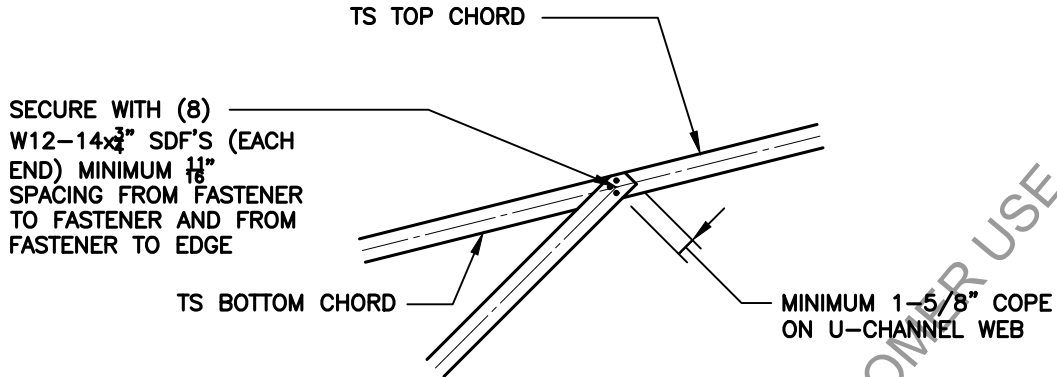
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PROJECT NO:
 MISC

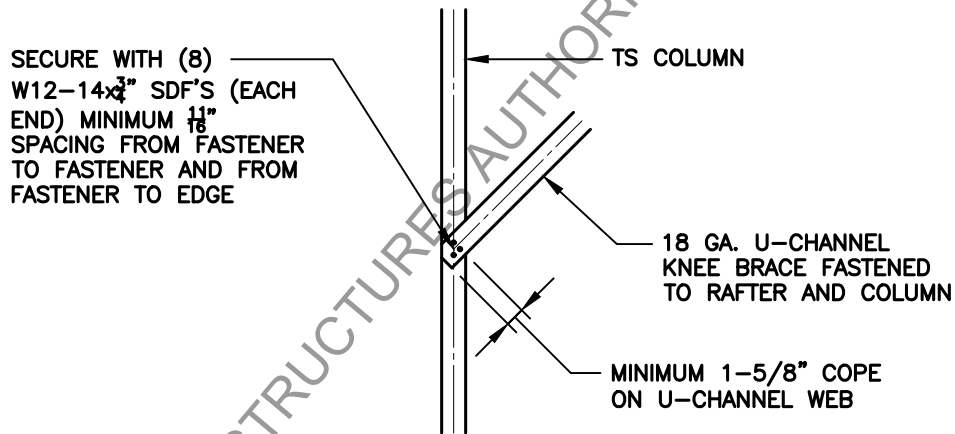
DATE:
 2022.08.01

SHEET NO:
S17A

U-CHANNEL CONNECTION DETAILS

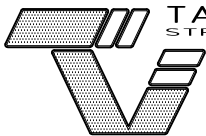


1 U-CHANNEL TO RAFTER CONNECTION DETAIL
S18 SCALE: 3/4" = 1'-0"



2 U-CHANNEL TO COLUMN CONNECTION DETAIL
S18 SCALE: 3/4" = 1'-0"

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S18