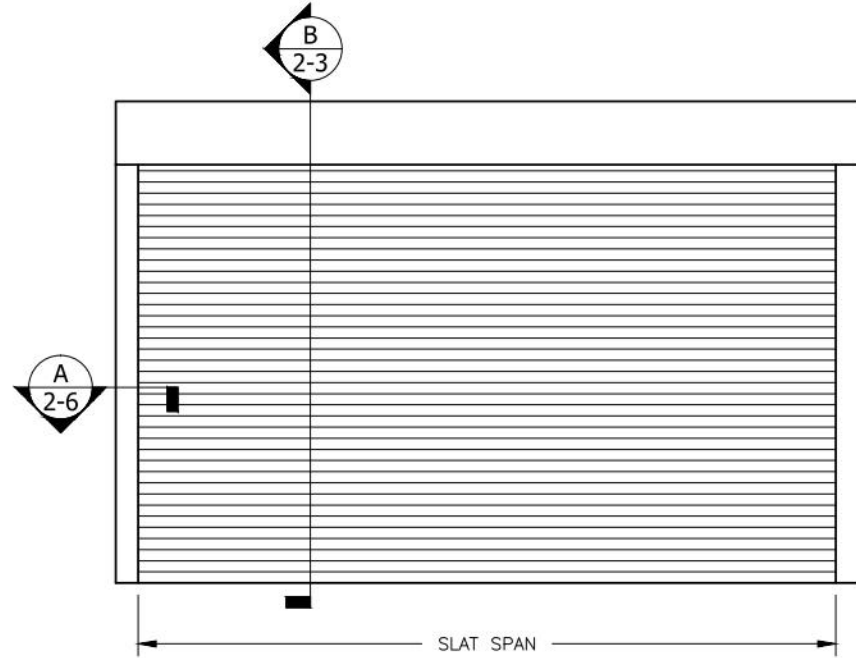
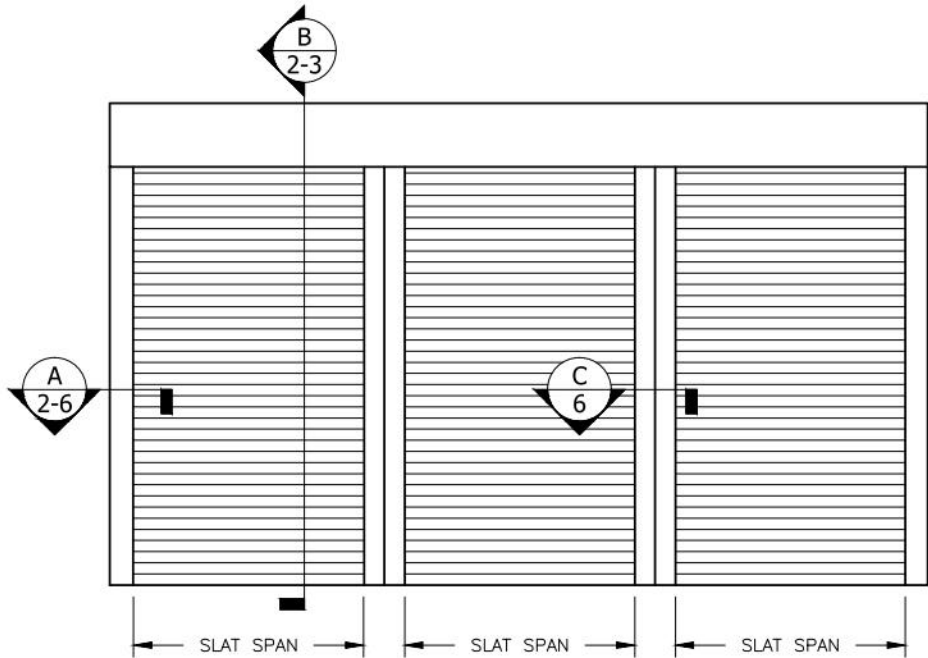




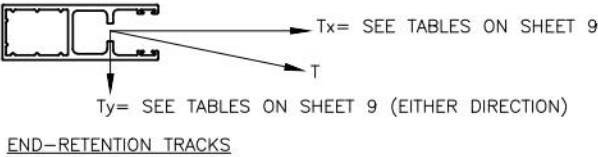
TYPICAL SINGLE UNIT ELEVATION
SINGLE SPAN UNIT INSTALLATION - N.T.S.



TYPICAL MULTIPLE UNIT ELEVATION
INTERMEDIATE MULLION REQUIRED FOR INSTALLATION - N.T.S.

GENERAL NOTES:

- TKJ ENGINEERING, LLC. HAS NO CONTROL OF THE MANUFACTURING, PERFORMANCE, OR INSTALLATION OF THIS PRODUCT. THESE GENERIC PLANS WERE ENGINEERED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES AND TEST DATA PROVIDED BY THE MANUFACTURER.
- THE ROLL-UP SHUTTERS SHOWN ON THIS PRODUCT EVALUATION DOCUMENT HAS BEEN DESIGNED IN ACCORDANCE WITH THE 5TH EDITION (2014) FLORIDA BUILDING CODE (FBC) AND THE 2009 INTERNATIONAL BUILDING CODE (IBC). THESE ROLL-UP SHUTTERS SHALL NOT BE INSTALLED IN HIGH VELOCITY HURRICANE ZONES (MIAMI-DADE COUNTY/BROWARD COUNTY). ROLL-UP SHUTTERS INSTALLED IN WIND ZONE 4 (SEE FBC SECTION 1609.1.2.2), OR ESSENTIAL FACILITIES SHALL MEET THE MINIMUM SEPARATION TO GLASS. DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1609 OF THE ABOVE REFERENCED CODES, IN ACCORDANCE WITH ASCE 7-10, AND FOR A BASIC WIND SPEED AS REQUIRED BY THE JURISDICTION WHERE THE ROLL-UP SHUTTERS WILL BE INSTALLED. THE ROLL-UP SHUTTERS ADEQUACY FOR IMPACT, DEFLECTION, AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609.1.2 OF THE ABOVE REFERENCED CODES AND AS PER TAS 201, 202, 203 AND ASTM E1886 & E1996 AT FENESTRATION TESTING LABORATORY, INC. (SEE LIST OF REPORTS).
- LIMITATIONS OF USE:
 - THIS PRODUCT SHALL NOT BE USED IN HIGH VELOCITY HURRICANE ZONES (SEE FBC SECTION 202),
 - THIS PRODUCT IS QUALIFIED AS "NON POROUS" THEREFORE GLASS SEPARATION IS NOT REQUIRED EXCEPT FOR THE FOLLOWING LOCATIONS.
 - ESSENTIAL FACILITIES AS DEFINED IN ASCE 7-10
 - WHERE THE SPECIFYING AUTHORITY HAS SPECIFIED OPTIONAL ADDITIONAL PASS/FAIL CRITERIA IN ACCORDANCE WITH ASTM E1996 FOR WIND ZONE 4 AS DEFINED IN ASTM E1996 WITH MODIFICATION BY THE FBC/IBC SECTION 1609.1.2.2 (FBC: LOCATIONS WITH ULTIMATE WIND SPEED GREATER THAN 170 MPH).
 - INSTALLATION IN THESE LOCATIONS SHALL MEET THE MINIMUM SEPARATION TO GLASS TABLES ON SHEET 9.
 - INSTALLATION WITH INTERMEDIATE, END, AND CORNER MULLIONS REQUIRE A FLORIDA PRODUCT APPROVAL FOR USE WITH THIS TYPE OF SHUTTER SYSTEM.
 - INSTALLATIONS SHALL NOT EXCEED THE MAXIMUM ALLOWABLE STRESS DESIGN (ASD) DESIGN RATINGS AND MAXIMUM SIZE LIMITS BELOW. ULTIMATE DESIGN WIND LOADS DETERMINED BY THE FBC AND ASCE 7-10 SHALL BE REDUCED TO ASD BY MULTIPLYING 0.6 (SEE FBC SECTION 1609.1.2.4).
 - 30 PSF MAX. PRESSURE @ 288" MAX. WIDTH
 - 130 PSF MAX. PRESSURE @ 95" MAX. WIDTH
 - SEE TABLES ON SHEETS 10 THROUGH 15
 - IMPACT LEVEL D; 9-1/4 LB LARGE MISSILE IMPACT.
 - ANCHORING OR LOADING CONDITIONS OTHER THAN THOSE SHOWN IN THESE DETAILS ARE NOT PART OF THIS APPROVAL
 - INCREASE IN ALLOWABLE STRESS (1.33) HAS NOT BEEN INCORPORATED INTO THE DESIGN OF THIS PRODUCT.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THE EXISTING STRUCTURE IS DESIGNED TO SUPPORT THE LOADS FROM THE SHUTTER SYSTEM AND MULLIONS. EXISTING STRUCTURES NOT ABLE TO SUPPORT THESE LOADS SHALL BE EVALUATED AS A SITE SPECIFIC PROJECT. SEE NOTE 4 OF PRODUCT EVALUATION NOTES.



- ALL ALUMINUM EXTRUSIONS SHALL BE 6063-T6 ALLOY (UNLESS OTHERWISE NOTED OR CAN BE REPLACED WITH 6061-T6 ALLOY).
- SHUTTERS MAY BE MOTOR, TAPE PULLEY, OR GEAR DRIVEN.
- SHUTTER MANUFACTURE'S LABELS SHALL BE IN ACCORDANCE WITH SECTION 1710.8 OF THE FLORIDA BUILDING CODE.

PRODUCT EVALUATION NOTES:

- THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; I.E. WHERE THE SITE CONDITIONS DEVIATE FROM THE P.E.D.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE SELECTION, PURCHASE, AND INSTALLATION OF THIS PRODUCT BASED ON THIS PRODUCT EVALUATION PROVIDED AND SHALL NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT.
- THIS PRODUCT EVALUATION DOCUMENT WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.
- SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA REGISTERED ENGINEER OR ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.E.D. THE ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE P.E.D. ENGINEER, SHALL SUBMIT SITE SPECIFIC DRAWINGS FOR REVIEW.

ANCHOR & FASTENING NOTES:

- ALL FASTENERS SHALL BE CORROSION RESISTANT COATED CARBON STEEL AS PER DIN 50018 OR STAINLESS STEEL 304 OR 316 SERIES WITH 50 KSI YIELD POINT AND 90 KSI ULTIMATE TENSILE STRENGTH.
- NO EMBEDMENT INTO NON-STRUCTURAL COMPONENTS SUCH AS, STUCCO, TILE, SIDING, ETC. SHALL BE CONSIDERED AS PART OF THE EMBEDMENT.
- THE ANCHOR SPACING AND DESIGN PRESSURES ARE VALID FOR EDGE DISTANCES AND MINIMUM EMBEDMENT SHOWN ON SHEET 9. THE MINIMUM EDGE DISTANCE FOR THE 1/4-14 & 5/16-24 DRILL-FLEX SCREW IS 1/2" AND SHALL BE ATTACHED TO 6063-T6 ALUMINUM OR A36 STEEL (OR BETTER).

EVALUATION BASED ON:
FENESTRATION TESTING LABORATORY, INC.

LABORATORY No. 5424
DATE: NOVEMBER 7, 2007
REPORT NO. 1
FILE NUMBER 07-374
TESTING PROTOCOL: TAS 201, 202, 203
MAXIMUM WIDTH TESTED=290.25"
DESIGN PRESSURE = 45.0 PSF
MINIMUM WIDTH TESTED=150.5"
DESIGN PRESSURE = 90.0 PSF
STRUCTURAL LOAD = 135 PSF

LABORATORY No. 7112
DATE: OCTOBER 19, 2012
PROJECT NO. 12-4213
FILE NUMBER 12-374
TESTING PROTOCOL: TAS 201, 203 &
ASTM E1886 & E1996
MINIMUM WIDTH TESTED= 107.75"
DESIGN PRESSURE = 140.0 PSF

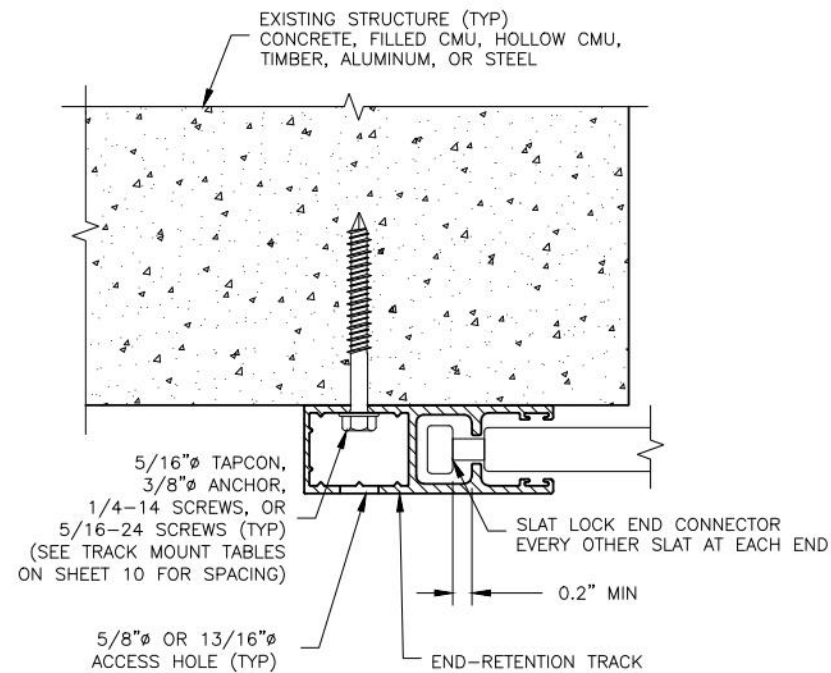
REVISIONS	DATE	#



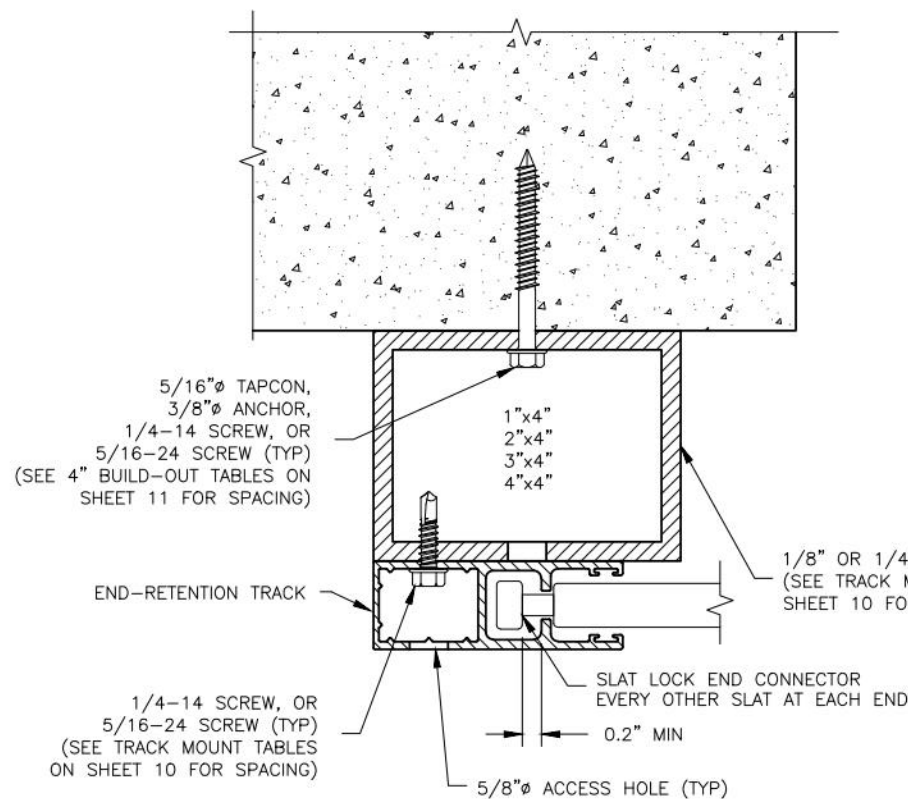
AHT 58MM SHUTTER

TKJ Engineering, LLC.	15-0801
1505 AUTUMN CREEK DRIVE, RIVERVIEW, FL 33569 TEL: 239.260.0020; FAX: 239.260.0023 E-MAIL: TKJENGINEERING@GMAIL.COM CERTIFICATE OF AUTHORIZATION NUMBER: 28582	PROJ. #:
DATE: 4/25/15	SCALE: N.T.S.
DRAWN BY: TKJ	PROJ. #:

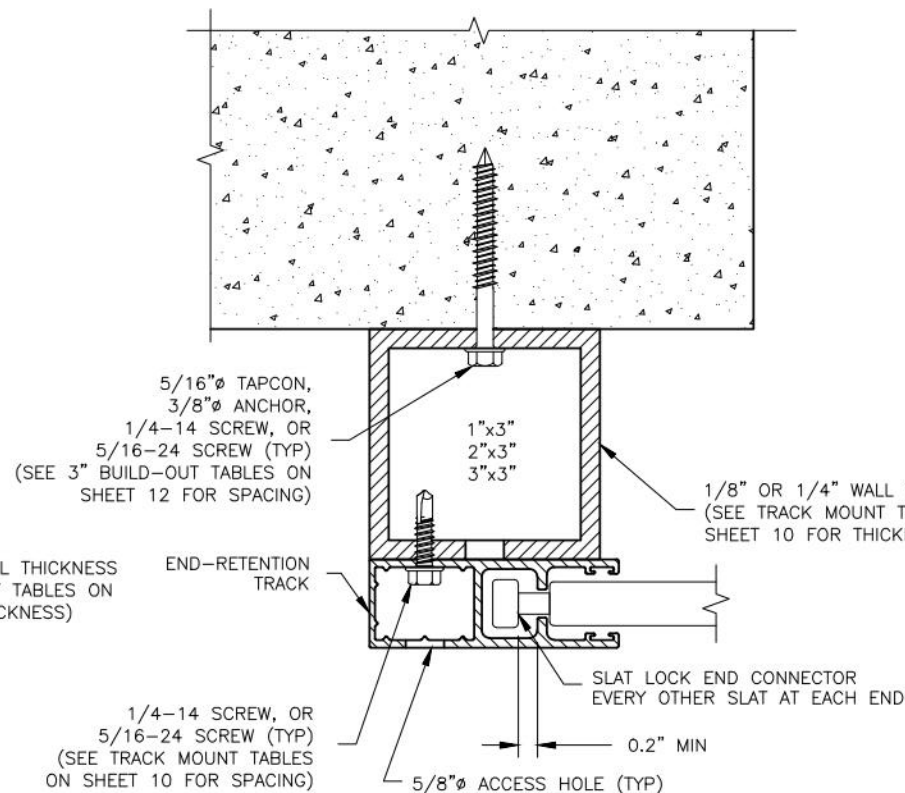




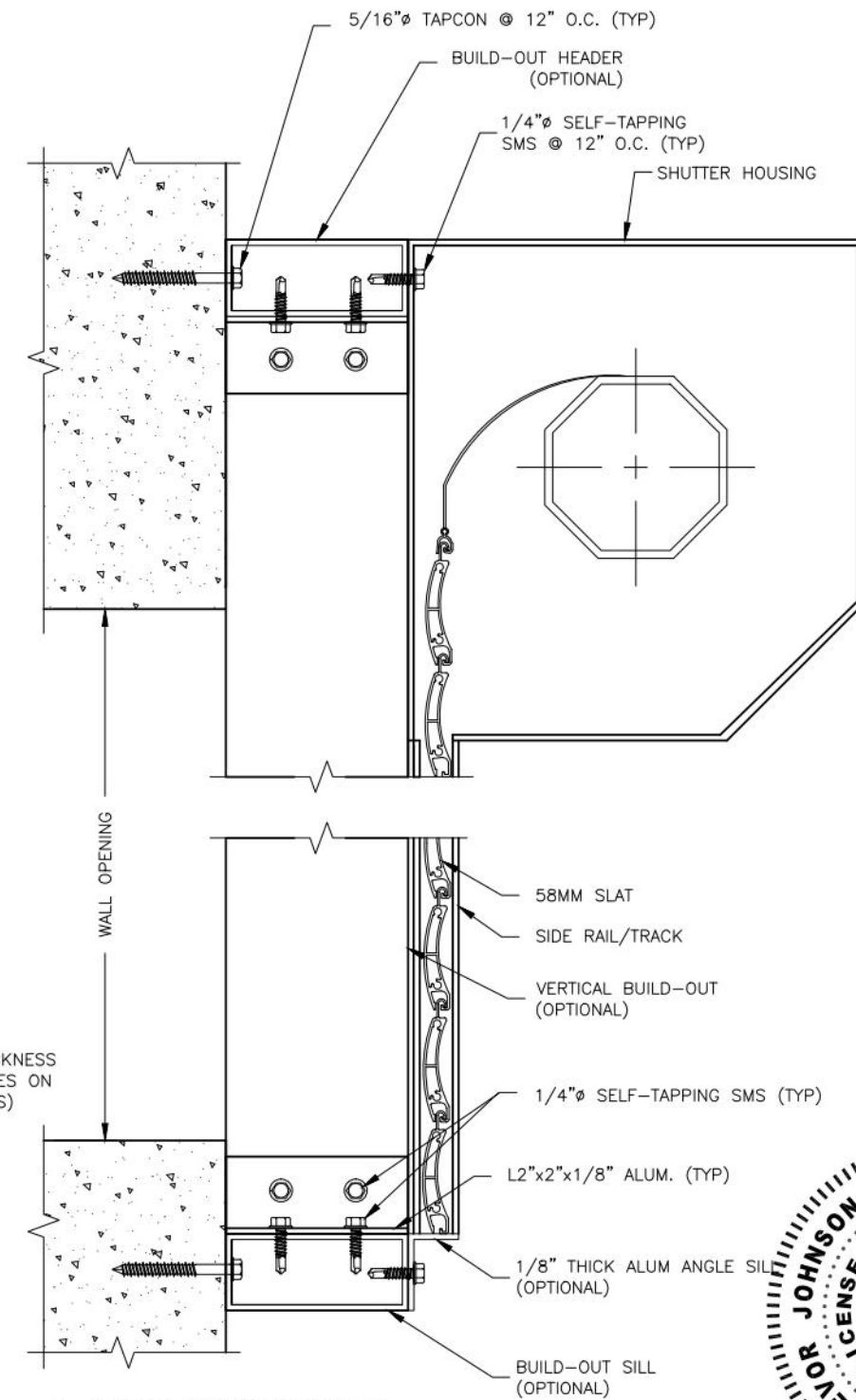
A WALL MOUNT (OPTION 1)
3 1/4" END-RETENTION TRACK - N.T.S.



A 4" BUILD-OUT (OPTION 2A)
END-RETENTION INSTALLATION - N.T.S.



A 3" BUILD-OUT (OPTION 2B)
END-RETENTION INSTALLATION - N.T.S.



B BUILD-OUT SECTION
END-RETENTION INSTALLATION - N.T.S.

NOTE: ACCESS HOLES FOR 3/8" ANCHORS ARE 13/16"Ø

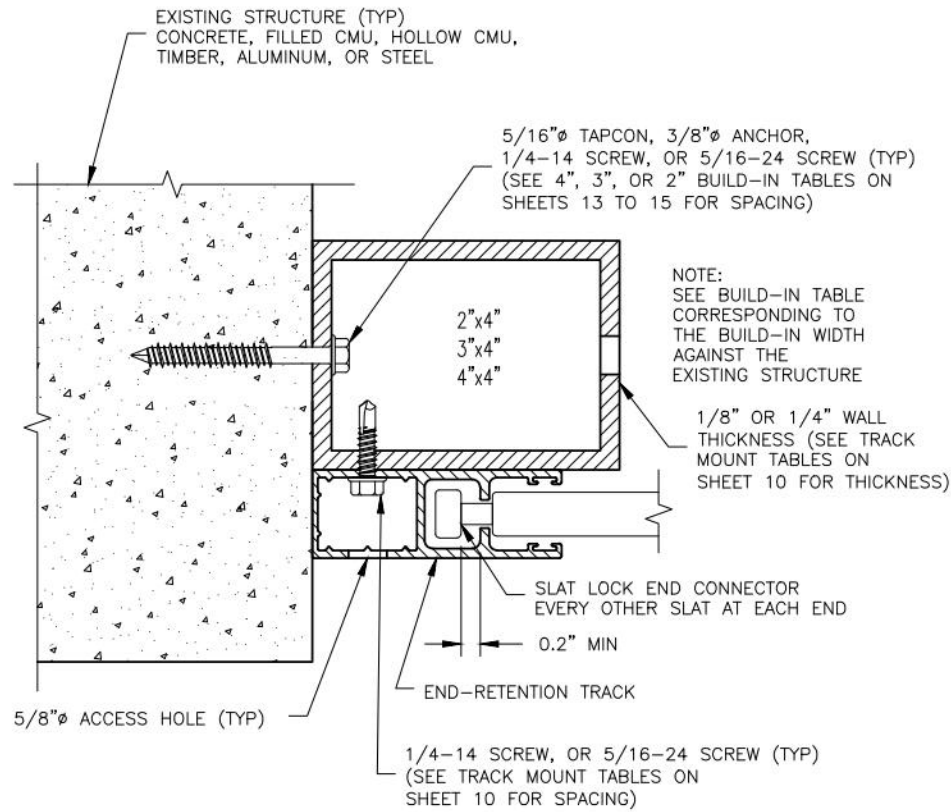
#	DATE	REVISIONS



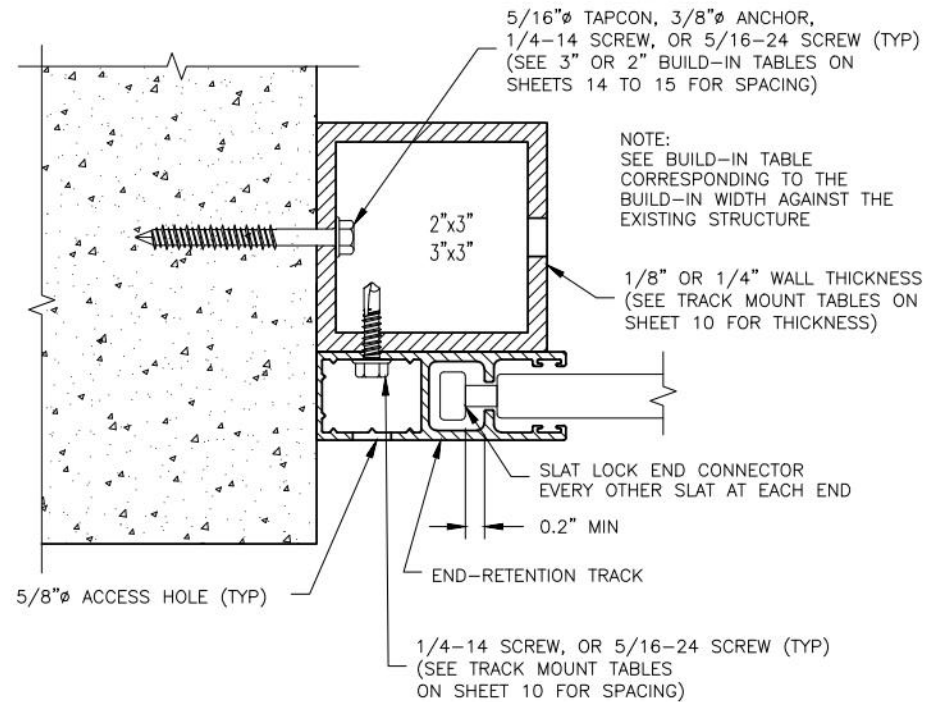
AHT 58MM SHUTTER

TK Engineering, LLC.	15-0801
1500 AUTUMN CREEK DRIVE, RIVERVIEW, FL 33569	PROJ. #:
TEL: 813.404.7649; FAX: 813.404.7649; EMAIL: TKENGINEERING@VERIZON.NET	SCALE: N.T.S.
CERTIFICATE OF AUTHORIZATION NUMBER: 28582	DRAWN BY: TKJ
DATE: 4/25/15	DATE: 4/25/15

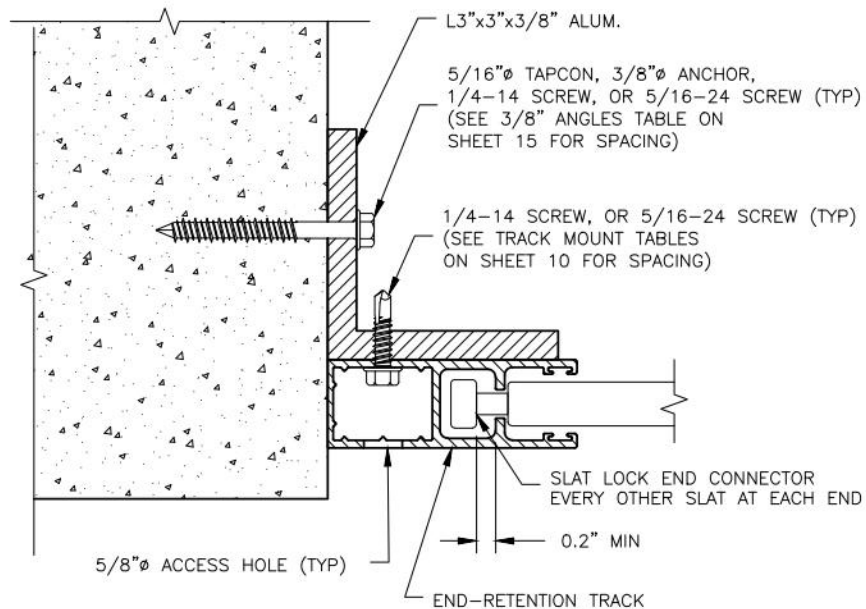




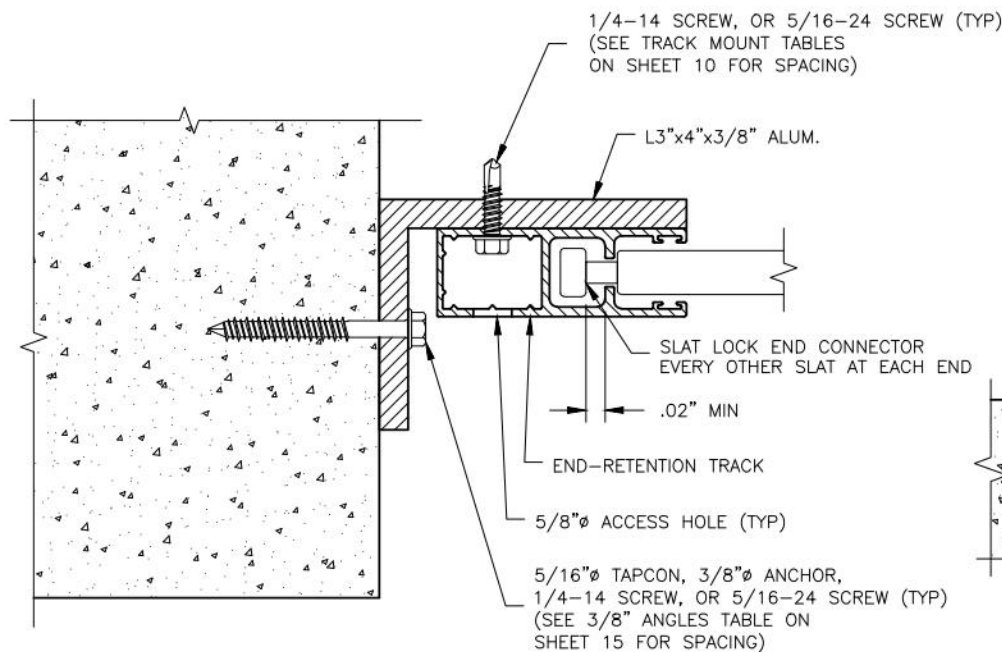
A 4", 3", OR 2" BUILD-IN (OPTION 3A)
END-RETENTION INSTALLATION - N.T.S.



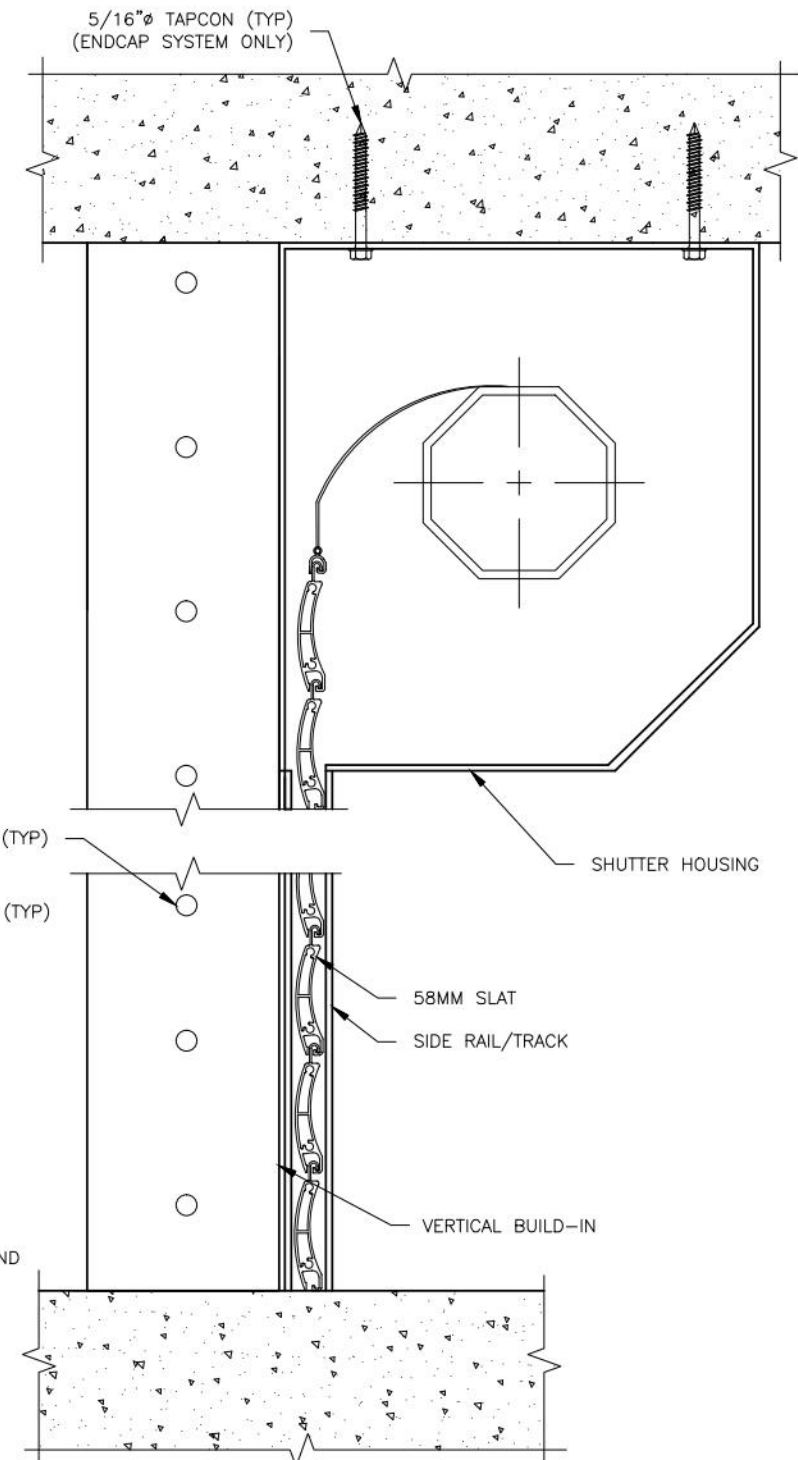
A 3", OR 2" BUILD-IN (OPTION 3B)
END-RETENTION INSTALLATION - N.T.S.



A L3x3x3/8 ANGLE BUILD-IN (OPTION 4A)
END-RETENTION INSTALLATION - N.T.S.



A L3x4x3/8 ANGLE BUILD-IN (OPTION 4B)
END-RETENTION INSTALLATION - N.T.S.



B BUILD-IN SECTION
END-RETENTION INSTALLATION - N.T.S.

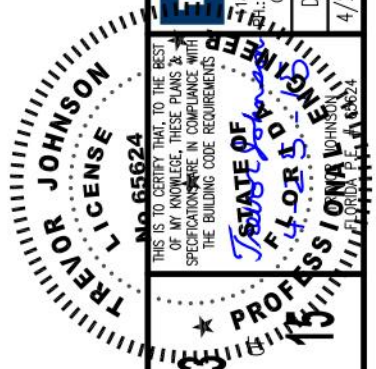
NOTE: ACCESS HOLES FOR 3/8" ANCHORS ARE 13/16"

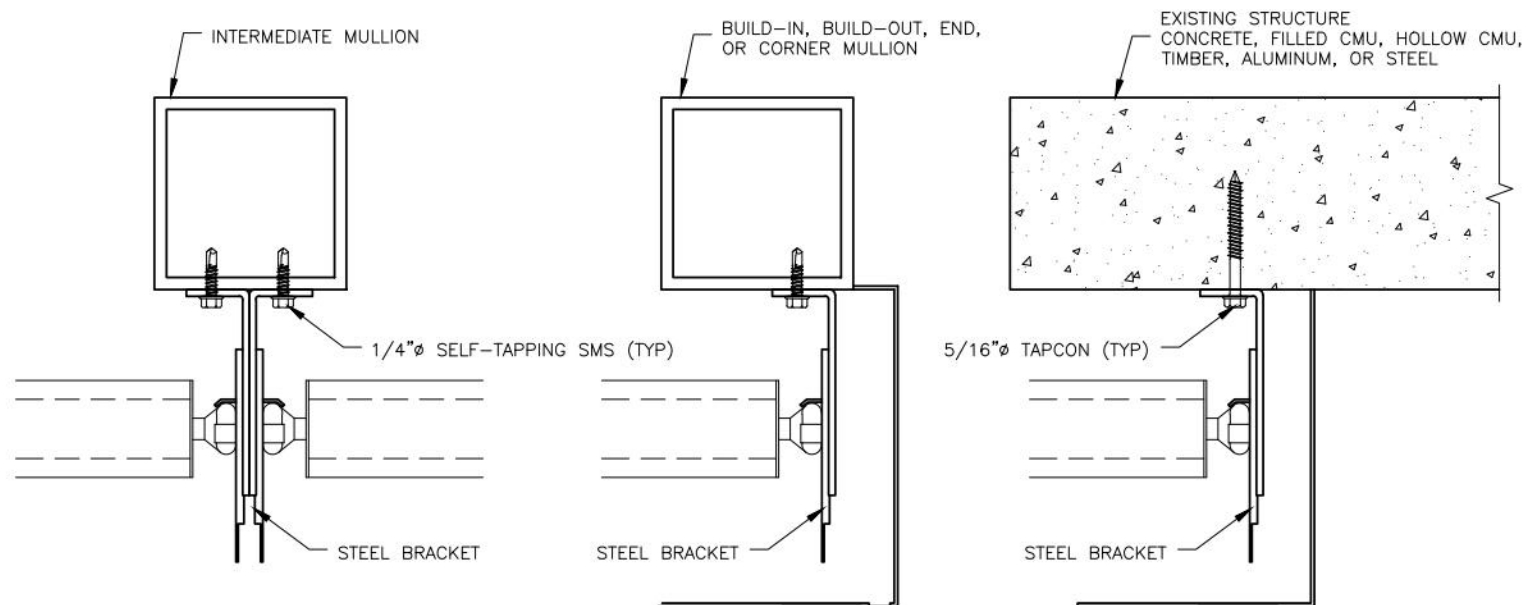
REVISIONS	DATE	#



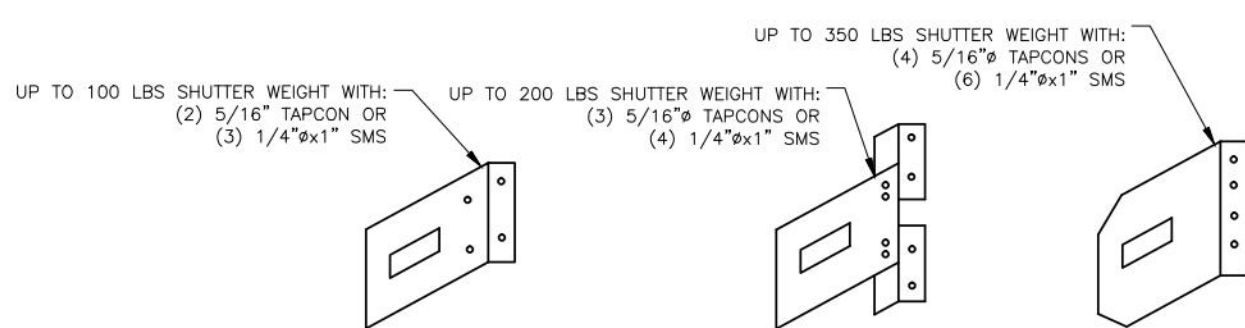
AHT 58MM SHUTTER

TKJ Engineering, LLC.	835 AUTUMN CREEK DRIVE, RIVERVIEW, FL 33569 TEL: 813.404.7649; EM: TKJENGINEERING@GMAIL.COM CERTIFICATE OF AUTHORIZATION NUMBER: 28582	PROJ. #:	15-0801
DATE:	4/25/15	SCALE:	N.T.S.
DRAWN BY:	TKJ		

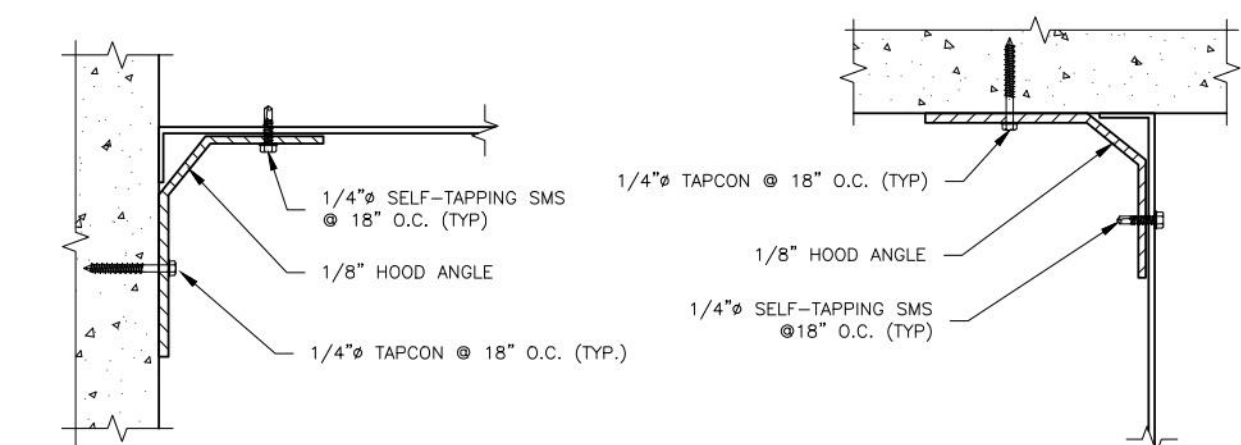




MOUNTING BRACKET INSTALLATION
END-RETENTION INSTALLATION - N.T.S.

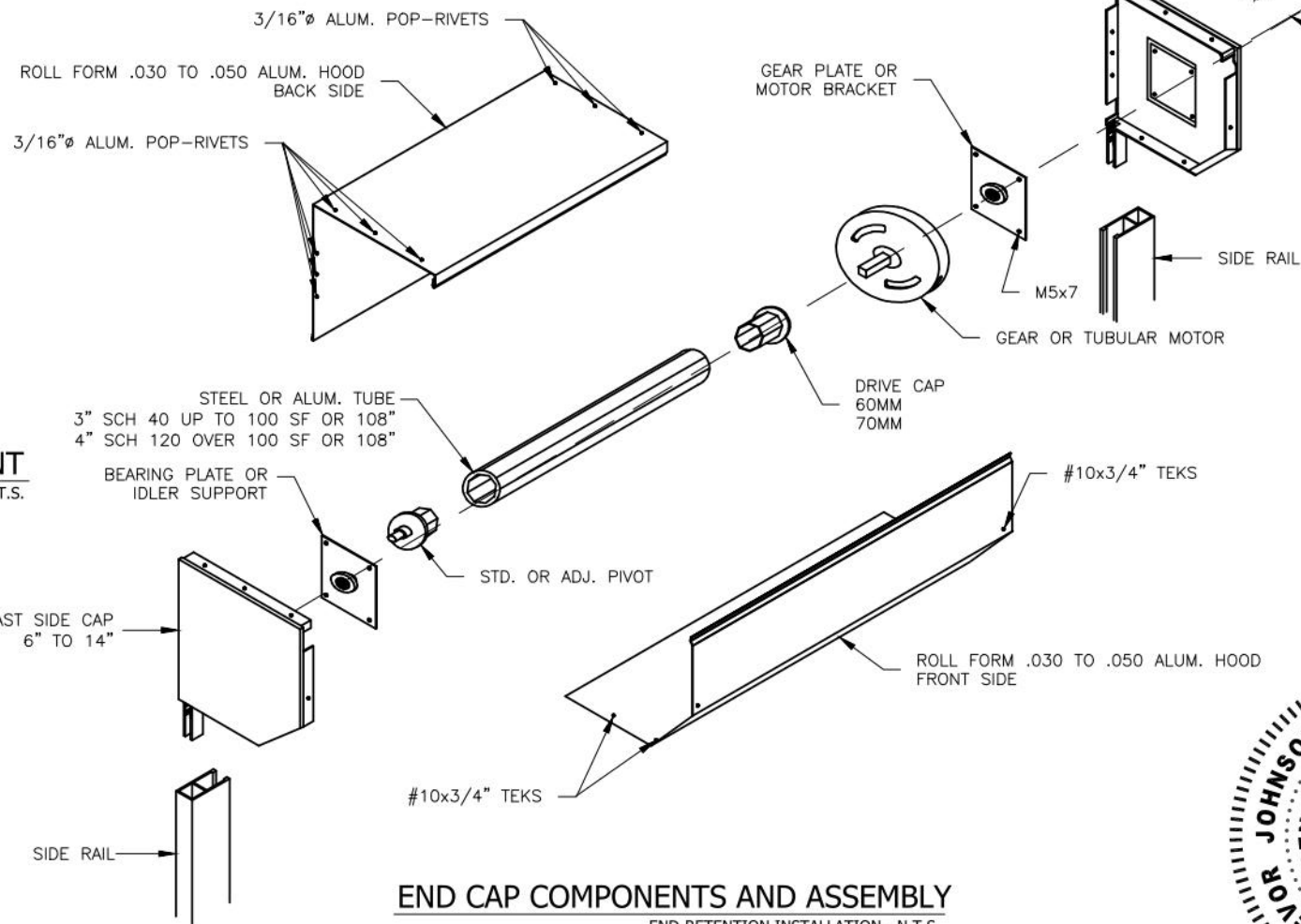


MOUNTING BRACKET
END-RETENTION INSTALLATION - N.T.S.

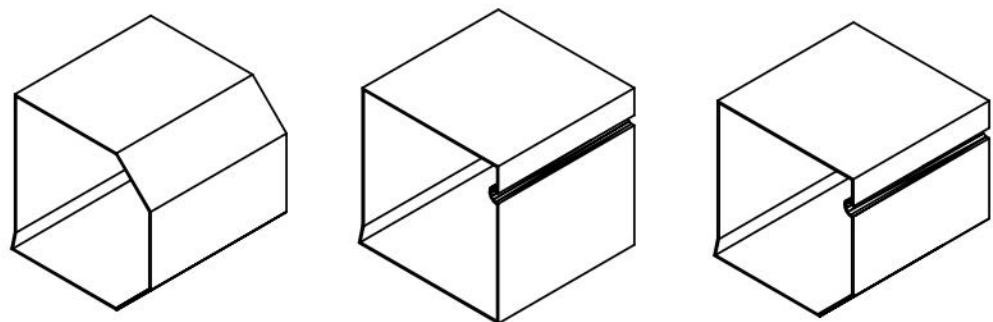


CUSTOM HOOD WALL ATTACHMENT
END-RETENTION INSTALLATION - N.T.S.

CUSTOM HOOD CEILING ATTACHMENT
END-RETENTION INSTALLATION - N.T.S.



END CAP COMPONENTS AND ASSEMBLY
END-RETENTION INSTALLATION - N.T.S.



ALUMINUM HOOD COVER
END-RETENTION INSTALLATION - N.T.S.

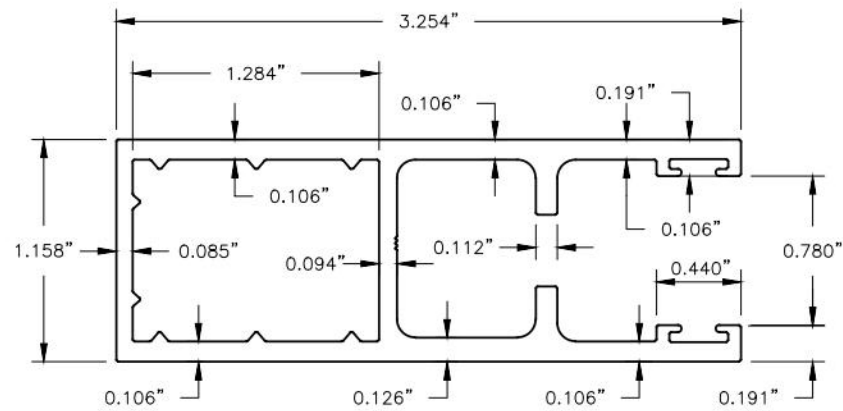
REV	DATE	DESCRIPTION

AHT
ADVANCED HURRICANE TECHNOLOGY
6063 JAMES LANE, NAPLES, FL 34109
PHONE: 239.260.0020; FAX: 239.260.0023
WWW.AHT-USA.NET

AHT 58MM SHUTTER

TEJ Engineering, LLC.	15-0801
155 AUTUMN CREEK DRIVE, RIVERVIEW, FL 33569	PROJ. #:
TEL: 239.260.0020; FAX: 239.260.0023	SCALE:
EMAIL: TKEENGINEERING@GMAIL.COM	DRAWN BY: TKJ
CERTIFICATE OF AUTHORIZATION NUMBER: 28582	DATE: 4/25/15

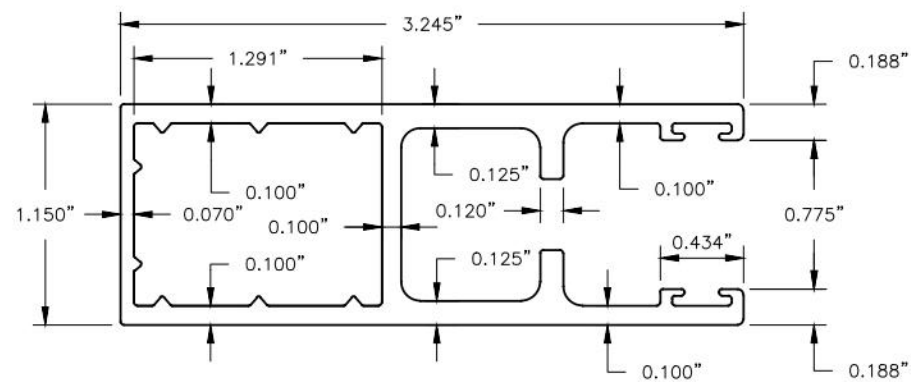
TREBOR JOHNSON
LICENSE
No. 65624
THIS IS TO CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, THESE PLANS & SPECIFICATIONS ARE IN COMPLIANCE WITH THE BUILDING CODE REQUIREMENTS OF THE STATE OF FLORIDA.
4 OF 15



5050-H112 ALUMINUM 3 1/4" SIDE RAIL

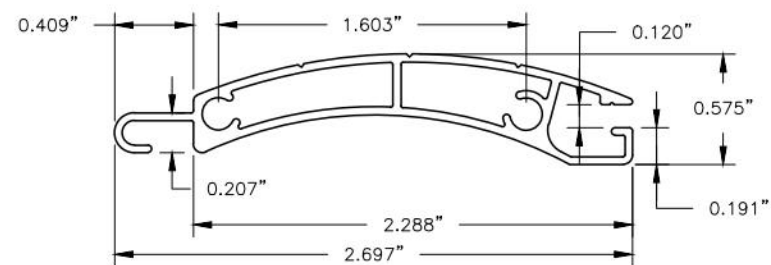
3 1/4" END-RETENTION STANDARD TRACK - SCALE 1:1

NOTES: FOR USE WITH SPANS UP TO 108"



6063-T6 ALUMINUM 3 1/4" SIDE RAIL

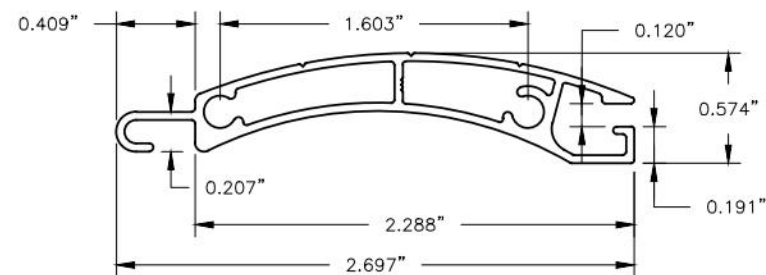
3 1/4" END-RETENTION STANDARD TRACK - SCALE 1:1



6063-T6 ALUMINUM 58MM SLAT

END-RETENTION SLAT - SCALE 1:1

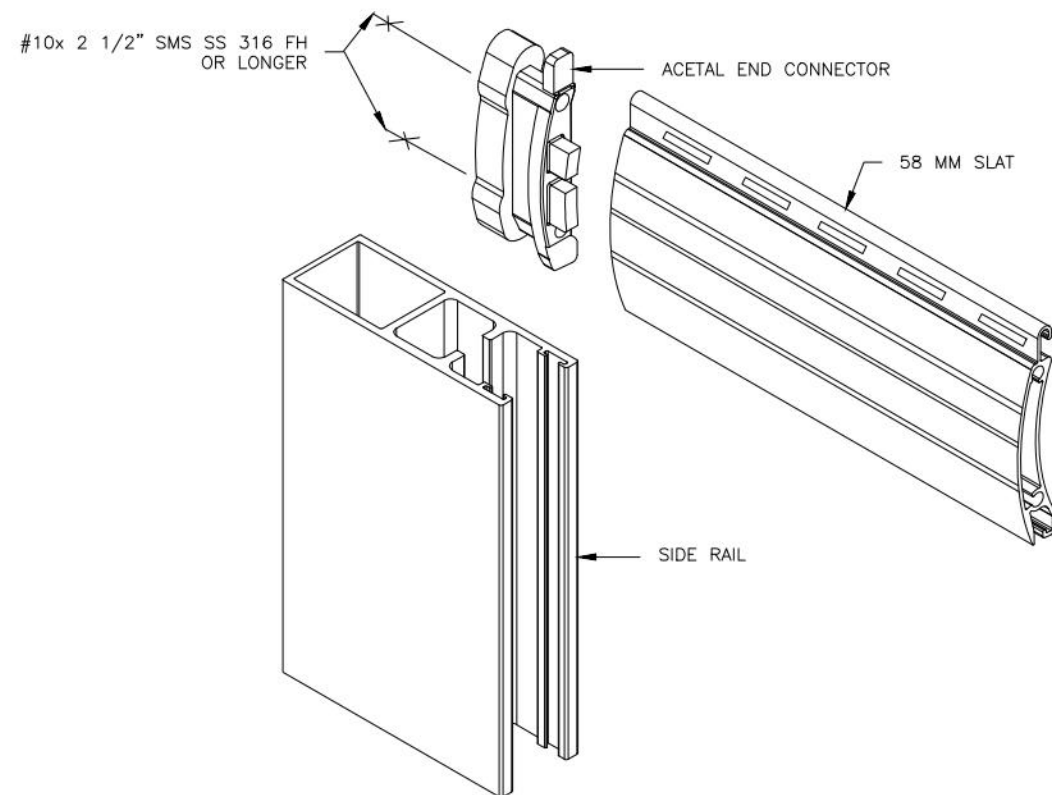
NOTES: FOR USE WITH ALL SPANS
MODULES OF ELASTICITY E = 10,100 KSI
MOMENT OF INERTIA I = .042 IN⁴/FT
SECTIONAL AREA A = 1.772 IN²/FT
SLACK (SLIP) Slack = .25±.04 IN



5050-H112 ALUMINUM 58MM SLAT

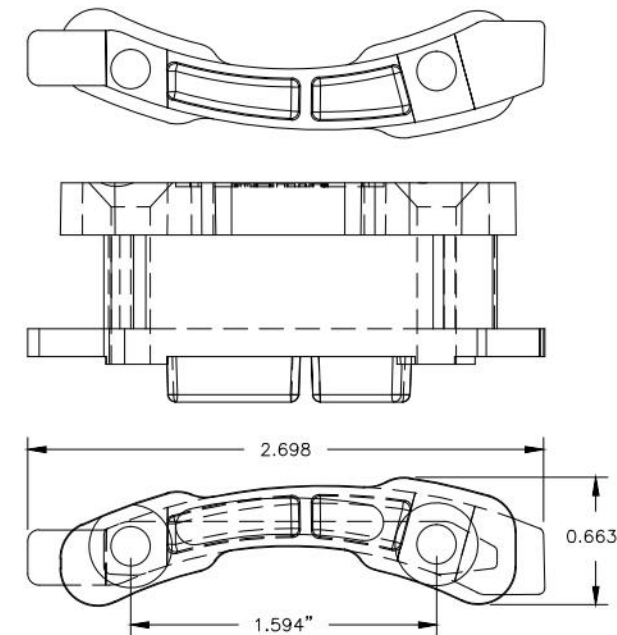
END-RETENTION SLAT - SCALE 1:1

NOTES: FOR USE WITH SPANS UP TO 108"
MODULES OF ELASTICITY E = 10,100 KSI
MOMENT OF INERTIA I = .042 IN⁴/FT
SECTIONAL AREA A = 1.772 IN²/FT
SLACK (SLIP) Slack = .25±.04 IN



END CONNECTOR DETAIL

END-RETENTION INSTALLATION - N.T.S.



SLAT LOCK END CONNECTOR

ACETAL END-RETENTION INSTALLATION - SCALE 1:1

NOTES: NYLON FOR USE WITH SPANS UP TO 108"

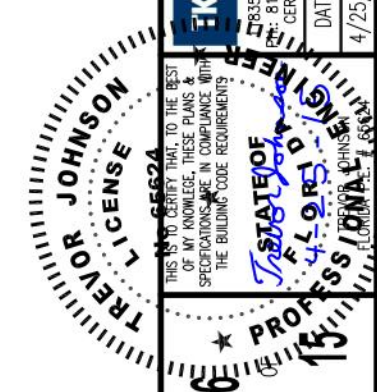
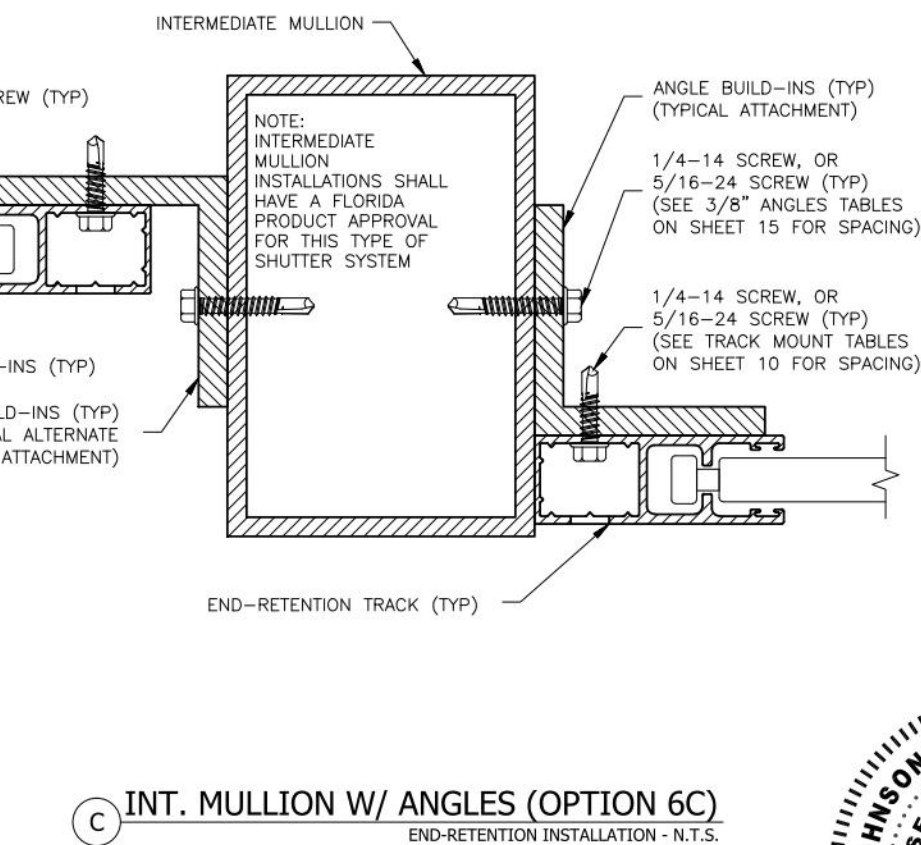
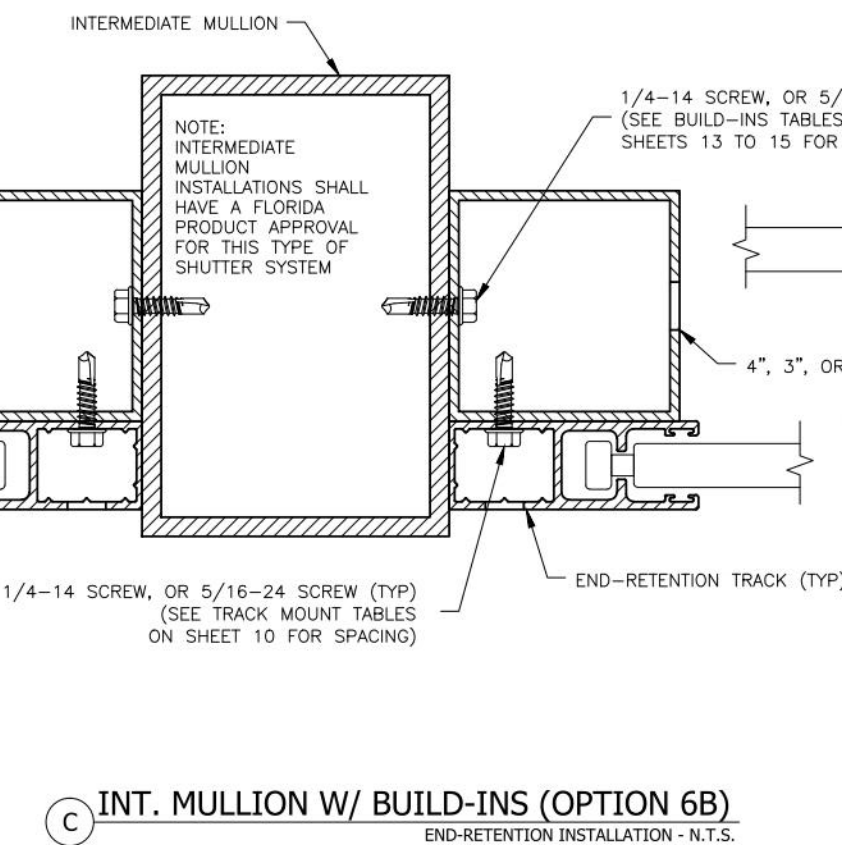
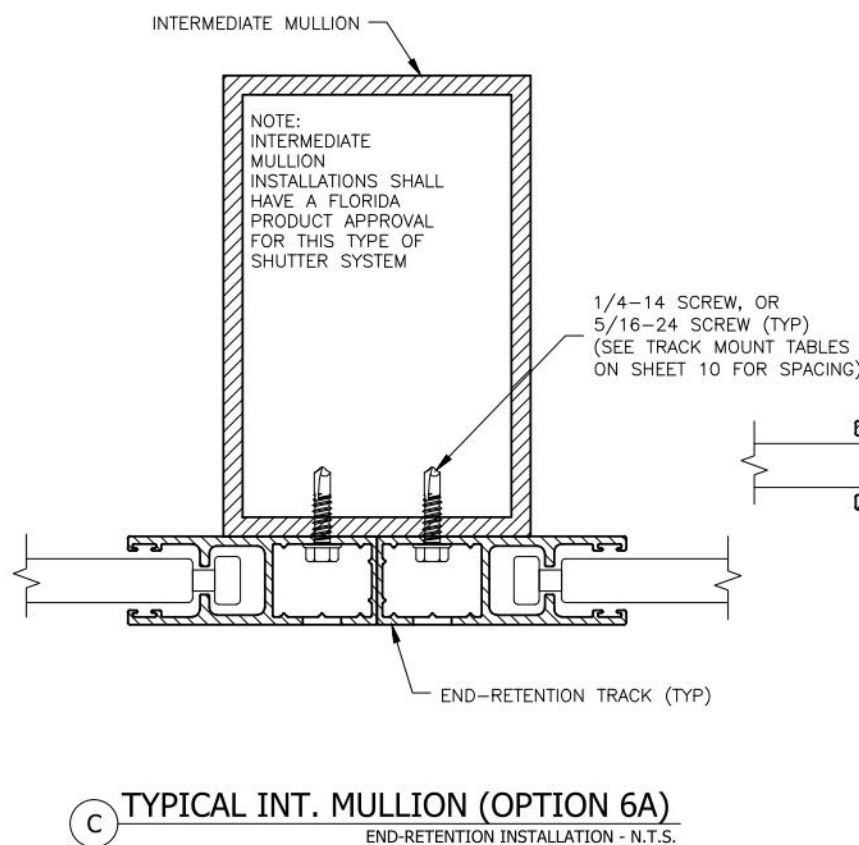
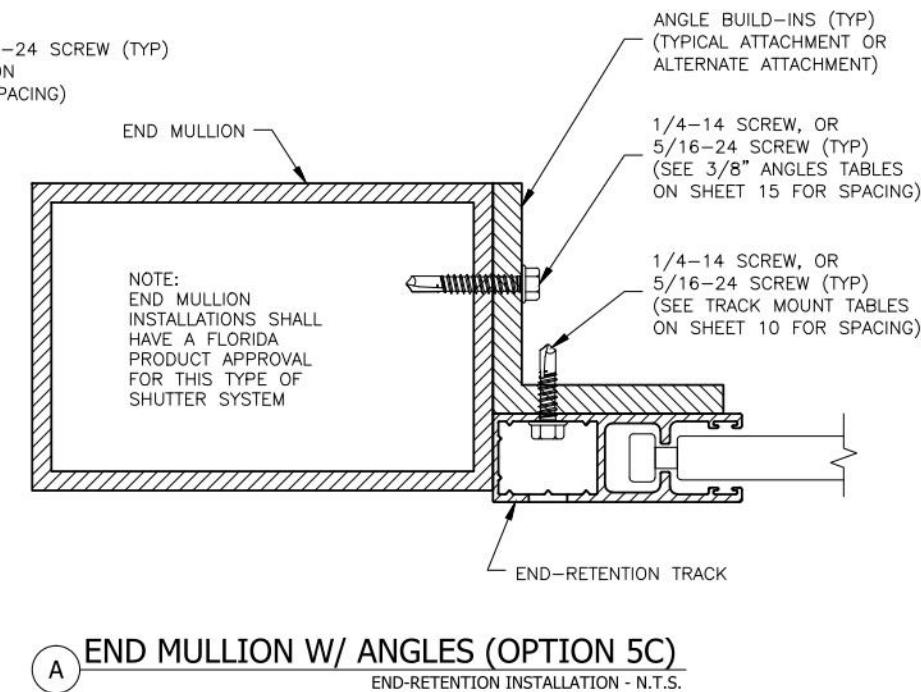
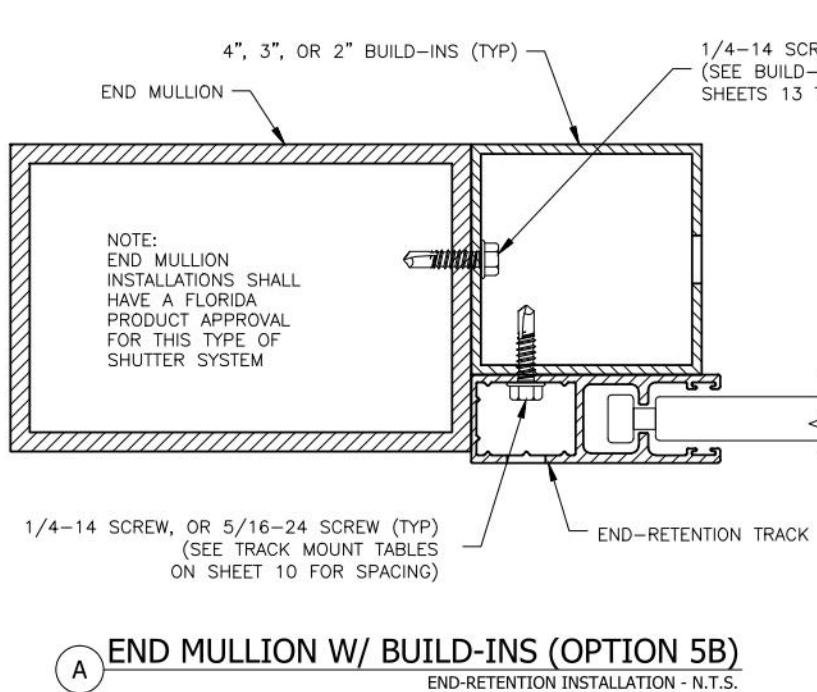
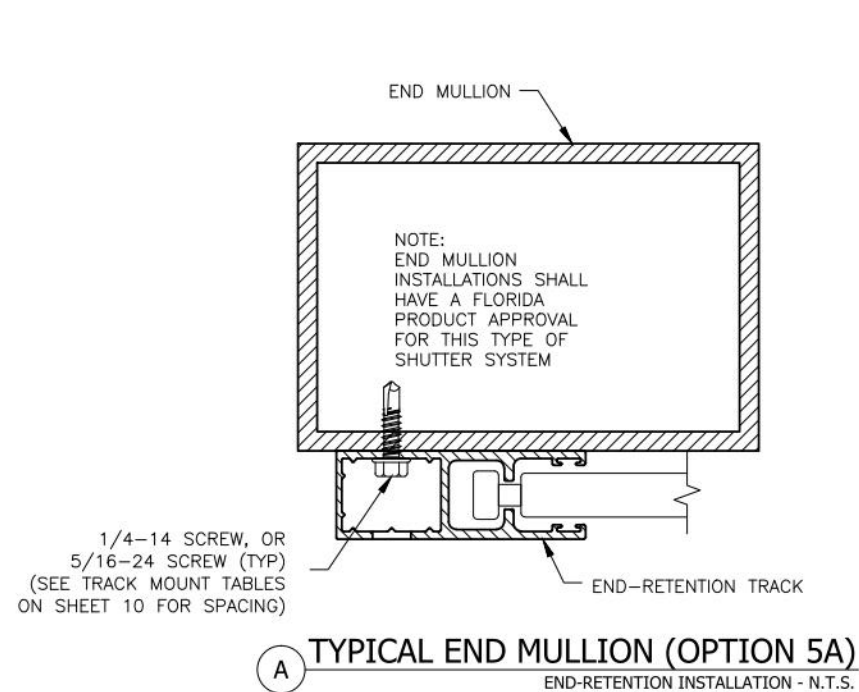
#	DATE	REVISIONS



AHT 58MM SHUTTER

TKJ Engineering, LLC.	15-0801
1535 AUTUMN CREEK DRIVE, RIVERVIEW, FL 33569 TEL: 239.260.0020; FAX: 239.260.0023 E-MAIL: TKJENGINEERING@AHT-USA.NET CERTIFICATE OF AUTHORIZATION NUMBER: 28582	PROJ. #:
DATE: 4/25/15	SCALE: N.T.S.
DRAWN BY: TKJ	DATE: 4/25/15





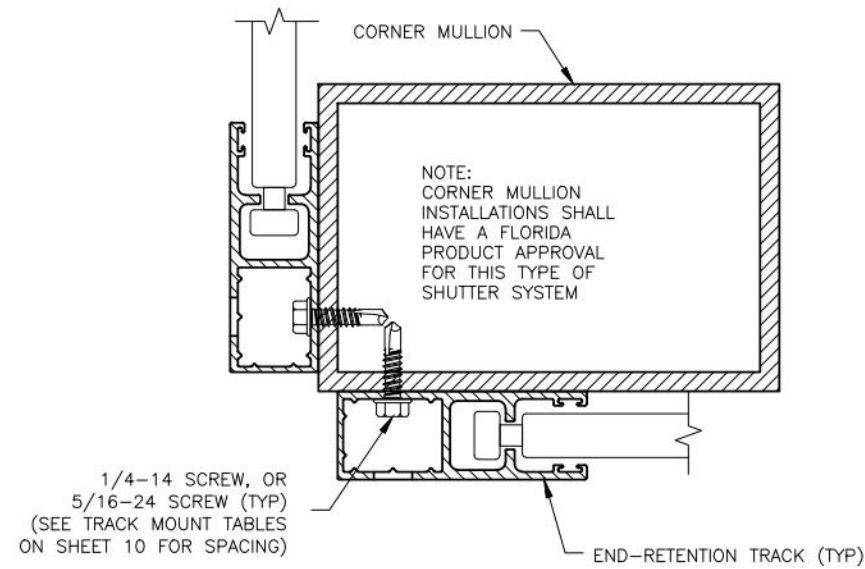
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#	DATE



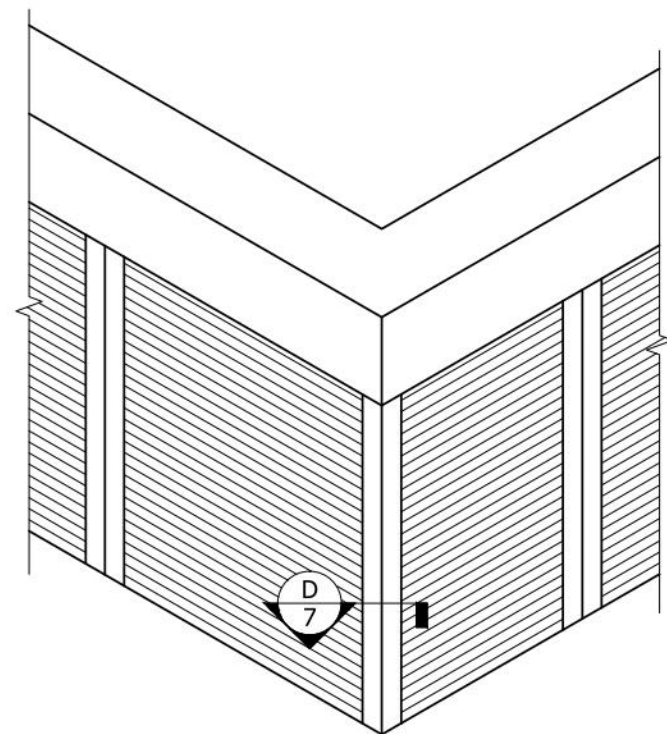
ADVANCED HURRICANE TECHNOLOGY
6063 JAMES LANE, NAPLES, FL 34109
PHONE: 239.260.0020; FAX: 239.260.0023
WWW.AHT-USA.NET

AHT 58MM SHUTTER

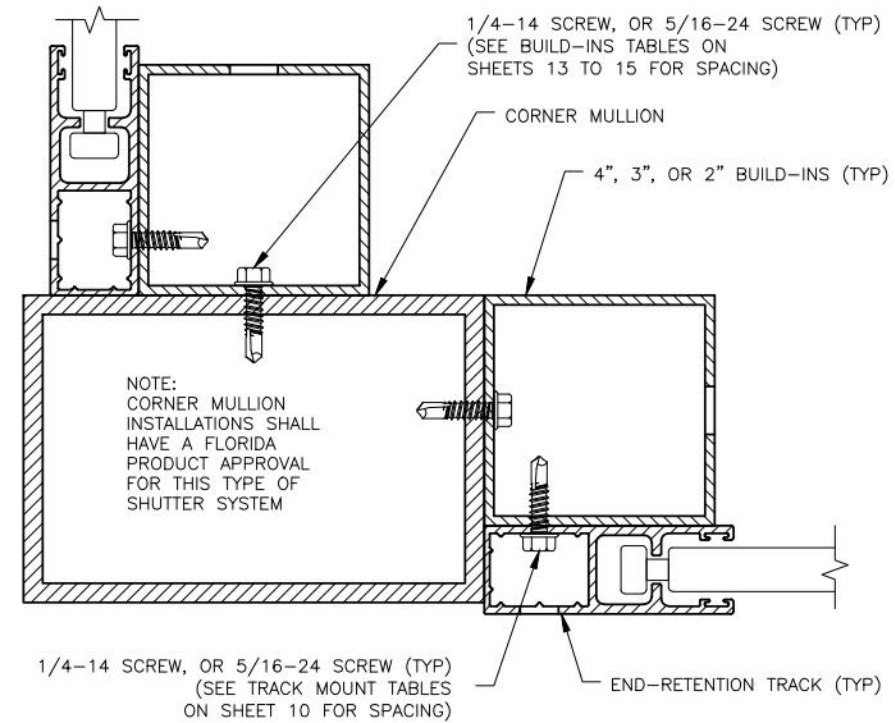
TKJ Engineering, LLC.	
18835 AUTUMN CREEK DRIVE, RIVERVIEW, FL 33569 TEL: 813.404.7649; EM: TKJENGINEERING@GMAIL.COM CERTIFICATE OF AUTHORIZATION NUMBER: 28582	PROJ. #: 15-0801
DATE: 4/25/15	SCALE: N.T.S.
DRAWN BY: TKJ	PROF. #:



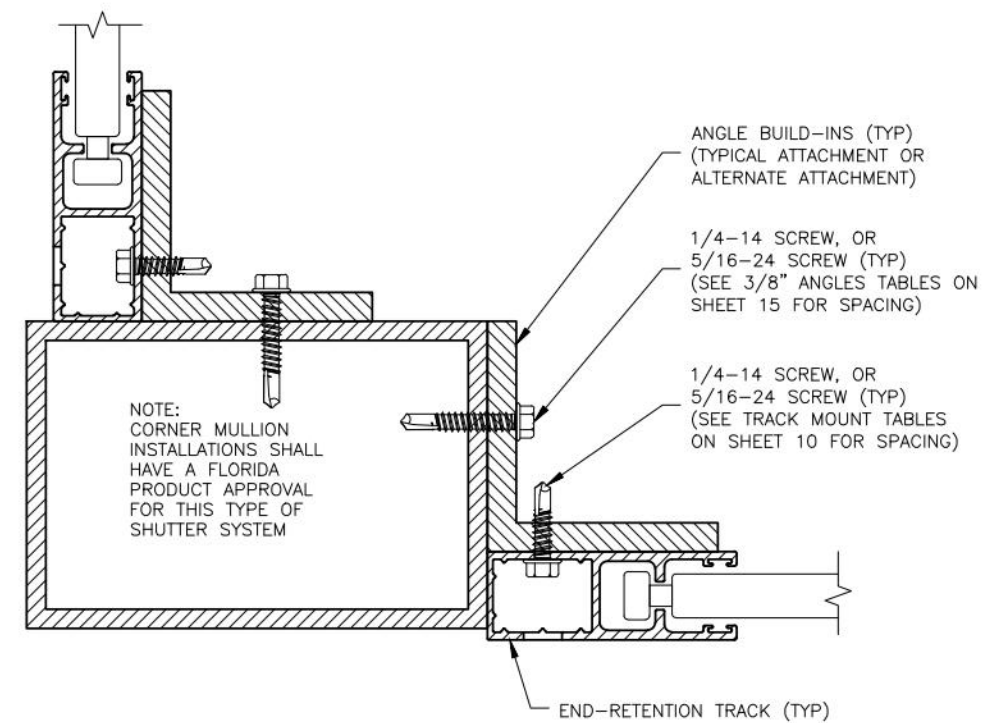
D TYPICAL CORNER MULLION (OPTION 7A)
END-RETENTION INSTALLATION - N.T.S.



CORNER MULLION ELEVATION
SINGLE OR MULTIPLE MULLION INSTALLATIONS - N.T.S.



D CORNER MULLION W/ BUILD-INS (OPTION 7B)
END-RETENTION INSTALLATION - N.T.S.



D CORNER MULLION W/ ANGLES (OPTION 7C)
END-RETENTION INSTALLATION - N.T.S.

#	DATE	REVISIONS

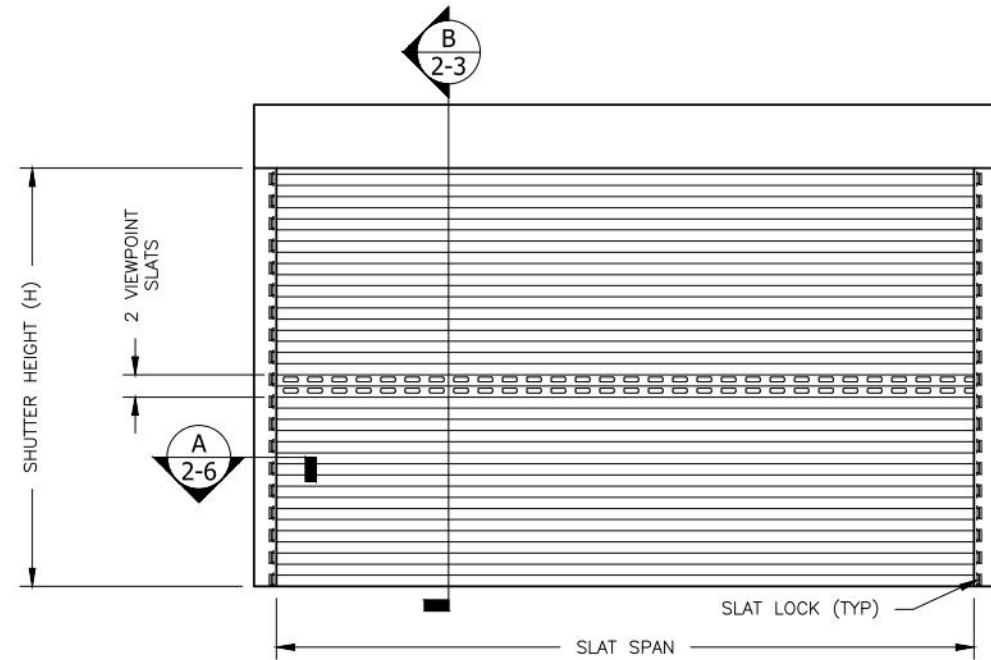
AHT
ADVANCED HURRICANE TECHNOLOGY
6063 JAMES LANE, NAPLES, FL 34109
PHONE: 239.260.0020; FAX: 239.260.0023
WWW.AHT-USA.NET

AHT 58MM SHUTTER

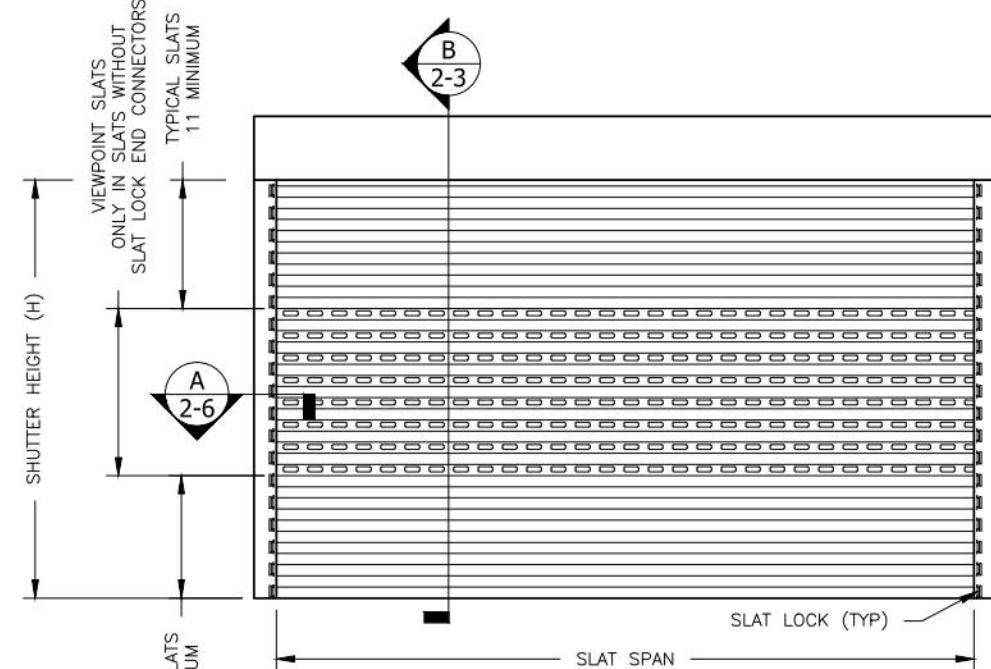
Engineering, LLC.

1925 AUTUMN CREEK DRIVE, RIVERVIEW, FL 33569
TEL: 313.404.7649; EM: TKENGINEERING@VERIZON.NET
CERTIFICATE OF AUTHORIZATION NUMBER: 28582
DATE: 4/25/15
DRAWN BY: TKJ
SCALE: N.T.S.
PROJ. #: 15-0801



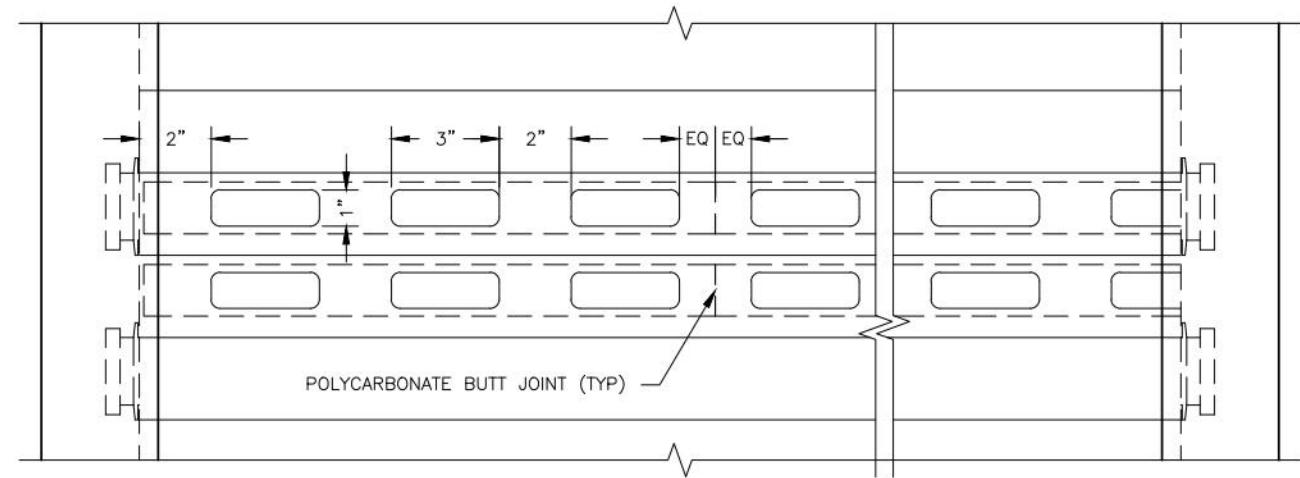


GROUPED VIEWPOINT UNIT ELEVATION
SPANS UP TO 108" SINGLE OR MULTIPLE UNIT INSTALLATIONS - N.T.S.

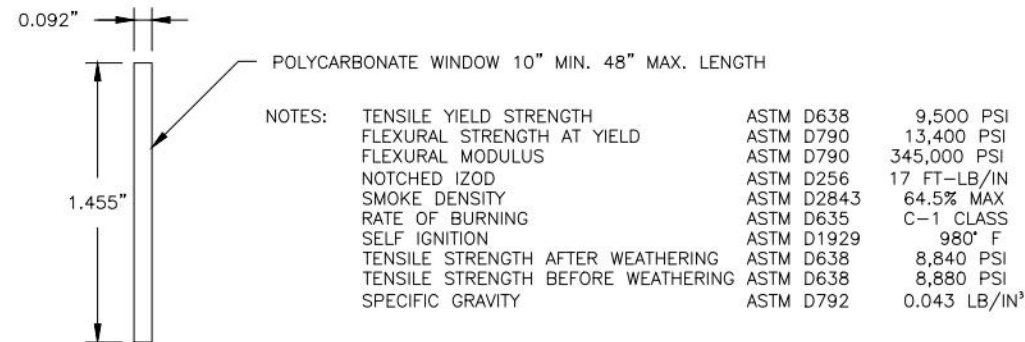


ALTERNATING VIEWPOINT UNIT ELEVATION
SPANS UP TO 108" SINGLE OR MULTIPLE UNIT INSTALLATIONS - N.T.S.

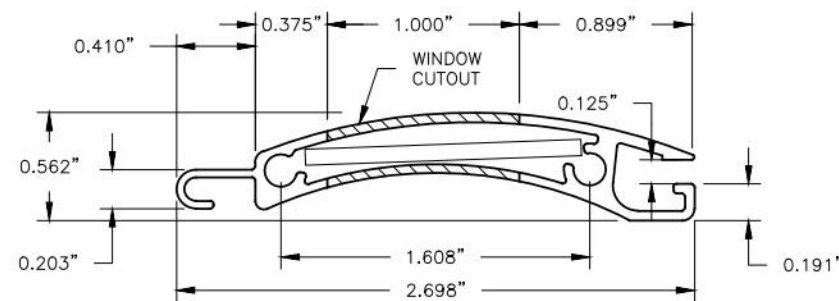
NOTE: FOR ATTACHMENT DETAILS SEE SHEETS 2 THRU 7



TYPICAL VIEWPOINT WINDOW DETAIL
GROUPED CONFIGURATION SHOWN ALTERNATING SIMILAR - N.T.S.



POLYCARBONATE VIEWPOINT WINDOW
SABIC INNOVATIVE PLASTIC LEXAN 103 RESIN - SCALE 1:1



5050-H112 ALUMINUM 58MM SLAT
SPANS UP TO 108" END-RETENTION VIEWPOINT SLAT - SCALE 1:1

#	DATE	REVISIONS



AHT 58MM SHUTTER

TJ Engineering, LLC.

15855 AUTUMN CREEK DRIVE, RIVERVIEW, FL 33569 TEL: 335.404.7649; EM: TJENGINEERING@GMAIL.COM CERTIFICATE OF AUTHORIZATION NUMBER: 28582	PROJ. #:
DATE:	4/25/15
DRAWN BY:	TKJ
SCALE:	N.T.S.
PROJ. #:	15-0801



THIS IS TO CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, THESE PLANS & SPECIFICATIONS ARE IN COMPLIANCE WITH THE BUILDING CODE REQUIREMENTS.

LOADS ON EXISTING STRUCTURE FROM SHUTTER SYSTEM												
T _x = PARALLEL LOADS (PLF)												
SLAT	PRESSURE (PSF)											
SPAN	140	130	120	110	100	90	80	70	60	50	40	30
36"	210	195	180	165	150	135	120	105	90	75	60	45
48"	280	260	240	220	200	180	160	140	120	100	80	60
60"	919	775	631	495	351	225	200	175	150	125	100	75
72"	1865	1675	1494	1312	1122	939	757	566	383	191	120	90
84"	2717	2489	2261	2032	1803	1565	1335	1104	873	633	401	160
96"	3527	3259	2983	2707	2429	2151	1873	1593	1305	1024	734	451
108"	4328	4005	3689	3365	3039	2712	2384	2054	1716	1385	1044	702
120"	5118	4747	4384	4011	3644	3268	2882	2502	2121	1731	1338	943
132"	5897	5488	5076	4663	4239	3814	3386	2948	2508	2065	1620	1173
144"	-	-	5767	5306	4834	4359	3882	3393	2902	2407	1901	1391
156"	-	-	-	5948	5428	4904	4377	3838	3295	2740	2181	1609
168"	-	-	-	-	6020	5448	4872	4283	3689	3081	2461	1834
180"	-	-	-	-	-	5992	5366	4727	4082	3415	2741	2051
192"	-	-	-	-	-	-	5860	5171	4468	3757	3021	2269
204"	-	-	-	-	-	-	-	5615	4861	4091	3302	2494
216"	-	-	-	-	-	-	-	6050	5254	4432	3583	2713
228"	-	-	-	-	-	-	-	-	5638	4766	3864	2939
240"	-	-	-	-	-	-	-	-	6029	5099	4145	3158
252"	-	-	-	-	-	-	-	-	-	5439	4426	3385
264"	-	-	-	-	-	-	-	-	-	5770	4706	3604
276"	-	-	-	-	-	-	-	-	-	-	4986	3830
288"	-	-	-	-	-	-	-	-	-	-	5265	4049

LOADS ON EXISTING STRUCTURE FROM SHUTTER SYSTEM												
T _y = PERPENDICULAR LOADS (PLF)												
SLAT	PRESSURE (PSF)											
SPAN	140	130	120	110	100	90	80	70	60	50	40	30
36"	212	197	182	167	152	137	122	107	92	77	62	47
48"	282	262	242	222	202	182	162	142	122	102	82	62
60"	351	326	300	276	251	226	200	176	151	126	101	76
72"	421	390	361	331	300	271	241	211	181	151	121	91
84"	491	456	421	386	351	315	280	246	211	175	141	105
96"	560	521	481	441	401	361	321	281	240	201	160	121
108"	631	585	541	496	451	406	361	316	270	226	180	135
120"	701	650	601	550	501	451	400	350	301	251	201	151
132"	770	715	660	606	551	496	441	385	330	275	220	166
144"	-	-	721	661	600	540	481	420	360	301	240	180
156"	-	-	-	716	650	585	521	455	390	325	260	195
168"	-	-	-	-	700	630	560	490	421	351	280	211
180"	-	-	-	-	-	675	600	525	451	375	300	225
192"	-	-	-	-	-	-	641	560	480	401	320	240
204"	-	-	-	-	-	-	-	596	510	425	340	256
216"	-	-	-	-	-	-	-	630	541	451	360	270
228"	-	-	-	-	-	-	-	-	570	475	380	286
240"	-	-	-	-	-	-	-	-	601	500	400	300
252"	-	-	-	-	-	-	-	-	-	526	420	316
264"	-	-	-	-	-	-	-	-	-	551	440	330
276"	-	-	-	-	-	-	-	-	-	-	460	346
288"	-	-	-	-	-	-	-	-	-	-	480	360

END-RETENTION TRACKS												
MINIMUM SEPARATION TO GLAZING (INCHES) REQUIRED FOR ESSENTIAL FACILITIES OR SPECIFIED BY AUTHORITY												
SLAT	PRESSURE (PSF)											
SPAN	140	130	120	110	100	90	80	70	60	50	40	30
36"	2.3	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
48"	3.9	3.7	3.4	3.1	2.9	2.6	2.3	2.1	2.0	2.0	2.0	2.0
60"	4.8	4.7	4.6	4.5	4.4	4.2	4.1	3.8	3.3	2.8	2.3	2.0
72"	5.4	5.2	5.1	5.0	4.8	4.7	4.6	4.5	4.3	4.2	4.1	3.1
84"	5.9	5.8	5.6	5.5	5.3	5.2	5.0	4.9	4.8	4.6	4.5	4.3
96"	6.5	6.3	6.2	6.0	5.8	5.7	5.5	5.4	5.2	5.0	4.9	4.7
108"	7.1	6.9	6.7	6.6	6.4	6.2	6.0	5.8	5.6	5.5	5.3	5.1
120"	7.8	7.6	7.4	7.2	7.0	6.8	6.5	6.3	6.1	5.9	5.7	5.5
132"	8.6	8.3	8.1	7.9	7.6	7.4	7.1	6.9	6.6	6.4	6.1	5.9
144"	-	-	-	8.9	8.6	8.4	8.1	7.8	7.5	7.2	6.9	6.6
156"	-	-	-	9.5	9.2	8.9	8.5	8.2	7.8	7.5	7.1	6.7
168"	-	-	-	-	10.1	9.7	9.3	8.9	8.5	8.1	7.6	7.2
180"	-	-	-	-	-	10.7	10.2	9.8	9.2	8.7	8.2	7.7
192"	-	-	-	-	-	-	11.3	10.7	10.1	9.5	8.9	8.3
204"	-	-	-	-	-	-	-	11.8	11.1	10.3	9.6	8.9
216"	-	-	-	-	-	-	-	-	13.0	12.1	11.3	10.4
228"	-	-	-	-	-	-	-	-	-	13.3	12.3	11.3
240"	-	-	-	-	-	-	-	-	-	14.7	13.5	12.3
252"	-	-	-	-	-	-	-	-	-	-	14.8	13.4
264"	-	-	-	-	-	-	-	-	-	-	16.2	14.6
276"	-	-	-	-	-	-	-	-	-	-	15.9	14.0
288"	-	-	-	-	-	-	-	-	-	-	17.4	15.1

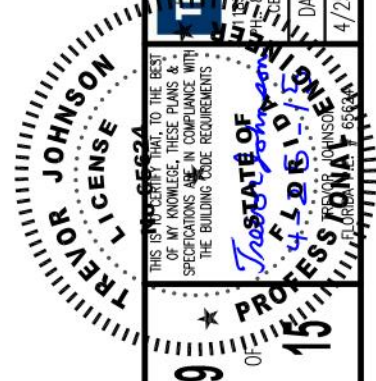
ANCHOR	Concrete & Filled CMU (3500 PSI)		Hollow CMU (1800 PSI)		Wood (S.G. = .55)	
	Min. Edge	Min Emb.	Min. Edge	Min Emb.	Min. Edge	Min Emb.
5/16" ULTRACON HFH	3 1/2"	2"	3 1/2"	1 1/4"	2"	2"
3/8" CONFLEX	3 3/4"	3 1/2"	-	-	-	-

#	DATE	REVISIONS



ADVANCED HURRICANE TECHNOLOGY
6063 JAMES LANE, NAPLES, FL, 34109
PHONE: 239.260.0020; FAX: 239.260.0023
WWW.AHT-USA.NET

AHT 58MM SHUTTER



THIS SEAL IS VALID TO THE BEST OF MY KNOWLEDGE, THESE PLANS & SPECIFICATIONS ARE IN COMPLIANCE WITH THE BUILDING CODE REQUIREMENTS

TREVOR JOHNSON
LICENSE
15000
FLORIDA

TEJO Engineering, LLC.
11115 AUTUMN CREEK DRIVE, RIVERVIEW, FL 33569
PH: 239.213.4047 FAX: 239.213.4047
E-MAIL: TJOHNSON@TEJOENGINEERING.COM
CERTIFICATE OF AUTHORIZATION NUMBER: 28582

DATE: 4/25/15
DRAWN BY: TKJ
SCALE: N.T.S.
PROJ. #: 15-0801

TRACK MOUNT END-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" ELCO ULTRACON HFH @ 6" O.C.			
SLAT SPAN	CONC. & FILLED CMU PRESSURE (PSF)	HOLLOW CMU PRESSURE (PSF)	TIMBER PRESSURE (PSF)
54"	140	135	140
57"	140	120	140
60"	140	107	131
66"	140	88	107
72"	140	74	89
78"	124	63	76
84"	110	55	66
90"	98	49	58
96"	89	43	51
102"	81	39	46
108"	74	35	42
114"	68	32	38
120"	63	30	35
126"	59	27	32
132"	55	25	30
138"	51	24	28
144"	48	22	26
150"	46	21	24
156"	43	20	23
162"	41	19	21
168"	39	18	20
174"	37	17	19
180"	35	16	18
186"	34	15	17
192"	32	15	17
198"	31	14	16
204"	30	13	15
210"	29	13	15
216"	27	12	14
222"	26	12	13
228"	25	11	13
234"	25	11	12
240"	24	11	12

TRACK MOUNT END-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" HFH ELCO ULTRACON @ 4" O.C.			
SLAT SPAN	CONC. & FILLED CMU PRESSURE (PSF)	HOLLOW CMU PRESSURE (PSF)	TIMBER PRESSURE (PSF)
84"	140	75	90
90"	140	67	79
96"	129	60	71
102"	118	54	64
108"	108	50	59
114"	100	46	54
120"	93	42	49
126"	87	39	46
132"	81	37	42
138"	76	34	40
144"	72	32	37
150"	68	30	35
156"	64	29	33
162"	61	27	31
168"	58	26	30
174"	55	24	28
180"	53	23	27
186"	51	22	25
192"	48	21	24
198"	46	20	23
204"	45	20	22
210"	43	19	21
216"	41	18	20
222"	40	17	20
228"	38	17	19
234"	37	16	18
240"	36	16	18
246"	35	15	17
252"	34	15	17
258"	33	14	16
264"	32	14	15
270"	31	13	15
276"	30	13	15

TRACK MOUNT END-RETENTION TRACKS	
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 3/8" ELCO CONPLEX @ 8" O.C.	
SLAT SPAN	CONC. & FILLED CMU PRESSURE (PSF)
96"	140
102"	128
108"	118
114"	109
120"	102
126"	95
132"	89
138"	84
144"	79
150"	75
156"	71
162"	67
168"	64
174"	61
180"	58
186"	56
192"	53
198"	51
204"	49
210"	47
216"	46
222"	44
228"	42
234"	41
240"	40
246"	38
252"	37
258"	36
264"	35
276"	33
288"	31

TRACK MOUNT END-RETENTION & NON-RETENTION TRACKS				
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 1/4"-14 ELCO DRIL-FLEX.				
SLAT SPAN	@ 6" O.C. 1/8" AL/ST PRESSURE (PSF)	@ 6" O.C. 1/4" AL/ST PRESSURE (PSF)	@ 4" O.C. 1/8" AL/ST PRESSURE (PSF)	@ 4" O.C. 1/4" AL/ST PRESSURE (PSF)
84"	79	122	113	140
90"	71	109	102	140
96"	64	99	93	140
102"	59	90	85	132
108"	54	82	79	121
114"	50	76	73	112
120"	47	71	68	104
126"	43	66	64	97
132"	41	61	60	91
138"	38	58	56	86
144"	36	54	53	81
150"	34	51	50	76
156"	32	48	48	72
162"	31	46	45	69
168"	29	44	43	65
174"	28	41	41	62
180"	27	40	39	59
186"	25	38	38	57
192"	24	36	36	54
198"	23	35	35	52
204"	23	33	34	50
210"	22	32	32	48
216"	21	31	31	46
222"	20	30	30	45
228"	19	29	29	43
234"	19	28	28	42
240"	18	27	27	40
246"	18	26	26	39
252"	17	25	26	38
258"	17	24	25	37
264"	16	23	24	36
276"	15	22	23	34
288"	14	21	22	32

TRACK MOUNT END-RETENTION & NON-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16"-24 ELCO DRIL-FLEX.			
SLAT SPAN	@ 8" O.C. 1/4" AL/ST PRESSURE (PSF)	@ 6" O.C. 1/4" AL/ST PRESSURE (PSF)	@ 4" O.C. 1/4" AL/ST PRESSURE (PSF)
84"	103	133	140
90"	93	120	140
96"	83	108	140
102"	76		140
108"	70	91	134
114"	64	84	124
120"	60	78	116
126"	55	73	108
132"	52	68	102
138"	49	64	96
144"	46	60	90
150"	43	57	85
156"	41	54	81
162"	39	51	77
168"	37	49	73
174"	35	46	70
180"	33	44	67
186"	32	42	64
192"	31	41	61
198"	29	39	59
204"	28	37	57
210"	27	36	54
216"	26	35	52
222"	25	33	51
228"	24	32	49
234"	23	31	47
240"	22	30	46
246"	22	29	44
252"	21	28	43
258"	20	27	42
264"	20	26	40
276"	19	25	38
288"	18	24	36

NOTE: THE 5050-H112 SLAT, TRACKS, AND ALL VIEWPORT SLAT SPANS SHALL NOT EXCEED 108"



TKJ Engineering, LLC.
1100 AUTUMN CREEK DRIVE, RIVERVIEW, FL 33569
PHONE: 204-7649; EMAIL: TKJENGINEERING@PROZON.NET
PROFESSIONAL ENGINEER AUTHORIZATION NUMBER: 28582

DRAWN BY: TKJ
DATE: 12/25/15
SCALE: N.T.S.
PROJECT #: 15-0801

AHT 58MM SHUTTER



#	DATE	REVISIONS

4" BUILD-OUTS			
END-RETENTION & NON-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" ELCO ULTRACON HFH @ 6" O.C.			
SLAT SPAN	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
57"	140	119	139
60"	140	103	121
63"	138	89	106
66"	123	78	93
69"	111	69	83
72"	100	61	74
75"	91	54	67
78"	83	49	60
81"	77	44	55
84"	71	40	50
87"	66	37	46
90"	61	34	43
93"	57	31	40
96"	53	29	37
99"	50	26	34
102"	47	25	32
105"	44	23	30
108"	42	21	28
111"	40	20	27
114"	38	19	25
117"	36	18	24
120"	34	17	22
123"	33	16	21
126"	31	15	20
129"	30	14	19
132"	29	14	18
135"	28	13	18
138"	27	12	17
141"	25	12	16
144"	25	11	16
147"	24	11	15
150"	23	10	14
153"	22	10	14

4" BUILD-OUTS			
END-RETENTION & NON-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" HFH ELCO ULTRACON @ 4" O.C.			
SLAT SPAN	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
60"	140	119	140
64"	140	100	125
68"	140	85	107
72"	135	73	94
76"	121	63	82
80"	109	56	73
84"	99	50	65
88"	90	44	59
92"	82	40	54
96"	76	36	49
100"	70	33	45
104"	65	30	42
108"	61	28	38
112"	57	26	36
116"	54	24	33
120"	50	22	31
124"	47	21	29
128"	45	19	28
132"	43	18	26
136"	40	17	25
140"	38	16	23
144"	37	15	22
148"	35	15	21
152"	34	14	20
156"	32	13	19
160"	31	13	18
164"	30	12	18
168"	29	12	17
172"	27	11	16
176"	26	11	16
180"	26	10	15
184"	25	10	15
188"	24	10	14

4" BUILD-OUTS	
END-RETENTION & NON-RETENTION TRACKS	
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 3/8" ELCO CONFLEX @ 6" O.C.	
SLAT SPAN	CONC. & FILLED CMU PRESSURE (PSF)
96"	107
100"	100
104"	93
108"	87
112"	82
116"	77
120"	73
124"	69
128"	65
132"	62
136"	59
140"	56
144"	54
148"	51
152"	49
156"	47
160"	45
164"	44
168"	42
172"	40
176"	39
180"	38
184"	36
188"	35
192"	34
196"	33
200"	32
204"	31
210"	30
216"	29
222"	27

4" BUILD-OUTS	
END-RETENTION & NON-RETENTION TRACKS	
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 3/8" ELCO CONFLEX @ 4" O.C.	
SLAT SPAN	CONC. & FILLED CMU PRESSURE (PSF)
108"	136
114"	125
120"	115
126"	106
132"	99
138"	92
144"	86
150"	81
156"	76
162"	71
168"	68
174"	64
180"	61
186"	58
192"	55
198"	53
204"	51
210"	48
216"	46
222"	45
228"	43
234"	41
240"	40
246"	38
252"	37
258"	36
264"	34
270"	33
276"	32
282"	31
288"	30

4" BUILD-OUTS				
END-RETENTION & NON-RETENTION TRACKS				
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 1/4"-14 ELCO DRIL-FLEX.				
SLAT SPAN	@ 6" O.C. 1/8" AL/ST	@ 6" O.C. 1/4" AL/ST	@ 4" O.C. 1/8" AL/ST	@ 4" O.C. 1/4" AL/ST
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
56"	135	140	140	140
60"	111	140	132	140
64"	93	135	112	140
68"	78	117	96	140
72"	67	102	83	139
76"	58	90	73	124
80"	51	80	64	111
84"	45	72	58	101
88"	40	66	52	93
92"	36	60	47	85
96"	33	55	43	78
100"	30	50	39	72
104"	27	46	36	67
108"	25	43	33	63
112"	23	40	31	59
116"	21	38	29	55
120"	20	35	27	52
124"	18	33	25	49
128"	17	31	24	47
132"	16	30	22	44
136"	15	28	21	42
140"	14	27	20	40
144"	14	25	19	38
148"	13	24	18	36
152"	12	23	17	35
156"	12	22	16	33
160"	11	21	16	32
164"	11	20	15	31
168"	10	19	14	29
172"	10	19	14	28
176"	9	18	13	27
180"	9	17	13	26
184"	9	17	12	25

4" BUILD-OUTS			
END-RETENTION & NON-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16"-24 ELCO DRIL-FLEX.			
SLAT SPAN	@ 8" O.C. 1/4" AL/ST	@ 6" O.C. 1/4" AL/ST	@ 4" O.C. 1/4" AL/ST
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
68"	103	124	140
72"	90	109	140
76"	79	97	135
80"	70	86	122
84"	63	78	110
88"	57	71	101
92"	52	65	93
96"	47	59	86
100"	43	55	79
104"	40	50	74
108"	37	47	69
112"	34	44	64
116"	32	41	61
120"	30	38	57
124"	28	36	54
128"	26	34	51
132"	25	32	49
136"	24	31	46
140"	22	29	44
144"	21	28	42
148"	20	27	40
152"	19	25	39
156"	18	24	37
160"	18	23	35
164"	17	22	34
168"	16	21	33
172"	16	21	32
176"	15	20	30
180"	14	19	29
184"	14	18	28
189"	13	18	27
196"	12	17	26
204"	12	16	24

NOTE: THE 5050-H112 SLAT, TRACKS, AND ALL VIEWPORT SLAT SPANS SHALL NOT EXCEED 108"



TKJ Engineering, LLC.

1735 AUTUMN CREEK DRIVE, RIVERVIEW, FL 33569
TEL: 813.404.7649; EM: TKJENGINEERING@GMAIL.COM
CERTIFICATE OF AUTHORIZATION NUMBER: 28582

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PROJ. #: 15-0801

AHT 58MM SHUTTER

AHT
ADVANCED HURRICANE TECHNOLOGY
6063 JAMES LANE, NAPLES, FL 34109
PHONE: 239.260.0020; FAX: 239.260.0023
WWW.AHT-USA.NET

#	DATE	REVISIONS

4" BUILD-INS			
END-RETENTION & NON-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" ELCO ULTRACON HFH @ 6" O.C.			
SLAT SPAN	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
57"	140	114	140
60"	140	99	123
63"	140	87	109
66"	128	76	98
69"	116	68	88
72"	106	61	80
75"	97	55	73
78"	90	50	67
81"	83	45	61
84"	77	41	57
87"	72	38	53
90"	68	35	49
93"	63	32	46
96"	60	30	43
99"	56	28	41
102"	53	26	38
105"	51	24	36
108"	48	23	34
111"	46	22	32
114"	43	20	31
117"	42	19	29
120"	40	18	28
123"	38	17	27
126"	37	17	26
129"	35	16	24
132"	34	15	24
135"	33	15	23
138"	31	14	22
141"	30	13	21
144"	29	13	20
147"	28	12	20
150"	27	12	19
153"	26	11	18

4" BUILD-INS			
END-RETENTION & NON-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" HFH ELCO ULTRACON @ 4" O.C.			
SLAT SPAN	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
60"	140	117	140
64"	140	99	134
68"	140	85	118
72"	140	74	104
76"	130	65	93
80"	118	58	84
84"	108	52	76
88"	99	47	70
92"	92	42	64
96"	85	39	59
100"	79	35	55
104"	74	33	51
108"	70	30	48
112"	66	28	45
116"	62	26	42
120"	58	25	40
124"	55	23	38
128"	53	22	36
132"	50	21	34
136"	48	20	32
140"	46	18	31
144"	44	18	29
148"	42	17	28
152"	40	16	27
156"	39	15	26
160"	37	15	25
164"	36	14	24
168"	34	13	23
172"	33	13	22
176"	32	12	21
180"	31	12	21
184"	30	12	20
188"	29	11	19

4" BUILD-INS	
END-RETENTION & NON-RETENTION TRACKS	
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 3/8" ELCO CONFLEX @ 6" O.C.	
SLAT SPAN	CONC. & FILLED CMU PRESSURE (PSF)
84"	127
88"	117
92"	108
96"	101
100"	94
104"	88
108"	83
112"	78
116"	73
120"	70
124"	66
128"	63
132"	60
136"	57
140"	54
144"	52
148"	50
152"	48
156"	46
160"	44
164"	43
168"	41
172"	40
176"	39
180"	37
184"	36
188"	35
192"	34
198"	32
204"	31
210"	30

4" BUILD-INS	
END-RETENTION & NON-RETENTION TRACKS	
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 3/8" ELCO CONFLEX @ 4" O.C.	
SLAT SPAN	CONC. & FILLED CMU PRESSURE (PSF)
108"	125
114"	115
120"	107
126"	99
132"	92
138"	86
144"	81
150"	76
156"	72
162"	68
168"	64
174"	61
180"	58
186"	55
192"	53
198"	51
204"	48
210"	46
216"	45
222"	43
228"	41
234"	40
240"	38
246"	37
252"	36
258"	35
264"	34
270"	33
276"	32
282"	31
288"	30

4" BUILD-INS				
END-RETENTION & NON-RETENTION TRACKS				
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 1/4"-14 ELCO DRIL-FLEX.				
SLAT SPAN	@ 6" O.C. 1/8" AL/ST	@ 6" O.C. 1/4" AL/ST	@ 4" O.C. 1/8" AL/ST	@ 4" O.C. 1/4" AL/ST
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
56"	122	140	140	140
60"	101	140	118	140
64"	85	126	100	140
68"	72	110	86	140
72"	62	97	75	130
76"	53	86	66	117
80"	47	78	59	106
84"	42	70	52	97
88"	37	64	47	89
92"	33	58	43	82
96"	30	54	39	76
100"	28	50	36	71
104"	25	46	33	66
108"	23	43	31	62
112"	21	40	28	58
116"	20	38	26	55
120"	18	36	25	52
124"	17	34	23	49
128"	16	32	22	46
132"	15	30	21	44
136"	14	29	20	42
140"	13	27	18	40
144"	13	26	18	38
148"	12	25	17	37
152"	12	24	16	35
156"	11	23	15	34
160"	10	22	15	33
164"	10	21	14	31
168"	10	20	13	30
172"	9	20	13	29
176"	9	19	12	28
180"	9	18	12	27
184"	8	17	12	26

4" BUILD-INS			
END-RETENTION & NON-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16"-24 ELCO DRIL-FLEX.			
SLAT SPAN	@ 8" O.C. 1/4" AL/ST	@ 6" O.C. 1/4" AL/ST	@ 4" O.C. 1/4" AL/ST
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
68"	96	115	140
72"	84	102	138
76"	74	91	124
80"	66	81	112
84"	60	74	103
88"	54	67	94
92"	50	62	87
96"	45	57	81
100"	42	53	75
104"	39	49	70
108"	36	46	66
112"	34	43	62
116"	31	40	58
120"	30	38	55
124"	28	36	52
128"	26	34	50
132"	25	32	47
136"	24	30	45
140"	22	29	43
144"	21	28	41
148"	20	26	39
152"	19	25	38
156"	19	24	36
160"	18	23	35
164"	17	22	33
168"	16	21	32
172"	16	21	31
176"	15	20	30
180"	15	19	29
184"	14	19	28
189"	14	18	27
196"	13	17	25
204"	12	16	24

NOTE: THE 5050-H112 SLAT, TRACKS, AND ALL VIEWPORT SLAT SPANS SHALL NOT EXCEED 108"



TKJ Engineering, LLC.

7835 AUTUMN CREEK DRIVE, RIVERVIEW, FL 33569
TEL: 813.404.7649; EM: TKJENGINEERING@GMAIL.COM
CERTIFICATE OF AUTHORIZATION NUMBER: 28582

DATE: 4/25/15
DRAWN BY: TKJ
SCALE: N.T.S.
PROJ. #: 15-0801

AHT 58MM SHUTTER

AHT
ADVANCED HURRICANE TECHNOLOGY
6063 JAMES LANE, NAPLES, FL 34109
PHONE: 239.260.0020; FAX: 239.260.0023
WWW.AHT-USA.NET

#	DATE	REVISIONS

3" BUILD-INS			
END-RETENTION & NON-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" ELCO ULTRACON HFH @ 6" O.C.			
SLAT SPAN	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
57"	140	110	132
60"	140	95	116
63"	131	83	103
66"	118	73	92
69"	107	65	83
72"	97	58	75
75"	90	52	68
78"	83	47	63
81"	76	43	58
84"	71	39	53
87"	66	36	50
90"	62	33	46
93"	58	31	43
96"	55	28	40
99"	52	26	38
102"	49	25	36
105"	47	23	34
108"	44	22	32
111"	42	20	30
114"	40	19	29
117"	38	18	27
120"	37	17	26
123"	35	17	25
126"	34	16	24
129"	32	15	23
132"	31	14	22
135"	30	14	21
138"	29	13	20
141"	28	12	20
144"	27	12	19
147"	26	12	18
150"	25	11	18
153"	24	11	17

3" BUILD-INS			
END-RETENTION & NON-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" HFH ELCO ULTRACON @ 4" O.C.			
SLAT SPAN	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
60"	140	110	140
64"	140	93	125
68"	140	80	109
72"	131	70	97
76"	118	61	86
80"	107	54	78
84"	98	49	70
88"	90	44	64
92"	83	40	59
96"	77	36	54
100"	71	33	51
104"	67	31	47
108"	63	28	44
112"	59	26	41
116"	56	25	39
120"	53	23	37
124"	50	22	34
128"	47	20	33
132"	45	19	31
136"	43	18	30
140"	41	17	28
144"	39	16	27
148"	38	16	26
152"	36	15	25
156"	35	14	24
160"	33	14	23
164"	32	13	22
168"	31	12	21
172"	30	12	20
176"	29	12	20
180"	28	11	19
184"	27	11	18
188"	26	10	18

3" BUILD-INS	
END-RETENTION & NON-RETENTION TRACKS	
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 3/8" ELCO CONFLEX @ 6" O.C.	
SLAT SPAN	CONC. & FILLED CMU PRESSURE (PSF)
84"	131
88"	121
92"	112
96"	104
100"	98
104"	92
108"	86
112"	81
116"	77
120"	73
124"	69
128"	66
132"	63
136"	60
140"	57
144"	55
148"	53
152"	50
156"	48
160"	47
164"	45
168"	43
172"	42
176"	40
180"	39
184"	38
188"	37
192"	36
196"	34
204"	33
210"	31

3" BUILD-INS	
END-RETENTION & NON-RETENTION TRACKS	
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 3/8" ELCO CONFLEX @ 4" O.C.	
SLAT SPAN	CONC. & FILLED CMU PRESSURE (PSF)
108"	129
114"	119
120"	110
126"	102
132"	95
138"	89
144"	83
150"	79
156"	74
162"	70
168"	67
174"	63
180"	60
186"	57
192"	55
198"	53
204"	50
210"	48
216"	46
222"	45
228"	43
234"	42
240"	40
246"	39
252"	37
258"	36
264"	35
270"	34
276"	33
282"	32
288"	31

3" BUILD-INS				
END-RETENTION & NON-RETENTION TRACKS				
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 1/4"-14 ELCO DRIL-FLEX.				
SLAT SPAN	@ 6" O.C. 1/8" AL/ST	@ 6" O.C. 1/4" AL/ST	@ 4" O.C. 1/8" AL/ST	@ 4" O.C. 1/4" AL/ST
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
56"	124	140	140	140
60"	102	140	121	140
64"	86	129	102	140
68"	73	113	88	140
72"	63	100	77	134
76"	55	90	68	121
80"	48	81	61	110
84"	43	73	54	101
88"	38	67	49	92
92"	35	61	44	86
96"	31	56	41	79
100"	29	52	37	74
104"	26	49	34	69
108"	24	46	32	65
112"	22	43	30	61
116"	21	40	28	58
120"	19	38	26	54
124"	18	36	25	52
128"	17	34	23	49
132"	16	32	22	47
136"	15	31	21	44
140"	14	29	20	43
144"	14	28	19	41
148"	13	27	18	39
152"	12	25	17	37
156"	12	24	16	36
160"	11	23	16	35
164"	11	23	15	33
168"	10	22	14	32
172"	10	21	14	31
176"	10	20	13	30
180"	9	19	13	29
184"	9	19	12	28

3" BUILD-INS			
END-RETENTION & NON-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16"-24 ELCO DRIL-FLEX.			
SLAT SPAN	@ 8" O.C. 1/4" AL/ST	@ 6" O.C. 1/4" AL/ST	@ 4" O.C. 1/4" AL/ST
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
68"	99	119	140
72"	87	105	140
76"	77	94	128
80"	69	85	117
84"	62	77	107
88"	57	70	98
92"	52	65	90
96"	48	59	84
100"	44	55	78
104"	41	51	73
108"	38	48	69
112"	35	45	65
116"	33	42	61
120"	31	40	58
124"	29	38	55
128"	28	36	52
132"	26	34	50
136"	25	32	47
140"	24	31	45
144"	23	30	43
148"	22	28	41
152"	21	27	40
156"	20	26	38
160"	19	25	37
164"	18	24	35
168"	18	23	34
172"	17	22	33
176"	16	21	32
180"	16	21	31
184"	15	20	30
189"	15	19	29
196"	14	18	27
204"	13	17	26

NOTE: THE 5050-H112 SLAT, TRACKS, AND ALL VIEWPORT SLAT SPANS SHALL NOT EXCEED 108"



TK Engineering, LLC.

1835 AUTUMN CREEK DRIVE, RIVERVIEW, FL 33569
TEL: 3404-7649; EM: TKENGINEERING@GMAIL.COM
CERTIFICATE OF AUTHORIZATION NUMBER: 28582

DATE: 4/25/15
DRAWN BY: TKJ
SCALE: N.T.S.
PROJ. #: 15-0801

AHT 58MM SHUTTER



#	DATE	REVISIONS

2" BUILD-INS W/ 1/4" WALLS & 3/8" ANGLES END-RETENTION & NON-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" ELCO ULTRACON HFH @ 6" O.C.			
SLAT SPAN	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
57"	140	104	123
60"	134	89	108
63"	120	78	96
66"	107	69	85
69"	98	61	77
72"	89	55	70
75"	81	49	63
78"	75	44	58
81"	69	40	53
84"	65	36	49
87"	60	34	46
90"	56	31	42
93"	53	29	40
96"	50	27	37
99"	47	25	35
102"	44	23	33
105"	42	22	31
108"	40	20	29
111"	38	19	28
114"	36	18	26
117"	35	17	25
120"	33	16	24
123"	31	15	23
126"	30	14	22
129"	29	14	21
132"	28	13	20
135"	27	13	19
138"	26	12	19
141"	25	12	18
144"	24	11	17
147"	23	11	17
150"	23	10	16
153"	22	10	16

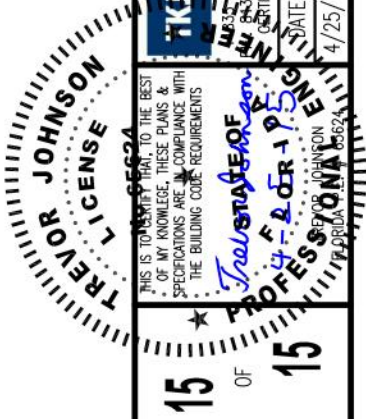
2" BUILD-INS W/ 1/4" WALLS & 3/8" ANGLES END-RETENTION & NON-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" HFH ELCO ULTRACON @ 4" O.C.			
SLAT SPAN	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
60"	140	103	132
64"	140	87	114
68"	132	74	100
72"	117	65	88
76"	106	57	79
80"	96	50	71
84"	87	45	64
88"	80	41	59
92"	74	36	54
96"	68	33	49
100"	64	30	46
104"	60	28	43
108"	56	26	40
112"	52	24	37
116"	50	23	35
120"	47	21	33
124"	44	20	31
128"	42	19	30
132"	40	18	28
136"	38	17	27
140"	37	16	26
144"	35	15	24
148"	33	14	23
152"	32	14	22
156"	31	13	21
160"	30	12	21
164"	28	12	20
168"	27	11	19
172"	26	11	18
176"	26	11	18
180"	25	10	17
184"	24	10	16
188"	23	9	16

2" BUILD-INS W/ 1/4" WALLS & 3/8" END-RETENTION & NON-RETENTION TRACKS	
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 3/8" ELCO CONPLEX @ 6" O.C.	
SLAT SPAN	CONC. & FILLED CMU
	PRESSURE (PSF)
72"	140
76"	138
80"	126
84"	116
88"	107
92"	99
96"	92
100"	86
104"	81
108"	75
112"	71
116"	67
120"	64
124"	61
128"	58
132"	55
136"	52
140"	50
144"	48
148"	46
152"	44
156"	43
160"	41
164"	39
168"	38
172"	37
176"	36
180"	34
192"	31
204"	29
216"	26

2" BUILD-INS W/ 1/4" WALLS & 3/8" ANGLES END-RETENTION & NON-RETENTION TRACKS				
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 1/4"-14 ELCO DRIL-FLEX.				
SLAT SPAN	@ 6" O.C. 1/8" AL/ST	@ 6" O.C. 1/4" AL/ST	@ 4" O.C. 1/8" AL/ST	@ 4" O.C. 1/4" AL/ST
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
56"	115	140	133	140
60"	95	137	111	140
64"	80	118	95	140
68"	68	103	81	135
72"	59	91	71	121
76"	51	81	62	108
80"	45	73	55	99
84"	40	66	50	90
88"	36	60	45	83
92"	32	55	41	76
96"	29	51	37	71
100"	27	47	34	66
104"	24	44	31	61
108"	22	41	29	58
112"	21	38	27	54
116"	19	36	25	51
120"	18	34	24	48
124"	17	32	22	46
128"	16	30	21	44
132"	15	29	20	41
136"	14	27	19	39
140"	13	26	18	38
144"	12	25	17	36
148"	12	24	16	35
152"	11	23	16	33
156"	11	22	15	32
160"	10	21	14	31
164"	10	20	14	30
168"	9	19	13	28
172"	9	19	13	27
176"	9	18	12	26
180"	8	17	12	26
184"	8	17	11	25

2" BUILD-INS W/ 1/4" WALLS & 3/8" ANGLES END-RETENTION & NON-RETENTION TRACKS			
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16"-24 ELCO DRIL-FLEX.			
SLAT SPAN	@ 8" O.C. 1/4" AL/ST	@ 6" O.C. 1/4" AL/ST	@ 4" O.C. 1/4" AL/ST
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
68"	91	108	140
72"	80	95	127
76"	70	85	114
80"	63	77	104
84"	57	69	95
88"	52	63	87
92"	47	58	81
96"	43	54	75
100"	40	50	70
104"	37	46	65
108"	34	43	61
112"	32	40	57
116"	30	38	54
120"	28	36	51
124"	27	34	49
128"	25	32	46
132"	24	31	44
136"	23	29	42
140"	22	28	40
144"	21	26	38
148"	20	25	37
152"	19	24	35
156"	18	23	34
160"	17	22	32
164"	17	21	31
168"	16	21	30
172"	15	20	29
176"	15	19	28
180"	14	19	27
184"	14	18	26
189"	13	17	25
196"	12	16	24
204"	12	15	23

NOTE: THE 5050-H112 SLAT, TRACKS, AND ALL VIEWPORT SLAT SPANS SHALL NOT EXCEED 108"



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401 AUTUMN CREEK DRIVE, RIVERVIEW, FL 33569
TEL: 404.764.9149; FAX: 404.764.9149
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