GENERAL NOTES: (FLORIDA BUILDING CODE 2010 - non HVHZ)

1- DEFINITION: THIS PRODUCT IS A HURRICANE PROTECTION DEVICE; DESIGNED, CONSTRUCTED AND ERECTED TO EASILY ENCLOSE AN AREA, PROVIDING PROTECTION FROM HURRICANE FORCE WINDS AND WIND BORNE DEBRIS WITHIN THE ALLOWABLE DESIGNED PRESSURES AND LIMITATIONS STATED IN THIS APPROVAL.

2- POSTING: A PERMANENT LABEL SHALL BE PROVIDED AS PER FBC 2010 SECTION 1715. 8. IT SHALL BE LOCATED ON THE BOTTOM OF THE HOOD FACING THE EXTERIOR OR OUTSIDE OR THE BOTTOM SLAT FACING THE EXTERIOR OR OUTSIDE AND A MINIMUM OF ONE LABEL PER OPENING.

3- GLASS SEPARATION (AS SPECIFIED IN TABLE 2): PRODUCT IS QUALIFIED AS "NON POROUS", THEREFORE GLAZING SEPARATION IS NOT REQUIRED WITH EXCEPTION FOR THE FOLLOWING LOCATIONS:

3. 1- ESSENTIAL FACILITIES AS DEFINED IN ASCE 7-10

3. 2- IN WIND ZONE 4 WHERE THE SPECIFYING AUTHORITY HAS SPECIFIED OPTIONAL ADDITIONAL PASS/FAIL CRITERIA IN ACCORDANCE WITH ASTM E1996-09 SECTION 7. 2. WIND ZONE 4 AS DEFINED IN ASTM E 1996 WITH MODIFICATION BY THE FBC SECTION 1609. 1. 2. 4 (LOCATIONS WITH BASIC WIND SPEED GREATER THAN 160 MPH)

4- LOADS: DESIGNED LOAD CALCULATED BASED ON THE ASCE 7-10 AND PROVIDED BY A PROFESSIONAL ARCHITECT OR ENGINEER FOR EACH SPECIFIC PROJECT. THE CALCULATED DESIGNED PRESSURE MUST NOT EXCEED THE ALLOWABLE PRESSURES FOR EACH SHUTTER COMPONENT TO BE USED. THE DESIGN PRESSURES ARE PERMITTED TO BE MULTIPLED BY 0. 6

5- MATERIAL: ALL EXTRUDED ALUMINUM SHAPES SHALL BE MADE OF 6063-T6 OR AS NOTED.

6- FASTENERS: ASSEMBLY SCREWS AND ANCHORS SHALL BE AS SPECIFIED IN THE CURRENT SET OF DRAWINGS. INSTALLATION AND LOADS AS PER THIS APPROVAL.

7- REINFORCEMENTS SUCH AS STORM BARS AND MULLIONS WERE DESIGNED BY RATIONAL ANALYSIS AND ARE PART OF THESE DRAWINGS. THE CONDITIONS ADDRESSED IN THE PROPOSED DRAWINGS HAVE CONSERVATIVE LIMITATIONS IN ORDER TO FACILITATE THE DESIGN. SITE SPECIFIC CONDITIONS CAN BE ADDRESSED ON A JOB BASIS PROVIDED PROPER ENGINEERING BASED ON THE ALUMINUM DESIGN MANUAL 05.

8- USE: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, ARCHITECT OR ENGINEER OF RECORD TO VERIFY THE FOLLOWING:

8. 1- THE STABILITY OF THE STRUCTURE WHERE THE PRODUCT IS TO BE ATTACHED INSURING PROPER ANCHORAGE.

8. 2- THE SITE SPECIFIC PROJECT CRITERIA, SUCH AS BUT NOT LIMITED TO, LOCAL CODE REQUIREMENTS, DESIGNED PRESSURES ETC.

8. 3- THAT THIS APPROVAL IS ADEQUATE TO THE SPECIFIC PROJECT.

9- LIMITATIONS: PRODUCT NOT TO BE USED IN HVHZ (BROWARD & MIAMI-DADE COUNTIES) AS DEFINED IN THE FLORIDA BUILDING CODE

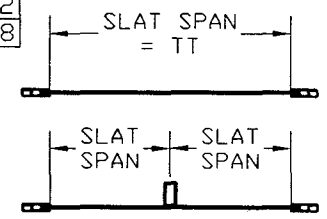
CODE AND STANDARD COMPLIANCE:
FLORIDA BUILDING CODE 2010 (non HVHZ)
ASTM E330, E1886, E1996 (LEVEL D MISSILE)

TABLE 1
ALLOWABLE DESIGNED PRESSURE

FW MAX. (IN)	TT MAX. (IN)	DESIGN RATING (PSF)
294 3/8	285 3/8	±30
273	264	±33
249	240	±38
225	216	±44
201	192	±51
177	168	±62
153	144	±75
141	132	±86
129	120	±98
117	108	±113
105	96	±133
93	84	±160
81	72	±200

TABLE 2 - *** SEE NOTE 3 ***
GLASS SEPARATION (GS) - INCHES

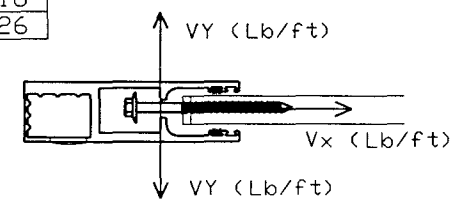
LOAD	SLAT SPAN (IN)						
PSF	72	84	96	108	144	216	285 3/8
30	1 7/8	3	4 3/8	6 3/4	9 3/4	11 5/8	19
40	2	3 5/8	5 5/8	7 3/4	9 7/8	15 1/4	
44	2	3 7/8	6	7 7/8	10 1/8	16 7/8	
50	2 1/8	4 1/4	6 3/4	8 1/8	10 3/8		
60	2 3/8	4 7/8	7 3/8	8 5/8	11 1/8		
70	2 3/4	5 1/2	7 3/4	9	11 5/8		
75	3	5 7/8	8	9 1/4	12 1/8		
80	3 1/4	6 1/8	8 1/8	9 1/2			
90	3 5/8	6 7/8	8 5/8	9 7/8			
100	4 3/8	7 1/4	9	10 1/8			
110	4 7/8	7 5/8	9 1/4	10 1/2			
113	5	7 5/8	9 1/4	10 5/8			
120	5 1/2	8	9 1/2				
130	5 7/8	8 1/8	9 3/4				
133	6	8 1/4	9 3/4				
140	6 1/4	8 3/8					
150	6 3/8	8 1/2					
160	6 1/2	8 3/4					
170	6 5/8						
180	6 7/8						
190	7 1/8						
200	7 1/4						



FOR UNITS WITHOUT INSIDE STORM BARS:
SLAT SPAN = TRACK TO TRACK

TABLE 3 - TRACK REACTION (LB/FT)

LOAD	TRACK TO TRACK (TT)													
	72		84		96		108		144		216		285	
psf	VX	VY	VX	VY	VX	VY	VX	VY	VX	VY	VX	VY	VX	VY
30	0	94	0	109	0	124	0	139	504	184	1288	274	1373	361
40	0	125	0	145	0	165	89	185	736	245	1286	365		
44	0	138	0	160	0	182	142	204	811	270	1250	399		
50	0	157	0	182	0	207	223	232	924	307				
60	0	188	0	218	71	248	341	278	1056	368				
70	0	220	0	255	165	290	447	325	1213	430				
75	0	235	0	273	207	310	494	348	1246	460				
80	0	251	0	291	249	331	542	371						
90	0	282	0	327	325	372	635	417						
100	0	314	53	364	393	414	730	464						
110	0	345	103	400	478	455	818	510						
113	0	354	117	411	502	467	846	526						
120	0	376	149	437	558	496								
130	0	408	220	473	634	538								
133	0	417	240	484	658	552								
140	0	439	288	509										
150	12	471	353	546										
160	69	502	416	583										
170	119	533												
180	158	565												
190	195	596												
200	253	627												



CONTRACTOR TO VERIFY ADEQUACY OF STRUCTURE
FOR MAXIMUM IMPOSED LOADS VY AND Vx

DESIGN SCHEDULE

COMPONENT	SHEET
SLAT ALLOWABLE PRESSURE - TABLE 1	1
GLASS SEPARATION - TABLE 2	1
TRACK REACTION - TABLE 3	1
TRACK ANCHORAGE	3, 4, 5 & 6
STORM BARS	7, 8, 9 & 10
MULLION	11 & 12

NOTES:
1- ALLOWABLE DESIGNED PRESSURE ARE FUNCTION OF THE LOWEST ALLOWABLE DESIGNED LOAD FOR EACH COMPONENT (SLATS, ANCHORAGE, STORM BARS & MULLIONS)
2- DESIGNED PRESSURES MUST NOT EXCEED 200 PSF.
3- FINISHED WIDTH (FW) MUST NOT EXCEED 294-3/8".

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AHT SUPERSPAN
IMPACT ROLLING SHUTTER
LARGE & SMALL MISSILE
IMPACT RATED

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PK DRAFTING & MORE

REVISIONS:
1- FBC 2010 UPDATE

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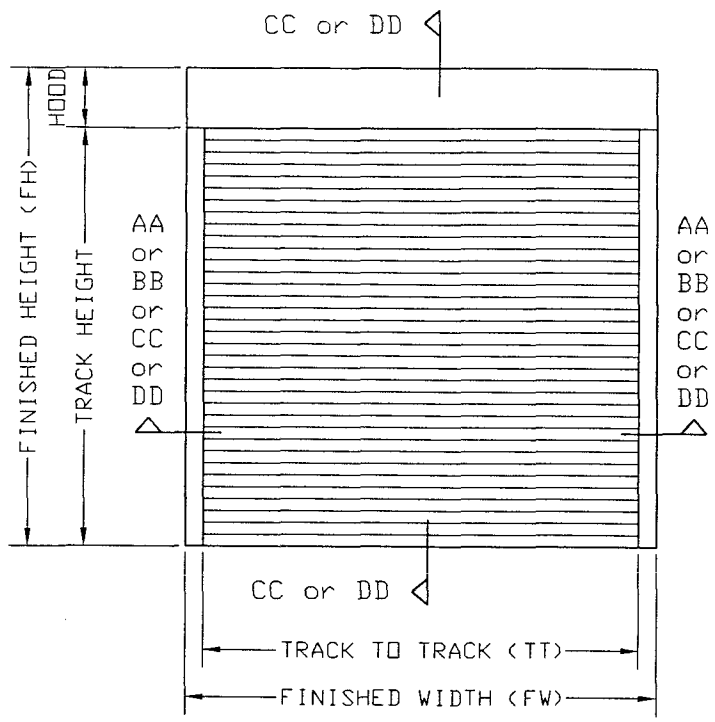
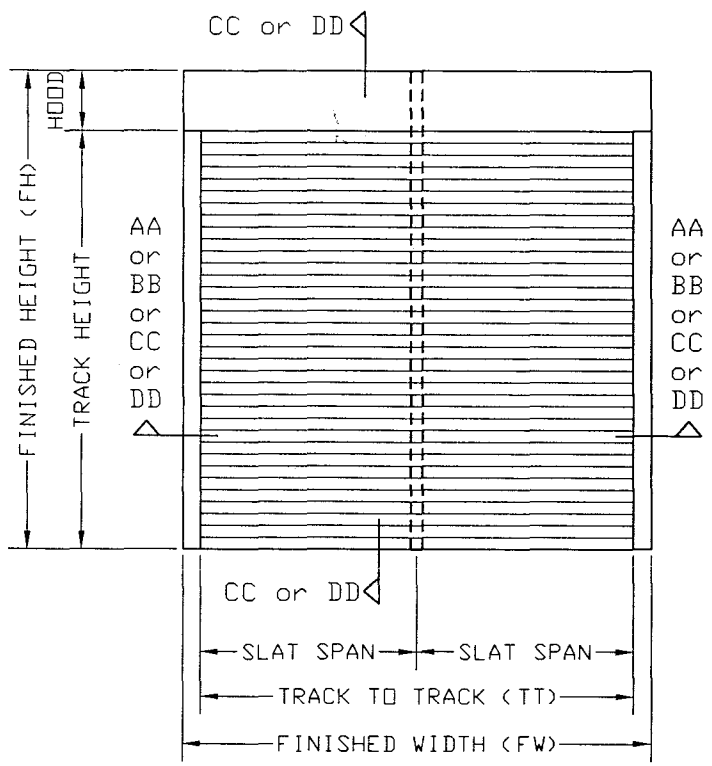
SHEET
1 of 13

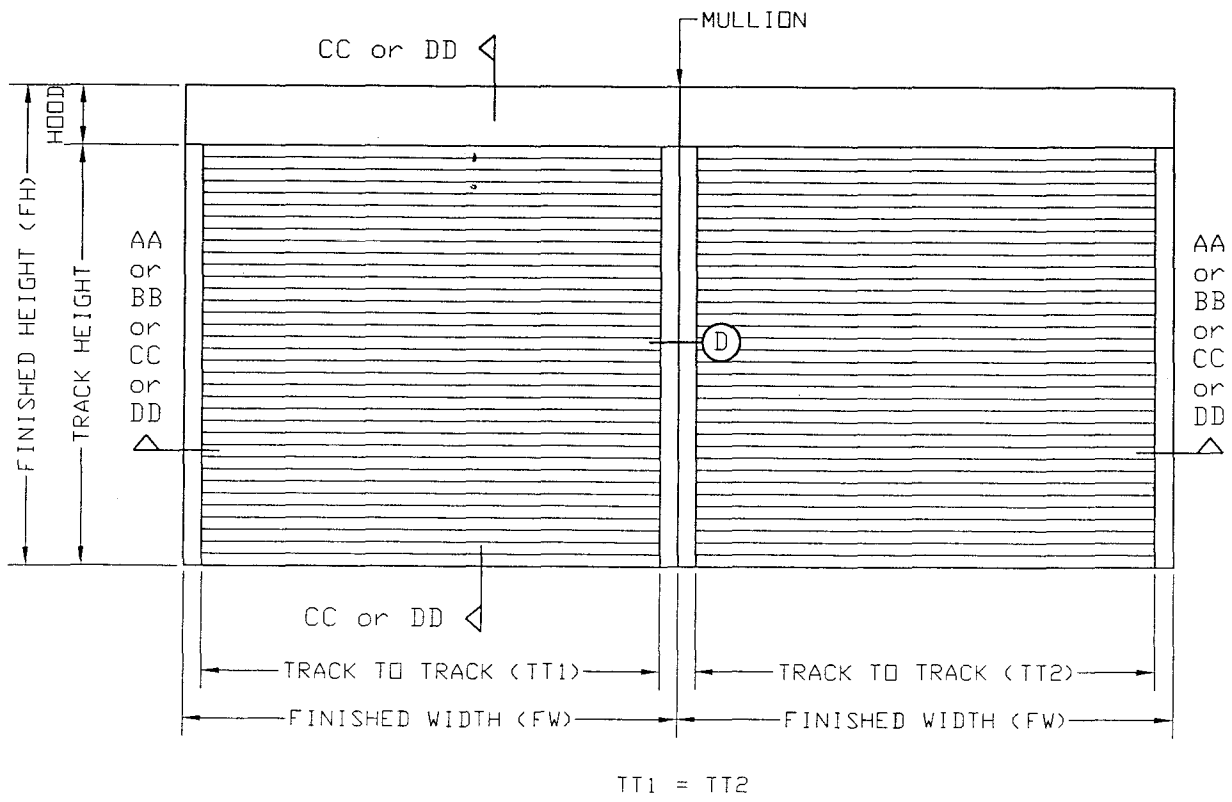
TYPICAL SINGLE UNIT ELEVATION



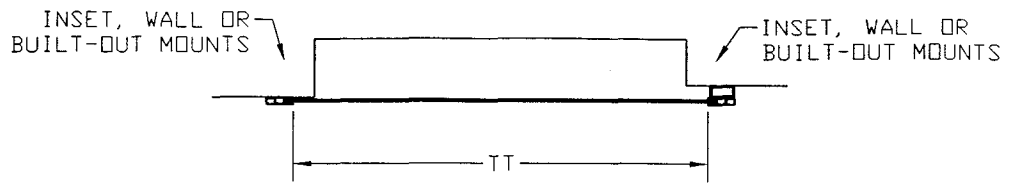
TYPICAL MULTIPLE SPANS ELEVATION
WITH INSIDE STORM BAR ONLY

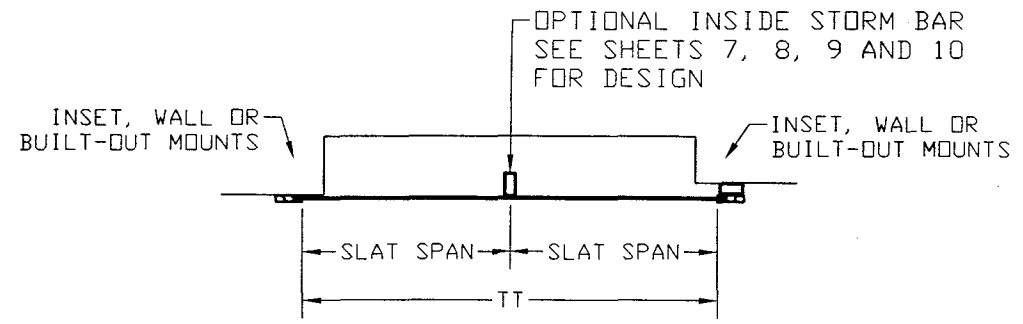


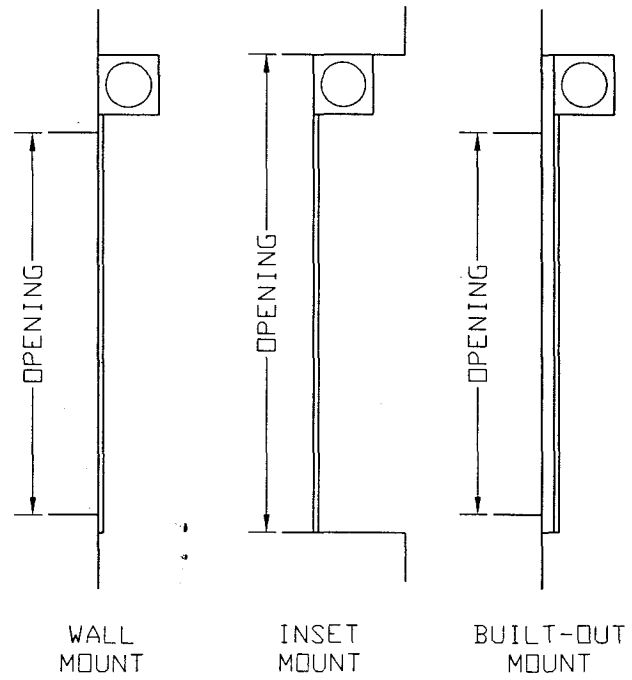
TYPICAL MULTIPLE UNITS ELEVATION

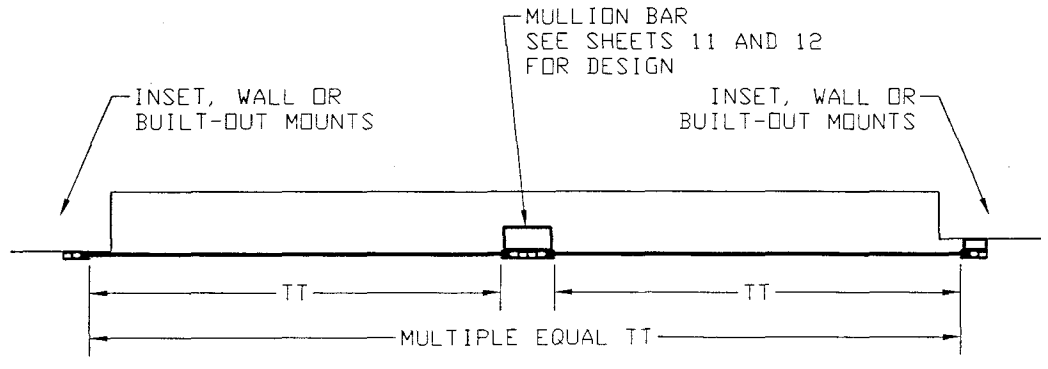


TT1 = TT2









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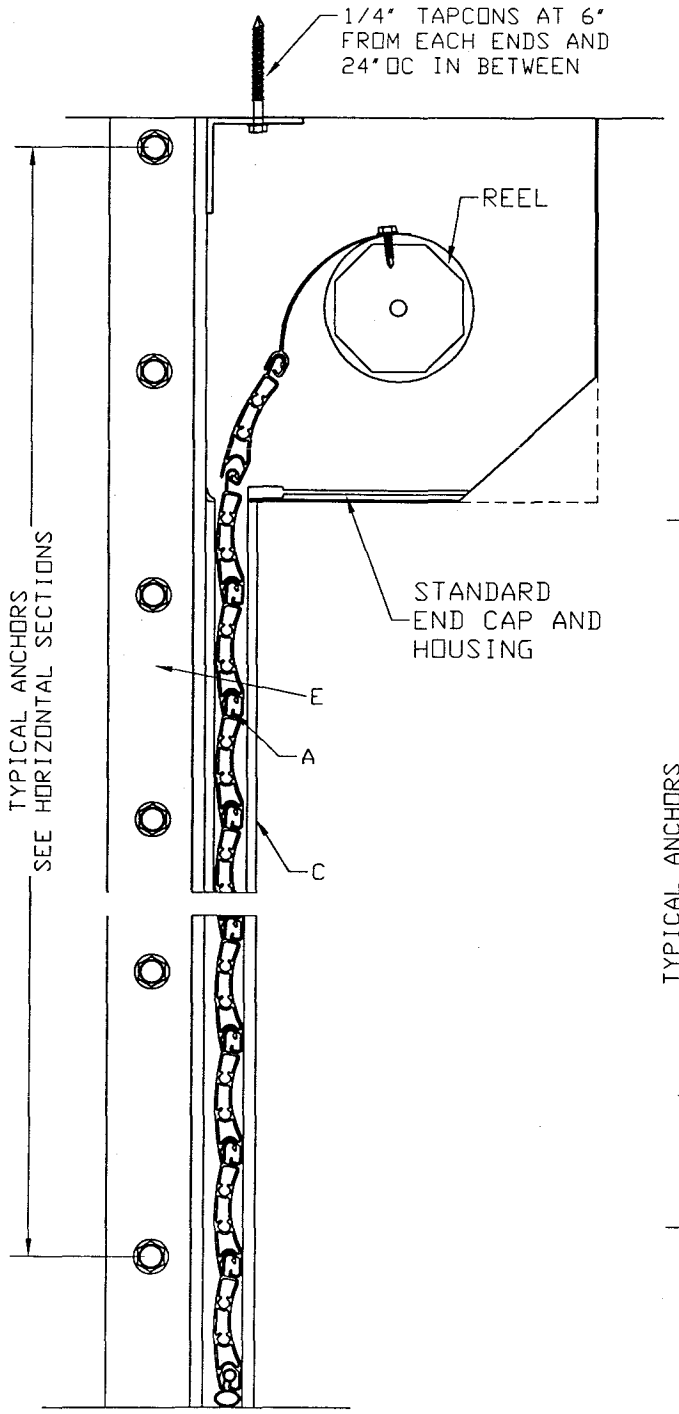
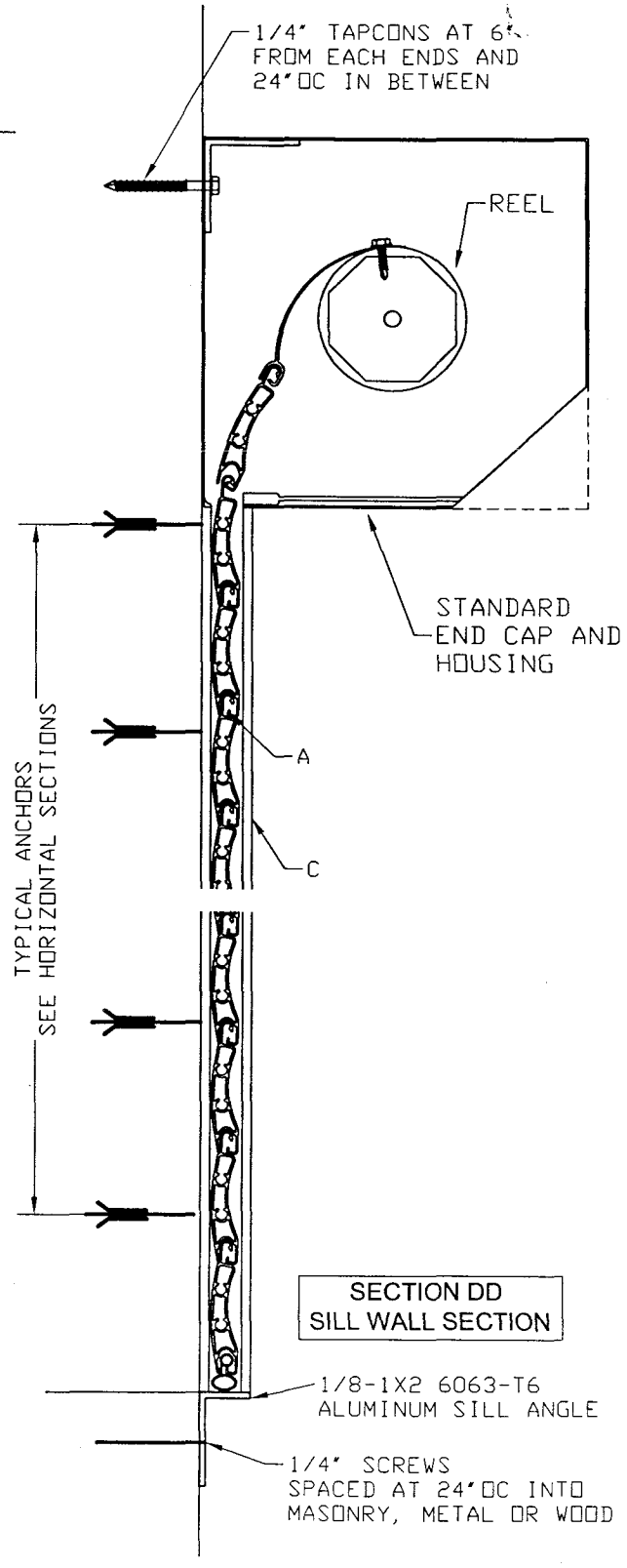
TYPICAL VERTICAL SECTIONS

SECTION DD
HEADER CEILING SECTION



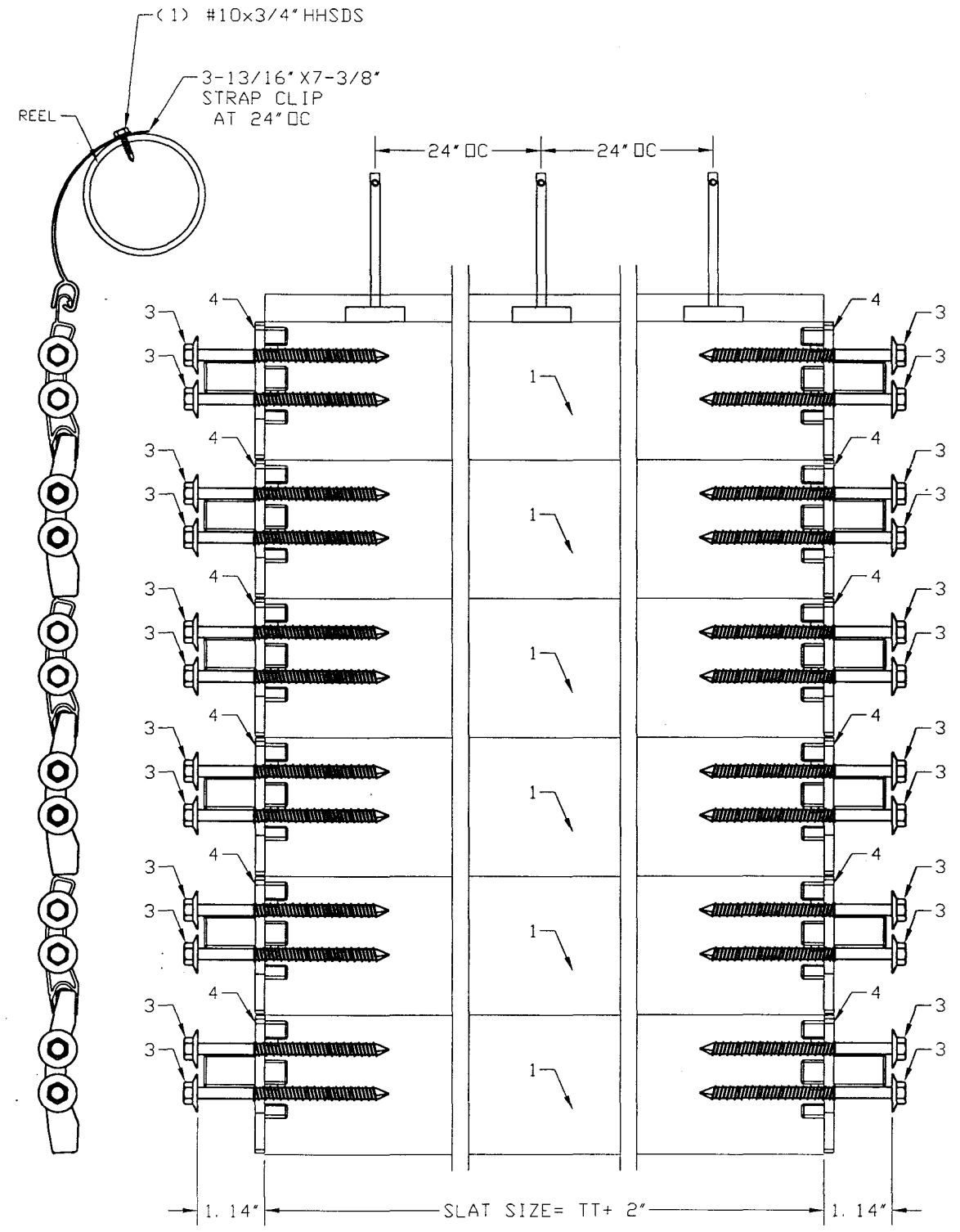
SECTION CC
SILL FLOOR SECTION

SECTION DD
HEADER WALL SECTION



SECTION DD
SILL WALL SECTION

SLAT END RETENTION LAY-OUT



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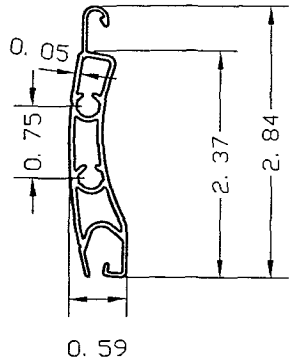
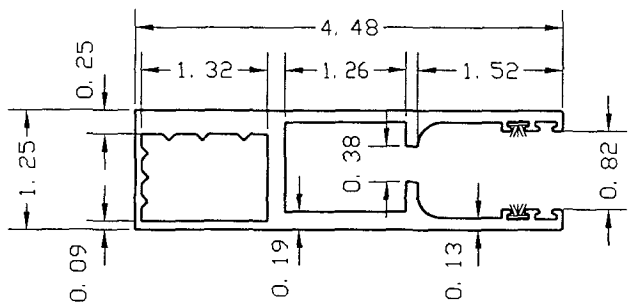
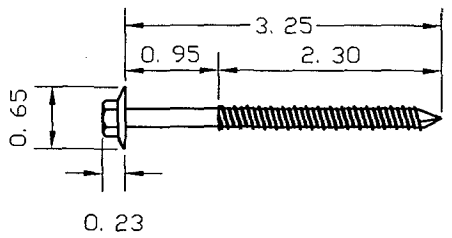
PRODUCT COMPONENTS

1- ROLLING WALL SLATS
6063-T6 EXTRUDED ALUMINUM

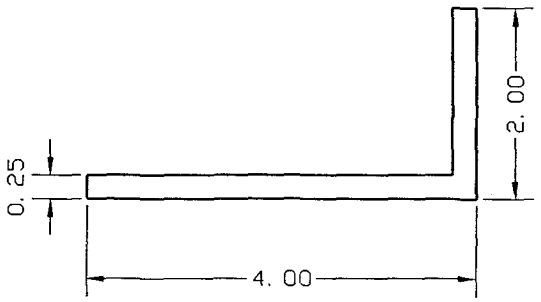


2- ROLLING WALL GUIDE RAIL
6063-T6 EXTRUDED ALUMINUM



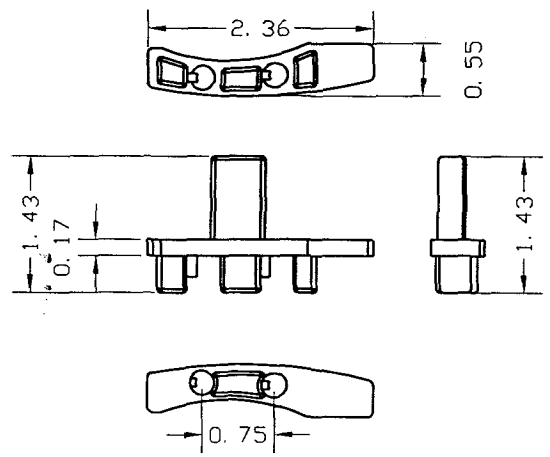


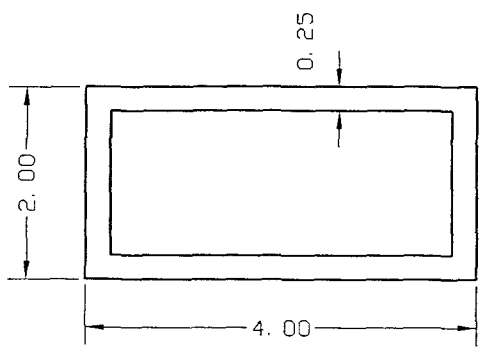
3- RETENTION SCREW
CARBON STEEL COATED W/ DACROMET 320 PLUS L COATING, AS MANUFACTURED AND CERTIFIED BY GEORGIA METAL COATING COMPANY AS PER ASTM B117 TEST REPORT 031604



E- INSET SUPPORT ANGLE
EXTRUDED ALUMINUM
6061-T6 or 6005-T5

4- NYLON SLAT LOCK





F- TUBE
EXTRUDED ALUMINUM
6061-T6 or 6005-T5

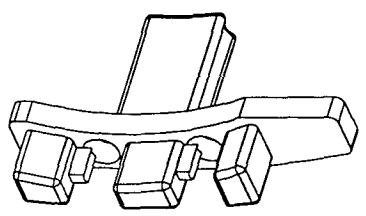


TABLE A1
SPACING ON CENTER FOR WALL MOUNT INSTALLATION

LOAD	TRACK TO TRACK																							
	72				84				96				108				144				216				285. 4			
Psf	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
30	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	5	5	4	3	4	4	4	-
40	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	5	4	4	4	3				
44	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	4	4	4	4	3				
50	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	4								
60	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	5	5	4	3								
70	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	4	4	4	3								
75	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	5	4	4	3	-								
80	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	5												
90	6	6	5	6	6	6	5	6	6	6	5	6	5	6	5	4												
100	6	6	5	6	6	6	5	6	6	6	5	5	5	5	4	4												
110	6	6	5	6	6	6	5	6	5	6	5	5	4	4	4	3												
113	6	6	5	6	6	6	5	6	5	5	5	4	4	4	4	3												
120	6	6	5	6	6	6	5	6	5	5	4	4																
130	6	6	5	6	6	6	5	6	4	5	4	4																
133	6	6	5	6	5	6	5	6	4	4	4	3																
140	6	6	5	6	5	6	5	5																				
150	6	6	5	6	5	5	4	5																				
160	6	6	5	6	4	5	4	4																				
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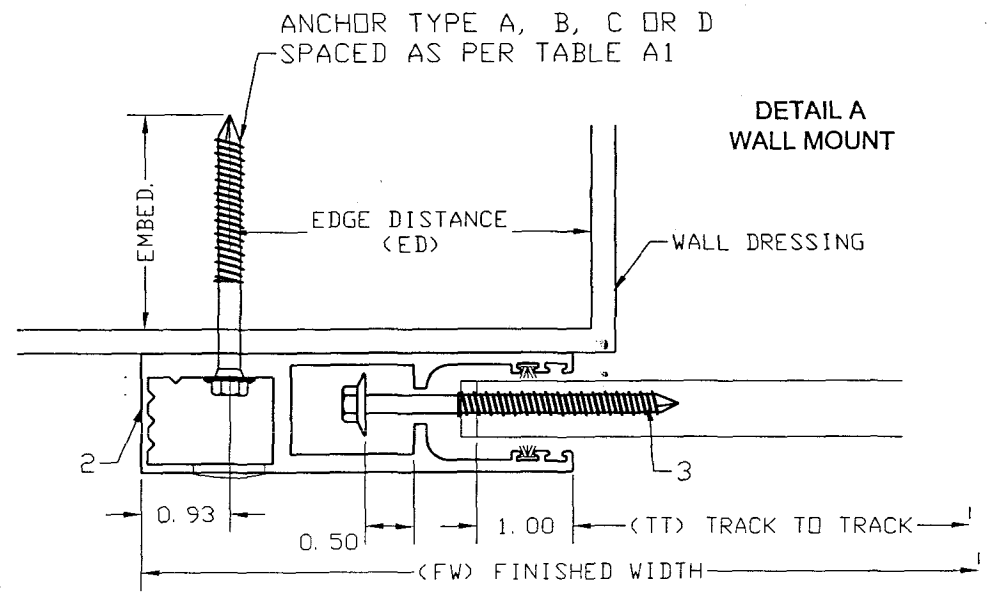
190	5	5	4	5																								
200	4	5	4	4																								



ANCHOR SCHEDULE:

ANCHOR	DESCRIPTION	MATERIAL	EMBEDMENT	EDGE DISTANCE
A	5/16" ITW TAPCONS	MIN. 2899 psi CONCRETE	2 1/4"	3 1/8"
B	5/16" ITW TAPCONS	GROUT FILLED C-90 BLOCK	2 1/4"	4"
C	1/4"-14X1" GRADE 5	MIN. 1/4" 6063-T6 ALUM.		1/2"
	SELF DRILLING SCREWS	OR A36 3/16"STEEL		3/8"
D	5/16"X3" TAPCONS	WOOD WITH G>=. 55	2 1/4"	1-1/4"
E	3/8" POWERS WEDGE BOLT	MIN. 3000 psI CONCRET	3 1/2"	4-1/2"

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REVISIONS:
1- FBC 2010 UPDATE

Date: 01/06/2012
Scale: NA
Design by: PPMF

Drawing Number
12-003

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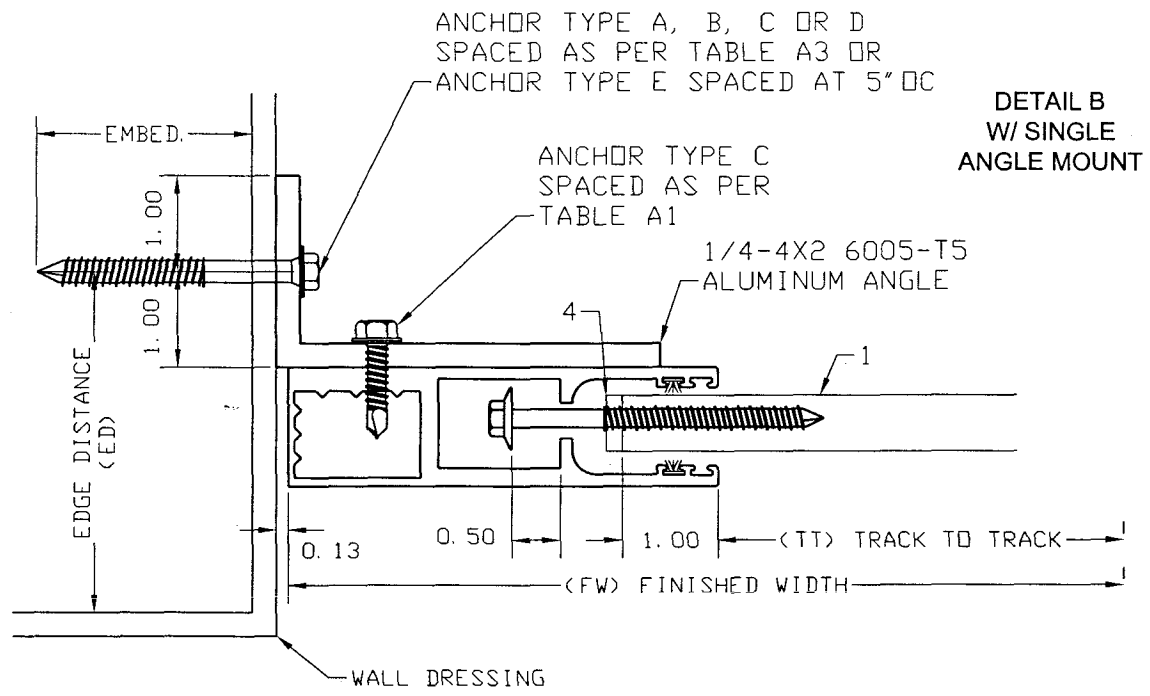
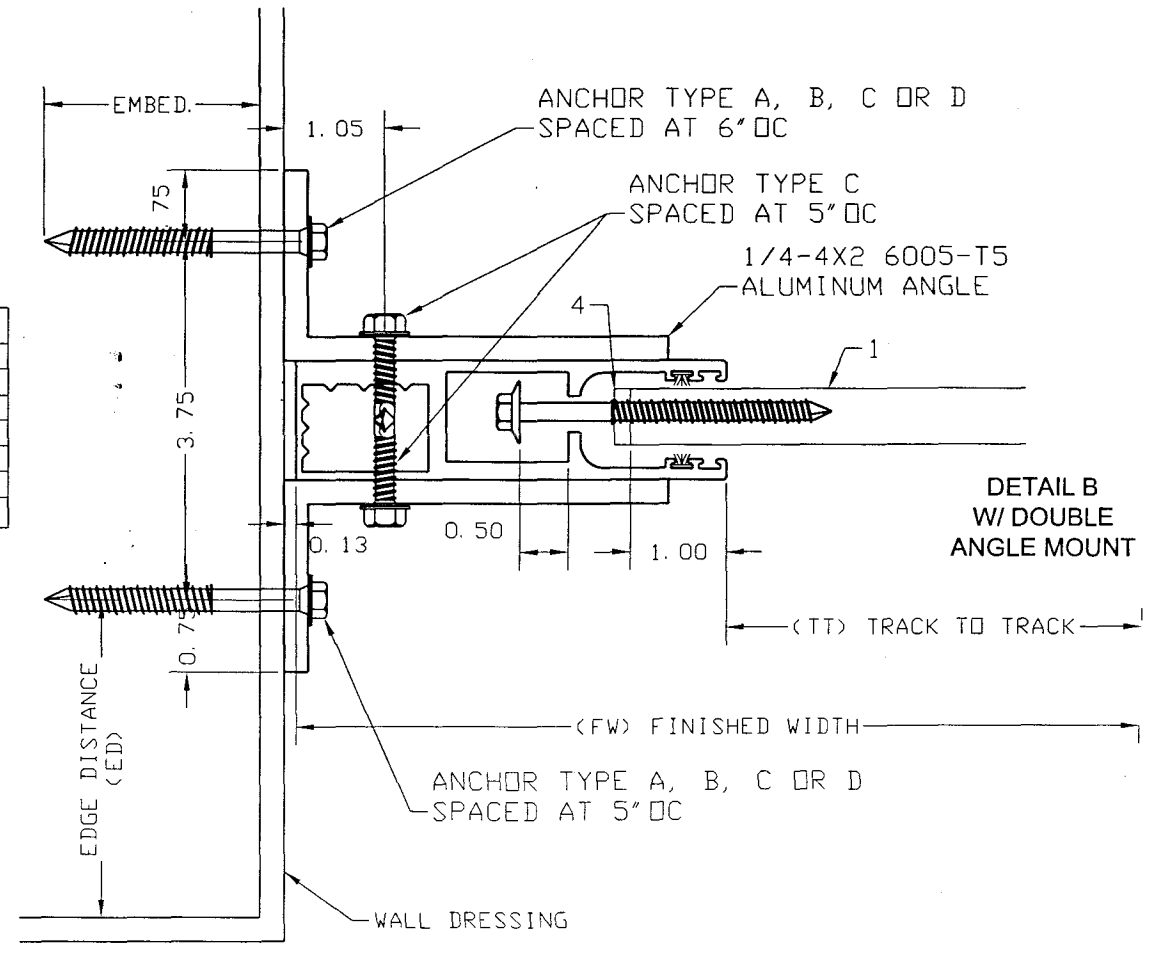
TABLE A3
SPACING ON CENTER FOR ONE ANGLE INSET MOUNT INSTALLATION

LOAD	TRACK TO TRACK																							
	72				84				96				108				144				216				285.4			
Psf	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
30	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	4	5	4	5	-	-	-	-	-	-	-	-
40	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	-	4	3	3	-	-	-	-				
44	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	-	-	-	3	-	-	-	-				
50	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	-	-	-	3								
60	6	6	5	6	6	6	5	6	6	6	5	6	5	5	4	5	-	-	-	-								
70	6	6	5	6	6	6	5	6	6	6	5	6	4	4	3	4	-	-	-	-								
75	6	6	5	6	6	6	5	6	5	6	5	5	-	4	3	3	-	-	-	-								
80	6	6	5	6	6	6	5	6	5	5	4	5	-	4	3	3												
90	6	6	5	6	6	6	5	6	4	5	4	4	-	-	-	3												
100	6	6	5	6	6	6	5	5	-	4	3	3	-	-	-	-												
110	6	6	5	6	5	6	5	5	-	-	3	3	-	-	-	-												
113	6	6	5	6	5	5	4	4	-	-	-	3	-	-	-	-												
120	6	6	5	5	4	5	4	4	-	-	-	3																
130	6	6	5	5	4	4	3	3	-	-	-	-																
133	5	6	5	5	-	4	3	3	-	-	-	-																
140	5	6	5	5	-	4	3	3																				
150	5	5	4	4	-	-	3	3																				
160	4	5	4	4	-	-	-	-																				
170	4	4	3	3																								
180	-	4	3	3																								
190	-	-	3	3																								
200	-	-	-	3																								



DETAIL B
W/ SINGLE
ANGLE MOUNT

ANCHOR SCHEDULE:				
ANCHOR	DESCRIPTION	MATERIAL	EMBEDMENT	EDGE DISTANCE
A	5/16" ITW TAPCONS	MIN. 2899 psi CONCRETE	2 1/4"	3 1/8"
B	5/16" ITW TAPCONS	GROUT FILLED C-90 BLOCK	2 1/4"	4"
C	1/4"-14X1" GRADE 5	MIN. 1/4" 6063-T6 ALUM.		1/2"
	SELF DRILLING SCREWS	OR A36 3/16" STEEL		3/8"
D	5/16"X3" TAPCONS	WOOD WITH G>=.55	2 1/4"	1-1/4"
E	3/8" POWERS WEDGE BOLT	MIN. 3000 psi CONCRETE	3 1/2"	4-1/2"



DETAIL B
W/ DOUBLE
ANGLE MOUNT

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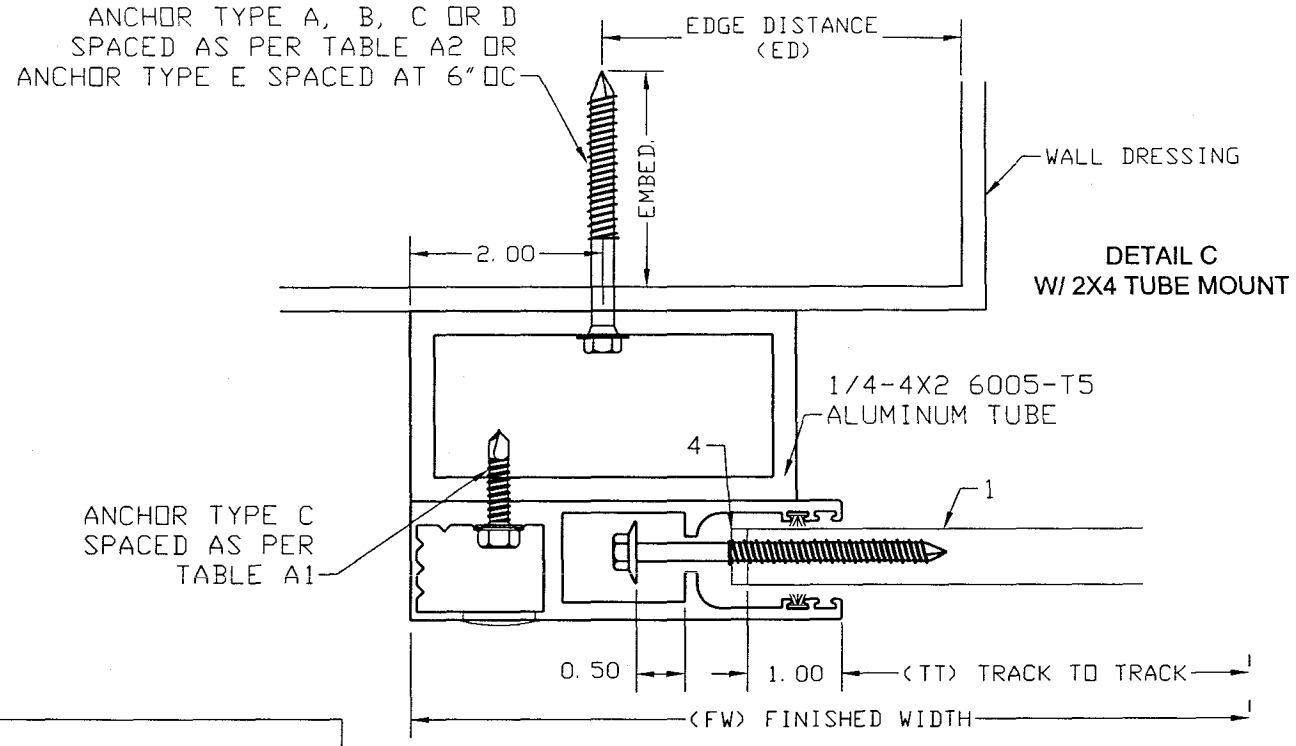
TABLE A2
SPACING ON CENTER FOR 2X4 BUILT-OUT MOUNT INSTALLATION

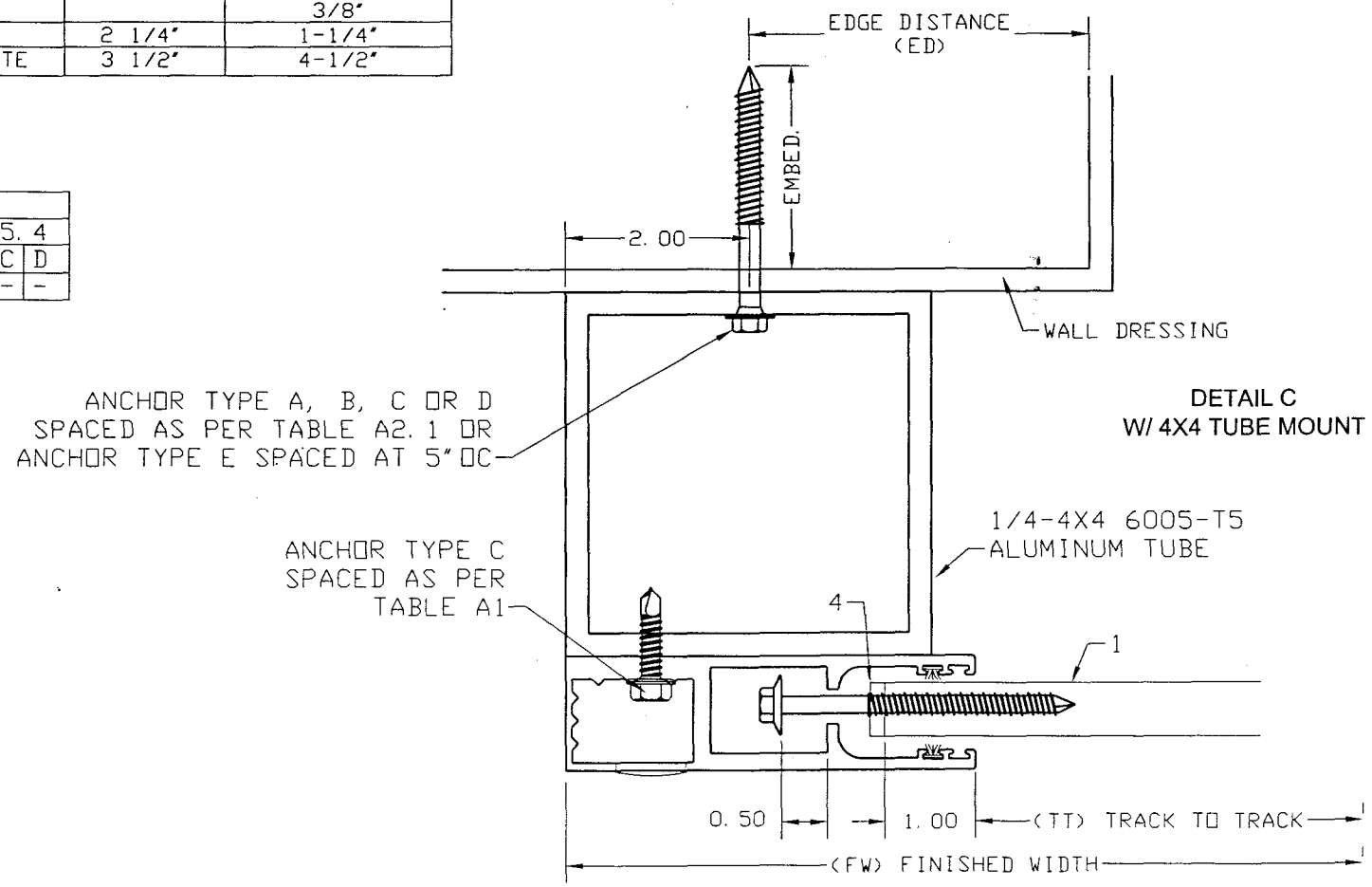
LOAD	TRACK TO TRACK																							
	72				84				96				108				144				216				285. 4			
Psf	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
30	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	-	-	-	-	-	-	-	-
40	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	5	6	5	4	-	-	-	-				
44	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	5	5	4	3	-	-	-	-				
50	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	4	4	4	3								
60	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	-	4	3	3								
70	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	-	-	3	-								
75	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	-	-	3	-								
80	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	5												
90	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	4												
100	6	6	5	6	6	6	5	6	6	6	5	6	5	5	4	4												
110	6	6	5	6	6	6	5	6	6	6	5	6	4	5	4	3												
113	6	6	5	6	6	6	5	6	6	6	5	5	4	4	4	3												
120	6	6	5	6	6	6	5	6	6	6	5	5																
130	6	6	5	6	6	6	5	6	5	6	5	4																
133	6	6	5	6	6	6	5	6	5	5	5	4																
140	6	6	5	6	6	6	5	6																				
150	6	6	5	6	6	6	5	6																				
160	6	6	5	6	6	6	5	6																				
170	6	6	5	6																								
180	6	6	5	6																								
190	6	6	5	6																								
200	6	6	5	6																								



ANCHOR SCHEDULE:				
ANCHOR	DESCRIPTION	MATERIAL	EMBEDMENT	EDGE DISTANCE
A	5/16" ITW TAPCONS	MIN. 2899 psi CONCRETE	2 1/4"	3 1/8"
B	5/16" ITW TAPCONS	GROUT FILLED C-90 BLOCK	2 1/4"	4"
C	1/4"-14X1" GRADE 5	MIN. 1/4" 6063-T6 ALUM.		1/2"
	SELF DRILLING SCREWS	OR A36 3/16" STEEL		3/8"
D	5/16"X3" TAPCONS	WOOD WITH G>=. 55	2 1/4"	1-1/4"
E	3/8" POWERS WEDGE BOLT	MIN. 3000 psi CONCRETE	3 1/2"	4-1/2"

TABLE A2.1
SPACING ON CENTER FOR 4X4 BUILT-OUT MOUNT INSTALLATION

LOAD	TRACK TO TRACK																							
	72				84				96				108				144				216				285. 4			
Psf	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
30	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	5	6	5	5	-	-	-	-	-	-	-	-
40	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	-	4	3	3	-	-	-	-				
44	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	-	-	3	3	-	-	-	-				
50	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	-	-	-	-								
60	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	6	-	-	-	-								
70	6	6	5	6	6	6	5	6	6	6	5	6	6	6	5	5	-	-	-	-								
75	6	6	5	6	6	6	5	6	6	6	5	6	5	6	5	4	-	-	-	-								
80	6	6	5	6	6	6	5	6	6	6	5	6	5	5	4	4												
90	6	6	5	6	6	6	5	6	6	6	5	6	4	4	4	3												
100	6	6	5	6	6	6	5	6	6	6	5	5	-	4	3	3												
110	6	6	5	6	6	6	5	6	5	6	5	4	-	-	3	3												
113	6	6	5	6	6	6	5	6	5	5	4	4	-	-	3	-												
120	6	6	5	6	6	6	5	6	4	5	4	4																
130	6	6	5	6	6	6	5	6	4	4	3	3																
133	6	6	5	6	6	6	5	6	4	4	3	3																
140	6	6	5	6	6	6	5	6																				
150	6	6	5	6	6	6	5	6																				
160	6	6	5	6	5	6	5	5																				
170	6	6	5	6																								
180	6	6	5	6																								
190	6	6	5	6																								
200	6	6	5	6																								



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STORM BARS SELECTION TABLES

POSITIVE DESIGN RATING - Pd (Psf)

1/4-2x2 STORM BAR - 2 SPANS

SLAT	STORM BAR HEIGHT				
Span	40	46	52	58	70
36	196	129	89	64	36
42	160	110	76	55	--
48	133	97	67	48	--
54	113	86	59	43	--
60	98	77	53	38	--
72	75	64	44	32	--

1/4-2x2 STORM BAR - 3+ SPANS

SLAT	STORM BAR HEIGHT				
Span	40	46	52	58	70
36	113	113	101	73	41
42	92	92	86	62	35
48	75	75	75	55	--
54	65	65	65	48	--
60	56	56	56	44	--
72	44	44	44	36	--

1/8-2x3 STORM BAR - 2 SPANS

SLAT	STORM BAR HEIGHT				
Span	40	46	52	60	72
36	200	177	138	94	54
42	160	151	118	80	46
48	133	132	103	70	40
54	113	113	92	62	35
60	98	98	82	56	32
72	75	75	69	46	26

1/8-2x3 STORM BAR - 3+ SPANS

SLAT	STORM BAR HEIGHT				
Span	40	46	52	60	72
36	113	113	113	106	61
42	92	92	92	91	52
48	75	75	75	75	45
54	65	65	65	65	40
60	56	56	56	56	36
72	44	44	44	44	30

1/4-2x4 STORM BAR - 2 SPANS

OR 1/8-2X5 STORM BAR

SLAT	STORM BAR HEIGHT				
Span	60	72	84	96	108
42	160	131	95	69	49
48	133	114	83	60	42
54	113	102	74	53	38
60	98	91	66	48	34
66	86	83	60	43	30
72	75	75	55	40	--

1/4-2x4 STORM BAR - 3+ SPANS

OR 1/8-2X5 STORM BAR

SLAT	STORM BAR HEIGHT				
Span	60	72	84	96	108
42	92	92	92	78	55
48	75	75	75	68	48
54	65	65	65	60	43
60	56	56	56	55	38
66	49	49	49	49	35
72	44	44	44	44	32

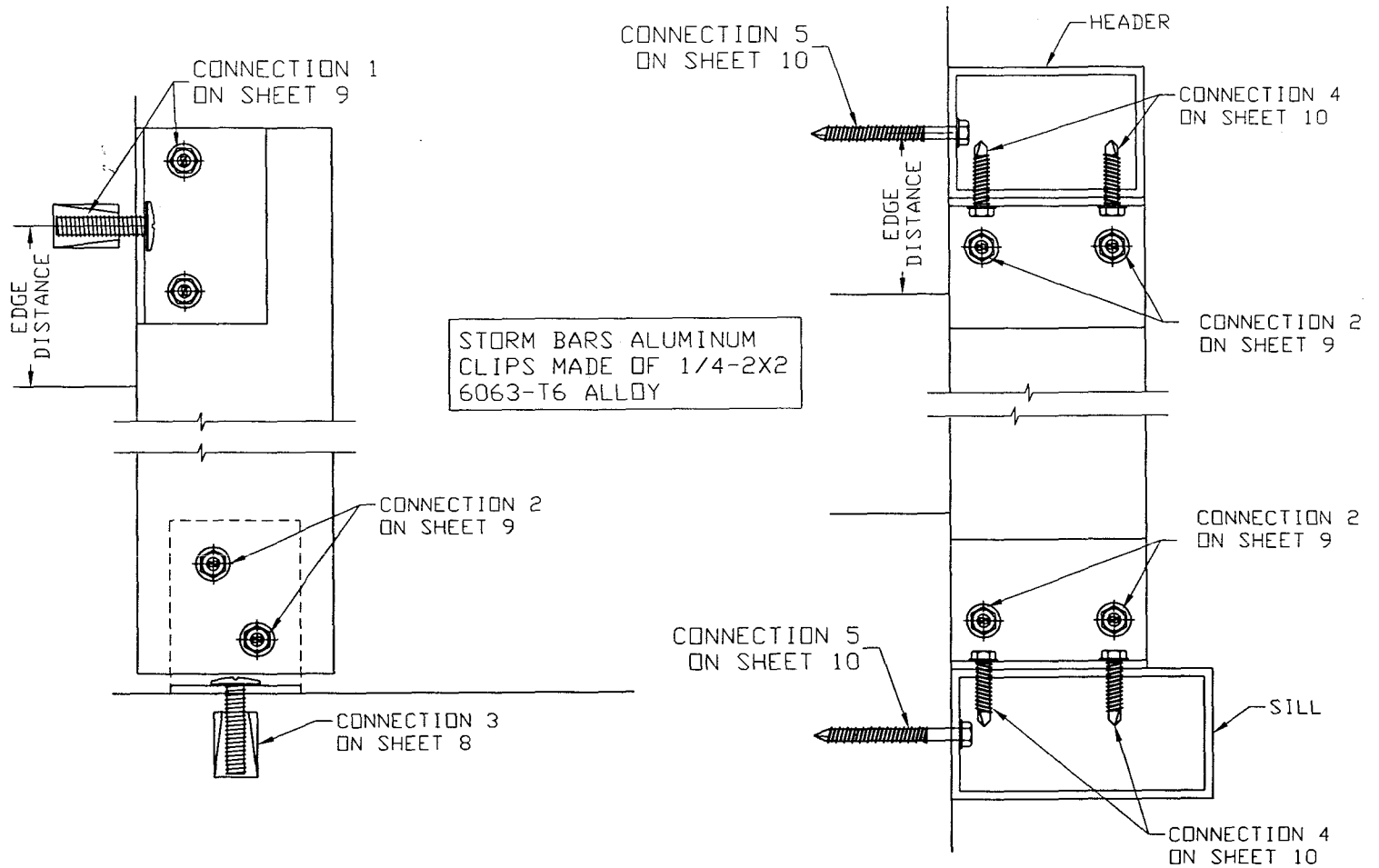
1/8-2x6 STORM BAR - 2 SPANS

SLAT	STORM BAR HEIGHT				
Span	72	84	96	108	120
42	160	126	95	74	56
48	133	110	83	65	49
54	113	98	74	58	43
60	98	87	66	52	39
66	86	79	60	47	35
72	75	73	55	43	32

1/8-2x6 STORM BAR - 3+ SPANS

SLAT	STORM BAR HEIGHT				
Span	72	84	96	108	120
42	92	92	92	85	64
48	75	75	75	74	55
54	65	65	65	65	49
60	56	56	56	56	45
66	49	49	49	49	40
72	44	44	44	44	36

STORM BARS MOUNTING OPTIONS



STORM BARS ALUMINUM CLIPS MADE OF 1/4-2X2 6063-T6 ALLOY

STORM BAR NOTES:

1- ALL STORM BAR SHAPES TO BE 6063-T6 ALUMINUM.
2- TABLES MUST WORK IN CONJUNCTION WITH MAXIMUM ALLOWABLE TT TABLES ON SHEET 1.
3- SPAN = TT / NUMBER OF SPANS
4- THESE TABLES ARE LIMITED BY THE SHAPES AND ANCHORAGE USED. SPECIFIC CONDITIONS OUT OF THE SCOPE OF THESE TABLES CAN BE ADDRESSED WITH A SITE SPECIFIC DESIGN BY A PROFESSIONAL ENGINEER.

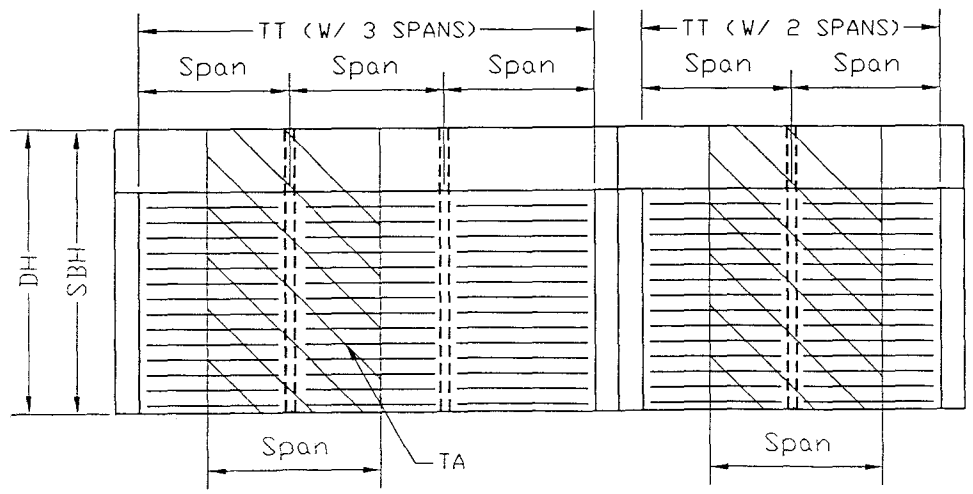
SPAN - SLAT SPAN
DH - DOOR HEIGHT
SBH - STORM BAR HEIGHT
TA - STORM BAR TRIBUTARY AREA

TABLE 1.1
ALLOWABLE POSITIVE DESIGNED PRESSURE

SLAT SPAN (IN)	DESIGN RATING (PSF)
72	+200
66	+200
60	+200
54	+200
48	+200
42	+200
36	+200

STORM BAR USER GUIDE:

1- OBTAIN DESIGNED PRESSURE AS PER GENERAL NOTES 4
2- FIND THE MAXIMUM NEGATIVE PRESSURE RATING ON TABLE 1 BASED ON TRACK TO TRACK DIMENSION (TT)
3- FIND THE MAXIMUM POSITIVE RATING PRESSURE ON TABLE 1.1 BASED ON SLAT SPAN DIMENSION (SPAN)
4- SELECT THE PRESSURE RATING FOR THE INTERIOR STORM BAR BASED ON STORM BAR TYPE, HEIGHT AND SLAT SPAN.
5- THE PROJECT POSITIVE AND NEGATIVE DESIGN PRESSURES PROVIDED BASED ON GENERAL NOTE 4 MUST BE LOWER OR EQUAL THAN THE PRESSURE RATINGS.



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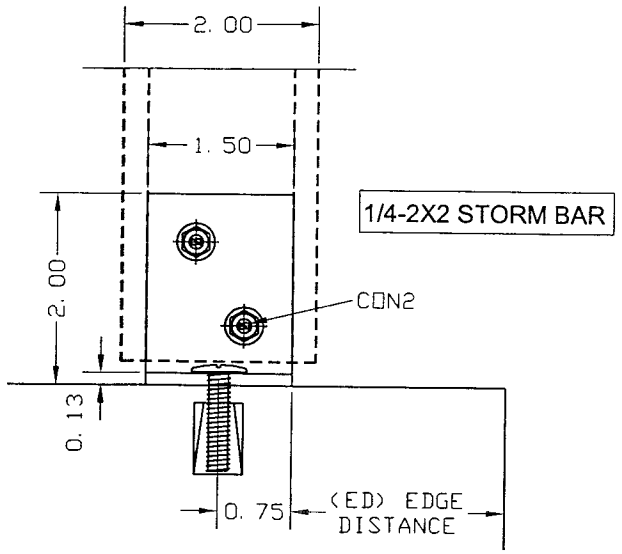
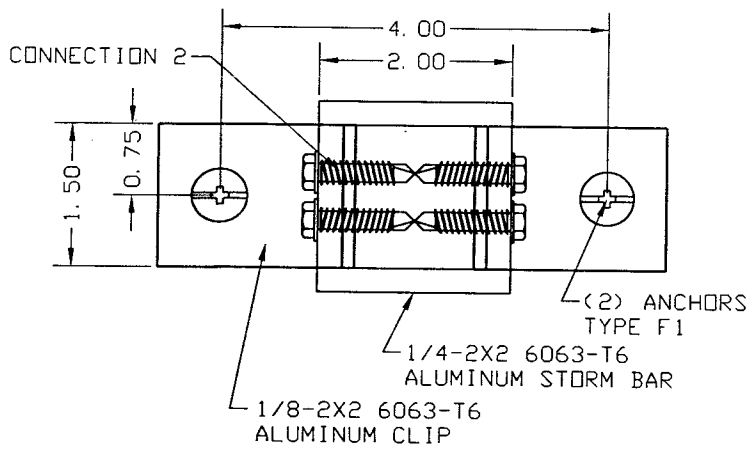
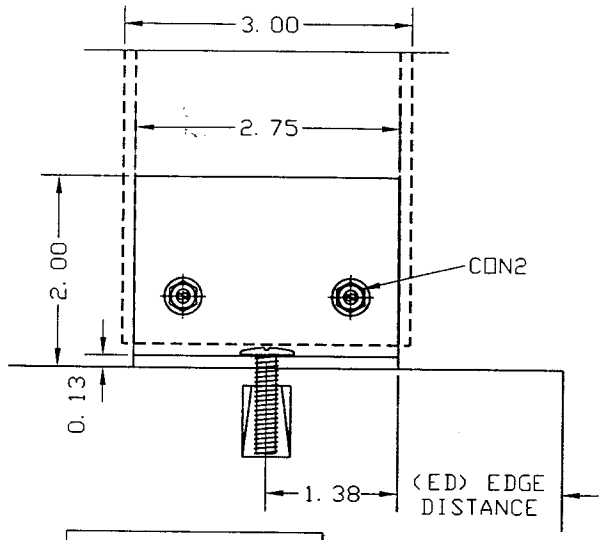
CONNECTION 3 - STORM BARS ANCHORAGE FLOOR/CEILING MOUNTED TO CONCRETE

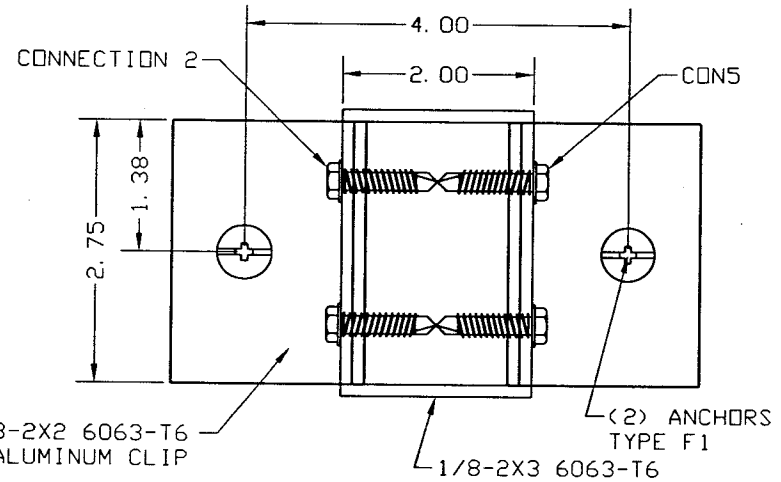


1/4-2X2 STORM BAR

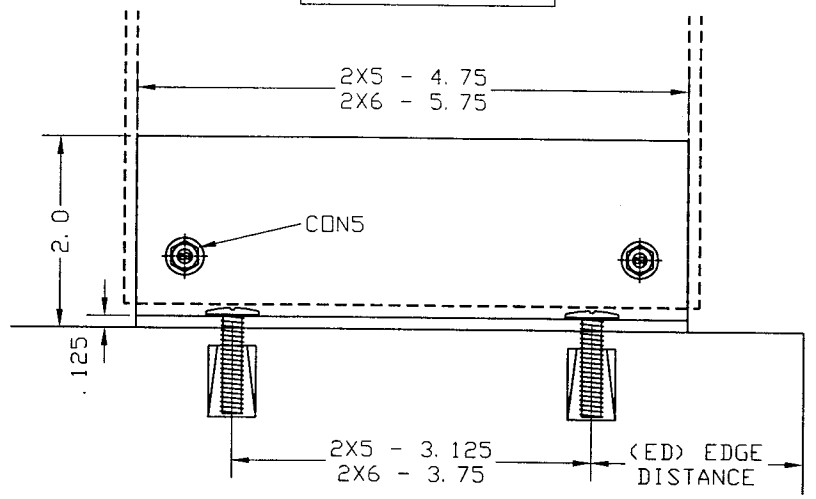


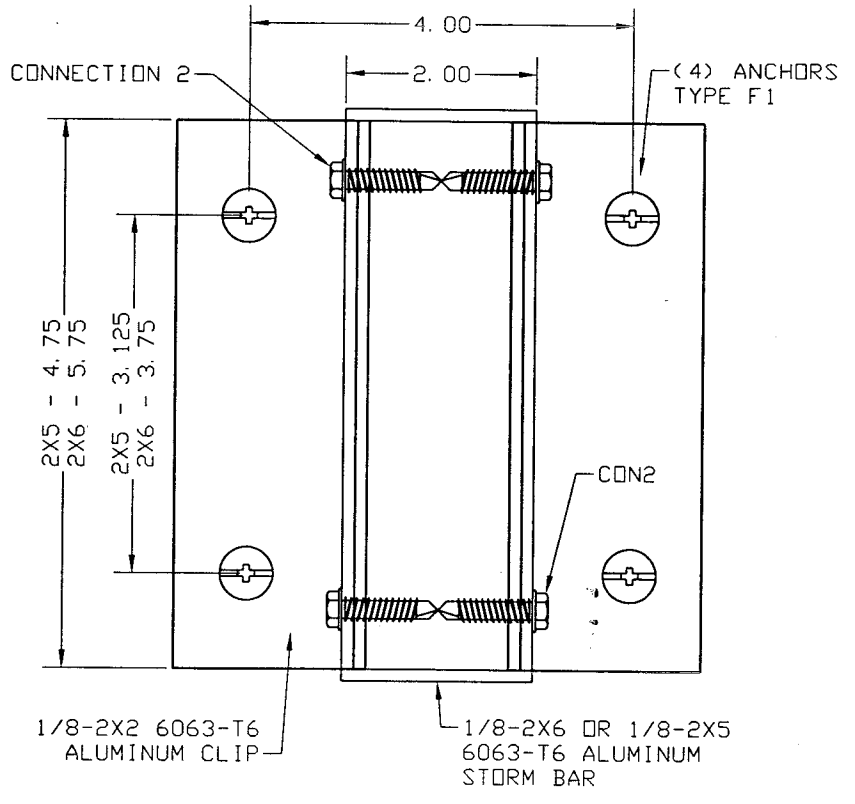


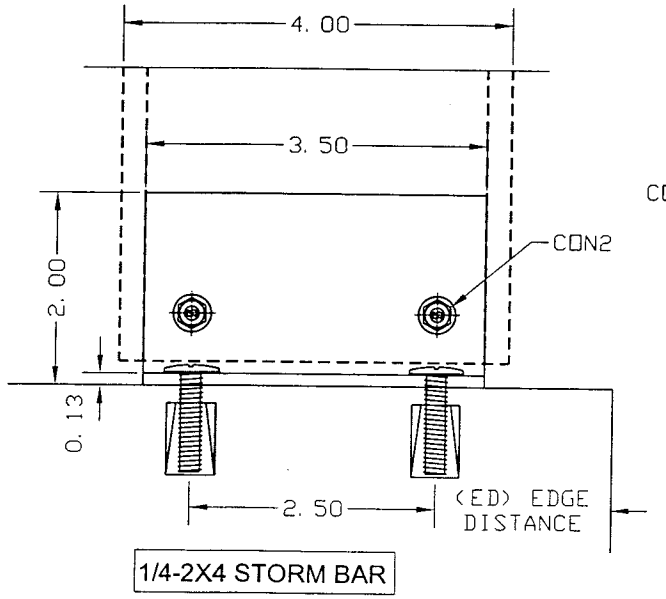
1/8-2X3 STORM BAR



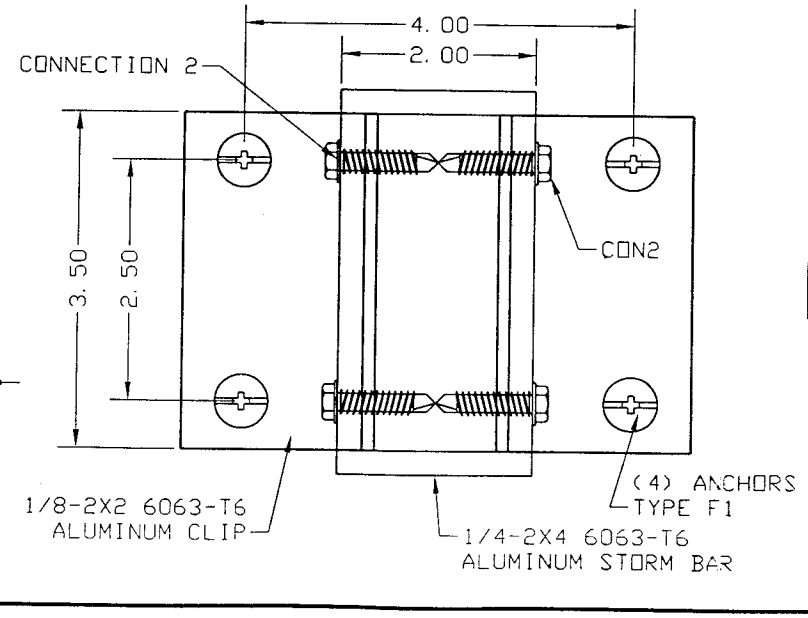
1/8-2X5 STORM BAR
1/8-2X6 STORM BAR







1/4-2X4 STORM BAR



CONNECTION 3 - ANCHOR SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	EMBEDMENT	ED	BASE MATERIAL
F1	5/16-18 CALKIN	POWERS	1"	4"	3000 psi CONCRETE

ED - EDGE DISTANCE

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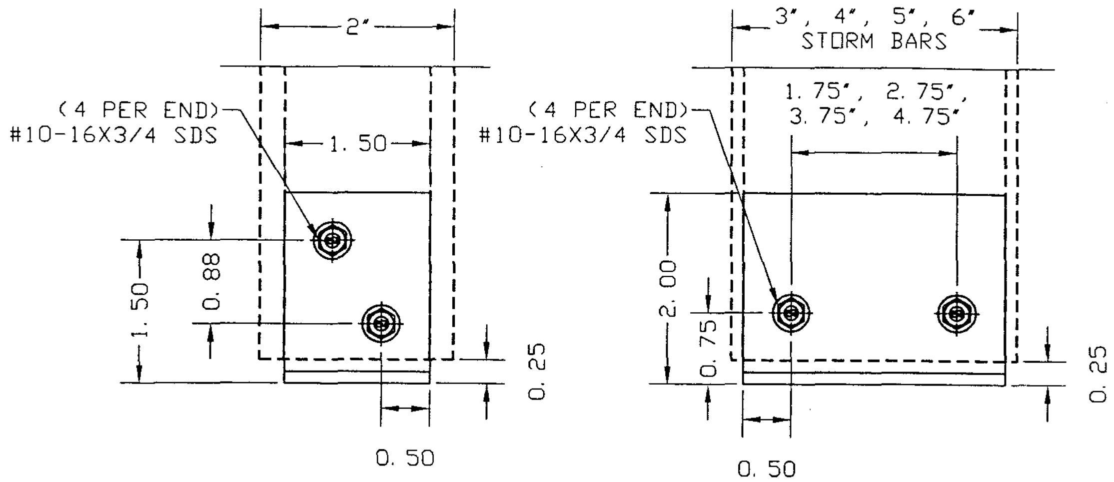
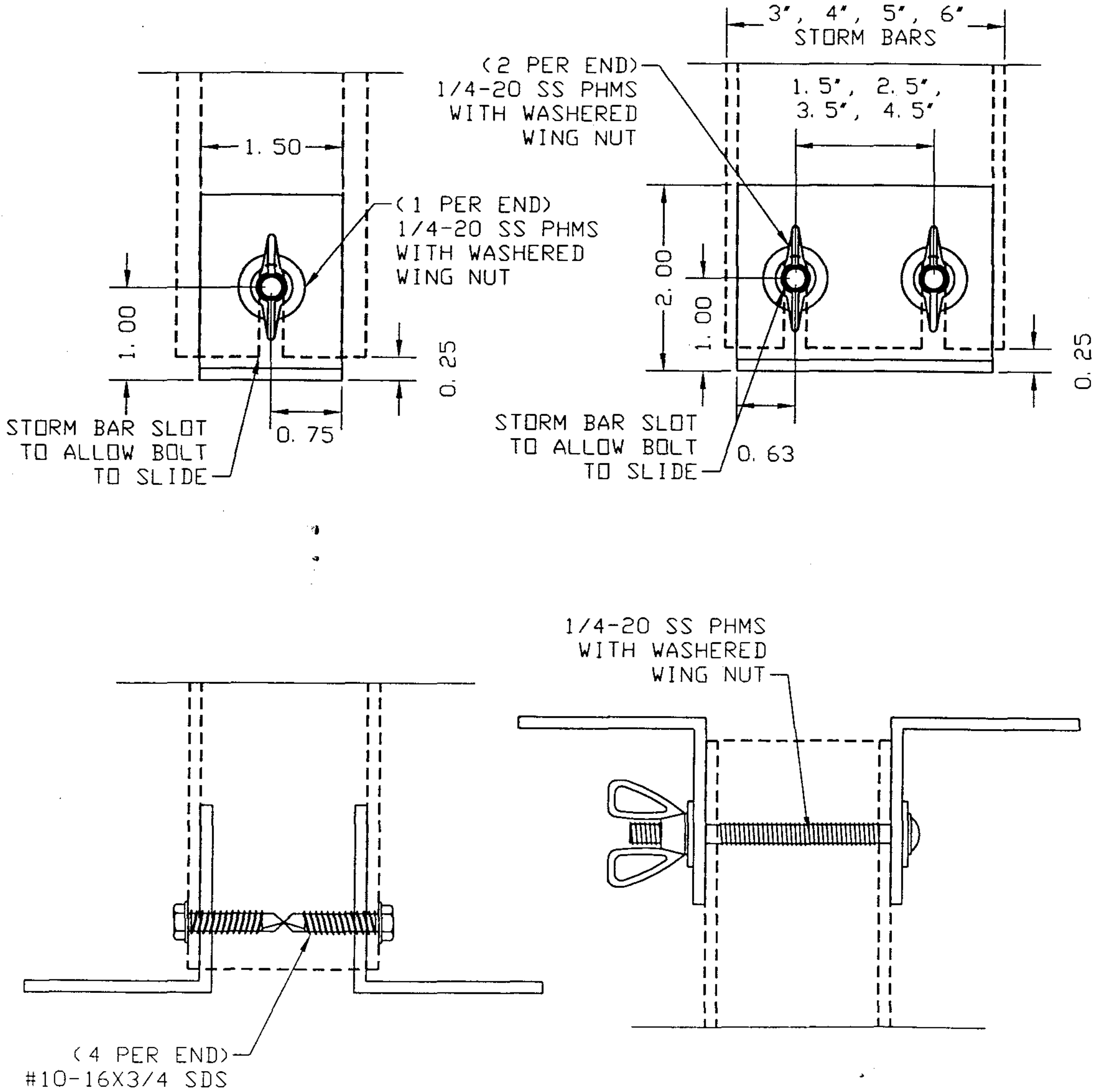
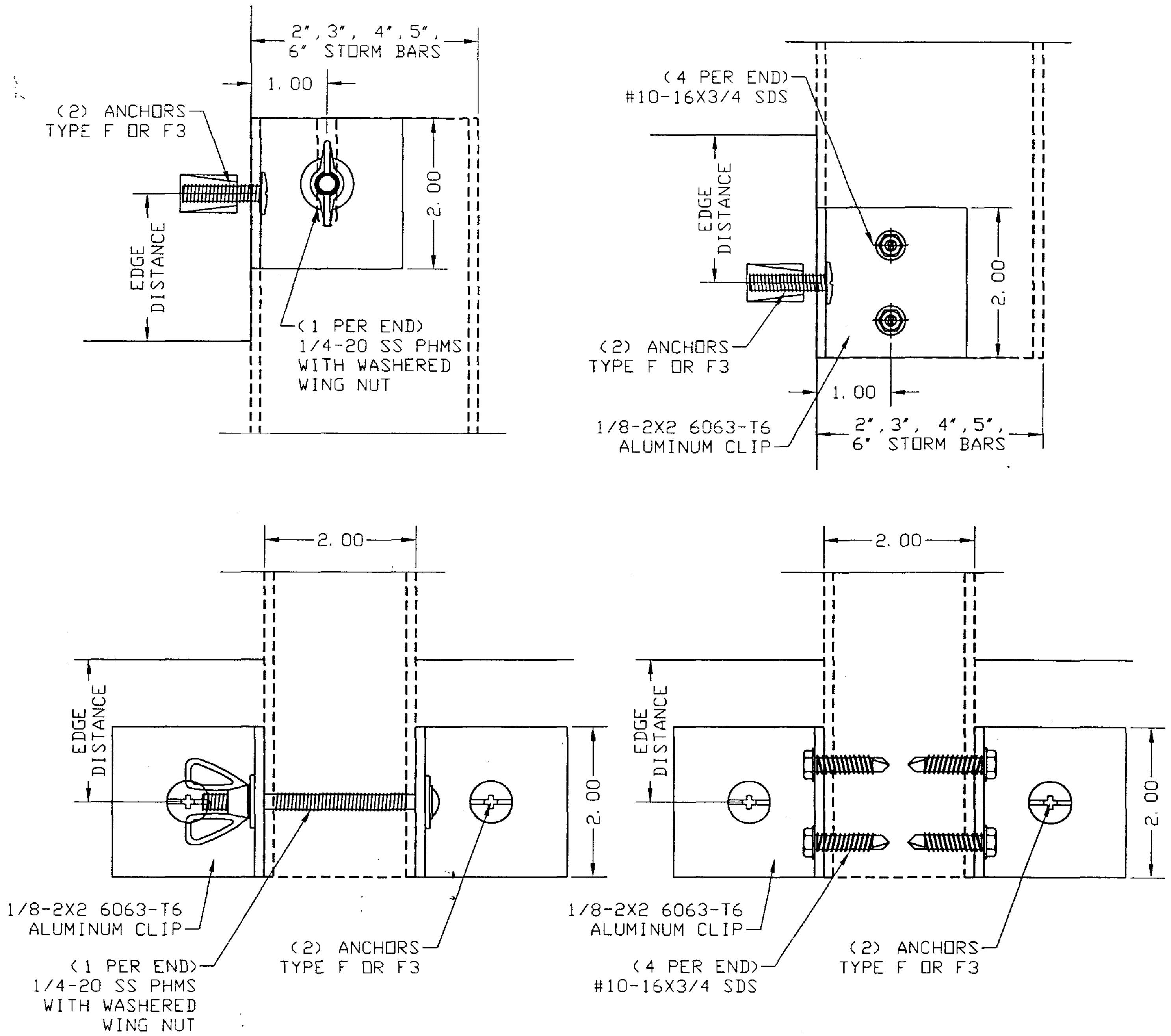
CONNECTION 2 - STORM BAR
CONNECTION TO ALUMINUM CLIP



NOTE: CONNECTION 2 WITH SELF DRILLING SCREWS OR BOLTS W/ NUTS CAN BE USED AT HEADER OR SILL CONDITIONS



CONNECTION 1 - STORM BAR
CONNECTION TO WALL



NOTES:
1- STOM BAR SUPPORTED BY BEARING AGAINST THE WALL
2- CONNECTION WITH SELF DRILLING SCREWS OR BOLTS W/ NUTS CAN BE USED AT HEADER OR SILL CONDITIONS

CONNECTION 1 - ANCHOR SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	EMBEDMENT	ED	BASE MATERIAL
F	1/4-20 CALKIN	POWERS	7/8"	3"	3000 psi CONCRETE
F3	1/4-20 CALKIN	POWERS	7/8"	3"	HOLLOW CONCRETE MASONRY

ED - EDGE DISTANCE

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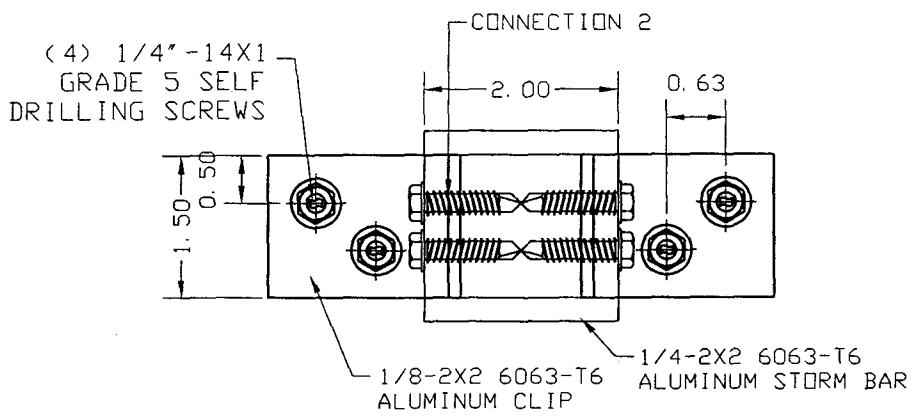
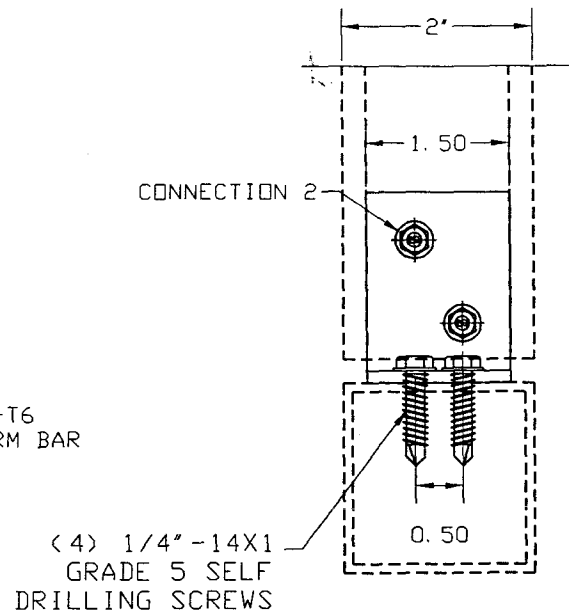
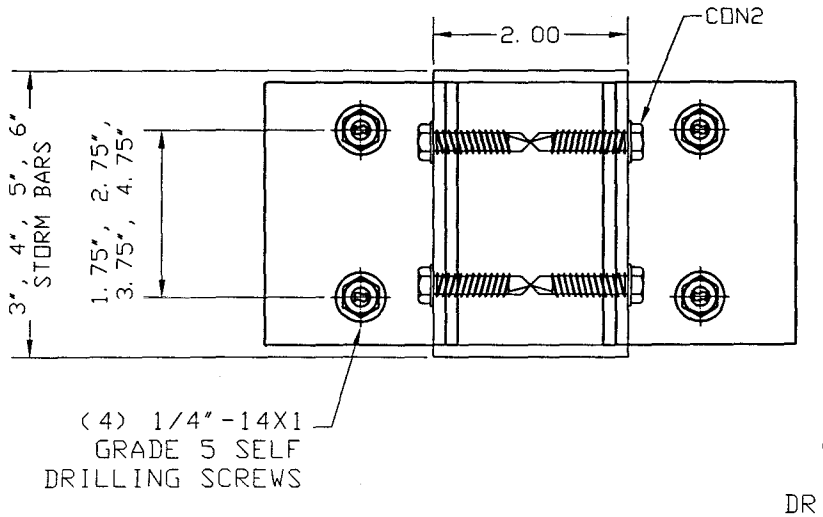
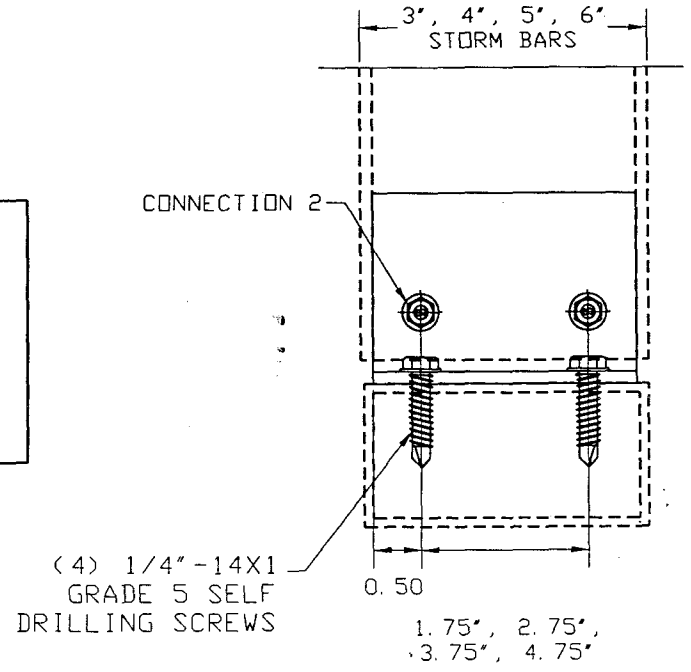
CONNECTION 4
STORM BARS ANCHORAGE FLOOR/CEILING TO BUILT-OUT TUBE OR HEADER

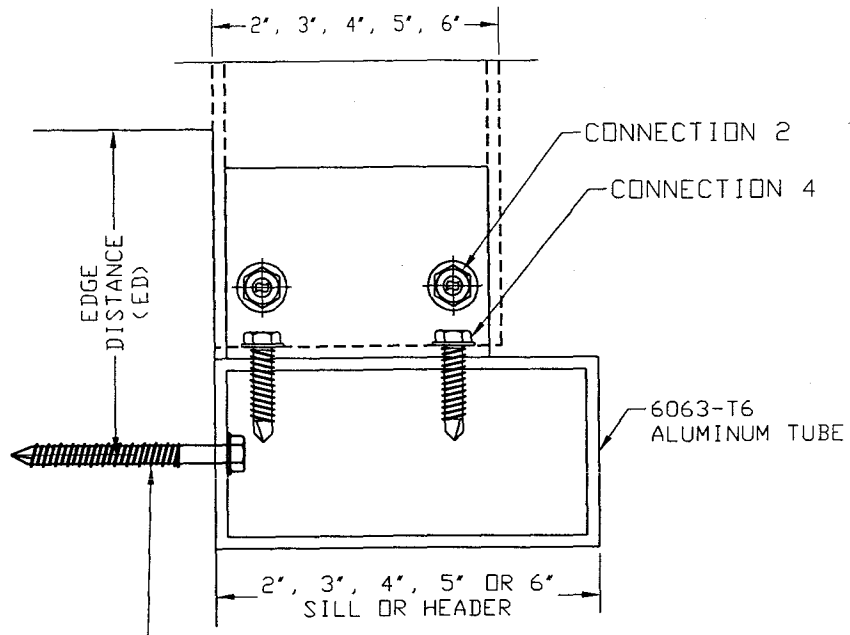




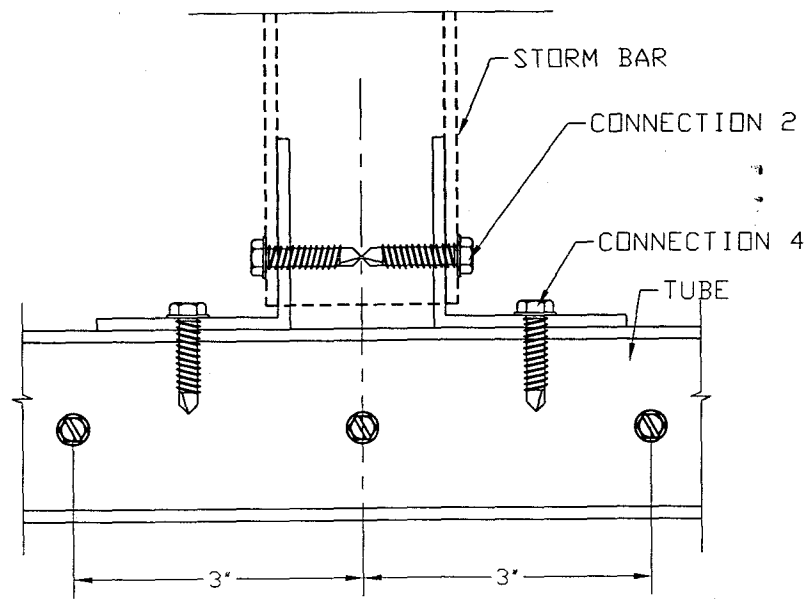




CONNECTION 5
HEADER / SILL ALUMINUM TUBE ANCHORED TO WALL



NOTE: HEADER AND SILL TUBE CONNECTED TO WALL BY BEARING.



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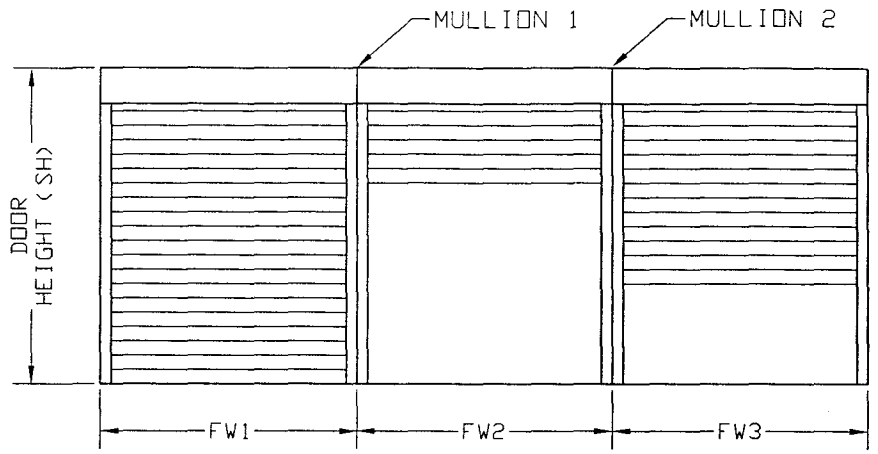
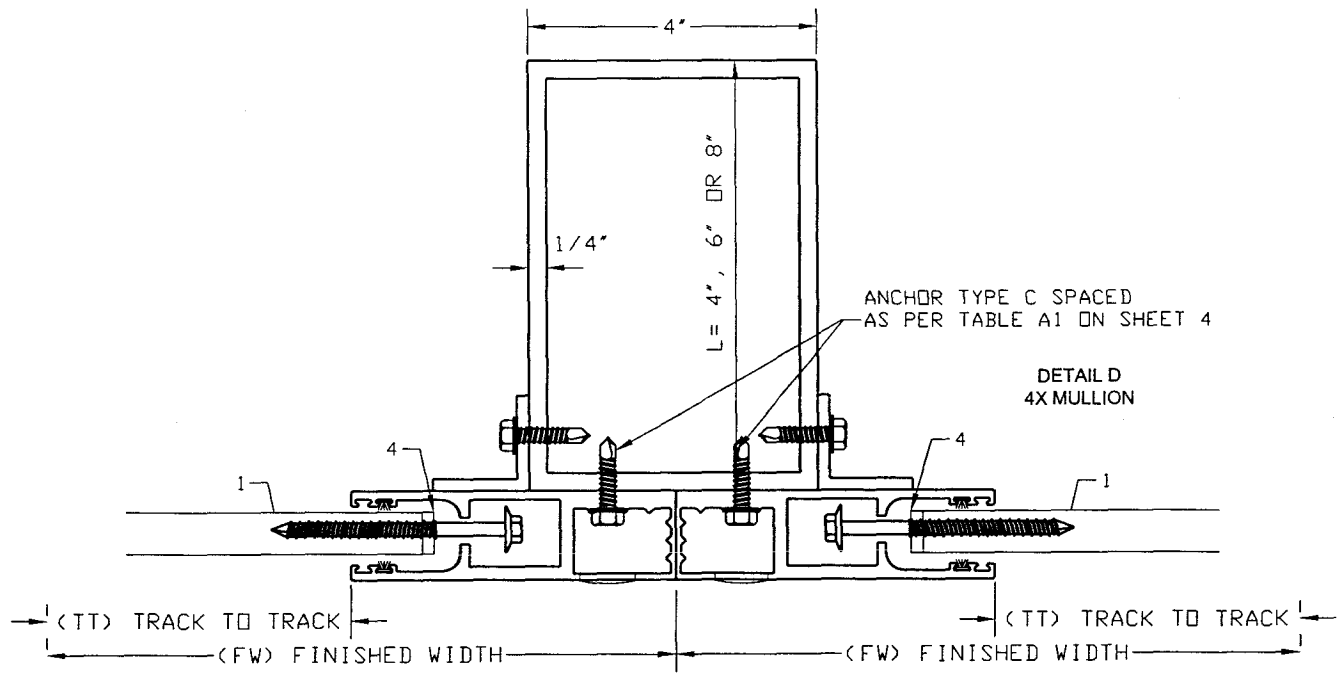
EQUALLY SPACED MULLIONS SELECTION



MULLION 1: TM1= (FW1+FW2) / 2
MULLION 2: TM2= (FW2+FW3) / 2
TM: TRIBUTARY MODULE

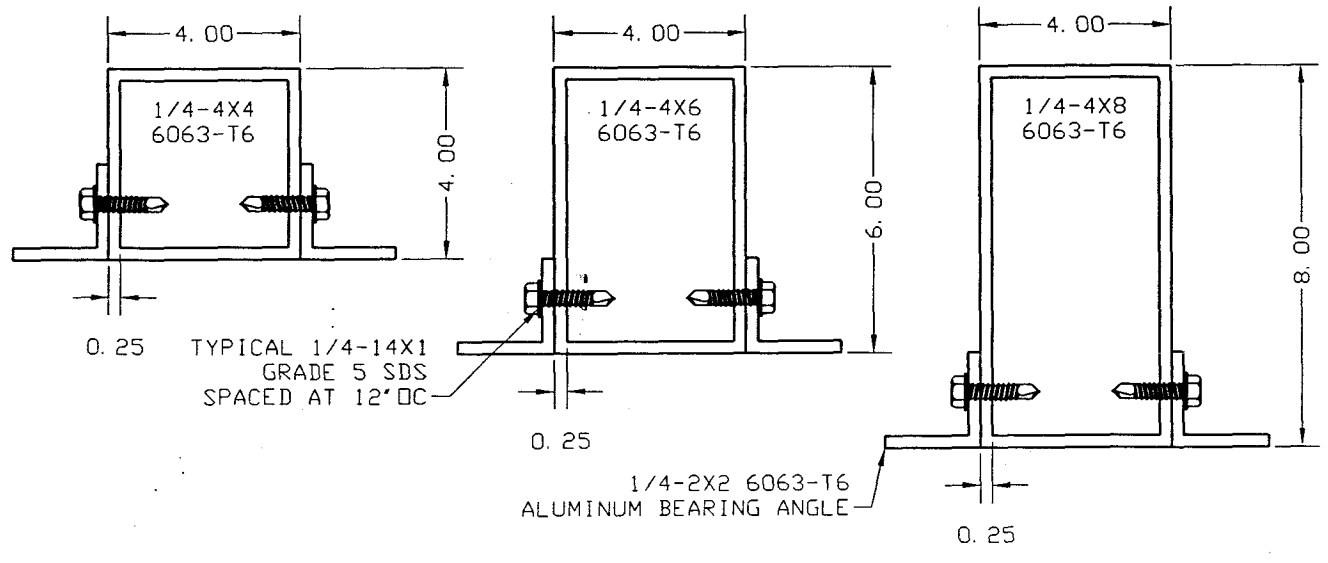
MULLIONS SECTIONS

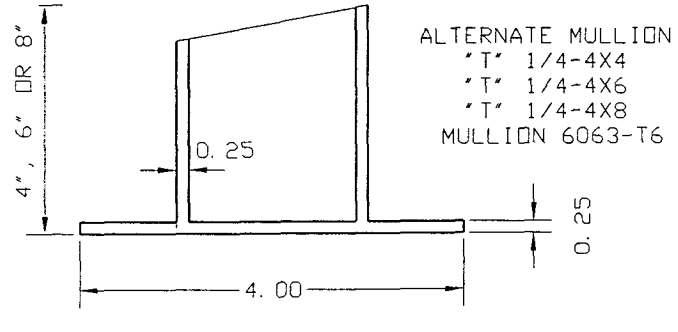


MULLION BARS SELECTION TABLES (PSF)

DOOR	MULLION TYPE & MAX. HEIGHT								
	1/4-4x8			1/4-4x6			1/4-4x4		
MODULE	144	132	120	120	108	96	96	84	72
294	30	30	30	28	30	30	21	30	30
249	38	38	38	33	38	38	24	37	38
201	49	51	51	41	51	51	30	45	51
177	55	62	62	47	62	62	34	52	62
129	76	91	98	65	89	98	47	71	98
105	94	112	133	80	110	133	58	88	133
81	122	145	176	104	142	181	76	114	181

NOTES:
1- MULLIONS WERE DESIGNED BY RATIONAL ANALYSIS BASED ON THE ALUMINUM DESIGN MANUAL 2005 ED. AND THE FLORIDA BUILDING CODE.
2- DEFLECTION CRITERIA: MAXIMUM SPAN /180
3- VALUES ABOVE IS APPLICABLE ONLY FOR EQUAL MODULES FW1=FW2=FW3.
4- UNEQUAL MODULES ARE TO BE DESIGNED BY RATIONAL ANALYSIS IN A CASE BY CASE BASIS.





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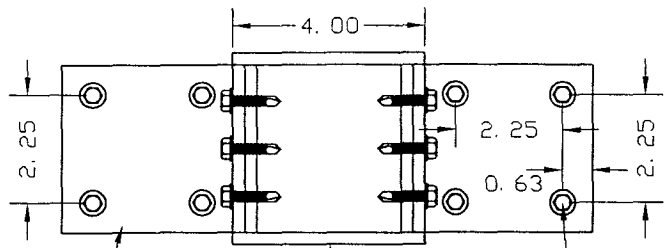
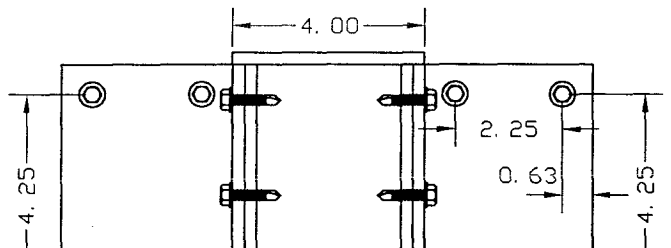
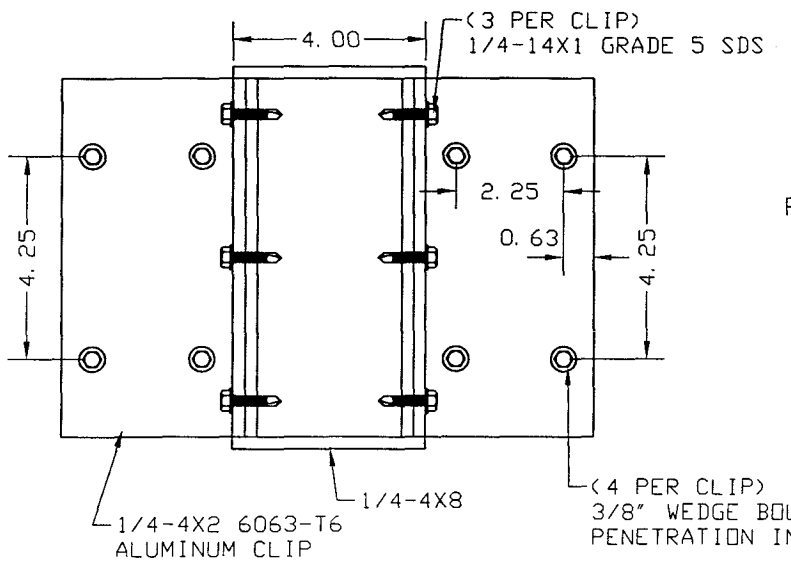
EQUALLY SPACED MULLIONS WALL AND INSET CONNECTIONS



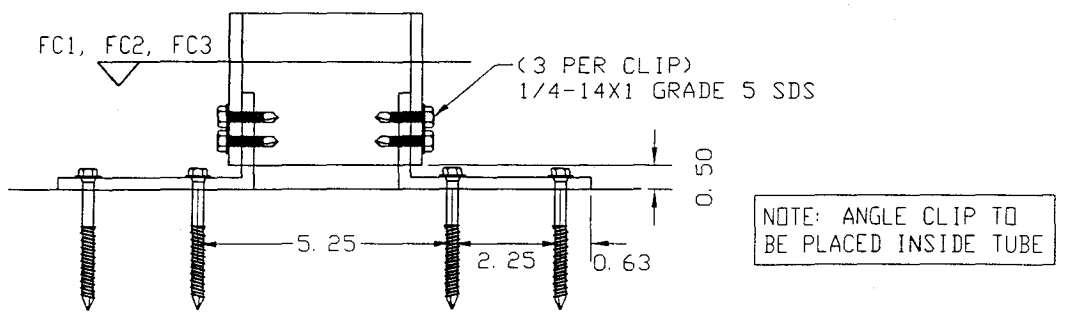
FC1
FLOOR/CEILING
MOUNT



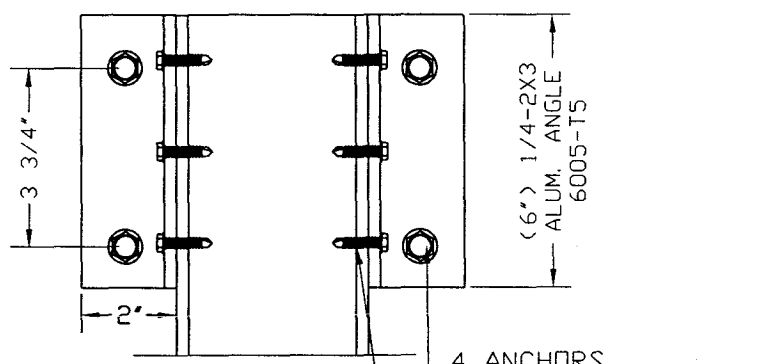
FC2
FLOOR/CEILING
MOUNT



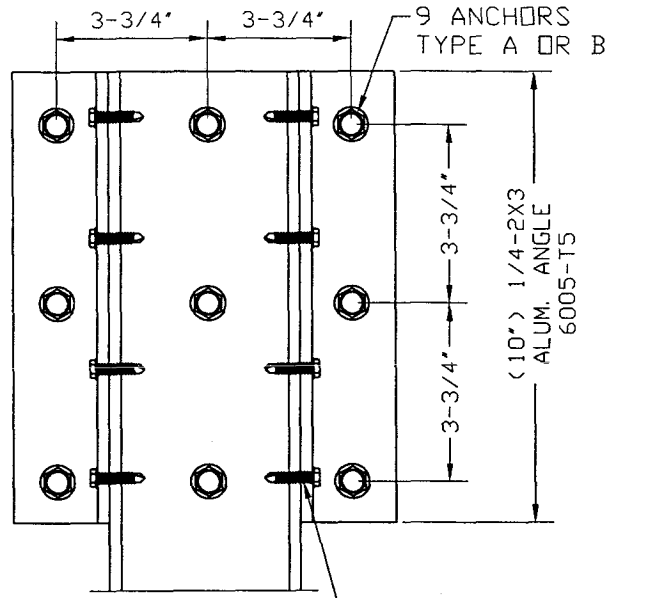
FC3
FLOOR/CEILING
MOUNT



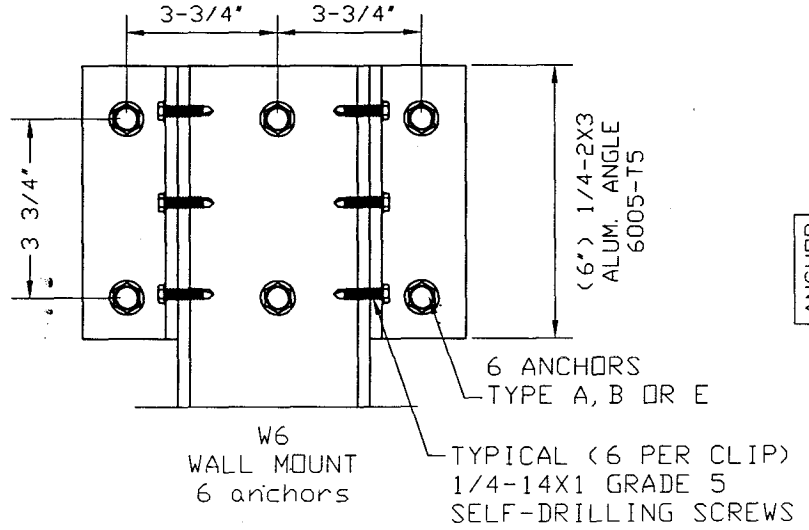
NOTE: ANGLE CLIP TO
BE PLACED INSIDE TUBE



W4
WALL MOUNT
4 anchors



W9
WALL MOUNT
9 anchors



W6
WALL MOUNT
6 anchors

WALL MOUNT ANCHOR SELECTION

ANCHOR TYPE	MULLION TYPE	4X4	4X6	4X8
	A	W6	W9	W9
	B	W4	W6	W9
	E	W4	W6	W6

ANCHOR SCHEDULE:

ANCHOR	DESCRIPTION	MATERIAL	EMBEDMENT	EDGE DISTANCE
A	5/16"X3" TAPCONS	MIN. 2899 psi CONCRETE	2 1/4"	3 1/8"
B	5/16"X3" TAPCONS	GROUT FILLED C-90 BLOCK	2 1/4"	4"
E	3/8"X4" WEDGE BOLTS	MIN. 3000 psi CONCRETE	2 1/2"	4 1/2"

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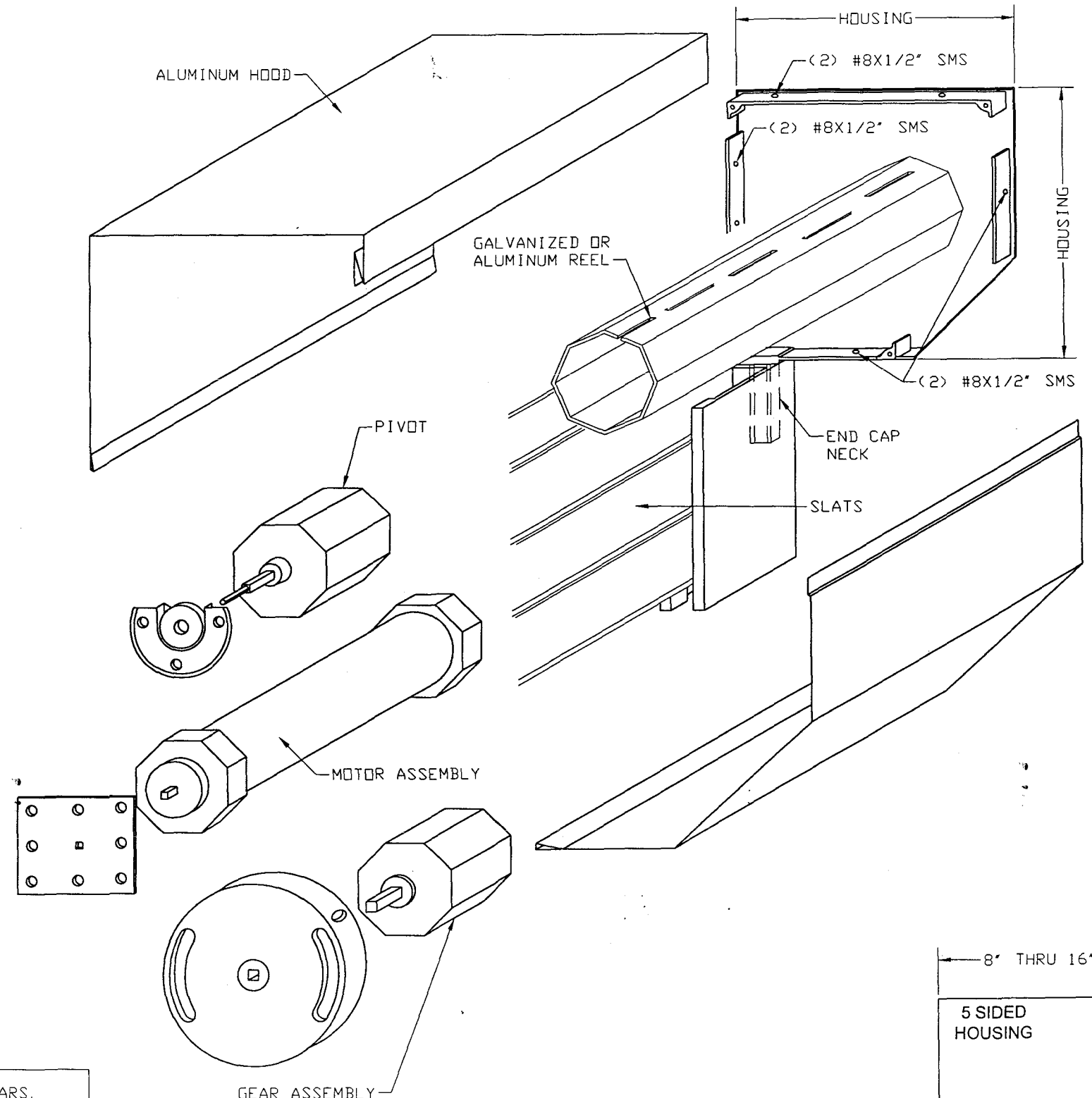
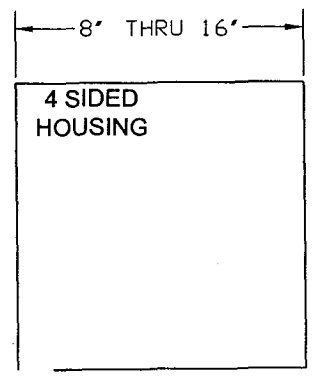
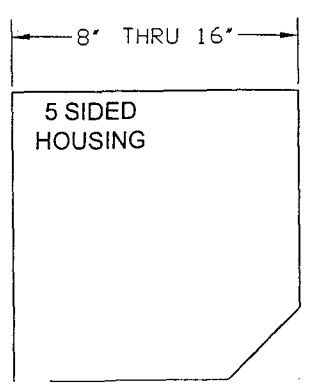
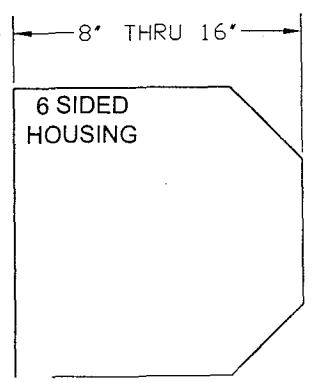
HOOD ASSEMBLY









NOTE: THE ROLL-UP MECHANISM (GEARS, MOTORS, SUPPORTING END PLATES) ARE NOT PART OF THIS APPROVAL. MANUFACTURER IS RESPONSIBLE TO SPECIFY THESE COMPONENTS FOR PROPER SHUTTER OPERATION.

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