



**BUILDING CODE COMPLIANCE OFFICE**  
METRO-DADE FLAGLER BUILDING  
140 WEST FLAGLER STREET, SUITE 1603  
MIAMI, FLORIDA 33130-1563  
(305) 375-2901 FAX (305) 375-2908

**CONTRACTOR LICENSING SECTION**  
(305) 375-2527 FAX (305) 375-2558

**CONTRACTOR ENFORCEMENT DIVISION**  
(305) 375-2966 FAX (305) 375-2908

**PRODUCT CONTROL DIVISION**  
(305) 375-2902 FAX (305) 372-6339

**PRODUCT CONTROL NOTICE OF ACCEPTANCE**

**Greenheck Fan Corporation**  
**525 Western Road**  
**Schofield, WI 54476-0410**

Your application for Notice of Acceptance (NOA) of:

**ESD-603D/ HCD-240 Louver/Damper**

under Chapter 8 of the Code of Miami-Dade County governing the use of Alternate Materials and Types of Construction, and completely described herein, has been recommended for acceptance by the Miami-Dade County Building Code Compliance Office (BCCO) under the conditions specified herein.

This NOA shall not be valid after the expiration date stated below. BCCO reserves the right to secure this product or material at any time from a jobsite or manufacturer's plant for quality control testing. If this product or material fails to perform in the approved manner, BCCO may revoke, modify, or suspend the use of such product or material immediately. BCCO reserves the right to revoke this approval, if it is determined by BCCO that this product or material fails to meet the requirements of the South Florida Building Code.

The expense of such testing will be incurred by the manufacturer.

**ACCEPTANCE NO.: 00-0929.14**  
**EXPIRES: 09/06/2006**

Raul Rodriguez  
Chief Product Control Division

**THIS IS THE COVERSHEET, SEE ADDITIONAL PAGES FOR SPECIFIC AND GENERAL  
CONDITIONS  
BUILDING CODE & PRODUCT REVIEW COMMITTEE**

This application for Product Approval has been reviewed by the BCCO and approved by the Building Code and Product Review Committee to be used in Miami-Dade County, Florida under the conditions set forth above.

Francisco J. Quintana, R.A.  
Director  
Miami-Dade County  
Building Code Compliance Office

**APPROVED: 09/06/2001**

**Greenheck Fan Corporation.**

**ACCEPTANCE No: 00-0929.14**

**APPROVED: SEP 06 2001**

**EXPIRES: SEP 06 2006**

**NOTICE OF ACCEPTANCE: SPECIFIC CONDITIONS**

**1. SCOPE**

- 1.1 This approves extruded aluminum louvers with damper, as described in Section 2 of this Notice of Acceptance, designed to comply with the South Florida Building Code (SFBC), 1994 Edition for Miami-Dade County. For the locations where the pressure requirements, as determined by SFBC Chapter 23, do not exceed the Design Pressure Rating values indicated in the approved drawings.

**2. PRODUCT DESCRIPTION**

- 2.1 The ESD-603D / HCD-24- Louver/Damper **and** its components shall be constructed in strict compliance with the following documents: Drawing No. MD-9, titled "ESD-603D/HCD-240 Combination Louver Damper" prepared by Greenheck Fan Corporation, dated 06/4 & 5/2001 with last revision on 07/27/2001. They bear the Miami-Dade County Product Control Approval stamp with the Notice of Acceptance number and approval date by the Miami-Dade County Product Control Division. These documents shall hereinafter be referred to as the approved drawings.

**3. LIMITATIONS**

- 3.1 All permanent set components, included but not limited to embedded anchor bolts, metal shields, headers and sills, must be protected against corrosion, contamination and damage at all time.
- 3.2 This approval applies to applications as shown on the approved drawings
- 3.3 Units with dimensions equal to or smaller than those shown in the approved drawings shall qualify under this approval, as long as all the components are exactly as described in this approval.

**4. INSTALLATION**

- 4.1 The louvers shall be installed in strict compliance with the approved drawings.
- 4.2 The installation of this product **will not** require a hurricane protection system.
- 4.3 This louver shall only be installed in a location where the room behind the louver is designed to drain water penetrating into the room, and the room will house water-resistant equipment, components, and supplies.

**5. LABELING**

- 5.1 Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved".

**6. BUILDING PERMIT REQUIREMENTS**

- 6.1 Application for building permit shall be accompanied by copies of the following:
- 6.1.1 This Notice of Acceptance.
- 6.1.2 Duplicate copies of the approved drawings, as identified in Section 2 of this Notice of Acceptance, clearly marked to show the components selected for the proposed installation.
- 6.1.3 Any other documents required by the Building Official or the South Florida Building Code (SFBC) in order to properly evaluate the installation of this system.

  
Candido Font PE., Senior Product Control Examiner  
Product Control Division

**Greenheck Fan Corporation.**

**ACCEPTANCE No: 00-0929.14**

**APPROVED: SEP 06 2001**

**EXPIRES: SEP 06 2006**

**NOTICE OF ACCEPTANCE: STANDARD CONDITIONS**

1. Renewal of this Acceptance (approval) shall be considered after a renewal application has been filed and the original submitted documents, including test-supporting data, engineering documents, are no older than eight (8) years.
2. Any and all approved products shall be permanently labeled with the manufacturer's name, city, state, and the following statement: "Miami-Dade County Product Control Approval", or as specifically stated in the specific conditions of this Acceptance.
3. Renewals of Acceptance will not be considered if:
  - a. There has been a change in the South Florida Building Code affecting the evaluation of this product and the product is not in compliance with the code changes.
  - b. The product is no longer the same product (identical) as the one originally approved.
  - c. If the Acceptance holder has not complied with all the requirements of this acceptance, including the correct installation of the product.
  - d. The engineer who originally prepared, signed and sealed the required documentation initially submitted, is no longer practicing the engineering profession.
4. Any revision or change in the materials, use, and/or manufacture of the product or process shall automatically be cause for termination of this Acceptance, unless prior written approval has been requested (through the filing of a revision application with appropriate fee) and granted by this office.
5. Any of the following shall also be grounds for removal of this Acceptance:
  - a. Unsatisfactory performance of this product or process.
  - b. Misuse of this Acceptance as an endorsement of any product, for sales, advertising or any other purposes.
6. The Notice of Acceptance number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the Notice of Acceptance is displayed, then it shall be done in its entirety.
7. A copy of this Acceptance as well as approved drawings and other documents, where it applies, shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at all time. The engineer need not reseal the copies.
8. Failure to comply with any section of this Acceptance shall be cause for termination and removal of Acceptance.
9. This Notice of Acceptance consists of pages 1, 2 and this last page 3.

  
Candido Font PE., Senior Product Control Examiner  
Product Control Division

**Greenheck Fan Corporation.**

**ACCEPTANCE No: 00-0929.14**

**APPROVED: SEP 06 2001**

**EXPIRES: SEP 06 2006**

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**A. DRAWINGS.**

1. Drawing prepared by Greenheck Fan Corporation, titled "ESD-603D / HCD-240 Combination Louver Damper" Drawing No. MD-9, dated 06/4 & 5/2001 with last revision on 07/27/2001, signed and sealed by L. D. Rice, PE.

**B. TESTS.**

1. Test report on Large Missile Impact Test per PA 201, Cyclic Wind Pressure Test per PA 203, Uniform Static Air Pressure Test per PA 202 and Wind Driven Rain Test Per PA 100(A) of "Specimens 1, 2, 3 & 4: ESD-603D Louver and Specimens 5A & 5B: ESD-603D / HCD-240 Louver/Damper Assembly", prepared by Architectural Testing, Inc., report No. 01-37834.01, dated 01/15/01, signed and sealed by A. N. Reeves, PE

**C. CALCULATIONS.**

1. Louver Calculations prepared by Greenheck Louver, pages 1 & 2, signed and sealed by L.D. Rice, PE.
2. Justification of Product Variation from Tested Units, prepared by Greenheck Fan Corporation, on 05/08/2001, revised on 07/27/2001, pages 1 to 11 of 11, signed and sealed by L. D. Rice, PE.

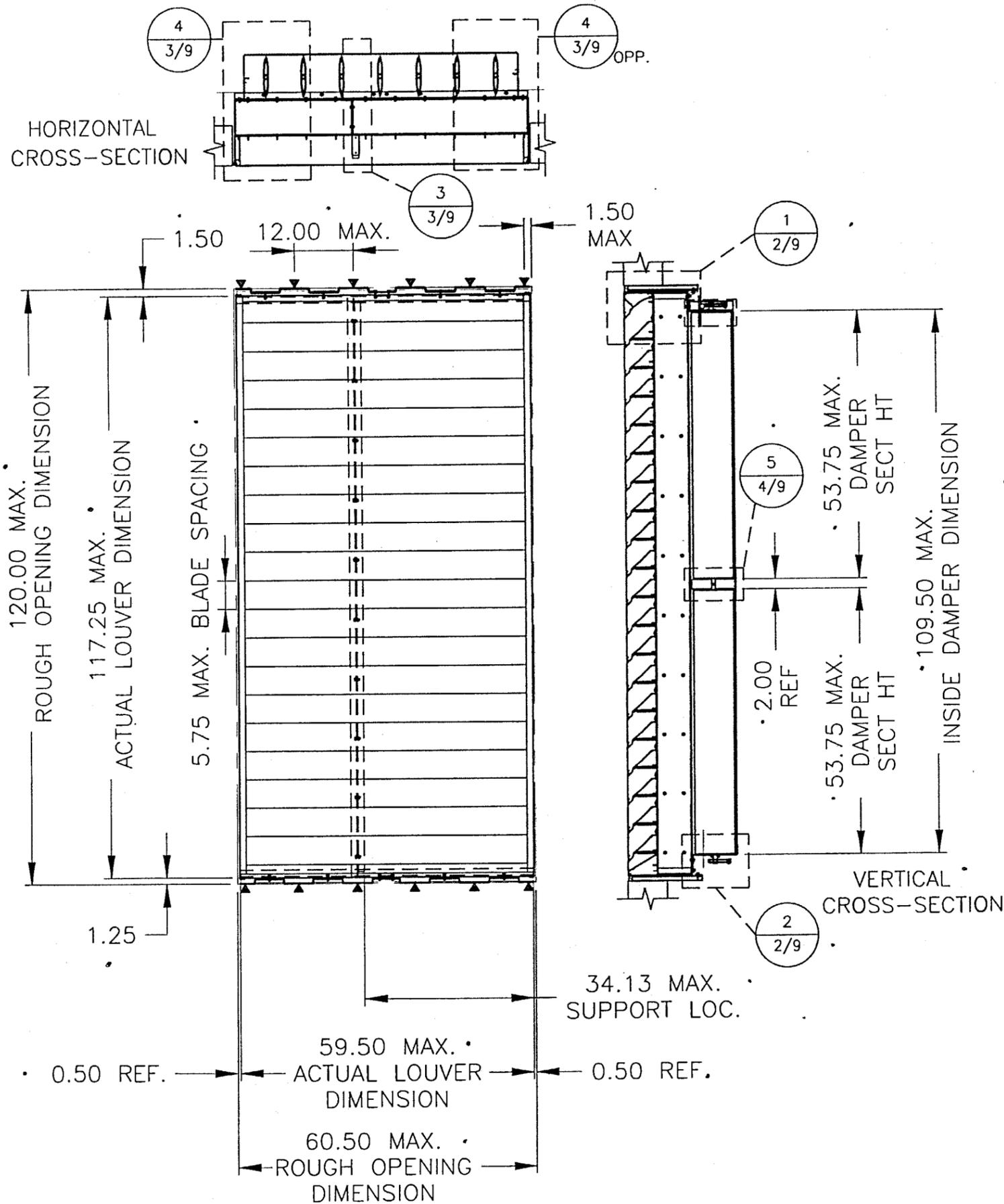
**D. MATERIAL CERTIFICATIONS.**

N/A

**E. STATEMENTS**

1. Test compliance letter issued by Architectural Testing, Inc., on 01/17/2001, signed and sealed by A. N. Reeves, PE.
2. Code compliance letter issued by Rice Engineering on 05/17, 2001, signed and sealed by L. D. Rice, PE.

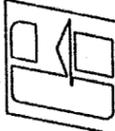
  
Candido Font PE., Senior Product Control Examiner  
Product Control Division

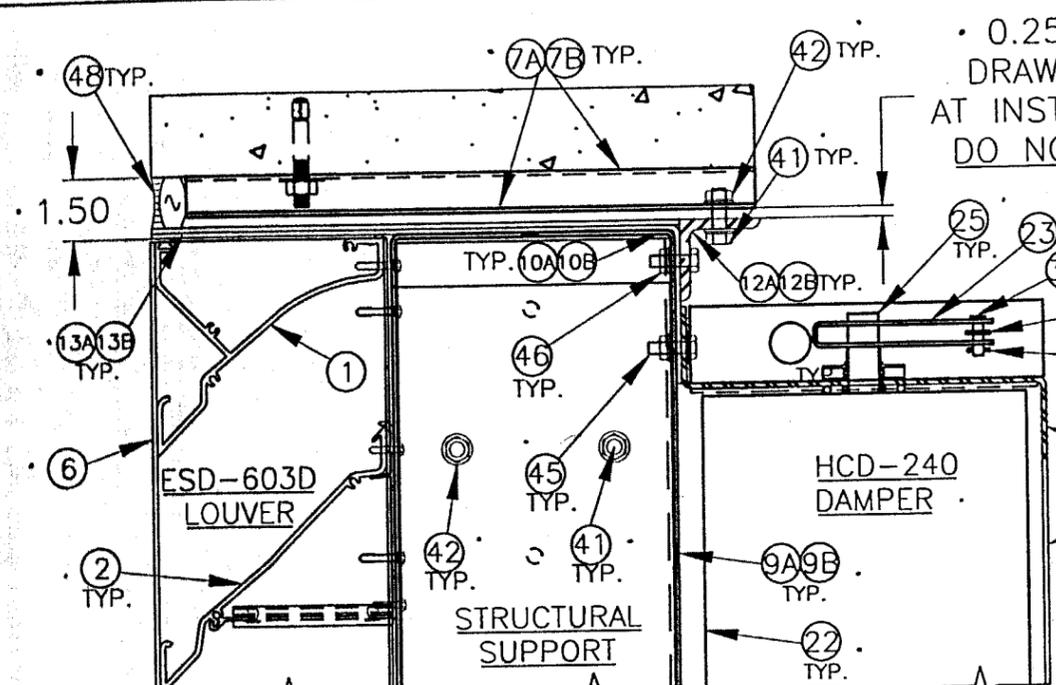


▲ REQUIRED ANCHOR POINTS.

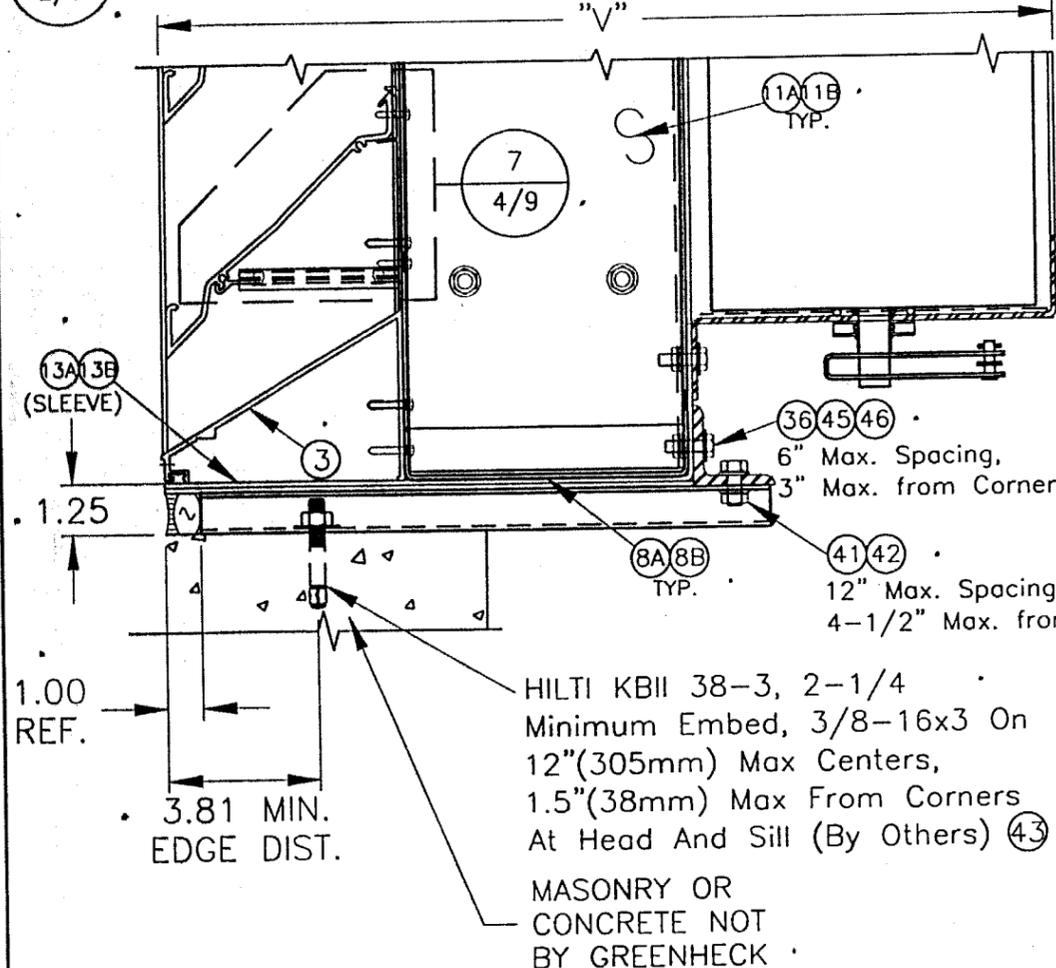
**GENERAL NOTES:**

- 1. Maximum allowable single panel size is 59.50" x 117.25" for a maximum 60.5"x120" rough opening.
- 2. Maximum wall opening is of unlimited width with an opening height not to exceed 120". The opening can be covered with multiple louver panels of 59.25" width or less inside sleeve.
- 3. Center blade support is used on all louvers having a rough opening width over 36". Louver blade span cannot exceed 34.25" in any configuration.
- 4. ESD-603D/HCD-240 is approved for installation into masonry, minimum 2000 psi concrete and steel frame openings. Louver/Damper construction and fastener locations are the same for all substrates. Opening frame must be designed to withstand the loads transferred from the assembly.
- 5. Assembly is qualified for a maximum design load of ±138 pounds per square foot (psf).
- 6. All anchoring fasteners must be as specified and must be installed as shown in these drawings.
- 7. The ESD-603D/HCD-240 assembly has been tested in accordance with Miami-Dade County Protocols PA201-94 (impact), PA202-94 (structural integrity), and PA203-94 (cyclic fatigue). Louver/Damper has been tested per Protocol PA100(A)-95 (Wind Driven Rain).
- 8. Combination Louver/Damper design, testing, and installation conforms to the South Florida Building Code.
- 9. Assembly is to be anchored at head and sill only. No anchorage is required at the jambs.
- 10. Aluminum sleeve prevents water loss through perimeter of Louver and Structural Support (See Sleeve Assembly Detail-9 on Sht. 5/9).
- 11. Louver frame jambs are mitered at bottom and square cut at top. Jambs are stitchwelded, two places, and fastened with (2) #10 x 1" Torx panhead screws at head and sill.
- 12. This Louver/Damper assembly is approved for installation to an elevation of 33' for applications where the space behind is not designed to drain water penetrating into the room, or the room will house non-water-resistant equipment, components, or supplies.

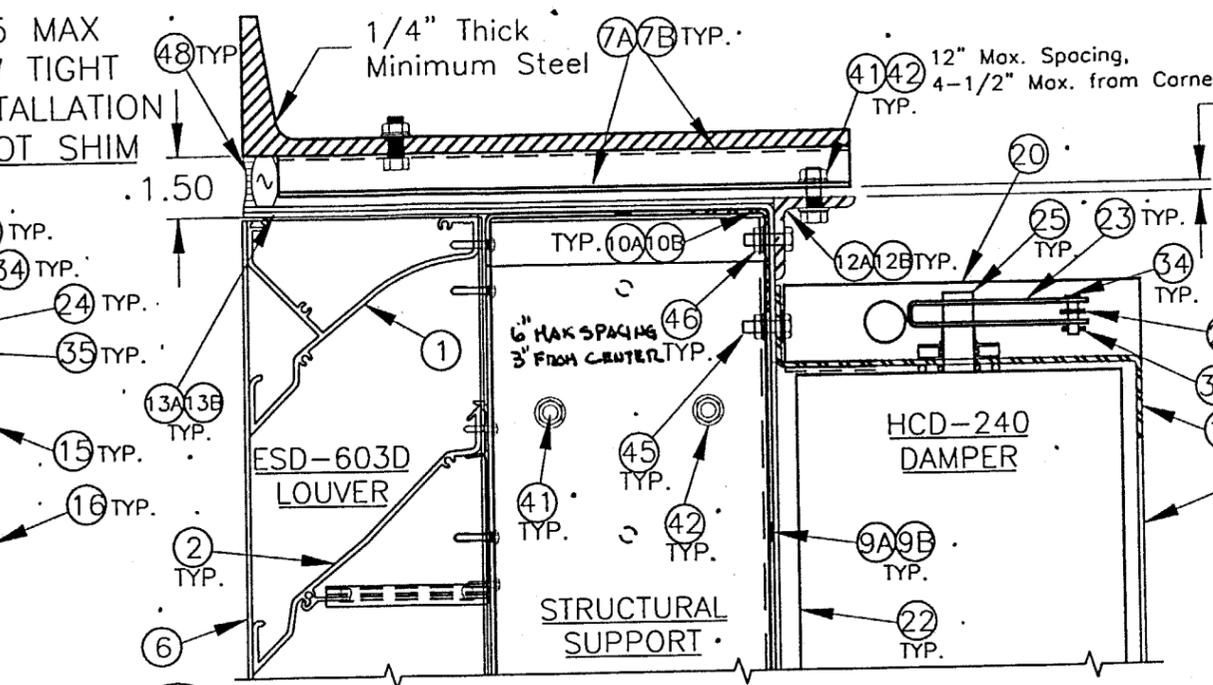
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	REVISION DATE <b>7/27/2001</b>		
SCALE <b>1/28</b>		TITLE <b>ESD-603D/HCD-240 COMBINATION LOUVER DAMPER</b>	
GREENHECK P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410		APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE DATE <b>SEP 06 2001</b> BY <i>[Signature]</i> PRODUCT CONTROL DIVISION BUILDING CODE COMPLIANCE OFFICE ACCEPTANCE NO. <b>00-0929.14</b>	
		 <b>AUG 07 2001</b>	



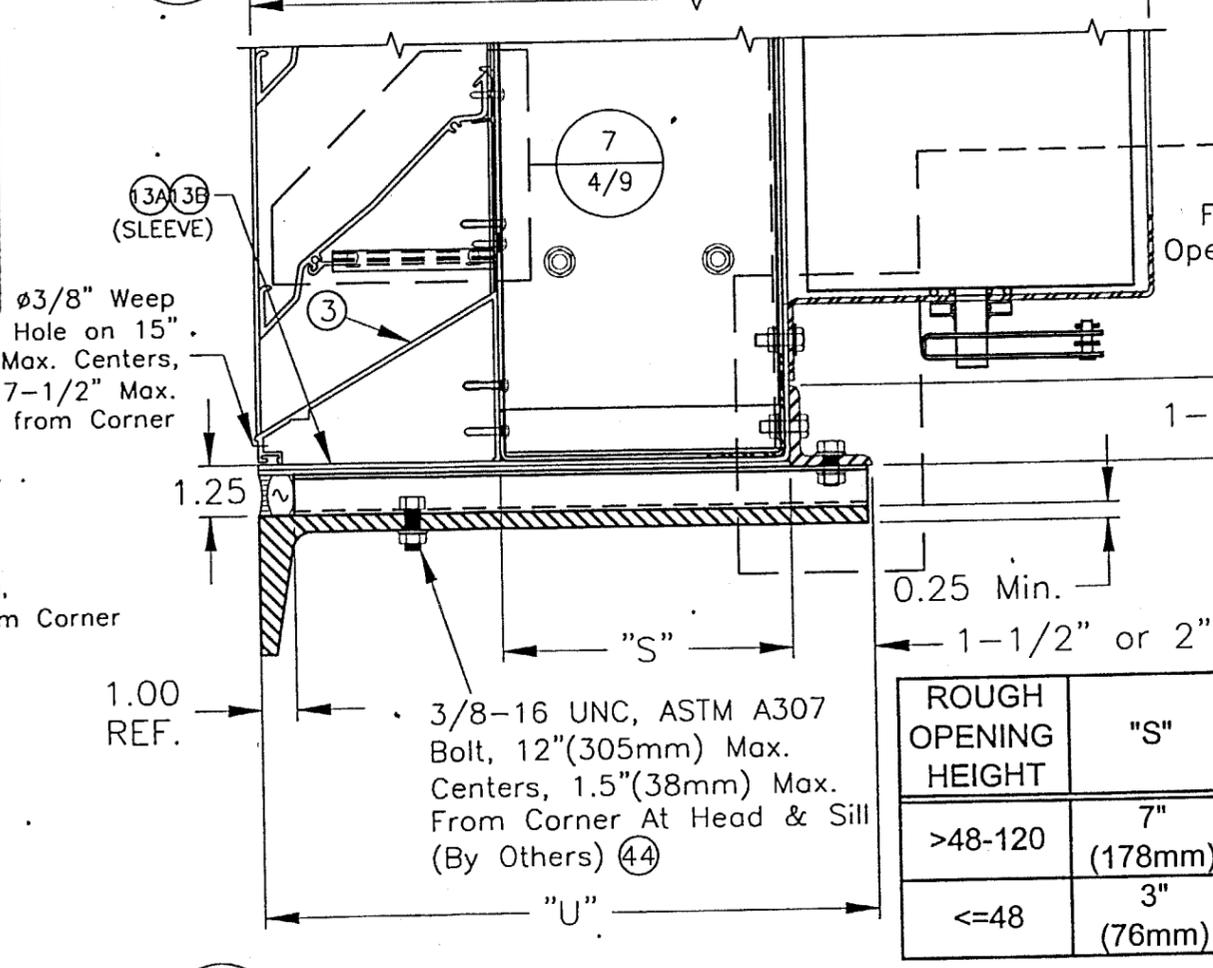
1A  
2/9  
INSTALLATION INTO CONCRETE/MASONRY



2A  
2/9  
INSTALLATION INTO CONCRETE/MASONRY



1B  
2/9  
INSTALLATION INTO STEEL FRAMED OPENING



2B  
2/9  
INSTALLATION INTO STEEL FRAMED OPENING

ROUGH OPENING HEIGHT	"S"	"U"	"V"
>48-120	7" (178mm)	15.13" (384mm)	22.13" (562mm)
<=48	3" (76mm)	10.63" (270mm)	18.13" (460mm)

DATE 6/4/2001  
REVISION DATE 7/27/2001  
DRAWN BY TESKE  
SCALE 1/2  
SHEET NO. 2 of 9  
CAD DRAWING NO. MD-9  
REV 1

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P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410  
TITLE  
ESD-603D/HCD-240  
COMBINATION LOUVER DAMPER

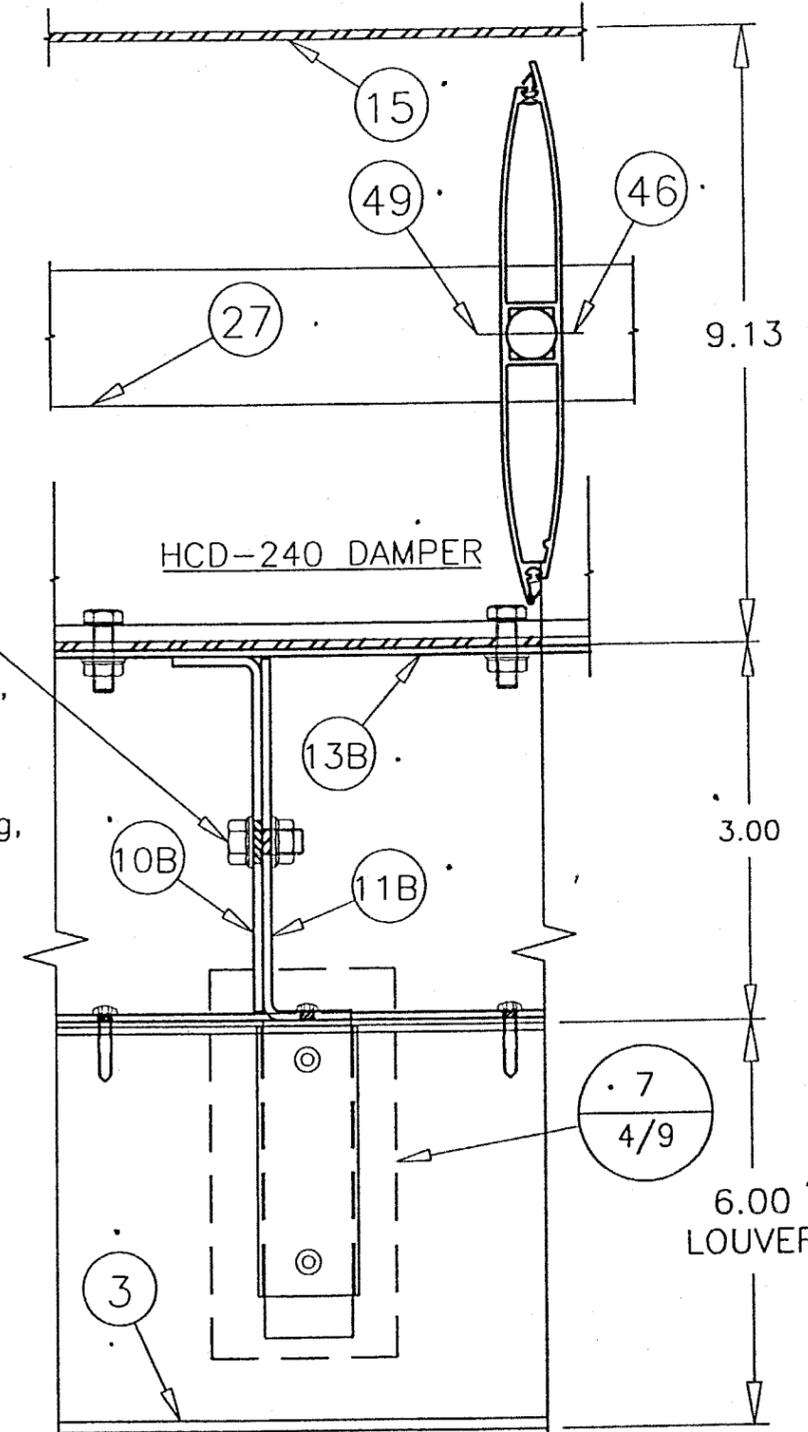
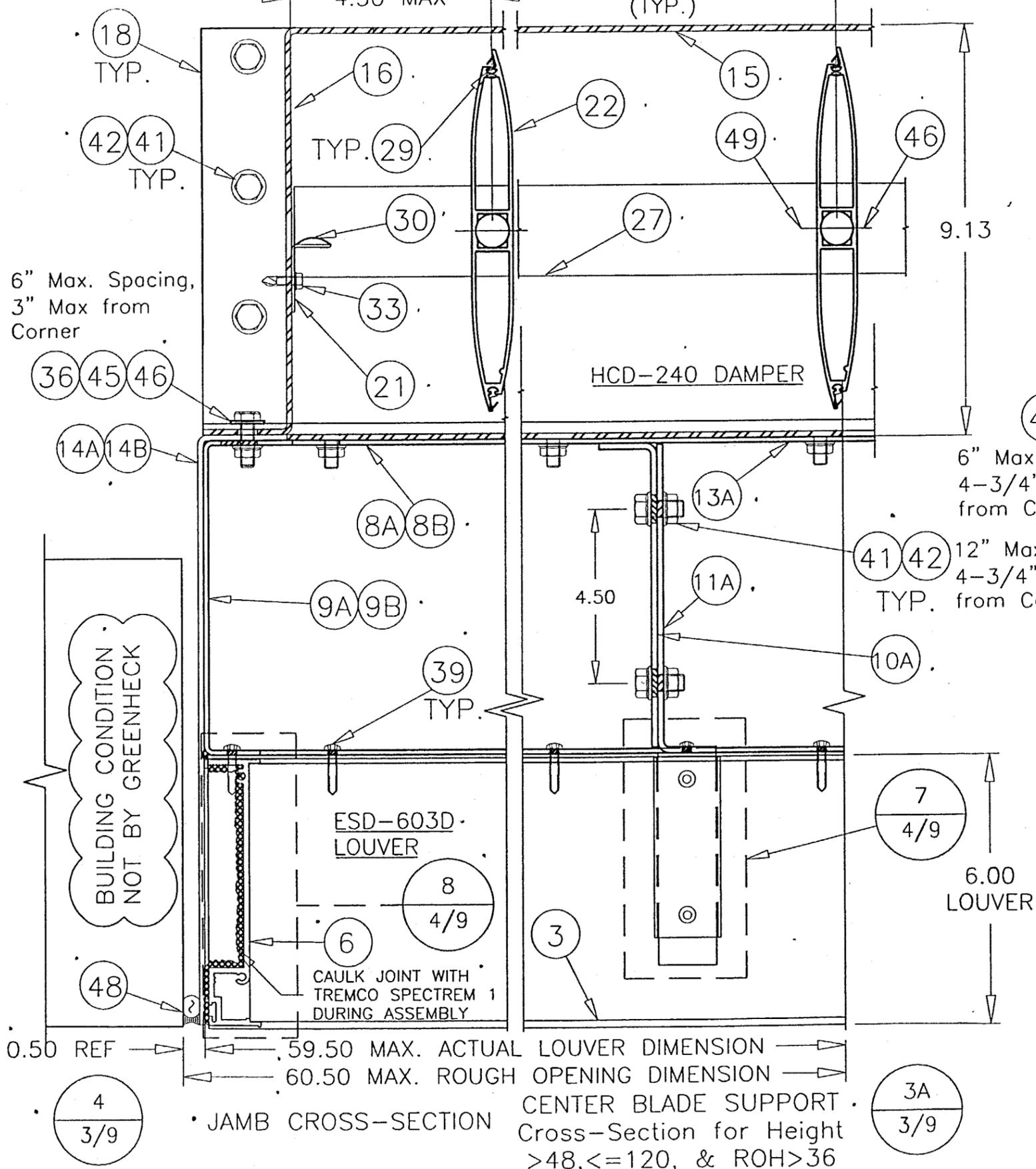
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DATE SEP 06 2001  
BY [Signature]  
PRODUCT CONTROL DIVISION  
BUILDING CODE COMPLIANCE OFFICE  
ACCEPTANCE NO. 00-092919

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AUG 07 2001

NOTE: NO ANCHORING IS REQ'D AT JAMBS

7.75 MAX SPACING (TYP.)

4.50 MAX



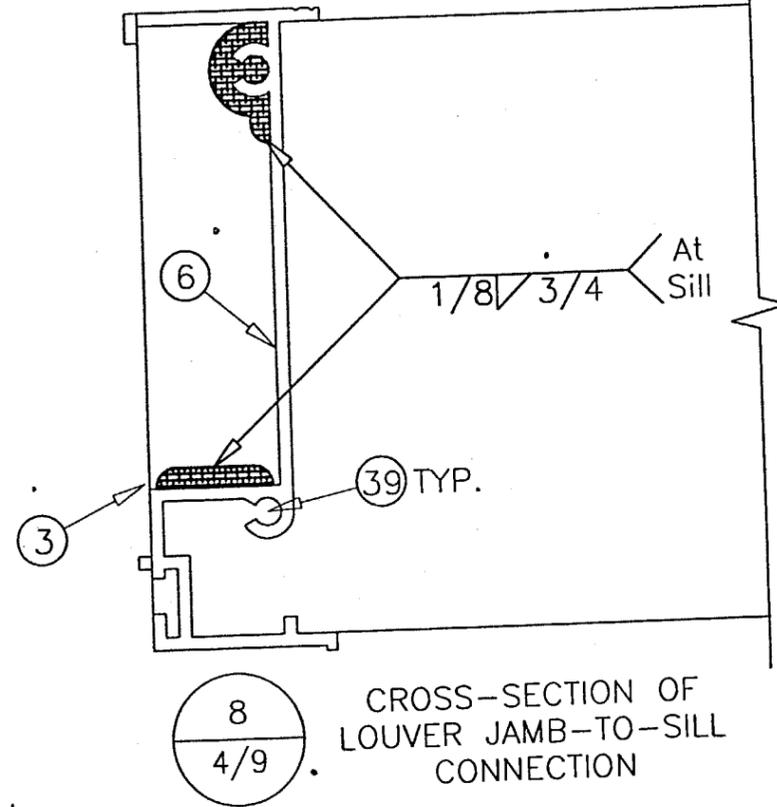
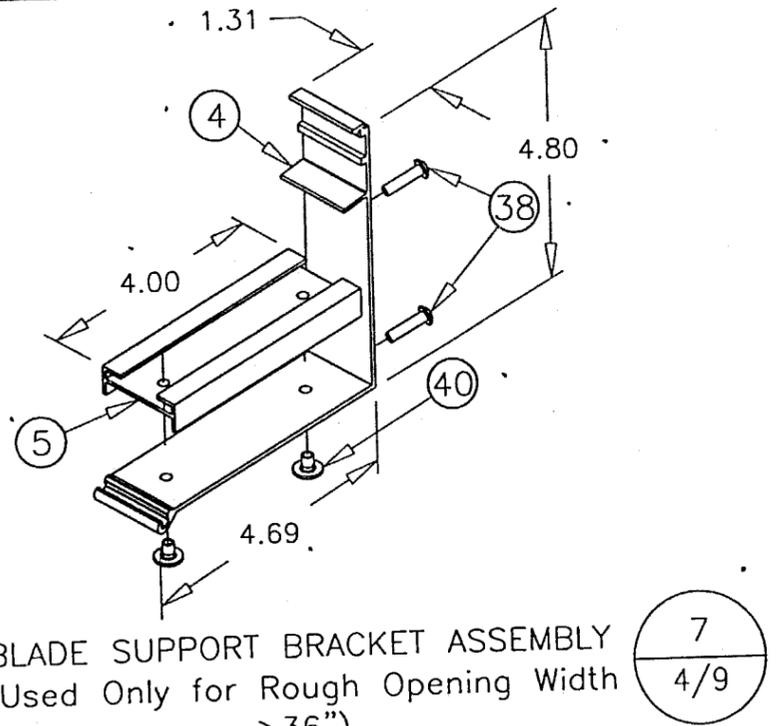
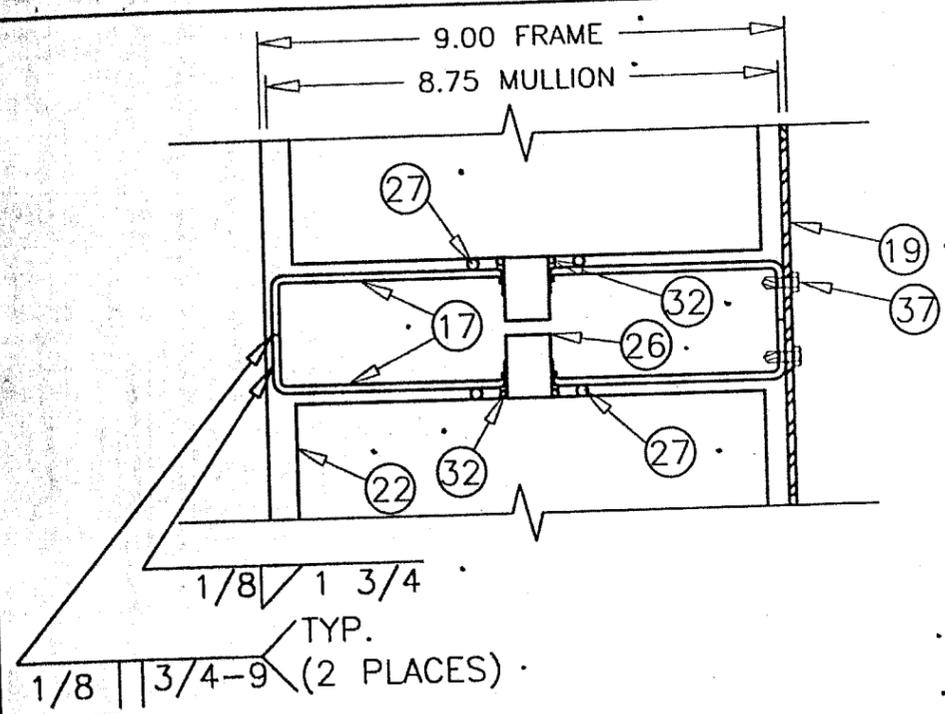
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TESKE	REVISION DATE	7/27/2001
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SHEET NO.		3 of 9
CAD DRAWING NO.		MD-9
REV		1

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 P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410

**ESD-603D/HCD-240 COMBINATION LOUVER DAMPER**

ACCEPTED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE DATE **SEP 06 2001** BY *[Signature]* PRODUCT CONTROL DIVISION BUILDING CODE COMPLIANCE OFFICE ACCEPTANCE NO. **20-0922.14**

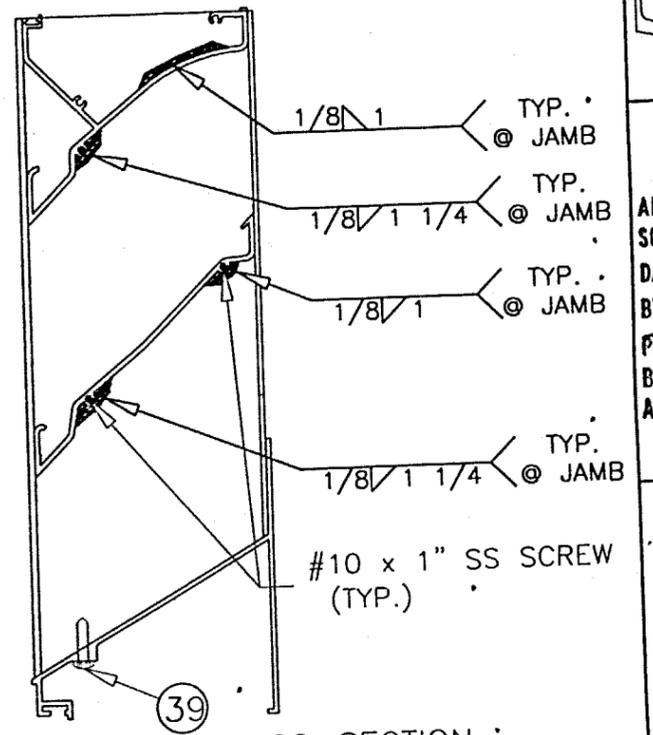
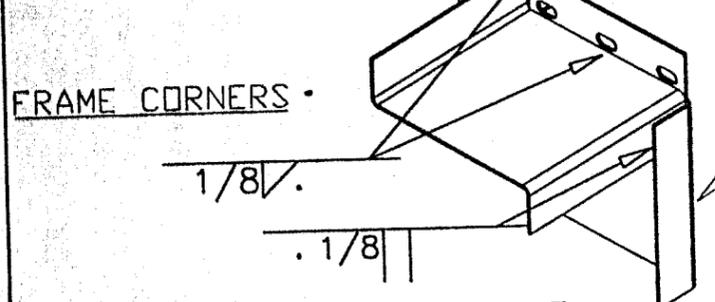
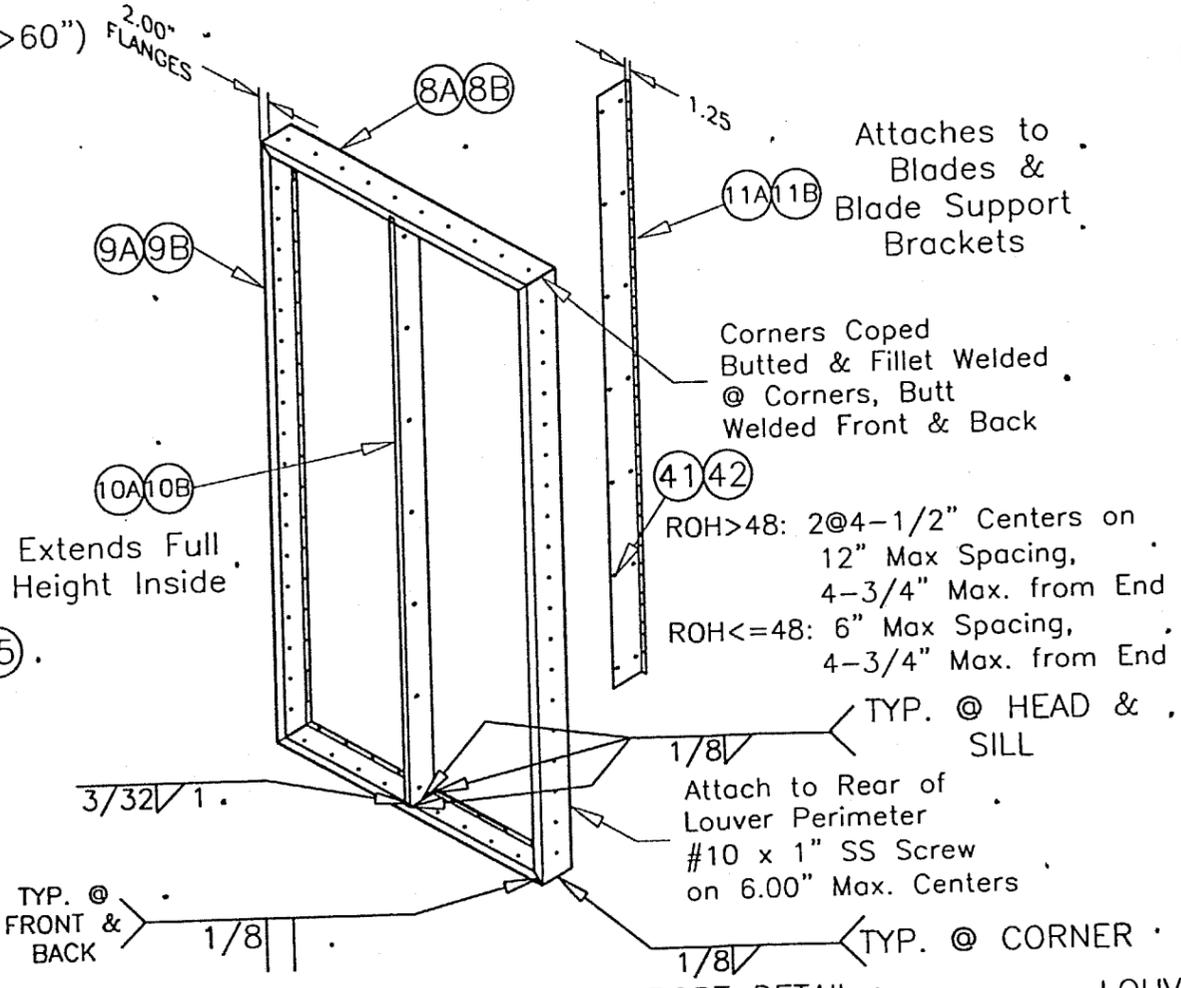
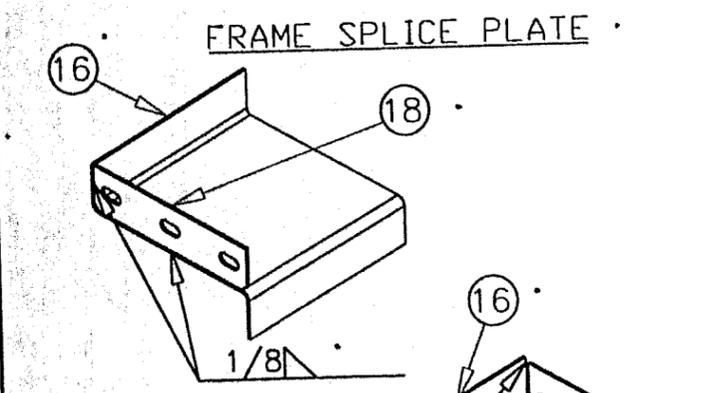
*[Signature]*  
 L. PAVIC R.I.C.C.  
 AUG 07 2001



5  
4/9  
DAMPER MULLION DETAIL  
(Used for Rough Opening Height >60")

7  
4/9  
BLADE SUPPORT BRACKET ASSEMBLY  
(Used Only for Rough Opening Width >36")

8  
4/9  
CROSS-SECTION OF LOUVER JAMB-TO-SILL CONNECTION



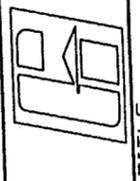
23  
25  
CLEVIS ARM TO AXLE  
ROUND AXLE  
DAMPER WELD DETAILS

STRUCTURAL STEEL SUPPORT DETAIL  
ASTM A569 Painted Steel or A240 Stainless Steel  
Parts 10A, 10B, & 11A, 11B, Are Used For Rough Opening Width >36"

LOUVER VERTICAL CROSS-SECTION  
Louver Weld Detail

DATE	6/5/200
REVISION DATE	7/27/200
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SCALE	1/2
SHEET NO.	4 of 9
CAD DRAWING NO.	MD-9
REV	1

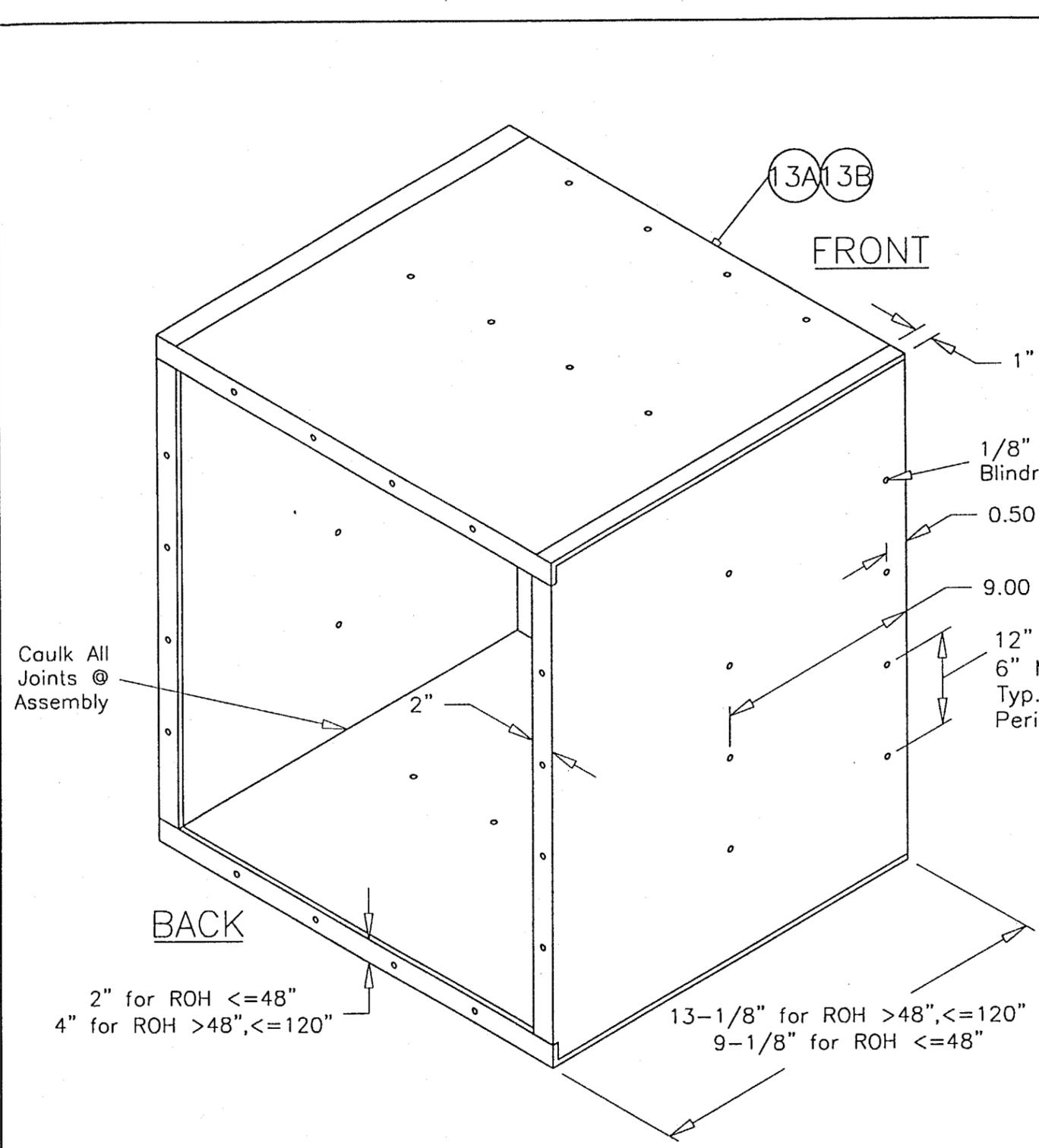
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P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410



ESD-603D/HCD-240  
COMBINATION LOUVER DAMPER

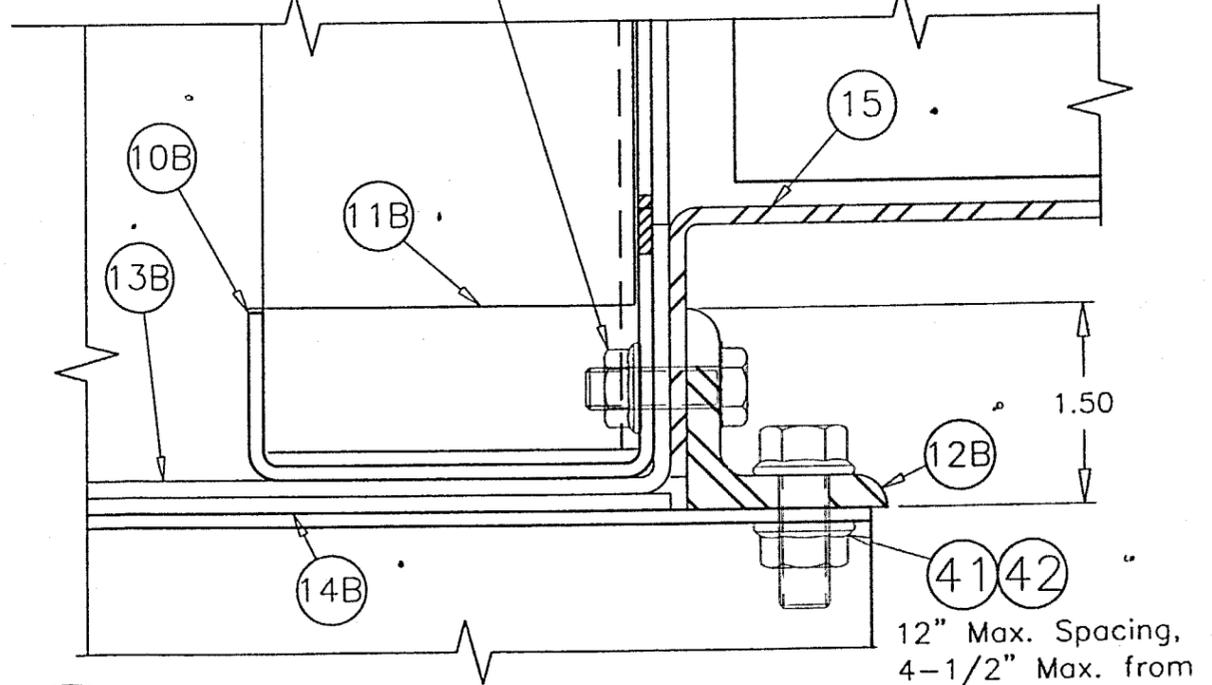
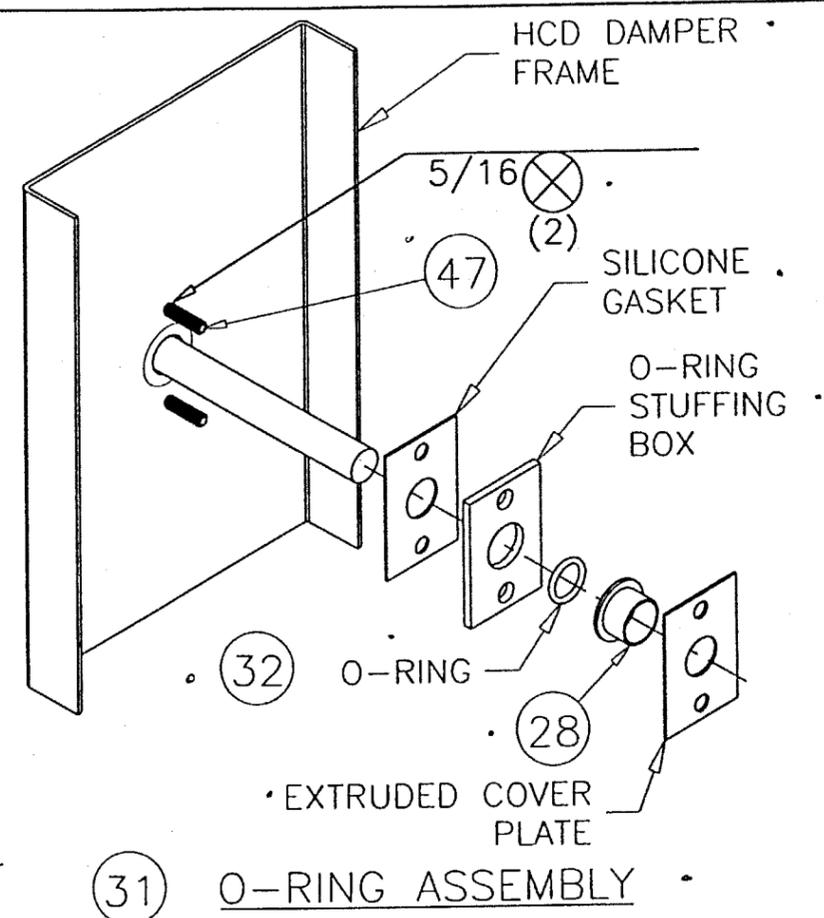
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SOUTH FLORIDA BUILDING CODE  
DATE SEP 06 2001  
BY [Signature]  
PRODUCT CONTROL DIVISION  
BUILDING CODE COMPLIANCE OFFICE  
ACCEPTANCE NO. 00-0929.14

[Signature]  
L. DAVID RICE  
AUG 07 2001



9  
5/9

SLEEVE ASSEMBLY  
1/8" 3003-H14 Aluminum

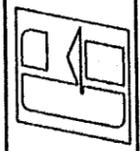


6  
5/9

Alternate Construction for Rough Opening  
Height <=48"

DRAWN BY	DATE	5 of 9
TESKE	6/5/2001	REV
SCALE	REVISION DATE	1
1/2	7/27/2001	CAD DRAWING NO.
SHEET NO.		MD-9

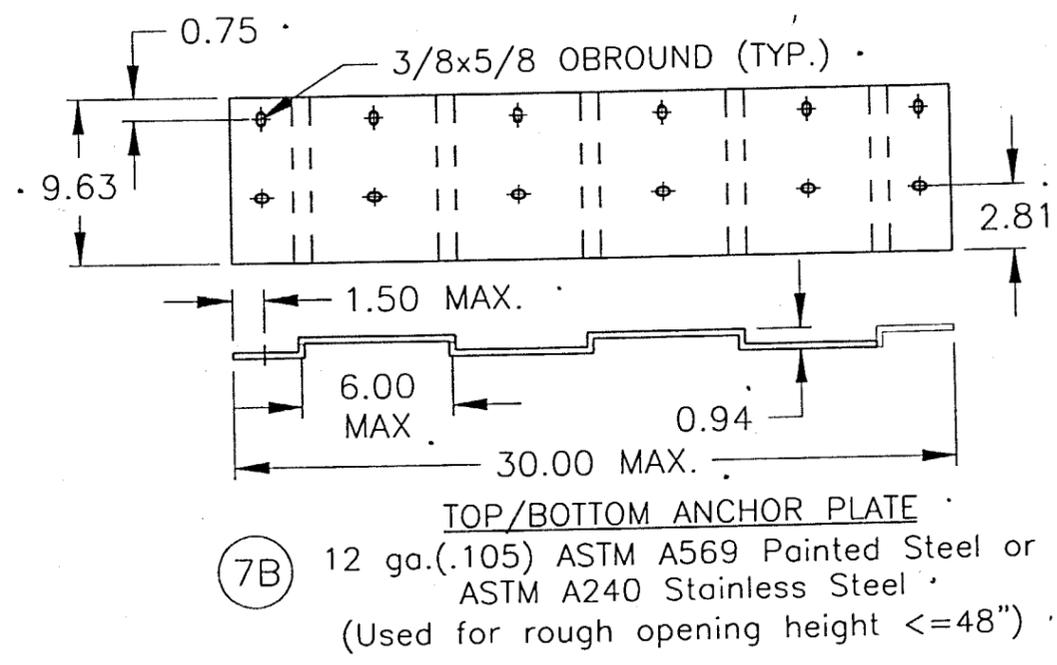
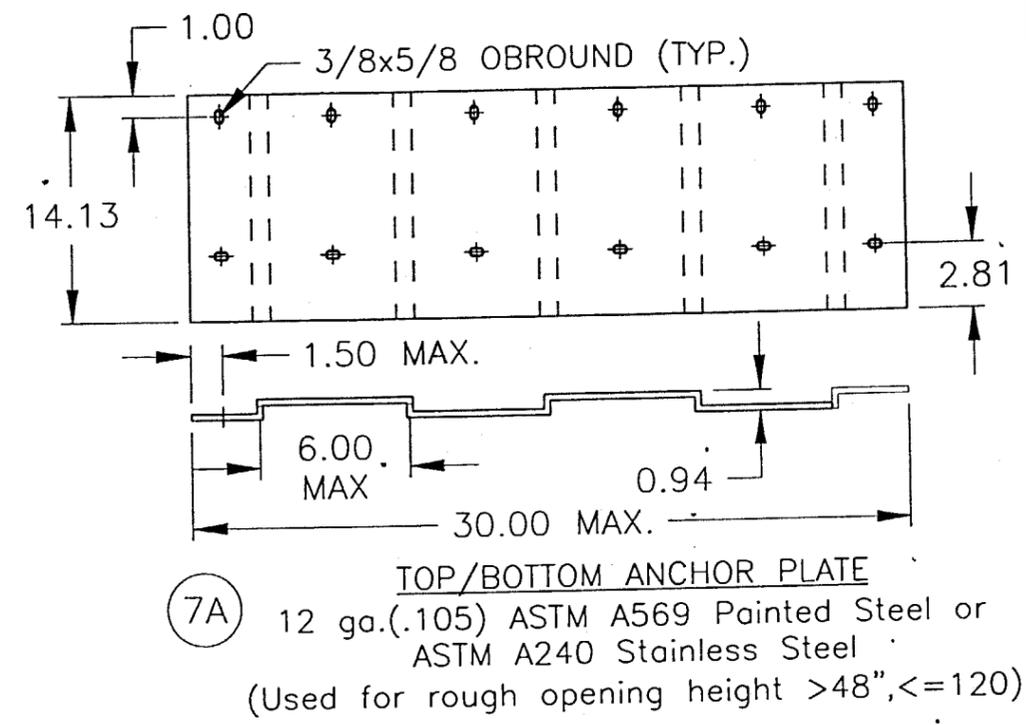
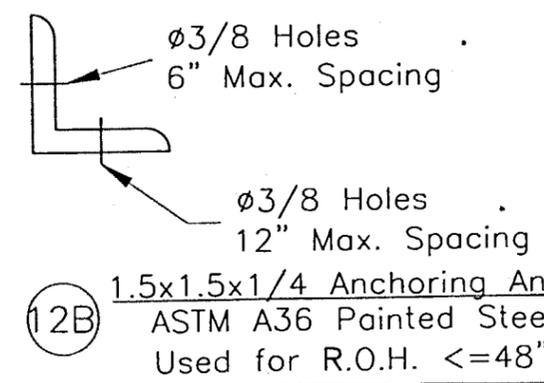
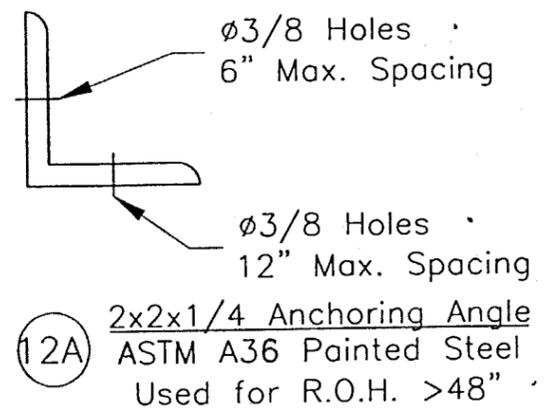
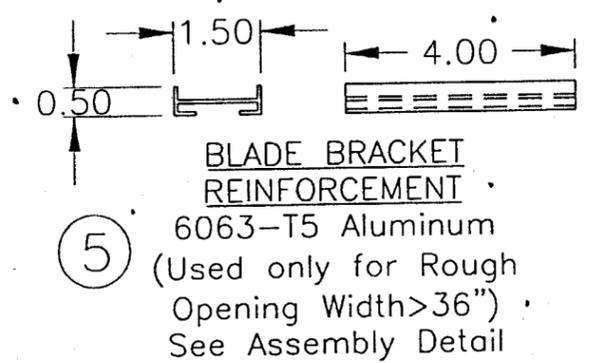
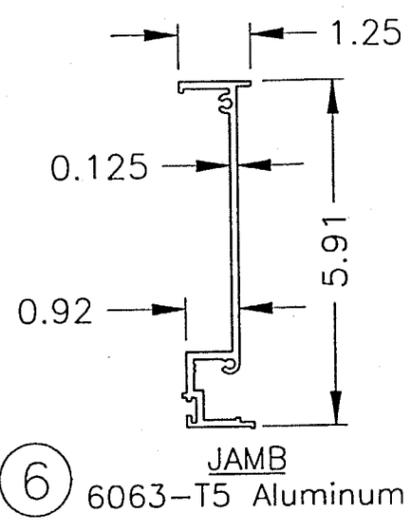
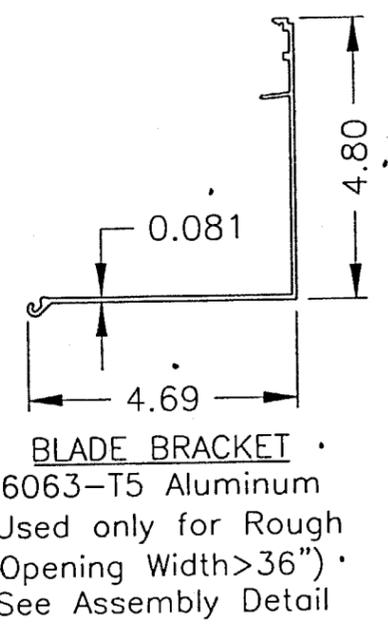
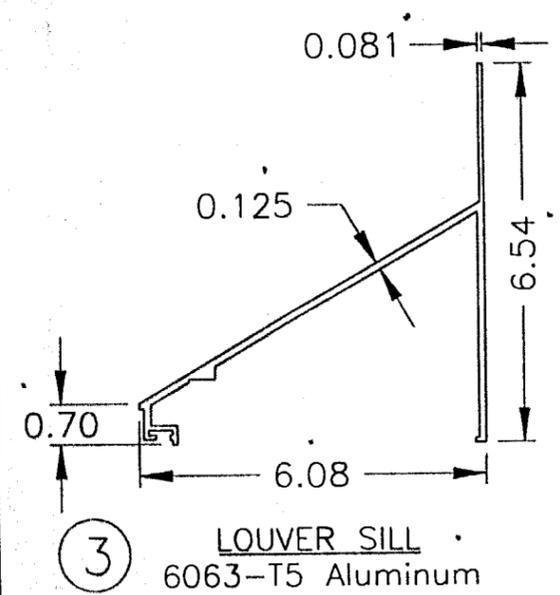
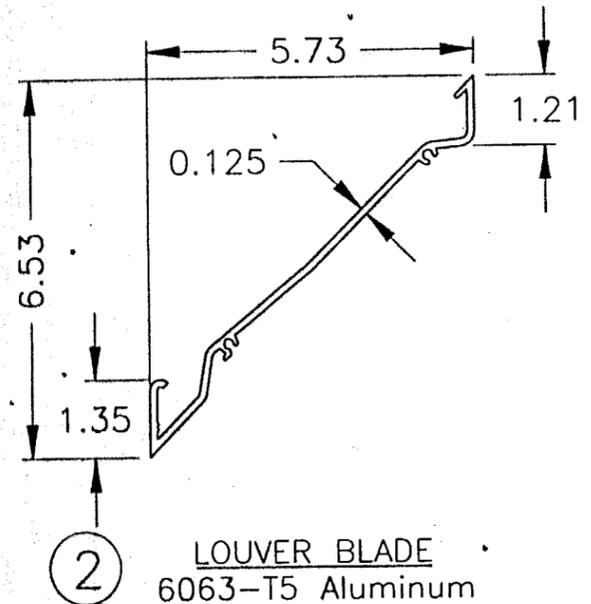
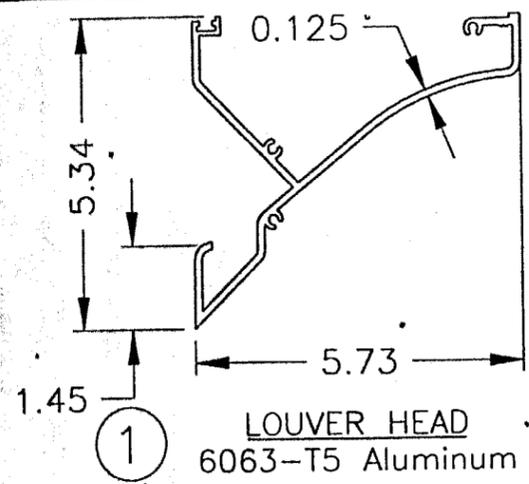
**GREENHECK**  
P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410



ESD-603D/HCD-240  
COMBINATION LOUVER DAMPER

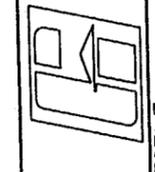
APPROVED AS COMPLYING WITH THE  
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DATE SEP 06 2001  
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ACCEPTANCE NO. 00-0929.14

[Signature]  
AUG 07 2001



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TESKE	REVISION DATE	7/27/2001
SCALE	1/2	
SHEET NO.	6 of 9	
CAD DRAWING NO.	MD-9	
REV	1	

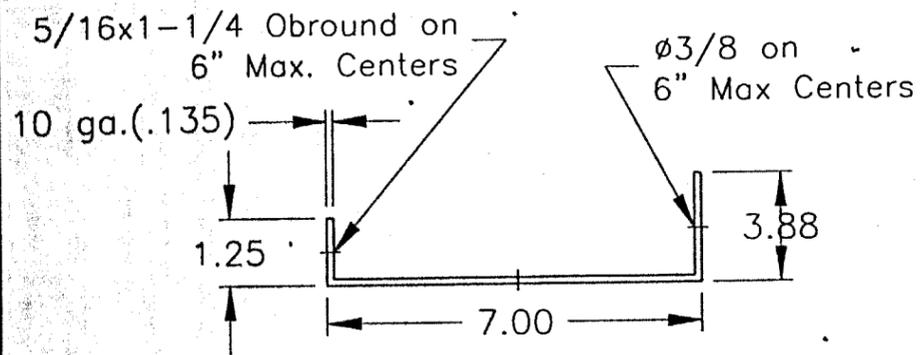
**GREENHECK**  
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WISCONSIN 54476-0410



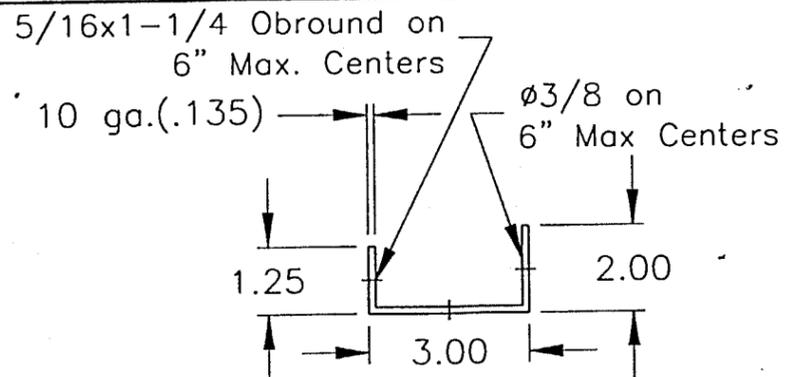
**ESD-603D/HCD-240**  
**COMBINATION LOUVER DAMPER**

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SOUTH FLORIDA BUILDING CODE  
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ACCEPTANCE NO. 00-0929.14

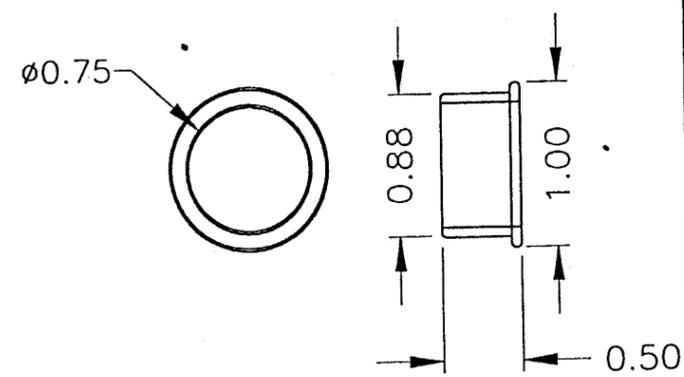
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AUG 07 2001



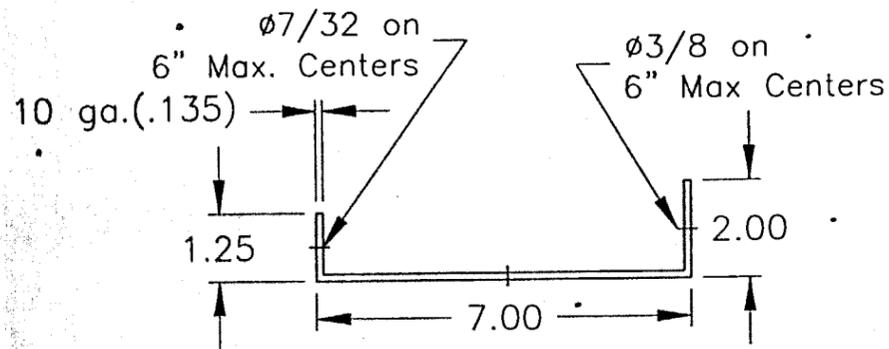
8A TOP/BOTTOM STRUCTURAL SUPPORT  
ASTM A569 Painted Steel or A240 Stainless Steel  
(Used for Rough Opening Height >48", <=120")



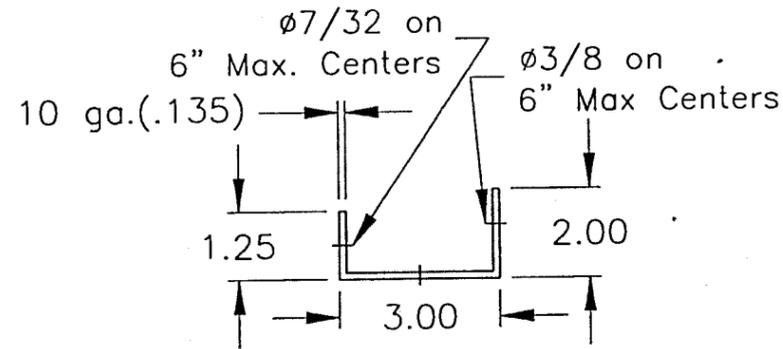
8B TOP/BOTTOM STRUCTURAL SUPPORT  
ASTM A569 Painted Steel or A240 Stainless Steel  
(Used for Rough Opening Height <=48")



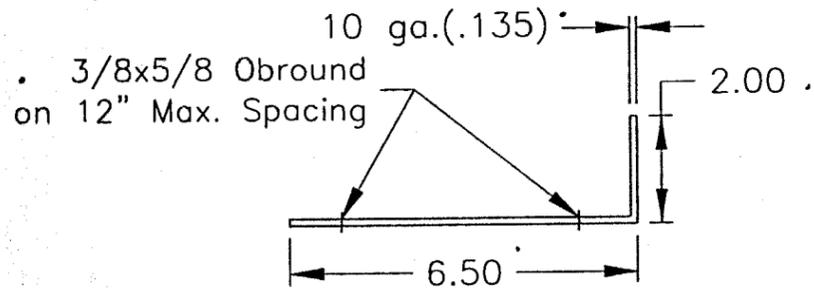
28 SLEEVE BEARING  
Type 316 Stainless Steel



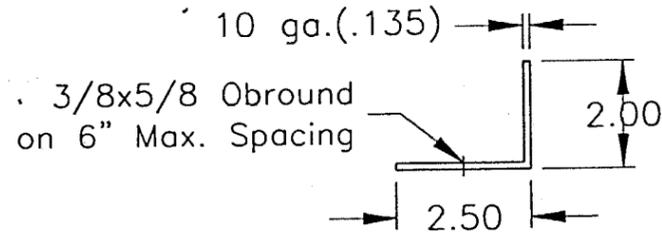
9A SIDE STRUCTURAL SUPPORT  
ASTM A569 Painted Steel or A240 Stainless Steel  
(Used for Rough Opening Height >48", <=120")



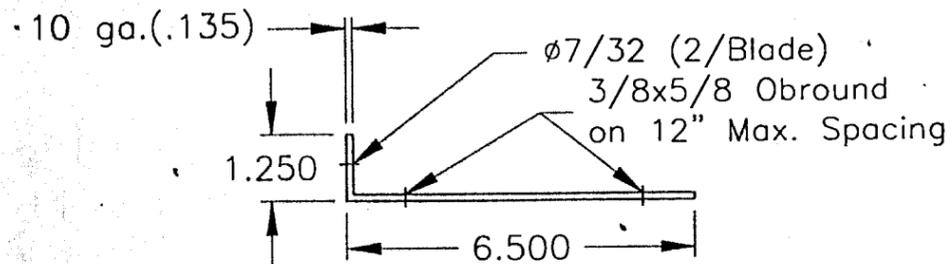
9B SIDE STRUCTURAL SUPPORT  
ASTM A569 Painted Steel or A240 Stainless Steel  
(Used for Rough Opening Height <=48")



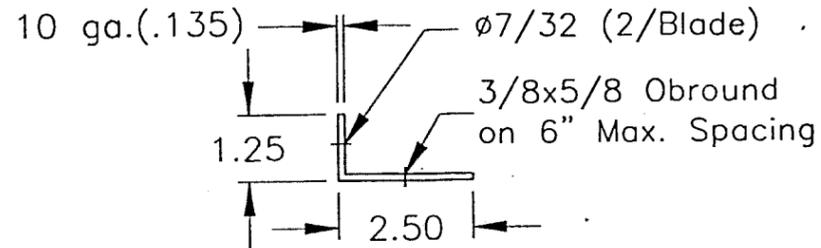
10A CENTER STRUCTURAL SUPPORT ANGLE  
ASTM A569 Painted Steel or A240 Stainless Steel  
(Used for Rough Opening Height >48", <=120")



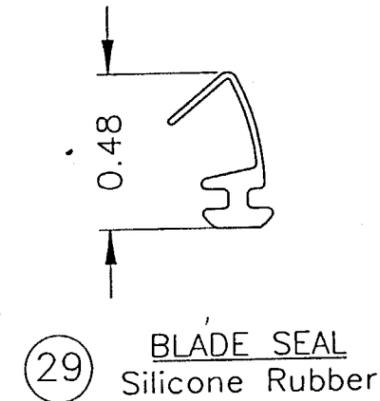
10B CENTER STRUCTURAL SUPPORT ANGLE  
ASTM A569 Painted Steel or A240 Stainless Steel  
(Used for Rough Opening Height <=48")



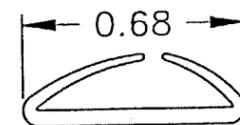
11A BLADE SUPPORT ANGLE  
ASTM A569 Painted Steel or A240 Stainless Steel.  
(Used for Rough Opening Height >48", <=120")



11B BLADE SUPPORT ANGLE  
ASTM A569 Painted Steel or A240 Stainless Steel  
(Used for Rough Opening Height <=48")



29 BLADE SEAL  
Silicone Rubber



30 BLADE STOP SEAL  
Silicone Rubber

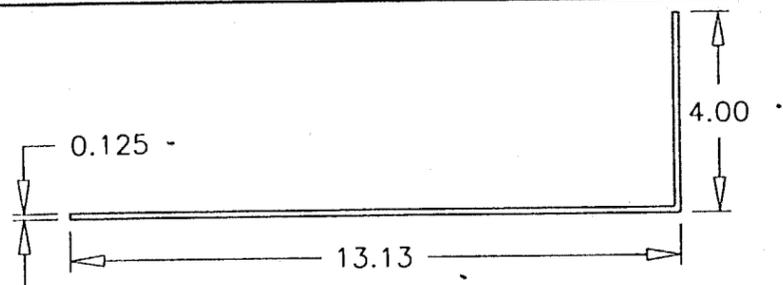
DRAWN BY	DATE	SHEET NO.	7 of 9	REV	1
TESKE	6/5/2001				
SCALE	REVISION DATE	CAD DRAWING NO.	MD-9		
1/2	7/27/2001				

**GREENHECK**  
P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410

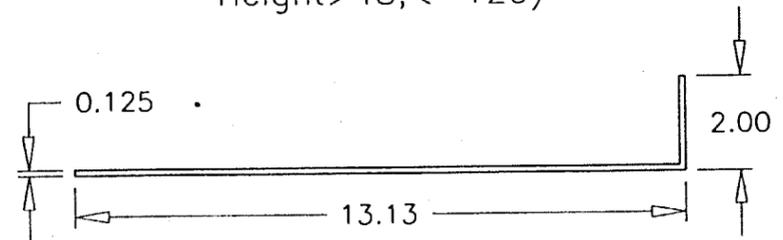
TITLE  
**ESD-603D/HCD-240  
COMBINATION LOUVER DAMPER**

APPROVED AS COMPLYING WITH THE  
SOUTH FLORIDA BUILDING CODE  
DATE **SEP 06 2001**  
BY *[Signature]*  
PRODUCT CONTROL DIVISION  
BUILDING CODE COMPLIANCE OFFICE  
ACCEPTANCE NO. **00-092914**

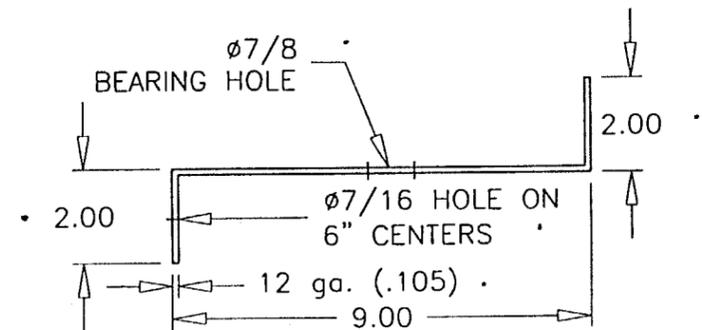
*L. PALM RICE*  
AUG 07 2001



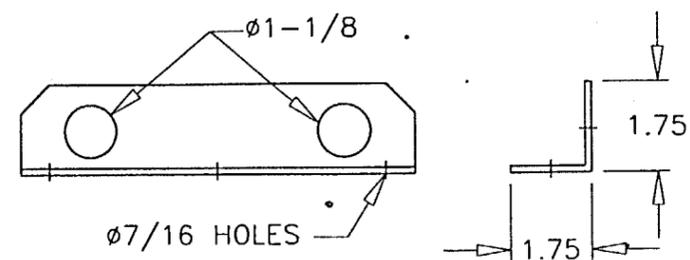
13A SLEEVE TOP & BOTTOM  
3003-H14 Aluminum  
(Used for Rough Opening Height >48, <=120)



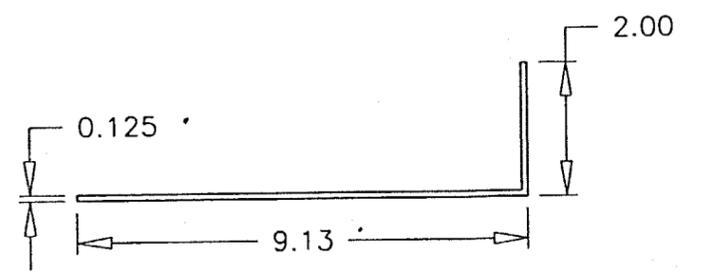
14A SLEEVE SIDE  
3003-H14 Aluminum  
(Used for Rough Opening Height >48, <=120)



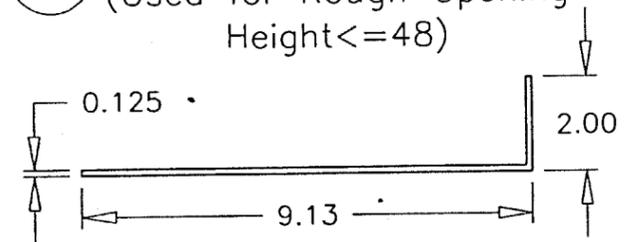
15 DAMPER TOP & BOTTOM FRAME  
ASTM A653 Galvanized Steel or A240 Stainless Steel



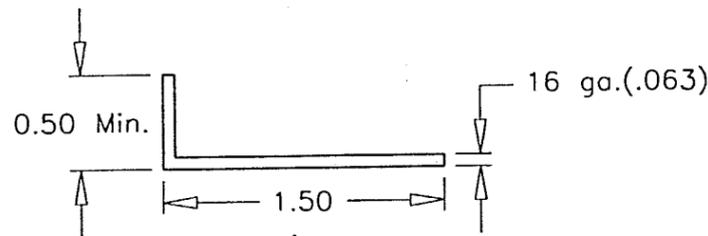
20 LIFTING LUG  
10 ga. (.135)  
ASTM A653 Galvanized Steel or A240 Stainless Steel



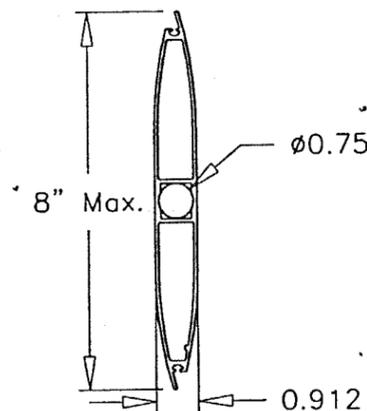
13B SLEEVE TOP & BOTTOM  
3003-H14 Aluminum  
(Used for Rough Opening Height <=48)



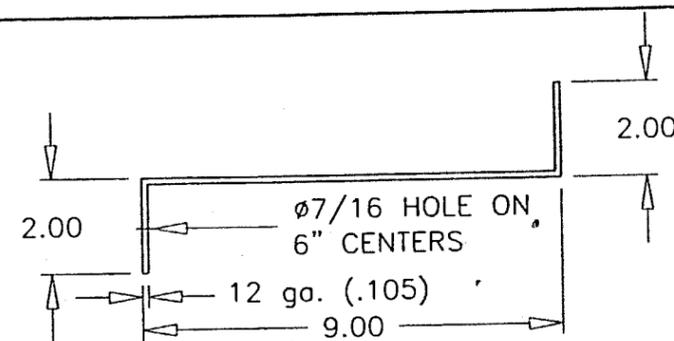
14B SLEEVE SIDE  
3003-H14 Aluminum  
(Used for Rough Opening Height <=48)



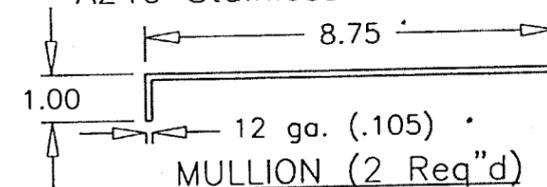
21 BLADE STOP ANGLE  
ASTM A653 Galvanized Steel or A240 Stainless Steel



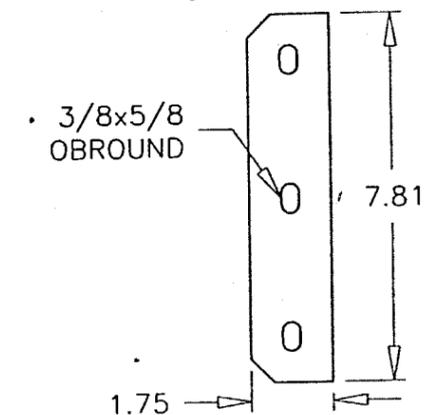
22 DAMPER BLADE  
.081 Thickness  
6063-T5 Extruded Aluminum



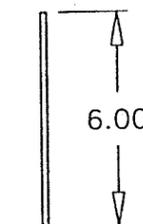
16 DAMPER SIDE FRAME  
ASTM A653 Galvanized Steel or A240 Stainless Steel



17 MULLION (2 Req'd)  
ASTM A653 Galvanized Steel or A240 Stainless Steel  
(Used Only For Rough Opening Height >60")



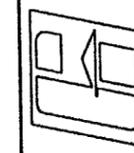
18 SPLICE PLATE  
12 ga. (.105)  
ASTM A653 Galvanized Steel or A240 Stainless Steel  
(Used to bolt Damper Top to Side Frame)



19 BAFFLE - 12ga (.105)  
ASTM A653 Galvanized Steel or A240 Stainless Steel  
(Used Only for Rough Opening Height >60")

DRAWN BY	DATE	6/5/2001
TESKE	REVISION DATE	7/27/2001
SCALE	1/2	
SHEET NO.	8 of 9	
CAD DRAWING NO.	MD-9	REV 1

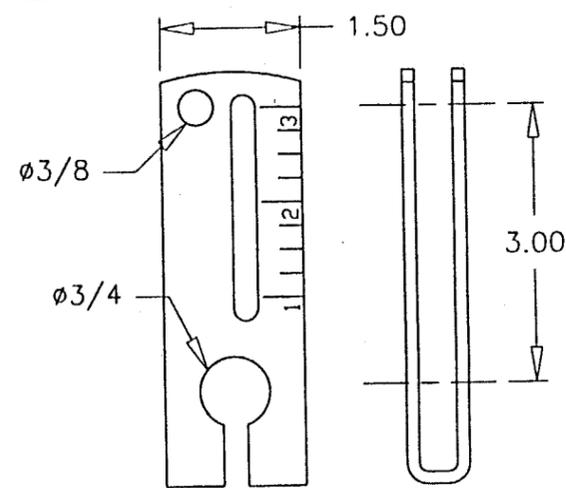
GREENHECK  
P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410



TITLE  
ESD-603D/HCD-240  
COMBINATION LOUVER DAMPER

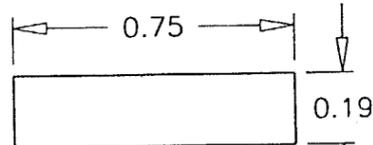
IN ACCORDANCE WITH THE  
SOUTH FLORIDA BUILDING CODE  
DATE SEP 06 2001  
BY [Signature]  
PRODUCT CONTROL DIVISION  
BUILDING CODE COMPLIANCE OFFICE  
ACCEPTANCE NO. 00-0929.19

[Signature]  
L. David Rice  
AUG 07 2001



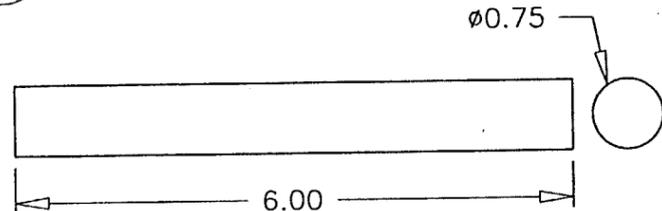
CLEVIS ARM

23 10 ga. (.135) ASTM A653 Galvanized Steel or A240 Stainless Steel



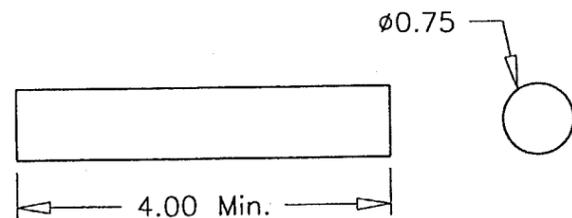
TIE BAR

24 AISI 1018 Zinc Plated Steel



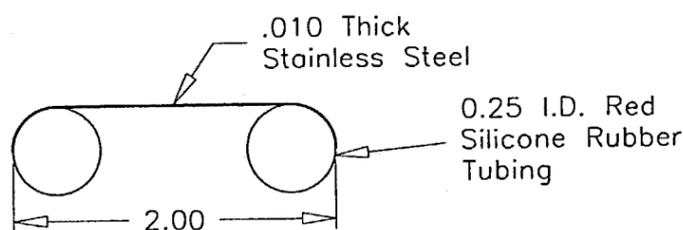
AXLE- Linkage Side

25 AISI 1018 Zinc Plated Steel



AXLE- Side Opposite

26 AISI 1018 Zinc Plated Steel



27 JAMB SEAL ASSEMBLY

ITEM #	QUANTITY	DESCRIPTION	MATERIAL	ALTERNATE MATERIAL	DIMENSIONS
1	1	LOUVER HEAD	6063-T5 EXTR. ALUM.	-	.125 WALL x 5.73D x 5.34H
2	5.75 MAX.SPACING	LOUVER BLADE	6063-T5 EXTR. ALUM.	-	.125 WALL x 5.73D x 6.53H
3	1	LOUVER SILL	6063-T5 EXTR. ALUM.	-	.125 WALL x 6.08D x 6.54H
4	1/BLADE	BLADE BRACKET (OVER 36" WIDE)	6063-T5 EXTR. ALUM.	-	.081 WALLx1.5Wx4.69Dx4.80H
5	1/BLADE	BLADE BRACKET REINFORCEMENT	6063-T5 EXTR. ALUM.	-	.063 WALL x .5 x 1.5 x 4
6	2	LOUVER JAMB	6063-T5 EXTR. ALUM.	-	.125 WALL x 5.94D x 1.25W
7A	2 MIN.	TOP/BOT ANCHOR PLATE W/7" FRAME	ASTM A569 HR CQ STL.	ASTM A240 STAINLESS STL.	12GA.x .94H x 14.13D
7B	2 MIN.	TOP/BOT ANCHOR PLATE W/3" FRAME	ASTM A569 HR CQ STL.	ASTM A240 STAINLESS STL.	12GA.x .94H x 9.63D
8A	2	TOP/BOT STRUCT. SUP. W/7" FRAME	ASTM A569 HR CQ STL.	ASTM A240 STAINLESS STL.	10GA.x 1.25 x 3.88 x 7D
8B	2	TOP/BOT STRUCT. SUP. W/3" FRAME	ASTM A569 HR CQ STL.	ASTM A240 STAINLESS STL.	10GA.x 1.25 x 2.00 x 3D
9A	2	SIDE STRUCT. SUP. W/7" FRAME	ASTM A569 HR CQ STL.	ASTM A240 STAINLESS STL.	10GA.x 1.25 x 2 x 7D
9B	2	SIDE STRUCT. SUP. W/3" FRAME	ASTM A569 HR CQ STL.	ASTM A240 STAINLESS STL.	10GA.x 1.25 x 2 x 3D
10A	1	CENTER STRUCT. ANGLE W/7" FRAME	ASTM A569 HR PO STL.	ASTM A240 STAINLESS STL.	10GA.x 2W x 6.5D
10B	1	CENTER STRUCT. ANGLE W/3" FRAME	ASTM A569 HR PO STL.	ASTM A240 STAINLESS STL.	10GA.x 2W x 2.5D
11A	1	BLADE SUPPORT ANGLE W/7" FRAME	ASTM A569 HR PO STL.	ASTM A240 STAINLESS STL.	10GA.x 1.25W x 6.5D
11B	1	BLADE SUPPORT ANGLE W/3" FRAME	ASTM A569 HR PO STL.	ASTM A240 STAINLESS STL.	10GA.x 1.25W x 2.5D
12A	2	2" ANCHORING ANGLE	ASTM A36 HR STL.	-	.25 x 2 x 2
12B	2	1-1/2" ANCHORING ANGLE	ASTM A36 HR STL.	-	.25 x 1.5 x 1.5
13A	2	SLEEVE TOP & BOTTOM	3003-H14 ALUMINUM	-	.125 x 13.125 x 4.00
13B	2	SLEEVE TOP & BOTTOM	3003-H14 ALUMINUM	-	.125 x 9.13 x 2.00
14A	2	SLEEVE SIDE	3003-H14 ALUMINUM	-	.125 x 13.13 x 2
14B	2	SLEEVE SIDE	3003-H14 ALUMINUM	-	.125 x 9.13 x 2
15	2	DAMPER TOP & BOTTOM FRAME	ASTM A653 GALV. STEEL	ASTM A240 STAINLESS STL.	12 GA.x 2 x 2 x 9
16	2	DAMPER SIDE FRAME	ASTM A653 GALV. STEEL	ASTM A240 STAINLESS STL.	12 GA.x 2 x 2 x 9
17	2	MULLION (ROUGH OPENING HEIGHT>60")	ASTM A653 GALV. STEEL	ASTM A240 STAINLESS STL.	12GA.x 1 x 1 x 8.88
18	2	DAMPER SPLICE PLATE	ASTM A653 GALV. STEEL	ASTM A240 STAINLESS STL.	12 GA.
19	1	BAFFLE (ROUGH OPENING HEIGHT>60")	ASTM A653 GALV. STEEL	ASTM A240 STAINLESS STL.	12GA.x 6
20	2	LIFTING LUG	ASTM A653 GALV. STEEL	ASTM A240 STAINLESS STL.	10GA.x 1.75 x 1.75
21	2	BLADE STOP ANGLE	ASTM A653 GALV. STEEL	ASTM A240 STAINLESS STL.	16 GA.x 1.5 x .5 MIN.
22	8" MAX WIDTH	DAMPER BLADE	6063-T5 EXTR. ALUM.	-	.081 WALL x .912 THICK.
23	1/BLADE	CLEVIS ARM	ASTM A653 GALV. STEEL	ASTM A240 STAINLESS STL.	10 GA.
24	1/PANEL	TIE BAR	AISI 1018 PLATED STEEL	-	3/16 x 3/4
25	1/BLADE	AXLE-LINKAGE SIDE	AISI 1018 PLATED STEEL	-	3/4 DIA.x 6
26	1/BLADE	AXLE-SIDE OPPOSITE	AISI 1018 PLATED STEEL	-	3/4 DIA.x4 MIN.
27	2/PANEL	JAMB SEAL ASSEMBLY	SILICONE/STAINLESS	-	
28	2/BLADE	SLEEVE BEARING	TYPE 316 STAINLESS	-	.75ID X .5L
29	2/BLADE	BLADE SEAL	SILICONE RUBBER	-	
30	2/PANEL	BLADE STOP SEAL	SILICONE RUBBER	-	
31	2/BLADE	O-RING ASSEMBLY	VITON/STAINLESS	-	
32	2/BLADE	O-RING	VITON	-	3/4ID x 1/8
33	MAX.12" SPACING	BLADE STOP FASTENER	PLATED STEEL	ASTM F593 STAINLESS STL.	1/4-20 x 1/2 SEMIHH
34	1/BLADE	CLEVIS PIN	PLATED STEEL	ASTM A276 STAINLESS STL.	3/8 x 1
35	1/BLADE	COTTER PIN	STAINLESS	-	1/8 x 3/4
36	AS REQUIRED	SEALING WASHER	NEOPRENE/GALV.	-	5/16
37	9" MAX.CENTERS	SELF TAPPING SCREW	PLATED STEEL	18-8 STAINLESS STL.	#10 x 1/2 TEK
38	2/BLD. BRKT	SMS TPH	18-8 SS	-	#8-18 x 3/4 TYPE AB
39	6" O.C.	SMS TPH	18-8 SS	-	#10-16 x 3/4 TYPE AB
40	2/BLD. BRKT	SELF-PIERCING RIVET	ZP	-	3/16 x 7/32
41	AS SPECIFIED	HH SFF	SAE J429, GRADE 5	ASTM F593 STAINLESS STL.	3/8-16 x 1
42	AS REQD.	HEX NUT	SAE J995, GRADE 5	ASTM F594 STAINLESS STL.	3/8-16
43	MAX 12" SPACING	INSTALLATION FASTENERS (BY OTHERS)	304SS	-	3/8-16x3 HILTI KBII 38-3
44	MAX 12" SPACING	INSTALLATION FASTENERS (BY OTHERS)	ASTM A307	-	3/8-16 x 1 MIN.
45	MAX 12" SPACING	ZP HH	SAE J429, GRADE 5	ASTM F593 STAINLESS STL.	5/16-18 x 1
46	AS REQUIRED	HEX NUT	ZP	ASTM F594 STAINLESS STL.	5/16-18
47	4/BLADE	WELDSTUD	STAINLESS STEEL	-	5/16-18 x 1
48	AS REQUIRED	SEALANT (BY OTHERS)	TREMCO SPECTREM 1	-	AS REQD.
49	4/BLADE	BLADE BOLT	PLATED STEEL	ASTM F593 STAINLESS STL.	5/16-18 x 1-1/4 MIN.
50	AS REQUIRED	BLIND RIVET	ALUMINUM	-	1/8 x 1/2 MAX GRIP

DATE	6/5/2001
REVISION DATE	7/27/2001
SCALE	1/2
SHEET NO.	9 of 9
CAD DRAWING NO.	MD-9
REV	1

**GREENHECK**  
P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410



TITLE  
**ESD-603D/HCD-240**  
**COMBINATION LOUVER DAMPER**

CONFORMING WITH THE  
SOUTH FLORIDA BUILDING CODE  
DATE **SEP 06 2001**  
BY *[Signature]*  
PRODUCT CONTROL DIVISION  
BUILDING CODE COMPLIANCE OFFICE  
ACCEPTANCE NO. **00-092914**

*[Signature]*  
AUG 07 2001