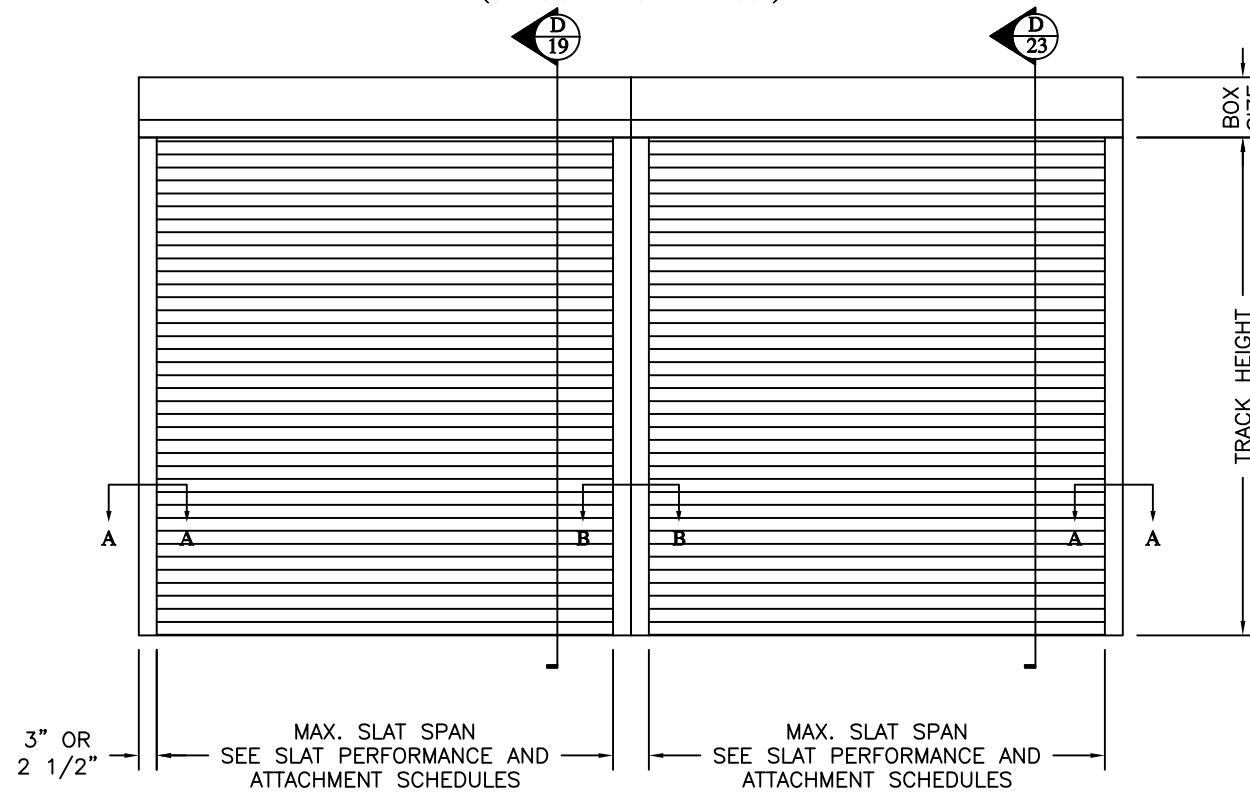
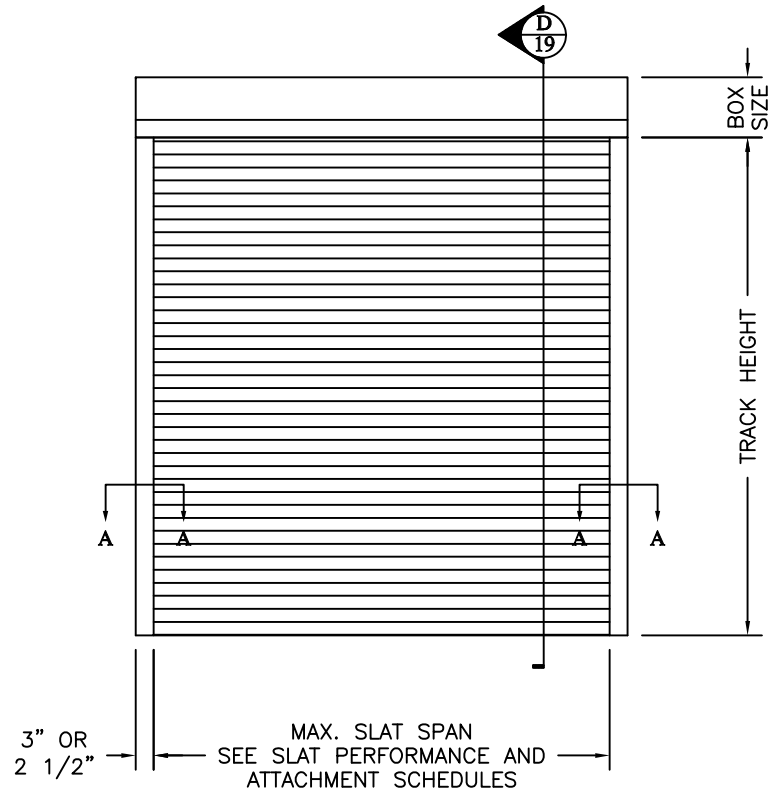


**TYPICAL SINGLE UNIT
ELEVATION
(NO STORM BARS REQUIRED)**

**TYPICAL MULTIPLE UNIT
ELEVATION
(NO STORM BARS REQUIRED)
(UNITS SHARE CENTER POST)**

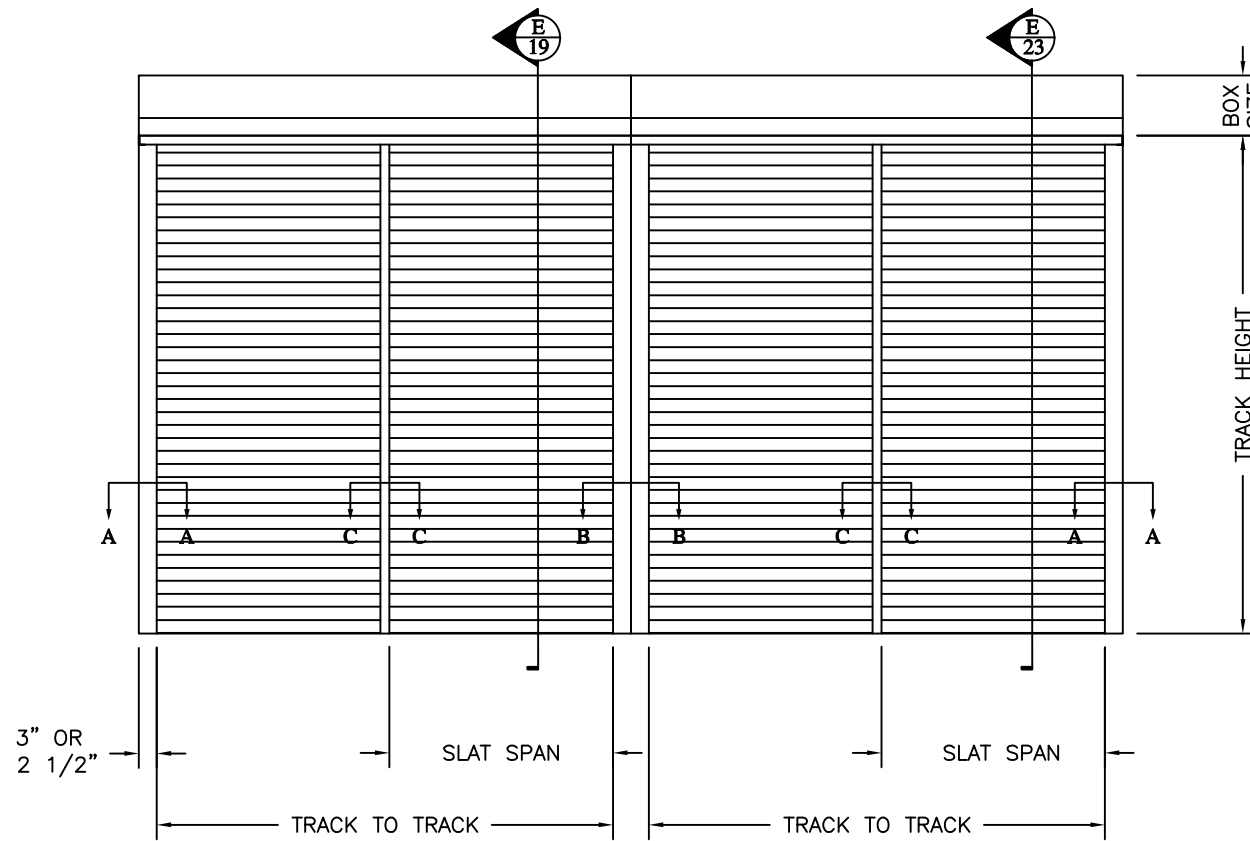
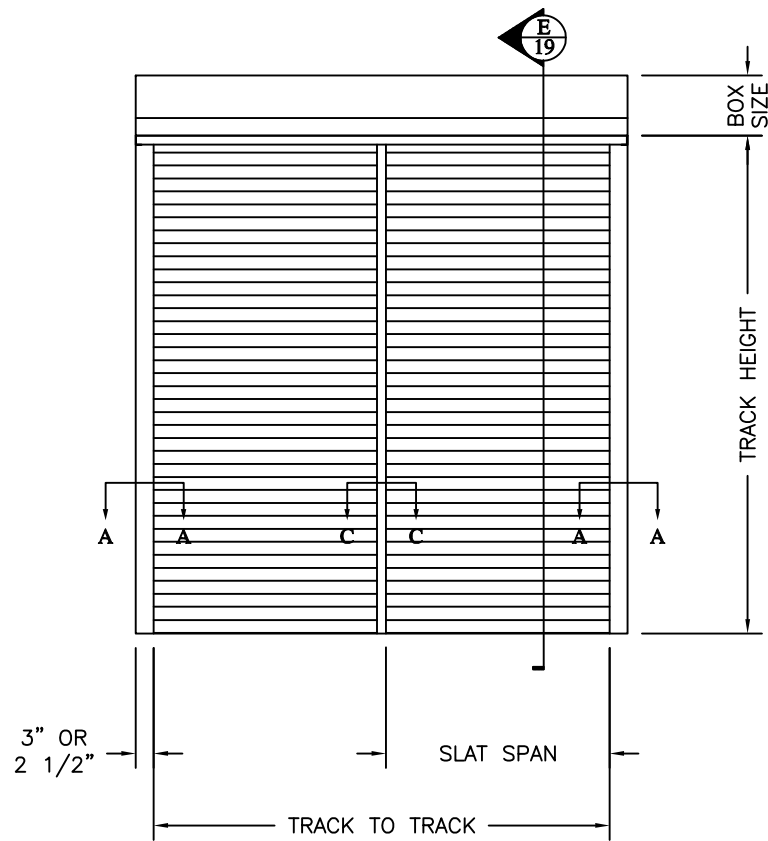


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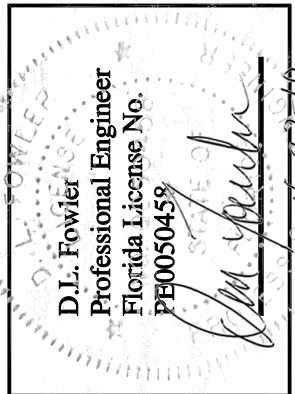


**TYPICAL SINGLE UNIT
ELEVATION
(STORM BARS REQUIRED)**

**TYPICAL MULTIPLE UNIT
ELEVATION
(STORM BARS REQUIRED)
(UNITS SHARE CENTER POST)**



DRAWING TITLE:
**HVHZ
END RETENTION
PRODUCT APPROVAL**



SEE GENERAL
NOTES PAGE 2

| | |
|-------------|--------------|
| DRAWN: | DLF |
| DATE: | 4-16-10 |
| APPROVED: | DLF |
| DATE: | 4-16-10 |
| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| SCALE: | 3/8" = 1'-0" |
| SHEET: | 1 OF 26 |

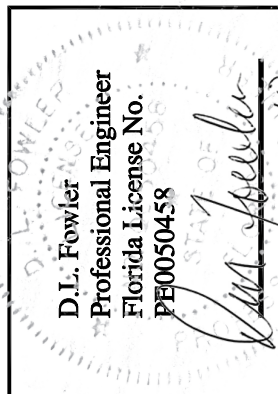
GENERAL NOTES:

1. THIS NOTICE OF ACCEPTANCE DRAWING FOR END RETENTION ROLLING ABATEMENT PRODUCTS IS DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE (FBC) 2007, HIGH VELOCITY HURRICANE ZONE. WIND LOADING REQUIREMENTS SHALL BE DETERMINED USING ASCE 7-05, WITH EXCEPTIONS AS PER FBC 2007. PRODUCT TESTING RECORDS AND REPORTS PER ATL 0126.01-00, HETI 99-830-A, HETI 99-830-B, HETI 99-830-C, CTLA 2017W, AND CTLA 2017W-1.
2. ALL ALUMINUM EXTRUSIONS SHALL BE SPECIFIED HERE-IN. ANY SUBSTITUTIONS SHALL BE APPROVED BY A LICENSED PROFESSIONAL ENGINEER.
3. ALL SCREWS TO BE STAINLESS STEEL 304 OR 316 SERIES WITH MINIMUM 50 KSI YIELD POINT AND MINIMUM 85 KSI TENSILE STRENGTH, ALUMINUM, DACROMET COATED STEEL, OR GALVANIZED STEEL.
(SS SMS = STAINLESS STEEL SHEET METAL SCREW)
4. STORM BARS SHALL REMAIN IN PLACE DURING ALL WIND EVENTS. SHUTTERS SHALL BE ROLLED UP IF REMOVABLE STORM BARS ARE NOT REPLACED BEFORE WIND EVENTS.
5. ANCHORS TO WALL SHALL BE AS FOLLOWS (UNLESS OTHERWISE NOTED):
 - (A) TO EXISTING 4000 PSI MIN. CONCRETE, OR AS SPECIFIED HEREIN:
 - Ø1/4" TAPCON ANCHORS, AS MANUFACTURED BY ELCO INDUSTRIES
 - #14 CRETEFLEX SS4 ANCHORS, AS MANUFACTURED BY ELCO INDUSTRIES
 - Ø3/8" POWER BOLTS, AS MANUFACTURED BY POWERS FASTENING, INC (3/8" POWER WEDGE BOLT MAYBE SUBSTITUTED).
 NOTES:
 - A.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS AND CRETE FLEX ANCHORS INTO CONCRETE SHALL BE 1 3/4 " UNLESS OTHERWISE SPECIFIED HEREIN.
 - A.2) MINIMUM EMBEDMENT OF POWER BOLT ANCHORS SHALL BE 2".
 - A.3) IN CASE THAT PRECAST STONE, PRECAST CONCRETE PANELS ARE FOUND ON THE EXISTING WALL, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS. ANCHORAGE SHALL BE PER THE LISTED MINIMUMS.
 - (B) TO EXISTING CONCRETE BLOCK WALL:
 - Ø1/4" TAPCON ANCHORS, AS MANUFACTURED BY ELCO INDUSTRIES
 - #14 CRETEFLEX SS4 ANCHORS, AS MANUFACTURED BY ELCO INDUSTRIES
 NOTES:
 - B.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS INTO THE CONCRETE BLOCK UNIT SHALL BE 1 1/4" UNLESS OTHERWISE SPECIFIED HEREIN.
 - B.2) MINIMUM EMBEDMENT OF CRETEFLEX ANCHORS INTO THE CONCRETE BLOCK UNIT SHALL BE 1 1/4" UNLESS OTHERWISE SPECIFIED HEREIN.
 - B.3) IN CASE THAT PRECAST STONE, PRECAST CONCRETE PANELS, ARE FOUND ON THE EXISTING WALL, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS. ANCHORAGE SHALL BE 1 1/4" MINIMUM.
 - (C) ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.
 - (D) ANCHORAGE TO WOOD FRAME BUILDINGS IS SPECIFIED IN THIS DRAWING.
 - (E) ANCHOR MINIMUM EMBEDMENT DOES NOT INCLUDE EXTERIOR FINISH.
 - (F) ANCHORAGE SHALL BE INSTALLED INTO THE BUILDING'S MAIN WIND-FORCE RESISTANT STRUCTURAL COMPONENTS TO ENSURE A LOAD PATH INTO THE BUILDING'S FOUNDATION.
6. IT SHALL BE THE RESPONSIBILITY OF THE INSTALLATION CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE WHERE SHUTTER IS TO BE STRUCTURALLY ATTACHED TO ENSURE PROPER ANCHORAGE PER NOTE 5.
7. THIS APPROVAL DOES NOT INCLUDE NOR COVER ANY SHUTTER ROLL-UP MECHANISMS, ANY ELECTRICAL INSTALLATIONS, OR MODIFICATIONS NECESSARY TO FACILITATE THEM.
8. TRACK MOUNTING CONDITIONS ARE DEPICTED ON SHEET 10 THRU SHEET 1. SECTION "A-A"(WALL MOUNT, JAMB MOUNT, BUILD OUT MOUNT AND MULLION MOUNT) ARE DEPICTED ON PAGES 10 THRU 13. SHARED MIDDLE MULLION TRACK MOUNTING CONDITIONS ARE FOUND ON SHEET 14, 15, & 16 PER SECTION "B-B". ANY OTHER TRACK MOUNTING CONDITIONS SHALL BE ENGINEERED ON A CASE BY CASE BASIS. END CONDITIONS MAY BE MIXED/COMBINED.
9. LINEAR INTERPOLATION IS ALLOWED FOR ALL GRAPHS, CHARTS, SCHEDULES, AND TABLES.
10. ALTERATIONS OR ADDITIONS TO THE DOCUMENT ARE NOT PERMITTED. DOCUMENT SHALL BEAR THE ORIGINAL SEAL, SIGNATURE, AND DATE OF THE PROFESSIONAL ENGINEER LISTED.
11. THIS PRODUCT APPROVAL IS SUITABLE FOR USE ONLY AS SPECIFICALLY STATED ON THE COMBINED PAGES OF THE ENTIRE DOCUMENT. ANY DEVIATIONS SHALL BE REVIEWED AND APPROVED BY A PROFESSIONAL ENGINEER SEPARATELY.



HVHZ
END RETENTION
PRODUCT APPROVAL

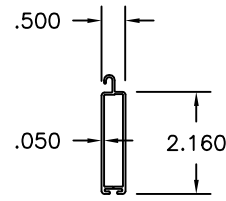
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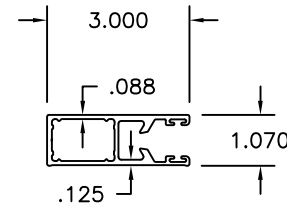
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| DATE: | 4-16-10 | |
| DRAWING NO: | 3-01-038 | |
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DETAIL LETTER → (A)
DETAIL SHEET → (3)

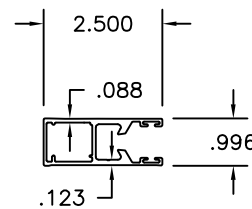
SECTION LETTER → (A)
SECTION SHEET → (3)



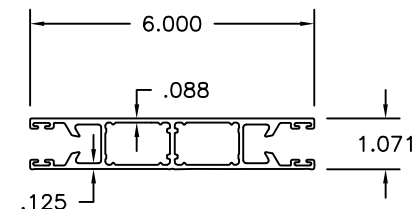
C BOTTOM SLAT
ALUMINUM 6063-T6



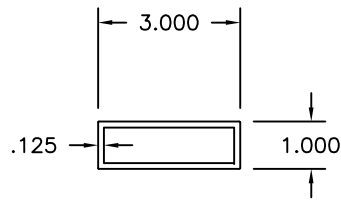
D SYSTEM I TRACK
END RETENTION
ALUMINUM 6063-T6



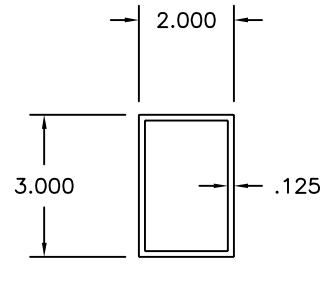
E SYSTEM II TRACK
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ALUMINUM 6063-T6



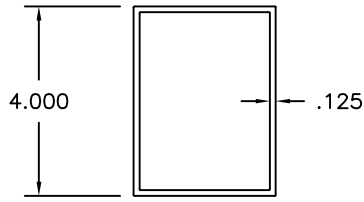
F SYSTEM I DOUBLE TRACK
END RETENTION
ALUMINUM 6063-T6



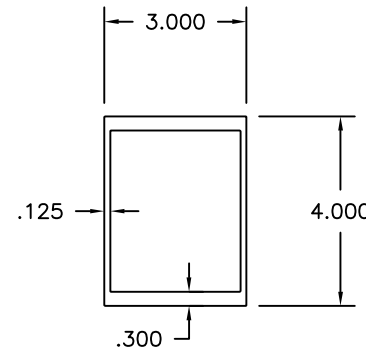
G TUBE 1" x 3" x .125"
ALUMINUM 6063-T6



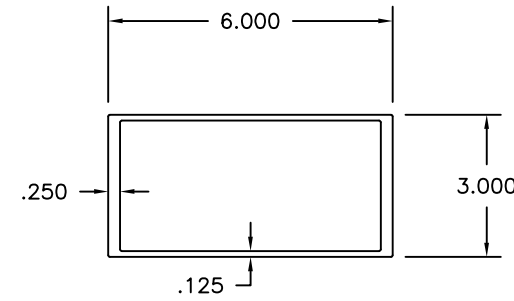
H TUBE 2" x 3" x 1/8"
ALUMINUM 6005-T5



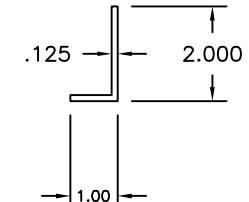
I TUBE 3" x 4" x 1/8"
ALUMINUM 6063-T6



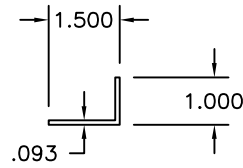
J MULLION 3" x 4" HEAVY DUTY
ALUMINUM 6005-T5



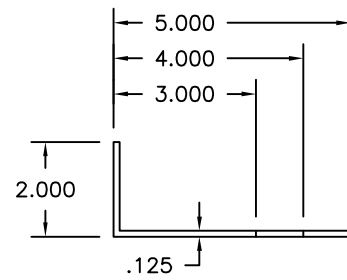
K MULLION 3" x 6" HEAVY DUTY
ALUMINUM 6005-T5



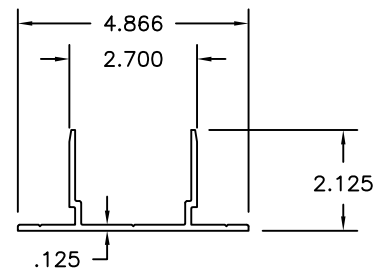
L ANGLE 1" x 2" x .125"
ALUMINUM 6063-T5



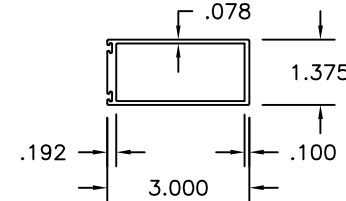
M ANGLE 1" x 1 1/2" x 3/32"
ALUMINUM 6063-T5



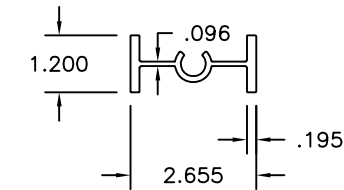
N ANGLE
2" x 3", 4" OR 5" x 1/8"
ALUMINUM 6063-T5



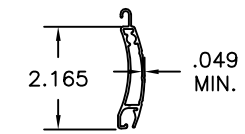
O MULLION BASE 3" x 4" (L=3 3/8")
MULLION BASE 3" x 6" (L=5 7/16")
ALUMINUM 6005-T5



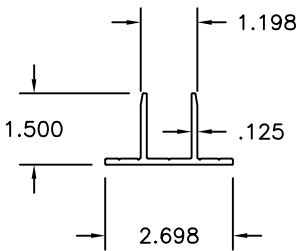
P 3" STORM BAR
ALUMINUM 6005-T5



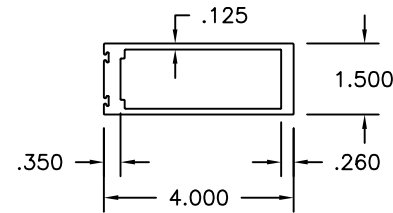
Q 3" STORM BAR INSERT
ALUMINUM 6005-T5



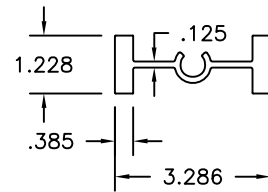
A2 US60 SLAT
ALUMINUM 6063-T6



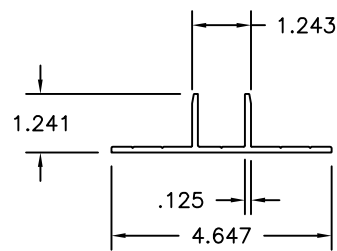
R 3" FIXED STORM BAR BASE,
STANDARD
(LENGTH = 2 5/8")
ALUMINUM 6063-T6



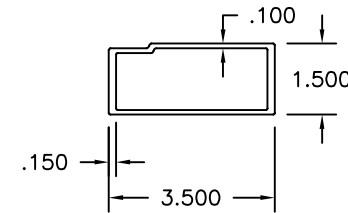
S 4" STORM BAR
ALUMINUM 6005-T5



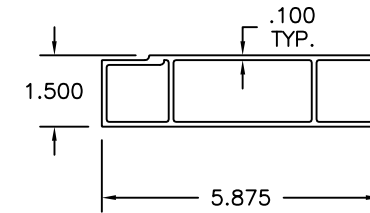
T 4" STORM BAR INSERT
ALUMINUM 6063-T6



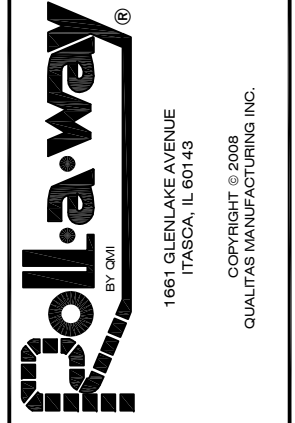
U 4" FIXED STORM BAR BASE,
STANDARD
(LENGTH = 3 9/32")
ALUMINUM 6005-T5



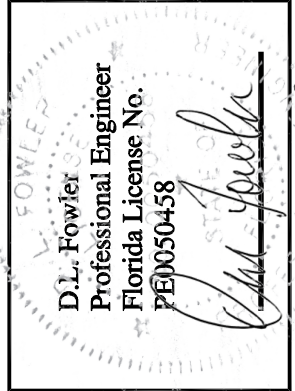
V 3 1/2" HEADER
ALLOY 6005-T5



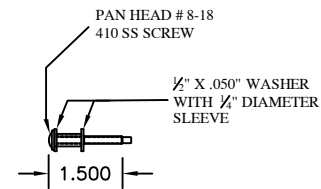
W HEADER 5 7/8"
ALUMINUM 6005-T5



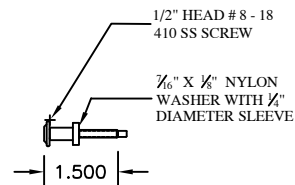
HVHZ
END RETENTION
PRODUCT APPROVAL



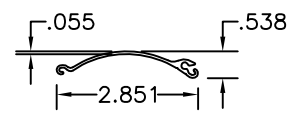
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| SHEET: | 3 OF 26 |



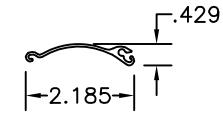
(AE) RETAIN SCREW ASSEMBLY



(AE) ALTERNATE RETAIN SCREW ASSEMBLY

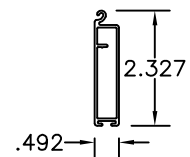


(A1) AL7-E SINGLE WALL SLAT
QMI-395
ALUMINUM 6063-T6

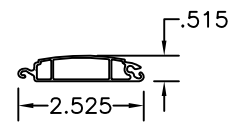


(A3) AL7-E SINGLE WALL STARTER SLAT
QMI-477
ALUMINUM 6063-T6

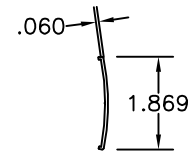
2 PC. RAIL ASSEMBLY SCREW
#8-18 x 3/4 PHILLIPS PAN SDS 410 S.S.



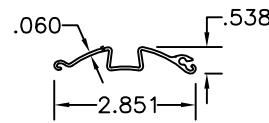
(C) BASE SLAT
QMI-408
ALUMINUM 6005-T5



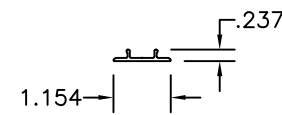
(B2) LOCK SLAT
QMI-409
ALUMINUM 6063-T6



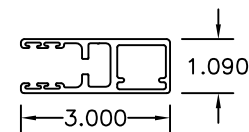
(B3) LOCK SLAT COVER
QMI-331
ALUMINUM 6005-T5



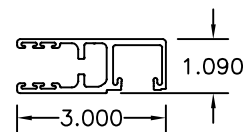
(B4) FINGER PULL SLAT
QMI-410
ALUMINUM 6063-T6



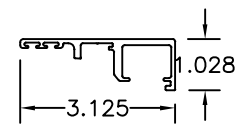
(B5) RAIL SNAP COVER
QMI-351
ALUMINUM 6063-T5



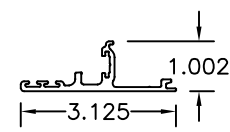
(D) RETAIN RAIL
QMI-491
ALUMINUM 6005-T5



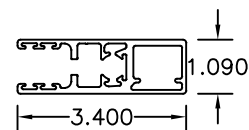
(D) SNAP COVER RETAIN RAIL
QMI-492
ALUMINUM 6005-T5



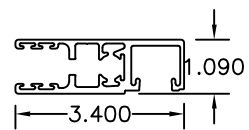
(D1) 2 PIECE INNER HALF RETAIN RAIL
QMI-493
ALUMINUM 6005-T5



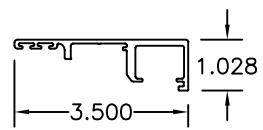
(D2) 2 PC. OUTER HALF RETAIN RAIL
QMI-494
ALUMINUM 6005-T5



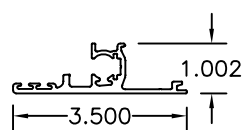
(E) SPRING STOP RETAIN RAIL
QMI-479
ALUMINUM 6005-T5



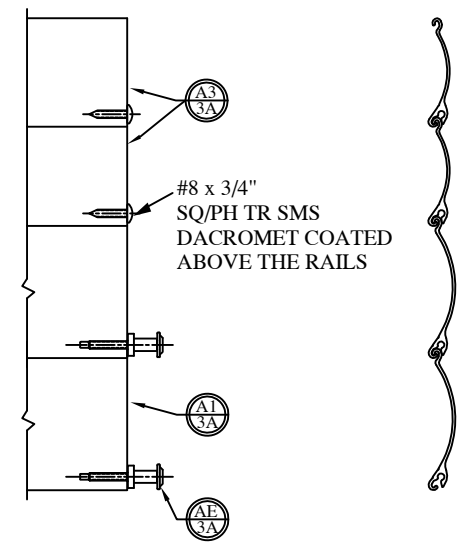
(E) SPRING STOP SNAP COVER RETAIN RAIL
QMI-487
ALUMINUM 6005-T5



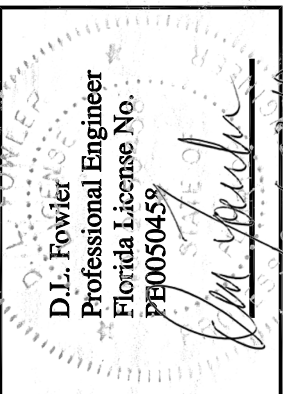
(E1) 2 PC. INNER HALF SPRING STOP RETAIN RAIL
QMI-488
ALUMINUM 6005-T5



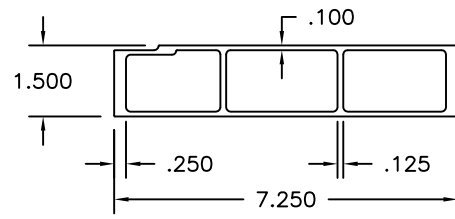
(E2) 2 PC. OUTER HALF SPRING STOP RETAIN RAIL
QMI-489
ALUMINUM 6005-T5



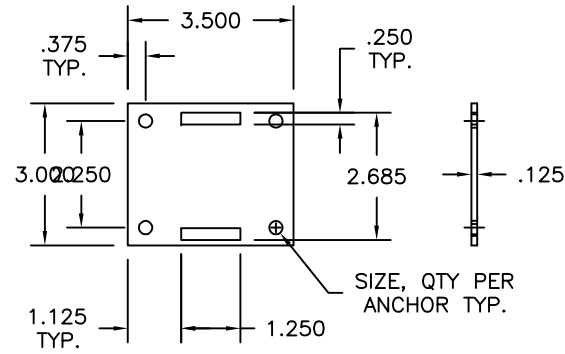
HVHZ
END RETENTION
PRODUCT APPROVAL



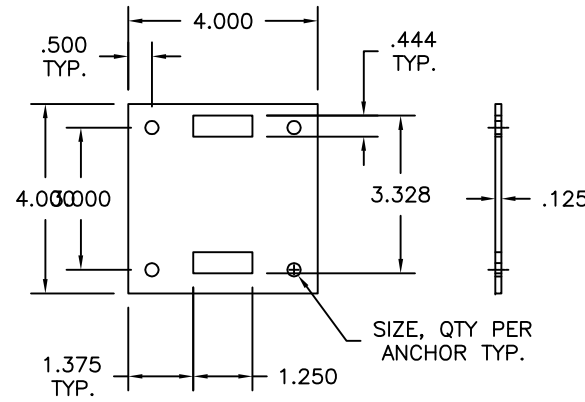
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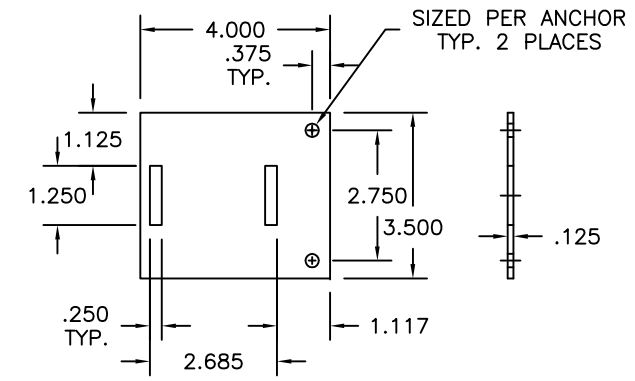
(X) HEADER 7 1/4"
ALUMINUM 6005-T5



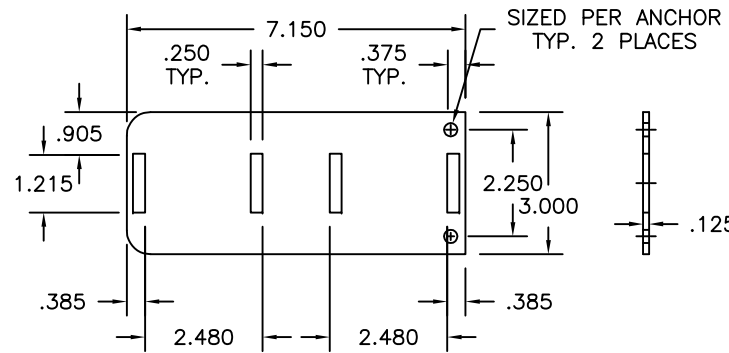
(Y) 3" REMOVABLE STORM BAR BASE,
STANDARD
ALUMINUM 6061-T6 OR 6005-T5



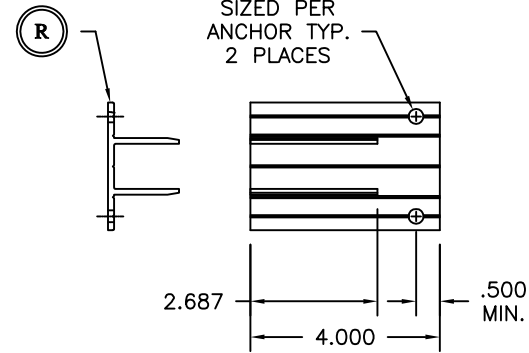
(Z) 4" REMOVABLE STORM BAR BASE,
STANDARD
ALUMINUM 6061-T6 OR 6005-T5



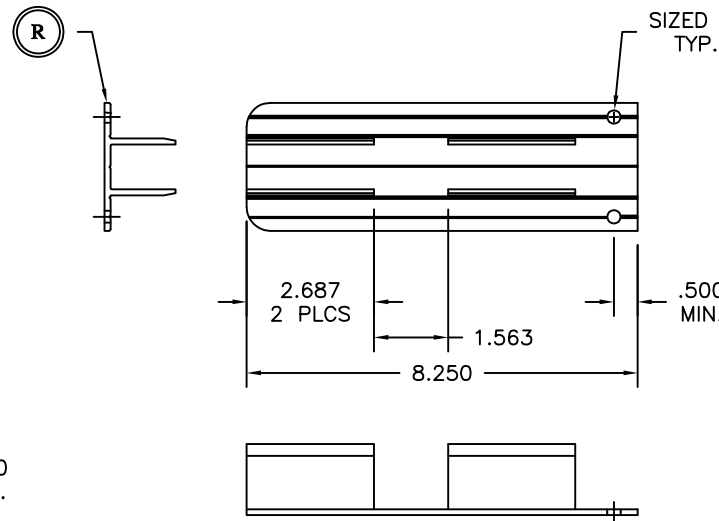
(AA) 3" REMOVABLE STORM BAR BASE,
EXTENDED
ALUMINUM 6061-T6 OR 6005-T5



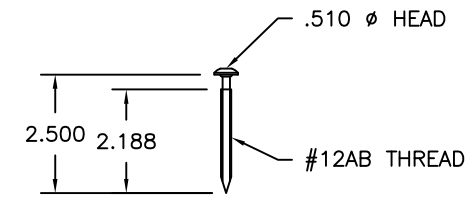
(AB) 3" REMOVABLE STORM BAR BASE,
EXTENDED
ALUMINUM 6061-T6 OR 6005-T5



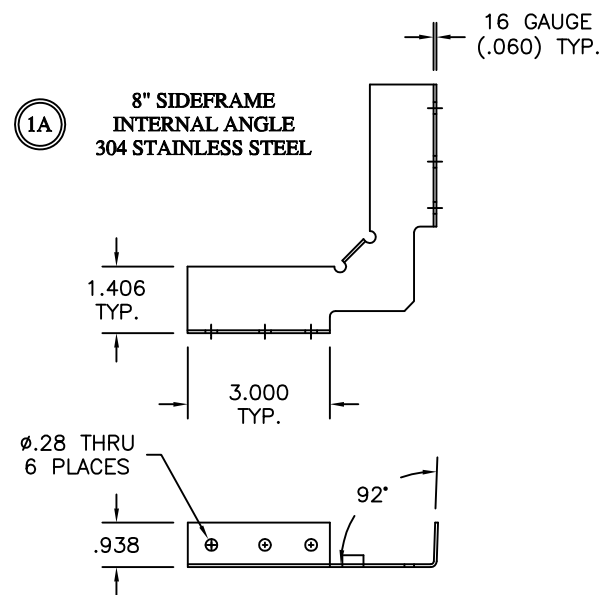
(AC) 3" FIXED STORM BAR BASE,
EXTENDED
ALUMINUM 6061-T6 OR 6005-T5



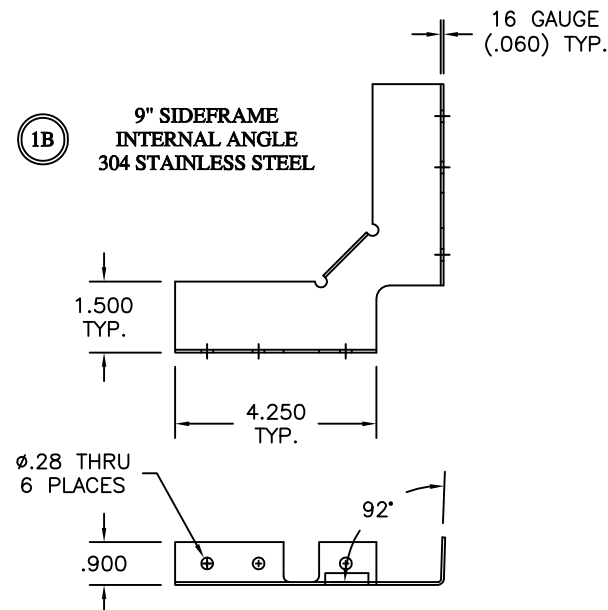
(AD) 3" FIXED STORM BAR BASE,
DOUBLE
ALUMINUM 6061-T6 OR 6005-T5



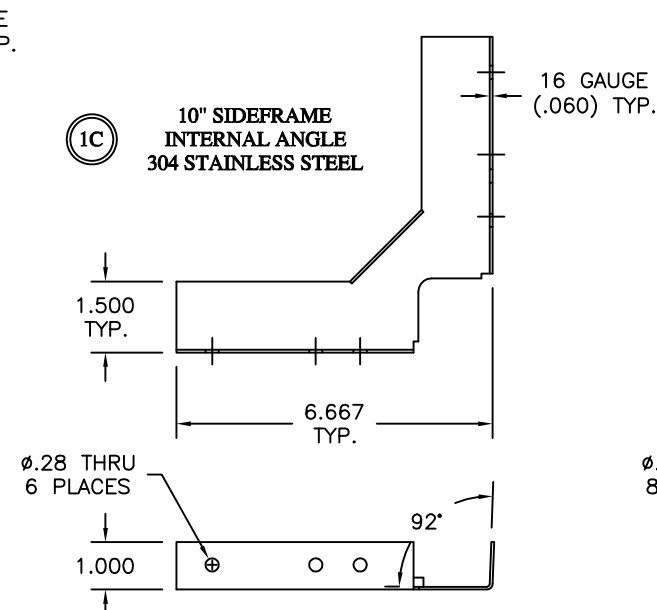
(AE) END RETENTION SCREW
302 HQ STAINLESS STEEL



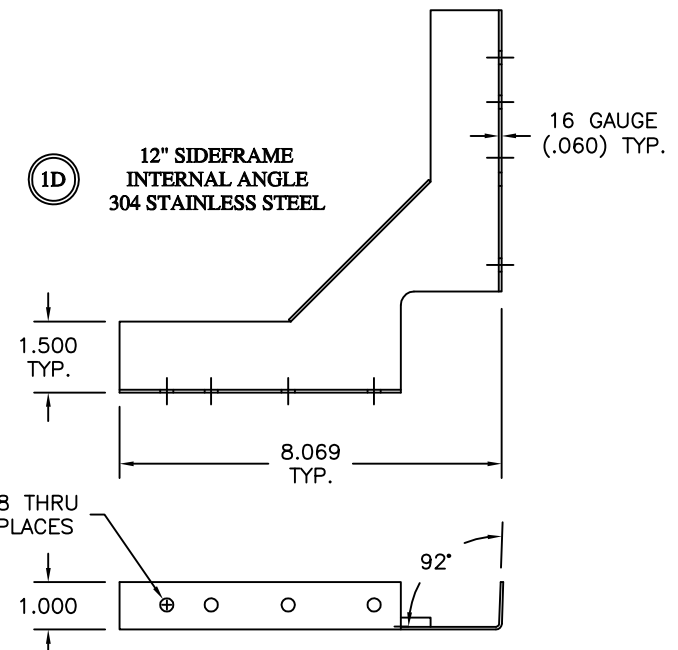
(1A) 8" SIDEFAME
INTERNAL ANGLE
304 STAINLESS STEEL



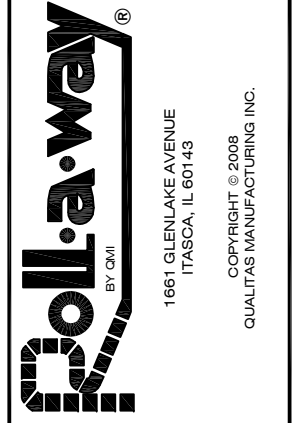
(1B) 9" SIDEFAME
INTERNAL ANGLE
304 STAINLESS STEEL



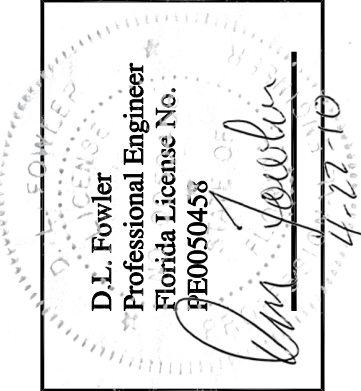
(1C) 10" SIDEFAME
INTERNAL ANGLE
304 STAINLESS STEEL



(1D) 12" SIDEFAME
INTERNAL ANGLE
304 STAINLESS STEEL

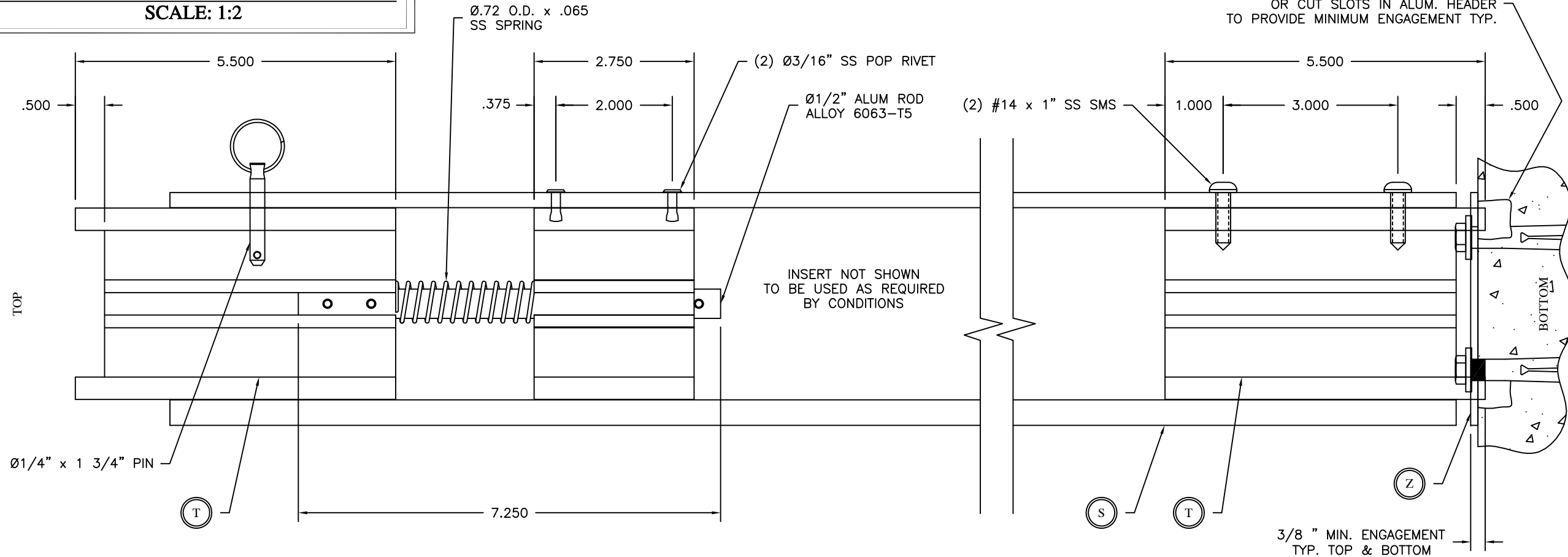


HVHZ
END RETENTION
PRODUCT APPROVAL

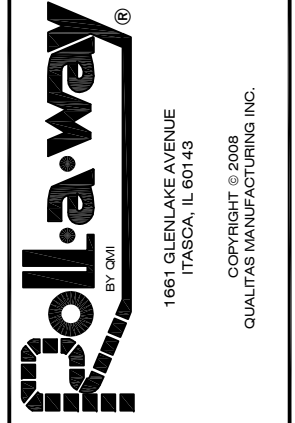
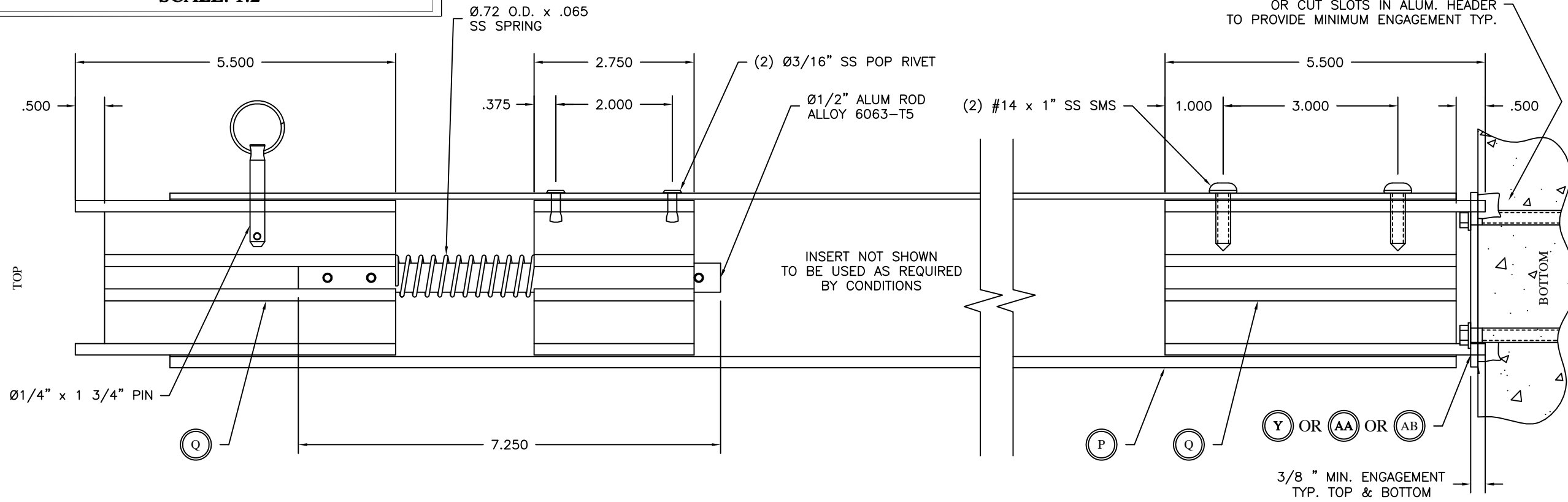


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| DATE: 4-16-10 | |
| APPROVED: DLF | |
| DATE: 4-16-10 | |
| DRAWING NO: 3-01-038 | |
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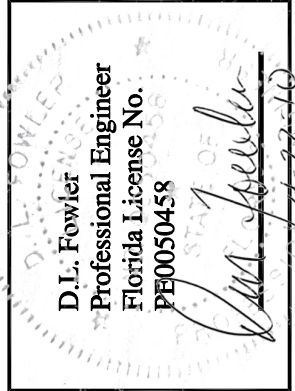
4" SPRING-LOADED STORM BAR ASSEMBLY
SCALE: 1:2



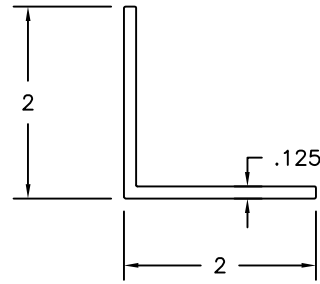
3" SPRING-LOADED STORM BAR ASSEMBLY
SCALE: 1:2



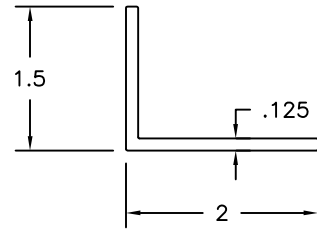
DRAWING TITLE:
HVHZ
END RETENTION
PRODUCT APPROVAL



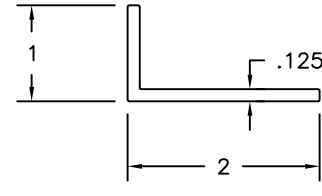
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| SHEET: | 4A OF 26 |



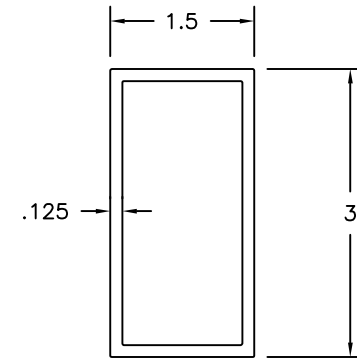
(N1) 2" x 2" x 1/8" ANGLE
6063-T5 ALLOY



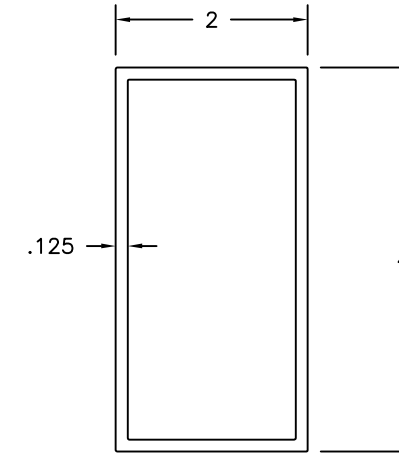
(M1) 1 1/2" x 2" x 1/8" ANGLE
6063-T5 ALLOY



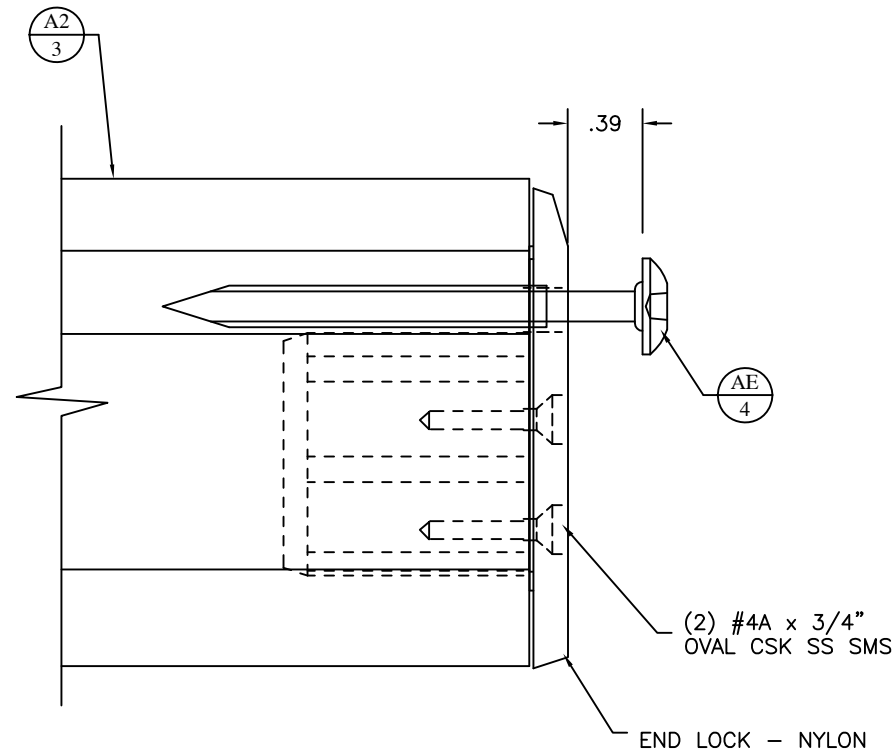
(M2) 1" x 2" x 1/8" ANGLE
6063-T5 ALLOY



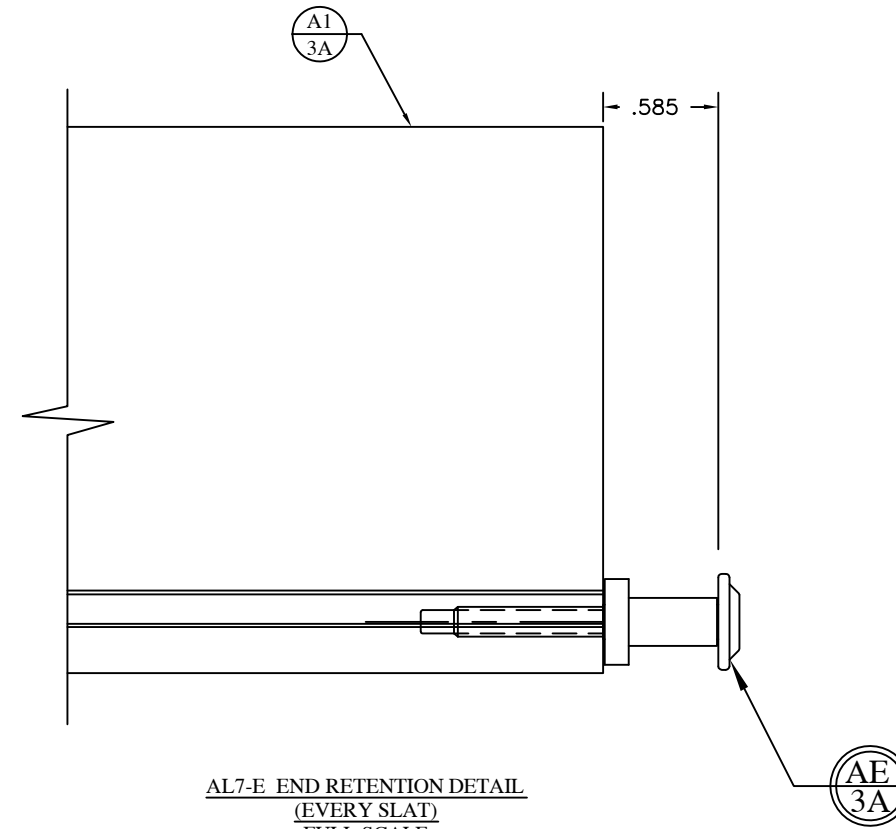
(G2) 1 1/2" x 3" POST
6063-T5 ALLOY



(G1) 2" x 4" POST
6063-T5 ALLOY



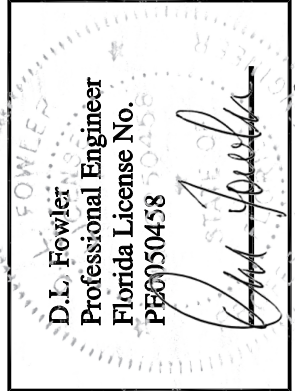
US60 END RETENTION DETAIL
(EVERY SLAT)
FULL SCALE



AL7-E END RETENTION DETAIL
(EVERY SLAT)
FULL SCALE



HVHZ
END RETENTION
PRODUCT APPROVAL



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|--------------------------------|--------|
| DRAWN: DLF | |
| DATE: 04-15-10 | |
| APPROVED: DLF | |
| DATE: 04-15-10 | |
| DRAWING NO: 3-01-038 | |
| SIZE: B | REV: - |
| SCALE: 1 : 2 | |
| SHEET: 5 OF 26 | |

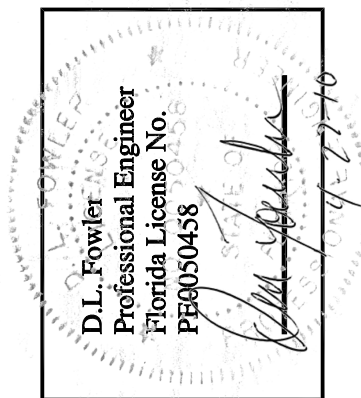
ALLOWABLE SLAT SPAN TABLE

| P.S.F. | AL7-E | US60ER |
|--------|-------|--------|
| 10 | 233" | 96" |
| 15 | 233" | 96" |
| 20 | 233" | 96" |
| 25 | 233" | 96" |
| 30 | 233" | 96" |
| 35 | 233" | 96" |
| 40 | 223" | 96" |
| 45 | 212" | 96" |
| 50 | 202" | 96" |
| 55 | 192" | 96" |
| 60 | 182" | 96" |
| 65 | 172" | 96" |
| 70 | 162" | 96" |
| 75 | 152" | 96" |
| 80 | 142" | 96" |
| 85 | 132" | 96" |
| 90 | 122" | 96" |
| 95 | 112" | 96" |
| 100 | 102" | 96" |



HVHZ
END RETENTION
PRODUCT APPROVAL

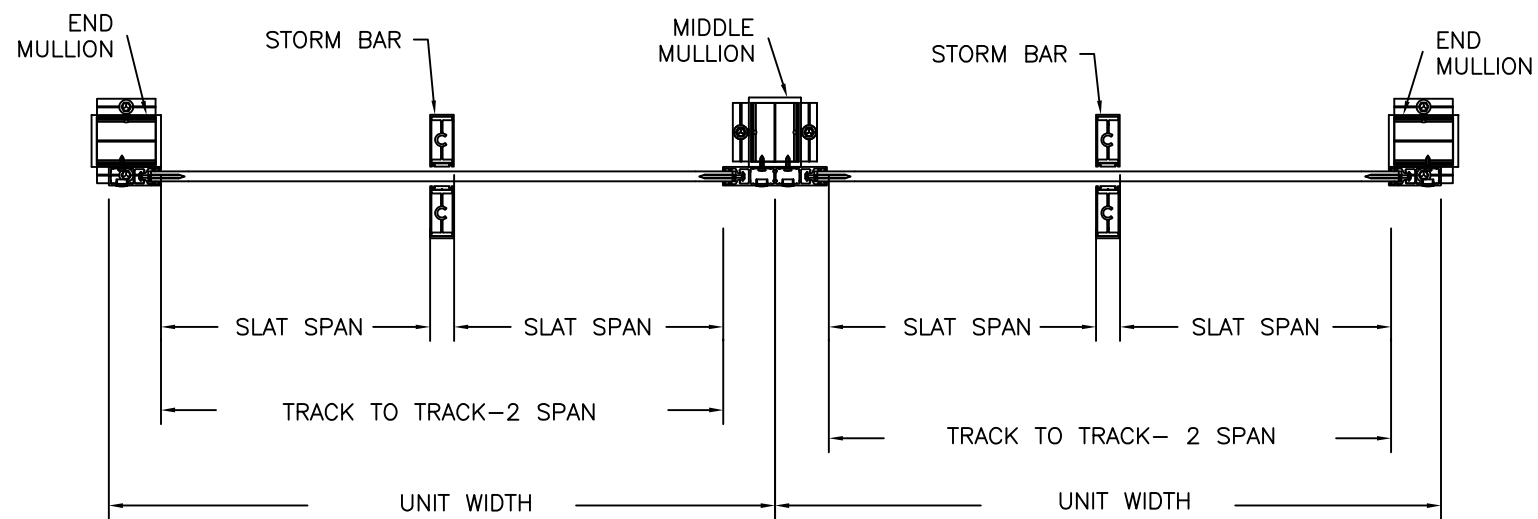
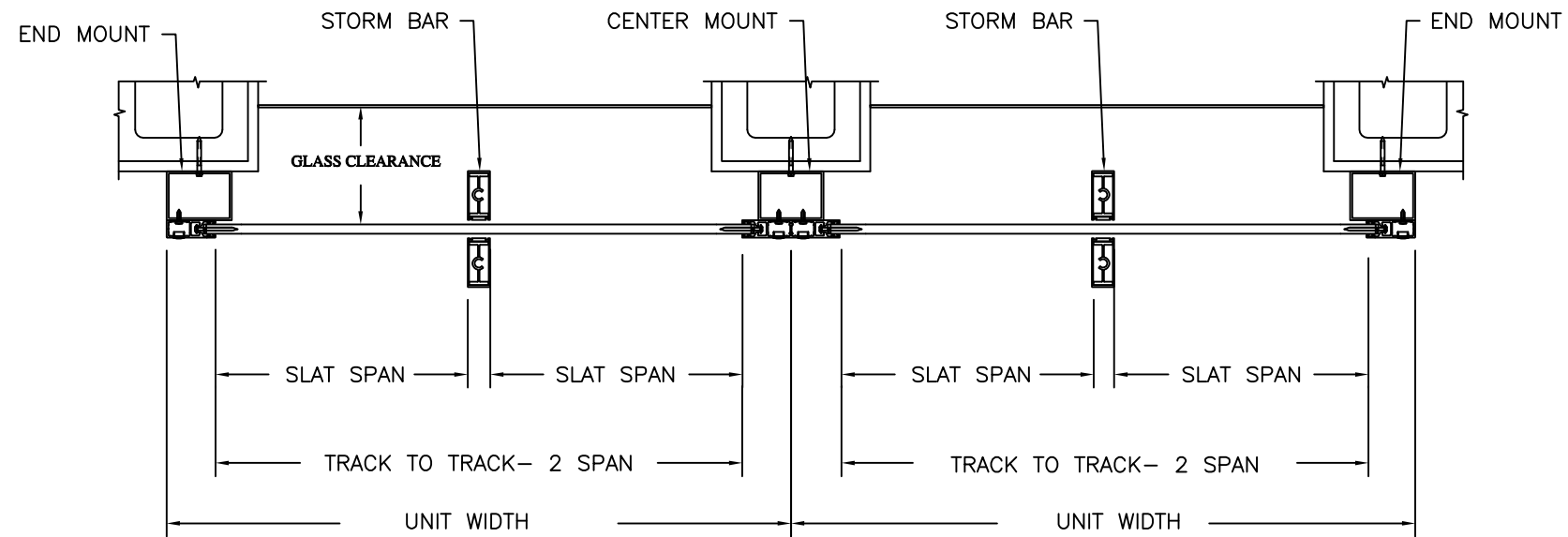
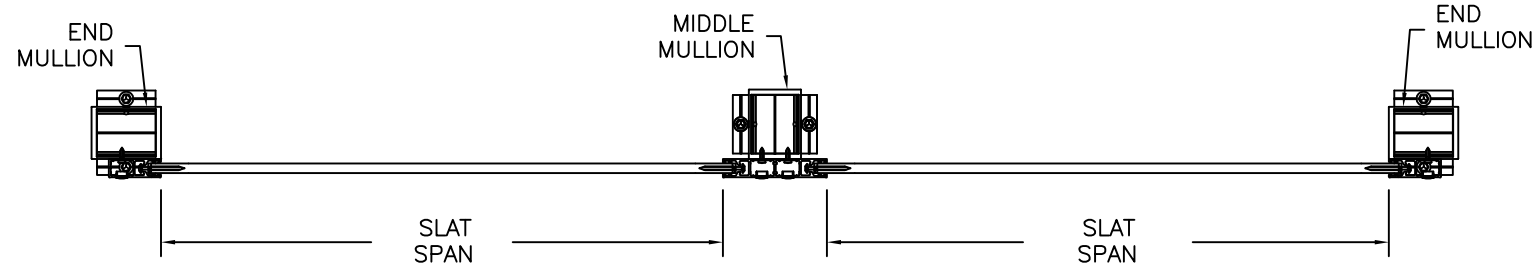
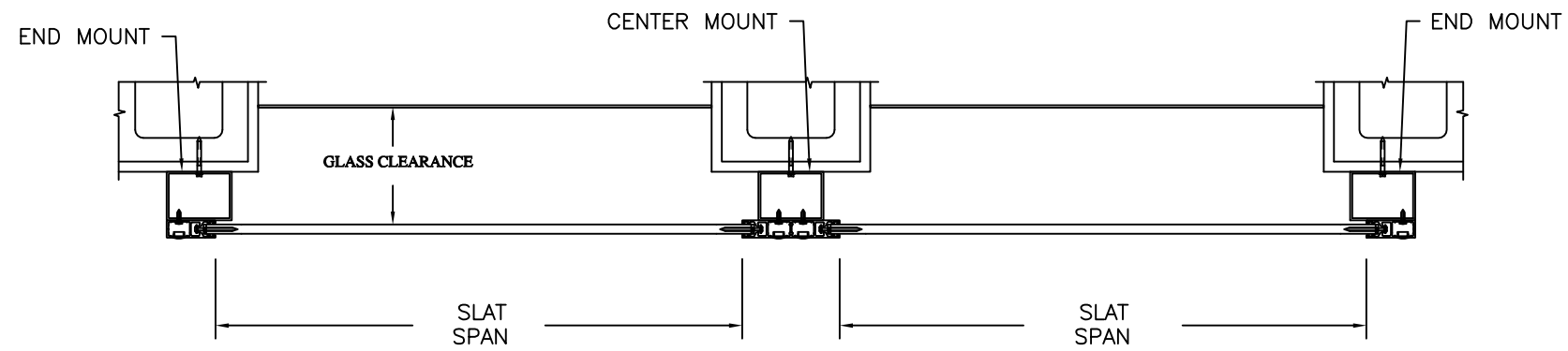
DRAWING TITLE:



NOTES:

1. THESE PERFORMANCE SPAN CHARTS DO NOT GUARANTEE USAGE. TRACK ATTACHMENTS, BUILD-OUT, AND MULLIONS MUST BE VERIFIED PER INDIVIDUAL ALLOWABLE USAGE CHARTS.
2. MAXIMUM SHUTTER HEIGHT FOR THE US60ER SLAT IS 96 INCHES.

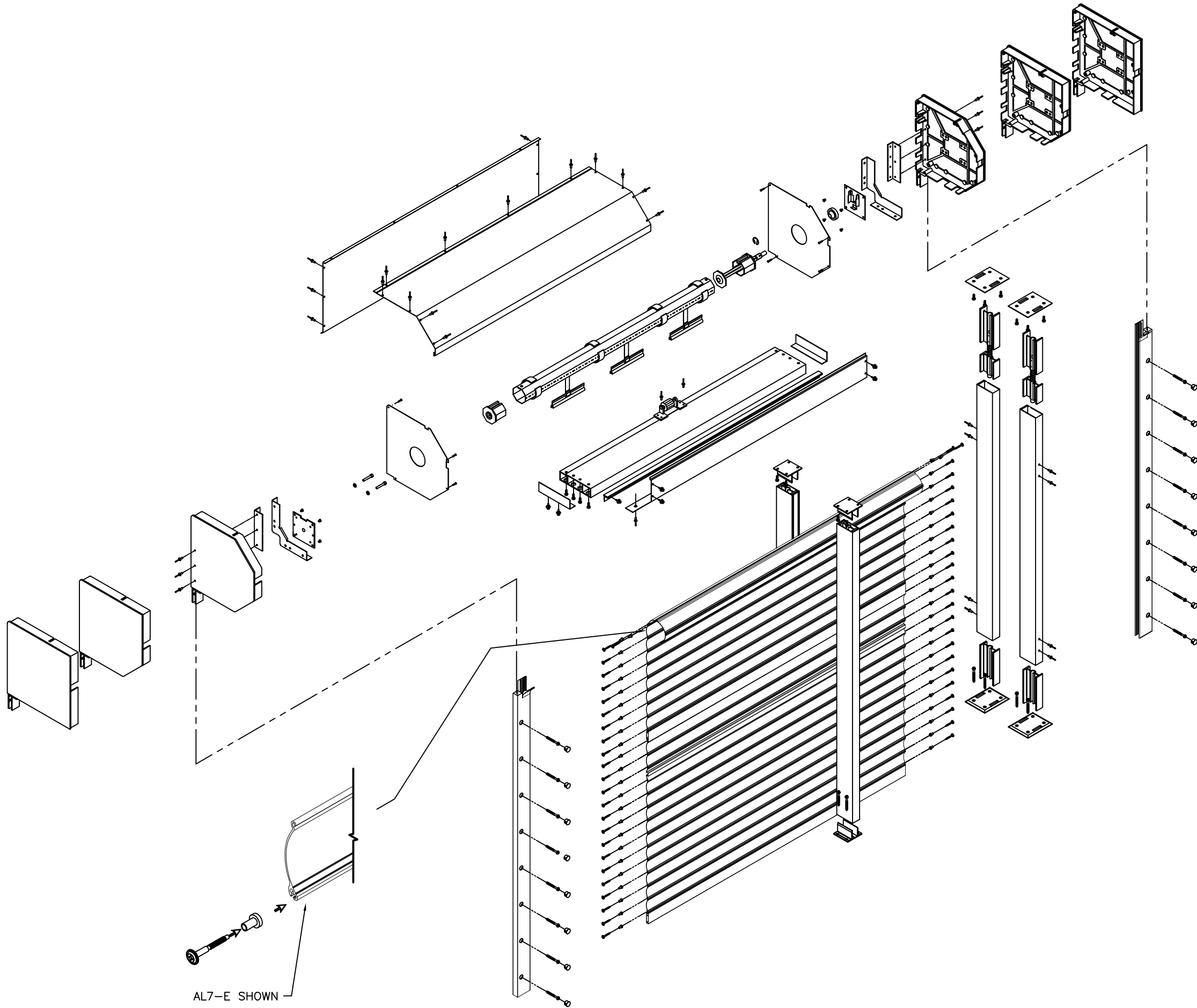
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| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| REV: | - |
| SCALE: | 1/2" = 1'-0" |
| SHEET: | 6 OF 26 |



DRAWING TITLE:
**HVHZ
END RETENTION
PRODUCT APPROVAL**



| | |
|-------------|--------------|
| DRAWN: | DLF |
| DATE: | 04-19-10 |
| APPROVED: | DLF |
| DATE: | 04-19-10 |
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| SHEET: | 8 OF 26 |



DRAWING TITLE:

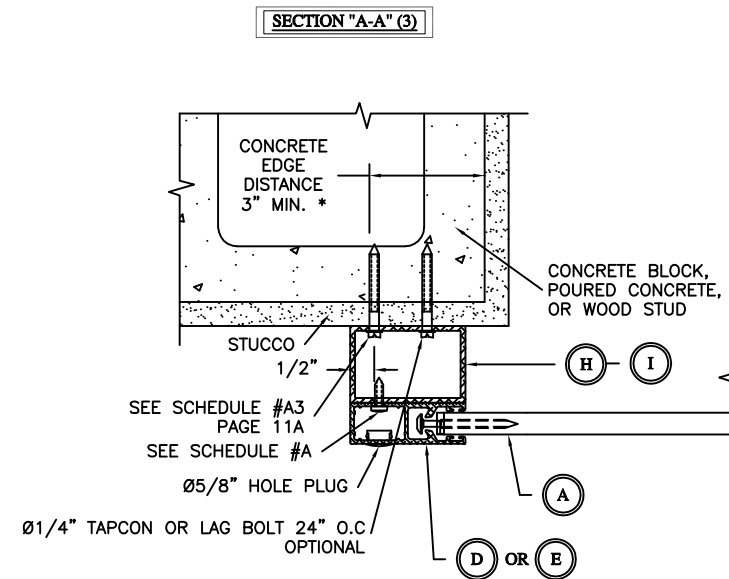
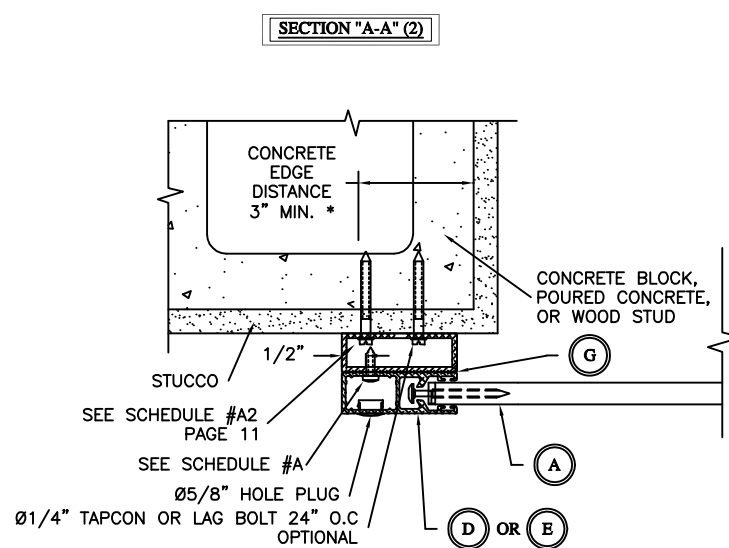
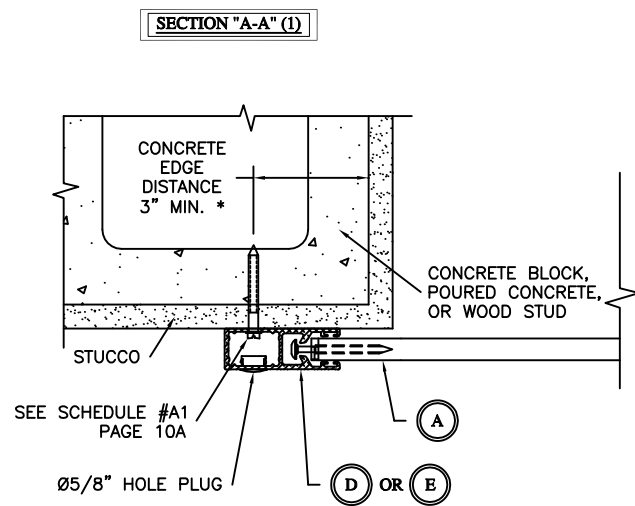
**HVHZ
END RETENTION
PRODUCT APPROVAL**

D.L. Fowler
Professional Engineer
Florida License No.
PE0050458

Carl Fowler

4-22-10

| | |
|--------------------------------|--------|
| DRAWN: <i>DLF</i> | |
| DATE: <i>04-19-10</i> | |
| APPROVED: <i>DLF</i> | |
| DATE: <i>04-19-10</i> | |
| DRAWING NO: 3-01-038 | |
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| SHEET: 9 OF 26 | |



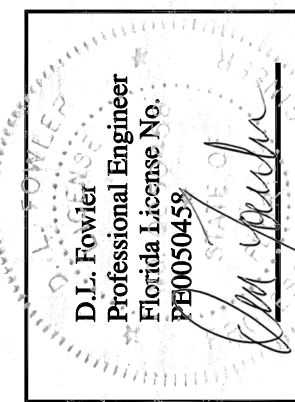
* WOOD SCREWS SHALL BE CENTERED IN 2" FACE OF STUD.

| PSF\SLAT SPAN | HOLE SPACING O.C. SCHEDULE # A * | | | | | | | | | | | | | | | | | | | |
|---------------|----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|
| | 36" | 42" | 48" | 54" | 60" | 66" | 72" | 84" | 96" | 108" | 120" | 144" | 156" | 168" | 180" | 192" | 204" | 216" | 228" | 240" |
| 10 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 15 | 10 | 9 | 8 | 7 | 6 | 6 | 5 | 5 | 5 |
| 15 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 15 | 12 | 9 | 7 | 6 | 6 | 5 | 4 | 4 | 4 | 3 | 3 |
| 20 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 14 | 11 | 8 | 7 | 5 | 5 | 4 | 4 | 3 | 3 | 3 | 3 | 2 |
| 25 | 18 | 18 | 18 | 18 | 18 | 18 | 16 | 11 | 8 | 7 | 6 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 2 | 2 |
| 30 | 18 | 18 | 18 | 18 | 18 | 16 | 13 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 |
| 35 | 18 | 18 | 18 | 18 | 17 | 13 | 10 | 7 | 6 | 5 | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 1.5 | 1.5 | 1.5 |
| 40 | 18 | 18 | 18 | 18 | 13 | 10 | 8 | 6 | 5 | 4 | 4 | 3 | 3 | 2 | 2 | 2 | 1.5 | 1.5 | 1.5 | 1.5 |
| 45 | 18 | 18 | 18 | 16 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2 | 2 | 2 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| 50 | 18 | 18 | 18 | 14 | 10 | 8 | 7 | 5 | 4 | 3 | 3 | 2 | 2 | 2 | 1.5 | 1.5 | 1.5 | 1.5 | 1 | 1 |
| 55 | 18 | 18 | 17 | 11 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2 | 2 | 1.5 | 1.5 | 1.5 | 1.5 | 1 | 1 | 1 |
| 60 | 18 | 18 | 15 | 10 | 8 | 6 | 5 | 4 | 3 | 3 | 3 | 2 | 1.5 | 1.5 | 1.5 | 1.5 | 1 | 1 | 1 | 1 |
| 65 | 18 | 18 | 13 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2 | 2 | 1.5 | 1.5 | 1.5 | 1 | 1 | 1 | 1 | 1 |
| 70 | 18 | 17 | 12 | 8 | 7 | 5 | 5 | 4 | 3 | 3 | 2 | 2 | 1.5 | 1.5 | 1.5 | 1 | 1 | 1 | 1 | 1 |
| 75 | 18 | 15 | 11 | 8 | 6 | 5 | 4 | 3 | 3 | 2 | 2 | 1.5 | 1.5 | 1.5 | 1 | 1 | 1 | 1 | 1 | 1 |
| 80 | 18 | 14 | 10 | 7 | 6 | 5 | 4 | 3 | 3 | 2 | 2 | 1.5 | 1.5 | 1 | 1 | 1 | 1 | 1 | 1 | N/A |
| 85 | 18 | 13 | 9 | 7 | 5 | 4 | 4 | 3 | 3 | 2 | 1.5 | 1.5 | 1.5 | 1 | 1 | 1 | 1 | 1 | N/A | N/A |
| 90 | 18 | 12 | 8 | 6 | 5 | 4 | 4 | 3 | 2 | 2 | 1.5 | 1.5 | 1 | 1 | 1 | 1 | 1 | 1 | N/A | N/A |
| 95 | 18 | 11 | 8 | 6 | 5 | 4 | 3 | 3 | 2 | 2 | 1.5 | 1.5 | 1 | 1 | 1 | 1 | 1 | 1 | N/A | N/A |
| 100 | 18 | 10 | 7 | 5 | 4 | 4 | 3 | 3 | 2 | 1.5 | 1.5 | 1 | 1 | 1 | 1 | 1 | N/A | N/A | N/A | N/A |
| 120 | 12 | 8 | 5 | 4 | 4 | 3 | 3 | 2 | 1.5 | 1.5 | 1.5 | 1 | 1 | 1 | N/A | N/A | N/A | N/A | N/A | N/A |
| 140 | 10 | 6 | 5 | 4 | 3 | 3 | 2 | 2 | 1.5 | 1.5 | 1 | 1 | 1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 160 | 8 | 5 | 4 | 3 | 3 | 2 | 2 | 1.5 | 1.5 | 1 | 1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 180 | 7 | 4 | 4 | 3 | 2 | 2 | 2 | 1.5 | 1 | 1 | 1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 200 | 6 | 4 | 3 | 3 | 2 | 2 | 1.5 | 1.5 | 1 | 1 | 1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 220 | 5 | 4 | 3 | 2 | 2 | 2 | 1.5 | 1 | 1 | 1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 240 | 4 | 3 | 3 | 2 | 1.5 | 1.5 | 1.5 | 1 | 1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 260 | 4 | 3 | 2 | 2 | 1.5 | 1.5 | 1 | 1 | 1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 280 | 4 | 3 | 2 | 1.5 | 1.5 | 1.5 | 1 | 1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

*1/8" ALUM 6063-T6 ALLOY, # 14 X 3/4" SS SMS (MINIMUM 2" O.C. FOR HOLLOW CAVITY RAILS)

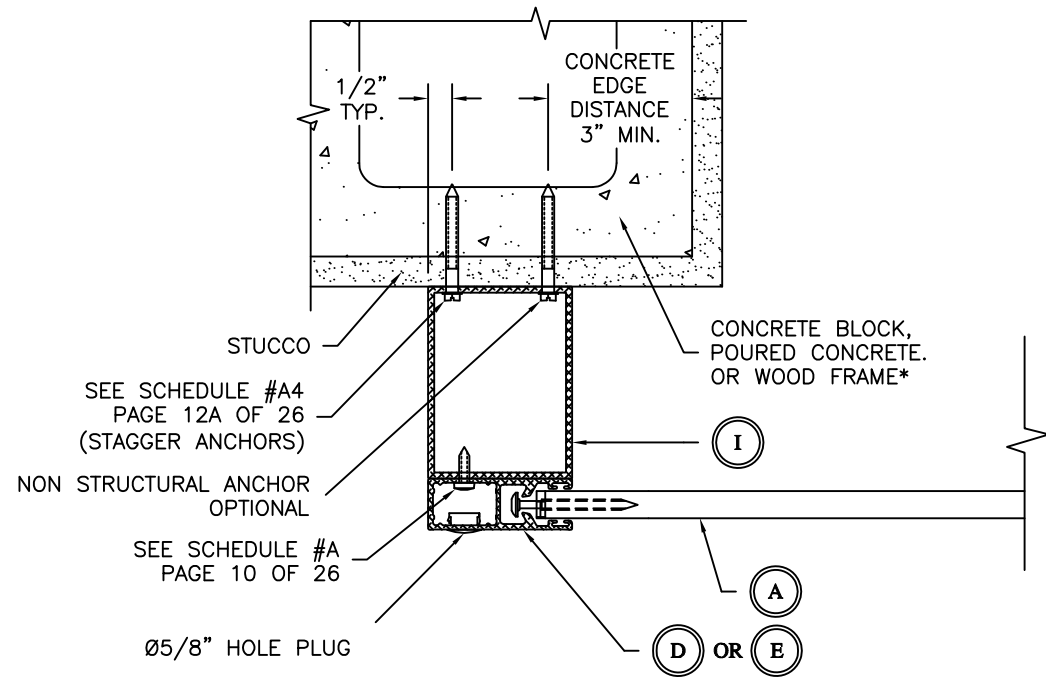


HVHZ
END RETENTION
PRODUCT APPROVAL

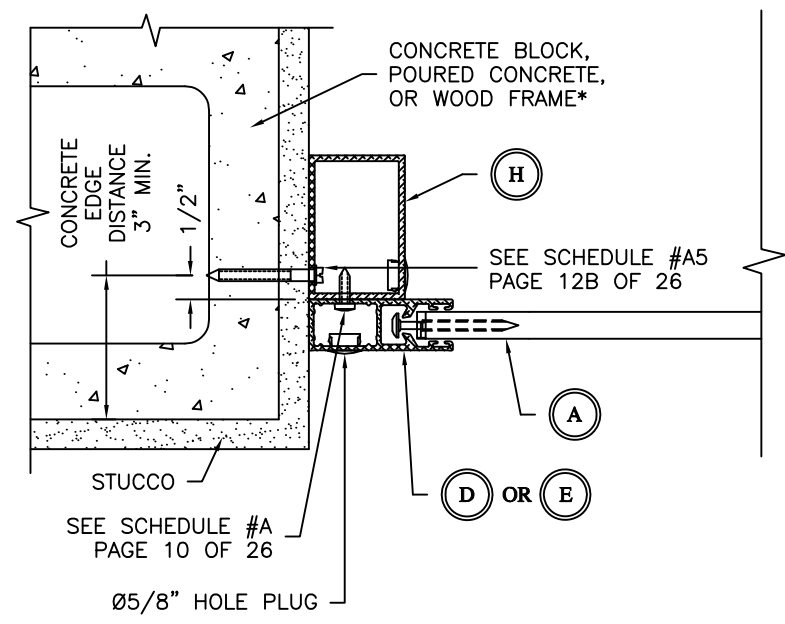


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| SCALE: | 1 : 4 |
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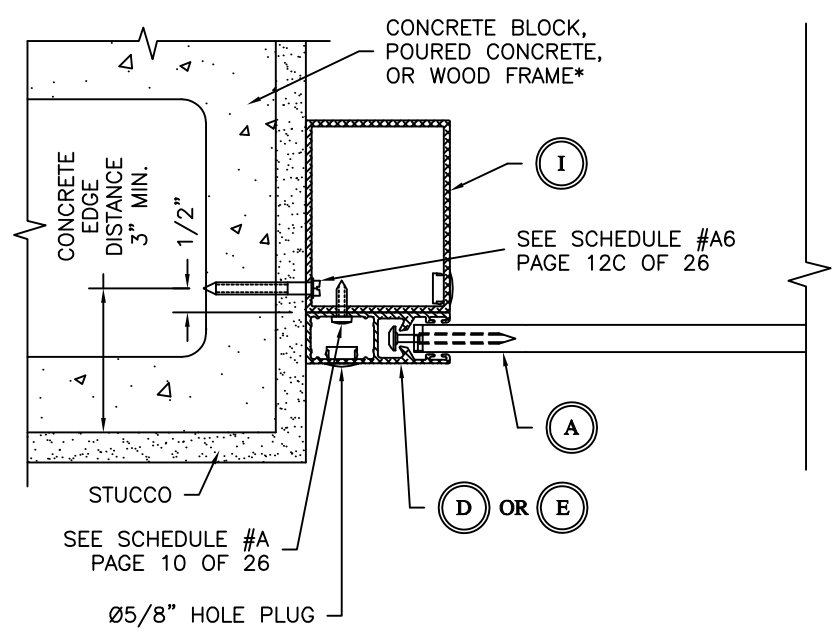
SECTION "A-A" (4)



SECTION "A-A" (5)



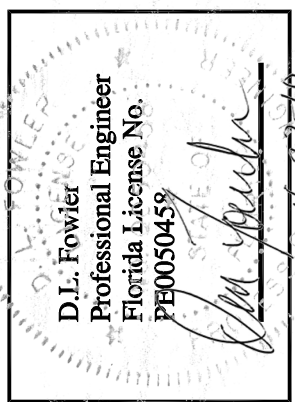
SECTION "A-A" (6)



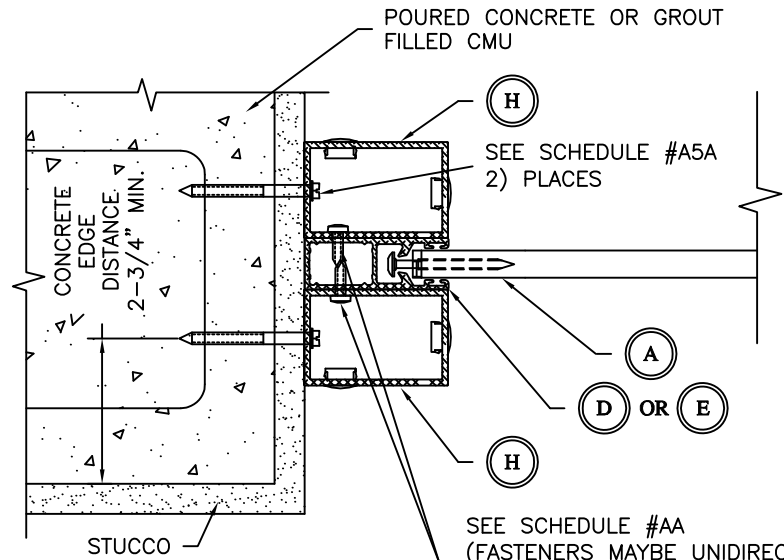
* WOOD SCREWS SHALL BE CENTERED IN 2" FACE OF STUD.



HVHZ
END RETENTION
PRODUCT APPROVAL



| | |
|-------------|----------|
| DRAWN: | DLF |
| DATE: | 04-19-10 |
| APPROVED: | DLF |
| DATE: | 04-19-10 |
| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| SCALE: | 1 : 4 |
| SHEET: | 12 OF 26 |



SECTION "A-A" (5A)

SEE SCHEDULE #AA
(FASTENERS MAYBE UNIDIRECTIONAL DOWN TO 3" O.C. PROVIDED THE SMS ARE STAGGERED). FASTENERS SHOWN AS INSTALLED IN OPPOSITE DIRECTION.

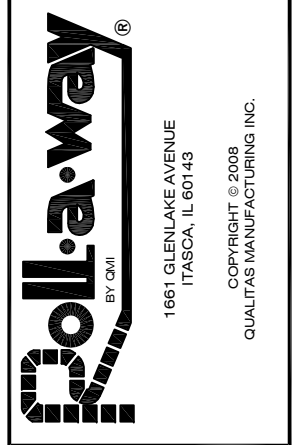
| PSF\SLAT SPAN | HOLE SPACING O.C. SCHEDULE #AA* | | | | | | | | | | | | | | | | | | | |
|---------------|---------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|
| | 36" | 42" | 48" | 54" | 60" | 66" | 72" | 84" | 96" | 108" | 120" | 144" | 156" | 168" | 180" | 192" | 204" | 216" | 228" | 240" |
| 10 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| 15 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 16 | 15 | 14 |
| 20 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 16 | 15 | 14 | 13 | 12 | 11 |
| 25 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 16 | 15 | 13 | 12 | 12 | 11 | 10 | 10 |
| 30 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 9 | 8 |
| 35 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 17 | 14 | 12 | 11 | 10 | 9 | 8 | 8 | 7 |
| 40 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 15 | 12 | 11 | 10 | 9 | 8 | 8 | 7 | 7 |
| 45 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 16 | 14 | 11 | 10 | 9 | 8 | 8 | 7 | 6 | 6 |
| 50 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 17 | 15 | 13 | 10 | 9 | 8 | 8 | 7 | 6 | 6 | 6 |
| 55 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 16 | 14 | 12 | 9 | 9 | 8 | 7 | 7 | 6 | 6 | 5 |
| 60 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 15 | 13 | 11 | 9 | 8 | 7 | 7 | 6 | 6 | 5 | 5 |
| 65 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 17 | 14 | 12 | 10 | 8 | 7 | 7 | 6 | 6 | 5 | 5 | 5 |
| 70 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 15 | 13 | 11 | 10 | 8 | 7 | 7 | 6 | 6 | 5 | 5 | 4 |
| 75 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 15 | 12 | 10 | 9 | 7 | 7 | 6 | 5 | 5 | 5 | 4 | 4 |
| 80 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 14 | 11 | 10 | 9 | 7 | 6 | 6 | 5 | 5 | 5 | 4 | 4 |
| 85 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 17 | 13 | 11 | 9 | 8 | 7 | 6 | 6 | 5 | 5 | 5 | 4 | 4 |
| 90 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 16 | 12 | 10 | 9 | 8 | 6 | 6 | 5 | 5 | 5 | 4 | 4 | 3 |
| 95 | 18 | 18 | 18 | 18 | 18 | 18 | 17 | 15 | 12 | 10 | 9 | 8 | 6 | 6 | 5 | 5 | 5 | 4 | 3 | 3 |
| 100 | 18 | 18 | 18 | 18 | 18 | 18 | 16 | 14 | 11 | 10 | 8 | 7 | 6 | 5 | 5 | 4 | 4 | 3 | 3 | 3 |
| 120 | 18 | 18 | 18 | 18 | 16 | 14 | 12 | 10 | 8 | 7 | 6 | 5 | 5 | 4 | 4 | 4 | 3 | 3 | 3 | 3 |
| 140 | 18 | 18 | 18 | 17 | 14 | 12 | 10 | 9 | 7 | 6 | 6 | 5 | 4 | 4 | 3 | 3 | 3 | 3 | 2.5 | 2.5 |
| 160 | 18 | 18 | 18 | 14 | 12 | 11 | 9 | 8 | 7 | 6 | 5 | 4 | 4 | 3 | 3 | 3 | 3 | 2.5 | 2.5 | 2 |
| 180 | 18 | 18 | 17 | 13 | 11 | 10 | 9 | 7 | 6 | 5 | 5 | 4 | 4 | 3 | 3 | 3 | 2.5 | 2.5 | 2 | 2 |
| 200 | 18 | 18 | 15 | 12 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 4 | 3 | 3 | 3 | 2.5 | 2.5 | 2 | 2 | 2 |
| 220 | 18 | 17 | 13 | 11 | 9 | 8 | 7 | 6 | 5 | 5 | 4 | 3 | 3 | 3 | 2.5 | 2.5 | 2 | 2 | 2 | 2 |
| 240 | 18 | 16 | 12 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 4 | 3 | 3 | 2.5 | 2.5 | 2 | 2 | 2 | 2 | 1.5 |
| 260 | 18 | 15 | 11 | 9 | 8 | 7 | 6 | 5 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2 | 2 | 2 | 2 | 1.5 | 1.5 |
| 280 | 18 | 14 | 11 | 9 | 8 | 7 | 6 | 5 | 4 | 4 | 3 | 2.5 | 2.5 | 2.5 | 2 | 2 | 2 | 1.5 | 1.5 | 1.5 |

*1/8" ALUM 6063-T6 ALLOY, #14 X 3/4" SS SMS

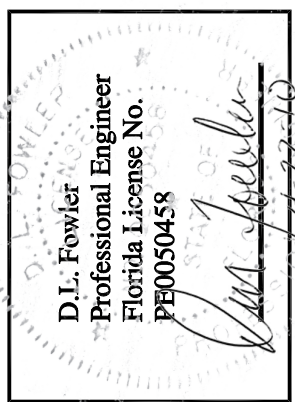
| PSF\SLAT SPAN | HOLE SPACING O.C. SCHEDULE #A5A* | | | | | | | | | | | | | | | | | | | |
|---------------|----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|
| | 36" | 42" | 48" | 54" | 60" | 66" | 72" | 84" | 96" | 108" | 120" | 144" | 156" | 168" | 180" | 192" | 204" | 216" | 228" | 240" |
| 10 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 16 | 12 | 10 | 9 | 8 | 7 | 7 | 6 | 6 | 6 |
| 15 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 17 | 13 | 10 | 8 | 7 | 6 | 6 | 5 | 4 | 4 | 4 |
| 20 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 16 | 12 | 9 | 8 | 6 | 5 | 5 | 4 | 4 | 3 | 3 |
| 25 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 4 | 4 | 3 | 3 | 3 |
| 30 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 4 | 3 | 3 | 3 | 3 |
| 35 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 40 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 45 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 50 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 55 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 60 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 65 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 70 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 75 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 80 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 85 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 90 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 95 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 100 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 120 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 140 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 160 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 180 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 200 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 220 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 240 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 260 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |
| 280 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2.5 | 2.5 | 2.5 |

#3320 PSI CONCRETE OR CELL FILLED CMU, 1/4" DIA. TAPCON, 2" EMBEDMENT, 3" EDGE DISTANCE

HIGHLIGHTED AREA CONCRETE OR CELL FILLED CMU, 1/4" DIA. WEDGE BOLT 3" EMBEDMENT, 2.75" EDGE DISTANCE



HVHZ
END RETENTION
PRODUCT APPROVAL

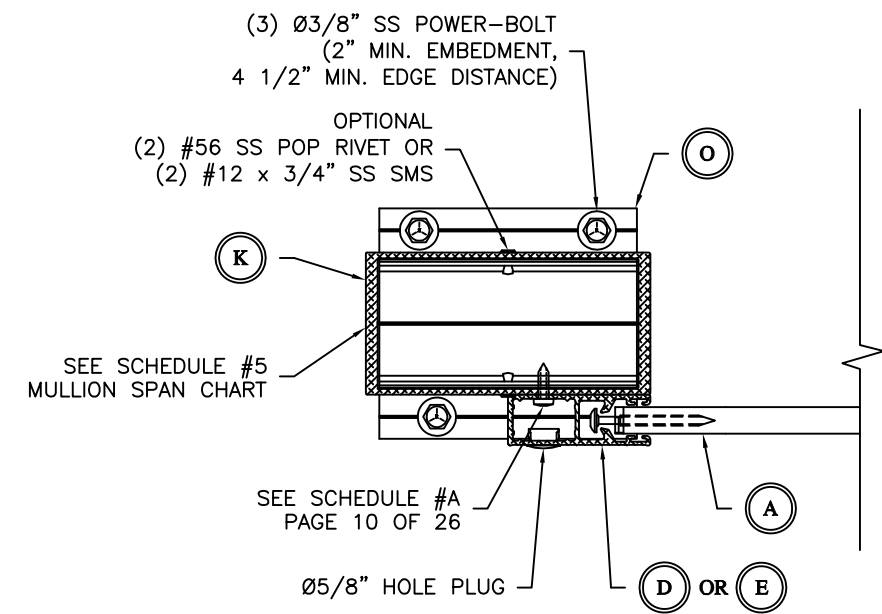
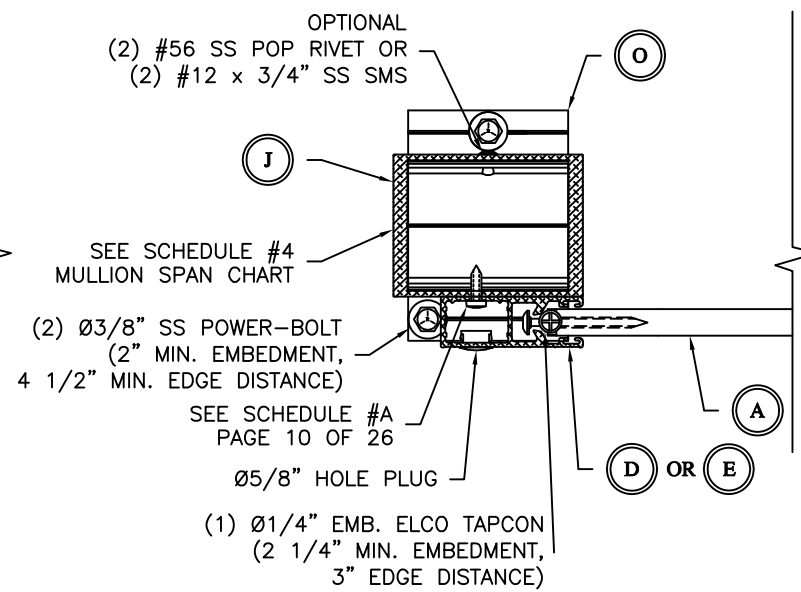
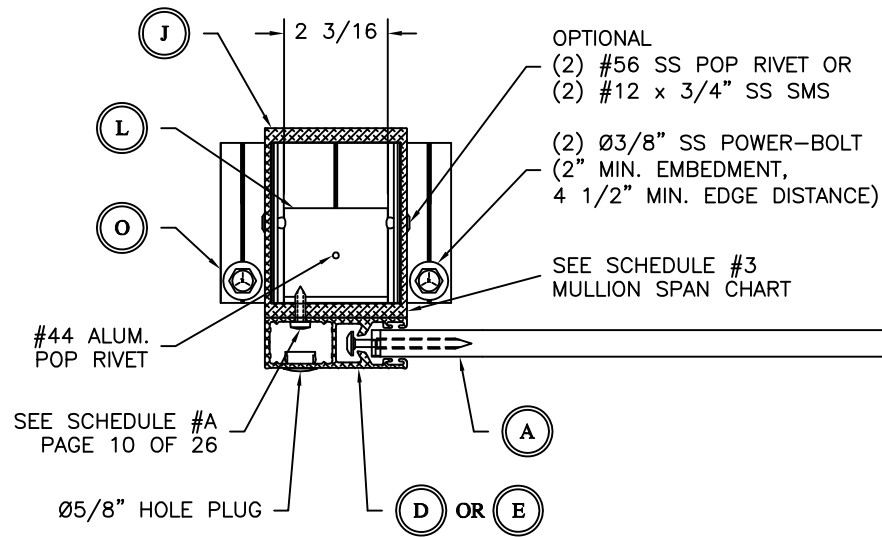


| | |
|-------------|-----------|
| DRAWN: | DLF |
| DATE: | 04-19-10 |
| APPROVED: | DLF |
| DATE: | 04-19-10 |
| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| SCALE: | 1 : 4 |
| SHEET: | 12D OF 26 |

SECTION "A-A" (7)

SECTION "A-A" (8)

SECTION "A-A" (9)



SCHEDULE # 3

NOTE: MAXIMUM GAP BETWEEN CUT END OF POST AND POST BASE IS 1/4"

| A-A (7) MULLION MAXIMUM HEIGHT (IN) | | | | | | | | | | | | | | | | |
|-------------------------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| PSF | SLAT SPAN (IN) - CLEAR SPAN (NO STORM BARS) - SEE PAGE 8 | | | | | | | | | | | | | | | |
| | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 108 | 120 | 132 | 144 | 156 | 168 | 180 |
| 10 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 219.6 | 175.1 | 153.1 | 139.1 | 124.1 | 116.0 | 106.3 | 97.7 | 91.0 | 85.5 | 80.8 |
| 15 | 240.0 | 240.0 | 219.1 | 191.9 | 174.9 | 150.0 | 135.0 | 124.4 | 117.0 | 103.4 | 93.2 | 84.4 | 78.4 | 73.4 | 69.3 | 65.8 |
| 20 | 240.0 | 214.0 | 173.0 | 152.0 | 139.0 | 126.1 | 117.0 | 107.4 | 98.5 | 87.1 | 78.7 | 72.5 | 67.5 | 63.4 | 59.9 | 56.9 |
| 25 | 240.0 | 192.0 | 145.0 | 133.0 | 122.1 | 112.4 | 101.9 | 92.9 | 86.5 | 76.7 | 69.8 | 64.5 | 60.2 | 56.6 | 53.6 | 50.1 |
| 30 | 240.0 | 175.0 | 134.0 | 122.0 | 108.5 | 99.0 | 89.8 | 83.0 | 77.2 | 69.3 | 63.3 | 58.7 | 54.8 | 51.3 | 46.2 | 42.0 |
| 35 | 240.0 | 160.0 | 125.0 | 111.8 | 99.0 | 88.5 | 81.2 | 75.7 | 71.0 | 63.6 | 58.4 | 54.2 | 49.5 | 44.1 | 39.8 | 36.1 |
| 40 | 240.0 | 150.0 | 120.0 | 103.3 | 90.4 | 82.0 | 74.6 | 70.0 | 65.6 | 59.5 | 54.4 | 49.4 | 43.5 | 38.8 | 35.0 | 31.9 |
| 45 | 193.0 | 134.0 | 111.0 | 93.8 | 82.9 | 75.7 | 70.2 | 65.5 | 61.6 | 55.8 | 50.7 | 43.9 | 38.8 | 34.6 | 31.2 | 28.5 |
| 50 | 155.5 | 121.0 | 100.7 | 87.0 | 77.8 | 70.7 | 65.8 | 61.7 | 58.3 | 52.9 | 45.6 | 39.5 | 34.9 | 31.3 | 28.3 | 25.8 |
| 60 | 136.0 | 110.8 | 88.2 | 77.4 | 69.0 | 63.6 | 59.5 | 55.7 | 52.7 | 44.5 | 38.0 | 33.1 | 29.3 | 26.3 | 23.8 | 21.8 |
| 70 | 121.0 | 93.2 | 79.2 | 69.5 | 63.1 | 58.3 | 54.3 | 51.0 | 45.6 | 38.1 | 32.6 | 28.5 | 25.3 | 22.7 | 20.7 | 18.9 |
| 80 | 108.8 | 83.9 | 72.5 | 63.7 | 58.5 | 54.1 | 49.3 | 44.0 | 39.8 | 33.3 | 28.5 | 25.0 | 22.3 | 20.1 | 18.3 | 16.8 |
| 90 | 95.2 | 76.9 | 66.2 | 59.7 | 54.7 | 49.5 | 43.5 | 39.0 | 35.2 | 29.6 | 25.5 | 22.4 | 20.0 | 18.0 | 16.4 | 15.1 |
| 100 | 87.1 | 71.4 | 62.1 | 55.9 | 50.5 | 44.1 | 38.9 | 35.1 | 31.8 | 26.7 | 23.0 | 20.3 | 18.1 | 16.4 | 14.9 | 13.8 |
| 110 | 80.7 | 66.9 | 58.7 | 53.1 | 45.6 | 39.8 | 35.5 | 31.8 | 28.8 | 24.3 | 21.0 | 18.5 | 16.6 | 15.0 | 13.7 | 12.6 |
| 120 | 75.6 | 62.2 | 55.2 | 48.7 | 41.5 | 36.5 | 32.3 | 29.1 | 26.4 | 22.3 | 19.3 | 17.1 | 15.3 | 13.9 | 12.7 | 11.7 |
| 130 | 69.6 | 59.2 | 52.7 | 44.2 | 38.1 | 33.5 | 29.7 | 26.8 | 24.4 | 20.7 | 17.9 | 15.9 | 14.2 | 12.9 | 11.8 | 10.9 |
| 140 | 66.2 | 56.6 | 49.2 | 41.0 | 35.1 | 30.9 | 27.6 | 25.0 | 22.7 | 19.3 | 16.7 | 14.8 | 13.3 | 12.1 | 11.1 | 10.3 |

SCHEDULE # 4

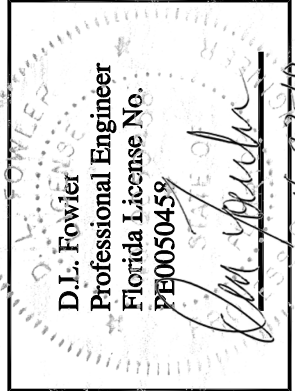
| A-A(8) MULLION MAXIMUM HEIGHT (IN) | | | | | | | | | | | | | | | | |
|------------------------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| PSF | SLAT SPAN (IN) - CLEAR SPAN (NO STORM BARS) - SEE PAGE 8 | | | | | | | | | | | | | | | |
| | 48.0 | 54.0 | 60.0 | 66.0 | 72.0 | 78.0 | 84.0 | 90.0 | 96.0 | 108.0 | 120.0 | 132.0 | 144.0 | 156 | 168 | 180 |
| 10.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 216.4 | 191.5 | 174.7 | 140.0 | 123.4 | 111.2 | 102.3 | 95.3 | 89.6 | 84.8 |
| 15.0 | 240.0 | 240.0 | 240.0 | 222.4 | 194.8 | 173.2 | 161.4 | 137.2 | 125.3 | 108.0 | 97.4 | 88.4 | 82.1 | 77.0 | 72.7 | 69.0 |
| 20.0 | 240.0 | 240.0 | 201.9 | 183.3 | 168.8 | 145.3 | 125.4 | 112.0 | 102.8 | 91.1 | 82.4 | 75.9 | 70.7 | 66.5 | 62.8 | 59.7 |
| 25.0 | 240.0 | 222.6 | 185.5 | 156.5 | 135.5 | 118.9 | 106.1 | 96.9 | 90.3 | 80.2 | 73.1 | 67.6 | 63.1 | 59.3 | 56.2 | 53.5 |
| 30.0 | 240.0 | 205.4 | 169.1 | 140.0 | 118.8 | 103.0 | 93.6 | 86.6 | 80.7 | 72.4 | 66.3 | 61.5 | 57.4 | 54.1 | 50.0 | 45.3 |
| 35.0 | 235.7 | 193.7 | 153.0 | 120.3 | 104.3 | 92.2 | 84.7 | 79.0 | 74.2 | 66.6 | 61.1 | 56.7 | 53.2 | 47.7 | 43.0 | 39.0 |
| 40.0 | 222.2 | 184.0 | 132.7 | 107.1 | 94.0 | 85.4 | 77.9 | 73.1 | 68.5 | 62.2 | 57.0 | 53.1 | 47.1 | 42.0 | 37.9 | 34.4 |
| 45.0 | 202.7 | 163.3 | 118.7 | 97.4 | 86.3 | 78.9 | 73.2 | 68.4 | 64.4 | 58.4 | 53.7 | 47.6 | 42.0 | 37.5 | 33.8 | 30.8 |
| 50.0 | 180.7 | 140.2 | 108.4 | 92.0 | 81.5 | 73.7 | 68.7 | 64.4 | 61.0 | 55.4 | 49.6 | 42.8 | 37.8 | 33.9 | 30.6 | 27.9 |
| 60.0 | 160.8 | 114.9 | 91.4 | 80.5 | 71.9 | 66.4 | 62.1 | 58.2 | 55.1 | 48.4 | 41.3 | 35.9 | 31.8 | 28.4 | 25.8 | 23.6 |
| 70.0 | 133.8 | 96.4 | 82.2 | 72.4 | 65.8 | 60.8 | 56.8 | 53.8 | 49.7 | 41.5 | 35.3 | 30.9 | 27.4 | 24.6 | 22.4 | 20.5 |
| 80.0 | 114.9 | 86.9 | 75.3 | 66.3 | 61.0 | 56.5 | 52.9 | 48.0 | 43.3 | 36.3 | 31.0 | 27.1 | 24.1 | 21.8 | 19.8 | 18.2 |
| 90.0 | 98.0 | 79.7 | 68.8 | 62.2 | 57.1 | 52.9 | 47.5 | 42.6 | 38.3 | 32.2 | 27.7 | 24.3 | 21.6 | 19.5 | 17.8 | 16.3 |
| 100.0 | 89.8 | 74.1 | 64.6 | 58.2 | 53.5 | 48.2 | 42.5 | 38.2 | 34.6 | 29.0 | 25.0 | 22.0 | 19.6 | 17.7 | 16.2 | 14.9 |
| 110.0 | 83.3 | 69.5 | 61.1 | 55.4 | 49.9 | 43.5 | 38.7 | 34.7 | 31.3 | 26.4 | 22.8 | 20.1 | 18.0 | 16.3 | 14.9 | 13.7 |
| 120.0 | 78.1 | 64.6 | 57.5 | 52.5 | 45.4 | 39.9 | 35.3 | 31.7 | 28.8 | 24.3 | 21.0 | 18.5 | 16.6 | 15.0 | 13.8 | 12.7 |
| 130.0 | 72.1 | 61.5 | 54.9 | 48.5 | 41.7 | 36.6 | 32.4 | 29.2 | 26.6 | 22.5 | 19.5 | 17.2 | 15.4 | 14.0 | 12.8 | 11.8 |
| 140.0 | 68.6 | 58.8 | 52.7 | 45.0 | 38.5 | 33.8 | 30.2 | 27.2 | 24.7 | 20.9 | 18.2 | 16.1 | 14.4 | 13.1 | 12.0 | 11.1 |

SCHEDULE # 5

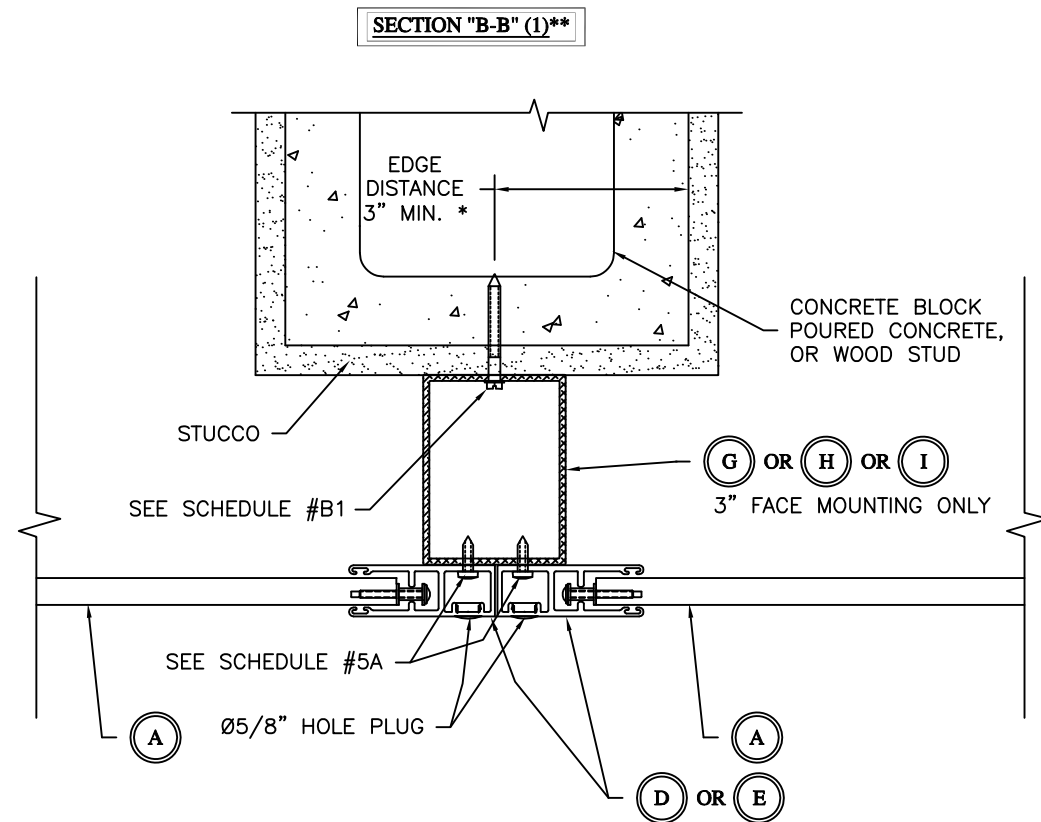
| A-A(9) MULLION MAXIMUM HEIGHT (IN) | | | | | | | | | | | | | | | | |
|------------------------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | SLAT SPAN (IN) - CLEAR SPAN (NO STORM BARS) - SEE PAGE 8 | | | | | | | | | | | | | | | |
| | 48.0 | 54.0 | 60.0 | 66.0 | 72.0 | 78.0 | 84.0 | 90.0 | 96.0 | 108.0 | 120.0 | 132.0 | 144.0 | 156 | 168 | 180 |
| 10.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 221.6 | 190.9 | 172.8 | 156.7 | 144.3 | 134.9 | 128.8 | 121.4 |
| 15.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 224.8 | 204.5 | 184.0 | 172.0 | 153.1 | 138.6 | 128.0 | 119.4 | 112.8 | 107.7 |
| 20.0 | 240.0 | 240.0 | 240.0 | 224.0 | 204.4 | 183.8 | 166.7 | 153.7 | 143.9 | 130.3 | 119.0 | 111.1 | 104.2 | 99.0 | 94.1 | 89.8 |
| 25.0 | 240.0 | 240.0 | 224.0 | 197.2 | 171.3 | 156.6 | 144.3 | 134.7 | 127.3 | 115.3 | 106.4 | 99.3 | 93.4 | 88.3 | 84.2 | 80.4 |
| 30.0 | 240.0 | 224.0 | 197.4 | 169.9 | 153.0 | 138.7 | 129.0 | 121.3 | 114.5 | 104.5 | 96.7 | 90.4 | 85.1 | 80.7 | 74.8 | 67.8 |
| 35.0 | 231.6 | 218.8 | 174.0 | 151.5 | 137.5 | 125.8 | 117.7 | 111.2 | 105.6 | 96.3 | 89.3 | 83.5 | 78.8 | 71.4 | 64.4 | 58.4 |
| 40.0 | 225.4 | 196.0 | 163.7 | 143.6 | 131.0 | 121.7 | 113.3 | 107.5 | 101.9 | 93.6 | 86.7 | 80.1 | 70.5 | 62.8 | 56.7 | 51.5 |
| 45.0 | 211.8 | 179.1 | 150.0 | 132.3 | 121.1 | 112.9 | 106.3 | 100.4 | 95.5 | 87.7 | 81.5 | 71.2 | 62.8 | 56.1 | 50.5 | 46.2 |
| 50.0 | 199.6 | 160.4 | 138.7 | 124.4 | 113.8 | 105.4 | 99.4 | 94.2 | 89.8 | 82.6 | 74.1 | 64.0 | 56.6 | 50.7 | 45.8 | 41.8 |
| 60.0 | 162.1 | 135.8 | 118.0 | 107.5 | 98.8 | 92.6 | 87.6 | 83.0 | 79.2 | 72.4 | 61.7 | 53.7 | 47.5 | 42.5 | 38.6 | 35.3 |
| 70.0 | 142.9 | 119.8 | 107.5 | 97.9 | 90.8 | 85.2 | 80.4 | 76.7 | 73.2 | 62.0 | 52.9 | 46.2 | 41.0 | 36.8 | 33.5 | 30.7 |
| 80.0 | 129.3 | 110.0 | 99.3 | 90.4 | 84.5 | 79.3 | 75.0 | 71.4 | 64.7 | 54.2 | 46.4 | 40.6 | 36.1 | 32.6 | 29.6 | 27.2 |
| 90.0 | 116.6 | 102.2 | 92.0 | 85.0 | 79.3 | 74.5 | 70.5 | 63.6 | 57.3 | 48.1 | 41.4 | 36.4 | 32.4 | 29.2 | 26.6 | 24.5 |
| 100.0 | 108.8 | 95.8 | 86.7 | 80.0 | 74.6 | 70.4 | 63.4 | 57.1 | 51.7 | 43.4 | 37.4 | 32.9 | 29.4 | 26.5 | 24.2 | 22.3 |
| 110.0 | 102.4 | 90.6 | 82.3 | 76.1 | 71.0 | 64.9 | 57.8 | 51.8 | 46.8 | 39.5 | 34.1 | 30.1 | 26.9 | 24.3 | 22.2 | 20.5 |
| 120.0 | 100.9 | 88.8 | 81.1 | 75.3 | 67.7 | 59.6 | 52.7 | 47.4 | 43.0 | 36.3 | 31.4 | 27.7 | 24.8 | 22.5 | 20.6 | 19.0 |
| 130.0 | 94.6 | 84.5 | 77.4 | 71.8 | 62.1 | 54.6 | 48.4 | 43.6 | 39.7 | 33.6 | 29.2 | 25.8 | 23.1 | 20.9 | 19.2 | 17.7 |
| 140.0 | 90.0 | 80.5 | 73.9 | 67.0 | 57.4 | 50.4 | 45.1 | 40.6 | 36.9 | 31.3 | 27.2 | 24.1 | 21.6 | 19.6 | 18.0 | 16.6 |



HVHZ
END RETENTION
PRODUCT APPROVAL



DRAWN: DLF
DATE: 04-19-10
APPROVED: DLF
DATE: 04-19-10
DRAWING NO: 3-01-038
SIZE: B REV: -
SCALE: 1 : 4
SHEET: 13 OF 26



| HOLE SPACING O.C. SCHEDULE # B1 (CONC.) # | | | | | | | |
|---|-----|-----|-----|-----|------|------|--|
| PSF\SLAT SPAN | 48" | 60" | 72" | 96" | 120" | 144" | |
| 10 | 16" | 16" | 16" | 16" | 16" | 16" | |
| 15 | 16" | 16" | 16" | 16" | 16" | 16" | |
| 20 | 16" | 16" | 16" | 16" | 14" | 16" | |
| 25 | 16" | 16" | 16" | 16" | 14" | 14" | |
| 30 | 16" | 14" | 14" | 14" | 14" | 14" | |
| 35 | 16" | 14" | 14" | 14" | 14" | 14" | |
| 40 | 16" | 14" | 14" | 14" | 12" | 12" | |
| 45 | 14" | 14" | 14" | 14" | 12" | 10" | |
| 50 | 14" | 14" | 14" | 14" | 11" | 9" | |
| 55 | 14" | 12" | 12" | 12" | 10" | 8" | |
| 60 | 14" | 12" | 12" | 11" | 9" | 8" | |
| 65 | 14" | 12" | 11" | 10" | 8" | 7" | |
| 70 | 14" | 12" | 10" | 9" | 8" | 6" | |
| 75 | 14" | 12" | 10" | 8" | 7" | 6" | |
| 80 | 14" | 12" | 10" | 8" | 7" | 5" | |
| 85 | 14" | 12" | 9" | 7" | 6" | 5" | |
| 90 | 12" | 12" | 9" | 7" | 6" | 5" | |
| 95 | 12" | 12" | 9" | 7" | 6" | 4" | |
| 100 | 12" | 10" | 8" | 7" | 5" | 4" | |
| 120 | 12" | 9" | 7" | 6" | 5" | 3" | |

| HOLE SPACING O.C. SCHEDULE # B1 (WOOD) ## | | | | | | | |
|---|-----|-----|-----|-----|------|------|--|
| PSF\SLAT SPAN | 48" | 60" | 72" | 96" | 120" | 144" | |
| 10 | 16" | 16" | 16" | 16" | 16" | 16" | |
| 15 | 16" | 16" | 16" | 14" | 14" | 14" | |
| 20 | 16" | 16" | 16" | 14" | 14" | 14" | |
| 25 | 16" | 16" | 14" | 14" | 14" | 12" | |
| 30 | 16" | 14" | 14" | 12" | 12" | 12" | |
| 35 | 14" | 14" | 14" | 12" | 12" | 10" | |
| 40 | 14" | 14" | 14" | 12" | 10" | 10" | |
| 45 | 14" | 12" | 12" | 12" | 10" | 9" | |
| 50 | 14" | 12" | 12" | 10" | 9" | 8" | |
| 55 | 12" | 12" | 12" | 10" | 8" | 8" | |
| 60 | 12" | 12" | 12" | 8" | 8" | 7" | |
| 65 | 12" | 12" | 10" | 8" | 7" | 7" | |
| 70 | 12" | 12" | 10" | 7" | 7" | 7" | |
| 75 | 12" | 12" | 10" | 7" | 7" | 6" | |
| 80 | 12" | 10" | 10" | 7" | 6" | 6" | |
| 85 | 12" | 10" | 9" | 6" | 6" | 6" | |
| 90 | 10" | 10" | 9" | 6" | 6" | 5" | |
| 95 | 10" | 10" | 9" | 6" | 5" | 4" | |
| 100 | 10" | 9" | 7" | 5" | 4" | 3" | |
| 120 | N/A | N/A | N/A | N/A | N/A | N/A | |

| HOLE SPACING O.C. SCHEDULE # B1 (CMU H.) ** | | | | | | | |
|---|-----|-----|-----|------|------|------|--|
| PSF\SLAT SPAN | 48" | 60" | 72" | 96" | 120" | 144" | |
| 10 | 16" | 14" | 13" | 12" | 12" | 10" | |
| 15 | 16" | 14" | 13" | 12" | 12" | 10" | |
| 20 | 14" | 14" | 13" | 12" | 12" | 10" | |
| 25 | 14" | 14" | 13" | 12" | 10" | 9" | |
| 30 | 14" | 12" | 10" | 9" | 8" | 7" | |
| 35 | 14" | 12" | 10" | 8" | 7" | 6" | |
| 40 | 14" | 12" | 10" | 8" | 6" | 5" | |
| 45 | 10" | 10" | 8" | 7" | 6" | 4" | |
| 50 | 10" | 9" | 8" | 7" | 5" | 4" | |
| 55 | 10" | 9" | 7" | 6" | 5" | 3" | |
| 60 | 9" | 8" | 7" | 6" | 5" | 3" | |
| 65 | 9" | 7" | 6" | 5" | 4" | 3" | |
| 70 | 8" | 7" | 6" | 5" | 4" | 3" | |
| 75 | 8" | 7" | 6" | 5" | 4" | 2.5" | |
| 80 | 7" | 6" | 6" | 5" | 4" | 2.5" | |
| 85 | 7" | 6" | 5" | 4" | 4" | 2.5" | |
| 90 | 7" | 6" | 5" | 4" | 3" | N/A | |
| 95 | 7" | 6" | 5" | 4" | 3" | N/A | |
| 100 | 6" | 5" | 4" | 3" | 2.5" | N/A | |
| 120 | 6" | 5" | 3" | 2.5" | N/A | N/A | |

3320 PSI CONCRETE OR CELL FILLED CMU, 1/4" DIA. TAPCON, 1-3/4" EMBEDMENT

WOOD, 1/4" DIA. TAPCON, LAG SCREW, OR #14 SS SMS 1 1/2" EMBEDMENT

**CMU HOLLOW, 1/4" DIA. TAPCON, 1 1/4" EMBEDMENT

| HOLE SPACING O.C. SCHEDULE 5A * | | | | | | | |
|---------------------------------|-----|-----|-----|-----|------|------|--|
| PSF\SLAT SPAN | 48" | 60" | 72" | 96" | 120" | 144" | |
| 10 | 16" | 16" | 16" | 12" | 10" | 7" | |
| 15 | 16" | 16" | 16" | 10" | 7" | 5" | |
| 20 | 16" | 16" | 14" | 8" | 5" | 3" | |
| 25 | 16" | 16" | 12" | 7" | 4" | 3" | |
| 30 | 16" | 14" | 10" | 6" | 3" | 2" | |
| 35 | 16" | 14" | 7" | 5" | 3" | 2" | |
| 40 | 16" | 14" | 6" | 3" | 2" | 2" | |
| 45 | 16" | 12" | 6" | 3" | 2" | N/A | |
| 50 | 16" | 10" | 5" | 3" | 2" | N/A | |
| 55 | 16" | 8" | 5" | 2" | N/A | N/A | |
| 60 | 15" | 7" | 4" | 2" | N/A | N/A | |
| 65 | 15" | 6" | 4" | 2" | N/A | N/A | |
| 70 | 14" | 5" | 3" | 2" | N/A | N/A | |
| 75 | 13" | 5" | 3" | 2" | N/A | N/A | |
| 80 | 11" | 4" | 3" | N/A | N/A | N/A | |
| 85 | 10" | 4" | 2" | N/A | N/A | N/A | |
| 90 | 9" | 4" | 2" | N/A | N/A | N/A | |
| 95 | 8" | 4" | 2" | N/A | N/A | N/A | |
| 100 | 7" | 3" | 2" | N/A | N/A | N/A | |
| 120 | 5" | 3" | 2" | N/A | N/A | N/A | |
| 140 | 4" | 2" | 2" | N/A | N/A | N/A | |
| 160 | 3" | 2" | N/A | N/A | N/A | N/A | |
| 180 | 3" | 2" | N/A | N/A | N/A | N/A | |
| 200 | 2" | N/A | N/A | N/A | N/A | N/A | |
| 220 | 2" | N/A | N/A | N/A | N/A | N/A | |
| 240 | 2" | N/A | N/A | N/A | N/A | N/A | |
| 260 | 2" | N/A | N/A | N/A | N/A | N/A | |
| 280 | 2" | N/A | N/A | N/A | N/A | N/A | |

14 X 3/4" SS SMS into .125" ALUM. ALLOY 6005-T5



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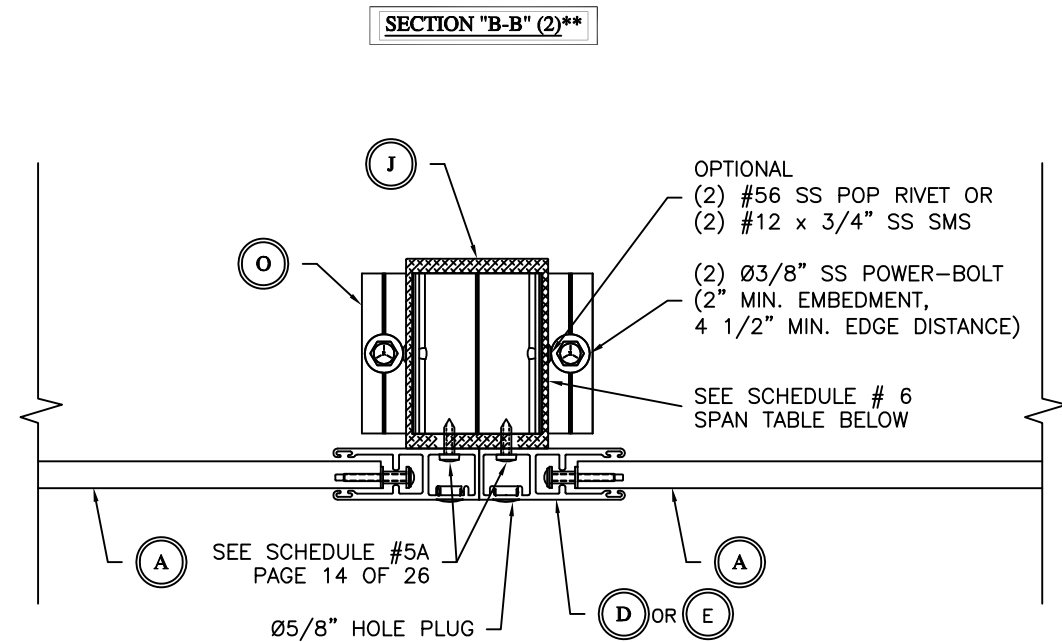
HVHZ
END RETENTION
PRODUCT APPROVAL

DRAWING TITLE:

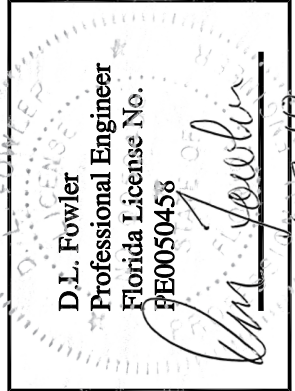


| | |
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| DRAWN: | DLF |
| DATE: | 04-19-10 |
| APPROVED: | DLF |
| DATE: | 04-19-10 |
| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| REV: | - |
| SCALE: | 1 : 4 |
| SHEET: | 14 OF 26 |

NOTE: MAXIMUM GAP BETWEEN CUT END OF POST AND POST BASE IS 1/4"



HVHZ
END RETENTION
PRODUCT APPROVAL



| | |
|-------------|----------|
| DRAWN: | DLF |
| DATE: | 04-19-10 |
| APPROVED: | DF |
| DATE: | 04-19-10 |
| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| REV: | - |
| SCALE: | 1 : 4 |
| SHEET: | 15 OF 26 |

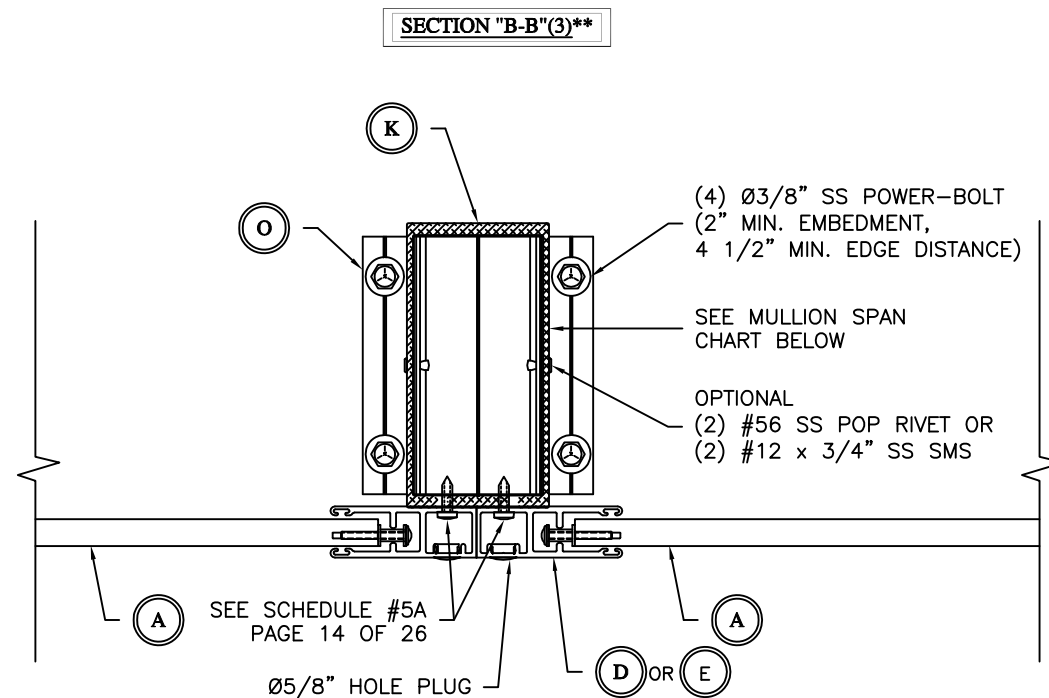
****SCHEDULE 6 BASED ON EQUAL SPANS.**
IF SPANS ARE NOT EQUAL THE DIFFERENCE BETWEEN SPANS (SPAN1 - SPAN2) SHALL BE USED TO EVALUATE THE FREE STANDING MULLION AS AN END MULLION USING SCHEDULE 3, PAGE 13 OF 26. THE EVALUATION SHALL BE AT THE SLAT SPAN DIFFERENCE

SCHEDULE # 6

| B-B(2) MAXIMUM MULLION HEIGHT (IN) | | | | | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| SLAT WIDTH (IN) - CLEAR SPAN (NO STORM BARS) - SEE PAGE 8 | | | | | | | | | | | | | | | | |
| PSF | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 108 | 120 | 132 | 144 | 156 | 168 | 180 |
| 10 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 |
| 15 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 235.5 | 228.9 | 222.9 | 217.5 | 212.6 |
| 20 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 237.6 | 228.6 | 220.8 | 214.0 | 208.0 | 200.2 | 193.0 | 186.5 |
| 25 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 236.1 | 230.5 | 225.3 | 220.6 | 212.2 | 203.9 | 194.5 | 186.3 | 179.1 | 172.6 | 166.8 |
| 30 | 240.0 | 240.0 | 240.0 | 234.7 | 228.1 | 222.2 | 216.9 | 212.0 | 207.6 | 196.1 | 186.1 | 177.6 | 170.1 | 163.5 | 157.6 | 152.3 |
| 35 | 240.0 | 237.9 | 229.9 | 222.9 | 216.7 | 211.1 | 205.4 | 198.6 | 192.4 | 181.5 | 172.3 | 164.4 | 157.5 | 151.4 | 145.9 | 141.0 |
| 40 | 236.4 | 227.6 | 219.9 | 213.2 | 207.2 | 199.3 | 192.1 | 185.7 | 179.9 | 169.8 | 161.2 | 153.8 | 147.3 | 141.6 | 136.5 | 131.9 |
| 45 | 227.3 | 218.8 | 211.4 | 203.9 | 195.4 | 187.9 | 181.2 | 175.1 | 169.6 | 160.1 | 152.0 | 145.0 | 138.9 | 133.5 | 128.7 | 124.4 |
| 50 | 219.5 | 211.3 | 202.6 | 193.4 | 185.4 | 178.2 | 171.9 | 166.1 | 160.9 | 151.9 | 144.2 | 137.5 | 131.8 | 126.6 | 122.1 | 117.5 |
| 60 | 206.2 | 194.7 | 185.0 | 176.6 | 169.2 | 162.7 | 156.9 | 151.7 | 146.9 | 138.6 | 126.9 | 115.5 | 106.0 | 97.9 | 91.0 | 84.9 |
| 70 | 190.9 | 180.3 | 171.3 | 163.5 | 156.7 | 150.6 | 145.3 | 140.4 | 135.5 | 120.7 | 108.8 | 99.0 | 90.8 | 83.9 | 78.0 | 72.8 |
| 80 | 178.5 | 168.6 | 160.2 | 152.9 | 146.5 | 140.9 | 135.2 | 126.3 | 118.6 | 105.6 | 95.2 | 86.6 | 79.5 | 73.4 | 68.2 | 63.7 |
| 90 | 168.3 | 159.0 | 151.0 | 144.2 | 138.2 | 129.3 | 120.2 | 112.3 | 105.4 | 93.9 | 84.6 | 77.0 | 70.6 | 65.3 | 60.6 | 56.6 |
| 100 | 159.7 | 150.8 | 143.3 | 136.8 | 125.8 | 116.3 | 108.2 | 101.1 | 94.9 | 84.5 | 76.1 | 69.3 | 63.6 | 58.7 | 54.6 | 51.0 |
| 110 | 152.3 | 143.8 | 136.6 | 124.5 | 114.4 | 105.8 | 98.3 | 91.9 | 86.2 | 76.8 | 69.2 | 63.0 | 57.8 | 53.4 | 49.6 | 46.3 |
| 120 | 145.8 | 137.7 | 125.3 | 114.2 | 104.9 | 96.9 | 90.1 | 84.2 | 79.1 | 70.4 | 63.4 | 57.7 | 53.0 | 48.9 | 45.5 | 42.5 |
| 130 | 140.1 | 128.2 | 115.7 | 105.4 | 96.8 | 89.5 | 83.2 | 77.8 | 73.0 | 65.0 | 58.6 | 53.3 | 48.9 | 45.2 | 42.0 | 39.2 |
| 140 | 133.4 | 119.0 | 107.4 | 97.9 | 89.9 | 83.1 | 77.3 | 72.2 | 67.8 | 60.3 | 54.4 | 49.5 | 45.4 | 42.0 | 39.0 | 36.4 |



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****SCHEDULE 7 BASED ON EQUAL SPANS.**

**IF SPANS ARE NOT EQUAL THE DIFFERENCE
BETWEEN SPANS (SPAN1 - SPAN2) SHALL BE
USED TO EVALUATE THE FREE STANDING MULLION
AS AN END MULLION USING SCHEDULE 3, PAGE 13 OF 26.
THE EVALUATION SHALL BE AT THE SLAT
SPAN DIFFERENCE**

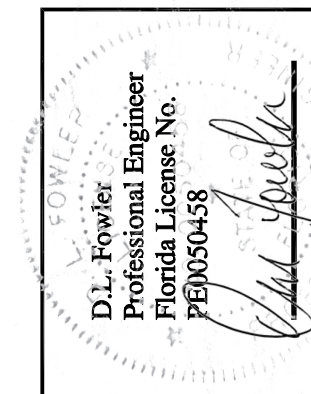
SCHEDULE 7

| B-B(3) MAXIMUM MULLION HEIGHT (IN) | | | | | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| SLAT WIDTH (IN) - CLEAR SPAN (NO STORM BARS) - SEE PAGE 8 | | | | | | | | | | | | | | | | |
| PSF | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 108 | 120 | 132 | 144 | 156 | 168 | 180 |
| 10 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 |
| 15 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 |
| 20 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 233.5 | 225.7 |
| 25 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 235.4 | 225.4 | 216.7 | 208.9 | 201.9 |
| 30 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 237.2 | 225.2 | 214.8 | 205.8 | 197.8 | 190.7 | 184.3 |
| 35 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 232.7 | 219.6 | 208.5 | 198.9 | 190.5 | 183.1 | 176.5 | 170.6 |
| 40 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 232.5 | 224.7 | 217.7 | 205.4 | 195.0 | 186.1 | 178.2 | 171.3 | 165.1 | 159.6 |
| 45 | 240.0 | 240.0 | 240.0 | 240.0 | 236.4 | 227.3 | 219.2 | 211.9 | 205.3 | 193.7 | 183.9 | 175.4 | 168.0 | 161.5 | 155.7 | 150.5 |
| 50 | 240.0 | 240.0 | 240.0 | 233.6 | 223.8 | 215.2 | 207.5 | 200.6 | 194.3 | 183.4 | 174.1 | 166.1 | 159.1 | 152.9 | 147.4 | 142.5 |
| 60 | 240.0 | 235.6 | 223.8 | 213.6 | 204.7 | 196.8 | 189.8 | 183.5 | 177.8 | 167.7 | 159.2 | 151.9 | 145.5 | 139.9 | 134.8 | 130.3 |
| 70 | 230.9 | 218.1 | 207.2 | 197.8 | 189.5 | 182.2 | 175.7 | 169.9 | 164.6 | 155.3 | 147.4 | 140.6 | 134.7 | 129.5 | 124.8 | 120.6 |
| 80 | 216.0 | 204.0 | 193.8 | 185.0 | 177.3 | 170.5 | 164.4 | 158.9 | 153.9 | 145.3 | 137.9 | 131.6 | 126.0 | 121.1 | 116.8 | 112.8 |
| 90 | 203.7 | 192.3 | 182.7 | 174.4 | 167.2 | 160.7 | 155.0 | 149.8 | 145.1 | 137.0 | 130.0 | 124.0 | 118.8 | 114.2 | 110.1 | 106.4 |
| 100 | 193.2 | 182.5 | 173.4 | 165.5 | 158.6 | 152.5 | 147.0 | 142.1 | 137.7 | 129.9 | 123.3 | 117.7 | 112.7 | 108.3 | 104.4 | 100.9 |
| 110 | 184.2 | 174.0 | 165.3 | 157.8 | 151.2 | 145.4 | 140.2 | 135.5 | 131.3 | 123.9 | 117.6 | 112.2 | 107.5 | 103.3 | 99.2 | 92.7 |
| 120 | 176.4 | 166.6 | 158.2 | 151.1 | 144.8 | 139.2 | 134.2 | 129.7 | 125.7 | 118.6 | 112.6 | 107.4 | 102.9 | 97.9 | 91.0 | 84.9 |
| 130 | 169.5 | 160.0 | 152.0 | 145.1 | 139.1 | 133.7 | 129.0 | 124.7 | 120.8 | 114.0 | 108.2 | 103.2 | 97.8 | 90.4 | 84.0 | 78.4 |
| 140 | 163.0 | 153.9 | 146.2 | 139.6 | 133.8 | 128.6 | 124.0 | 119.9 | 116.1 | 109.6 | 104.0 | 99.0 | 90.8 | 83.9 | 78.0 | 72.8 |

**** MAXIMUM GAP BETWEEN CUT END
OF POST AND POST BASE IS 1/4"**

HVHZ
END RETENTION
PRODUCT APPROVAL

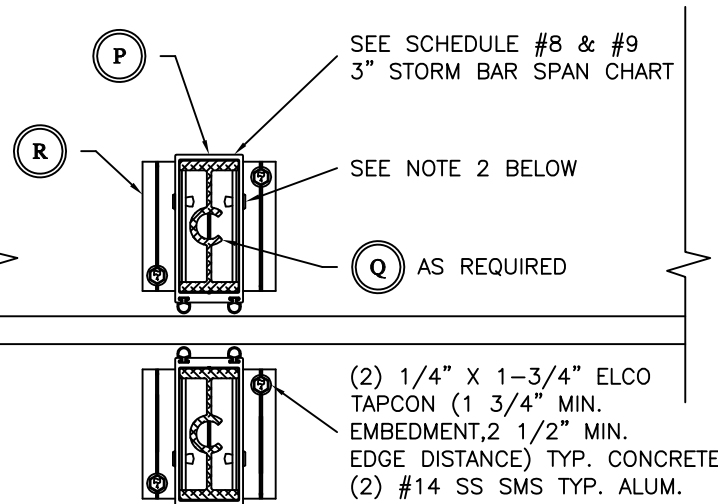
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| DATE: | 04-19-10 |
| APPROVED: | DF |
| DATE: | 04-19-10 |
| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| REV: | - |
| SCALE: | 1 : 4 |
| SHEET: | 16 OF 26 |

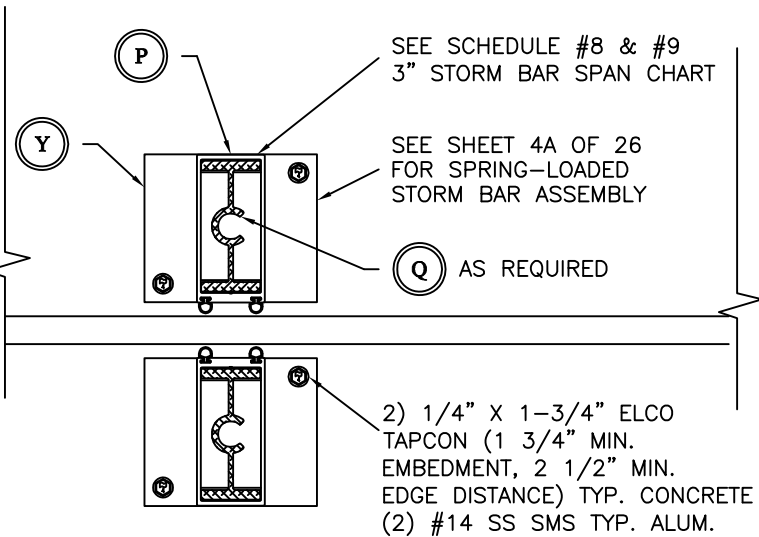
SECTION "C-C" (1)

FIXED STORM BAR



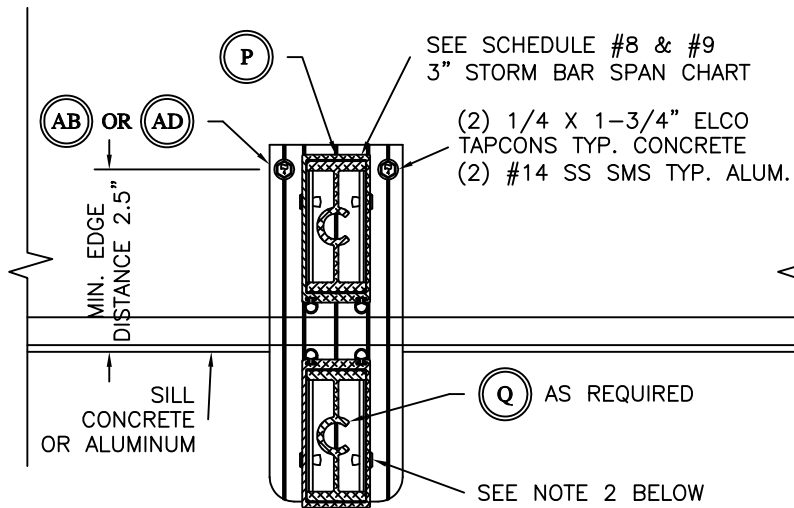
SECTION "C-C" (2)

REMOVABLE STORM BAR



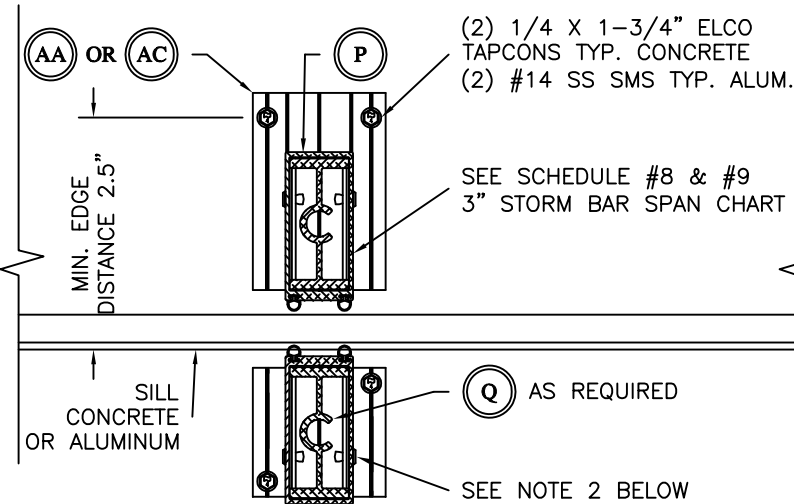
SECTION "C-C" (5)

FIXED OR REMOVABLE STORM BAR



SECTION "C-C" (6)

FIXED OR REMOVABLE STORM BAR



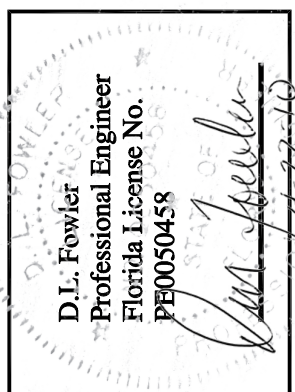
- NOTES:**
1. ALL PERFORMANCE CHARTS ARE DRAWING SECTION SPECIFIC AND ARE BASED ON ANCHORAGE, BENDING STRESS, AND DEFLECTION LIMITS.
 2. OPTIONAL (2) #56 SS POP RIVET OR (2) #12 x 3/4" SS SMS THRU STORM BAR INTO STORM BAR BASE PLATE. NON STRUCTURAL FASTENER TO KEEP ALUMINUM FROM VIBRATING.

| 3" STORM BAR PERFORMANCE | | SCHEDULE #8 | | | | | | | | | | | |
|------------------------------------|--------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| FIXED OR REMOVABLE | | MAXIMUM STORM BAR HEIGHT (INCHES) | | | | | | | | | | | |
| SECTION "C-C" (1), (2), (5), & (6) | | SPAN WIDTH IN INCHES (BETWEEN RAILS) | | | | | | | | | | | |
| PSF | PSF | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 | 156 | 168 | |
| 3 SPAN | 2 SPAN | | | | | | | | | | | | |
| 17 | 10 | 183.0 | 169.8 | 159.8 | 151.8 | 145.2 | 139.6 | 134.4 | 128.5 | 123.3 | 118.7 | 114.6 | |
| 26 | 15 | 159.8 | 148.4 | 139.6 | 131.3 | 123.3 | 116.6 | 110.9 | 106.0 | 101.7 | 97.9 | 94.5 | |
| 35 | 20 | 145.2 | 134.4 | 123.3 | 114.6 | 107.6 | 101.7 | 96.7 | 92.4 | 88.7 | 85.3 | 82.4 | |
| 43 | 25 | 134.4 | 120.9 | 110.9 | 103.1 | 96.7 | 91.4 | 87.0 | 83.1 | 79.7 | 76.7 | 74.0 | |
| 52 | 30 | 123.3 | 110.9 | 101.7 | 94.5 | 88.6 | 83.8 | 79.7 | 76.1 | 73.0 | 70.2 | 67.8 | |
| 61 | 35 | 114.6 | 103.0 | 94.5 | 87.8 | 82.3 | 77.8 | 74.0 | 70.7 | 67.8 | 65.2 | 62.9 | |
| 70 | 40 | 107.5 | 96.7 | 88.6 | 82.3 | 77.2 | 73.0 | 69.4 | 66.3 | 63.5 | 61.1 | 59.0 | |
| 78 | 45 | 101.6 | 91.4 | 83.7 | 77.8 | 72.9 | 68.9 | 65.5 | 62.6 | 60.0 | 57.7 | 55.7 | |
| 87 | 50 | 96.6 | 86.9 | 79.6 | 73.9 | 69.3 | 65.5 | 62.3 | 59.5 | 57.0 | 54.9 | 52.1 | |
| 105 | 60 | 88.5 | 79.6 | 72.9 | 67.7 | 63.5 | 60.0 | 57.0 | 54.4 | 50.7 | 46.8 | 43.4 | |
| 122 | 70 | 82.2 | 73.9 | 67.7 | 62.9 | 58.9 | 55.7 | 52.1 | 47.4 | 43.4 | 40.1 | 37.2 | |
| 140 | 80 | 77.1 | 69.3 | 63.5 | 58.9 | 55.2 | 50.7 | 45.6 | 41.5 | 38.0 | 35.1 | 32.6 | |
| 157 | 90 | 72.9 | 65.5 | 60.0 | 55.7 | 50.7 | 45.0 | 40.5 | 36.8 | 33.8 | 31.2 | 29.0 | |
| 175 | 100 | 69.3 | 62.2 | 57.0 | 52.1 | 45.6 | 40.5 | 36.5 | 33.2 | 30.4 | 28.1 | 26.1 | |

| 3" WITH INSERT STORM BAR | | SCHEDULE #9 | | | | | | | | | | | |
|------------------------------------|--------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| FIXED OR REMOVABLE | | MAXIMUM STORM BAR HEIGHT (INCHES) | | | | | | | | | | | |
| SECTION "C-C" (1), (2), (5), & (6) | | SPAN WIDTH IN INCHES (BETWEEN RAILS) | | | | | | | | | | | |
| PSF | PSF | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 | 156 | 168 | |
| 3 SPAN | 2 SPAN | | | | | | | | | | | | |
| 17 | 10 | 223.9 | 207.9 | 195.6 | 185.8 | 177.7 | 170.9 | 165.0 | 159.8 | 155.2 | 151.2 | 147.5 | |
| 26 | 15 | 195.6 | 181.6 | 170.9 | 162.3 | 155.2 | 149.3 | 144.1 | 139.6 | 135.6 | 130.8 | 126.4 | |
| 35 | 20 | 177.7 | 165.0 | 155.2 | 147.5 | 141.1 | 135.6 | 129.3 | 123.7 | 118.8 | 114.4 | 110.5 | |
| 43 | 25 | 165.0 | 153.2 | 144.1 | 136.9 | 129.3 | 122.4 | 116.5 | 111.4 | 107.0 | 103.0 | 99.5 | |
| 52 | 30 | 155.2 | 144.1 | 135.6 | 126.3 | 118.7 | 112.4 | 107.0 | 102.3 | 98.2 | 93.5 | 86.9 | |
| 61 | 35 | 147.5 | 136.9 | 126.3 | 117.6 | 110.5 | 104.5 | 99.5 | 94.8 | 86.9 | 80.2 | 74.4 | |
| 70 | 40 | 141.1 | 129.2 | 118.7 | 110.4 | 103.7 | 98.2 | 91.2 | 82.9 | 76.0 | 70.2 | 65.1 | |
| 78 | 45 | 135.6 | 122.3 | 112.3 | 104.5 | 98.1 | 90.1 | 81.1 | 73.7 | 67.6 | 62.4 | 57.9 | |
| 87 | 50 | 129.1 | 116.4 | 106.9 | 99.4 | 91.2 | 81.1 | 73.0 | 66.3 | 60.8 | 56.1 | 52.1 | |
| 105 | 60 | 118.5 | 106.8 | 98.1 | 86.9 | 76.0 | 67.6 | 60.8 | 55.3 | 50.7 | 46.8 | 43.4 | |
| 122 | 70 | 110.3 | 99.3 | 86.9 | 74.4 | 65.1 | 57.9 | 52.1 | 47.4 | 43.4 | 40.1 | 37.2 | |
| 140 | 80 | 103.5 | 91.2 | 76.0 | 65.1 | 57.0 | 50.7 | 45.6 | 41.5 | 38.0 | 35.1 | 32.6 | |
| 157 | 90 | 97.9 | 81.1 | 67.6 | 57.9 | 50.7 | 45.0 | 40.5 | 36.8 | 33.8 | 31.2 | 29.0 | |
| 175 | 100 | 91.2 | 73.0 | 60.8 | 52.1 | 45.6 | 40.5 | 36.5 | 33.2 | 30.4 | 28.1 | 26.1 | |



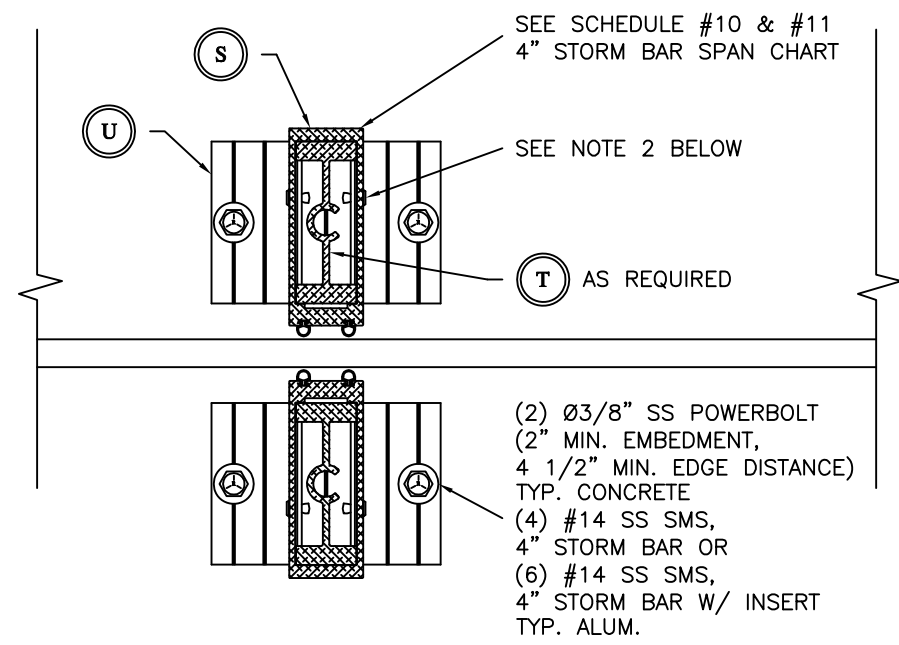
HVHZ
END RETENTION
PRODUCT APPROVAL



| | |
|-------------|----------|
| DRAWN: | DF |
| DATE: | 04-19-10 |
| APPROVED: | DF |
| DATE: | 04-19-10 |
| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| SCALE: | 1 : 4 |
| SHEET: | 17 OF 26 |

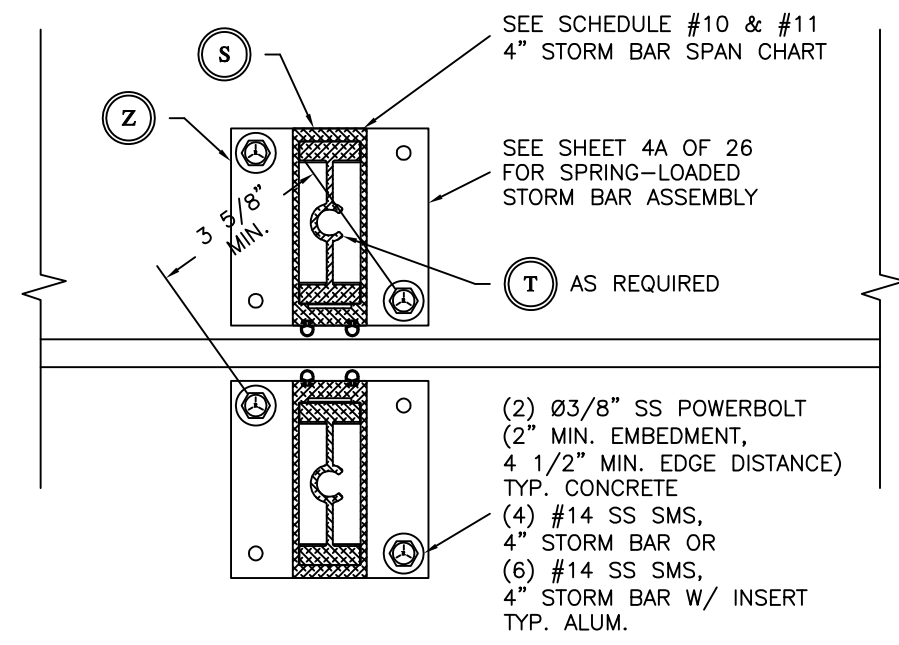
SECTION "C-C" (3)

FIXED STORM BAR



SECTION "C-C" (4)

REMOVABLE STORM BAR



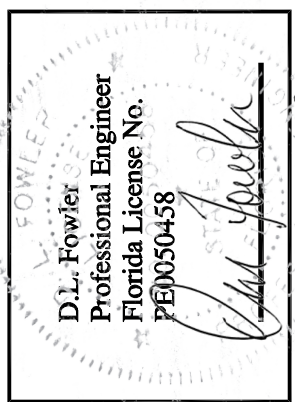
| 4" STORM BAR PERFORMANCE | | SCHEDULE # 10 | | | | | | | | | | |
|--------------------------|---------------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| FIXED OR REMOVABLE | | MAXIMUM STORM BAR HEIGHT (INCHES) | | | | | | | | | | |
| SECTION "C-C" (3) & (4) | | | | | | | | | | | | |
| PSF 3 SPAN | PSF 2 SPAN | SPAN WIDTH IN INCHES (BETWEEN RAILS) | | | | | | | | | | |
| | | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 | 156 | 168 |
| 17 | 10 | 240.0 | 240.0 | 240.0 | 239.5 | 229.1 | 220.3 | 212.6 | 206.0 | 200.1 | 194.8 | 190.1 |
| 26 | 15 | 240.0 | 234.1 | 220.3 | 209.2 | 200.1 | 192.4 | 184.7 | 176.8 | 169.8 | 163.6 | 158.1 |
| 35 | 20 | 229.1 | 212.6 | 200.1 | 190.1 | 179.3 | 169.8 | 161.7 | 154.7 | 148.6 | 143.1 | 138.3 |
| 43 | 25 | 212.6 | 197.4 | 184.7 | 172.0 | 161.7 | 153.1 | 145.8 | 139.4 | 133.9 | 128.9 | 124.5 |
| 52 | 30 | 200.1 | 184.6 | 169.7 | 158.0 | 148.5 | 140.6 | 133.8 | 128.0 | 122.9 | 118.3 | 114.3 |
| 61 | 35 | 190.1 | 171.9 | 158.0 | 147.1 | 138.2 | 130.8 | 124.5 | 119.0 | 114.3 | 110.0 | 106.2 |
| 70 | 40 | 179.1 | 161.6 | 148.5 | 138.2 | 129.8 | 122.8 | 116.9 | 111.8 | 107.3 | 103.3 | 99.7 |
| 78 | 45 | 169.6 | 153.0 | 140.5 | 130.7 | 122.8 | 116.2 | 110.6 | 105.7 | 101.4 | 97.7 | 94.3 |
| 87 | 50 | 161.5 | 145.6 | 133.7 | 124.4 | 116.9 | 110.6 | 105.2 | 100.6 | 96.5 | 92.9 | 89.7 |
| 105 | 60 | 148.4 | 133.7 | 122.8 | 114.2 | 107.2 | 101.4 | 96.5 | 92.2 | 88.5 | 85.2 | 82.2 |
| 122 | 70 | 138.1 | 124.4 | 114.2 | 106.2 | 99.7 | 94.3 | 89.7 | 85.7 | 82.2 | 79.1 | 76.4 |
| 140 | 80 | 129.7 | 116.8 | 107.2 | 99.6 | 93.5 | 88.4 | 84.1 | 80.4 | 77.1 | 74.2 | 71.7 |
| 157 | 90 | 122.7 | 110.4 | 101.3 | 94.2 | 88.4 | 83.6 | 79.5 | 76.0 | 72.9 | 70.2 | 67.7 |
| 175 | 100 | 116.7 | 105.1 | 96.4 | 89.6 | 84.1 | 79.5 | 75.6 | 72.2 | 69.3 | 66.7 | 64.4 |

| 4" W INSERT STORM BAR PERFORMANCE | | SCHEDULE # 11 | | | | | | | | | | | |
|-----------------------------------|---------------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| FIXED OR REMOVABLE | | MAXIMUM STORM BAR HEIGHT (INCHES) | | | | | | | | | | | |
| SECTION "C-C" (3) & (4) | | | | | | | | | | | | | |
| PSF 3 SPAN | PSF 2 SPAN | SPAN WIDTH IN INCHES (BETWEEN RAILS) | | | | | | | | | | | |
| | | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 | 156 | 168 | |
| 17 | 10 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 239.3 | 232.5 | 226.4 | 220.9 |
| 26 | 15 | 240.0 | 240.0 | 240.0 | 240.0 | 232.5 | 223.5 | 215.8 | 209.1 | 203.1 | 197.8 | 192.9 | |
| 35 | 20 | 240.0 | 240.0 | 232.5 | 220.9 | 211.2 | 203.1 | 196.1 | 189.3 | 182.0 | 175.6 | 169.7 | |
| 43 | 25 | 240.0 | 229.4 | 215.8 | 205.0 | 196.1 | 187.4 | 178.7 | 171.1 | 164.5 | 158.6 | 153.3 | |
| 52 | 30 | 232.5 | 215.8 | 203.1 | 192.9 | 182.0 | 172.6 | 164.5 | 157.5 | 151.4 | 145.9 | 141.0 | |
| 61 | 35 | 220.9 | 205.0 | 192.9 | 180.3 | 169.7 | 160.9 | 153.3 | 146.8 | 141.0 | 135.9 | 131.3 | |
| 70 | 40 | 211.2 | 196.1 | 182.0 | 169.7 | 159.7 | 151.4 | 144.2 | 138.0 | 132.6 | 127.8 | 123.5 | |
| 78 | 45 | 203.1 | 187.4 | 172.6 | 160.9 | 151.4 | 143.4 | 136.6 | 130.7 | 125.6 | 121.0 | 116.9 | |
| 87 | 50 | 196.1 | 178.6 | 164.5 | 153.3 | 144.2 | 136.6 | 130.1 | 124.5 | 119.5 | 115.2 | 111.3 | |
| 105 | 60 | 181.9 | 164.4 | 151.3 | 140.9 | 132.5 | 125.5 | 119.5 | 114.3 | 109.8 | 105.8 | 102.2 | |
| 122 | 70 | 169.6 | 153.2 | 140.9 | 131.3 | 123.4 | 116.8 | 111.2 | 106.4 | 102.2 | 98.4 | 95.0 | |
| 140 | 80 | 159.6 | 144.1 | 132.5 | 123.4 | 116.0 | 109.8 | 104.5 | 99.9 | 95.9 | 92.4 | 89.2 | |
| 157 | 90 | 151.2 | 136.5 | 125.4 | 116.8 | 109.7 | 103.9 | 98.9 | 94.6 | 90.8 | 87.4 | 84.4 | |
| 175 | 100 | 144.0 | 130.0 | 119.4 | 111.2 | 104.5 | 98.9 | 94.1 | 90.0 | 86.4 | 83.2 | 80.3 | |

NOTES:
 1. ALL PERFORMANCE CHARTS ARE DRAWING SECTION SPECIFIC AND ARE BASED ON ANCHORAGE, BENDING STRESS, AND DEFLECTION LIMITS.
 2. OPTIONAL (2) #56 SS POP RIVET OR (2) #12 x 3/4" SS SMS THRU STORM BAR INTO STORM BAR BASE PLATE. NON STRUCTURAL FASTENER TO KEEP ALUMINUM FROM VIBRATING.



HVHZ
 END RETENTION
 PRODUCT APPROVAL



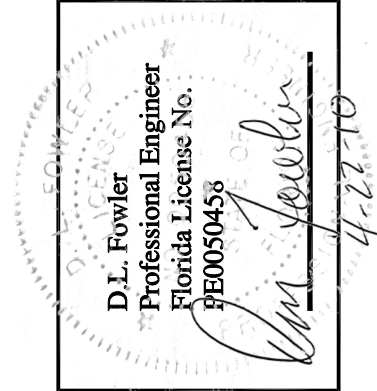
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|-------------|----------|
| DRAWN: | DF |
| DATE: | 04-19-10 |
| APPROVED: | DF |
| DATE: | 04-19-10 |
| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| SCALE: | 1 : 4 |
| SHEET: | 18 OF 26 |



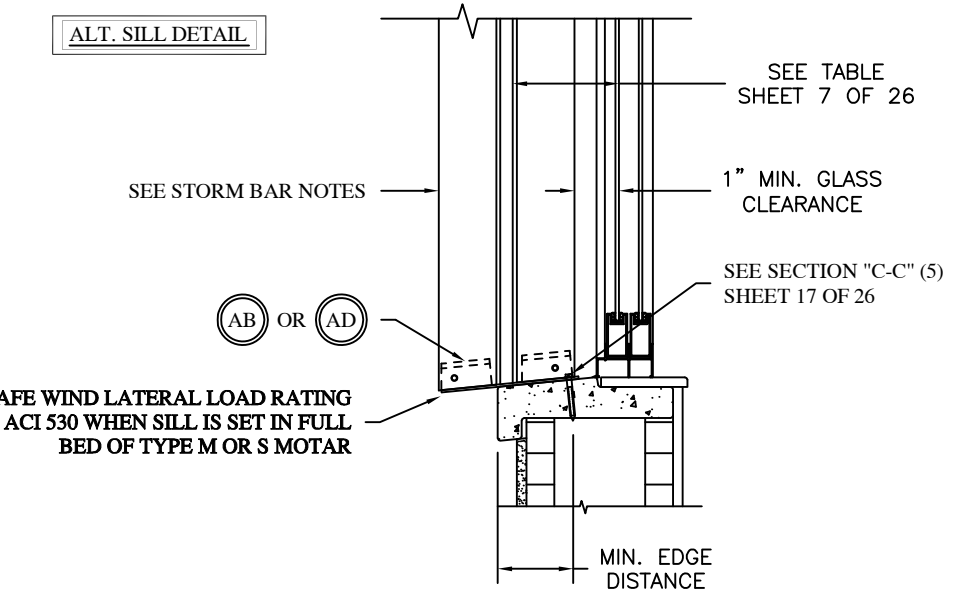
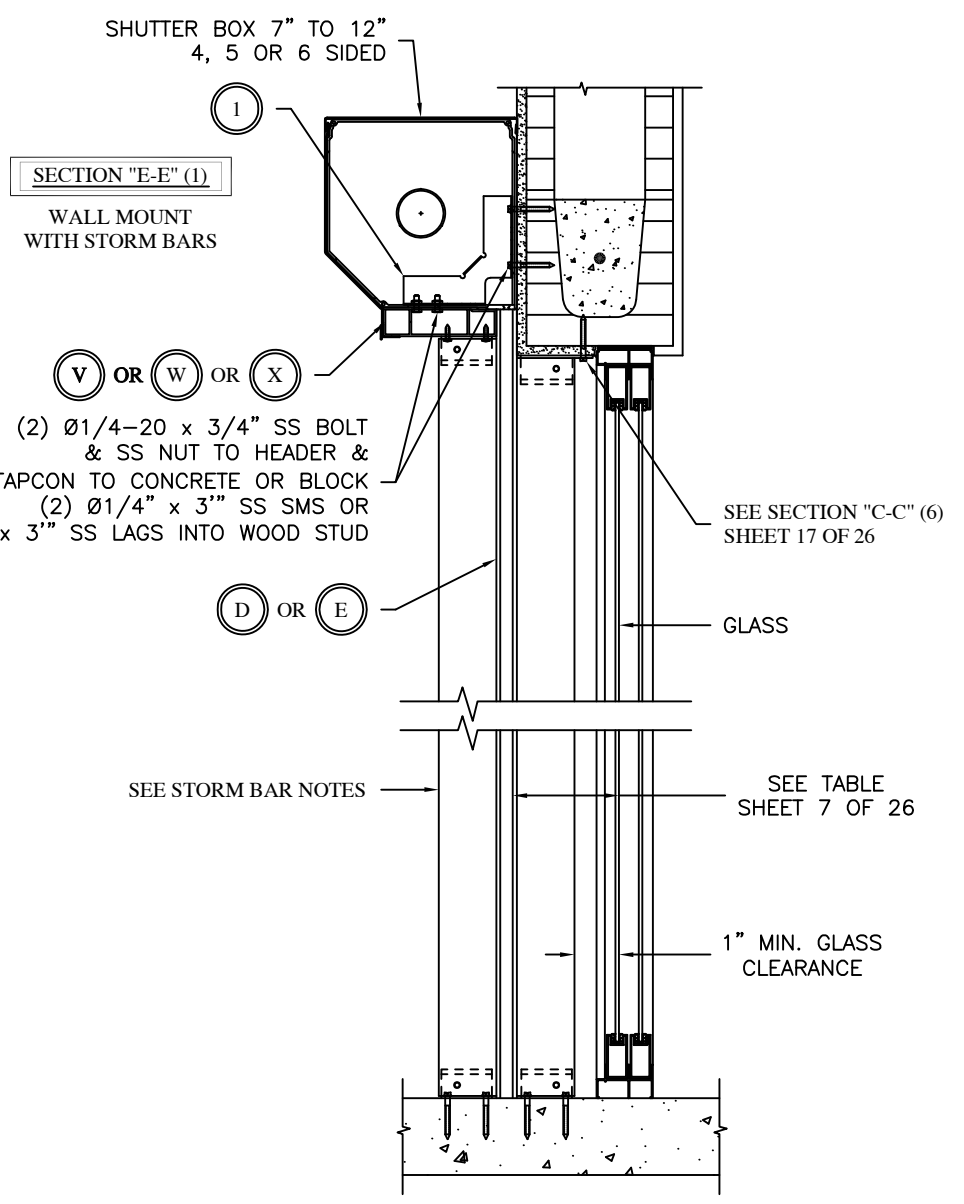
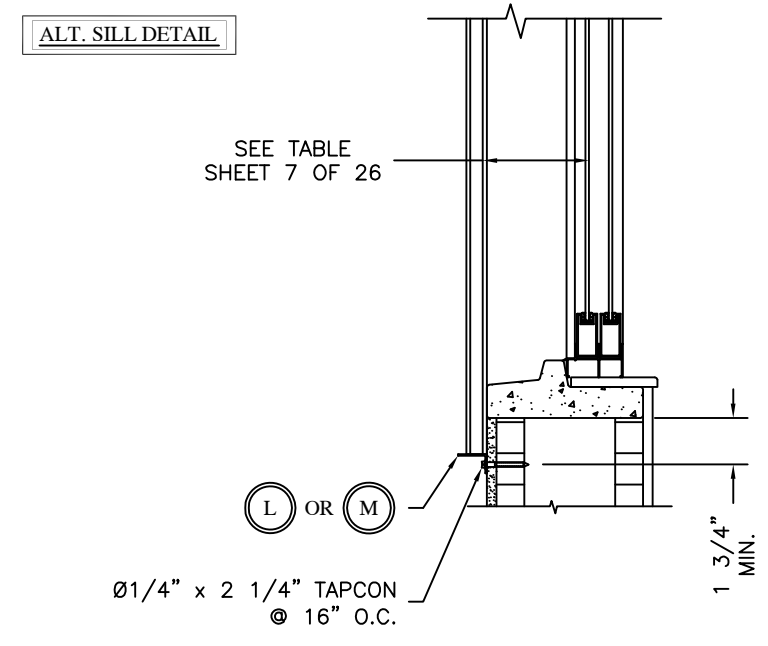
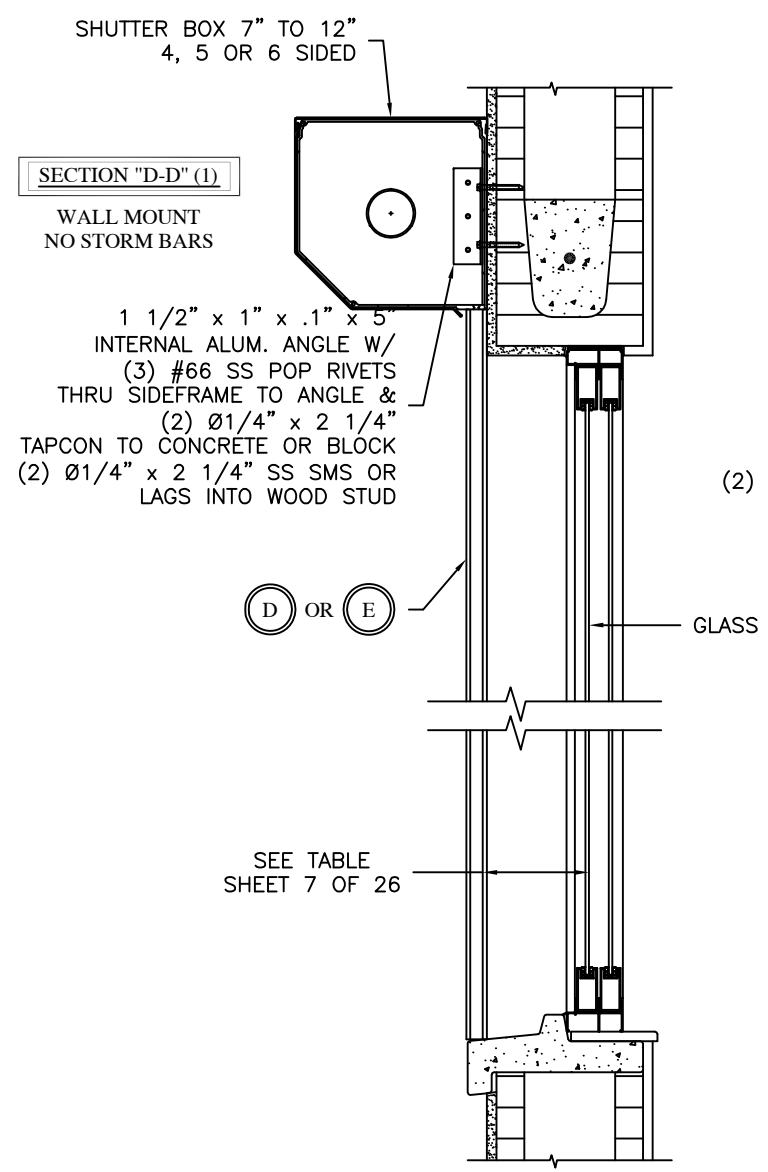
1661 GLENLAKE AVENUE
ITASCA, IL 60143
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QUALITAS MANUFACTURING INC.

HVHZ
END RETENTION
PRODUCT APPROVAL

DRAWING TITLE:



| | |
|-------------|----------|
| DRAWN: | DF |
| DATE: | 04-19-10 |
| APPROVED: | DLF |
| DATE: | 04-19-10 |
| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| SCALE: | 1 : 10 |
| SHEET: | 19 OF 26 |



637 LB/FT SAFE WIND LATERAL LOAD RATING
BASED ON ACI 530 WHEN SILL IS SET IN FULL
BED OF TYPE M OR S MOTAR

- STORM BAR NOTES:
1. SHUTTER SECTIONS ARE SHOWN WITH FIXED STORM BARS. STORM BARS CAN BE FIXED OR REMOVABLE, REMOVABLE (SPRING-LOADED) STORM BAR ASSEMBLIES & MOUNTING ARE SHOWN ON SHEET 17, 18, & 4A OF 26.
 2. SHUTTER(S) SHOULD NOT BE ROLLED DOWN DURING WIND EVENTS WITHOUT REMOVABLE STORM BARS IN PLACE. ROLL-A-WAY IS NOT RESPONSIBLE FOR SUBSEQUENT DAMAGE.
 3. REMOVING SPRING-LOADED STORM BARS: REMOVE PIN, LIFT UP ON STORM BAR, WHEN BOTTOM FEET CLEAR THE STORM BAR BASE PLATE, ROTATE STORM BAR OUT OF OPENING.
 4. SHUTTERS WITH NO STORM BARS OVER 72" WIDE SHOULD USE SOME FORM OF HOOD SUPPORT, HEADER, TUBING OR EXTERNAL SUPPORT.
 5. SEE ALLOWABLE HEADER SPAN TABLES ON PAGE 20 THRU 20C OF 26.
 6. FOR ALLOWABLE HEADER SPANS USING EXTERIOR REINFORCEMENT BRACKETS SEE SHEET 24 OF 26.

SCHEDULE 12

| MAXIMUM ALLOWABLE 2 SPAN 5.875" HEADER WIDTH (TRACK TO TRACK) E-E (1) ATTACHMENT TO WOOD | | | | | | | | | | | | | | | | |
|--|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 186.1 | 180.7 | 175.7 | 171.2 | 167.0 | 163.1 | 159.5 | 156.1 |
| 30 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 189.5 | 182.8 | 176.7 | 171.2 | 166.2 | 161.6 | 157.4 | 153.6 | 150.0 | 146.6 | 143.5 |
| 35 | 192.0 | 192.0 | 192.0 | 192.0 | 183.8 | 176.7 | 170.3 | 164.6 | 159.5 | 154.8 | 150.5 | 146.6 | 143.0 | 139.6 | 136.5 | 133.6 |
| 40 | 192.0 | 192.0 | 189.5 | 180.7 | 173.0 | 166.2 | 160.2 | 154.8 | 150.0 | 145.6 | 141.5 | 137.8 | 134.4 | 131.2 | 128.3 | 125.5 |
| 45 | 192.0 | 189.5 | 179.6 | 171.2 | 163.9 | 157.4 | 151.7 | 146.6 | 142.0 | 137.8 | 134.0 | 130.5 | 127.2 | 124.2 | 119.0 | 113.6 |
| 50 | 192.0 | 180.7 | 171.2 | 163.1 | 156.1 | 150.0 | 144.5 | 139.6 | 135.2 | 131.2 | 127.6 | 124.2 | 118.4 | 112.4 | 107.1 | 102.2 |
| 55 | 183.8 | 172.9 | 163.8 | 156.1 | 149.4 | 143.5 | 138.2 | 133.6 | 129.3 | 125.5 | 120.3 | 113.6 | 107.6 | 102.2 | 97.3 | 92.9 |
| 60 | 176.6 | 166.1 | 157.4 | 149.9 | 143.4 | 137.8 | 132.7 | 128.2 | 124.2 | 117.1 | 110.2 | 104.1 | 98.6 | 93.7 | 89.2 | 85.2 |
| 65 | 170.2 | 160.1 | 151.6 | 144.4 | 138.2 | 132.7 | 127.9 | 123.5 | 115.3 | 108.1 | 101.8 | 96.1 | 91.0 | 86.5 | 82.4 | 78.6 |
| 70 | 164.5 | 154.7 | 146.5 | 139.5 | 133.5 | 128.2 | 123.5 | 114.7 | 107.1 | 100.4 | 94.5 | 89.2 | 84.5 | 80.3 | 76.5 | 73.0 |
| 75 | 159.3 | 149.8 | 141.9 | 135.1 | 129.2 | 124.1 | 115.3 | 107.1 | 99.9 | 93.7 | 88.2 | 83.3 | 78.9 | 75.0 | 71.4 | 68.1 |
| 80 | 154.6 | 145.4 | 137.6 | 131.1 | 125.4 | 117.1 | 108.1 | 100.4 | 93.7 | 87.8 | 82.7 | 78.1 | 74.0 | 70.3 | 66.9 | 63.9 |
| 85 | 150.3 | 141.3 | 133.8 | 127.4 | 120.3 | 110.2 | 101.8 | 94.5 | 88.2 | 82.7 | 77.8 | 73.5 | 69.6 | 66.1 | 63.0 | 60.1 |
| 90 | 146.4 | 137.6 | 130.3 | 124.1 | 113.6 | 104.1 | 96.1 | 89.2 | 83.3 | 78.1 | 73.5 | 69.4 | 65.8 | 62.5 | 59.5 | 56.8 |
| 95 | 142.7 | 134.2 | 127.0 | 118.4 | 107.6 | 98.6 | 91.0 | 84.5 | 78.9 | 74.0 | 69.6 | 65.8 | 62.3 | 59.2 | 56.4 | 53.8 |
| 100 | 139.4 | 131.0 | 124.0 | 112.4 | 102.2 | 93.7 | 86.5 | 80.3 | 75.0 | 70.3 | 66.1 | 62.5 | 59.2 | 56.2 | 53.5 | 51.1 |
| 125 | 125.6 | 112.4 | 99.9 | 89.9 | 81.8 | 75.0 | 69.2 | 64.2 | 60.0 | 56.2 | 52.9 | 50.0 | 47.3 | 45.0 | 42.8 | 40.9 |
| 150 | 107.1 | 93.7 | 83.3 | 75.0 | 68.1 | 62.5 | 57.7 | 53.5 | 50.0 | 46.8 | 44.1 | 41.6 | 39.5 | 37.5 | 35.7 | 34.1 |
| 175 | 91.8 | 80.3 | 71.4 | 64.2 | 58.4 | 53.5 | 49.4 | 45.9 | 42.8 | 40.2 | 37.8 | 35.7 | 33.8 | 32.1 | 30.6 | 29.2 |
| 200 | 80.3 | 70.3 | 62.5 | 56.2 | 51.1 | 46.8 | 43.2 | 40.2 | 37.5 | 35.1 | 33.1 | 31.2 | 29.6 | 28.1 | 26.8 | 25.6 |
| 225 | 71.4 | 62.5 | 55.5 | 50.0 | 45.4 | 41.6 | 38.4 | 35.7 | 33.3 | 31.2 | 29.4 | 27.8 | 26.3 | 25.0 | 23.8 | 22.7 |
| 250 | 64.2 | 56.2 | 50.0 | 45.0 | 40.9 | 37.5 | 34.6 | 32.1 | 30.0 | 28.1 | 26.5 | 25.0 | 23.7 | 22.5 | 21.4 | 20.4 |
| 275 | 58.4 | 51.1 | 45.4 | 40.9 | 37.2 | 34.1 | 31.5 | 29.2 | 27.3 | 25.6 | 24.1 | 22.7 | 21.5 | 20.4 | 19.5 | 18.6 |

SCHEDULE 14

| MAXIMUM ALLOWABLE 2 SPAN 5.875" HEADER WIDTH (TRACK TO TRACK) E-E (1) ATTACHMENT TO BLOCK | | | | | | | | | | | | | | | | |
|---|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 186.1 | 180.7 | 175.7 | 171.2 | 167.0 | 163.1 | 159.5 | 156.1 |
| 30 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 189.5 | 182.8 | 176.7 | 171.2 | 166.2 | 161.6 | 157.4 | 153.6 | 150.0 | 146.6 | 143.5 |
| 35 | 192.0 | 192.0 | 192.0 | 192.0 | 183.8 | 176.7 | 170.3 | 164.6 | 159.5 | 154.8 | 150.5 | 146.6 | 143.0 | 139.6 | 134.8 | 128.7 |
| 40 | 192.0 | 192.0 | 189.5 | 180.7 | 173.0 | 166.2 | 160.2 | 154.8 | 150.0 | 145.6 | 141.5 | 137.6 | 130.4 | 123.8 | 117.9 | 112.6 |
| 45 | 192.0 | 189.5 | 179.6 | 171.2 | 163.9 | 157.4 | 151.7 | 146.6 | 142.0 | 137.6 | 129.5 | 122.3 | 115.9 | 110.1 | 104.8 | 100.1 |
| 50 | 192.0 | 180.7 | 171.2 | 163.1 | 156.1 | 150.0 | 144.5 | 139.6 | 132.1 | 123.8 | 116.6 | 110.1 | 104.3 | 99.1 | 94.4 | 90.1 |
| 55 | 183.8 | 172.9 | 163.8 | 156.1 | 149.4 | 143.5 | 138.2 | 128.7 | 120.1 | 112.6 | 106.0 | 100.1 | 94.8 | 90.1 | 85.8 | 81.9 |
| 60 | 176.6 | 166.1 | 157.4 | 149.9 | 143.4 | 137.6 | 127.0 | 117.9 | 110.1 | 103.2 | 97.1 | 91.7 | 86.9 | 82.6 | 78.6 | 75.1 |
| 65 | 170.2 | 160.1 | 151.6 | 144.4 | 138.2 | 127.0 | 117.2 | 108.9 | 101.6 | 95.3 | 89.7 | 84.7 | 80.2 | 76.2 | 72.6 | 69.3 |
| 70 | 164.5 | 154.7 | 146.5 | 139.5 | 128.7 | 117.9 | 108.9 | 101.1 | 94.4 | 88.5 | 83.3 | 78.6 | 74.5 | 70.8 | 67.4 | 64.3 |
| 75 | 159.3 | 149.8 | 141.9 | 132.1 | 120.1 | 110.1 | 101.6 | 94.4 | 88.1 | 82.6 | 77.7 | 73.4 | 69.5 | 66.0 | 62.9 | 60.0 |
| 80 | 154.6 | 145.4 | 137.6 | 123.8 | 112.6 | 103.2 | 95.3 | 88.5 | 82.6 | 77.4 | 72.8 | 68.8 | 65.2 | 61.9 | 59.0 | 56.3 |
| 85 | 150.3 | 141.3 | 129.5 | 116.6 | 106.0 | 97.1 | 89.7 | 83.3 | 77.7 | 72.8 | 68.6 | 64.8 | 61.3 | 58.3 | 55.5 | 53.0 |
| 90 | 146.4 | 137.6 | 122.3 | 110.1 | 100.1 | 91.7 | 84.7 | 78.6 | 73.4 | 68.8 | 64.8 | 61.2 | 57.9 | 55.0 | 52.4 | 50.0 |
| 95 | 142.7 | 130.4 | 115.9 | 104.3 | 94.8 | 86.9 | 80.2 | 74.5 | 69.5 | 65.2 | 61.3 | 57.9 | 54.9 | 52.1 | 49.7 | 47.4 |
| 100 | 139.4 | 123.8 | 110.1 | 99.1 | 90.1 | 82.6 | 76.2 | 70.8 | 66.0 | 61.9 | 58.3 | 55.0 | 52.1 | 49.5 | 47.2 | 45.0 |
| 125 | 113.2 | 99.1 | 88.1 | 79.3 | 72.1 | 66.0 | 61.0 | 56.6 | 52.8 | 49.5 | 46.6 | 44.0 | 41.7 | 39.6 | 37.7 | 36.0 |
| 150 | 94.4 | 82.6 | 73.4 | 66.0 | 60.0 | 55.0 | 50.8 | 47.2 | 44.0 | 41.3 | 38.9 | 36.7 | 34.8 | 33.0 | 31.5 | 30.0 |
| 175 | 80.9 | 70.8 | 62.9 | 56.6 | 51.5 | 47.2 | 43.5 | 40.4 | 37.7 | 35.4 | 33.3 | 31.5 | 29.8 | 28.3 | 27.0 | 25.7 |
| 200 | 70.8 | 61.9 | 55.0 | 49.5 | 45.0 | 41.3 | 38.1 | 35.4 | 33.0 | 31.0 | 29.1 | 27.5 | 26.1 | 24.8 | 23.6 | 22.5 |
| 225 | 62.9 | 55.0 | 48.9 | 44.0 | 40.0 | 36.7 | 33.9 | 31.5 | 29.4 | 27.5 | 25.9 | 24.5 | 23.2 | 22.0 | 21.0 | 20.0 |
| 250 | 56.6 | 49.5 | 44.0 | 39.6 | 36.0 | 33.0 | 30.5 | 28.3 | 26.4 | 24.8 | 23.3 | 22.0 | 20.9 | 19.8 | 18.9 | 18.0 |
| 275 | 51.5 | 45.0 | 40.0 | 36.0 | 32.8 | 30.0 | 27.7 | 25.7 | 24.0 | 22.5 | 21.2 | 20.0 | 19.0 | 18.0 | 17.2 | 16.4 |

SCHEDULE 13

| MAXIMUM ALLOWABLE 3 SPAN 5.875" HEADER WIDTH (TRACK TO TRACK) E-E (1) ATTACHMENT TO WOOD | | | | | | | | | | | | | | | | | | |
|--|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 | | |
| 25 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 191.3 | 186.6 | 182.3 | 178.3 | 174.1 |
| 30 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 191.3 | 185.7 | 180.7 | 176.0 | 168.0 | 159.6 | 152.0 | 145.1 | 141.1 |
| 35 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 190.3 | 184.0 | 178.3 | 171.0 | 160.9 | 152.0 | 144.0 | 136.8 | 130.3 | 124.3 | 119.1 | 114.8 |
| 40 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 185.7 | 179.1 | 171.0 | 159.6 | 149.6 | 140.8 | 133.0 | 126.0 | 119.7 | 114.0 | 108.8 | 103.6 | 99.4 |
| 45 | 192.0 | 192.0 | 192.0 | 191.3 | 183.2 | 176.0 | 163.7 | 152.0 | 141.8 | 133.0 | 125.2 | 118.2 | 112.0 | 106.4 | 101.3 | 96.7 | 92.1 | 88.5 |
| 50 | 192.0 | 192.0 | 191.3 | 182.3 | 174.1 | 159.6 | 147.3 | 136.8 | 127.7 | 119.7 | 112.6 | 106.4 | 100.8 | 95.7 | 91.2 | 87.0 | 82.9 | 79.1 |
| 55 | 192.0 | 192.0 | 183.1 | 174.1 | 158.3 | 145.1 | 133.9 | 124.3 | 116.1 | 108.8 | 102.4 | 96.7 | 91.6 | 87.0 | 82.9 | 79.1 | 75.4 | 71.9 |
| 60 | 192.0 | 185.6 | 176.0 | 159.6 | 145.1 | 133.0 | 122.8 | 114.0 | 106.4 | 99.7 | 93.9 | 88.7 | 84.0 | 79.8 | 76.0 | 72.5 | 69.1 | 65.8 |
| 65 | 190.2 | 179.0 | 163.7 | 147.3 | 133.9 | 122.8 | 113.3 | 105.2 | 98.2 | 92.1 | 86.6 | 81.8 | 77.5 | 73.7 | 70.1 | 67.0 | 64.0 | 61.1 |
| 70 | 183.8 | 171.0 | 152.0 | 136.8 | 124.3 | 114.0 | 105.2 | 97.7 | 91.2 | 85.5 | 80.5 | 76.0 | 72.0 | 68.4 | 65.1 | 62.2 | 59.4 | 56.7 |
| 75 | 178.1 | 159.6 | 141.8 | 127.7 | 116.1 | 106.4 | 98.2 | 91.2 | 85.1 | 79.8 | 75.1 | 70.9 | 67.2 | 63.8 | 60.8 | 58.0 | 55.4 | 52.9 |
| 80 | 171.0 | 149.6 | 133.0 | 119.7 | 108.8 | 99.7 | 92.1 | 85.5 | 79.8 | 74.8 | 70.4 | 66.5 | 63.0 | 59.8 | 57.0 | 54.4 | 51.9 | 49.5 |
| 85 | 160.9 | 140.8 | 125.2 | 112.6 | 102.4 | 93.9 | 86.6 | 80.5 | 75.1 | 70.4 | 66.3 | 62.6 | 59.3 | 56.3 | 53.6 | 51.2 | 48.8 | 46.5 |
| 90 | 152.0 | 133.0 | 118.2 | 106.4 | 96.7 | 88.7 | 81.8 | 76.0 | 70.9 | 66.5 | 62.6 | 59.1 | 56.0 | 53.2 | 50.7 | 48.4 | 46.1 | 43.9 |
| 95 | 144.0 | 126.0 | 112.0 | 100.8 | 91.6 | 84.0 | 77.5 | 72.0 | 67.2 | 63.0 | 59.3 | 56.0 | 53.0 | 50.4 | 48.0 | 45.8 | 43.6 | 41.5 |
| 100 | 136.8 | 119.7 | 106.4 | 95.7 | 87.0 | 79.8 | 73.7 | 68.4 | 63.8 | 59.8 | 56.3 | 53.2 | 50.4 | 47.9 | 45.6 | 43.5 | 41.4 | 39.4 |
| 125 | 109.4 | 95.7 | 85.1 | 76.6 | 69.6 | 63.8 | 58.9 | 54.7 | 51.1 | 47.9 | 45.1 | 42.6 | 40.3 | 38.3 | 36.5 | 34.8 | 33.1 | 31.5 |
| 150 | 91.2 | 79.8 | 70.9 | 63.8 | 58.0 | 53.2 | 49.1 | 45.6 | 42.6 | 39.9 | 37.5 | 35.5 | 33.6 | 31.9 | 30.4 | 29.0 | 27.6 | 26.2 |
| 175 | 78.2 | 68.4 | 60.8 | 54.7 | 49.7 | 45.6 | 42.1 | 39.1 | 36.5 | 34.2 | 32.2 | 30.4 | 28.8 | 27.4 | 26.1 | 24.9 | 23.7 | 22.5 |
| 200 | 68.4 | 59.8 | 53.2 | 47.9 | 43.5 | 39.9 | 36.8 | 34.2 | 31.9 | 29.9 | 28.2 | 26.6 | 25.2 | 23.9 | 22.8 | 21.8 | 20.8 | 19.8 |
| 225 | 60.8 | 53.2 | 47.3 | 42.6 | 38.7 | 35.5 | 32.7 | 30.4 | 28.4 | 26.6 | 25.0 | 23.6 | 22.4 | 21.3 | 20.3 | 19.3 | 18.4 | 17.5 |
| 250 | 54.7 | 47.9 | 42.6 | 38.3 | 34.8 | 31.9 | 29.5 | 27.4 | 25.5 | 23.9 | 22.5 | | | | | | | |

SCHEDULE 16

| MAXIMUM ALLOWABLE 2 SPAN 5.875" HEADER WIDTH (TRACK TO TRACK) E-E (1), (2) AND (3) ATTACHMENT TO CONCRETE OR BUILD OUT | | | | | | | | | | | | | | | | |
|--|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 240.0 | 240.0 | 234.3 | 223.5 | 214.1 | 205.9 | 198.6 | 192.0 | 186.1 | 180.7 | 175.7 | 171.2 | 167.0 | 163.1 | 159.5 | 156.1 |
| 30 | 240.0 | 227.6 | 215.9 | 205.9 | 197.2 | 189.5 | 182.8 | 176.7 | 171.2 | 166.2 | 161.6 | 157.4 | 153.6 | 150.0 | 146.6 | 143.5 |
| 35 | 225.5 | 212.4 | 201.4 | 192.0 | 183.8 | 176.7 | 170.3 | 164.6 | 159.5 | 154.8 | 150.5 | 146.6 | 143.0 | 139.6 | 136.5 | 133.6 |
| 40 | 212.4 | 200.0 | 189.5 | 180.7 | 173.0 | 166.2 | 160.2 | 154.8 | 150.0 | 145.6 | 141.5 | 137.8 | 134.4 | 131.2 | 128.3 | 125.5 |
| 45 | 201.4 | 189.5 | 179.6 | 171.2 | 163.9 | 157.4 | 151.7 | 146.6 | 142.0 | 137.8 | 134.0 | 130.5 | 127.2 | 124.2 | 121.4 | 118.8 |
| 50 | 192.0 | 180.7 | 171.2 | 163.1 | 156.1 | 150.0 | 144.5 | 139.6 | 135.2 | 131.2 | 127.6 | 124.2 | 121.1 | 118.3 | 115.6 | 113.1 |
| 55 | 183.8 | 172.9 | 163.8 | 156.1 | 149.4 | 143.5 | 138.2 | 133.6 | 129.3 | 125.5 | 122.0 | 118.8 | 115.8 | 113.1 | 110.5 | 108.1 |
| 60 | 176.6 | 166.1 | 157.4 | 149.9 | 143.4 | 137.8 | 132.7 | 128.2 | 124.2 | 120.5 | 117.1 | 114.0 | 111.2 | 108.5 | 106.1 | 103.8 |
| 65 | 170.2 | 160.1 | 151.6 | 144.4 | 138.2 | 132.7 | 127.9 | 123.5 | 119.6 | 116.0 | 112.8 | 109.8 | 107.1 | 104.5 | 102.1 | 99.9 |
| 70 | 164.5 | 154.7 | 146.5 | 139.5 | 133.5 | 128.2 | 123.5 | 119.3 | 115.5 | 112.1 | 108.9 | 106.0 | 103.4 | 100.9 | 98.6 | 96.5 |
| 75 | 159.3 | 149.8 | 141.9 | 135.1 | 129.2 | 124.1 | 119.6 | 115.5 | 111.8 | 108.5 | 105.4 | 102.6 | 100.1 | 97.7 | 95.5 | 93.4 |
| 80 | 154.6 | 145.4 | 137.6 | 131.1 | 125.4 | 120.4 | 116.0 | 112.0 | 108.5 | 105.2 | 102.3 | 99.6 | 97.0 | 94.7 | 92.6 | 90.6 |
| 85 | 150.3 | 141.3 | 133.8 | 127.4 | 121.9 | 117.0 | 112.7 | 108.9 | 105.4 | 102.3 | 99.4 | 96.7 | 94.3 | 92.1 | 90.0 | 88.0 |
| 90 | 146.4 | 137.6 | 130.3 | 124.0 | 118.6 | 113.9 | 109.7 | 106.0 | 102.6 | 99.5 | 96.7 | 94.1 | 91.8 | 89.6 | 87.5 | 85.6 |
| 95 | 142.7 | 134.2 | 127.0 | 120.9 | 115.7 | 111.0 | 107.0 | 103.3 | 100.0 | 97.0 | 94.3 | 91.8 | 89.4 | 87.3 | 85.3 | 83.5 |
| 100 | 139.4 | 131.0 | 124.0 | 118.1 | 112.9 | 108.4 | 104.4 | 100.8 | 97.6 | 94.7 | 92.0 | 89.6 | 87.3 | 85.2 | 83.3 | 81.3 |
| 125 | 125.6 | 118.0 | 111.7 | 106.3 | 101.6 | 97.6 | 94.0 | 90.7 | 87.8 | 85.2 | 82.8 | 79.5 | 75.3 | 71.6 | 68.2 | 65.1 |
| 150 | 115.3 | 108.3 | 102.5 | 97.5 | 93.2 | 89.5 | 86.2 | 83.2 | 79.5 | 74.6 | 70.2 | 66.3 | 62.8 | 59.6 | 56.8 | 54.2 |
| 175 | 107.2 | 100.7 | 95.3 | 90.7 | 86.7 | 83.2 | 78.7 | 73.0 | 68.2 | 63.9 | 60.1 | 56.8 | 53.8 | 51.1 | 48.7 | 46.5 |
| 200 | 100.7 | 94.6 | 89.5 | 85.1 | 81.3 | 74.6 | 68.8 | 63.9 | 59.6 | 55.9 | 52.6 | 49.7 | 47.1 | 44.7 | 42.6 | 40.7 |
| 225 | 95.3 | 89.4 | 84.6 | 79.5 | 72.3 | 66.3 | 61.2 | 56.8 | 53.0 | 49.7 | 46.8 | 44.2 | 41.9 | 39.8 | 37.9 | 36.2 |
| 250 | 90.6 | 85.1 | 79.5 | 71.6 | 65.1 | 59.6 | 55.1 | 51.1 | 47.7 | 44.7 | 42.1 | 39.8 | 37.7 | 35.8 | 34.1 | 32.5 |
| 275 | 86.6 | 81.3 | 72.3 | 65.1 | 59.2 | 54.2 | 50.1 | 46.5 | 43.4 | 40.7 | 38.3 | 36.2 | 34.2 | 32.5 | 31.0 | 29.6 |

SCHEDULE 17

| MAXIMUM ALLOWABLE 3 SPAN 5.875" HEADER WIDTH (TRACK TO TRACK) E-E (1), (2) AND (3) ATTACHMENT TO CONCRETE OR BUILD OUT | | | | | | | | | | | | | | | | |
|--|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 240.0 | 240.0 | 240.0 | 240.0 | 239.5 | 230.0 | 221.6 | 214.3 | 207.7 | 201.8 | 196.3 | 191.3 | 186.6 | 182.3 | 178.3 | 174.6 |
| 30 | 240.0 | 240.0 | 240.0 | 230.0 | 220.1 | 211.6 | 204.1 | 197.4 | 191.3 | 185.7 | 180.7 | 176.0 | 171.7 | 167.7 | 164.0 | 160.6 |
| 35 | 240.0 | 237.5 | 224.9 | 214.3 | 205.3 | 197.4 | 190.3 | 184.0 | 178.3 | 173.1 | 168.4 | 164.0 | 160.0 | 156.3 | 152.8 | 149.6 |
| 40 | 237.5 | 223.2 | 211.6 | 201.8 | 193.2 | 185.7 | 179.1 | 173.1 | 167.7 | 162.8 | 158.4 | 154.3 | 150.5 | 146.9 | 143.7 | 140.6 |
| 45 | 224.9 | 211.6 | 200.6 | 191.3 | 183.2 | 176.0 | 169.7 | 164.0 | 158.9 | 154.3 | 150.0 | 146.1 | 142.5 | 139.1 | 136.0 | 133.1 |
| 50 | 214.3 | 201.8 | 191.3 | 182.3 | 174.6 | 167.7 | 161.7 | 156.3 | 151.4 | 146.9 | 142.9 | 139.1 | 135.7 | 132.5 | 129.5 | 126.8 |
| 55 | 205.2 | 193.2 | 183.1 | 174.5 | 167.1 | 160.5 | 154.7 | 149.5 | 144.8 | 140.6 | 136.7 | 133.1 | 129.8 | 126.7 | 123.9 | 121.2 |
| 60 | 197.2 | 185.6 | 175.9 | 167.7 | 160.5 | 154.2 | 148.6 | 143.6 | 139.1 | 135.0 | 131.2 | 127.8 | 124.6 | 121.7 | 118.9 | 115.4 |
| 65 | 190.2 | 179.0 | 169.6 | 161.6 | 154.6 | 148.6 | 143.2 | 138.3 | 134.0 | 130.0 | 126.4 | 123.1 | 120.0 | 117.2 | 114.6 | 112.1 |
| 70 | 183.8 | 173.0 | 163.9 | 156.1 | 149.4 | 143.5 | 138.3 | 133.6 | 129.4 | 125.6 | 122.1 | 118.9 | 114.6 | 108.8 | 103.7 | 98.9 |
| 75 | 178.1 | 167.5 | 158.7 | 151.2 | 144.7 | 139.0 | 133.9 | 129.4 | 125.3 | 121.6 | 118.2 | 112.9 | 106.9 | 101.6 | 96.8 | 92.4 |
| 80 | 172.9 | 162.6 | 154.0 | 146.7 | 140.4 | 134.9 | 129.9 | 125.5 | 121.6 | 118.0 | 112.0 | 105.8 | 100.3 | 95.2 | 90.7 | 86.6 |
| 85 | 168.1 | 158.1 | 149.8 | 142.7 | 136.5 | 131.1 | 126.3 | 122.0 | 118.2 | 112.0 | 105.5 | 99.6 | 94.4 | 89.6 | 85.4 | 81.5 |
| 90 | 163.7 | 154.0 | 145.9 | 138.9 | 132.9 | 127.7 | 123.0 | 118.8 | 112.9 | 105.8 | 99.6 | 94.1 | 89.1 | 84.7 | 80.6 | 77.0 |
| 95 | 159.7 | 150.2 | 142.2 | 135.5 | 129.6 | 124.5 | 119.9 | 114.6 | 106.9 | 100.3 | 94.4 | 89.1 | 84.4 | 80.2 | 76.4 | 72.9 |
| 100 | 155.9 | 146.6 | 138.9 | 132.2 | 126.5 | 121.5 | 117.0 | 108.8 | 101.6 | 95.2 | 89.6 | 84.7 | 80.2 | 76.2 | 72.6 | 69.3 |
| 125 | 140.6 | 132.2 | 125.1 | 119.1 | 110.8 | 101.6 | 93.8 | 87.1 | 81.3 | 76.2 | 71.7 | 67.7 | 64.2 | 61.0 | 58.1 | 55.4 |
| 150 | 129.1 | 121.4 | 112.9 | 101.6 | 92.4 | 84.7 | 78.1 | 72.6 | 67.7 | 63.5 | 59.8 | 56.4 | 53.5 | 50.8 | 48.4 | 46.2 |
| 175 | 120.1 | 108.8 | 96.8 | 87.1 | 79.2 | 72.6 | 67.0 | 62.2 | 58.1 | 54.4 | 51.2 | 48.4 | 45.8 | 43.5 | 41.5 | 39.6 |
| 200 | 108.8 | 95.2 | 84.7 | 76.2 | 69.3 | 63.5 | 58.6 | 54.4 | 50.8 | 47.6 | 44.8 | 42.3 | 40.1 | 38.1 | 36.3 | 34.6 |
| 225 | 96.8 | 84.7 | 75.3 | 67.7 | 61.6 | 56.4 | 52.1 | 48.4 | 45.2 | 42.3 | 39.8 | 37.6 | 35.6 | 33.9 | 32.3 | 30.8 |
| 250 | 87.1 | 76.2 | 67.7 | 61.0 | 55.4 | 50.8 | 46.9 | 43.5 | 40.6 | 38.1 | 35.9 | 33.9 | 32.1 | 30.5 | 29.0 | 27.7 |
| 275 | 79.2 | 69.3 | 61.6 | 55.4 | 50.4 | 46.2 | 42.6 | 39.6 | 36.9 | 34.6 | 32.6 | 30.8 | 29.2 | 27.7 | 26.4 | 25.2 |



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END RETENTION
PRODUCT APPROVAL

DRAWING TITLE:



| | |
|-------------|-----------|
| DRAWN: | DF |
| DATE: | 04-19-10 |
| APPROVED: | DLF |
| DATE: | 04-19-10 |
| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| REV: | - |
| SCALE: | 1 : 10 |
| SHEET: | 20A OF 26 |

SCHEDULE 12A

| MAXIMUM ALLOWABLE 2 SPAN 3.5" HEADER WIDTH (TRACK TO TRACK) E-E (1) ATTACHMENT TO WOOD | | | | | | | | | | | | | | | | |
|--|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 182.0 | 171.0 | 161.8 | 154.0 | 147.3 | 141.4 | 136.2 | 131.5 | 127.3 | 123.5 | 120.0 | 116.8 | 113.8 | 111.1 | 108.5 | 106.1 |
| 30 | 167.1 | 157.0 | 148.6 | 141.4 | 135.2 | 129.8 | 124.9 | 120.6 | 116.8 | 113.2 | 110.0 | 107.1 | 104.4 | 101.8 | 99.5 | 97.3 |
| 35 | 155.5 | 146.1 | 138.2 | 131.5 | 125.7 | 120.6 | 116.1 | 112.1 | 108.5 | 105.2 | 102.2 | 99.5 | 97.0 | 94.6 | 92.4 | 90.4 |
| 40 | 146.1 | 137.2 | 129.8 | 123.5 | 118.0 | 113.2 | 109.0 | 105.2 | 101.8 | 98.8 | 95.9 | 93.4 | 91.0 | 88.8 | 86.7 | 84.8 |
| 45 | 138.2 | 129.8 | 122.7 | 116.8 | 111.6 | 107.1 | 103.1 | 99.5 | 96.3 | 93.4 | 90.7 | 88.3 | 86.0 | 83.9 | 82.0 | 80.2 |
| 50 | 131.5 | 123.5 | 116.8 | 111.1 | 106.1 | 101.8 | 98.0 | 94.6 | 91.6 | 88.8 | 86.2 | 83.9 | 81.8 | 79.8 | 77.9 | 76.2 |
| 55 | 125.7 | 118.0 | 111.6 | 106.1 | 101.4 | 97.3 | 93.7 | 90.4 | 87.5 | 84.8 | 82.4 | 80.2 | 78.1 | 76.2 | 74.4 | 72.8 |
| 60 | 120.6 | 113.2 | 107.1 | 101.8 | 97.3 | 93.3 | 89.8 | 86.7 | 83.9 | 81.3 | 79.0 | 76.9 | 74.9 | 73.1 | 71.4 | 69.8 |
| 65 | 116.1 | 109.0 | 103.0 | 98.0 | 93.6 | 89.8 | 86.5 | 83.4 | 80.7 | 78.3 | 76.0 | 74.0 | 72.1 | 70.3 | 68.7 | 67.2 |
| 70 | 112.1 | 105.2 | 99.5 | 94.6 | 90.4 | 86.7 | 83.4 | 80.5 | 77.9 | 75.5 | 73.4 | 71.4 | 69.5 | 67.8 | 66.3 | 64.8 |
| 75 | 108.5 | 101.8 | 96.2 | 91.5 | 87.4 | 83.9 | 80.7 | 77.9 | 75.4 | 73.1 | 71.0 | 69.0 | 67.3 | 65.6 | 64.1 | 62.7 |
| 80 | 105.2 | 98.7 | 93.3 | 88.7 | 84.8 | 81.3 | 78.2 | 75.5 | 73.1 | 70.8 | 68.8 | 66.9 | 65.2 | 63.6 | 62.1 | 60.8 |
| 85 | 102.2 | 95.9 | 90.6 | 86.2 | 82.3 | 79.0 | 76.0 | 73.3 | 71.0 | 68.8 | 66.8 | 65.0 | 63.3 | 61.8 | 60.3 | 59.0 |
| 90 | 99.4 | 93.3 | 88.2 | 83.9 | 80.1 | 76.8 | 73.9 | 71.4 | 69.0 | 66.9 | 65.0 | 63.2 | 61.6 | 60.1 | 58.7 | 56.8 |
| 95 | 96.9 | 90.9 | 85.9 | 81.7 | 78.1 | 74.9 | 72.0 | 69.5 | 67.2 | 65.2 | 63.3 | 61.6 | 60.0 | 58.5 | 56.4 | 53.8 |
| 100 | 94.5 | 88.7 | 83.8 | 79.7 | 76.1 | 73.0 | 70.3 | 67.8 | 65.6 | 63.6 | 61.8 | 60.1 | 58.5 | 56.2 | 53.5 | 51.1 |
| 125 | 85.0 | 79.7 | 75.3 | 71.6 | 68.4 | 65.6 | 63.1 | 60.9 | 58.9 | 56.2 | 52.9 | 50.0 | 47.3 | 45.0 | 42.8 | 40.9 |
| 150 | 77.8 | 73.0 | 69.0 | 65.6 | 62.6 | 60.1 | 57.7 | 55.5 | 50.0 | 46.8 | 44.1 | 41.6 | 39.5 | 37.5 | 35.7 | 34.1 |
| 175 | 72.3 | 67.8 | 64.0 | 60.9 | 58.1 | 55.5 | 49.4 | 45.9 | 42.8 | 40.2 | 37.8 | 35.7 | 33.8 | 32.1 | 30.6 | 29.2 |
| 200 | 67.7 | 63.5 | 60.0 | 56.2 | 51.1 | 46.8 | 43.2 | 40.2 | 37.5 | 35.1 | 33.1 | 31.2 | 29.6 | 28.1 | 26.8 | 25.6 |
| 225 | 64.0 | 60.0 | 55.5 | 50.0 | 45.4 | 41.6 | 38.4 | 35.7 | 33.3 | 31.2 | 29.4 | 27.8 | 26.3 | 25.0 | 23.8 | 22.7 |
| 250 | 60.8 | 56.2 | 50.0 | 45.0 | 40.9 | 37.5 | 34.6 | 32.1 | 30.0 | 28.1 | 26.5 | 25.0 | 23.7 | 22.5 | 21.4 | 20.4 |
| 275 | 58.1 | 51.1 | 45.4 | 40.9 | 37.2 | 34.1 | 31.5 | 29.2 | 27.3 | 25.6 | 24.1 | 22.7 | 21.5 | 20.4 | 19.5 | 18.6 |

SCHEDULE 14A

| MAXIMUM ALLOWABLE 2 SPAN 3.5" HEADER WIDTH (TRACK TO TRACK) E-E (1) ATTACHMENT TO BLOCK | | | | | | | | | | | | | | | | |
|---|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 182.0 | 171.0 | 161.8 | 154.0 | 147.3 | 141.4 | 136.2 | 131.5 | 127.3 | 123.5 | 120.0 | 116.8 | 113.8 | 111.1 | 108.5 | 106.1 |
| 30 | 167.1 | 157.0 | 148.6 | 141.4 | 135.2 | 129.8 | 124.9 | 120.6 | 116.8 | 113.2 | 110.0 | 107.1 | 104.4 | 101.8 | 99.5 | 97.3 |
| 35 | 155.5 | 146.1 | 138.2 | 131.5 | 125.7 | 120.6 | 116.1 | 112.1 | 108.5 | 105.2 | 102.2 | 99.5 | 97.0 | 94.6 | 92.4 | 90.4 |
| 40 | 146.1 | 137.2 | 129.8 | 123.5 | 118.0 | 113.2 | 109.0 | 105.2 | 101.8 | 98.8 | 95.9 | 93.4 | 91.0 | 88.8 | 86.7 | 84.8 |
| 45 | 138.2 | 129.8 | 122.7 | 116.8 | 111.6 | 107.1 | 103.1 | 99.5 | 96.3 | 93.4 | 90.7 | 88.3 | 86.0 | 83.9 | 82.0 | 80.2 |
| 50 | 131.5 | 123.5 | 116.8 | 111.1 | 106.1 | 101.8 | 98.0 | 94.6 | 91.6 | 88.8 | 86.2 | 83.9 | 81.8 | 79.8 | 77.9 | 76.2 |
| 55 | 125.7 | 118.0 | 111.6 | 106.1 | 101.4 | 97.3 | 93.7 | 90.4 | 87.5 | 84.8 | 82.4 | 80.2 | 78.1 | 76.2 | 74.4 | 72.8 |
| 60 | 120.6 | 113.2 | 107.1 | 101.8 | 97.3 | 93.3 | 89.8 | 86.7 | 83.9 | 81.3 | 79.0 | 76.9 | 74.9 | 73.1 | 71.4 | 69.8 |
| 65 | 116.1 | 109.0 | 103.0 | 98.0 | 93.6 | 89.8 | 86.5 | 83.4 | 80.7 | 78.3 | 76.0 | 74.0 | 72.1 | 70.3 | 68.7 | 67.2 |
| 70 | 112.1 | 105.2 | 99.5 | 94.6 | 90.4 | 86.7 | 83.4 | 80.5 | 77.9 | 75.5 | 73.4 | 71.4 | 69.5 | 67.8 | 66.3 | 64.8 |
| 75 | 108.5 | 101.8 | 96.2 | 91.5 | 87.4 | 83.9 | 80.7 | 77.9 | 75.4 | 73.1 | 71.0 | 69.0 | 67.3 | 65.6 | 62.9 | 60.0 |
| 80 | 105.2 | 98.7 | 93.3 | 88.7 | 84.8 | 81.3 | 78.2 | 75.5 | 73.1 | 70.8 | 68.8 | 66.9 | 65.2 | 63.6 | 62.1 | 60.8 |
| 85 | 102.2 | 95.9 | 90.6 | 86.2 | 82.3 | 79.0 | 76.0 | 73.3 | 71.0 | 68.8 | 66.8 | 64.8 | 63.3 | 61.8 | 60.3 | 59.0 |
| 90 | 99.4 | 93.3 | 88.2 | 83.9 | 80.1 | 76.8 | 73.9 | 71.4 | 69.0 | 66.9 | 65.0 | 63.2 | 61.6 | 60.1 | 58.7 | 56.8 |
| 95 | 96.9 | 90.9 | 85.9 | 81.7 | 78.1 | 74.9 | 72.0 | 69.5 | 67.2 | 65.2 | 63.3 | 61.6 | 60.0 | 58.5 | 56.4 | 53.8 |
| 100 | 94.5 | 88.7 | 83.8 | 79.7 | 76.1 | 73.0 | 70.3 | 67.8 | 65.6 | 63.6 | 61.8 | 60.1 | 58.5 | 56.2 | 53.5 | 51.1 |
| 125 | 85.0 | 79.7 | 75.3 | 71.6 | 68.4 | 65.6 | 63.1 | 60.9 | 58.9 | 56.2 | 52.9 | 50.0 | 47.3 | 45.0 | 42.8 | 40.9 |
| 150 | 77.8 | 73.0 | 69.0 | 65.6 | 62.6 | 60.1 | 57.7 | 55.5 | 50.0 | 46.8 | 44.1 | 41.6 | 39.5 | 37.5 | 35.7 | 34.1 |
| 175 | 72.3 | 67.8 | 64.0 | 60.9 | 58.1 | 55.5 | 49.4 | 45.9 | 42.8 | 40.2 | 37.8 | 35.7 | 33.8 | 32.1 | 30.6 | 29.2 |
| 200 | 67.7 | 63.5 | 60.0 | 56.2 | 51.1 | 46.8 | 43.2 | 40.2 | 37.5 | 35.1 | 33.1 | 31.2 | 29.6 | 28.1 | 26.8 | 25.6 |
| 225 | 64.0 | 60.0 | 55.5 | 50.0 | 45.4 | 41.6 | 38.4 | 35.7 | 33.3 | 31.2 | 29.4 | 27.8 | 26.3 | 25.0 | 23.8 | 22.7 |
| 250 | 60.8 | 56.2 | 50.0 | 45.0 | 40.9 | 37.5 | 34.6 | 32.1 | 30.0 | 28.1 | 26.5 | 25.0 | 23.7 | 22.5 | 21.4 | 20.4 |
| 275 | 58.1 | 51.1 | 45.4 | 40.9 | 37.2 | 34.1 | 31.5 | 29.2 | 27.3 | 25.6 | 24.1 | 22.7 | 21.5 | 20.4 | 19.5 | 18.6 |

SCHEDULE 13A

| MAXIMUM ALLOWABLE 3 SPAN 3.5" HEADER WIDTH (TRACK TO TRACK) E-E (1) ATTACHMENT TO WOOD | | | | | | | | | | | | | | | | |
|--|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 184.6 | 176.6 | 169.8 | 163.9 | 158.8 | 154.3 | 150.2 | 146.5 | 142.8 | 138.5 | 134.6 | 131.0 | 127.7 | 124.7 | 121.8 | 119.2 |
| 30 | 173.7 | 166.2 | 159.8 | 154.3 | 149.4 | 145.2 | 140.2 | 135.4 | 131.0 | 127.1 | 123.5 | 120.2 | 117.2 | 114.4 | 111.8 | 109.3 |
| 35 | 165.0 | 157.8 | 151.8 | 146.5 | 141.0 | 135.4 | 130.4 | 125.9 | 121.8 | 118.2 | 114.8 | 111.8 | 108.9 | 106.3 | 103.9 | 101.6 |
| 40 | 157.8 | 151.0 | 145.2 | 138.5 | 132.4 | 127.1 | 122.4 | 118.2 | 114.4 | 110.9 | 107.8 | 104.9 | 102.2 | 99.8 | 97.5 | 95.3 |
| 45 | 151.8 | 145.2 | 137.7 | 131.0 | 125.3 | 120.2 | 115.8 | 111.8 | 108.2 | 104.9 | 101.9 | 99.2 | 96.6 | 94.3 | 92.1 | 90.1 |
| 50 | 146.5 | 138.5 | 131.0 | 124.7 | 119.2 | 114.4 | 110.1 | 106.3 | 102.9 | 99.8 | 96.9 | 94.3 | 91.9 | 89.7 | 87.6 | 85.7 |
| 55 | 141.0 | 132.4 | 125.3 | 119.2 | 113.9 | 109.3 | 105.2 | 101.6 | 98.3 | 95.3 | 92.6 | 90.1 | 87.8 | 85.7 | 82.9 | 79.1 |
| 60 | 135.3 | 127.1 | 120.2 | 114.3 | 109.3 | 104.9 | 100.9 | 97.4 | 94.3 | 91.4 | 88.8 | 86.4 | 84.0 | 79.8 | 76.0 | 72.5 |
| 65 | 130.3 | 122.4 | 115.7 | 110.1 | 105.2 | 100.9 | 97.2 | 93.8 | 90.8 | 88.0 | 85.5 | 81.8 | 77.5 | 73.7 | 70.1 | 67.0 |
| 70 | 125.8 | 118.1 | 111.7 | 106.3 | 101.5 | 97.4 | 93.8 | 90.5 | 87.6 | 84.9 | 80.5 | 76.0 | 72.0 | 68.4 | 65.1 | 62.2 |
| 75 | 121.8 | 114.3 | 108.1 | 102.8 | 98.3 | 94.3 | 90.7 | 87.6 | 84.7 | 79.8 | 75.1 | 70.9 | 67.2 | 63.8 | 60.8 | 58.0 |
| 80 | 118.1 | 110.8 | 104.8 | 99.7 | 95.3 | 91.4 | 88.0 | 84.9 | 79.8 | 74.8 | 70.4 | 66.5 | 63.0 | 59.8 | 57.0 | 54.4 |
| 85 | 114.7 | 107.7 | 101.8 | 96.9 | 92.5 | 88.8 | 85.4 | 80.5 | 75.1 | 70.4 | 66.3 | 62.6 | 59.3 | 56.3 | 53.6 | 51.2 |
| 90 | 111.7 | 104.8 | 99.1 | 94.2 | 90.1 | 86.4 | 81.8 | 76.0 | 70.9 | 66.5 | 62.6 | 59.1 | 56.0 | 53.2 | 50.7 | 48.4 |
| 95 | 108.8 | 102.1 | 96.6 | 91.8 | 87.7 | 84.0 | 77.5 | 72.0 | 67.2 | 63.0 | 59.3 | 56.0 | 53.0 | 50.4 | 48.0 | 45.8 |
| 100 | 106.2 | 99.7 | 94.2 | 89.6 | 85.6 | 79.8 | 73.7 | 68.4 | 63.8 | 59.8 | 56.3 | 53.2 | 50.4 | 47.9 | 45.6 | 43.5 |
| 125 | 95.5 | 89.6 | 84.7 | 76.6 | 69.6 | 63.8 | 58.9 | 54.7 | 51.1 | 47.9 | 45.1 | 42.6 | 40.3 | 38.3 | 36.5 | 34.8 |
| 150 | 87.5 | 79.8 | 70.9 | 63.8 | 58.0 | 53.2 | 49.1 | 45.6 | 42.6 | 39.9 | 37.5 | 35.5 | 33.6 | 31.9 | 30.4 | 29.0 |
| 175 | 78.2 | 68.4 | 60.8 | 54.7 | 49.7 | 45.6 | 42.1 | 39.1 | 36.5 | 34.2 | 32.2 | 30.4 | 28.8 | 27.4 | 26.1 | 24.9 |
| 200 | 68.4 | 59.8 | 53.2 | 47.9 | 43.5 | 39.9 | 36.8 | 34.2 | 31.9 | 29.9 | 28.2 | 26.6 | 25.2 | 23.9 | 22.8 | 21.8 |
| 225 | 60.8 | 53.2 | 47.3 | 42.6 | 38.7 | 35.5 | 32.7 | 30.4 | 28.4 | 26.6 | 25.0 | 23.6 | 22.4 | 21.3 | 20.3 | 19.3 |
| 250 | 54.7 | 47.9 | 42.6 | 38.3 | 34.8 | 31.9 | 29.5 | 27.4 | 25.5 | 23.9 | 22.5 | 21.3 | 20.2 | 19.1 | 18.2 | 17.4 |
| 275 | 49.7 | 43.5 | 38.7 | 34.8 | 31.7 | 29.0 | 26.8 | 24.9 | 23.2 | 21.8 | 20.5 | 19.3 | 18.3 | 17.4 | 16.6 | 15.8 |

SCHEDULE 15A

| MAXIMUM ALLOWABLE 3 SPAN 3.5" HEADER WIDTH (TRACK TO TRACK) E-E (1) ATTACHMENT TO BLOCK | | | | | | | | | | | | | | | | |
|---|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-----|----|-----|-----|-----|-----|-----|-----|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 184.6 | 176.6 | 169.8 | 163.9 | 158.8 | 154.3 | 150.2 | 146.5 | 142 | | | | | | | |

SCHEDULE 16A

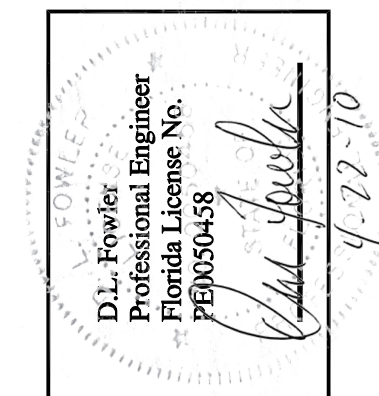
| MAXIMUM ALLOWABLE 2 SPAN 3.5 HEADER WIDTH (TRACK TO TRACK) E-E (1), (2) AND (3) ATTACHMENT TO CONCRETE OR BUILD OUT | | | | | | | | | | | | | | | | |
|---|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 182.0 | 171.0 | 161.8 | 154.0 | 147.3 | 141.4 | 136.2 | 131.5 | 127.3 | 123.5 | 120.0 | 116.8 | 113.8 | 111.1 | 108.5 | 106.1 |
| 30 | 167.1 | 157.0 | 148.6 | 141.4 | 135.2 | 129.8 | 124.9 | 120.6 | 116.8 | 113.2 | 110.0 | 107.1 | 104.4 | 101.8 | 99.5 | 97.3 |
| 35 | 155.5 | 146.1 | 138.2 | 131.5 | 125.7 | 120.6 | 116.1 | 112.1 | 108.5 | 105.2 | 102.2 | 99.5 | 97.0 | 94.6 | 92.4 | 90.4 |
| 40 | 146.1 | 137.2 | 129.8 | 123.5 | 118.0 | 113.2 | 109.0 | 105.2 | 101.8 | 98.8 | 95.9 | 93.4 | 91.0 | 88.8 | 86.7 | 84.8 |
| 45 | 138.2 | 129.8 | 122.7 | 116.8 | 111.6 | 107.1 | 103.1 | 99.5 | 96.3 | 93.4 | 90.7 | 88.3 | 86.0 | 83.9 | 82.0 | 80.2 |
| 50 | 131.5 | 123.5 | 116.8 | 111.1 | 106.1 | 101.8 | 98.0 | 94.6 | 91.6 | 88.8 | 86.2 | 83.9 | 81.8 | 79.8 | 77.9 | 76.2 |
| 55 | 125.7 | 118.0 | 111.6 | 106.1 | 101.4 | 97.3 | 93.7 | 90.4 | 87.5 | 84.8 | 82.4 | 80.2 | 78.1 | 76.2 | 74.4 | 72.8 |
| 60 | 120.6 | 113.2 | 107.1 | 101.8 | 97.3 | 93.3 | 89.8 | 86.7 | 83.9 | 81.3 | 79.0 | 76.9 | 74.9 | 73.1 | 71.4 | 69.8 |
| 65 | 116.1 | 109.0 | 103.0 | 98.0 | 93.6 | 89.8 | 86.5 | 83.4 | 80.7 | 78.3 | 76.0 | 74.0 | 72.1 | 70.3 | 68.7 | 67.2 |
| 70 | 112.1 | 105.2 | 99.5 | 94.6 | 90.4 | 86.7 | 83.4 | 80.5 | 77.9 | 75.5 | 73.4 | 71.4 | 69.5 | 67.8 | 66.3 | 64.8 |
| 75 | 108.5 | 101.8 | 96.2 | 91.5 | 87.4 | 83.9 | 80.7 | 77.9 | 75.4 | 73.1 | 71.0 | 69.0 | 67.3 | 65.6 | 64.1 | 62.7 |
| 80 | 105.2 | 98.7 | 93.3 | 88.7 | 84.8 | 81.3 | 78.2 | 75.5 | 73.1 | 70.8 | 68.8 | 66.9 | 65.2 | 63.6 | 62.1 | 60.8 |
| 85 | 102.2 | 95.9 | 90.6 | 86.2 | 82.3 | 79.0 | 76.0 | 73.3 | 71.0 | 68.8 | 66.8 | 65.0 | 63.3 | 61.8 | 60.3 | 59.0 |
| 90 | 99.4 | 93.3 | 88.2 | 83.8 | 80.1 | 76.8 | 73.9 | 71.3 | 69.0 | 66.9 | 65.0 | 63.2 | 61.6 | 60.1 | 58.7 | 57.4 |
| 95 | 96.9 | 90.9 | 85.9 | 81.7 | 78.0 | 74.9 | 72.0 | 69.5 | 67.2 | 65.2 | 63.3 | 61.6 | 60.0 | 58.5 | 57.2 | 55.9 |
| 100 | 94.5 | 88.7 | 83.8 | 79.7 | 76.1 | 73.0 | 70.3 | 67.8 | 65.6 | 63.6 | 61.8 | 60.1 | 58.5 | 57.1 | 55.8 | 54.5 |
| 125 | 85.0 | 79.7 | 75.3 | 71.6 | 68.4 | 65.6 | 63.1 | 60.9 | 58.9 | 57.1 | 55.4 | 53.9 | 52.5 | 51.3 | 50.1 | 48.9 |
| 150 | 77.8 | 73.0 | 69.0 | 65.6 | 62.6 | 60.1 | 57.8 | 55.8 | 53.9 | 52.3 | 50.8 | 49.4 | 48.1 | 46.9 | 45.7 | 44.7 |
| 175 | 72.3 | 67.8 | 64.0 | 60.9 | 58.1 | 55.7 | 53.6 | 51.7 | 50.0 | 48.5 | 47.1 | 45.7 | 44.5 | 43.4 | 42.3 | 41.4 |
| 200 | 67.8 | 63.6 | 60.0 | 57.1 | 54.5 | 52.3 | 50.3 | 48.5 | 46.9 | 45.4 | 44.0 | 42.8 | 41.6 | 40.6 | 39.6 | 38.7 |
| 225 | 64.0 | 60.0 | 56.7 | 53.9 | 51.5 | 49.4 | 47.5 | 45.7 | 44.2 | 42.8 | 41.5 | 40.3 | 39.3 | 38.3 | 37.3 | 36.2 |
| 250 | 60.9 | 57.1 | 53.9 | 51.2 | 48.9 | 46.9 | 45.0 | 43.4 | 41.9 | 40.6 | 39.4 | 38.3 | 37.2 | 35.8 | 34.1 | 32.5 |
| 275 | 58.1 | 54.5 | 51.5 | 48.9 | 46.7 | 44.7 | 42.9 | 41.4 | 40.0 | 38.7 | 37.5 | 36.2 | 34.2 | 32.5 | 31.0 | 29.6 |

SCHEDULE 17A

| MAXIMUM ALLOWABLE 3 SPAN 3.5 HEADER WIDTH (TRACK TO TRACK) E-E (1), (2) AND (3) ATTACHMENT TO CONCRETE OR BUILD OUT | | | | | | | | | | | | | | | | |
|---|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 185.0 | 177.0 | 170.0 | 163.0 | 157.0 | 152.0 | 147.0 | 144.0 | 141.0 | 139.0 | 138.0 | 135.0 | 132.6 | 129.2 | 126.1 | 123.2 |
| 30 | 173.0 | 166.0 | 160.0 | 154.0 | 148.0 | 145.0 | 142.0 | 138.0 | 134.0 | 131.9 | 127.9 | 124.3 | 121.0 | 118.0 | 115.1 | 112.5 |
| 35 | 164.0 | 158.0 | 152.0 | 146.0 | 142.0 | 138.0 | 133.0 | 130.5 | 126.1 | 122.1 | 118.4 | 115.1 | 112.0 | 109.2 | 106.6 | 104.1 |
| 40 | 158.0 | 151.0 | 145.0 | 140.0 | 135.0 | 131.9 | 126.7 | 122.1 | 118.0 | 114.2 | 110.8 | 107.7 | 104.8 | 102.1 | 99.7 | 97.4 |
| 45 | 151.0 | 145.0 | 140.0 | 134.0 | 129.9 | 124.3 | 119.5 | 115.1 | 111.2 | 107.7 | 104.5 | 101.5 | 98.8 | 96.3 | 94.0 | 91.8 |
| 50 | 147.0 | 140.0 | 135.0 | 129.2 | 123.2 | 118.0 | 113.3 | 109.2 | 105.5 | 102.1 | 99.1 | 96.3 | 93.7 | 91.4 | 89.2 | 87.1 |
| 55 | 142.0 | 136.0 | 129.9 | 123.2 | 117.5 | 112.5 | 108.0 | 104.1 | 100.6 | 97.4 | 94.5 | 91.8 | 89.4 | 87.1 | 85.0 | 83.1 |
| 60 | 138.0 | 131.9 | 124.3 | 118.0 | 112.5 | 107.7 | 103.4 | 99.7 | 96.3 | 93.2 | 90.5 | 87.9 | 85.6 | 83.4 | 81.4 | 79.5 |
| 65 | 133.0 | 126.7 | 119.5 | 113.3 | 108.0 | 103.4 | 99.4 | 95.8 | 92.5 | 89.6 | 86.9 | 84.5 | 82.2 | 80.1 | 78.2 | 76.4 |
| 70 | 130.5 | 122.1 | 115.1 | 109.2 | 104.1 | 99.7 | 95.8 | 92.3 | 89.2 | 86.3 | 83.8 | 81.4 | 79.2 | 77.2 | 75.4 | 73.6 |
| 75 | 126.1 | 118.0 | 111.2 | 105.5 | 100.6 | 96.3 | 92.5 | 89.2 | 86.1 | 83.4 | 80.9 | 78.6 | 76.5 | 74.6 | 72.8 | 71.1 |
| 80 | 122.1 | 114.2 | 107.7 | 102.1 | 97.4 | 93.2 | 89.6 | 86.3 | 83.4 | 80.8 | 78.3 | 76.1 | 74.1 | 72.2 | 70.5 | 68.9 |
| 85 | 118.4 | 110.8 | 104.5 | 99.1 | 94.5 | 90.5 | 86.9 | 83.8 | 80.9 | 78.3 | 76.0 | 73.9 | 71.9 | 70.1 | 68.4 | 66.8 |
| 90 | 115.1 | 107.7 | 101.5 | 96.3 | 91.8 | 87.9 | 84.5 | 81.4 | 78.6 | 76.1 | 73.9 | 71.8 | 69.9 | 68.1 | 66.5 | 64.9 |
| 95 | 112.0 | 104.8 | 98.8 | 93.7 | 89.4 | 85.6 | 82.2 | 79.2 | 76.5 | 74.1 | 71.9 | 69.9 | 68.0 | 66.3 | 64.7 | 63.2 |
| 100 | 109.2 | 102.1 | 96.3 | 91.4 | 87.1 | 83.4 | 80.1 | 77.2 | 74.6 | 72.2 | 70.1 | 68.1 | 66.3 | 64.6 | 63.0 | 61.6 |
| 125 | 97.7 | 91.4 | 86.1 | 81.7 | 77.9 | 74.6 | 71.7 | 69.1 | 66.7 | 64.6 | 62.7 | 60.9 | 59.3 | 57.8 | 56.4 | 55.1 |
| 150 | 89.2 | 83.4 | 78.6 | 74.6 | 71.1 | 68.1 | 65.4 | 63.0 | 60.9 | 59.0 | 57.2 | 55.6 | 53.5 | 50.8 | 48.4 | 46.2 |
| 175 | 82.5 | 77.2 | 72.8 | 69.1 | 65.9 | 63.0 | 60.6 | 58.4 | 56.4 | 54.4 | 51.2 | 48.4 | 45.8 | 43.5 | 41.5 | 39.6 |
| 200 | 77.2 | 72.2 | 68.1 | 64.6 | 61.6 | 59.0 | 56.7 | 54.4 | 50.8 | 47.6 | 44.8 | 42.3 | 40.1 | 38.1 | 36.3 | 34.6 |
| 225 | 72.8 | 68.1 | 64.2 | 60.9 | 58.1 | 55.6 | 52.1 | 48.4 | 45.1 | 42.3 | 39.8 | 37.6 | 35.6 | 33.9 | 32.2 | 30.8 |
| 250 | 69.1 | 64.6 | 60.9 | 57.8 | 55.1 | 50.8 | 46.9 | 43.5 | 40.6 | 38.1 | 35.9 | 33.9 | 32.1 | 30.5 | 29.0 | 27.7 |
| 275 | 65.9 | 61.6 | 58.1 | 55.1 | 50.4 | 46.2 | 42.6 | 39.6 | 36.9 | 34.6 | 32.6 | 30.8 | 29.2 | 27.7 | 26.4 | 25.2 |

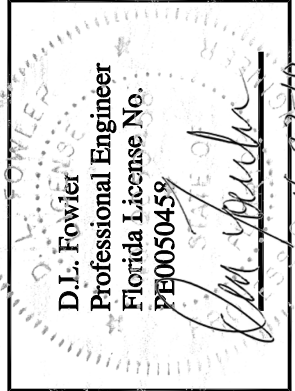


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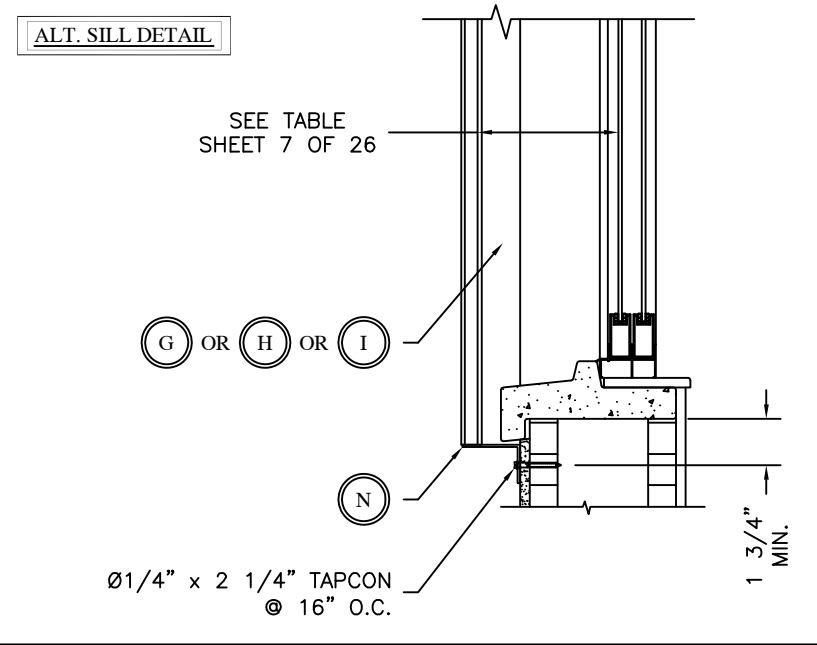
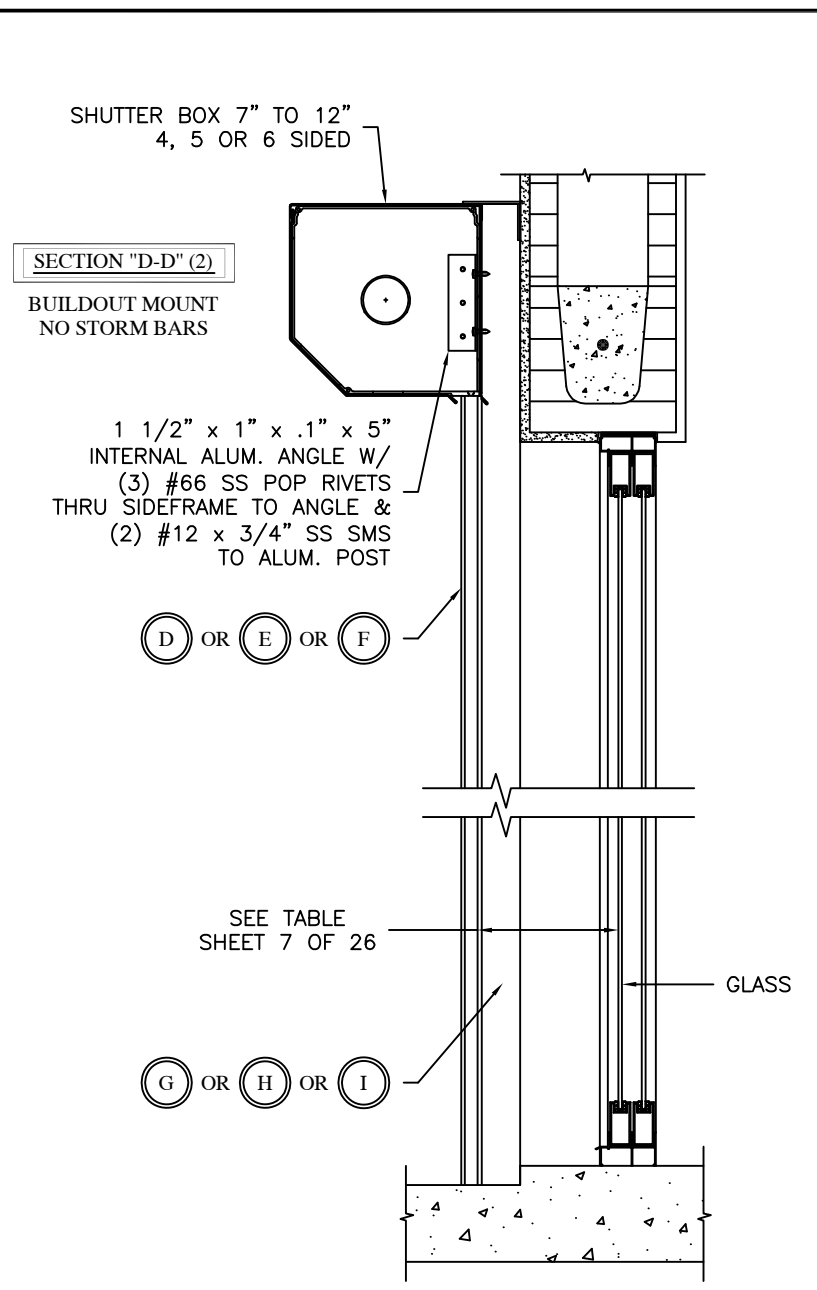
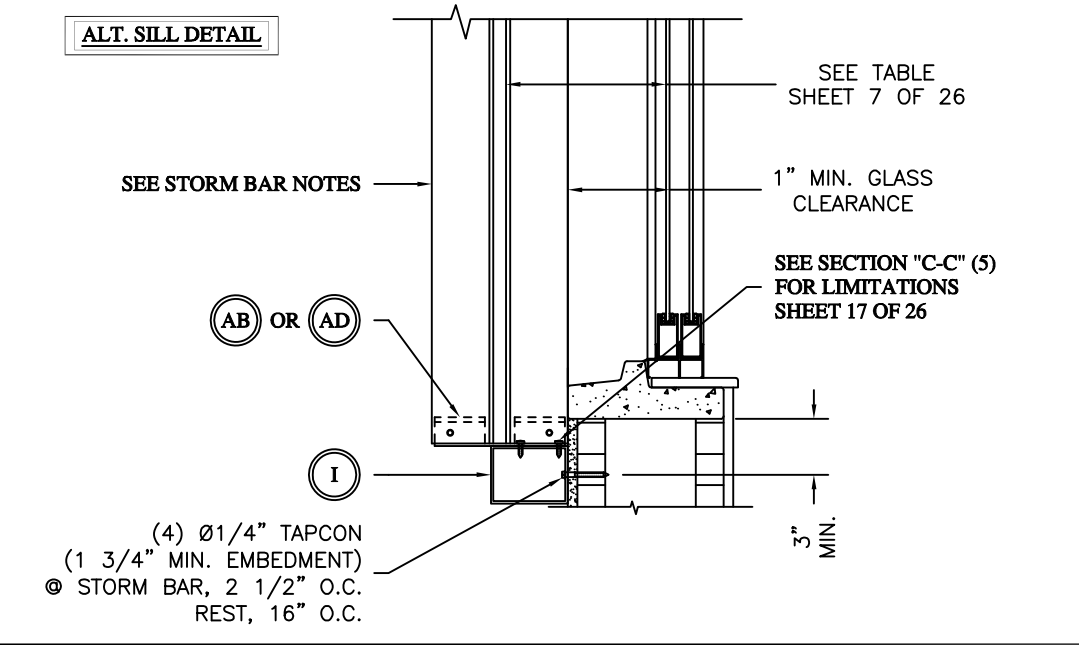
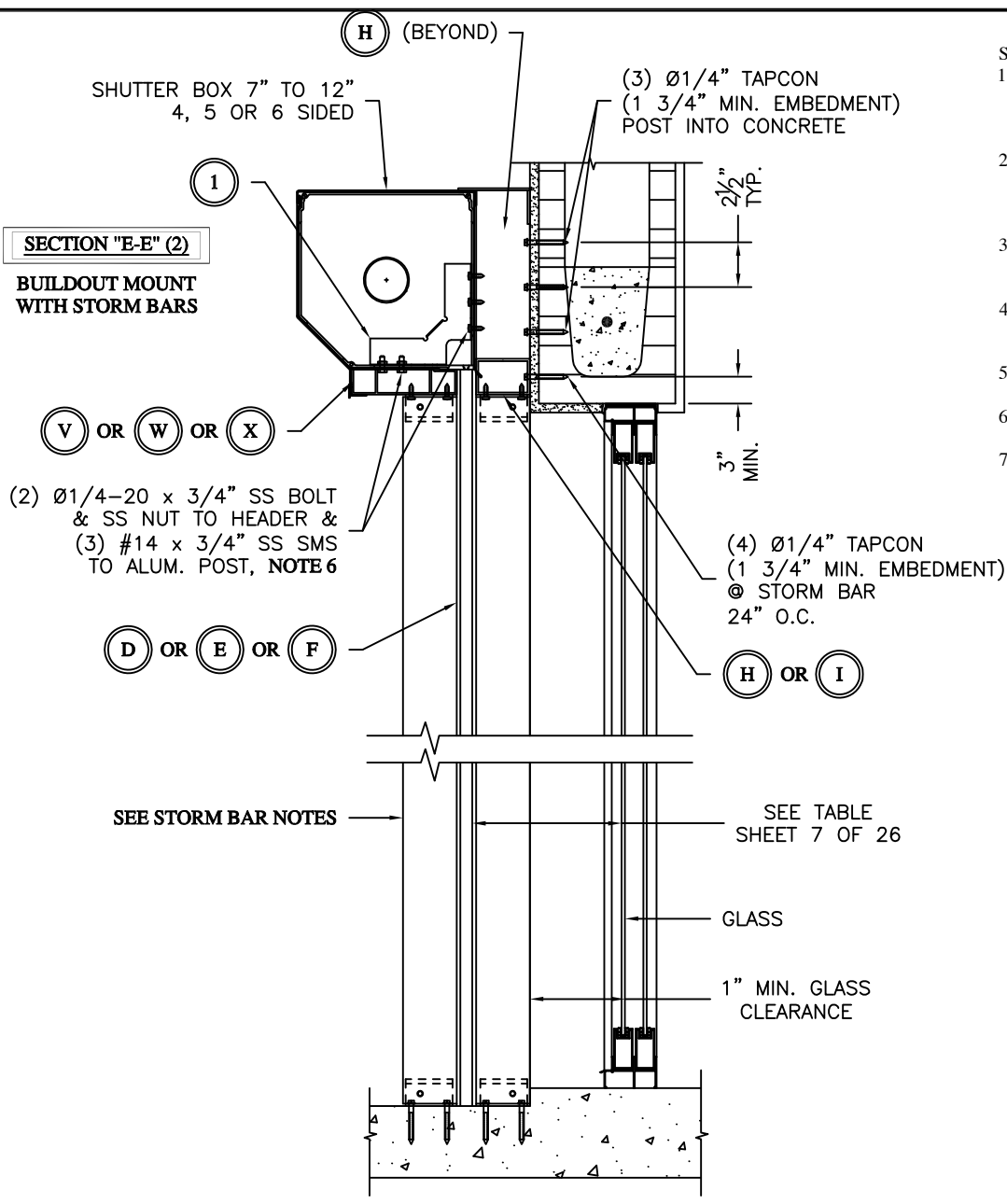
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| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| SCALE: | 1 : 10 |
| SHEET: | 20C OF 26 |

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PRODUCT APPROVAL



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|--------------------------------|--------|
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| DATE: 04-19-10 | |
| APPROVED: DLF | |
| DATE: 04-19-10 | |
| DRAWING NO: 3-01-038 | |
| SIZE: B | REV: - |
| SCALE: 1 : 10 | |
| SHEET: 21 OF 26 | |

- STORM BAR NOTES:**
1. SHUTTER SECTIONS ARE SHOWN WITH FIXED STORM BARS. STORM BARS CAN BE FIXED OR REMOVABLE, REMOVABLE (SPRING-LOADED) STORM BAR ASSEMBLIES & MOUNTING ARE SHOWN ON SHEET 17, 18, & 4A OF 26.
 2. SHUTTER(S) SHOULD NOT BE ROLLED DOWN DURING WIND EVENTS WITHOUT REMOVABLE STORM BARS IN PLACE. ROLL-A-WAY IS NOT RESPONSIBLE FOR SUBSEQUENT DAMAGE.
 3. REMOVING SPRING-LOADED STORM BARS: REMOVE PIN, LIFT UP ON STORM BAR, WHEN BOTTOM FEET CLEAR THE STORM BAR BASE PLATE, ROTATE STORM BAR OUT OF OPENING.
 4. SHUTTERS WITH NO STORM BARS. OVER 72" WIDE SHOULD USE SOME FORM OF HOOD SUPPORT, HEADER, TUBING OR EXTERNAL SUPPORT.
 5. FOR LARGER ALLOWABLE HEADER SPANS USE EXTERIOR REINFORCEMENT BRACKET SHOWN ON SHEET 25 OF 26.
 6. SEE ALTERNATE SPANS USING Ø1/4-20 BOLT & NUT PER DETAIL "E-E" (4) SHEET 23 OF 26.
 7. SEE 2 SPAN AND 3 SPAN MAXIMUM ALLOWABLE HEADER SPANS E-E(2) ON PAGES 20A & 20C OF 26.

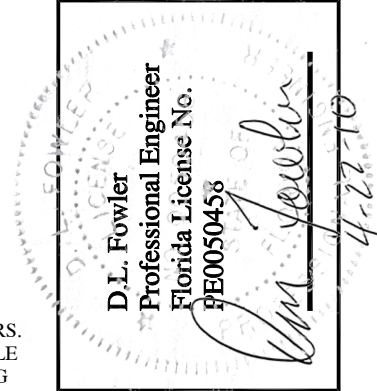




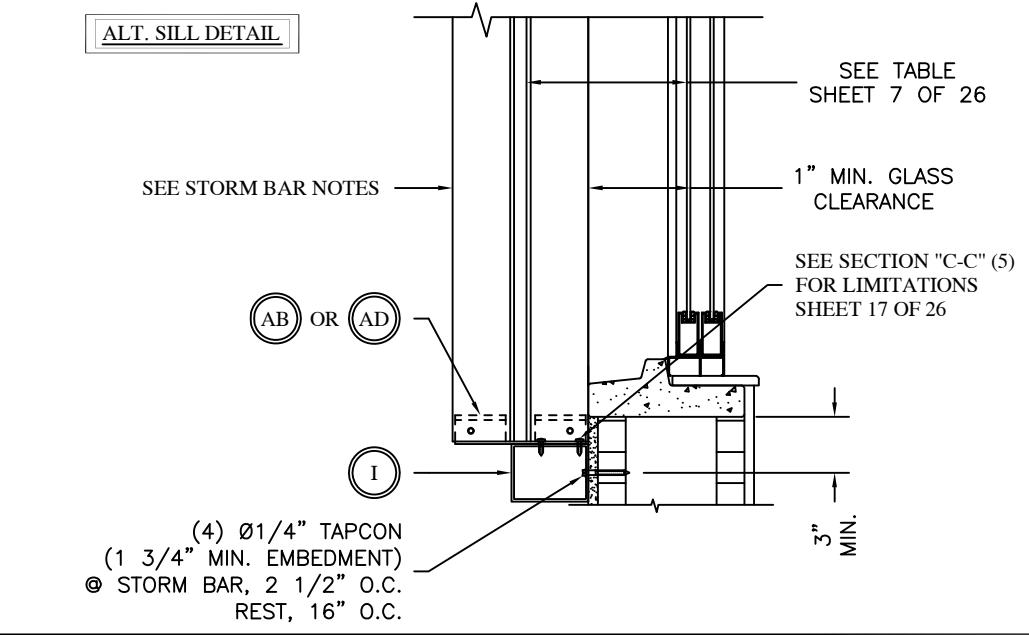
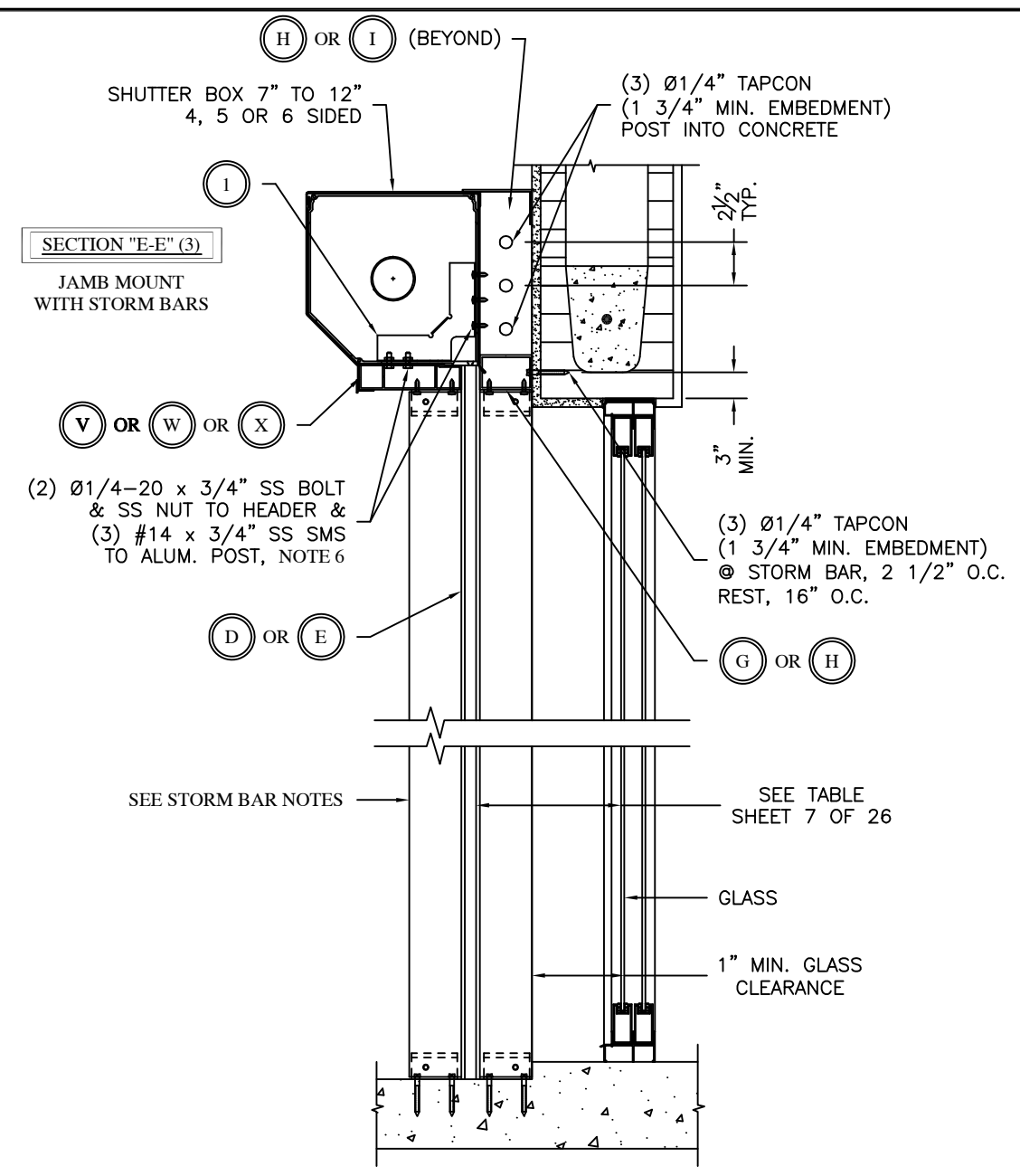
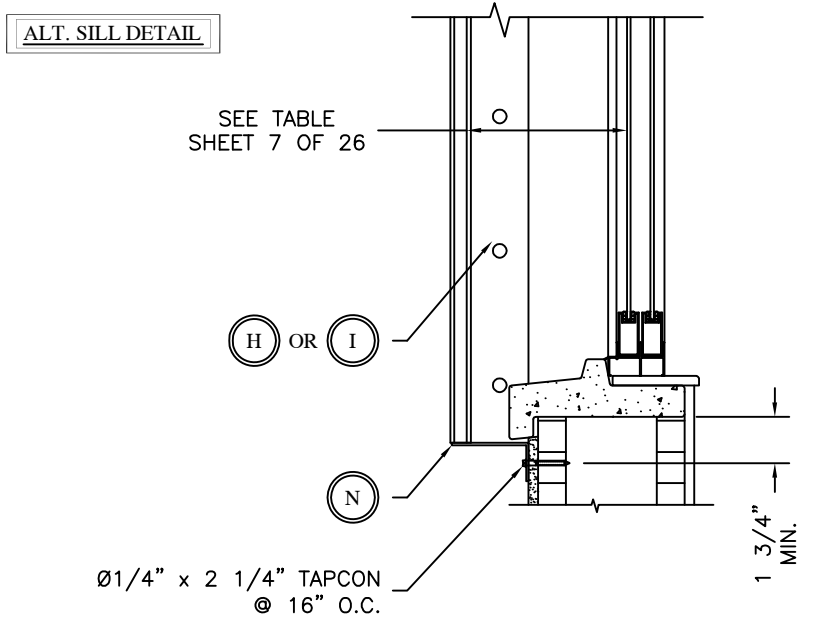
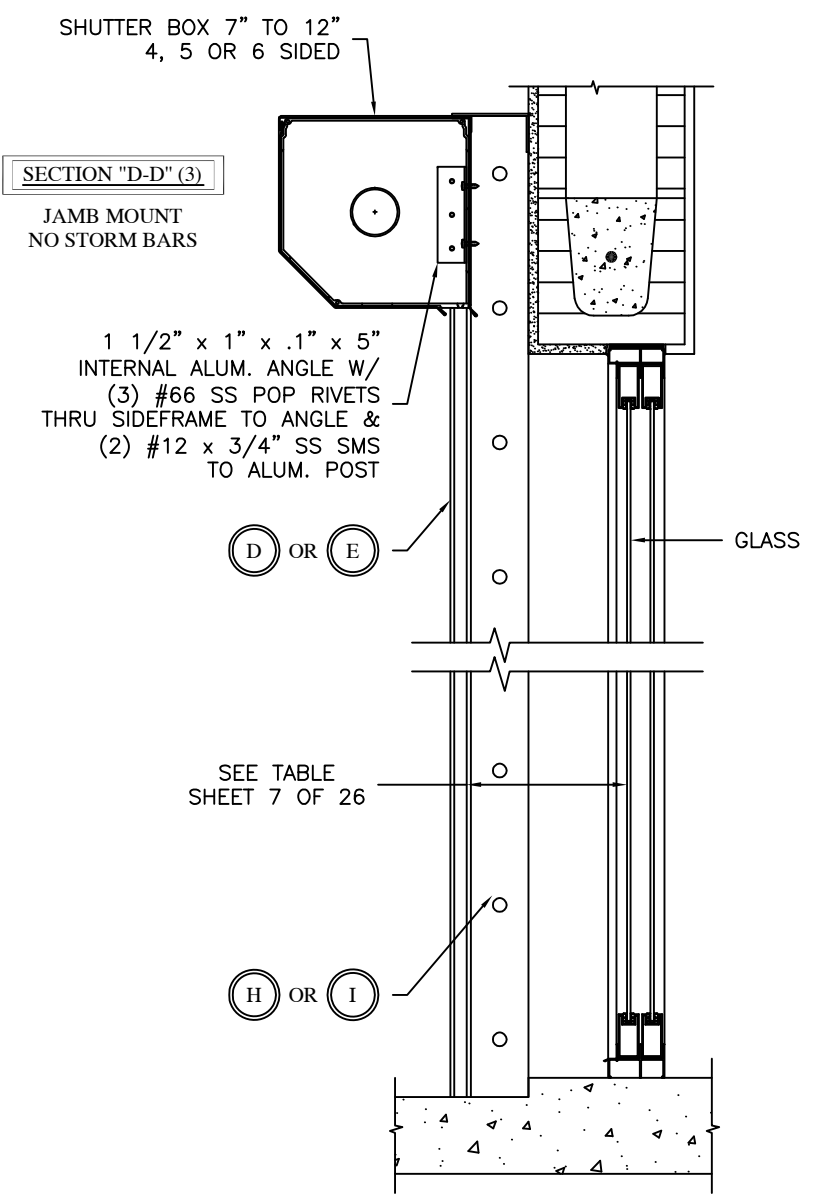
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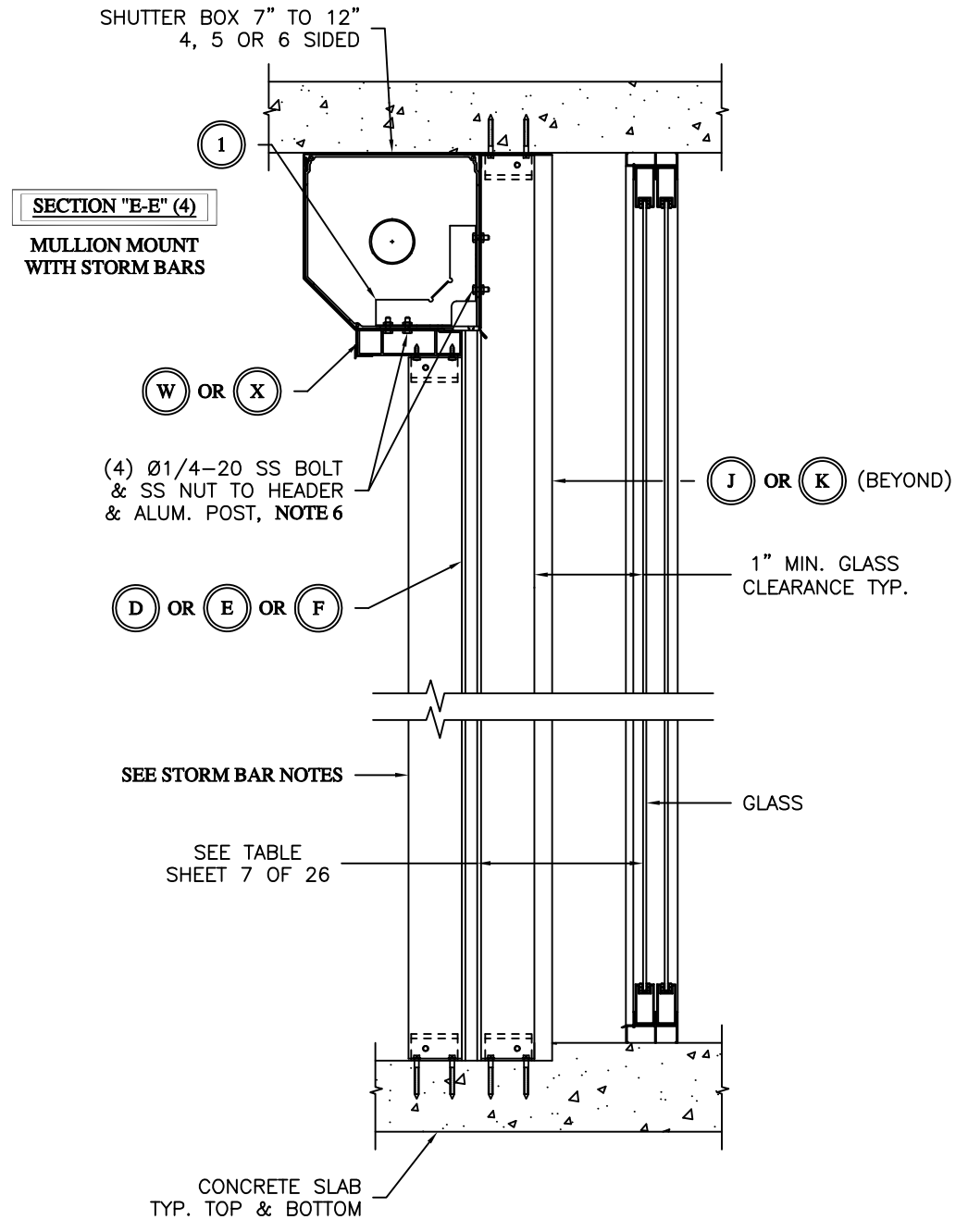
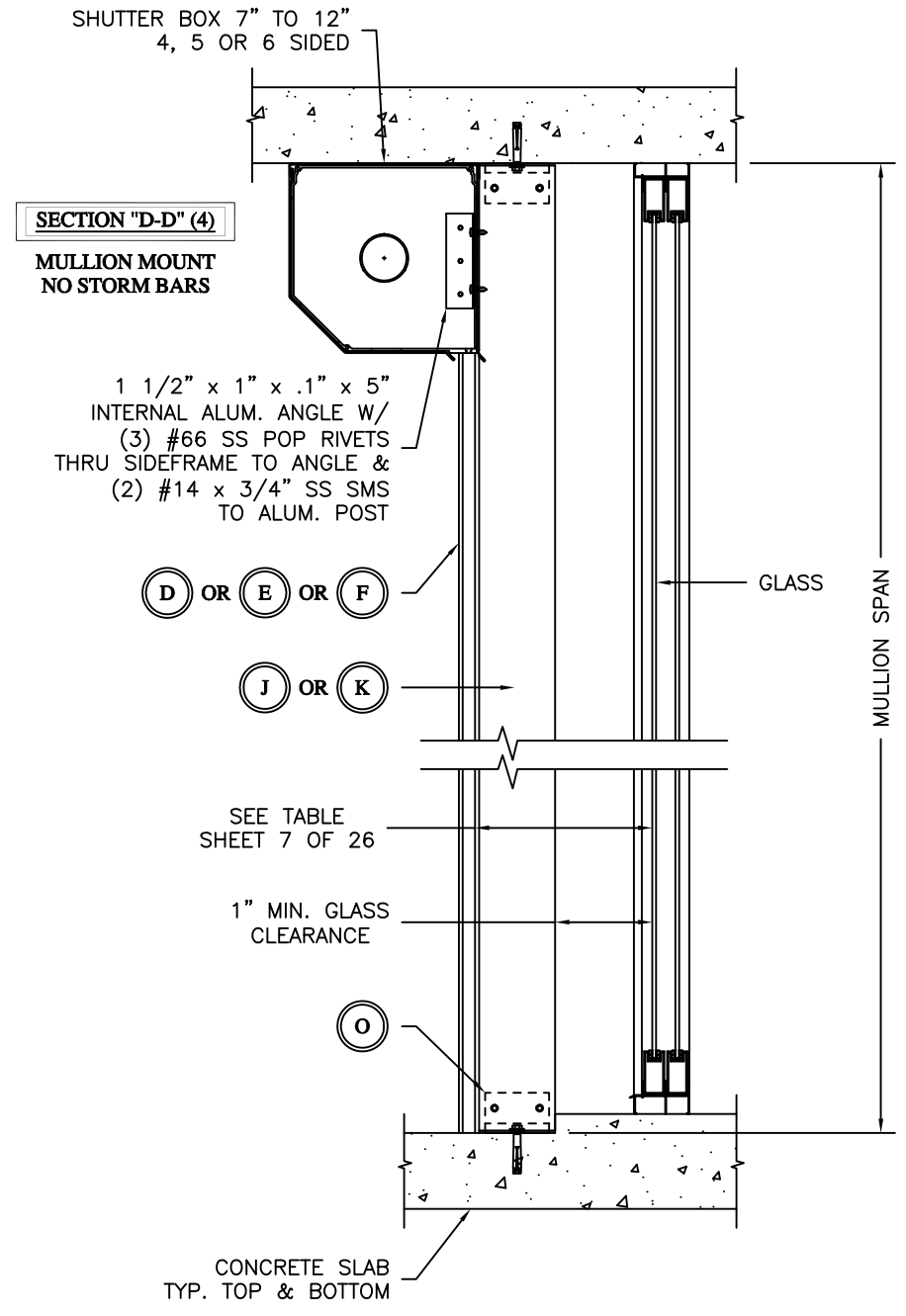
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| DATE: 04-19-10 | |
| APPROVED: DLF | |
| DATE: 04-19-10 | |
| DRAWING NO: 3-01-038 | |
| SIZE: B | REV: - |
| SCALE: 1 : 10 | |
| SHEET: 22 OF 26 | |



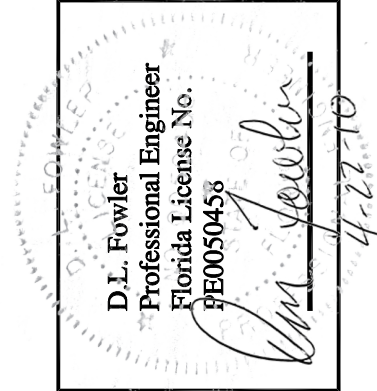
- STORM BAR NOTES:**
1. SHUTTER SECTIONS ARE SHOWN WITH FIXED STORM BARS. STORM BARS CAN BE FIXED OR REMOVABLE, REMOVABLE (SPRING-LOADED) STORM BAR ASSEMBLIES & MOUNTING ARE SHOWN ON SHEET 17, 18, & 4A OF 26.
 2. SHUTTER(S) SHOULD NOT BE ROLLED DOWN DURING WIND EVENTS WITHOUT REMOVABLE STORM BARS IN PLACE. ROLL-A-WAY IS NOT RESPONSIBLE FOR SUBSEQUENT DAMAGE.
 3. REMOVING SPRING-LOADED STORM BARS: REMOVE PIN, LIFT UP ON STORM BAR, WHEN BOTTOM FEET CLEAR THE STORM BAR BASE PLATE, ROTATE STORM BAR OUT OF OPENING.
 4. SHUTTERS WITH NO STORM BARS OVER 72" WIDE SHOULD USE SOME FORM OF HOOD SUPPORT, HEADER, TUBING OR EXTERNAL SUPPORT.
 5. FOR LARGER ALLOWABLE HEADER SPANS USE EXTERIOR REINFORCEMENT BRACKET SHOWN ON SHEET 24 OF 26.
 6. SEE ALTERNATE SPANS USING Ø1/4-20 BOLT & NUT PER DETAIL "E-E" (4) SHEET 23 OF 26 ("W" AND "X" HEADERS ONLY)
 7. SEE 2 SPAN AND 3 SPAN MAXIMUM ALLOWABLE HEADER SPANS E-E (3) ON PAGES 20A & 20C OF 26.



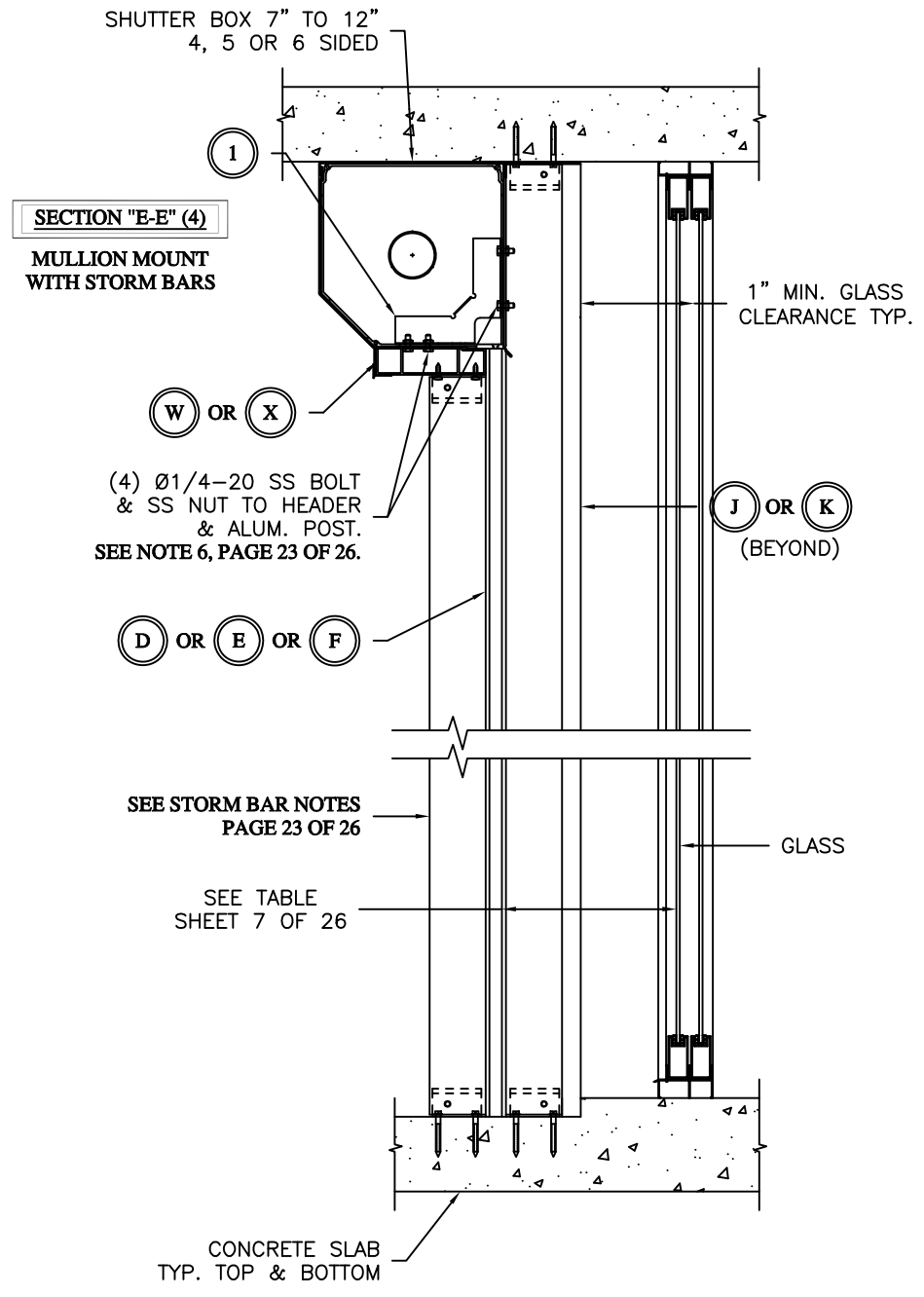
- STORM BAR NOTES:**
1. SHUTTER SECTIONS ARE SHOWN WITH FIXED STORM BARS. STORM BARS CAN BE FIXED OR REMOVABLE, REMOVABLE (SPRING-LOADED) STORM BAR ASSEMBLIES & MOUNTING ARE SHOWN ON SHEET 17, 18, & 4A OF 26.
 2. SHUTTER(S) SHOULD NOT BE ROLLED DOWN DURING WIND EVENTS WITHOUT REMOVABLE STORM BARS IN PLACE. ROLL-A-WAY IS NOT RESPONSIBLE FOR SUBSEQUENT DAMAGE.
 3. REMOVING SPRING-LOADED STORM BARS: REMOVE PIN, LIFT UP ON STORM BAR, WHEN BOTTOM FEET CLEAR THE STORM BAR BASE PLATE, ROTATE STORM BAR OUT OF OPENING.
 4. SHUTTERS WITH NO STORM BARS OVER 72" WIDE SHOULD USE SOME FORM OF HOOD SUPPORT, HEADER, TUBING OR EXTERNAL SUPPORT.
 5. SEE 2 SPAN (SCHEDULE 18) AND 3 SPAN (SCHEDULE 19) MAXIMUM ALLOWABLE HEADER SPANS PER PAGE 23A OF 26.
 6. SEE SHEET 24 OF 26 FOR ALLOWABLE HEADER SPANS USING EXTERIOR REINFORCEMENT BRACKETS WITH SMS (BUILD OUT SECTION E-E(3)) IN LIEU OF BOLTING OR USE SCHEDULES 16 AND 17 FOR THE SMS ATTACHMENT WITHOUT REINFORCEMENT.



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| DRAWN: | DF |
| DATE: | 04-19-10 |
| APPROVED: | DLF |
| DATE: | 04-19-10 |
| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| REV: | - |
| SCALE: | 1 : 10 |
| SHEET: | 23 OF 26 |

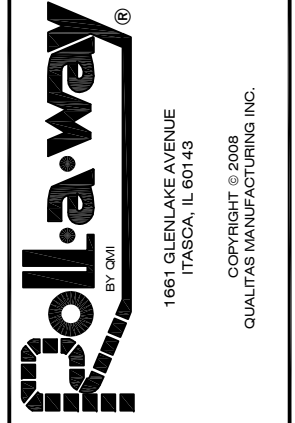


| MAXIMUM ALLOWABLE 2 SPAN HEADER WIDTH (TRACK TO TRACK) E-E (4) BUILDOUT WITH BOLTED CONNECTION - SCHEDULE 18 * | | | | | | | | | | | | | | | | |
|--|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 240.0 | 240.0 | 234.8 | 224.0 | 214.6 | 206.3 | 199.0 | 192.4 | 186.4 | 181.0 | 176.1 | 171.5 | 167.3 | 163.4 | 159.8 | 156.4 |
| 30 | 240.0 | 228.0 | 216.3 | 206.2 | 197.5 | 189.8 | 183.0 | 176.9 | 171.4 | 166.4 | 161.8 | 157.6 | 153.8 | 150.2 | 146.8 | 143.7 |
| 35 | 225.8 | 212.6 | 201.6 | 192.2 | 184.0 | 176.8 | 170.5 | 164.8 | 159.6 | 155.0 | 150.7 | 146.7 | 143.1 | 139.7 | 136.6 | 133.7 |
| 40 | 212.6 | 200.1 | 189.7 | 180.8 | 173.1 | 166.3 | 160.3 | 154.9 | 150.1 | 145.6 | 141.6 | 137.9 | 134.5 | 131.3 | 128.4 | 125.6 |
| 45 | 201.5 | 189.6 | 179.7 | 171.3 | 163.9 | 157.5 | 151.8 | 146.7 | 142.1 | 137.9 | 134.0 | 130.5 | 127.3 | 124.3 | 121.5 | 118.9 |
| 50 | 192.0 | 180.7 | 171.2 | 163.1 | 156.1 | 150.0 | 144.5 | 139.6 | 135.2 | 131.2 | 127.6 | 124.2 | 121.1 | 118.5 | 115.2 | 112.1 |
| 55 | 183.8 | 172.9 | 163.8 | 156.1 | 149.4 | 143.5 | 138.2 | 133.6 | 129.3 | 125.5 | 122.0 | 118.8 | 115.4 | 112.1 | 108.9 | 105.8 |
| 60 | 176.6 | 166.1 | 157.4 | 149.9 | 143.4 | 137.8 | 132.7 | 128.2 | 124.2 | 120.5 | 117.0 | 113.2 | 109.7 | 106.4 | 103.2 | 100.0 |
| 65 | 170.2 | 160.1 | 151.6 | 144.4 | 138.2 | 132.7 | 127.9 | 123.5 | 119.6 | 115.6 | 111.6 | 107.8 | 104.2 | 100.7 | 97.2 | 93.7 |
| 70 | 164.5 | 154.7 | 146.5 | 139.5 | 133.5 | 128.2 | 123.5 | 119.3 | 114.9 | 110.7 | 106.9 | 103.3 | 99.8 | 96.3 | 92.8 | 89.3 |
| 75 | 159.3 | 149.8 | 141.9 | 135.1 | 129.2 | 124.1 | 119.6 | 114.9 | 110.4 | 106.3 | 102.6 | 99.1 | 95.6 | 92.1 | 88.6 | 85.1 |
| 80 | 154.6 | 145.4 | 137.6 | 131.1 | 125.4 | 120.4 | 115.5 | 110.6 | 106.3 | 102.3 | 98.7 | 95.1 | 91.6 | 88.1 | 84.6 | 81.1 |
| 85 | 150.3 | 141.3 | 133.8 | 127.4 | 121.9 | 116.7 | 111.5 | 106.8 | 102.5 | 98.6 | 94.9 | 91.2 | 87.6 | 84.0 | 80.4 | 76.8 |
| 90 | 146.4 | 137.6 | 130.3 | 124.1 | 118.7 | 113.9 | 108.8 | 104.2 | 100.0 | 96.3 | 92.9 | 89.5 | 86.1 | 82.7 | 79.3 | 75.9 |
| 95 | 142.7 | 134.2 | 127.0 | 120.9 | 115.0 | 109.4 | 104.4 | 99.9 | 95.8 | 92.1 | 88.7 | 85.3 | 81.9 | 78.5 | 75.1 | 71.7 |
| 100 | 139.4 | 131.0 | 124.0 | 117.9 | 111.6 | 105.9 | 100.8 | 96.1 | 91.8 | 87.9 | 84.4 | 80.9 | 77.5 | 74.1 | 70.7 | 67.3 |
| 125 | 125.6 | 118.0 | 110.1 | 103.5 | 97.8 | 92.8 | 88.4 | 84.4 | 80.8 | 77.5 | 74.1 | 70.7 | 67.3 | 64.0 | 60.6 | 57.2 |
| 150 | 114.5 | 106.0 | 98.8 | 92.8 | 87.5 | 82.9 | 78.8 | 75.1 | 71.8 | 68.6 | 65.4 | 62.2 | 59.0 | 55.8 | 52.6 | 49.4 |
| 175 | 104.6 | 96.7 | 89.9 | 84.0 | 79.4 | 75.1 | 71.2 | 67.6 | 64.2 | 60.9 | 57.6 | 54.3 | 51.0 | 47.7 | 44.4 | 41.1 |
| 200 | 95.3 | 87.9 | 81.5 | 75.9 | 71.6 | 67.6 | 64.1 | 60.8 | 57.6 | 54.4 | 51.2 | 48.0 | 44.8 | 41.6 | 38.4 | 35.2 |
| 225 | 86.6 | 79.7 | 73.7 | 68.4 | 64.4 | 60.6 | 57.4 | 54.2 | 51.0 | 47.8 | 44.6 | 41.4 | 38.2 | 35.0 | 31.8 | 28.6 |
| 250 | 78.4 | 72.0 | 66.4 | 61.4 | 57.8 | 54.6 | 51.4 | 48.2 | 45.0 | 41.8 | 38.6 | 35.4 | 32.2 | 29.0 | 25.8 | 22.6 |
| 275 | 70.6 | 64.7 | 59.5 | 54.8 | 51.6 | 48.6 | 45.4 | 42.2 | 39.0 | 35.8 | 32.6 | 29.4 | 26.2 | 23.0 | 19.8 | 16.6 |

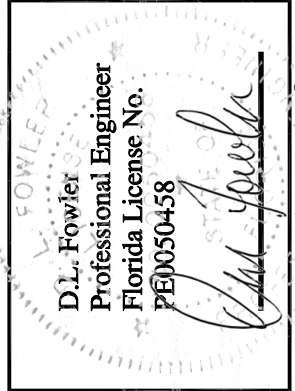
* SHADED REGIONS PROVIDE FOR A MAXIMUM HEADER SPAN FOR THE 7-1/4" HEADER ONLY. A 5-7/8" HEADER IS ALLOWABLE AT A REDUCED SPAN.

| MAXIMUM ALLOWABLE 3 SPAN HEADER WIDTH (TRACK TO TRACK) E-E (4) BUILDOUT WITH BOLTED CONNECTION - SCHEDULE 19 * | | | | | | | | | | | | | | | | |
|--|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 240.0 | 240.0 | 240.0 | 240.0 | 239.5 | 230.0 | 221.6 | 214.3 | 207.7 | 201.8 | 196.3 | 191.3 | 186.6 | 182.3 | 178.3 | 174.6 |
| 30 | 240.0 | 240.0 | 240.0 | 230.0 | 220.1 | 211.6 | 204.1 | 197.4 | 191.3 | 185.7 | 180.7 | 176.0 | 171.7 | 167.7 | 164.0 | 160.6 |
| 35 | 240.0 | 237.5 | 224.9 | 214.3 | 205.3 | 197.4 | 190.3 | 184.0 | 178.3 | 173.1 | 168.4 | 164.0 | 160.0 | 156.3 | 152.8 | 149.6 |
| 40 | 237.5 | 223.2 | 211.6 | 201.8 | 193.2 | 185.7 | 179.1 | 173.1 | 167.7 | 162.8 | 158.4 | 154.3 | 150.5 | 146.9 | 143.7 | 140.6 |
| 45 | 224.9 | 211.6 | 200.6 | 191.3 | 183.2 | 176.0 | 169.7 | 164.0 | 158.9 | 154.3 | 150.0 | 146.1 | 142.5 | 139.1 | 136.0 | 133.1 |
| 50 | 214.3 | 201.8 | 191.3 | 182.3 | 174.6 | 167.7 | 161.7 | 156.3 | 151.4 | 146.9 | 142.9 | 139.1 | 135.7 | 132.7 | 129.9 | 127.2 |
| 55 | 205.2 | 193.2 | 183.1 | 174.5 | 167.1 | 160.5 | 154.7 | 149.5 | 144.8 | 140.6 | 136.7 | 133.1 | 129.9 | 126.9 | 124.1 | 121.4 |
| 60 | 197.2 | 185.6 | 175.9 | 167.7 | 160.5 | 154.2 | 148.6 | 143.6 | 139.1 | 135.0 | 131.1 | 127.5 | 124.3 | 121.3 | 118.4 | 115.6 |
| 65 | 190.2 | 179.0 | 169.6 | 161.6 | 154.6 | 148.6 | 143.2 | 138.3 | 134.0 | 130.0 | 126.6 | 123.5 | 120.5 | 117.6 | 114.7 | 111.9 |
| 70 | 183.8 | 173.0 | 163.9 | 156.1 | 149.4 | 143.5 | 138.3 | 133.6 | 129.3 | 125.2 | 121.3 | 117.6 | 114.1 | 110.7 | 107.4 | 104.2 |
| 75 | 178.1 | 167.5 | 158.7 | 151.2 | 144.7 | 139.0 | 133.9 | 129.3 | 125.2 | 121.3 | 117.6 | 114.1 | 110.7 | 107.4 | 104.2 | 101.0 |
| 80 | 172.9 | 162.6 | 154.0 | 146.7 | 140.4 | 134.9 | 129.9 | 125.2 | 121.3 | 117.6 | 114.1 | 110.7 | 107.4 | 104.2 | 101.0 | 97.8 |
| 85 | 168.1 | 158.1 | 149.8 | 142.7 | 136.5 | 130.8 | 125.8 | 121.3 | 117.6 | 114.1 | 110.7 | 107.4 | 104.2 | 101.0 | 97.8 | 94.6 |
| 90 | 163.7 | 154.0 | 145.9 | 138.9 | 132.6 | 126.9 | 121.9 | 117.6 | 114.1 | 110.7 | 107.4 | 104.2 | 101.0 | 97.8 | 94.6 | 91.4 |
| 95 | 159.7 | 150.2 | 142.2 | 135.5 | 129.2 | 123.5 | 118.5 | 114.1 | 110.7 | 107.4 | 104.2 | 101.0 | 97.8 | 94.6 | 91.4 | 88.2 |
| 100 | 155.9 | 146.6 | 138.9 | 132.1 | 125.8 | 120.1 | 115.1 | 110.7 | 107.4 | 104.2 | 101.0 | 97.8 | 94.6 | 91.4 | 88.2 | 85.0 |
| 125 | 140.6 | 130.0 | 122.5 | 115.7 | 109.4 | 103.7 | 98.6 | 94.1 | 90.0 | 86.4 | 82.9 | 79.4 | 76.0 | 72.6 | 69.2 | 65.8 |
| 150 | 126.2 | 114.8 | 107.5 | 100.7 | 94.4 | 88.6 | 83.5 | 79.0 | 75.0 | 71.4 | 67.9 | 64.4 | 61.0 | 57.6 | 54.2 | 50.8 |
| 175 | 112.9 | 100.8 | 93.7 | 86.9 | 80.6 | 74.8 | 69.6 | 65.1 | 61.0 | 57.4 | 53.9 | 50.4 | 47.0 | 43.6 | 40.2 | 36.8 |
| 200 | 100.0 | 88.0 | 81.1 | 74.4 | 68.1 | 62.3 | 57.1 | 52.6 | 48.5 | 44.8 | 41.3 | 37.8 | 34.4 | 31.0 | 27.6 | 24.2 |
| 225 | 87.6 | 75.9 | 69.2 | 62.6 | 56.3 | 50.5 | 45.3 | 40.8 | 36.6 | 32.8 | 29.3 | 25.8 | 22.4 | 19.0 | 15.6 | 12.2 |
| 250 | 75.8 | 64.4 | 58.0 | 51.6 | 45.4 | 39.6 | 34.4 | 29.9 | 25.6 | 21.6 | 18.0 | 14.6 | 11.2 | 7.8 | 4.4 | 1.0 |
| 275 | 64.5 | 53.4 | 47.2 | 40.9 | 34.8 | 29.0 | 23.8 | 19.3 | 15.0 | 11.0 | 7.4 | 3.8 | 0.4 | 0.0 | 0.0 | 0.0 |

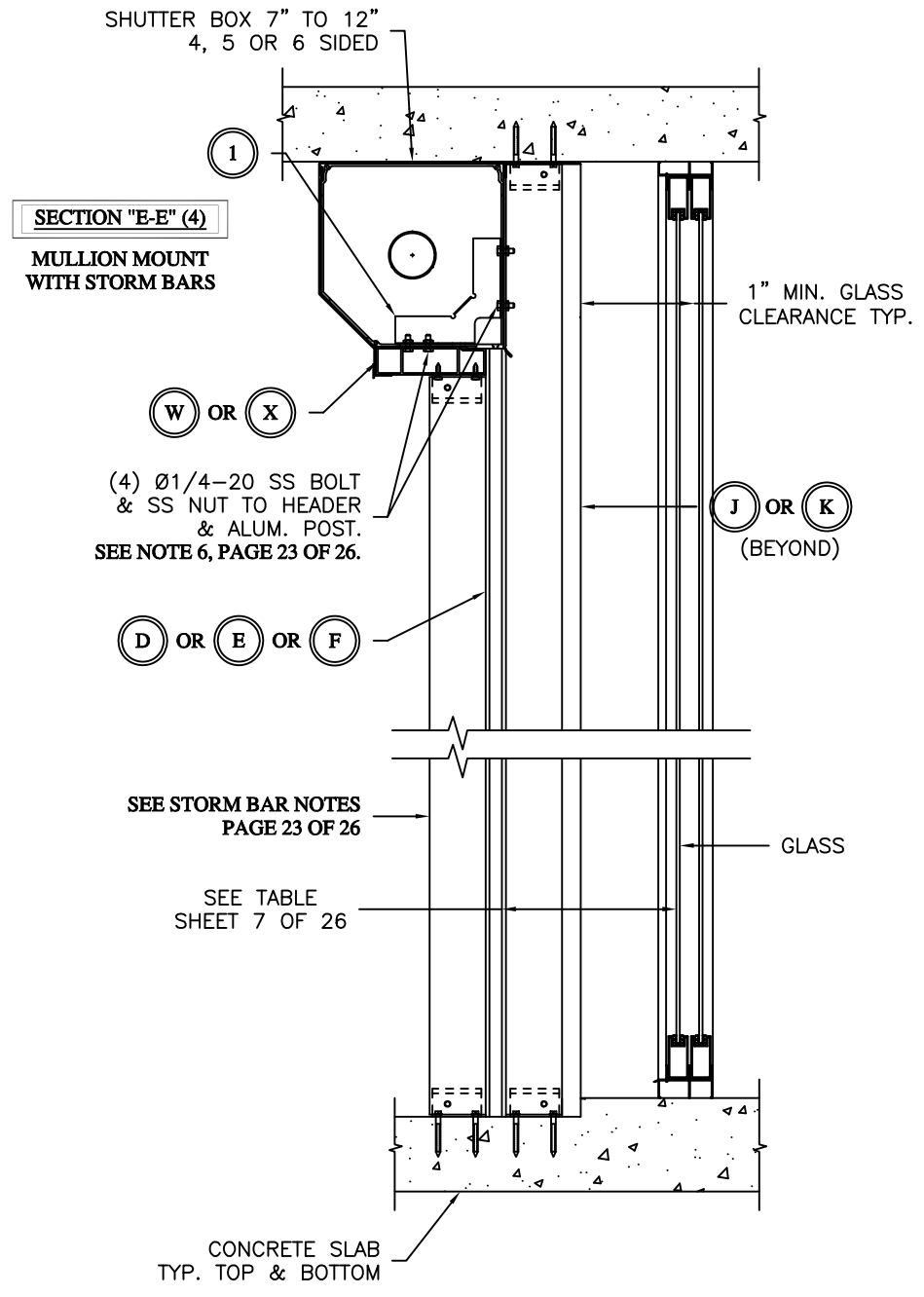
* SHADED REGIONS PROVIDE FOR A MAXIMUM HEADER SPAN FOR THE 7-1/4" HEADER ONLY. A 5-7/8" HEADER IS ALLOWABLE AT A REDUCED SPAN.



HVHZ
END RETENTION
PRODUCT APPROVAL



DRAWN: DF
 DATE: 04-19-10
 APPROVED: DLF
 DATE: 04-19-10
 DRAWING NO: 3-01-038
 SIZE: B
 SCALE: 1 : 10
 SHEET: 23A OF 26

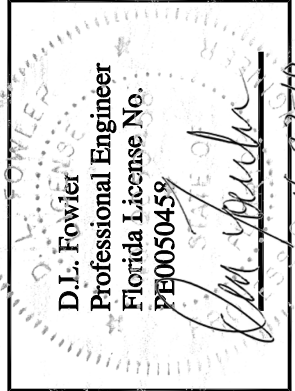


| MAXIMUM ALLOWABLE 2 SPAN HEADER WIDTH (TRACK TO TRACK) E-E (4) BUILDOUT WITH BOLTED CONNECTION - SCHEDULE 18A * | | | | | | | | | | | | | | | | |
|---|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | 3.5" HEADER | | | | | | | | | | | | | | | |
| | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 182.2 | 171.2 | 162.0 | 154.2 | 147.5 | 141.5 | 136.3 | 131.6 | 127.4 | 123.6 | 120.1 | 116.9 | 113.9 | 111.2 | 108.6 | 106.2 |
| 30 | 167.3 | 157.2 | 148.7 | 141.5 | 135.3 | 129.8 | 125.0 | 120.7 | 116.8 | 113.3 | 110.1 | 107.1 | 104.4 | 101.9 | 99.6 | 97.4 |
| 35 | 155.6 | 146.1 | 138.3 | 131.6 | 125.8 | 120.7 | 116.2 | 112.2 | 108.6 | 105.3 | 102.3 | 99.5 | 97.0 | 94.7 | 92.5 | 90.4 |
| 40 | 146.1 | 137.2 | 129.8 | 123.5 | 118.0 | 113.3 | 109.0 | 105.3 | 101.9 | 98.8 | 96.0 | 93.4 | 91.0 | 88.8 | 86.8 | 84.8 |
| 45 | 138.2 | 129.8 | 122.8 | 116.8 | 111.6 | 107.1 | 103.1 | 99.5 | 96.3 | 93.4 | 90.7 | 88.3 | 86.0 | 83.9 | 82.0 | 80.2 |
| 50 | 131.5 | 123.5 | 116.8 | 111.1 | 106.1 | 101.8 | 98.0 | 94.6 | 91.6 | 88.8 | 86.2 | 83.9 | 81.8 | 79.8 | 77.9 | 76.2 |
| 55 | 125.7 | 118.0 | 111.6 | 106.1 | 101.4 | 97.3 | 93.7 | 90.4 | 87.5 | 84.8 | 82.4 | 80.2 | 78.1 | 76.2 | 74.4 | 72.8 |
| 60 | 120.6 | 113.2 | 107.1 | 101.8 | 97.3 | 93.3 | 89.8 | 86.7 | 83.9 | 81.3 | 79.0 | 76.9 | 74.9 | 73.1 | 71.4 | 69.8 |
| 65 | 116.1 | 109.0 | 103.0 | 98.0 | 93.6 | 89.8 | 86.5 | 83.4 | 80.7 | 78.3 | 76.0 | 74.0 | 72.1 | 70.3 | 68.7 | 67.2 |
| 70 | 112.1 | 105.2 | 99.5 | 94.6 | 90.4 | 86.7 | 83.4 | 80.5 | 77.9 | 75.5 | 73.4 | 71.4 | 69.5 | 67.8 | 66.3 | 64.8 |
| 75 | 108.5 | 101.8 | 96.2 | 91.5 | 87.4 | 83.9 | 80.7 | 77.9 | 75.4 | 73.1 | 71.0 | 69.0 | 67.3 | 65.6 | 64.1 | 62.7 |
| 80 | 105.2 | 98.7 | 93.3 | 88.7 | 84.8 | 81.3 | 78.2 | 75.5 | 73.1 | 70.8 | 68.8 | 66.9 | 65.2 | 63.6 | 62.1 | 60.8 |
| 85 | 102.2 | 95.9 | 90.6 | 86.2 | 82.3 | 79.0 | 76.0 | 73.3 | 71.0 | 68.8 | 66.8 | 65.0 | 63.3 | 61.8 | 60.3 | 59.0 |
| 90 | 99.4 | 93.3 | 88.2 | 83.9 | 80.1 | 76.8 | 73.9 | 71.4 | 69.0 | 66.9 | 65.0 | 63.2 | 61.6 | 60.1 | 58.7 | 57.4 |
| 95 | 96.9 | 90.9 | 85.9 | 81.7 | 78.1 | 74.9 | 72.0 | 69.5 | 67.2 | 65.2 | 63.3 | 61.6 | 60.0 | 58.5 | 57.2 | 55.9 |
| 100 | 94.5 | 88.7 | 83.8 | 79.7 | 76.1 | 73.0 | 70.3 | 67.8 | 65.6 | 63.6 | 61.8 | 60.1 | 58.5 | 57.1 | 55.8 | 54.5 |
| 125 | 85.0 | 79.7 | 75.3 | 71.6 | 68.4 | 65.6 | 63.1 | 60.9 | 58.9 | 57.1 | 55.4 | 53.9 | 52.5 | 51.3 | 50.1 | 48.9 |
| 150 | 77.8 | 73.0 | 69.0 | 65.6 | 62.6 | 60.1 | 57.8 | 55.8 | 53.9 | 52.3 | 50.8 | 49.4 | 48.1 | 46.9 | 45.7 | 44.7 |
| 175 | 72.3 | 67.8 | 64.0 | 60.9 | 58.1 | 55.7 | 53.6 | 51.7 | 50.0 | 48.5 | 47.1 | 45.7 | 44.5 | 43.4 | 42.3 | 41.4 |
| 200 | 67.8 | 63.6 | 60.0 | 57.1 | 54.5 | 52.3 | 50.3 | 48.5 | 46.9 | 45.4 | 44.0 | 42.8 | 41.6 | 40.6 | 39.6 | 38.7 |
| 225 | 64.0 | 60.0 | 56.7 | 53.9 | 51.5 | 49.4 | 47.5 | 45.7 | 44.2 | 42.8 | 41.5 | 40.3 | 39.3 | 38.3 | 37.3 | 36.5 |
| 250 | 60.9 | 57.1 | 53.9 | 51.2 | 48.9 | 46.9 | 45.0 | 43.4 | 41.9 | 40.6 | 39.4 | 38.3 | 37.2 | 36.3 | 35.4 | 34.6 |
| 275 | 58.1 | 54.5 | 51.5 | 48.9 | 46.7 | 44.7 | 42.9 | 41.4 | 40.0 | 38.7 | 37.5 | 36.5 | 35.5 | 34.6 | 33.8 | 33.0 |

| MAXIMUM ALLOWABLE 2 SPAN HEADER WIDTH (TRACK TO TRACK) E-E (4) BUILDOUT WITH BOLTED CONNECTION - SCHEDULE 19A * | | | | | | | | | | | | | | | | |
|---|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | 3.5" HEADER | | | | | | | | | | | | | | | |
| | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 184.6 | 176.6 | 169.8 | 163.9 | 158.8 | 154.3 | 150.2 | 146.5 | 142.8 | 138.5 | 134.6 | 131.0 | 127.7 | 124.7 | 121.8 | 119.2 |
| 30 | 173.7 | 166.2 | 159.8 | 154.3 | 149.4 | 145.2 | 140.2 | 135.4 | 131.0 | 127.1 | 123.5 | 120.2 | 117.2 | 114.4 | 111.8 | 109.3 |
| 35 | 165.0 | 157.8 | 151.8 | 146.5 | 141.0 | 135.4 | 130.4 | 125.9 | 121.8 | 118.2 | 114.8 | 111.8 | 108.9 | 106.3 | 103.9 | 101.6 |
| 40 | 157.8 | 151.0 | 145.2 | 138.5 | 132.4 | 127.1 | 122.4 | 118.2 | 114.4 | 110.9 | 107.8 | 104.9 | 102.2 | 99.8 | 97.5 | 95.3 |
| 45 | 151.8 | 145.2 | 137.7 | 131.0 | 125.3 | 120.2 | 115.8 | 111.8 | 108.2 | 104.9 | 101.9 | 99.2 | 96.6 | 94.3 | 92.1 | 90.1 |
| 50 | 146.5 | 138.5 | 131.0 | 124.7 | 119.2 | 114.4 | 110.1 | 106.3 | 102.9 | 99.8 | 96.9 | 94.3 | 91.9 | 89.7 | 87.6 | 85.7 |
| 55 | 141.0 | 132.4 | 125.3 | 119.2 | 113.9 | 109.3 | 105.2 | 101.6 | 98.3 | 95.3 | 92.6 | 90.1 | 87.8 | 85.7 | 83.7 | 81.9 |
| 60 | 135.3 | 127.1 | 120.2 | 114.3 | 109.3 | 104.9 | 100.9 | 97.4 | 94.3 | 91.4 | 88.8 | 86.4 | 84.2 | 82.2 | 80.3 | 78.5 |
| 65 | 130.3 | 122.4 | 115.7 | 110.1 | 105.2 | 100.9 | 97.2 | 93.8 | 90.8 | 88.0 | 85.5 | 83.2 | 81.0 | 79.1 | 77.3 | 75.5 |
| 70 | 125.8 | 118.1 | 111.7 | 106.3 | 101.5 | 97.4 | 93.8 | 90.5 | 87.6 | 84.9 | 82.5 | 80.3 | 78.2 | 76.3 | 74.5 | 72.9 |
| 75 | 121.8 | 114.3 | 108.1 | 102.8 | 98.3 | 94.3 | 90.7 | 87.6 | 84.7 | 82.2 | 79.8 | 77.6 | 75.7 | 73.8 | 72.1 | 70.5 |
| 80 | 118.1 | 110.8 | 104.8 | 99.7 | 95.3 | 91.4 | 88.0 | 84.9 | 82.1 | 79.6 | 77.4 | 75.3 | 73.3 | 71.6 | 69.9 | 68.4 |
| 85 | 114.7 | 107.7 | 101.8 | 96.9 | 92.5 | 88.8 | 85.4 | 82.5 | 79.8 | 77.4 | 75.1 | 73.1 | 71.2 | 69.5 | 67.9 | 66.4 |
| 90 | 111.7 | 104.8 | 99.1 | 94.2 | 90.1 | 86.4 | 83.1 | 80.2 | 77.6 | 75.3 | 73.1 | 71.1 | 69.3 | 67.6 | 66.0 | 64.6 |
| 95 | 108.8 | 102.1 | 96.6 | 91.8 | 87.7 | 84.2 | 81.0 | 78.2 | 75.6 | 73.3 | 71.2 | 69.3 | 67.5 | 65.9 | 64.3 | 62.9 |
| 100 | 106.2 | 99.7 | 94.2 | 89.6 | 85.6 | 82.1 | 79.0 | 76.3 | 73.8 | 71.5 | 69.5 | 67.6 | 65.9 | 64.3 | 62.8 | 61.4 |
| 125 | 95.5 | 89.6 | 84.7 | 80.5 | 76.9 | 73.8 | 71.0 | 68.5 | 66.3 | 64.2 | 62.4 | 60.7 | 59.1 | 57.7 | 56.3 | 55.1 |
| 150 | 87.5 | 82.1 | 77.6 | 73.8 | 70.5 | 67.6 | 65.0 | 62.7 | 60.7 | 58.8 | 57.1 | 55.6 | 54.1 | 52.8 | 51.6 | 50.4 |
| 175 | 81.2 | 76.2 | 72.0 | 68.5 | 65.4 | 62.7 | 60.3 | 58.2 | 56.3 | 54.6 | 53.0 | 51.6 | 50.2 | 49.0 | 47.9 | 46.8 |
| 200 | 76.2 | 71.5 | 67.5 | 64.2 | 61.3 | 58.8 | 56.6 | 54.6 | 52.8 | 51.2 | 49.7 | 48.3 | 47.1 | 45.9 | 44.8 | 43.8 |
| 225 | 72.0 | 67.5 | 63.8 | 60.6 | 57.9 | 55.5 | 53.4 | 51.6 | 49.9 | 48.3 | 46.9 | 45.6 | 44.4 | 43.3 | 42.2 | 41.2 |
| 250 | 68.4 | 64.2 | 60.6 | 57.6 | 55.0 | 52.8 | 50.8 | 49.0 | 47.4 | 45.9 | 44.5 | 43.3 | 42.1 | 41.0 | 40.1 | 39.1 |
| 275 | 65.4 | 61.3 | 57.9 | 55.0 | 52.6 | 50.4 | 48.5 | 46.8 | 45.2 | 43.8 | 42.4 | 41.2 | 40.1 | 39.1 | 38.2 | 37.3 |

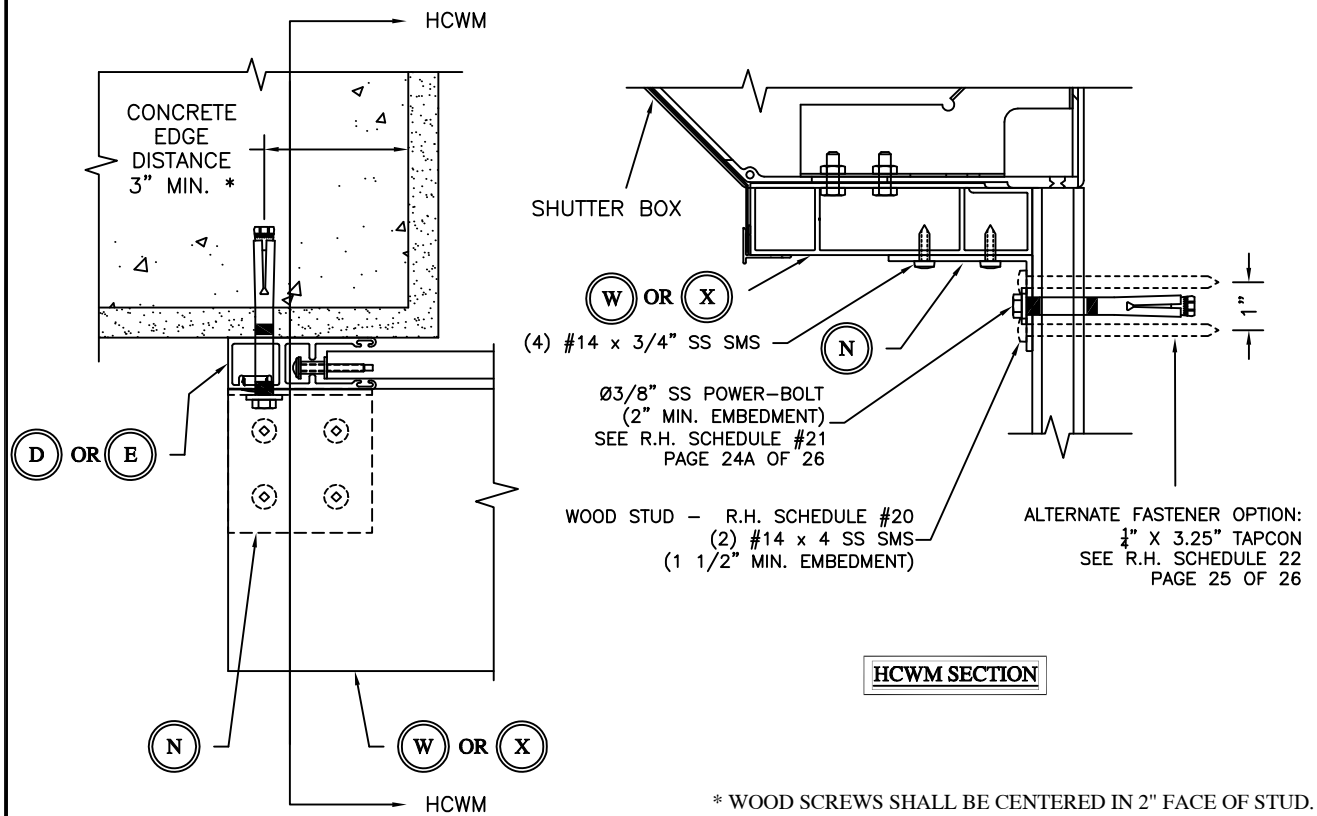


HVHZ
END RETENTION
PRODUCT APPROVAL



DRAWN: DF
 DATE: 04-19-10
 APPROVED: DLF
 DATE: 04-19-10
 DRAWING NO: 3-01-038
 SIZE: B REV: -
 SCALE: 1 : 10
 SHEET: 23B OF 26

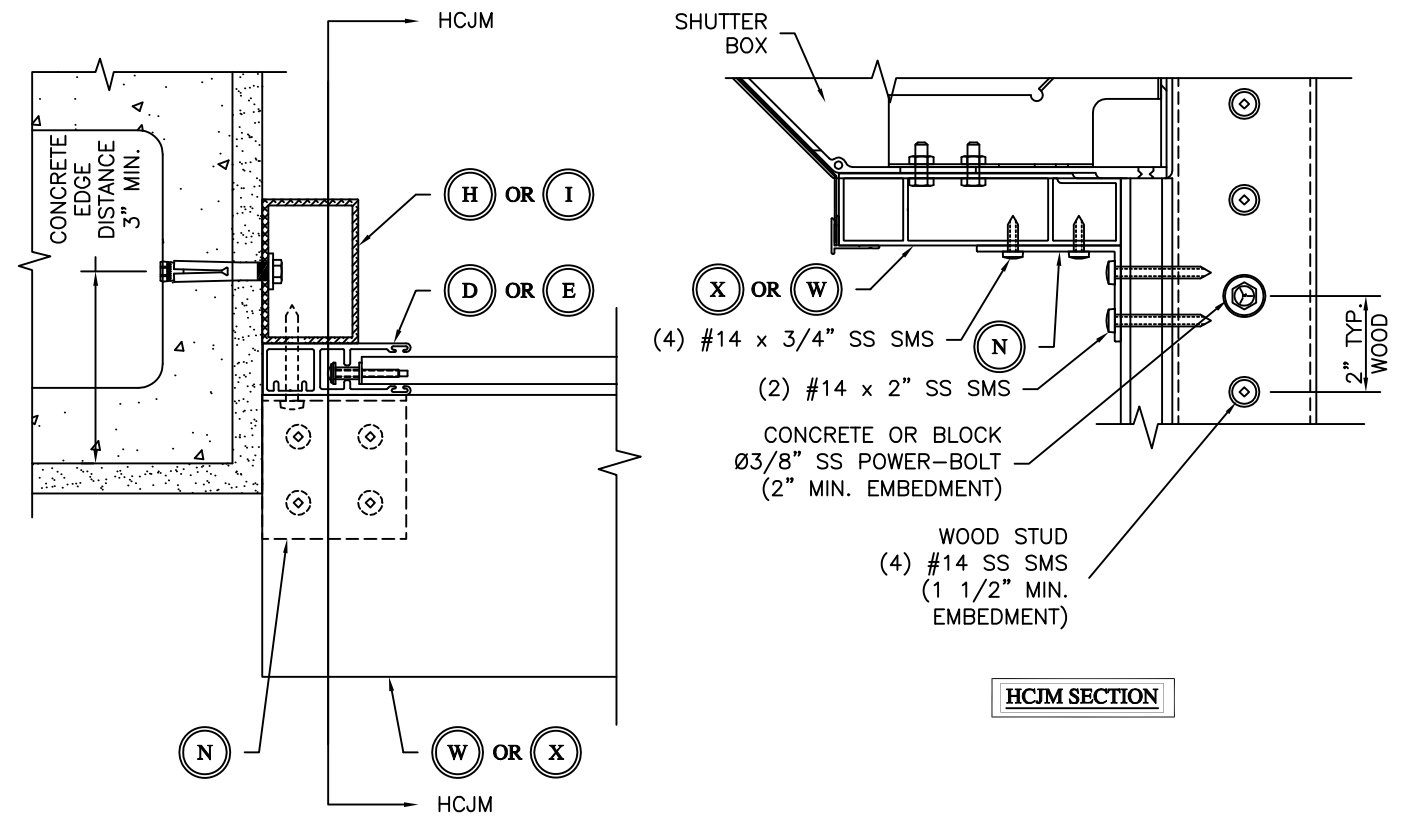
**WALL MOUNT
SECTION A-A(1)
REINFORCED HEADER
CONNECTION**



HCWM SECTION

JAMB MOUNT

**REINFORCED HEADER CONNECTION
SEE R.H. SCHEDULE #22
PAGE 25 OF 26**



HCJM SECTION

* WOOD SCREWS SHALL BE CENTERED IN 2" FACE OF STUD.



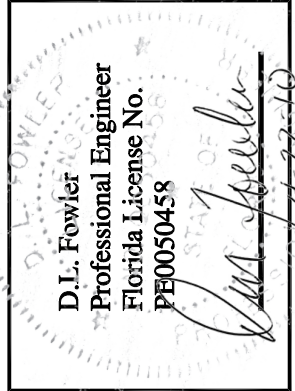
**HVHZ
END RETENTION
PRODUCT APPROVAL**

| MAXIMUM ALLOWABLE 2 SPAN 5.875" HEADER WIDTH (TRACK TO TRACK) - REINFORCED HEADER SCHEDULE 20 | | | | | | | | | | | | | | | | |
|---|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 240.0 | 240.0 | 234.8 | 224.0 | 214.6 | 206.3 | 199.0 | 192.4 | 186.4 | 181.0 | 176.1 | 171.5 | 167.3 | 163.4 | 159.8 | 156.4 |
| 30 | 240.0 | 228.0 | 216.3 | 206.2 | 197.5 | 189.8 | 183.0 | 176.9 | 171.4 | 166.4 | 161.8 | 157.6 | 153.8 | 150.2 | 146.8 | 143.7 |
| 35 | 225.8 | 212.6 | 201.6 | 192.2 | 184.0 | 176.8 | 170.5 | 164.8 | 159.6 | 155.0 | 150.7 | 146.7 | 143.1 | 139.7 | 136.6 | 133.7 |
| 40 | 212.6 | 200.1 | 189.7 | 180.8 | 173.1 | 166.3 | 160.3 | 154.9 | 150.1 | 145.6 | 141.6 | 137.9 | 134.5 | 131.3 | 128.4 | 125.6 |
| 45 | 201.5 | 189.6 | 179.7 | 171.3 | 163.9 | 157.5 | 151.8 | 146.7 | 142.1 | 137.9 | 134.0 | 130.5 | 127.3 | 124.3 | 121.5 | 118.9 |
| 50 | 192.0 | 180.7 | 171.2 | 163.1 | 156.1 | 150.0 | 144.5 | 139.6 | 135.2 | 131.2 | 127.6 | 124.2 | 121.1 | 118.3 | 115.6 | 113.1 |
| 55 | 183.8 | 172.9 | 163.8 | 156.1 | 149.4 | 143.5 | 138.2 | 133.6 | 129.3 | 125.5 | 122.0 | 118.8 | 115.8 | 113.1 | 110.5 | 108.1 |
| 60 | 176.6 | 166.1 | 157.4 | 149.9 | 143.4 | 137.8 | 132.7 | 128.2 | 124.2 | 120.5 | 117.1 | 114.0 | 111.2 | 108.5 | 106.1 | 103.8 |
| 65 | 170.2 | 160.1 | 151.6 | 144.4 | 138.2 | 132.7 | 127.9 | 123.5 | 119.6 | 116.0 | 112.8 | 109.8 | 107.1 | 104.5 | 102.1 | 99.9 |
| 70 | 164.5 | 154.7 | 146.5 | 139.5 | 133.5 | 128.2 | 123.5 | 119.3 | 115.5 | 112.1 | 108.9 | 106.0 | 103.4 | 100.9 | 98.6 | 96.5 |
| 75 | 159.3 | 149.8 | 141.9 | 135.1 | 129.2 | 124.1 | 119.6 | 115.5 | 111.8 | 108.5 | 105.4 | 102.6 | 100.1 | 97.7 | 95.5 | 93.4 |
| 80 | 154.6 | 145.4 | 137.6 | 131.1 | 125.4 | 120.4 | 116.0 | 112.0 | 108.5 | 105.2 | 102.3 | 99.6 | 97.0 | 94.7 | 92.6 | 90.6 |
| 85 | 150.3 | 141.3 | 133.8 | 127.4 | 121.9 | 117.0 | 112.7 | 108.9 | 105.4 | 102.3 | 99.4 | 96.7 | 94.3 | 92.1 | 90.0 | 88.0 |
| 90 | 146.4 | 137.6 | 130.3 | 124.1 | 118.7 | 113.9 | 109.7 | 106.0 | 102.6 | 99.5 | 96.7 | 94.2 | 91.8 | 89.6 | 87.5 | 85.6 |
| 95 | 142.7 | 134.2 | 127.0 | 120.9 | 115.7 | 111.1 | 107.0 | 103.3 | 100.0 | 97.0 | 94.3 | 91.8 | 89.5 | 87.3 | 85.3 | 83.5 |
| 100 | 139.4 | 131.0 | 124.0 | 118.1 | 112.9 | 108.4 | 104.4 | 100.8 | 97.6 | 94.7 | 92.0 | 89.6 | 87.3 | 85.2 | 83.3 | 81.3 |
| 125 | 125.6 | 118.0 | 111.7 | 106.3 | 101.6 | 97.6 | 94.0 | 90.7 | 87.8 | 85.2 | 82.8 | 79.5 | 75.3 | 71.6 | 68.2 | 65.1 |
| 150 | 115.3 | 108.3 | 102.5 | 97.5 | 93.2 | 89.5 | 86.2 | 83.2 | 79.5 | 74.6 | 70.2 | 66.3 | 62.8 | 59.6 | 56.8 | 54.2 |
| 175 | 107.2 | 100.7 | 95.3 | 90.7 | 86.7 | 83.2 | 78.7 | 73.0 | 68.2 | 63.9 | 60.1 | 56.8 | 53.8 | 51.1 | 48.7 | 46.5 |
| 200 | 100.7 | 94.6 | 89.5 | 85.1 | 81.3 | 74.6 | 68.8 | 63.9 | 59.6 | 55.9 | 52.6 | 49.7 | 47.1 | 44.7 | 42.6 | 40.7 |
| 225 | 95.3 | 89.4 | 84.6 | 79.5 | 72.3 | 66.3 | 61.2 | 56.8 | 53.0 | 49.7 | 46.8 | 44.2 | 41.9 | 39.8 | 37.9 | 36.2 |
| 250 | 90.6 | 85.1 | 79.5 | 71.6 | 65.1 | 59.6 | 55.1 | 51.1 | 47.7 | 44.7 | 42.1 | 39.8 | 37.7 | 35.8 | 34.1 | 32.5 |
| 275 | 86.6 | 81.3 | 72.3 | 65.1 | 59.2 | 54.2 | 50.1 | 46.5 | 43.4 | 40.7 | 38.3 | 36.2 | 34.2 | 32.5 | 31.0 | 29.6 |

* WALL MOUNT A-A(1) ON WOOD WITH REINFORCEMENT ANGLE

| MAXIMUM ALLOWABLE 2 SPAN 7.25" HEADER WIDTH (TRACK TO TRACK) - REINFORCED HEADER SCHEDULE 20 | | | | | | | | | | | | | | | | |
|--|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 237.8 | 230.7 | 224.3 | 218.4 | 212.9 | 207.9 | 203.2 | 198.9 | 194.8 |
| 30 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 234.9 | 226.8 | 219.5 | 212.9 | 206.9 | 201.4 | 196.4 | 191.7 | 187.4 | 183.3 | 179.5 |
| 35 | 240.0 | 240.0 | 240.0 | 237.6 | 227.9 | 219.4 | 211.7 | 204.9 | 198.7 | 193.1 | 187.9 | 183.2 | 178.8 | 174.7 | 170.9 | 167.4 |
| 40 | 240.0 | 240.0 | 234.6 | 224.0 | 214.8 | 206.7 | 199.5 | 193.0 | 187.2 | 181.8 | 176.9 | 172.5 | 168.3 | 164.4 | 160.9 | 157.5 |
| 45 | 240.0 | 234.5 | 222.7 | 212.6 | 203.8 | 196.1 | 189.2 | 183.1 | 177.5 | 172.4 | 167.7 | 163.5 | 159.5 | 155.8 | 152.4 | 149.2 |
| 50 | 237.2 | 223.7 | 212.5 | 202.8 | 194.4 | 187.0 | 180.4 | 174.5 | 169.1 | 164.3 | 159.8 | 155.8 | 152.0 | 148.5 | 145.2 | 142.1 |
| 55 | 227.3 | 214.4 | 203.5 | 194.2 | 186.1 | 179.0 | 172.7 | 167.0 | 161.9 | 157.2 | 153.0 | 149.1 | 145.4 | 142.1 | 138.9 | 136.0 |
| 60 | 218.6 | 206.2 | 195.7 | 186.7 | 178.9 | 172.1 | 166.0 | 160.5 | 155.6 | 151.1 | 147.0 | 143.2 | 139.7 | 136.4 | 133.4 | 130.6 |
| 65 | 211.0 | 198.9 | 188.7 | 180.1 | 172.5 | 165.9 | 160.0 | 154.7 | 150.0 | 145.6 | 141.6 | 138.0 | 134.6 | 131.5 | 128.6 | 125.1 |
| 70 | 204.1 | 192.4 | 182.5 | 174.1 | 166.8 | 160.4 | 154.7 | 149.6 | 144.9 | 140.7 | 136.9 | 133.3 | 130.1 | 127.1 | 124.1 | 121.2 |
| 75 | 197.9 | 186.5 | 176.9 | 168.7 | 161.6 | 155.4 | 149.9 | 144.9 | 140.4 | 136.3 | 132.6 | 129.2 | 125.6 | 122.5 | 119.3 | 116.6 |
| 80 | 192.2 | 181.1 | 171.8 | 163.8 | 156.9 | 150.9 | 145.5 | 140.6 | 136.3 | 132.3 | 128.7 | 124.3 | 121.7 | 118.8 | 116.5 | 114.7 |
| 85 | 187.0 | 176.2 | 167.1 | 159.4 | 152.6 | 146.7 | 141.5 | 136.8 | 132.5 | 128.6 | 123.8 | 120.8 | 118.8 | 117.0 | 115.3 | 113.6 |
| 90 | 182.3 | 171.7 | 162.8 | 155.2 | 148.7 | 142.9 | 137.8 | 133.2 | 129.0 | 124.3 | 120.8 | 117.0 | 114.5 | 112.5 | 110.6 | 108.7 |
| 95 | 177.8 | 167.5 | 158.8 | 151.4 | 145.0 | 139.4 | 134.4 | 129.9 | 125.6 | 121.7 | 117.7 | 114.5 | 111.5 | 109.5 | 107.6 | 105.7 |
| 100 | 173.7 | 163.6 | 155.1 | 147.9 | 141.6 | 136.1 | 131.2 | 126.8 | 122.6 | 118.6 | 114.8 | 111.5 | 108.5 | 106.5 | 104.6 | 102.7 |
| 125 | 157.1 | 147.8 | 140.1 | 133.5 | 127.8 | 119.3 | 110.1 | 102.3 | 95.4 | 89.5 | 84.2 | 79.5 | 75.3 | 71.6 | 68.2 | 65.1 |
| 150 | 144.5 | 136.0 | 128.8 | 119.3 | 108.5 | 99.4 | 91.8 | 85.2 | 79.5 | 74.6 | 70.2 | 66.3 | 62.8 | 59.6 | 56.8 | 54.2 |
| 175 | 134.6 | 126.7 | 113.6 | 102.3 | 93.0 | 85.2 | 78.7 | 73.0 | 68.2 | 63.9 | 60.1 | 56.8 | 53.8 | 51.1 | 48.7 | 46.5 |
| 200 | 126.7 | 111.8 | 99.4 | 89.5 | 81.3 | 74.6 | 68.8 | 63.9 | 59.6 | 55.9 | 52.6 | 49.7 | 47.1 | 44.7 | 42.6 | 40.7 |
| 225 | 113.6 | 99.4 | 88.4 | 79.5 | 72.3 | 66.3 | 61.2 | 56.8 | 53.0 | 49.7 | 46.8 | 44.2 | 41.9 | 39.8 | 37.9 | 36.2 |
| 250 | 102.3 | 89.5 | 79.5 | 71.6 | 65.1 | 59.6 | 55.1 | 51.1 | 47.7 | 44.7 | 42.1 | 39.8 | 37.7 | 35.8 | 34.1 | 32.5 |
| 275 | 93.0 | 81.3 | 72.3 | 65.1 | 59.2 | 54.2 | 50.1 | 46.5 | 43.4 | 40.7 | 38.3 | 36.2 | 34.2 | 32.5 | 31.0 | 29.6 |

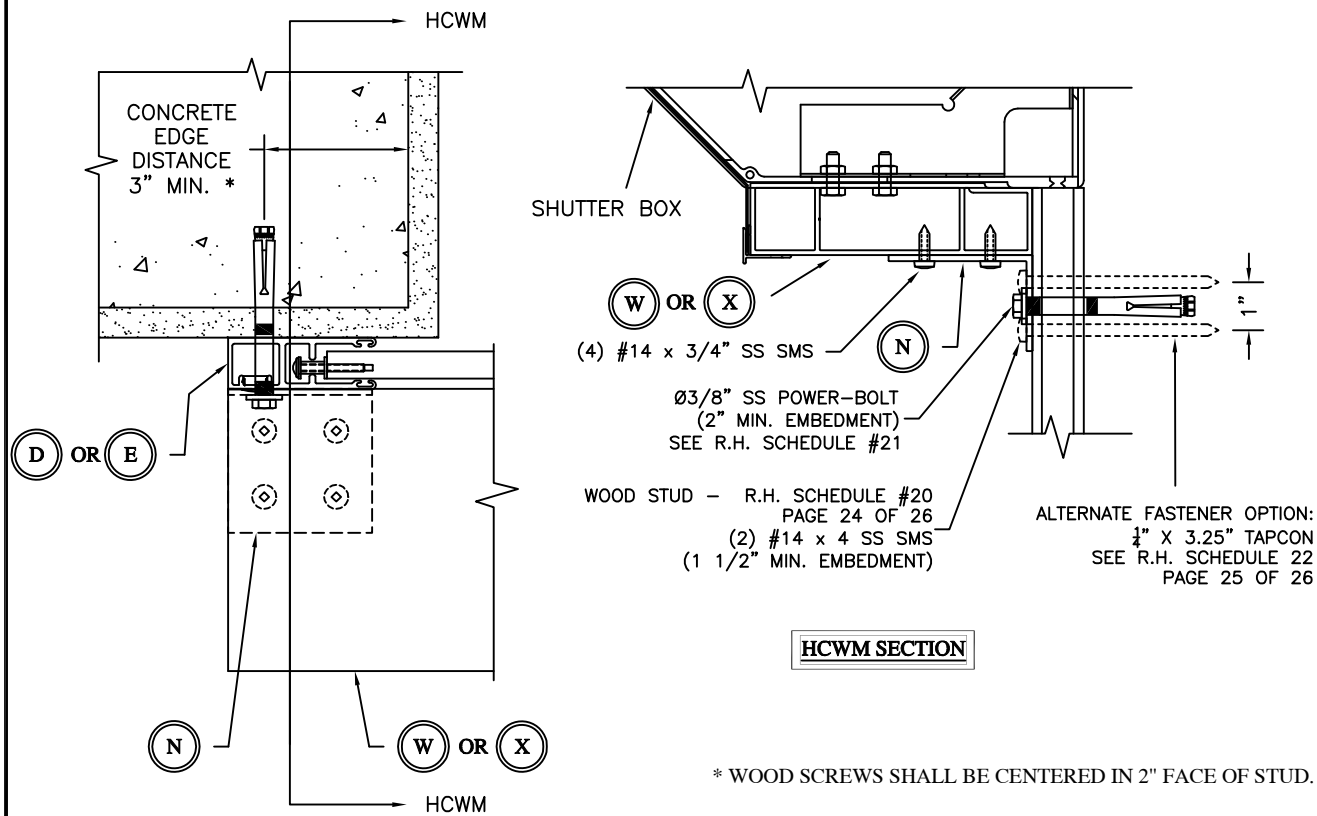
* WALL MOUNT A-A(1) ON WOOD WITH REINFORCEMENT ANGLE



DRAWN: *DF*
 DATE: 04-19-10
 APPROVED: *DLF*
 DATE: 04-19-10
 DRAWING NO: **3-01-038**
 SIZE: **B** REV: -
 SCALE: 1 : 4
 SHEET: 24 OF 26

**WALL MOUNT
SECTION A-A(1)**

**REINFORCED HEADER
CONNECTION**



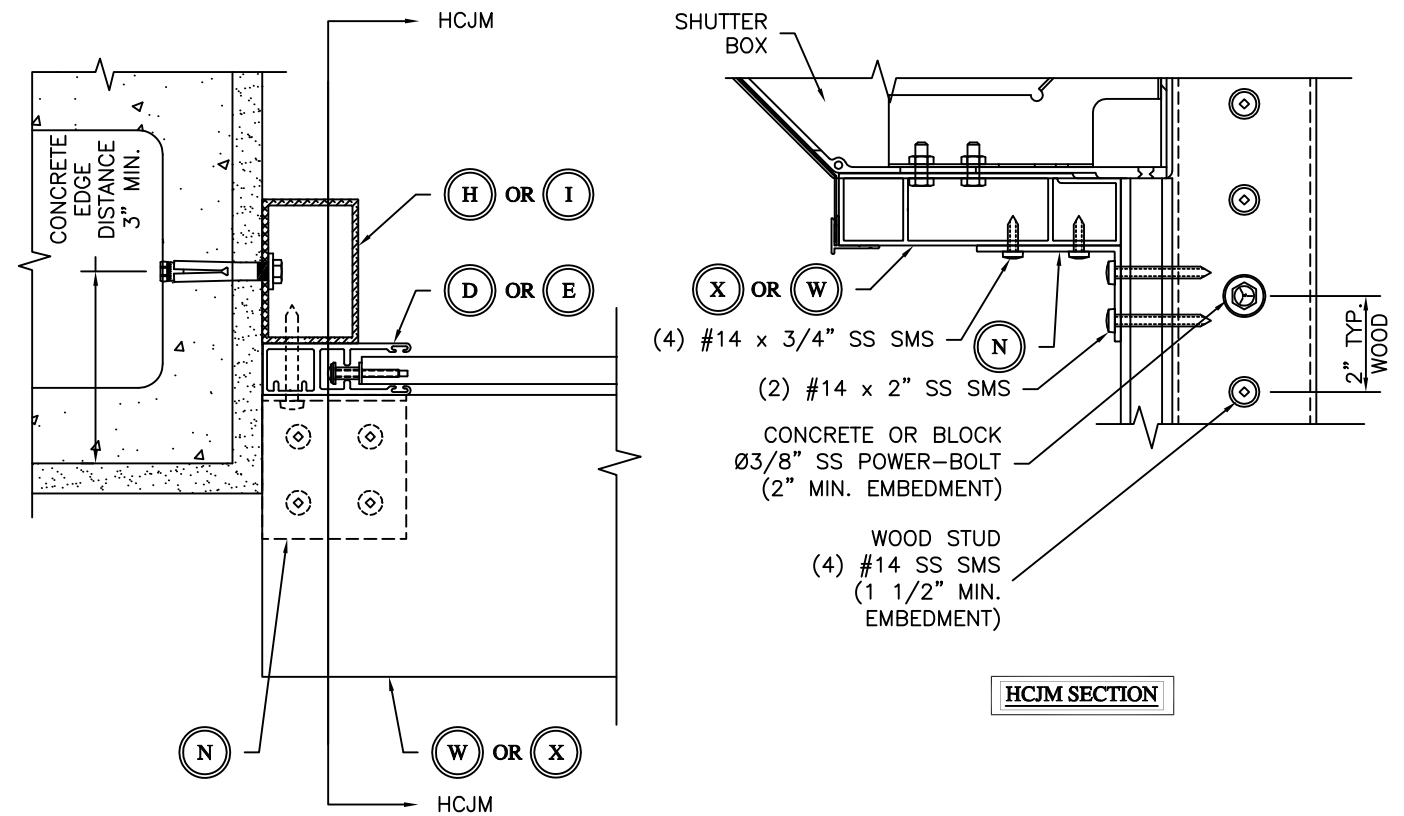
HCWM SECTION

* WOOD SCREWS SHALL BE CENTERED IN 2" FACE OF STUD.

NOTE: USE 3 SPAN SCHEDULE 19, PAGE 23A WITH SCH. 21

JAMB MOUNT

**REINFORCED HEADER
CONNECTION
SEE R.H. SCHEDULE#22**



HCJM SECTION

MAXIMUM ALLOWABLE 2 SPAN 5.875" HEADER WIDTH (TRACK TO TRACK) REINFORCED HEADER SCHEDULE #21*

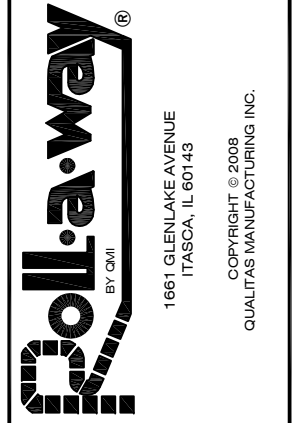
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
|-----|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 240.0 | 240.0 | 234.8 | 224.0 | 214.6 | 206.3 | 199.0 | 192.4 | 186.4 | 181.0 | 176.1 | 171.5 | 167.3 | 163.4 | 159.8 | 156.4 |
| 30 | 240.0 | 228.0 | 216.3 | 206.2 | 197.5 | 189.8 | 183.0 | 176.9 | 171.4 | 166.4 | 161.8 | 157.6 | 153.8 | 150.2 | 146.8 | 143.7 |
| 35 | 225.8 | 212.6 | 201.6 | 192.2 | 184.0 | 176.8 | 170.5 | 164.8 | 159.6 | 155.0 | 150.7 | 146.7 | 143.1 | 139.7 | 136.6 | 133.7 |
| 40 | 212.6 | 200.1 | 189.7 | 180.8 | 173.1 | 166.3 | 160.3 | 154.9 | 150.1 | 145.6 | 141.6 | 137.9 | 134.5 | 131.3 | 128.4 | 125.6 |
| 45 | 201.5 | 189.6 | 179.7 | 171.3 | 163.9 | 157.5 | 151.8 | 146.7 | 142.1 | 137.9 | 134.0 | 130.5 | 127.3 | 124.3 | 121.5 | 118.9 |
| 50 | 192.0 | 180.7 | 171.2 | 163.1 | 156.1 | 150.0 | 144.5 | 139.6 | 135.2 | 131.2 | 127.6 | 124.2 | 121.1 | 118.3 | 115.6 | 113.1 |
| 55 | 183.8 | 172.9 | 163.8 | 156.1 | 149.4 | 143.5 | 138.2 | 133.6 | 129.3 | 125.5 | 122.0 | 118.8 | 115.8 | 113.1 | 110.5 | 108.1 |
| 60 | 176.6 | 166.1 | 157.4 | 149.9 | 143.4 | 137.8 | 132.7 | 128.2 | 124.2 | 120.5 | 117.1 | 114.0 | 111.2 | 108.5 | 106.1 | 103.8 |
| 65 | 170.2 | 160.1 | 151.6 | 144.4 | 138.2 | 132.7 | 127.9 | 123.5 | 119.6 | 116.0 | 112.8 | 109.8 | 107.1 | 104.5 | 102.1 | 99.9 |
| 70 | 164.5 | 154.7 | 146.5 | 139.5 | 133.5 | 128.2 | 123.5 | 119.3 | 115.5 | 112.1 | 108.9 | 106.0 | 103.4 | 100.9 | 98.6 | 96.5 |
| 75 | 159.3 | 149.8 | 141.9 | 135.1 | 129.2 | 124.1 | 119.6 | 115.5 | 111.8 | 108.5 | 105.4 | 102.6 | 100.1 | 97.7 | 95.5 | 93.4 |
| 80 | 154.6 | 145.4 | 137.6 | 131.1 | 125.4 | 120.4 | 116.0 | 112.0 | 108.5 | 105.2 | 102.3 | 99.6 | 97.0 | 94.7 | 92.6 | 90.6 |
| 85 | 150.3 | 141.3 | 133.8 | 127.4 | 121.9 | 117.0 | 112.7 | 108.9 | 105.4 | 102.3 | 99.4 | 96.7 | 94.3 | 92.1 | 90.0 | 88.0 |
| 90 | 146.4 | 137.6 | 130.3 | 124.1 | 118.7 | 113.9 | 109.7 | 106.0 | 102.6 | 99.5 | 96.7 | 94.2 | 91.8 | 89.6 | 87.5 | 85.6 |
| 95 | 142.7 | 134.2 | 127.0 | 120.9 | 115.7 | 111.1 | 107.0 | 103.3 | 100.0 | 97.0 | 94.3 | 91.8 | 89.5 | 87.3 | 85.3 | 83.5 |
| 100 | 139.4 | 131.0 | 124.0 | 118.1 | 112.9 | 108.4 | 104.4 | 100.8 | 97.6 | 94.7 | 92.0 | 89.6 | 87.3 | 85.2 | 83.3 | 81.4 |
| 125 | 125.6 | 118.0 | 111.7 | 106.3 | 101.6 | 97.6 | 94.0 | 90.7 | 87.8 | 85.2 | 82.8 | 80.6 | 78.5 | 76.6 | 74.9 | 73.2 |
| 150 | 115.3 | 108.3 | 102.5 | 97.5 | 93.2 | 89.5 | 86.2 | 83.2 | 80.5 | 78.1 | 75.9 | 73.8 | 72.0 | 70.2 | 68.6 | 67.1 |
| 175 | 107.2 | 100.7 | 95.3 | 90.7 | 86.7 | 83.2 | 80.1 | 77.3 | 74.8 | 72.6 | 70.5 | 68.6 | 66.9 | 65.2 | 63.7 | 62.3 |
| 200 | 100.7 | 94.6 | 89.5 | 85.1 | 81.4 | 78.1 | 75.2 | 72.6 | 70.2 | 68.1 | 66.1 | 64.4 | 62.7 | 61.2 | 59.8 | 58.5 |
| 225 | 95.3 | 89.4 | 84.6 | 80.5 | 76.9 | 73.8 | 71.1 | 68.6 | 66.4 | 64.4 | 62.5 | 60.8 | 59.3 | 57.8 | 56.5 | 55.3 |
| 250 | 90.6 | 85.1 | 80.5 | 76.5 | 73.2 | 70.2 | 67.6 | 65.2 | 63.1 | 61.2 | 59.4 | 57.8 | 56.4 | 55.0 | 53.7 | 52.5 |
| 275 | 86.6 | 81.3 | 76.9 | 73.1 | 69.9 | 67.1 | 64.5 | 62.3 | 60.3 | 58.4 | 56.8 | 55.2 | 53.8 | 52.5 | 51.3 | 50.2 |

*Wall Mount A-A (1) on Concrete with Reinforcement Angle

MAXIMUM ALLOWABLE 2 SPAN 7.25" HEADER WIDTH (TRACK TO TRACK) - REINFORCED HEADER SCHEDULE 21*

| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | | |
|-----|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 | |
| 25 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 237.8 | 237.8 | 230.7 | 224.3 | 218.4 | 212.9 | 207.9 | 203.2 | 198.9 | 194.8 |
| 30 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 234.9 | 226.8 | 219.5 | 212.9 | 206.9 | 201.4 | 196.4 | 191.7 | 187.4 | 183.3 | 179.5 |
| 35 | 240.0 | 240.0 | 240.0 | 237.6 | 227.9 | 219.4 | 211.7 | 204.9 | 198.7 | 193.1 | 187.9 | 183.2 | 178.8 | 174.7 | 170.9 | 167.4 | 164.1 |
| 40 | 240.0 | 240.0 | 234.6 | 224.0 | 214.8 | 206.7 | 199.5 | 193.0 | 187.2 | 181.8 | 176.9 | 172.5 | 168.3 | 164.4 | 160.9 | 157.5 | 154.3 |
| 45 | 240.0 | 234.5 | 222.7 | 212.6 | 203.8 | 196.1 | 189.2 | 183.1 | 177.5 | 172.4 | 167.7 | 163.5 | 159.5 | 155.8 | 152.4 | 149.2 | 146.1 |
| 50 | 237.2 | 223.7 | 212.5 | 202.8 | 194.4 | 187.0 | 180.4 | 174.5 | 169.1 | 164.3 | 159.8 | 155.8 | 152.0 | 148.5 | 145.2 | 142.1 | 139.1 |
| 55 | 227.3 | 214.4 | 203.5 | 194.2 | 186.1 | 179.0 | 172.7 | 167.0 | 161.9 | 157.2 | 153.0 | 149.1 | 145.4 | 142.1 | 138.9 | 136.0 | 133.2 |
| 60 | 218.6 | 206.2 | 195.7 | 186.7 | 178.9 | 172.1 | 166.0 | 160.5 | 155.6 | 151.1 | 147.0 | 143.2 | 139.7 | 136.4 | 133.4 | 130.6 | 128.0 |
| 65 | 211.0 | 198.9 | 188.7 | 180.1 | 172.5 | 165.9 | 160.0 | 154.7 | 150.0 | 145.6 | 141.6 | 138.0 | 134.6 | 131.5 | 128.6 | 125.9 | 123.4 |
| 70 | 204.1 | 192.4 | 182.5 | 174.1 | 166.8 | 160.4 | 154.7 | 149.6 | 144.9 | 140.7 | 136.9 | 133.3 | 130.1 | 127.1 | 124.2 | 121.6 | 119.1 |
| 75 | 197.9 | 186.5 | 176.9 | 168.7 | 161.6 | 155.4 | 149.9 | 144.9 | 140.4 | 136.3 | 132.6 | 129.2 | 126.0 | 123.0 | 120.3 | 117.8 | 115.4 |
| 80 | 192.2 | 181.1 | 171.8 | 163.8 | 156.9 | 150.9 | 145.5 | 140.6 | 136.3 | 132.3 | 128.7 | 125.3 | 122.3 | 119.4 | 116.7 | 114.3 | 112.0 |
| 85 | 187.0 | 176.2 | 167.1 | 159.4 | 152.6 | 146.7 | 141.5 | 136.8 | 132.5 | 128.6 | 125.1 | 121.9 | 118.9 | 116.1 | 113.5 | 111.1 | 108.8 |
| 90 | 182.3 | 171.7 | 162.8 | 155.2 | 148.7 | 142.9 | 137.8 | 133.2 | 129.0 | 125.3 | 121.8 | 118.7 | 115.7 | 112.8 | 110.1 | 107.5 | 105.1 |
| 95 | 177.8 | 167.5 | 158.8 | 151.4 | 145.0 | 139.4 | 134.4 | 129.9 | 125.8 | 122.2 | 118.8 | 115.7 | 112.8 | 110.2 | 107.7 | 105.4 | 103.1 |
| 100 | 173.7 | 163.6 | 155.1 | 147.9 | 141.6 | 136.1 | 131.2 | 126.8 | 122.9 | 119.3 | 116.0 | 113.0 | 110.2 | 107.6 | 105.2 | 102.9 | 100.7 |
| 125 | 157.1 | 147.8 | 140.1 | 133.5 | 127.8 | 122.8 | 118.4 | 114.4 | 110.8 | 107.5 | 104.6 | 101.8 | 99.3 | 97.0 | 94.8 | 92.7 | 90.7 |
| 150 | 144.5 | 136.0 | 128.8 | 122.8 | 117.5 | 112.9 | 108.8 | 105.1 | 101.8 | 98.8 | 96.0 | 93.5 | 91.2 | 89.0 | 87.0 | 85.1 | 83.3 |
| 175 | 134.6 | 126.7 | 120.0 | 114.3 | 109.4 | 105.1 | 101.2 | 97.8 | 94.7 | 91.9 | 89.3 | 87.0 | 84.8 | 82.8 | 80.9 | 79.1 | 77.4 |
| 200 | 126.6 | 119.1 | 112.8 | 107.4 | 102.8 | 98.7 | 95.1 | 91.9 | 88.9 | 86.3 | 83.9 | 81.7 | 79.6 | 77.7 | 76.0 | 74.3 | 72.7 |
| 225 | 119.9 | 112.8 | 106.8 | 101.7 | 97.3 | 93.4 | 90.0 | 86.9 | 84.2 | 81.6 | 79.4 | 77.2 | 75.3 | 73.5 | 71.8 | 70.3 | 68.8 |
| 250 | 114.3 | 107.5 | 101.8 | 96.9 | 92.7 | 89.0 | 85.7 | 82.8 | 80.2 | 77.8 | 75.6 | 73.6 | 71.7 | 70.0 | 68.4 | 66.9 | 65.5 |
| 275 | 109.4 | 102.8 | 97.3 | 92.7 | 88.6 | 85.1 | 82.0 | 79.1 | 76.6 | 74.3 | 72.2 | 70.3 | 68.5 | 66.9 | 65.3 | 63.8 | 62.5 |

*Wall Mount A-A (1) on Concrete with Reinforcement Angle



HVHZ
END RETENTION
PRODUCT APPROVAL

D.L. Fowler
Professional Engineer
Florida License No. PE0050456
4-22-10

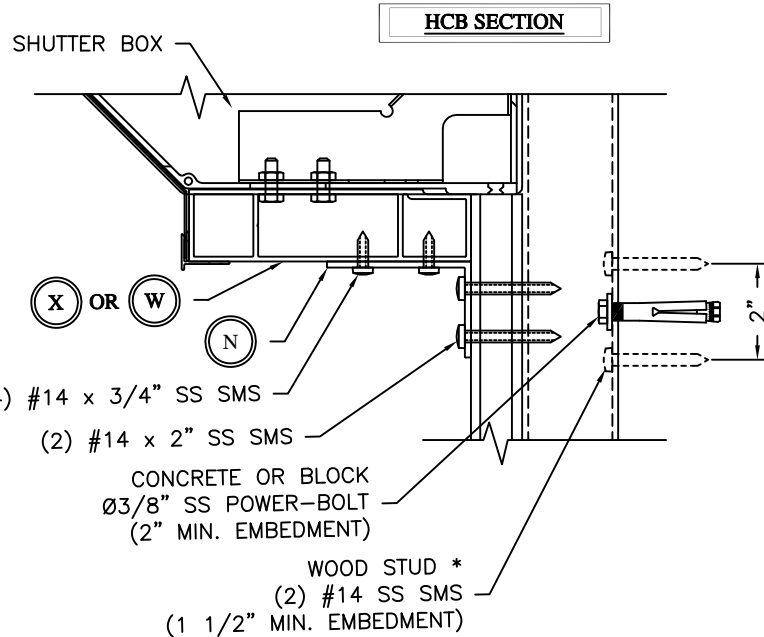
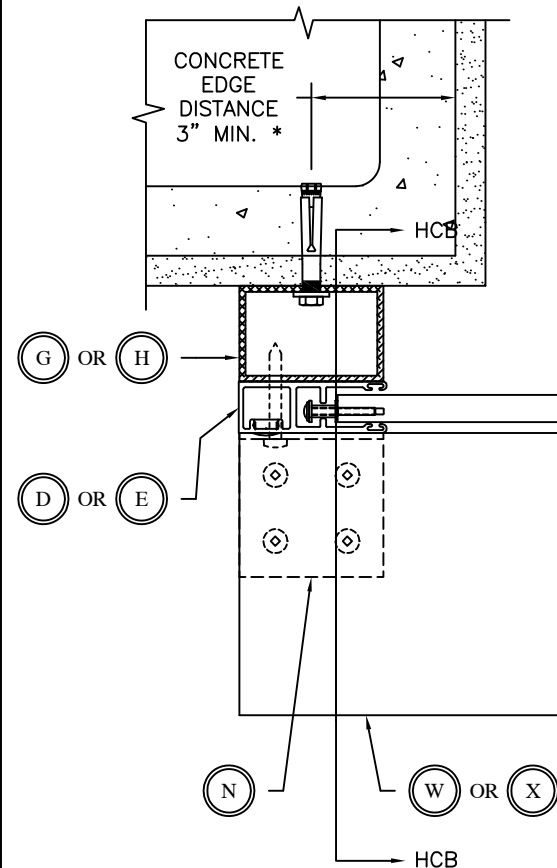
DRAWN: DF
DATE: 04-19-10
APPROVED: DLF
DATE: 04-19-10
DRAWING NO: 3-01-038
SIZE: B REV: -
SCALE: 1 : 4
SHEET: 24A OF 26

* WOOD SCREWS SHALL BE CENTERED IN 2" FACE OF STUD.

NOTE: USE 3 SPAN SCHEDULE 17, PAGE 20A, AS NEEDED.

BUILDOUT MOUNT

REINFORCED HEADER CONNECTION SEE SCHEDULE 22



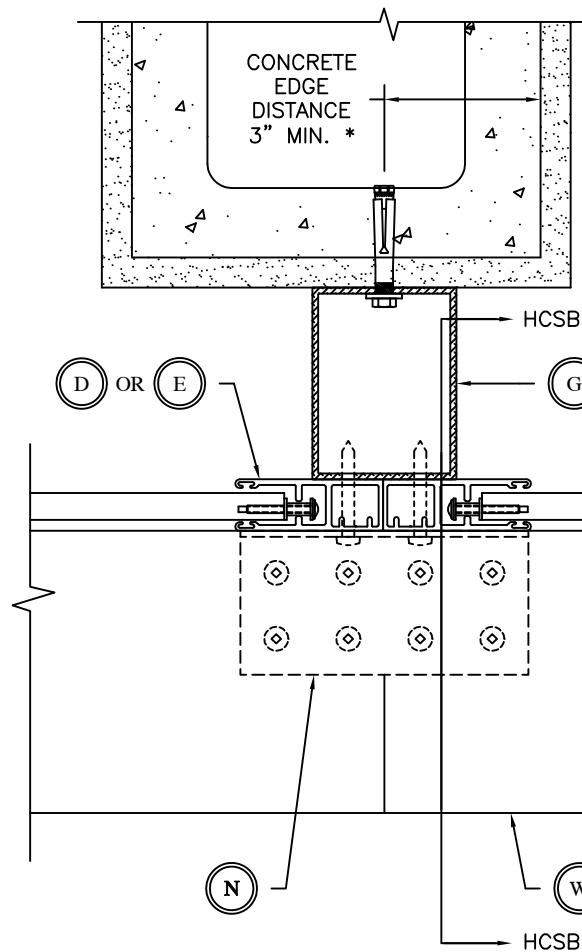
- (4) #14 x 3/4" SS SMS
- (2) #14 x 2" SS SMS
- CONCRETE OR BLOCK Ø3/8" SS POWER-BOLT (2" MIN. EMBEDMENT)
- WOOD STUD * (2) #14 SS SMS (1 1/2" MIN. EMBEDMENT)

| MAXIMUM ALLOWABLE 2 SPAN 7.25" HEADER WIDTH (TRACK TO TRACK) - REINFORCED HEADER SCHEDULE 22 * | | | | | | | | | | | | | | | | |
|--|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 237.8 | 230.7 | 224.3 | 218.4 | 212.9 | 207.9 | 203.2 | 198.9 | 194.8 |
| 30 | 240.0 | 240.0 | 240.0 | 240.0 | 240.0 | 234.9 | 226.8 | 219.5 | 212.9 | 206.9 | 201.4 | 196.4 | 191.7 | 187.4 | 183.3 | 179.5 |
| 35 | 240.0 | 240.0 | 240.0 | 237.6 | 227.9 | 219.4 | 211.7 | 204.9 | 198.7 | 193.1 | 187.9 | 183.2 | 178.8 | 174.7 | 170.9 | 167.4 |
| 40 | 240.0 | 240.0 | 234.6 | 224.0 | 214.8 | 206.7 | 199.5 | 193.0 | 187.2 | 181.8 | 176.9 | 172.5 | 168.3 | 164.4 | 160.9 | 157.5 |
| 45 | 240.0 | 234.5 | 222.7 | 212.6 | 203.8 | 196.1 | 189.2 | 183.1 | 177.5 | 172.4 | 167.7 | 163.5 | 159.5 | 155.8 | 152.4 | 149.2 |
| 50 | 237.2 | 223.7 | 212.5 | 202.8 | 194.4 | 187.0 | 180.4 | 174.5 | 169.1 | 164.3 | 159.8 | 155.8 | 152.0 | 148.5 | 145.2 | 142.1 |
| 55 | 227.3 | 214.4 | 203.5 | 194.2 | 186.1 | 179.0 | 172.7 | 167.0 | 161.9 | 157.2 | 153.0 | 149.1 | 145.4 | 142.1 | 138.9 | 136.0 |
| 60 | 218.6 | 206.2 | 195.7 | 186.7 | 178.9 | 172.1 | 166.0 | 160.5 | 155.6 | 151.1 | 147.0 | 143.2 | 139.7 | 136.4 | 133.4 | 130.6 |
| 65 | 211.0 | 198.9 | 188.7 | 180.1 | 172.5 | 165.9 | 160.0 | 154.7 | 150.0 | 145.6 | 141.6 | 138.0 | 134.6 | 131.5 | 128.6 | 125.9 |
| 70 | 204.1 | 192.4 | 182.5 | 174.1 | 166.8 | 160.4 | 154.7 | 149.6 | 144.9 | 140.7 | 136.9 | 133.3 | 130.1 | 127.1 | 124.2 | 121.6 |
| 75 | 197.9 | 186.5 | 176.9 | 168.7 | 161.6 | 155.4 | 149.9 | 144.9 | 140.4 | 136.3 | 132.6 | 129.2 | 126.0 | 123.0 | 120.3 | 117.8 |
| 80 | 192.2 | 181.1 | 171.8 | 163.8 | 156.9 | 150.9 | 145.5 | 140.6 | 136.3 | 132.3 | 128.7 | 125.3 | 122.3 | 119.4 | 116.7 | 114.3 |
| 85 | 187.0 | 176.2 | 167.1 | 159.4 | 152.6 | 146.7 | 141.5 | 136.8 | 132.5 | 128.6 | 125.1 | 121.9 | 118.9 | 116.1 | 113.5 | 111.1 |
| 90 | 182.3 | 171.7 | 162.8 | 155.2 | 148.7 | 142.9 | 137.8 | 133.2 | 129.0 | 125.3 | 121.8 | 118.7 | 115.7 | 113.0 | 110.5 | 108.1 |
| 95 | 177.8 | 167.5 | 158.8 | 151.4 | 145.0 | 139.4 | 134.4 | 129.9 | 125.8 | 122.2 | 118.8 | 115.7 | 112.8 | 110.2 | 107.7 | 105.4 |
| 100 | 173.7 | 163.6 | 155.1 | 147.9 | 141.6 | 136.1 | 131.2 | 126.8 | 122.9 | 119.3 | 116.0 | 113.0 | 110.2 | 107.6 | 105.2 | 102.9 |
| 125 | 157.1 | 147.8 | 140.1 | 133.5 | 127.8 | 122.8 | 118.4 | 114.4 | 110.8 | 107.5 | 104.6 | 101.8 | 99.3 | 97.0 | 94.8 | 92.7 |
| 150 | 144.5 | 136.0 | 128.8 | 122.8 | 117.5 | 112.9 | 108.8 | 105.1 | 101.8 | 98.8 | 96.0 | 93.5 | 91.2 | 89.0 | 86.1 | 82.2 |
| 175 | 134.6 | 126.7 | 120.0 | 114.3 | 109.4 | 105.1 | 101.2 | 97.8 | 94.7 | 91.9 | 89.3 | 86.1 | 81.5 | 77.5 | 73.8 | 70.4 |
| 200 | 126.6 | 119.1 | 112.8 | 107.4 | 102.8 | 98.7 | 95.1 | 91.9 | 88.9 | 84.7 | 79.7 | 75.3 | 71.3 | 67.8 | 64.5 | 61.6 |
| 225 | 119.9 | 112.8 | 106.8 | 101.7 | 97.3 | 93.4 | 90.0 | 86.1 | 80.3 | 75.3 | 70.9 | 66.9 | 63.4 | 60.2 | 57.4 | 54.8 |
| 250 | 114.3 | 107.5 | 101.8 | 96.9 | 92.7 | 89.0 | 83.4 | 77.5 | 72.3 | 67.8 | 63.8 | 60.2 | 57.1 | 54.2 | 51.6 | 49.3 |
| 275 | 109.4 | 102.8 | 97.3 | 92.7 | 88.6 | 82.2 | 75.8 | 70.4 | 65.7 | 61.6 | 58.0 | 54.8 | 51.9 | 49.3 | 46.9 | 44.8 |

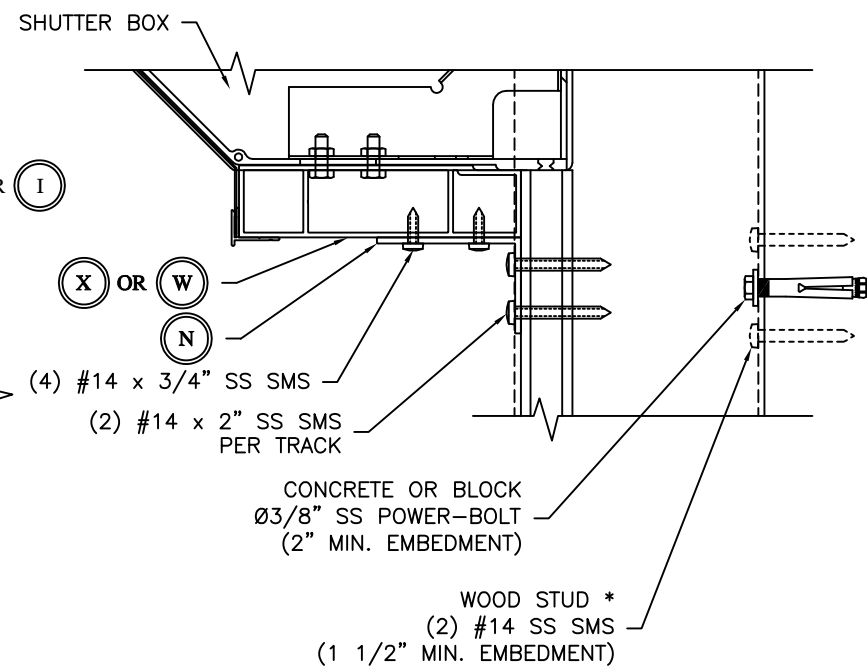
* BUILDOUT AND MULLION MOUNT WITH REINFORCEMENT ANGLE

SPLIT BUILDOUT MOUNT

REINFORCED HEADER CONNECTION SEE SCHEDULE 22



HCSB SECTION



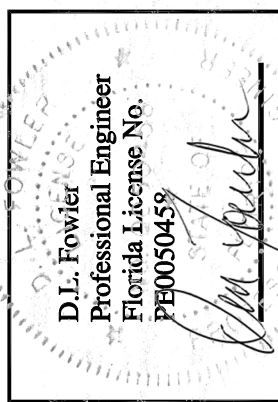
- (4) #14 x 3/4" SS SMS
- (2) #14 x 2" SS SMS PER TRACK
- CONCRETE OR BLOCK Ø3/8" SS POWER-BOLT (2" MIN. EMBEDMENT)
- WOOD STUD * (2) #14 SS SMS (1 1/2" MIN. EMBEDMENT)

| MAXIMUM ALLOWABLE 2 SPAN 5.875" HEADER WIDTH (TRACK TO TRACK) - REINFORCED HEADER SCHEDULE 22 * | | | | | | | | | | | | | | | | |
|---|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PSF | STORM BAR HEIGHT UNDER HEADER | | | | | | | | | | | | | | | |
| | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 | 126 | 132 |
| 25 | 240.0 | 240.0 | 234.8 | 224.0 | 214.6 | 206.3 | 199.0 | 192.4 | 186.4 | 181.0 | 176.1 | 171.5 | 167.3 | 163.4 | 159.8 | 156.4 |
| 30 | 240.0 | 228.0 | 216.3 | 206.2 | 197.5 | 189.8 | 183.0 | 176.9 | 171.4 | 166.4 | 161.8 | 157.6 | 153.8 | 150.2 | 146.8 | 143.7 |
| 35 | 225.8 | 212.6 | 201.6 | 192.2 | 184.0 | 176.8 | 170.5 | 164.8 | 159.6 | 155.0 | 150.7 | 146.7 | 143.1 | 139.7 | 136.6 | 133.7 |
| 40 | 212.6 | 200.1 | 189.7 | 180.8 | 173.1 | 166.3 | 160.3 | 154.9 | 150.1 | 145.6 | 141.6 | 137.9 | 134.5 | 131.3 | 128.4 | 125.6 |
| 45 | 201.5 | 189.6 | 179.7 | 171.3 | 163.9 | 157.5 | 151.8 | 146.7 | 142.1 | 137.9 | 134.0 | 130.5 | 127.3 | 124.3 | 121.5 | 118.9 |
| 50 | 192.0 | 180.7 | 171.2 | 163.1 | 156.1 | 150.0 | 144.5 | 139.6 | 135.2 | 131.2 | 127.6 | 124.2 | 121.1 | 118.3 | 115.6 | 113.1 |
| 55 | 183.8 | 172.9 | 163.8 | 156.1 | 149.4 | 143.5 | 138.2 | 133.6 | 129.3 | 125.5 | 122.0 | 118.8 | 115.8 | 113.1 | 110.5 | 108.1 |
| 60 | 176.6 | 166.1 | 157.4 | 149.9 | 143.4 | 137.8 | 132.7 | 128.2 | 124.2 | 120.5 | 117.1 | 114.0 | 111.2 | 108.5 | 106.1 | 103.8 |
| 65 | 170.2 | 160.1 | 151.6 | 144.4 | 138.2 | 132.7 | 127.9 | 123.5 | 119.6 | 116.0 | 112.8 | 109.8 | 107.1 | 104.5 | 102.1 | 99.9 |
| 70 | 164.5 | 154.7 | 146.5 | 139.5 | 133.5 | 128.2 | 123.5 | 119.3 | 115.5 | 112.1 | 108.9 | 106.0 | 103.4 | 100.9 | 98.6 | 96.5 |
| 75 | 159.3 | 149.8 | 141.9 | 135.1 | 129.2 | 124.1 | 119.6 | 115.5 | 111.8 | 108.5 | 105.4 | 102.6 | 100.1 | 97.7 | 95.5 | 93.4 |
| 80 | 154.6 | 145.4 | 137.6 | 131.1 | 125.4 | 120.4 | 116.0 | 112.0 | 108.5 | 105.2 | 102.3 | 99.4 | 96.7 | 94.3 | 92.6 | 90.6 |
| 85 | 150.3 | 141.3 | 133.8 | 127.4 | 121.9 | 117.0 | 112.7 | 108.9 | 105.4 | 102.3 | 99.4 | 96.7 | 94.3 | 92.1 | 90.0 | 88.0 |
| 90 | 146.4 | 137.6 | 130.3 | 124.1 | 118.7 | 113.9 | 109.7 | 106.0 | 102.6 | 99.5 | 96.7 | 94.2 | 91.8 | 89.6 | 87.5 | 85.6 |
| 95 | 142.7 | 134.2 | 127.0 | 120.9 | 115.7 | 111.1 | 107.0 | 103.3 | 100.0 | 97.0 | 94.3 | 91.8 | 89.5 | 87.3 | 85.3 | 83.5 |
| 100 | 139.4 | 131.0 | 124.0 | 118.1 | 112.9 | 108.4 | 104.4 | 100.8 | 97.6 | 94.7 | 92.0 | 89.6 | 87.3 | 85.2 | 83.3 | 81.4 |
| 125 | 125.6 | 118.0 | 111.7 | 106.3 | 101.6 | 97.6 | 94.0 | 90.7 | 87.8 | 85.2 | 82.8 | 80.6 | 78.5 | 76.6 | 74.9 | 73.2 |
| 150 | 115.3 | 108.3 | 102.5 | 97.5 | 93.2 | 89.5 | 86.2 | 83.2 | 80.5 | 78.1 | 75.9 | 73.8 | 72.0 | 70.2 | 68.6 | 67.1 |
| 175 | 107.2 | 100.7 | 95.3 | 90.7 | 86.7 | 83.2 | 80.1 | 77.3 | 74.8 | 72.6 | 70.5 | 68.6 | 66.9 | 65.2 | 63.7 | 62.3 |
| 200 | 100.7 | 94.6 | 89.5 | 85.1 | 81.4 | 78.1 | 75.2 | 72.6 | 70.2 | 68.1 | 66.1 | 64.4 | 62.7 | 61.2 | 59.8 | 58.5 |
| 225 | 95.3 | 89.4 | 84.6 | 80.5 | 76.9 | 73.8 | 71.1 | 68.6 | 66.4 | 64.4 | 62.5 | 60.8 | 59.3 | 57.8 | 56.5 | 54.8 |
| 250 | 90.6 | 85.1 | 80.5 | 76.5 | 73.2 | 70.2 | 67.6 | 65.2 | 63.1 | 61.2 | 59.4 | 57.8 | 56.4 | 54.2 | 51.6 | 49.3 |
| 275 | 86.6 | 81.3 | 76.9 | 73.1 | 69.9 | 67.1 | 64.5 | 62.3 | 60.3 | 58.4 | 56.8 | 54.8 | 51.9 | 49.3 | 46.9 | 44.8 |

* BUILDOUT AND MULLION MOUNT WITH REINFORCEMENT ANGLE

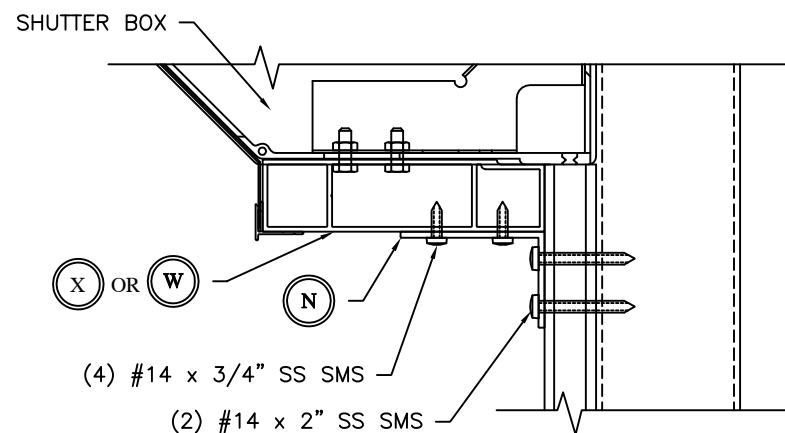
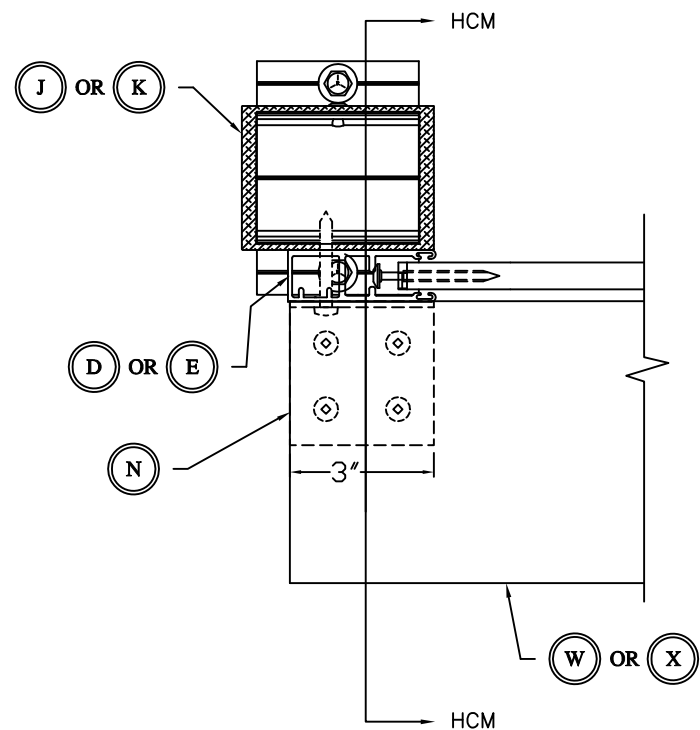


HVHZ
END RETENTION
PRODUCT APPROVAL



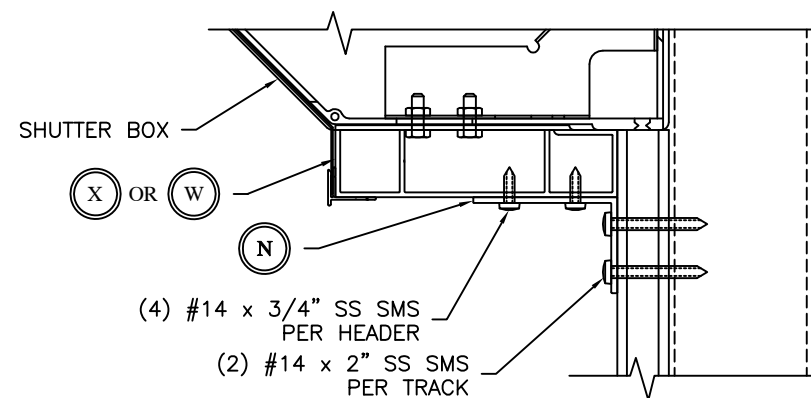
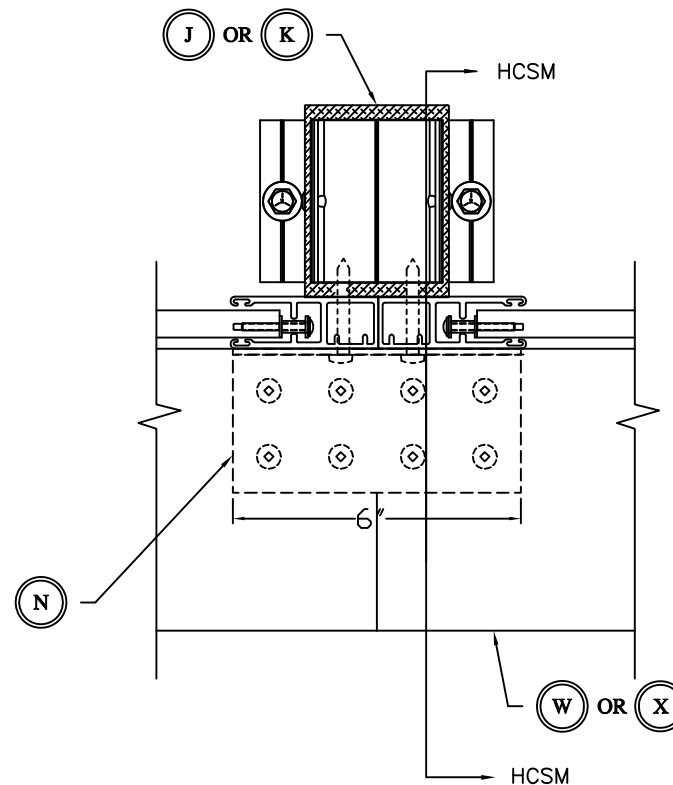
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| APPROVED: | DLF |
| DATE: | 04-19-10 |
| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| SCALE: | 1 : 4 |
| SHEET: | 25 OF 26 |

MULLION MOUNT
REINFORCED HEADER
CONNECTION
 SEE R.H.SCHEDULE 22
 PAGE 25 OF 26

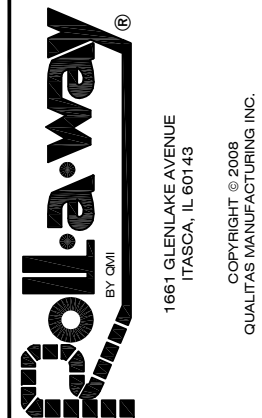


HCM SECTION

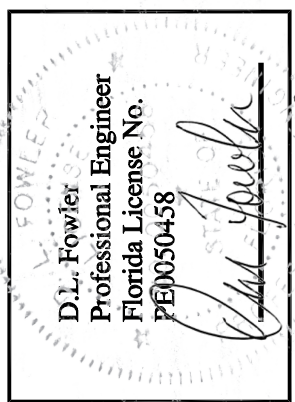
SPLIT MULLION MOUNT
REINFORCED HEADER
CONNECTION
 SEE R.H.SCHEDULE 22
 PAGE 25 OF 26



HCSM SECTION



DRAWING TITLE:
HVHZ
END RETENTION
PRODUCT APPROVAL



| | |
|-------------|-----------------|
| DRAWN: | DF |
| DATE: | 04-19-10 |
| APPROVED: | DF |
| DATE: | 04-19-10 |
| DRAWING NO: | 3-01-038 |
| SIZE: | B |
| SCALE: | 1 : 4 |
| SHEET: | 26 OF 26 |