



*STRUCTURAL DESIGN
ENCLOSED BUILDING*

*MAXIMUM 30'-0" WIDE X 14'-0" EAVE HEIGHT-
BOX EAVE FRAME AND BOW FRAME*

*25 June 2025
Revision-0
ASG Project No. 252795
Prepared for:*

*Reliable Metal Buildings, LLC
16570 US Highway 20
Pioneer, OH 43554*

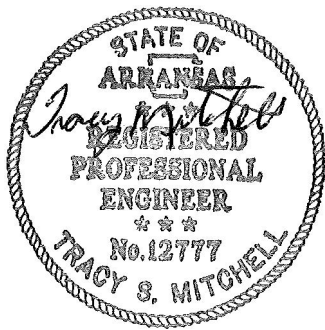
*Prepared by:
ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS*

*225 SOUTH MAIN STREET,
MONROE, OHIO 45050*

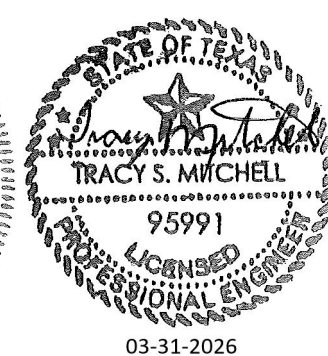
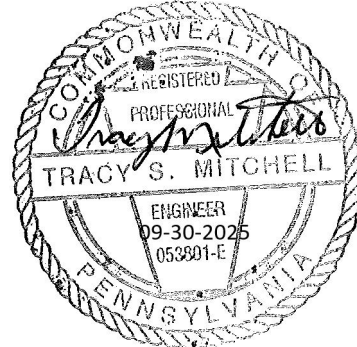
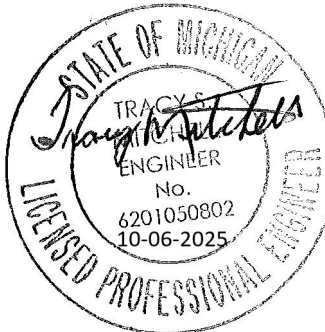
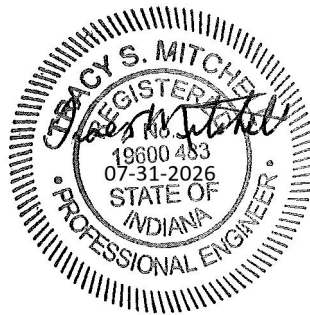


*Validity Notice
Plans Expiration Date: Per Each State
Plans are valid for one year from issuance date*

ASG LLC, American Structural Group, Consulting Structural Engineers is the author and owner of all plans, drawings, specifications, etc. ("Instruments of Service") provided by it, and retains all common law, statutory, and other reserved rights, including without limitation copyrights. A limited license is granted to you for use of the Instruments of Service solely and exclusively in connection with the specific project for which the Instruments of Service were created by ASG LLC. All other uses, including without limitation transfer to a third party, are strictly prohibited. Acceptance of the Instruments of Service constitutes your agreement to indemnify and to hold ASG LLC harmless from all cost, expenses, damages, and attorney's fees arising from or relating to any unauthorized use or transfer of the Instruments of Service.



12-31-2025



Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT.1

DWG.NO.

REV.

PE SEAL
COVER PAGE

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM
"Value Engineering the First Time"

DRAWING INDEX

SHEET NO.	DESCRIPTION
SHEET 1	PE SEAL COVER SHEET
SHEET 2	DRAWING INDEX
SHEET 3	INSTALLATION NOTES AND SPECIFICATIONS
SHEET 3A	LIST OF APPLICABLE BUILDING CODES
SHEET 4	TYPICAL SIDE AND END ELEVATIONS
SHEET 5	TYPICAL RAFTER/COLUMN END AND SIDE FRAMING SECTION (BOX EAVE RAFTER)
SHEET 5A	TYPICAL RAFTER/COLUMN END AND SIDE FRAMING SECTION (BOX EAVE RAFTER)
SHEET 6	RAFTER/COLUMN CONNECTION DETAILS (BOX EAVE RAFTER)
SHEET 6A	RAFTER/COLUMN CONNECTION DETAILS (BOX EAVE RAFTER)
SHEET 7	TYPICAL RAFTER/COLUMN END AND SIDE FRAMING SECTION (BOW EAVE RAFTER)
SHEET 7A	TYPICAL RAFTER/COLUMN END AND SIDE FRAMING SECTION (BOW EAVE RAFTER)
SHEET 8	RAFTER/COLUMN CONNECTION DETAILS (BOW EAVE RAFTER)
SHEET 8A	RAFTER/COLUMN CONNECTION DETAILS (BOW EAVE RAFTER)
SHEET 9	BASE RAIL ANCHORAGE OPTIONS
SHEET 9A	BASE RAIL ANCHORAGE OPTIONS
SHEET 10	TYPICAL END WALL AND SIDE WALL FRAMING SECTIONS (BOX EAVE RAFTER)
SHEET 11	TYPICAL END WALL AND SIDE WALL FRAMING SECTIONS (BOW EAVE RAFTER)
SHEET 12	CONNECTION DETAILS
SHEET 13	CONNECTION DETAILS
SHEET 14	CONNECTION DETAILS
SHEET 15	LEAN TO OPTIONS (BOX EAVE RAFTER)
SHEET 16	LEAN TO OPTIONS (BOW EAVE RAFTER)
SHEET 17	VERTICAL ROOF/SIDING OPTION
SHEET 18	SIDE WALL AND END WALL HEADER OPTIONS FOR TS DOUBLE COLUMNS
SHEET 18A	SIDE WALL AND END WALL HEADER OPTIONS FOR TS SINGLE COLUMNS

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DRAWING
INDEX

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM
"Value Engineering the First Time"

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 2

DWG. NO.

REV.

INSTALLATION NOTES AND SPECIFICATIONS

1. DESIGN IS FOR MAXIMUM 30'-0" WIDE x 14'-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 = 2 PSF
 - MEP = 0 PSF
 - COLLATERAL = 0 PSF
 - B. ROOF LIVE LOAD = 20 PSF
 - C. FLOOR LIVE LOAD = 100 PSF (4" CONCRETE SLAB/FOOTING)
 - D. GROUND SNOW LOAD = UPTO 60 PSF

= 20 PSF WITH U-CHANNEL RAFTER TIE (W ≤ 16'-0")

NOTE: DROP-DOWN LEAN-TO'S (THOSE CAUSING A HEIGHT DIFFERENTIAL FROM THE MAIN STRUCTURE SHALL BE LIMITED TO GROUND SNOW LOADS ≤ 25 PSF DUE TO ADDITIONAL SNOW DRIFT LOADING.
4. 3-SECOND GUST WIND SPEED ≤ 140 MPH (NOMINAL WIND SPEED = 108 MPH).
5. MAXIMUM RAFTER/POST AND END POST SPACING 5.0 FEET (UNLESS NOTED OTHERWISE).
6. END WALL COLUMNS ARE EQUIVALENT TO SIDE WALL COLUMNS IN SIZE AND SPACING (UNLESS NOTED OTHERWISE).
7. RISK CATEGORY 1 (NOT FOR HUMAN OCCUPANCY).
8. WIND EXPOSURE CATEGORY B.
9. STRUCTURAL ANALYSIS/DESIGN IS BASED ON TS MEETING THE REQUIREMENTS OF ASTM A653 GRADE 50 TYPE SS WITH MINIMUM YIELD STRENGTH (Fy) OF 50 KSI AND GALVANIZING MEETING THE MINIMUM REQUIREMENTS OF G60.
10. SPECIFICATIONS APPLICABLE TO 29 GAUGE (FOR GROUND SNOW LOADS ≤ 30 PSF) OR 26 GAUGE (FOR GROUND SNOW LOADS ≤ 40 PSF) METAL PANELS FASTENED DIRECTLY TO 2 1/2"x2 1/2"-14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS (UNLESS NOTED OTHERWISE) 2 1/4"x2 1/4"-12 GAUGE TS MAY BE USED AS OPTIONAL FRAMING MEMBERS.
11. CONNECTOR SLEEVES ARE MINIMUM 6" LONG, TS 2 1/4"x2 1/4"-14 GAUGE FOR 2 1/2"x2 1/2"-14 GAUGE (UNLESS NOTED OTHERWISE), WHERE TS 2 1/4"x2 1/4"-12 GAUGE IS SPECIFIED. 6" LONG TS 2"x2"-14 GAUGE TS CONNECTOR SLEEVE MAY BE USED AS AN OPTION.
12. AVERAGE FASTENER SPACING ON-CENTERS = 10" (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 17.875 FEET OR LESS, AND ROOF SLOPES OF 14° (13:12 PITCH) OR LESS SPACING REQUIREMENTS FOR OTHER ROOF HEIGHTS AND/OR SLOPES MAY VARY.
14. ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6" OF EACH COLUMN ALONG SIDES.
15. STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBAR W/ WELDED NUT 30" LONG AND MAY ONLY BE USED IN CONJUNCTION WITH OTHER (OPTIONAL) ANCHOR DEVICES AND ONLY IN SUITABLE SOILS OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED, COORDINATE WITH LOCAL CODES/ORDINANCES REGARDING MINIMUM LENGTH FOR FROST DEPTH PROTECTION.
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 = 1
R = 3.25 I_E = 1.0
S_{DS} = 2.625g V = C_sW
S_{D1} = 2.13g.
18. IF MORE THAN 50% OF COLUMN (LEG) ARE REMOVED IN ANY LONGITUDINAL (SIDE) WALL OF A BUILDING, THE ENGINEER IS TO BE NOTIFIED TO DETERMINE WHETHER PORTAL FRAMES OR OTHER LONGITUDINAL STABILITY ELEMENTS WILL BE REQUIRED.
19. ANALYSIS/DESIGN OF THIS STRUCTURE WAS BASED ON THE LOADS, BUILDING CODE, AND STRUCTURAL GEOMETRY NOTED HEREIN, NO CHANGES SHALL BE MADE TO THE STRUCTURE WITHOUT EXPRESS WRITTEN PERMISSION FROM THE DESIGN ENGINEER, ANY CHANGES IN THE USE OR GEOMETRY OF THE STRUCTURE IN ANY MANNER IS A VIOLATION OF THE BUILDING CODE AND NEGATES ANY LIABILITY ON THE PART OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.
20. WHEN USING GENERIC MASTER DESIGNS TO OBTAIN BUILDING PERMIT, IT MUST BE ACCOMPANIED BY SUFFICIENT ADDITIONAL INFORMATION TO INDICATE THE LOCATION, NATURE, AND EXTEND OF THE CONSTRUCTION AND SHOW IN DETAIL THAT IT WILL CONFORM TO ALL APPLICABLE CODES, LAWS, ORDINANCES, RULES, AND REGULATIONS.
21. WHEN APPLYING FOR BUILDING PERMIT, THE 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 OBTAINING A BUILDING PERMIT. GENERIC MASTER DESIGNS CAN NOT BE USED WHERE A SITE-SPECIFIC DESIGN IS REQUIRED.
22. ANY VARIATION FROM THE ANALYSIS/DESIGN PARAMETERS OF THE MASTER DESIGN REQUIRES THE DEVELOPMENT OF A SITE-SPECIFIC DESIGN.

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

INSTALLATION
NOTES AND
SPECIFICATIONS

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 3

DWG. NO.

REV.

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM
"Value Engineering the First Time"

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)

2009 INTERNATIONAL BUILDING CODE (IBC 2009)

2006 INTERNATIONAL BUILDING CODE (IBC 2006)

ARKANSAS FIRE PREVENTION CODE VOL II -BUILDINGS
(ADOPTS THE IBC 2021 WITH AMENDMENTS)

INDIANA BUILDING CODE. 2014 EDITION
(ADOPTS THE IBC 2012 WITH AMENDMENTS)

2018 KENTUCKY BUILDING CODE
(ADOPTS THE IBC 2015 WITH AMENDMENTS)

LOUISIANA BUILDING CODE 2021
(ADOPTS THE IBC 2021 WITH AMENDMENTS)

MICHIGAN BUILDING CODE 2015
(ADOPTS THE IBC 2015 WITH AMENDMENTS)
DETROIT CITY BUILDING CODE
(ADOPTS THE MI BC 2015 WITH AMENDMENTS)

2024 OHIO BUILDING CODE
(ADOPTS THE IBC 2021 WITH AMENDMENTS)

OKLAHOMA BUILDING CODE 2018
(ADOPTS THE IBC 2018 WITH AMENDMENTS)
(IBC 2015, IBC 2018 (DEPENDENT UPON LOCAL JURISDICTION))

PENNSYLVANIA BUILDING CODE 2018
(ADOPTS THE IBC 2018 WITH AMENDMENTS)
PHILADELPHIA BUILDING CODE
(ADOPTS THE IBC 2018 WITH AMENDMENTS)

BUILDING CODE OF THE TEXAS INDUSTRIALIZED
HOUSING AND BUILDINGS PROGRAM
(ADOPTS THE IBC 2021 WITH AMENDMENTS)
AUSTIN BUILDING CODE 2021
(ADOPTS THE IBC 2021 WITH AMENDMENTS)
DALLAS BUILDING CODE
(ADOPTS THE IBC 2021 WITH AMENDMENTS)
FORT WORTH BUILDING CODE 2021
(ADOPTS THE IBC 2021 WITH AMENDMENTS)
CITY OF HOUSTON BUILDING CODE
(ADOPTS THE IBC 2021 WITH AMENDMENTS)
SAN ANTONIO BUILDING CODE 2021
(ADOPTS THE IBC 2021 WITH AMENDMENTS)
(IBC 2006, IBC 2009, IBC 2012, IBC 2015, IBC 2018,
IBC 2021 (DEPENDENT UPON LOCAL JURISDICTION))

WEST VIRGINIA BUILDING CODE 2018
(ADOPTS THE IBC 2018 WITH AMENDMENTS)

Validity Notice

Plans Expiration Date:

PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

DATE: 06-25-25

SCALE: NTS

SHT. 3A

DWG. NO.

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

JOB NO:

REV.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

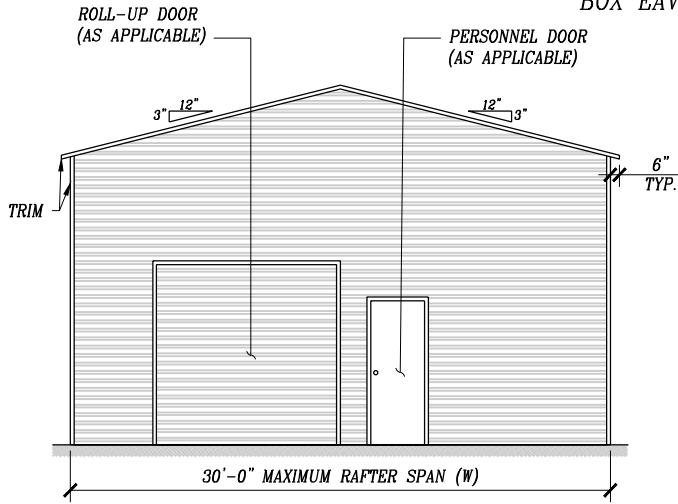
LIST OF APPLICABLE
BUILDING CODES

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM

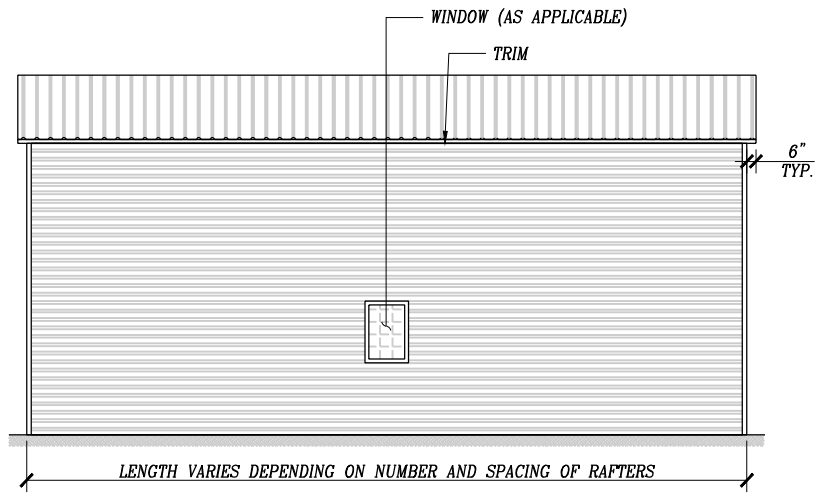
"Value Engineering the First Time"

BOX EAVE FRAME RAFTER STRUCTURE



TYPICAL END ELEVATION

SCALE: NTS

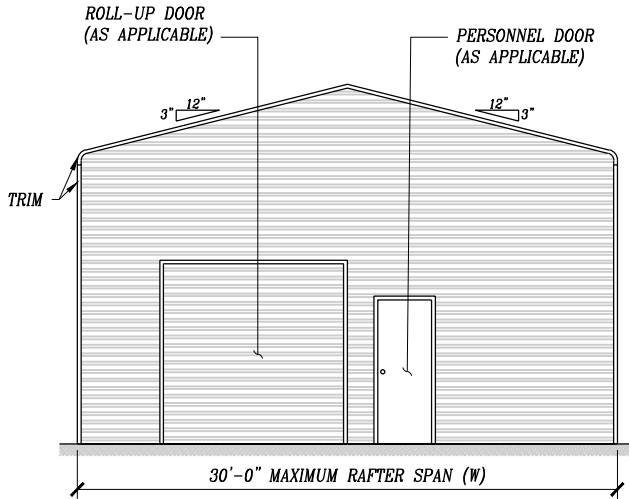


TYPICAL SIDE ELEVATION

SCALE: NTS

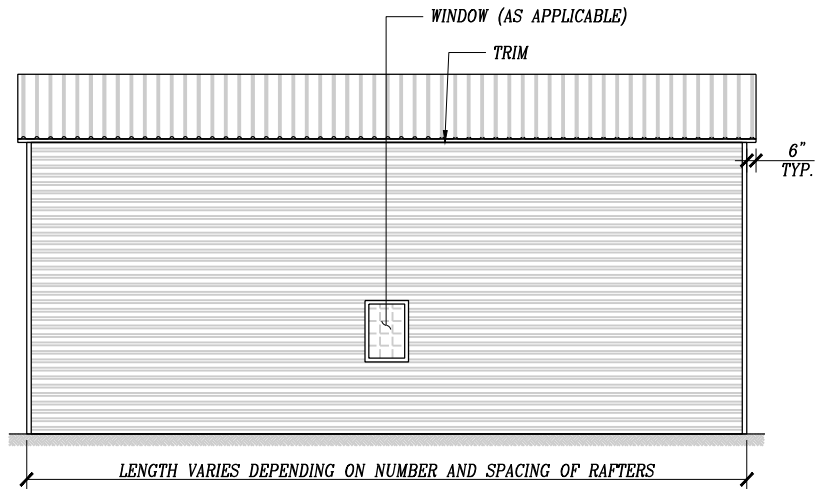
NOTE: 29 GA HORIZONTAL ROOF PANELS CAN BE USED FOR
GROUND SNOW LOADS \leq 30 PSF
26 GA HORIZONTAL ROOF PANELS CAN BE USED FOR
GROUND SNOW LOADS \leq 40 PSF

BOW EAVE FRAME RAFTER STRUCTURE



TYPICAL END ELEVATION

SCALE: NTS



TYPICAL SIDE ELEVATION

SCALE: NTS

NOTE: 29 GA HORIZONTAL ROOF PANELS CAN BE USED FOR
GROUND SNOW LOADS \leq 30 PSF
26 GA HORIZONTAL ROOF PANELS CAN BE USED FOR
GROUND SNOW LOADS \leq 40 PSF

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

DATE: 06-25-25

SCALE: NTS

SHT. 4

DWG. NO.

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

JOB NO:

REV.

DRAWN BY: —

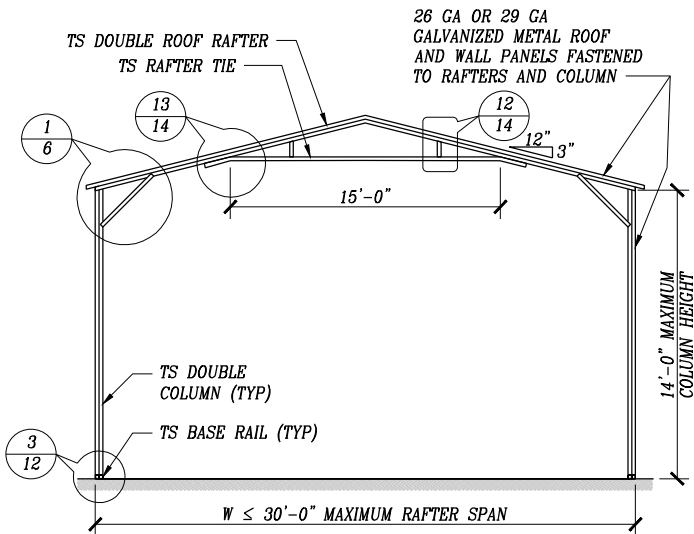
CHECKED BY: —

PROJECT MGR: —

TYPICAL SIDE
AND END
ELEVATIONS

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM
"Value Engineering the First Time"



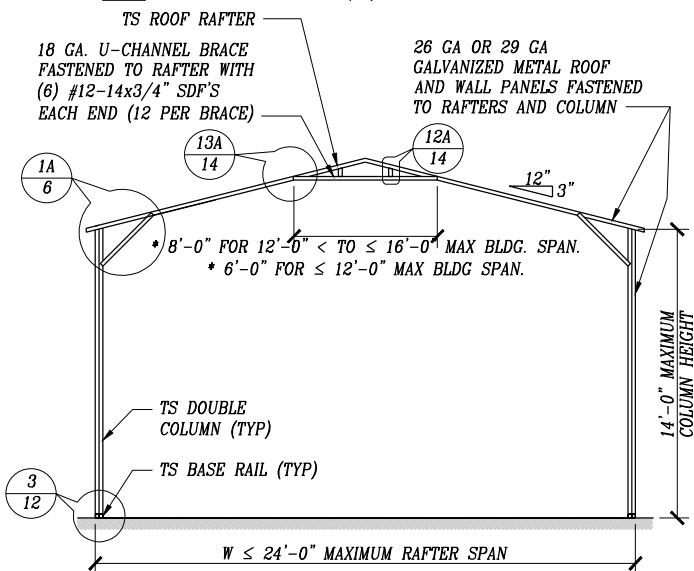
TYPICAL INTERIOR RAFTER/COLUMN FRAME SECTION

NOTE: FRAME SPACING CHART/SCHEDULE

SCALE: NTS

GROUND SNOW LOAD (PSF)	20-35	40	45-50	55	60
FRAME SPACING (FT)	5	4.5	4	3.5	3

NOTE: 12 GAUGE TUBE STEEL (TS) FRAMING MEMBERS



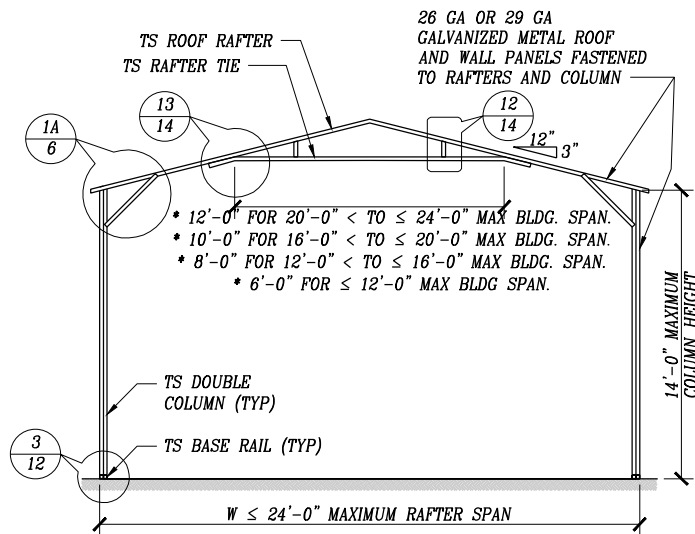
TYPICAL INTERIOR RAFTER/COLUMN FRAME SECTION

SCALE: NTS

NOTE: VERTICAL STRUTS NOT REQUIRED FOR THESE TIE LENGTHS.

NOTE: FRAME SPACING CHART/SCHEDULE

GROUND SNOW LOAD (PSF)					
FRAME SPACING (FT)					



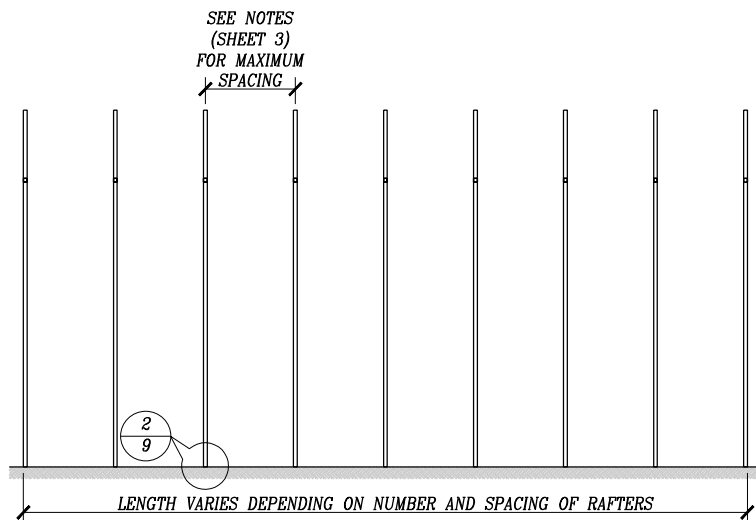
TYPICAL INTERIOR RAFTER/COLUMN FRAME SECTION

SCALE: NTS

NOTE: VERTICAL STRUTS NOT REQUIRED FOR THESE TIE LENGTHS.

NOTE: FRAME SPACING CHART/SCHEDULE

GROUND SNOW LOAD (PSF)					
FRAME SPACING (FT)					



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

Validity Notice

Plans Expiration Date:

PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

DATE: 06-25-25

SCALE: NTS

SHT. 5

DWG. NO.

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

JOB NO:

REV.

DRAWN BY: —

CHECKED BY: —

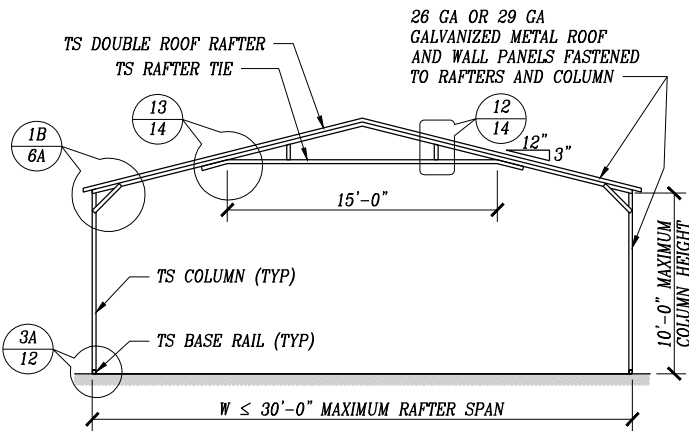
PROJECT MGR: —

TYPICAL RAFTER/COLUMN END
AND SIDE FRAMING SECTION
(BOX EAVE RAFTERS)

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM

"Value Engineering the First Time"

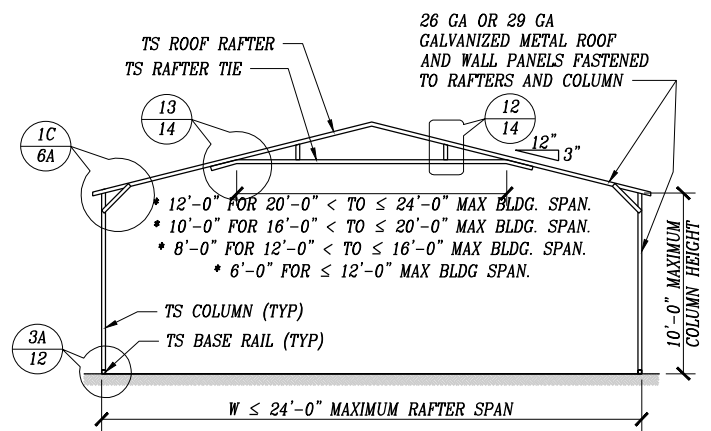


TYPICAL INTERIOR RAFTER/COLUMN FRAME SECTION

SCALE: NTS

NOTE: FRAME SPACING CHART/SCHEDULE

GROUND SNOW LOAD (PSF)					
FRAME SPACING (FT)					



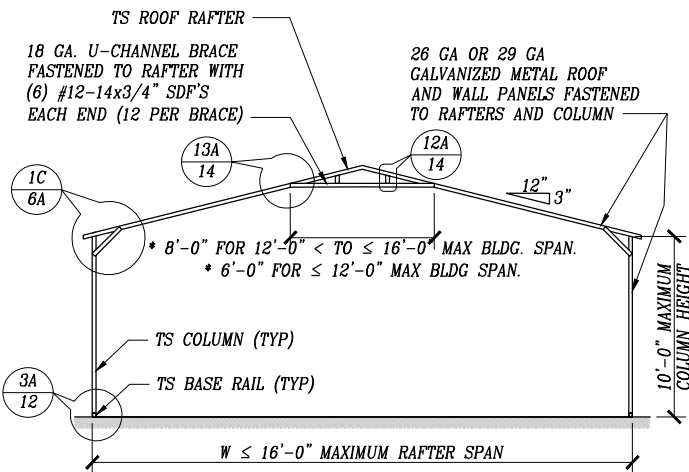
TYPICAL INTERIOR RAFTER/COLUMN FRAME SECTION

SCALE: NTS

NOTE: VERTICAL STRUTS NOT REQUIRED FOR THESE TIE LENGTHS.

NOTE: FRAME SPACING CHART/SCHEDULE

GROUND SNOW LOAD (PSF)					
FRAME SPACING (FT)					



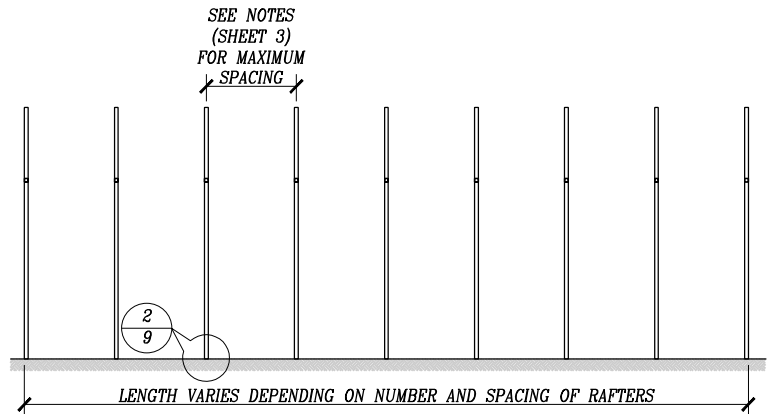
TYPICAL INTERIOR RAFTER/COLUMN FRAME SECTION

SCALE: NTS

NOTE: VERTICAL STRUTS NOT REQUIRED FOR THESE TIE LENGTHS.

NOTE: FRAME SPACING CHART/SCHEDULE

GROUND SNOW LOAD (PSF)					
FRAME SPACING (FT)					



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

Validity Notice

Plans Expiration Date:

PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

DATE: 06-25-25

SCALE: NTS

SHT. 5A

DWG. NO.

CLIENT :

RELIABLE METAL
BUILDINGS, LLC.

JOB NO:

REV.

DRAWN BY: —

CHECKED BY: —

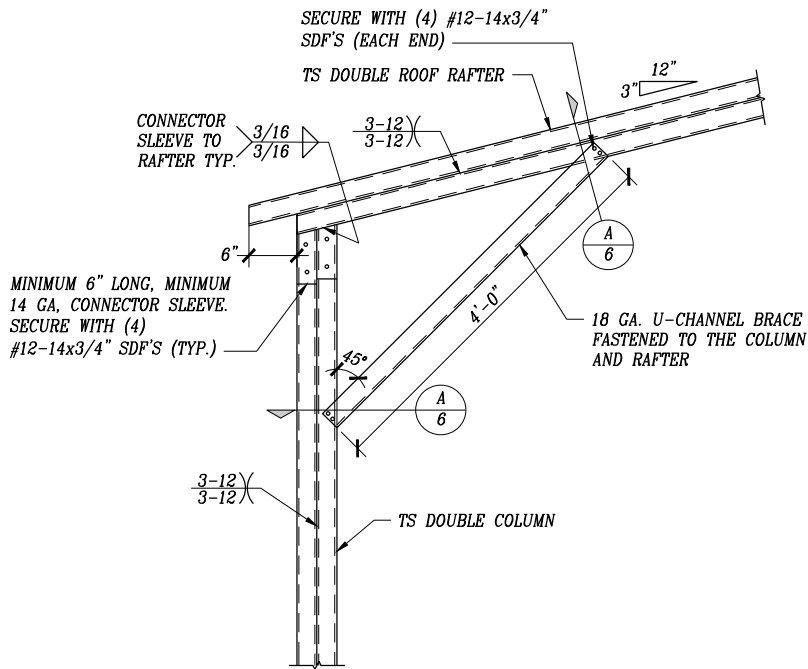
PROJECT MGR: —

TYPICAL RAFTER/COLUMN END
AND SIDE FRAMING SECTION
(BOX EAVE RAFTERS)

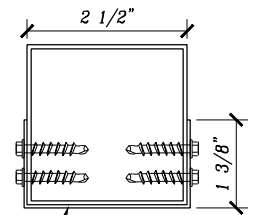
ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM

"Value Engineering the First Time"

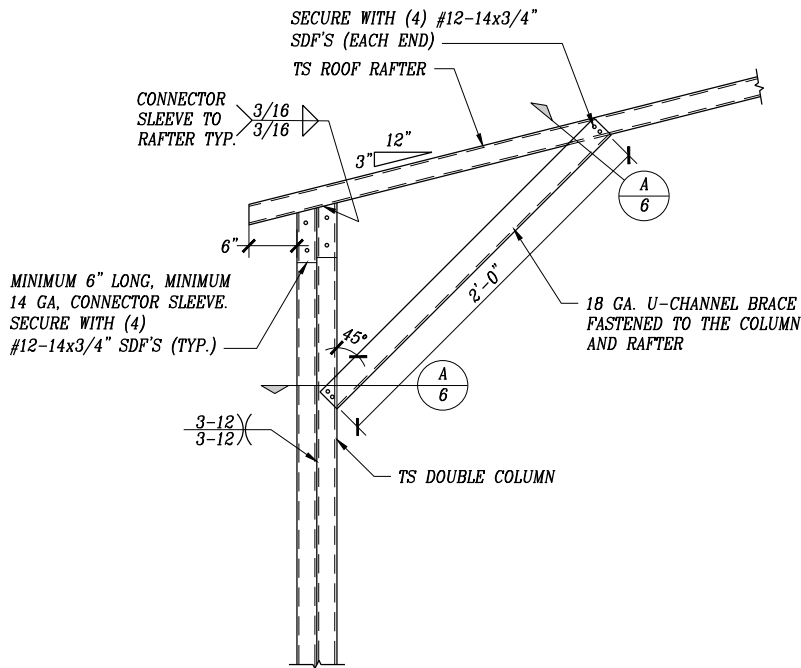


1 BOX EAVE RAFTER/COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO ≤ 14'-0" SCALE: NTS



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

A BRACE SECTION SCALE: NTS



1A BOX EAVE RAFTER/COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO ≤ 14'-0" SCALE: NTS

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 6

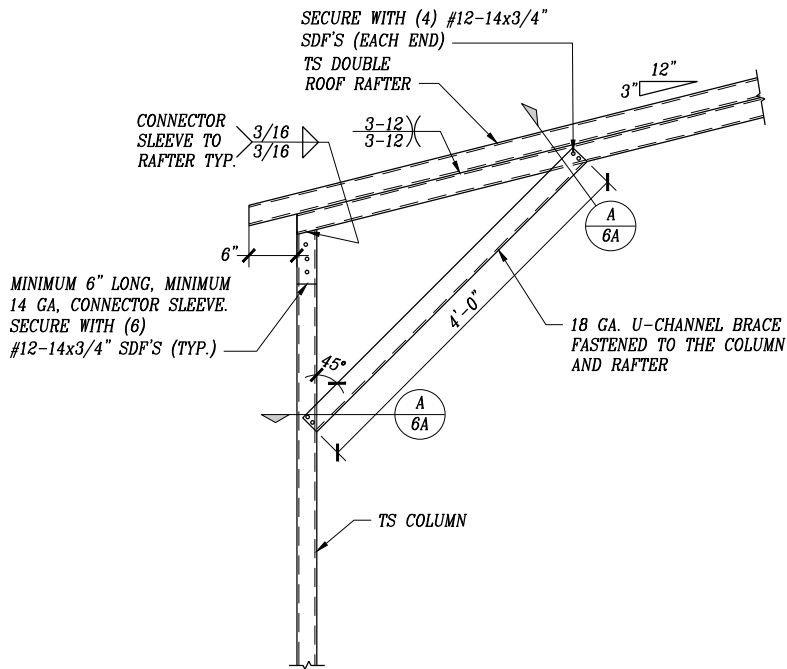
DWG. NO.

REV.

RAFTER/COLUMN
CONNECTION DETAILS
(BOX EAVE RAFTER)

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

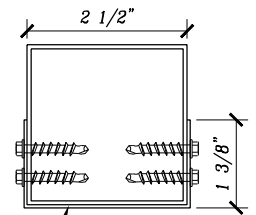
225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM
"Value Engineering the First Time"



BOX EAVE RAFTER/COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 10'-0"
(HEIGHTS ≤ 12'-0" FOR WIND SPEEDS ≤ 110 MPH AND NO LEAN-TO)

1B

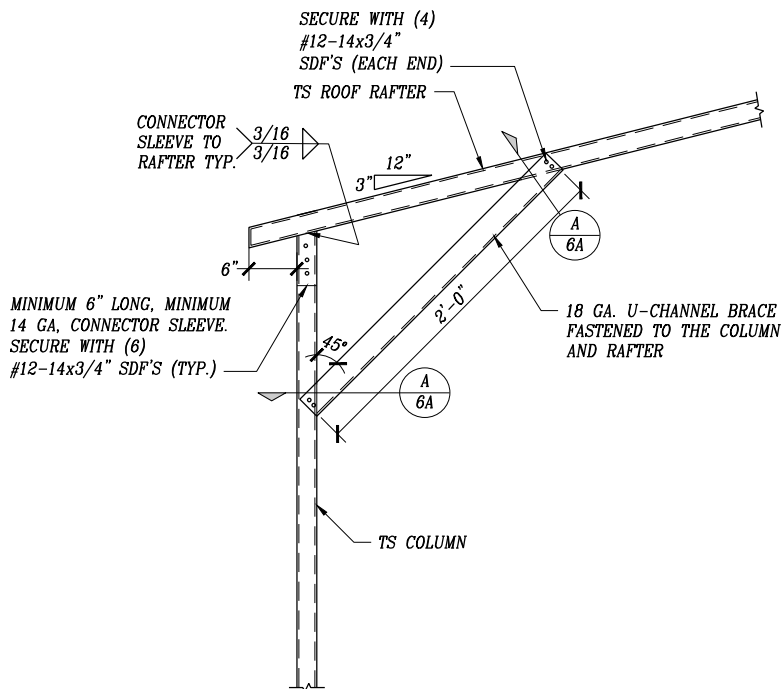
SCALE: NTS



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

A BRACE SECTION

SCALE: NTS



BOX EAVE RAFTER/COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 10'-0"
(HEIGHTS ≤ 12'-0" FOR WIND SPEEDS ≤ 110 MPH AND NO LEAN-TO)

1C

SCALE: NTS

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 6A

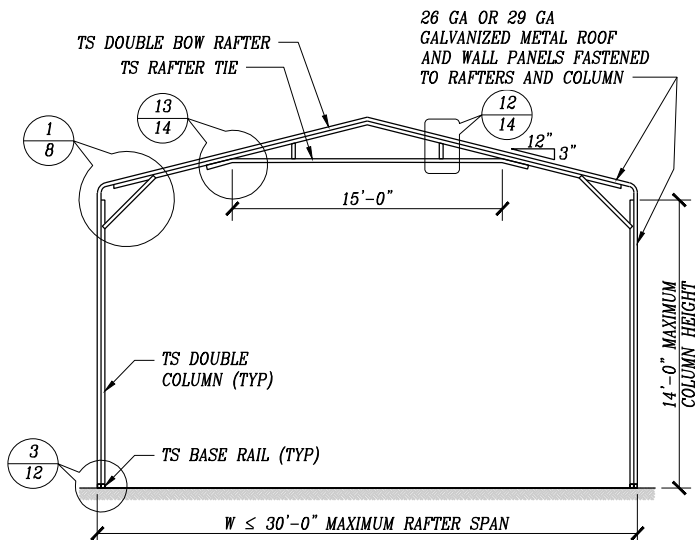
DWG. NO.

REV.

RAFTER/COLUMN
CONNECTION DETAILS
(BOX EAVE RAFTER)

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM
"Value Engineering the First Time"

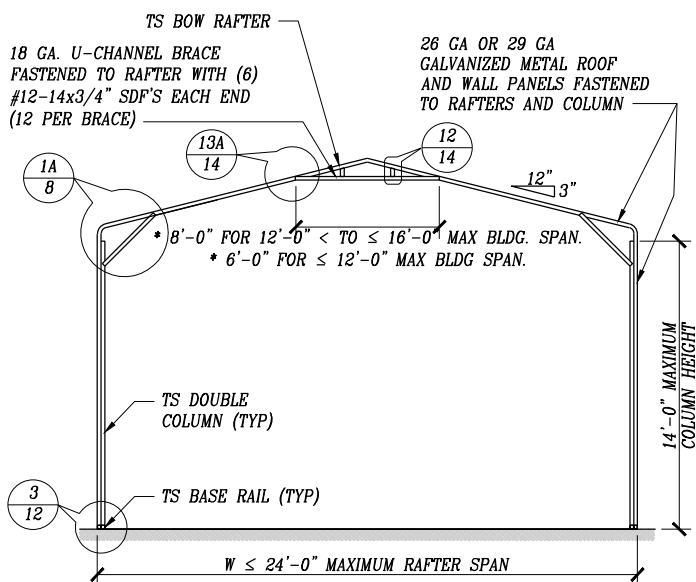


TYPICAL INTERIOR RAFTER/COLUMN FRAME SECTION

NOTE: FRAME SPACING CHART/SCHEDULE

SCALE: NTS

GROUND SNOW LOAD (PSF)					
FRAME SPACING (FT)					



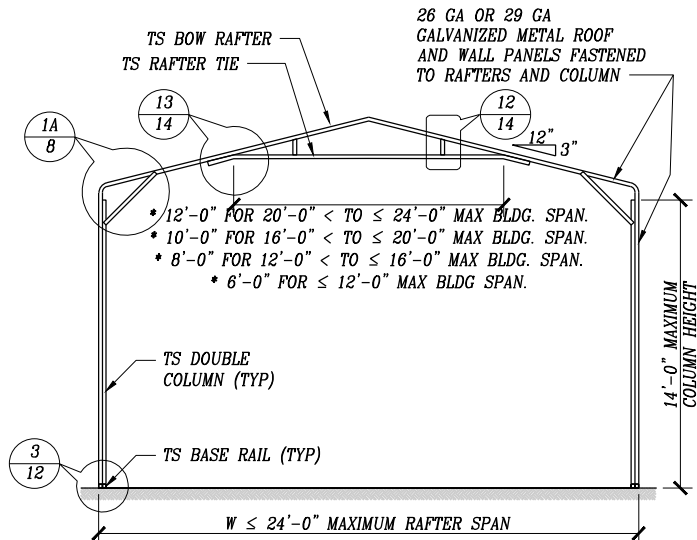
TYPICAL INTERIOR RAFTER/COLUMN FRAME SECTION

SCALE: NTS

NOTE: VERTICAL STRUTS NOT REQUIRED FOR THESE TIE LENGTHS.

NOTE: FRAME SPACING CHART/SCHEDULE

GROUND SNOW LOAD (PSF)					
FRAME SPACING (FT)					



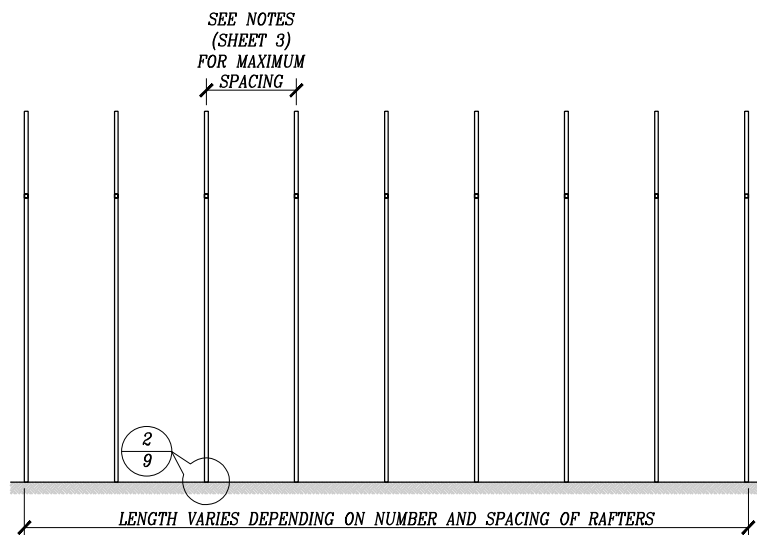
TYPICAL INTERIOR RAFTER/COLUMN FRAME SECTION

SCALE: NTS

NOTE: VERTICAL STRUTS NOT REQUIRED FOR THESE TIE LENGTHS.

NOTE: FRAME SPACING CHART/SCHEDULE

GROUND SNOW LOAD (PSF)					
FRAME SPACING (FT)					



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

Validity Notice

Plans Expiration Date:

PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

DATE: 06-25-25

SCALE: NTS

SHT. 7

DWG. NO.

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

JOB NO:

REV.

DRAWN BY: —

CHECKED BY: —

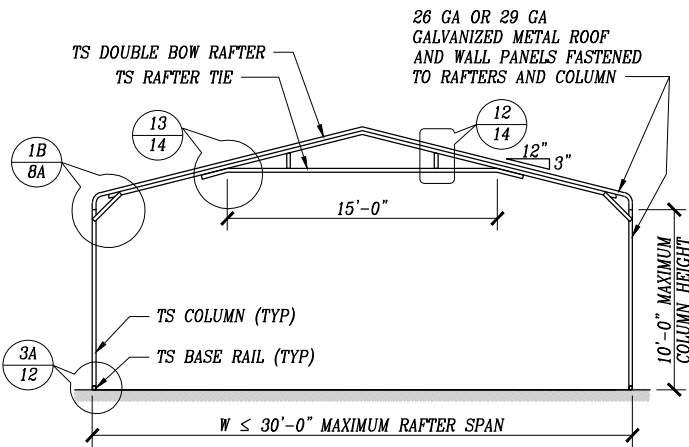
PROJECT MGR: —

TYPICAL RAFTER/COLUMN END
AND SIDE FRAMING SECTION
(BOW EAVE RAFTERS)

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM

"Value Engineering the First Time"

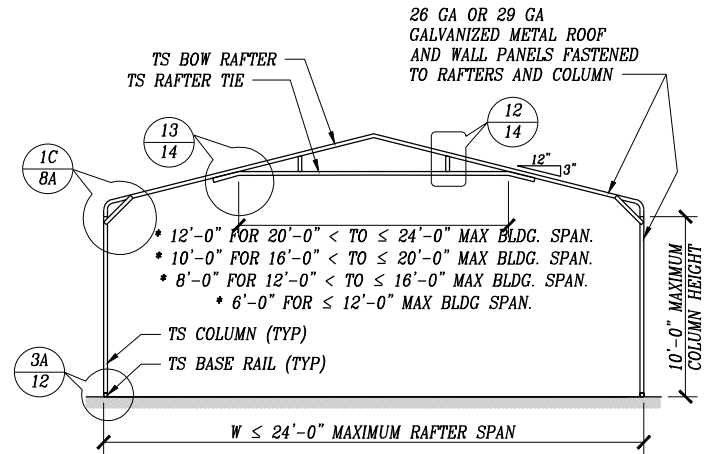


TYPICAL INTERIOR RAFTER/COLUMN FRAME SECTION

SCALE: NTS

NOTE: FRAME SPACING CHART/SCHEDULE

GROUND SNOW LOAD (PSF)					
FRAME SPACING (FT)					



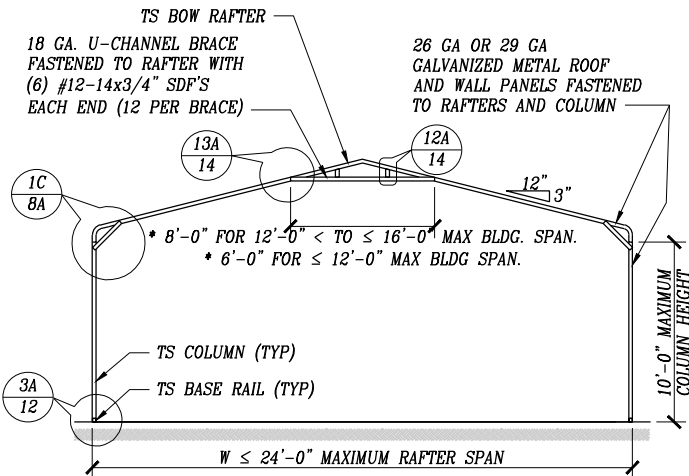
TYPICAL INTERIOR RAFTER/COLUMN FRAME SECTION

SCALE: NTS

NOTE: VERTICAL STRUTS NOT REQUIRED FOR THESE TIE LENGTHS.

NOTE: FRAME SPACING CHART/SCHEDULE

GROUND SNOW LOAD (PSF)					
FRAME SPACING (FT)					



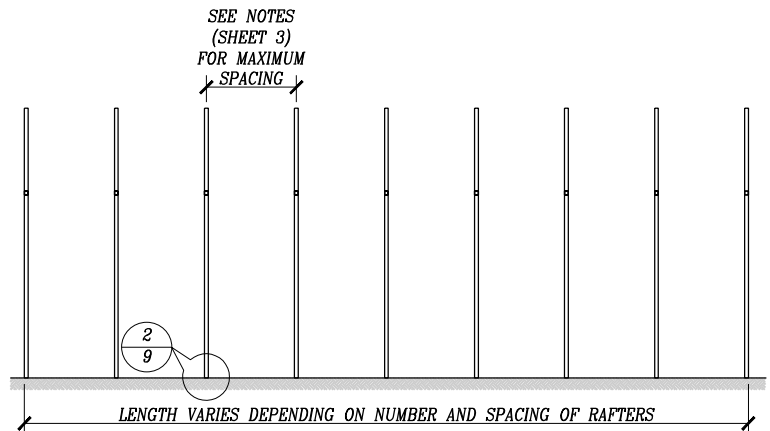
TYPICAL INTERIOR RAFTER/COLUMN FRAME SECTION

SCALE: NTS

NOTE: VERTICAL STRUTS NOT REQUIRED FOR THESE TIE LENGTHS.

NOTE: FRAME SPACING CHART/SCHEDULE

GROUND SNOW LOAD (PSF)					
FRAME SPACING (FT)					



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

Validity Notice

Plans Expiration Date:

PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 7A

DWG. NO.

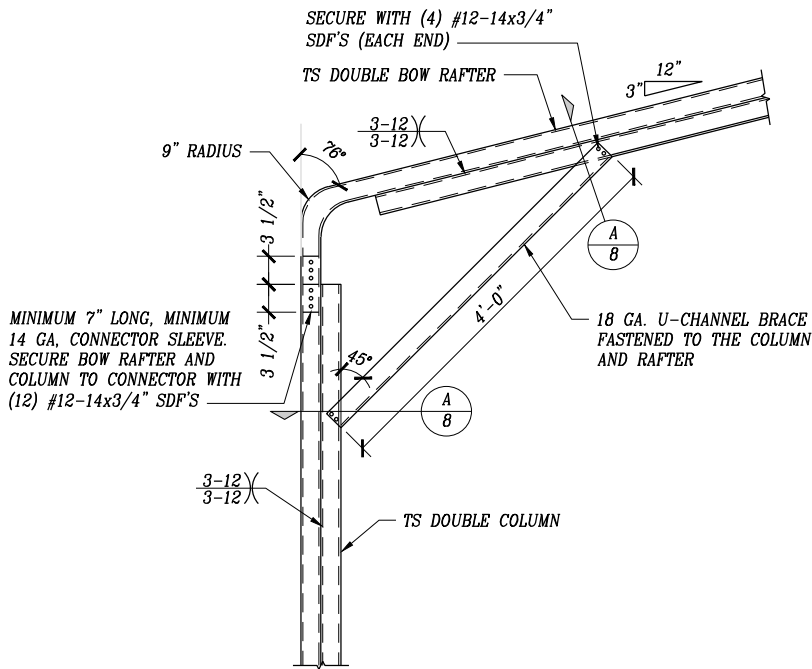
REV.

TYPICAL RAFTER/COLUMN END
AND SIDE FRAMING SECTION
(BOW EAVE RAFTERS)

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM

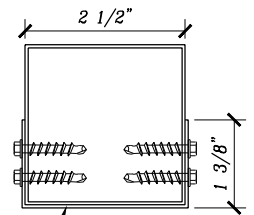
"Value Engineering the First Time"



BOW EAVE RAFTER/COLUMN CONNECTION

1 DETAIL FOR HEIGHTS 10'-0" < TO ≤ 14'-0"

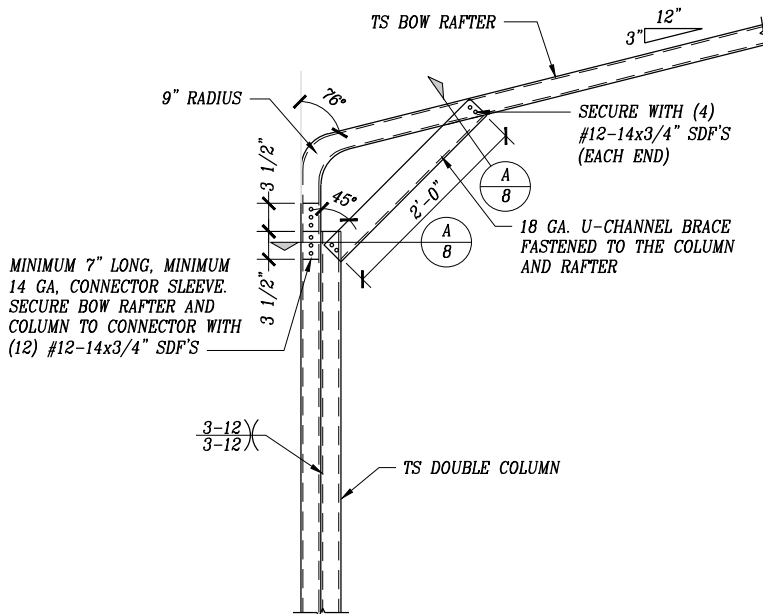
SCALE: NTS



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

A BRACE SECTION

SCALE: NTS



BOW EAVE RAFTER/COLUMN CONNECTION

1A DETAIL FOR HEIGHTS 10'-0" < TO ≤ 14'-0"

SCALE: NTS

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 8

DWG. NO.

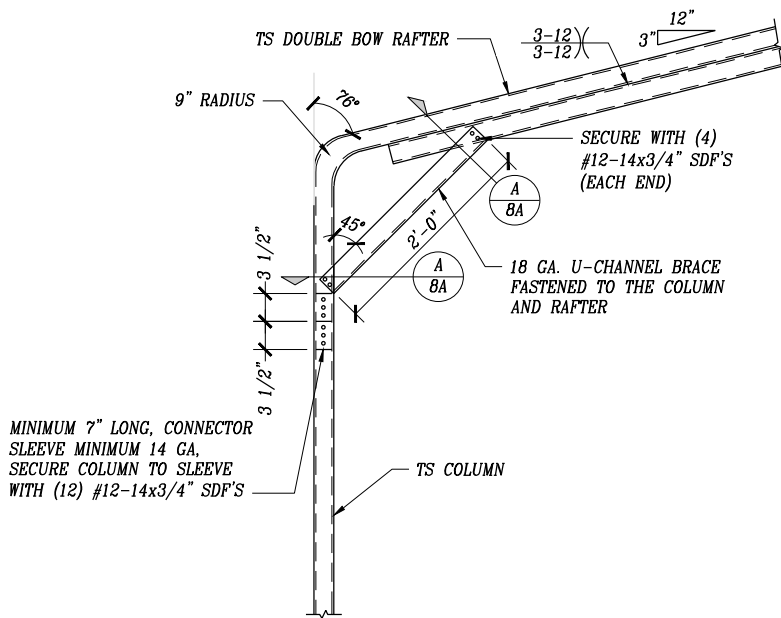
REV.

RAFTER/COLUMN
CONNECTION DETAILS
(BOW EAVE RAFTER)

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM

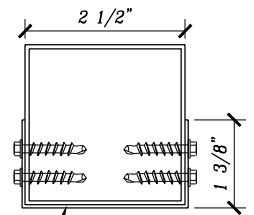
"Value Engineering the First Time"



BOW EAVE RAFTER/COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0"
(HEIGHTS ≤ 12'-0" FOR WIND SPEEDS ≤ 110 MPH AND NO LEAN-TO)

1B

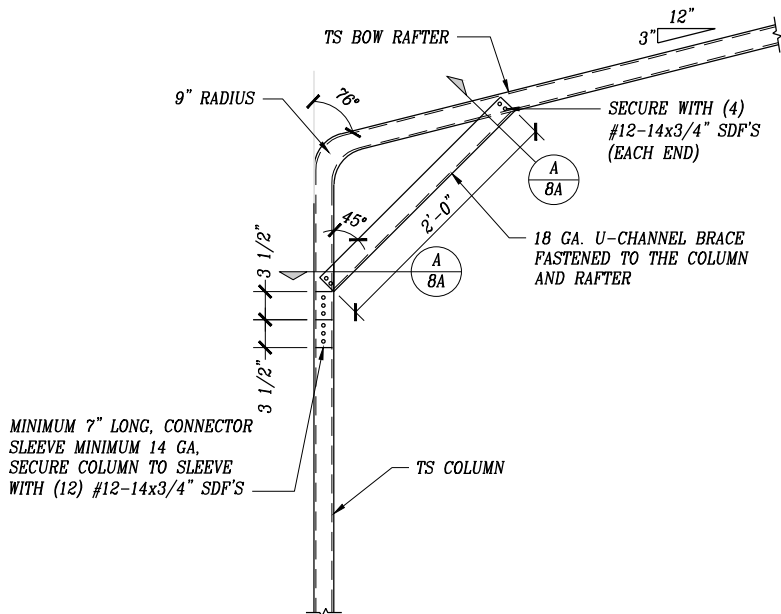
SCALE: NTS



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

A BRACE SECTION

SCALE: NTS



BOW EAVE RAFTER/COLUMN CONNECTION DETAIL FOR HEIGHTS 11'-0"
(HEIGHTS ≤ 12'-0" FOR WIND SPEEDS ≤ 110 MPH AND NO LEAN-TO)

1C

SCALE: NTS

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 8A

DWG. NO.

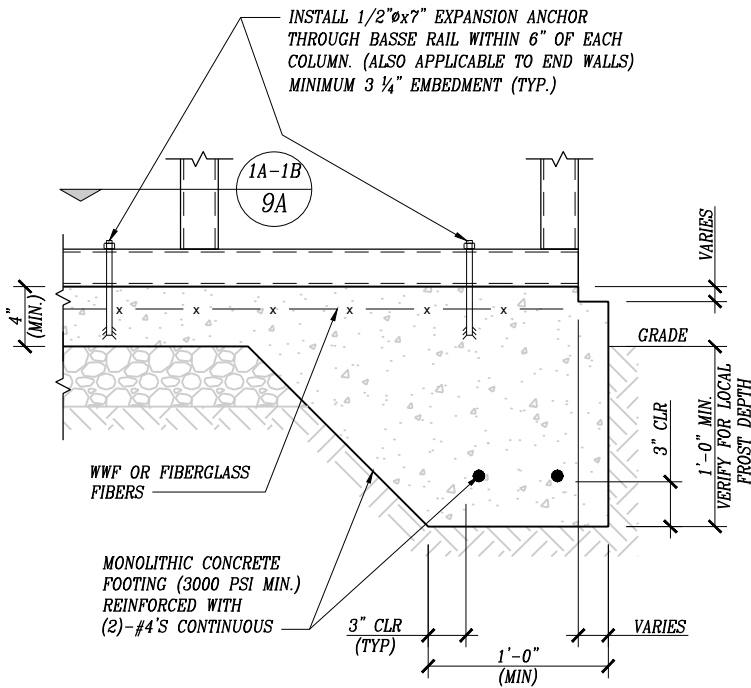
REV.

RAFTER/COLUMN
CONNECTION DETAILS
(BOW EAVE RAFTER)

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM

"Value Engineering the First Time"



② CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS

(MINIMUM ANCHOR EDGE DISTANCE IS 2 3/4")
 * COORDINATE WITH LOCAL CODES/ORD.

GENERAL NOTES

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

CONCRETE

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

COVER OVER REINFORCING STEEL

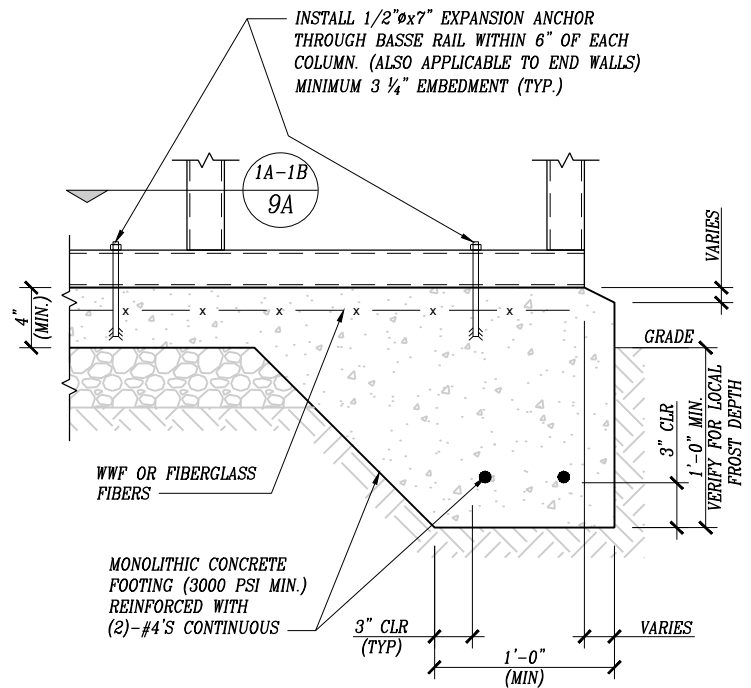
FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-318.
 3" IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH OR WEATHER, AND 1 1/2" ELSEWHERE.

REINFORCING STEEL

THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASIM 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.



②A CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS

(MINIMUM ANCHOR EDGE DISTANCE IS 2 3/4")
 * COORDINATE WITH LOCAL CODES/ORD.

Validity Notice

Plans Expiration Date:

PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
 16570 US HIGHWAY 20
 PIONEER, OHIO 43554
 30'-0"x14'-0" ENCLOSED STRUCTURE

DATE: 06-25-25

SCALE: NTS

SHT.9

DWG.NO.

CLIENT :
 RELIABLE METAL
 BUILDINGS, LLC.

JOB NO:

REV.

DRAWN BY: —

CHECKED BY: —

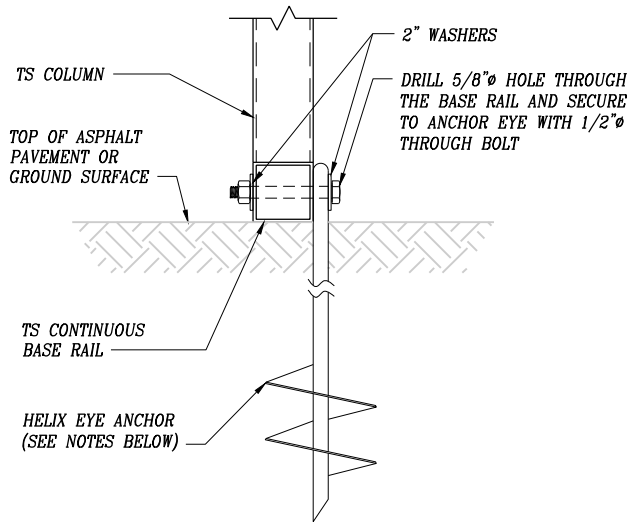
PROJECT MGR: —

BASE RAIL
 ANCHORAGE OPTIONS

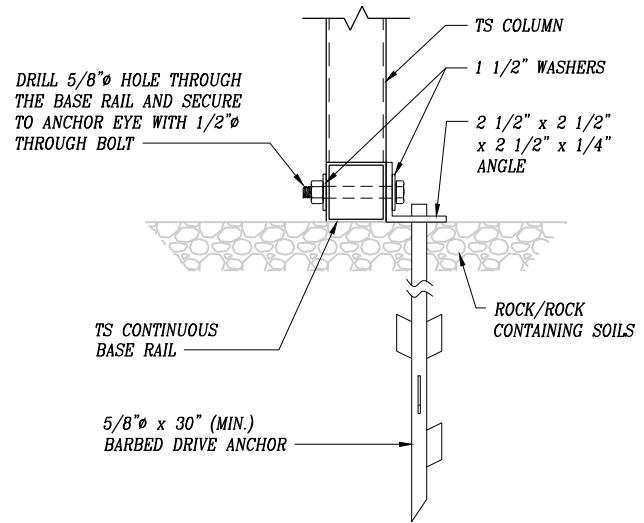
ASG LLC
 AMERICAN STRUCTURAL GROUP
 CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
 MONROE, OHIO 45050
 PH 513-402-7600
 WWW.ASG-ENG.COM
 "Value Engineering the First Time"

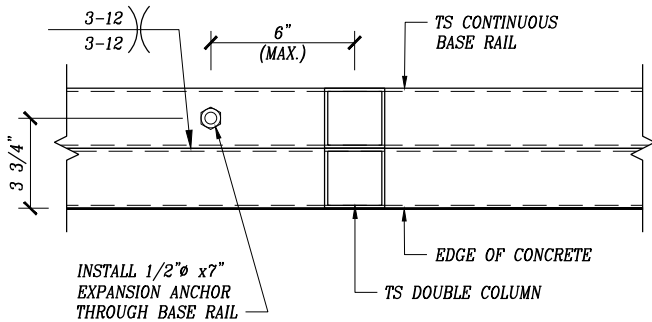
BASE RAIL ANCHORAGE OPTIONS



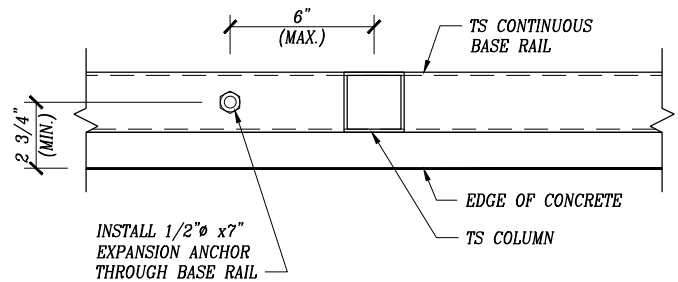
2B GROUND BASE HELIX ANCHORAGE
(CAN BE USED FOR ASPHALT) SCALE: NTS



2C ASPHALT BARBED DRIVE ANCHORAGE SCALE: NTS
* COORDINATE WITH LOCAL BUILDING CODE AND/OR REGARDING MINIMUM FROST DEPTH (LENGTH.)



1A SECTION SCALE: NTS



1B SECTION SCALE: NTS

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" 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.

Validity Notice

Plans Expiration Date:

PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 9A

DWG. NO.

REV.

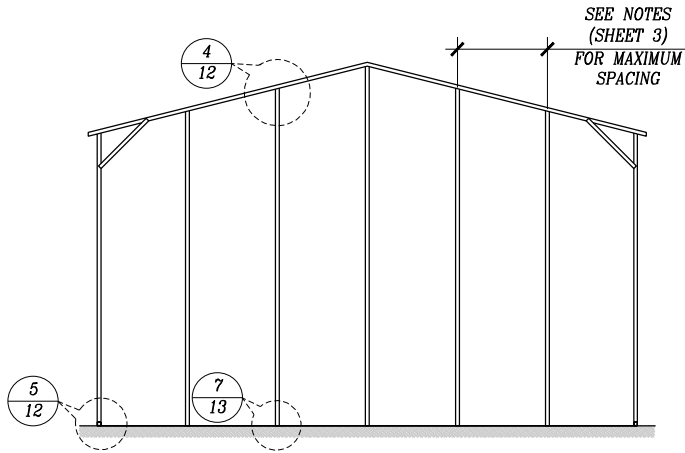
BASE RAIL
ANCHORAGE OPTIONS

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM

"Value Engineering the First Time"

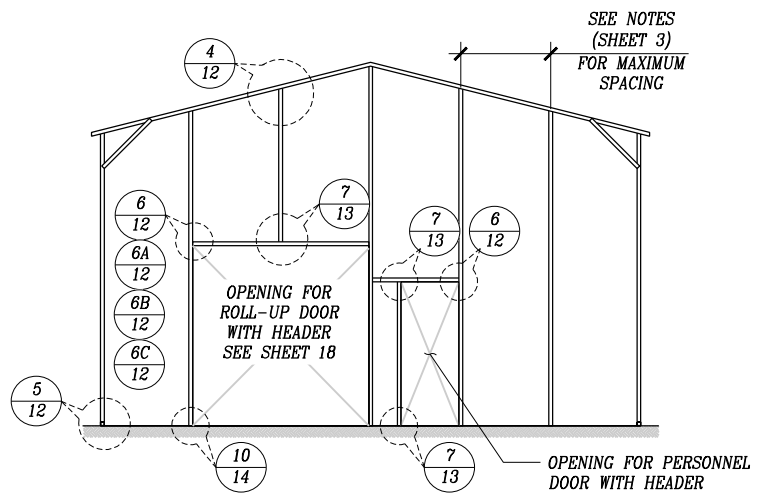
BOX EAVE RAFTER END WALL AND SIDE WALL FRAMING SECTIONS



TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

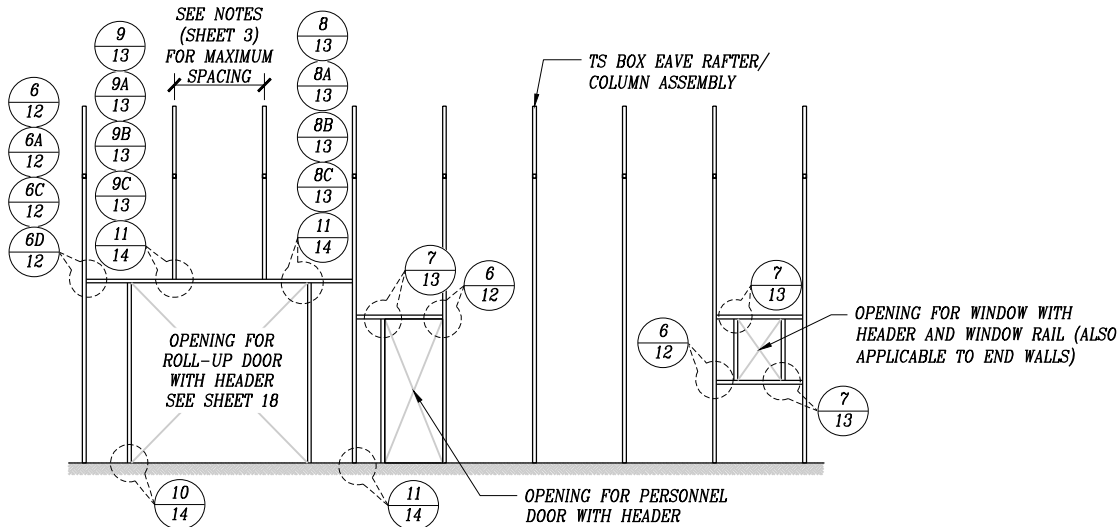
SCALE: NTS

NOTE: END WALL COLUMNS SHALL BE THE FOLLOWING SIZES:
DOUBLE TUBE COLUMNS FOR EAVE HEIGHTS 12'-0" < TO ≤ 14'-0"
SINGLE TUBE COLUMNS FOR EAVE HEIGHTS ≤ 12'-0".



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER SIDE OPENINGS FRAMING SECTION

SCALE: NTS

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 10

DWG. NO.

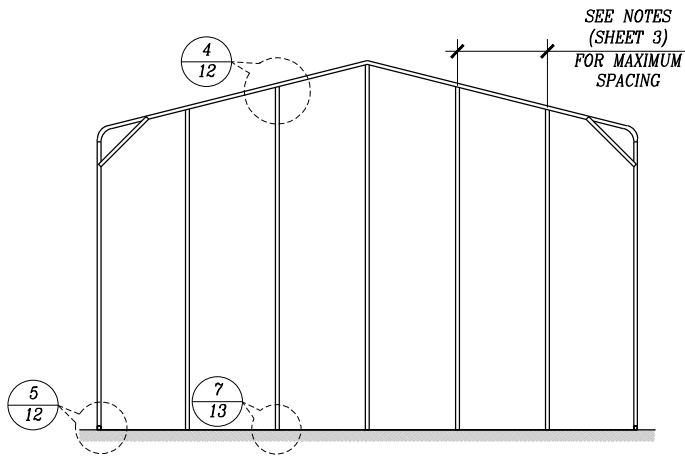
REV.

TYPICAL END WALL AND SIDE
WALL FRAMING SECTIONS
(BOX EAVE RAFTER)

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM
"Value Engineering the First Time"

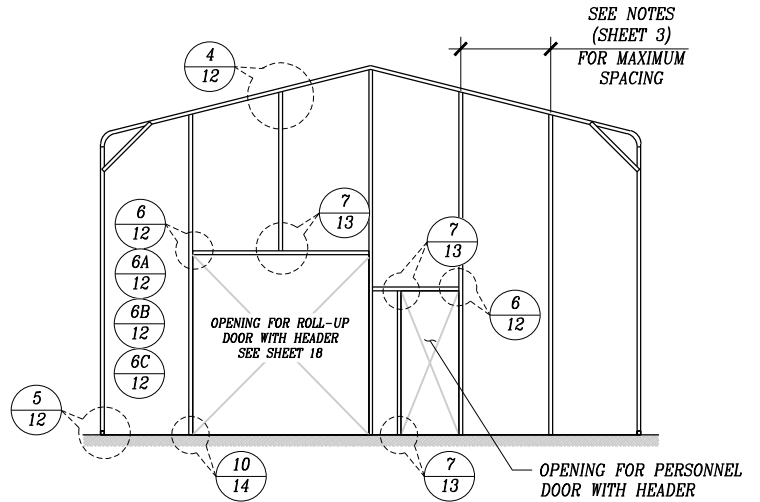
BOW EAVE RAFTER END WALL AND SIDE WALL FRAMING SECTIONS



TYPICAL BOW RAFTER END WALL FRAMING SECTION

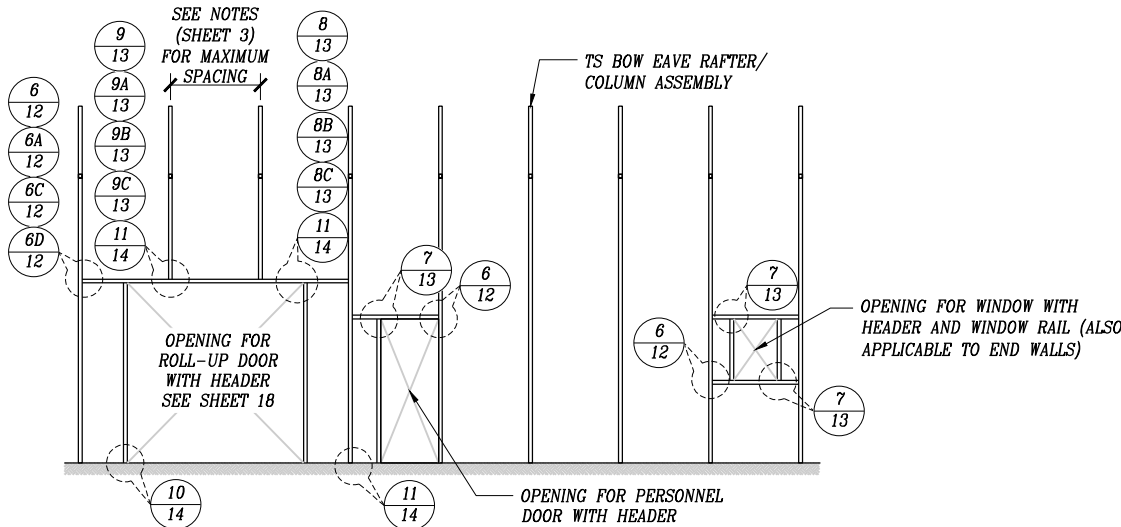
SCALE: NTS

NOTE: END WALL COLUMNS SHALL BE THE FOLLOWING SIZES:
DOUBLE TUBE COLUMNS FOR EAVE HEIGHTS 12'-0" < TO ≤ 14'-0"
SINGLE TUBE COLUMNS FOR EAVE HEIGHTS ≤ 12'-0".



TYPICAL BOW RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS



TYPICAL BOW RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 11

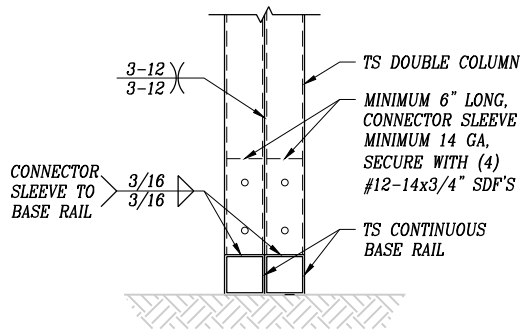
DWG. NO.

REV.

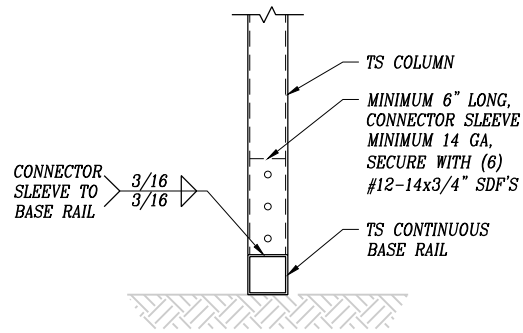
TYPICAL END WALL AND SIDE
WALL FRAMING SECTIONS
(BOW EAVE RAFTER)

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

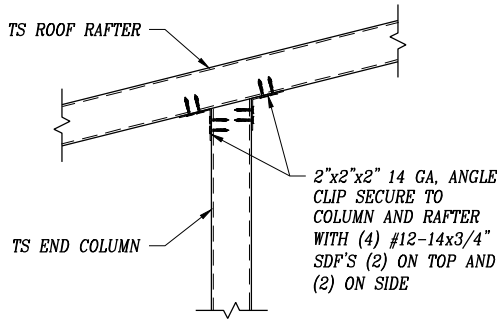
225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM
"Value Engineering the First Time"



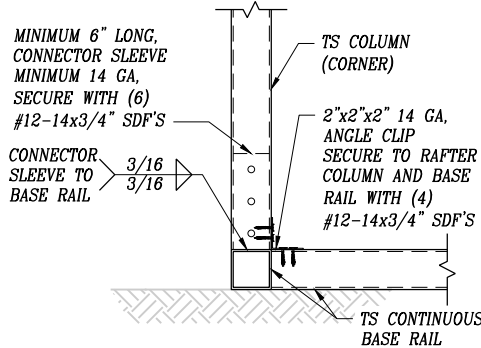
③ COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS



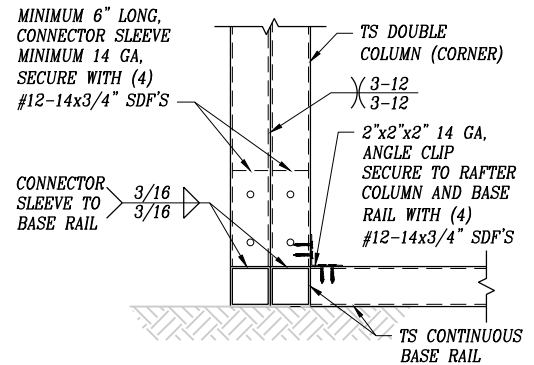
③A COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS



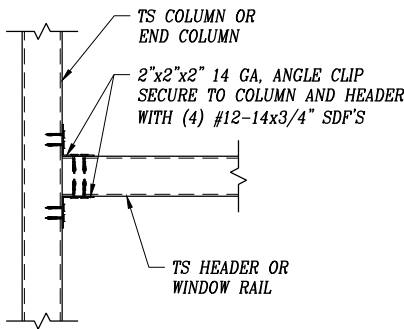
④ END COLUMN/RAFTER CONNECTION DETAIL
SCALE: NTS



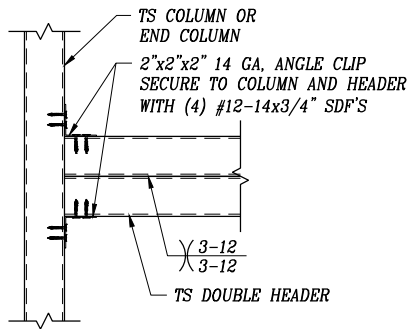
⑤ END COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS



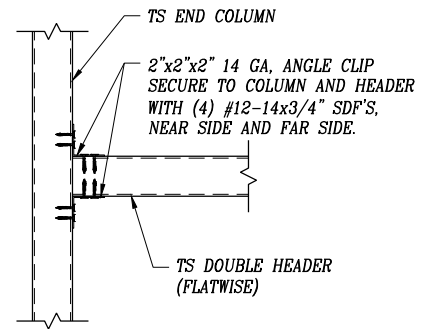
⑤A END COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS



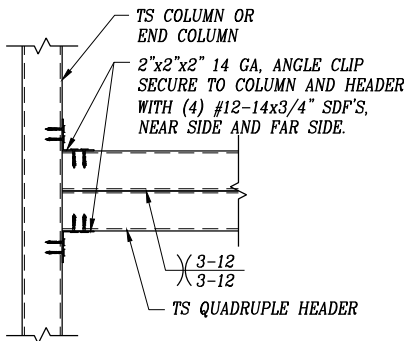
⑥ HEADER OR WINDOW RAIL TO COLUMN CONNECTION DETAIL
SCALE: NTS



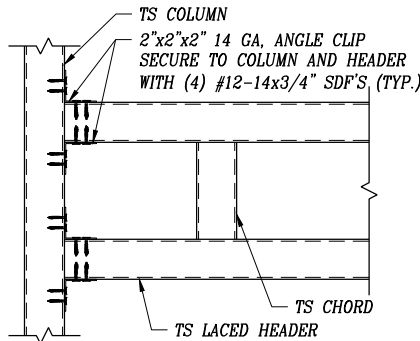
⑥A DOUBLE HEADER TO COLUMN CONNECTION DETAIL
SCALE: NTS



⑥B DOUBLE HEADER (FLATWISE) TO COLUMN CONNECTION DETAIL
SCALE: NTS



⑥C LACED HEADER TO COLUMN CONNECTION DETAIL
SCALE: NTS



⑥D LACED HEADER TO COLUMN CONNECTION DETAIL
SCALE: NTS

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

DATE: 06-25-25

SCALE: NTS

SHT. 12

DWG. NO.

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

JOB NO:

REV.

DRAWN BY: —

CHECKED BY: —

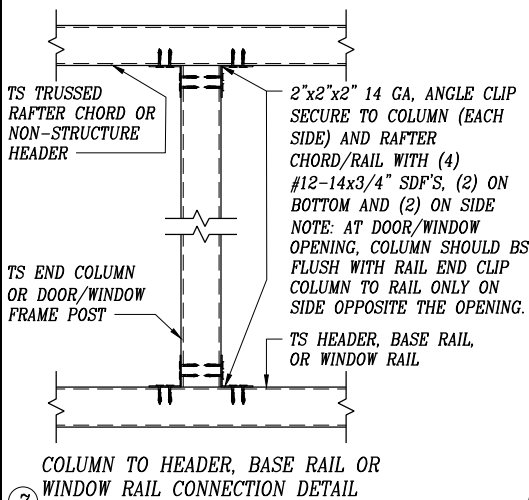
PROJECT MGR: —

CONNECTION
DETAILS

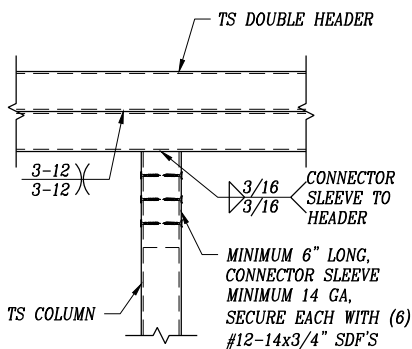
ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM

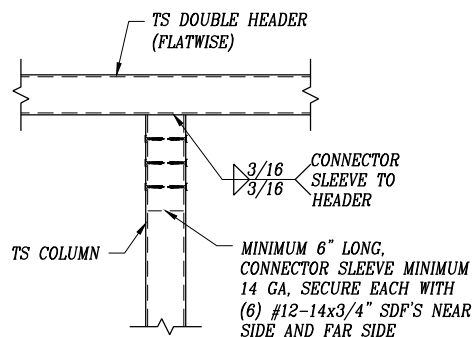
"Value Engineering the First Time"



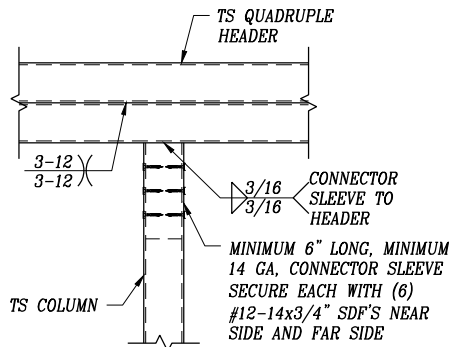
SCALE: NTS



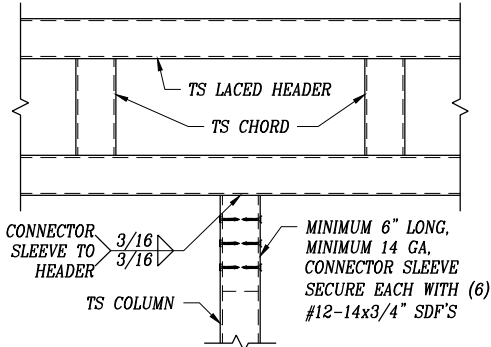
SCALE: NTS



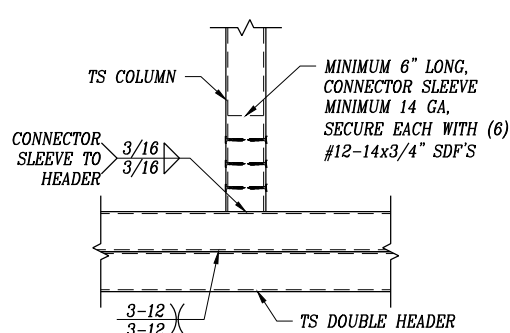
SCALE: NTS



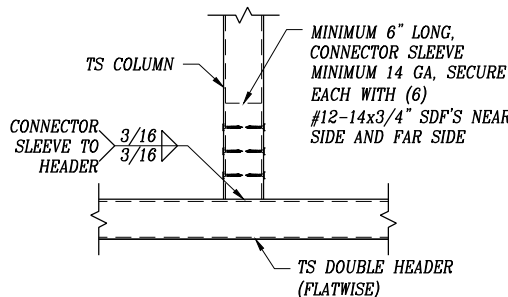
SCALE: NTS



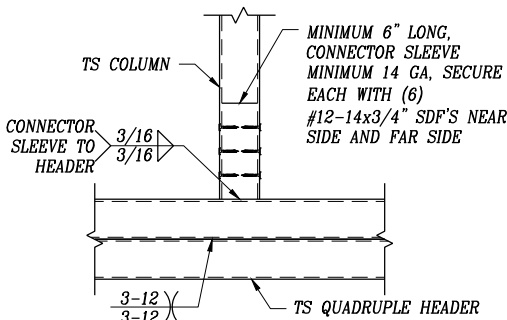
SCALE: NTS



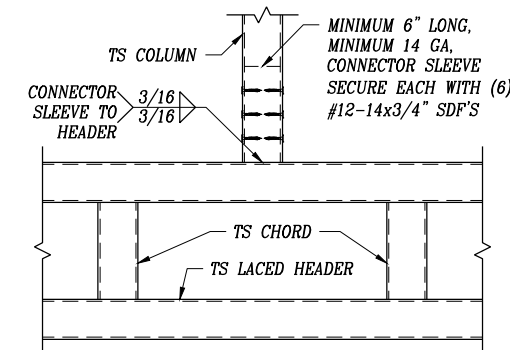
SCALE: NTS



SCALE: NTS



SCALE: NTS



SCALE: NTS

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 13

DWG. NO.

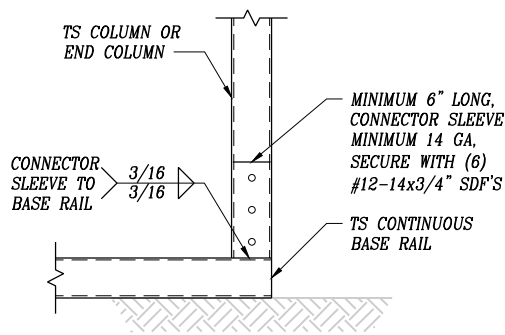
REV.

CONNECTION
DETAILS

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

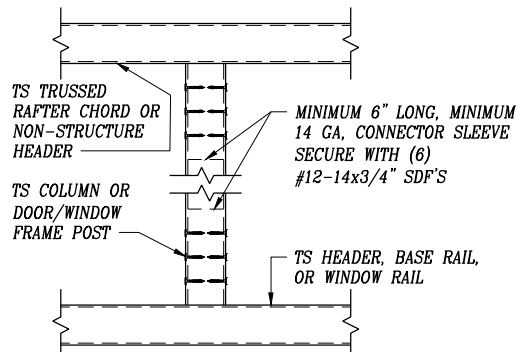
225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM

"Value Engineering the First Time"



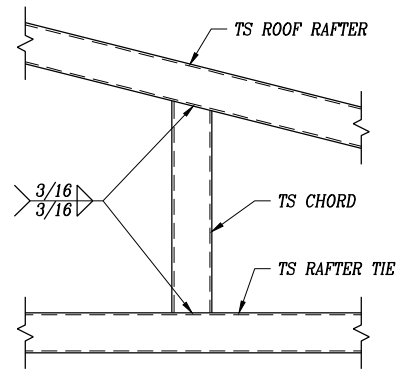
10 COLUMN/BASE RAIL CONNECTION DETAIL

SCALE: NTS



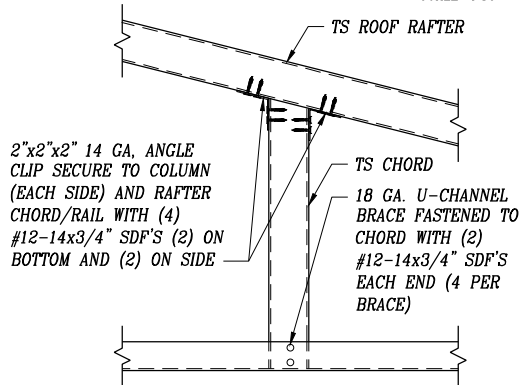
11 COLUMN TO HEADER, WINDOW RAIL OR BASE RAIL CONNECTION DETAIL

SCALE: NTS



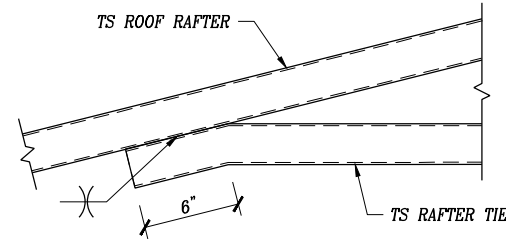
12 RAFTER TO CHORD CONNECTION DETAIL

SCALE: NTS



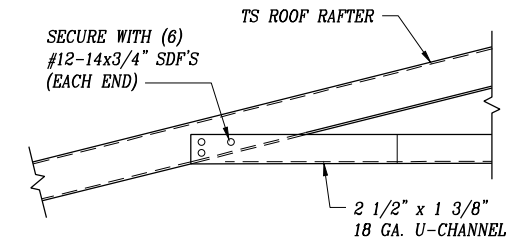
12A RAFTER TO CHORD CONNECTION DETAIL

SCALE: NTS



13 RAFTER TIE CONNECTION DETAIL

SCALE: NTS



13A RAFTER TIE CONNECTION DETAIL

SCALE: NTS

NOTE:
DOUBLE TUBE RAFTER NOT
SHOWN FOR CLARITY.

NOTE:
DOUBLE TUBE RAFTER NOT
SHOWN FOR CLARITY.

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0" x 14'-0" ENCLOSED STRUCTURE

DATE: 06-25-25

SCALE: NTS

SHT. 14

DWG. NO.

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

JOB NO:

REV.

DRAWN BY: —

CHECKED BY: —

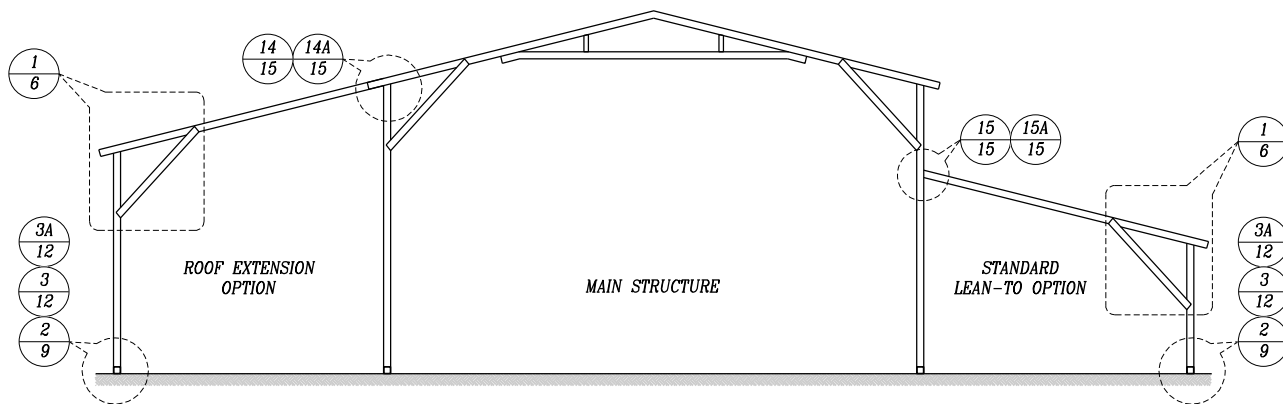
PROJECT MGR: —

CONNECTION
DETAILS

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM
"Value Engineering the First Time"

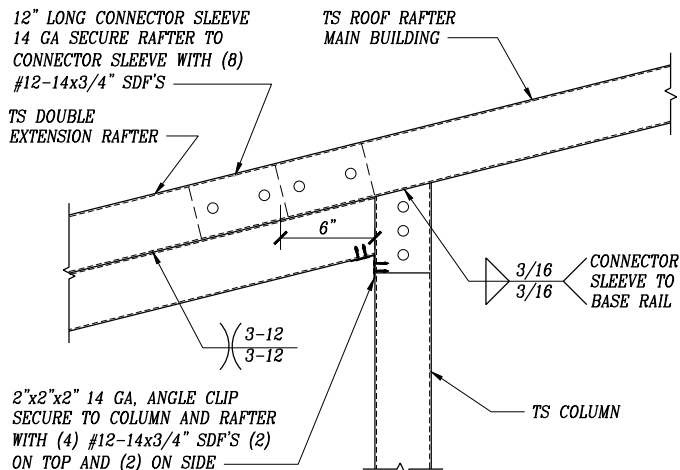
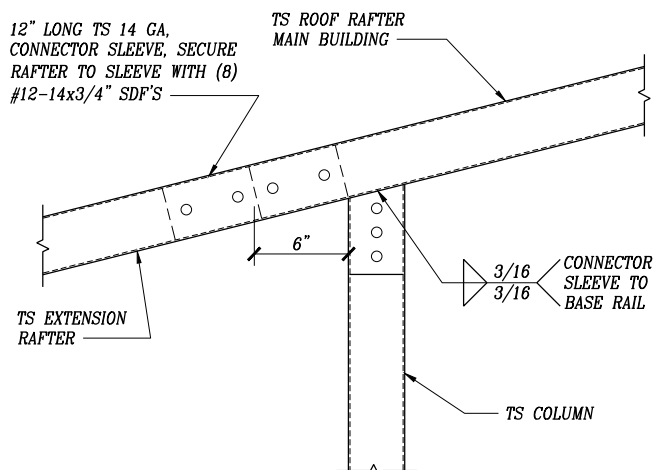
BOX EAVE RAFTER LEAN-TO OPTIONS



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

NOTE: REFER TO SHEETS 6 AND 6A FOR COLUMN HEIGHTS AND TYPES.
LEAN-TO COLUMN SPACING SHALL MATCH MAIN BUILDING.

SCALE: NTS



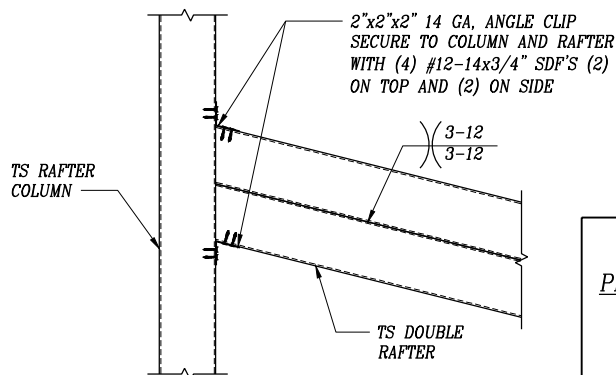
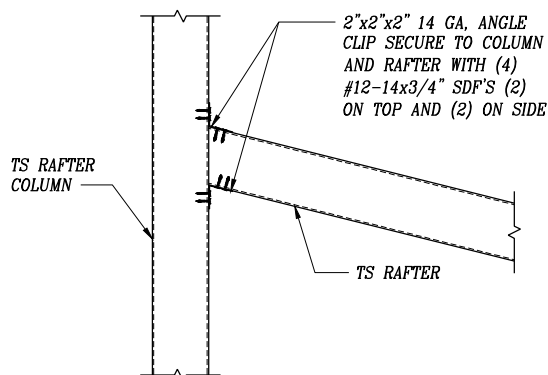
SIDE EXTENSION RAFTER/COLUMN
DETAIL FOR WIDTHS ≤ 10'-0"

SIDE EXTENSION RAFTER/COLUMN DETAIL
FOR WIDTHS 10'-0" < TO ≤ 12'-0"

NOTE: LEAN-TO RAFTER CAN SPAN 11'-0" IF
A 4'-0" LONG KNEE BRACE IS USED.

SCALE: NTS

SCALE: NTS



LEAN-TO RAFTER TO RAFTER/COLUMN
CONNECTION DETAIL FOR WIDTHS ≤ 10'-0"

LEAN-TO RAFTER TO RAFTER/COLUMN CONNECTION
DETAIL FOR WIDTHS 10'-0" < TO ≤ 12'-0"

NOTE: LEAN-TO RAFTER CAN SPAN 11'-0" IF
A 4'-0" LONG KNEE BRACE IS USED.

SCALE: NTS

SCALE: NTS

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 15

DWG. NO.

REV.

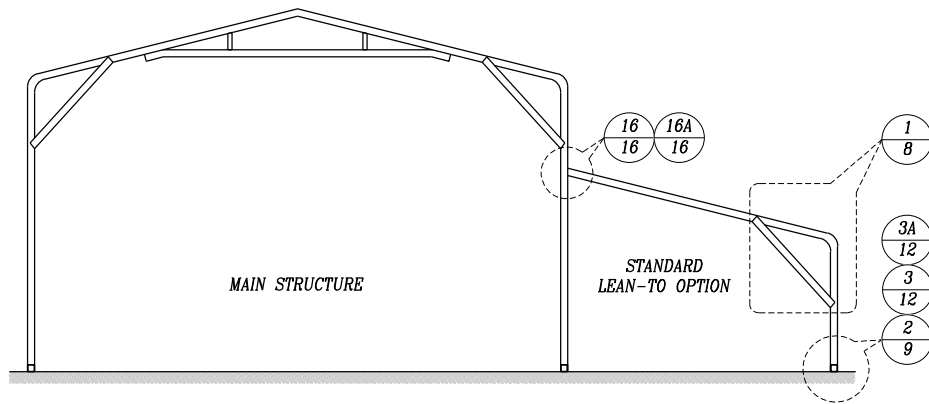
LEAN TO OPTIONS
(BOX EAVE RAFTER)

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM

"Value Engineering the First Time"

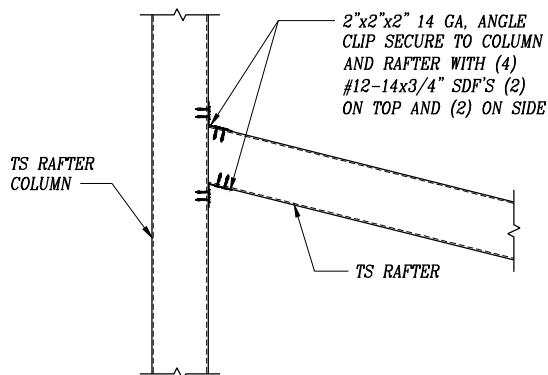
BOW RAFTER LEAN-TO OPTION



TYPICAL BOW EAVE RAFTER LEAN-TO OPTION FRAMING SECTION

NOTE: REFER TO SHEETS 8 AND 8A FOR COLUMN HEIGHTS AND TYPES.
LEAN-TO COLUMN SPACING SHALL MATCH MAIN BUILDING.

SCALE: NTS

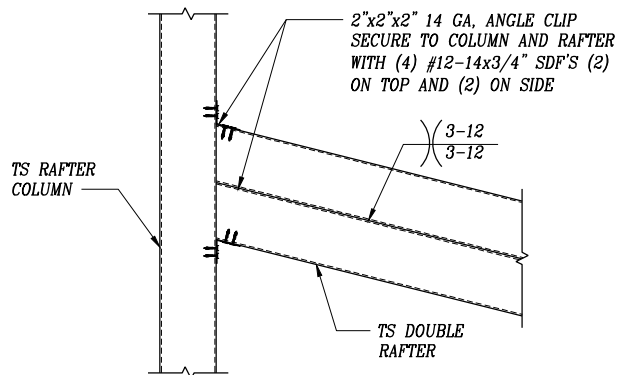


LEAN-TO RAFTER TO RAFTER/COLUMN

CONNECTION DETAIL FOR WIDTHS $\leq 10'-0''$

NOTE: LEAN-TO RAFTER CAN SPAN $11'-0''$ IF
A $4'-0''$ LONG KNEE BRACE IS USED.

SCALE: NTS



LEAN-TO RAFTER TO RAFTER/COLUMN CONNECTION

DETAIL FOR WIDTHS $10'-0'' < TO \leq 12'-0''$

SCALE: NTS

Validity Notice

Plans Expiration Date:

PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 16

DWG. NO.

REV.

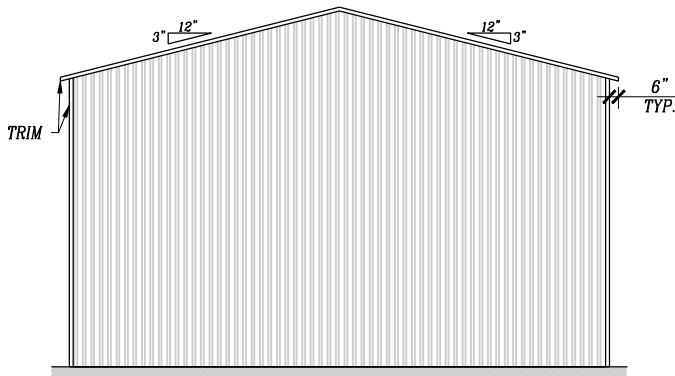
LEAN TO OPTIONS
(BOX EAVE RAFTER)

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM

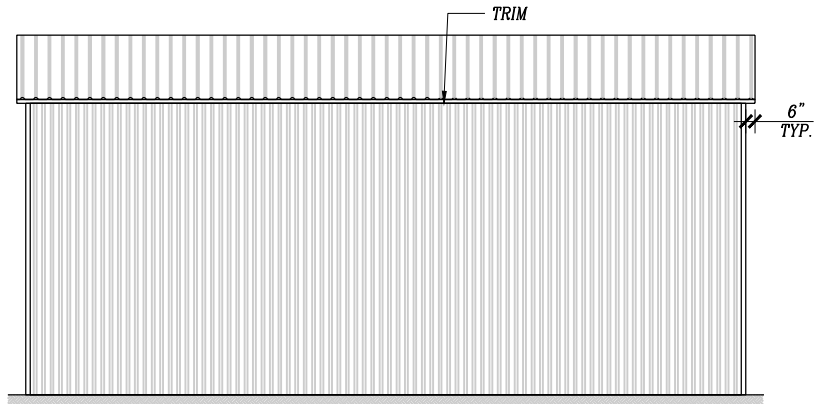
"Value Engineering the First Time"

VERTICAL ROOF/SIDING OPTION



TYPICAL END ELEVATION VERTICAL ROOF/SIDING

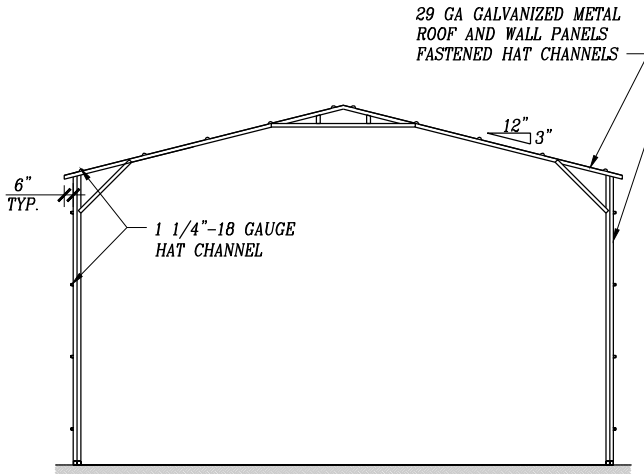
SCALE: NTS



TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING OPTION

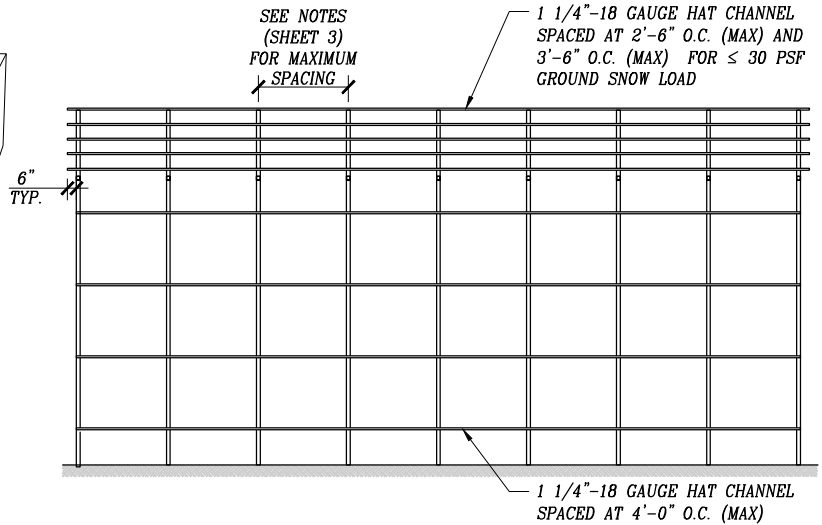
SCALE: NTS

NOTE: 29 GA HORIZONTAL ROOF PANELS CAN BE USED FOR
GROUND SNOW LOADS \leq 30 PSF
26 GA HORIZONTAL ROOF PANELS CAN BE USED FOR
GROUND SNOW LOADS \leq 40 PSF



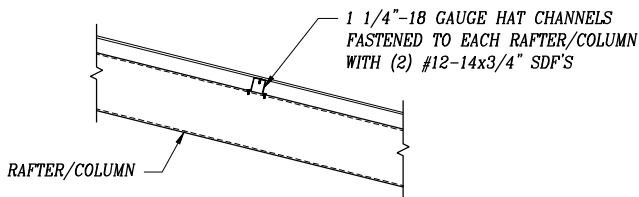
TYPICAL SECTION-VERTICAL ROOF/SIDING

SCALE: NTS



TYPICAL FRAMING SECTION VERTICAL ROOF/SIDING OPTION

SCALE: NTS



PANEL ATTACHMENT

(ALTERNATE FOR VERTICAL ROOF PANELS)

SCALE: NTS

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

DATE: 06-25-25

SCALE: NTS

SHT. 17

DWG. NO.

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

JOB NO:

REV.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

VERTICAL ROOF/
SIDING OPTION

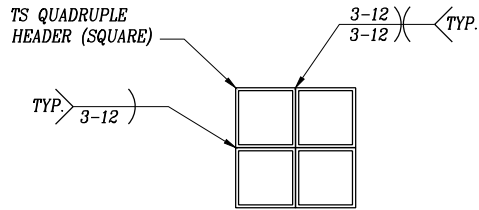
ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM

"Value Engineering the First Time"

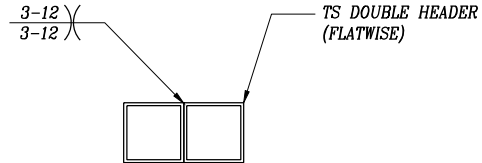
SIDE WALL HEADER OPTIONS FOR TS DOUBLE COLUMNS

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



HEADER DETAIL FOR
 $8'-0" < \text{LENGTH} \leq 12'-0"$

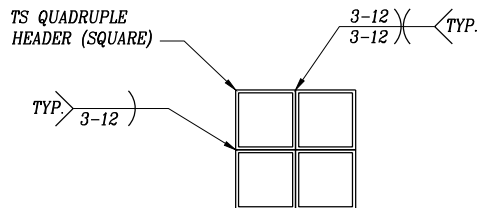
SCALE: NTS



HEADER DETAIL FOR
 $\text{LENGTH} \leq 8'-0"$

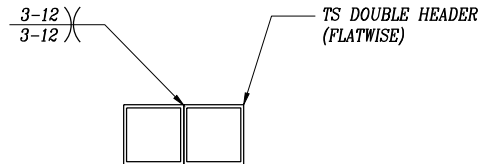
SCALE: NTS

END WALL HEADER OPTIONS FOR TS DOUBLE COLUMNS



HEADER DETAIL FOR
 $10'-0" < \text{LENGTH} \leq 12'-0"$

SCALE: NTS



HEADER DETAIL FOR
 $\text{LENGTH} \leq 10'-0"$

SCALE: NTS

Validity Notice

Plans Expiration Date:

PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 18

DWG. NO.

REV.

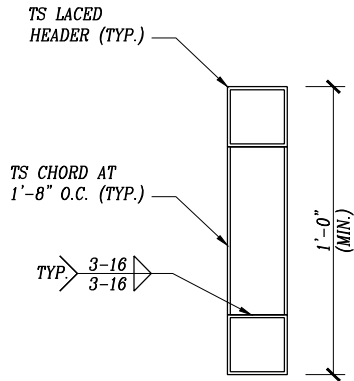
SIDE WALL AND END WALL
HEADER OPTIONS FOR TS
DOUBLE COLUMNS

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM
"Value Engineering the First Time"

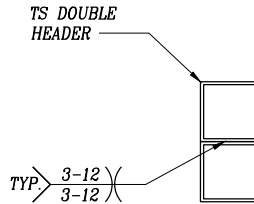
SIDE WALL HEADER OPTIONS FOR TS SINGLE COLUMNS

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



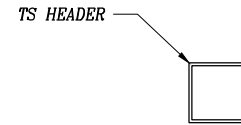
HEADER DETAIL FOR
 $9'-0" < \text{LENGTH} \leq 12'-0"$

SCALE: NTS



HEADER DETAIL FOR
 $5'-0" < \text{LENGTH} \leq 9'-0"$

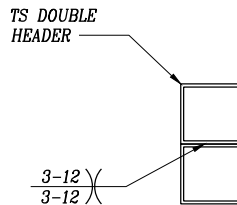
SCALE: NTS



HEADER DETAIL FOR
 $\text{LENGTH} \leq 5'-0"$

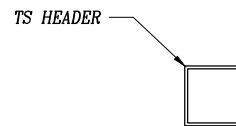
SCALE: NTS

END WALL HEADER OPTIONS FOR TS SINGLE COLUMNS



HEADER DETAIL FOR
 $8'-0" < \text{LENGTH} \leq 12'-0"$

SCALE: NTS



HEADER DETAIL FOR
 $\text{LENGTH} \leq 8'-0"$

SCALE: NTS

Validity Notice
Plans Expiration Date:
PER EACH STATE

RELIABLE METAL BUILDINGS, LLC.
16570 US HIGHWAY 20
PIONEER, OHIO 43554
30'-0"x14'-0" ENCLOSED STRUCTURE

CLIENT :
RELIABLE METAL
BUILDINGS, LLC.

DRAWN BY: —

CHECKED BY: —

PROJECT MGR: —

DATE: 06-25-25

SCALE: NTS

JOB NO:

SHT. 18A

DWG. NO.

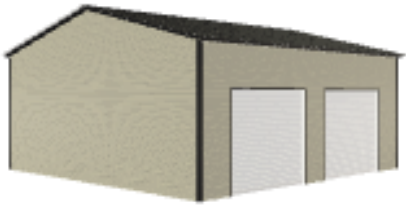
REV.

SIDE WALL AND END WALL
HEADER OPTIONS FOR TS
SINGLE COLUMNS

ASG LLC
AMERICAN STRUCTURAL GROUP
CONSULTING STRUCTURAL ENGINEERS

225 SOUTH MAIN STREET
MONROE, OHIO 45050
PH 513-402-7600
WWW.ASG-ENG.COM
"Value Engineering the First Time"

Building Images



Perspective View



Front



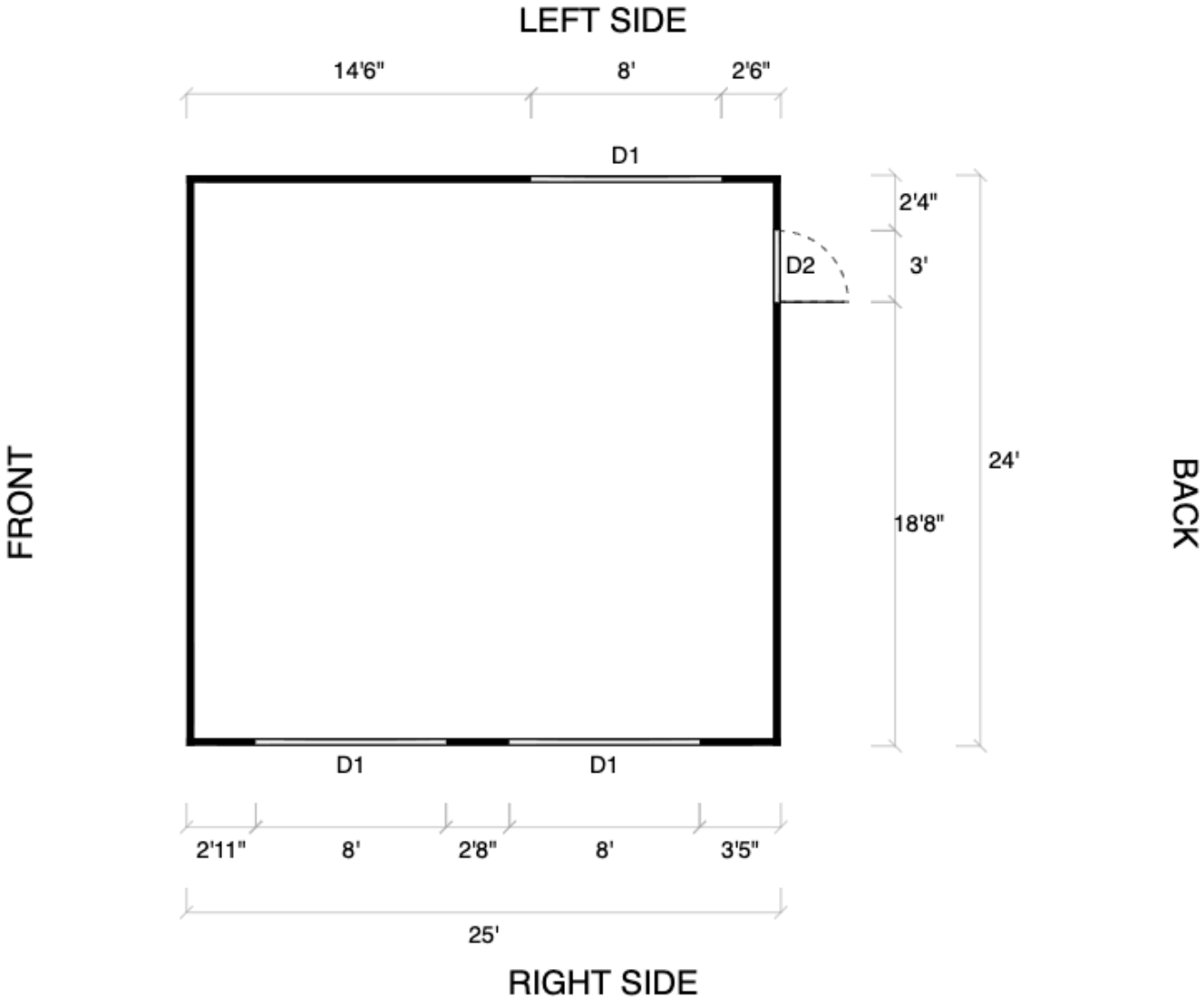
Left Side



Right Side



Back



SYMBOL LEGEND	
D1	8'x7' Garage Door
D2	Standard 6 Panel Steel Door (36x80) - Right Hand Outswing
	Closed Wall







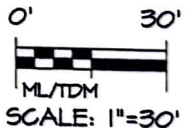
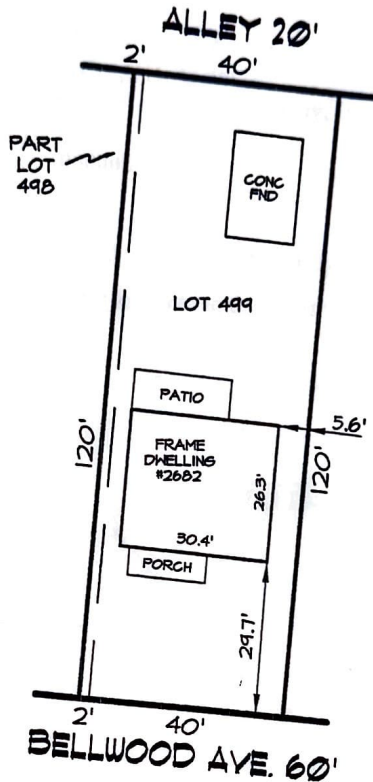




CAMPBELL &
ASSOCIATES, INC.
Land Surveying

614.785.9340
Fax: 614.785.9342
77 E Wilson Bridge Road
Suite 205
Worthington, OH 43085
<http://www.campbellsurvey.com>

Mortgage Location Survey



WE HAVE RECEIVED A COPY OF THIS
SURVEY AND FIND THE CONDITIONS
ACCEPTABLE TO ME/US.

[Signature]
BUYER/OWNER

Street Address:

2682 Bellwood Ave, Columbus, Ohio 43209

New Owner:

Nathan L. Morris and Keagan A. Morris

Allotment: Bellwood Addition

Record Info: Plat Book: 6 Page: 16

Client Order No: 77169080

Date: July 20, 2022

Present Owner:

Martin A. Berkowitz and Karen K. Berkowitz

This is to certify to:

Ruoff Mortgage Company, Inc. and/or Valmer Land Title Agency, LLC that a visual inspection of the property and buildings shown (if any) has been made and there are no apparent encroachments or visible easements unless otherwise shown. This service was not performed for the purpose of establishing boundary lines, and is not to be used for that purpose.

This Mortgage Location Survey has been prepared in accordance with Chapter 4733-38, Ohio Administrative Code, and is not a boundary survey pursuant to Chapter 4733-37, Ohio Administrative Code.

[Signature]
Matthew L. Campbell - Reg. Surveyor No. 8546