TUBULAR BUILDING SYSTEMS

STRUCTURAL DESIGN

PARTIALLY ENCLOSED (UTILITY) BUILDING EXPOSURE B

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

29 July 2021
Revision 3
M&A Project No. 16154S/17300S/20352S

COLUMBIA COUNTY BUILDING DEPARTMENT
Received for FILE COPY Code Compliance
PLANS EXAMINER

Prepared for:

Tubular Building Systems, LLC
631 SE Industrial Circle
Lake City, Florida 32025

Prepared by:

Moore and Associates Engineering and Consulting, Inc.
1009 East Avenue
North Augusta, SC 29841

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

Wayne S Moore
Digitally signed by Wayne S Moore
Date: 2021.10.21 08:33:08 -04'00'

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING

WAYNE S. MOORE
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No 57170
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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DRAWN BY: JG
CHECKED BY: PDH
PROJECT MGR: WSM
CLIENT: TBS

TUBULAR BUILDING SYSTEMS
30'-0"x20'-0" UTILITY BUILDING EXP. B
PE SEAL COVER SHEET

DATE: 7-29-21
SCALE: NTS
JOB NO: 16154S/17300S/20352S
SHT. 1
DWG. NO: SK-2
REV.: 3

DRAWING INDEX

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DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"x20'-0" UTILITY BUILDING EXP. B		
CHECKED BY: PDH			
PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16154S/17300S/20352S
CLIENT: TBS	SHT. 2	DWG. NO: SK-2	REV.: 3

INSTALLATION NOTES AND SPECIFICATIONS

1 DESIGN IS FOR A MAXIMUM 30'-0" WIDE x 20'-0" EAVE HEIGHT PARTIALLY ENCLOSED UTILITY STRUCTURES

2 DESIGN WAS DONE IN ACCORDANCE WITH THE 2020 FLORIDA BUILDING CODE (FBC) 7TH EDITION, 2012 INTERNATIONAL BUILDING CODE (IBC), 2015 IBC, AND 2018 IBC

3 DESIGN LOADS ARE AS FOLLOWS
- A) DEAD LOAD = 15 PSF
- B) LIVE LOAD = 12 PSF
- C) GROUND SNOW LOAD = 10 PSF

4 LOW ULTIMATE WIND SPEED 105 TO 140 MPH (NOMINAL WIND SPEED 81 TO 108 MPH): MAXIMUM RAFTER/POST AND END POST SPACING = 50 FEET

5 HIGH ULTIMATE WIND SPEED 141 TO 170 MPH (NOMINAL WIND SPEED 109 TO 132 MPH): MAXIMUM RAFTER/POST AND END POST SPACING = 40 FEET

6 END WALL COLUMNS (POSTS) AND SIDE WALL COLUMNS ARE EQUIVALENT IN SIZE AND SPACING (UNLESS NOTED OTHERWISE)

7 RISK CATEGORY I

8 WIND EXPOSURE CATEGORY B

9 SPECIFICATIONS APPLICABLE TO 29 GAUGE METAL PANELS FASTENED DIRECTLY TO 2 1/2" x 2 1/2" - 14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS FOR VERTICAL PANELS. 29 GAUGE METAL PANELS SHALL BE FASTENED TO 18 GAUGE HAT CHANNELS (UNLESS OTHERWISE NOTED)

10 AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR PURLINS, AND POSTS, INTERIOR = 9" OR END = 6". (MAX.)

11 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 JOINT SEALANT

12 STANDARD ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6" OF EACH COLUMN

13 STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBAR W/WELDED NUT x 30" LONG IN SUITABLE SOIL CONDITIONS MAY BE USED FOR LOW ($\leq$ 108 MPH NOMINAL) WIND SPEEDS ONLY 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

14 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}= 1.522 g V= C_SW
S_{D1}= 0.839 g

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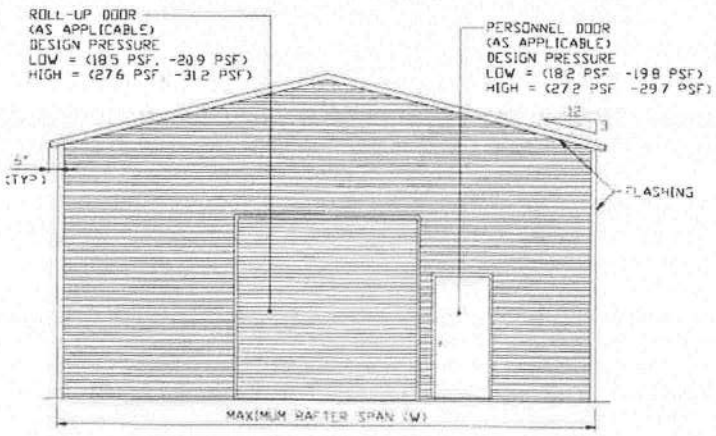
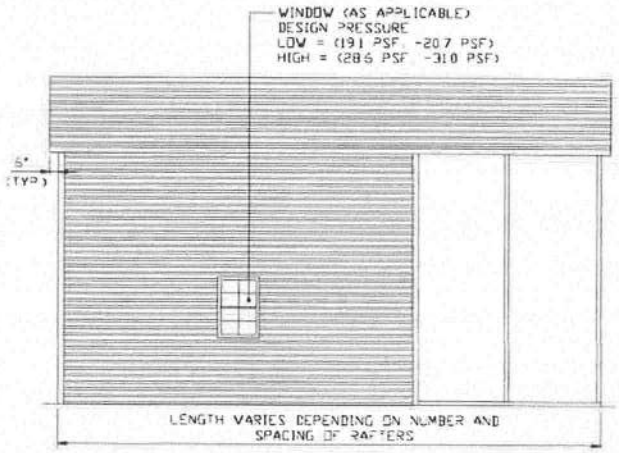
	CLIENT: TBS	SHT. 3	DWG. NO: SK-2	REV.: 3

BOX EAVE FRAME RAFTER ENCLOSED BUILDING

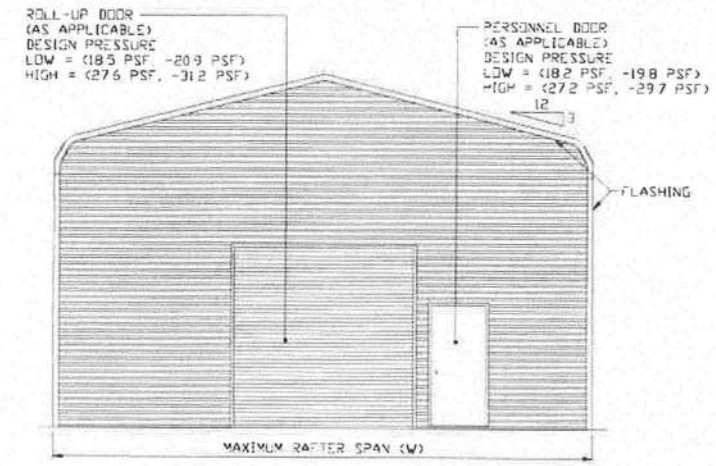


TYPICAL END ELEVATION
SCALE: NTS



TYPICAL SIDE ELEVATION
SCALE: NTS

BOW FRAME RAFTER ENCLOSED BUILDING



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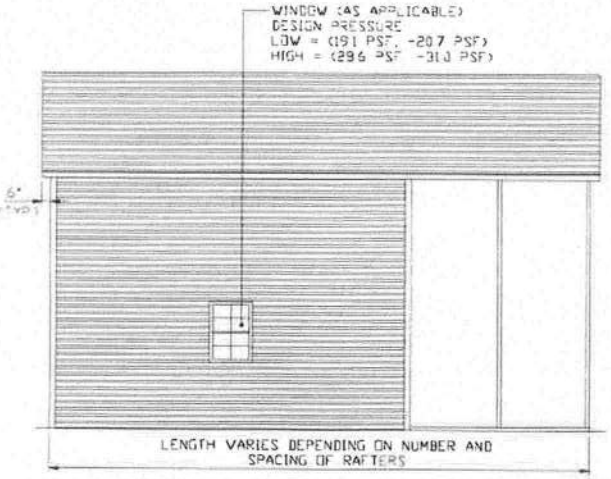

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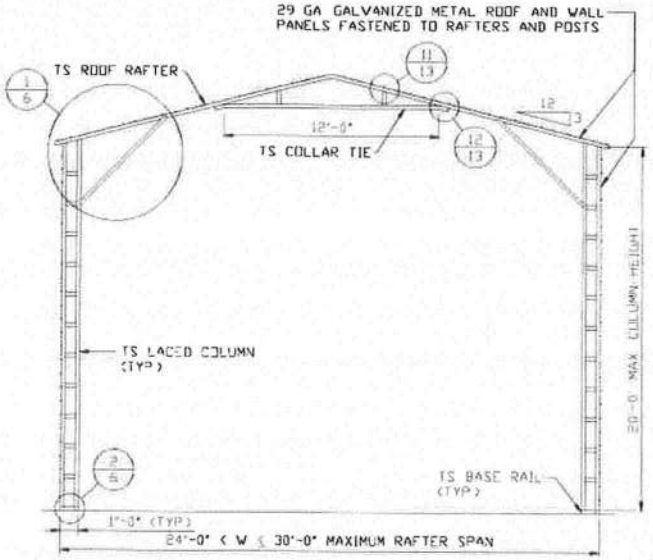
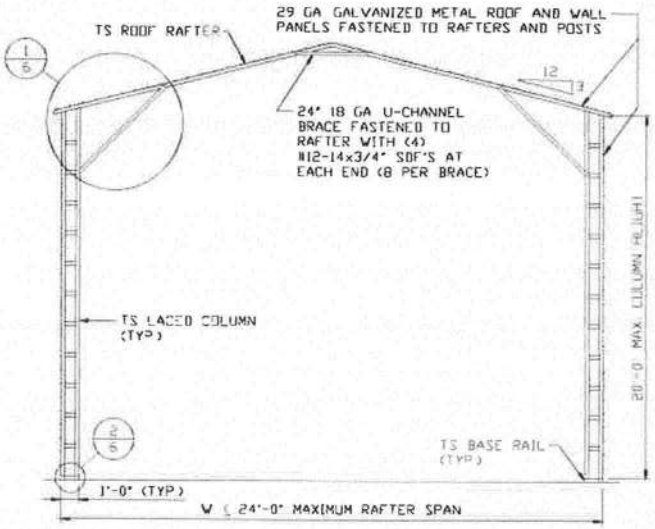


TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



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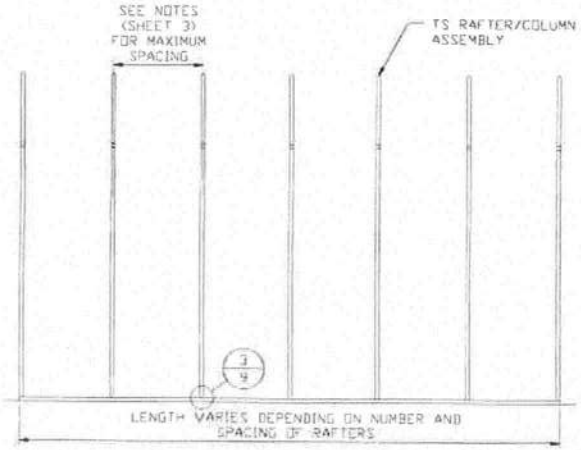

TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

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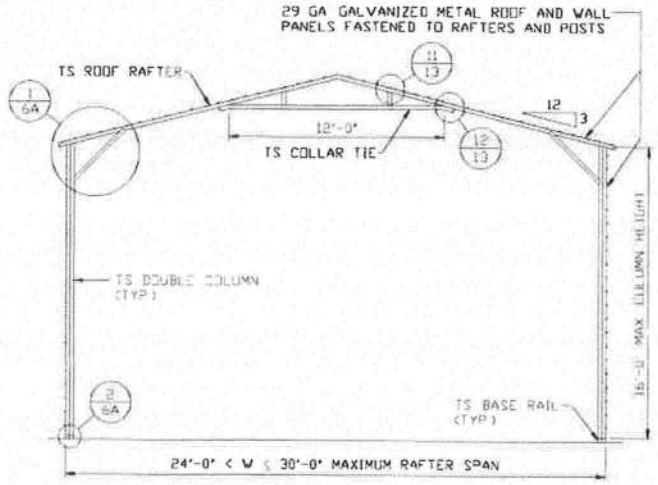

TYPICAL RAFTER/COLUMN END FRAME SECTION

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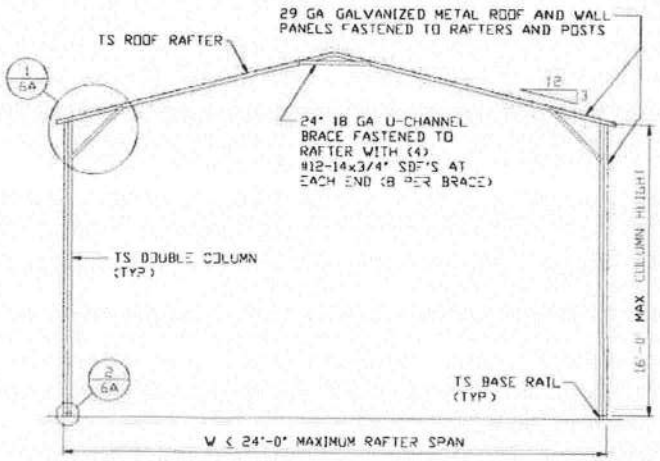

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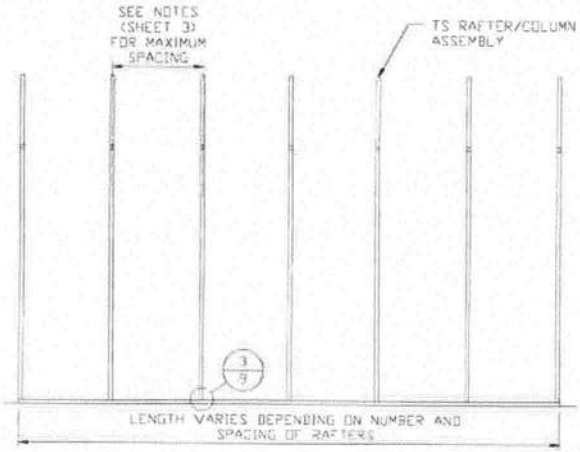

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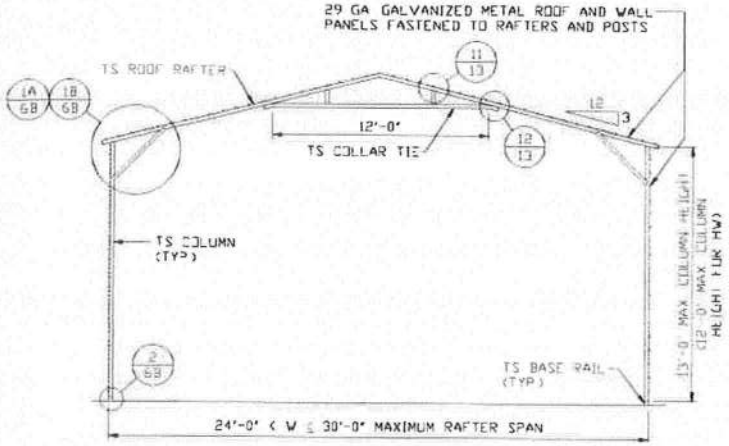

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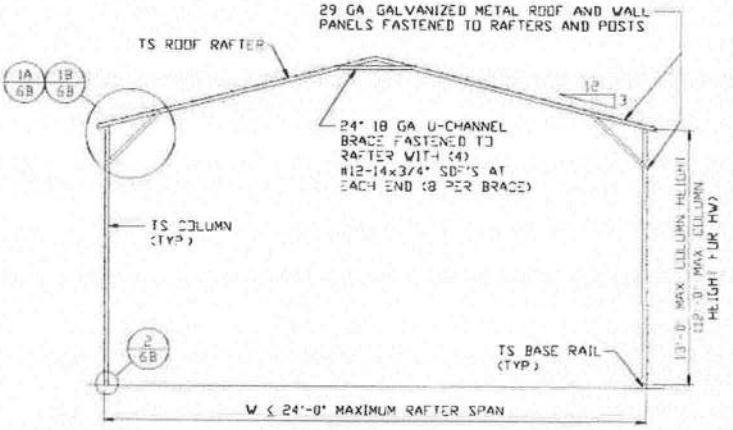

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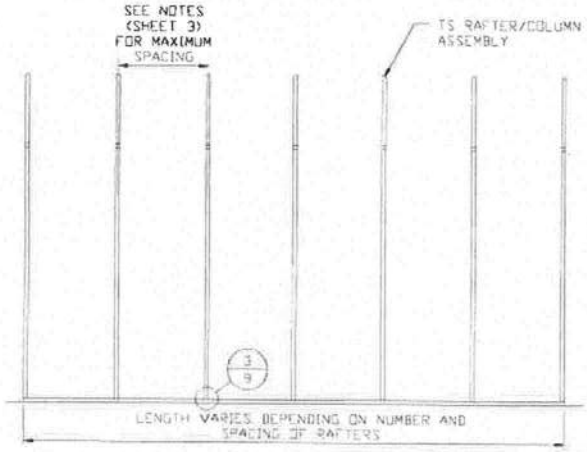

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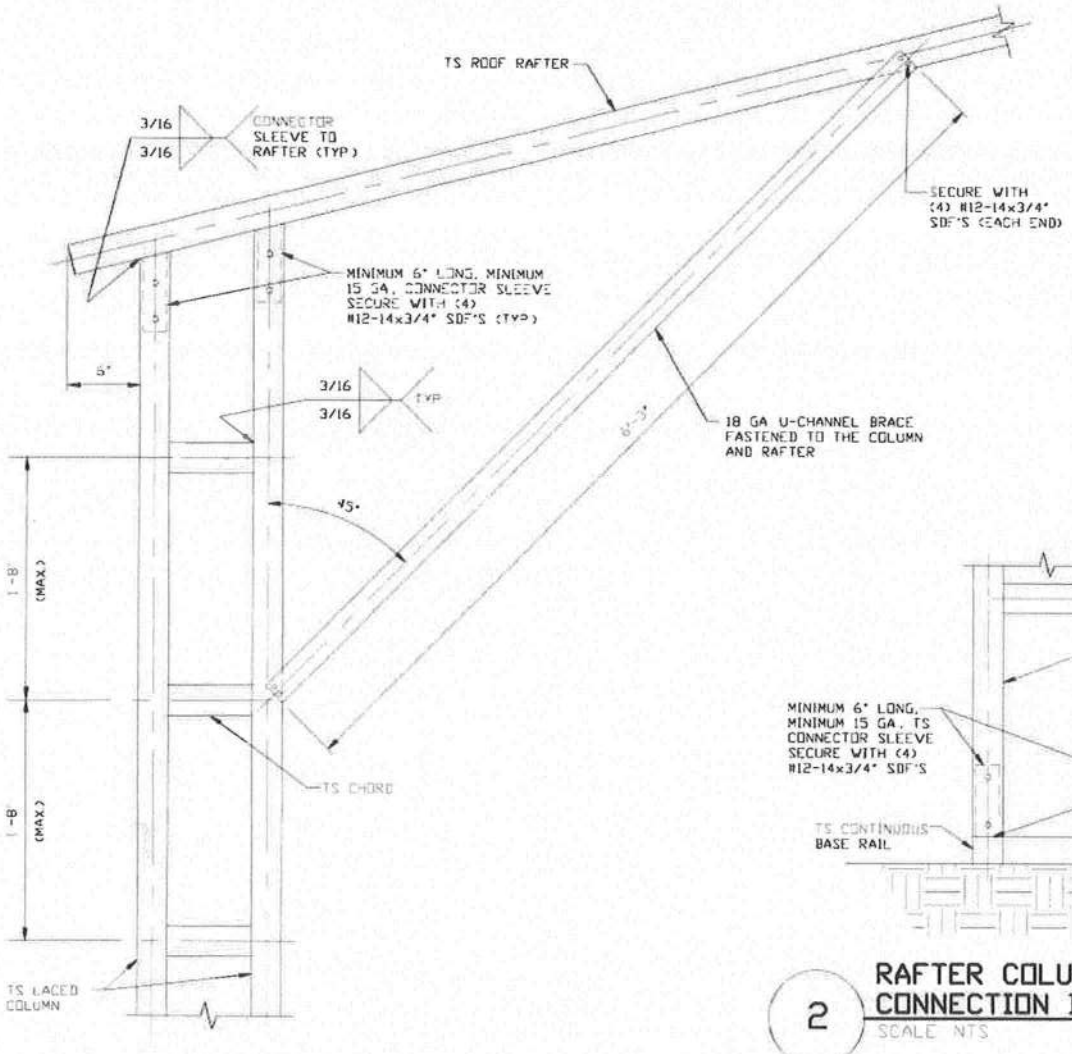
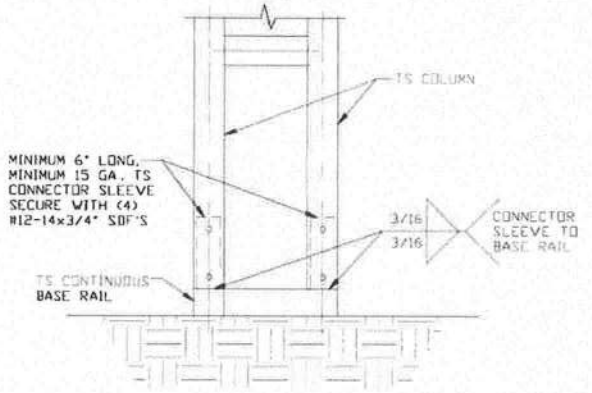


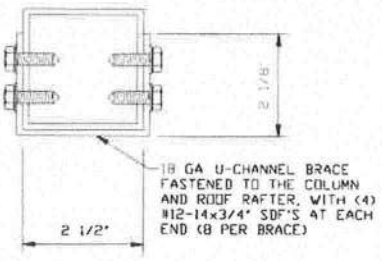
1 BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 16'-0" < TO ≤ 20'-0"

SCALE: NTS



2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

SCALE: NTS



BRACE SECTION

SCALE: NTS

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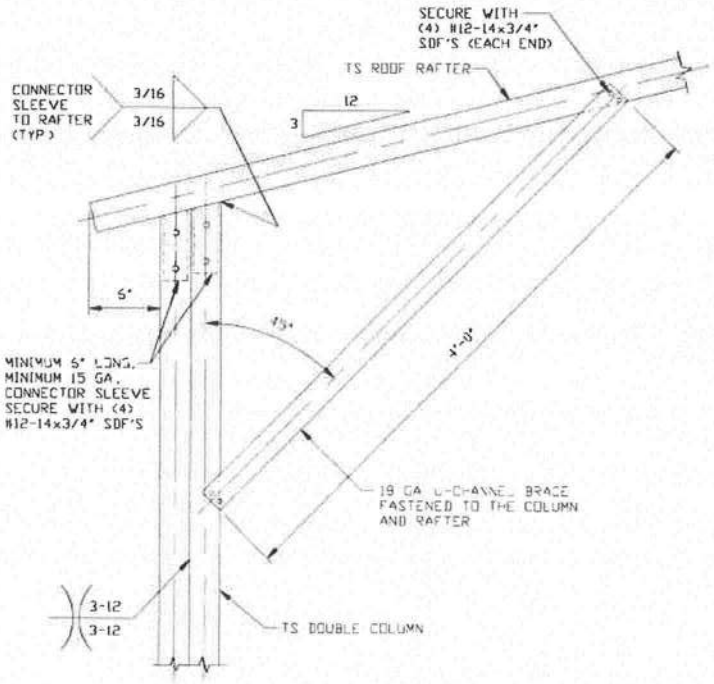
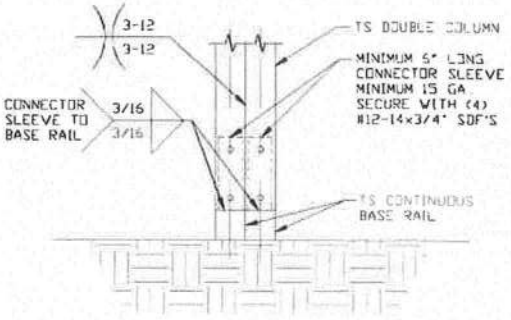


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 13'-0" < TO ≤ 16'-0"

1

SCALE NTS

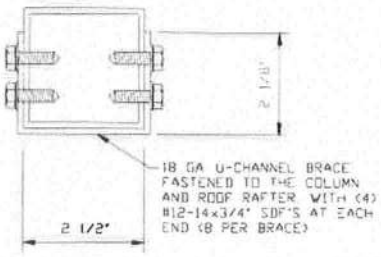
NOTE: COLUMN HEIGHTS 12'-0" < TO ≤ 16'-0" FOR HIGH WIND



RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

2

SCALE NTS



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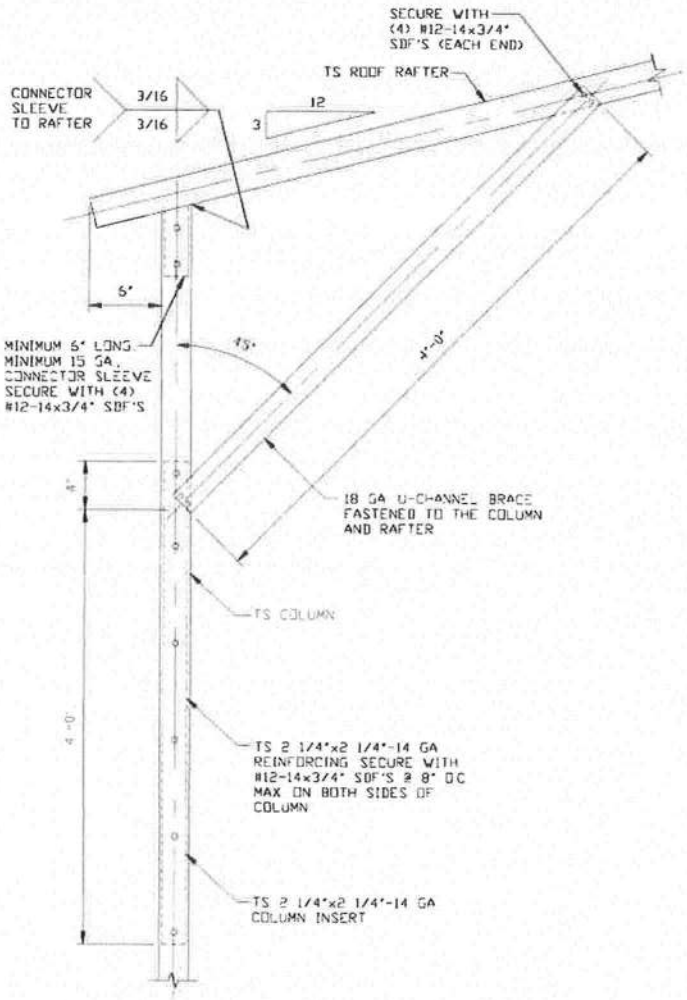
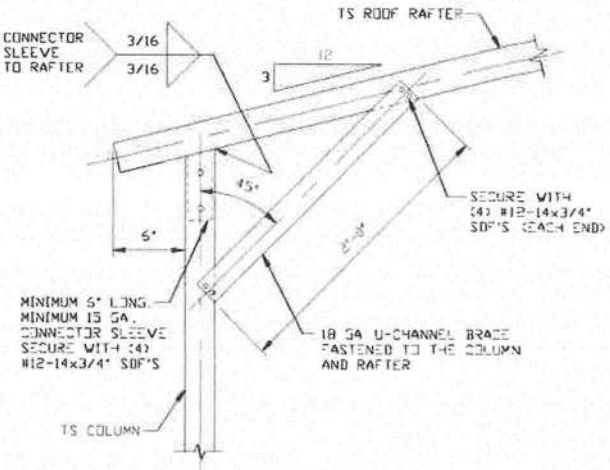


1A BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO ≤ 13'-0"

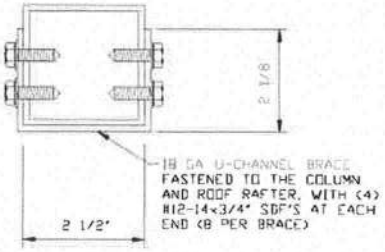
SCALE NTS

NOTE MAXIMUM COLUMN HEIGHT IS 12'-0" FOR HIGH WIND



1B BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 10'-0"

SCALE NTS



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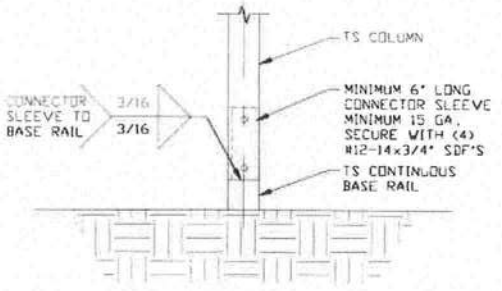

2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

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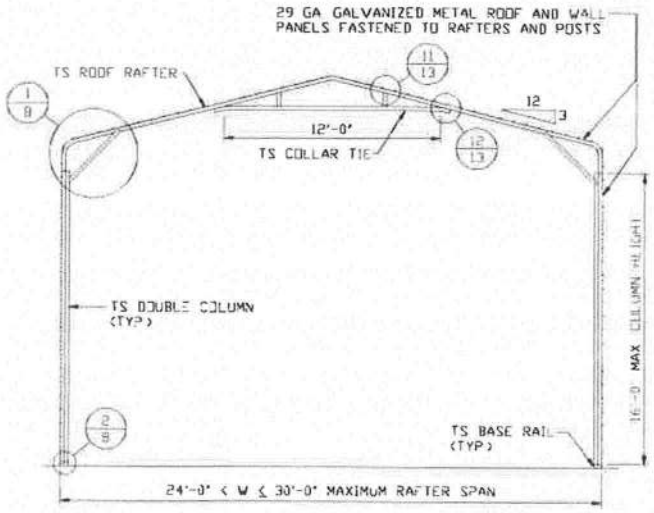

TYPICAL RAFTER/COLUMN END FRAME SECTION

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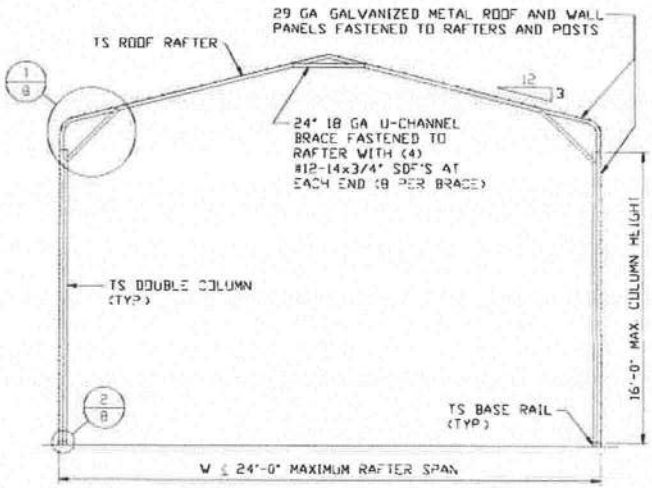

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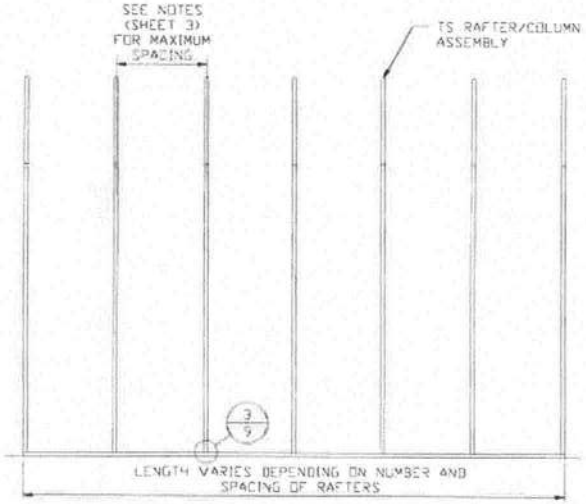

TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

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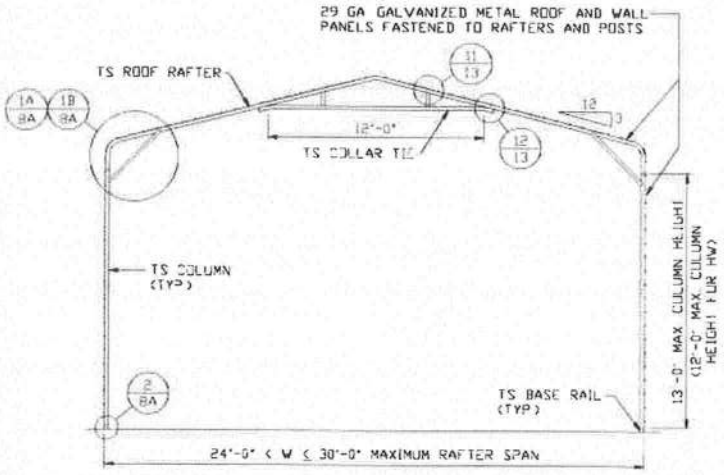

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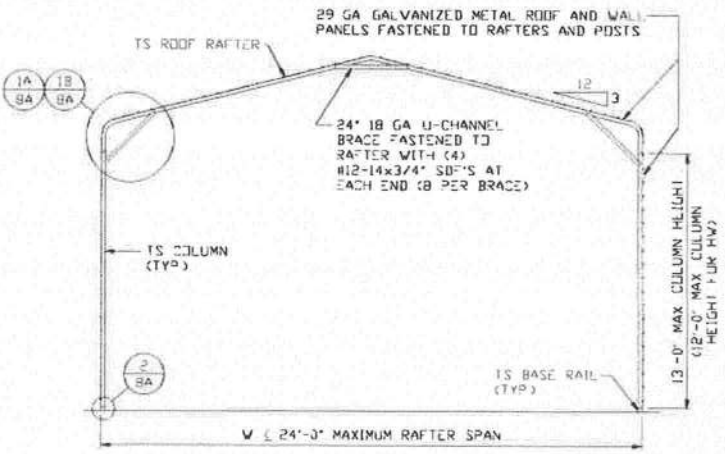

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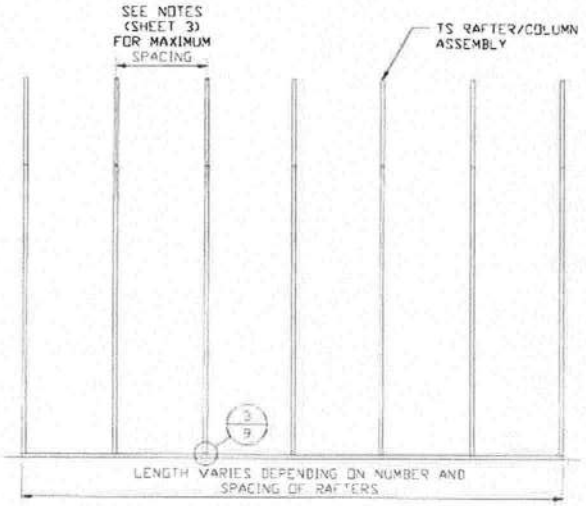

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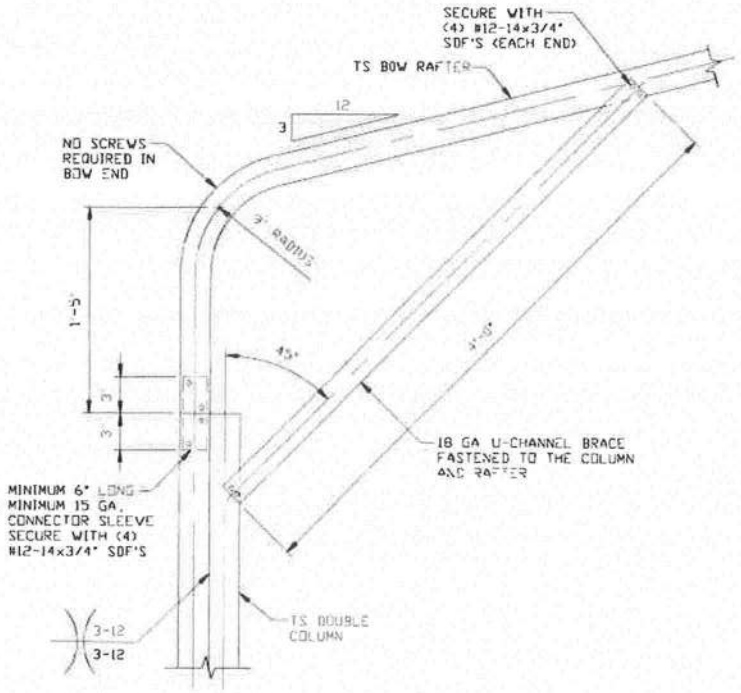
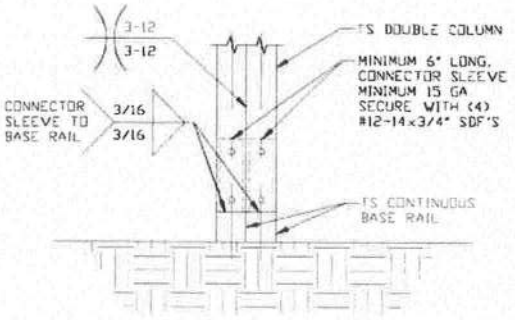
	PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16154S/17300S/20352S
	CLIENT: TBS	SHT. 7A	DWG. NO: SK-2	REV.: 3



1 BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 13'-0" < TO ≤ 16'-0"

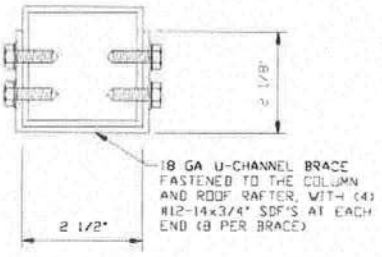
SCALE NTS

NOTE COLUMN HEIGHTS 12'-0" < TO ≤ 16'-0" FOR HIGH WIND



2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

SCALE NTS



BRACE SECTION

SCALE NTS

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STATE OF FLORIDA
PROFESSIONAL ENGINEER

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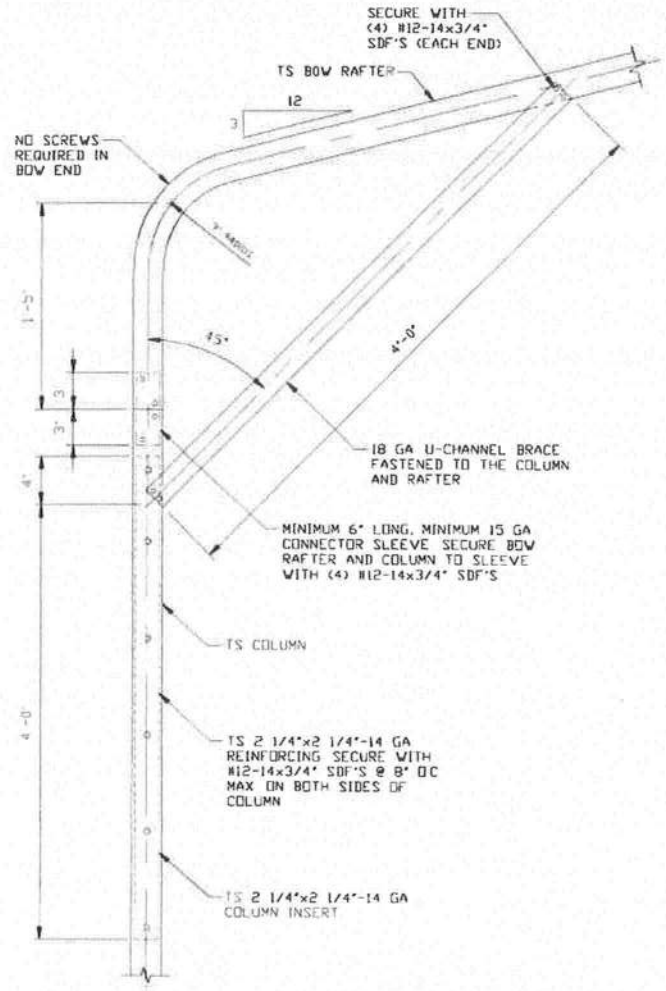
	PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16154S/ 17300S/20352S
	CLIENT: TBS	SHT. 8	DWG. NO: SK-2	REV.: 3

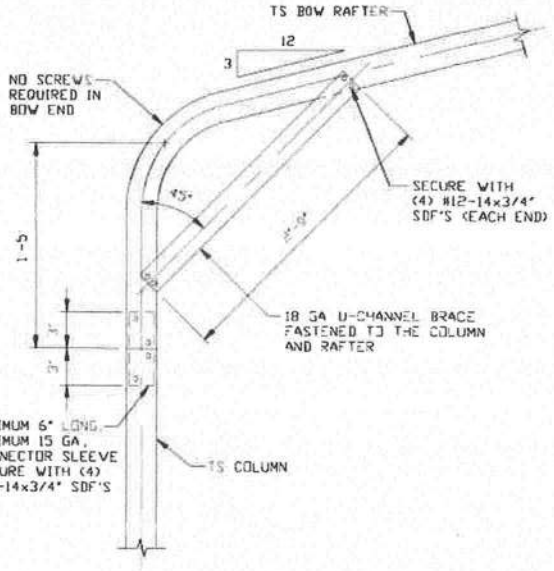


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO ≤ 13'-0"

1A

SCALE: NTS

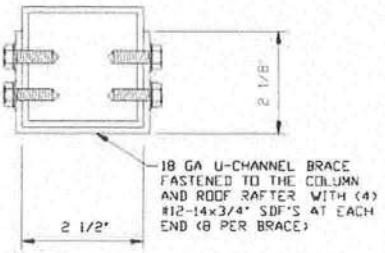
NOTE MAXIMUM COLUMN HEIGHT IS 12'-0" FOR HIGH WIND



BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 10'-0"

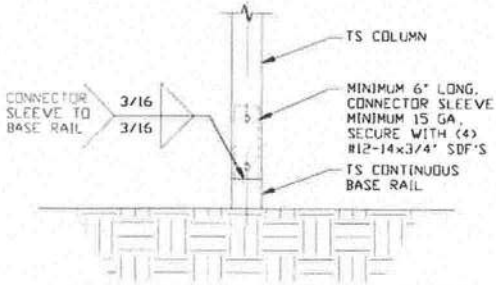
1B

SCALE: NTS



BRACE SECTION

SCALE: NTS



RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

2

SCALE: NTS

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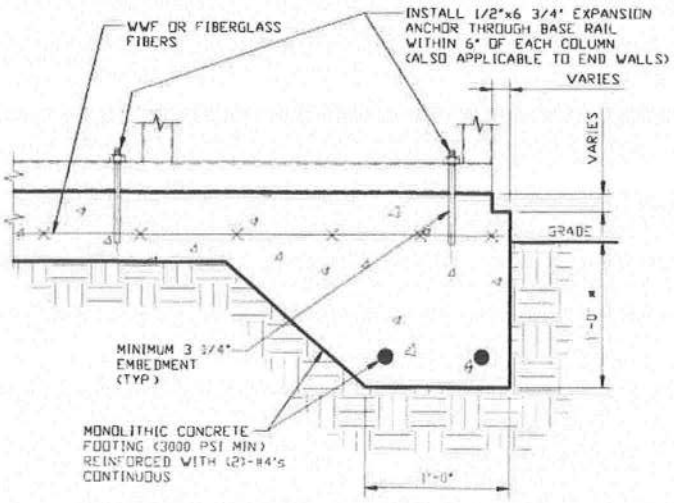
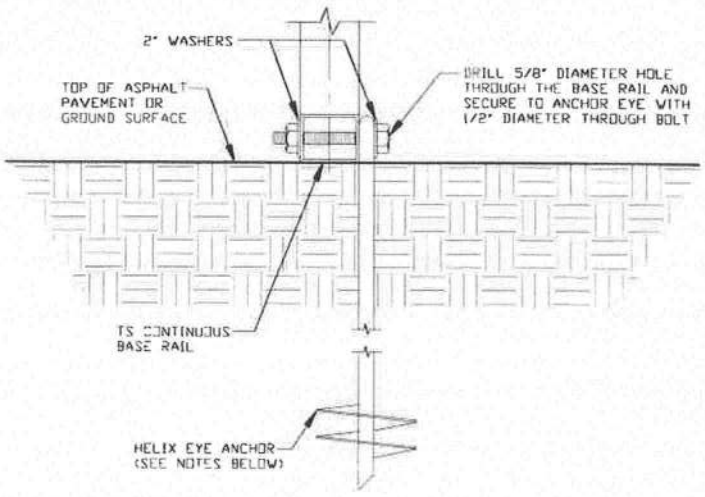
	PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16154S/ 17300S/20352S
	CLIENT: TBS	SHT. 8A	DWG. NO: SK-2	REV.: 3

BASE RAIL ANCHORAGE OPTIONS FOR LOW AND HIGH WIND SPEED



3A CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS
MINIMUM ANCHOR EDGE DISTANCE IS 4"
* COORDINATE WITH LOCAL CODES/ORD REGARDING MINIMUM FROST DEPTH REQ



3B GROUND BASE HELIX ANCHORAGE

SCALE: NTS
(CAN BE USED FOR ASPHALT)
* COORDINATE WITH LOCAL CODES/ORD REGARDING MINIMUM FROST DEPTH REQ

GENERAL NOTES

NOTE: CONCRETE MONOLITHIC SLAB DESIGN 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 INCHES 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 INCHES 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 INCH EMBEDMENT

2 FOR CORAL USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT

3 FOR MEDIUM DENSE COARSE SANDS, SANDY GRAVELS VERY STIFF SILTS, AND CLAYS USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT

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

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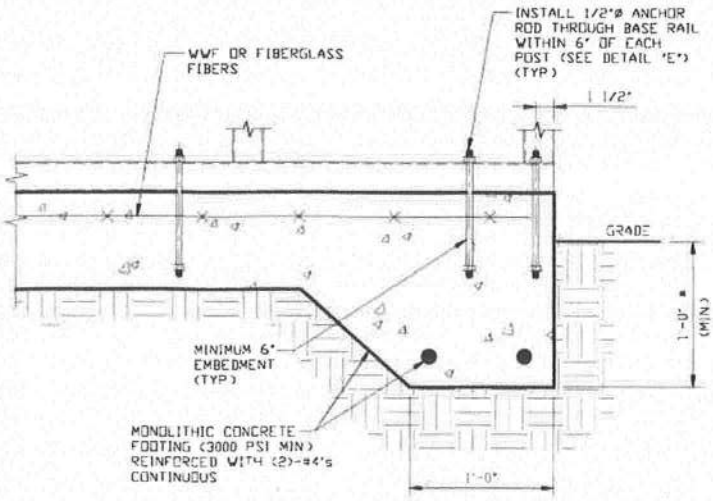
	CLIENT: TBS	SHT. 9	DWG. NO: SK-2	REV.: 3

OPTIONAL FOUNDATION ANCHORAGE FOR LOW AND HIGH WIND SPEED

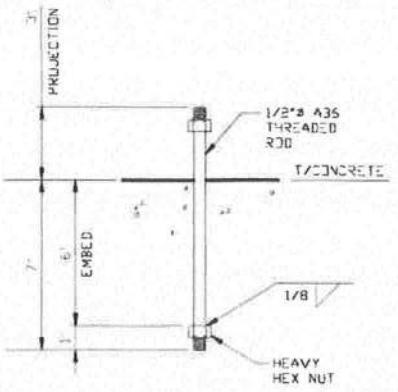


3C **CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE**

SCALE NTS

MINIMUM ANCHOR EDGE DISTANCE IS 1 1/2"

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



3D **ANCHOR ROD THROUGH BASE RAIL DETAIL**

SCALE NTS

GENERAL NOTES

NOTE: CONCRETE MONOLITHIC SLAB DESIGN 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 INCHES 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 INCHES 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

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3 REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT

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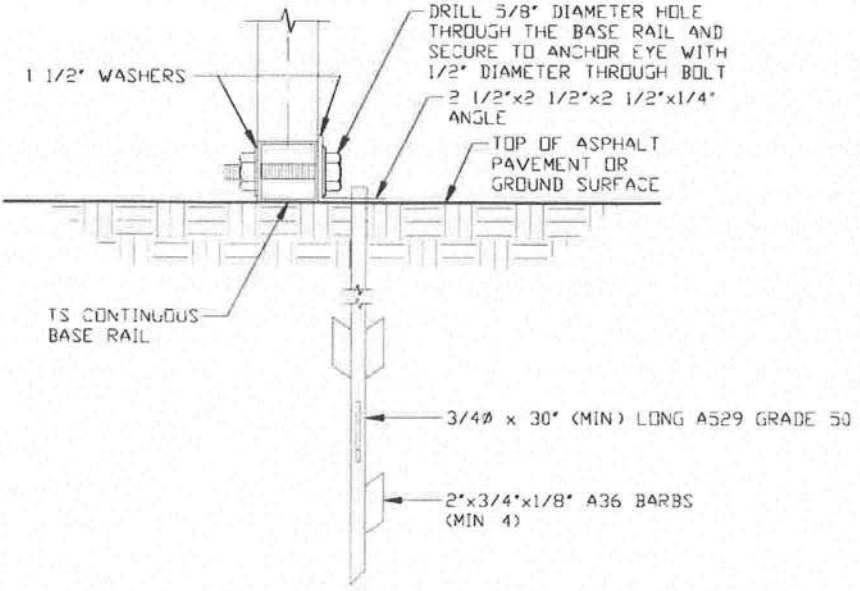
CLIENT: TBS	SHT. 9A	DWG. NO: SK-2	REV.: 3

BASE RAIL ANCHORAGE OPTION



3E ASPHALT BASE ANCHORAGE (HP 9 BARBED DRIVE ANCHOR)

SCALE NTS
(CAN BE USED FOR ASPHALT)
* COORDINATE WITH LOCAL CODES/ORD REGARDING MINIMUM FROST DEPTH REQ

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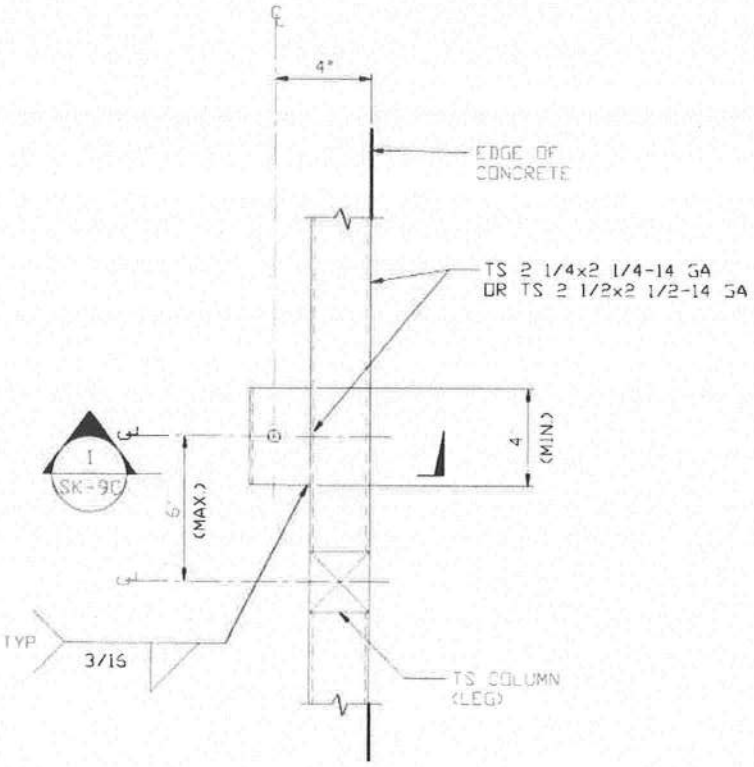
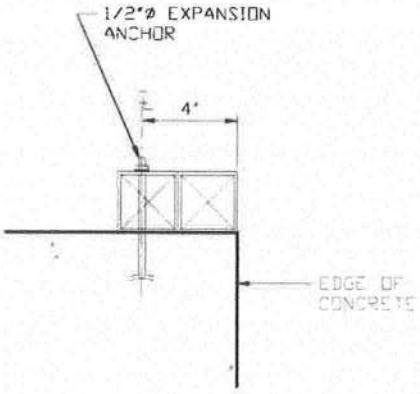
	CLIENT: TBS	SHT. 9B	DWG. NO: SK-2	REV.: 3

BASE RAIL ANCHORAGE OPTIONS



TYPICAL ANCHOR DETAIL WHEN BASE RAIL IS NEAR EDGE OF CONCRETE

SCALE NTS



SECTION 1 SK-9C

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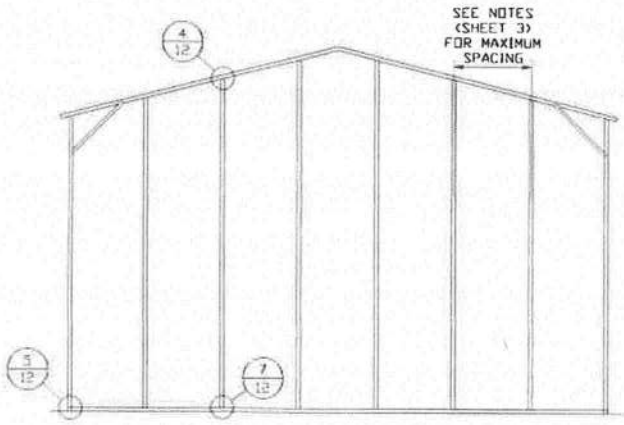
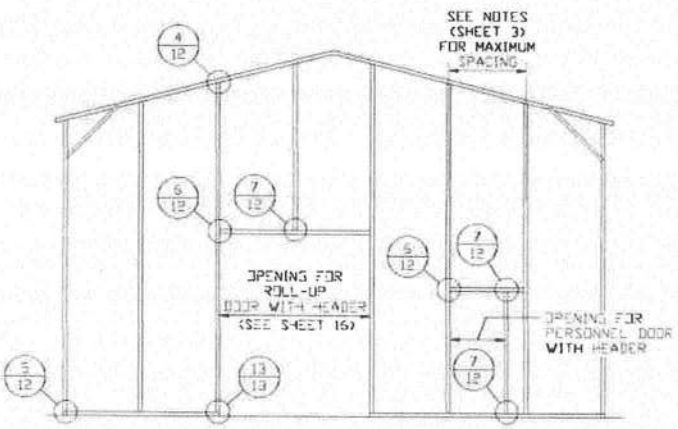
	CLIENT: TBS	SHT. 9C	DWG. NO: SK-2	REV.: 3

BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



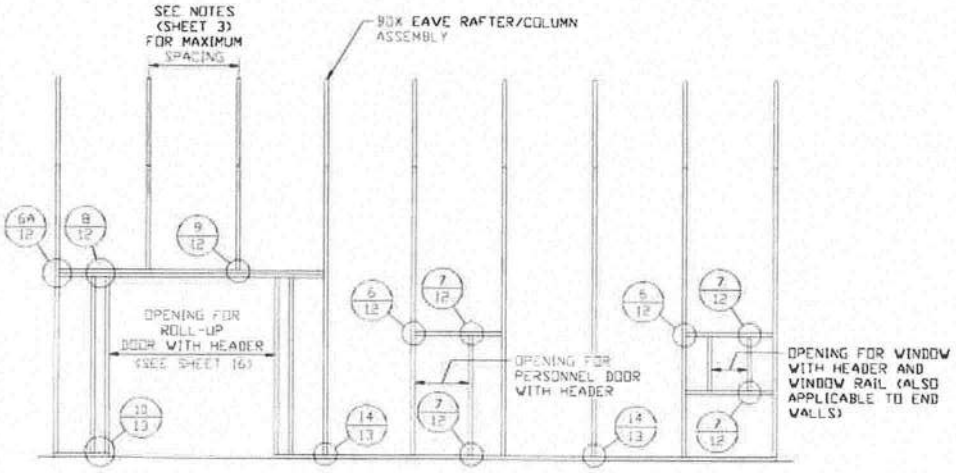
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS

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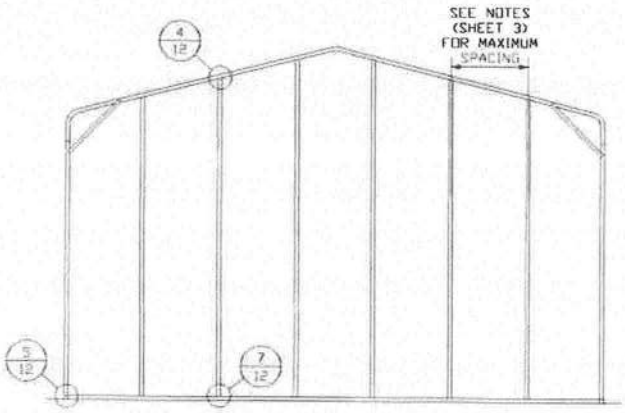
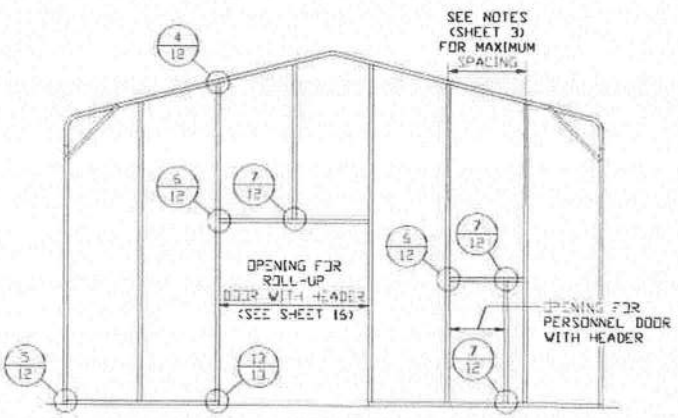
	CLIENT: TBS	SHT. 10	DWG. NO: SK-2	REV.: 3

BOW RAFTER END WALL AND SIDE WALL OPENINGS



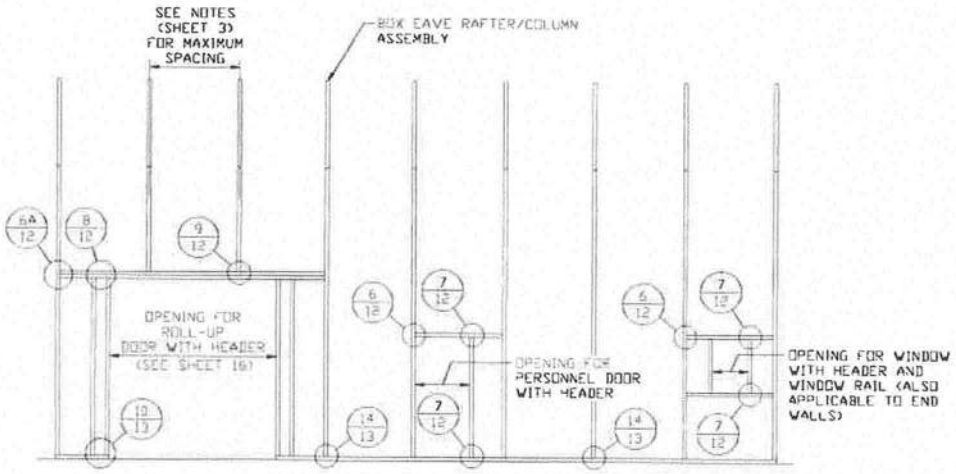
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE NTS



TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE NTS

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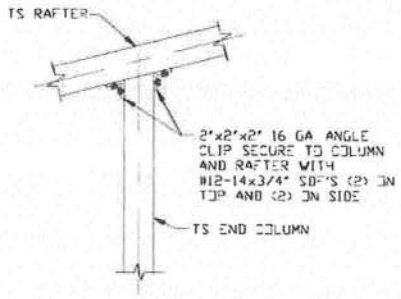
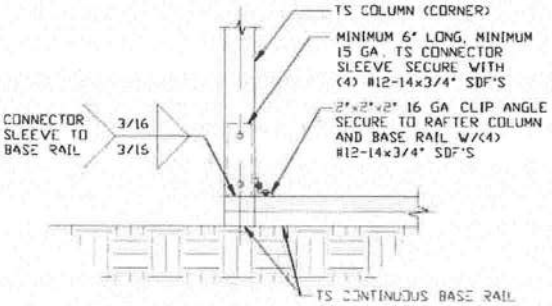
	CLIENT: TBS	SHT. 11	DWG. NO: SK-2	REV.: 3

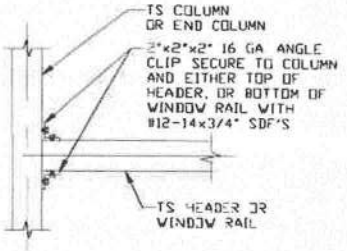
CONNECTION DETAILS



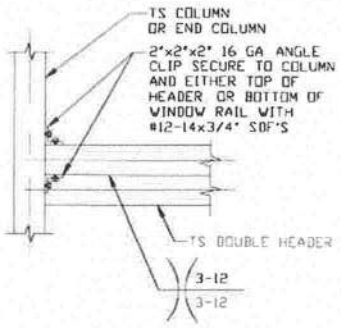
4 END COLUMN/RAFTER CONNECTION DETAIL
SCALE: NTS



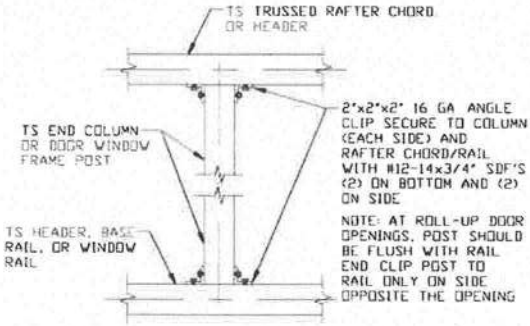
5 END COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS



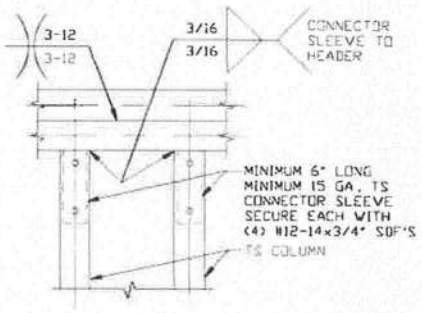
6 HEADER OR WINDOW RAIL TO COLUMN CONNECTION DETAIL
SCALE: NTS



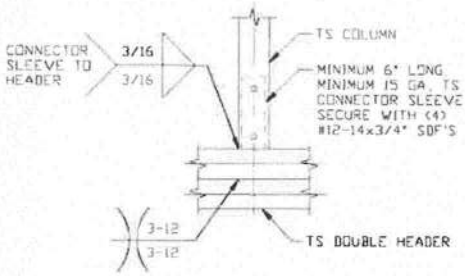
6A DOUBLE HEADER TO COLUMN CONNECTION DETAIL
SCALE: NTS



7 COLUMN TO HEADER, BASE RAIL, OR WINDOW RAIL CONNECTION DETAIL
SCALE: NTS



8 DOUBLE HEADER/COLUMN CONNECTION DETAIL
SCALE: NTS



9 COLUMN/DOUBLE HEADER CONNECTION DETAIL
SCALE: NTS

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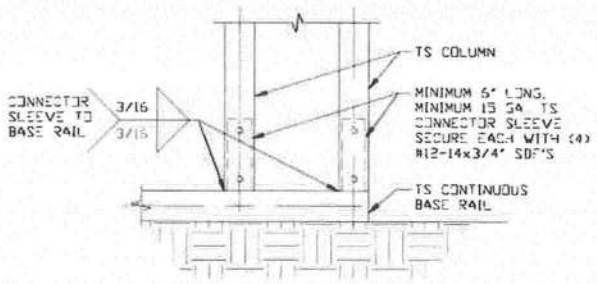
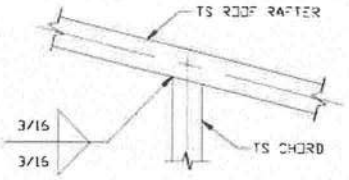
	CLIENT: TBS	SHT. 12	DWG. NO: SK-2 / REV.: 3

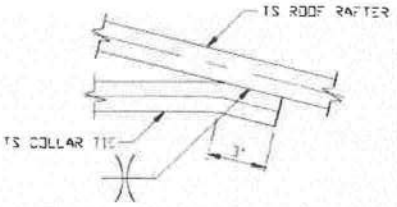
CONNECTION DETAILS



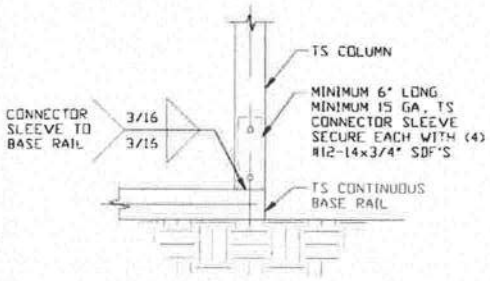
10 COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS



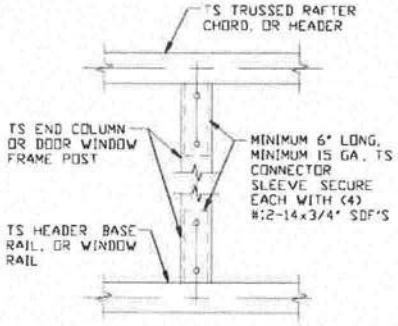
11 RAFTER TO CHORD CONNECTION DETAIL
SCALE: NTS



12 COLLAR TIE CONNECTION DETAIL
SCALE: NTS



13 COLUMN/BASE RAIL CONNECTION DETAIL
SCALE NTS



14 COLUMN TO HEADER, BASE RAIL CONNECTION DETAIL
SCALE: NTS

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ENGINEERING AND CONSULTING, INC.

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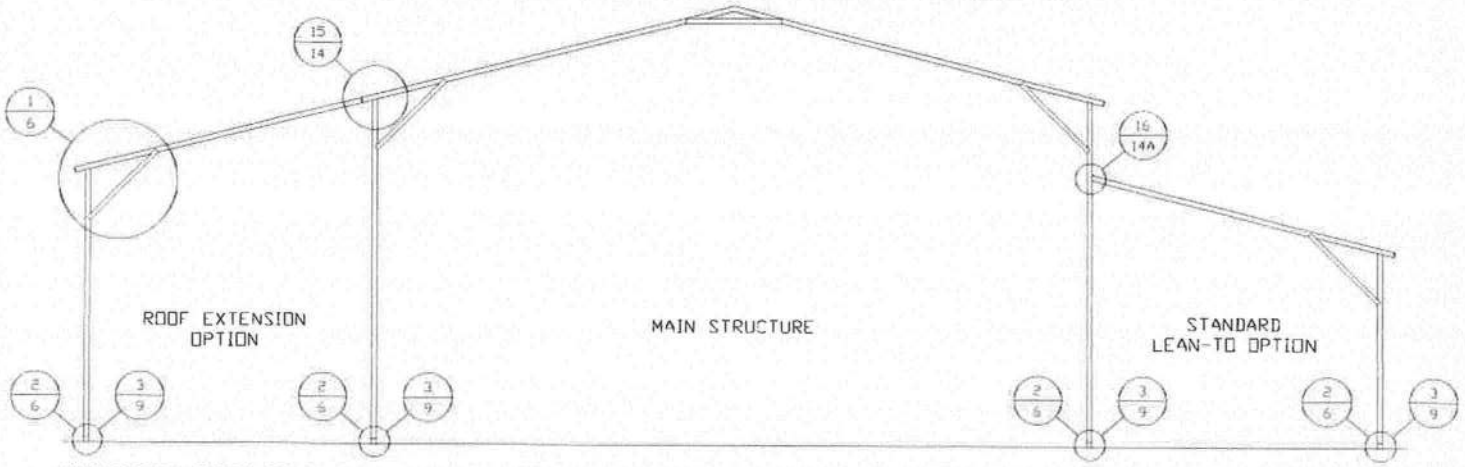
CHECKED BY: PDH			
PROJECT MGR: WSH	DATE: 7-29-21	SCALE: NTS	JOB NO: 16154S/17300S/20352S
CLIENT: TBS	SHT. 13	DWG. NO: SK-2	REV.: 3

BOX EAVE RAFTER LEAN-TO OPTIONS



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

SCALE: NTS

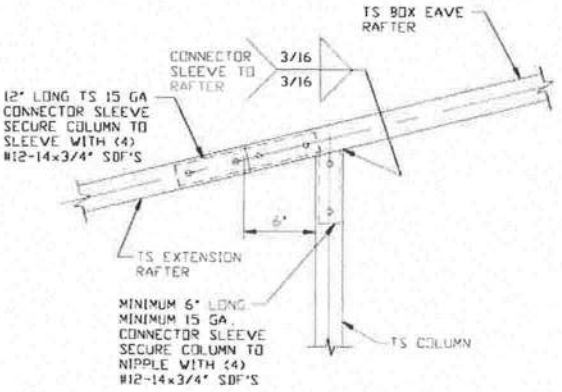
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE LACED COLUMNS FOR EAVE HEIGHTS 16'-0" < TO ≤ 20'-0"

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS 13'-0" (12'-0" FOR HIGH WIND) < TO ≤ 16'-0"

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS 10'-0" < TO ≤ 13'-0" (12'-0" FOR HGH WIND) (WITH 4'-4" INSERT)

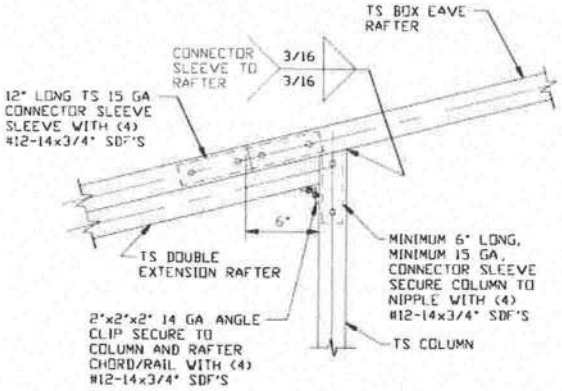
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS ≤ 10'-0"

KNEE BRACES MUST BE 4'-0" (5'-0" FOR HIGH WIND) WHEN LEAN-TO'S ARE ADDED



15 SIDE EXTENSION RAFTER/COLUMN DETAIL FOR RAFTER SPANS ≤ 15'-0"

SCALE: NTS



15A SIDE EXTENSION RAFTER/COLUMN DETAIL FOR RAFTER SPANS 15'-0" < TO ≤ 24'-0"

SCALE: NTS

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	CHECKED BY: PDH			
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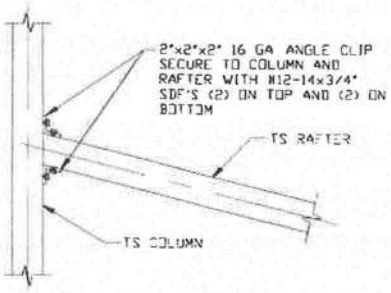
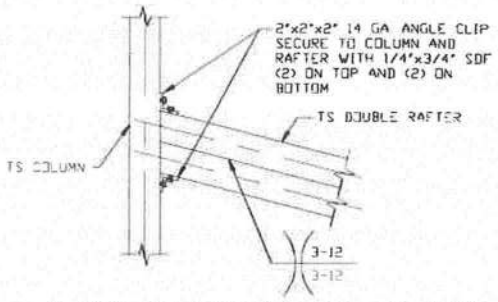
	CLIENT: TBS	SHT. 14	DWG. NO: SK-2	REV.: 3

BOX EAVE RAFTER LEAN-TO OPTIONS



16 LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS ≤ 15'-0"
SCALE NTS



16A LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 15'-0" < TO ≤ 24'-0"
SCALE NTS

WAYNE S. MOORE
LICENSE
No 57170
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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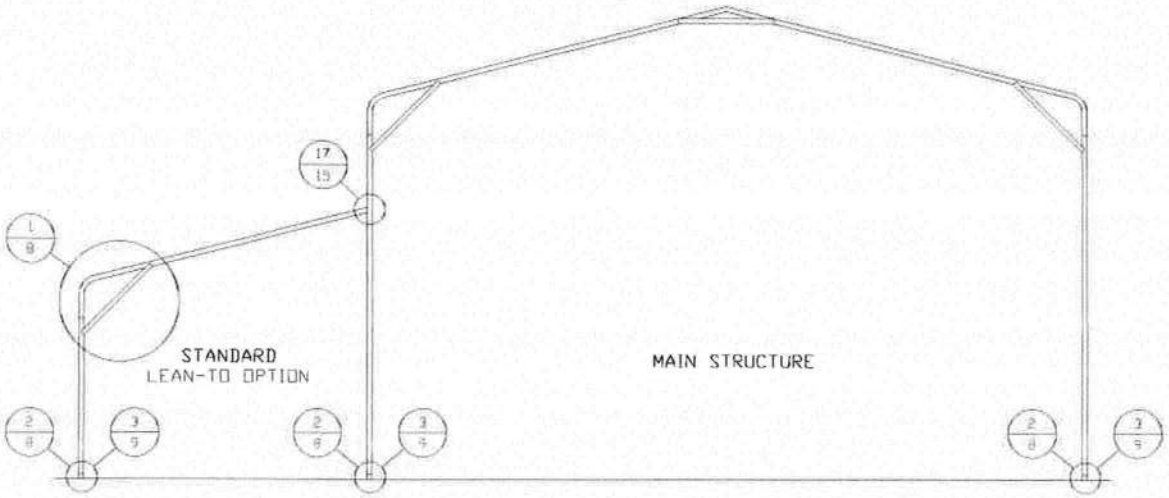
DRAWN BY: JG
CHECKED BY: PDH
PROJECT MGR: WSM
CLIENT: TBS

TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE
LAKE CITY, FLORIDA 32025
30'-0"x20'-0" UTILITY BUILDING EXP. B

DATE: 7-29-21 | SCALE: NTS | JOB NO: 16154S/17300S/20352S
SHT. 14A | DWG. NO: SK-2 | REV.: 3

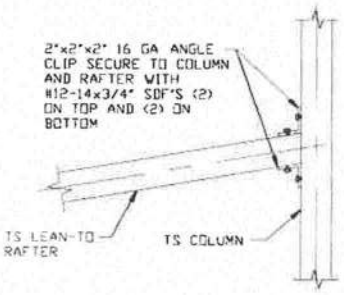
BOW RAFTER LEAN-TO OPTIONS



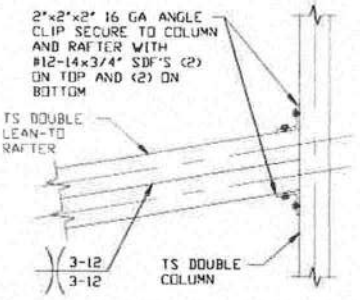
TYPICAL BOW RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

SCALE: NTS

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS 13'-0" (12'-0" FOR HIGH WIND) < TO ≤ 16'-0"
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS 10'-0" < TO ≤ 13'-0" (12'-0" FOR HIGH WIND) (WITH 4'-4" INSERT)
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS ≤ 10'-0"
KNEE BRACES MUST BE 4'-0" (5'-0" FOR HIGH WIND) WHEN LEAN-TO'S ARE ADDED



17 LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS ≤ 15'-0"
SCALE NTS



17A LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 15'-0" < TO ≤ 24'-0"
SCALE NTS

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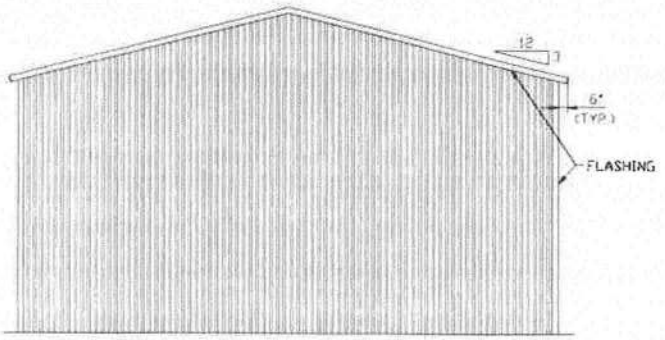
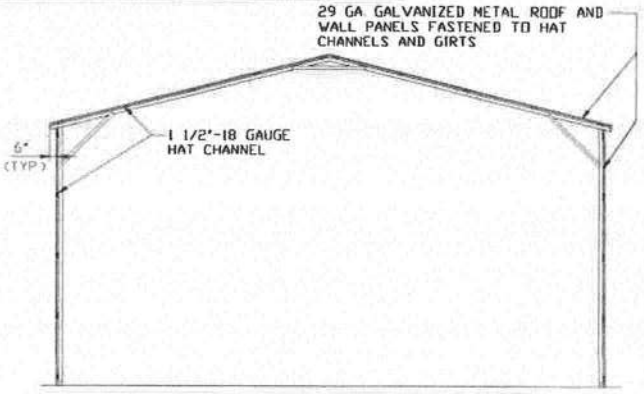
CHECKED BY: PDH				
PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16154S/17300S/20352S	
CLIENT: TBS	SHT. 15	DWG. NO: SK-2	REV.: 3	

BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



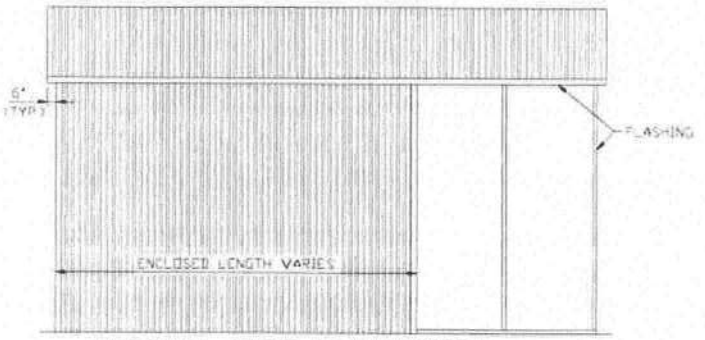
TYPICAL END ELEVATION VERTICAL ROOF/SIDING OPTION

SCALE: NTS



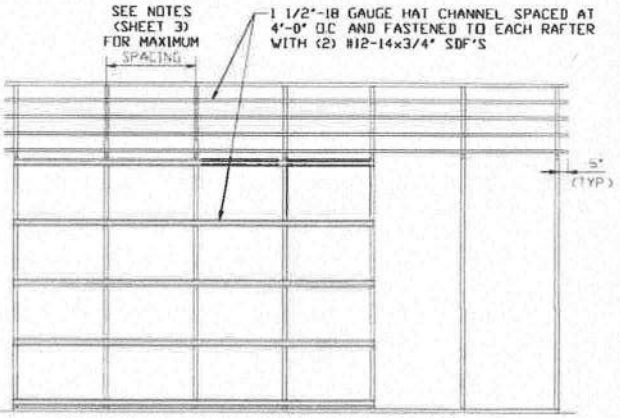
TYPICAL SECTION VERTICAL ROOF/SIDING OPTION

SCALE: NTS



TYPICAL SIDE ELEVATION VERTICAL ROOF/SIDING OPTION

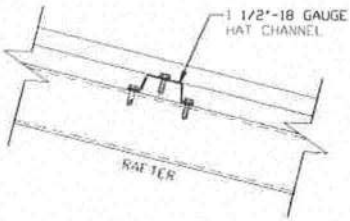
SCALE: NTS



TYPICAL FRAMING SECTION VERTICAL ROOF/SIDING OPTION

SCALE: NTS

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



ROOF PANEL ATTACHMENT

(ALTERNATE FOR VERTICAL ROOF PANELS)
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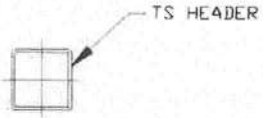
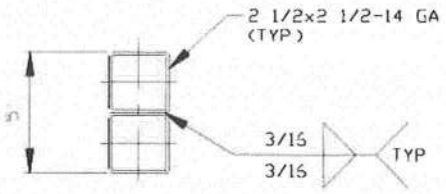
	CHECKED BY: PDH			
	PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16154S/ 17300S/20352S
	CLIENT: TBS	SHT. 16	DWG. NO: SK-2	REV.: 3

SIDE WALL HEADER OPTIONS



HEADER DETAIL FOR DOOR OPENINGS ≤ 10'-0"

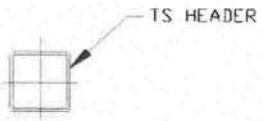
SCALE NTS



HEADER DETAIL FOR DOOR OPENINGS 10'-0" < LENGTH ≤ 15'-0"

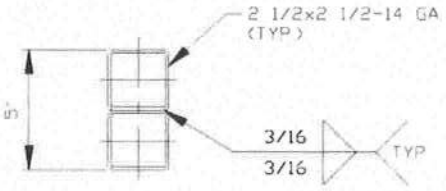
SCALE NTS

END WALL HEADER OPTIONS



HEADER DETAIL FOR DOOR OPENINGS ≤ 12'-0"

SCALE NTS



HEADER DETAIL FOR DOOR OPENINGS 12'-0" < LENGTH ≤ 15'-0"

SCALE NTS

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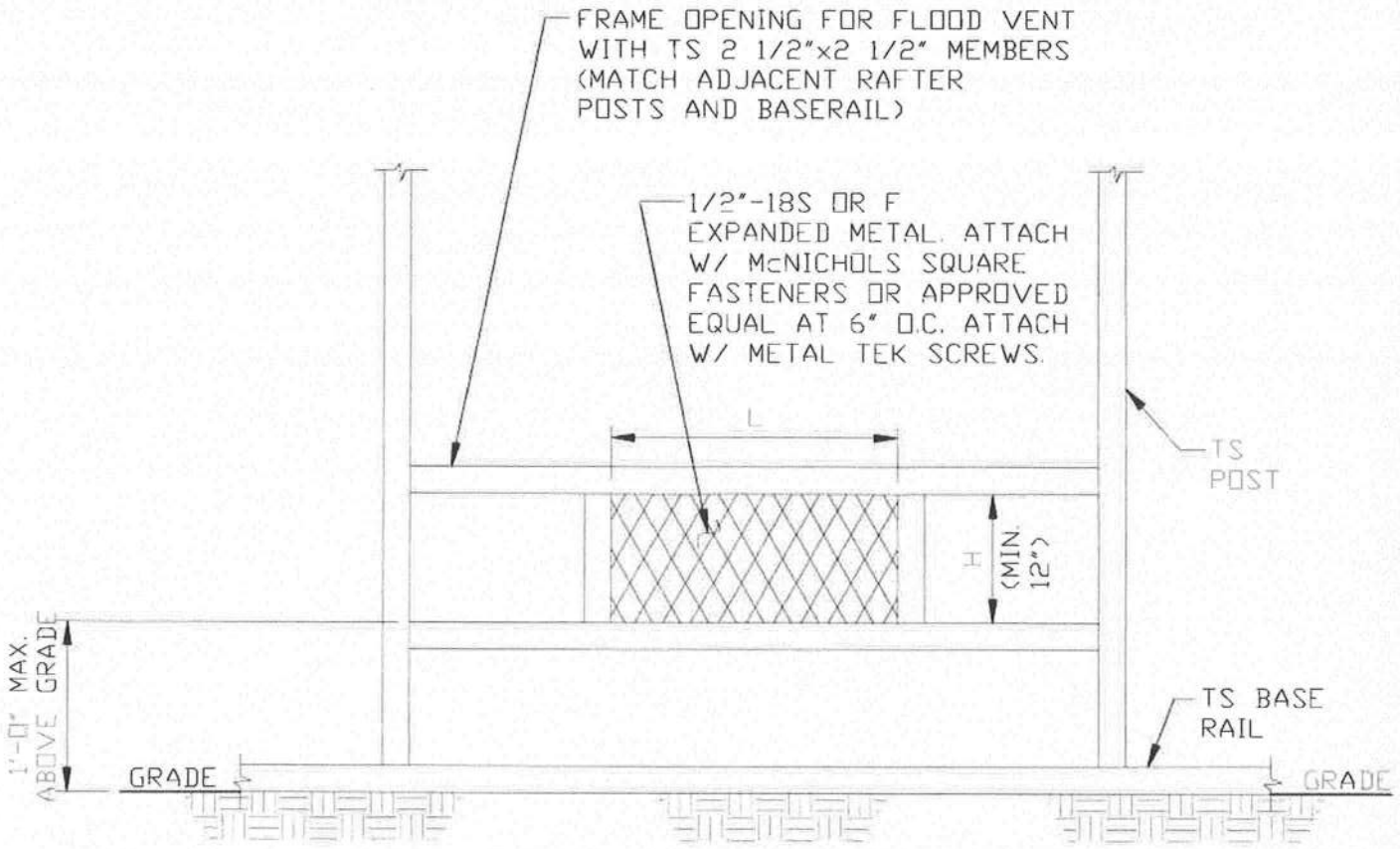
	CHECKED BY: PDH			
	PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16154S/ 17300S/20352S
	CLIENT: TBS	SHT. 17	DWG. NO: SK-2	REV.: 3

FLOOD VENT DETAIL



TYPICAL FLOOD VENT DETAIL

SCALE NTS

1 MINIMUM VENT SPACE REQUIRED = 1 SQ. INCH OF OPEN VENT AREA PER SQ. FOOT OF BUILDING AREA

2 THERE SHALL BE A MINIMUM OF TWO OPENINGS ON DIFFERENT SIDES FOR EACH ENCLOSED BUILDING

3 APPLY 1.3 FACTOR WHEN CALCULATING TOTAL OPEN AREA WHEN USING 1/2"-18GA S OR F EXPANDED METAL

4 TOTAL OPEN AREA OF VENT = LxH(MIN 12")

5 FLOOD VENT DETAIL COMPLIES WITH FEMA/NFIP

6 PREFABRICATED FLOOD VENTS MEETING THE REQUIREMENTS OF FEMA/NIFIP MAY BE USED

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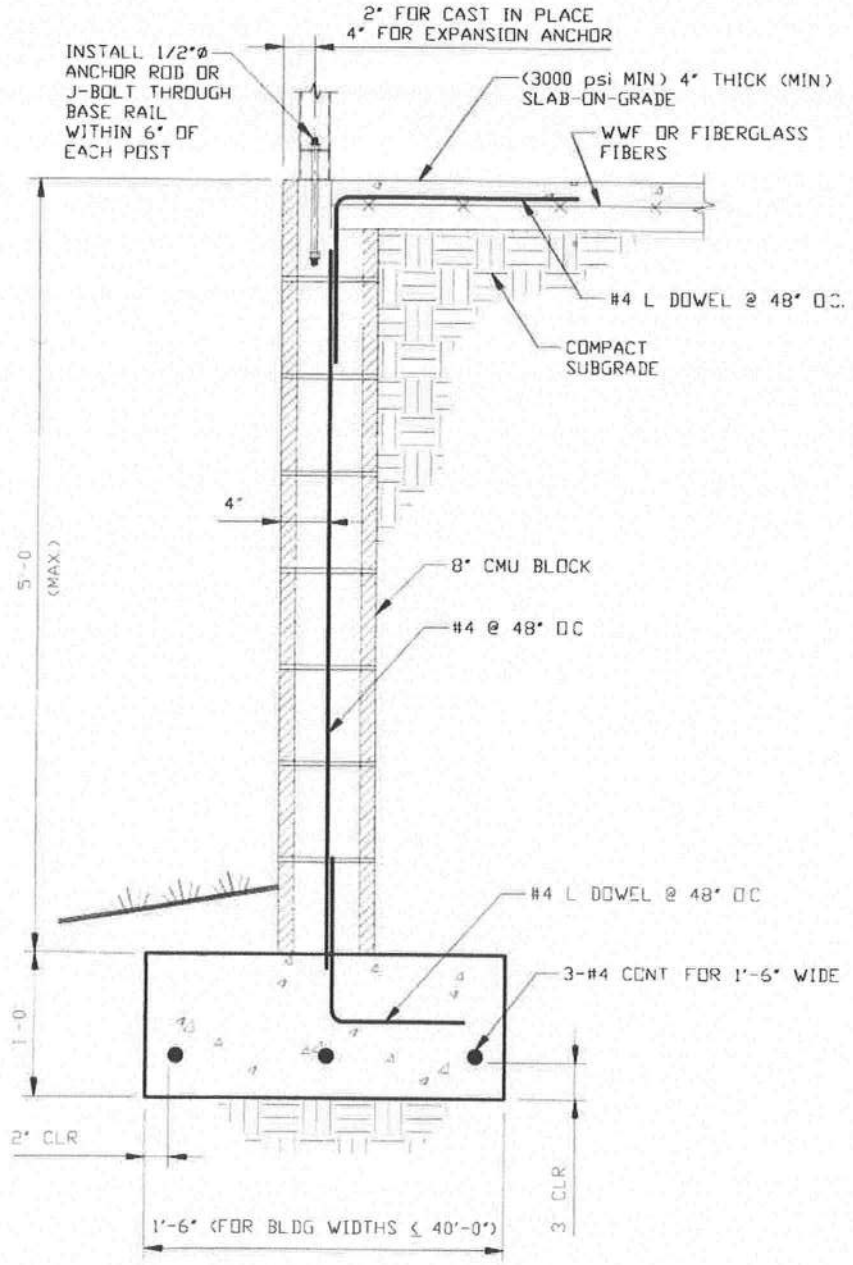
	CHECKED BY: PDH			
	PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16154S/ 17300S/20352S
	CLIENT: TBS	SHT. 18	DWG. NO: SK-2	REV.: 3

STAND -ALONE STEM WALL DETAIL



STAND-ALONE CONCRETE MASONRY UNIT (CMU) FOUNDATION STEM WALL DETAIL

SCALE: NTS

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LICENSE
No 57170
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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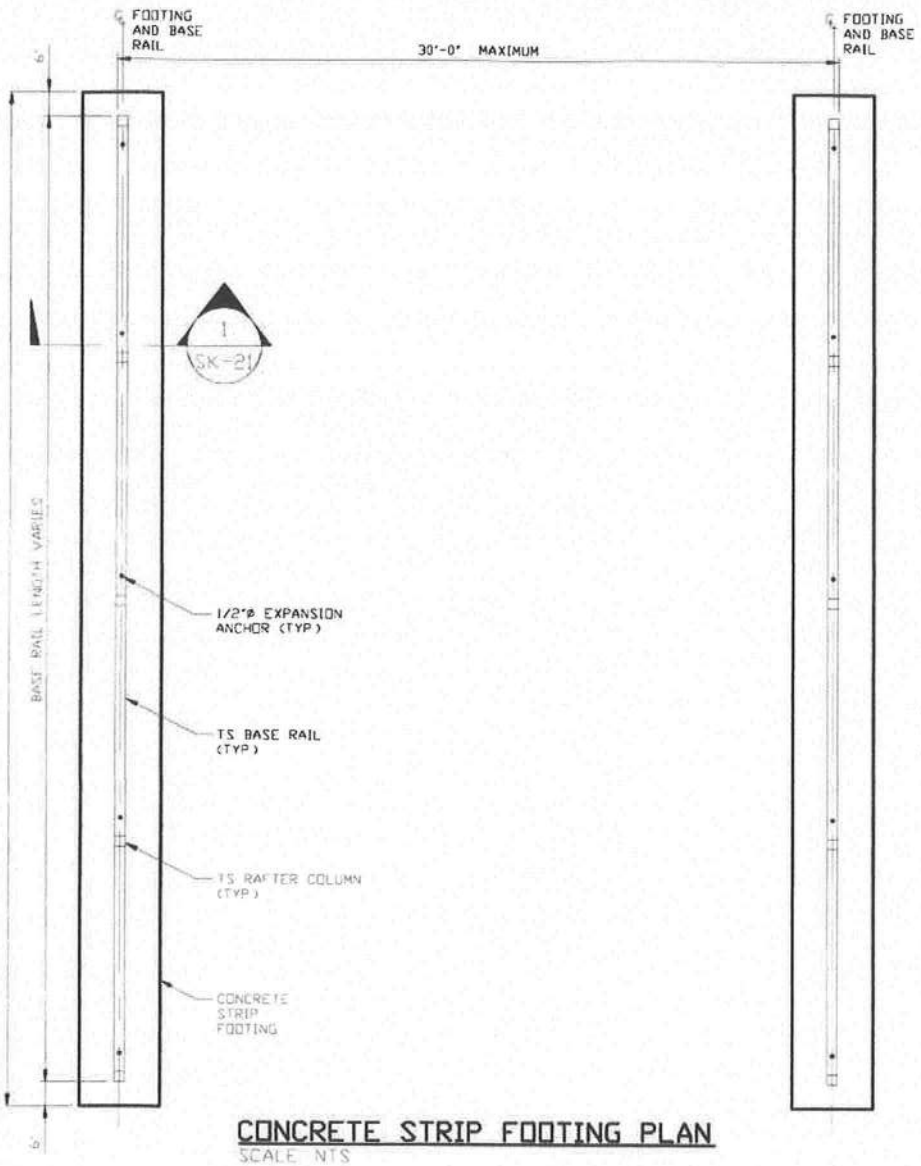
	CLIENT: TBS	SHT. 19	DWG. NO: SK-2	REV.: 3

OPTIONAL CONCRETE STRIP FOOTING



1 STRIP FOOTING DESIGN BASED ON MINIMUM SOIL BEARING CAPACITY OF 1,500 PSF

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

3 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

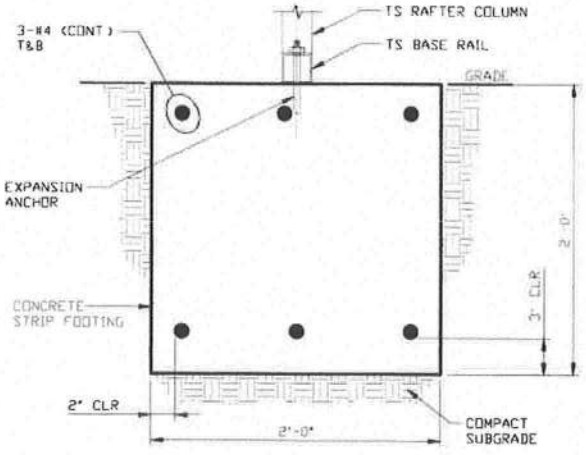
4 THE STRIP FOOTING REINFORCING STEEL SHALL BE ASTM A615 GRADE 60

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

- A) REINFORCEMENT IS BENT COLD
- B) THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETERS
- C) REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT

CONCRETE STRIP FOOTING PLAN

SCALE: NTS



SECTION 1 / SK-21

SCALE: NTS

* COORDINATE WITH LOCAL CODES/ORD

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LICENSE
No 57170
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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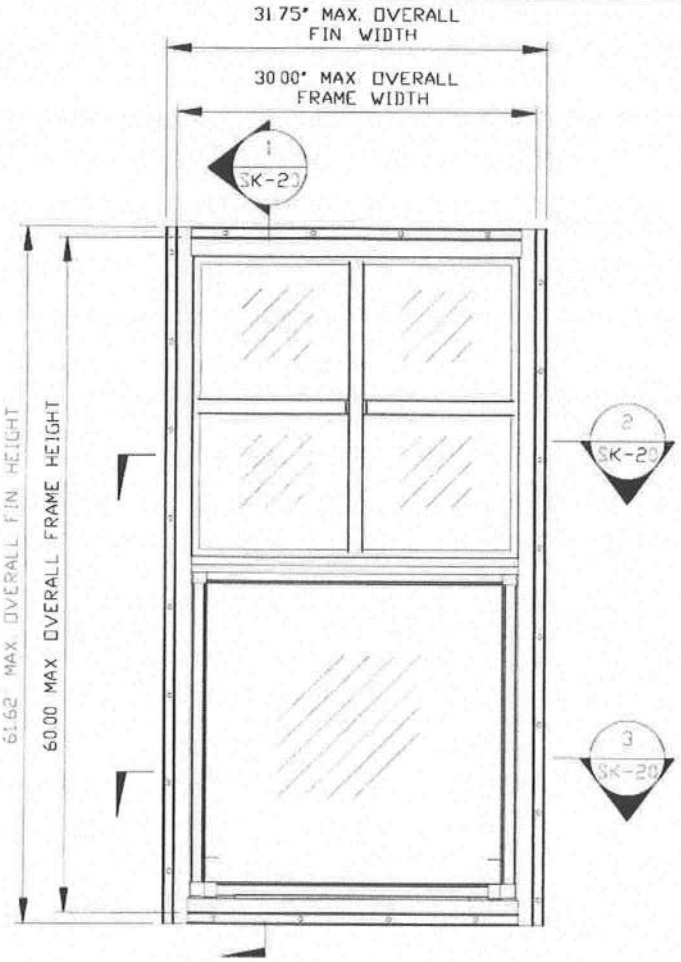
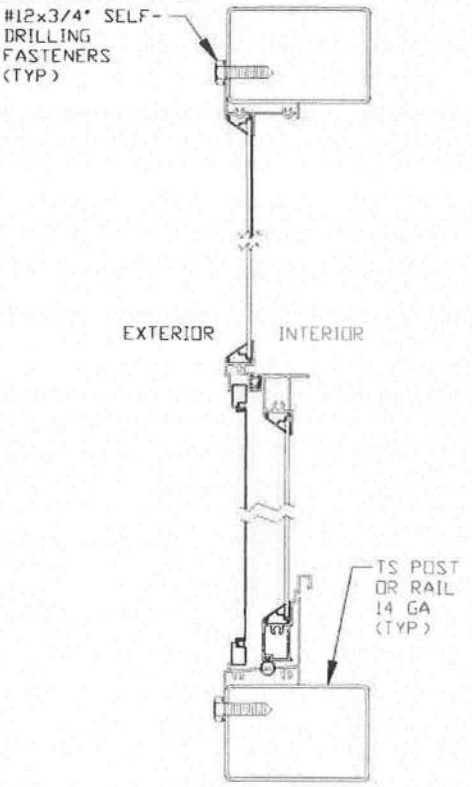
	CHECKED BY: PDH		
	PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS / JOB NO: 16154S/17300S/20352S
	CLIENT: TBS	SHT. 21	DWG. NO: SK-2 / REV.: 3

VERTICAL SLIDING WINDOW DETAIL



ELEVATION VIEW

SCALE NTS



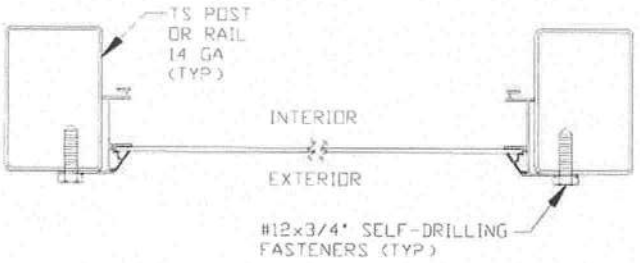
SECTION 1 / SK-20

SCALE 3"=1'-0"

NOTE KINRO SERIES 18000-R VS OR EQIVALENT WINDOW IS REQUIRED

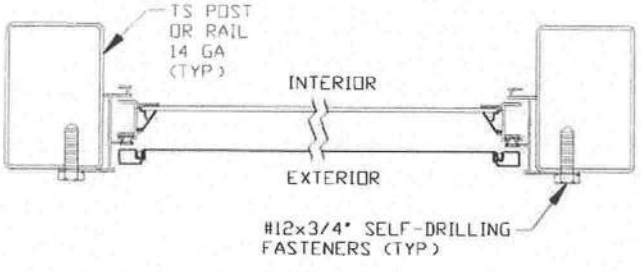
POSITIVE WALL PRESSURE: +40.0 PSF

NEGATIVE WALL PRESSURE: -40.0 PSF



SECTION 2 / SK-20

SCALE 3"=1'-0"



SECTION 3 / SK-20

SCALE: 3"=1'-0"

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CLIENT: TBS	SHT. 20	DWG. NO: SK-2	REV.: 3

TUBULAR BUILDING SYSTEMS

Florida Product Approval Codes

Roll-Up Doors:

6Wide Janus International Corporation Model 750: 21450.11 EXP 12/31/2022

Roof Deck:

Capital Metal Supply Inc. Ag Panel: 20147.2 EXP 03/04/2025

Wall Panel:

Capital Metal Supply Inc. Ag Panel: 20148.2 EXP 03/04/2025

If you have any questions on concern, please contact Donald Little at 386-961-0006 or at tubularbuildingsystems@gmail.com.