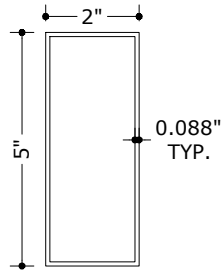


# STRUCTALL BUILDING SYSTEMS

## 2"x5" & 2"x7" RECTANGULAR ALUMINUM EDGE BEAMS

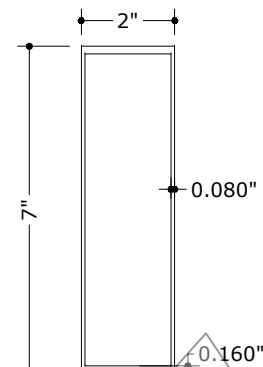
(FOR USE WITH OPEN STRUCTURES)

SCOPE OF CERTIFICATION:  
THESE TABLES CERTIFY BEAM SPANS ONLY. PANEL SPANS AND CONNECTIONS, AND BEAM CONNECTIONS OR SUPPORTS SHALL BE PER SEPARATE ENGINEERING IN CONJUNCTION WITH THIS PLAN.



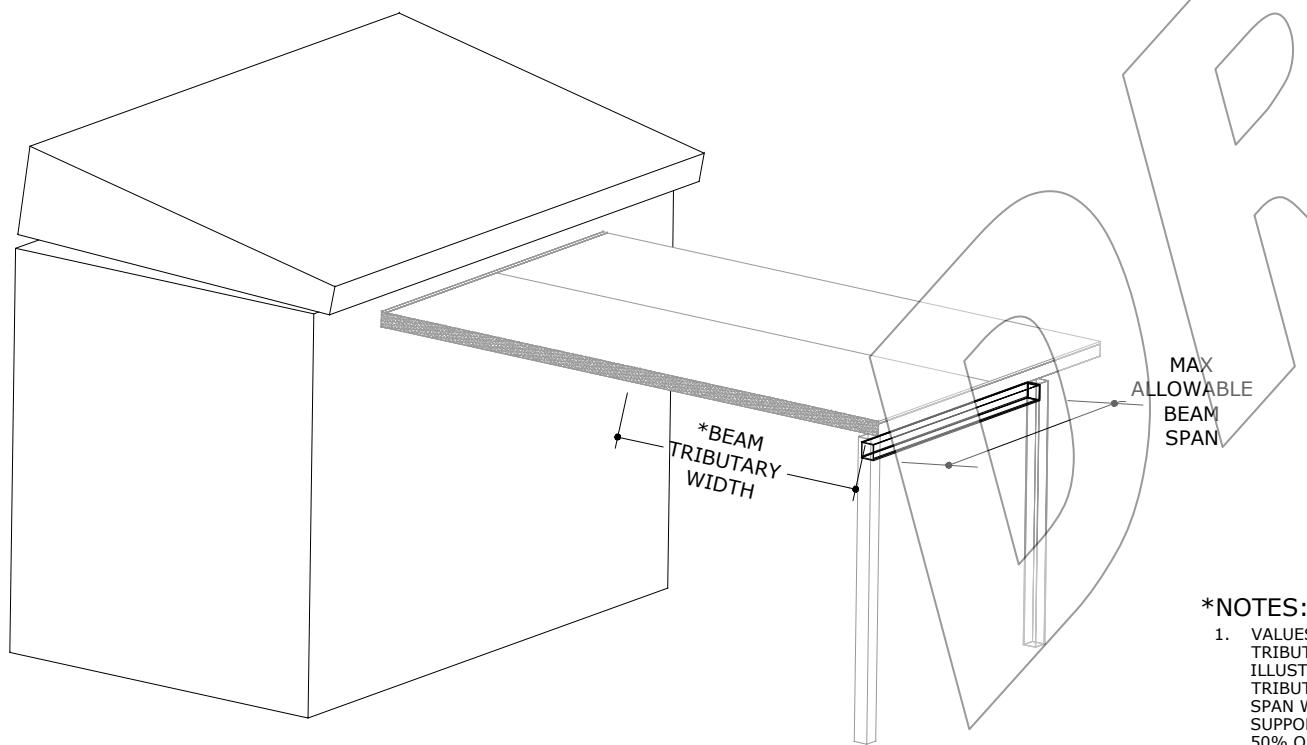
2"x5" BEAM

1	1	3" = 1'-0"	6005-T6 OR 6061-T6
---	---	------------	--------------------------



2"x7" BEAM

2	1	3" = 1'-0"	6005-T6 OR 6061-T6
---	---	------------	--------------------------



3 TRIBUTARY WIDTH SCHEMATIC  
1 N.T.S. ISOMETRIC

**\*NOTES:**

- VALUES SHOWN IN DESIGN SCHEDULE CONSIDER THE TRIBUTARY WIDTH THAT EACH BEAM WILL SUPPORT. THE ILLUSTRATION SHOWN HEREIN CONSIDERS THE TRIBUTARY WIDTH TO BE HALF OF THE OVERALL ROOF SPAN WITH 50% OF THE TRIBUTARY WIDTH BEING SUPPORTED AT THE HOST STRUCTURE AND THE OTHER 50% OF THE TRIBUTARY WIDTH SUPPORTED BY THE EDGE BEAM.
- FOR THE TRIBUTARY WIDTH OF A SINGLE BEAM PLACED IN A MULTIPLE BEAM LAYOUT, THE TRIBUTARY WIDTH FOR EACH INDIVIDUAL BEAM SHALL BE CALCULATED AS THE SUM OF DISTANCES TO EACH ADJACENT BEAM DIVIDED BY 2.0. SEE EXAMPLE CALCULATION TO THE RIGHT.

### MAXIMUM ALLOWABLE DESIGN PRESSURES:

AS NOTED IN DESIGN TABLES

### DESIGN NOTES:

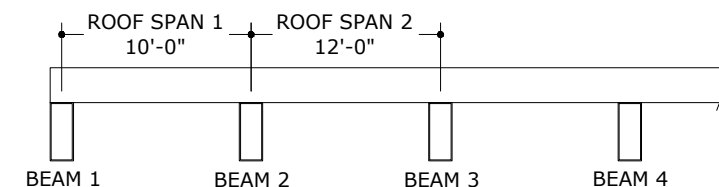
POSITIVE AND NEGATIVE DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED BY OTHERS ON A JOB-SPECIFIC BASIS IN ACCORDANCE WITH THE GOVERNING CODE. SITE-SPECIFIC PRESSURE REQUIREMENTS AS DETERMINED IN ACCORDANCE WITH ASCE 7-10 AND CHAPTER 1609 OF THE FLORIDA BUILDING CODE FIFTH EDITION (2014) SHALL BE LESS THAN OR EQUAL TO THE POSITIVE OR NEGATIVE DESIGN PRESSURE CAPACITY VALUES LISTED HEREIN FOR ANY ASSEMBLY AS SHOWN.

### GENERAL NOTES:

- THIS SPECIFICATION HAS BEEN DESIGNED AND SHALL BE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE FOR USE WITHIN & OUTSIDE OF THE HVHZ. COMPOSITE ROOF PANELS SHALL COMPLY WITH CHAPTER 7 SECTION 720, CHAPTER 8 SECTION 803, CLASS A INTERIOR FINISH, AND CHAPTER 26 SECTION 2603 OF THE FBC. CONTRACTOR SHALL INVESTIGATE AND CONFORM TO ALL LOCAL BUILDING CODE AMENDMENTS WHICH MAY APPLY. DESIGN CRITERIA BEYOND AS STATED HEREIN MAY REQUIRE ADDITIONAL SITE-SPECIFIC SEALED ENGINEERING.
- NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM.
- THE ARCHITECT/ENGINEER OF RECORD FOR THE PROJECT SUPERSTRUCTURE WITH WHICH THIS DESIGN IS USED SHALL BE RESPONSIBLE FOR THE INTEGRITY OF ALL SUPPORTING SURFACES TO THIS DESIGN WHICH SHALL BE COORDINATED BY THE PERMITTING CONTRACTOR.
- SEPARATE 'SITE-SPECIFIC' SEALED ENGINEERING SHALL BE REQUIRED IN ORDER TO DEVIATE FROM LOADS, DEFLECTIONS, OR SPANS CONTAINED HEREIN. LINEAR INTERPOLATION OF THE ALLOWABLE SPAN TABLES LISTED HEREIN SHALL NOT BE PERMITTED. CONTACT THIS ENGINEER FOR ALTERNATE SPAN CALCULATIONS AS MAY BE REQUIRED.
- THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
- THE CONTRACTOR SHALL CAREFULLY CONSIDER POSSIBLE IMPOSING LOADS ON ROOF, INCLUDING BUT NOT LIMITED TO ANY CONCENTRATED LOADS WHICH MAY JUSTIFY GREATER DESIGN CRITERIA. THIS ADDITIONAL ROOF LOAD CRITERIA SHALL BE PROPERLY ANALYZED BY A LICENSED ENGINEER OR REGISTERED ARCHITECT.
- THE CONTRACTOR IS RESPONSIBLE TO INSULATE ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
- ENGINEER SEAL AFFIXED HERE TO VALIDATES STRUCTURAL DESIGN AS SHOWN ONLY. USE OF THIS SPECIFICATION BY CONTRACTOR, et. al. INDEMNIFIES & SAVES HARMLESS THIS ENGINEER FOR ALL COST & DAMAGES INCLUDING LEGAL FEES & APPELLATE FEES RESULTING FROM MATERIAL FABRICATION, SYSTEM ERECTION, & CONSTRUCTION PRACTICES BEYOND THAT WHICH IS CALLED FOR BY LOCAL, STATE, & FEDERAL CODES & FROM DEVIATIONS OF THIS PLAN.
- EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED.
- ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE THIS CERTIFICATION.

### EXAMPLE TRIBUTARY WIDTH CALCULATION:

- EXAMPLE CALCULATION, BEAM 1:  
•  $(\text{ROOF SPAN 1}) \times (\frac{1}{2}) = (10.00 \text{ FT}) \times (\frac{1}{2}) = 5.00 \text{ FT}$
- EXAMPLE CALCULATION, BEAM 2:  
•  $(\text{ROOF SPAN 1} + \text{ROOF SPAN 2}) \times (\frac{1}{2}) = (10.00 \text{ FT} + 12.00 \text{ FT}) \times (\frac{1}{2}) = 11.00 \text{ FT}$



FRANK L. BENNARDO, P.E.  
#PE0046549

04/26/2016

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OLDSMAR, FL 34677  
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2X5 AND 2X7 ALUMINUM BEAMS  
STRUCTURAL SPAN TABLES

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13-1026

SCALE: SEE DETAILS  
PAGE DESCRIPTION:

V:\Projects\13-1026 Span Tables - Edge Beams\WP\Change Order (4-26-16)\13-1026e Edge Beam Spans (FL).dwg intern1 04/26/2016 - 4:48pm

MAXIMUM ALLOWABLE TRIBUTARY WIDTH (L/180 DEFLECTION LIMIT):

LOAD (PSF)	MAX ALLOWABLE BEAM SPAN	MAX ALLOWABLE TRIBUTARY WIDTH	
		2"x5" Beam	2"x7" Beam
+/- 20	20'-0"	N/A	4'-3"
+/- 20	19'-0"	N/A	5'-0"
+/- 20	18'-0"	N/A	5'-11"
+/- 20	17'-0"	N/A	6'-12"
+/- 20	16'-0"	N/A	8'-4"
+/- 20	15'-0"	N/A	9'-8"
+/- 20	14'-0"	4'-1"	11'-1"
+/- 20	13'-0"	5'-2"	12'-10"
+/- 20	12'-0"	6'-6"	15'-1"
+/- 20	11'-0"	8'-6"	17'-11"
+/- 20	10'-0"	10'-9"	21'-8"
+/- 20	9'-0"	13'-3"	26'-9"
+/- 25	19'-0"	N/A	4'-0"
+/- 25	18'-0"	N/A	4'-8"
+/- 25	17'-0"	N/A	5'-7"
+/- 25	16'-0"	N/A	6'-8"
+/- 25	15'-0"	N/A	7'-8"
+/- 25	14'-0"	N/A	8'-10"
+/- 25	13'-0"	4'-1"	10'-3"
+/- 25	12'-0"	5'-3"	12'-0"
+/- 25	11'-0"	6'-9"	14'-4"
+/- 25	10'-0"	8'-7"	17'-4"
+/- 25	9'-0"	10'-7"	21'-5"
+/- 25	8'-0"	13'-5"	27'-1"
+/- 30	17'-0"	N/A	4'-8"
+/- 30	16'-0"	N/A	5'-7"
+/- 30	15'-0"	N/A	6'-5"
+/- 30	14'-0"	N/A	7'-4"
+/- 30	13'-0"	N/A	8'-7"
+/- 30	12'-0"	4'-4"	10'-0"
+/- 30	11'-0"	5'-8"	11'-11"
+/- 30	10'-0"	7'-2"	14'-5"
+/- 30	9'-0"	8'-10"	17'-10"
+/- 30	8'-0"	11'-2"	22'-7"
+/- 30	7'-0"	14'-7"	29'-6"
+/- 35	16'-0"	N/A	4'-9"
+/- 35	15'-0"	N/A	5'-6"
+/- 35	14'-0"	N/A	6'-4"
+/- 35	13'-0"	N/A	7'-4"
+/- 35	12'-0"	N/A	8'-7"
+/- 35	11'-0"	4'-10"	10'-3"
+/- 35	10'-0"	6'-1"	12'-5"
+/- 35	9'-0"	7'-7"	15'-3"
+/- 35	8'-0"	9'-7"	19'-4"
+/- 35	7'-0"	12'-6"	25'-3"
+/- 40	16'-0"	N/A	4'-2"
+/- 40	15'-0"	N/A	4'-10"
+/- 40	14'-0"	N/A	5'-6"
+/- 40	13'-0"	N/A	6'-5"
+/- 40	12'-0"	N/A	7'-6"
+/- 40	11'-0"	4'-3"	8'-11"
+/- 40	10'-0"	5'-4"	10'-10"
+/- 40	9'-0"	6'-7"	13'-4"
+/- 40	8'-0"	8'-4"	16'-11"
+/- 40	7'-0"	10'-11"	22'-1"
+/- 40	6'-0"	14'-11"	30'-1"
+/- 45	15'-0"	N/A	4'-3"
+/- 45	14'-0"	N/A	4'-11"
+/- 45	13'-0"	N/A	5'-8"
+/- 45	12'-0"	N/A	6'-8"
+/- 45	11'-0"	N/A	7'-11"
+/- 45	10'-0"	4'-9"	9'-8"
+/- 45	9'-0"	5'-11"	11'-11"
+/- 45	8'-0"	7'-5"	15'-1"
+/- 45	7'-0"	9'-9"	19'-8"
+/- 45	6'-0"	13'-3"	26'-9"

MAXIMUM ALLOWABLE TRIBUTARY WIDTH (L/240 DEFLECTION LIMIT):

LOAD (PSF)	MAX ALLOWABLE BEAM SPAN	MAX ALLOWABLE TRIBUTARY WIDTH	
		2"x5" Beam	2"x7" Beam
+/- 20	18'-0"	N/A	4'-5"
+/- 20	17'-0"	N/A	5'-3"
+/- 20	16'-0"	N/A	6'-0"
+/- 20	15'-0"	N/A	7'-2"
+/- 20	14'-0"	N/A	8'-4"
+/- 20	13'-0"	5'-3"	10'-8"
+/- 20	12'-0"	6'-8"	13'-6"
+/- 20	11'-0"	8'-9"	17'-8"
+/- 20	10'-0"	11'-11"	24'-1"
+/- 50	5'-0"	17'-2"	34'-8"
+/- 55	14'-0"	N/A	4'-0"
+/- 55	13'-0"	N/A	4'-8"
+/- 55	12'-0"	N/A	5'-6"
+/- 55	11'-0"	N/A	6'-6"
+/- 55	10'-0"	N/A	7'-11"
+/- 55	9'-0"	4'-10"	9'-9"
+/- 55	8'-0"	6'-1"	12'-4"
+/- 55	7'-0"	7'-11"	16'-1"
+/- 55	6'-0"	10'-10"	21'-11"
+/- 55	5'-0"	15'-7"	31'-6"
+/- 60	13'-0"	N/A	4'-3"
+/- 60	12'-0"	N/A	5'-0"
+/- 60	11'-0"	N/A	5'-12"
+/- 60	10'-0"	N/A	7'-3"
+/- 60	9'-0"	4'-5"	8'-11"
+/- 60	8'-0"	5'-7"	11'-3"
+/- 60	7'-0"	7'-3"	14'-9"
+/- 60	6'-0"	9'-11"	20'-1"
+/- 60	5'-0"	14'-3"	28'-11"
+/- 65	12'-0"	N/A	4'-8"
+/- 65	11'-0"	14'-7"	5'-6"
+/- 65	10'-0"	N/A	6'-8"
+/- 65	9'-0"	4'-1"	8'-3"
+/- 65	8'-0"	5'-2"	10'-5"
+/- 65	7'-0"	6'-9"	13'-7"
+/- 65	6'-0"	9'-2"	18'-6"
+/- 65	5'-0"	13'-2"	26'-8"
+/- 70	12'-0"	N/A	4'-4"
+/- 70	11'-0"	N/A	5'-1"
+/- 70	10'-0"	N/A	6'-2"
+/- 70	9'-0"	N/A	7'-8"
+/- 70	8'-0"	4'-9"	9'-8"
+/- 70	7'-0"	6'-3"	12'-8"
+/- 70	6'-0"	8'-6"	17'-2"
+/- 70	5'-0"	12'-3"	24'-9"
+/- 75	12'-0"	N/A	4'-0"
+/- 75	11'-0"	N/A	4'-9"
+/- 75	10'-0"	N/A	5'-9"
+/- 75	9'-0"	N/A	7'-2"
+/- 75	8'-0"	4'-6"	9'-0"
+/- 75	7'-0"	5'-10"	11'-9"
+/- 75	6'-0"	7'-11"	16'-1"
+/- 75	5'-0"	11'-5"	23'-1"
+/- 80	11'-0"	N/A	4'-8"
+/- 80	10'-0"	N/A	5'-5"
+/- 80	9'-0"	N/A	6'-8"
+/- 80	8'-0"	4'-2"	8'-6"
+/- 80	7'-0"	5'-6"	11'-1"
+/- 80	6'-0"	7'-5"	15'-1"
+/- 80	5'-0"	10'-9"	21'-8"
+/- 85	11'-0"	N/A	4'-3"
+/- 85	10'-0"	N/A	5'-1"
+/- 85	9'-0"	N/A	6'-4"
+/- 85	8'-0"	N/A	8'-4"
+/- 85	7'-0"	7'-12"	12'-8"
+/- 85	6'-0"	9'-2"	16'-11"
+/- 85	5'-0"	13'-2"	26'-8"
+/- 90	10'-0"	N/A	4'-10"
+/- 90	9'-0"	N/A	5'-11"
+/- 90	8'-0"	N/A	7'-6"
+/- 90	7'-0"	4'-10"	9'-10"
+/- 90	6'-0"	6'-7"	13'-4"
+/- 90	5'-0"	9'-6"	19'-3"
+/- 95	10'-0"	N/A	4'-7"
+/- 95	9'-0"	N/A	5'-8"
+/- 95	8'-0"	N/A	7'-2"
+/- 95	7'-0"	4'-7"	9'-4"
+/- 95	6'-0"	6'-3"	12'-8"
+/- 95	5'-0"	9'-0"	18'-3"

LOAD (PSF)	MAX ALLOWABLE BEAM SPAN	MAX ALLOWABLE TRIBUTARY WIDTH	
		2"x5" Beam	2"x7" Beam
+/- 50	13'-0"	N/A	4'-8"
+/- 50	12'-0"	N/A	5'-11"
+/- 50	11'-0"	N/A	7'-2"
+/- 50	10'-0"	N/A	8'-8"
+/- 50	9'-0"	4'-8"	10'-8"
+/- 50	8'-0"	6'-7"	13'-6"
+/- 50	7'-0"	8'-9"	17'-8"
+/- 50	6'-0"	11'-11"	24'-0"
+/- 50	5'-0"	17'-2"	34'-0"
+/- 55	13'-0"	N/A	4'-3"
+/- 55	12'-0"	N/A	5'-5"
+/- 55	11'-0"	N/A	6'-6"
+/- 55	10'-0"	N/A	7'-11"
+/- 55	9'-0"	N/A	9'-9"
+/- 55	8'-0"	6'-0"	12'-4"
+/- 55	7'-0"	7'-11"	16'-1"
+/- 55	6'-0"	10'-10"	21'-11"
+/- 55	5'-0"	15'-7"	31'-6"
+/- 60	12'-0"	N/A	4'-12"
+/- 60	11'-0"	N/A	5'-12"
+/- 60	10'-0"	N/A	7'-3"
+/- 60	9'-0"	N/A	8'-11"
+/- 60	8'-0"	5'-6"	11'-3"
+/- 60	7'-0"	7'-3"	14'-9"
+/- 60	6'-0"	9'-11"	20'-1"
+/- 60	5'-0"	14'-3"	24'-0"
+/- 65	12'-0"	N/A	4'-7"
+/- 65	11'-0"	N/A	5'-6"
+/- 65	10'-0"	N/A	6'-8"
+/- 65	9'-0"	N/A	8'-3"
+/- 65	8'-0"	5'-1"	10'-5"
+/- 65	7'-0"	6'-9"	13'-7"
+/- 65	6'-0"	9'-2"	18'-6"
+/- 65	5'-0"	13'-2"	24'-0"
+/- 70	12'-0"	N/A	4'-3"
+/- 70	11'-0"	N/A	5'-1"
+/- 70	10'-0"	N/A	6'-2"
+/- 70	9'-0"	N/A	7'-8"
+/- 70	8'-0"	4'-9"	9'-8"
+/- 70	7'-0"	6'-3"	12'-8"
+/- 70	6'-0"	8'-6"	17'-2"
+/- 70	5'-0"	12'-3"	24'-0"
+/- 75	11'-0"	N/A	4'-9"
+/- 75	10'-0"	N/A	5'-9"
+/- 75	9'-0"	N/A	7'-2"
+/- 75	8'-0"	4'-5"	9'-0"
+/- 75	7'-0"	5'-10"	11'-9"
+/- 75	6'-0"	7'-11"	16'-1"
+/- 75	5'-0"	11'-5"	23'-1"
+/- 80	10'-0"	N/A	5'-5"
+/- 80	9'-0"	N/A	6'-8"
+/- 80	8'-0"	4'-2"	8'-6"
+/- 80	7'-0"	5'-6"	11'-1"
+/- 80	6'-0"	7'-5"	15'-1"
+/- 80	5'-0"	10'-9"	21'-8"
+/- 85	10'-0"	N/A	4'-10"
+/- 85	9'-0"	N/A	5'-11"
+/- 85	8'-0"	N/A	7'-6"
+/- 85	7'-0"	4'-10"	9'-10"
+/- 85	6'-0"	6'-7"	13'-4"
+/- 85	5'-0"	9'-6"	19'-3"
+/- 90	10'-0"	N/A	4'-10"
+/- 90	9'-0"	N/A	5'-11"
+/- 90	8'-0"	N/A	7'-6"
+/- 90	7'-0"	4'-10"	9'-10"
+/- 90	6'-0"	6'-7"	13'-4"
+/- 90	5'-0"	9'-6"	19'-3"
+/- 95	10'-0"	N/A	4'-7"
+/- 95	9'-0"	N/A	5'-8"
+/- 95	8'-0"	N/A	7'-2"
+/- 95	7'-0"	4'-7"	9'-4"
+/- 95	6'-0"	6'-3"	12'-8"
+/- 95	5'-0"	9'-0"	18'-3"

DESIGN TABLE NOTES:

- ALL BEAMS HAVE BEEN CALCULATED WITH THE COMPRESSION FLANGE BRACING AT A MAXIMUM OF 4'-6" ON CENTER (PROVIDED BY INSTALLING CONTRACTOR). COMPRESSIONS FLANGES ARE REQUIRED ONLY FOR INSTALLATIONS USING (2) OR MORE BEAMS. ALL ANCHORS ATTACHING PANELS TO BEAMS SHALL BE STAGGERED.
- BEAM CALCULATIONS CONSIDER VERTICAL LOADS ONLY. LATERAL LOADS DO NOT APPLY FOR USE WITH THE SPANS ILLUSTRATED HEREIN.
- BEAMS HAVE BEEN CALCULATED CONSIDERING THE MAXIMUM BENDING MOMENT, SHEAR AND DEFLECTION DERIVED FROM THE VERTICAL LOADS & TRIBUTARY SPANS APPLIED TO EACH MAX ALLOWABLE SIMPLE BEAM WIDTH AS ILLUSTRATED HEREIN.
- ALL EXTRUDED ALUMINUM BEAMS SHALL BE 6005-T6, 6061-T6 OR BETTER.
- DEFLECTION LIMIT SELECTION SHALL BE BY OTHERS AND SHALL MEET THE MINIMUM REQUIREMENTS OF THE FLORIDA BUILDING CODE TABLE 1604.3 FOR NON-HVHZ OR SECTION 1616.3 FOR HVHZ.

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04/26/2016

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