STRUCTURAL DESIGN
ENCLOSED BUILDING

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

17 June 2022
Revision 0
M&A Project No. 22057S

Prepared for:

USA Metal Structures, LLP
1495 East Pine St.
Mt. Airy, NC 27030

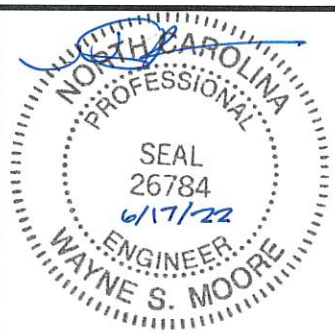
Prepared by:

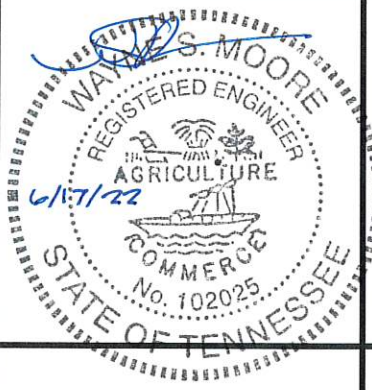
Moore and Associates Engineering and Consulting, Inc.

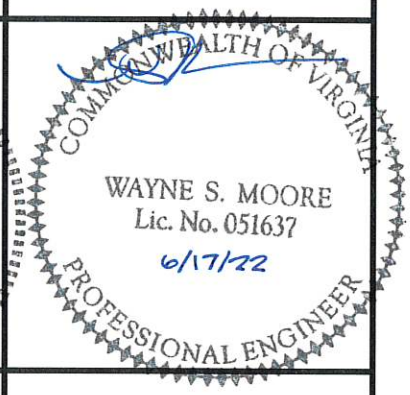
1009 East Avenue
North Augusta, SC 29841

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

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING







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ENGINEERING AND CONSULTING, INC.

DRAWN BY: LT	USA METAL STRUCTURES, LLP 1495 EAST PINE ST. MOUNT AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE		
CHECKED BY: PDH			
PROJECT MGR: WSM	DATE: 6-17-22	SCALE: NTS	JOB NO: 22057S
CLIENT: USA METAL STRUCTURES	SHT. 1	DWG. NO: SK-3	REV.: 0

DRAWING INDEX

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

DRAWN BY: LT
CHECKED BY: PDH

USA METAL STRUCTURES, LLP
1495 EAST PINE ST.
MOUNT AIRY, NC 27030
30'-0"x16'-0" ENCLOSED STRUCTURE

PROJECT MGR: WSM | DATE: 6-17-22 | SCALE: NTS | JOB NO: 220575

CLIENT: USA METAL STRUCTURES | SHT. 2 | DWG. NO: SK-3 | REV.: 0

INSTALLATION NOTES AND SPECIFICATIONS

1. DESIGN IS FOR MAXIMUM 30'-0" WIDE x 16'-0" EAVE HEIGHT ENCLOSED STRUCTURES.
2. DESIGN WAS DONE IN ACCORDANCE WITH ALL THE APPLICABLE BUILDING CODES LISTED ON SHEET 3A.
3. DESIGN LOADS ARE AS FOLLOWS:
   A) ROOF DEAD LOADS:
      SELF-WEIGHT = 1.5 PSF
      MEP = 0 PSF
      COLLATERAL = 0 PSF
   B) ROOF LIVE LOAD = 12 PSF
   C) FLOOR LIVE LOAD = 100 PSF (4" CONCRETE SLAB)
   D) GROUND SNOW LOAD = 35 PSF
   NOTE: UNBALANCED LOADING DUE TO SNOW DRIFTING FROM AN ADJACENT TALLER STRUCTURE HAS NOT BEEN EVALUATED.
4. 3-SECOND GUST ULTIMATE WIND SPEED (V_{ULT}) = 140 MPH (NOMINAL WIND SPEED = 108 MPH).
5. MAXIMUM RAFTER/POST SPACING = 5.0 FEET
6. END WALL COLUMNS (POSTS) ARE EQUIVALENT TO SIDE WALL POSTS IN SIZE AND SPACING (UNLESS NOTED OTHERWISE).
7. RISK CATEGORY I (NOT FOR HUMAN HABITATION).
8. WIND EXPOSURE CATEGORY B.
9. SPECIFICATIONS APPLICABLE TO 29 GAUGE METAL PANELS FASTENED DIRECTLY TO 2 1/2"x2 1/2"-14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS (UNLESS NOTED OTHERWISE), TS 2 1/4"x2 1/4"-12 GAUGE MAY BE USED AS AN OPTION.
10. CONNECTOR SLEEVES ARE MINIMUM 6" LONG, TS 2 1/4"x2 1/4"-14 GAUGE FOR 2 1/2"x2 1/2"-14 GAUGE AND TS 2"x2"-12 GAUGE FOR 2 1/4"x2 1/4"-12 GAUGE FRAMING MEMBERS (UNLESS NOTED OTHERWISE).
11. STRUCTURAL ANALYSIS/DESIGN IS BASED ON TS MEETING THE REQUIREMENTS OF ASTM A653 GRADE 50 WITH MINIMUM YIELD STRENGTH (Fy) OF 54 KSI AND GALVANIZING MEETING THE MINIMUM REQUIREMENTS OF G60.
12. AVERAGE PANEL FASTENER SPACING ON-CENTERS = 10" O.C. (MAX.)
13. FASTENERS CONSIST OF #12-14x3/4" 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. ROOF SLOPES LESS THAN 3:12 REQUIRE USE OF LAP JOINT SEALANT.
14. ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL AT OR WITHIN 6" OF EACH COLUMN.
15. STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBAR W/ WELDED NUT x 36" LONG AND MAY BE USED IN SUITABLE SOILS. OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED.
16. CONTRACTOR TO PROVIDE ADEQUATE BRACING FOR STRUCTURE SO THAT IT WILL BE STABLE DURING ALL STAGES OF CONSTRUCTION. THE STRUCTURE AND FOUNDATIONS ARE DESIGNED FOR A COMPLETED CONDITION ONLY AND, THEREFORE, REQUIRE ADDITIONAL SUPPORT TO MAINTAIN STABILITY BEFORE COMPLETION.
17. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:
    SOIL SITE CLASS = D
    RISK CATEGORY I
    R = 3.25 I_E = 1.0
    S_{DS} = 2.625 g $V = C_S W$
    S_{D1} = 2.13 g
18. IF MORE THAN 50% OF COLUMNS (LEGS) ARE REMOVED IN ANY LONGITUDINAL (SIDE) WALLS OF A BUILDING, THE ENGINEER IS TO BE NOTIFIED TO DETERMINE WHETHER PORTAL FRAMES OR OTHER LONGITUDINAL STABILITY ELEMENTS WILL BE REQUIRED.
19. **THIS MASTER DESIGN IS A GENERIC MASTER DESIGN PRIMARILY INTENDED FOR PLANT FABRICATION AND ERECTION AKIN TO SHOP DRAWINGS. THE MASTER DESIGN IS NOT PRIMARILY INTENDED FOR CONSTRUCTION PERMIT. WHEN APPLYING FOR BUILDING PERMIT, THE CERTIFIED BUILDING OFFICIAL MUST BE CONSULTED TO VERIFY WHETHER THE USE OF THE MASTER DESIGN IS ADEQUATE OR IF A SITE-SPECIFIC DESIGN IS REQUIRED FOR BUILDING PERMIT. ANY VARIATION FROM THE ANALYSIS/DESIGN PARAMETERS OF THE MASTER DESIGN REQUIRES THE DEVELOPMENT OF A SITE-SPECIFIC DESIGN.**

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CLIENT: USA METAL STRUCTURES	SHT. 3	DWG. NO: SK-3	REV.: 0

LIST OF APPLICABLE BUILDING CODES

2021 INTERNATIONAL BUILDING CODE (IBC 2021)

2018 INTERNATIONAL BUILDING CODE (IBC 2018)

2015 INTERNATIONAL BUILDING CODE (IBC 2015)

2012 INTERNATIONAL BUILDING CODE (IBC 2012)

BUILDING CODE 2021 OF ALABAMA
(ADOPTS THE IBC 2021 WITHOUT AMENDMENTS)
(IBC 2015, IBC 2018, IBC 2021 (DEPENDENT UPON LOCAL JURISDICTION))

GEORGIA STATE MINIMUM STANDARD BUILDING CODE
(ADOPTS THE IBC 2018 WITH AMENDMENTS)

2018 NORTH CAROLINA BUILDING CODE
(ADOPTS THE IBC 2015 WITH AMENDMENTS)

2018 SOUTH CAROLINA BUILDING CODE
(ADOPTS THE IBC 2018 WITH AMENDMENTS)

BUILDING CODE 2012 OF TENNESSEE
(ADOPTS THE IBC 2012 WITH AMENDMENTS)
BUILDING CODE 2018 OF NASHVILLE AND DAVIDSON
COUNTY (ADOPTS THE IBC 2018 WITH AMENDMENTS)

2018 VIRGINIA CONSTRUCTION CODE
(ADOPTS THE IBC 2018 WITH AMENDMENTS)

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MOUNT AIRY, NC 27030
30'-0"x16'-0" ENCLOSED STRUCTURE

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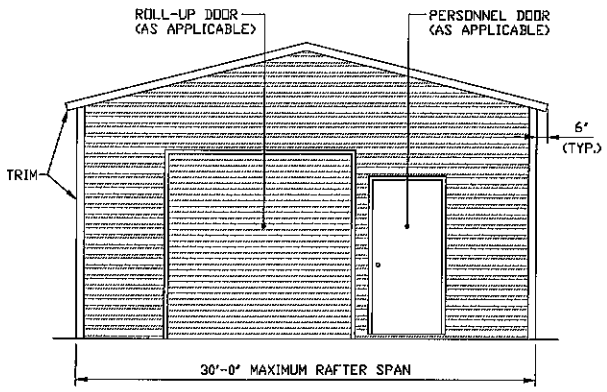
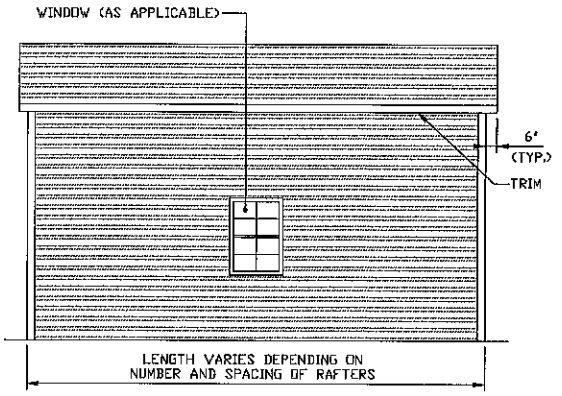
SHT. 3A | DWG. NO: SK-3 | REV.: 0

BOX EAVE FRAME RAFTER STRUCTURE

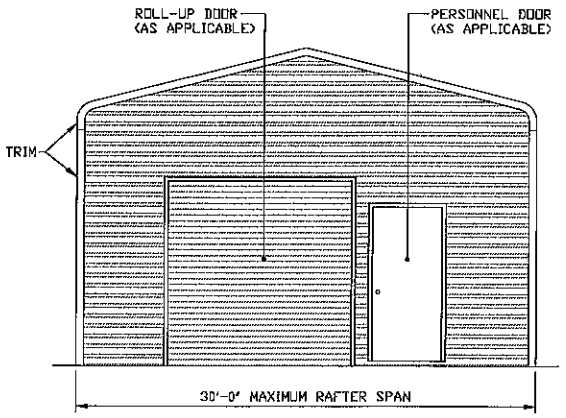


TYPICAL END ELEVATION
SCALE: NTS



TYPICAL SIDE ELEVATION
SCALE: NTS

BOW EAVE FRAME RAFTER STRUCTURE



TYPICAL END ELEVATION
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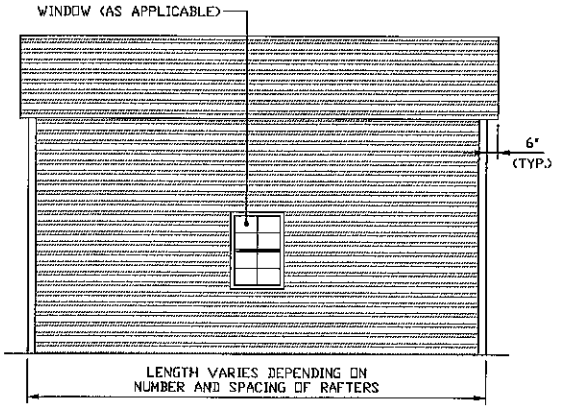

TYPICAL SIDE ELEVATION
SCALE: NTS

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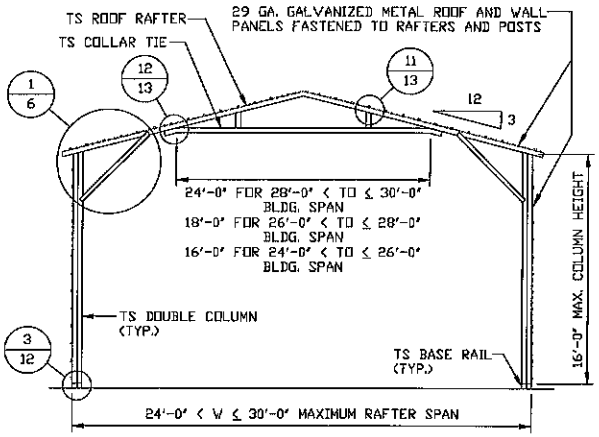

TYPICAL RAFTER/COLUMN FRAME SECTION

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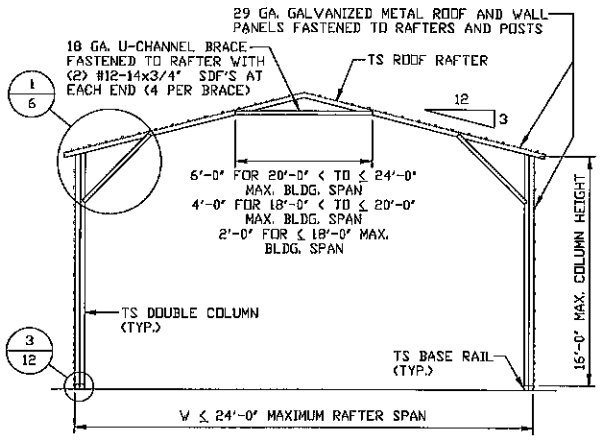

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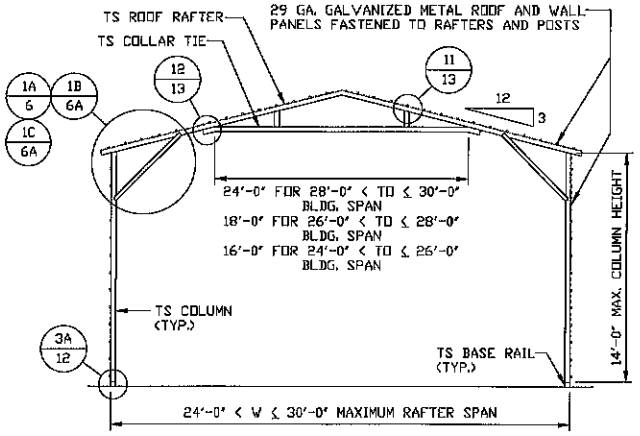

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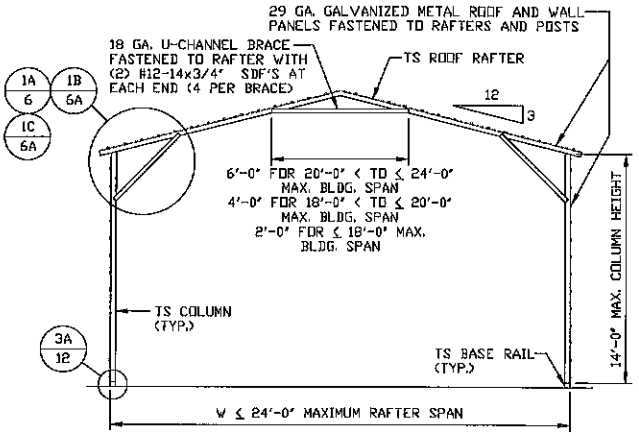

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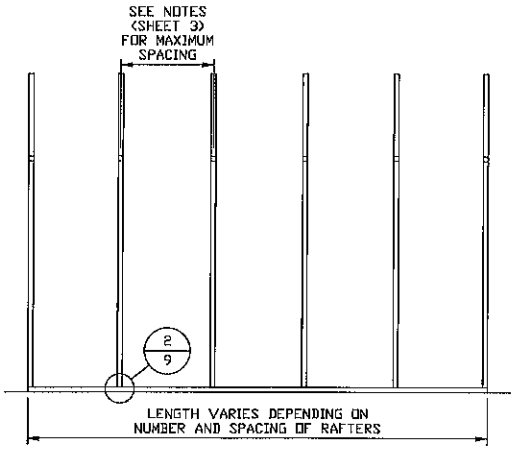

TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

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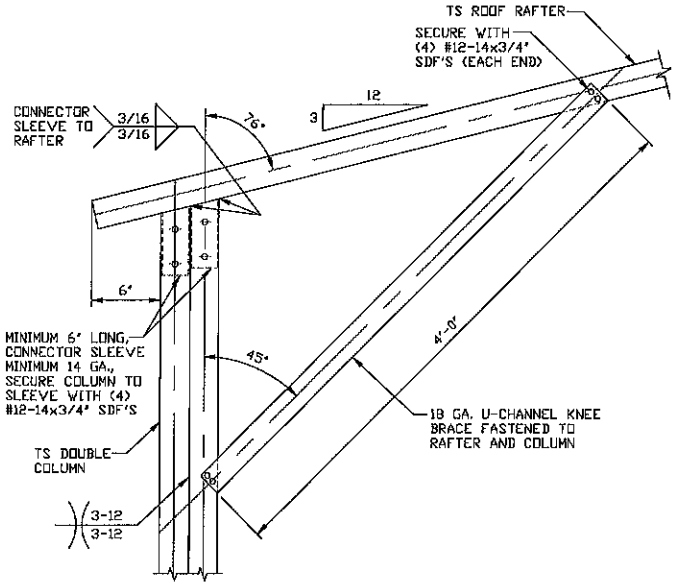
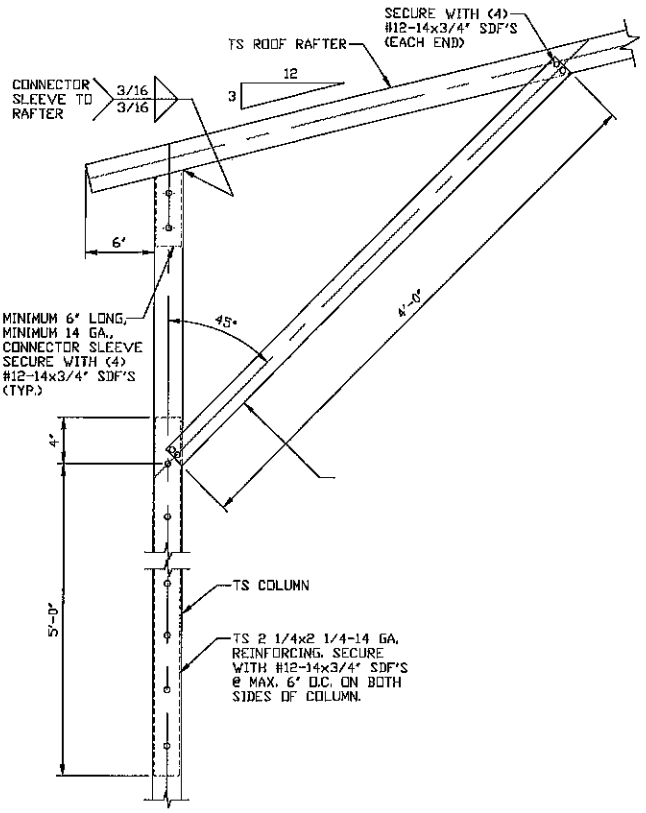


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 14'-0" < TO ≤ 16'-0"

1

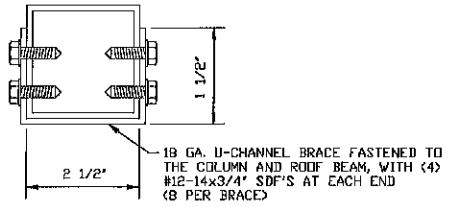
SCALE: NTS



BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 11'-0" < TO ≤ 14'-0"

1A

SCALE: NTS



BRACE SECTION

SCALE: NTS

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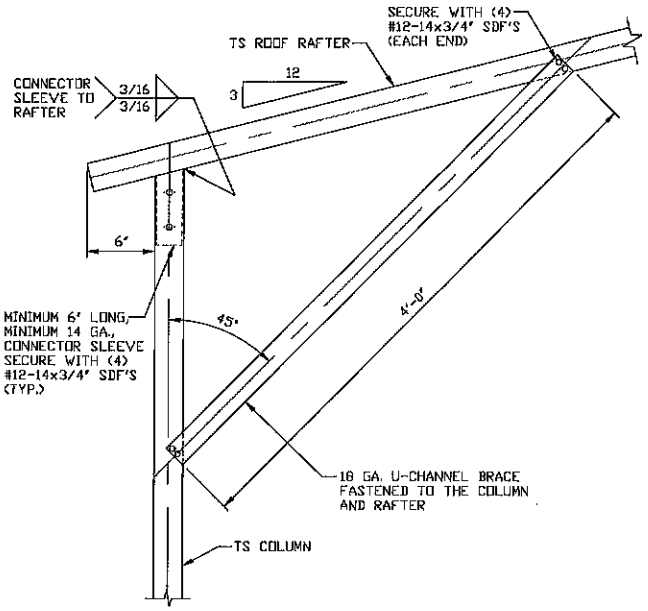
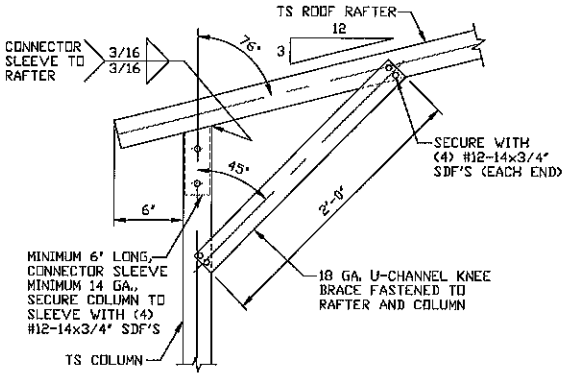


1B BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 8'-0" < TO ≤ 11'-0"

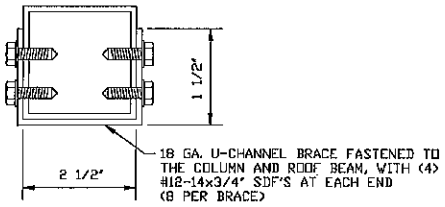
SCALE: NTS



1C BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 8'-0"

SCALE: NTS

NOTE: FOR 3'-0" KNEE BRACE FOR 28'-0" < TO ≤ 30'-0" BLDG. SPAN.



BRACE SECTION

SCALE: NTS

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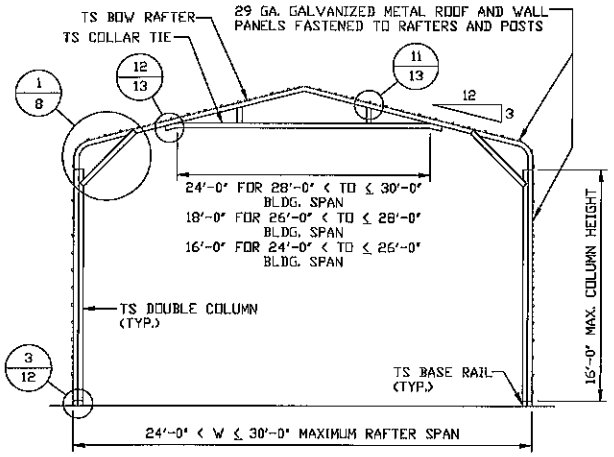

TYPICAL RAFTER/COLUMN FRAME SECTION

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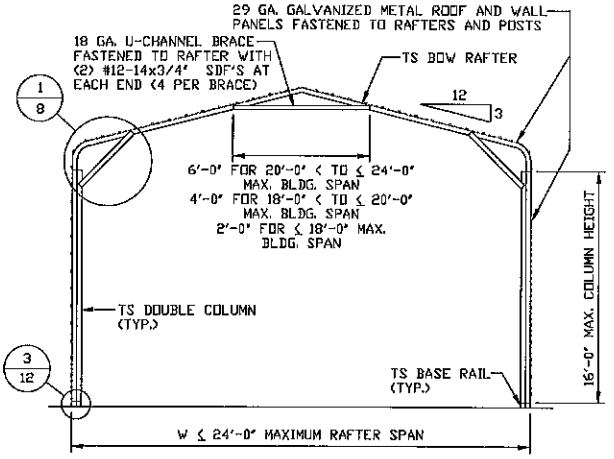

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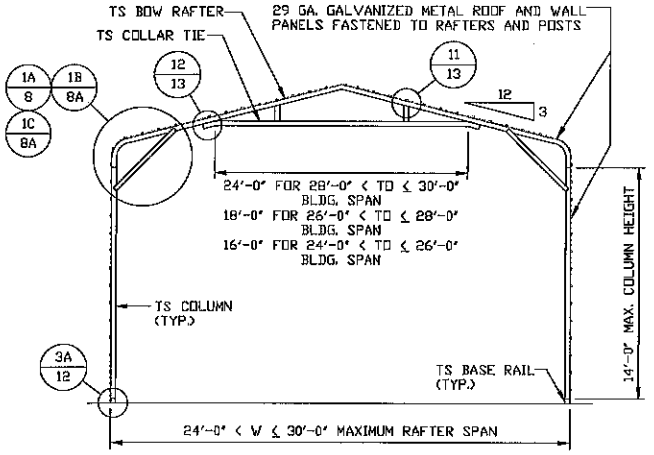

TYPICAL RAFTER/COLUMN FRAME SECTION

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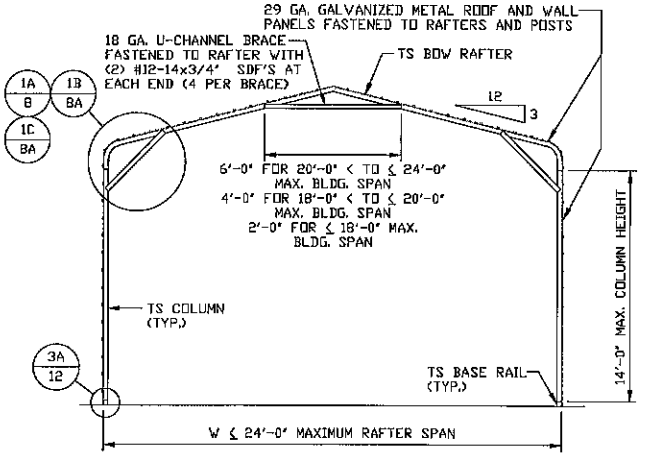

TYPICAL RAFTER/COLUMN FRAME SECTION

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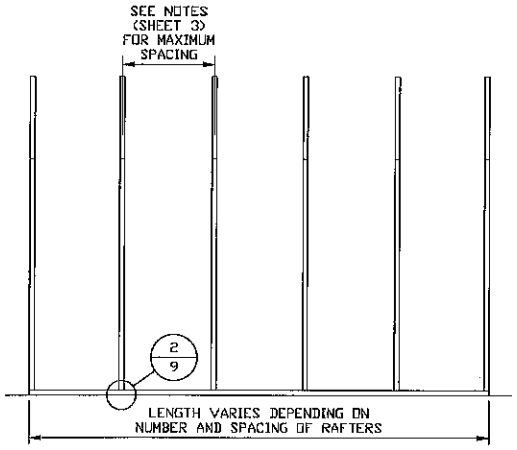

TYPICAL RAFTER/COLUMN FRAMING SIDE SECTION

SCALE: NTS

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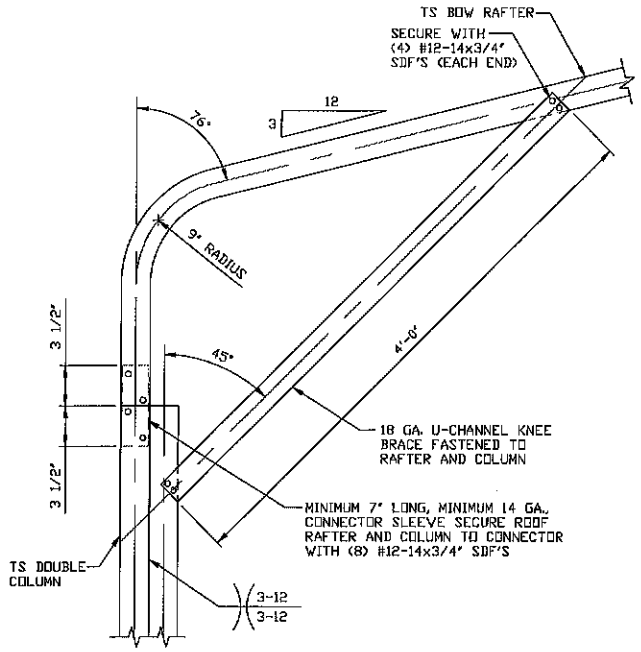
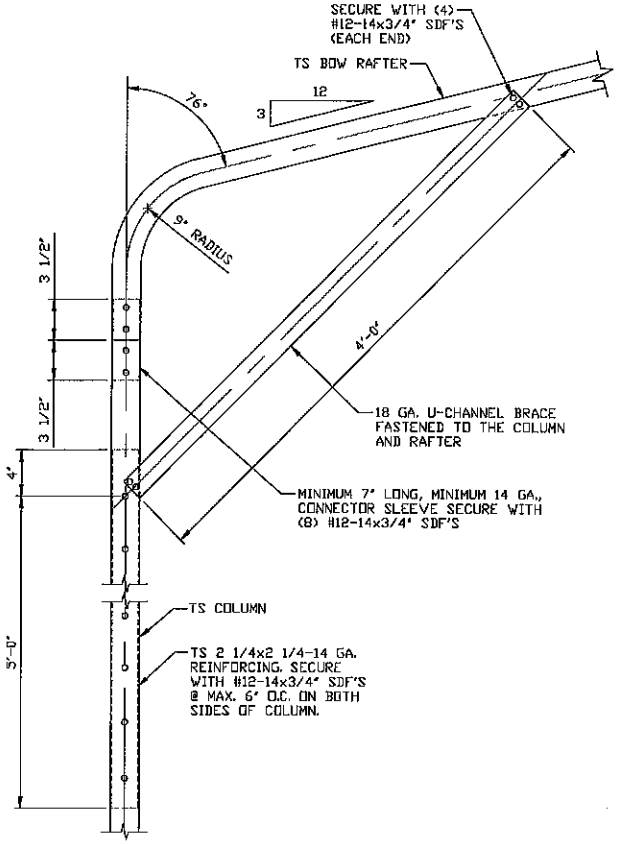


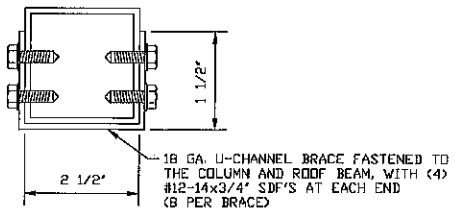
1 BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 14'-0" < TO ≤ 16'-0"

SCALE: NTS



1A BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 11'-0" < TO ≤ 14'-0"

SCALE: NTS



BRACE SECTION

SCALE: NTS

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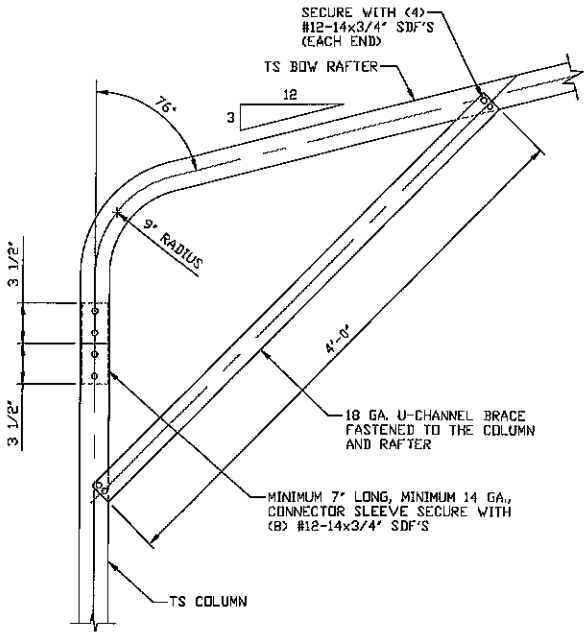
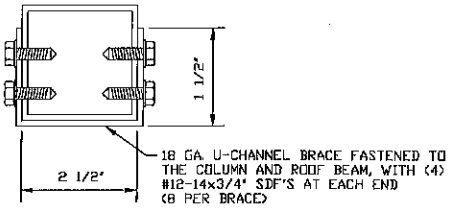


1B BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 8'-0" < TO ≤ 11'-0"

SCALE: NTS



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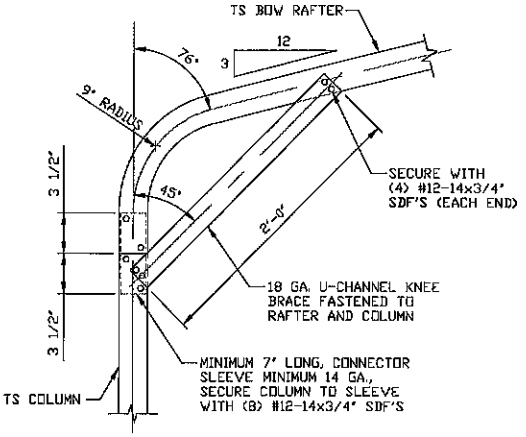

1C BOW EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 8'-0"

SCALE: NTS

NOTE: FOR 3'-0" KNEE BRACE FOR 28'-0" < TO ≤ 30'-0" BLDG. SPAN.

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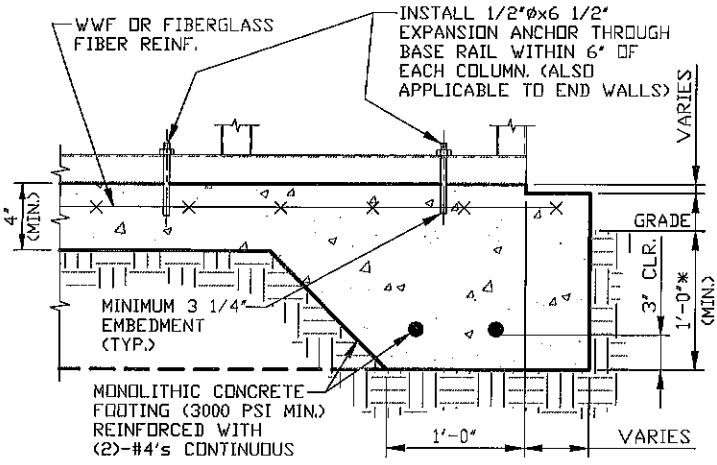
BASE RAIL ANCHORAGE OPTIONS

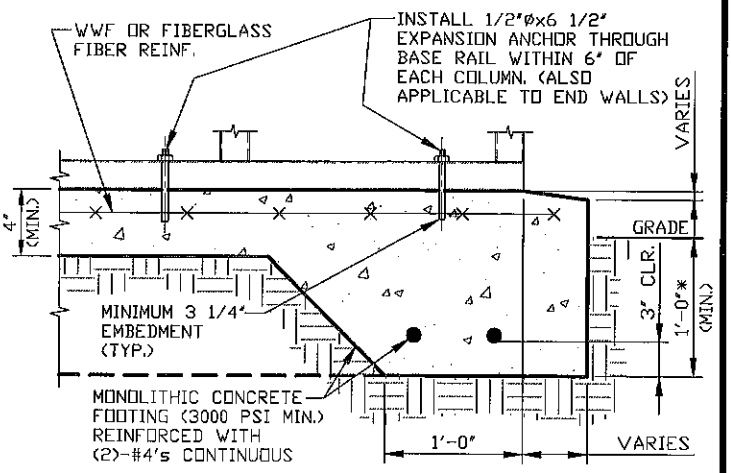


2 CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS

MINIMUM ANCHOR EDGE DISTANCE IS 4".

* COORDINATE WITH LOCAL BUILDING CODE AND/OR BUILDING OFFICIAL REGARDING REQUIRED FOOTING DEPTH.



2A CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS

MINIMUM ANCHOR EDGE DISTANCE IS 4".

* COORDINATE WITH LOCAL BUILDING CODE AND/OR BUILDING OFFICIAL REGARDING REQUIRED FOOTING DEPTH.

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:

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:

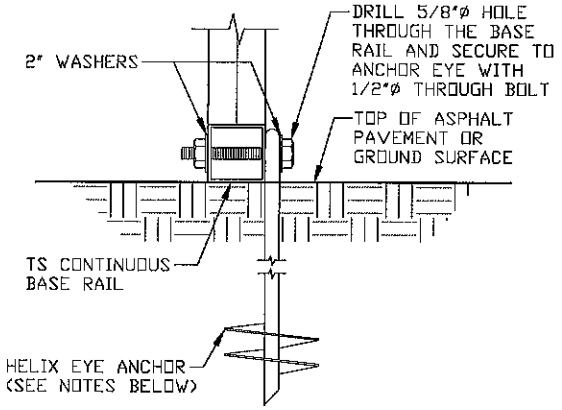
THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT.

REINFORCEMENT MAY BE BENT IN THE SHOP OR THE FIELD PROVIDED:

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:

1. FOR VERY DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS, USE MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT OR SINGLE 6" HELIX WITH MINIMUM 50" EMBEDMENT
2. FOR CORAL USE MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT OR SINGLE 6" HELIX WITH MINIMUM 50" EMBEDMENT.
3. FOR MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS, AND CLAYS USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT OR SINGLE 6" HELIX WITH MINIMUM 50" EMBEDMENT.
4. FOR LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS ALLUVIAL FILL, USE MINIMUM (2) 6" HELICES WITH MINIMUM 50" EMBEDMENT.
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.



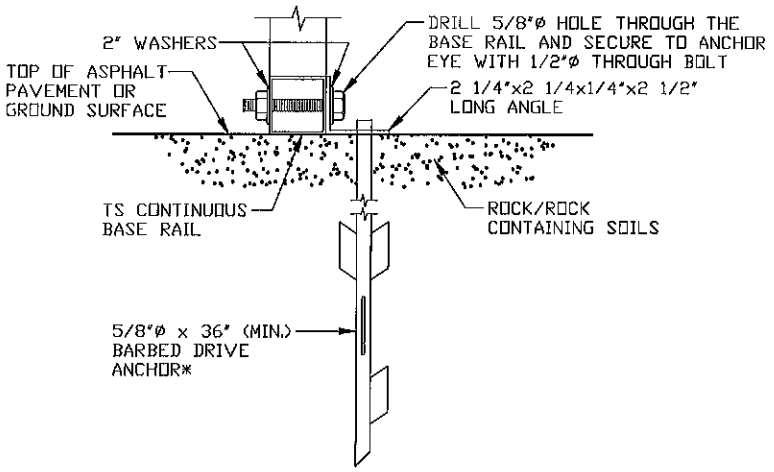
2B GROUND BASE HELIX ANCHORAGE

SCALE: NTS (CAN BE USED FOR ASPHALT)

* COORDINATE WITH LOCAL CODES/ORD. REGARDING MIN. FROST DEPTH (LENGTH).

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	USA METAL STRUCTURES, LLP 1495 EAST PINE ST. MOUNT AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE	
	CHECKED BY: PDH		
	PROJECT MGR: WSM	DATE: 6-17-22	SCALE: NTS	JOB NO: 220575
	CLIENT: USA METAL STRUCTURES	SHT. 9	DWG. NO: SK-3	REV: 0

BASE RAIL ANCHORAGE OPTIONS



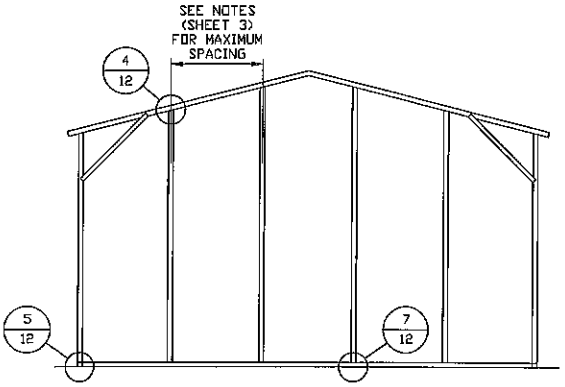
2C **BARBED DRIVE ANCHORAGE**

SCALE: NTS

* COORDINATE WITH LOCAL CODES/ORD. REGARDING MINIMUM FROST DEPTH REQ.

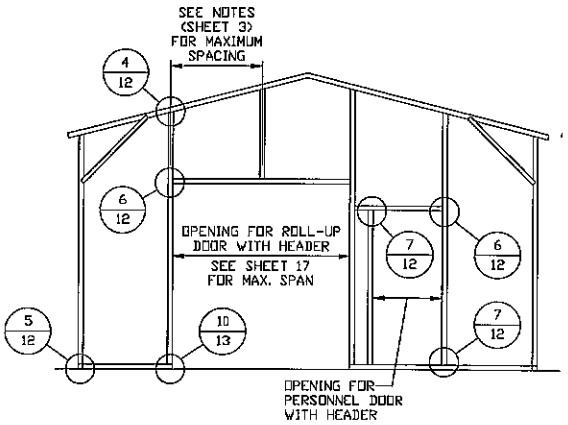
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	USA METAL STRUCTURES, LLP 1495 EAST PINE ST. MOUNT AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE		
	CHECKED BY: PDH			
	PROJECT MGR: WSH	DATE: 6-17-22	SCALE: NTS	JOB NO: 22057S
	CLIENT: USA METAL STRUCTURES	SHT. 9A	DWG. NO: SK-3	REV.: 0

BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



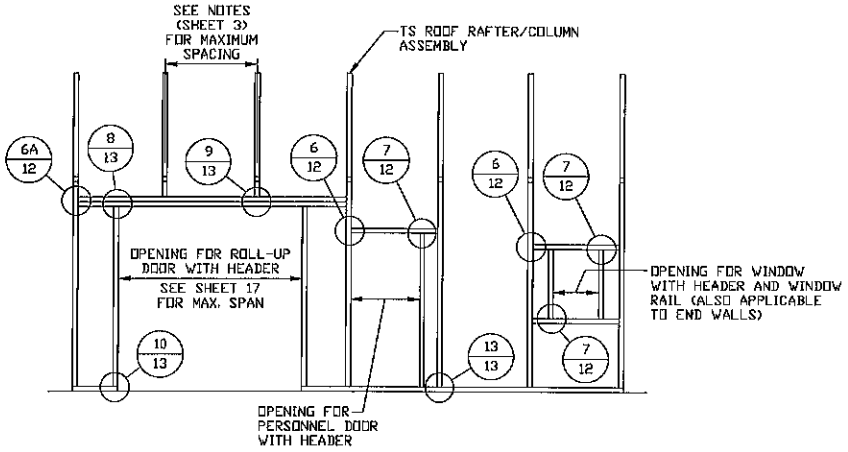
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS

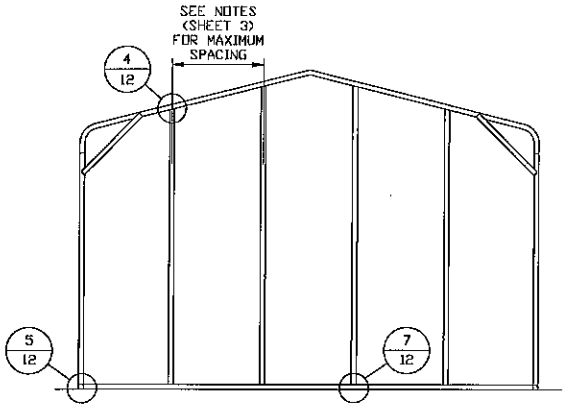


TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS

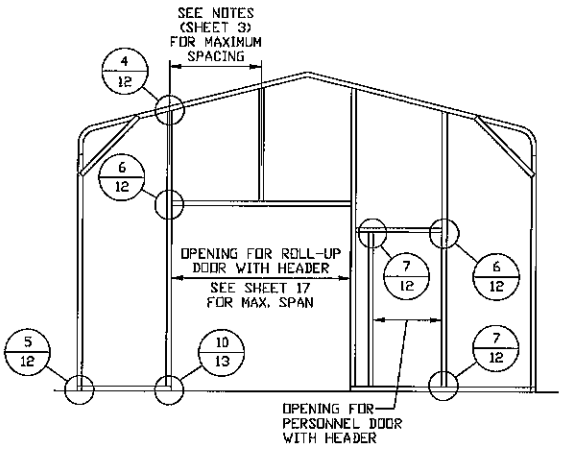
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT CHECKED BY: PDH	USA METAL STRUCTURES, LLP 1495 EAST PINE ST. MOUNT AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE	
	PROJECT MGR: WSH CLIENT: USA METAL STRUCTURES	DATE: 6-17-22 SHT. 10	SCALE: NTS DWG. NO: SK-3	JOB NO: 220575 REV.: 0

BOW EAVE RAFTER END WALL AND SIDE WALL OPENINGS



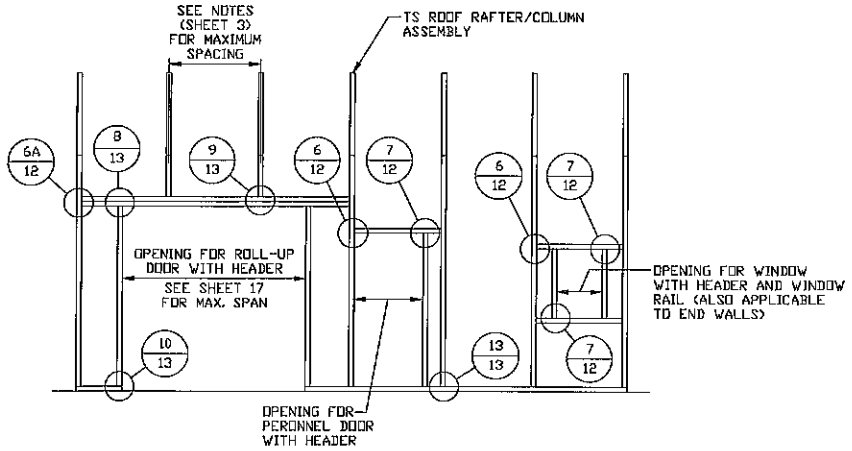
TYPICAL BOW EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOW EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS

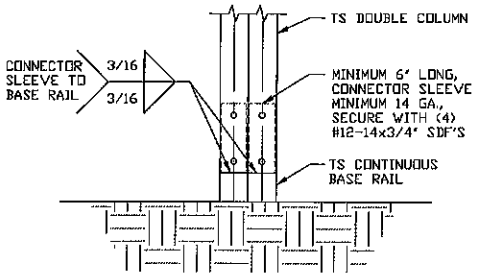


TYPICAL BOW EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS

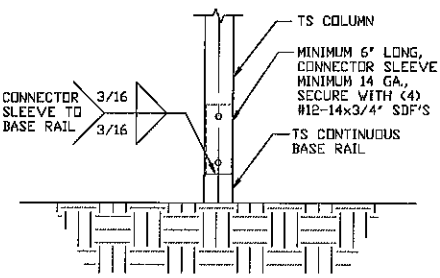
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	USA METAL STRUCTURES, LLP 1495 EAST PINE ST. MOUNT AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE	
	CHECKED BY: PDH		
	PROJECT MGR: WSM	DATE: 6-17-22	SCALE: NTS / JOB NO: 22057S
	CLIENT: USA METAL STRUCTURES	SHT. 11	DWG. NO: SK-3 / REV: 0

CONNECTION DETAILS



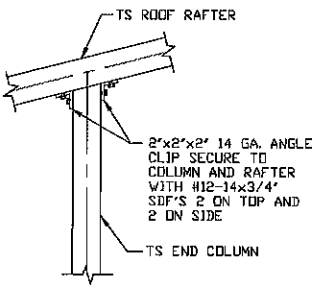
3 RAFTER COLUMN/ BASE RAIL CONNECTION DETAIL

SCALE: NTS



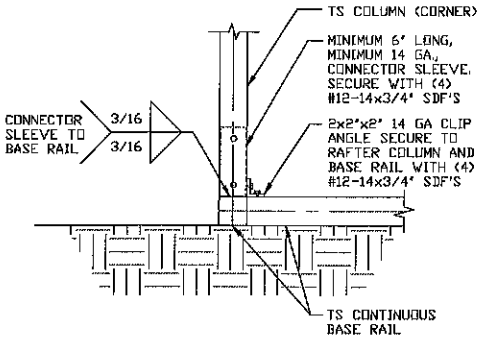
3A RAFTER COLUMN/ BASE RAIL CONNECTION DETAIL

SCALE: NTS



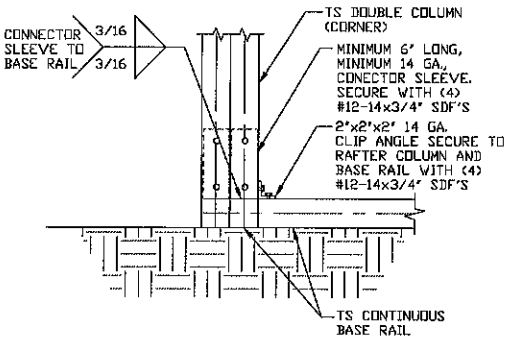
4 END COLUMN/RAFTER CONNECTION DETAIL

SCALE: NTS



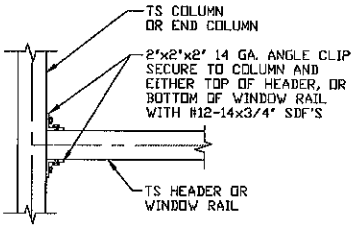
5 END COLUMN/BASE RAIL CONNECTION DETAIL

SCALE: NTS



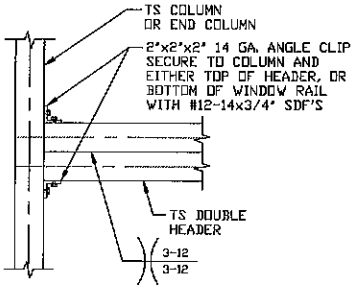
5A END COLUMN/BASE RAIL CONNECTION DETAIL

SCALE: NTS



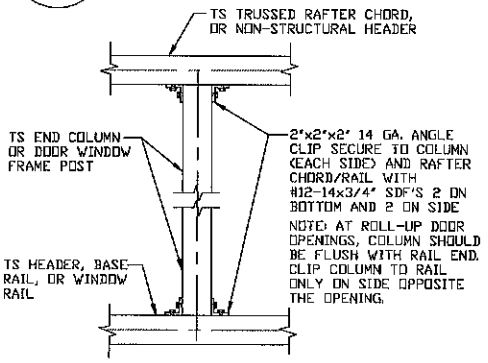
6 COLUMN OR WINDOW RAIL/WALL GIRT TO POST CONNECTION DETAIL

SCALE: NTS



6A COLUMN OR WINDOW RAIL TO POST CONNECTION DETAIL

SCALE: NTS

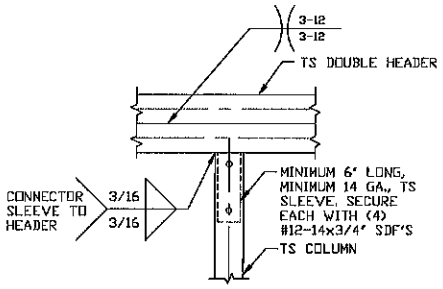


7 COLUMN TO WINDOW RAIL CONNECTION DETAIL

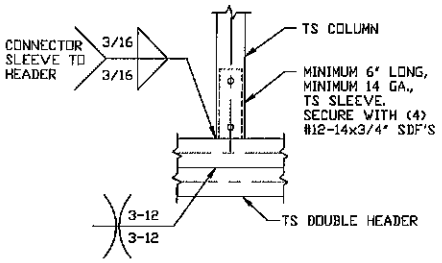
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	USA METAL STRUCTURES, LLP 1495 EAST PINE ST. MOUNT AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE	
	CHECKED BY: PDH		
	PROJECT MGR: WSM	DATE: 6-17-22	SCALE: NTS / JOB NO: 22057S
	CLIENT: USA METAL STRUCTURES	SHT. 12	DWG. NO: SK-3 / REV.: 0

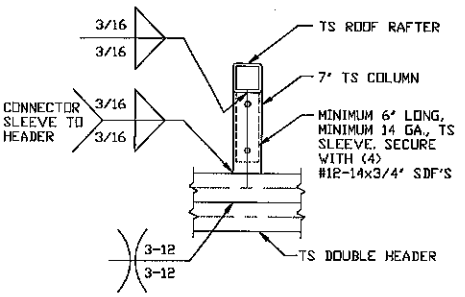
CONNECTION DETAILS



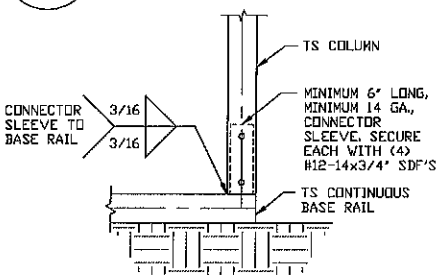
8 **DOUBLE HEADER/COLUMN CONNECTION DETAIL**
SCALE: NTS



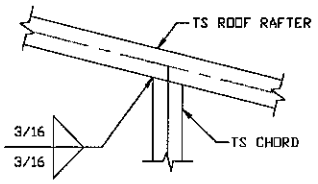
9A **COLUMN/DOUBLE HEADER CONNECTION DETAIL**
SCALE: NTS



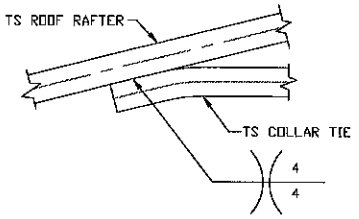
9B **COLUMN/DOUBLE HEADER CONNECTION DETAIL**
SCALE: NTS



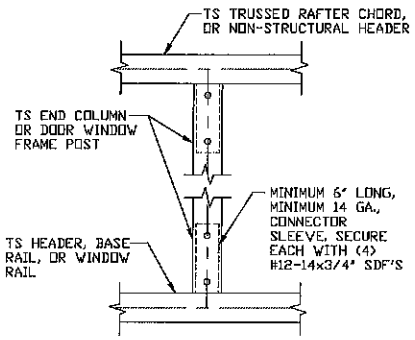
10 **COLUMN/BASE RAIL CONNECTION DETAIL**
SCALE: NTS



11 **RAFTER TO CHORD CONNECTION DETAIL**
SCALE: NTS



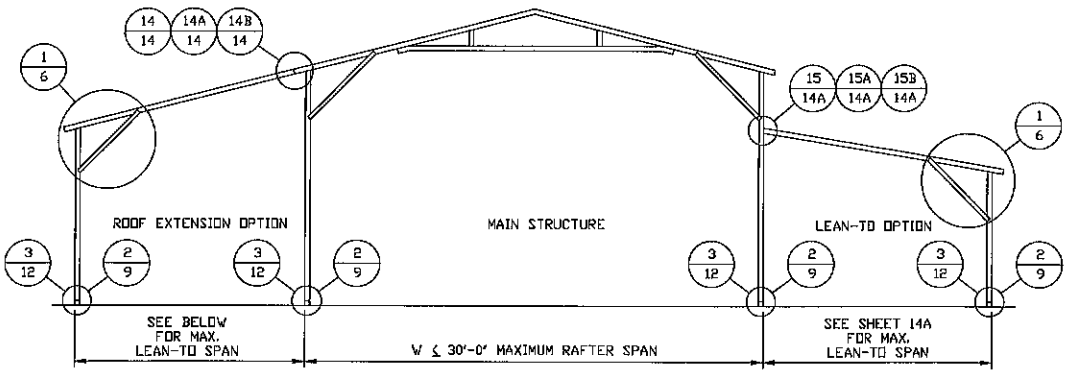
12 **COLLAR TIE CONNECTION DETAIL**
SCALE: NTS



13 **COLUMN TO HEADER OR BASE RAIL CONNECTION DETAIL**
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	USA METAL STRUCTURES, LLP 1495 EAST PINE ST. MOUNT AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE	
	CHECKED BY: PDH		
	PROJECT MGR: WSM	DATE: 6-17-22	SCALE: NTS / JOB NO: 22057S
	CLIENT: USA METAL STRUCTURES	SHT. 13	DWG. NO: SK-3 / REV: 0

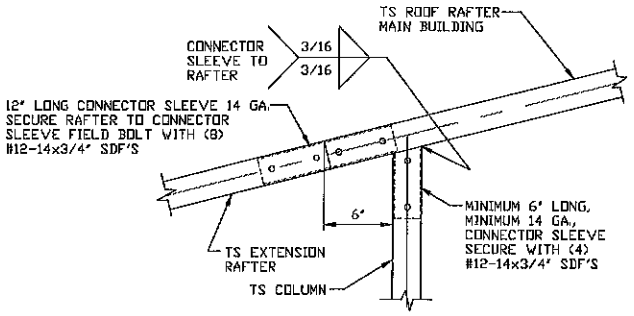
BOX EAVE RAFTER LEAN-TO OPTIONS



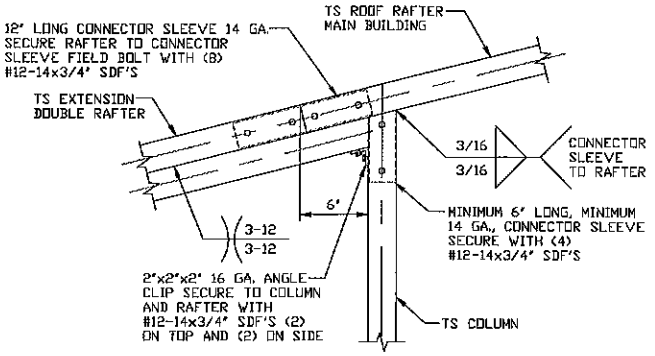
TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

SCALE: NTS

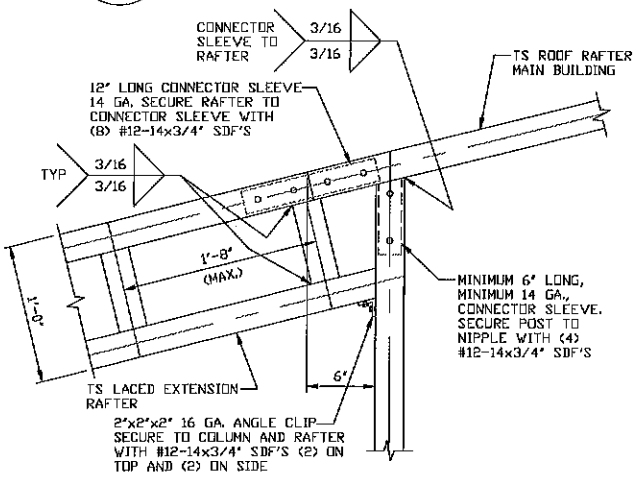
MAXIMUM WIDTH OF SINGLE MEMBER ROOF EXTENSION AND LEAN-TO IS 12'-0".
MAXIMUM WIDTH OF DOUBLE MEMBER ROOF EXTENSION AND LEAN-TO IS 16'-0".
MAXIMUM WIDTH OF LACED MEMBER ROOF EXTENSION AND LEAN-TO IS 20'-0".
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS 11'-0" < TO ≤ 16'-0".
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS ≤ 11'-0".



14 SIDE EXTENSION RAFTER/ COLUMN DETAIL FOR RAFTER SPANS ≤ 12'-0"
SCALE: NTS



14A SIDE EXTENSION RAFTER/COLUMN DETAIL FOR RAFTER SPANS 12'-0" < TO ≤ 16'-0"
SCALE: NTS



14B SIDE EXTENSION RAFTER/COLUMN DETAIL FOR RAFTER SPANS 16'-0" < TO ≤ 20'-0"
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	USA METAL STRUCTURES, LLP 1495 EAST PINE ST. MOUNT AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE	
	CHECKED BY: PDH		
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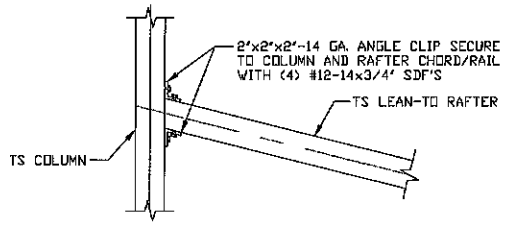
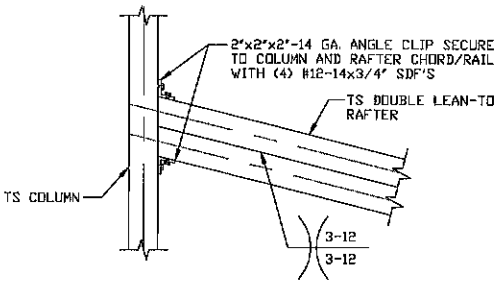
	CLIENT: USA METAL STRUCTURES	SHT. 14	DWG. NO: SK-3 / REV.: 0

BOX EAVE RAFTER LEAN-TO OPTIONS



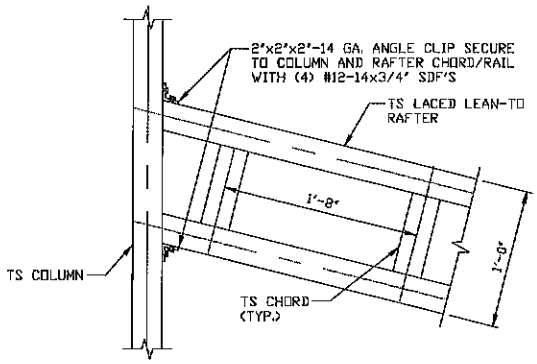
15 LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS ≤ 12'-0"

SCALE: NTS



15A LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 12'-0" < TO ≤ 16'-0"

SCALE: NTS



15B LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 16'-0" < TO ≤ 20'-0"

SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	USA METAL STRUCTURES, LLP 1495 EAST PINE ST. MOUNT AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE		
	CHECKED BY: PDH			
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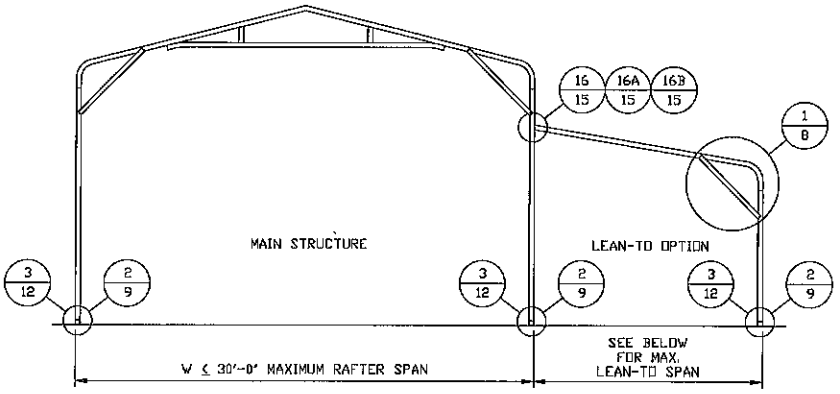
	CLIENT: USA METAL STRUCTURES	SHT. 14A	DWG. NO: SK-3	REV.: 0

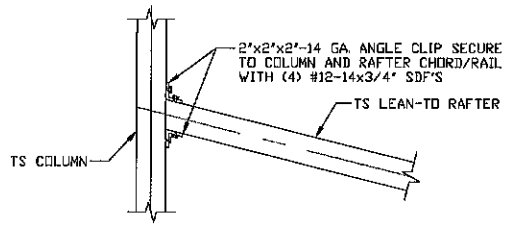
BOW EAVE RAFTER LEAN-TO OPTION



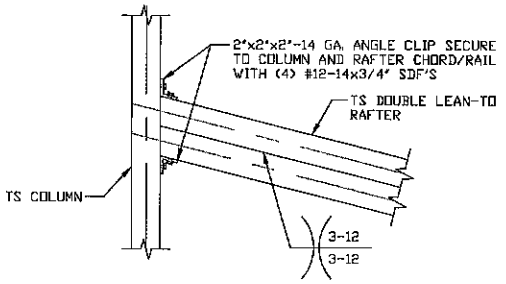
TYPICAL BOW EAVE RAFTER LEAN-TO OPTION FRAMING SECTION

SCALE: NTS

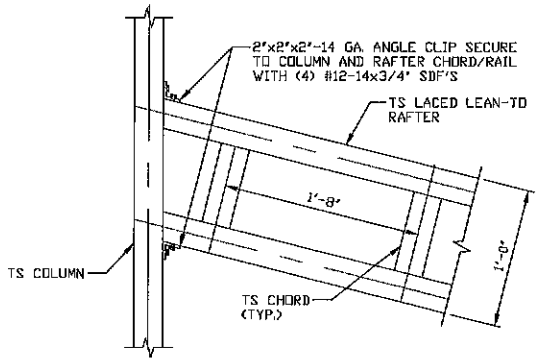
MAXIMUM WIDTH OF SINGLE MEMBER ROOF EXTENSION AND LEAN-TO IS 12'-0".
MAXIMUM WIDTH OF DOUBLE MEMBER ROOF EXTENSION AND LEAN-TO IS 16'-0".
MAXIMUM WIDTH OF LACED MEMBER ROOF EXTENSION AND LEAN-TO IS 20'-0".
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS 11'-0" < TO ≤ 16'-0".
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS ≤ 11'-0".



16 LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS ≤ 12'-0"
SCALE: NTS



16A LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 12'-0" < TO ≤ 16'-0"
SCALE: NTS



16B LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 16'-0" < TO ≤ 20'-0"
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	USA METAL STRUCTURES, LLP 1495 EAST PINE ST. MOUNT AIRY, NC 27030 30'-0"x16'-0" ENCLOSED STRUCTURE		
	CHECKED BY: PDH			
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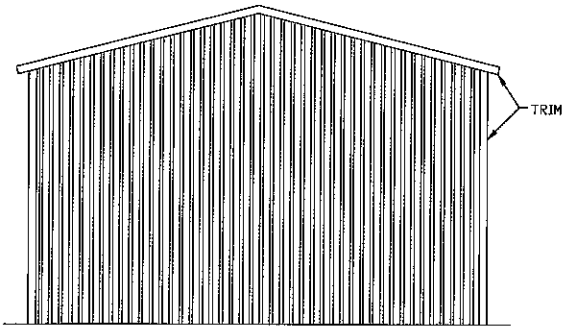
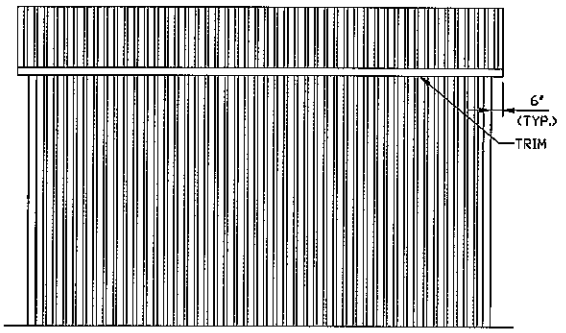
	CLIENT: USA METAL STRUCTURES	SHT. 15	DWG. NO: SK-3	REV.: 0

BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



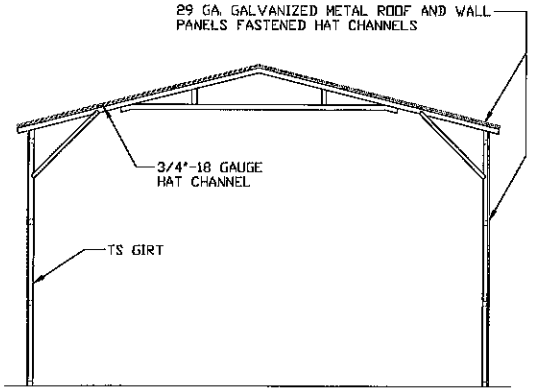
TYPICAL END ELEVATION VERTICAL ROOF/SIDING

SCALE: NTS



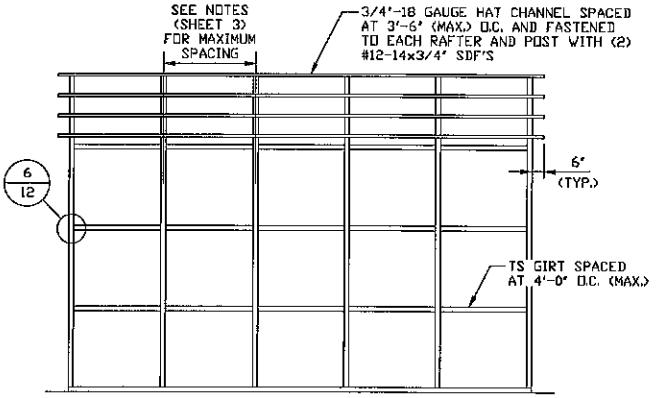
TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING

SCALE: NTS



TYPICAL SECTION VERTICAL ROOF/SIDING OPTION

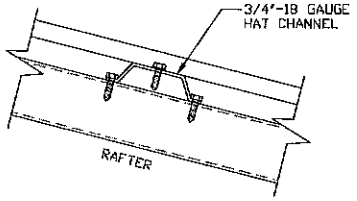
SCALE: NTS



TYPICAL FRAMING SECTION VERTICAL ROOF/SIDING OPTION

SCALE: NTS

NOTE: HAT CHANNELS CAN BE USED AS AN OPTION IN PLACE OF TS GIRTS. HAT CHANNELS MUST BE SPACED AT 4'-0" O.C. MAX.



ROOF PANEL ATTACHMENT

(ALTERNATE FOR VERTICAL ROOF PANELS)

SCALE: NTS

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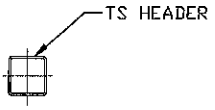
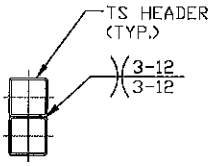
	CHECKED BY: PDH		
	PROJECT MGR: WSM	DATE: 6-17-22	SCALE: NTS / JOB NO: 22057S
	CLIENT: USA METAL STRUCTURES	SHT. 16	DWG. NO: SK-3 / REV: 0

SIDE WALL HEADER OPTIONS

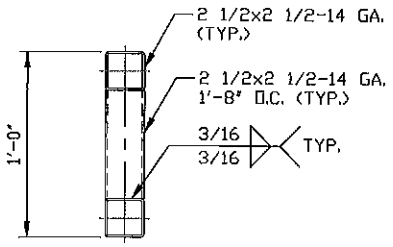
NOTE: HEADER DESIGN DOES NOT TAKE IN TO ACCOUNT ADDITIONAL ROOF LOADING FROM ATTACHED LEAN-TO STRUCTURES.



HEADER DETAIL FOR SPANS ≤ 7'-0"
SCALE: NTS

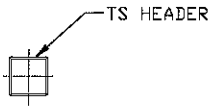


HEADER DETAIL FOR SPANS 7'-0" < TO ≤ 12'-0"
SCALE: NTS

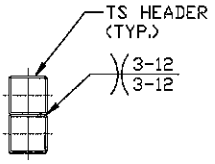


HEADER DETAIL FOR SPANS 12'-0" < TO ≤ 16'-0"
SCALE: NTS

END WALL HEADER OPTIONS



HEADER DETAIL FOR SPANS ≤ 12'-0"
SCALE: NTS



HEADER DETAIL FOR SPANS 12'-0" < TO ≤ 20'-0"
SCALE: NTS

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

DRAWN BY: LT
CHECKED BY: PDH
PROJECT MGR: WSM
CLIENT: USA METAL STRUCTURES

USA METAL STRUCTURES, LLP
1495 EAST PINE ST.
MOUNT AIRY, NC 27030
30'-0"x16'-0" ENCLOSED STRUCTURE

DATE: 6-17-22 | SCALE: NTS | JOB NO: 220575
SHT. 17 | DWG. NO: SK-3 | REV.: 0