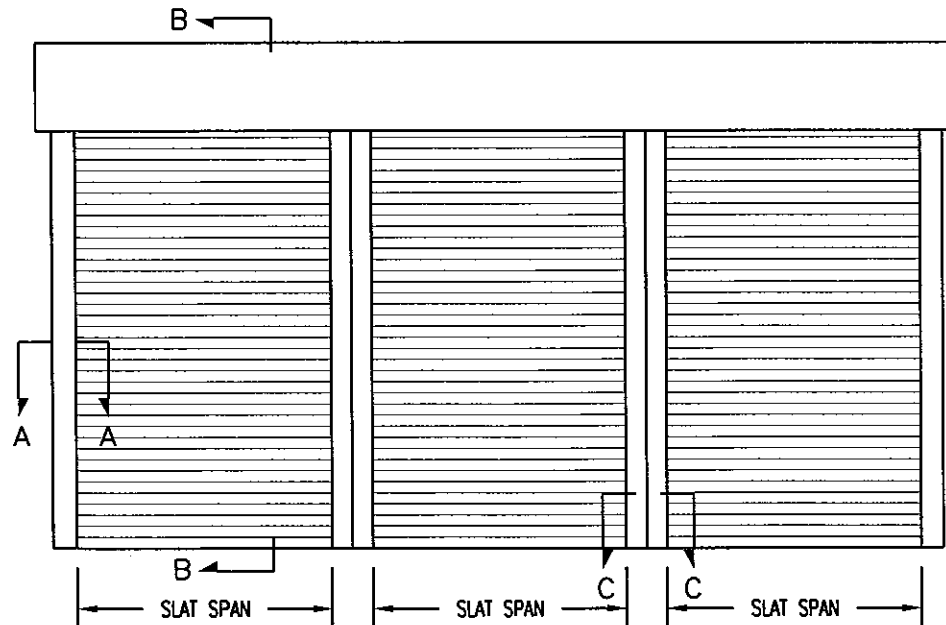
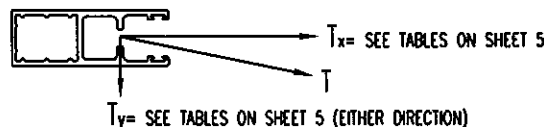


TYPICAL SINGLE UNIT ELEVATION
SINGLE SPAN UP TO 24 FEET - N.T.S.



TYPICAL MULTIPLE UNIT ELEVATION
SEE INTERMEDIATE MULLION TABLES FOR PERFORMANCE - N.T.S.



GENERAL NOTES:

- ARNOLD SANDERS CONSULTING ENGINEERS, INC., 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.
- THESE DRAWINGS SHALL BE USED TO OBTAIN NO MORE THAN ONE BUILDING PERMIT. MASTER PERMITTING IS SPECIFICALLY NOT AUTHORIZED.
- THE ROLL-UP SHUTTER SHOWN ON THIS PRODUCT EVALUATION DOCUMENT HAS BEEN DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE, 2004 EDITION WITH 2006 REVISIONS (FBC 2004) AND THE 2007 FLORIDA BUILDING CODE (FBC 2007). THIS ROLL-UP SHUTTER SHALL NOT BE INSTALLED IN HIGH VELOCITY HURRICANE ZONES (DADE COUNTY/BROWARD COUNTIES). DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1609 OF THE ABOVE MENTIONED CODE, IN ACCORDANCE WITH ASCE 7-02 (FOR FBC 2004) OR ASCE 7-05 (FOR FBC 2007), AND FOR A BASIC WIND SPEED AS REQUIRED BY THE JURISDICTION WHERE THE SHUTTER WILL BE INSTALLED. THE ROLL-UP SHUTTER ADEQUACY FOR IMPACT, DEFLECTION AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609.1.4 OF THE ABOVE MENTIONED CODE AND AS PER TAS 201, 202, & 203 AT FENESTRATION TESTING LABORATORY, INC. PER THEIR REPORTS. (SEE LIST OF REPORTS.)
- LIMITATIONS OF USE:
 - THIS PRODUCT IS NOT TO BE USED IN HIGH VELOCITY HURRICANE ZONES.
 - MULTIPLE UNIT INSTALLATIONS REQUIRE AN APPROVED MULLION FOR THIS TYPE OF SHUTTER SYSTEM.
 - MAXIMUM SIZE:
 - 30 PSF MAX. PRESSURE @ 288" MAX. WIDTH
 - 130 PSF MAX. PRESSURE @ 96" MAX. WIDTH
 - SEE TABLES ON SHEETS 6 THROUGH 9
 - IMPACT LEVEL: 9-1/4lb. LARGE MISSILE IMPACT
 - ANCHORING OR LOADING CONDITIONS OTHER THAN THOSE SHOWN IN THESE DETAILS ARE NOT PART OF THIS APPROVAL.
 - THIS PRODUCT SHALL ONLY BE USED TO PREVENT THE PENETRATION OF WIND-BORNE DEBRIS.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THE EXISTING STRUCTURE IS DESIGNED TO SUPPORT THE LOADS FROM THE SHUTTER SYSTEM. EXISTING STRUCTURES NOT ABLE TO SUPPORT THESE LOADS SHALL BE EVALUATED AND STRENGTHENED AS A SITE SPECIFIC PROJECT. SEE NOTE 4 OF PRODUCT EVALUATION NOTES.

- ALL ALUMINUM EXTRUSION SHALL BE 6063-T6 ALLOY (UNLESS OTHERWISE NOTED).
- SHUTTERS MAY BE MOTOR, TAPE PULLEY OR GEAR DRIVEN.

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 TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION OF THIS PRODUCT BASED ON THIS PRODUCT EVALUATION PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT.
- THIS PRODUCT EVALUATION DOCUMENT WILL BE CONSIDERED INVALID IF ALTERED (i.e. HIGHLIGHTED, MARKED ETC.) 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. ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE P.E.D. ENGINEER SHALL SUBMIT TO THIS LATTER THE SITE SPECIFIC DRAWINGS FOR REVIEW.
- THIS P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT

ANCHOR & FASTENING NOTES

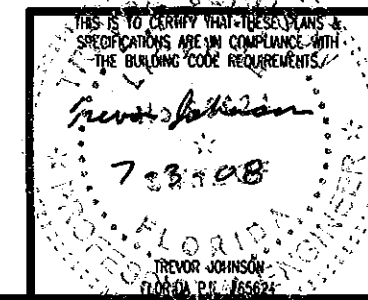
- ALL FASTENERS SHALL BE CORROSION RESISTANT COATED CARBON STEEL AS PER DIN 50018 OR STAINLESS STEEL 304 OR 316 SERIES WITH 50 KSI YIELD POINT AND 90 KSI ULTIMATE TENSILE STRENGTH.
- BOLTS SHALL BE ASTM A307 GALVANIZED STEEL OR STAINLESS STEEL WITH 35 KSI MINIMUM YIELD POINT.
- NO EMBEDMENT INTO NON-STRUCTURAL COMPONENTS SUCH AS, STUCCO, TILE, SIDING, ETC. SHALL BE CONSIDERED AS PART OF THE EMBEDMENT.
- THE ANCHOR SPACING ARE VALID FOR EDGE DISTANCES AND MINIMUM EMBEDMENT BELOW. THE MINIMUM EDGE DISTANCE FOR THE 1/4-14 DRILL-FLEX SCREW IS 1/2".

ANCHOR	CONC. & FILLED CMU (3500 PSI)		HOLLOW CMU (1800 PSI)		WOOD (S.G. = .64)	
	MIN. EDGE	MIN. EMB.	MIN. EDGE	MIN. EMB.	MIN. EDGE	MIN. EMB.
5/16" ULTRACON HFH	3 1/2"	2"	4"	1 1/4"	2"	2"
3/8" CONFLEX	3 3/4"	3 1/2"	-	-	-	-

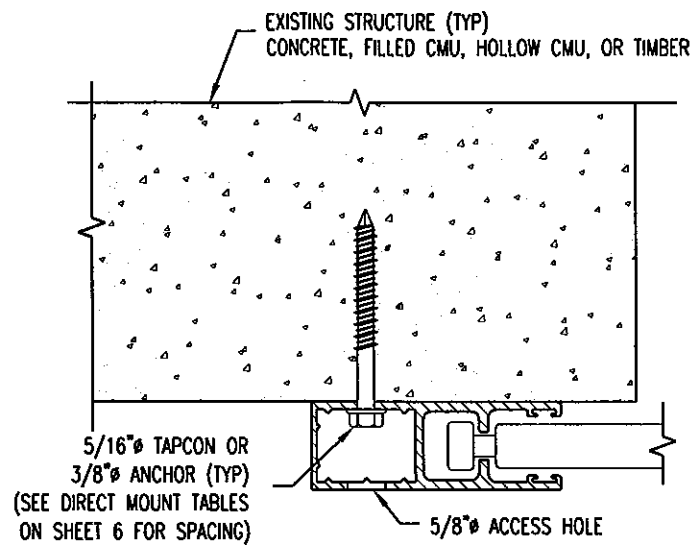
EVALUATION BASED ON: FENESTRATION TESTING LABORATORY, INC.	
LABORATORY No.	5424
DATE:	NOVEMBER 7, 2007
REPORT No.	01
FILE No.	07-374
TEST PROTOCOL:	TAS 201, 202, 203
MAXIMUM WIDTH TESTED:	290.25"
DESIGN PRESSURE TESTED:	45 PSF
STRUCTURAL LOAD TESTED:	67.5 PSF
MINIMUM WIDTH TESTED:	150.5"
DESIGN PRESSURE TESTED:	90 PSF
STRUCTURAL LOAD TESTED:	135 PSF

LIST OF REPORTS

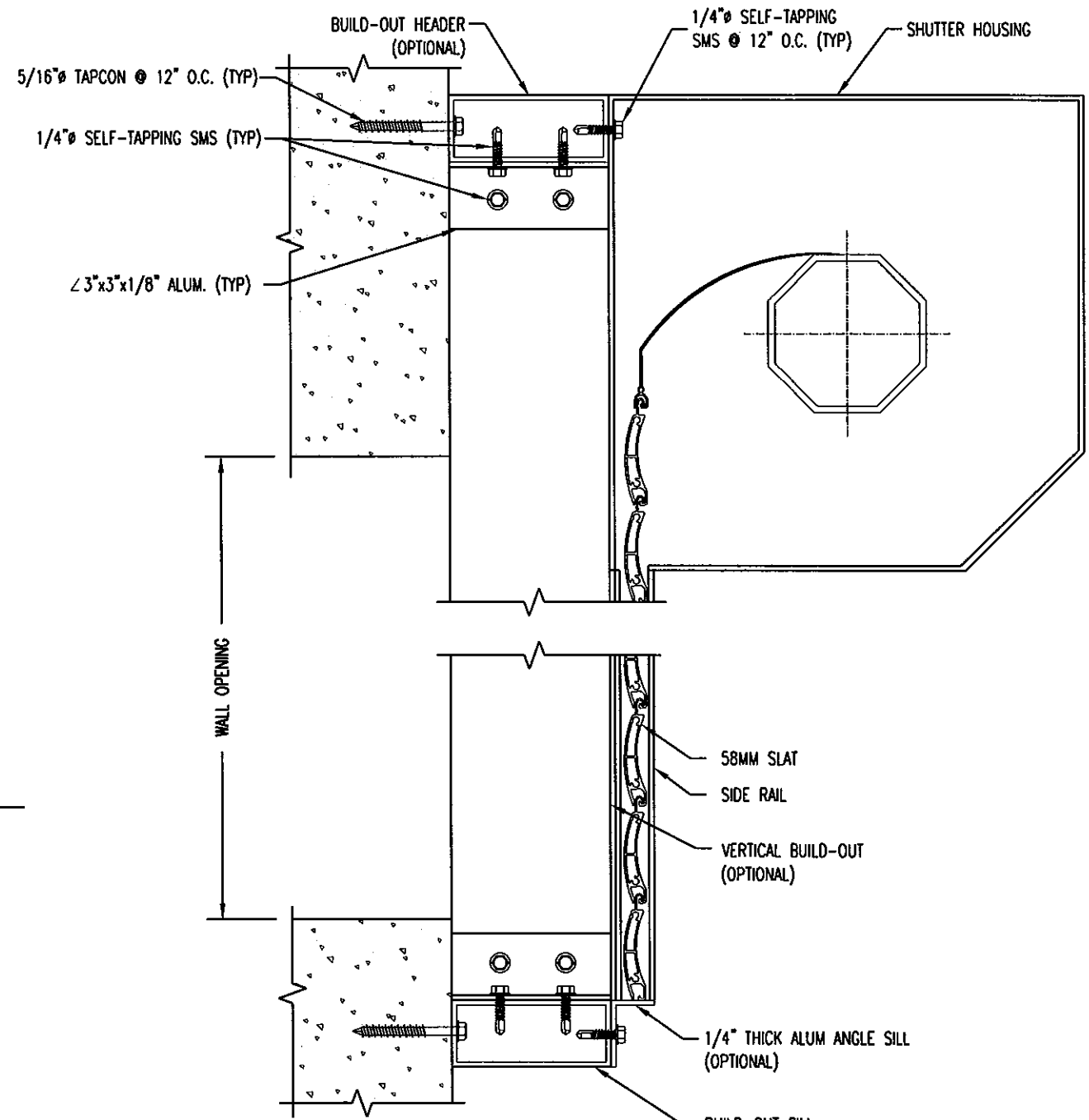
ENGINEERING REVIEW BY:
TREVOR JOHNSON, P.E.
FLORIDA LICENSE NUMBER: 65624
ARNOLD/SANDERS CONSULTING ENGINEERS, INC.
16681 MCGREGOR BLVD., SUITE 102
FORT MYERS, FL 33908
PHONE: (239) 267-3666
CERTIFICATE OF AUTHORIZATION: #9451



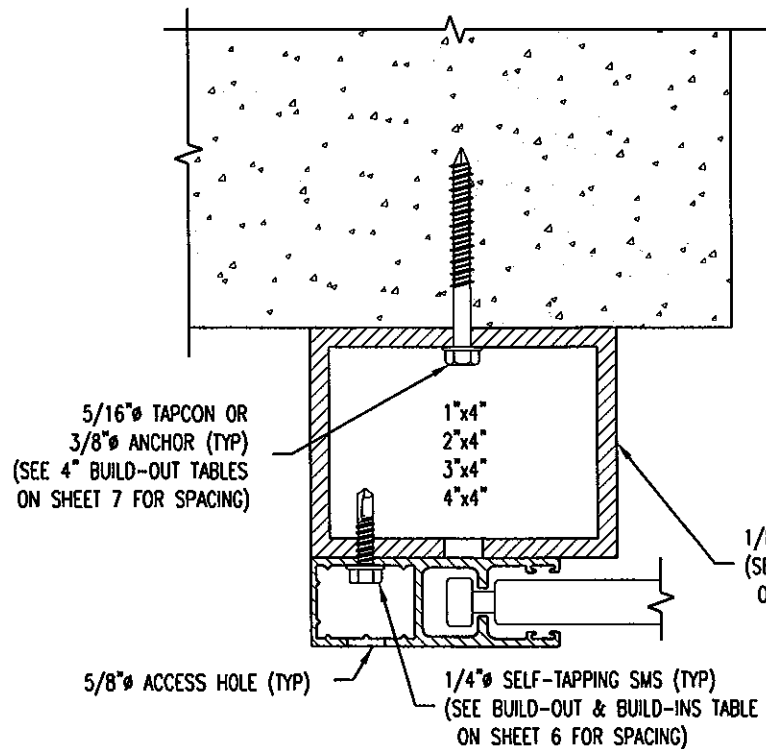
58mm END-RETENTION ROLL SHUTTER SYSTEM		
ADVANCED HURRICANE TECHNOLOGY, INC. 6063 JANES LANE NAPLES, FL 34109		
DATE: 7/3/08	DWG. No.: 1	REV.:
SCALE: N.T.S.	SHEET: 1 OF 9	



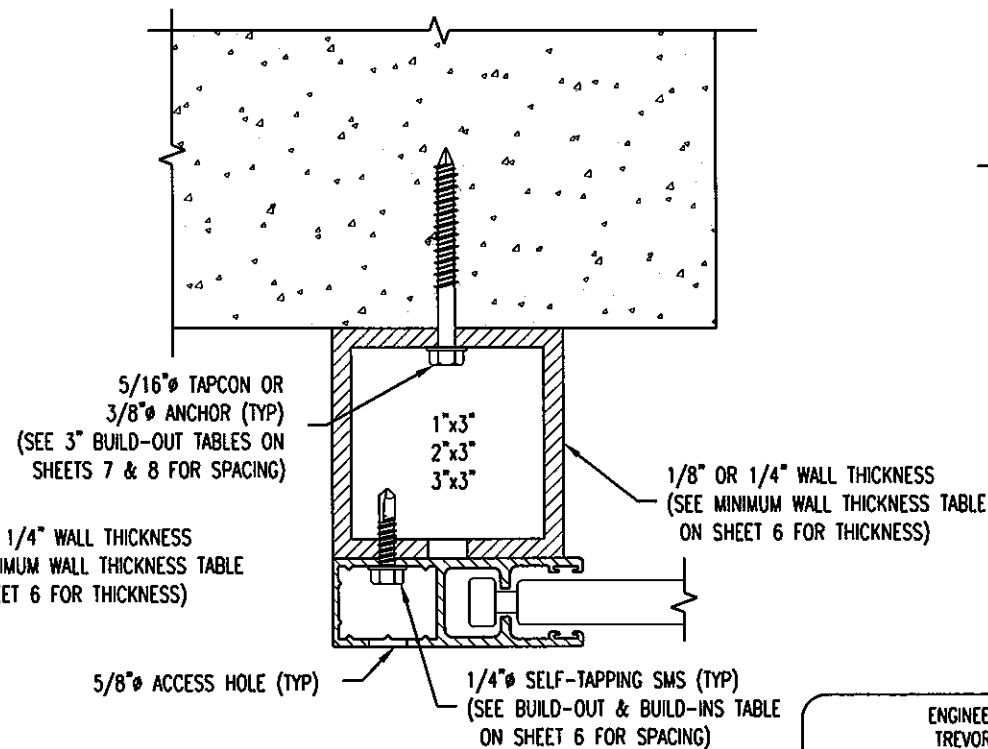
SECTION A-A (OPTION 1)
3 1/4" END-RETENTION TRACK - WALL MOUNT INSTALLATION - N.T.S.



SECTION B-B (BUILD-OUT)
OUTSIDE BUILD-OUT INSTALLATION - N.T.S.

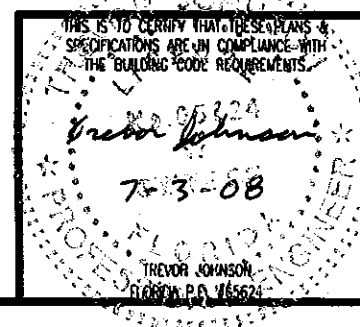


SECTION A-A (OPTION 2A)
4" BUILD-OUT INSTALLATION - N.T.S.

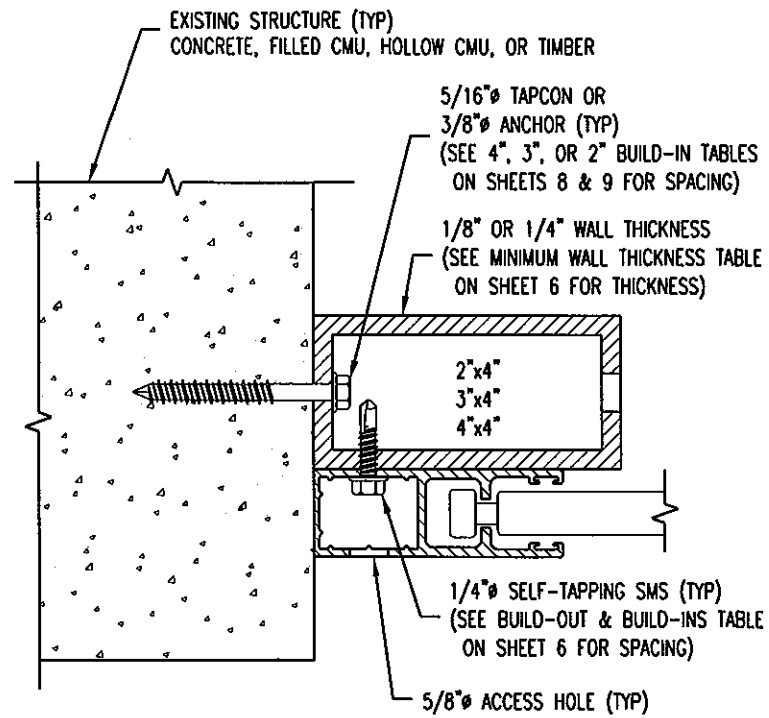


SECTION A-A (OPTION 2B)
3" BUILD-OUT INSTALLATION - N.T.S.

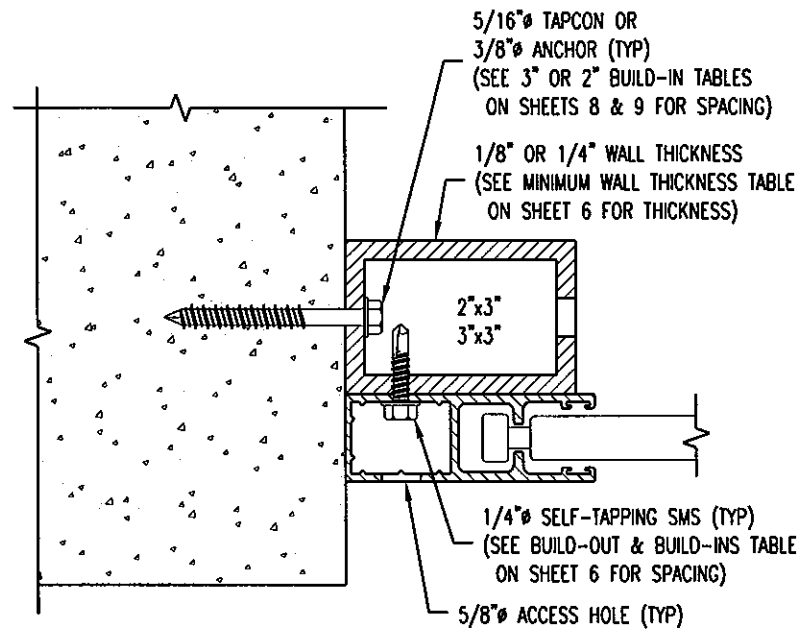
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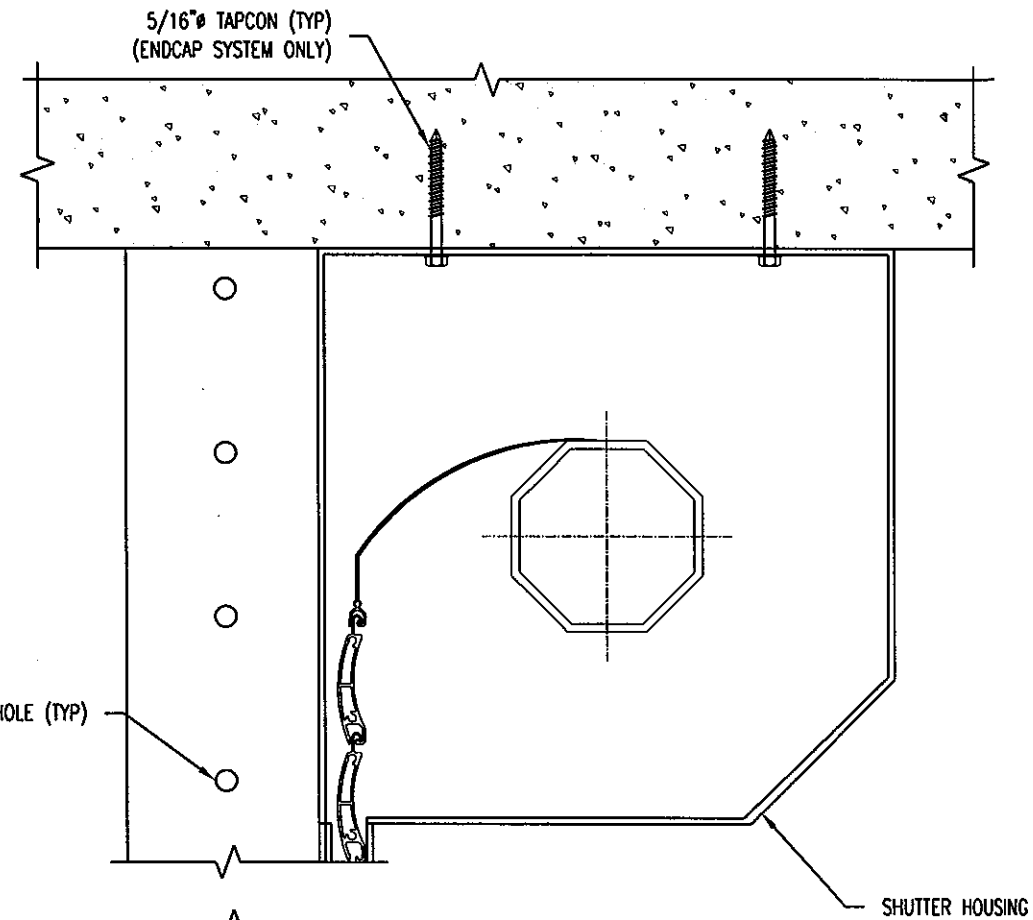
58mm END-RETENTION ROLL SHUTTER SYSTEM		
ADVANCED HURRICANE TECHNOLOGY, INC. 6063 JANES LANE NAPLES, FL 34109		
DATE: 7/3/08	DWG. No.: 2	REV.:
SCALE: N.T.S.	SHEET: 2 OF 9	



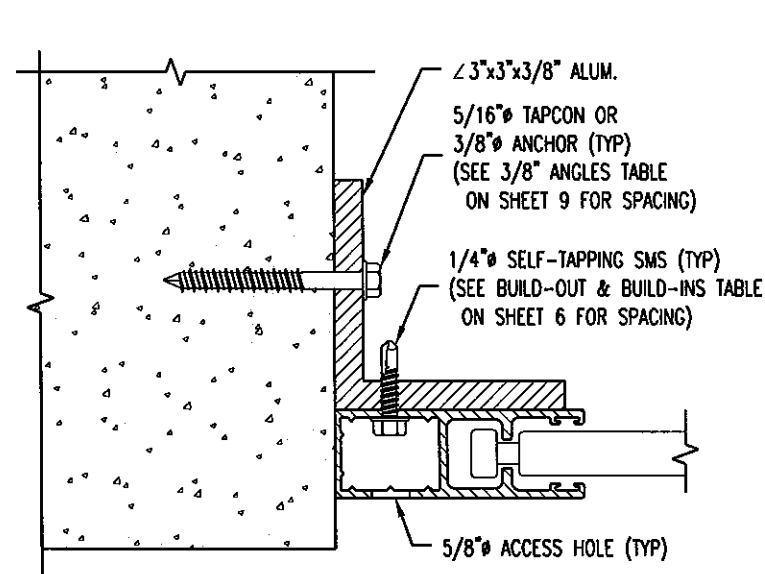
SECTION A-A (OPTION 3A)
4", 3", OR 2" BUILD-IN INSTALLATION - N.T.S.



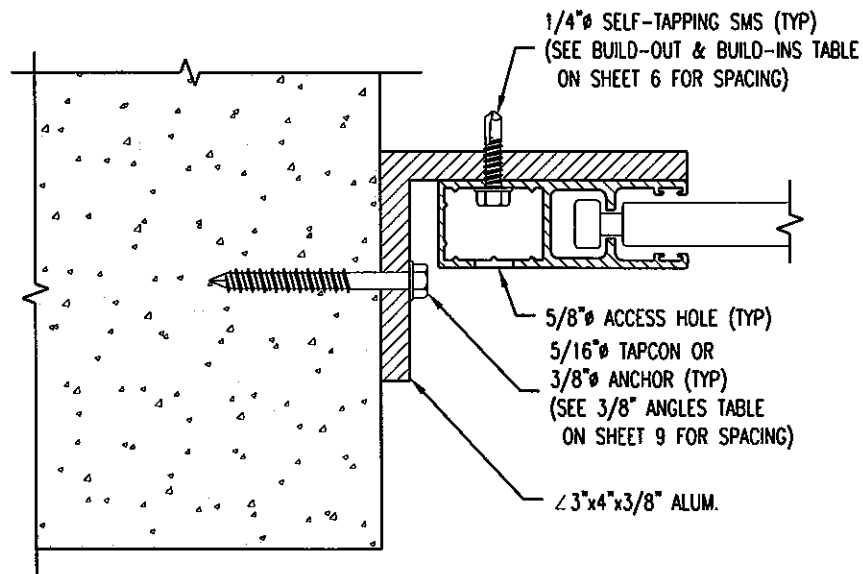
SECTION A-A (OPTION 3B)
3" OR 2" BUILD-IN INSTALLATION - N.T.S.



SECTION B-B (BUILD-IN)
INSIDE BUILD-IN INSTALLATION - N.T.S.

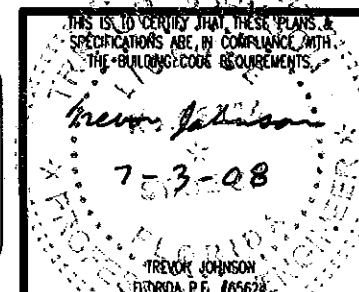


SECTION A-A (OPTION 4A)
3/8" ANGLE INSTALLATION - N.T.S.

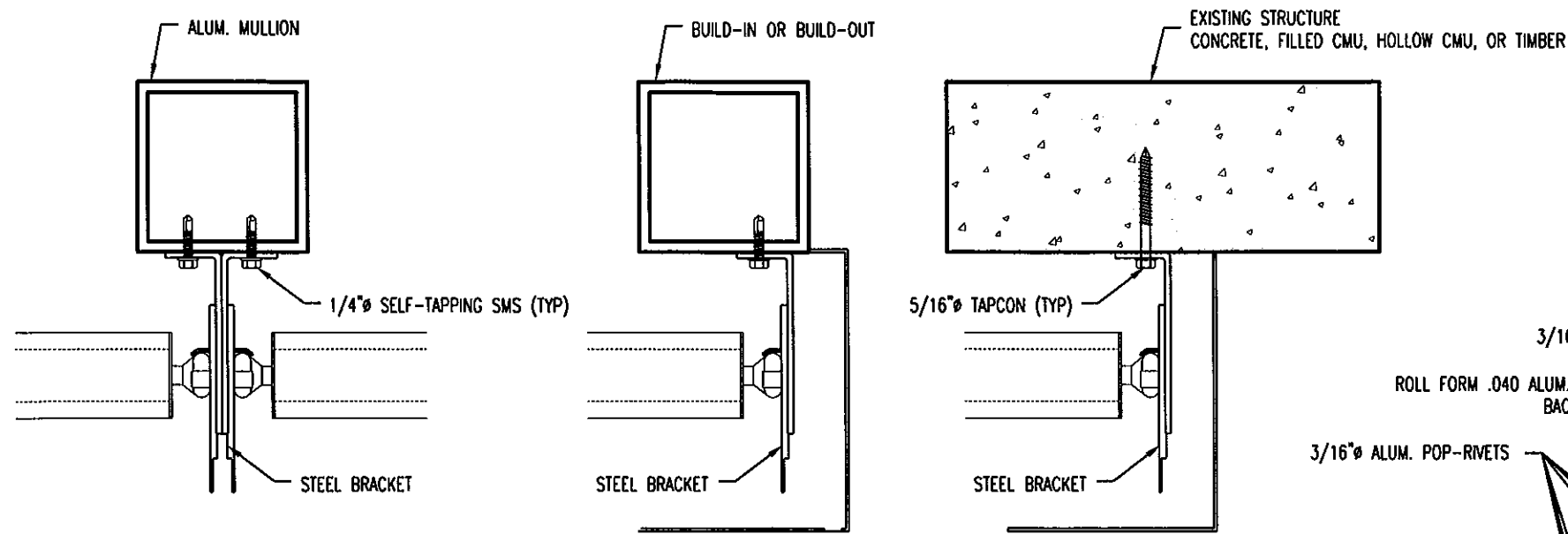


SECTION A-A (OPTION 4B)
3/8" ANGLE INSTALLATION - N.T.S.

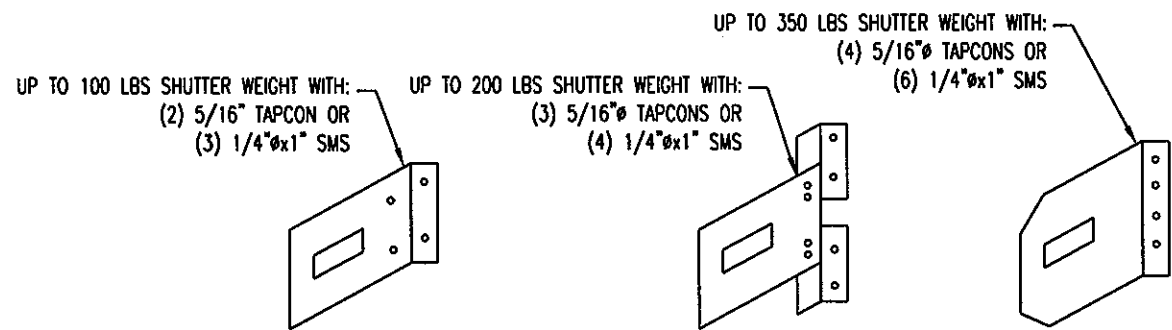
ENGINEERING REVIEW BY:
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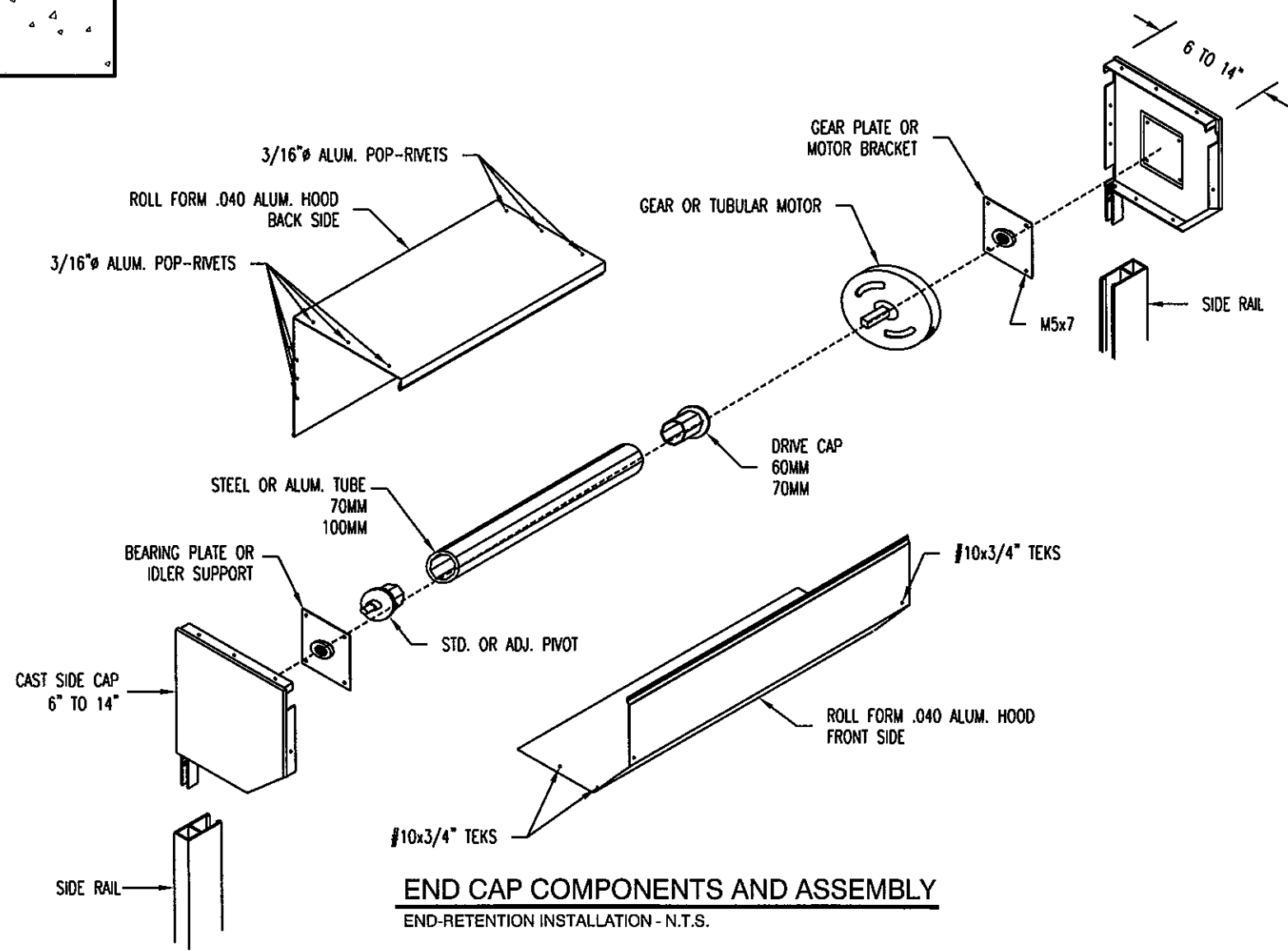
58mm END-RETENTION ROLL SHUTTER SYSTEM		
ADVANCED HURRICANE TECHNOLOGY, INC. 6063 JANES LANE NAPLES, FL 34109		
DATE: 7/3/08	DWG. No.: 3	REV.:
SCALE: N.T.S.	SHEET: 3 OF 9	



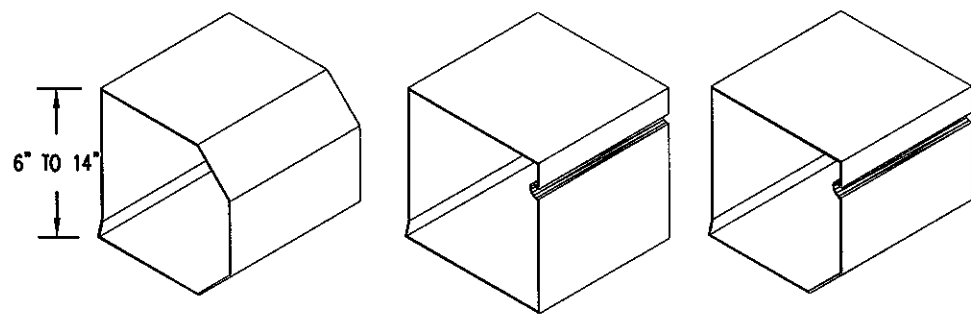
MOUNTING BRACKET INSTALLATION
END-RETENTION INSTALLATION - N.T.S.



MOUNTING BRACKET
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.

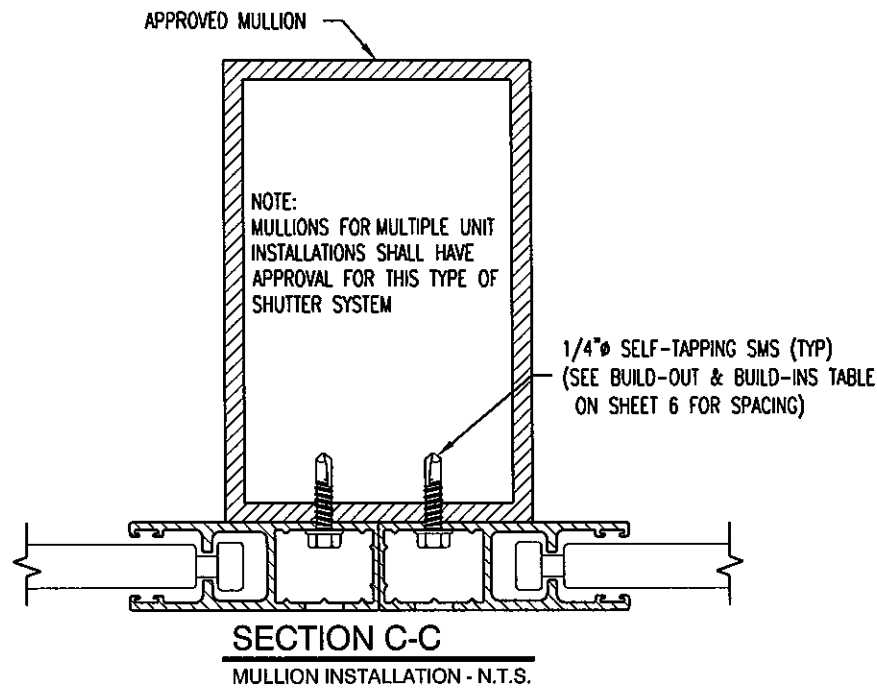
ENGINEERING REVIEW BY:
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16681 MCGREGOR BLVD., SUITE 102
FORT MYERS, FL 33908
PHONE: (239) 267-3666
CERTIFICATE OF AUTHORIZATION: #9451

THIS IS TO CERTIFY THAT THESE PLANS & SPECIFICATIONS ARE IN COMPLIANCE WITH THE BUILDING CODE REQUIREMENTS.

Trevor Johnson
7-3-08

TREVOR JOHNSON
FLORIDA P.E. #65624

58mm END-RETENTION ROLL SHUTTER SYSTEM		
ADVANCED HURRICANE TECHNOLOGY, INC. 6063 JANES LANE NAPLES, FL 34109		
DATE: 7/3/08	DWG. No.: 4	REV.:
SCALE: N.T.S.	SHEET: 4 OF 9	

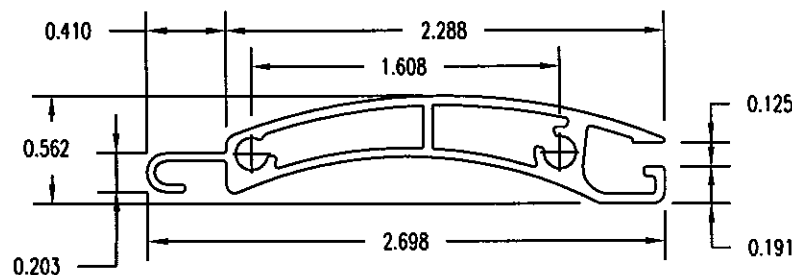
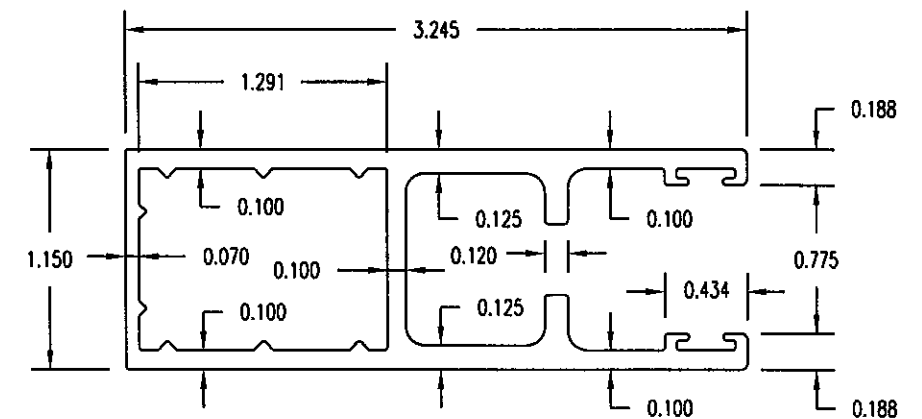
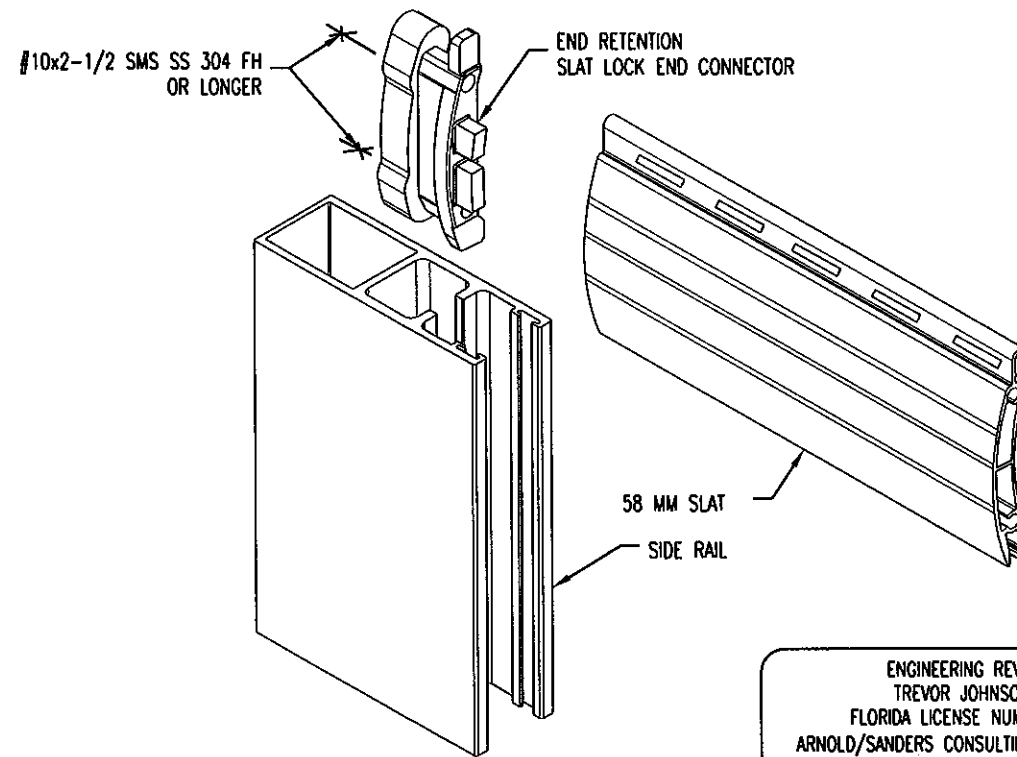
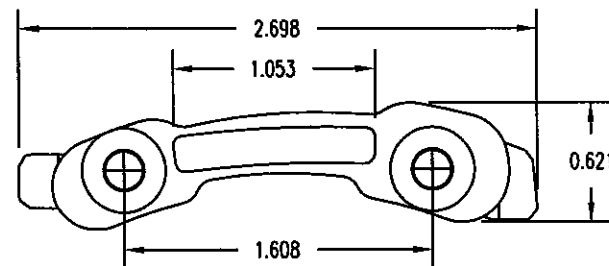


LOADS ON EXISTING STRUCTURE FROM SHUTTER SYSTEM
T_x = PARALLEL LOADS (PLF)

SLAT SPAN	PRESSURE (PSF)										
	130	120	110	100	90	80	70	60	50	40	30
3'-0"	195	180	165	150	135	120	105	90	75	60	45
4'-0"	260	240	220	200	180	160	140	120	100	80	60
5'-0"	588	444	301	250	225	200	175	150	125	100	75
6'-0"	1547	1364	1181	991	807	623	433	248	150	120	90
7'-0"	2396	2167	1933	1703	1473	1237	1006	769	537	299	105
8'-0"	3187	2913	2638	2358	2077	1800	1518	1230	946	662	372
9'-0"	3961	3638	3314	2984	2658	2327	1994	1661	1322	986	645
10'-0"	4718	4351	3978	3601	3226	2842	2460	2073	1681	1290	891
11'-0"	5474	5056	4637	4212	3786	3354	2917	2477	2032	1582	1129
12'-0"	-	5760	5291	4820	4341	3859	3371	2877	2377	1871	1359
13'-0"	-	-	5945	5426	4898	4364	3823	3276	2720	2157	1583
14'-0"	-	-	-	6029	5451	4869	4275	3674	3064	2442	1810
15'-0"	-	-	-	-	6006	5372	4728	4073	3406	2726	2033
16'-0"	-	-	-	-	-	5872	5180	4471	3749	3011	2258
17'-0"	-	-	-	-	-	-	5628	4869	4093	3297	2481
18'-0"	-	-	-	-	-	-	-	5265	4435	3583	2707
19'-0"	-	-	-	-	-	-	-	5661	4777	3870	2932
20'-0"	-	-	-	-	-	-	-	6054	5119	4155	3159
21'-0"	-	-	-	-	-	-	-	-	5460	4440	3385
22'-0"	-	-	-	-	-	-	-	-	5797	4726	3612
23'-0"	-	-	-	-	-	-	-	-	-	5010	3838
24'-0"	-	-	-	-	-	-	-	-	-	5292	4065

LOADS ON EXISTING STRUCTURE FROM SHUTTER SYSTEM
T_y = PERPENDICULAR LOADS (PLF)

SLAT SPAN	PRESSURE (PSF)										
	130	120	110	100	90	80	70	60	50	40	30
3'-0"	198	183	168	153	138	123	108	93	78	63	48
4'-0"	262	242	222	202	182	162	142	122	102	82	62
5'-0"	326	301	276	250	225	201	176	151	126	101	76
6'-0"	390	361	331	300	271	241	210	181	150	121	91
7'-0"	456	421	385	350	316	280	245	210	176	140	105
8'-0"	520	480	441	400	360	321	281	240	200	160	120
9'-0"	586	540	495	450	405	360	315	270	225	180	135
10'-0"	650	600	550	500	450	400	350	300	250	200	150
11'-0"	715	660	605	550	495	440	385	330	275	220	165
12'-0"	-	720	660	600	540	480	420	360	300	240	180
13'-0"	-	-	715	650	585	520	455	390	325	260	195
14'-0"	-	-	-	700	630	560	490	420	350	280	210
15'-0"	-	-	-	-	675	600	525	450	375	300	225
16'-0"	-	-	-	-	-	640	560	480	400	320	240
17'-0"	-	-	-	-	-	-	595	510	425	340	255
18'-0"	-	-	-	-	-	-	-	540	450	360	270
19'-0"	-	-	-	-	-	-	-	570	475	380	285
20'-0"	-	-	-	-	-	-	-	600	500	400	300
21'-0"	-	-	-	-	-	-	-	-	525	420	315
22'-0"	-	-	-	-	-	-	-	-	550	440	330
23'-0"	-	-	-	-	-	-	-	-	-	460	345
24'-0"	-	-	-	-	-	-	-	-	-	480	360



6063-T6 ALUMINUM 58 MM SLAT
END-RETENTION SLAT - SCALE: 1:1

END CONNECTOR DETAIL
END-RETENTION - N.T.S.

6063-T6 ALUMINUM 3 1/4" SIDE RAIL
3 1/4" END-RETENTION TRACK - SCALE: 1:1

ENGINEERING REVIEW BY:
TREVOR JOHNSON, P.E.
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16681 MCGREGOR BLVD., SUITE 102
FORT MYERS, FL 33908
PHONE: (239) 267-3666
CERTIFICATE OF AUTHORIZATION: #9451

THIS IS TO CERTIFY THAT THESE PLANS & SPECIFICATIONS ARE IN COMPLIANCE WITH THE BUILDING CODE REQUIREMENTS.

Trevor Johnson
7-3-08

TREVOR JOHNSON
FLORIDA P.E. #65624

58mm END-RETENTION ROLL SHUTTER SYSTEM

ADVANCED HURRICANE TECHNOLOGY, INC.
6063 JANES LANE
NAPLES, FL 34109

DATE: 7/3/08	DWG. No.: 5	REV.:
SCALE: N.T.S.	SHEET: 5 OF 9	

DIRECT MOUNT			
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" ELCO ULTRACON HFH @ 6" O.C.			
SLAT SPANS UP TO	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
5'-0"	130	115	130
5'-6"	130	94	125
6'-0"	130	78	104
6'-6"	128	67	89
7'-0"	113	58	77
7'-6"	101	51	67
8'-0"	91	45	60
8'-6"	82	40	54
9'-0"	75	37	48
9'-6"	69	33	44
10'-0"	64	31	40
10'-6"	60	28	37
11'-0"	56	26	35
11'-6"	52	24	32
12'-0"	49	23	30
12'-6"	46	21	28
13'-0"	44	20	26
13'-6"	41	19	25
14'-0"	39	18	24
14'-6"	37	17	22
15'-0"	35	16	21
15'-6"	34	15	20
16'-0"	32	15	19
16'-6"	31	14	18
17'-0"	30	14	18
17'-6"	29	13	17
18'-0"	28	12	16
18'-6"	26	12	16
19'-0"	26	12	15
19'-6"	25	11	14
20'-0"	24	11	14
20'-6"	23	10	13
21'-0"	22	10	13

DIRECT MOUNT			
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" HFH ELCO ULTRACON @ 4" O.C.			
SLAT SPANS UP TO	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
8'-0"	130	62	83
8'-6"	119	56	75
9'-0"	109	51	68
9'-6"	101	47	62
10'-0"	94	43	58
10'-6"	87	40	53
11'-0"	82	37	50
11'-6"	77	35	46
12'-0"	72	33	43
12'-6"	68	31	41
13'-0"	65	29	38
13'-6"	61	27	36
14'-0"	58	26	34
14'-6"	56	25	33
15'-0"	53	24	31
15'-6"	51	22	30
16'-0"	49	22	28
16'-6"	46	21	27
17'-0"	45	20	26
17'-6"	43	19	25
18'-0"	41	18	24
18'-6"	40	18	23
19'-0"	38	17	22
19'-6"	37	16	21
20'-0"	36	16	21
20'-6"	35	15	20
21'-0"	34	15	19
21'-6"	33	14	19
22'-0"	32	14	18
22'-6"	31	13	17
23'-0"	30	13	17
23'-6"	29	13	16
24'-0"	28	12	16

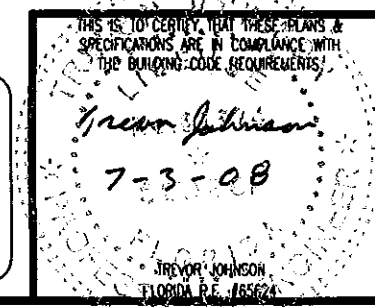
DIRECT MOUNT	
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 3/8" ELCO CONFLX @ 8" O.C.	
SLAT SPANS UP TO	CONC. & FILLED CMU
	PRESSURE (PSF)
8'-0"	130
8'-6"	130
9'-0"	119
9'-6"	110
10'-0"	102
10'-6"	96
11'-0"	90
11'-6"	84
12'-0"	79
12'-6"	75
13'-0"	71
13'-6"	67
14'-0"	64
14'-6"	61
15'-0"	58
15'-6"	56
16'-0"	53
16'-6"	51
17'-0"	49
17'-6"	47
18'-0"	46
18'-6"	44
19'-0"	42
19'-6"	41
20'-0"	40
20'-6"	38
21'-0"	37
21'-6"	36
22'-0"	35
23'-0"	33
24'-0"	31

BUILD-OUTS & BUILD-INS		
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 1/4"-14 HWH ELCO DRIL-FLEX.		
SLAT SPANS UP TO	@ 4" O.C.	@ 6" O.C.
	PRESSURE (PSF)	PRESSURE (PSF)
8'-0"	130	102
8'-6"	130	93
9'-0"	125	86
9'-6"	116	79
10'-0"	108	73
10'-6"	101	68
11'-0"	95	64
11'-6"	89	60
12'-0"	84	56
12'-6"	79	53
13'-0"	75	50
13'-6"	71	48
14'-0"	68	45
14'-6"	65	43
15'-0"	62	41
15'-6"	59	39
16'-0"	57	38
16'-6"	54	36
17'-0"	52	35
17'-6"	50	33
18'-0"	48	32
18'-6"	47	31
19'-0"	45	30
19'-6"	44	29
20'-0"	42	28
20'-6"	41	27
21'-0"	40	26
21'-6"	38	25
22'-0"	37	25
22'-6"	36	24
23'-0"	35	23
23'-6"	34	22
24'-0"	33	22

MINIMUM WALL THICKNESS	
MAXIMUM DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL ATTACHED TO BUILD-OUTS AND BUILD-INS WITH AN 1/8" WALL THICKNESS	
SLAT SPAN	PRESSURE (PSF)
5'-0"	130
5'-6"	114
6'-0"	97
6'-6"	85
7'-0"	75
7'-6"	67
8'-0"	61
8'-6"	55
9'-0"	51
9'-6"	47
10'-0"	43
10'-6"	40
11'-0"	38
11'-6"	35
12'-0"	33
12'-6"	31
13'-0"	30
13'-6"	28
14'-0"	27
14'-6"	26
15'-0"	24
15'-6"	23
16'-0"	22
16'-6"	21
17'-0"	21
17'-6"	20
18'-0"	19
18'-6"	18
19'-0"	18
19'-6"	17
20'-0"	17
20'-6"	16
21'-0"	16

NOTE: THE MINIMUM WALL THICKNESS FOR BUILD-OUTS AND BUILD-INS SHALL BE 1/4" WHEN THE DESIGN WIND LOADS OR SLAT SPANS EXCEED VALUES SHOWN ON THE "MINIMUM WALL THICKNESS" TABLE.

ENGINEERING REVIEW BY:
TREVOR JOHNSON, P.E.
FLORIDA LICENSE NUMBER: 65624
ARNOLD/SANDERS CONSULTING ENGINEERS, INC.
16681 MCGREGOR BLVD., SUITE 102
FORT MYERS, FL 33908
PHONE: (239) 267-3666
CERTIFICATE OF AUTHORIZATION: #9451



58mm END-RETENTION ROLL SHUTTER SYSTEM		
ADVANCED HURRICANE TECHNOLOGY, INC. 6063 JANES LANE NAPLES, FL 34109		
DATE: 7/3/08	DWG. No.: 6	REV.:
SCALE: N.T.S.	SHEET: 6 OF 9	

4" BUILD-OUTS			
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" ELCO ULTRACON HFH @ 6" O.C.			
SLAT SPANS UP TO	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
4'-9"	130	130	130
5'-0"	130	122	130
5'-3"	130	105	130
5'-6"	130	92	116
5'-9"	126	81	103
6'-0"	113	71	91
6'-3"	103	64	82
6'-6"	94	57	75
6'-9"	86	51	68
7'-0"	79	46	62
7'-3"	73	42	57
7'-6"	67	38	52
7'-9"	63	35	48
8'-0"	59	32	45
8'-3"	55	30	42
8'-6"	51	28	39
8'-9"	48	26	37
9'-0"	46	24	34
9'-3"	43	22	32
9'-6"	41	21	31
9'-9"	39	20	29
10'-0"	37	19	27
10'-3"	35	18	26
10'-6"	34	17	25
10'-9"	32	16	24
11'-0"	31	15	23
11'-3"	30	14	22
11'-6"	28	14	21
11'-9"	27	13	20
12'-0"	26	12	19
12'-3"	25	12	18
12'-6"	24	11	18
12'-9"	23	11	17

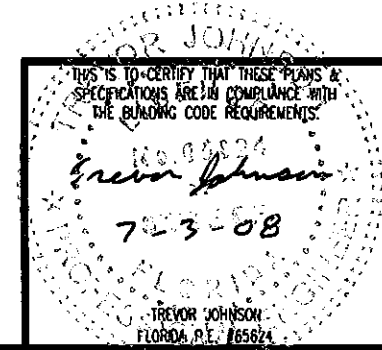
4" BUILD-OUTS			
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" HFH ELCO ULTRACON @ 4" O.C.			
SLAT SPANS UP TO	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
5'-0"	130	130	130
5'-4"	130	117	130
5'-8"	130	98	130
6'-0"	130	85	117
6'-4"	130	73	102
6'-8"	120	64	91
7'-0"	109	56	81
7'-4"	98	50	73
7'-8"	90	45	66
8'-0"	82	40	60
8'-4"	76	37	55
8'-8"	70	33	51
9'-0"	66	31	47
9'-4"	61	28	44
9'-8"	57	26	41
10'-0"	54	24	38
10'-4"	51	23	36
10'-8"	48	21	34
11'-0"	45	20	32
11'-4"	43	19	30
11'-8"	41	18	29
12'-0"	39	17	27
12'-4"	37	16	26
12'-8"	35	15	25
13'-0"	34	14	24
13'-4"	33	14	23
13'-8"	31	13	22
14'-0"	30	12	21
14'-4"	29	12	20
14'-8"	28	11	19
15'-0"	27	11	18
15'-4"	26	10	18
15'-8"	25	10	17

4" BUILD-OUTS	
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 3/8" ELCO CONFLEX @ 4" O.C.	
SLAT SPANS UP TO	CONC. & FILLED CMU PRESSURE (PSF)
9'-0"	130
9'-6"	130
10'-0"	123
10'-6"	113
11'-0"	105
11'-6"	97
12'-0"	91
12'-6"	85
13'-0"	80
13'-6"	76
14'-0"	71
14'-6"	67
15'-0"	64
15'-6"	61
16'-0"	58
16'-6"	55
17'-0"	53
17'-6"	50
18'-0"	48
18'-6"	46
19'-0"	45
19'-6"	43
20'-0"	41
20'-6"	40
21'-0"	38
21'-6"	37
22'-0"	36
22'-6"	35
23'-0"	34
23'-6"	32
24'-0"	31

3" BUILD-OUTS			
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" ELCO ULTRACON HFH @ 6" O.C.			
SLAT SPANS UP TO	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
4'-9"	130	130	130
5'-0"	130	118	130
5'-3"	130	102	124
5'-6"	130	89	109
5'-9"	116	78	96
6'-0"	104	69	86
6'-3"	94	61	78
6'-6"	86	55	70
6'-9"	79	49	63
7'-0"	72	45	58
7'-3"	67	40	53
7'-6"	62	37	49
7'-9"	57	34	45
8'-0"	53	31	42
8'-3"	50	29	39
8'-6"	47	27	37
8'-9"	44	25	34
9'-0"	42	23	32
9'-3"	39	22	30
9'-6"	37	20	29
9'-9"	35	19	27
10'-0"	34	18	26
10'-3"	32	17	24
10'-6"	31	16	23
10'-9"	29	15	22
11'-0"	28	14	21
11'-3"	27	14	20
11'-6"	26	13	19
11'-9"	25	12	18
12'-0"	24	12	18
12'-3"	23	11	17
12'-6"	22	11	16
12'-9"	21	10	16

3" BUILD-OUTS			
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" HFH ELCO ULTRACON @ 4" O.C.			
SLAT SPANS UP TO	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
5'-0"	130	130	130
5'-4"	130	111	130
5'-8"	130	94	123
6'-0"	130	80	107
6'-4"	120	69	94
6'-8"	107	60	83
7'-0"	97	53	74
7'-4"	87	47	67
7'-8"	80	42	61
8'-0"	73	38	55
8'-4"	67	35	51
8'-8"	63	32	47
9'-0"	58	29	43
9'-4"	54	27	40
9'-8"	51	25	37
10'-0"	48	23	35
10'-4"	45	21	33
10'-8"	42	20	31
11'-0"	40	19	29
11'-4"	38	18	27
11'-8"	36	17	26
12'-0"	34	16	25
12'-4"	33	15	24
12'-8"	31	14	22
13'-0"	30	13	21
13'-4"	29	13	20
13'-8"	28	12	20
14'-0"	27	12	19
14'-4"	26	11	18
14'-8"	25	11	17
15'-0"	24	10	17
15'-4"	23	10	16
15'-8"	22	9	16

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CERTIFICATE OF AUTHORIZATION: #9451



58mm END-RETENTION
ROLL SHUTTER SYSTEM

ADVANCED HURRICANE TECHNOLOGY, INC.
6063 JANES LANE
NAPLES, FL 34109

DATE: 7/3/08 DWG. No.: 7 REV.:

SCALE: N.T.S. SHEET: 7 OF 9

3" BUILD-OUTS	
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 3/8" ELCO CONPLEX @ 4" O.C.	
SLAT SPANS UP TO	CONC. & FILLED CMU PRESSURE (PSF)
8'-6"	130
9'-0"	121
9'-6"	110
10'-0"	101
10'-6"	93
11'-0"	87
11'-6"	81
12'-0"	75
12'-6"	70
13'-0"	66
13'-6"	62
14'-0"	59
14'-6"	56
15'-0"	53
15'-6"	50
16'-0"	48
16'-6"	46
17'-0"	44
17'-6"	42
18'-0"	40
18'-6"	38
19'-0"	37
19'-6"	36
20'-0"	34
20'-6"	33
21'-0"	32
21'-6"	31
22'-0"	30
22'-6"	29
23'-0"	28
24'-0"	26

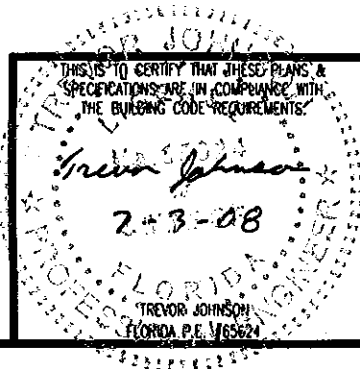
4" BUILD-INS			
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" ELCO ULTRACON HFH @ 6" O.C.			
SLAT SPANS UP TO	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
4'-9"	130	128	130
5'-0"	130	111	130
5'-3"	130	97	128
5'-6"	130	85	115
5'-9"	123	75	103
6'-0"	112	67	94
6'-3"	103	60	86
6'-6"	95	54	78
6'-9"	87	49	72
7'-0"	81	45	67
7'-3"	76	41	62
7'-6"	70	38	58
7'-9"	66	35	54
8'-0"	62	32	51
8'-3"	58	30	48
8'-6"	55	28	45
8'-9"	52	26	42
9'-0"	50	25	40
9'-3"	47	23	38
9'-6"	45	22	36
9'-9"	43	21	35
10'-0"	41	19	33
10'-3"	39	18	31
10'-6"	38	18	30
10'-9"	36	17	29
11'-0"	35	16	28
11'-3"	33	15	27
11'-6"	32	15	26
11'-9"	31	14	25
12'-0"	30	13	24
12'-3"	29	13	23
12'-6"	28	12	22
12'-9"	27	12	21

4" BUILD-INS			
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" HFH ELCO ULTRACON @ 4" O.C.			
SLAT SPANS UP TO	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
5'-0"	130	129	130
5'-4"	130	108	130
5'-8"	130	93	130
6'-0"	130	80	123
6'-4"	130	70	110
6'-8"	123	62	99
7'-0"	112	56	90
7'-4"	103	50	82
7'-8"	95	45	76
8'-0"	88	41	70
8'-4"	81	38	65
8'-8"	76	35	60
9'-0"	71	32	56
9'-4"	67	30	53
9'-8"	63	28	50
10'-0"	60	26	47
10'-4"	56	24	44
10'-8"	54	23	42
11'-0"	51	21	40
11'-4"	49	20	38
11'-8"	46	19	36
12'-0"	44	18	35
12'-4"	42	17	33
12'-8"	41	16	32
13'-0"	39	16	30
13'-4"	37	15	29
13'-8"	36	14	28
14'-0"	35	14	27
14'-4"	33	13	26
14'-8"	32	13	25
15'-0"	31	12	24
15'-4"	30	12	23
15'-8"	29	11	23

4" BUILD-INS	
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 3/8" ELCO CONPLEX @ 4" O.C.	
SLAT SPANS UP TO	CONC. & FILLED CMU PRESSURE (PSF)
9'-0"	130
9'-6"	120
10'-0"	111
10'-6"	103
11'-0"	96
11'-6"	90
12'-0"	84
12'-6"	80
13'-0"	74
13'-6"	71
14'-0"	67
14'-6"	64
15'-0"	60
15'-6"	58
16'-0"	55
16'-6"	53
17'-0"	50
17'-6"	48
18'-0"	46
18'-6"	45
19'-0"	43
19'-6"	41
20'-0"	40
20'-6"	39
21'-0"	37
21'-6"	36
22'-0"	34
22'-6"	33
23'-0"	33
23'-6"	32
24'-0"	31

3" BUILD-INS			
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" ELCO ULTRACON HFH @ 6" O.C.			
SLAT SPANS UP TO	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
4'-9"	130	123	130
5'-0"	130	107	130
5'-3"	130	93	121
5'-6"	126	81	108
5'-9"	114	72	97
6'-0"	104	64	88
6'-3"	95	58	80
6'-6"	87	52	73
6'-9"	81	47	67
7'-0"	75	43	62
7'-3"	70	39	58
7'-6"	65	36	54
7'-9"	61	33	50
8'-0"	57	31	47
8'-3"	54	29	44
8'-6"	51	27	42
8'-9"	48	25	40
9'-0"	46	23	37
9'-3"	43	22	36
9'-6"	41	21	34
9'-9"	39	20	32
10'-0"	38	19	31
10'-3"	36	18	29
10'-6"	35	17	28
10'-9"	33	16	27
11'-0"	32	15	26
11'-3"	31	14	25
11'-6"	29	14	24
11'-9"	28	13	23
12'-0"	27	13	22
12'-3"	27	12	21
12'-6"	26	12	21
12'-9"	25	11	20

ENGINEERING REVIEW BY:
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58mm END-RETENTION
ROLL SHUTTER SYSTEM

ADVANCED HURRICANE TECHNOLOGY, INC.
6063 JANES LANE
NAPLES, FL 34109

DATE: 7/3/08 DWG. No.: 8 REV.:

SCALE: N.T.S. SHEET: 8 OF 9

3" BUILD-INS			
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" HFH ELCO ULTRACON @ 4" O.C.			
SLAT SPANS UP TO	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
5'-0"	130	122	130
5'-4"	130	103	130
5'-8"	130	88	128
6'-0"	130	76	113
6'-4"	123	67	101
6'-8"	111	59	91
7'-0"	101	52	83
7'-4"	93	47	75
7'-8"	86	42	69
8'-0"	79	39	64
8'-4"	74	35	59
8'-8"	69	32	55
9'-0"	64	30	52
9'-4"	60	28	48
9'-8"	57	26	45
10'-0"	54	24	43
10'-4"	51	23	41
10'-8"	48	21	38
11'-0"	46	20	36
11'-4"	44	19	35
11'-8"	42	18	33
12'-0"	40	17	32
12'-4"	38	16	30
12'-8"	37	15	29
13'-0"	35	15	28
13'-4"	34	14	27
13'-8"	32	13	26
14'-0"	31	13	25
14'-4"	30	12	24
14'-8"	29	12	23
15'-0"	28	11	22
15'-4"	27	11	21
15'-8"	26	11	21

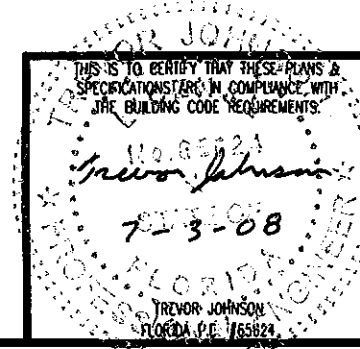
3" BUILD-INS	
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 3/8" ELCO CONFLEX @ 4" O.C.	
SLAT SPANS UP TO	CONC. & FILLED CMU
	PRESSURE (PSF)
9'-0"	130
9'-6"	120
10'-0"	111
10'-6"	103
11'-0"	96
11'-6"	90
12'-0"	84
12'-6"	79
13'-0"	74
13'-6"	71
14'-0"	67
14'-6"	63
15'-0"	60
15'-6"	58
16'-0"	55
16'-6"	53
17'-0"	50
17'-6"	48
18'-0"	46
18'-6"	45
19'-0"	43
19'-6"	41
20'-0"	40
20'-6"	39
21'-0"	37
21'-6"	36
22'-0"	35
22'-6"	34
23'-0"	33
23'-6"	32
24'-0"	31

2" BUILD-INS W/ 1/4" WALLS & 3/8" ANGLES			
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" ELCO ULTRACON HFH @ 6" O.C.			
SLAT SPANS UP TO	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
4'-9"	130	117	130
5'-0"	130	100	127
5'-3"	129	88	112
5'-6"	116	77	100
5'-9"	104	68	90
6'-0"	95	60	81
6'-3"	87	54	74
6'-6"	80	49	68
6'-9"	74	44	62
7'-0"	68	40	58
7'-3"	63	37	53
7'-6"	59	34	50
7'-9"	55	31	46
8'-0"	52	29	43
8'-3"	49	27	41
8'-6"	46	25	38
8'-9"	44	23	36
9'-0"	41	22	34
9'-3"	39	20	32
9'-6"	37	19	31
9'-9"	36	18	29
10'-0"	34	17	28
10'-3"	33	16	27
10'-6"	31	15	26
10'-9"	30	15	24
11'-0"	29	14	23
11'-3"	28	13	23
11'-6"	27	13	22
11'-9"	26	12	21
12'-0"	25	12	20
12'-3"	24	11	19
12'-6"	23	11	19
12'-9"	22	10	18

2" BUILD-INS W/ 1/4" WALLS & 3/8" ANGLES			
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 5/16" HFH ELCO ULTRACON @ 4" O.C.			
SLAT SPANS UP TO	CONC. & FILLED CMU	HOLLOW CMU	TIMBER
	PRESSURE (PSF)	PRESSURE (PSF)	PRESSURE (PSF)
5'-0"	130	114	130
5'-4"	130	96	130
5'-8"	130	82	117
6'-0"	123	71	103
6'-4"	111	62	92
6'-8"	100	54	83
7'-0"	91	48	75
7'-4"	83	43	68
7'-8"	77	39	63
8'-0"	71	36	58
8'-4"	66	32	54
8'-8"	61	30	50
9'-0"	57	28	47
9'-4"	54	26	44
9'-8"	51	24	41
10'-0"	48	22	39
10'-4"	45	21	36
10'-8"	43	19	35
11'-0"	41	18	33
11'-4"	39	17	31
11'-8"	37	16	30
12'-0"	35	16	28
12'-4"	34	15	27
12'-8"	33	14	26
13'-0"	31	13	25
13'-4"	30	13	24
13'-8"	29	12	23
14'-0"	28	12	22
14'-4"	27	11	21
14'-8"	26	11	21
15'-0"	25	10	20
15'-4"	24	10	19
15'-8"	23	10	19

2" BUILD-INS W/ 1/4" WALLS & 3/8"	
DESIGN PRESSURE OF A SINGLE UNIT SLAT WALL FOR ANY HEIGHT ATTACHED WITH 3/8" ELCO CONFLEX @ 6" O.C.	
SLAT SPANS UP TO	CONC. & FILLED CMU
	PRESSURE (PSF)
6'-0"	130
6'-6"	130
7'-0"	119
7'-6"	105
8'-0"	94
8'-6"	85
9'-0"	77
9'-6"	71
10'-0"	65
10'-6"	60
11'-0"	56
11'-6"	52
12'-0"	49
12'-6"	46
13'-0"	43
13'-6"	41
14'-0"	38
14'-6"	36
15'-0"	35
15'-6"	33
16'-0"	31
16'-6"	30
17'-0"	29
17'-6"	28
18'-0"	26
18'-6"	25
19'-0"	24
19'-6"	24
20'-0"	23
20'-6"	22
21'-0"	21

ENGINEERING REVIEW BY:
TREVOR JOHNSON, P.E.
FLORIDA LICENSE NUMBER: 65624
ARNOLD/SANDERS CONSULTING ENGINEERS, INC.
16681 MCGREGOR BLVD., SUITE 102
FORT MYERS, FL 33908
PHONE: (239) 267-3666
CERTIFICATE OF AUTHORIZATION: #9451



58mm END-RETENTION
ROLL SHUTTER SYSTEM

ADVANCED HURRICANE TECHNOLOGY, INC.
6063 JANES LANE
NAPLES, FL 34109

DATE: 7/3/08 DWG. No.: 9 REV.:

SCALE: N.T.S. SHEET: 9 OF 9