

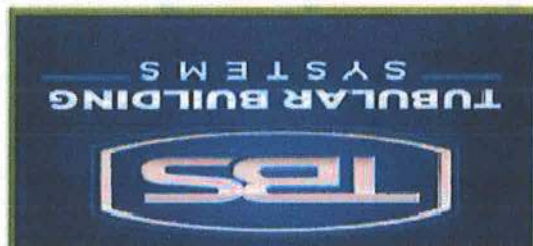


Florida Product Approval Codes

Roll-Up Doors:	10Wide Janus International Corporation Model 750: 21450.13	EXP 12/31/2022
Walk-In Door:	Elixir Door & Metal Company blank (no window): 17996.5	EXP 08/26/2025
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.





STRUCTURAL DESIGN

PARTIALLY ENCLOSED (UTILITY) BUILDING EXPOSURE B

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

8 January 2021

Revision 2

M&A Project No. 16154S/17300S/20352S

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



MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING

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Wayne S Moore
Date: 2021.01.12
15:47:07 -05'00'



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TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0" x 20'-0" UTILITY BUILDING EXP. B		DATE: 1-8-21 SHT. 2	DWG. NO. SK-2 SCALE: NTS JOB NO. 16154S/ 17300S/20352S REV. 2

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CLIENT: TBS PROJECT MGR: VSM CHECKED BY: PDH DRAWN BY: JG		TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"x20'-0" UTILITY BUILDING EXP. B	
DATE: 1-8-21 SCALE: NTS DWG. NO. SK-2 REV. 2		JOB NO. 161545/ 173005/203525	

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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 = 5.0 FEET.
5. HIGH ULTIMATE WIND SPEED 141 TO 170 MPH (NOMINAL WIND SPEED 109 TO 132 MPH). MAXIMUM RAFTER/POST AND END POST SPACING = 4.0 FEET.
6. END WALL COLUMNS (POSTS) AND SIDE WALL COLUMNS ARE EQUIVALENT IN SIZE AND SPACING (UNLESS NOTED OTHERWISE).
7. RISK CATEGORY 1.
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.
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 (< 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:
 - R = 3.25
 - I_e = 1.0
 - V = C_sV
 - S_{MS} = 1.522 g
 - S_{MI} = 0.839 g

INSTALLATION NOTES AND SPECIFICATIONS

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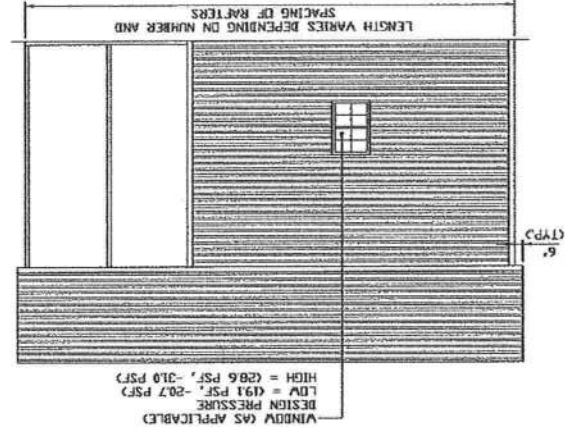
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CLIENT TBS	SHT. 4	DWG. NO. SK-2	REV. 2
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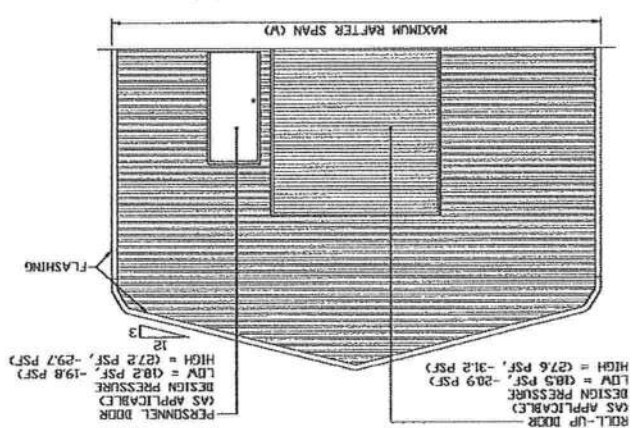
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TYPICAL SIDE ELEVATION
SCALE: NTS

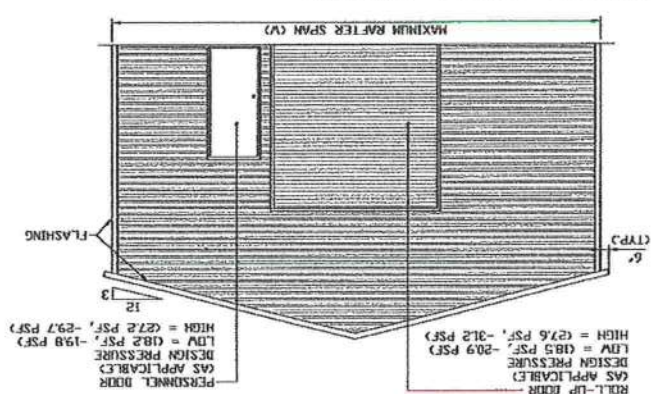


TYPICAL END ELEVATION
SCALE: NTS



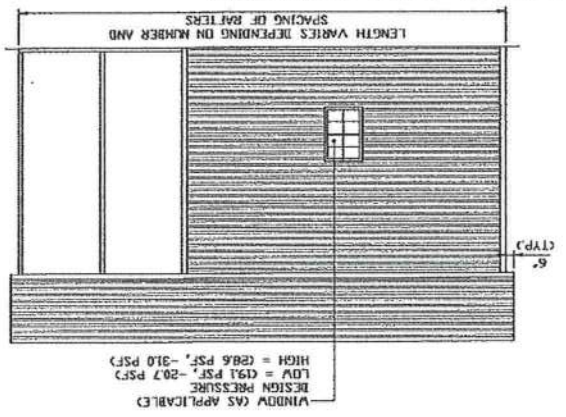
BOX FRAME ENCLOSED BUILDING

TYPICAL END ELEVATION
SCALE: NTS



BOX EAVE RAFTER ENCLOSED BUILDING

TYPICAL SIDE ELEVATION
SCALE: NTS



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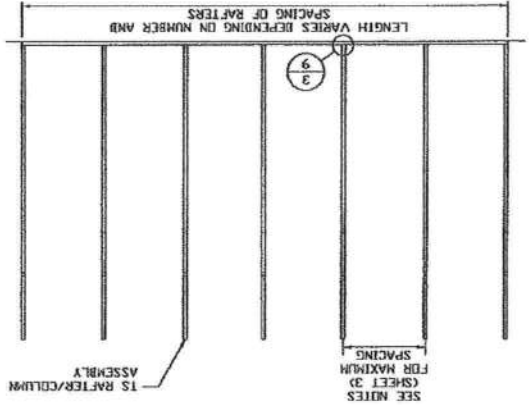
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DATE: 1-8-21
SCALE: NTS
JOB NO: 161545/
173005/203525

TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE
LAKE CITY, FLORIDA 32025
30'-0"X20'-0" UTILITY BUILDING EXP. B

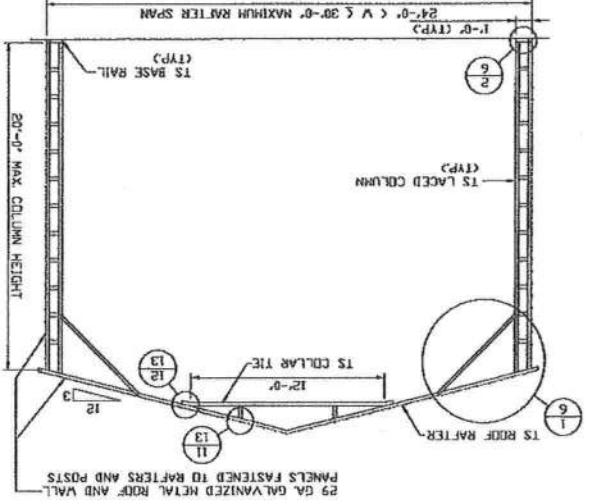
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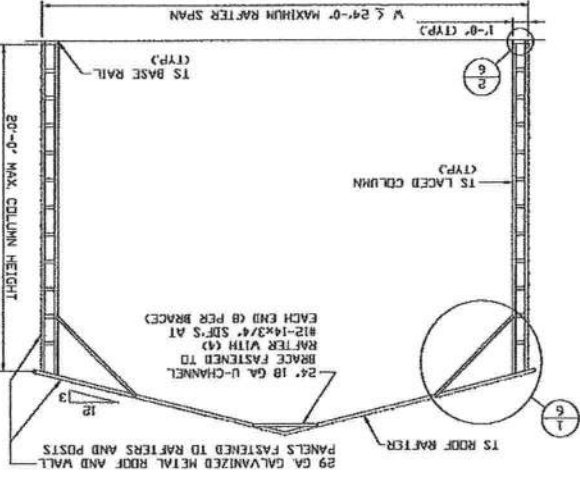
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TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION



SCALE: NTS
TYPICAL RAFTER/COLUMN END FRAME SECTION



SCALE: NTS
TYPICAL RAFTER/COLUMN END FRAME SECTION



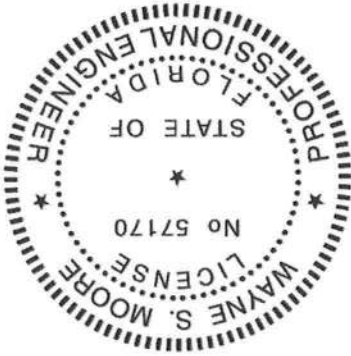
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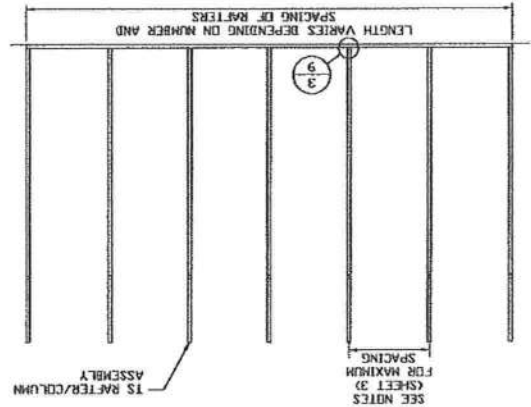
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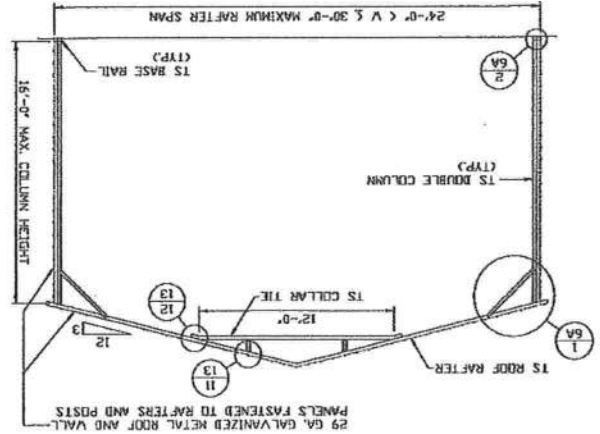
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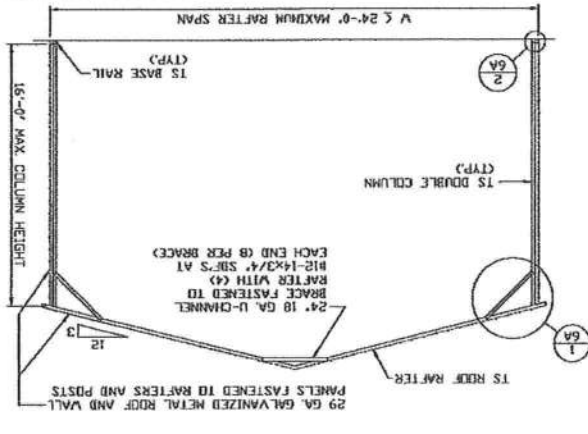
SCALE: NTS
TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION



SCALE: NTS
TYPICAL RAFTER/COLUMN END FRAME SECTION



SCALE: NTS
TYPICAL RAFTER/COLUMN END FRAME SECTION



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CHECKED BY: PDH

PROJECT MGR: WSM

SHT. 5B

DATE: 1-8-21

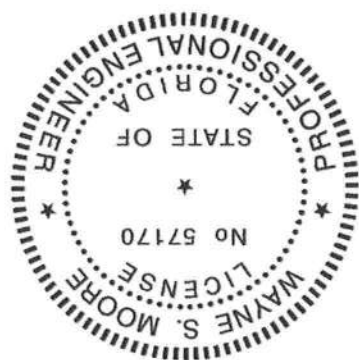
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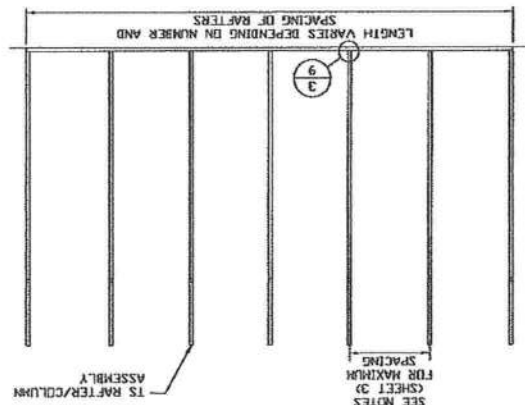
JOB NO. 161545/
173005/20325

TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE
LAKE CITY, FLORIDA 32025
30'-0" x 20'-0" UTILITY BUILDING EXP. B

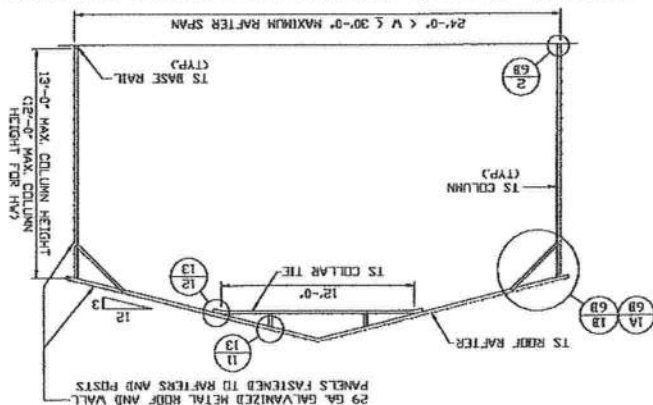
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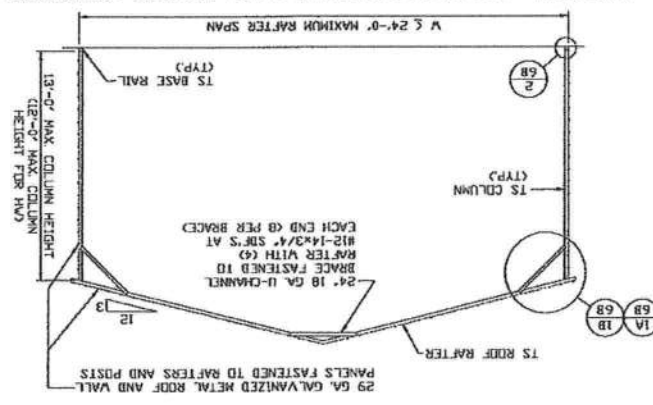
TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION SCALE: NTS



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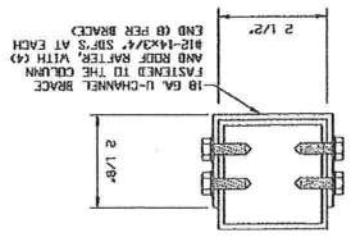
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PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JOB NO. 161545/173005/203525
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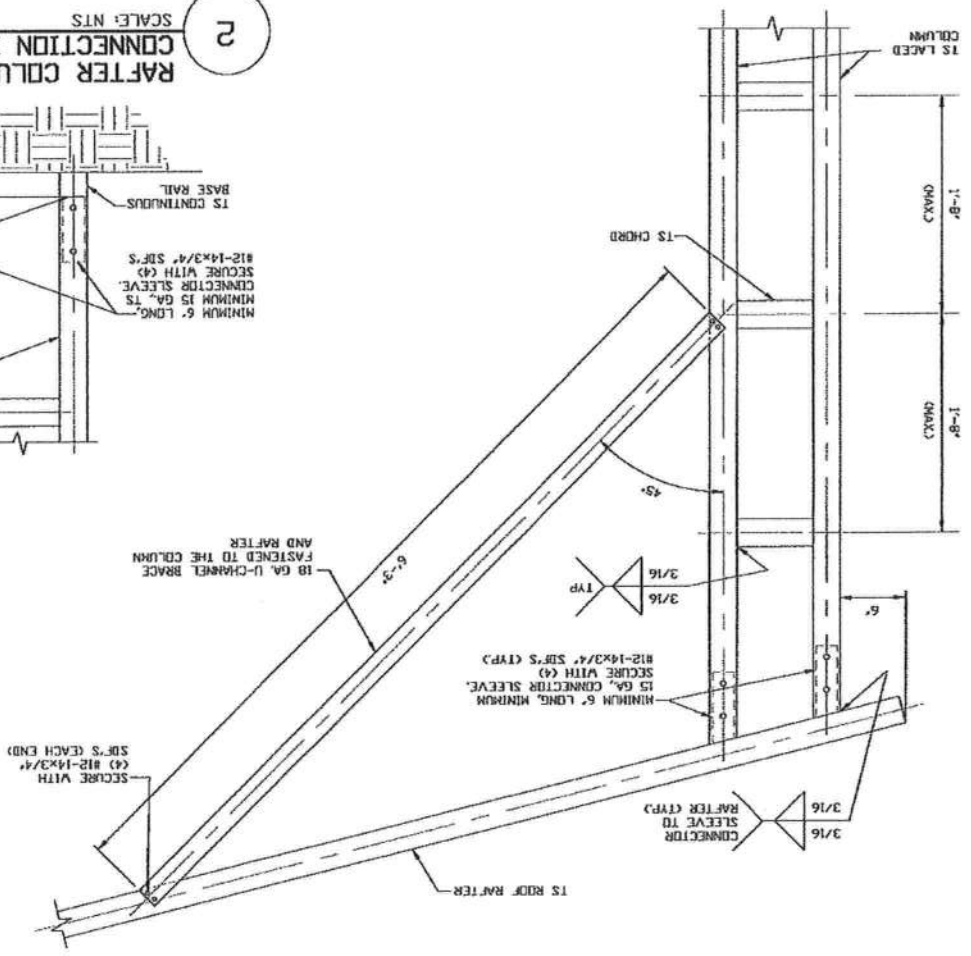
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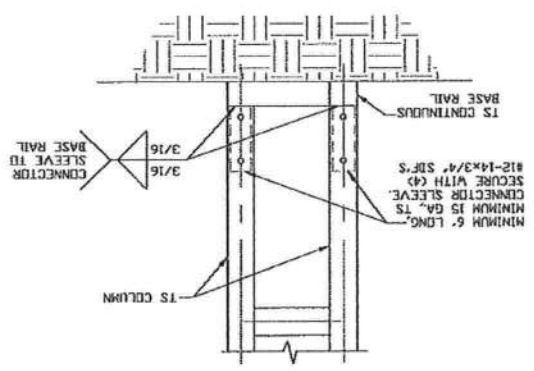
BRACE SECTION
SCALE: NTS



1
BOX EAVE RAFTER COLUMN CONNECTION DETAIL
FOR HEIGHTS 16'-0" < TD < 20'-0"
SCALE: NTS



2
RAFTER COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS



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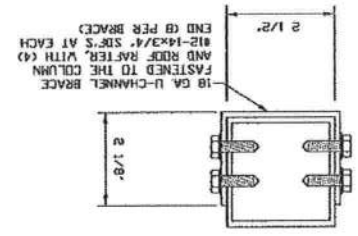
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PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JOB NO. 161545/ 173005/203525
CHECKED BY: PDH	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0" x 20'-0" UTILITY BUILDING EXP. B		
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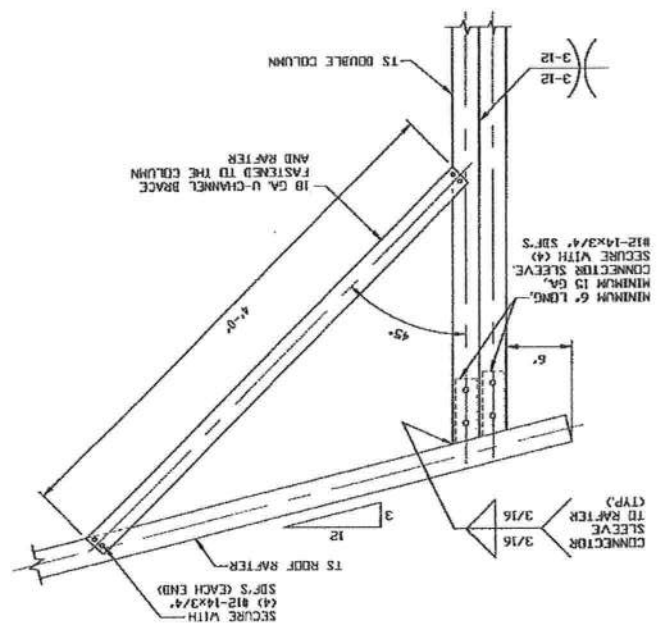


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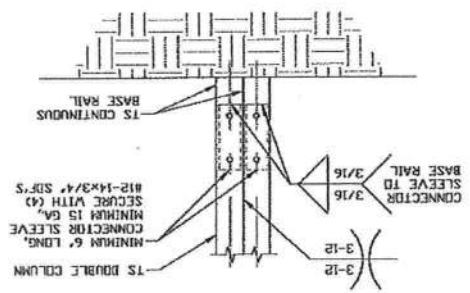


1
BOX EAVE RAFTER COLUMN
CONNECTION DETAIL
FOR HEIGHTS 13'-0" < TO < 16'-0"
SCALE: NTS

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



2
RAFTER COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS

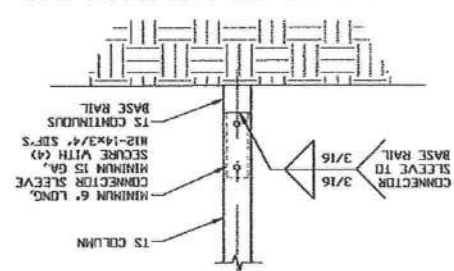


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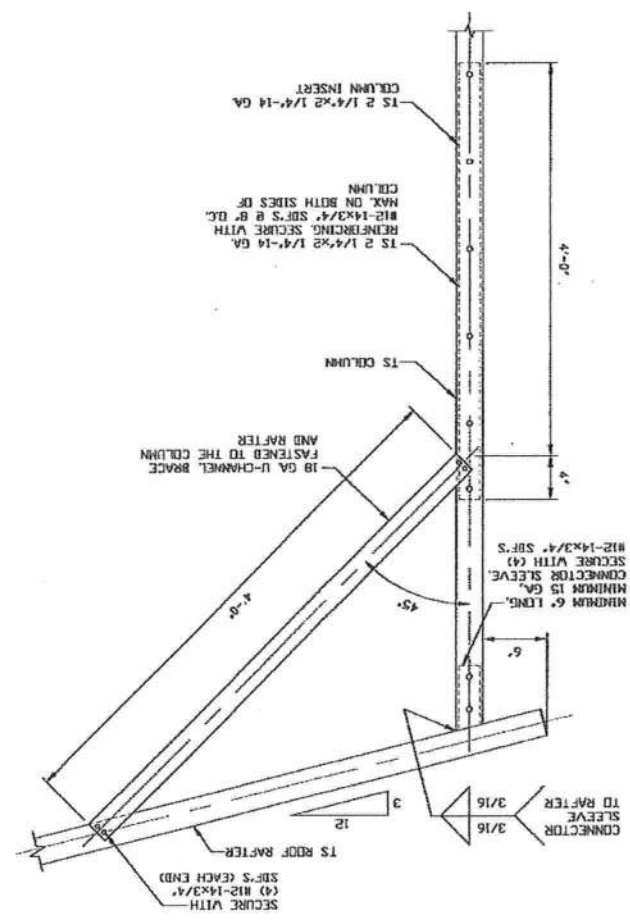
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2
RAFTER COLUMN/BASE RAIL
SCALE: NTS

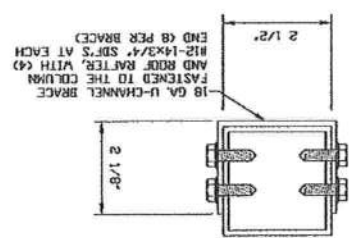


1A
BOX EAVE RAFTER COLUMN
CONNECTION DETAIL
FOR HEIGHTS 10'-0\"/>

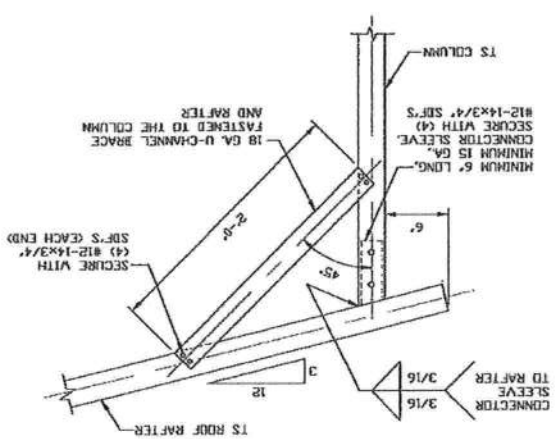


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BRACE SECTION
SCALE: NTS



1B
BOX EAVE RAFTER COLUMN
CONNECTION DETAIL
FOR HEIGHTS $\leq 10'-0"$
SCALE: NTS



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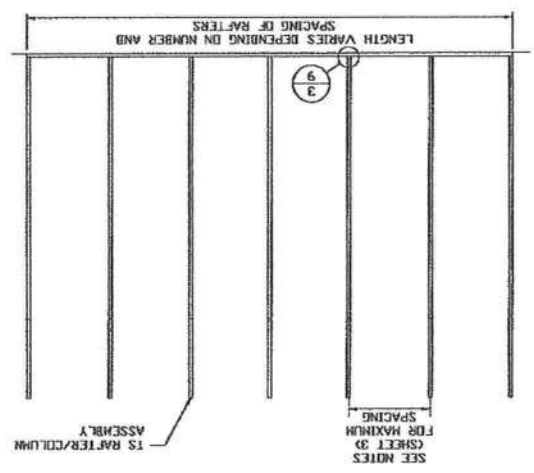
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PROJECT MGR: WSM	DATE: 1-8-21	SCALE: NTS	JOB NO. 161545/ 173008/203525
CHECKED BY: PMH	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLB LAKE CITY, FLORIDA 32025 30'-0"X20'-0" UTILITY BUILDING EXP. B		
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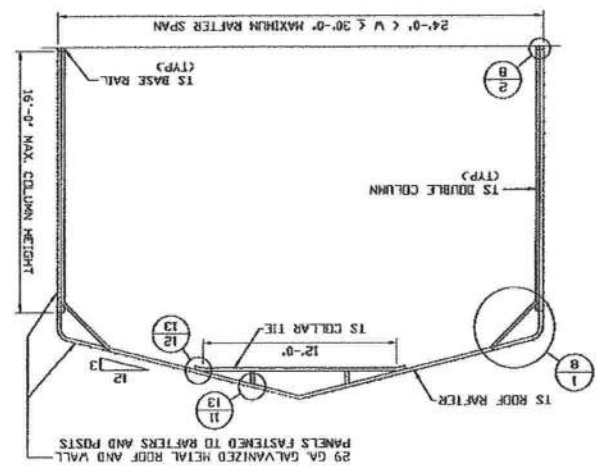
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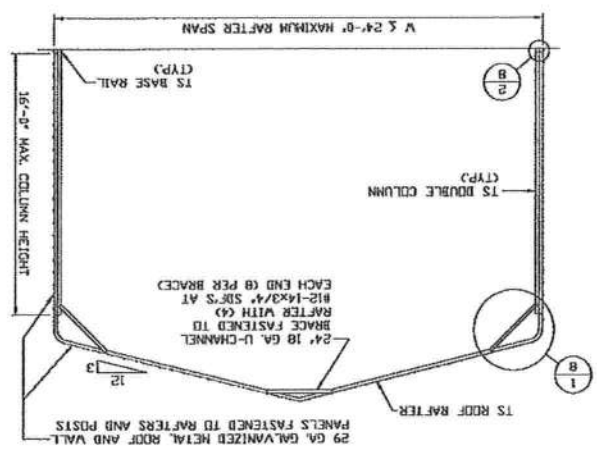
SCALE: NTS
TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION



SCALE: NTS
TYPICAL RAFTER/COLUMN END FRAME SECTION



SCALE: NTS
TYPICAL RAFTER/COLUMN END FRAME SECTION



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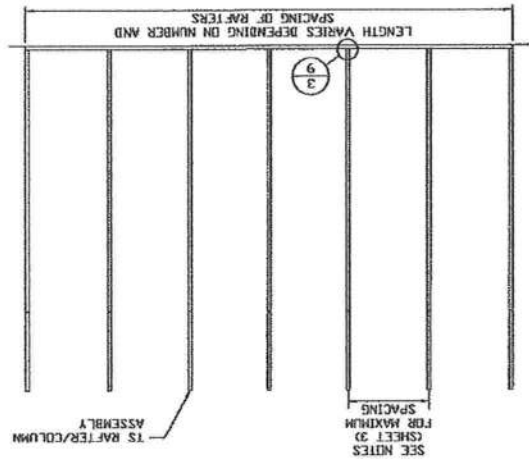
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CHECKED BY: PDH	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0" x 20'-0" UTILITY BUILDING EXP. B		
DRAWN BY: JG			

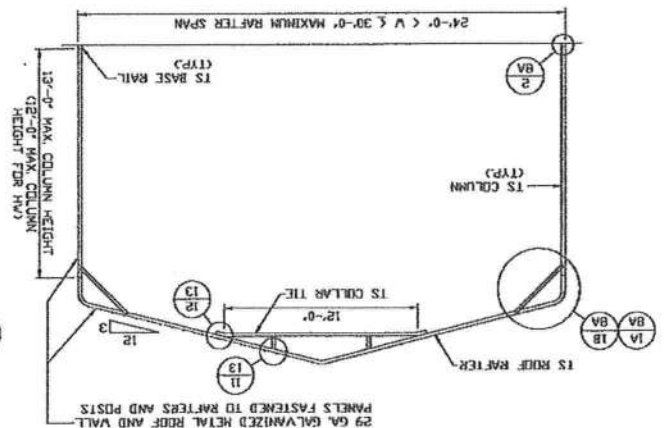
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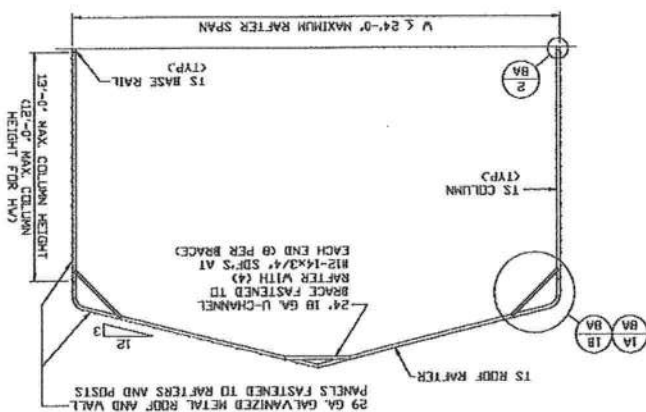
TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS

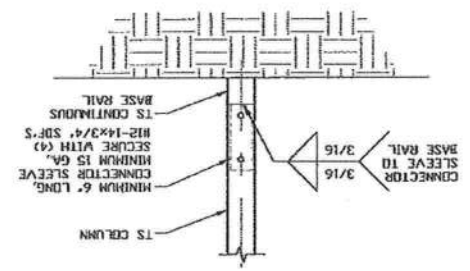


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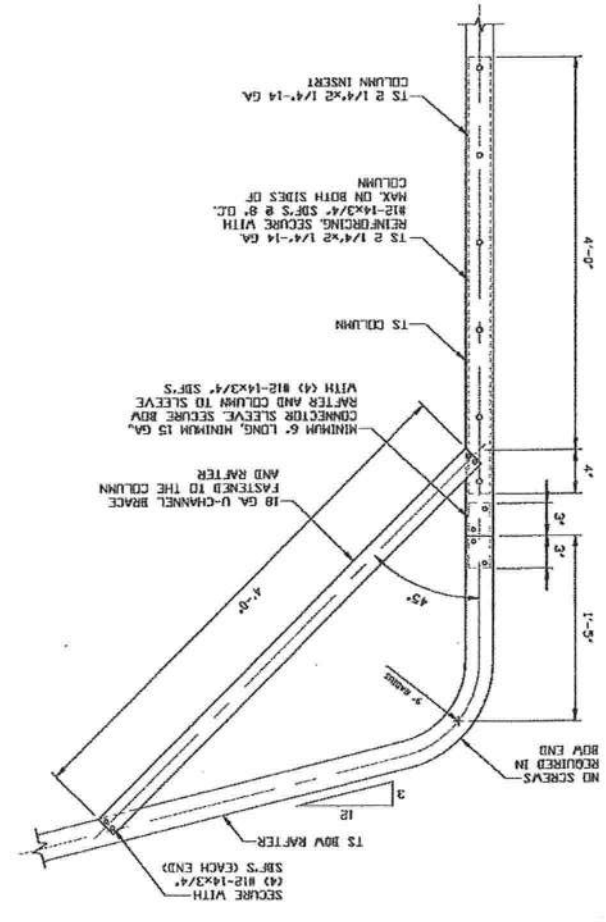
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CLIENT: TBS	SHT. BA	DWG. NO. SK-2	REV. 2
PROJECT MGR: VSM	DATE: 1-8-21	SCALE: NTS	JOB NO. 161545/173005/203525
CHECKED BY: PDH	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0" x 20'-0" UTILITY BUILDING EXP. B		
DRAWN BY: JG			

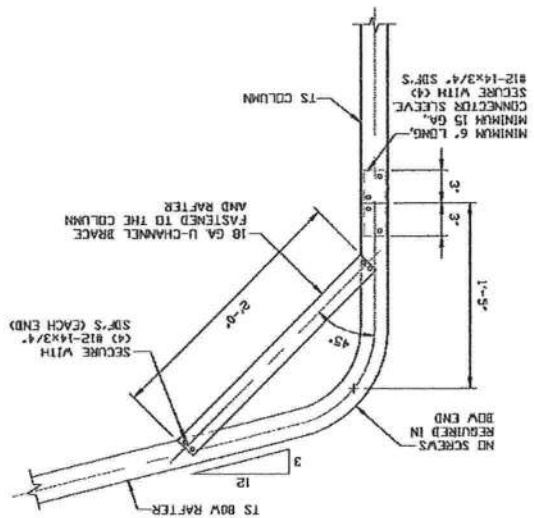
2
RAFTER COLUMN/BASE RAIL
SCALE: NTS



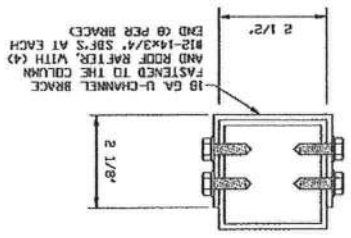
1A
BOX EAVE RAFTER COLUMN
SCALE: NTS
FOR HEIGHTS 10'-0" < TO < 13'-0"
NOTE: MAXIMUM COLUMN HEIGHT IS 12'-0" FOR HIGH WIND.



1B
BOX EAVE RAFTER COLUMN
SCALE: NTS
FOR HEIGHTS < 10'-0"



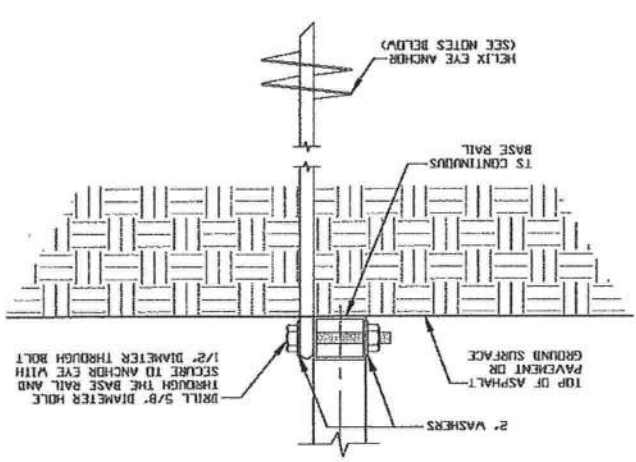
BRACE SECTION
SCALE: NTS



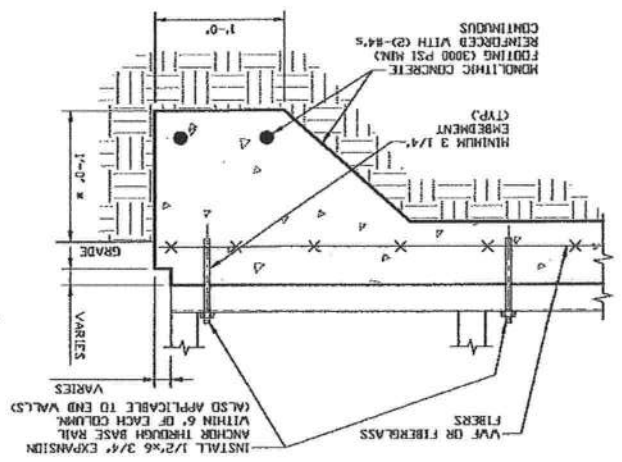
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BASE RAIL ANCHORAGE OPTIONS FOR LOW AND HIGH WIND SPEED



3B GROUND BASE HELIX ANCHORAGE
SCALE: NTS
* COORDINATE WITH LOCAL CODES/ORD.
(CAN BE USED FOR ASPHALT)
REGARDING MINIMUM FROST DEPTH REQ.



3A CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE
SCALE: NTS
* 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 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.

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 CORBELS, 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 LOOSE 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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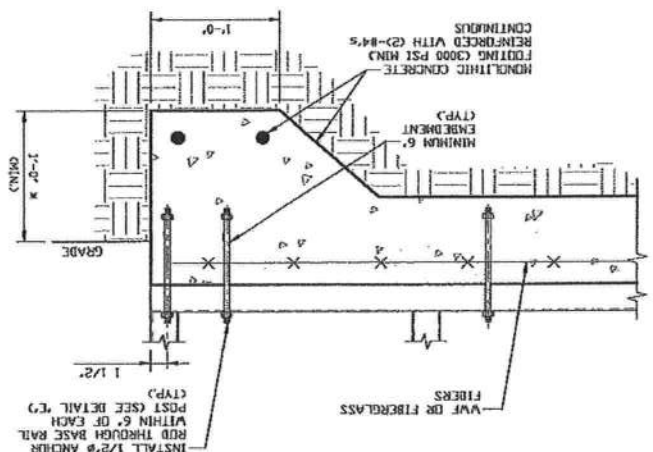


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CHECKED BY: PDH
PROJECT MGR: VSM
CLIENT: TBS
DATE: 1-8-21
SHT. 9
DWG. NO. SK-2
REV. 2
JOB NO. 16154S/17300S/20352S

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

OPTIONAL FOUNDATION ANCHORAGE FOR LOW AND HIGH WIND SPEED



3C
SCALE: NTS
CONCRETE MONOLITHIC SLAB
BASE RAIL ANCHORAGE

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

GENERAL NOTES

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

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.

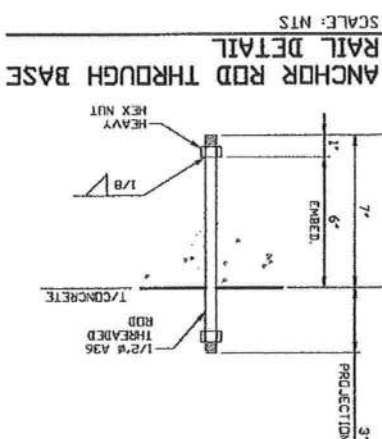
3 INCHES IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH OR WEATHER, AND 1 1/2 INCHES ELSEWHERE.

REINFORCING STEEL

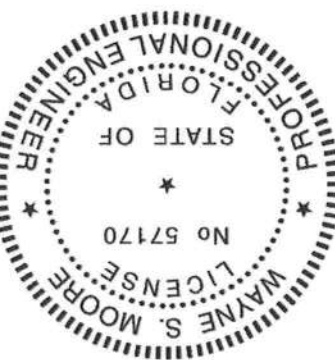
THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT.

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.



3D
SCALE: NTS
ANCHOR ROD THROUGH BASE RAIL DETAIL



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CHECKED BY: PMH	DRAWN BY: JG
SHT. 9A	DATE: 1-8-21
DWG. NO. SK-2	SCALE: NTS
REV. 2	JOB NO. 16154S/17300S/20352S

TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE
LAKE CITY, FLORIDA 32025
30'-0" X 20'-0" UTILITY BUILDING EXP. B

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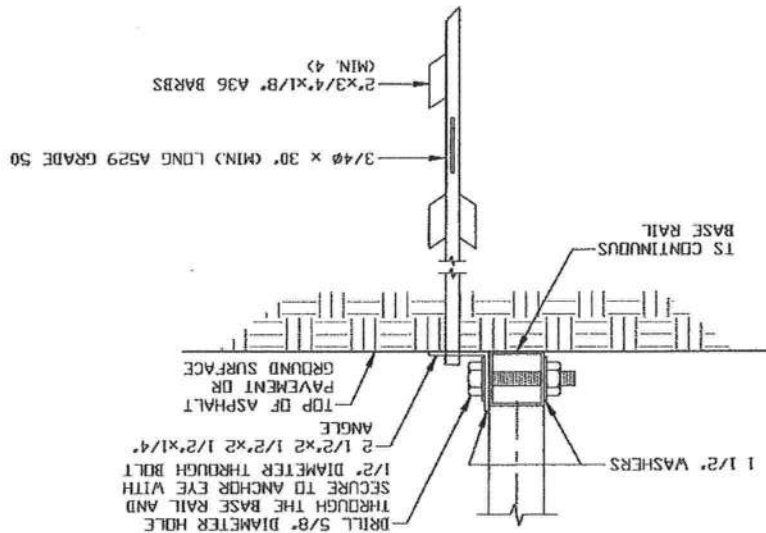
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ASPHALT BASE ANCHORAGE (HP 9 BARBED DRIVE ANCHOR)

3E

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



BASE RAIL ANCHORAGE OPTION

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CHECKED BY: PDH

PROJECT MGR: VSM

CLIENT: TBS

SHT. 9C

DATE: 1-8-21

SCALE: NTS

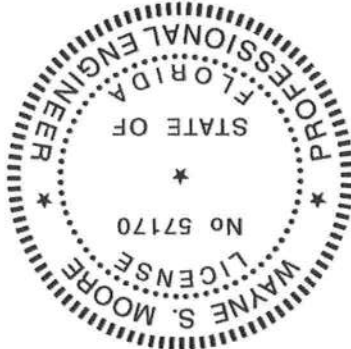
DWG. NO. SK-2

REV. 2

JOB NO. 16154S/
17300S/20352S

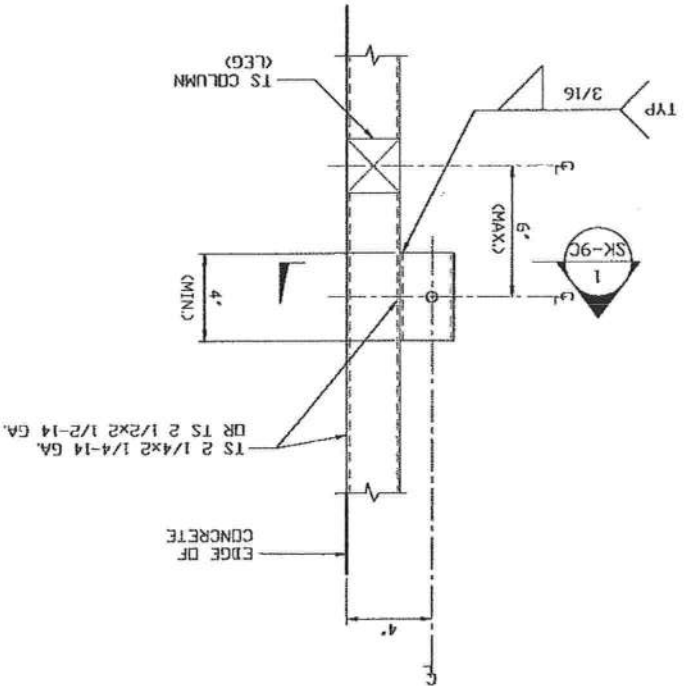
TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE
LAKE CITY, FLORIDA 32025
30'-0" x 20'-0" UTILITY BUILDING EXP. B

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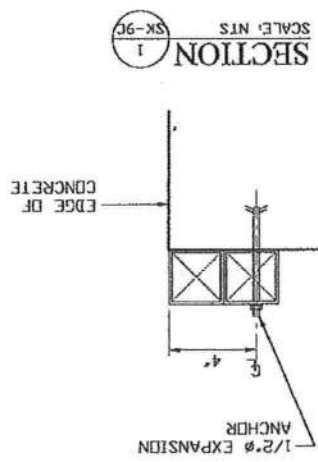


TYPICAL ANCHOR DETAIL WHEN BASE
RAIL IS NEAR EDGE OF CONCRETE

SCALE: NTS



BASE RAIL ANCHORAGE OPTIONS

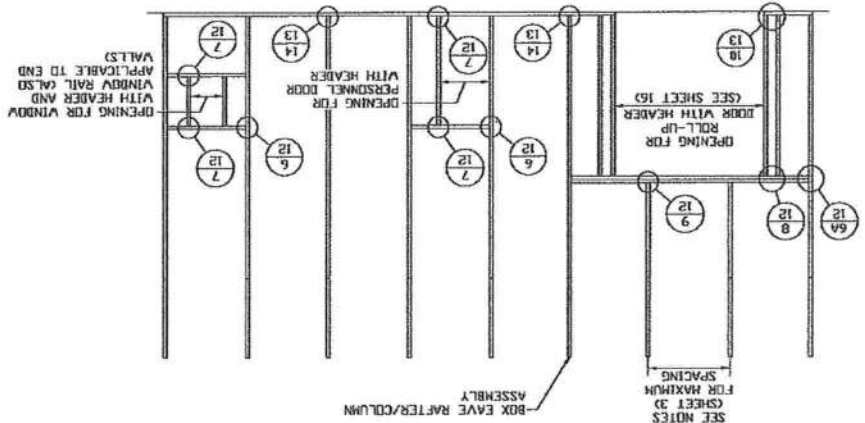


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		CLIENT: TBS	SHT. 10	DWG. NO. SK-2	REV. 2

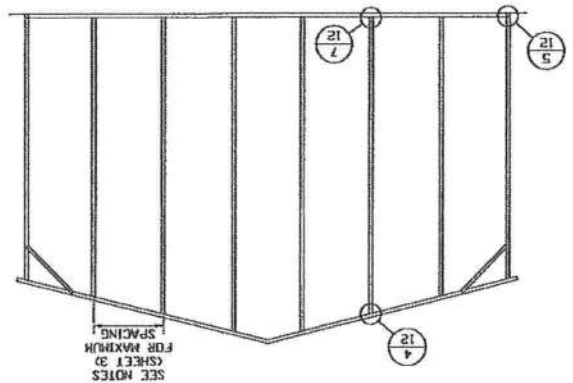
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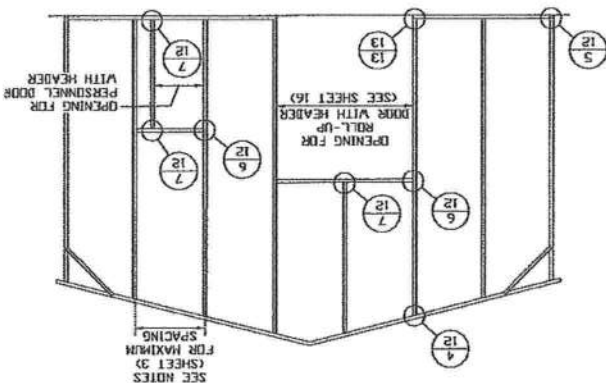
TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION
SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION
SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION
SCALE: NTS



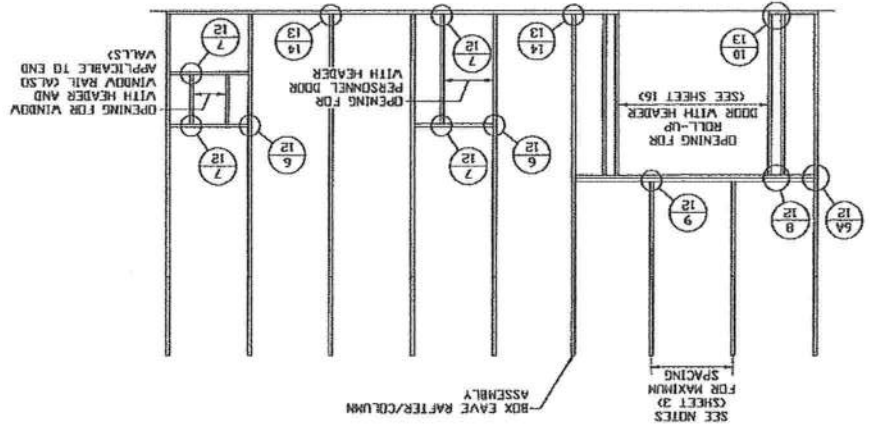
BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS

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TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0"x20'-0" UTILITY BUILDING EXP. B		SHEET: 11 DWG. NO.: SK-2 REV.: 2	JOB NO.: 16194S/ 17300S/20352S SCALE: NTS

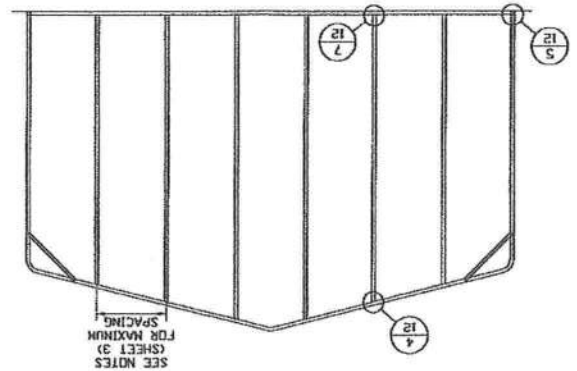
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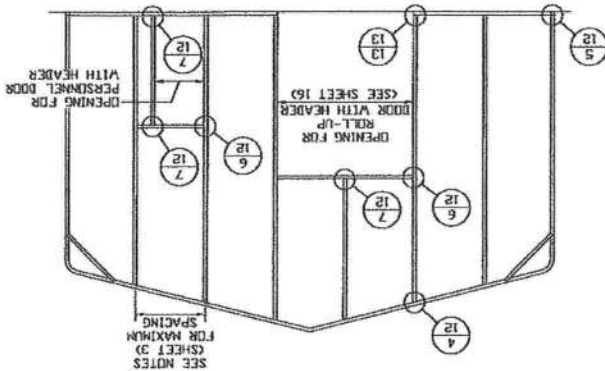
SCALE: NTS
TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION



SCALE: NTS
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

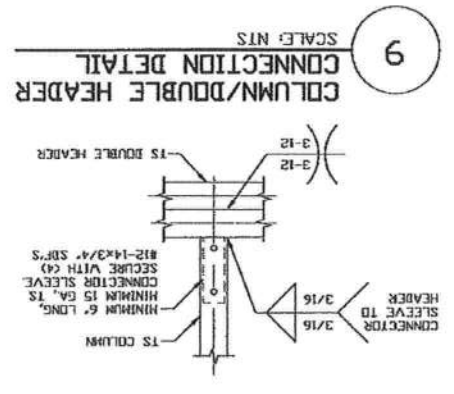
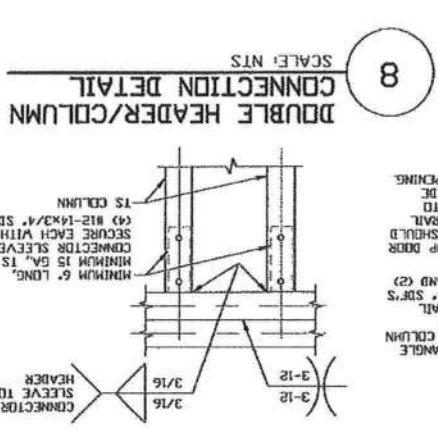
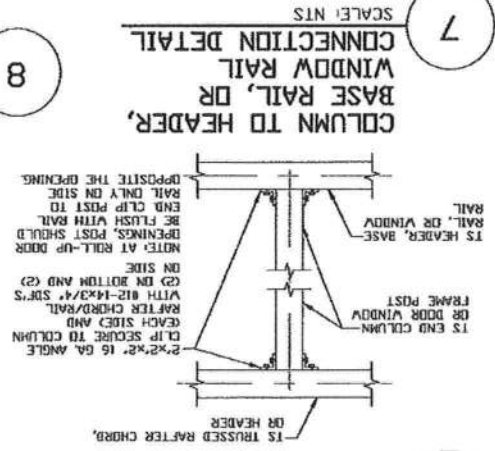
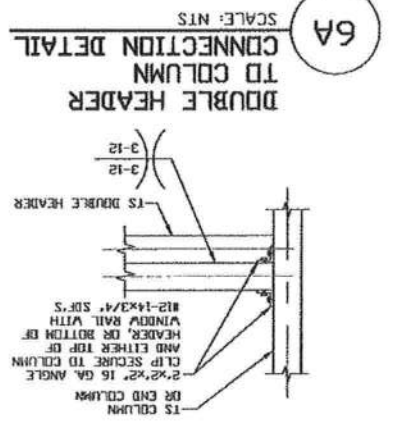
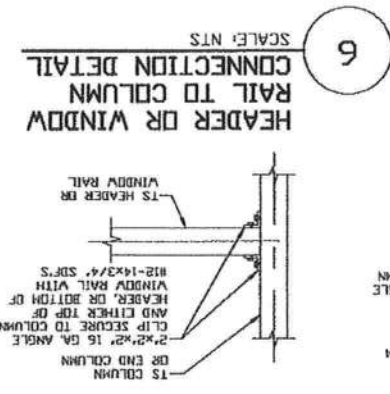
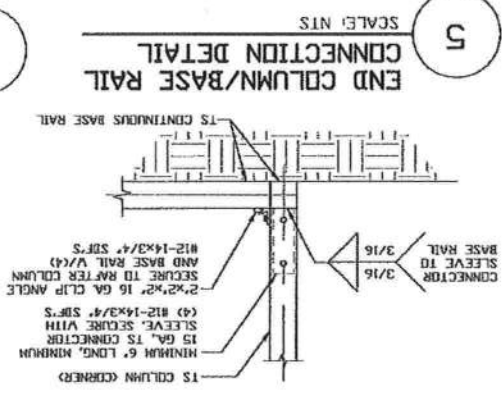


SCALE: NTS
TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION



BOW RAFTER END WALL AND SIDE WALL OPENINGS

CONNECTION DETAILS



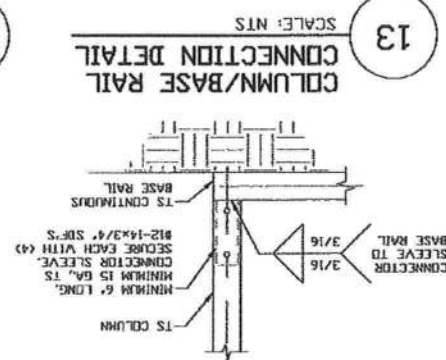
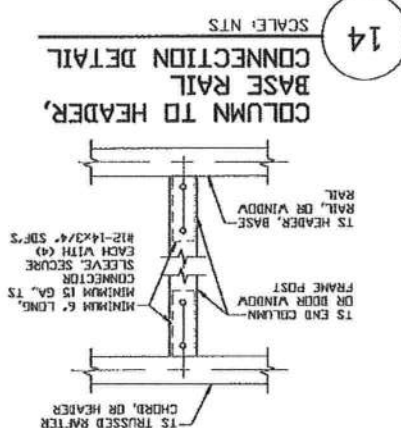
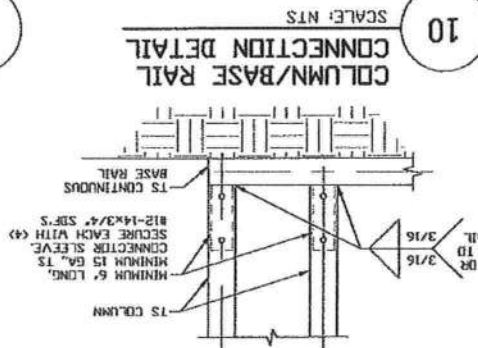
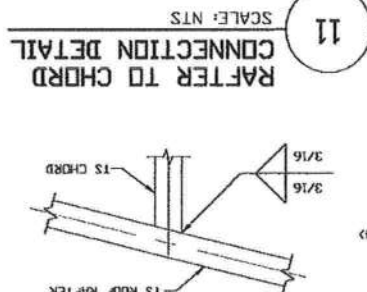
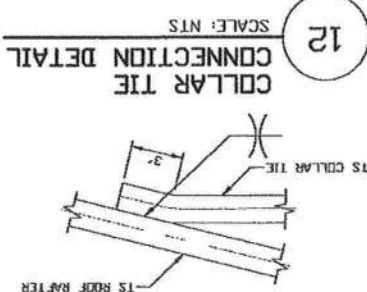
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PROJECT MGR: VSM
CLIENT: TBS
DATE: 1-8-21
SHT. 12
DWG. NO. SK-2
REV. 2

TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE
LAKE CITY, FLORIDA 32025
30'-0" x 20'-0" UTILITY BUILDING EXP. B
JOB NO. 16154S/
17300S/20352S

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		CHECKED BY: PMH		TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025	
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		CLIENT: TBS		SHT. 13	
		DWG. NO: SK-2		REV: 2	
		JOB NO: 16154S/ 17300S/2032S			

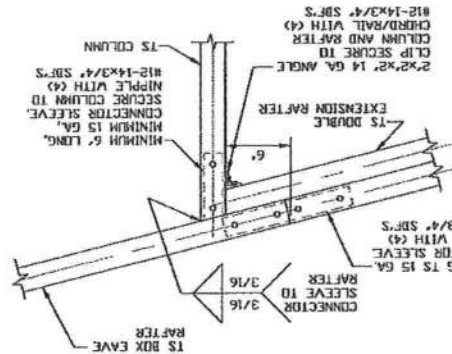
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PROJECT MGR. WSH	DATE: 1-8-21	SCALE: NTS	JOB NO. 16154S/17300S/20352S
CHECKED BY: PMH	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0" x 20'-0" UTILITY BUILDING EXP. B		
DRAWN BY: JIG			

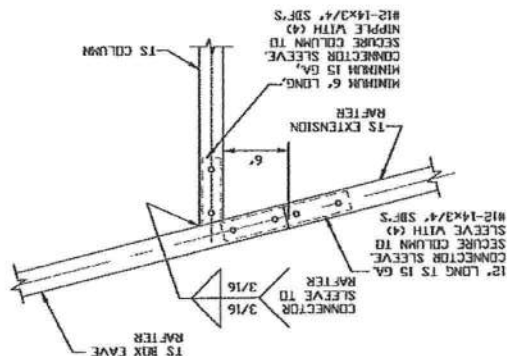
15A
SIDE EXTENSION RAFTER/COLUMN DETAIL
FOR RAFTER SPANS 15'-0" < TO < 24'-0"

SCALE: NTS



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

SCALE: NTS



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".

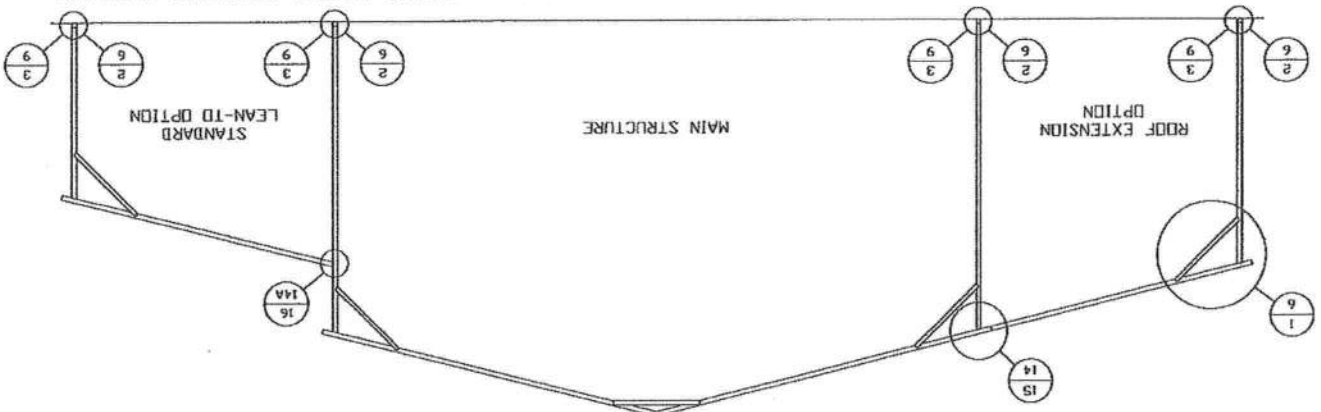
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS 13'-0" (12'-0" FOR HIGH WIND) < TO < 16'-0".

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 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.

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



BOX EAVE RAFTER LEAN-TO OPTIONS

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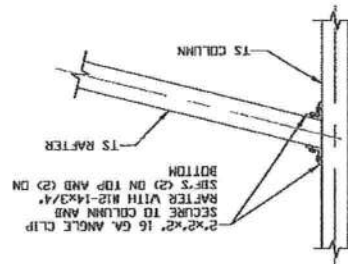
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CLIENT: TBS	SHT. 14A	DWG. NO. SK-2	REV. 2
PROJECT MGR. VSM	DATE: 1-8-21	SCALE: NTS	JOB NO. 16154S/17300S/20352S
CHECKED BY: PDH	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0" x 20'-0" UTILITY BUILDING EXP. B		
DRAWN BY: JG			

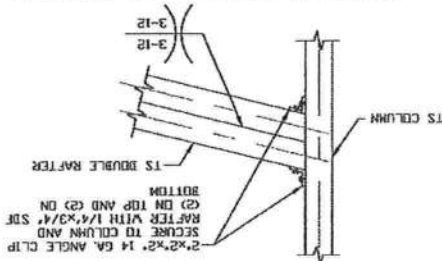
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16
SCALE: NTS
LEAN-TO RAFTER TO RAFTER
COLUMN CONNECTION DETAIL
FOR RAFTER SPANS $\leq 15'-0"$



16A
SCALE: NTS
LEAN-TO RAFTER TO RAFTER
COLUMN CONNECTION DETAIL
FOR RAFTER SPANS
 $15'-0" < \text{TO} \leq 24'-0"$



BOX EAVE RAFTER LEAN-TO OPTIONS

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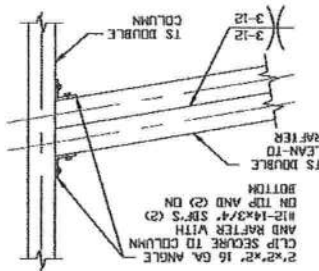
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PROJECT MGR: WSH
CHECKED BY: PDH
DRAWN BY: JG

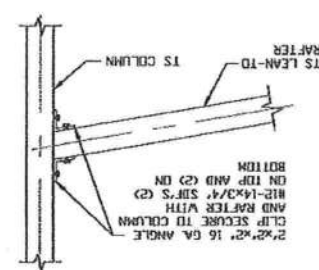
SHT. 15
DATE: 1-8-21
SCALE: NTS
JOB NO. 16154S/
17300S/20352S

DWG. NO. SK-2
REV. 2
TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE
LAKE CITY, FLORIDA 32025
30'-0"x20'-0" UTILITY BUILDING EXP. B

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



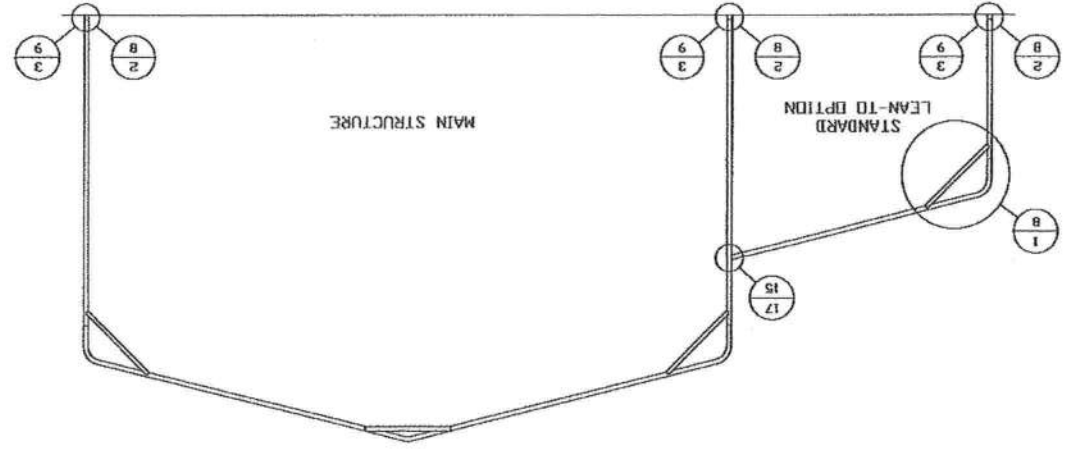
17
**LEAN-TO RAFTER TO RAFTER
COLUMN CONNECTION DETAIL
FOR RAFTER SPANS < 15'-0"**
SCALE: NTS



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SCALE: NTS
TYPICAL BOW RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS 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-TOS ARE ADDED.



BOW RAFTER LEAN-TO OPTIONS

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CHECKED BY: PDH

PROJECT MGR: VSM

CLIENT: TBS

SHT. 16

DATE: 1-8-21

DWG. NO. SK-2

SCALE: NTS

JOB NO. 16154S/
17300S/20352S

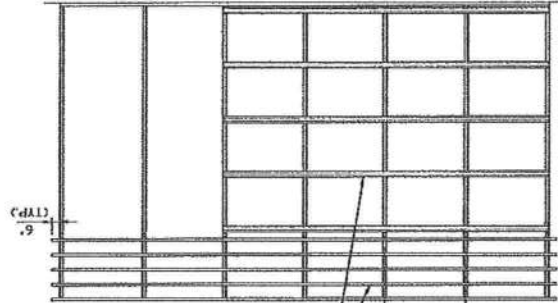
TUBULAR BUILDING SYSTEMS
631 SE INDUSTRIAL CIRCLE
LAKE CITY, FLORIDA 32025
30'-0" x 20'-0" UTILITY BUILDING EXP. B

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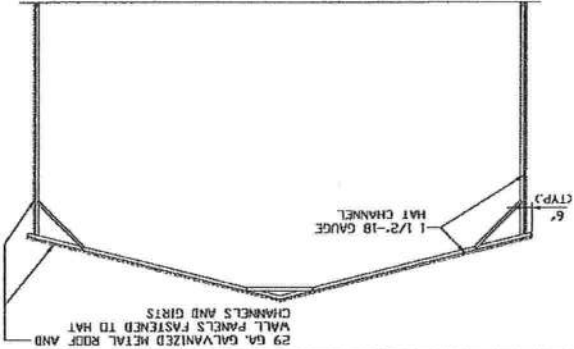


NOTE: IS WALL GIRTS CAN BE USED AS AN OPTION IN PLACE OF HAT CHANNELS. IS GIRTS MUST BE SPACED AT 4'-0" (MAX.) O.C.

TYPICAL FRAMING SECTION
VERTICAL ROOF/SIDING OPTION
SCALE: NTS

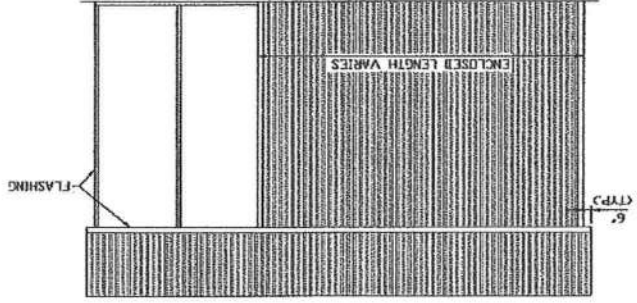


TYPICAL SECTION VERTICAL
ROOF/SIDING OPTION
SCALE: NTS

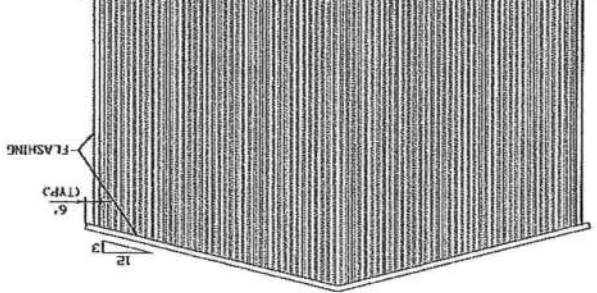


BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION

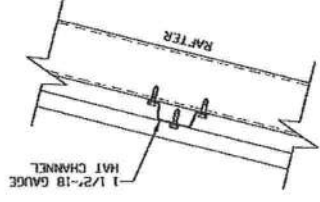
TYPICAL SIDE ELEVATION
VERTICAL ROOF/SIDING OPTION
SCALE: NTS



TYPICAL END ELEVATION
VERTICAL ROOF/SIDING OPTION
SCALE: NTS



ROOF PANEL ATTACHMENT
(ALTERNATE FOR VERTICAL ROOF PANELS)
SCALE: NTS



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CLIENT: TBS	SHT. 17	DWG. NO. SK-2	REV. 2
PROJECT MGR: VSM	DATE: 1-8-21	SCALE: NTS	JOB NO. 16154S/ 17300S/20392S
CHECKED BY: PDH	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0" x 20'-0" UTILITY BUILDING EXP. B		
DRAWN BY: JG			

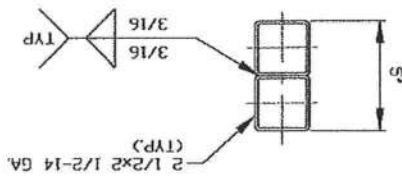
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SCALE: NTS
HEADER DETAIL FOR DOOR
OPENINGS $\leq 12'-0"$



SCALE: NTS
HEADER DETAIL FOR DOOR
OPENINGS $12'-0" < \text{LENGTH} \leq 15'-0"$

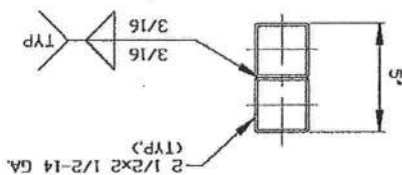


END WALL HEADER OPTIONS

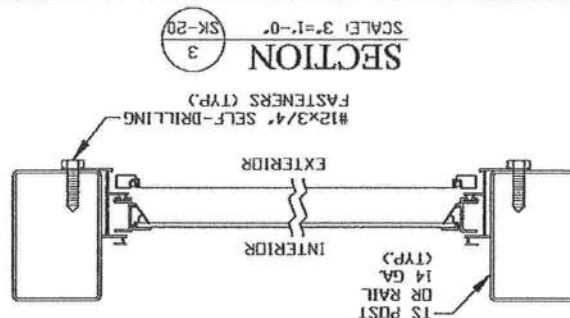
SCALE: NTS
HEADER DETAIL FOR DOOR
OPENINGS $\leq 10'-0"$



SCALE: NTS
HEADER DETAIL FOR DOOR
OPENINGS $10'-0" < \text{LENGTH} \leq 15'-0"$



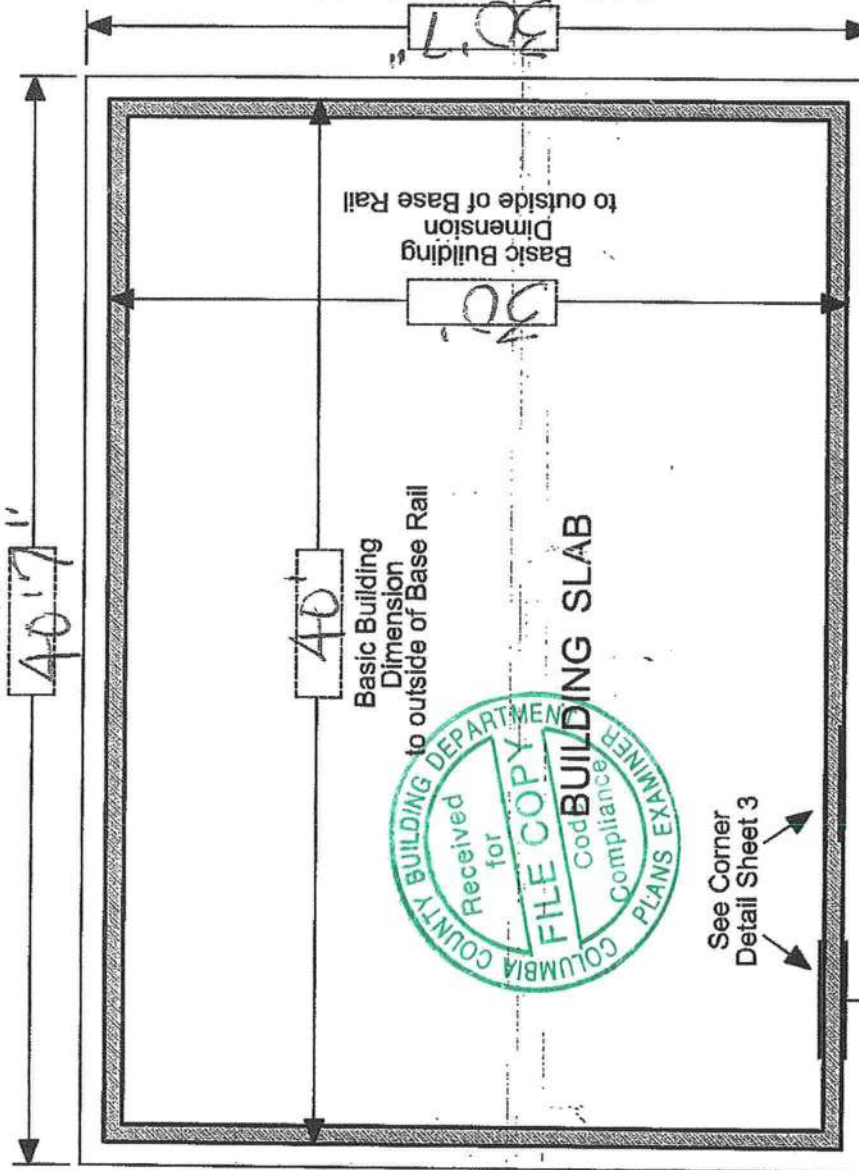
SIDE WALL HEADER OPTIONS



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Outside measurement of foundation
Equals Basic Building Dimension
plus Seven (7) inches

40' 7"



Outside measurement of foundation
Equals Basic Building Dimension
plus Seven (7) inches

30'

Basic Building
Dimension
to outside of Base Rail

40'

Basic Building
Dimension
to outside of Base Rail

BUILDING SLAB



See Corner
Detail Sheet 3

Building
Base Rail

3-1/2" wide x 1-1/2" high Notch
in Concrete outside
of basic building
dimensions

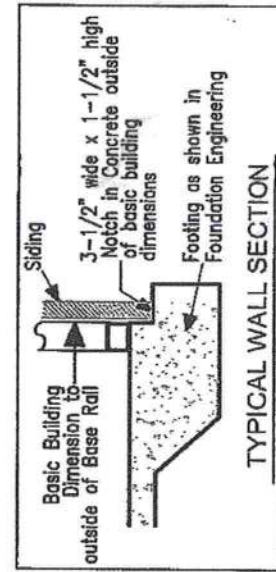
IMPORTANT - NOTES



Record Measurements
in these spaces provided

All basic building dimensions
are to the outside of the
frame Base Rail and DO NOT
INCLUDE the 3-1/2" x 1-1/2"
notch in the concrete footing

See Sheet 3 of 3
for Detail of Building
corner configuration



TYPICAL WALL SECTION

TYPICAL BUILDING FOUNDATION MEASUREMENTS

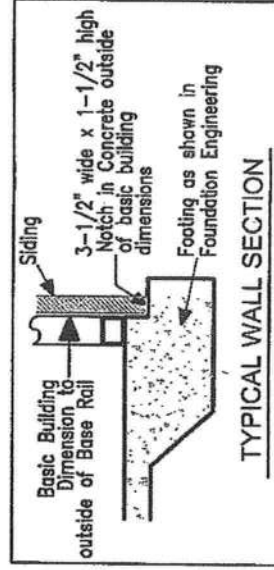
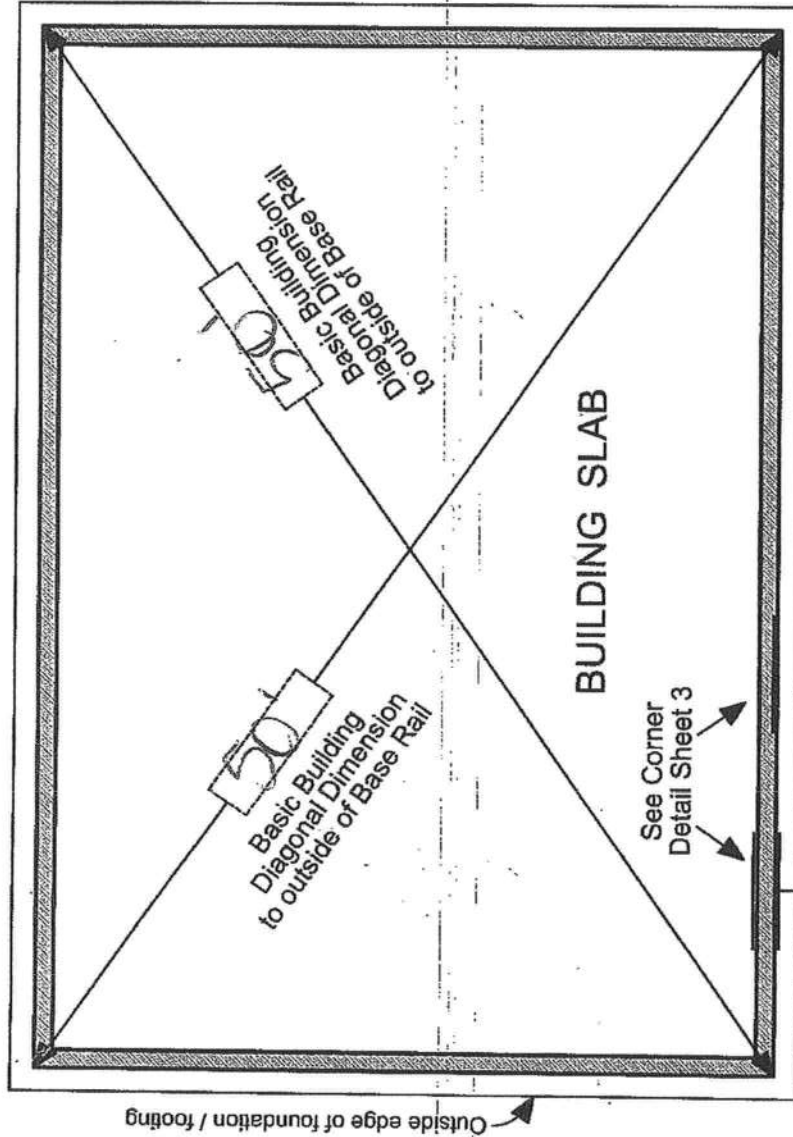


IMPORTANT - NOTES

Record Measurements
in these spaces provided

All basic building diagonal dimensions
are to the outside corner of the
frame Base Rail and DO NOT
INCLUDE the 3-1/2" x 1-1/2"
notch in the concrete footing

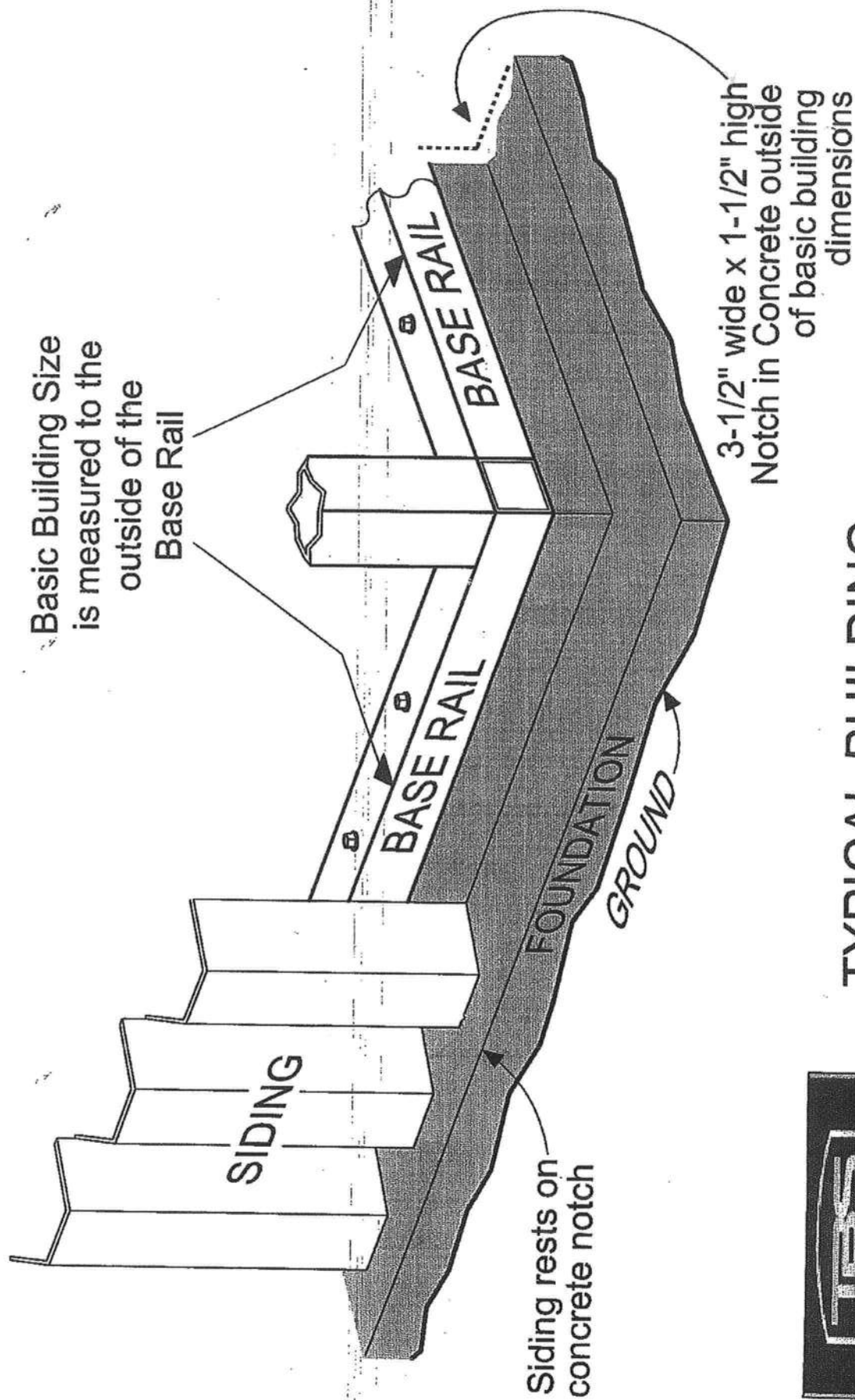
See Sheet 3 of 3
for Detail of Building
corner configuration



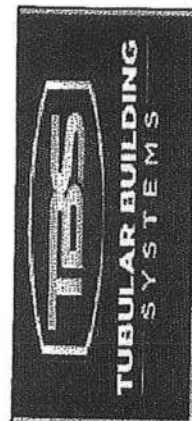
TYPICAL WALL SECTION

TYPICAL BUILDING FOUNDATION MEASUREMENTS DIAGONALS





TYPICAL BUILDING CORNER DETAIL



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PROJECT MGR: VSM		DATE: 1-8-21	
CHECKED BY: PDH		SCALE: NTS	
DRAWN BY: JG		DWG. NO: SK-2	
TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" UTILITY BUILDING EXP. B PE SEAL COVER SHEET		JOB NO: 16154S/ 17300S/2035S	
DRAFTSMAN'S SEAL WAYNE S. MOORE LICENSE NO. 57170 STATE OF FLORIDA PROFESSIONAL ENGINEER		This item has been electronically signed and sealed by Wayne S. Moore, PE. using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.	