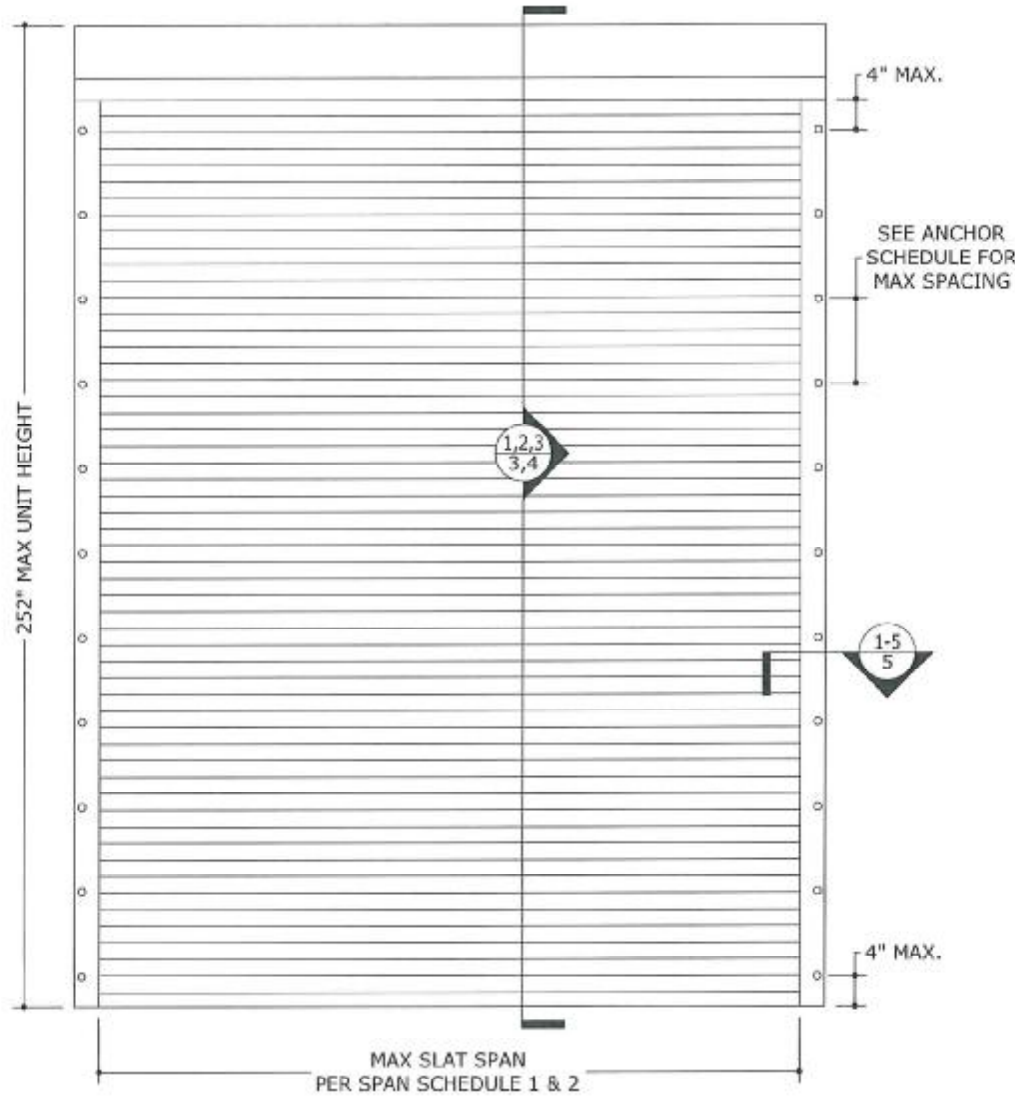


ALUTECH UNITED, INC.

MAGNUM 3.57 SECURITY STAR
ROLL DOWN SHUTTER



1
1 N.T.S. EXTERIOR ELEV

**END RETENTION SHUTTER
WITH SINGLE WALL SLATS**

**MAXIMUM ALLOWABLE
DESIGN PRESSURES:** AS NOTED IN
SCHEDULES

DESIGN NOTES:

POSITIVE AND NEGATIVE DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED BY OTHERS ON A JOB-SPECIFIC BASIS IN ACCORDANCE WITH THE GOVERNING CODE. SITE-SPECIFIC WIND LOAD REQUIREMENTS SHALL BE DETERMINED IN ACCORDANCE WITH ASCE 7 AND THE GOVERNING BUILDING CODE BY SEPARATE ENGINEERING CERTIFICATION AND SHALL BE LESS THAN OR EQUAL TO THE POSITIVE OR NEGATIVE DESIGN PRESSURE CAPACITY VALUE LISTED HEREIN FOR ANY ASSEMBLY WITHIN THE LIMITATIONS STATED HEREIN.

GENERAL NOTES:

1. THE SYSTEM DESCRIBED HEREIN HAS BEEN DESIGNED AND TESTED IN ACCORDANCE WITH THE 2010 FLORIDA BUILDING CODE AND THE FBC FIFTH EDITION (2014), FOR USE OUTSIDE THE HIGH VELOCITY HURRICANE ZONE. THIS SYSTEM HAS BEEN TESTED IN ACCORDANCE WITH ASTM E330, E1996, AND E1886 TESTING STANDARDS PER TEST REPORT D6939.01-109-44, D6939.02-109-44 AND D6939.03-109-44 BY ARCHITECTURAL TESTING.
2. NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM. WIND LOAD DURATION FACTOR $C_d=1.6$ HAS BEEN USED FOR WOOD ANCHOR DESIGN.
3. THE ARCHITECT/ENGINEER OF RECORD FOR THE PROJECT SUPERSTRUCTURE WITH WHICH THIS DESIGN IS USED SHALL BE RESPONSIBLE FOR THE INTEGRITY OF ALL SUPPORTING SURFACES TO THIS DESIGN WHICH SHALL BE COORDINATED BY THE PERMITTING CONTRACTOR.
4. POSITIVE AND NEGATIVE DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED PER SEPARATE ENGINEERING IN ACCORDANCE WITH THE GOVERNING CODE. PRESSURE REQUIREMENTS SHALL BE LESS THAN OR EQUAL TO THE POSITIVE OR NEGATIVE DESIGN PRESSURE CAPACITY VALUES LISTED HEREIN FOR ANY ASSEMBLY AS SHOWN.
5. DESIGN PRESSURES NOTED HEREIN ARE BASED ON MAXIMUM TESTED PRESSURES DIVIDED BY A 1.5 SAFETY FACTOR.
6. THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
7. PERMIT HOLDER SHALL VERIFY THE ADEQUACY OF THE EXISTING STRUCTURE TO WITHSTAND SUPERIMPOSED LOADS.
8. CONCRETE ANCHORS NOTED HEREIN SHALL BE EMBEDDED TO UN-CRACKED CONCRETE ONLY. INSTALL ALL CONCRETE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS.
9. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE AS NOTED HEREIN. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO, FOAM, BRICK, AND OTHER WALL FINISHES.
10. MAXIMUM SLAT SPAN: 18'-0".
11. MAXIMUM ALLOWABLE DESIGN PRESSURE: PER DESIGN SCHEDULES.
12. ENGINEER SEAL AFFIXED HERETO VALIDATES STRUCTURAL DESIGN AS SHOWN ONLY. USE OF THIS SPECIFICATION BY CONTRACTOR, et. al. INDEMNIFIES & SAVES HARMLESS THIS ENGINEER FOR ALL COST & DAMAGES INCLUDING LEGAL FEES & APPELLATE FEES RESULTING FROM MATERIAL FABRICATION, SYSTEM ERECTION, & CONSTRUCTION PRACTICES BEYOND THAT WHICH IS CALLED FOR BY LOCAL, STATE, & FEDERAL CODES & FROM DEVIATIONS OF THIS PLAN.
13. EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED.
14. ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE THIS CERTIFICATION.
15. END RETENTION SHUTTER ASSEMBLY WITH SINGLE WALL SLATS SHALL BEAR A PERMANENT LABEL ON THE BOTTOM OF THE HOOD OR ON THE BOTTOM SLAT FACING THE EXTERIOR WITH THE FOLLOWING MINIMUM INFORMATION:
ALUTECH UNITED, INC.
SELBYVILLE, DE
MISSILE LEVEL D, WIND ZONE 4 - ASTM E1886, E1996 & E330
FLORIDA PRODUCT APPROVAL #



ALUTECH UNITED, INC.

117 DIXON STREET
SELBYVILLE, DE 19975
PHONE: 302 - 436 - 6005 FAX: 302 - 436 - 5100
MAGNUM 3.57 SECURITY STAR
ROLL DOWN SHUTTER

| DRWN/CHKD | DATE |
|-----------|----------|
| CSL TSB | 10/13/14 |

REMARKS
INIT ISSUE

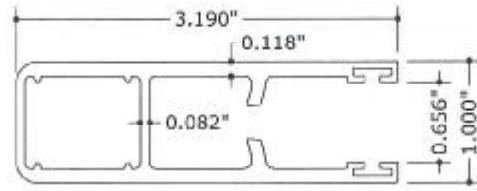
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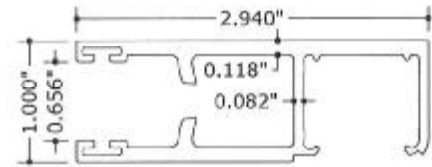
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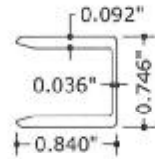
10/23/2014 - 3:03pm chen V:\Projects\14-1323 Magnum III (Security Star) Slat Shutter Florida Product Approval-SWP114-1323_c Magnum 3.57 Roll-up Shutter (FSA).dwg



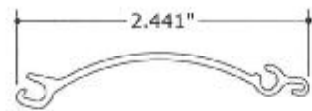
1 **MAGNUM 3.57 END-RETENTION RAIL**
8" = 1'-0" 6063-T5 ALUM.



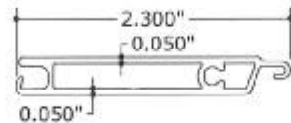
2 **SNAP RAIL END-RETENTION RAIL**
8" = 1'-0" 6063-T5 ALUM.



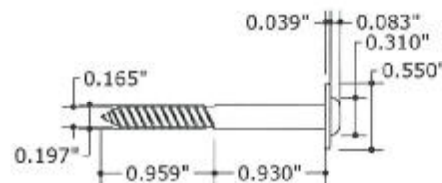
3 **END-RETENTION RAIL INSERT**
8" = 1'-0" PLASTIC



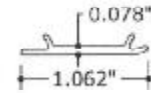
4 **SINGLE WALL SLAT**
8" = 1'-0" 6063-T5 ALUM.



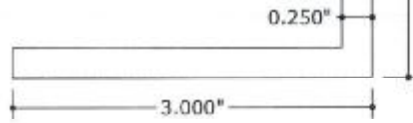
5 **BASE SLAT**
8" = 1'-0" 6063-T5 ALUM.



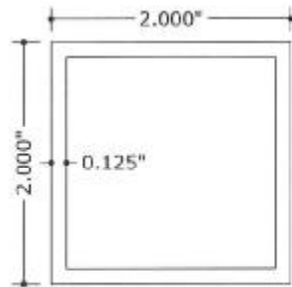
6 **RETAINING SCREW**
8" = 1'-0" 304 S.S.



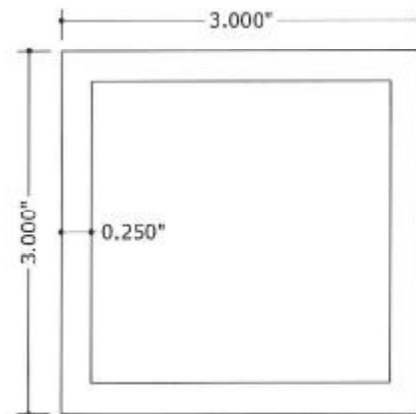
7 **END-RETENTION RAIL SNAP COVER**
8" = 1'-0" 6063-T5 ALUM.



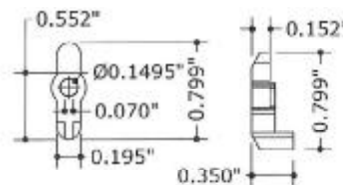
8 **3"X3"X0.250" ANGLE**
8" = 1'-0" 6063-T5 ALUM.



9 **2"X2"X0.125" TUBE**
8" = 1'-0" 6063-T5 ALUM.



10 **3"X3"X0.250" TUBE**
8" = 1'-0" 6063-T5 ALUM.



11 **SLAT SIDE LOCK**
8" = 1'-0" BAYBLEND T85 POLYCARB.

ALLOWABLE SLAT SPAN SCHEDULES:

| SPAN SCHEDULE 1 MAGNUM 3.57 RETENTION SHUTTER WITH SINGLE WALL SLATS | |
|--|---------------------------|
| SLAT SPAN | ALLOWABLE DESIGN PRESSURE |
| 48.0" | ± 206.7 PSF |
| 56.0" | ± 163.4 PSF |
| 64.0" | ± 139.9 PSF |
| 72.0" | ± 125.6 PSF |
| 80.0" | ± 116.1 PSF |
| 88.0" | ± 109.3 PSF |
| 96.0" | ± 104.2 PSF |
| 104.0" | ± 100.0 PSF |
| 112.0" | ± 96.6 PSF |
| 120.0" | ± 93.6 PSF |
| 128.0" | ± 91.1 PSF |
| 136.0" | ± 88.8 PSF |
| 144.0" | ± 86.7 PSF |
| 152.0" | ± 81.3 PSF |
| 160.0" | ± 76.6 PSF |
| 168.0" | ± 72.4 PSF |
| 176.0" | ± 68.7 PSF |
| 184.0" | ± 65.4 PSF |
| 192.0" | ± 62.4 PSF |
| 200.0" | ± 59.7 PSF |
| 208.0" | ± 57.3 PSF |
| 216.0" | ± 55.0 PSF |

| SPAN SCHEDULE 2 SNAP RAIL RETENTION SHUTTER WITH SINGLE WALL SLATS | |
|--|---------------------------|
| SLAT SPAN | ALLOWABLE DESIGN PRESSURE |
| 48.0" | ± 130.0 PSF |
| 56.0" | ± 95.0 PSF |
| 64.0" | ± 77.7 PSF |
| 72.0" | ± 68.3 PSF |
| 80.0" | ± 62.8 PSF |
| 88.0" | ± 59.3 PSF |
| 96.0" | ± 56.9 PSF |
| 104.0" | ± 55.1 PSF |
| 112.0" | ± 53.8 PSF |
| 120.0" | ± 52.6 PSF |
| 128.0" | ± 51.7 PSF |
| 136.0" | ± 50.8 PSF |
| 144.0" | ± 50.0 PSF |

SEPARATION FROM GLAZING SCHEDULES*:

| GLASS SEPARATION SCHEDULE MAGNUM 3.57 END RETENTION SHUTTER WITH SINGLE WALL SLATS* | | |
|---|---------------------------------------|---------------------------------------|
| SLAT SPAN | INSTALLATIONS ≤ 30' ABOVE GRADE | INSTALLATIONS > 30' ABOVE GRADE |
| 48.0" | 6.1" | 6.1" |
| 56.0" | 14.0" | 6.4" |
| 64.0" | 14.0" | 6.8" |
| 72.0" | 14.0" | 7.2" |
| 80.0" | 14.0" | 7.5" |
| 88.0" | 14.0" | 7.9" |
| 96.0" | 14.0" | 8.3" |
| 104.0" | 14.0" | 8.6" |
| 112.0" | 14.0" | 8.9" |
| 120.0" | 14.0" | 9.3" |
| 128.0" | 14.0" | 9.6" |
| 136.0" | 14.0" | 9.9" |
| 144.0" | 14.0" | 10.3" |
| 152.0" | 12.2" | 10.6" |
| 160.0" | 12.2" | 11.0" |
| 168.0" | 12.2" | 11.3" |
| 176.0" | 12.2" | 11.7" |
| 184.0" | 12.2" | 12.0" |
| 192.0" | 12.4" | 12.4" |
| 200.0" | 12.7" | 12.7" |
| 208.0" | 13.1" | 13.1" |
| 216.0" | 13.4" | 13.4" |

| GLASS SEPARATION SCHEDULE SNAP RAIL END RETENTION SHUTTER WITH SINGLE WALL SLATS* | | |
|---|---------------------------------------|---------------------------------------|
| SLAT SPAN | INSTALLATIONS ≤ 30' ABOVE GRADE | INSTALLATIONS > 30' ABOVE GRADE |
| 48.0" | 9.0" | 6.8" |
| 56.0" | 10.2" | 6.0" |
| 64.0" | 10.2" | 6.4" |
| 72.0" | 10.2" | 6.8" |
| 80.0" | 10.2" | 7.2" |
| 88.0" | 10.2" | 7.5" |
| 96.0" | 10.2" | 7.8" |
| 104.0" | 10.2" | 8.1" |
| 112.0" | 10.2" | 8.5" |
| 120.0" | 10.2" | 8.8" |
| 128.0" | 10.2" | 9.1" |
| 136.0" | 10.2" | 9.4" |
| 144.0" | 10.2" | 9.7" |

SPAN AND GLAZING SEPARATION NOTES:

- SLAT SPAN IS DEFINED AS THE DISTANCE BETWEEN RAILS.
- SEPARATION FROM GLAZING IS ONLY REQUIRED IN ASTM WIND ZONE 4 OR ESSENTIAL FACILITIES AS DEFINED IN ASTM E1996.
- LINEAR INTERPOLATION BETWEEN SHUTTER SPANS IS NOT PERMITTED. FOR SPANS BETWEEN THOSE INDICATED ABOVE, THE SEPARATION FROM GLASS AND/OR DESIGN PRESSURE FOR THE NEXT HIGHER SPAN SHALL BE USED.

* NOTE: APPLIES TO INSTALLATIONS LOCATED WITHIN WIND ZONE 4 OR ESSENTIAL FACILITIES.

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ROLL DOWN SHUTTER

| DRWN | CHKD | DATE |
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| CSL | TSB | 10/13/14 |

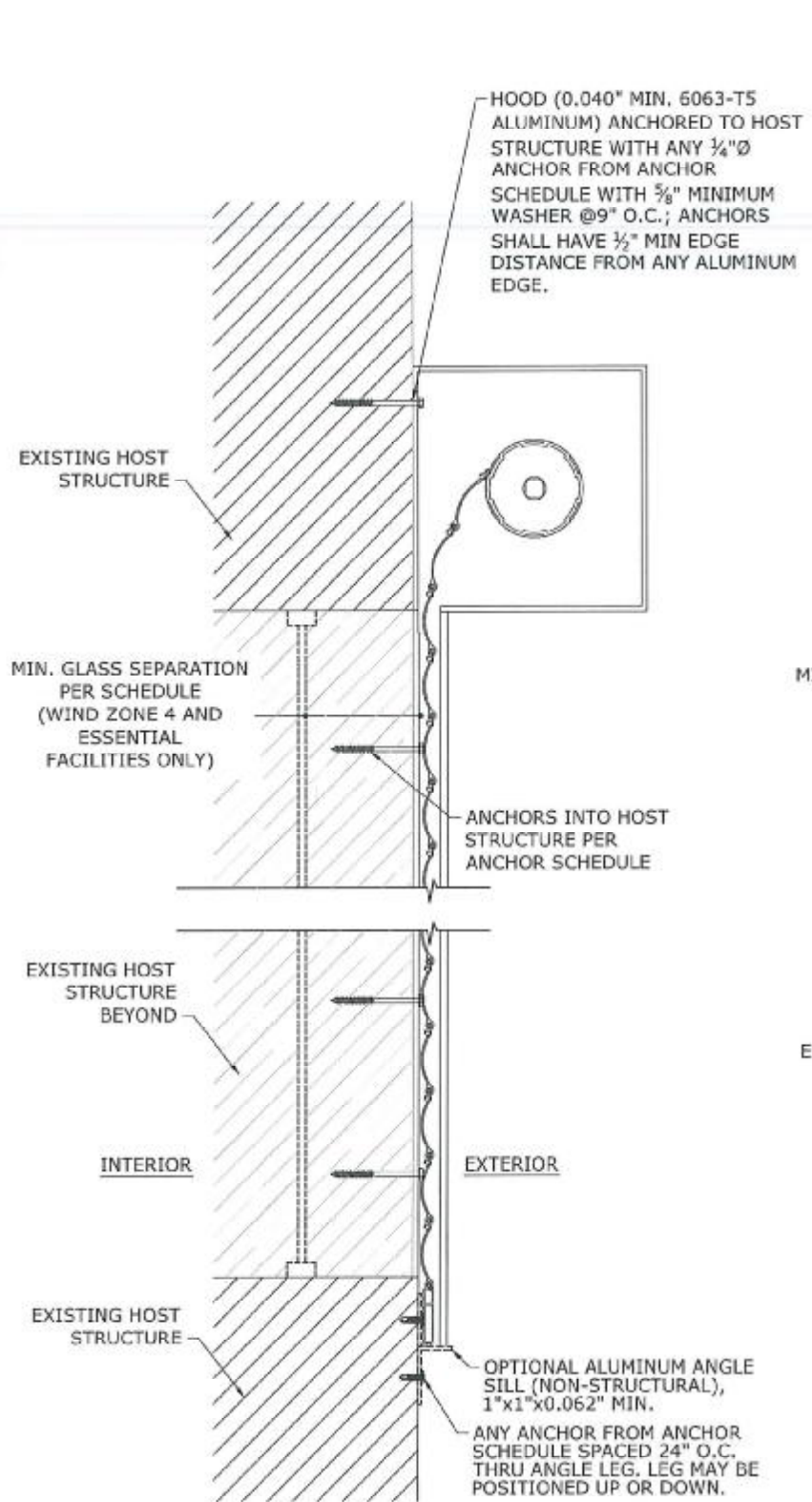
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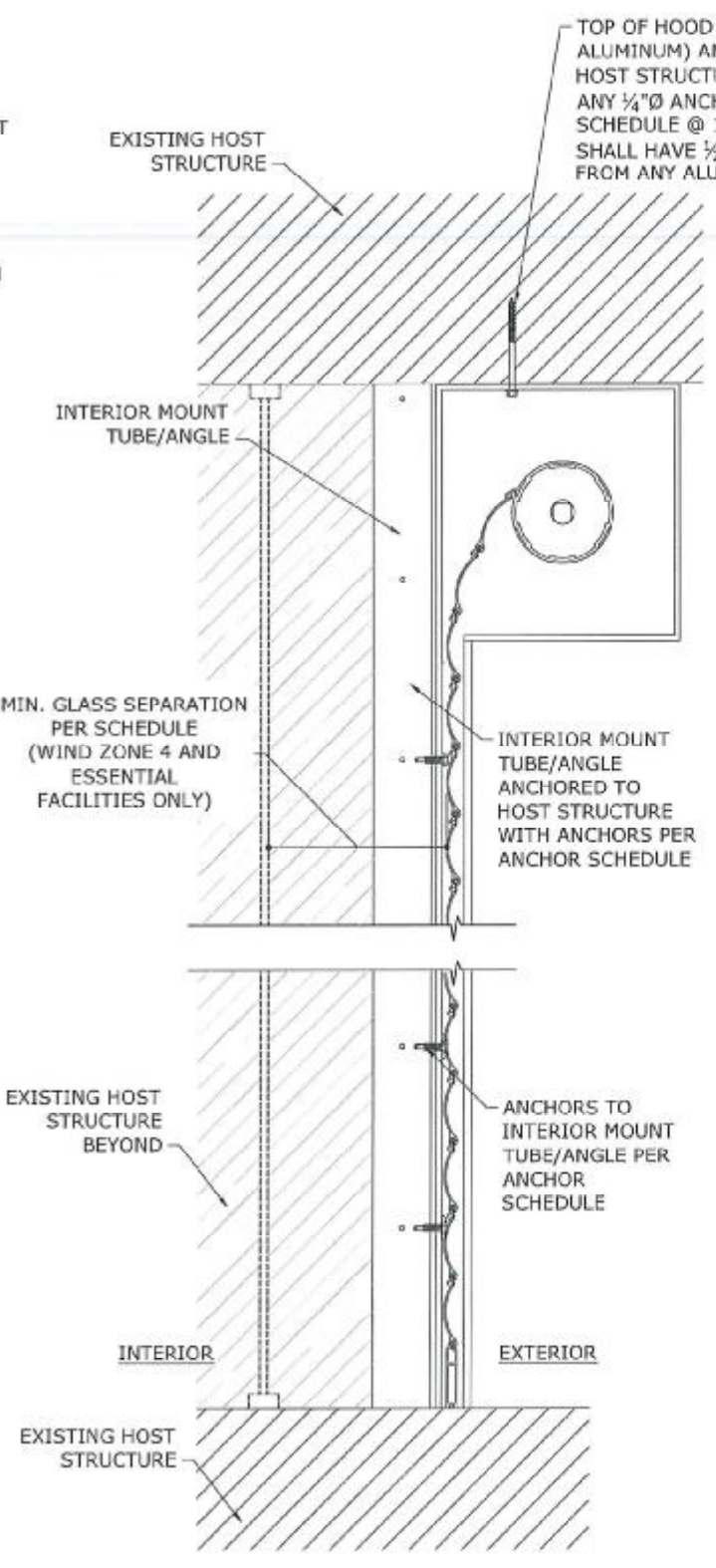
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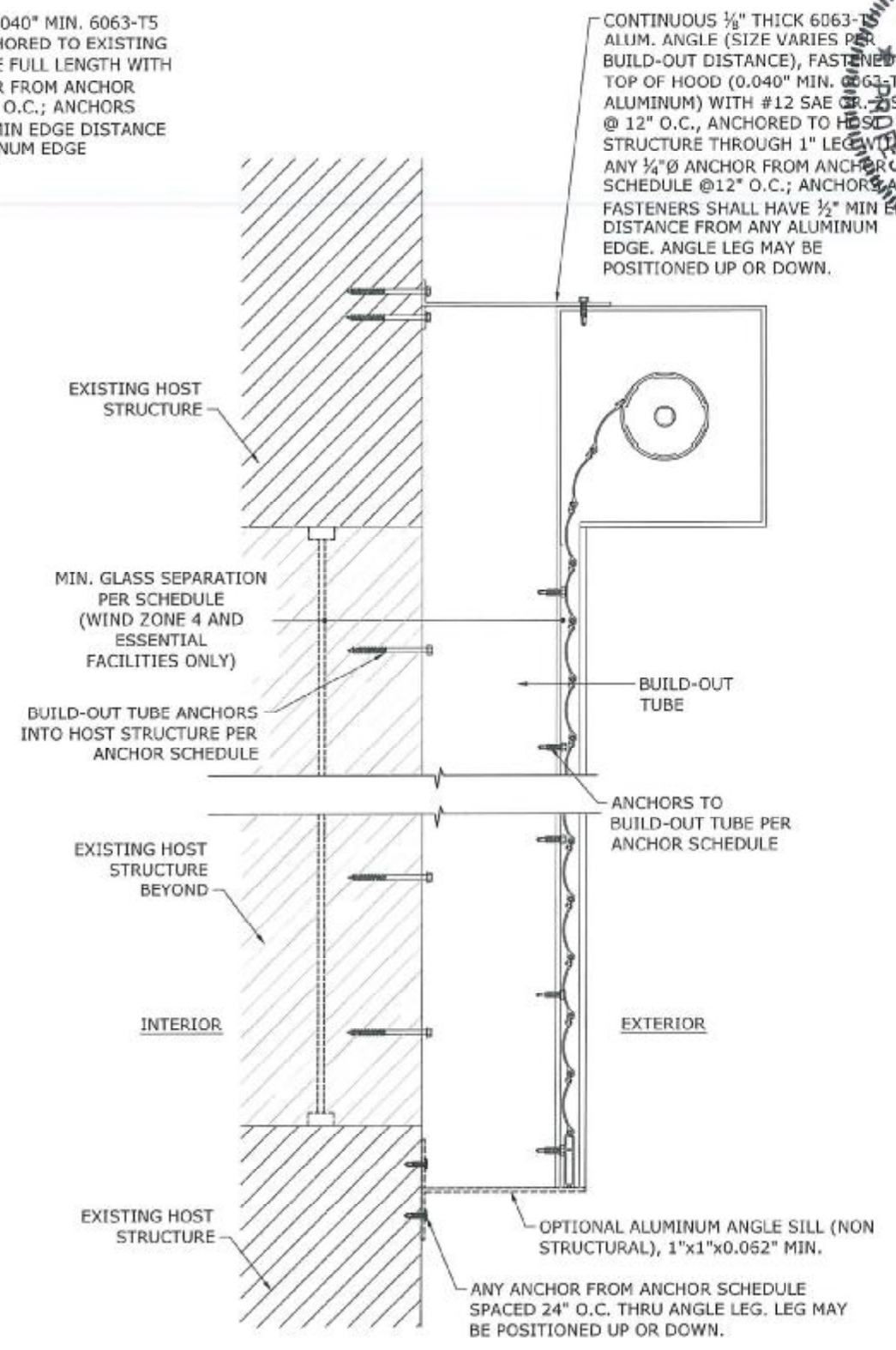
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1 TYPICAL WALL MOUNT
N.T.S. VERT SECTION



2 TYPICAL INTERIOR MOUNT
N.T.S. VERT SECTION



3 BUILD-OUT WALL MOUNT
N.T.S. VERT SECTION

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 ROLL DOWN SHUTTER

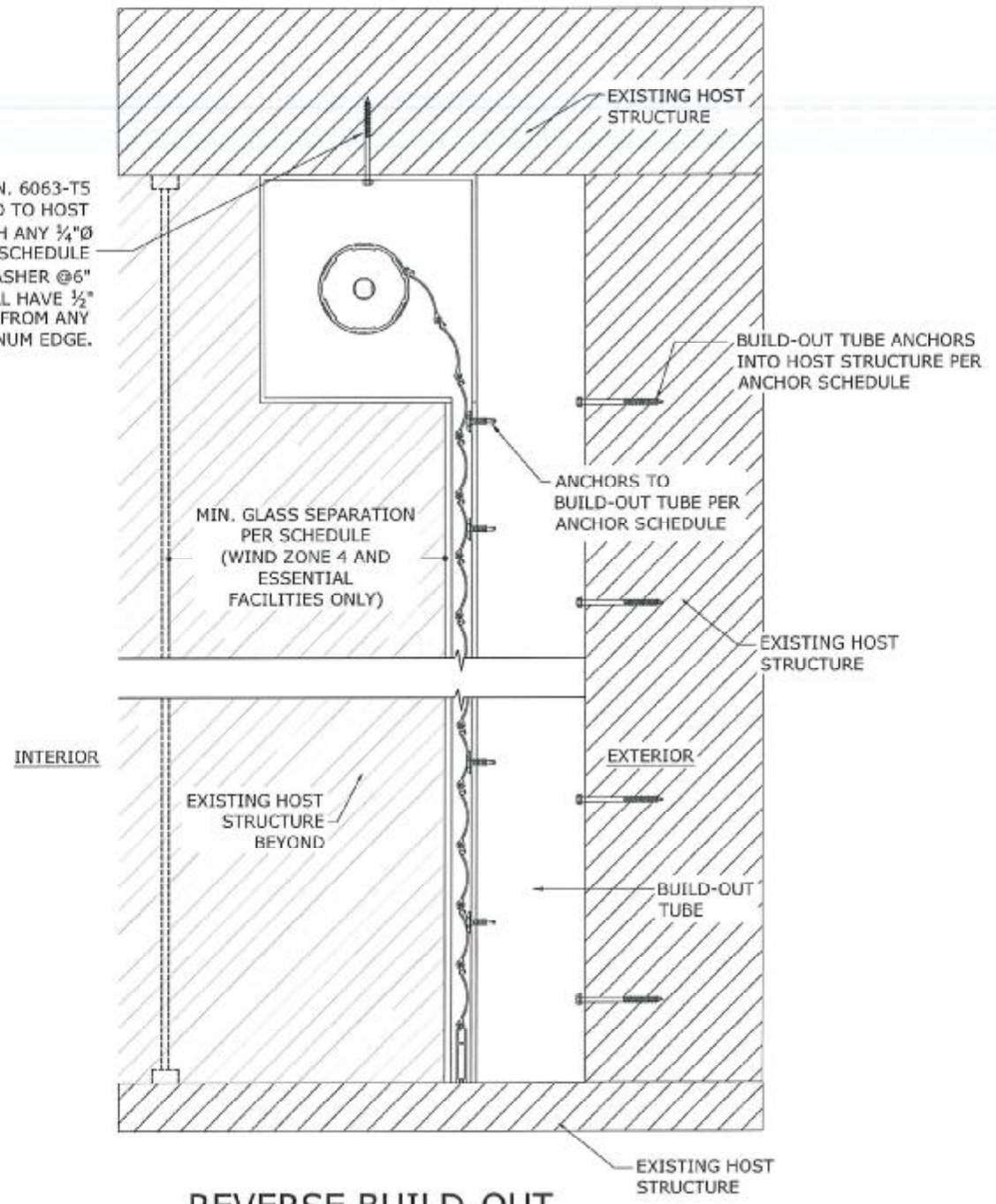
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| INIT ISSUE | CSL | TSB | 10/13/14 |

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V:\Projects\14-1323 Magnum III (Security Star) Slat Shutter Florida Product Approval-SWP14-1323_c Magnum 3.57 Roll-up Shutter (FSA).dwg
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HOOD (0.040" MIN. 6063-T5 ALUMINUM) ANCHORED TO HOST STRUCTURE WITH ANY 1/4" Ø ANCHOR FROM ANCHOR SCHEDULE WITH 5/8" MINIMUM WASHER @ 6" O.C.; ANCHORS SHALL HAVE 1/2" MIN EDGE DISTANCE FROM ANY ALUMINUM EDGE.

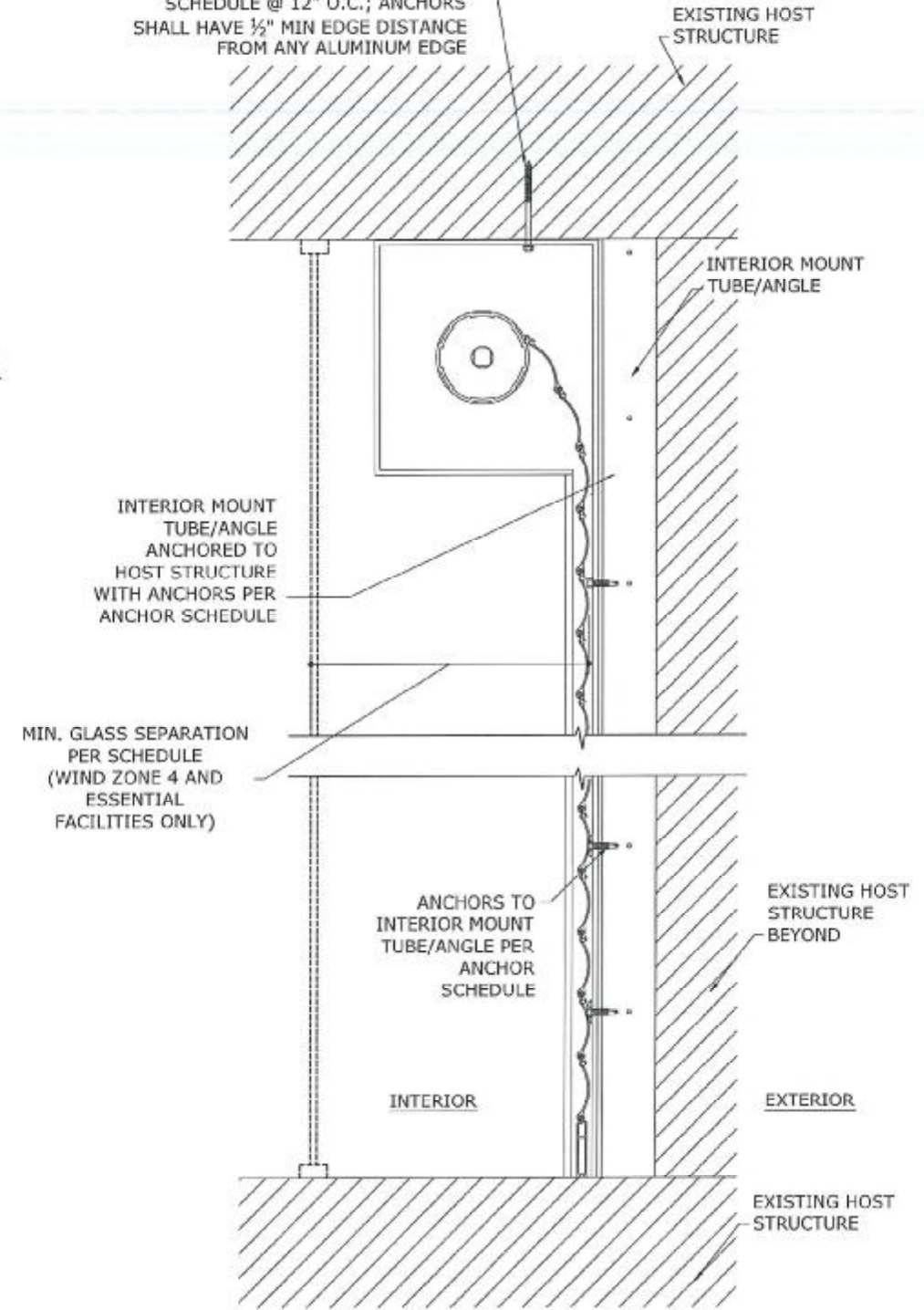


1 REVERSE BUILD-OUT WALL MOUNT

4 N.T.S. VERT SECTION

NOTE: THIS DETAIL IS INTENDED FOR SHUTTERS WITH THE MAGNUM 3.57 END RETENTION RAIL ONLY.

TOP OF HOOD (0.040" MIN. 6063-T5 ALUMINUM) ANCHORED TO EXISTING HOST STRUCTURE FULL LENGTH WITH ANY 1/4" Ø ANCHOR FROM ANCHOR SCHEDULE @ 12" O.C.; ANCHORS SHALL HAVE 1/2" MIN EDGE DISTANCE FROM ANY ALUMINUM EDGE



2 REVERSE INTERIOR MOUNT

4 N.T.S. VERT SECTION

NOTE: THIS DETAIL IS INTENDED FOR SHUTTERS WITH THE MAGNUM 3.57 END RETENTION RAIL ONLY.

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 ROLL DOWN SHUTTER

| DRWN | CHKD | DATE |
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| CSL | TSB | 10/13/14 |
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| | | |
| | | |
| | | |

REMARKS
 INT ISSUE

PLEASE REFER TO THE PROJECT SPECIFICATIONS FOR THE SHUTTER TYPE AND MATERIALS TO BE USED. ALL MATERIALS, METHODS, WORKMANSHIP, OR OTHER MATTERS REFERENCED IN THESE DRAWINGS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF ALL DIMENSIONS AND CONDITIONS OF THE EXISTING STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF ALL DIMENSIONS AND CONDITIONS OF THE EXISTING STRUCTURE.

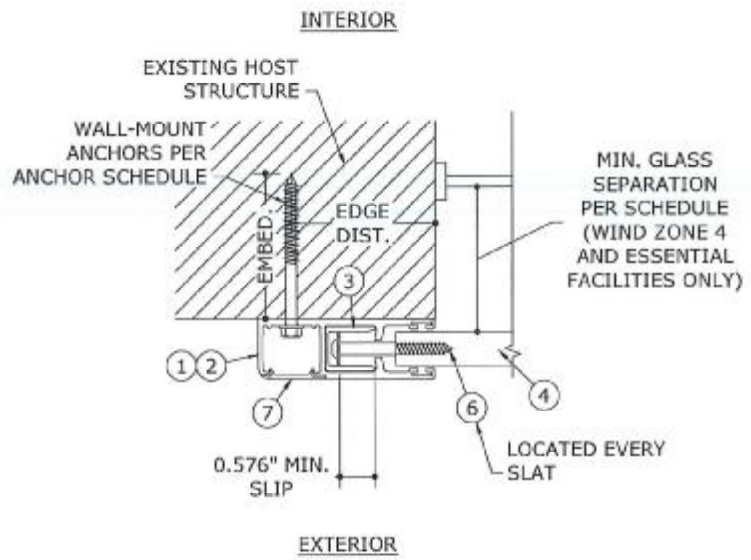
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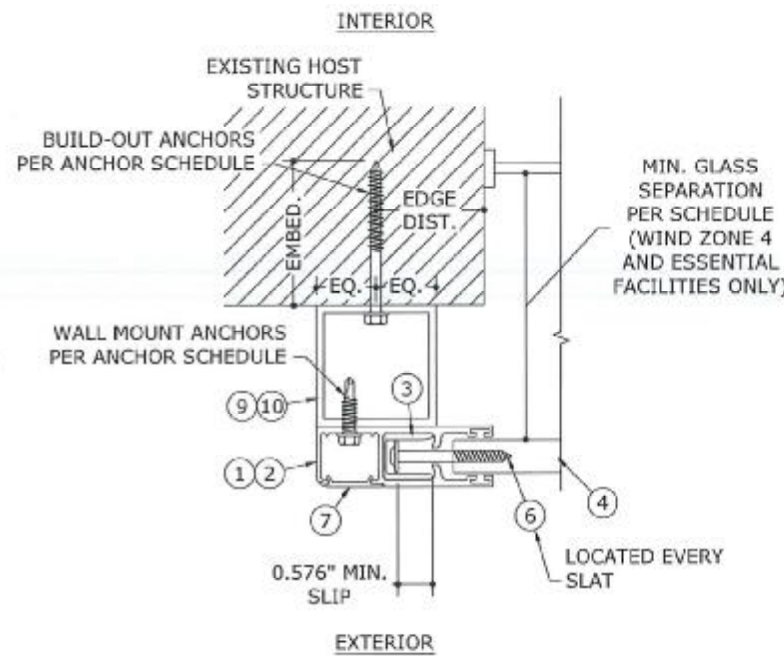
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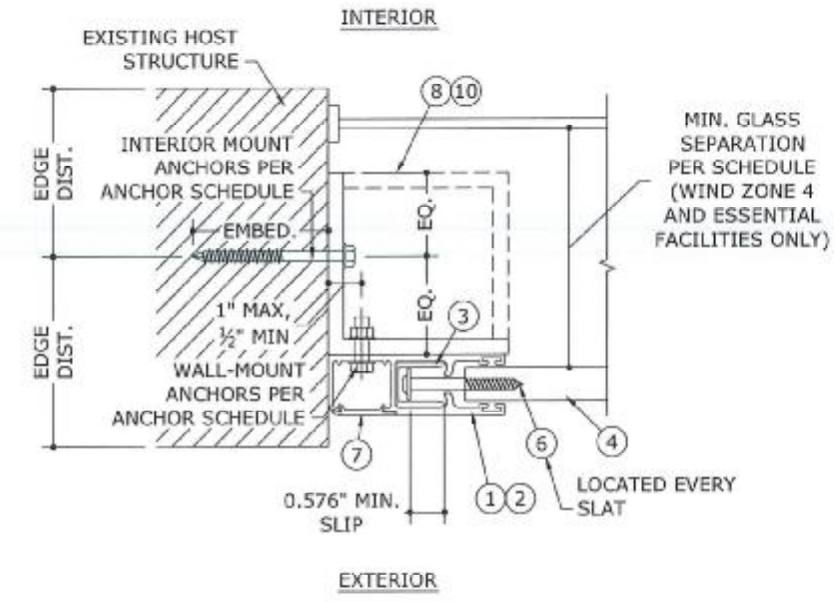
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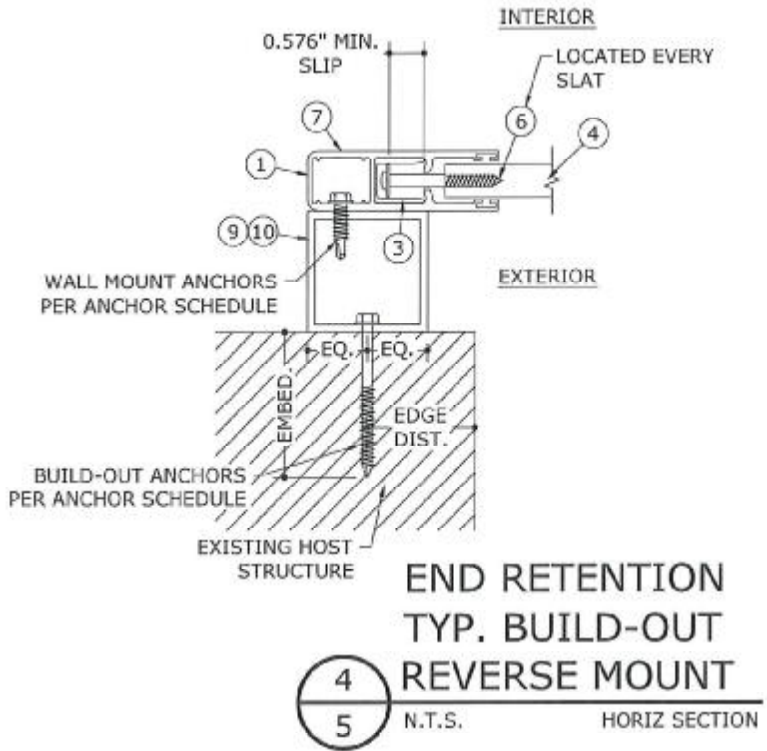
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5 N.T.S. HORIZ SECTION



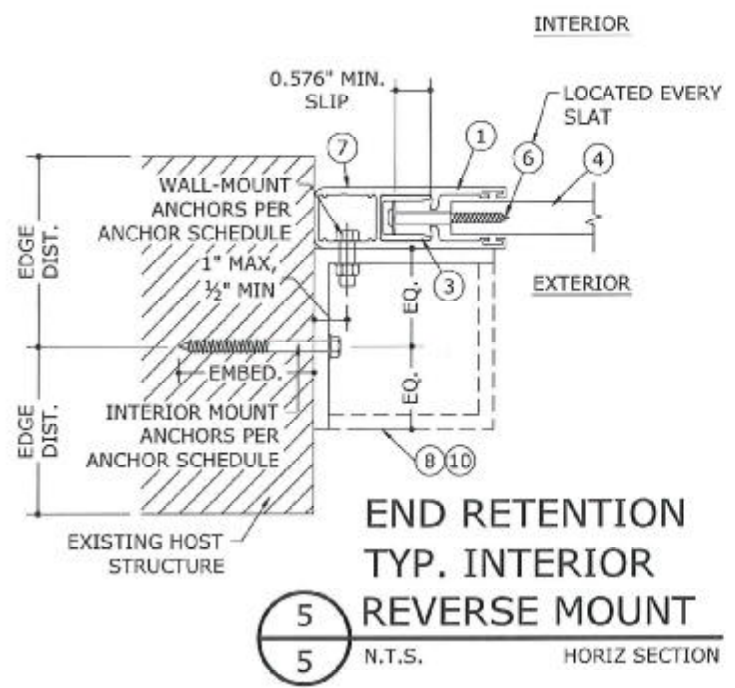
2
5 N.T.S. HORIZ SECTION



3
5 N.T.S. HORIZ SECTION



4
5 N.T.S. HORIZ SECTION



5
5 N.T.S. HORIZ SECTION

ANCHOR SCHEDULE:
(SEE DESIGN SCHEDULES ON SHEETS 6-17 FOR REQUIRED ANCHOR SPACING)

| ANCHOR | SUBSTRATE | MINIMUM EMBEDMENT | MINIMUM EDGE DISTANCE |
|--|--|-------------------------|-----------------------|
| 1/4" ELCO ULTRACON | 2846 PSI MIN. CONCRETE | 1.75" | 2.5" |
| 1/4" SS ITW TAPCON | 3192 PSI MIN. CONCRETE | 1.75" | 2.5" |
| 5/16" ITW TAPCON | 2896 PSI MIN. CONCRETE | 2.25" | 3.125" |
| | GROUT-FILLED CONCRETE BLOCK | 2.25" | 4.0" |
| 1/4" POWERS POWER-BOLT | HOLLOW CONCRETE BLOCK | 1.75" | 4.0" |
| | 3000 PSI MIN. CONCRETE | 2.5" | 3.0" |
| 1/4" ALL-POINTS SOLID-SET | HOLLOW CONCRETE BLOCK | 0.875" | 3.0" |
| | 3000 PSI MIN. CONCRETE | 0.875" | 3.0" |
| 1/4" LAG SCREW | G=0.55 MIN. WOOD | 1.5" | 0.75" |
| 5/16" LAG SCREW | G=0.42 MIN. WOOD | 2.0" | 0.75" |
| #14 WOOD SCREW | G=0.55 MIN. WOOD | 1.5" | 0.75" |
| #14 316 SS SMS (OR 1/4-20 316 SS THRU-BOLT) W/ 5/8" WASHER | 1/8" THICK MIN. 6063-T5 ALUMINUM OR A36 STEEL | FULL THREAD PENETRATION | 0.5" |
| #14 316 SS SMS (OR 1/4-20 316 SS THRU-BOLT) W/ 5/8" WASHER | 0.25" THICK MIN. 6063-T5 ALUMINUM OR A36 STEEL | FULL THREAD PENETRATION | 0.5" |
| 3/8" POWERS WEDGE BOLT | 3000 PSI MIN. CONCRETE | 3.5" | 4.5" |

- ANCHOR NOTES:**
- ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
 - WHERE ANCHORS FASTEN TO NARROW FACE OF STUD FRAMING, ANCHOR SHALL BE LOCATED IN CENTER OF NOMINAL 2x (MIN) WOOD STUD (I.E. 3/4" EDGE DISTANCE IS ACCEPTABLE FOR ANCHORS TO WOOD FRAMING).
 - MINIMUM EMBEDMENT SHALL BE AS NOTED IN ANCHOR SCHEDULE. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO, FOAM, BRICK, AND OTHER WALL FINISHES.
 - ANCHOR SCHEDULE APPLIES TO ALL PRODUCTS CERTIFIED HEREIN, BUT ONLY PROVIDES MAXIMUM ALLOWABLE ANCHOR SPACING. MAXIMUM ALLOWABLE SPANS AND PRESSURES INDICATED IN SPAN SCHEDULE SHALL APPLY.
 - WHERE EXISTING STRUCTURE IS WOOD FRAMING, EXISTING CONDITIONS MAY VARY. FIELD VERIFY THAT FASTENERS ARE INTO ADEQUATE WOOD FRAMING MEMBERS, NOT INTO PLYWOOD.
 - SHEET METAL SCREWS SHALL BE INSTALLED WITH FULL ENGAGEMENT OF THREADS INTO METAL HOST STRUCTURE.



ALUTECH UNITED, INC.
117 DIXON STREET
SELBYVILLE, DE 19775
PHONE: 302 - 436 - 6005 FAX: 302 - 436 - 5100
MAGNUM 3.57 SECURITY STAR
ROLL DOWN SHUTTER

| DRWN | CHKD | DATE |
|------|------|----------|
| CSL | TSB | 10/13/14 |

14-1323

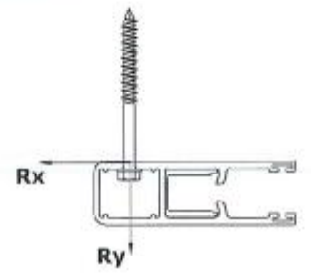
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PAGE DESCRIPTION:

ANCHOR SCHEDULE: [Hatched Box] INDICATES VALUES NOT APPROVED FOR USE.

WALL MOUNT: MAGNUM 3.57 END RETENTION SHUTTER WITH SINGLE WALL SLATS (CONTINUED)

ANCHOR NOTES: SEE SHEET 5 FOR ANCHOR NOTES.

| SLAT SPAN | DESIGN PRESSURE | Rx | Ry | MAXIMUM SPACING (O.C.) | | | | | | | | | | | | | | |
|-----------|-----------------|--------------|--------------|---|---|------------------|-----------|--|---------------------------|-----------|--|---|--|--|---|--|------|------|
| | | | | 1/4" ELCO ULTRACON TO 2846 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE | 1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE | 5/16" ITW TAPCON | | 1/4" POWERS POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE | 1/4" ALL-POINTS SOLID-SET | | 1/4" LAG SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | 5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | #14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | #14 316 SS SMS W FULL THREAD PENETRATION (OR 1/4-20 316 SS THRU-BOLT) W 5/8" WASHER TO 0.125" MIN. ALUM; 0.5" MIN. EDGE DISTANCE | #14 316 SS SMS W FULL THREAD PENETRATION (OR 1/4-20 316 SS THRU-BOLT) W 5/8" WASHER TO 0.25" MIN. ALUM; 0.5" MIN. EDGE DISTANCE | 3/8" POWERS WEDGE BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN. EDGE DISTANCE | | |
| 180" | +/- 20 PSF | 715.2 LB/FT | 300.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.7" | 2.7" | 2.3" | 2.9" | 4.0" | 4.0" | 4.0" | |
| | +/- 30 PSF | 1091.7 LB/FT | 461.6 LB/FT | [Hatched] | 3.8" | 4.0" | 4.0" | [Hatched] | [Hatched] | 4.0" | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 3.0" | 4.0" | 4.0" | |
| | +/- 40 PSF | 1467.1 LB/FT | 628.1 LB/FT | [Hatched] | [Hatched] | 4.0" | 3.8" | [Hatched] | [Hatched] | 3.2" | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 2.2" | 3.8" | 4.0" | |
| | +/- 50 PSF | 1841.4 LB/FT | 799.6 LB/FT | [Hatched] | [Hatched] | 3.8" | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 3.0" | 4.0" | 4.0" |
| | +/- 67 PSF | 2474.8 LB/FT | 1102.4 LB/FT | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 2.2" | 4.0" | 4.0" |
| 192" | +/- 10 PSF | 381.2 LB/FT | 155.3 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 20 PSF | 797.3 LB/FT | 323.6 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | [Hatched] | 4.0" | 4.0" | 3.4" | 2.4" | 2.1" | 2.6" | 4.0" | 4.0" | 4.0" | |
| | +/- 30 PSF | 1212.0 LB/FT | 498.2 LB/FT | [Hatched] | 3.4" | 4.0" | 4.0" | [Hatched] | [Hatched] | 3.9" | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 2.7" | 4.0" | 4.0" | |
| | +/- 40 PSF | 1625.4 LB/FT | 678.9 LB/FT | [Hatched] | [Hatched] | 4.0" | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 2.0" | 3.4" | 4.0" | |
| | +/- 50 PSF | 2037.4 LB/FT | 865.7 LB/FT | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 2.7" | 4.0" | 4.0" |
| | +/- 62 PSF | 2529.7 LB/FT | 1097.9 LB/FT | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 2.2" | 4.0" | 4.0" |
| 204" | +/- 10 PSF | 425.2 LB/FT | 166.9 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.9" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 20 PSF | 880.9 LB/FT | 347.3 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | [Hatched] | 4.0" | 4.0" | 3.1" | 2.2" | 2.3" | 3.9" | 4.0" | 4.0" | 4.0" | |
| | +/- 30 PSF | 1335.1 LB/FT | 535.3 LB/FT | [Hatched] | 3.2" | 4.0" | 4.0" | [Hatched] | [Hatched] | 3.6" | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 2.5" | 4.0" | 4.0" | |
| | +/- 40 PSF | 1787.6 LB/FT | 730.8 LB/FT | [Hatched] | [Hatched] | 4.0" | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 3.1" | 4.0" | 4.0" |
| | +/- 50 PSF | 2238.3 LB/FT | 933.8 LB/FT | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 2.5" | 4.0" | 4.0" |
| 216" | +/- 10 PSF | 469.7 LB/FT | 178.5 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.5" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 20 PSF | 966.3 LB/FT | 371.3 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | [Hatched] | 4.0" | 4.0" | [Hatched] | [Hatched] | 2.0" | 2.1" | 3.6" | 4.0" | 4.0" | |
| | +/- 30 PSF | 1461.0 LB/FT | 573.2 LB/FT | [Hatched] | [Hatched] | 4.0" | 3.9" | [Hatched] | [Hatched] | 3.3" | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 2.3" | 3.9" | 4.0" | |
| | +/- 40 PSF | 1953.7 LB/FT | 784.1 LB/FT | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 2.9" | 4.0" | 4.0" |
| | +/- 50 PSF | 2444.2 LB/FT | 1004.0 LB/FT | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 2.3" | 4.0" | 4.0" |
| | +/- 55 PSF | 2888.7 LB/FT | 1117.3 LB/FT | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | [Hatched] | 2.1" | 4.0" | 4.0" |



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 PHONE: 302 - 436 - 6005 FAX: 302 - 436 - 5100
 MAGNUM 3.57 SECURITY STAR
 ROLL DOWN SHUTTER

| REMARKS | DRWN | CHKD | DATE |
|---|------|------|----------|
| INT ISSUE | CSL | TSB | 10/13/14 |
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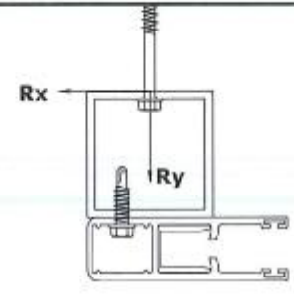
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ANCHOR SCHEDULE:  INDICATES VALUES NOT APPROVED FOR USE.

BUILD-OUT MOUNT: MAGNUM 3.57 END RETENTION SHUTTER WITH SINGLE WALL SLATS (CONTINUED)

ANCHOR NOTES: SEE SHEET 5 FOR ANCHOR NOTES.

| SLAT SPAN | DESIGN PRESSURE | Rx | | Ry | | MAXIMUM SPACING (O.C.) | | | | | | | | | | | | |
|-----------|-----------------|--------------|--------------|---|---|--|---|---|--|---|--|--|---|--|--|---|---|------|
| | | Rx | Ry | 5/16" ITW TAPCON | | | 1/4" ALL-POINTS SOLID-SET | | 1/4" LAG SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | 5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | #14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | #14 316 SS SMS W/ FULL THREAD PENETRATION (OR 1/4-20 316 SS THRU-BOLT) W/ 5/8" WASHER TO 0.125" MIN. 6063-T5 ALUM; 0.5" MIN. EDGE DISTANCE | #14 316 SS SMS W/ FULL THREAD PENETRATION (OR 1/4-20 316 SS THRU-BOLT) W/ 5/8" WASHER TO 0.25" MIN. 6063-T5 ALUM; 0.5" MIN. EDGE DISTANCE | 3/8" POWERS WEDGE BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN. EDGE DISTANCE | | | | |
| | | | | 1/4" ELCO ULTRACON TO 2845 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE | 1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE | TO 2899 PSI MIN. CONCRETE; 2.25" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE | TO GROUT-FILLED CONCRETE BLOCK; 2.25" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE | TO HOLLOW CONCRETE BLOCK; 1.75" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE | | | | | | | 1/4" POWERS POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE | TO 3000 PSI MIN. CONCRETE; 0.875" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE | TO HOLLOW BLOCK; 0.875" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE | |
| 168" | +/- 10 PSF | 294.1 LB/FT | 219.1 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 20 PSF | 634.5 LB/FT | 460.8 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 30 PSF | 974.0 LB/FT | 709.1 LB/FT | 4.0" | 3.6" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 40 PSF | 1312.7 LB/FT | 964.1 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 50 PSF | 1650.3 LB/FT | 1225.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 60 PSF | 1981.6 LB/FT | 1530.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 180" | +/- 10 PSF | 337.6 LB/FT | 239.1 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 20 PSF | 715.2 LB/FT | 500.1 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 30 PSF | 1091.7 LB/FT | 769.4 LB/FT | 4.0" | 3.2" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 40 PSF | 1457.1 LB/FT | 1047.1 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 50 PSF | 1841.4 LB/FT | 1332.9 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 60 PSF | 2474.8 LB/FT | 1837.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 192" | +/- 10 PSF | 381.2 LB/FT | 258.8 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 20 PSF | 797.3 LB/FT | 539.5 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 30 PSF | 1212.0 LB/FT | 830.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 40 PSF | 1625.4 LB/FT | 1131.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 50 PSF | 2037.4 LB/FT | 1443.1 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 60 PSF | 2529.7 LB/FT | 1830.2 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 204" | +/- 10 PSF | 425.2 LB/FT | 278.2 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 20 PSF | 880.9 LB/FT | 579.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 30 PSF | 1335.1 LB/FT | 892.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 40 PSF | 1787.6 LB/FT | 1218.3 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 50 PSF | 2238.3 LB/FT | 1558.8 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 60 PSF | 2597.6 LB/FT | 1836.1 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 216" | +/- 10 PSF | 469.7 LB/FT | 297.5 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 20 PSF | 966.3 LB/FT | 618.9 LB/FT | 4.0" | 3.8" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 30 PSF | 1461.0 LB/FT | 955.5 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 40 PSF | 1953.7 LB/FT | 1307.1 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 50 PSF | 2444.2 LB/FT | 1673.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 60 PSF | 2688.7 LB/FT | 1862.5 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |



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 MAGNUM 3.57 SECURITY STAR
 ROLL DOWN SHUTTER

| DRWN | CHKD | DATE |
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| | | |
| | | |
| | | |

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ANCHOR SCHEDULE:  INDICATES VALUES NOT APPROVED FOR USE.

INTERIOR MOUNT: MAGNUM 3.57 END RETENTION SHUTTER WITH SINGLE WALL SLATS (CONTINUED)

ANCHOR NOTES: SEE SHEET 5 FOR ANCHOR NOTES.

| SLAT SPAN | DESIGN PRESSURE | Rx | Ry | MAXIMUM SPACING (O.C.) | | | | | | | | | | | | | |
|-----------|-----------------|--------------|-------------|---|---|------------------|------|---|--|---------------------------|------|--|---|--|--|---|--|
| | | | | 1/4" ELCO ULTRACON TO 2846 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE | 1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE | 5/16" ITW TAPCON | | TO HOLLOW CONCRETE BLOCK; 1.75" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE | 1/4" POWERS POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE | 1/4" ALL-POINTS SOLID-SET | | 1/4" LAG SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | 5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | #14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | #14 316 SS SMS W FULL THREAD PENETRATION (OR 1/4-20 316 SS THRU-BOLT) W 5/8" WASHER TO 0.125" MIN. ALUM; 0.5" MIN. EDGE DISTANCE | #14 316 SS SMS W FULL THREAD PENETRATION (OR 1/4-20 316 SS THRU-BOLT) W 5/8" WASHER TO 0.25" MIN. ALUM; 0.5" MIN. EDGE DISTANCE | 3/8" POWERS WEDGE BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN. EDGE DISTANCE |
| 96" | +/- 40 PSF | 631.0 LB/FT | 284.2 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.0" | 2.6" | 3.2" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 831.8 LB/FT | 367.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.2" | 2.3" | 2.4" | 3.8" | 4.0" | 4.0" | 4.0" |
| | +/- 60 PSF | 1033.0 LB/FT | 451.6 LB/FT | | 4.0" | 4.0" | 4.0" | | 4.0" | | | | | 3.1" | 4.0" | 4.0" | 4.0" |
| | +/- 70 PSF | 1234.6 LB/FT | 536.8 LB/FT | | 3.3" | 4.0" | 4.0" | | 3.8" | | | | | 2.6" | 4.0" | 4.0" | 4.0" |
| | +/- 80 PSF | 1436.6 LB/FT | 623.0 LB/FT | | | 4.0" | 3.9" | | 3.3" | | | | | 2.2" | 3.8" | 4.0" | 4.0" |
| | +/- 90 PSF | 1638.9 LB/FT | 710.2 LB/FT | | | 4.0" | | | 4.0" | | | | | | 3.4" | 4.0" | 4.0" |
| 108" | +/- 30 PSF | 573.3 LB/FT | 243.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.4" | 2.8" | 3.6" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 40 PSF | 809.6 LB/FT | 336.6 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.3" | 2.4" | 2.0" | 2.5" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 1045.3 LB/FT | 431.2 LB/FT | | 4.0" | 4.0" | 4.0" | | 4.0" | | | | | 3.2" | 4.0" | 4.0" | 4.0" |
| | +/- 60 PSF | 1283.6 LB/FT | 527.0 LB/FT | | 3.3" | 4.0" | 4.0" | | 3.7" | | | | | 2.6" | 4.0" | 4.0" | 4.0" |
| | +/- 70 PSF | 1521.3 LB/FT | 624.1 LB/FT | | | 4.0" | 4.0" | | 3.1" | | | | | 2.2" | 3.7" | 4.0" | 4.0" |
| | +/- 80 PSF | 1759.5 LB/FT | 722.5 LB/FT | | | 4.0" | | | | | | | | | 3.2" | 4.0" | 4.0" |
| 120" | +/- 30 PSF | 710.7 LB/FT | 281.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.8" | 2.7" | 2.3" | 2.9" | 4.0" | 4.0" | 4.0" |
| | +/- 40 PSF | 984.5 LB/FT | 386.2 LB/FT | | 4.0" | 4.0" | 4.0" | | 4.0" | | | | | 2.1" | 3.5" | 4.0" | 4.0" |
| | +/- 50 PSF | 1258.9 LB/FT | 492.2 LB/FT | | 3.4" | 4.0" | 4.0" | | 3.8" | | | | | 2.7" | 4.0" | 4.0" | 4.0" |
| | +/- 60 PSF | 1534.0 LB/FT | 599.9 LB/FT | | | 4.0" | 4.0" | | 3.1" | | | | | 2.2" | 3.7" | 4.0" | 4.0" |
| | +/- 70 PSF | 1809.6 LB/FT | 709.1 LB/FT | | | 4.0" | | | | | | | | | 3.1" | 4.0" | 4.0" |
| | +/- 80 PSF | 2085.9 LB/FT | 820.0 LB/FT | | | | | | | | | | | | 2.7" | 4.0" | 4.0" |
| 132" | +/- 30 PSF | 848.1 LB/FT | 318.2 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.7" | 3.1" | 3.9" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 40 PSF | 1159.1 LB/FT | 434.0 LB/FT | | 3.7" | 4.0" | 4.0" | | 4.0" | | | | | 3.0" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 1472.8 LB/FT | 551.8 LB/FT | | | 4.0" | 3.9" | | 3.3" | | | | | 2.4" | 3.9" | 4.0" | 4.0" |
| | +/- 60 PSF | 1789.2 LB/FT | 676.1 LB/FT | | | 4.0" | | | | | | | | | 3.2" | 4.0" | 4.0" |
| | +/- 70 PSF | 2102.7 LB/FT | 793.2 LB/FT | | | | | | | | | | | | 2.7" | 4.0" | 4.0" |
| | +/- 80 PSF | 2422.1 LB/FT | 925.1 LB/FT | | | | | | | | | | | | 2.4" | 4.0" | 4.0" |
| 144" | +/- 20 PSF | 628.8 LB/FT | 228.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.1" | 2.6" | 3.3" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 30 PSF | 981.5 LB/FT | 353.6 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | | | 2.1" | 3.6" | 4.0" | 4.0" | 4.0" |
| | +/- 40 PSF | 1335.2 LB/FT | 481.0 LB/FT | | 3.2" | 4.0" | 4.0" | | 3.7" | | | | | 2.7" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 1689.9 LB/FT | 610.7 LB/FT | | | 4.0" | | | | | | | | 2.1" | 3.4" | 4.0" | 4.0" |
| | +/- 60 PSF | 2050.3 LB/FT | 754.0 LB/FT | | | | | | | | | | | | 2.8" | 4.0" | 4.0" |
| | +/- 70 PSF | 2402.2 LB/FT | 877.1 LB/FT | | | | | | | | | | | | 2.4" | 4.0" | 4.0" |
| 156" | +/- 20 PSF | 723.6 LB/FT | 252.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.9" | 2.7" | 2.3" | 2.9" | 4.0" | 4.0" | 4.0" |
| | +/- 30 PSF | 1118.6 LB/FT | 389.5 LB/FT | | 3.9" | 4.0" | 4.0" | | 4.0" | | | | | 3.3" | 4.0" | 4.0" | 4.0" |
| | +/- 40 PSF | 1515.0 LB/FT | 529.4 LB/FT | | | 4.0" | 3.9" | | 3.3" | | | | | 2.4" | 3.9" | 4.0" | 4.0" |
| | +/- 50 PSF | 1912.6 LB/FT | 672.4 LB/FT | | | | | | | | | | | | 3.1" | 4.0" | 4.0" |
| | +/- 60 PSF | 2318.3 LB/FT | 834.4 LB/FT | | | | | | | | | | | | 2.5" | 4.0" | 4.0" |
| | +/- 70 PSF | 2711.8 LB/FT | 967.6 LB/FT | | | | | | | | | | | | 2.1" | 4.0" | 4.0" |



ALUTECH UNITED, INC.
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 SELBYVILLE, DE 19975
 PHONE: 302 - 436 - 6005 FAX: 302 - 436 - 5100
 MAGNUM 3.57 SECURITY STAR
 ROLL DOWN SHUTTER

| REMARKS | DRWN/CHKD | DATE |
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ANCHOR SCHEDULE:  INDICATES VALUES NOT APPROVED FOR USE.

INTERIOR MOUNT: MAGNUM 3.57 END RETENTION SHUTTER WITH SINGLE WALL SLATS (CONTINUED)

ANCHOR NOTES: SEE SHEET 5 FOR ANCHOR NOTES.

| SLAT SPAN | DESIGN PRESSURE | Rx | Ry | MAXIMUM SPACING (O.C.) | | | | | | | | | | | | | |
|-----------|-----------------|--------------|--------------|---|---|------------------|------|--|---------------------------|------|--|---|--|--|---|--|------|
| | | | | 1/4" ELCO ULTRACON TO 2846 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE | 1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE | 5/16" ITW TAPCON | | 1/4" POWERS POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE | 1/4" ALL-POINTS SOLID-SET | | 1/4" LAG SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | 5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | #14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | #14 316 SS SMS W FULL THREAD PENETRATION (OR 1/4-20 316 SS THRU-BOLT) W 5/8" WASHER TO 0.125" MIN. ALUM; 0.5" MIN. EDGE DISTANCE | #14 316 SS SMS W FULL THREAD PENETRATION (OR 1/4-20 316 SS THRU-BOLT) W 5/8" WASHER TO 0.25" MIN. ALUM; 0.5" MIN. EDGE DISTANCE | 3/8" POWERS WEDGE BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN. EDGE DISTANCE | |
| 168" | +/- 20 PSF | 818.9 LB/FT | 276.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 3.8" | 4.0" | 4.0" | 3.5" | 2.4" | 2.0" | 2.6" | 4.0" | 4.0" | 4.0" |
| | +/- 30 PSF | 1257.8 LB/FT | 425.4 LB/FT | | 3.5" | 4.0" | 4.0" | | | 4.0" | | | | | 2.9" | 4.0" | 4.0" |
| | +/- 40 PSF | 1698.4 LB/FT | 578.4 LB/FT | | | 4.0" | 4.0" | | | | | | | | 2.2" | 3.5" | 4.0" |
| | +/- 50 PSF | 2140.8 LB/FT | 735.3 LB/FT | | | | | | | | | | | | | 2.7" | 4.0" |
| | +/- 60 PSF | 2594.0 LB/FT | 918.0 LB/FT | | | | | | | | | | | | | 2.3" | 4.0" |
| | +/- 72 PSF | 3119.6 LB/FT | 1094.2 LB/FT | | | | | | | | | | | | | | 4.0" |
| 180" | +/- 10 PSF | 433.2 LB/FT | 143.5 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.8" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 20 PSF | 915.3 LB/FT | 300.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | | 4.0" | 4.0" | 3.1" | 2.2" | | 2.3" | 4.0" | 4.0" | 4.0" |
| | +/- 30 PSF | 1399.6 LB/FT | 461.6 LB/FT | | 3.2" | 4.0" | 4.0" | | | 3.6" | | | | | 2.7" | 4.0" | 4.0" |
| | +/- 40 PSF | 1886.1 LB/FT | 628.1 LB/FT | | | 4.0" | 4.0" | | | | | | | | | 3.1" | 4.0" |
| | +/- 50 PSF | 2374.7 LB/FT | 796.6 LB/FT | | | | | | | | | | | | | 2.5" | 4.0" |
| | +/- 67 PSF | 3210.1 LB/FT | 1102.4 LB/FT | | | | | | | | | | | | | | 4.0" |
| 192" | +/- 10 PSF | 484.7 LB/FT | 155.3 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.4" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 20 PSF | 1013.1 LB/FT | 323.6 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | | 4.0" | 4.0" | | | | 2.1" | 3.8" | 4.0" | 4.0" |
| | +/- 30 PSF | 1544.3 LB/FT | 498.2 LB/FT | | | 4.0" | 3.8" | | | 3.3" | | | | | 2.5" | 3.9" | 4.0" |
| | +/- 40 PSF | 2078.2 LB/FT | 678.9 LB/FT | | | | | | | | | | | | | 2.9" | 4.0" |
| | +/- 50 PSF | 2614.8 LB/FT | 865.7 LB/FT | | | | | | | | | | | | | 2.3" | 4.0" |
| | +/- 62 PSF | 3262.0 LB/FT | 1097.9 LB/FT | | | | | | | | | | | | | | 4.0" |
| 204" | +/- 10 PSF | 536.5 LB/FT | 166.9 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.7" | 3.1" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 20 PSF | 1112.6 LB/FT | 347.3 LB/FT | | 4.0" | 4.0" | 4.0" | | 4.0" | 4.0" | | | | | 3.5" | 4.0" | 4.0" |
| | +/- 30 PSF | 1692.2 LB/FT | 535.3 LB/FT | | | 4.0" | | | | 3.0" | | | | | 2.3" | 3.5" | 4.0" |
| | +/- 40 PSF | 2275.1 LB/FT | 730.8 LB/FT | | | | | | | | | | | | | 2.6" | 4.0" |
| | +/- 50 PSF | 2861.2 LB/FT | 933.6 LB/FT | | | | | | | | | | | | | 2.1" | 4.0" |
| | +/- 58 PSF | 3332.3 LB/FT | 1101.4 LB/FT | | | | | | | | | | | | | | 4.0" |
| 216" | +/- 10 PSF | 588.8 LB/FT | 178.5 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.4" | 2.8" | 3.6" | 4.0" | 4.0" | 4.0" |
| | +/- 20 PSF | 1214.0 LB/FT | 371.3 LB/FT | | 3.7" | 4.0" | 4.0" | | | 4.0" | | | | | 3.2" | 4.0" | 4.0" |
| | +/- 30 PSF | 1843.3 LB/FT | 573.2 LB/FT | | | 4.0" | | | | | | | | | 2.1" | 3.3" | 4.0" |
| | +/- 40 PSF | 2476.7 LB/FT | 784.1 LB/FT | | | | | | | | | | | | | 2.4" | 4.0" |
| | +/- 50 PSF | 3113.9 LB/FT | 1004.0 LB/FT | | | | | | | | | | | | | | 4.0" |
| | +/- 55 PSF | 3433.9 LB/FT | 1117.3 LB/FT | | | | | | | | | | | | | | 4.0" |



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 MAGNUM 3.57 SECURITY STAR
 ROLL DOWN SHUTTER

| REMARKS | DRWN/CHKD | DATE |
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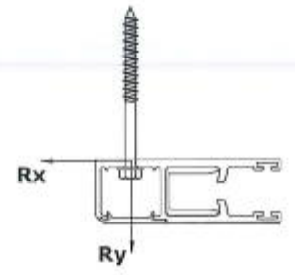
V:\Projects\14-1323 Magnum III (Security Star) Slat Shutter Florida Product Approval\1. SWP\14-1323_c Magnum 3.57 Roll-up Shutter (FSA).dwg chen 10/23/2014 - 3:07pm

ANCHOR SCHEDULE: : INDICATES VALUES NOT APPROVED FOR USE.

WALL MOUNT: SNAP RAIL END RETENTION SHUTTER WITH SINGLE WALL SLATS

ANCHOR NOTES: SEE SHEET 5 FOR ANCHOR NOTES.

| SLAT SPAN | DESIGN PRESSURE | Rx | Ry | MAXIMUM SPACING (O.C.) | | | | | | | | | | | | | | |
|-------------|-----------------|--------------|-------------|---|---|------------------|------|------|--|---------------------------|------|--|---|--|--|---|--|------|
| | | | | 1/4" ELCO ULTRACON TO 2846 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE | 1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE | 5/16" ITW TAPCON | | | 1/4" POWERS POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE | 1/4" ALL-POINTS SOLID-SET | | 1/4" LAG SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | 5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | #14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | #14 316 SS SMS W/ FULL THREAD PENETRATION (OR 1/4-20 316 SS THRU-BOLT) W/ 5/8" WASHER TO 0.125" MIN. ALUM; 0.5" MIN. EDGE DISTANCE | #14 316 SS SMS W/ FULL THREAD PENETRATION (OR 1/4-20 316 SS THRU-BOLT) W/ 5/8" WASHER TO 0.25" MIN. ALUM; 0.5" MIN. EDGE DISTANCE | 3/8" POWERS WEDGE BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN. EDGE DISTANCE | |
| 48" | +/- 40 PSF | 0.0 LB/FT | 80.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 0.0 LB/FT | 100.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 60 PSF | 0.0 LB/FT | 120.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 70 PSF | 0.0 LB/FT | 140.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 80 PSF | 0.0 LB/FT | 160.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 90 PSF | 0.0 LB/FT | 180.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 100 PSF | 0.0 LB/FT | 200.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 110 PSF | 1.2 LB/FT | 220.5 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| +/- 120 PSF | 51.9 LB/FT | 290.2 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| +/- 130 PSF | 102.5 LB/FT | 300.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| 60" | +/- 40 PSF | 0.0 LB/FT | 100.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 0.0 LB/FT | 125.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 60 PSF | 68.7 LB/FT | 173.8 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 70 PSF | 140.0 LB/FT | 224.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 72" | +/- 40 PSF | 0.0 LB/FT | 100.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 125.9 LB/FT | 159.9 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 60 PSF | 399.0 LB/FT | 331.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.9" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 84" | +/- 40 PSF | 291.3 LB/FT | 226.8 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 410.1 LB/FT | 298.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.7" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 60 PSF | 528.7 LB/FT | 371.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.4" | 2.9" | 3.5" | 4.0" | 4.0" | 4.0" | 4.0" |
| 96" | +/- 40 PSF | 441.4 LB/FT | 284.2 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.5" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 596.8 LB/FT | 367.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.1" | 2.7" | 3.3" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 57 PSF | 688.3 LB/FT | 426.2 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.4" | 2.7" | 2.3" | 2.8" | 3.8" | 4.0" | 4.0" | 4.0" |
| 108" | +/- 40 PSF | 595.0 LB/FT | 336.6 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.2" | 2.7" | 3.3" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 758.7 LB/FT | 431.2 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.2" | 2.5" | 2.1" | 2.6" | 3.6" | 4.0" | 4.0" |
| | +/- 54 PSF | 828.1 LB/FT | 469.3 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.4" | 2.2" | 2.4" | 3.3" | 4.0" | 4.0" | 4.0" |
| 120" | +/- 30 PSF | 522.8 LB/FT | 281.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.5" | 3.1" | 3.8" | 4.0" | 4.0" | 4.0" |
| | +/- 40 PSF | 726.9 LB/FT | 366.2 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.4" | 2.6" | 2.2" | 2.7" | 3.9" | 4.0" | 4.0" |
| | +/- 50 PSF | 930.6 LB/FT | 492.2 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 2.0" | 2.1" | 3.1" | 4.0" | 4.0" | 4.0" |
| 132" | +/- 52 PSF | 971.3 LB/FT | 513.6 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 2.0" | 2.9" | 4.0" | 4.0" | 4.0" |
| | +/- 30 PSF | 633.9 LB/FT | 318.2 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.0" | 2.5" | 3.1" | 4.0" | 4.0" | 4.0" |
| | +/- 40 PSF | 889.6 LB/FT | 434.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 2.2" | 2.3" | 3.4" | 4.0" | 4.0" | 4.0" |
| 144" | +/- 50 PSF | 1104.8 LB/FT | 551.8 LB/FT | 4.0" | 3.6" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 2.7" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 20 PSF | 476.3 LB/FT | 228.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.4" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 30 PSF | 745.6 LB/FT | 353.6 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.5" | 2.6" | 2.7" | 4.0" | 4.0" | 4.0" |
| 144" | +/- 40 PSF | 1014.4 LB/FT | 481.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.0" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 1282.8 LB/FT | 610.7 LB/FT | 4.0" | 3.1" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 2.4" | 4.0" | 4.0" | 4.0" |



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| INT ISSUE | CSL | TSB | 10/13/14 |

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V:\Projects\14-1323 Magnum III (Security Star) Slat Shutter Florida Product Approval\14-1323_c Magnum 3.57 Roll-up Shutter (FSA).dwg
 10/23/2014 - 3:07pm
 chen

ANCHOR SCHEDULE: [Hatched Box] INDICATES VALUES NOT APPROVED FOR USE.
BUILD-OUT MOUNT: SNAP RAIL END RETENTION SHUTTER WITH SINGLE WALL SLATS

ANCHOR NOTES: SEE SHEET 5 FOR ANCHOR NOTES.

| SLAT SPAN | DESIGN PRESSURE | Rx | Ry | MAXIMUM SPACING (O.C.) | | | | | | | | | | | | | | | |
|-----------|-----------------|--------------|-------------|---|---|------------------|------|--|---------------------------|------|--|---|--|--|---|--|------|------|------|
| | | | | 1/4" ELCO ULTRACON TO 2846 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE | 1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE | 5/16" ITW TAPCON | | 1/4" POWERS POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE | 1/4" ALL-POINTS SOLID-SET | | 1/4" LAG SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | 5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | #14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | #14 316 SS SMS W/ FULL THREAD PENETRATION (OR 1/4-20 316 SS THRU-BOLT) W/ 5/8" WASHER TO 0.125" MIN. ALUM; 0.5" MIN. EDGE DISTANCE | #14 316 SS SMS W/ FULL THREAD PENETRATION (OR 1/4-20 316 SS THRU-BOLT) W/ 5/8" WASHER TO 0.25" MIN. ALUM; 0.5" MIN. EDGE DISTANCE | 3/8" POWERS WEDGE BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN. EDGE DISTANCE | | | |
| 48" | +/- 40 PSF | 0.0 LB/FT | 133.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 50 PSF | 0.0 LB/FT | 166.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 60 PSF | 0.0 LB/FT | 200.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 70 PSF | 0.0 LB/FT | 233.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 80 PSF | 0.0 LB/FT | 266.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 90 PSF | 0.0 LB/FT | 300.1 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 100 PSF | 0.0 LB/FT | 333.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 60" | +/- 40 PSF | 0.0 LB/FT | 166.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 50 PSF | 0.0 LB/FT | 208.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 60 PSF | 68.7 LB/FT | 289.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 70 PSF | 140.0 LB/FT | 373.5 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 84 PSF | 239.5 LB/FT | 492.1 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| 72" | +/- 40 PSF | 125.9 LB/FT | 266.6 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 50 PSF | 220.0 LB/FT | 367.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 68 PSF | 389.0 LB/FT | 552.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.9" | 3.5" | 3.9" | 3.6" | 4.0" | 4.0" | 4.0" | 4.0" | |
| 84" | +/- 40 PSF | 291.3 LB/FT | 378.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 50 PSF | 410.1 LB/FT | 497.9 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.8" | 3.4" | 3.9" | 3.8" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 60 PSF | 528.7 LB/FT | 619.1 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.3" | 3.1" | 2.7" | 3.1" | 3.1" | 4.0" | 4.0" | 4.0" | |
| 96" | +/- 30 PSF | 295.7 LB/FT | 336.9 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 40 PSF | 441.4 LB/FT | 473.8 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.7" | 3.3" | 3.8" | 3.9" | 4.0" | 4.0" | 4.0" | |
| | +/- 50 PSF | 586.8 LB/FT | 612.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.2" | 2.8" | 2.9" | 3.0" | 4.0" | 4.0" | 4.0" | |
| 108" | +/- 30 PSF | 411.0 LB/FT | 405.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.6" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 40 PSF | 585.0 LB/FT | 561.2 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.3" | 2.9" | 2.5" | 3.0" | 3.2" | 4.0" | 4.0" | |
| | +/- 50 PSF | 758.7 LB/FT | 718.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.3" | 2.2" | 2.3" | 2.5" | 4.0" | 4.0" | 4.0" | |
| 120" | +/- 20 PSF | 318.3 LB/FT | 298.1 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 30 PSF | 522.8 LB/FT | 469.6 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.8" | 3.3" | 2.8" | 3.4" | 3.8" | 4.0" | |
| | +/- 40 PSF | 726.9 LB/FT | 643.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.8" | 2.4" | 2.1" | 2.4" | 2.8" | 4.0" | |
| 132" | +/- 20 PSF | 397.7 LB/FT | 340.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 30 PSF | 633.9 LB/FT | 530.5 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.3" | 2.8" | 2.4" | 2.8" | 3.3" | 4.0" | |
| | +/- 40 PSF | 869.6 LB/FT | 723.5 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 3.3" | 2.0" | 2.1" | 2.4" | 4.0" | 4.0" | |
| 144" | +/- 20 PSF | 476.3 LB/FT | 381.2 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 30 PSF | 745.6 LB/FT | 589.5 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| | +/- 40 PSF | 1014.4 LB/FT | 801.6 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |



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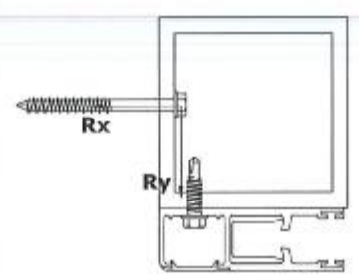
V:\Projects\14-1323 Magnum III (Security Star) Slat Shutter Florida Product Approval\SWP14-1323_c Magnum 3.57 Roll-up Shutter (FSA).dwg 10/23/2014 - 3:07pm chen

ANCHOR SCHEDULE: : INDICATES VALUES NOT APPROVED FOR USE.

INTERIOR MOUNT: SNAP RAIL END RETENTION SHUTTER WITH SINGLE WALL SLATS

ANCHOR NOTES: SEE SHEET 5 FOR ANCHOR NOTES.

| SLAT SPAN | DESIGN PRESSURE | Rx | Ry | MAXIMUM SPACING (O.C.) | | | | | | | | | | | | | | |
|-----------|-----------------|--------------|--------------|---|---|------------------|------|------|--|---------------------------|------|--|---|--|---|--|--|------|
| | | | | 1/4" ELCO ULTRACON TO 2846 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE | 1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE | 5/16" ITW TAPCON | | | 1/4" POWERS POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE | 1/4" ALL-POINTS SOLID-SET | | 1/4" LAG SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | 5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | #14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE | #14 316 SS SMS W/ FULL THREAD PENETRATION (OR 1/4-20 316 SS THRU-BOLT) W 5/8" WASHER TO 0.125" MIN. ALUM; 0.5" MIN. EDGE DISTANCE | #14 316 SS SMS W/ FULL THREAD PENETRATION (OR 1/4-20 316 SS THRU-BOLT) W 5/8" WASHER TO 0.25" MIN. ALUM; 0.5" MIN. EDGE DISTANCE | 3/8" POWERS WEDGE BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN. EDGE DISTANCE | |
| 48" | +/- 40 PSF | 53.4 LB/FT | 80.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 66.7 LB/FT | 100.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 60 PSF | 80.0 LB/FT | 120.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 70 PSF | 93.4 LB/FT | 140.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 80 PSF | 106.7 LB/FT | 160.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 90 PSF | 120.1 LB/FT | 180.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 100 PSF | 133.4 LB/FT | 200.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 110 PSF | 146.7 LB/FT | 220.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 60" | +/- 120 PSF | 225.5 LB/FT | 260.2 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 130 PSF | 302.9 LB/FT | 300.4 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 40 PSF | 66.7 LB/FT | 100.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 83.4 LB/FT | 125.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 60 PSF | 100.0 LB/FT | 150.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 72" | +/- 70 PSF | 116.7 LB/FT | 170.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 80 PSF | 133.4 LB/FT | 190.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 84 PSF | 146.7 LB/FT | 210.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 88 PSF | 160.0 LB/FT | 230.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 84" | +/- 40 PSF | 83.4 LB/FT | 125.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 100.0 LB/FT | 150.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 60 PSF | 116.7 LB/FT | 170.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 96" | +/- 40 PSF | 100.0 LB/FT | 150.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 125.0 LB/FT | 187.5 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 57 PSF | 146.7 LB/FT | 210.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 108" | +/- 30 PSF | 166.7 LB/FT | 250.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 40 PSF | 222.2 LB/FT | 333.3 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 277.8 LB/FT | 416.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 120" | +/- 54 PSF | 333.3 LB/FT | 500.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 30 PSF | 333.3 LB/FT | 500.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 40 PSF | 444.4 LB/FT | 666.7 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 50 PSF | 555.6 LB/FT | 833.3 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 132" | +/- 52 PSF | 666.7 LB/FT | 1000.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 20 PSF | 666.7 LB/FT | 1000.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 30 PSF | 1000.0 LB/FT | 1500.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 40 PSF | 1333.3 LB/FT | 2000.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| 144" | +/- 50 PSF | 1666.7 LB/FT | 2500.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 20 PSF | 1666.7 LB/FT | 2500.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |
| | +/- 30 PSF | 2500.0 LB/FT | 3750.0 LB/FT | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" |



ALUTECH UNITED, INC.

117 DIXON STREET
SELBYVILLE, DE 19975
PHONE: 302 - 436 - 6005 FAX: 302 - 436 - 5100
MAGNUM 3.57 SECURITY STAR
ROLL DOWN SHUTTER

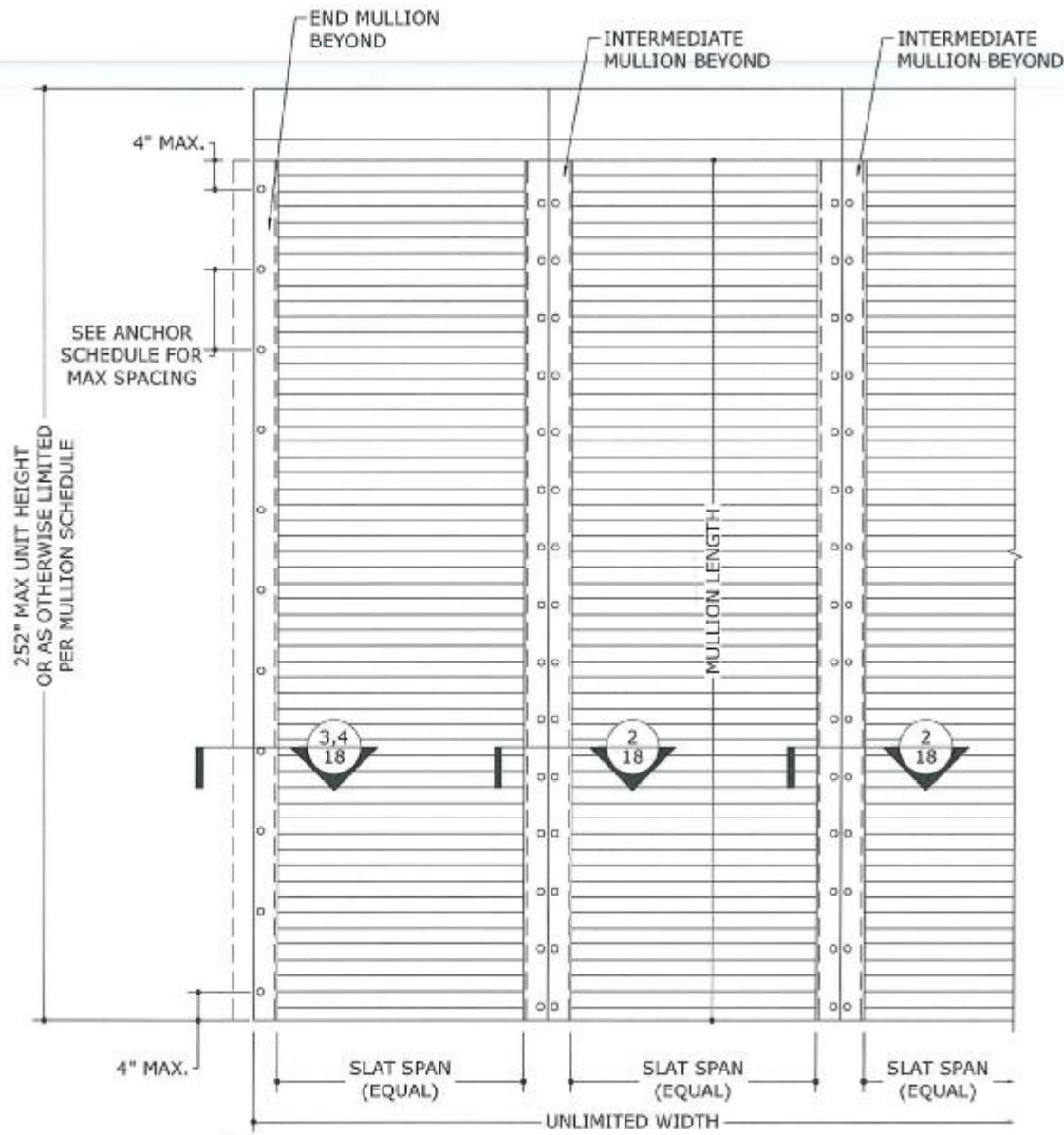
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| INT ISSUE | CSL | TSB | 10/13/14 |

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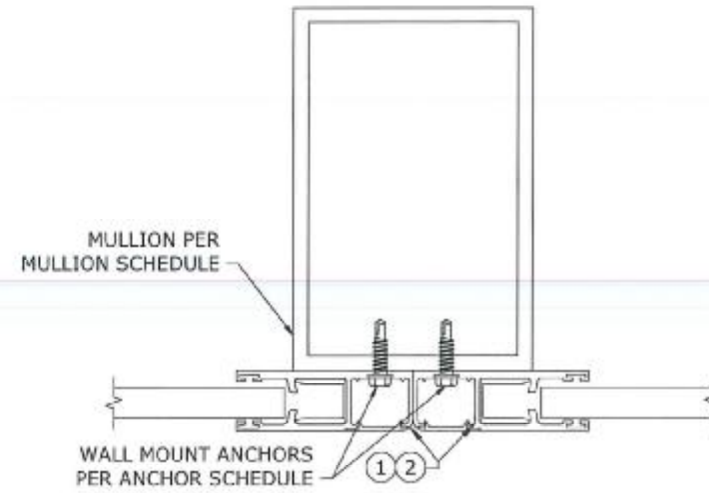
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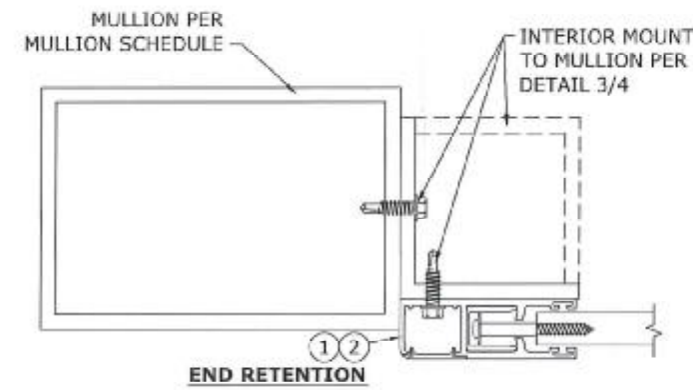


1
18 N.T.S. **TYPICAL SHUTTER WITH MULLIONS**
EXTERIOR ELEV

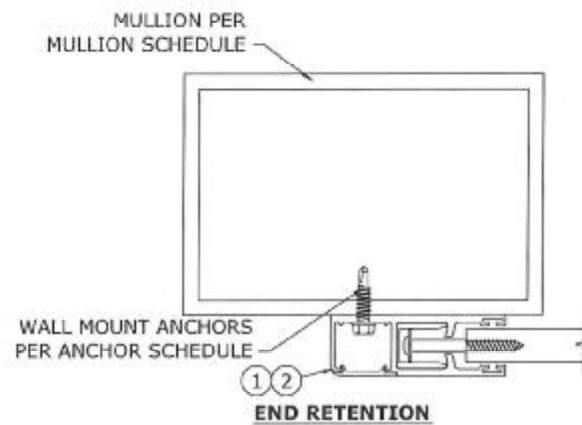


NOTE: SEE SHEET 4 FOR ADDITIONAL LIMITATIONS AND REQUIREMENTS.

2
18 N.T.S. **TYPICAL MOUNT TO INTERMEDIATE MULLION**
HORIZ SECTION



3
18 N.T.S. **INTERIOR MOUNT TO END MULLION**
HORIZ SECTION



4
18 N.T.S. **END MULLION**
HORIZ SECTION



ALUTECH UNITED, INC.
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MAGNUM 3.57 SECURITY STAR
ROLL DOWN SHUTTER

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PAGE DESCRIPTION:

END RETENTION MULLION SCHEDULE

| SLAT SPAN | DESIGN PRESSURE | 3"x3"x0.25" 6063-T6 ALUMINUM TUBE | | | | | | 4"x6"x0.25" 6053-T6 ALUMINUM TUBE | | | | | | 4"x8"x0.25" 6063-T6 ALUMINUM TUBE | | | | | |
|------------|-----------------|-----------------------------------|-------------------|--------------------|-----------------|-----------------|-------------------|-----------------------------------|-------------------|--------------------|-----------------|-----------------|-------------------|-----------------------------------|-------------------|--------------------|-----------------|-----------------|-------------------|
| | | INTERMEDIATE MULLION | | END MULLION | | | | INTERMEDIATE MULLION | | END MULLION | | | | INTERMEDIATE MULLION | | END MULLION | | | |
| | | MAX MULLION LENGTH | END REACTION Rsum | MAX MULLION LENGTH | END REACTION Rv | END REACTION Rt | END REACTION Rsum | MAX MULLION LENGTH | END REACTION Rsum | MAX MULLION LENGTH | END REACTION Rv | END REACTION Rt | END REACTION Rsum | MAX MULLION LENGTH | END REACTION Rsum | MAX MULLION LENGTH | END REACTION Rv | END REACTION Rt | END REACTION Rsum |
| UP TO 96" | UP TO 60 PSF | 58.5" | 2202 LB | 49.8" | 1519 LB | 937 LB | 1785 LB | 110.4" | 4153 LB | 89.1" | 2717 LB | 1677 LB | 3193 LB | 138.1" | 5199 LB | 96.9" | 2954 LB | 1823 LB | 3471 LB |
| | UP TO 80 PSF | 51.3" | 2665 LB | 44.6" | 1866 LB | 1157 LB | 2221 LB | 95.6" | 4962 LB | 79.3" | 3373 LB | 2058 LB | 3951 LB | 117.6" | 6106 LB | 87.0" | 3702 LB | 2259 LB | 4337 LB |
| | UP TO 104 PSF | 44.4" | 3084 LB | 38.6" | 2200 LB | 1343 LB | 2578 LB | 82.6" | 5741 LB | 68.5" | 3902 LB | 2381 LB | 4571 LB | 101.6" | 7064 LB | 78.9" | 4496 LB | 2744 LB | 5267 LB |
| UP TO 144" | UP TO 60 PSF | 46.7" | 2932 LB | 37.8" | 2436 LB | 1187 LB | 2710 LB | 86.9" | 5459 LB | 67.4" | 4347 LB | 2119 LB | 4836 LB | 106.9" | 6717 LB | 80.0" | 5159 LB | 2514 LB | 5739 LB |
| | UP TO 86 PSF | 38.7" | 3537 LB | 31.4" | 2931 LB | 1434 LB | 3263 LB | 72.0" | 6585 LB | 58.0" | 5230 LB | 2558 LB | 5822 LB | 88.6" | 8102 LB | 66.4" | 6207 LB | 3036 LB | 6910 LB |
| UP TO 180" | UP TO 67 PSF | 38.6" | 3545 LB | 30.3" | 3124 LB | 1392 LB | 3420 LB | 71.8" | 6601 LB | 54.2" | 5590 LB | 2490 LB | 6119 LB | 88.4" | 8122 LB | 64.5" | 6647 LB | 2961 LB | 7277 LB |
| UP TO 216" | UP TO 55 PSF | 38.3" | 3569 LB | 29.4" | 3291 LB | 1368 LB | 3564 LB | 71.4" | 6645 LB | 52.6" | 5899 LB | 2451 LB | 6388 LB | 87.8" | 8177 LB | 62.7" | 7024 LB | 2919 LB | 7606 LB |

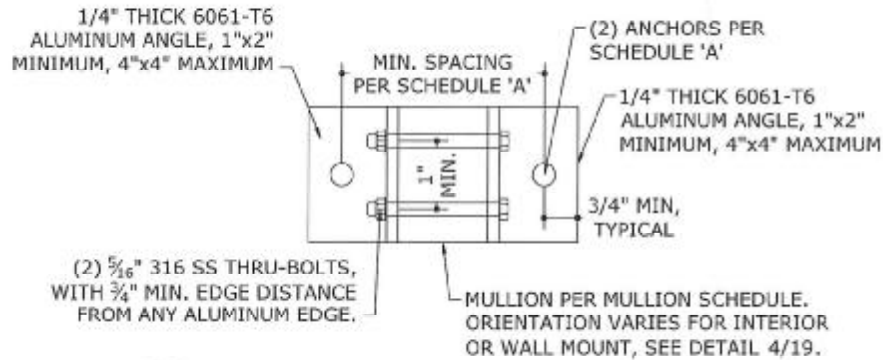
- "END RETENTION MULLION SCHEDULE" IS APPLICABLE TO ALL END RETENTION MULLIONS.
- "INTERMEDIATE MULLIONS" AND "END MULLIONS" ARE AS DEFINED IN ELEVATION 1/19.
- ALLOWABLE DESIGN PRESSURES AND SLAT SPANS INDICATED ARE FOR DETERMINING PERMISSIBLE MULLION LENGTHS ONLY. ACTUAL SLAT SPANS AND DESIGN PRESSURES SHALL NOT EXCEED THOSE INDICATED IN SPAN SCHEDULES.
- "END REACTIONS" ARE LISTED FOR EACH COMBINATION OF DESIGN LOAD, MULLION TYPE, & SLAT SPAN. CHOOSE MOUNTING CONNECTIONS (PER APPLICABLE CONNECTION DETAILS HEREIN) THAT PROVIDES "CONNECTION CAPACITY" GREATER THAN OR EQUAL TO "END REACTIONS" GIVEN ABOVE.
- THIS SCHEDULE MAY BE USED FOR ALL MOUNTING CONDITIONS LISTED HEREIN.
- SEE MULLION HORIZONTAL SECTIONS ON SHEET 18 FOR REQUIRED MULLION ORIENTATIONS.

SCHEDULE 'A'

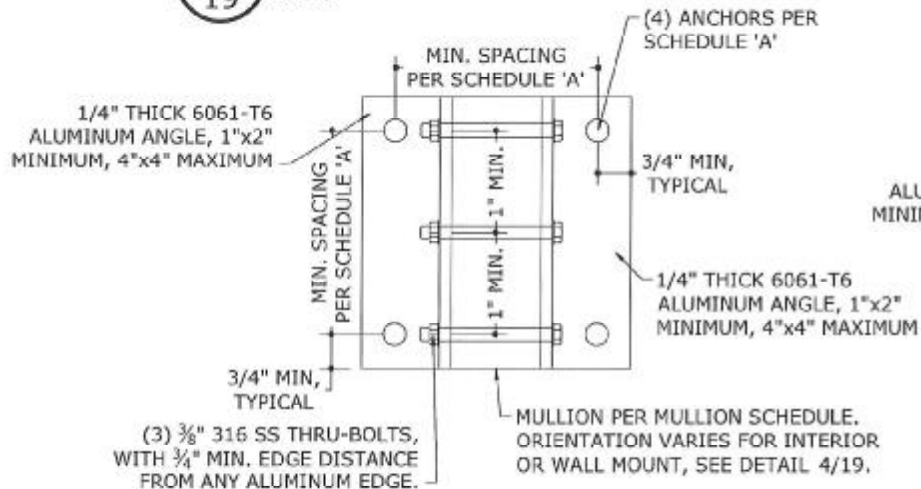
| ANCHOR TYPE | MINIMUM SPACING | MINIMUM EDGE DISTANCE | CONNECTION DETAIL | CONNECTION CAPACITY | | |
|--|-----------------|-----------------------|-------------------|---------------------|---------|---------|
| 3/8" POWERS WEDGE BOLTS W/ 3-1/2" EMBED TO 3KSI MIN. CONCRETE | 4.5" | 4.5" | 1/12 | Tcap | 4410 LB | |
| | | | | Vcap | 3055 LB | |
| | 2.5" | 4.5" | 3/12 | Tcap | 8820 LB | |
| | | | | Vcap | 6130 LB | |
| 3/8" POWERS STEEL DROP IN W/ 1-9/16" EMBED TO 3KSI MIN. CONCRETE | 4.5" | 5.25" | 1/12 | Tcap | 1590 LB | |
| | | | | Vcap | 2290 LB | |
| | 2.5" | 5.25" | 3/12 | Tcap | 3180 LB | |
| | | | | Vcap | 4580 LB | |
| 5/16" ITW TAPCON XL OR ELCO ULTRACON W/ 2-1/4" MIN. EMBED TO 3.515 KSI MIN. CONCRETE | 5.0" | 3.125" | 1/12 | Tcap | 1578 LB | |
| | | | | Vcap | 1700 LB | |
| | | | | 2/12 | Tcap | 3152 LB |
| | | | | | Vcap | 3400 LB |

SCHEDULE 'A' NOTES:

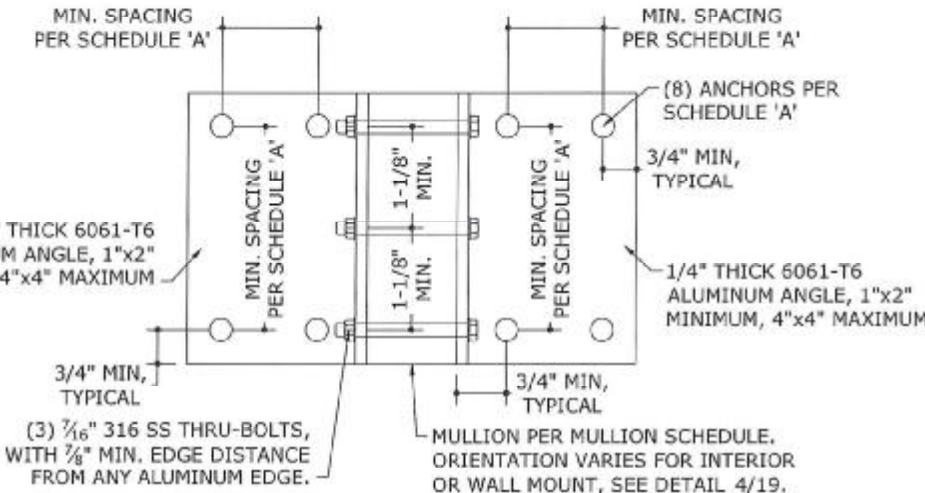
- INTERIOR MOUNT:
 - FOR ALL MULLIONS, 'Rsum' VALUES IN MULLION SCHEDULE SHALL NOT EXCEED MAX 'Vcap' VALUES NOTED IN SCHEDULE 'A'.
- WALL MOUNT:
 - FOR INTERMEDIATE END RETENTION MULLIONS AND ALL NON-END RETENTION MULLIONS, 'Rsum' VALUES IN MULLION SCHEDULE SHALL NOT EXCEED MAX 'Tcap' VALUES NOTED IN SCHEDULE 'A'. FOR END RETENTION END MULLIONS, **Rv/Vcap + Rt/Tcap SHALL BE LESS THAN OR EQUAL TO 1.0**, WHERE 'Rv' AND 'Rt' ARE PER MULLION SCHEDULE, AND 'Tcap' AND 'Vcap' ARE PER SCHEDULE 'A'.



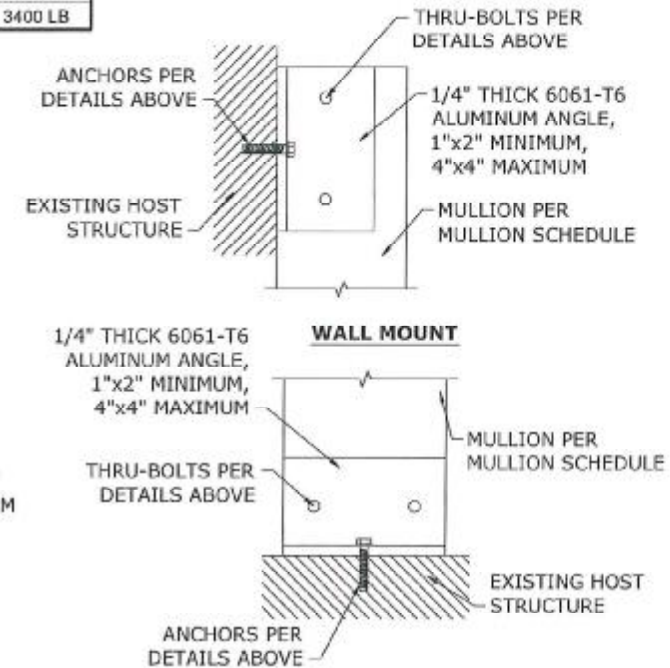
1 INTERIOR OR WALL MOUNT
19 N.T.S.



2 INTERIOR OR WALL MOUNT
19 N.T.S.



3 INTERIOR OR WALL MOUNT
19 N.T.S.



4 MOUNTING CONDITIONS VERTICAL SECTIONS
19 N.T.S.

FRANK L. BERNARDO, P.E.
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MAGNUM 3.57 SECURITY STAR
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