

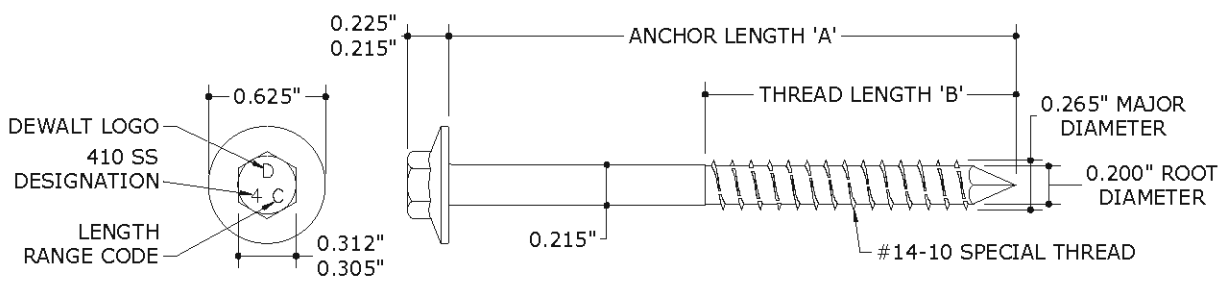
1/4" CRETE-FLEX[®] SS4 MASONRY SCREWS

RICHARD NEET, P.E.
PE# 86488 CA#9885



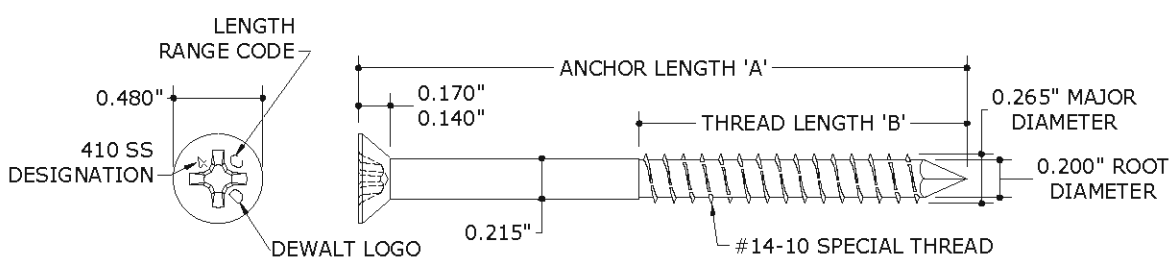
ENGINEERING EXPRESS
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0560 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

Length code*	Part length	Thread length
A	1 3/4"	1.625
B	2 1/4"	1.750
C	2 3/4"	1.750



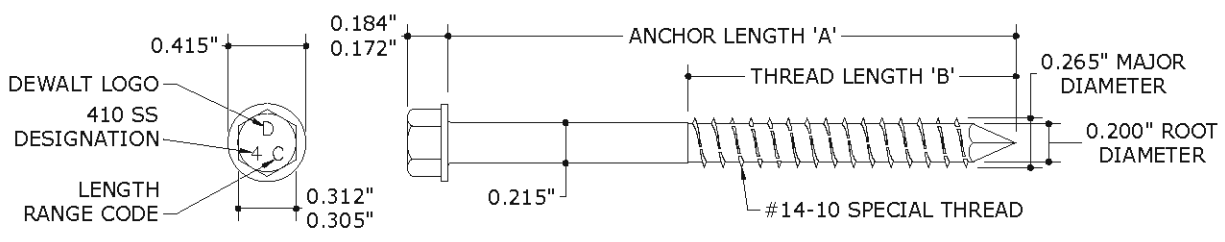
1 HEX FLANGE HEAD (HFH) 1'-0" = 1'-0"

Length code*	Part length	Thread length
□	1 1/4"	1
A	1 3/4"	1.500
B	2 1/4"	1.750
C	2 3/4"	1.750
D	3 1/4"	1.750
E	3 3/4"	1.750
F	4"	1.750
G	5"	1.750
H	6"	1.750



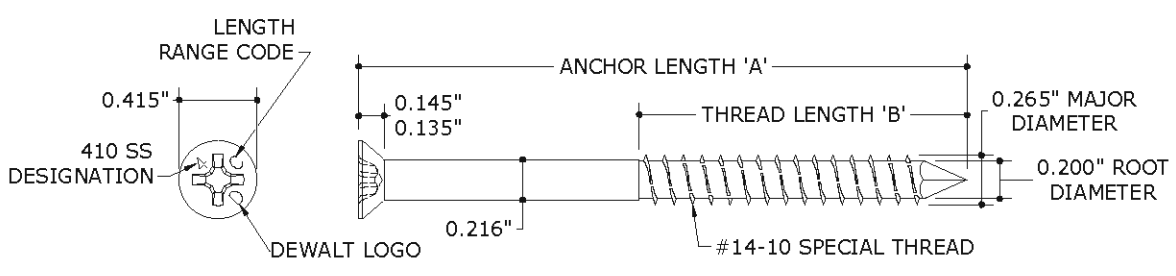
2 PHILLIPS FLAT HEAD (PFH) 1'-0" = 1'-0"

Length code*	Part length	Thread length
□	1 1/4"	1.125
A	1 3/4"	1.625
B	2 1/4"	1.750
C	2 3/4"	1.750
D	3 1/4"	1.750
E	3 3/4"	1.750
F	4"	1.750
G	5"	1.750
H	6"	1.750



3 HEX WASHER HEAD (HWH) 1'-0" = 1'-0"

Length code*	Part length	Thread length
□	1 1/4"	1.125
A	1 3/4"	1.625
B	2 1/4"	1.750
C	2 3/4"	1.750
D	3 1/4"	1.750



4 TRIM FIT 1'-0" = 1'-0"

GENERAL NOTES:

- THIS PRODUCT HAS BEEN DESIGNED & TESTED IN ACCORDANCE WITH THE THE FLORIDA BUILDING CODE SEVENTH EDITION (2020) AND THE FOLLOWING STANDARDS: ASTM E488 & TAS 114. THIS PRODUCT IS INTENDED FOR USE WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE.
- ANCHORS ARE MANUFACTURED FROM 410 STAINLESS STEEL AND SHALL HAVE A CORROSION-RESISTANT SILVER-COLORED STALGARD COATING.
- ANCHOR INSTALLATION SHALL BE MADE IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS AND THIS APPROVAL.
- CONCRETE SHALL CONFORM TO ACI 301 SPECIFICATIONS, WITH STRENGTH PROPERTIES AS SPECIFIED HEREIN. HOLLOW CONCRETE BLOCK SHALL CONFORM TO ASTM C90.
- ANCHORS SHALL NOT BE INSTALLED INTO CRACKED CONCRETE AS DEFINED IN ACI 355.
- ALLOWABLE LOADS TO 3350 PSI MINIMUM CONCRETE SUBSTRATE ARE BASED ON THE ULTIMATE LOADS DIVIDED BY 4. ALLOWABLE LOADS TO ASTM C90 CONCRETE BLOCK ARE BASED ON THE ULTIMATE LOADS DIVIDED BY 5.
- PILOT HOLES SHALL BE DRILLED USING A 7/32" MASONRY DRILL BIT, AND SHALL BE A MINIMUM 1/4" DEEPER THAN THE REQUIRED EMBEDMENT DEPTH.
- ANCHORS NOTED HEREIN HAVE A TENSILE YIELD STRENGTH OF $F_y = 127.4$ ksi AND A TENSILE ULTIMATE STRENGTH OF $F_u = 189.7$ ksi.

ALLOWABLE ANCHOR CAPACITIES:

	EMBEDMENT	EDGE DISTANCE	SPACING	TENSION	SHEAR	
CONCRETE 3350 PSI MINIMUM	1"	1"	6" O.C.	150 LB	125 LB	
		1-3/4"	6" O.C.	165 LB	215 LB	
		2-1/2"	6" O.C.	190 LB	265 LB	
	1-3/4"	1"	1-1/2" O.C.	320 LB		
			3" O.C.	388 LB	178 LB	
			6" O.C.	390 LB	310 LB	
		1-3/4"	1-3/4"	6" O.C.	525 LB	450 LB
			2-1/2"	3" O.C.	314 LB	467 LB
			6" O.C.	625 LB	645 LB	
	2"	1"	6" O.C.	390 LB	310 LB	
		1-3/4"	6" O.C.	525 LB	450 LB	
		2-1/2"	6" O.C.	680 LB	645 LB	
C90 CONCRETE BLOCK	1-1/4"	1"	6" O.C.	156 LB	84 LB	
		1-3/4"	6" O.C.	232 LB	264 LB	
		2-1/2"	1-1/2" O.C.	101 LB	213 LB	
	3" O.C.		101 LB	247 LB		
	6" O.C.		244 LB	264 LB		
	1-5/8"	1"	6" O.C.	248 LB	108 LB	

* LINEAR INTERPOLATION MAY BE PERFORMED FOR ANCHOR CAPACITIES BETWEEN THE ANCHOR SPACINGS LISTED ABOVE.

VISIT ECALC.IO/21685

FOR SITE SPECIFIC DEVIATIONS & MORE INFORMATION ABOUT THIS DOCUMENT OR SCAN THIS QR CODE
VISIT ENGINEERINGEXPRESS.COM/STORE FOR ADDITIONAL PLANS, REPORTS & RESOURCES



DEWALT
701 EAST JOPPA ROAD
TOWNSON, MARYLAND 21286
(800) 524-3244

DEWALT 1/4" CRETE-FLEX SS4, 1/4" ULTRACON SS4, 1/4" AGGRE-GATOR CONCRETE & MASONRY ANCHORS
FLORIDA STATEWIDE APPROVAL #FL29068.1

REMARKS	DATE	DRWN	CHKD
INIT ISSUE	2/18/19	IRVN	FLB
2020-FBC	7/16/20	CCB	RWN

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ULTRACON[®] SS4

410 SERIES STAINLESS STEEL CONCRETE & MASONRY SCREW

1/4"Ø ULTRACON SS4 ALLOWABLE LOAD CAPACITIES:

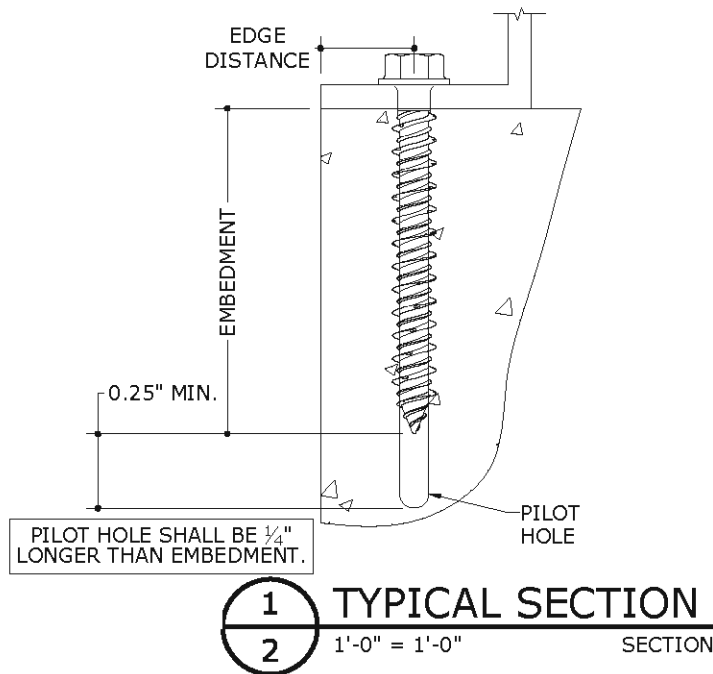
	EDGE DISTANCE	SPACING	EMBEDMENT	TENSION (LB)	SHEAR (LB)
HOLLOW BLOCK	1"	1-1/2"	1-1/4"	106	44
		3"	1-1/4"	124	72
	2-1/2"	1-1/2"	1-1/4"	106	89
		3"	1-1/4"	124	123
CONCRETE (2897 PSI MIN.)	1"	1-1/2"	1"	91	71
			1-3/4"	144	103
		3"	1"	163	74
	2-1/2"	1-1/2"	1-3/4"	328	136
			1"	191	194
		3"	1"	339	505
			1"	236	263
			1-3/4"	403	584
GROUT FILLED BLOCK	1"	1-1/2"	1-1/4"	137	56
			2"	218	56
		3"	1-1/4"	190	83
	2-1/2"	1-1/2"	2"	292	83
			1-1/4"	205	91
		3"	2"	218	180
			1-1/4"	212	200
			2"	386	302

NOTE:

- HOLLOW BLOCK SHALL CONFORM TO ASTM C-90 WITH A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.
- GROUT FILLED BLOCK SHALL CONFORM TO ASTM C-90 WITH A MINIMUM BLOCK COMPRESSIVE STRENGTH OF 2000 PSI AND MINIMUM GROUT COMPRESSIVE STRENGTH OF 1624 PSI
- ALLOWABLE LOAD CAPACITIES LISTED HEREIN ARE **NOT** VALID FOR CRACKED CONCRETE SUBSTRATES AS DETAILED IN ACI 355.2.

GENERAL NOTES:

- THIS PRODUCT HAS BEEN DESIGNED & TESTED IN ACCORDANCE WITH THE STRUCTURAL PROVISIONS OF THE FLORIDA BUILDING CODE SEVENTH EDITION (2020) FOR USE WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE, AND THE FOLLOWING STANDARDS: ASTM E488, ASTM C39, TAS 114, ASTM G85.
- ULTRACON SS4 SCREW ANCHORS SHALL BE 410 SERIES STAINLESS STEEL WITH A SILVER STALGARD CORROSION RESISTANT COATING, ANCHOR YIELD STRENGTH $F_y=164$ KSI, ANCHOR ULTIMATE STRENGTH $F_u=190$ KSI.
- ANCHOR INSTALLATION SHALL BE MADE IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS AND THIS APPROVAL.
- PILOT HOLES FOR ANCHORS TESTED WERE MADE WITH A $\frac{3}{16}$ " DRILL BIT WITH A DIAMETER OF $0.206 \pm 0.000/-0.008$.
- ALLOWABLE LOADS SHOWN HEREIN HAVE BEEN CALCULATED DIRECTLY FROM THE TEST REPORTS REFERENCED BELOW PER THE FOLLOWING:
 - ULTIMATE LOAD DIVIDED BY 4.0 FOR SOLID NON-CRACKED CONCRETE SUBSTRATES.
 - ULTIMATE LOAD DIVIDED BY 5.0 FOR HOLLOW BLOCK & GROUT FILLED BLOCK SUBSTRATES.
- NO ALLOWABLE STRESS INCREASE HAS BEEN USED IN PREPARATION OF THIS DOCUMENT.
- CONCRETE SHALL CONFORM TO ACI 301 SPECIFICATIONS, WITH STRENGTH PROPERTIES AS SPECIFIED HEREIN. HOLLOW AND GROUT-FILLED CONCRETE BLOCK SHALL CONFORM TO ASTM C-90.
- ANCHOR EDGE DISTANCE AND SPACING SHALL BE MEASURED FROM THE CENTERLINE OF EACH ANCHOR.
- ANCHOR EDGE DISTANCES, EMBEDMENT, AND SPACING BELOW THOSE SHOWN IN DESIGN TABLES HEREIN ARE NOT ACCEPTABLE.
- ALLOWABLE LOAD CAPACITIES TO SUBSTRATES THAT ARE NOT SHOWN IN THE DESIGN TABLES LISTED HEREIN ARE OUTSIDE THE SCOPE OF THIS CERTIFICATION AND SHALL BE DETERMINED BY A LICENSED PROFESSIONAL ENGINEER.
- ANCHOR VALUES LISTED HEREIN ARE DETERMINED THROUGH TESTING REPORT DATA AND CHECKED FOR CONSISTENCY WITH EACH TEST PERFORMED.
- REFERENCE THE FOLLOWING TEST REPORTS:
 - HURRICANE ENGINEERING & TESTING, INC.
 - #HETI-11-A650 (06/11/13)
 - #HETI-11-A666 (06/11/13)
 - #HETI-11-A674 (06/11/13)
 - #HETI-11-C164 (10/19/11)
 - #HETI-11-C162 (10/17/11)
 - #HETI-11-C163 (12/12/11)
 - #HETI-11-S100 (12/30/11)
 - #HETI-12-T100 (01/24/12)
 - #HETI-12-T101 (01/24/12)
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- ALTERATIONS, ADDITIONS OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE THIS CERTIFICATION.



1 TYPICAL SECTION
SECTION
1'-0" = 1'-0"

ULTRACON SS4 THREAD LENGTHS:

Length code*	Part length	Thread length
□	1 1/4"	1 1/8"
A	1 3/4"	1 5/8"
B	2 1/4"	1 7/8"
C	2 3/4"	1 7/8"
D	3 1/4"	1 7/8"
E	3 3/4"	1 7/8"
F	4"	1 7/8"

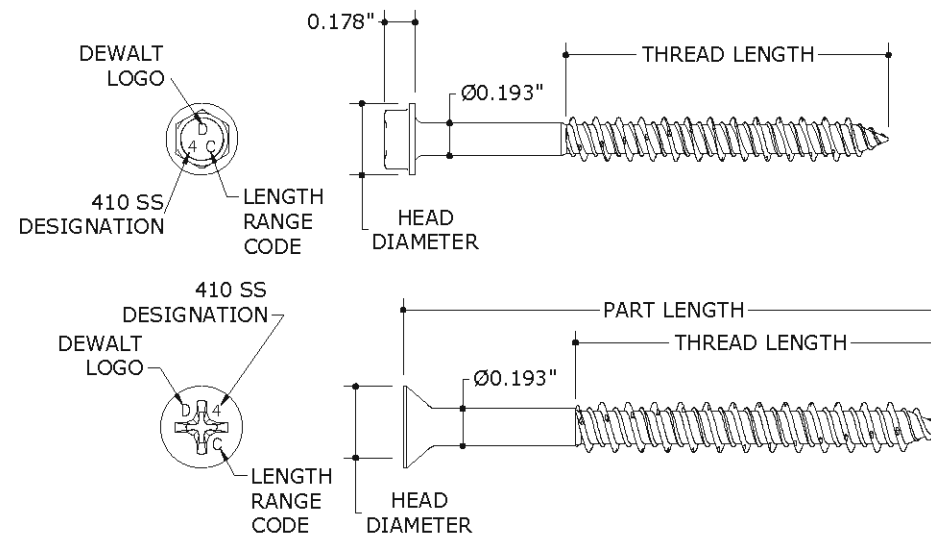
*LENGTH CODE IS MARKED ON TOP OF FASTENER HEAD, SEE ILLUSTRATION BELOW

DRIVE AND HEAD DIMENSIONS:

DRIVE/HEAD STYLE	DRIVE	HEAD DIAMETER
HEX WASHER HEAD (HWH)	5/16" HEX (AF)	0.415" NOM.
PHILLIPS FLAT HEAD (PFH)	#3 PHILLIPS	0.415" NOM.

THREAD AND SHANK DIMENSIONS:

FASTENER DIMENSION	DIAMETER
HIGH THREAD DIAMETER	0.257" NOM.
LOW THREAD DIAMETER	0.209" NOM.
MINOR DIAMETER (THREAD ROOT)	0.174" NOM.
UNTHREADED SECTION DIAMETER	0.193"



2 1/4"Ø ULTRACON SS4 SCREW
SIDE VIEW
N.T.S.

RICHARD NEET, P.E.
PE# 86488 CA#9885



ENGINEERING EXPRESS
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0560 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

DEWALT
701 EAST JOPPA ROAD
TOWNSON, MARYLAND 21286
(800) 524-3244
DEWALT 1/4" CRETE-FLEX SS4, 1/4" ULTRACON SS4, 1/4" AGGREGATOR CONCRETE & MASONRY ANCHORS
FLORIDA STATEWIDE APPROVAL #FL29068.1

REMARKS	DRWN	CHKD	DATE
INIT ISSUE	IRVN	FLB	2/18/19
2020-FBC	CCB	RWN	7/16/20

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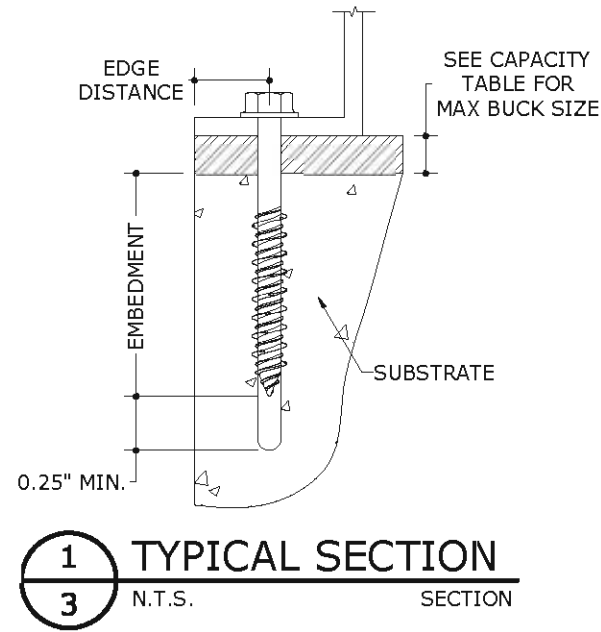
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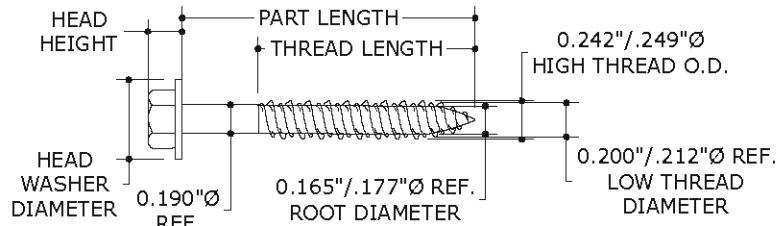
08/03/2020 - 8:39pm mckm

AGGRE-GATOR®

300 SERIES STAINLESS STEEL BI-METAL CONCRETE & MASONRY SCREW



1 TYPICAL SECTION
3 N.T.S. SECTION



2 1/4"Ø AGGRE-GATOR SCREW
3 N.T.S. SIDE VIEW

AGGRE-GATOR THREAD LENGTHS:

Length code*	Length range of anchor	Part length	Thread length
□	1 < 1 1/2	1 1/4"	1 1/8"
A	1 1/2 < 2	1 3/4"	1 3/4"
B	2 < 2 1/2	2 1/4"	1 3/4"
C	2 1/2 < 3	2 3/4"	1 3/4"
D	3 < 3 1/2	3 1/4"	1 3/4"
E	3 1/2 < 4	3 3/4"	1 3/4"
F	4 < 4 1/2	4"	1 3/4"

*LENGTH CODE IS MARKED ON TOP OF FASTENER HEAD, SEE ILLUSTRATION BELOW



HEAD MARKING GUIDE:

"3" - 300 SERIES (18-8) STAINLESS STEEL DESIGNATION
"C" - LENGTH CODE
D - DEWALT LOGO

1/4"Ø AGGRE-GATOR ALLOWABLE LOAD CAPACITIES:

	EDGE DISTANCE	SPACING	EMBEDMENT	TENSION (LB)	SHEAR (LB)	
HOLLOW BLOCK	2"	3"	1-1/4"	156	187	
	4"	3"	1-1/4"	176	211	
GROUT FILLED BLOCK	2"	3"	1-1/4"	166	207	
			2"	325	473	
	4"	1-1/2"	1-1/4"	149	282	
			2"	403	477	
CONCRETE (2220 PSI MIN.)	1-1/4"	3"	1"	118	N/A	
			1-3/8"	289	N/A	
			1-3/4"	294	N/A	
	1-1/2"	3"	1"	118	204	
			1-3/8"	289	259	
			1-3/4"	294	305	
	2-1/2"	1-1/2"	1"	194	204	
			1-3/8"	251	259	
		3"	1-1/2"	N/A	200 †	
			1-3/4"	N/A	199 ††	
	3"	1-1/2"	1"	194	226	
			1-3/8"	251	413	
			1-3/4"	319	488	
	CONCRETE (3275 PSI MIN.)	1-1/4"	3"	1"	248	N/A
				1-3/8"	294	N/A
				1-3/4"	294	N/A
1-1/2"		3"	1"	248	255	
			1-3/8"	294	305	
			1-3/4"	294	305	
2-1/2"		1-1/2"	1"	251	255	
			1-3/8"	251	305	
		3"	1-1/2"	1"	251	226
			1-3/8"	251	510	
				1-3/4"	319	515

NOTE:

- HOLLOW & GROUT FILLED BLOCK SHALL CONFORM TO ASTM C-90 MINIMUM BLOCK.
- AGGRE-GATOR ALLOWABLE LOAD CAPACITIES LISTED HEREIN ARE **NOT** VALID FOR CRACKED CONCRETE SUBSTRATES AS DETAILED IN ACI 355.2.

† EMBEDMENT DEPTH INTO 2220 PSI CONCRETE, WITH 3/4" MAX THICK UNANCHORED WOOD BUCK LOCATED BETWEEN THE CONCRETE AND SIDE MEMBER.

†† EMBEDMENT DEPTH INTO 2220 PSI CONCRETE, WITH 1/2" MAX THICK UNANCHORED WOOD BUCK LOCATED BETWEEN THE CONCRETE AND SIDE MEMBER.

AGGRE-GATOR HEAD DIMENSIONS:

HEAD STYLE	WASHER DIAMETER	HEAD HEIGHT	ACROSS FLATS
HEX WASHER HEAD	0.420"	0.190"	0.312"
HEX FLANGE HEAD	0.620"	0.225"	0.312"
PHILLIPS TRIMFIT HEAD	0.430"*	0.155"	N/A

*DIAMETER AT FLAT PORTION OF TRIMFIT HEAD

GENERAL NOTES:

- THIS PRODUCT HAS BEEN DESIGNED & TESTED IN ACCORDANCE WITH THE STRUCTURAL PROVISIONS OF THE FLORIDA BUILDING CODE SEVENTH EDITION (2020) FOR USE WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE, AND THE FOLLOWING STANDARDS: ASTM E488, ASTM C39, TAS 114.
- AGGRE-GATOR SCREW ANCHORS SHALL BE 300 SERIES (18-8) STAINLESS STEEL WITH A STALGARD GB (GALVANIC BARRIER) CORROSION RESISTANT COATING, ANCHOR YIELD STRENGTH $F_y=57$ KSI, ANCHOR ULTIMATE STRENGTH $F_u=96$ KSI.
- ANCHOR INSTALLATION SHALL BE MADE IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS AND THIS NOTICE OF ACCEPTANCE.
- PILOT HOLES FOR ANCHORS TESTED WERE MADE WITH A 3/16" DRILL BIT WITH A DIAMETER OF 0.206"Ø (+0.000/-0.008).
- ALLOWABLE LOADS SHOWN HEREIN HAVE BEEN CALCULATED DIRECTLY FROM THE TEST REPORTS REFERENCED BELOW PER THE FOLLOWING:
 - ULTIMATE LOAD DIVIDED BY 4.0 FOR SOLID NON-CRACKED CONCRETE SUBSTRATES.
 - ULTIMATE LOAD DIVIDED BY 5.0 FOR HOLLOW BLOCK & GROUT FILLED BLOCK SUBSTRATES.
- NO ALLOWABLE STRESS INCREASE HAS BEEN USED IN PREPARATION OF THIS DOCUMENT.
- CONCRETE SHALL CONFORM TO ACI 301 SPECIFICATIONS, WITH STRENGTH PROPERTIES AS SPECIFIED HEREIN. HOLLOW AND GROUT-FILLED CONCRETE BLOCK SHALL CONFORM TO ASTM C-90.
- ANCHOR EDGE DISTANCE AND SPACING SHALL BE MEASURED FROM THE CENTERLINE OF EACH ANCHOR.
- ANCHOR EDGE DISTANCES, EMBEDMENT, AND SPACING BELOW THOSE SHOWN IN DESIGN TABLES HEREIN ARE NOT ACCEPTABLE.
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- ANCHOR VALUES LISTED HEREIN ARE DETERMINED THROUGH TESTING REPORT DATA AND CHECKED FOR CONSISTENCY WITH EACH TEST PERFORMED.
- REFERENCE THE FOLLOWING TEST REPORTS:
 - HURRICANE ENGINEERING & TESTING, INC.
 - #HETI-08-A222 (02/28/08)
 - #HETI-08-A226 (02/28/08)
 - #HETI-08-A230 (02/28/08)
 - #HETI-08-A236 (02/28/08)
 - #HETI-08-A242 (02/28/08)
 - #HETI-08-A248 (02/28/08)
 - #HETI-08-A260 (02/28/08)
 - #HETI-08-A275 (03/17/08)
 - #HETI-08-A277 (03/17/08)
 - #HETI-08-C100A (03/25/08)
 - #HETI-08-C101A (03/25/08)
 - #HETI-08-C102A (03/25/08)
 - SUB-TROPICAL TESTING SERVICE.
 - #STTS 08001 (05/25/08)
 - #STTS 08003 (06/21/08)

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RICHARD NEET, P.E.
PE# 86488 CA#9885



ENGINEERING EXPRESS!
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0560 | (866) 396-9999
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ENGINEERINGEXPRESS.COM

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FLORIDA STATEWIDE APPROVAL #FL29068.1

REMARKS	DRWN/CHKD	DATE
INIT ISSUE	RYN/FLB	2/18/19
2020-FBC	CCB/RWN	7/16/20

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