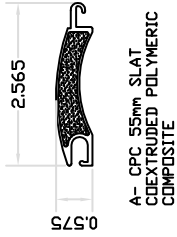


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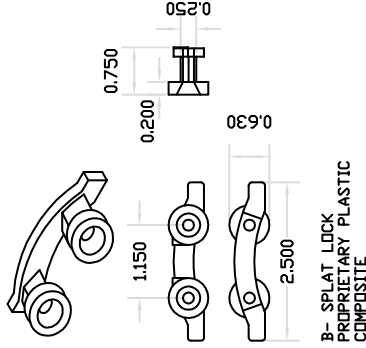
- SHEET**
- 1- INDEX, GENERAL NOTES, PRODUCT COMPONENTS
 - 2- TYPICAL ELEVATIONS, ALLOWABLE SHUTTER PRESSURE (TABLE 1)
 - 3- TYPICAL AND ALTERNATE HORIZONTAL SECTIONS
 - 4- ANCHORAGE, SCHEDULE SECTION 4A (TABLE 2) & SECTION 4B (TABLE 3)
 - 5- TYPICAL MULLION SECTIONS AND MULLION SELECTION TABLES (4, 4a, 4b)
 - 6- TYPICAL MULLION SECTIONS, END MULLION CONNECTIONS
 - 7- MULLIONS CONNECTIONS WALL AND FLOOR MOUNTS.
 - 8- BUILT-OUT SELECTION AND ANCHORAGE TABLES
 - 9- HOOD ASSEMBLY

GENERAL NOTES:

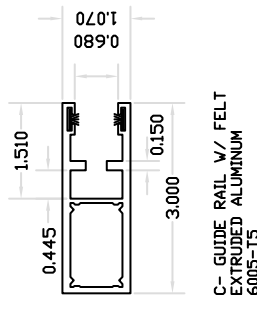
- 1- DEFINITION: THIS PRODUCT IS A ROLLING TYPE SHUTTER, DESIGNED, CONSTRUCTED AND ERECTED TO EASILY ENCLOSE AN AREA, PROVIDING PROTECTION FROM HURRICANE FORCE WINDS WITHIN THE ALLOWABLE DESIGNED PRESSURES AND LIMITATIONS STATED IN THIS APPROVAL.
- 2- CODE: THIS PRODUCT HAS BEEN TESTED UNDER THE ASTM E1886 & 1996 (MISSILE LEVEL D) AND ASTM E330, AND HAS BEEN DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE, 2001 EDITION (NON HIGH VELOCITY HURRICANE ZONES).
- 3- POSTING: A PERMANENT LEGIBLE DECAL SHALL BE PLACED AT A READILY VISIBLE LOCATION STATING THE FOLLOWING:
 * INNOVATIVE PROTECTIVE PRODUCTS, LLC
 JENSEN BEACH, FLORIDA
 MISSILE LEVEL D IMPACT RESISTANT SHUTTER
 CPC 55mm ROLLING SHUTTER*
- 4- LOADS: THE DESIGNED LOAD MUST BE CALCULATED BY A PROFESSIONAL ARCHITECT OR ENGINEER AS PER ASCE 7-98. THE CALCULATED DESIGNED PRESSURE MUST NOT EXCEED THE ALLOWABLE PRESSURES FOR EACH SHUTTER COMPONENT TO BE USED.
- 5- MATERIAL: ALL EXTRUDED ALUMINUM SHAPES SHALL BE MADE OF 6005-T5, 6061-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- USE: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, ARCHITECT OR ENGINEER OF RECORD TO VERIFY THE FOLLOWING:
 7.1- THE STABILITY OF THE STRUCTURE WHERE THE SHUTTER IS TO BE ATTACHED INSURING PROPER ANCHORAGE.
 7.2- THE SITE SPECIFIC PROJECT CRITERIA, SUCH AS BUT NOT LIMITED TO, WIND LOADS, LOCAL CODE REQUIREMENTS, DESIGNED PRESSURES ETC.
 7.3- THAT THIS APPROVAL IS ADEQUATE TO THE SPECIFIC PROJECT.
- 8- DISCLAIMER: ENGCO INC. HAS NO CONTROL IN THE MANUFACTURING AND/OR PERFORMANCE OF THIS PRODUCT. THESE GENERIC PLANS WERE ENGINEERED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES AND TEST DATA PROVIDED BY THE MANUFACTURER.
- 9- 33 1/3% INCREASE IN ALLOWABLE LOADS HAVE NOT BEEN USED IN THE DESIGN OF THE ANCHORS FOR THIS PRODUCT APPROVAL, HOWEVER, WOOD ANCHORS WITH 1.6 INCREASE FOR WIND LOAD DURATION HAVE BEEN USED.



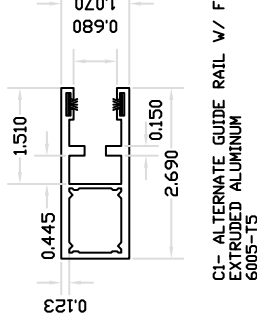
A- CPC 55mm SLAT
COEXTRUDED POLYMERIC
COMPOSITE



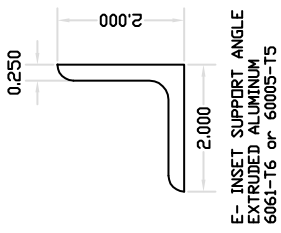
B- SPLAT LOCK
PROPRIETARY PLASTIC
COMPOSITE



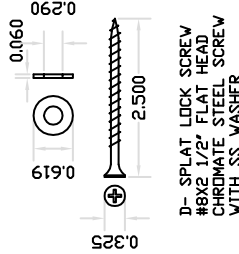
C- GUIDE RAIL W/ FELT
EXTRUDED ALUMINUM
6005-T5



C1- ALTERNATE GUIDE RAIL W/ FELT
EXTRUDED ALUMINUM
6005-T5



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



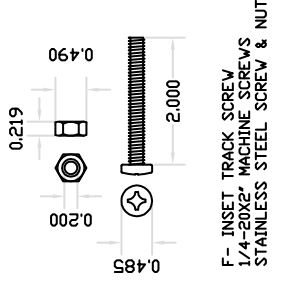
D- SPLAT LOCK SCREW
#8X2 1/2" FLAT HEAD
CHROME PLATE STEEL SCREW
WITH SS WASHER

TABLES SCHEDULE

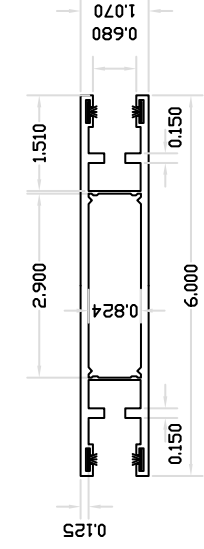
COMPONENT	TABLE	SHEET
SLAT ALLOWABLE PRESSURE	1	2
TRACK ANCHORAGE	2, 3	4
MULLIONS	4, 4a, 4b	5
END MULLION ANCHORAGE	5, 6	6
MULLION ANCHORAGE	7	7
BUILT-OUT ANCHORAGE	7.1 - 7.6	8

NOTES:

- 1- ALLOWABLE DESIGNED PRESSURE FOR MULTIPLE SHUTTERS ARE FUNCTION OF THE LOWEST ALLOWABLE DESIGNED LOAD FOR THE SLATS, MULLIONS AND ANCHORAGE.
- 2- THIS PRODUCT IS CONSIDERED "NON POROUS", THEREFORE SLAT TO GLASS SEPARATION DUE TO WIND OR IMPACT DEFLECTION WAS NOT CONSIDERED IN EVALUATING THIS PRODUCT.



F- INSET TRACK SCREW
1/4-20X2" MACHINE SCREWS
STAINLESS STEEL SCREW & NUT



C2- ALTERNATE GUIDE RAIL W/ FELT
POST INSTALLATION
EXTRUDED ALUMINUM 6005-T5

Manufacturer:
Innovative Protective Products, LLC
742 NE JENSEN BEACH BLVD.
JENSEN BEACH, FLORIDA 33334
Tel.: (772) 334-0858
Fax.: (772) 225-7542

Product:
CPC 55 mm Rolling Shutter
Engineering:
EngCo Inc.
CA 8116
6971 W. Sunrise Blvd. 104
Plantation, Fl. 33313
Tel.: (954) 585-0304
Fax.: (954) 585-0305

Engineer Seal
Pedro De Figueiredo
PE 52609
Date: 12/30/03
Scale: NA
Design by: PPMF

REVISIONS:

Drawing Number
03-318

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Manufacturer:
Innovative Protective Products, LLC
 742 NE JENSEN BEACH BLVD.
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 TEL. : (954) 585-0304
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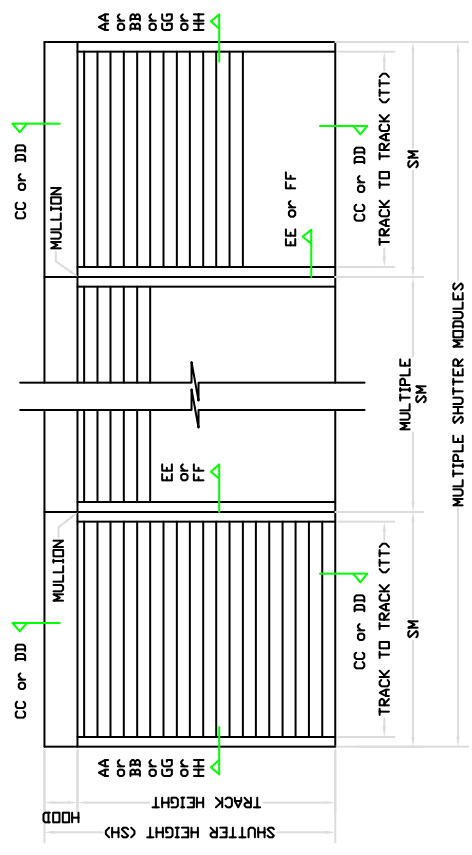
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 Pedro De Figueiredo
 PE 52609
 Date: 12/30/03
 Scale: NA
 Design by: PPMF

REVISIONS:

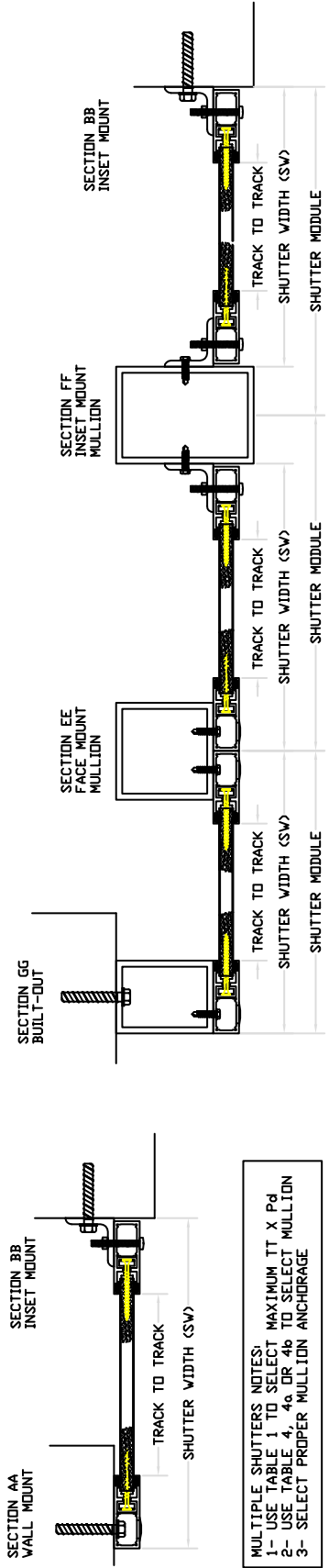
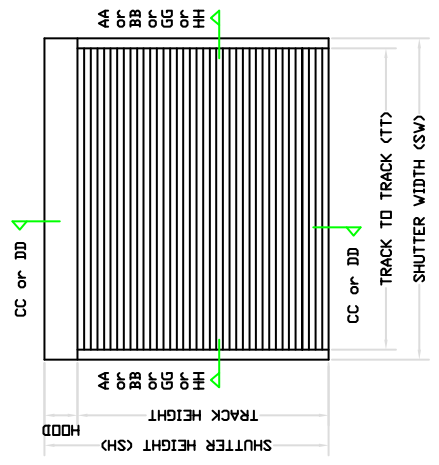
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TYPICAL MULTIPLE UNITS ELEVATION



TYPICAL SINGLE UNIT ELEVATION

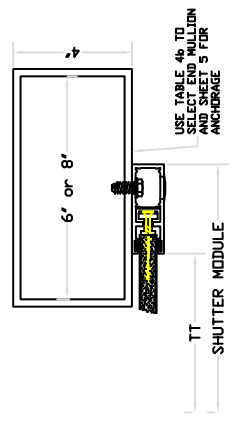


MULTIPLE SHUTTERS NOTES:
 1- USE TABLE 1 TO SELECT MAXIMUM TT X Pd
 2- USE TABLE 4, 4a OR 4b TO SELECT MULLION
 3- SELECT PROPER MULLION ANCHORAGE

TABLE 1 - ALLOWABLE DESIGNED PRESSURE

TT	ALLOWABLE WIND PRESSURES	
	POSITIVE	NEGATIVE
146 1/4"	+ 87.0	- 87.0
122 1/4"	+105.9	-105.9
98 1/4"	+124.8	-124.8
84 1/4"	+124.8	-124.8
<=72 1/4"	+124.8	-124.8

NOTES:
 1- USE LINEAR INTERPOLATION FOR SHUTTERS SIZED BETWEEN 146 1/4" AND 98 1/4".
 2- DESIGNED PRESSURES MUST NOT EXCEED 124.8 PSF.
 3- SHUTTER SIZE (TT) MUST NOT EXCEED 146 1/4".



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 Plantation, Fl. 33313
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 Pedro De Figueredo
 PE 52609

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03-318

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4 of 9

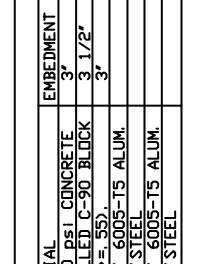
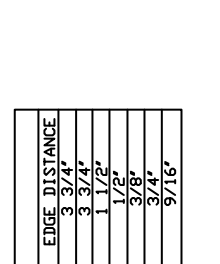
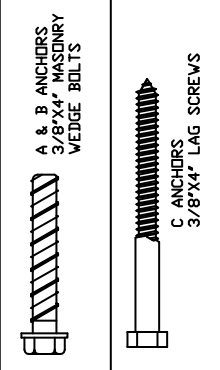
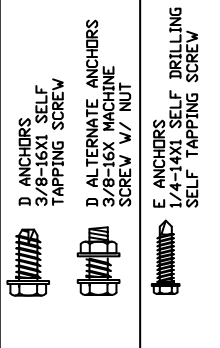


TABLE 2 - AA SECTION - WALL MOUNT ANCHOR SCHEDULE

ANCHOR TYPE	ANCHOR SPACING																								
	146.25 >= TT	122.25 >= TT	98.25 >= TT	84.25 >= TT	72.25 >= TT	72.25 >= TT	72.25 >= TT	72.25 >= TT	72.25 >= TT	72.25 >= TT															
38.3	9	5	3	4	11	6	3	4	10	12	7	4	5	12	9	5	6	12	10	5	7	12			
47.2	8	4	2	3	7	9	5	3	4	8	12	6	4	4	10	12	7	4	5	11	12	8	5	6	12
55.5	7	4	2	3	6	8	4	3	3	7	10	6	3	4	9	12	6	4	5	10	12	7	4	5	12
66.3	6	-	2	2	5	7	4	2	3	6	9	5	3	3	8	10	6	3	4	9	12	7	4	5	10
78.3	5	-	2	2	4	6	-	2	2	5	8	4	2	3	7	9	5	3	4	8	11	6	3	4	9
87.9	5	-	2	2	4	6	-	2	2	5	7	4	2	3	6	8	4	3	3	7	10	5	3	4	8
102.0	4	-	-	-	4	5	-	-	2	4	6	-	2	2	5	7	4	2	3	6	9	5	3	3	8
114.0	4	-	-	-	3	5	-	-	2	4	6	-	2	2	5	7	4	2	3	6	8	4	3	3	7
125.0	4	-	-	-	3	4	-	-	2	4	5	-	2	2	5	6	-	2	2	5	8	4	2	3	6

TABLE 3 - BB SECTION - INSET MOUNT ANCHOR SCHEDULE

ANCHOR TYPE	ANCHOR SPACING																								
	146.25 >= TT	122.25 >= TT	98.25 >= TT	84.25 >= TT	72.25 >= TT	72.25 >= TT	72.25 >= TT	72.25 >= TT	72.25 >= TT	72.25 >= TT															
38.3	7	-	5	3	6	7	-	6	4	6	8	4	7	4	7	9	4	7	4	7	9	4	8	5	8
47.2	6	-	4	3	5	6	-	5	3	5	7	-	6	3	6	8	-	6	4	6	8	4	7	4	7
55.5	5	-	4	2	4	6	-	4	3	5	6	-	5	3	5	7	-	5	3	6	7	-	6	4	6
66.3	4	-	3	2	4	5	-	4	2	4	5	-	4	2	5	6	-	5	3	6	7	-	5	3	5
78.3	4	-	3	2	3	4	-	3	2	3	4	-	4	2	4	5	-	4	3	4	6	-	4	3	5
87.9	-	-	2	-	3	4	-	3	2	3	4	-	4	2	4	5	-	4	2	4	5	-	4	3	5
102.0	-	-	2	-	2	3	-	3	2	3	4	-	3	2	3	4	-	4	2	4	5	-	4	2	4
114.0	-	-	2	-	2	3	-	3	2	3	4	-	3	2	3	4	-	3	2	3	4	-	3	2	4
125.0	-	-	2	-	2	3	-	2	2	3	4	-	3	2	3	4	-	3	2	3	4	-	3	2	3

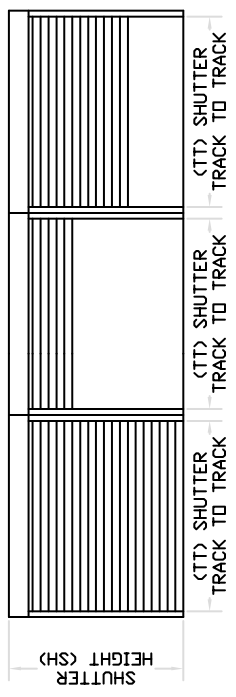


TABLE 4a - UNEQUAL SPACED MULLION SELECTION

SHUTTER HEIGHT	DESIGNED PRESSURES PSF					
	38.3	47.2	55.5	66.0	78.3	87.9
96'	4x6	4x6	4x6	4x8	4x8	4x8
108'	4x6	4x8	-	-	-	-

NOTES:
 1-TABLE IS APPLICABLE ONLY FOR UNEQUAL SHUTTER MODULES WITH RATIO GREATER THAN 1/2. (SM2/SM1 >=0.5, SM2/SM3 >=0.5)
 2- SM1-SM6 AND SM3-SM6

TABLE 4b - END MULLION SELECTION

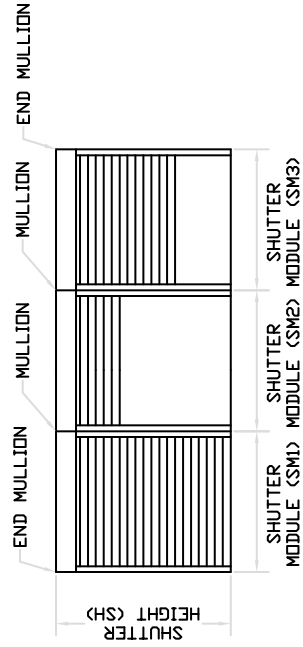
SHUTTER HEIGHT	DESIGNED PRESSURES PSF									
	38.3	47.2	55.5	66.0	78.3	87.9	102.0	114.7	125.0	-
146.25	-	-	-	-	-	-	-	-	-	-
122.25	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4
98.25	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4
84.25	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4
72.25	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4
146.25	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4
122.25	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4
98.25	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4
84.25	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4
72.25	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4	8x4

NOTE: TABLE IS APPLICABLE ONLY FOR END MULLION SHUTTER MODULES

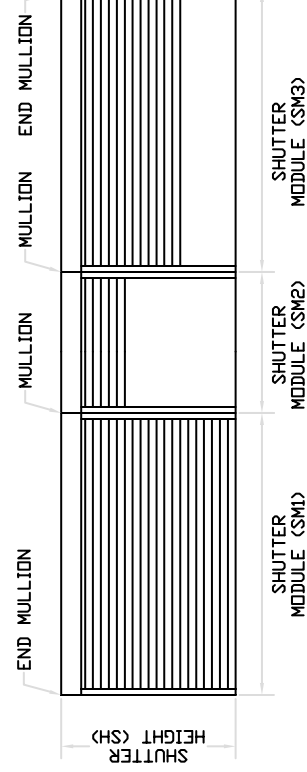
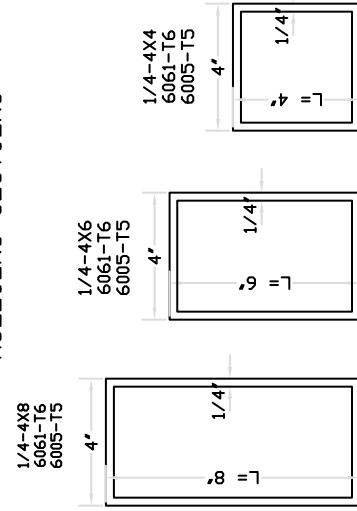
TABLE 4 - EQUAL SPACED MULLION SELECTION

SHUTTER HEIGHT	DESIGNED PRESSURES PSF									
	38.3	47.2	55.5	66.0	78.3	87.9	102.0	114.7	125.0	-
146.25	4x8	4x8	4x8	4x8	4x8	4x8	4x8	4x8	4x8	4x8
122.25	4x8	4x8	4x8	4x8	4x8	4x8	4x8	4x8	4x8	4x8
98.25	4x6	4x6	4x6	4x6	4x6	4x6	4x6	4x6	4x6	4x6
84.25	4x4	4x4	4x4	4x4	4x4	4x4	4x4	4x4	4x4	4x4
72.25	4x4	4x4	4x4	4x4	4x4	4x4	4x4	4x4	4x4	4x4

NOTE: TABLE 4 IS APPLICABLE ONLY FOR EQUAL SHUTTER MODULES SM1-SM2-SM3



MULLIONS SECTIONS



Manufacturer:
**Innovative
 Protective
 Products,
 LLC**

742 NE JENSEN BEACH BLVD.
 JENSEN BEACH, FLORIDA 33334
 Tel.: (772) 334-0858
 Fax.: (772) 225-7542

Product:
**CPC 55 mm
 Rolling
 Shutter**

Engineering:
Eng'g Inc.
 CA 8116
 6971 W. Sunrise Blvd, 104
 Plantation, Fl. 33313
 Tel.: (954) 585-0304
 Fax.: (954) 585-0305

Engineer Seal
 Pedro De Figueiredo
 PE 52609

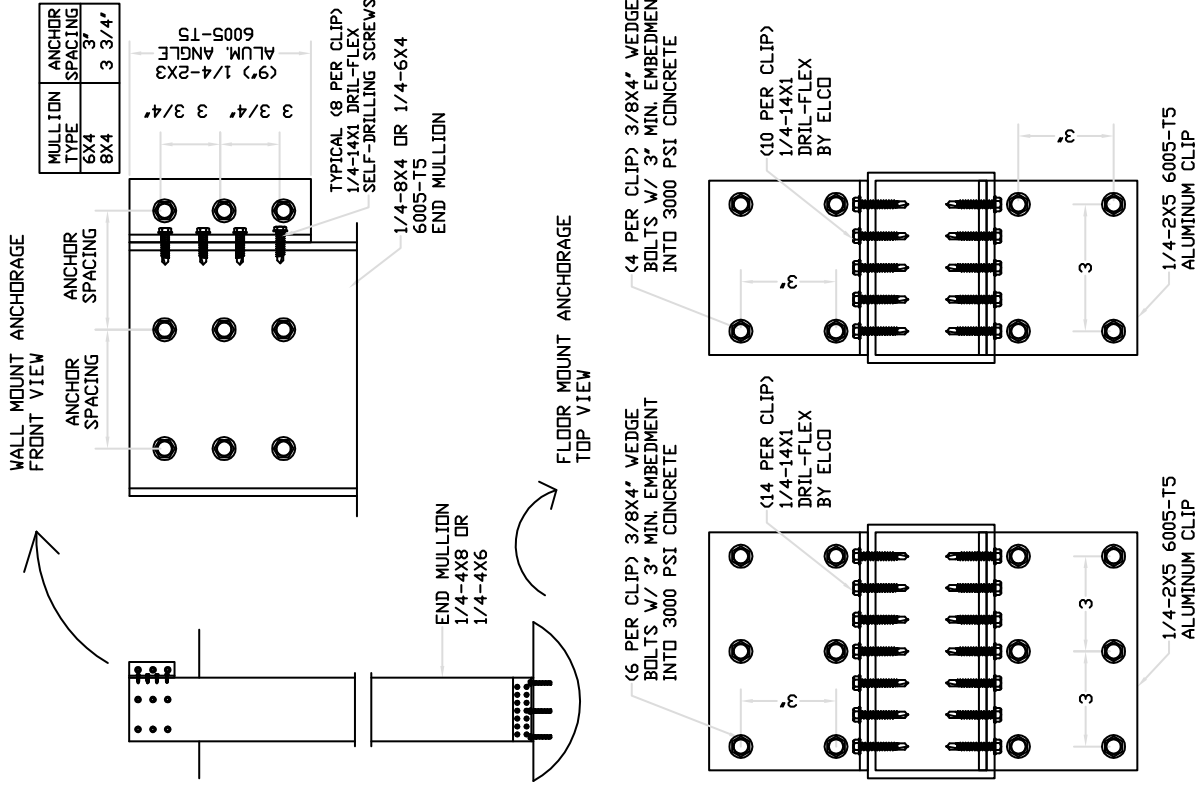
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 Scale: NA
 Design by: PPMF

REVISIONS:

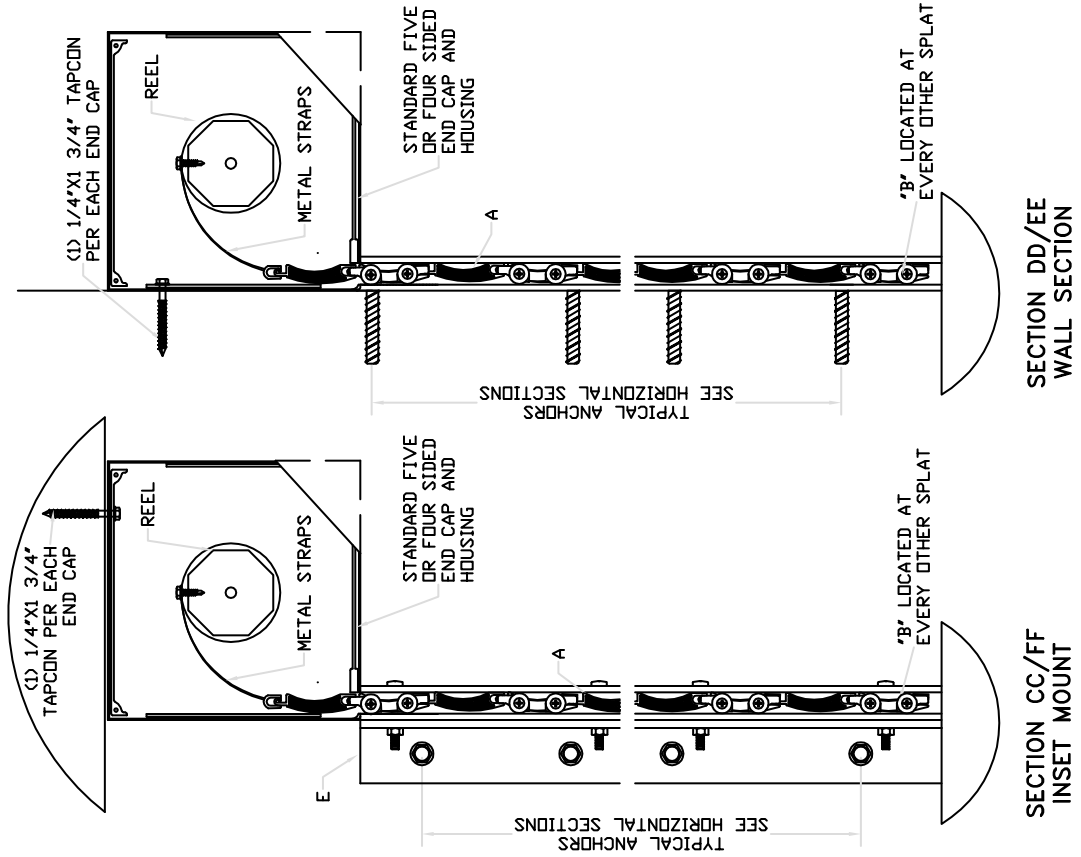
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END MULLION CONNECTIONS



TYPICAL VERTICAL SECTIONS



Manufacturer:
Innovative Protective Products, LLC

742 NE JENSEN BEACH BLVD.
JENSEN BEACH, FLORIDA 33334
Tel.: (772) 334-0858
Fax.: (772) 225-7542

Product:
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CA 8116
6971 W. Sunrise Blvd, 104
Plantation, Fl. 33313
Tel.: (954) 585-0304
Fax.: (954) 585-0305

Engineer Seal
Pedro De Figueiredo
PE 52609

Date: 12/30/03
Scale: NA
Design by: PPMF

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03-318

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TABLE 5
WALL MOUNT ANCHOR SELECTION

PRESSURE	66.0	66.0	125	125
MULLION TYPE	4X4	4X6	4X6	4X8
A	W4	W4	W4	W4
B	W4	W4	W4	W6
C	W4	W4	W4	W4
D	W4	W4	W4	W6

NOTE: FOR UNEQUAL SPAN SHUTTERS, SELECT MULLION ON TABLE 4a WITH CONNECTION W9 AND TYPE A ANCHORS.

ANCHOR TYPE	ANCHOR SPACING
A	3 3/4"
B	3 3/4"
C	2"
D	2"

MULLIONS CONNECTIONS

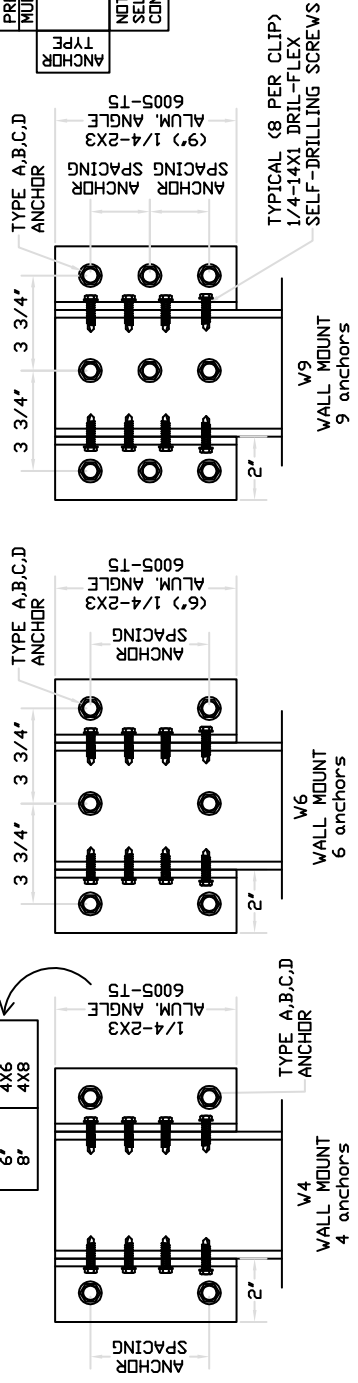
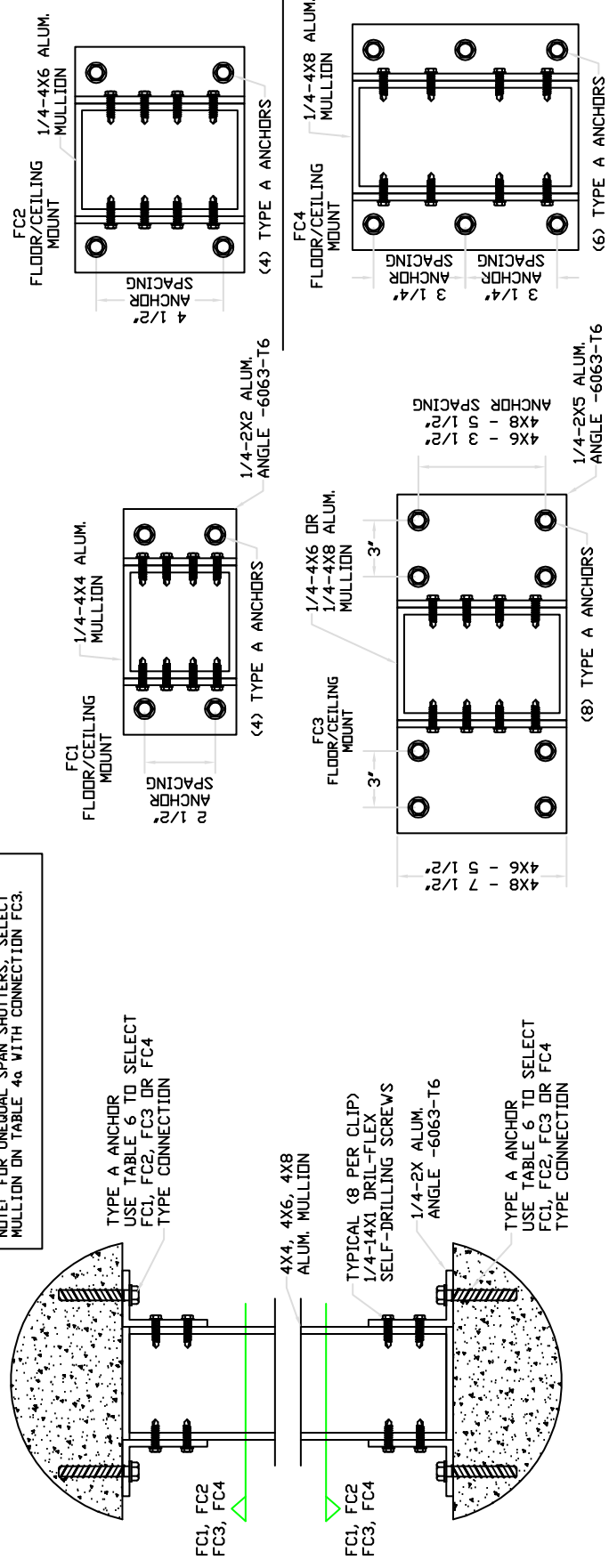


TABLE 6
FLOOR/CEILING MOUNT ANCHOR SELECTION

MAX. Pd (PSF)	66.0	102	125	125
ANCHOR TYPE	4X4	4X6	4X6	4X8
A	FC1	FC2	FC3	FC4

NOTE: FOR UNEQUAL SPAN SHUTTERS, SELECT MULLION ON TABLE 4a WITH CONNECTION FC3.

ANCHOR	DESCRIPTION	MATERIAL	EMBEDMENT	EDGE DISTANCE
A	3/8" X 4" WEDGE BOLTS	MIN. 3000 PSI CONCRETE	3"	3 3/4"
B	3/8" X 4" WEDGE BOLTS	GROUT FILLED C-90 BLOCK	3 1/2"	3 3/4"
C	3/8" X 4" LAG SCREWS	WOOD (SGS-35)	3"	1 1/2"
D	1/4" - 14X1" DRILL-FLEX	MIN. 1/4" 6063-T6 ALUM.	1 1/2"	1 1/2"
	Self drilling screws	A36 3/16" STEEL		3/8"



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 Plantation, Fl. 33313
 Tel.: (954) 585-0304
 Fax.: (954) 585-0305

Engineer Seal
 Pedro De Figueredo
 PE 52609

Date: 12/30/03
 Scale: NA
 Design by: PPMF

REVISIONS:

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03-318

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BUILT-OUT TUBE ANCHORAGE SPACING TABLES

TABLE 7.2 3X4 TUBE L=3

PdXTT	146.25'	98.25'	84.25'	72.25'
38.3	5	7	8	9
47.2	4	6	7	8
55.5	4	6	6	7
66.0	-	5	6	7
78.3	-	4	5	6
87.9	-	4	5	6
102.0	-	4	4	5
114.7	-	-	4	5
125.0	-	-	4	4

TABLE 7.1 4x4 TUBE L=4

PdXTT	146.25'	98.25'	84.25'	72.25'
38.3	4	6	7	8
47.2	4	5	6	7
55.5	-	5	6	6
66.0	-	4	5	5
78.3	-	4	4	5
87.9	-	-	4	5
102.0	-	-	4	4
114.7	-	-	-	4
125.0	-	-	-	4

TABLE 7.4 3x4 TUBE L=4

PdXTT	146.25'	98.25'	84.25'	72.25'
38.3	-	5	6	6
47.2	-	4	5	5
55.5	-	4	4	5
66.0	-	-	4	4
78.3	-	-	-	4
87.9	-	-	-	4
102.0	-	-	-	-
114.7	-	-	-	-
125.0	-	-	-	-

TABLE 7.3 2x4 TUBE L=2

PdXTT	146.25'	98.25'	84.25'	72.25'
38.3	6	9	10	11
47.2	5	8	9	10
55.5	5	7	8	9
66.0	4	6	7	8
78.3	4	5	6	7
87.9	-	5	6	7
102.0	-	4	5	6
114.7	-	4	5	6
125.0	-	4	5	5

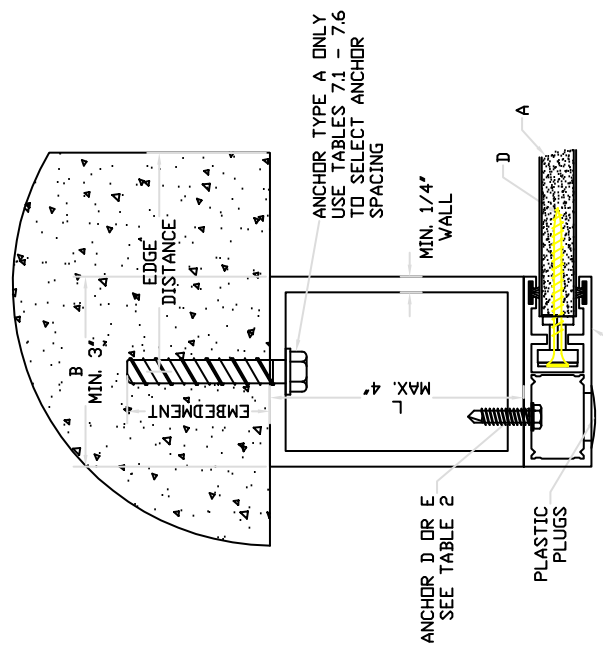
TABLE 7.6 2X3 TUBE L=2

PdXTT	146.25'	98.25'	84.25'	72.25'
38.3	5	8	9	10
47.2	5	7	8	9
55.5	4	6	7	8
66.0	4	5	6	7
78.3	-	5	6	6
87.9	-	4	5	6
102.0	-	4	4	5
114.7	-	4	4	4
125.0	-	-	4	4

TABLE 7.5 3x3 TUBE L=3

PdXTT	146.25'	98.25'	84.25'	72.25'
38.3	4	6	7	8
47.2	4	5	6	7
55.5	-	5	6	6
66.0	-	4	5	5
78.3	-	4	4	5
87.9	-	-	4	5
102.0	-	-	4	4
114.7	-	-	-	4
125.0	-	-	-	4

**SECTION GG
 BUILT-OUT SECTION**



ANCHOR SCHEDULE:

ANCHOR	DESCRIPTION	MATERIAL	EMBEDMENT	EDGE DISTANCE
A	3/8" X4" WEDGE BOLTS	MIN. 3000 psi CONCRETE	3"	3 3/4"

