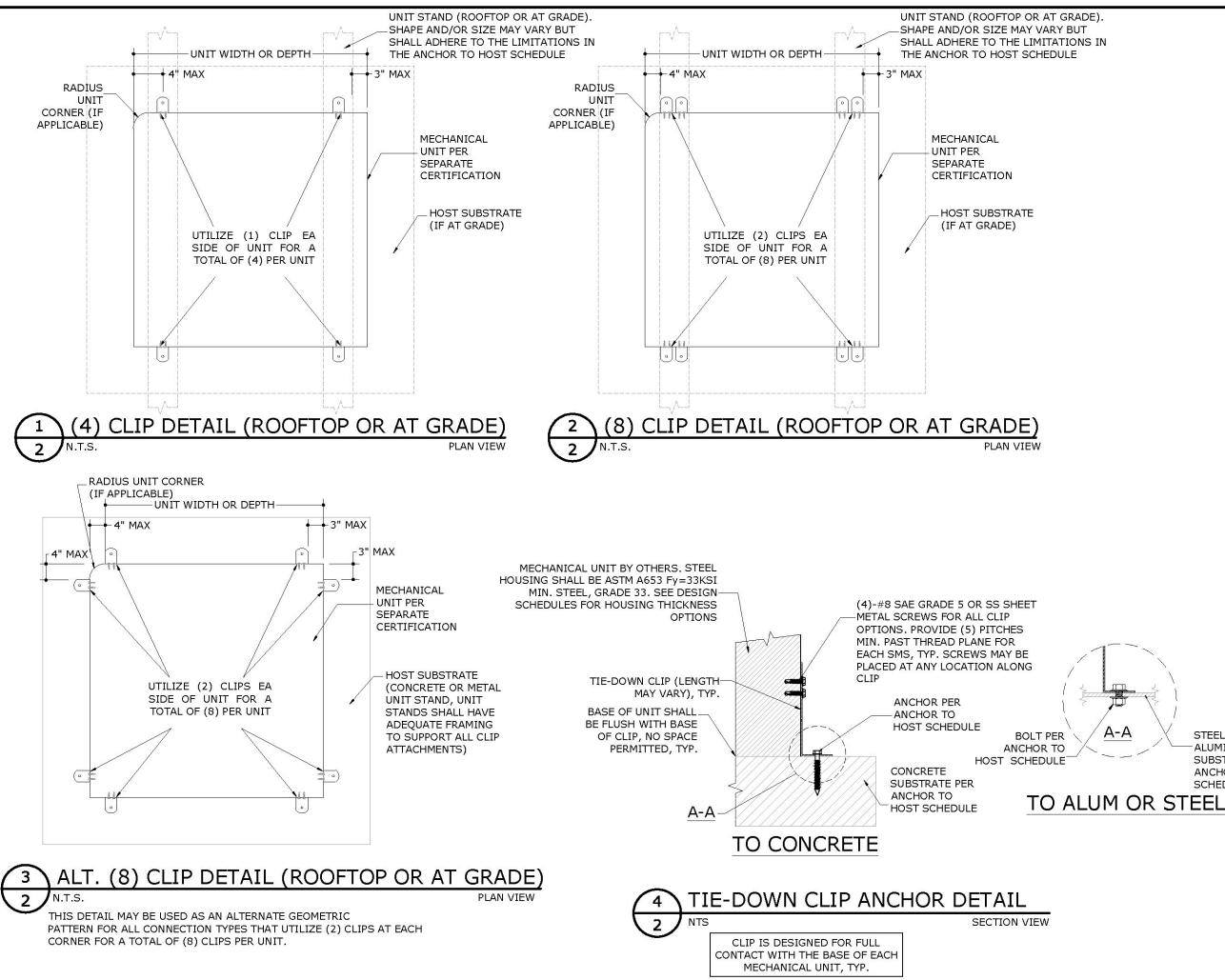


RICHARD NEET, P.E. E# 86488 CA #9885 CORPORATE OFFICE: 160 SW 12th AVE, SUITE 106 DEERFIELD BEACH, FL 33442 (994) 334-060 | (866) 396-999 TEAM@ENGINEERINGEXPRESS.COM ENGINEERINGEXPRESS.COM Ľ THIS PRODUCT HAS BEEN DESIGNED IN ACCORDANCE WITH ASCE 7 AND THE FLORIDA BUILDING CODE SEVENTH EDITION (2020) FOR USE WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE AS INDICATED IN THE ACCOMPANYING DESIGN SCHEDULES. THE DESIGN CRITERIA USED TO CALCULATE THE REQUIRED DESIGN PRESSURES CONSIDERS FBC SECTION 1609 FOR NON-HVHZ AND SECTION 1620 FOR HVHZ $(GC_f)_{Lateral}$ = 1.90 WITHIN THE HVHZ & OUTSIDE THE HVHZ, $(GC_f)_{Uolift}$ = 1.5 FOR ALL LOCATIONS (CONCURRENT). ALL OTHER DESIGN VARIABLES ARE IN ACCORDANCE WITH ASCE 7 CHAPTERS 26 & THE HEIGHTS LISTED IN THE ALLOWABLE PRESSURE SCHEDULE REPRESENTS THE MAXIMUM ALLOWABLE HEIGHT (MRH) OF THE BUILDING. NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF DESIGN IS BASED ON CLIENT PROVIDED PRODUCT AND DIE SHEETS FROM TEST REPORT PROJECT #12-0967 BY SGS TESTING, ENGINEERING & CONSULTING SERVICES, INC. . NO SUBSTITUTIONS WITHOUT WRITTEN APPROVAL BY THIS ENGINEER SHALL STEEL CLIPS SHALL BE 12ga ASTM A653 STEEL WITH Fy=39 KSI OR BETTER. STEEL MEMBERS SHALL BE PROTECTED AGAINST CORROSION WITH AN APPROVED COAT OF PAINT, ENAMEL OR OTHER APPROVED PROTECTION. G90-RATED COATING REQUIRED HURRICANE TIE-DOWN CLIP (STEEL) FBC SEVENTH EDITION (2020) FLORIDA PRODUCT APPROVAL #FL31178. Tech Corp. THIS PRODUCT HAS BEEN DESIGNED AND SHALL BE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE & ASCE 7. THIS Duluth, GA (678) 542-3600 PRODUCT MAY BE USED WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE DiversiTech (6650 Sugarloaf Parkway, MAXIMUM & MINIMUM DIMENSIONS AND MINIMUM WEIGHT OF MECHANICAL UNIT SHALL CONFORM TO SPECIFICATIONS STATED HEREIN. ALL MECHANICAL SPECIFICATIONS (CLEAR SPACE, TONNAGE, ETC.) SHALL BE AS PER MANUFACTURER RECOMMENDATIONS AND ARE THE EXPRESS RESPONSIBILITY OF THE CONTRACTOR. FASTENERS TO BE #8 X 3/4" OR GREATER SAE GR 5 OR STAINLESS STEEL 410 UNLESS NOTED OTHERWISE. ANCHORS REFERRED TO HEREIN SHALL BE DEWALT BRAND, INSTALLED TO 3000 PSI MIN CONCRETE. ALTERNATE CONCRETE ANCHORS MAY BE USED IF CERTIFIED BY OTHERS TO HAVE GREATER OR EQUAL ALLOWABLE TENSION/SHEAR CAPACITIES. SEE ANCHOR TO HOST SCHEDULE FOR ANCHOR REQUIREMENTS. ALL FASTENERS SHALL HAVE APPROPRIATE CORROSION ALL CONCRETE SPECIFIED HEREIN IS NOT PART OF THIS CERTIFICATION. AS A MINIMUM, ALL CONCRETE SHALL BE STRUCTURAL CONCRETE 4" MIN. THICK AND SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI, UNLESS NOTED THE CONTRACTOR IS RESPONSIBLE TO INSULATE ALL MEMBERS FROM DISSIMILAR ELECTRICAL GROUND, WHEN REQUIRED, TO BE DESIGNED & INSTALLED BY OTHERS THE ADEQUACY OF ANY EXISTING STRUCTURE TO WITHSTAND SUPERIMPOSED LOADS SHALL BE VERIFIED BY THE ONSITE DESIGN PROFESSIONAL AND IS NOT INCLUDED IN THIS CERTIFICATION. EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED. THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS RWN DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS RWN CCB WATER-TIGHTNESS OF EXISTING HOST SUBSTRATE SHALL BE THE FULL RESPONSIBILITY OF THE INSTALLING CONTRACTOR. CONTRACTOR SHALL ENSURE THAT ANY REMOVED OR ALTERED WATERPROOFING MEMBRANE IS RESTORED AFTER FABRICATION AND INSTALLATION OF STRUCTURE PROPOSED HEREIN. THIS ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY WATERPROOFING OR LEAKAGE ISSUES WHICH MAY OCCUR AS WATER-TIGHTNESS SHALL BE THE FULL RESPONSIBILITY OF THE INSTALLING CONTRACTOR. 10. FOR AN EXPLANATION OF EXPOSURE AND RISK CATEGORIES THAT ACCOMPANY THE Vult WIND SPEEDS USED IN THIS APPROVAL, SEE SECTION 26 OF ASCE 7. RIGHT ENGINEERING EXPRES 20-31532 VISIT ECALC.IO/31532 SCALE: NTS UNLESS NOTED FOR SITE SPECIFIC DEVIATIONS & MORE INFORMATION ABOUT THIS DOCUMENT 3 OR SCAN THIS QR CODE

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Discret Care	DIVERSITECTI COLD.	6650 Sunarinaf Darkway Suita 100	ACCO DUGATION TO MARA / DUILE TOO	DUIUTIN, GA	(678) 542-3600	HURRICANE TIE-DOWN CLIP (STEEL)	FBC SEVENTH EDITION (2020)	FLORIDA PRODUCT APPROVAL #FL31178.1	
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ANCHOR TO HOST

TABLE 1: CLIP DESIGN SCHEDULE (18 GA MIN. UNIT HOUSING)

							7		
MAX UNIT HEIGHT	MAX UNIT FACE AREA		MAX ALLOWA PRESSURES W/ (1) (MAX ALLOWABLE DESIGN PRESSURES W/ (2) CLIPS PER CORNER				
			LATERAL DESIGN PRESSURE	UPLIFT DESIGN PRESSURE	LATERAL DESIGN PRESSURE	UPLIFT DESIGN PRESSURE	MIN UNIT WEIGHT (LB)	TABLE 1 & 2 NOTES: 1. UTILIZE THE UNIT DIMENSION DIRECTIVE	
241-	576 in^2	15 in	133.0 psf	105.0 psf	180.0 psf	142.1 psf	50	ON SHEET 1 FOR	
24 in		576 IN^Z	24 in	154.0 psf	121.6 psf	180.0 psf	142.1 psf	50	DEFINITIONS OF UNIT HEIGHT, UNIT DEPTH
	1296 in^2	15 in	49.0 psf	38.7 psf	96.0 psf	75.8 psf	75	AND FACE AREA.	
36 in		24 in	65.0 psf	51.3 psf	127.0 psf	100.3 psf	125	2. MAXIMUM ALLOWABLE	
		36 in	76.0 psf	60.0 psf	144.0 psf	113.7 psf	200	ANCHOR CLIP TENSION AND SHEAR LOADINGS	
	2304 in^2	24 in	33.0 psf	26.1 psf	63.0 psf	49.7 psf	150	UTILIZED TO CREATE	
48 in		36 in	40.0 psf	31.6 psf	77.0 psf	60.8 psf	200	THESE SCHEDULES ARE BASED ON TESTED DATA	
			48 in	45.0 psf	35.5 psf	83.0 psf	65.5 psf	300	PER THE TEST REPORT
	3600 in^2	36 in	24.0 psf	18.9 psf	45.0 psf	35.5 psf	200	LISTED IN THE DESIGN	
60 in		48 in	26.0 psf	20.5 psf	50.0 psf	39.5 psf	250	NOTES WITH A SAFETY FACTOR OF 2.	
		60 in	30.0 psf	23.7 psf	54.0 psf	42.6 psf	350	3. INDIVIDUAL UNIT	
								WEIGHTS SHALL NOT BE	

TABLE 2: CLIP DESIGN SCHEDULE (22 GA MIN. UNIT HOUSING)

MAX UNIT		MIN UNIT	MAX ALLOWA PRESSURES W/ (1)		4.				
HEIGHT	FACE AREA	DEPTH	LATERAL DESIGN PRESSURE	UPLIFT DESIGN PRESSURE	LATERAL DESIGN PRESSURE	UPLIFT DESIGN PRESSURE	MIN UNIT WEIGHT (LB)	5.	
		15 in	122.0 psf	96.3 psf	180.0 psf	142.1 psf	50		
24 in	576 in^2	24 in	140.0 psf	110.5 psf	180.0 psf	142.1 psf	50		
36 in	1296 in^2	15 in	45.0 psf	35.5 psf	89.0 psf	70.3 psf	75		
		24 in	59.0 psf	46.6 psf	115.0 psf	90.8 psf	125		
		36 in	68.0 psf	53.7 psf	129.0 psf	101.8 psf	200	6.	
		24 in	30.0 psf	23.7 psf	58.0 psf	45.8 psf	150		
48 in	2304 in^2	2304 in^2	36 in	36.0 psf	28.4 psf	69.0 psf	54.5 psf	200	
				48 in	40.0 psf	31.6 psf	75.0 psf	59.2 psf	300
60 in			36 in	22.0 psf	17.4 psf	41.0 psf	32.4 psf	200	
	3600 in^2	48 in	24.0 psf	18.9 psf	46.0 psf	36.3 psf	250		
			60 in	27.0 psf	21.3 psf	50.0 psf	39.5 psf	350	

TABLE 3: ANCHOR TO HOST SCHEDULE

CONCRETE: (2-5/8" THICK MIN, 3000 PSI	DESCRIPTION (1)-1/4"Ø DEWALT OR DEWALT ULTRACON, 1¾" FULL EMBED TO CONCRETE, 2½" MIN. EDGE DISTANCE, 3" MIN.	 TABLE 3 NOTES: EMBEDMENT AND EDGE DISTANCE EXCLUDES FINISHES, IF APPLICABLE. ENSURE MINIMUM EDGE DISTANCE AS NOTED IN ANCHOR SCHEDULE. ENSURE MINIMUM SPACING TO ANY ADJACENT ANCHORS. SEE DETAILS ON SHEET 2 FOR ANCHORS ATTACHING
MIN.) ALUMINUM: (0.090" MIN. THICK, 6061-T6 MIN. ALUMINUM)	SPACING TO ANY ADJACENT ANCHOR. (1)-#14 SAE GR 5 OR STAINLESS STEEL BOLT 410 WITH NUT AND WASHER TOP & BOTTOM SS OD 1", ½" MINIMUM EDGE DISTANCE TO METAL EDGE	 4. SEE DETAILS ON SHEET 2 FOR ANCHORS ATTACHING TO MECHANICAL UNIT. 5. PROTECT ALL METALS FROM DISSIMILAR METALS GENERAL NOTE #5. 6. ALTERNATE HOST ANCHORS MAY BE USED IN LIEU OF THE OPTIONS LISTED IN THIS TABLE AS LONG AS THEY MEET THE FOLLOWING MINIMUM REQUIREMENTS: ALLOWABLE TENSION CAPACITY = 428 LBS ALLOWABLE SHEAR CAPACITY = 445 LBS
STEEL: (0.100" MIN. THICK, 36 KSI MIN. STEEL)	(1)-#14 SAE GR 5 OR STAINLESS STEEL BOLT 410 WITH NUT AND WASHER TOP & BOTTOM SS OD 1", ½" MINIMUM EDGE DISTANCE TO METAL EDGE	

TABLE 4: REQUIRED DESIGN PRESSURE SCHEDULE

MAXIMUM MEAN ROOF HEIGHT	ULTIMATE WIND SPEED	EXPOSURE CATEGORY	LATERAL DESIGN PRESSURE (ASD)	UPLIFT DESIGN PRESSURE (ASD)
		С	43.7 psf	34.5 psf
AT GRADE	-	D	53.0 psf	41.9 psf
100000 - 200	-	C	50.4 psf	39.8 psf
25 ft		D	59.7 psf	47.1 psf
		C	57.3 psf	45.3 psf
50 ft		D	66.4 psf	52.4 psf
	- 140 mph -	C	62.1 psf	49.0 psf
75 ft		D	70.9 psf	56.0 psf
2821		С	65.8 psf	51.9 psf
100 ft		D	74.3 psf	58.7 psf
		С	71.4 psf	56.4 psf
150 ft		D	79.6 psf	62.8 psf
AT COADE		C	64.5 psf	50.9 psf
AT GRADE		D	78.2 psf	61.8 psf
25.6		С	74.3 psf	58.7 psf
25 ft	-	D	90.0 psf	69.4 psf
		С	84.6 psf	66.8 psf
50 ft	1	D	97.9 psf	77.3 psf
75.0	170	С	91.5 psf	72.3 psf
75 ft	170 mph	D	104.5 psf	82.5 psf
100 ft		С	97.0 psf	76.6 psf
100 ft		D	109.6 psf	86.5 psf
150 ft		С	105.3 psf	83.1 psf
150 11		D	117.3 psf	92.6 psf
200 ft		С	111.7 psf	88.2 psf
20011		D	123.2 psf	97.3 psf
AT GRADE		С	68.3 psf	53.9 psf
AT GRADE		D	82.9 psf	65.4 psf
25 ft		С	78.7 psf	62.2 psf
2311		D	93.2 psf	73.6 psf
50 ft		С	89.6 psf	70.7 psf
		D	103.7 psf	81.9 psf
75 ft	175 mph	С	97.0 psf	76.6 psf
/51	1/3 liihii	D	110.8 psf	87.4 psf
100 ft		С	102.8 psf	81.1 psf
10010		D	116.2 psf	91.7 psf
150 ft		С	111.6 psf	88.1 psf
130 11		D	124.3 psf	89.2 psf
200 ft		С	118.4 psf	93.4 psf
20010		D	130.5 psf	103.1 psf

TABLE 4 NOTES:

LESS THAN THE WEIGHTS LISTED IN

THESE DESIGN SCHEDULES.

WEIGHTS SHALL NOT BE

LINEAR INTERPOLATION BETWEEN UNIT FACE AREAS AND UNIT DEPTHS IS PERMITTED. REQUIRED ASD DESIGN PRESSURES SHALL BE LESS THAN OR EQUAL TO THE ALLOWABLE ASD PRESSURES WITHIN THESE DESIGN SCHEDULES.

THE REQUIRED DESIGN PRESSURE SCHEDULE (TABLE 4) MAY BE USED TO FIND REQUIRED DESIGN PRESSURES OR REQUIRED DESIGN PRESSURES SHALL BE

CALCULATED SEPARATELY.

- BASED ON THE FOLLOWING PARAMETERS:

 - 1.2. STRUCTURE SHAPE = SQUARE
 - 1.3. z = 4.5 FT
- 1.4. LATERAL GC_f = 1.90; UPLIFT GC_f = 1.50

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1. THE REQUIRED ASD DESIGN PRESSURES LISTED IN THIS SCHEDULE WERE CALCULATED

1.1. ASCE 7 SECTION 29.5 "ROOFTOP STRUCTURES AND EQUIPMENT"

2. THIS REQUIRED PRESSURE SCHEDULE IS FOR REFERENCE ONLY AND SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION AS BEING ADEQUATE FOR USE. 3. IF THE DESIGN PRESSURES LISTED IN THE SCHEDULE ARE NOT USED, REQUIRED DESIGN PRESSURES SHALL BE CALCULATED ON A SITE SPECIFIC BASIS BY OTHERS.