



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**

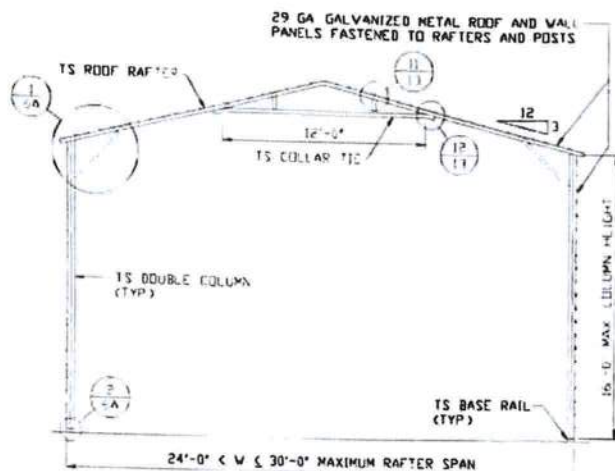
**401 S. Main Street, Suite 200
Mount Airy, NC 27030**

**Wayne
S Moore** Digitally signed
by Wayne S
Moore
Date: 2021.10.21
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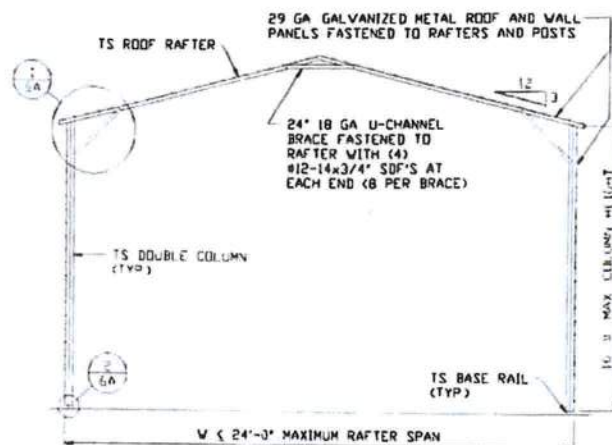


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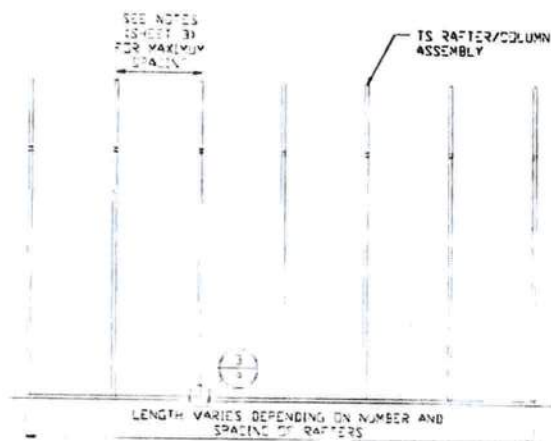
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TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION
SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION
SCALE: NTS



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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

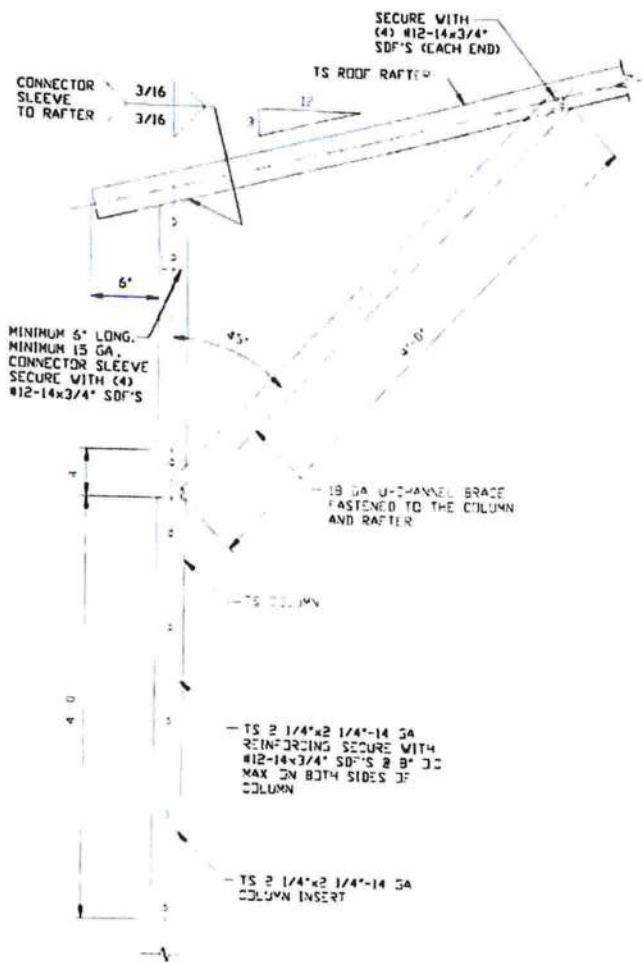
JOB NO: 16022S/
17300S/20352S

SHT. 5A

DWG. NO: SK-3

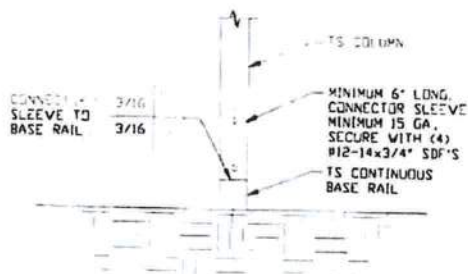
REV: 6

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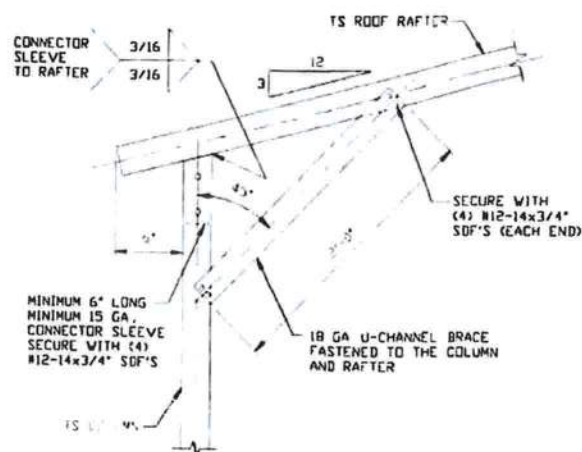
**BOX EAVE RAFTER COLUMN
CONNECTION DETAIL
FOR HEIGHTS 10'-0" < TO ≤ 13'-0"**

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



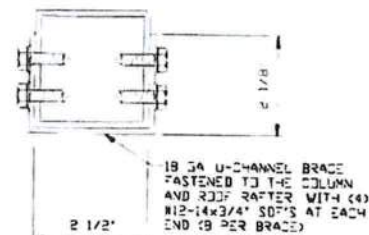
**RAFTER COLUMN/BASE RAIL
CONNECTION DETAIL**

SCALE: NTS



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

SCALE: NTS



BRACE SECTION

SCALE: NTS



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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

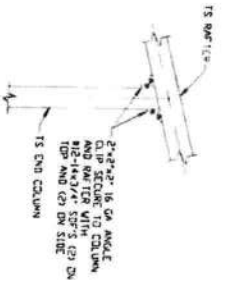
SHT. 6B

DWG. NO: SK-3

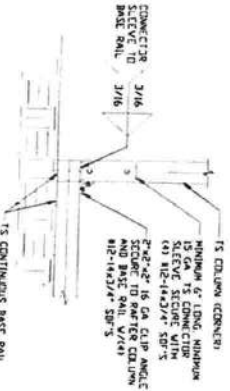
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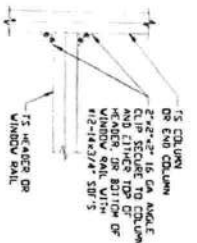
CONNECTION DETAILS



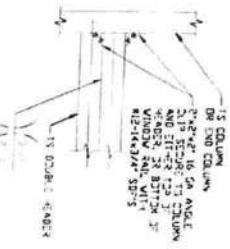
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END COLUMN/RAFTER
CONNECTION DETAIL
SCALE: NTS



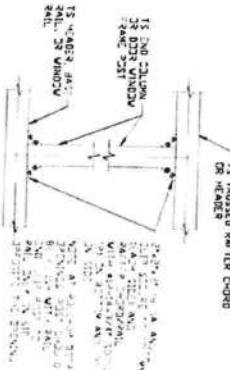
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END COLUMN/BASE RAIL
CONNECTION DETAIL
SCALE: NTS



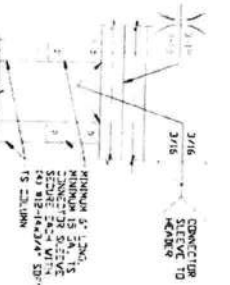
6
HEADER OR WINDOW
RAIL TO COLUMN
CONNECTION DETAIL
SCALE: NTS



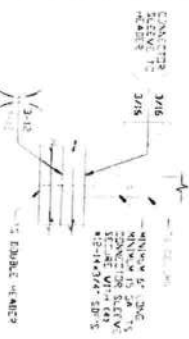
6A
DOUBLE HEADER
TO COLUMN
CONNECTION DETAIL
SCALE: NTS



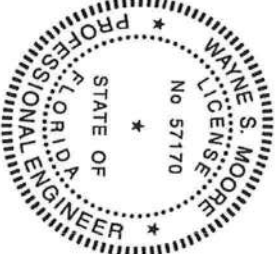
7
COLUMN TO HEADER,
BASE RAIL, OR
WINDOW RAIL
CONNECTION DETAIL
SCALE: NTS



8
DOUBLE HEADER/COLUMN
CONNECTION DETAIL
SCALE: NTS



9
COLUMN/DOUBLE HEADER
CONNECTION DETAIL
SCALE: NTS



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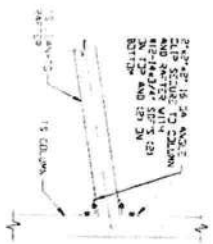
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DRAWN BY: JG	CHECKED BY: PMH	DATE: 7-29-21	SCALE: NTS	DWG. NO: SK-3	REV: 6
PROJECT: MGR. VSM		TUBULAR BUILDING SYSTEMS 631 SE INDUSTRIAL CIRCLE LAKE CITY, FLORIDA 32025 30'-0\"x20'-0\" ENCLOSED BUILDING EXP. B			
CLIENT: TBS		JOB NO: 160225/ 173005/203523			

Diagram illustrating a standard lean-to option for a roof structure. The diagram shows a main structure with a gabled roof and a lean-to section attached to the side. The lean-to section is labeled "LEAN-TO OPTION" and "STANDARD". The main structure is labeled "MAIN STRUCTURE". The diagram includes various dimensions and angles, such as 12', 15', 18', 20', 22', 24', 26', 28', 30', 32', 34', 36', 38', 40', 42', 44', 46', 48', 50', 52', 54', 56', 58', 60', 62', 64', 66', 68', 70', 72', 74', 76', 78', 80', 82', 84', 86', 88', 90', 92', 94', 96', 98', 100', 102', 104', 106', 108', 110', 112', 114', 116', 118', 120', 122', 124', 126', 128', 130', 132', 134', 136', 138', 140', 142', 144', 146', 148', 150', 152', 154', 156', 158', 160', 162', 164', 166', 168', 170', 172', 174', 176', 178', 180', 182', 184', 186', 188', 190', 192', 194', 196', 198', 200', 202', 204', 206', 208', 210', 212', 214', 216', 218', 220', 222', 224', 226', 228', 230', 232', 234', 236', 238', 240', 242', 244', 246', 248', 250', 252', 254', 256', 258', 260', 262', 264', 266', 268', 270', 272', 274', 276', 278', 280', 282', 284', 286', 288', 290', 292', 294', 296', 298', 300', 302', 304', 306', 308', 310', 312', 314', 316', 318', 320', 322', 324', 326', 328', 330', 332', 334', 336', 338', 340', 342', 344', 346', 348', 350', 352', 354', 356', 358', 360', 362', 364', 366', 368', 370', 372', 374', 376', 378', 380', 382', 384', 386', 388', 390', 392', 394', 396', 398', 400', 402', 404', 406', 408', 410', 412', 414', 416', 418', 420', 422', 424', 426', 428', 430', 432', 434', 436', 438', 440', 442', 444', 446', 448', 450', 452', 454', 456', 458', 460', 462', 464', 466', 468', 470', 472', 474', 476', 478', 480', 482', 484', 486', 488', 490', 492', 494', 496', 498', 500', 502', 504', 506', 508', 510', 512', 514', 516', 518', 520', 522', 524', 526', 528', 530', 532', 534', 536', 538', 540', 542', 544', 546', 548', 550', 552', 554', 556', 558', 560', 562', 564', 566', 568', 570', 572', 574', 576', 578', 580', 582', 584', 586', 588', 590', 592', 594', 596', 598', 600', 602', 604', 606', 608', 610', 612', 614', 616', 618', 620', 622', 624', 626', 628', 630', 632', 634', 636', 638', 640', 642', 644', 646', 648', 650', 652', 654', 656', 658', 660', 662', 664', 666', 668', 670', 672', 674', 676', 678', 680', 682', 684', 686', 688', 690', 692', 694', 696', 698', 700', 702', 704', 706', 708', 710', 712', 714', 716', 718', 720', 722', 724', 726', 728', 730', 732', 734', 736', 738', 740', 742', 744', 746', 748', 750', 752', 754', 756', 758', 760', 762', 764', 766', 768', 770', 772', 774', 776', 778', 780', 782', 784', 786', 788', 790', 792', 794', 796', 798', 800', 802', 804', 806', 808', 810', 812', 814', 816', 818', 820', 822', 824', 826', 828', 830', 832', 834', 836', 838', 840', 842', 844', 846', 848', 850', 852', 854', 856', 858', 860', 862', 864', 866', 868', 870', 872', 874', 876', 878', 880', 882', 884', 886', 888', 890', 892', 894', 896', 898', 900', 902', 904', 906', 908', 910', 912', 914', 916', 918', 920', 922', 924', 926', 928', 930', 932', 934', 936', 938', 940', 942', 944', 946', 948', 950', 952', 954', 956', 958', 960', 962', 964', 966', 968', 970', 972', 974', 976', 978', 980', 982', 984', 986', 988', 990', 992', 994', 996', 998', 1000'. The diagram also includes a scale bar indicating 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 feet.

MAIN BUILDING COLUMNS WITH LEAN-TO ROOF EXTENSION ATTACHED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS 13'-0" - 17'-0" FOR HIGH WIND ($C_{pe} = 0.8$)
MAIN BUILDING COLUMNS WITH LEAN-TO ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS 13'-0" < 13.5' OR 13'-0" - 17'-0" FOR LOW WIND WITH $d \geq 6'$ (INSERT)
MAIN BUILDING COLUMNS WITH LEAN-TO ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS < 13'-0"
EAVE PROJECTIONS MUST BE 4'-0" - 5'-0" FOR HIGH WIND WHEN LEAN-TOS ARE ADDED



2'-0" x 2'-0" IS ON ANGLE
CLIP SECURE TO COLUMN
AND BEAM WITH
1/2" x 1/2" x 1/2" (2)
BOLTS AND (2) ON
BOLTS

15 DOUBLE
CLUMP
3-12

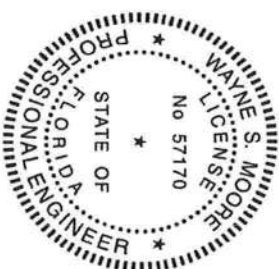
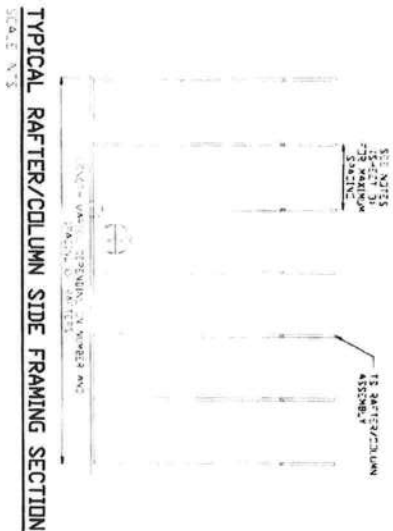
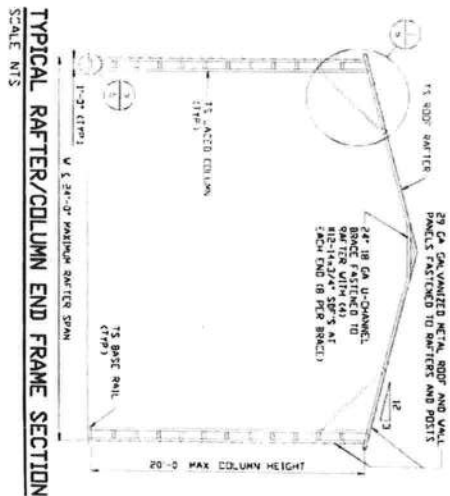
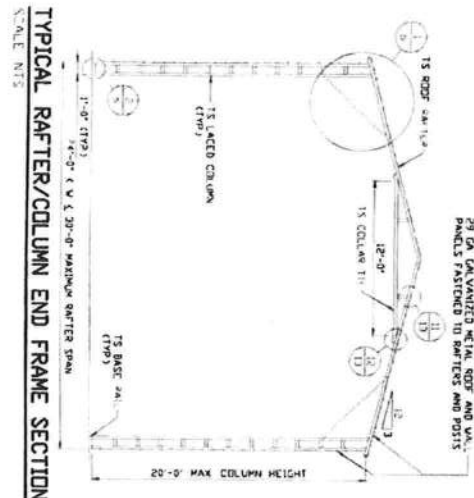
15 DOUBLE
CLUMP
3-12

A circular professional engineer seal for Wayne S. Moore. The outer ring contains the text "WAYNE S. MOORE" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by three stars. The inner circle contains the text "STATE OF FLORIDA" on the left and "LICENSE" on the right, also separated by three stars. In the center of the seal is the license number "No 57170".

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DRAWN BY: JF	TUBULAR BUILDING SYSTEMS	
CHECKED BY: PMH	631 SE INDUSTRIAL CIRCLE	
PROJECT NO: 0418	LAKE CITY, FLORIDA 32025	
	30'-0" x 20'-0" ENCLOSED BUILDING EXP. B	
DATE: 7-29-91	SCALE: NTS	JOB NO: 150293/173032/212323
CLIENT: TBS		

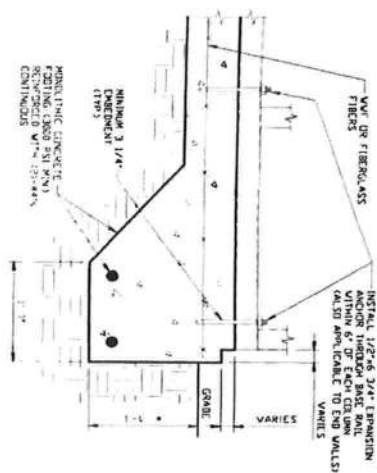


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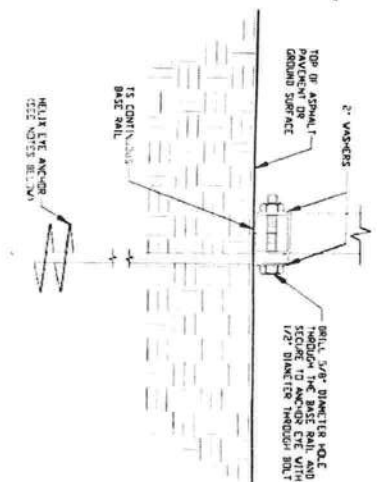
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DRAWN BY: JG	TUBULAR BUILDING SYSTEMS		
CHECKED BY: PMH	631 SE INDUSTRIAL CIRCLE		
PROJECT HUB VSM	LAKE CITY, FLORIDA 32025		
DATE: 7-29-21	30'-0" x 20'-0" ENCLOSED BUILDING EXP. B		
SHT. 5	SCALE: NTS	JOB NO: 160285/173005/203285	REV: 6
CLIENT: TBS	DWG. NO: SK-3		

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.

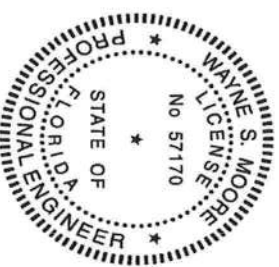
CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.

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.

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 COULD
 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, PRELACED 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 STIFFER 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



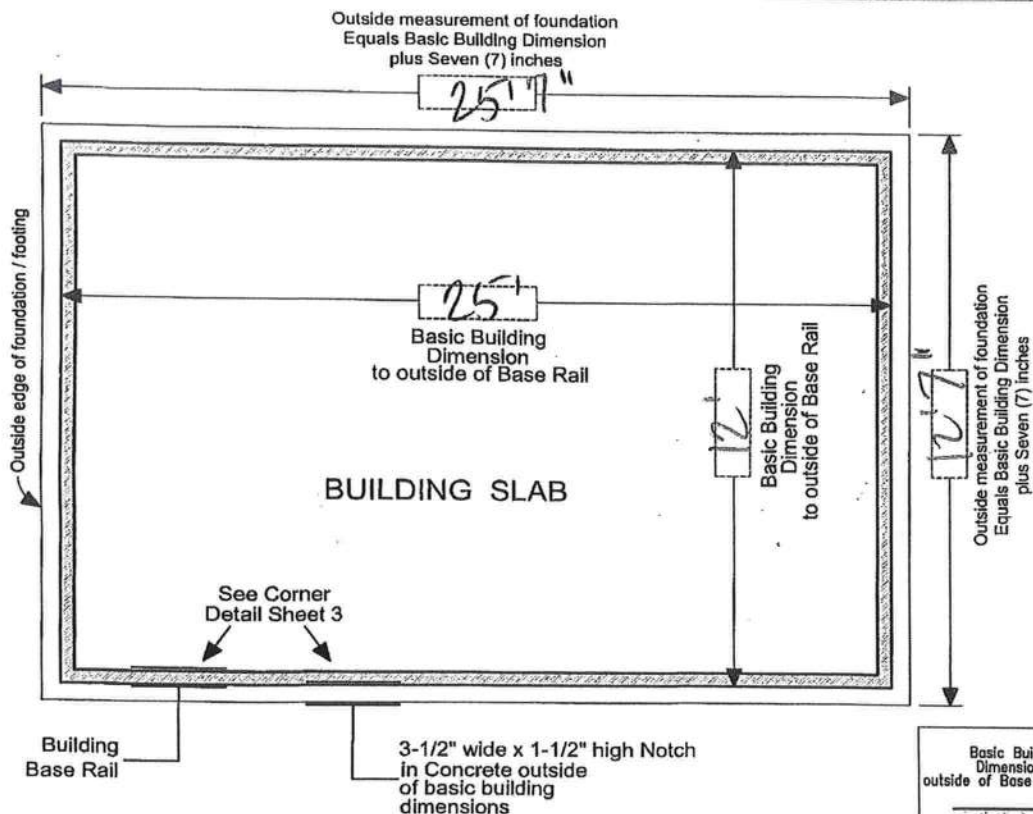
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CHECKED BY: PMH		631 SE INDUSTRIAL CIRCLE	
PROJECT NO: VSH		LAKE CITY, FLORIDA 32025	
DATE: 7-29-21		30-DAY-20-DAY ENCLOSED BUILDING EXP. B	
SHT. 9		SCALE: NTS	JOB NO. 164225/
DWG. NO. SK-3		172005/202525	
		REV: 6	

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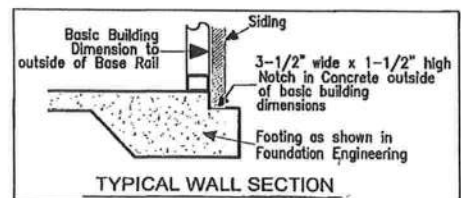


IMPORTANT - NOTES

Record Measurements
in these spaces provided

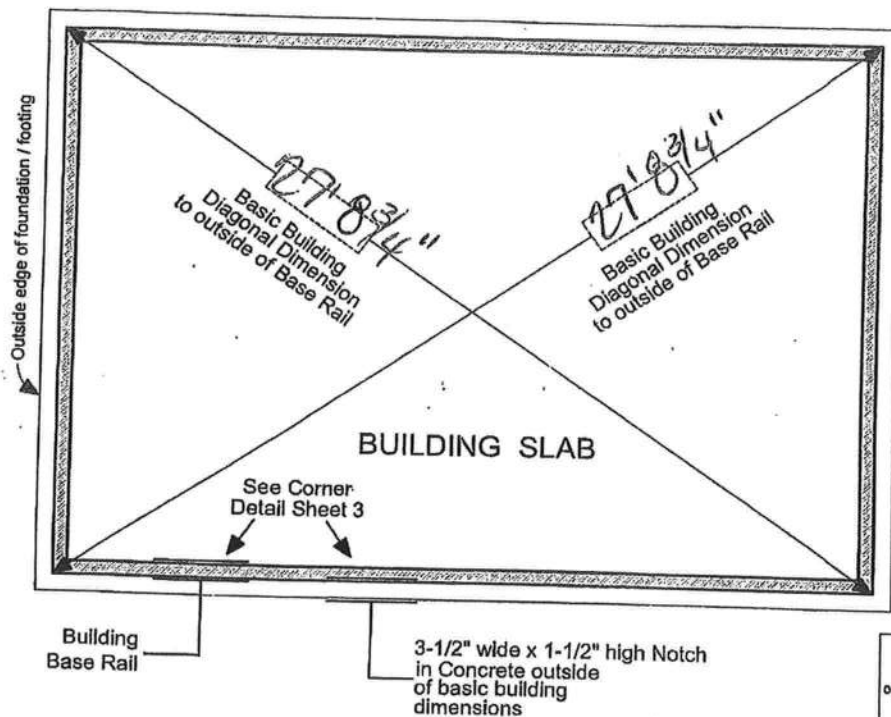
All basic building dimensions
are to the outside of the
frame Base Rail and DO NOT
INCLUDE the 3-1/2" x 1-1/2"
notch in the concrete footing

See Sheet 3 of 3
for Detail of Building
corner configuration



TYPICAL BUILDING FOUNDATION MEASUREMENTS

SHEET 1 of 3

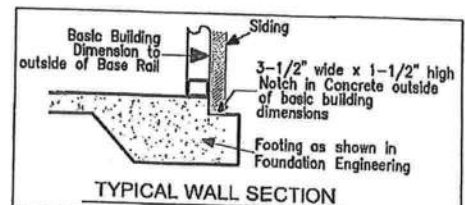


IMPORTANT - NOTES

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

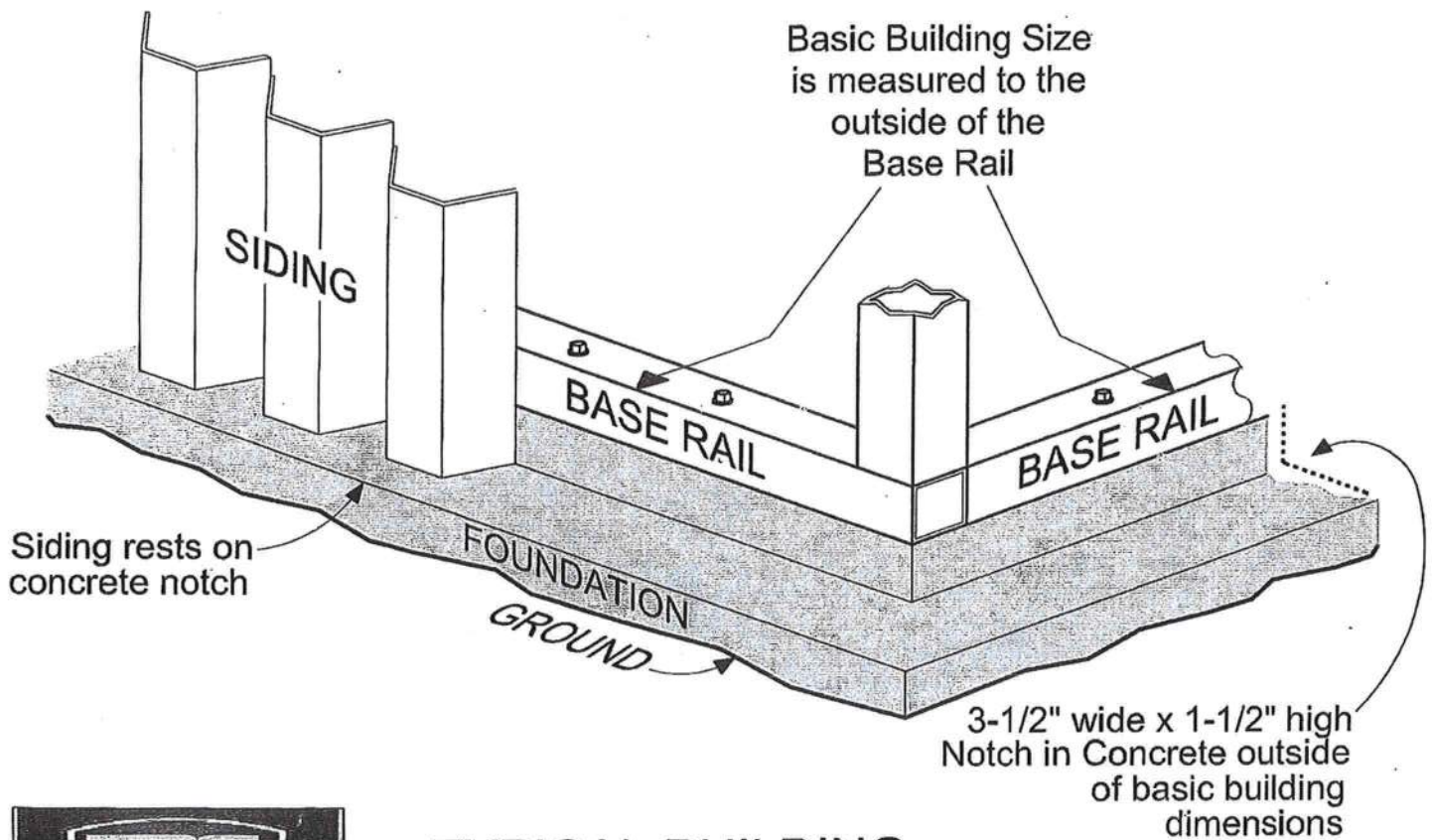


TYPICAL WALL SECTION



TYPICAL BUILDING FOUNDATION MEASUREMENTS DIAGONALS

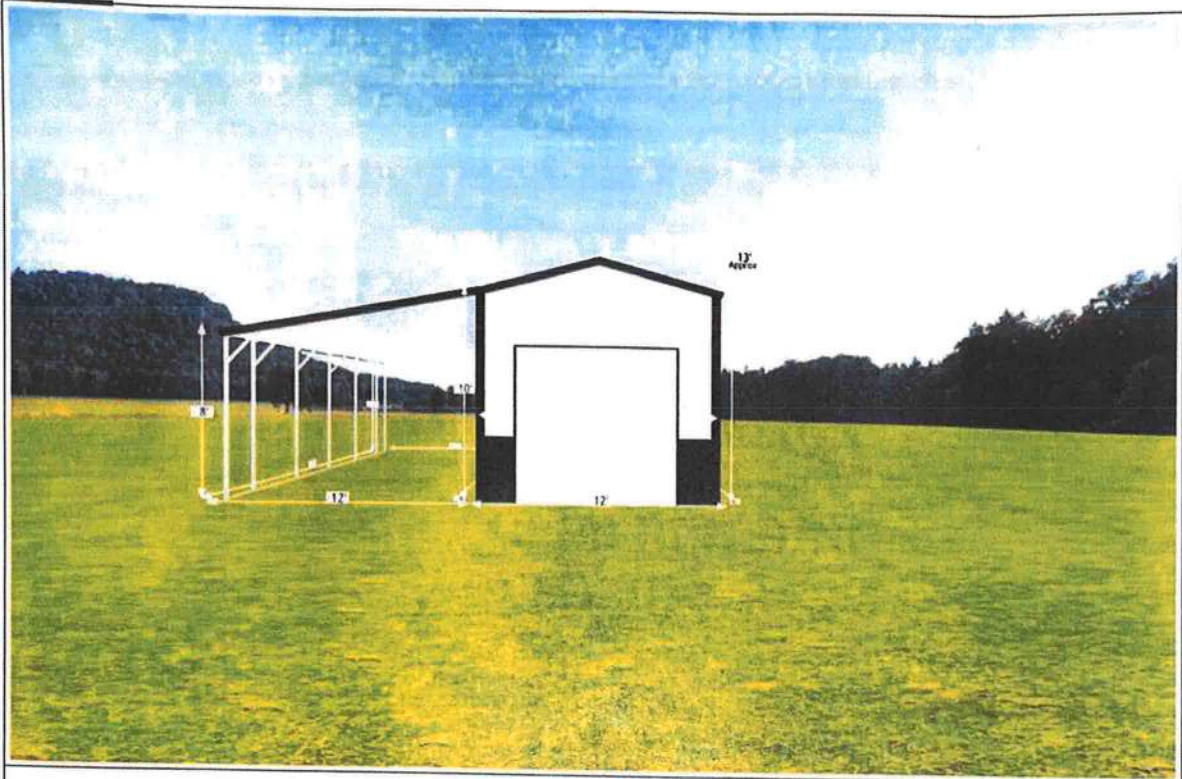
SHEET 2 of 3



TYPICAL BUILDING CORNER DETAIL

SHEET 3 of 3

BUILDING VIEW



FRONT