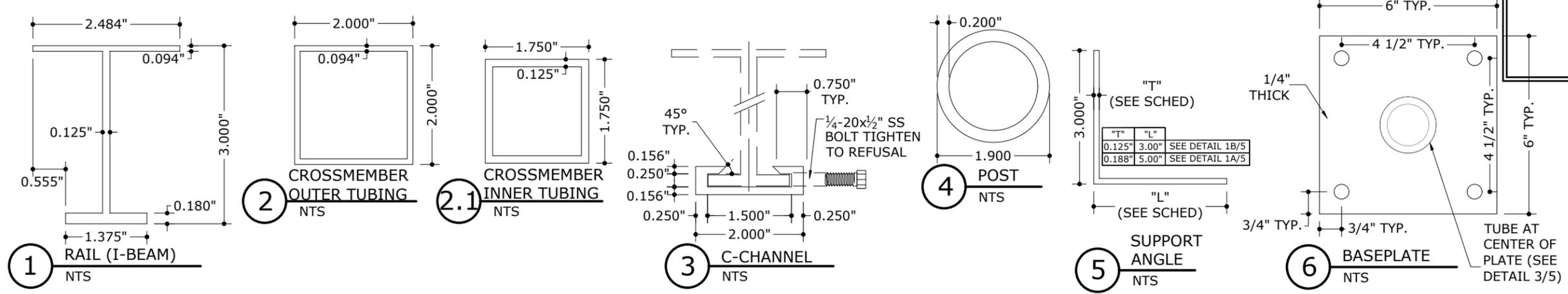


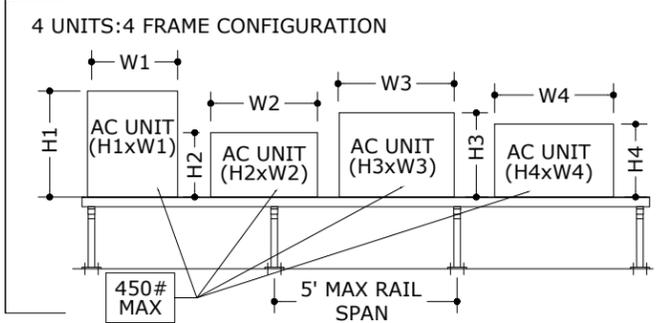
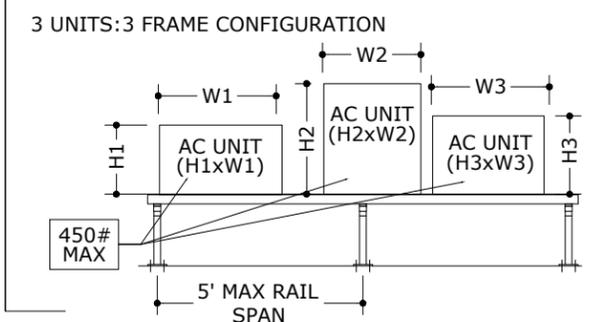
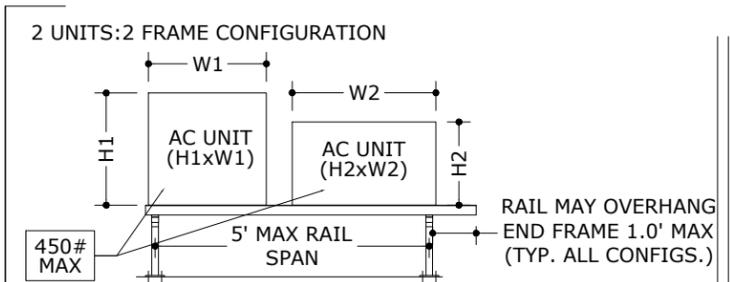


STAND COMPONENTS

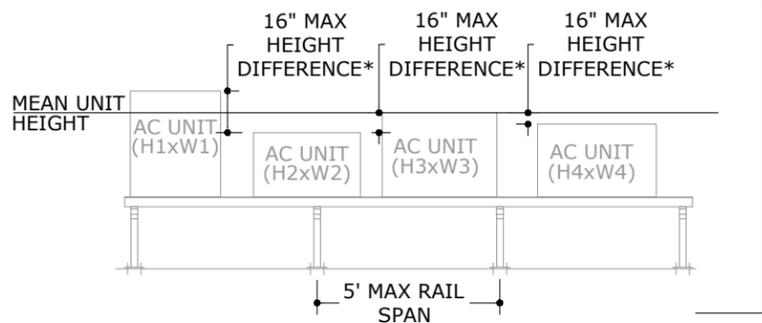
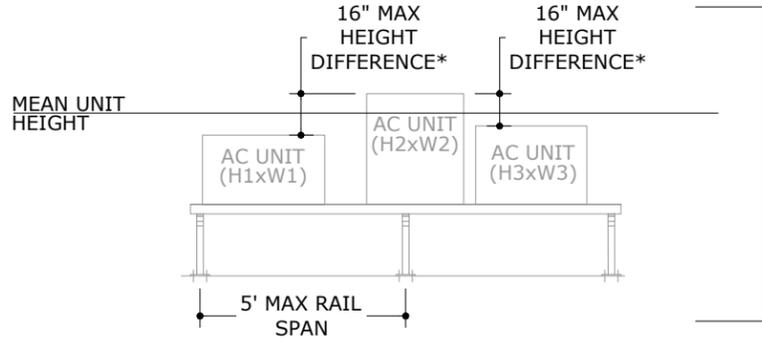
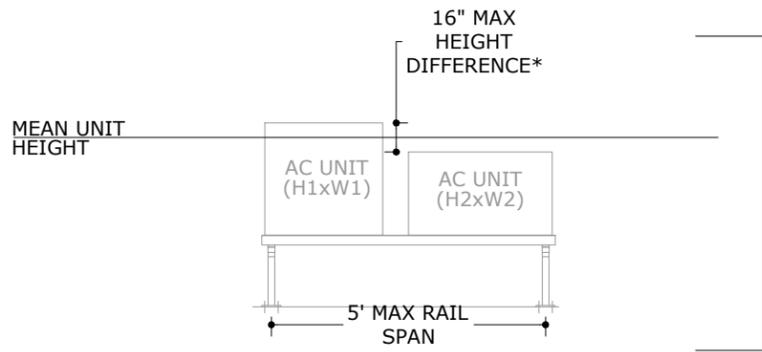


MEAN UNIT HEIGHT & MAX FACE AREA CALCULATION DIRECTIVE: THIS DIRECTIVE SHALL BE USED TO CALCULATE THE MEAN UNIT HEIGHT & MAXIMUM FACE AREA OF ANY MULTIPLE UNIT CONFIGURATION.

EXAMPLE CONFIGURATIONS:



NOTE: THE NUMBER OF UNITS PER STAND CONFIGURATION MAY BE UNLIMITED PROVIDED THAT MULTIPLE UNITS CONFORM TO THE MEAN UNIT HEIGHT & MAXIMUM UNIT FACE AREA RESTRICTIONS UTILIZED IN THE DESIGN SCHEDULES.



*MAXIMUM ALLOWABLE HEIGHT DIFFERENCE BETWEEN ANY UNITS IN A MULTIPLE UNIT CONFIGURATION IS RESTRICTED TO 16" MAX.

FORMULAS USED FOR DETERMINING MEAN UNIT HEIGHT & MAXIMUM UNIT FACE AREA:

1. CALCULATE THE MEAN UNIT HEIGHT BY THE FOLLOWING EQUATION:

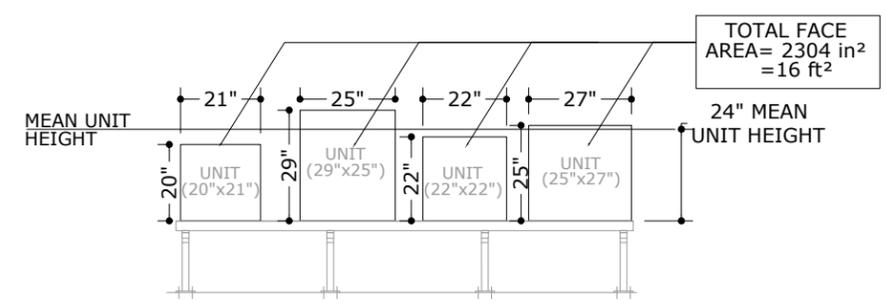
- TWO UNITS: $\frac{H1+H2}{2}$
- THREE UNITS: $\frac{H1+H2+H3}{3}$
- FOUR UNITS: $\frac{H1+H2+H3+H4}{4}$
- "n" UNITS: $\frac{H1+H2+H3+...+Hn}{n}$

2. CALCULATE THE MAXIMUM UNIT FACE AREA BY THE FOLLOWING EQUATION:

- TWO UNITS: $(H1 \times W1) + (H2 \times W2)$
- THREE UNITS: $(H1 \times W1) + (H2 \times W2) + (H3 \times W3)$
- FOUR UNITS: $(H1 \times W1) + (H2 \times W2) + (H3 \times W3) + (H4 \times W4)$
- "n" UNITS: $(H1 \times W1) + ... + (Hn \times Wn)$

EXAMPLE SCENARIO:

- CONSIDER A FOUR UNIT CONFIGURATION WITH THE DIMENSIONS AS SHOWN BELOW.
- CALCULATE THE MEAN UNIT HEIGHT.
 - FOUR UNITS: $\frac{H1+H2+H3+H4}{4} = \frac{20''+29''+22''+25''}{4} = 24''$ MEAN UNIT HEIGHT
- CALCULATE THE MAXIMUM FACE AREA.
 - FOUR UNITS: $(H1 \times W1) + (H2 \times W2) + (H3 \times W3) + (H4 \times W4) = (20'' \times 21'') + (29'' \times 25'') + (22'' \times 22'') + (25'' \times 27'')$
 $= 2304 \text{ in}^2 = 16 \text{ ft}^2$



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23-63451
 SCALE: NTS UNLESS NOTED

ALUMINUM STAND DESIGN SCHEDULE

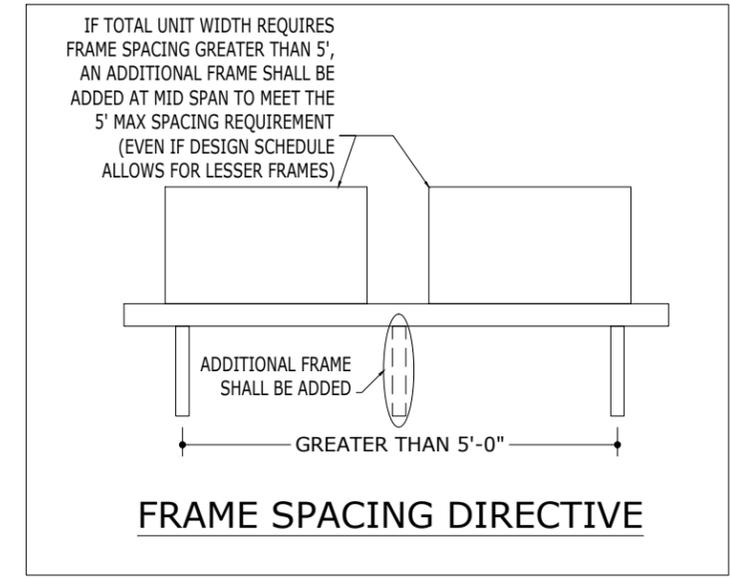
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PE# 86488 CA# 9885

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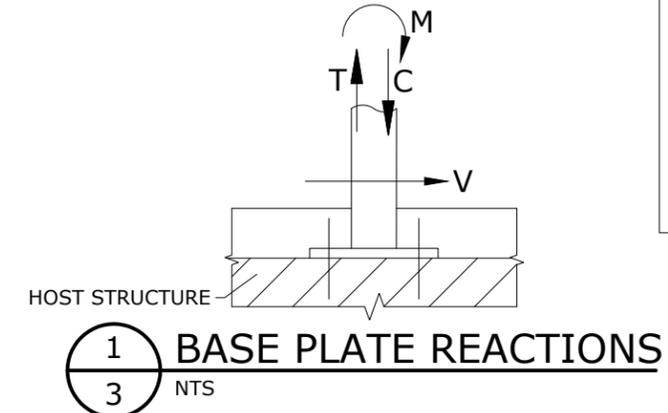


STAND DESIGN SCHEDULE (MAXIMUM ALLOWABLE LATERAL/UPLIFT PRESSURES)

MAX UNIT HEIGHT	MAX FACE AREA	MAX POST HEIGHT	2 FRAMES		3 FRAMES		4 FRAMES		5 FRAMES		6 FRAMES		7 FRAMES		8 FRAMES		9 FRAMES		10 FRAMES			
			LATERAL	UPLIFT	LATERAL	UPLIFT																
24.0 in	576.0 in ² (= 4.0 sqft)	18 in	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf														
		24 in	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf														
		30 in	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf														
30.0 in	900.0 in ² (= 6.3 sqft)	18 in	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf														
		24 in	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf														
		30 in	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf														
36.0 in	1008.0 in ² (= 7.0 sqft)	18 in	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf														
		24 in	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf														
		30 in	179 psf	142 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf												
36.0 in	1152.0 in ² (= 8.0 sqft)	18 in	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf														
		24 in	188 psf	148 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf												
		30 in	157 psf	124 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf												
36.0 in	1440.0 in ² (= 10.0 sqft)	18 in	191 psf	151 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf												
		24 in	150 psf	119 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf												
		30 in	125 psf	99 psf	188 psf	149 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf										
36.0 in	1728.0 in ² (= 12.0 sqft)	18 in	159 psf	126 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf												
		24 in	125 psf	99 psf	188 psf	148 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf										
		30 in	105 psf	83 psf	157 psf	124 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf										
36.0 in	2160.0 in ² (= 15.0 sqft)	18 in	128 psf	101 psf	191 psf	151 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf										
		24 in	100 psf	79 psf	150 psf	119 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf										
		30 in	84 psf	66 psf	125 psf	99 psf	167 psf	132 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf								
40.0 in	3200.0 in ² (= 22.2 sqft)	18 in	86 psf	68 psf	129 psf	102 psf	172 psf	136 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf								
		24 in	68 psf	53 psf	101 psf	80 psf	135 psf	107 psf	169 psf	133 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf						
		30 in	56 psf	45 psf	85 psf	67 psf	113 psf	89 psf	141 psf	111 psf	169 psf	134 psf	198 psf	156 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf
48.0 in	3840.0 in ² (= 26.7 sqft)	18 in	72 psf	57 psf	108 psf	85 psf	143 psf	113 psf	179 psf	142 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf						
		24 in	56 psf	44 psf	84 psf	67 psf	113 psf	89 psf	141 psf	111 psf	169 psf	133 psf	197 psf	156 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf
		30 in	47 psf	37 psf	71 psf	56 psf	94 psf	74 psf	118 psf	93 psf	141 psf	111 psf	165 psf	130 psf	188 psf	149 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf
48.0 in	4800.0 in ² (= 33.3 sqft)	18 in	57 psf	45 psf	86 psf	68 psf	115 psf	91 psf	143 psf	113 psf	172 psf	136 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf
		24 in	45 psf	36 psf	68 psf	53 psf	90 psf	71 psf	113 psf	89 psf	135 psf	107 psf	158 psf	124 psf	180 psf	142 psf	200 psf	158 psf	200 psf	158 psf	200 psf	158 psf
		30 in	38 psf	30 psf	56 psf	45 psf	75 psf	59 psf	94 psf	74 psf	113 psf	89 psf	132 psf	104 psf	151 psf	119 psf	169 psf	134 psf	188 psf	149 psf	200 psf	158 psf
60.0 in	7200.0 in ² (= 50.0 sqft)	18 in	38 psf	30 psf	57 psf	45 psf	77 psf	60 psf	96 psf	76 psf	115 psf	91 psf	134 psf	106 psf	153 psf	121 psf	172 psf	136 psf	191 psf	151 psf	200 psf	158 psf
		24 in	30 psf	24 psf	45 psf	36 psf	60 psf	47 psf	75 psf	59 psf	90 psf	71 psf	105 psf	83 psf	120 psf	95 psf	135 psf	107 psf	150 psf	119 psf	200 psf	158 psf
		30 in	25 psf	20 psf	38 psf	30 psf	50 psf	40 psf	63 psf	50 psf	75 psf	59 psf	88 psf	69 psf	100 psf	79 psf	113 psf	89 psf	125 psf	99 psf	200 psf	158 psf
60.0 in	8640.0 in ² (= 60.0 sqft)	18 in	32 psf	25 psf	48 psf	38 psf	64 psf	50 psf	80 psf	63 psf	96 psf	76 psf	112 psf	88 psf	128 psf	101 psf	143 psf	113 psf	159 psf	126 psf	200 psf	158 psf
		24 in	25 psf	20 psf	38 psf	30 psf	50 psf	40 psf	63 psf	49 psf	75 psf	59 psf	88 psf	69 psf	100 psf	79 psf	113 psf	89 psf	125 psf	99 psf	200 psf	158 psf
		30 in	21 psf	17 psf	31 psf	25 psf	42 psf	33 psf	52 psf	41 psf	63 psf	50 psf	73 psf	58 psf	84 psf	66 psf	94 psf	74 psf	105 psf	83 psf	200 psf	158 psf



- DESIGN SCHEDULE NOTES:
1. MAXIMUM FRAME-TO-FRAME SPACING SHALL NOT EXCEED 5'-0" O.C. (SEE FRAME SPACING DIRECTIVE)
 2. ALLOWABLE STAND DEPTH SHALL BE 20" MINIMUM UP TO 42" MAXIMUM.
 3. A "FRAME" CONSISTS OF (2) POSTS CONNECTED WITH (1) CROSS MEMBER. FOR EXAMPLE, A "2 FRAME" STAND WILL HAVE 4 POSTS TOTAL.
 4. REFERENCE STAND DETAILS HEREIN FOR STAND COMPONENTS AND INSTALLATION OPTIONS.
 5. SEE TIEDOWN DIRECTIVE FOR UNIT TIEDOWN REQUIREMENTS AND LIMITATIONS.
 6. UNIT OR STAND DIMENSIONS OUTSIDE THE PARAMETERS LISTED IN THIS SCHEDULE WILL REQUIRE SEPARATE SITE SPECIFIC ENGINEERING.
 7. REQUIRED DESIGN PRESSURES FOR INSTALLATION SHALL BE CALCULATED ON A SITE SPECIFIC BASIS AND BE LESS THAN OR EQUAL TO THE MAX ALLOWABLE PRESSURES LISTED IN THIS DRAWING.
 8. INTERPOLATION BETWEEN UNIT HEIGHTS, FACE AREA OR POST HEIGHT IS **NOT** PERMITTED.
 9. THE UNIT DEPTH SHALL NOT EXCEED THE MAX UNIT HEIGHT LISTED. SEE THE TIEDOWN STRAP SCHEDULE FOR MINIMUM ALLOWABLE UNIT DEPTHS.



ENGINEER OF RECORD TO VERIFY THAT THE HOST STRUCTURE CAN SUPPORT THE SERVICE LOAD REACTIONS LISTED BELOW:

M = 5 KIP-IN
V = 0.5 KIPS
T = C = 0.8 KIPS

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CHKD	RN

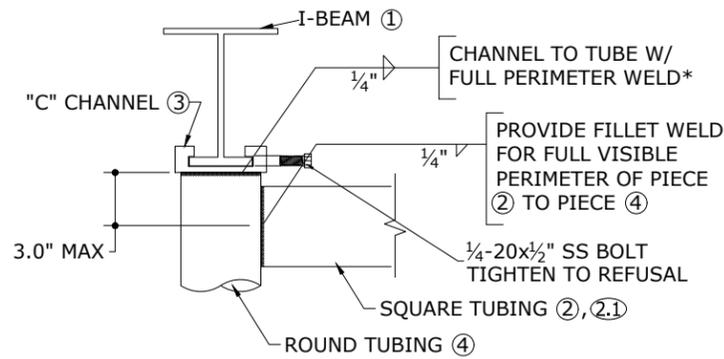
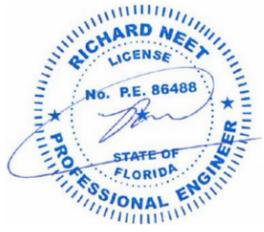
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FRAME ASSEMBLY & UNIT TIE-DOWN DETAILS:

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PE# 86488 CA# 9885

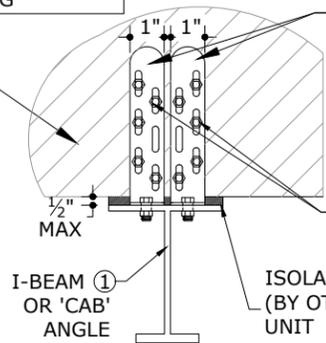
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1 FRAME ASSEMBLY DETAIL
4 NTS

THIS DETAIL IS APPLICABLE FOR UNITS UP TO 54" TALL MAX. UNITS TALLER THAN 54" REQUIRE SITE SPECIFIC OR SEPARATE TIEDOWN ENGINEERING

22 GA (0.0299" MIN., Fu=58KSI MIN.) STEEL A/C HOUSING UNIT



(2) 1" WIDE x 14GA (0.070") OR x 12GA (0.105") ASTM A-653 GRADE 33 GALV STEEL ANGLE (CUTD-1 BY MIAMI TECH). UTILIZE (2) MIN. PER CORNER (8 TOTAL). **NOTE: IF UNIT MANUFACTURER HAS SEPARATE APPROVED TIEDOWN ENGINEERING IT MAY BE USED IN LIEU OF THIS DIRECTIVE.**

NOTE: UNIT TIEDOWN DETAILS MAY ALSO BE USED TO ANCHOR THE UNIT TO THE SUPPORT ANGLE SHOWN ON NEXT SHEET. (I.E. I-BEAM CAN BE SUBSTITUTED WITH ANGLE SUPPORT AS BASE MATERIAL)

2 A/C UNIT TIE-DOWN DETAIL
4 NTS (SEE TIEDOWN STRAP SCHED. FOR STRAP REQUIREMENTS)

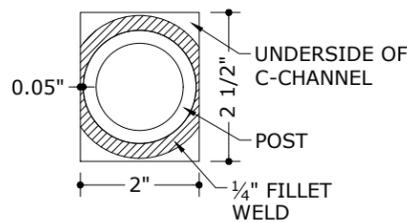
TIEDOWN STRAP SCHEDULE

MAX UNIT HEIGHT (in)	MIN UNIT DEPTH (in)	MAX LATERAL PRESSURE (psf)	NO. OF STRAPS REQUIRED (PER UNIT)
UP TO 24	12-19	UP TO 80	0
		UP TO 120	0
		UP TO 200	2
	20	UP TO 80	0
		UP TO 120	0
		UP TO 200	0
UP TO 30	12-19	UP TO 80	0
		UP TO 120	2
		UP TO 200	2
	20	UP TO 80	0
		UP TO 120	0
		UP TO 200	0
UP TO 36	12-19	UP TO 80	0
		UP TO 120	2
		UP TO 200	3
	20	UP TO 80	0
		UP TO 120	0
		UP TO 200	2
UP TO 40	14-23	UP TO 80	0
		UP TO 120	2
		UP TO 200	3
	24	UP TO 80	0
		UP TO 120	2
		UP TO 200	3
UP TO 48	16-23	UP TO 80	3
		UP TO 120	4
		UP TO 200	5
	24	UP TO 80	0
		UP TO 120	2
		UP TO 200	4
UP TO 54	16-23	UP TO 80	4
		UP TO 120	5
		UP TO 200	6
	24	UP TO 80	2
		UP TO 120	3
		UP TO 200	5
UP TO 60	SITE SPECIFIC DESIGN REQUIRED		

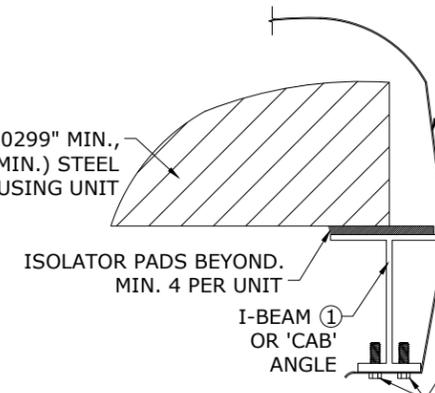
TIEDOWN SCHEDULE NOTES:

- THE TIEDOWN CLIP AND STRAP REQUIREMENTS ON THIS SHEET DO NOT ACCOUNT FOR INTEGRATED FEET OR RAILS ON THE MECHANICAL UNITS. IF INTEGRATED TIEDOWN FEET OR RAILS EXIST ON THE UNIT, SEPARATE ENGINEERING IS REQUIRED.
- THE TIEDOWN REQUIREMENTS ON THIS SHEET ACCOUNT FOR RECTANGULAR SHAPED UNITS ONLY. CIRCULAR OR OTHER SHAPED MECHANICAL EQUIPMENT (FANS, DUCTWORK, PIPES, ETC.) SHALL BE CERTIFIED SEPARATELY.

***C-CHANNEL TO POST WELD NOTE:**
IN AREAS WHERE 1/4" WELD DIAMETER CANNOT BE ACHIEVED, CONTINUE WELD AROUND FULL PERIMETER OF POST TO PREVENT WATER INFILTRATION. WELD DIAMETER WILL DECREASE TO 0.05" ALONG C-CHANNEL EDGE. SEE DETAIL BELOW.



22 GA (0.0299" MIN., Fu=58KSI MIN.) STEEL A/C HOUSING UNIT

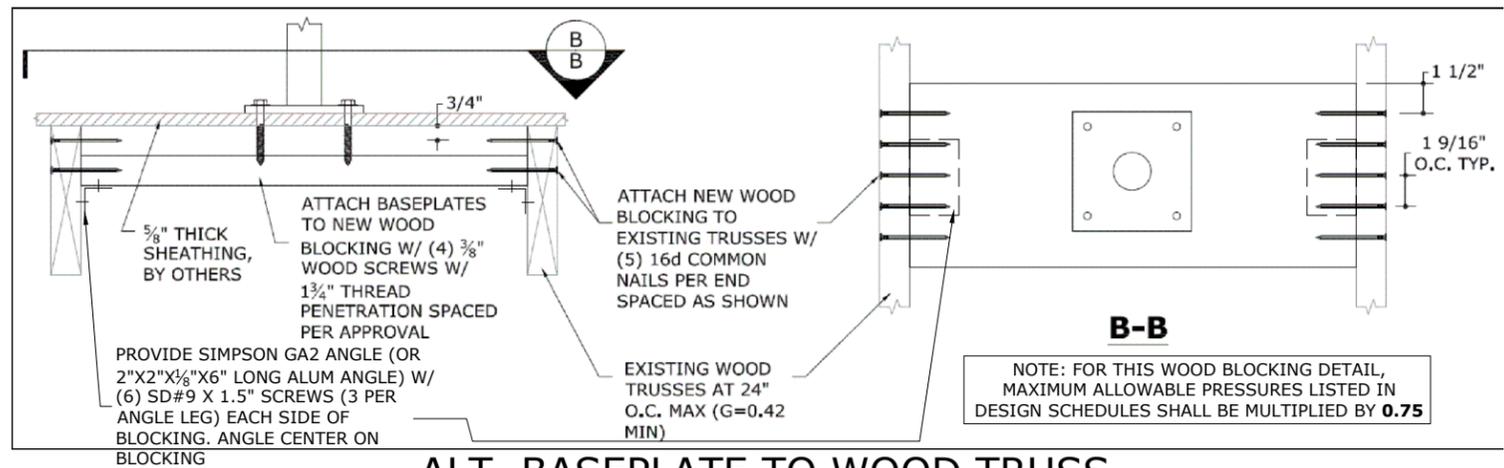


1"x 22ga CONTINUOUS GALV. STEEL STRAP (Fy = 36 KSI MIN.) SHALL PASS OVER UNIT TO I-BEAM ON OPPOSITE SIDE TIGHTENED SNUG AGAINST UNIT. STRAPS SHALL BE SPACED SYMMETRICALLY OVER UNITS NO CLOSER THAN 2" FROM UNIT EDGES, TYP.

SEE TIEDOWN STRAP SCHEDULE FOR REQUIRED NUMBER OF STRAPS PER UNIT

3 TIE-DOWN STRAP DETAIL **
4 NTS

*SHALL BE USED **IN COMBINATION** WITH ANY A/C UNIT TIE-DOWN DETAIL ON THIS SHEET



4 ALT. BASEPLATE TO WOOD TRUSS ATTACHMENT (2X10 WOOD BLOCKING)
4 NTS

SCALE: NTS WOOD (G=0.55 MIN.)

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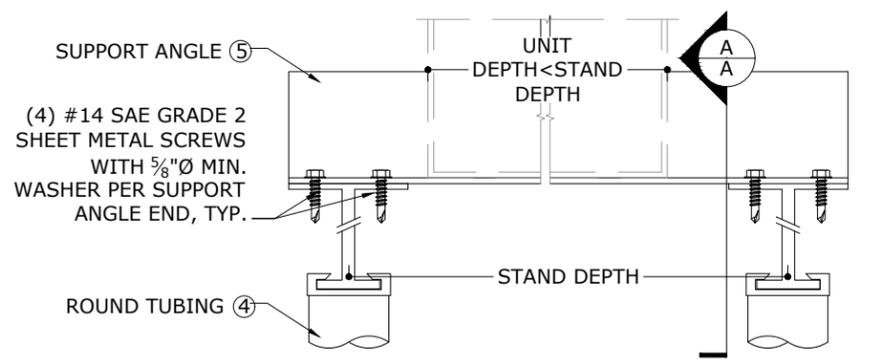
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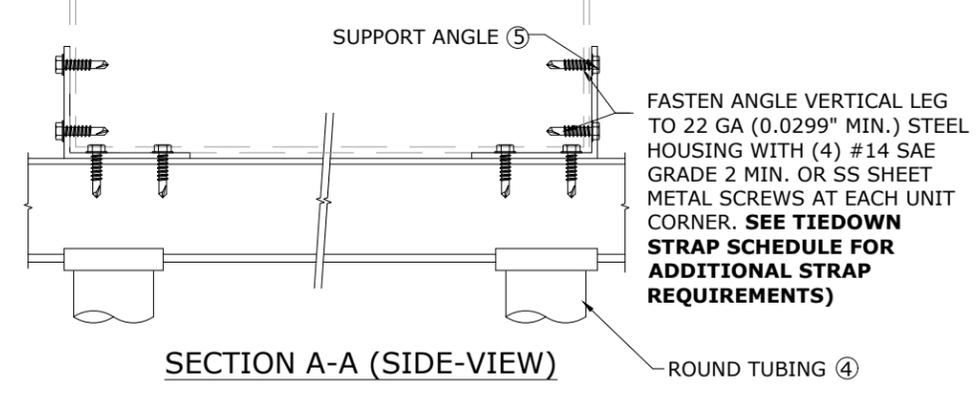
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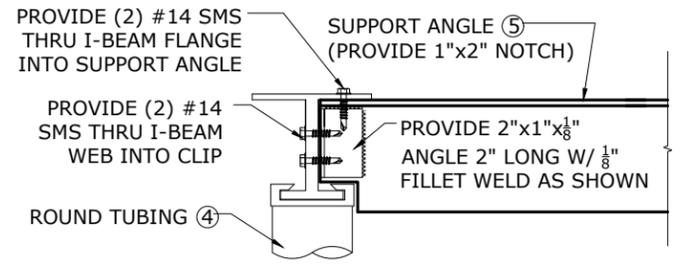
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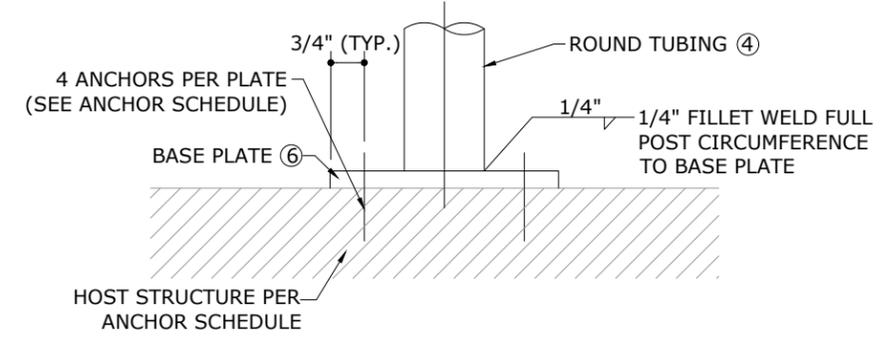
1A
5 NTS
SUPPORT ANGLE ATTACHMENT DETAIL



SECTION A-A (SIDE-VIEW)
 ROUND TUBING (4)



1B
5 NTS
SUPPORT ANGLE ATTACHMENT DETAIL



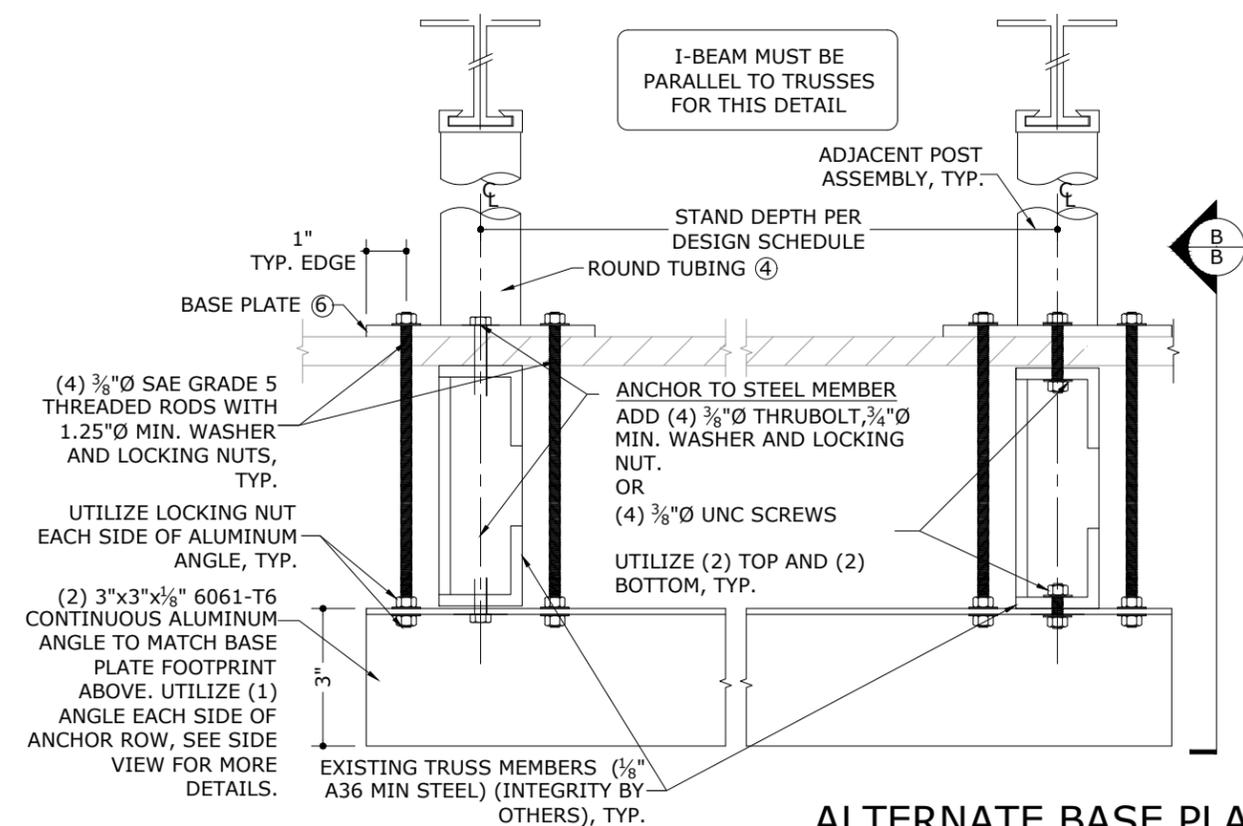
3
5 NTS
STANDARD BASE PLATE ATTACHMENT DETAIL

ANCHOR SCHEDULE

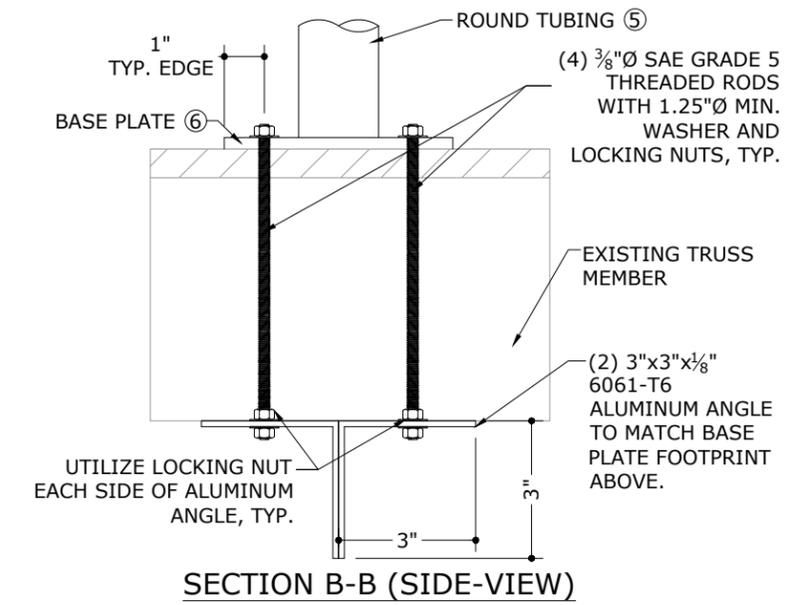
ANCHOR TYPE	HOST STRUCTURE	ANCHOR DESCRIPTION
1	STEEL	3/8"Ø SAE GRADE 5 SHEET METAL SCREWS WITH 1"Ø MIN. WASHER, TO STRUCTURAL A36 STEEL MEMBERS (3/16" MIN HOST THICKNESS)
2A	CONCRETE (3.0 KSI MIN)	3/8"Ø DEWALT CARBON STEEL SCREW-BOLT CONCRETE ANCHOR WITH 1"Ø MIN. WASHER, 2-1/2" EMBEDMENT & 6" MIN EDGE DISTANCE, SEE BASE PLATE COMPONENT #6 (ON SHEET 2) FOR TYPICAL ANCHOR SPACING.
2B	CONCRETE (5.0 KSI MIN)	1/2"Ø DEWALT MINI-DROPIN ANCHOR WITH 1.0" EMBEDMENT & 6" MIN EDGE DISTANCE, SEE BASE PLATE COMPONENT #6 (ON SHEET 2) FOR TYPICAL ANCHOR SPACING. NOTE: MAX ALLOWABLE PRESSURES LISTED IN THE STAND DESIGN SCHEDULE SHALL BE MULTIPLIED BY 0.8 WHEN USING THIS ANCHOR OPTION
3	WOOD*	*SEE DETAIL 4/4 OR SITE SPECIFIC ENGINEERING IS REQUIRED
4	STEEL	3/8"Ø SAE GRADE 5 THRU BOLT WITH 1"Ø MIN. WASHER & NUT, TO STRUCTURAL A36 STEEL MEMBERS (3/16" MIN HOST THICKNESS)

ANCHOR NOTES:

- ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
- ENSURE MINIMUM EDGE DISTANCE AS NOTED IN ANCHOR SCHEDULE FOR EACH ANCHOR.
- WOOD HOST STRUCTURE SHALL BE "SOUTHERN PINE" G=0.55 OR GREATER DENSITY. ALL CONCRETE SUBSTRATE SHALL BE UN-CRACKED CONCRETE AND SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI, U.N.O. CONCRETE SUBSTRATE THICKNESS SHALL BE GREATER THAN OR EQUAL TO 1.5xANCHOR EMBEDMENT. INSTALL CONCRETE ANCHORS TO UN-CRACKED CONCRETE ONLY.
- MINIMUM EMBEDMENT SHALL BE AS NOTED IN ANCHOR SCHEDULE. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDES ROOFING FINISHES.
- WHERE EXISTING STRUCTURE IS WOOD TRUSSES, EXISTING CONDITIONS MAY VARY. FIELD VERIFY THAT FASTENERS ARE INTO ADEQUATE WOOD TRUSS MEMBERS, NOT INTO PLYWOOD.



4
5 NTS
ALTERNATE BASE PLATE ATTACHMENT AT STEEL TRUSS MEMBERS
 DETAIL



SECTION B-B (SIDE-VIEW)

FL42314.1

ENGINEERING EXPRESS
 POSTAL ADDRESS:
 401 W. ATLANTIC AVE R10 BOX 219
 DELRAY BEACH, FL 33444
 ENGINEERINGEXPRESS.COM

Miami Tech, Inc.
 3611 NW 74th St
 Miami, FL 33147
 (305) 693-7054
 Aluminum Stand for Mechanical Units
 Florida Statewide Approval
 Florida Building Code

DATE	DRWN	CHKD	REMARKS
6/20/2023	RN	RN	INIT ISSUE

23-63451
 SCALE: NTS UNLESS NOTED