



STRUCTURAL DESIGN

ENCLOSED BUILDING

EXPOSURE B

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

29 July 2021

Revision 6

M&A Project No. 16022S/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**

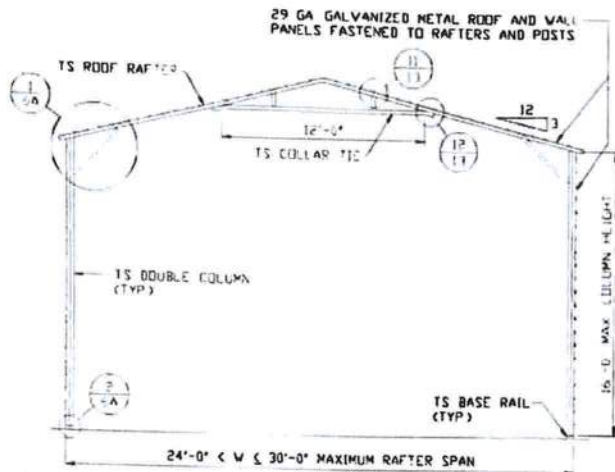


Wayne S Moore Digitally signed
by Wayne S
Moore
Date: 2021.10.21
08:30:02 -04'00'

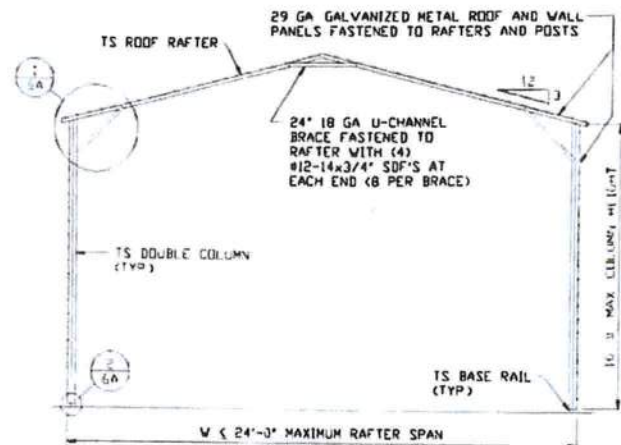


This item has been electronically signed and sealed by Wayne S. Moore, PE. using a Digital Signature and date.

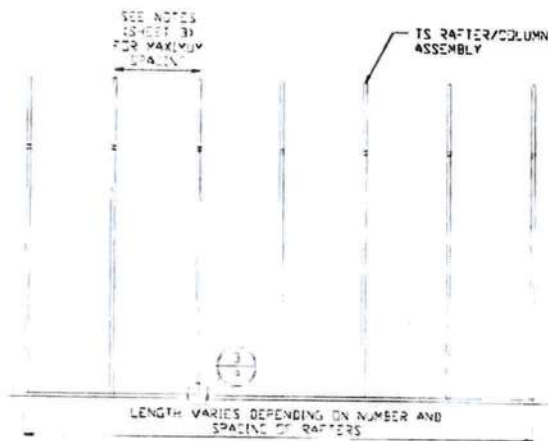
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION
SCALE: NTS



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.

**MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.**

DRAWN BY: JG

CHECKED BY: PDH

PROJECT MGR: VSM

CLIENT: TBS

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

DATE: 7-29-21

SCALE: NTS

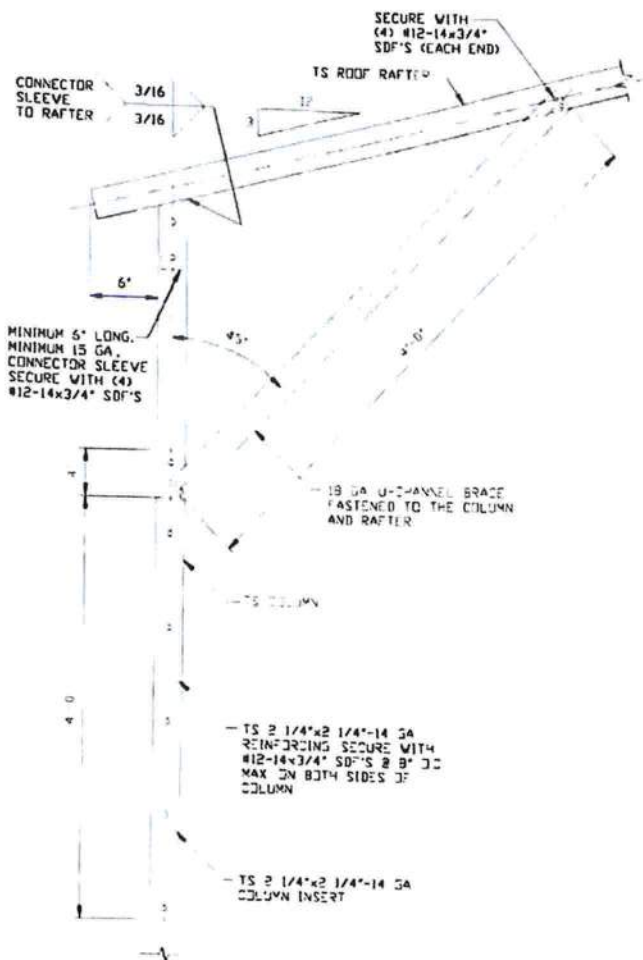
DWG. NO: SK-3

JOB NO: 16022S/
17300S/20352S

SHT. 5A

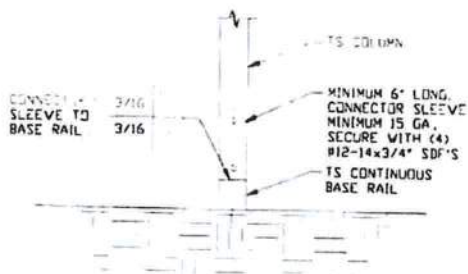
REV: 6

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.



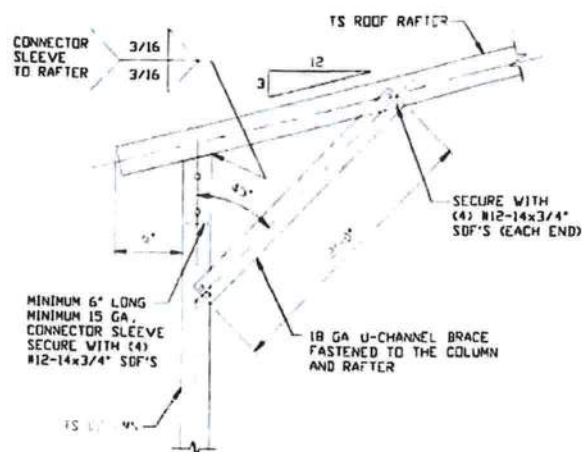
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO ≤ 13'-0"

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



2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

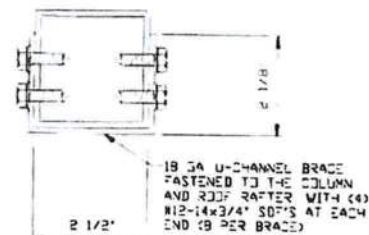
SCALE: NTS



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

1B

SCALE: NTS



BRACE SECTION

SCALE: NTS



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.

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

DRAWN BY: JG

CHECKED BY: PDH

PROJECT MGR: WSM

CLIENT: TBS

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

DATE: 7-29-21

SCALE: NTS

JOB NO: 16022S/
17300S/20352S

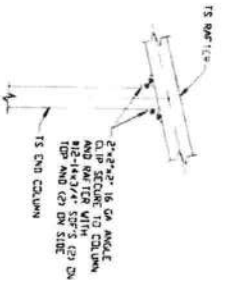
SHT. 6B

DWG. NO: SK-3

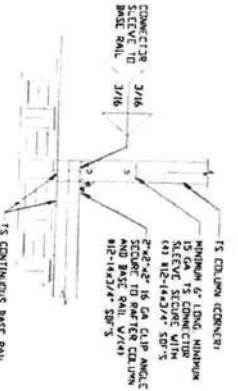
REV: 6

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING. THE UNAUTHORIZED REPRODUCTION, COPYING, OR OTHERWISE USE OF THIS DOCUMENT IS STRICTLY PROHIBITED AND ANY INFRINGEMENT THEREUPON MAY BE SUBJECT TO LEGAL ACTION.

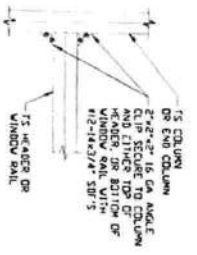
CONNECTION DETAILS



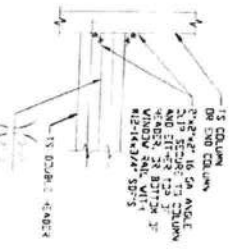
4
END COLUMN/RAFTER
CONNECTION DETAIL
SCALE: NTS



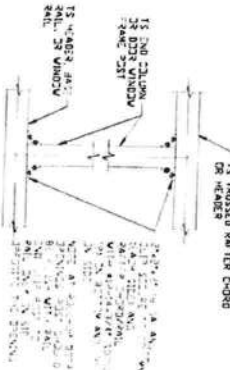
5
END COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS



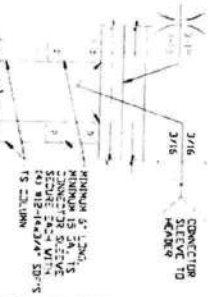
6
HEADER OR WINDOW
RAIL TO COLUMN
CONNECTION DETAIL
SCALE: NTS



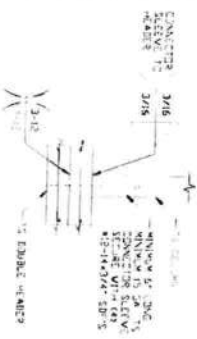
6A
DOUBLE HEADER
TO COLUMN
CONNECTION DETAIL
SCALE: NTS



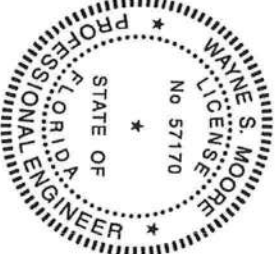
7
COLUMN TO HEADER,
BASE RAIL, OR
WINDOW RAIL
CONNECTION DETAIL
SCALE: NTS



8
DOUBLE HEADER/COLUMN
CONNECTION DETAIL
SCALE: NTS



9
COLUMN/DOUBLE HEADER
CONNECTION DETAIL
SCALE: NTS



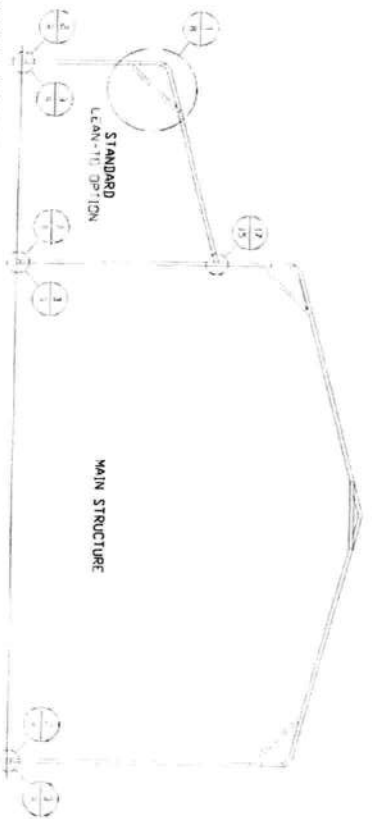
This item has been electronically signed and sealed by Wayne S. Moore, P.E. using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC. IT IS TO BE USED FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON AND NOT BE LOANED, REPRODUCED, COPIED, OR OTHERWISE USED FOR ANY OTHER PROJECT OR SITE WITHOUT THE WRITTEN PERMISSION OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC. IT IS TO BE RETURNED TO THE OFFICE OF ORIGIN IMMEDIATELY UPON COMPLETION OF THE PROJECT AND SITE. IT IS TO BE SUBJECT TO LOCAL ACTS.

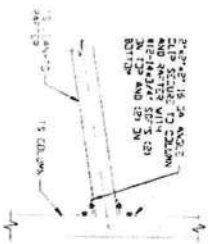
DRAWN BY: JG	TUBULAR BUILDING SYSTEMS
CHECKED BY: PMH	631 SE INDUSTRIAL CIRCLE
PROJECT NO: VSM	LAKE CITY, FLORIDA 32025
DATE: 7-29-21	30'-0"x20'-0" ENCLOSED BUILDING EXP. B
SHT. 12	SCALE: NTS
DATE: 7-29-21	JOB NO. 166025/
DATE: 7-29-21	173005/203823
DATE: 7-29-21	REV. 6

BOW RAFTER LEAN-TO OPTIONS

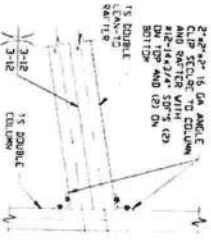


TYPICAL BOW RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

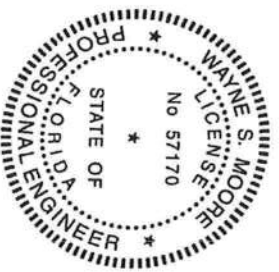
SCALE: N.T.S.
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS 13'-3" TO 15'-3" FOR MAIN WIND < TO < 15'-3"
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS 13'-3" < TO < 15'-3" FOR HIGH WIND (WITH 6'-4" INSERT)
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS < 13'-3"
KNEE BRACES MUST BE 4'-3" TO 5'-3" FOR HIGH WIND WHEN LEAN-TO'S ARE ADDED



17
SCALE: N.T.S.
LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS < 15'-0"



17A
SCALE: N.T.S.
LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 15'-0" < TO < 24'-0"

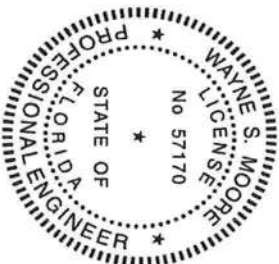
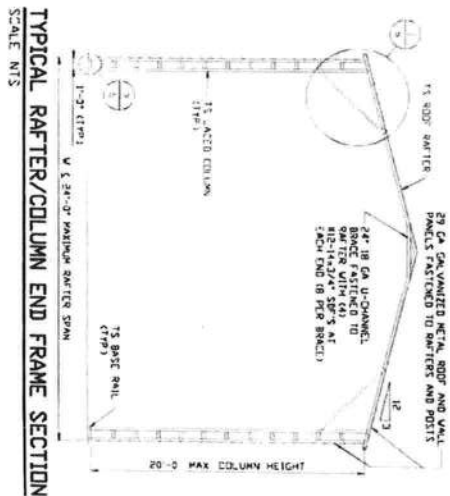
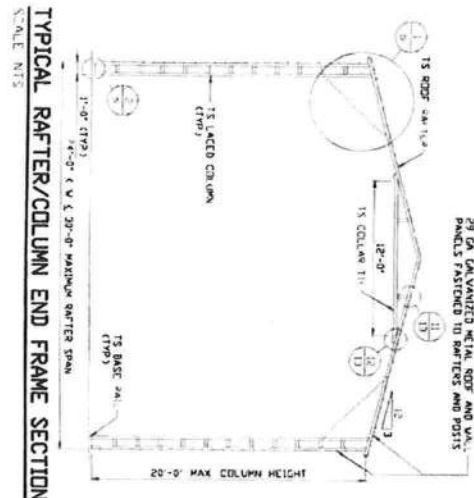


This item has been electronically signed and sealed by Wayne S. Moore, P.E., using a Digital Signature and date.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC. IT IS TO BE USED FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN. IT IS NOT TO BE REPRODUCED, COPIED, OR OTHERWISE USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN PERMISSION OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC. IT IS TO BE RETURNED TO THE ORIGINAL ISSUING OFFICE WHEN REQUESTED. IT IS NOT TO BE LOANED, REPRODUCED, COPIED, OR OTHERWISE USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN PERMISSION OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC. IT IS TO BE RETURNED TO THE ORIGINAL ISSUING OFFICE WHEN REQUESTED.

DESIGN BY: JG	TUBULAR BUILDING SYSTEMS
CHECKED BY: PMH	631 SE INDUSTRIAL CIRCLE
PROJECT NO: VSM	LAKE CITY, FLORIDA 32025
DATE: 7-29-21	30'-0" x 20'-0" ENCLOSED BUILDING EXP. B
SHT. 15	SCALE: N.T.S.
DWG. NO: SK-9	JOB NO: 160225/173005/201522
REV: 6	



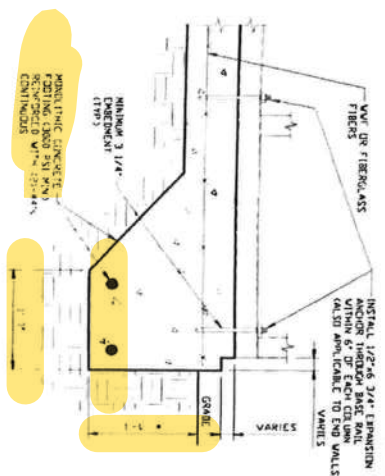
This item has been electronically signed and sealed by Wayne S. Moore, PE, using a Digital Signature and date.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

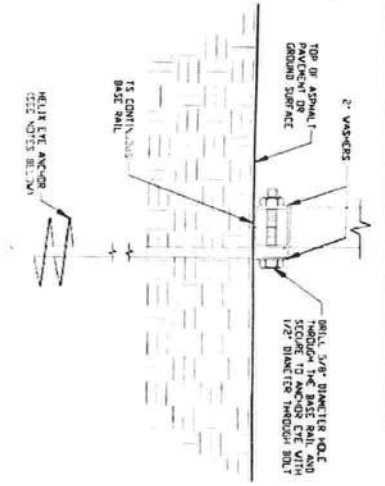
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.			
DESIGNED BY: JG	TUBULAR BUILDING SYSTEMS		
CHECKED BY: PMH	631 SE INDUSTRIAL CIRCLE		
PROJECT NO: VSM	LAKE CITY, FLORIDA 32025		
DATE: 7-29-21	30'-0" x 20'-0" ENCLOSED BUILDING EXP. B		
SHEET: 5	SCALE: NTS	JOB NO: 160225/173005/203225	REV: 6
CLIENT: TBS	DWG. NO: SK-3		

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC. IT IS TO BE USED FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. IT IS NOT TO BE REPRODUCED, COPIED, OR OTHERWISE USED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC. IT IS TO BE RETURNED TO THE FIRM UPON COMPLETION OF THE PROJECT.

BASE RAIL ANCHORAGE OPTIONS FOR LOW AND HIGH WIND SPEED



3A
CONCRETE MONOLITHIC SLAB
BASE RAIL ANCHORAGE



3B
GROUND BASE HELIX ANCHORAGE

GENERAL NOTES

NOTE: CONCRETE MONOLITHIC SLAB DESIGN ON MINIMUM SOIL BEARING CAPACITY OF 1500 PSF.

CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.

COVER OVER REINFORCING STEEL:

FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-308.

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 TURNING 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 COOL.

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.

HELIUM ANCHOR NOTES:

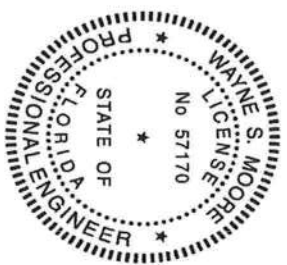
1. FOR VERY DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL, AND COBBLES, CALICHE, PRECASTED SILTS AND CLAYS USE MINIMUM (2) 4\"/>

2. FOR CORAL USE MINIMUM (2) 4\"/>

3. FOR MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS, AND CLAYS USE MINIMUM (2) 4\"/>

4. FOR LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER SILTS, ALLUVIAL FILL USE MINIMUM (2) 6\"/>

5. FOR VERY LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER CLAYS AND SILTS, ALLUVIAL FILL USE MINIMUM (2) 8\"/>



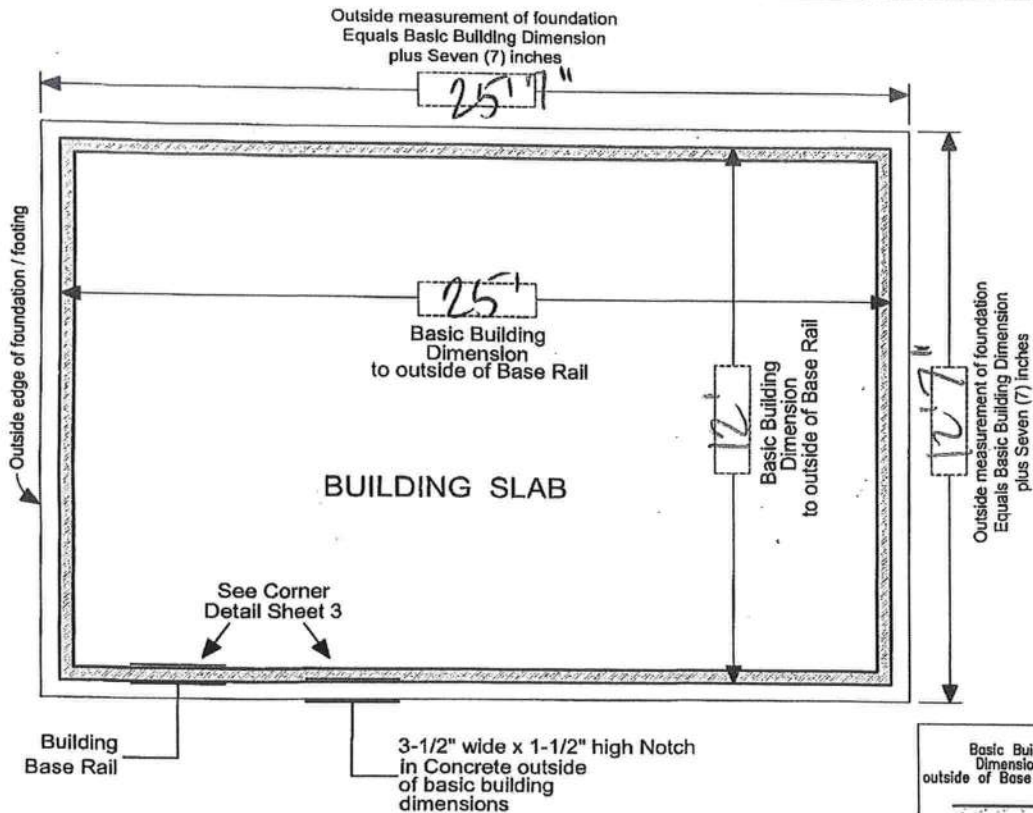
This item has been electronically signed and sealed by Wayne S. Moore, PE, using a Digital Signature and date.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.

THIS DOCUMENT IS THE PROPERTY OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC. IT IS TO BE USED FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. IT IS NOT TO BE REPRODUCED, COPIED, OR OTHERWISE USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN PERMISSION OF MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.

DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025
CHECKED BY: PMH	30-07-20-07 ENCLOSED BUILDING EXP. B
PROJECT NO: VSM	DATE: 7-29-21 SCALE: NTS
CLIENT: TBS	SHT. 9 DWG. NO. SK-3 REV. 6

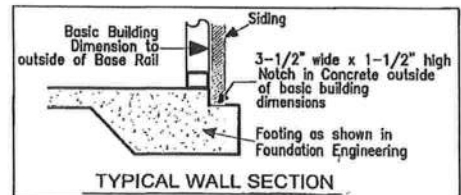


IMPORTANT - NOTES

Record Measurements
in these spaces provided

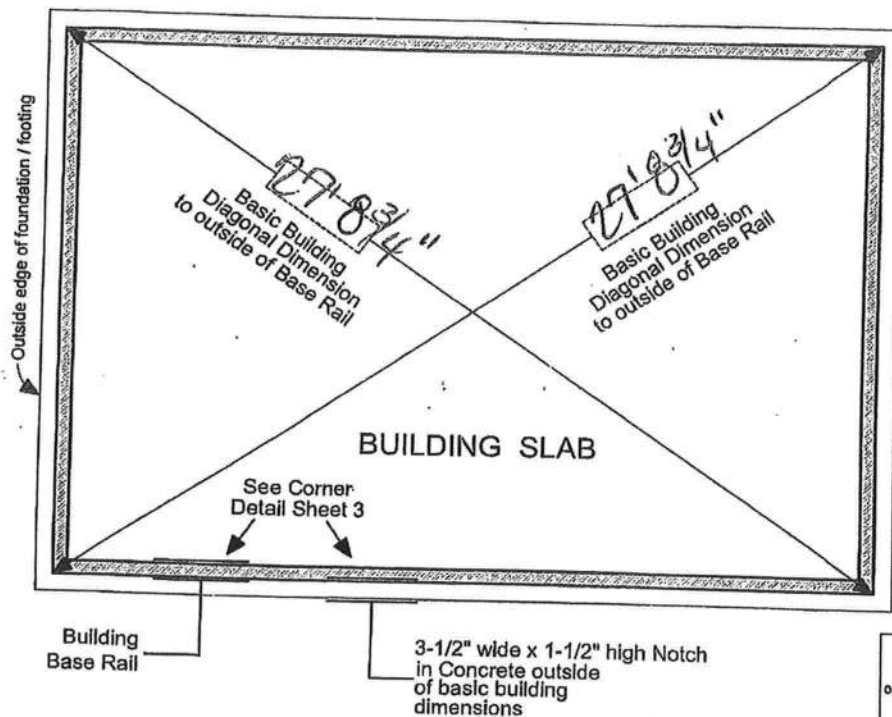
All basic building dimensions
are to the outside of the
frame Base Rail and DO NOT
INCLUDE the 3-1/2" x 1-1/2"
notch in the concrete footing

See Sheet 3 of 3
for Detail of Building
corner configuration



TYPICAL BUILDING FOUNDATION MEASUREMENTS

SHEET 1 of 3

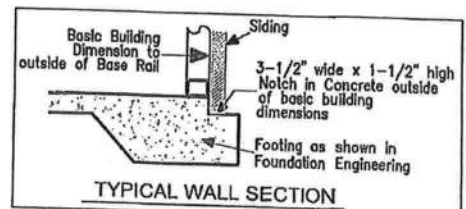


IMPORTANT - NOTES

Record Measurements
in these spaces provided

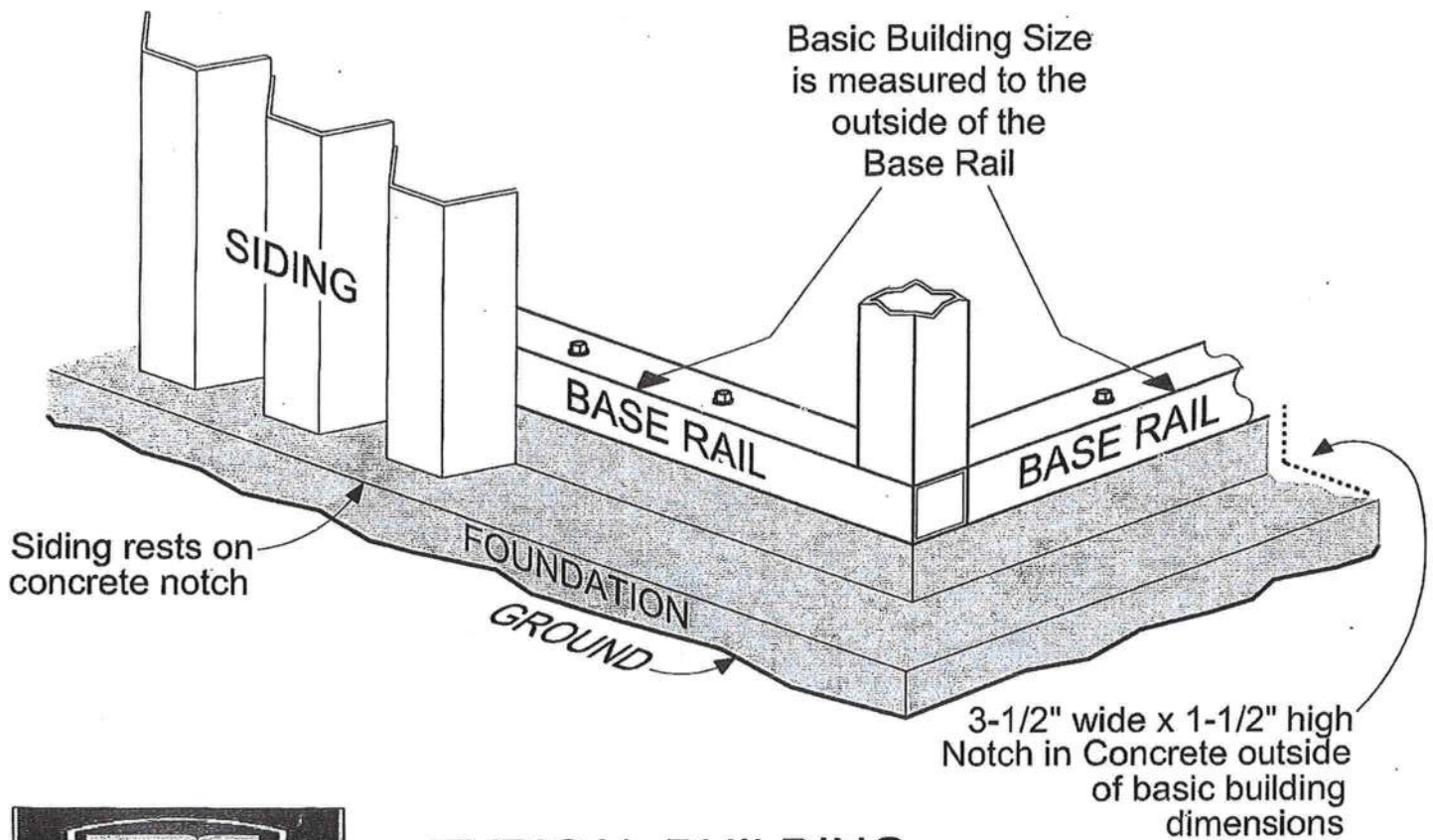
All basic building diagonal dimensions are to the outside corner of the frame Base Rail and DO NOT INCLUDE the 3-1/2" x 1-1/2" notch in the concrete footing

See Sheet 3 of 3
for Detail of Building
corner configuration



TYPICAL BUILDING FOUNDATION MEASUREMENTS DIAGONALS

SHEET 2 of 3



TYPICAL BUILDING CORNER DETAIL

SHEET 3 of 3

FRONT