

**GENERAL NOTES:**

1. SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE, (I.B.C) AND INTERNATIONAL RESIDENTIAL CODE, (I.R.C).

DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1609 OF THE INTERNATIONAL BUILDING CODE, FOR A BASIC WIND SPEED AS REQUIRED BY THE JURISDICTION WHERE PRODUCT WILL BE INSTALLED, AND FOR A DIRECTIONALITY FACTOR  $K_d = 0.85$ , IN ACCORDANCE WITH ASCE 7-16 STANDARD, AND SHALL NOT EXCEED THE DESIGN PRESSURE RATING INDICATED ON THIS NOTE.

IN ORDER TO VERIFY THE ABOVE CONDITION, ULTIMATE DESIGN WIND LOADS DETERMINED PER ASC 7-16 SHALL BE FIRST REDUCED TO A.S.D. DESIGN WIND LOADS BY MULTIPLYING THEM BY 0.6 IN ORDER TO COMPARE THESE W/ MAX. (A.S.D.) DESIGN PRESSURE RATINGS INDICATED BELOW.

IN ORDER TO VERIFY THAT ANCHORS ON THIS P.E.D., AS TESTED, WERE NOT OVERSTRESSED, A 33% INCREASE IN ALLOWABLE STRESS FOR WIND LOADS WAS NOT USED IN THEIR ANALYSIS. FASTENERS SPACING TO WOOD HAS BEEN DETERMINED IN ACCORDANCE WITH N.D.S. 2018.

SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ADEQUACY FOR IMPACT AND CYCLIC RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609.2 OF THE INTERNATIONAL BUILDING CODE (I.B.C), AS PER FLORIDA BUILDING CODE HIGH VELOCITY HURRICANE ZONES PROTOCOLS TAS-201, TAS-202, TAS-203, PER AMERICAN TESTING LAB REPORT # 0514.01-08, AS WELL AS PER AMCA IMPACT STANDARD 540, PER INTERTEK/ARCHITECTURAL TESTING REPORT # F 3136.01-550-44 & PRI TECHNOLOGIES LAB REPORT # UEC-001-02-01, PER TAS-100A (WIND DRIVEN RAIN, EXCEEDS AMCA 550 STANDARD), AND AS PER SUBMITTED STRUCTURAL CALCULATIONS, PERFORMED AS PER SECTION 1604 OF THE ABOVE MENTIONED BUILDING CODE.

**DESIGN PRESSURE RATING:**

VARIABLES (psf), FOR ALL SINGLE UNITS W/ SQUARE EDGES WITHOUT MULLIONS WITH OR WITHOUT DAMPER. (SEE SCHEDULE ON SHEET 4A), AND +150, -150 psf. FOR ALL SINGLE UNITS W/ CURVED EDGES W/O DAMPER.

VARIABLES (psf), FOR ALL MULTIPLE UNITS WITH MULLIONS (2L) WITH OR WITHOUT DAMPER (SEE SCHEDULE ON SHEET 15).

2. ALL ALUMINUM EXTRUSIONS SHALL BE 6063-T5 ALLOY WITH MIN. SPECIFIC YIELD STRENGTHS AS SHOWN ON SHEETS 2 AND 3

3. ALL SCREWS TO BE STAINLESS STEEL 304 OR 316 AISI SERIES AND MEET ASTM A167, OR HOT DIPPED GALVANIZED (AFTER FABRICATION) CARBON STEEL AS PER ASTM A 123 OR ASTM A153, OR HOT DIPPED GALVANIZED OR GALVANNEALED (PRIOR TO FABRICATION) AND MEET ASTM A653 WITH 50 ksi YIELD STRENGTH AND 90 hsi TENSILE STRENGTH.

4. BOLTS TO BE ASTM A-307 GALVANIZED STEEL OR AISI 304 SERIES STAINLESS STEEL, WITH 35 ksi MINIMUM YIELD STRENGTH.

5. ALL WELDING OF ALUMINUM FRAMING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY A.W.S. D.1.2 REGULATIONS. USE CERTIFIED WELDERS. USE ER-5356 ELECTRODES.

6. ANCHORS TO EXISTING STRUCTURE'S JAMBS SHALL BE AS FOLLOWS (SEE SHEETS 11 AND 16):

- ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER. E.D. IS BEYOND ANY WALL FINISH.

| ANCHOR TYPE | MANUFACTURER | DIAMETER OR GAGE | MIN. EMBEDMENT                  |                               |                                     | MIN. EDGE DISTANCE (E.D)   |       |
|-------------|--------------|------------------|---------------------------------|-------------------------------|-------------------------------------|----------------------------|-------|
|             |              |                  | TO CONCRETE (f'c= 3192psi) MIN. | TO CONCRETE BLOCK (C-90 UNIT) | TO 1/8" MIN. STEEL Fy=33 ksi (MIN.) | CONCRETE OR CONCRETE BLOCK | STEEL |
| TAPCONS     | ITW/ BUILDEX | 1/4"             | 1-3/4"                          | 1-1/4"                        | N/A                                 | 3"                         | N/A   |
| TEK SCREWS  | ITW/ BUILDEX | 1/4"             | N/A                             | N/A                           | 3/4"                                | N/A                        | N/A   |

- ANCHORS FOR MULLION CONNECTIONS SHALL BE AS INDICATED ON SHEETS 12 AND 13

7. SED-5.1 LOUVER SYSTEM WITHOUT CD-151 DAMPER 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/WATER PROOF EQUIPMENT, COMPONENTS OR SUPPLIES.

8. CD-151 DAMPER IS AN OPERABLE ASSEMBLY. IT MAY BE OPERATED BY MEANS OF A HAND QUADRANTHANDLE MECHANISM (AS SHOWN ON SHEET 7) OR THROUGH AN ELECTRICAL OR PNEUMATIC ACTUATOR. DAMPER'S OPERATIVE MECHANISM IS NOT PART OF THIS APPROVAL, BUT SHALL BE CERTIFIED BY AN INDEPENDENT TESTING AGENCY.

9. ALL ALUMINUM EXTRUSIONS IN CONTACT WITH DISSIMILAR MATERIALS SHALL COMPLY WITH SECTION III-6 OF THE 2015 ALUMINUM DESIGN MANUAL.

10. SHOP DRAWINGS PREPARED BASED ON THIS T.D.I REPORT AND TAKING INTO ACCOUNT THE SPECIFIC JOB CONDITIONS, SHALL BE SUBMITTED TO THE BUILDING OFFICIAL AS PART OF THE PERMIT DOCUMENTS.

11. SUBSTRATE MATERIAL NOTED ON THIS DRAWING AS EXISTING BY OTHERS, POURED CONCRETE, GROUT FILLED CONCRETE BLOCK AND WOOD MUST WITHSTAND THE LOADS IMPOSED BY THIS PRODUCT.

12. THIS PRODUCT'S INSTALLATION SHALL COMPLY WITH ALL SPECS INDICATED IN THIS DRAWING PLUS ANY BUILDING AND ZONING REGULATIONS PROVIDED BY THE JURISDICTION WHERE PERMIT IS APPLIED TO.

13. (a) THIS P.E.D. PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; i.e. WHERE THE SITE CONDITIONS DEVIATE FROM THE P.E.D.

(b) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION INCLUDING LIFE SAFETY OF THIS PRODUCT, BASED ON THIS P.E.D., PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT. CONSTRUCTION SAFETY AT SITE IS THE CONTRACTOR'S RESPONSIBILITY.

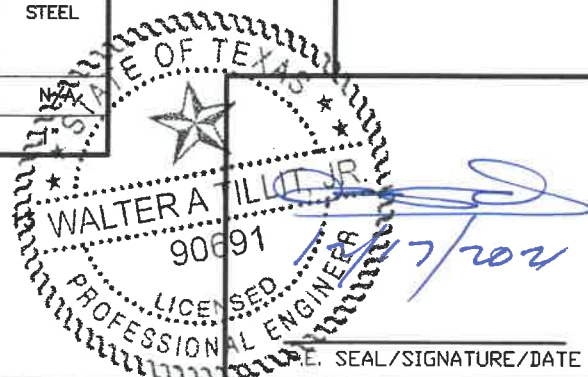
(c) THIS P.E.D. WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.

(d) SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A PROFESSIONAL ENGINEER OR ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.E.D. ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE P.E.D. ENGINEER, SHALL SUBMIT TO THIS LETTER THE SITE SPECIFIC DRAWINGS FOR REVIEW.

(e) ORIGINAL P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.

14. PRODUCT MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION AT PRODUCT IN ACCORDANCE WITH TEXAS DEPARTMENT OF INSURANCE REQUIREMENTS. ONE LABEL SHALL BE PLACED FOR EVERY OPENING.

**THIS DRAWING SHALL ONLY BE USED TO OBTAIN PERMITS UNDER THE TEXAS DEPARTMENT OF INSURANCE JURISDICTION**



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 FIRM REGISTRATION # F-13790

**TEXAS DEPARTMENT OF INSURANCE - 2018**

**SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ASSEMBLY**

**UNITED ENERTECH HOLDINGS, LLC**

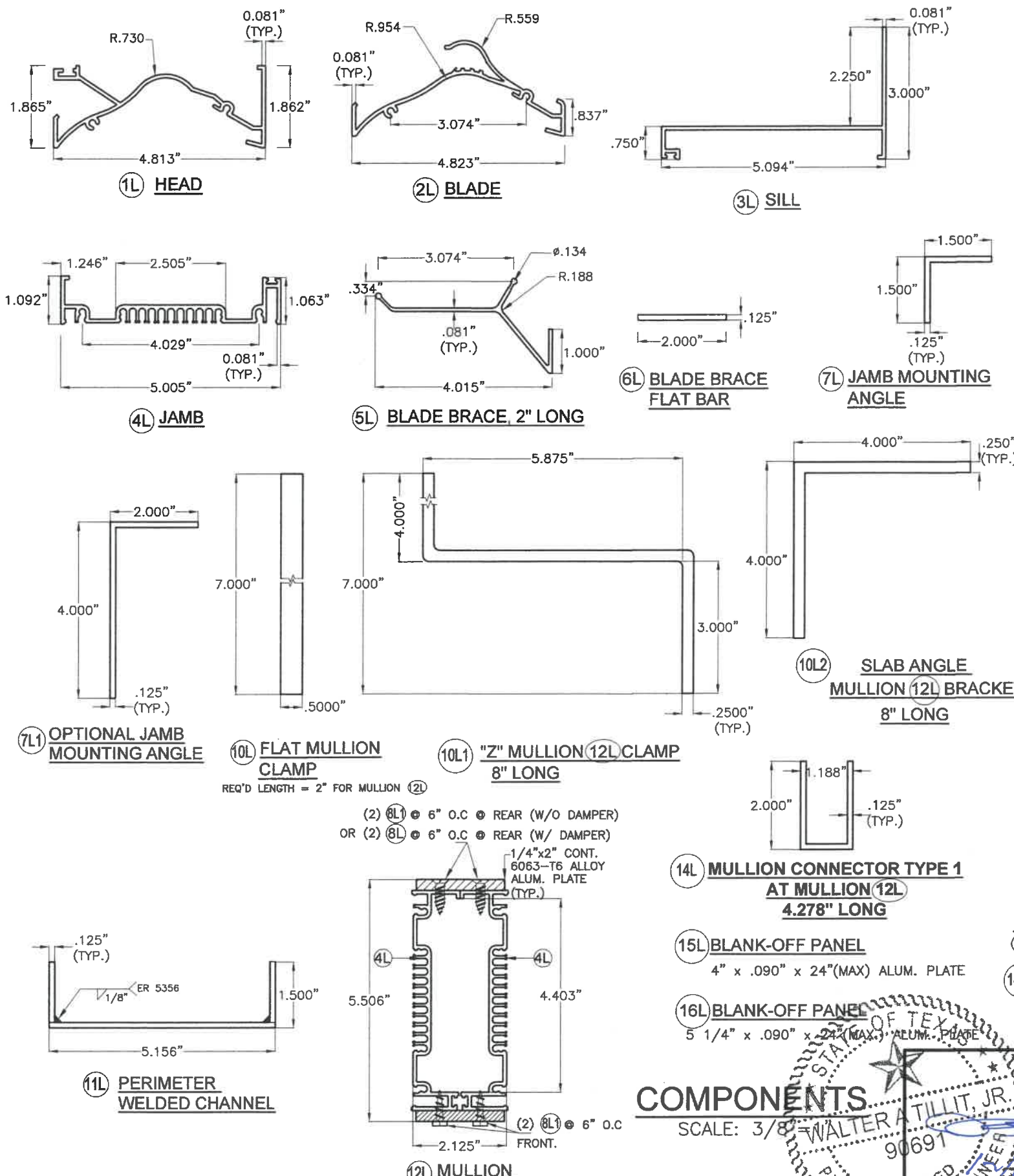
3005 SOUTH HICKORY ST. CHATTANOOGA, TN 37407  
 159 GENCO DRIVE HARTFORD, AL 36344  
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M.P. DRAWN BY:

12/16/2021 DATE:

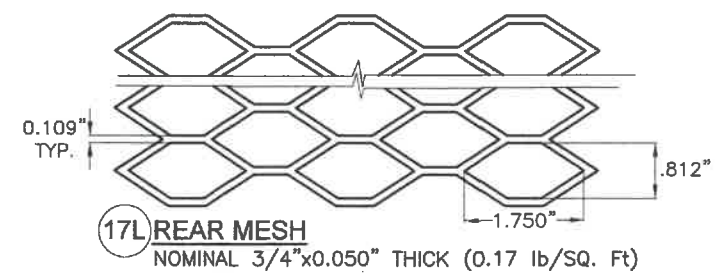
**21-150**  
DRAWING No.

| REV. NO | DESCRIPTION | DATE     | REV. No | DESCRIPTION | DATE |
|---------|-------------|----------|---------|-------------|------|
| 1       | OLD 16-005  | 12-16-21 | 3       | -           | -    |
| 2       | -           | -        | 4       | -           | -    |



| BILL OF MATERIALS SED-5.1 LOUVER ASSEMBLY |   |   |                   |   |
|---|---|---|-------------------|---|
| ITEM                                      | DESCRIPTION                                 | MATERIAL  | SIZE              | REMARKS   |
| 1L  | EXTRUDED ALUM. HEAD                         | 6063-T5 ALLOY                                       | SEE DETAIL        | Fy (MIN.) = 16 ksi  |
| 2L  | EXTRUDED ALUM. BLADE                        | 6063-T5 ALLOY                                       | SEE DETAIL        | Fy (MIN.) = 16 ksi  |
| 3L  | EXTRUDED ALUM. SILL                         | 6063-T5 ALLOY                                       | SEE DETAIL        | Fy (MIN.) = 16 ksi  |
| 4L  | EXTRUDED ALUM. JAMB                         | 6063-T5 ALLOY                                       | SEE DETAIL        | Fy (MIN.) = 16 ksi  |
| 5L  | EXTRUDED ALUM. BLADE BRACE                  | 6063-T5 ALLOY                                       | SEE DETAIL        | Fy (MIN.) = 16 ksi  |
| 6L  | EXTRUDED ALUM. FLAT BAR                     | 6063-T5 ALLOY                                       | SEE DETAIL        | Fy (MIN.) = 16 ksi  |
| 7L  | EXTRUDED ALUM. JAMB MOUNTING ANGLE          | 6063-T6 ALLOY                                       | SEE DETAIL        | Fy (MIN.) = 25 ksi  |
| 7L1                                       | OPTIONAL EXTRUDED ALUM. JAMB MOUNTING ANGLE | 6063-T6 ALLOY                                       | SEE DETAIL        | Fy (MIN.) = 25 ksi  |
| 8L  | FLAT HEAD TEK SCREWS                        | ZINC PLATED STEEL                                   | 1/4"Ø x 3/4" LONG | ITW / BUILDDEX  |
| 8L1                                       | HEX HEAD TEK SCREWS                         | ZINC PLATED STEEL                                   | 1/4"Ø x 1" LONG   | ITW / BUILDDEX  |
| 9L  | NEOPRENE WASHER HEAD S.M.S.                 | 410 STAINLESS STEEL                                 | #8 x 1-1/2" LONG  | LOUVER BLADE AND FRAME ASSEMBLY (1L, 2L, & 4L)                      |
| 10L                                       | FLAT MULLION CLAMP                          | ASTM A-36 OR ASTM A-653 GRADE 40 OR AISI 304 S.S. * | SEE DETAIL        | REQ'D LENGTH = 2" FOR MULLION (12L) Fy (MIN.) = 36 ksi              |
| 10L1                                      | "Z" MULLION (12L) CLAMP                     | ASTM A-36 OR ASTM A-653 GRADE 40 OR AISI 304 S.S. * | SEE DETAIL        | 8" LONG AT HEAD & SILL AT BLADE W/ MULLION (12L) Fy (MIN.) = 36 ksi |
| 10L2                                      | ANGLE MULLION BRACKET                       | 6063-T6 ALLOY                                       | SEE DETAIL        | 8" LONG AT HEAD & SILL AT BLADE W/ MULLIONS. Fy (MIN.) = 25 ksi     |
| 11L                                       | PERIMETER WELDED CHANNEL                    | 6063-T5 ALLOY                                       | SEE DETAIL        | Fy (MIN.) = 16 ksi  |
| 12L                                       | MULLION                                     | 6063-T5 ALLOY                                       | SEE DETAIL        | Fy (MIN.) = 16 ksi  |
| 14L                                       | MULLION CONNECTOR TYPE 1 AT MULLION (12L)   | 6063-T6 ALLOY                                       | SEE DETAIL        | Fy (MIN.) = 16 ksi  |
| 14L1                                      | MULLION CONNECTOR TYPE 2 AT MULLION (12L)   | ASTM A-36 *   | SEE DETAIL        | Fy (MIN.) = 36 ksi  |
| 15L                                       | BLANK-OFF PANEL                             | 6063-T5 ALLOY                                       | SEE DETAIL        | Fy (MIN.) = 16 ksi  |
| 16L                                       | BLANK-OFF PANEL                             | 6063-T5 ALLOY                                       | SEE DETAIL        | Fy (MIN.) = 16 ksi  |
| 17L                                       | REAR MESH                                   | 3003-H14 ALLOY                                      | SEE DETAIL        | Fy (MIN.) = 16 ksi  |

\* NOTE: STEEL COMPONENTS SHALL BE PROTECTED FROM CORROSION W/ A PRIMER CONSISTING OF RED OXIDE PAINT OR SIMILAR W/ GALVANIZING (G-60) AS AN OPTION. ADDITIONALLY, FINAL (FINISH) PAINT FOR THESE PROFILES SHALL BE IN ACCORDANCE W/ SECTION 2003.8.4.2 OF THE F.B.C., ADDRESSING PROTECTION OF ALUMINUM IN CONTACT W/ METALS NOT CONSIDERED COMPATIBLE.



**COMPONENTS**  
SCALE: 3/8" = 1"

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LICENSED PROFESSIONAL ENGINEER  
P.E. SEAL/SIGNATURE/DATE

TEXAS DEPARTMENT OF INSURANCE - 2018

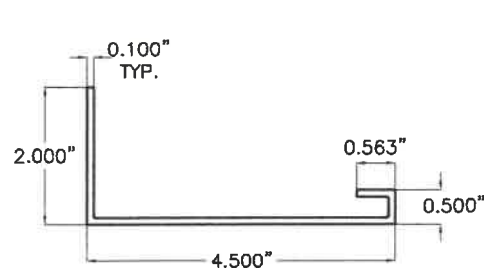
SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ASSEMBLY

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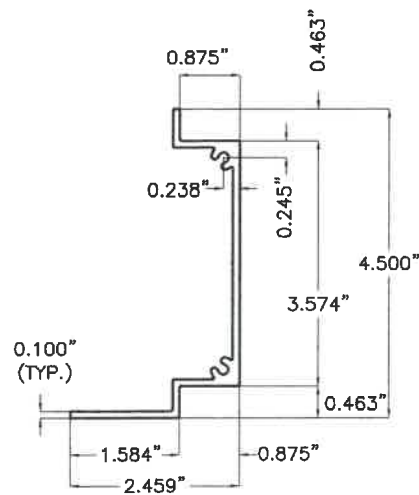
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M.P. DRAWN BY: 12/16/2021 DATE: 21-150 DRAWING No. SHEET 2 OF 16

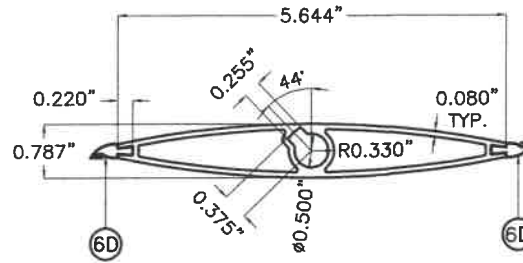
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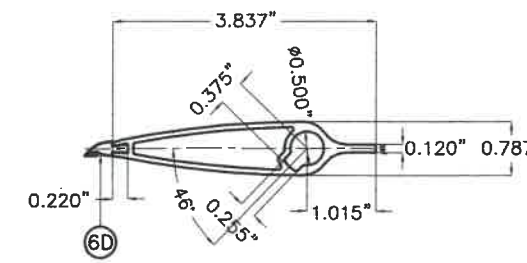
1D HEAD & SILL



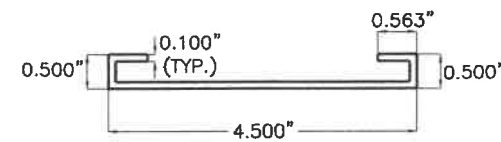
2D JAMB



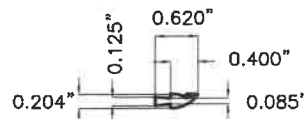
3D REGULAR DAMPER BLADE



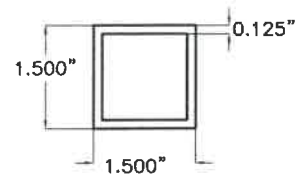
3D1 TOP DAMPER HALF BLADE



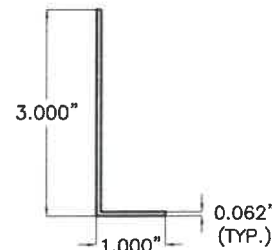
7D MID-HEIGHT HEAD or SILL



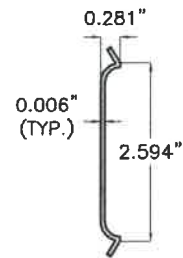
6D BLADE SEAL



1I INTERMEDIATE TUBE FRAME



8D ALUM. ANGLE BLADE STOP



9D JAMB SEAL

| BILL OF MATERIALS CD-151 DAMPER ASSEMBLY |  |                            |                                       |   |
|--|--|----------------------------|---------------------------------------|---|
| ITEM                                     | DESCRIPTION                            | MATERIAL                   | SIZE                                  | REMARKS   |
| 1D                                       | EXTRUDED ALUM. HEAD & SILL             | 6063-T5 ALUMINUM ALLOY     | SEE DETAIL                            | Fy(MIN.)=33.4 ksi   |
| 2D                                       | EXTRUDED ALUM. JAMB                    | 6063-T5 ALUMINUM ALLOY     | SEE DETAIL                            | Fy(MIN.)=31.6 ksi   |
| 3D                                       | EXTRUDED ALUM. REGULAR DAMPER BLADE    | 6063-T5 ALUMINUM ALLOY     | SEE DETAIL                            | Fy(MIN.)=31.8 ksi   |
| 3D1                                      | EXTRUDED ALUM. TOP DAMPER HALF BLADE   | 6063-T5 ALUMINUM ALLOY     | SEE DETAIL                            | Fy(MIN.)=31.8 ksi   |
| 4D                                       | BUSHING                                | BRONZE                     | 1/2" I.D.(5/8" O.D.)x1/4"             | 0.059" THICK @ WASHER SIDE                                  |
| 5D                                       | AXLE PIN                               | ZAMAC No. 3 ZINC           | 1/2"x3 1/8"                           | WITH NYLON WASHER & LOCK RING                               |
| 6D                                       | BLADE SEAL                             | SILICONE                   | SEE DETAIL                            | ASTM D-2000, 60-65 DUROMETER                                |
| 7D                                       | MID-HEIGHT EXTRUDED ALUM. HEAD or SILL | 6063-T5 ALUMINUM ALLOY     | SEE DETAIL                            | Fy(MIN.)=29.8 ksi   |
| 8D                                       | ALUM. ANGLE BLADE STOP                 | 6063-T5 ALUMINUM ALLOY     | SEE DETAIL                            | WITH VINYL WEATHER STRIP AT END OF 3" LEG                   |
| 9D                                       | JAMB SEAL                              | STAINLESS STEEL 316 SERIES | SEE DETAIL                            | ATTACHED TO 2D W/(3) DOUBLE SIDED (1"x1/8") TAPES           |
| 10D                                      | S.D.S. TEK SCREW                       | ZINC PLATED                | #8 X 1/2"                             | FASTEN TO 6D @ 12" O.C., 2 1/2" FROM ENDS                   |
| 1I                                       | INTERMEDIATE TUBE FRAME                | 6063-T5 ALUMINUM ALLOY     | SEE DETAIL IN THIS SHEET AND SHEET 9. | Fy(MIN.)=31.9 ksi<br>INSTALL BETWEEN DAMPER & LOUVER FRAME. |

**CD-151 DAMPER AND INTERMEDIATE TUBE FRAME COMPONENTS**  
(EXCLUDES COMPONENTS FOR OPERATIVE MECHANISM, SEE NOTE 8/1)

**COMPONENTS**

SCALE: 3/8"=1"

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12/17/2021  
P.E. SEAL/SIGNATURE/DATE

TEXAS DEPARTMENT OF INSURANCE - 2018

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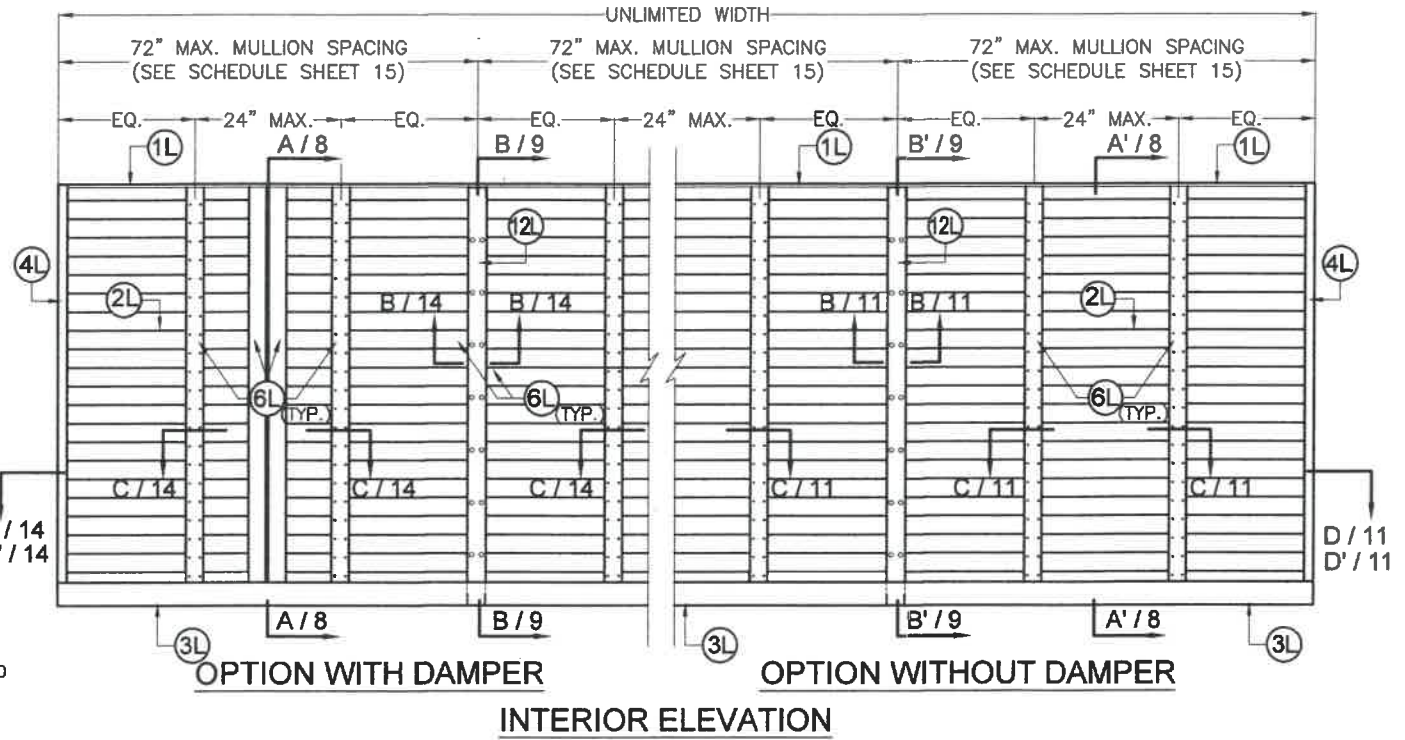
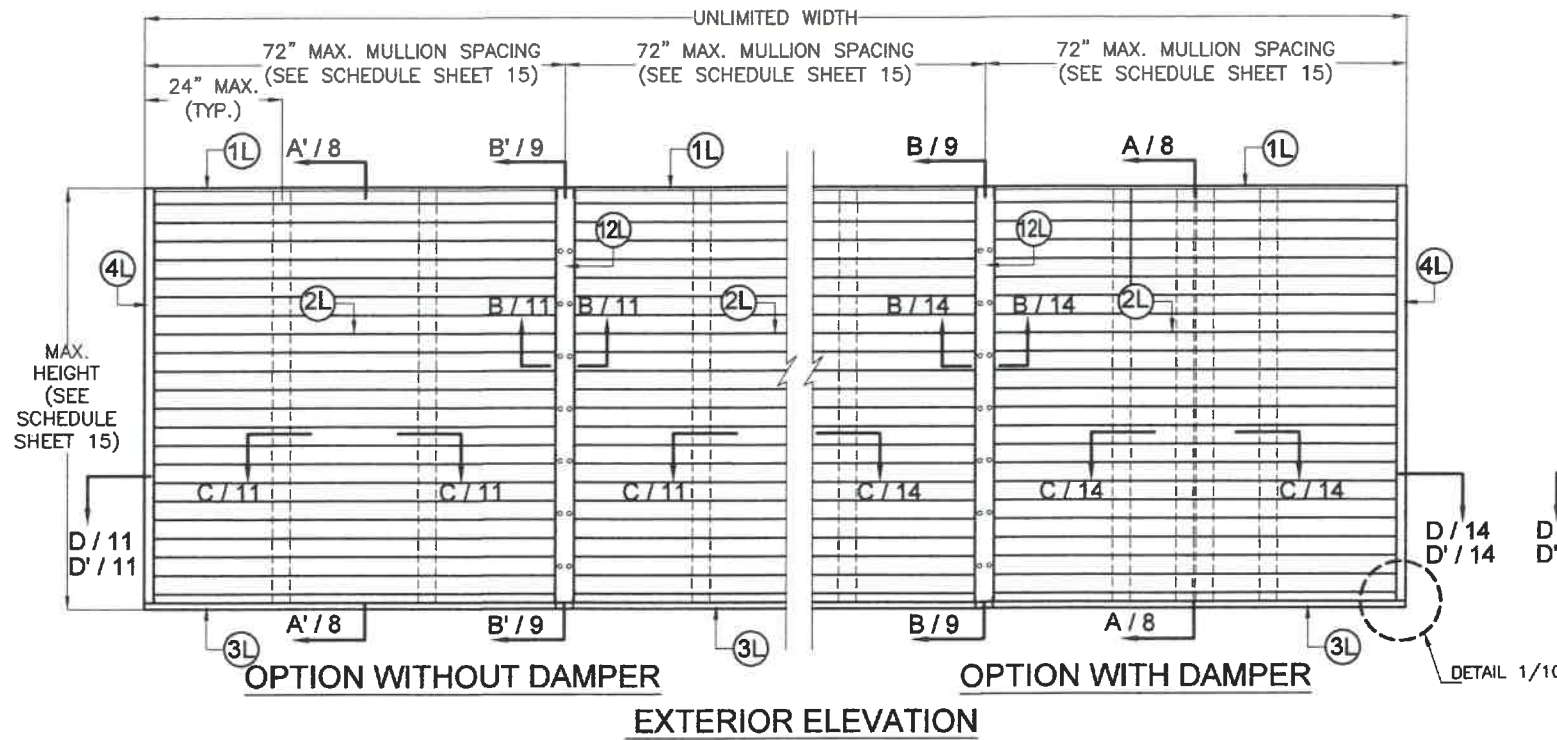
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12/16/2021 DATE:

21-150 DRAWING No.

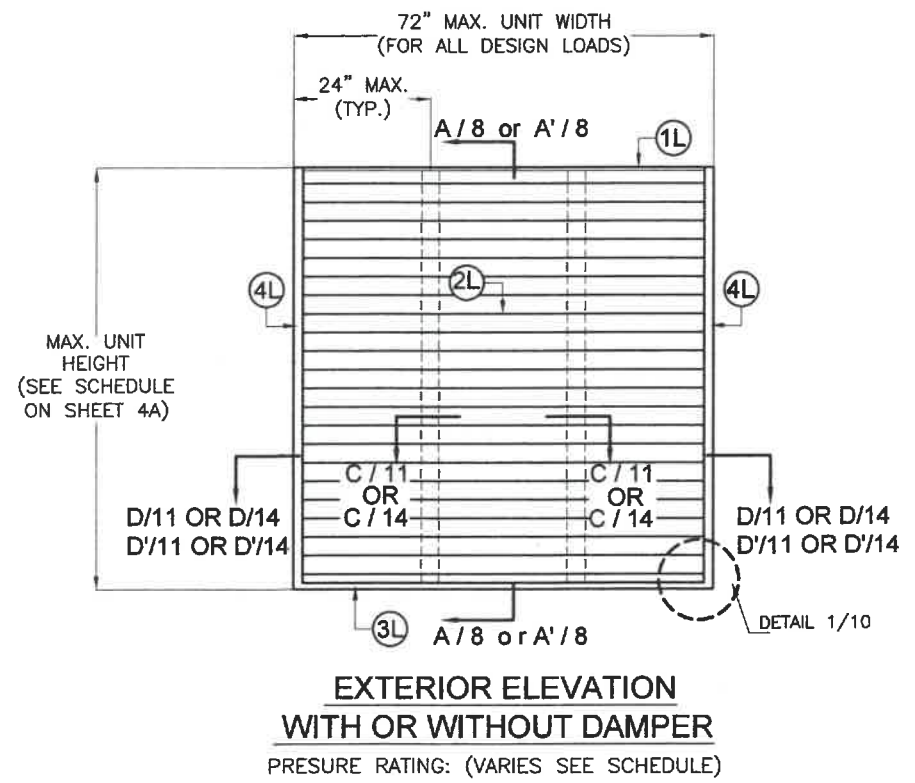
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SHEET 3 OF 16

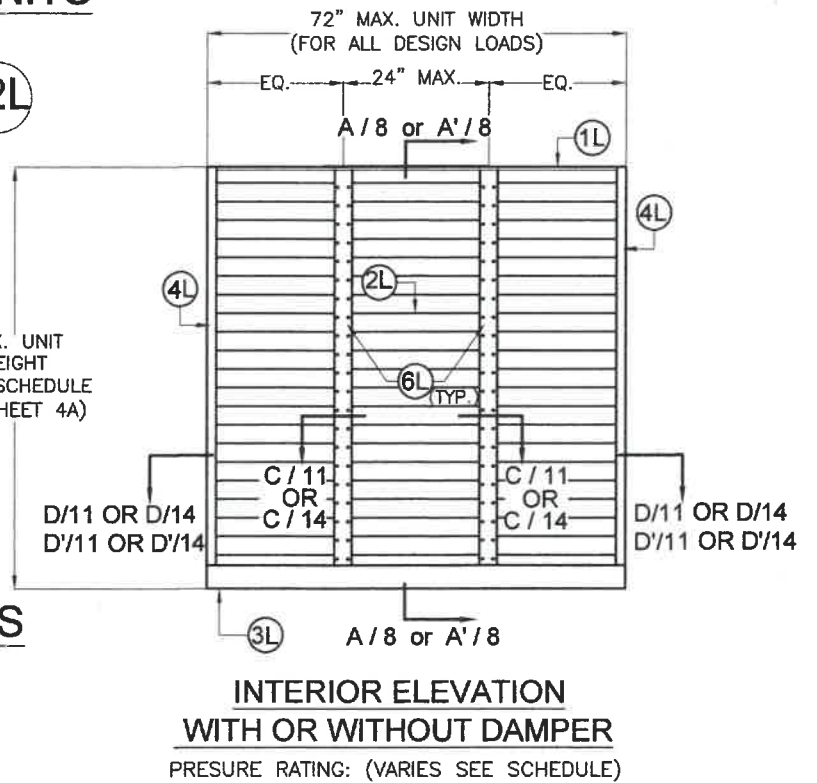


**MULTIPLE SED 5.1 LOUVER UNITS  
WITH OR WITHOUT  
DAMPER WITH MULLION 12L**

N.T.S  
(PRESURE RATING VARIES, SEE SCHEDULE ON SHEET 15)



**SINGLE SED 5.1 LOUVER UNITS  
WITH OR WITHOUT  
DAMPER W/ SQUARE EDGES**



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DRAWING No.

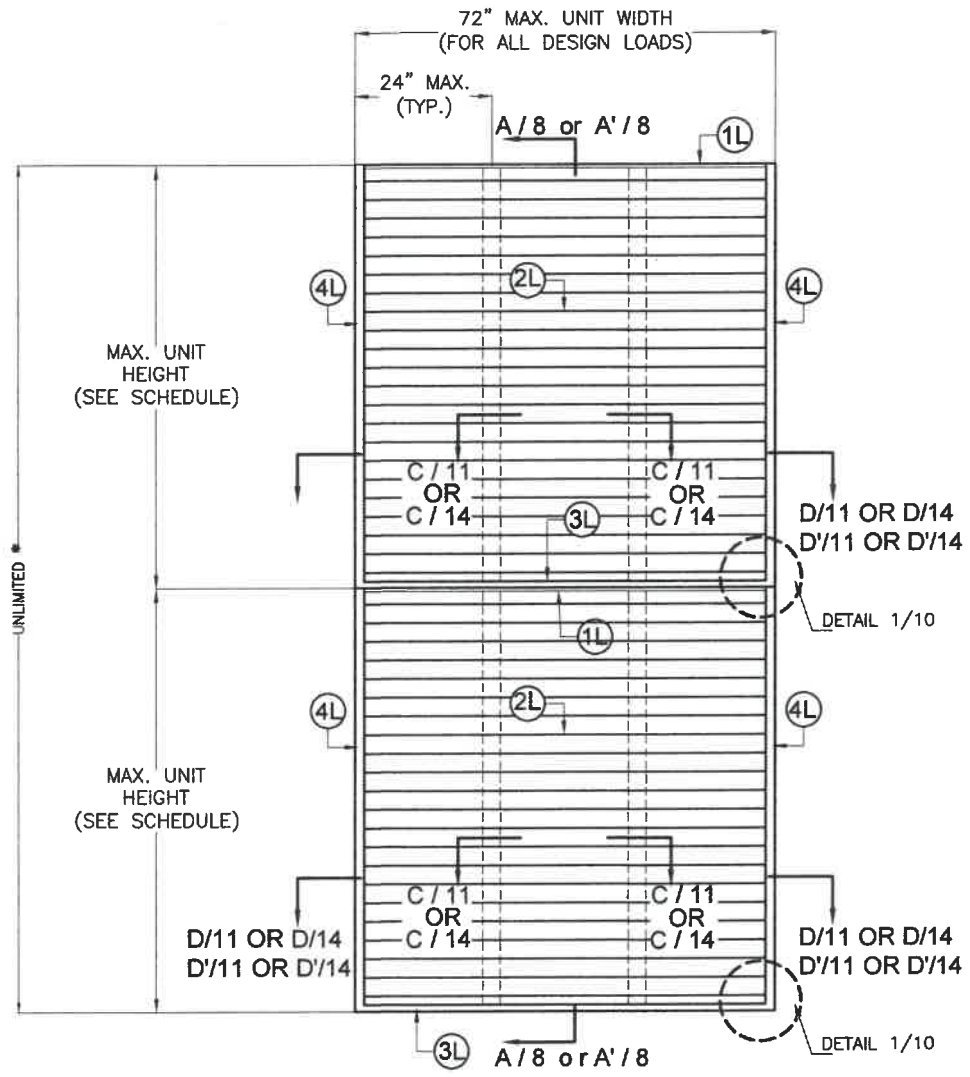
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SHEET 4 OF 16

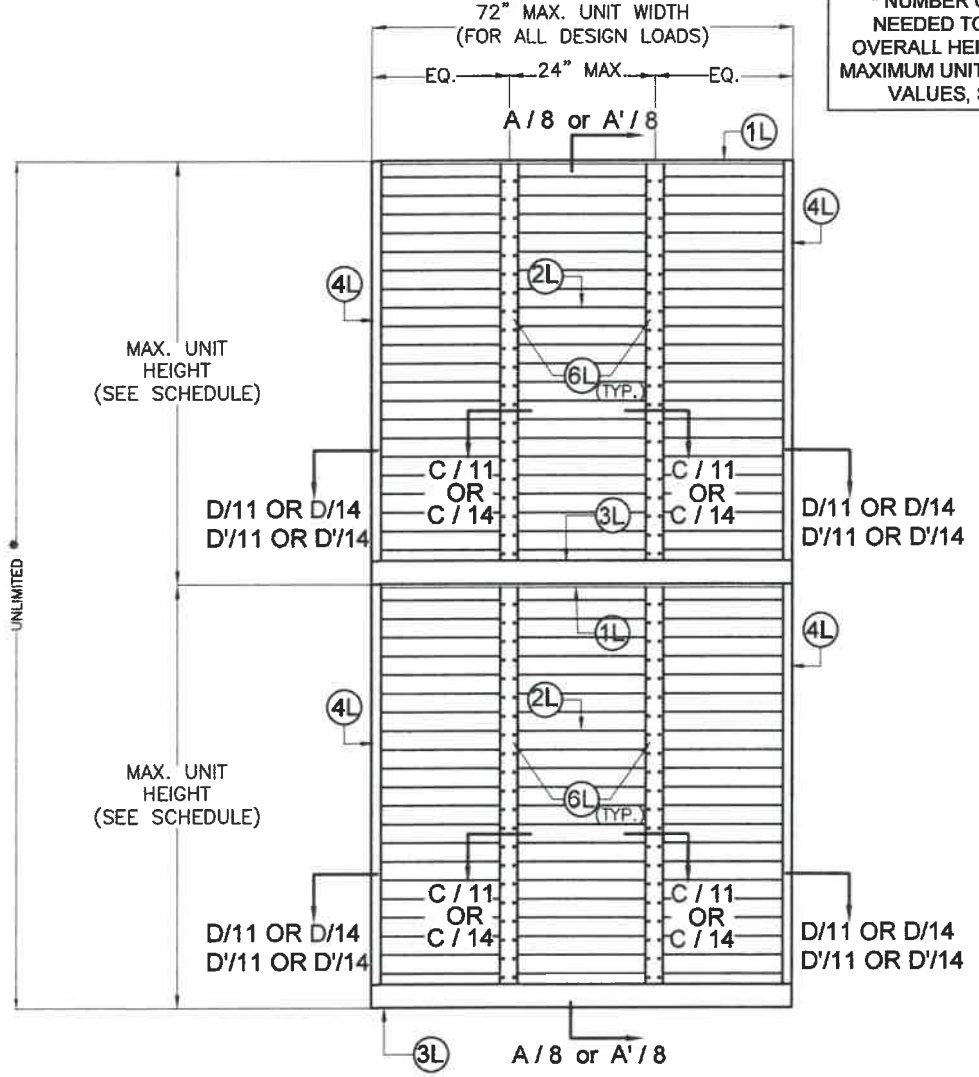
MAX. UNIT HEIGHT FOR A GIVEN DESIGN PRESSURE RATING SCHEDULE, APPLICABLE TO SINGLE UNITS W/ SQUARE EDGES W/O MULLION

| MAXIMUM DESIGN PRESSURE RATING (p.s.f) | MAX. UNIT HEIGHT |
|--|------------------|
| 40                                     | 10'-0"           |
| 45                                     | 10'-0"           |
| 50                                     | 10'-0"           |
| 55                                     | 10'-0"           |
| 60                                     | 10'-0"           |
| 65                                     | 10'-0"           |
| 70                                     | 10'-0"           |
| 75                                     | 9'-11"           |
| 80                                     | 9'-7"            |
| 85                                     | 9'-4"            |
| 90                                     | 9'-0"            |
| 95                                     | 8'-10"           |
| 100                                    | 8'-7"            |
| 105                                    | 8'-4"            |
| 110                                    | 8'-2"            |
| 115                                    | 7'-12"           |
| 120                                    | 7'-10"           |
| 125                                    | 7'-8"            |
| 130                                    | 7'-6"            |
| 135                                    | 7'-5"            |
| 140                                    | 7'-3"            |
| 145                                    | 7'-1"            |
| 150                                    | 7'-0"            |

\* NUMBER OF LOUVER PANEL UNITS NEEDED TO ACHIEVE THE OPENING OVERALL HEIGHT MAY VARY. HOWEVER MAXIMUM UNIT HEIGHT SHALL NO EXCEED VALUES, SHOWN ON SCHEDULE.



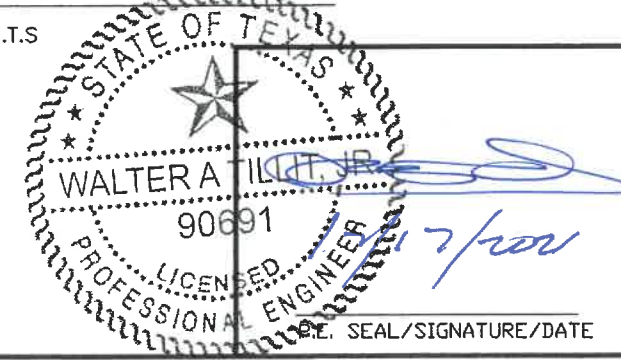
**EXTERIOR ELEVATION  
WITH OR WITHOUT DAMPER**  
PRESURE RATING: (VARIES SEE SCHEDULE)



**INTERIOR ELEVATION  
WITH OR WITHOUT DAMPER**  
PRESURE RATING: (VARIES SEE SCHEDULE)

**SINGLE SED 5.1 LOUVER UNITS  
WITH OR WITHOUT  
DAMPER W/ SQUARE EDGES**

N.T.S



WALTER A. TILLIT Jr P.E.  
PROFESSIONAL ENGINEER  
6355 N.W 36 STREET, STE. 305  
VIRGINIA GARDENS, FL 33166  
PHONE(305) 871-1530 FAX (305) 871-1531  
TEXAS LIC. # 90691  
FIRM REGISTRATION # F-13790

TEXAS DEPARTMENT OF INSURANCE - 2018

**SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ASSEMBLY**

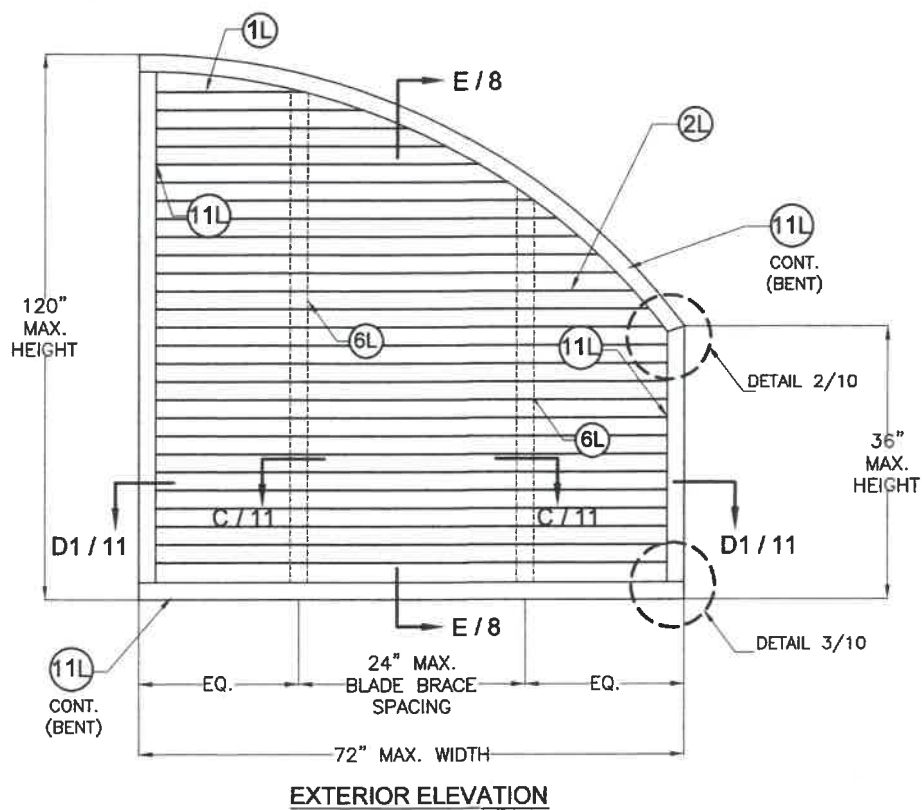
**UNITED ENERTECH HOLDINGS, LLC**  
3005 SOUTH HICKORY ST. CHATTANOOGA, TN 37407  
159 GENCO DRIVE HARTFORD, AL 36344  
PHONE: (423)698-7715 FAX:(423)698-6629

M.P.  
DRAWN BY:  
12/16/2021  
DATE:

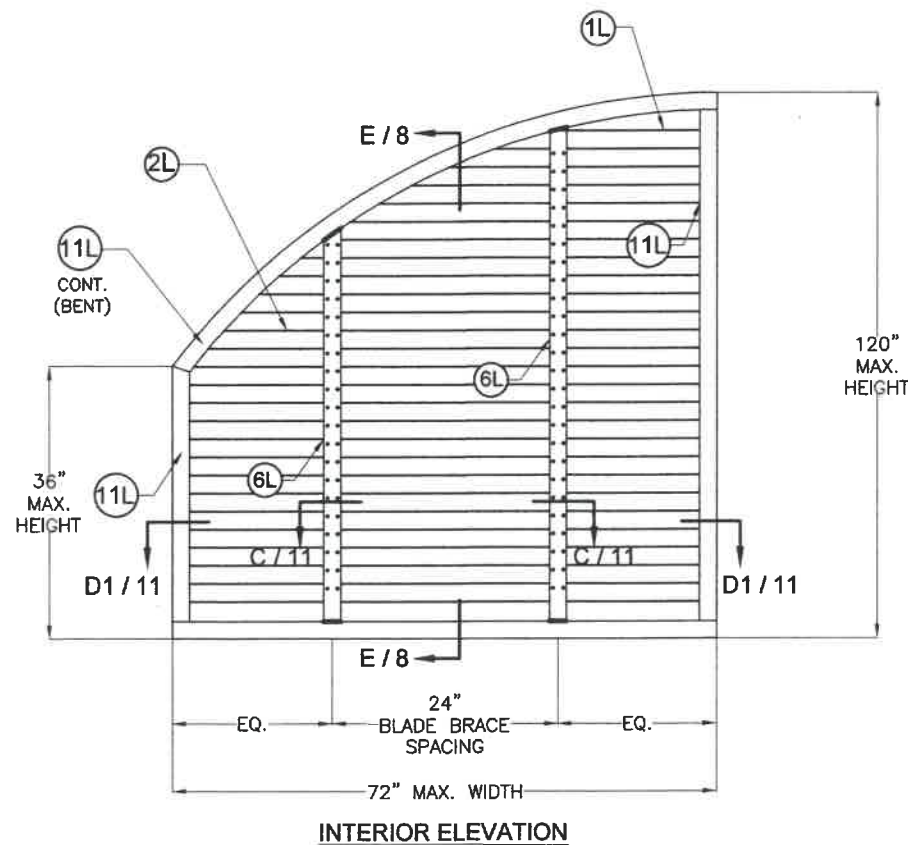
**21-150**  
DRAWING No.

| REV. NO | DESCRIPTION | DATE     | REV. No | DESCRIPTION | DATE |
|---------|-------------|----------|---------|-------------|------|
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| 2       | -           | -        | 4       | -           | -    |

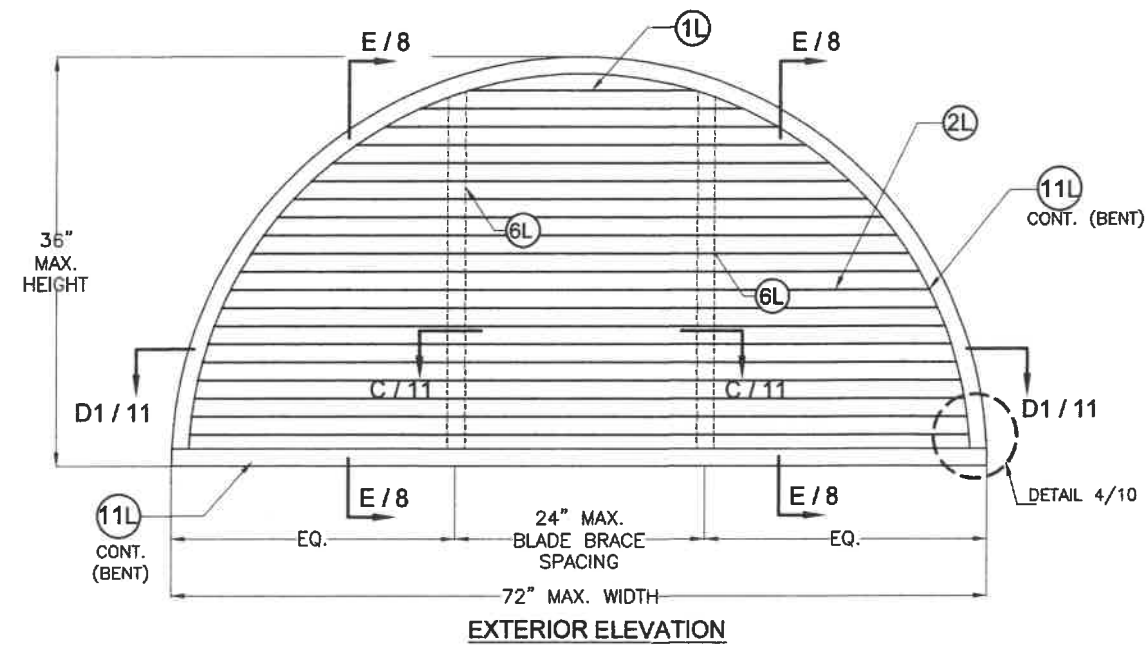
SHEET 4A OF 16



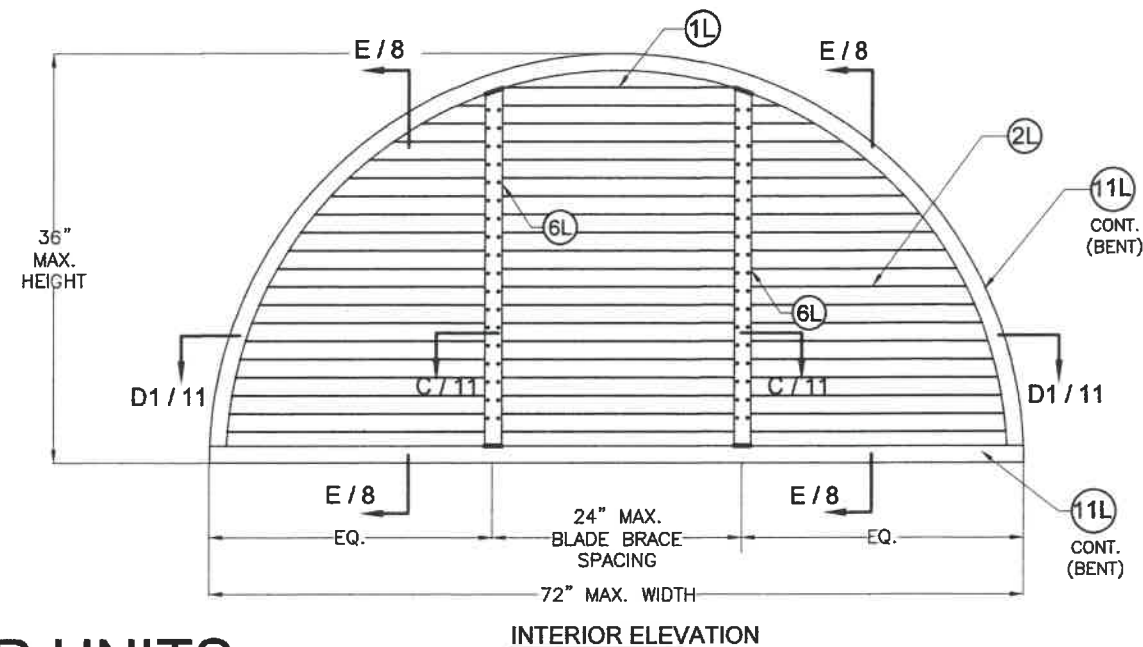
EXTERIOR ELEVATION



INTERIOR ELEVATION

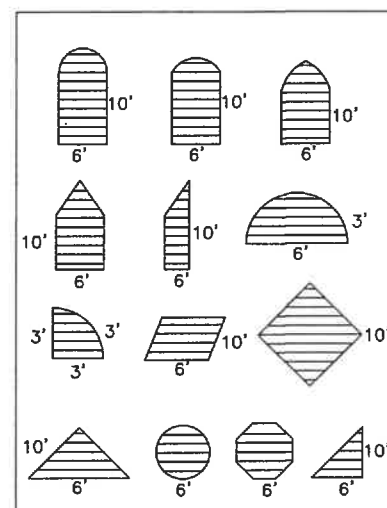


EXTERIOR ELEVATION



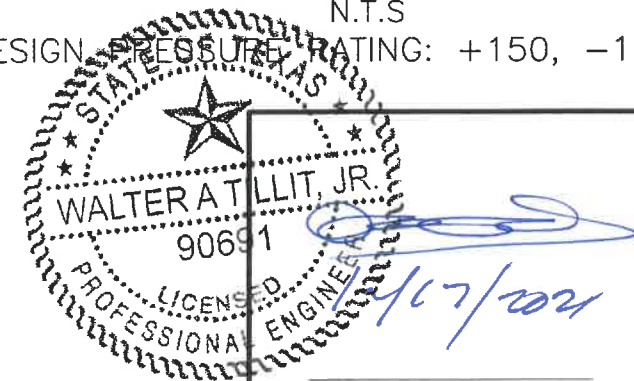
INTERIOR ELEVATION

QUALIFIES THE FOLLOWING SHAPES:



## SINGLE SED 5.1 LOUVER UNITS WITHOUT DAMPER W/ CURVED EDGES

N.T.S  
(DESIGN PRESSURE RATING: +150, -150 PSF)



P.E. SEAL/SIGNATURE/DATE

TEXAS DEPARTMENT OF INSURANCE - 2018

WALTER A. TILLIT Jr P.E.  
PROFESSIONAL ENGINEER  
6355 N.W 36 STREET, STE. 305  
VIRGINIA GARDENS, FL 33166  
PHONE(305) 871-1530 FAX (305) 871-1531  
TEXAS LIC. # 90691  
FIRM REGISTRATION # F-13790

SED-5.1 LOUVER SYSTEM WITH OR  
WITHOUT CD-151 DAMPER ASSEMBLY

**UNITED ENERTECH HOLDINGS, LLC**  
3005 SOUTH HICKORY ST. CHATTANOOGA, TN 37407  
159 GENCO DRIVE HARTFORD, AL 36344  
PHONE: (423)698-7715 FAX:(423)698-6629

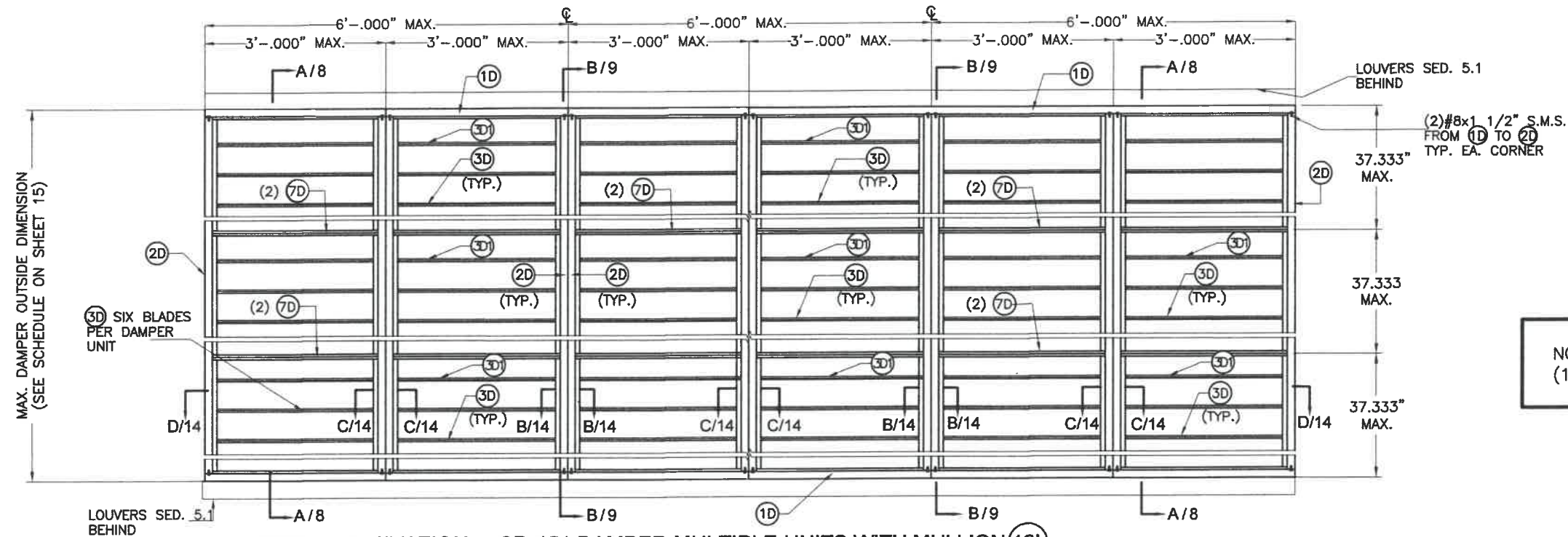
M.P.  
DRAWN BY:

12/16/2021  
DATE:

**21-150**  
DRAWING No.

| REV. NO | DESCRIPTION | DATE     | REV. No | DESCRIPTION | DATE |
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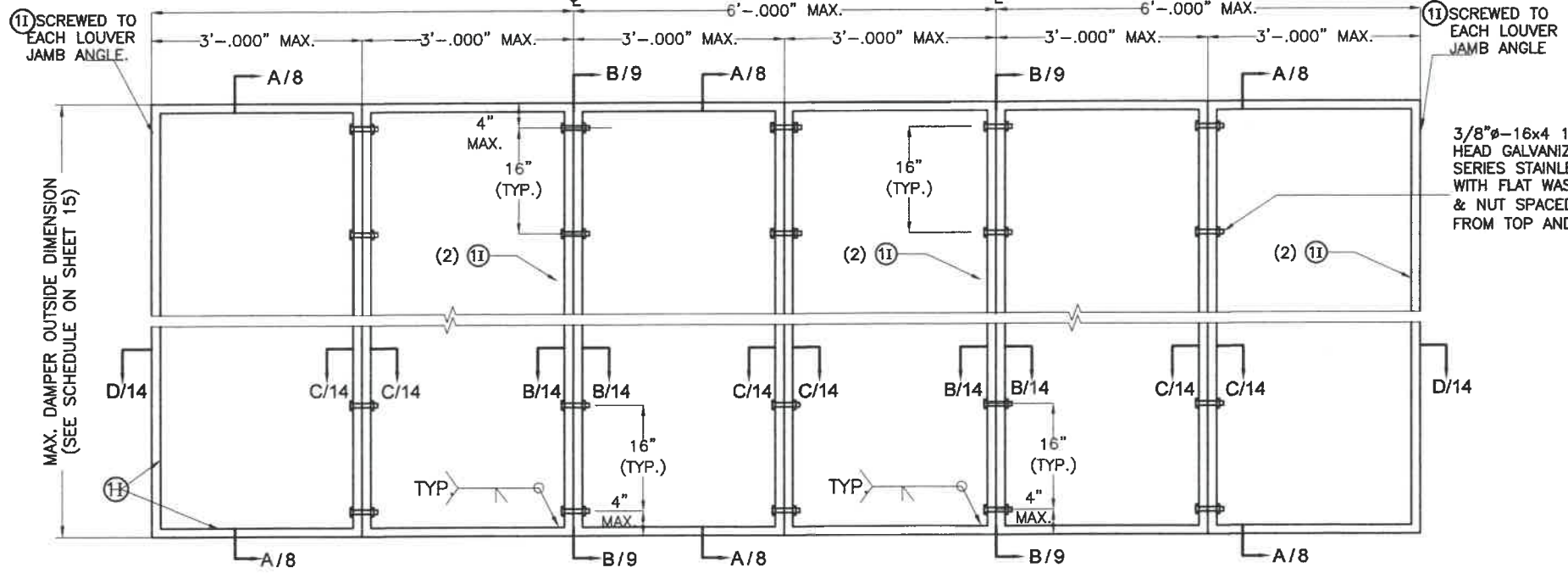
SHEET 5 OF 16



**INTERIOR ELEVATION: CD-151 DAMPER MULTIPLE UNITS WITH MULLION (12L)**

SCALE: 1/2"=1'-0"

NOTE:  
(1) SEE COMPONENTS ON SHEET 3.

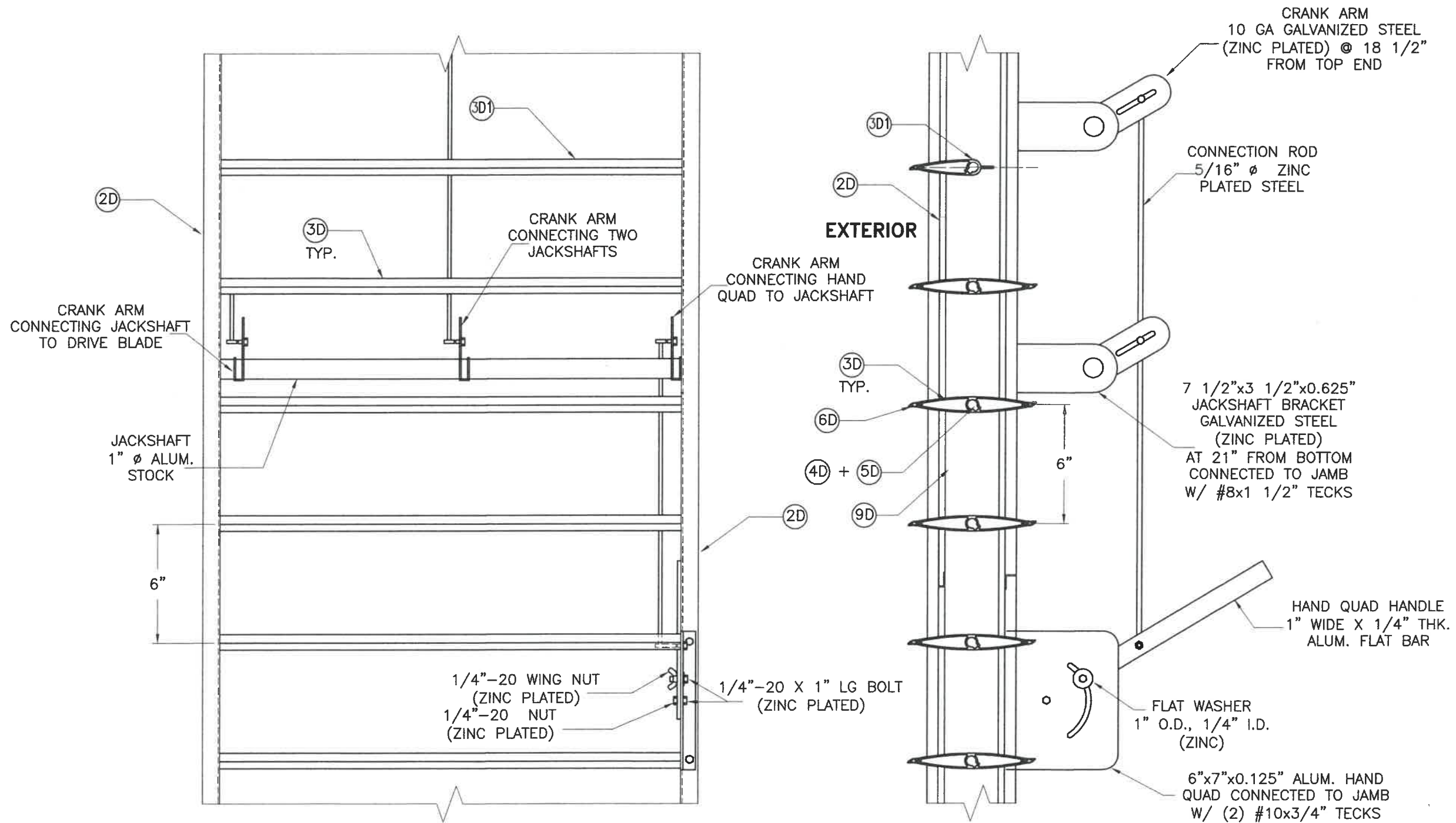


**EXTERIOR ELEVATION: INTERMEDIATE TUBE FRAME FOR CD-151 DAMPER ATTACHMENT AT MULTIPLE UNITS WITH MULLION (12L)**

SCALE: 1/2"=1'-0"

WALTER A. TILLIT, JR.  
 90691  
 LICENSED PROFESSIONAL ENGINEER  
 P.E. SEAL/SIGNATURE/DATE

|   |             |   |         |                              |      |
|---|-------------|---|---------|------------------------------|------|
| <b>TEXAS DEPARTMENT OF INSURANCE - 2018</b>                             |             |   |         |                              |      |
| <b>SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ASSEMBLY</b>     |             |   |         | M.P.<br>DRAWN BY:            |      |
| <b>UNITED ENERTECH HOLDINGS, LLC</b>                                    |             |   |         | 12/16/2021<br>DATE:          |      |
| 3005 SOUTH HICKORY ST.<br>CHATTANOOGA, TN 37407<br>PHONE: (423)698-7715 |             | 159 GENCO DRIVE<br>HARTFORD, AL 36344<br>FAX: (423)698-6629 |         | <b>21-150</b><br>DRAWING No. |      |
| REV. NO   | DESCRIPTION | DATE  | REV. No | DESCRIPTION                  | DATE |
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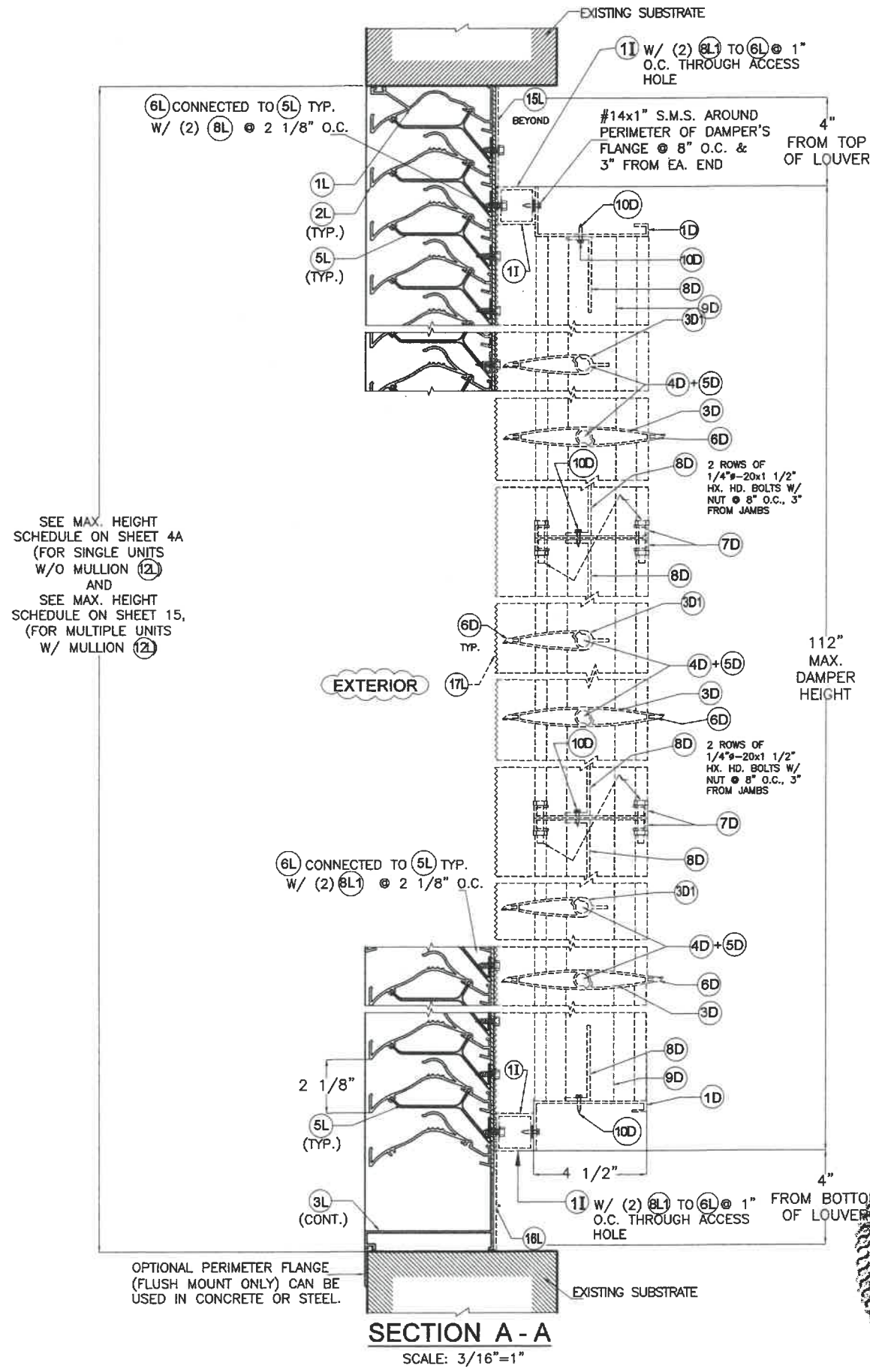


**HAND QUADRANT HANDLE MECHANISM**

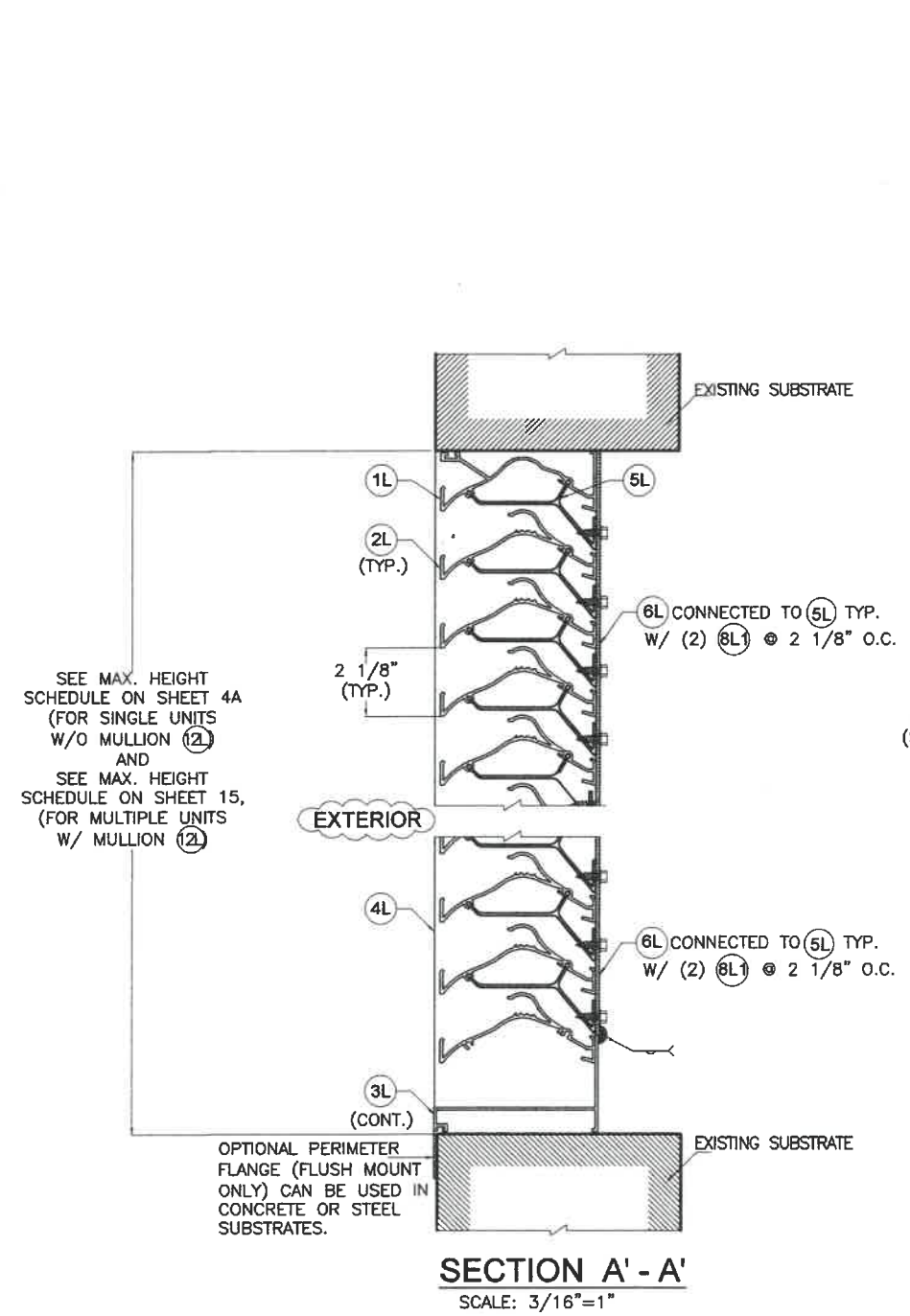
WALTER A. TILLIT, JR.  
 90691  
 P.E. SEAL/SIGNATURE/DATE

|   |             |   |         |                              |      |
|---|-------------|---|---------|------------------------------|------|
| TEXAS DEPARTMENT OF INSURANCE - 2018                                    |             |   |         |                              |      |
| SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ASSEMBLY            |             |   |         | M.P.<br>DRAWN BY:            |      |
| <b>UNITED ENERTECH HOLDINGS, LLC</b>                                    |             |   |         | 12/16/2021<br>DATE:          |      |
| 3005 SOUTH HICKORY ST.<br>CHATTANOOGA, TN 37407<br>PHONE: (423)698-7715 |             | 159 GENCO DRIVE<br>HARTFORD, AL 36344<br>FAX: (423)698-6629 |         | <b>21-150</b><br>DRAWING No. |      |
| REV. NO   | DESCRIPTION | DATE  | REV. No | DESCRIPTION                  | DATE |
| 1   | OLD 16-005  | 12-16-21  | 3       | -                            | -    |
| 2   | -           | -   | 4       | -                            | -    |

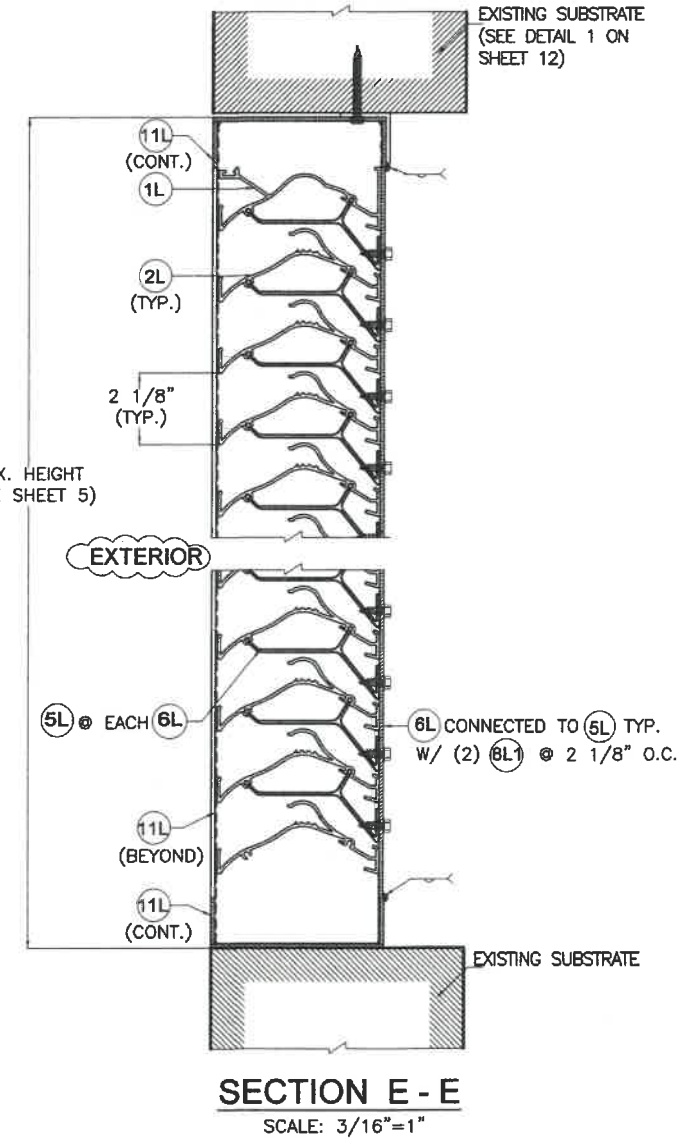




**SECTION A - A**  
SCALE: 3/16"=1"



**SECTION A' - A'**  
SCALE: 3/16"=1"



**SECTION E - E**  
SCALE: 3/16"=1"

SEE MAX. HEIGHT SCHEDULE ON SHEET 4A (FOR SINGLE UNITS W/O MULLION 12) AND SEE MAX. HEIGHT SCHEDULE ON SHEET 15, (FOR MULTIPLE UNITS W/ MULLION 12)

SEE MAX. HEIGHT SCHEDULE ON SHEET 4A (FOR SINGLE UNITS W/O MULLION 12) AND SEE MAX. HEIGHT SCHEDULE ON SHEET 15, (FOR MULTIPLE UNITS W/ MULLION 12)

MAX. HEIGHT (SEE SHEET 5)

STATE OF TEXAS  
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90691  
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12/16/2021  
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**TEXAS DEPARTMENT OF INSURANCE - 2018**

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VIRGINIA GARDENS, FL 33166  
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TEXAS LIC. # 90691  
FIRM REGISTRATION # F-13790

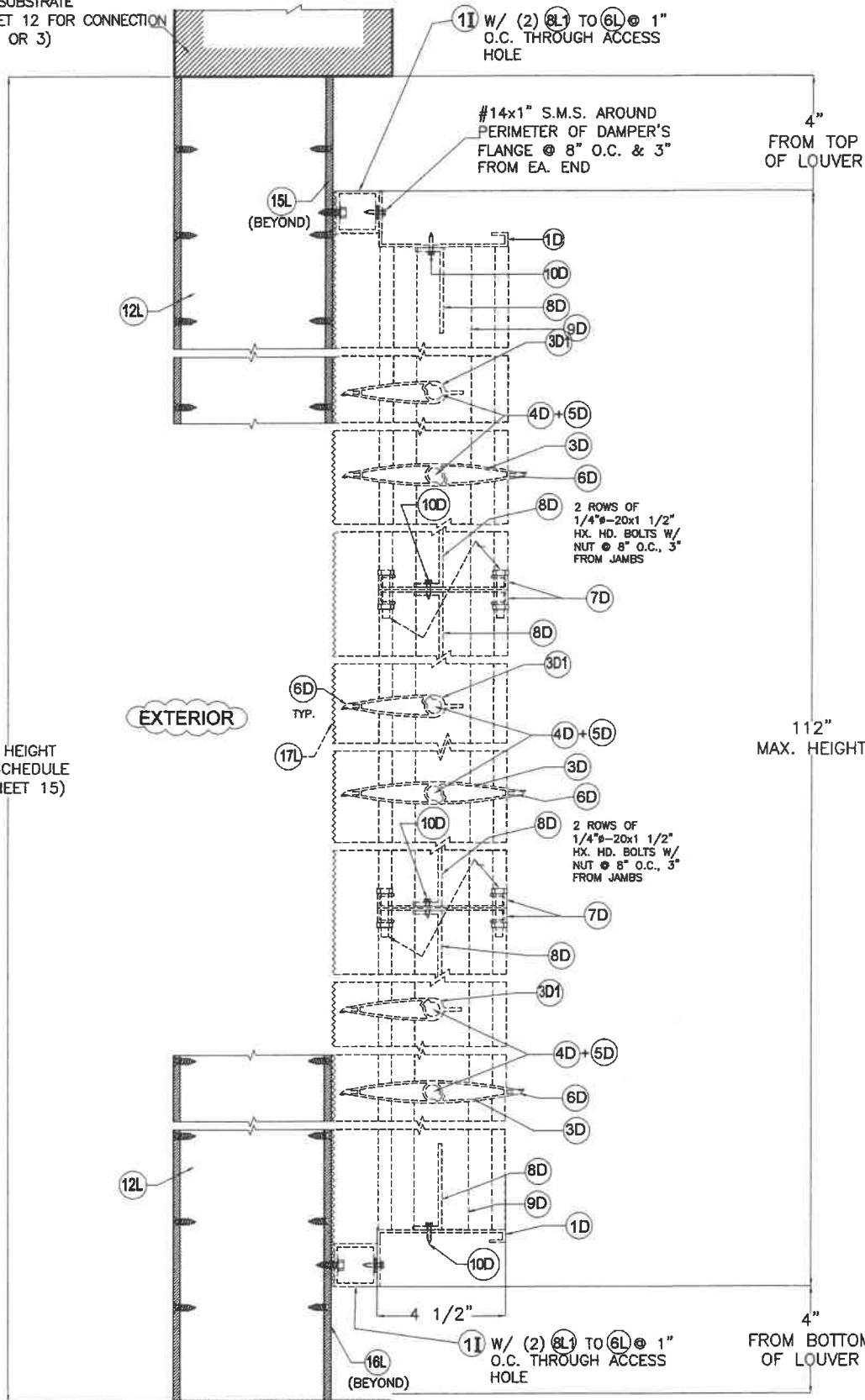
**SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ASSEMBLY**

**UNITED ENERTECH HOLDINGS, LLC**  
3005 SOUTH HICKORY ST. CHATTANOOGA, TN 37407  
159 GENCO DRIVE HARTFORD, AL 36344  
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DATE:  
**21-150**  
DRAWING No.

| REV. NO | DESCRIPTION | DATE     | REV. No | DESCRIPTION | DATE |
|---------|-------------|----------|---------|-------------|------|
| 1       | OLD 16-005  | 12-16-21 | 3       | -           | -    |
| 2       | -           | -        | 4       | -           | -    |

EXISTING SUBSTRATE  
(SEE SHEET 12 FOR CONNECTION  
DETAILS 2 OR 3)

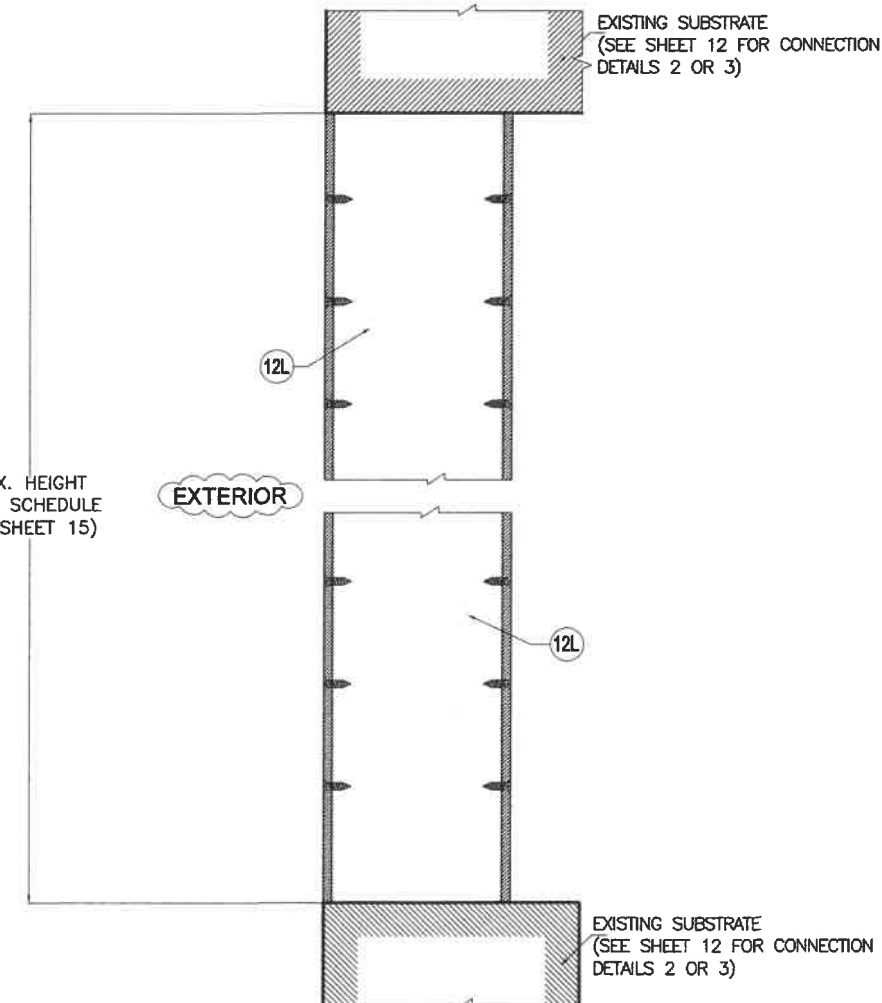


**SECTION B - B**  
SCALE: 3/16"=1"  
(DAMPER BEYOND)

MAX. HEIGHT  
(SEE SCHEDULE  
ON SHEET 15)

112"  
MAX. HEIGHT

MAX. HEIGHT  
(SEE SCHEDULE  
ON SHEET 15)



**SECTION B' - B'**  
SCALE: 3/16"=1"

STATE OF TEXAS  
WALTER A. TILLIT, JR.  
90691  
LICENSED PROFESSIONAL ENGINEER  
12/16/2021  
P.E. SEAL/SIGNATURE/DATE

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TEXAS LIC. # 90691  
FIRM REGISTRATION # F-13790

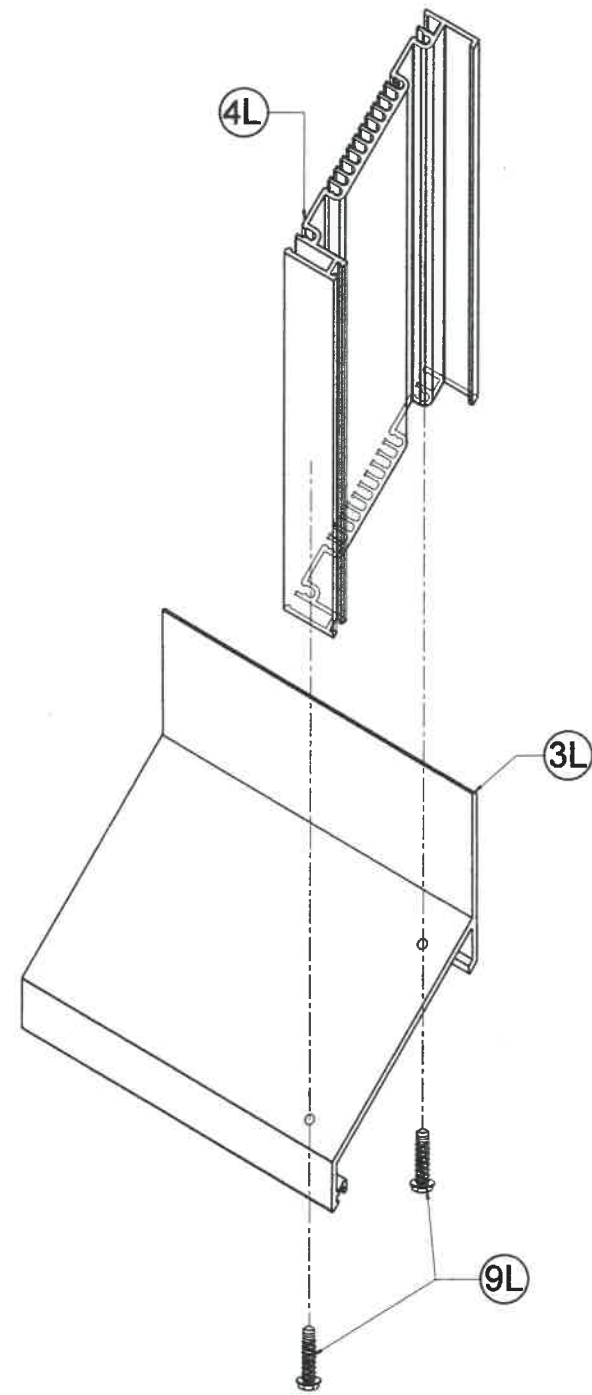
TEXAS DEPARTMENT OF INSURANCE - 2018

SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ASSEMBLY

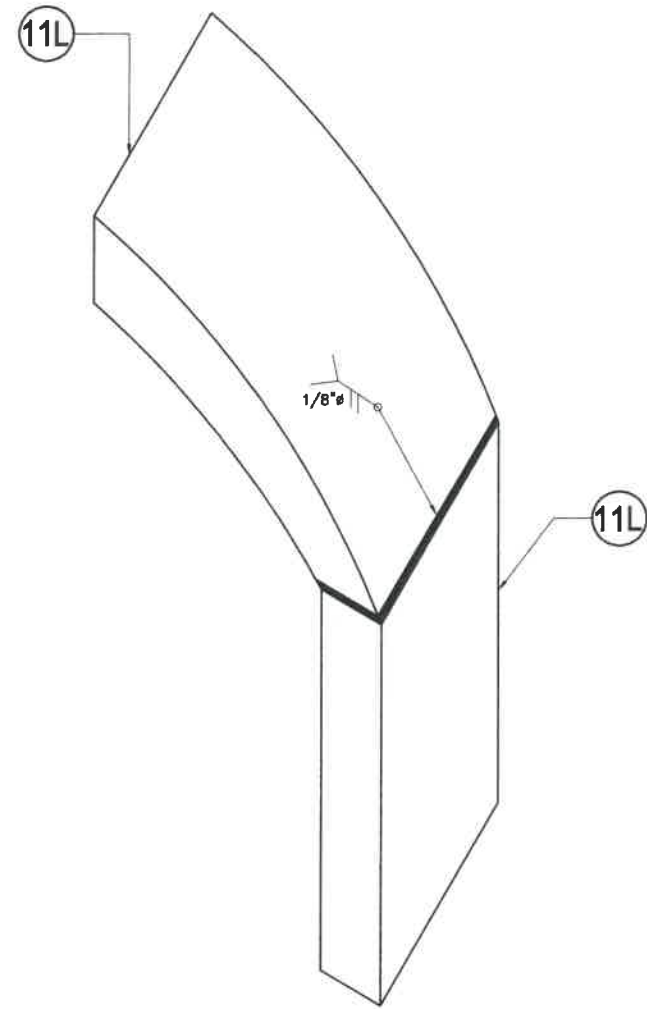
**UNITED ENERTECH HOLDINGS, LLC**  
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159 GENCO DRIVE HARTFORD, AL 36344  
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M.P.  
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DATE:  
**21-150**  
DRAWING No.

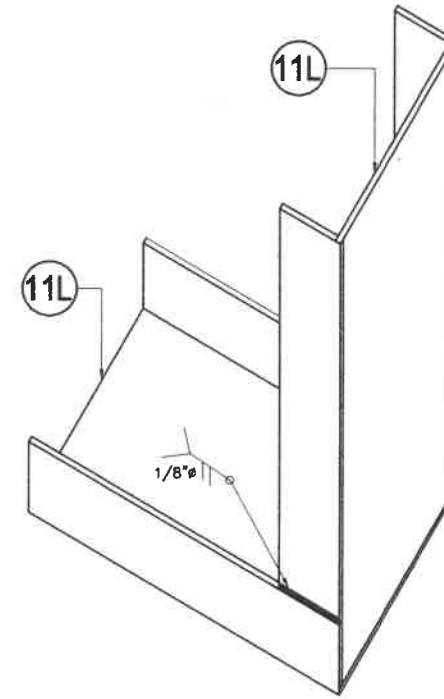
| REV. NO | DESCRIPTION | DATE     | REV. No | DESCRIPTION | DATE |
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| 1       | OLD 16-005  | 12-16-21 | 3       | -           | -    |
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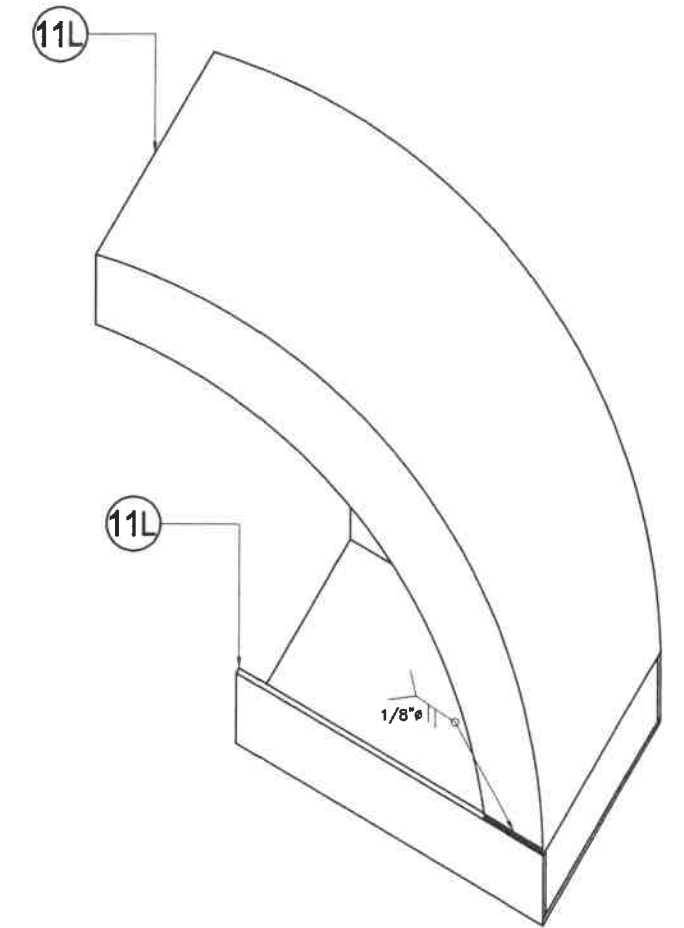
**DETAIL 1**  
**CORNER AT BOTTOM**  
N.T.S



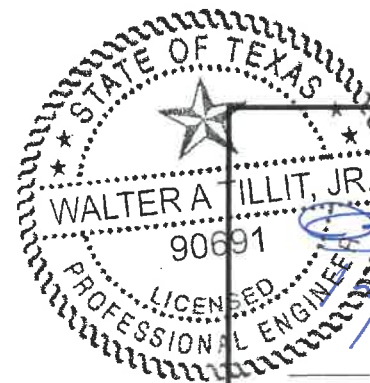
**DETAIL 2**  
**CORNER AT TOP**  
N.T.S



**DETAIL 3**  
**CORNER AT BOTTOM**  
N.T.S



**DETAIL 4**  
**CORNER AT BOTTOM**  
N.T.S



*Walter A. Tillit, Jr.*  
12/17/2021  
P.E. SEAL/SIGNATURE/DATE

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PHONE(305) 871-1530 FAX (305) 871-1531  
TEXAS LIC. # 90691  
FIRM REGISTRATION # F-13790

TEXAS DEPARTMENT OF INSURANCE - 2018

SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ASSEMBLY

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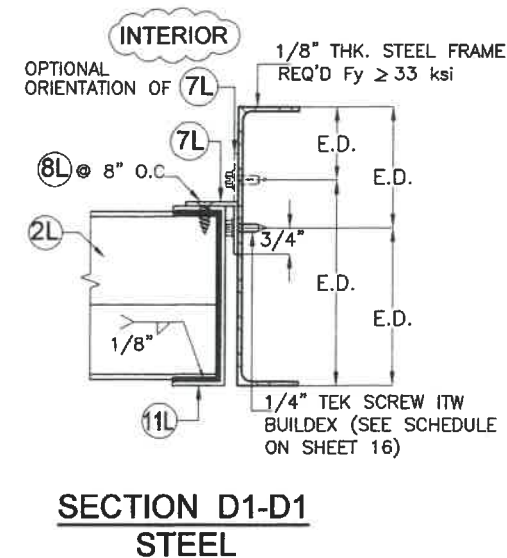
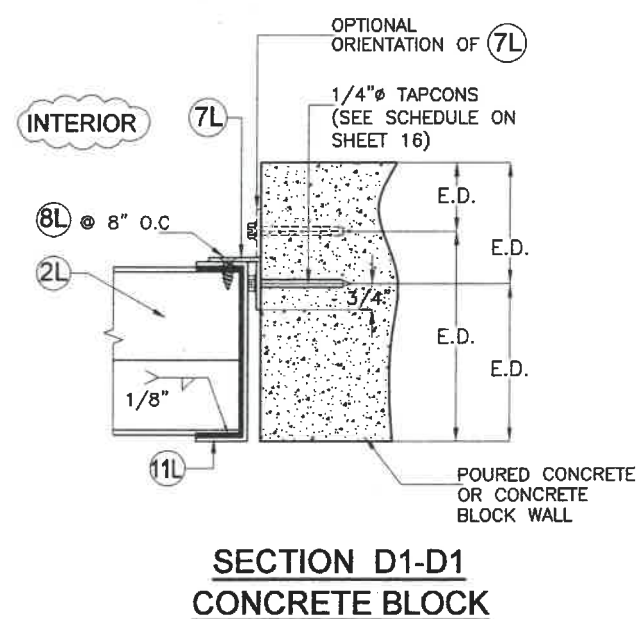
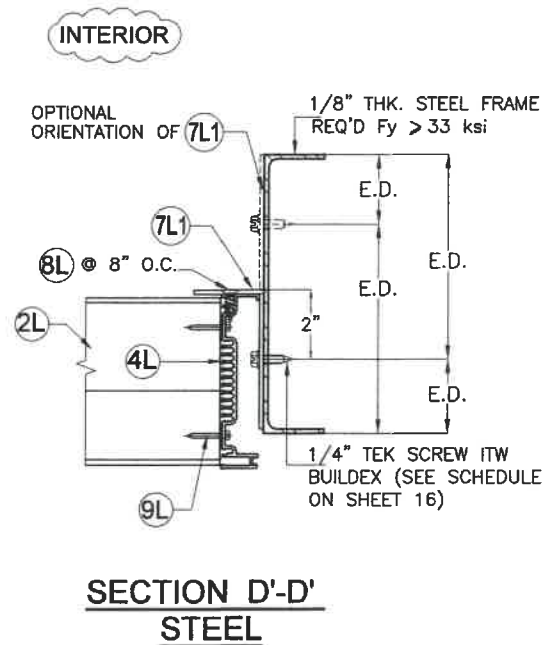
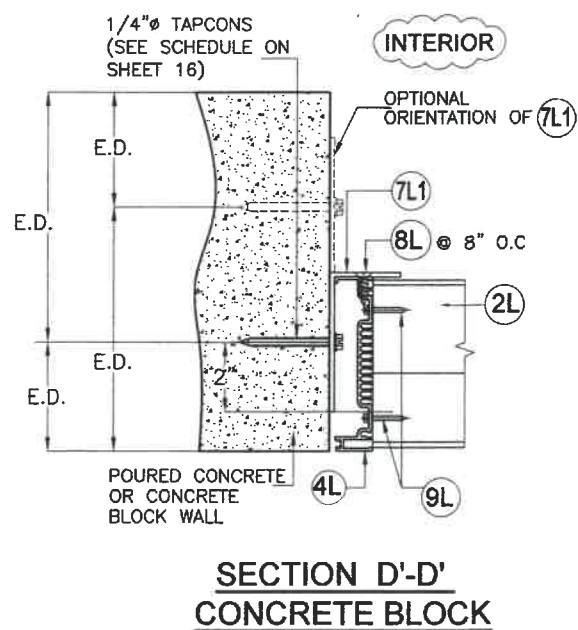
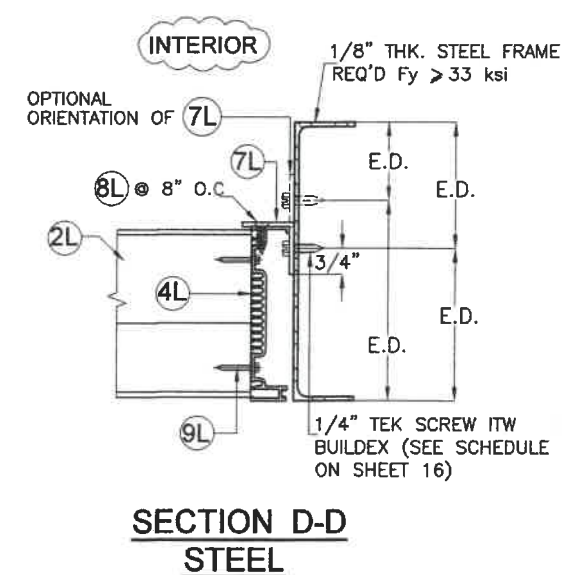
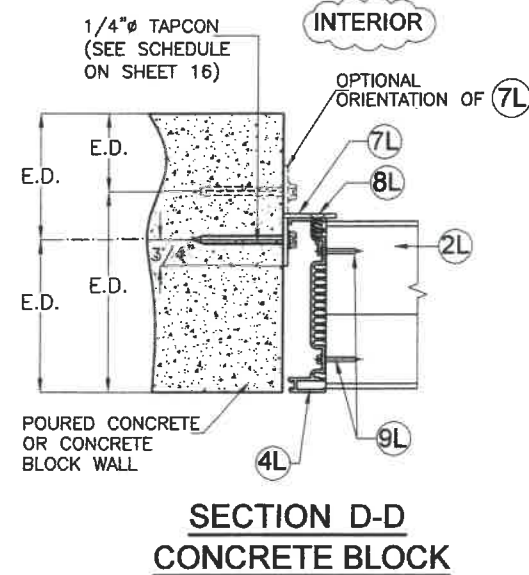
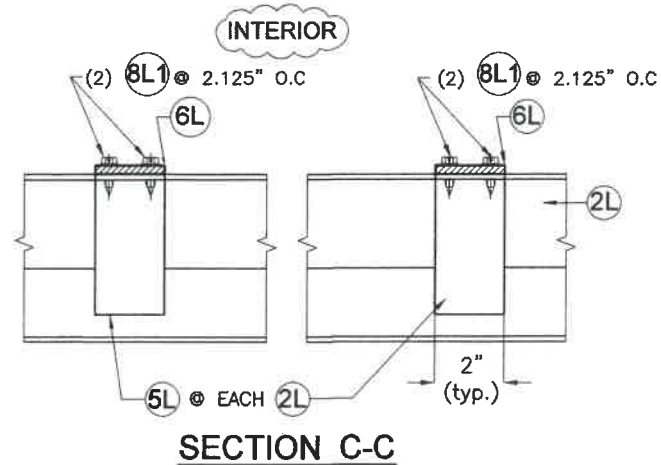
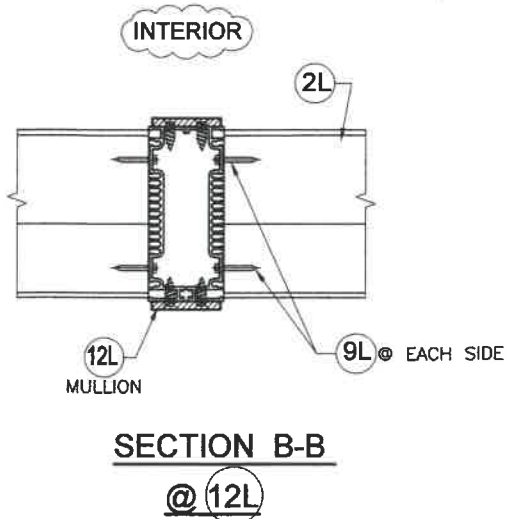
M.P.  
DRAWN BY:

12/16/2021  
DATE:

**21-150**  
DRAWING No.

| REV. NO | DESCRIPTION | DATE     | REV. No | DESCRIPTION | DATE |
|---------|-------------|----------|---------|-------------|------|
| 1       | OLD 16-005  | 12-16-21 | 3       | -           | -    |
| 2       | -           | -        | 4       | -           | -    |

SHEET 10 OF 16



# CONNECTION DETAILS

SCALE: 3/16"=1"

STATE OF TEXAS  
WALTER A. TILLIT, JR.  
90691  
LICENSED PROFESSIONAL ENGINEER  
P.E. SEAL/SIGNATURE/DATE

TEXAS DEPARTMENT OF INSURANCE - 2018

WALTER A. TILLIT Jr P.E.  
PROFESSIONAL ENGINEER  
6355 N.W. 36 STREET, STE. 305  
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TEXAS LIC. # 90691  
FIRM REGISTRATION # F-13790

SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ASSEMBLY

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3005 SOUTH HICKORY ST. CHATTANOOGA, TN 37407  
159 GENCO DRIVE HARTFORD, AL 36344  
PHONE: (423)698-7715 FAX:(423)698-6629

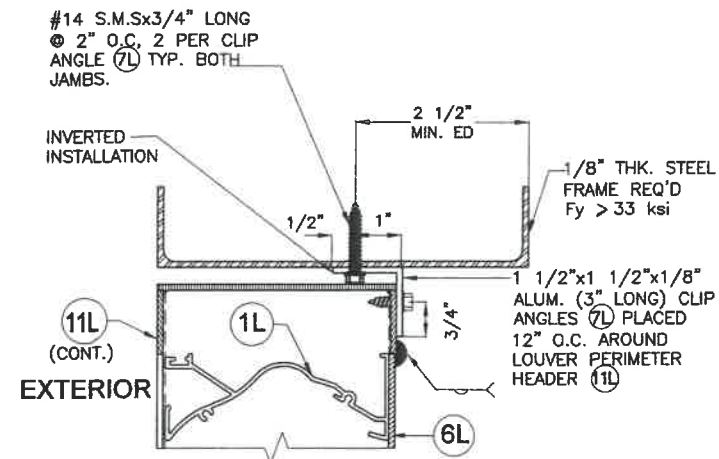
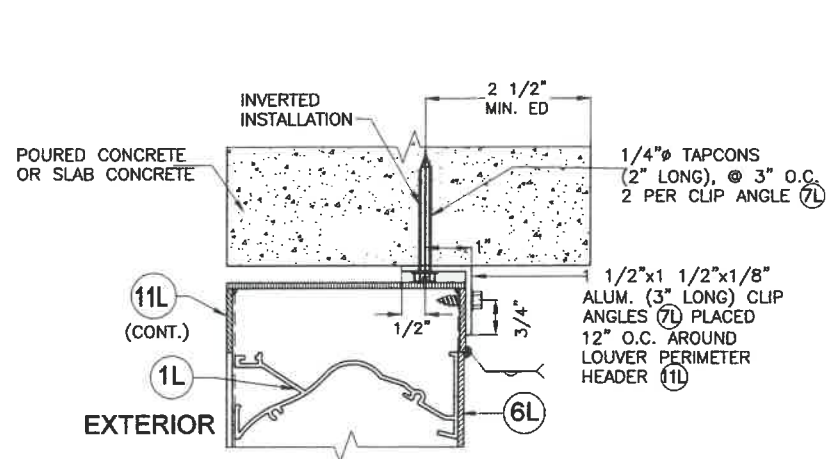
M.P. DRAWN BY:

12/16/2021 DATE:

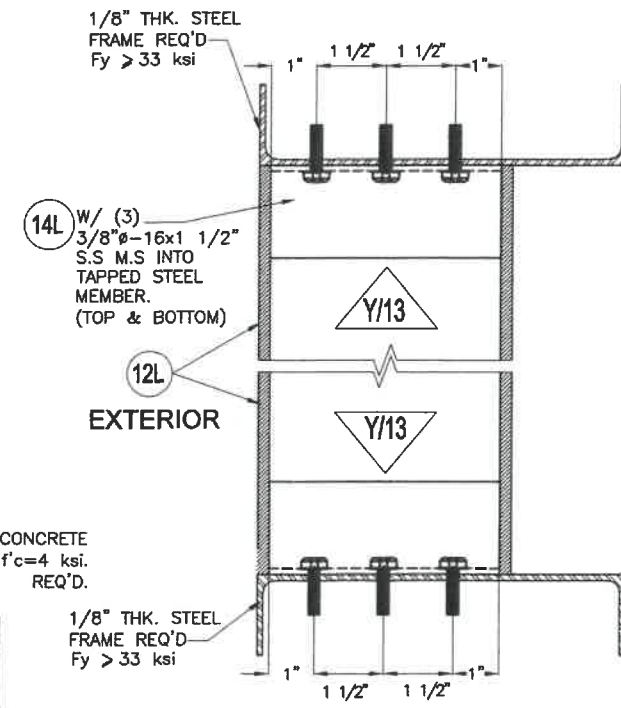
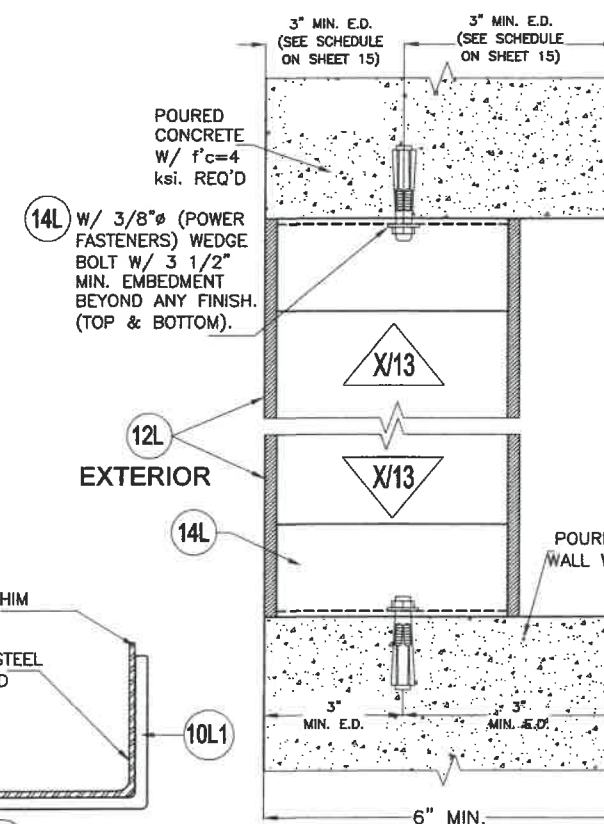
21-150 DRAWING No.

| REV. NO | DESCRIPTION | DATE     | REV. No | DESCRIPTION | DATE |
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| 1       | OLD 16-005  | 12-16-21 | 3       | -           | -    |
| 2       | -           | -        | 4       | -           | -    |

SHEET 11 OF 16

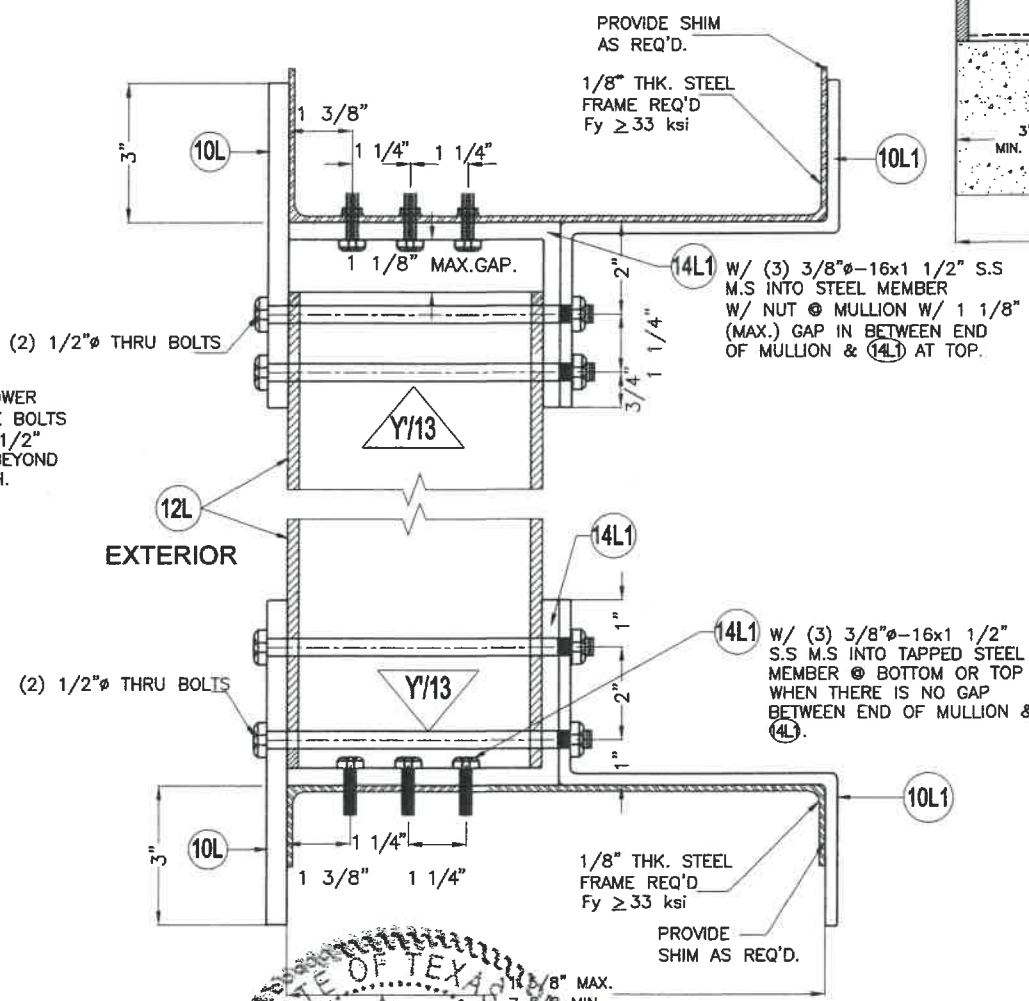
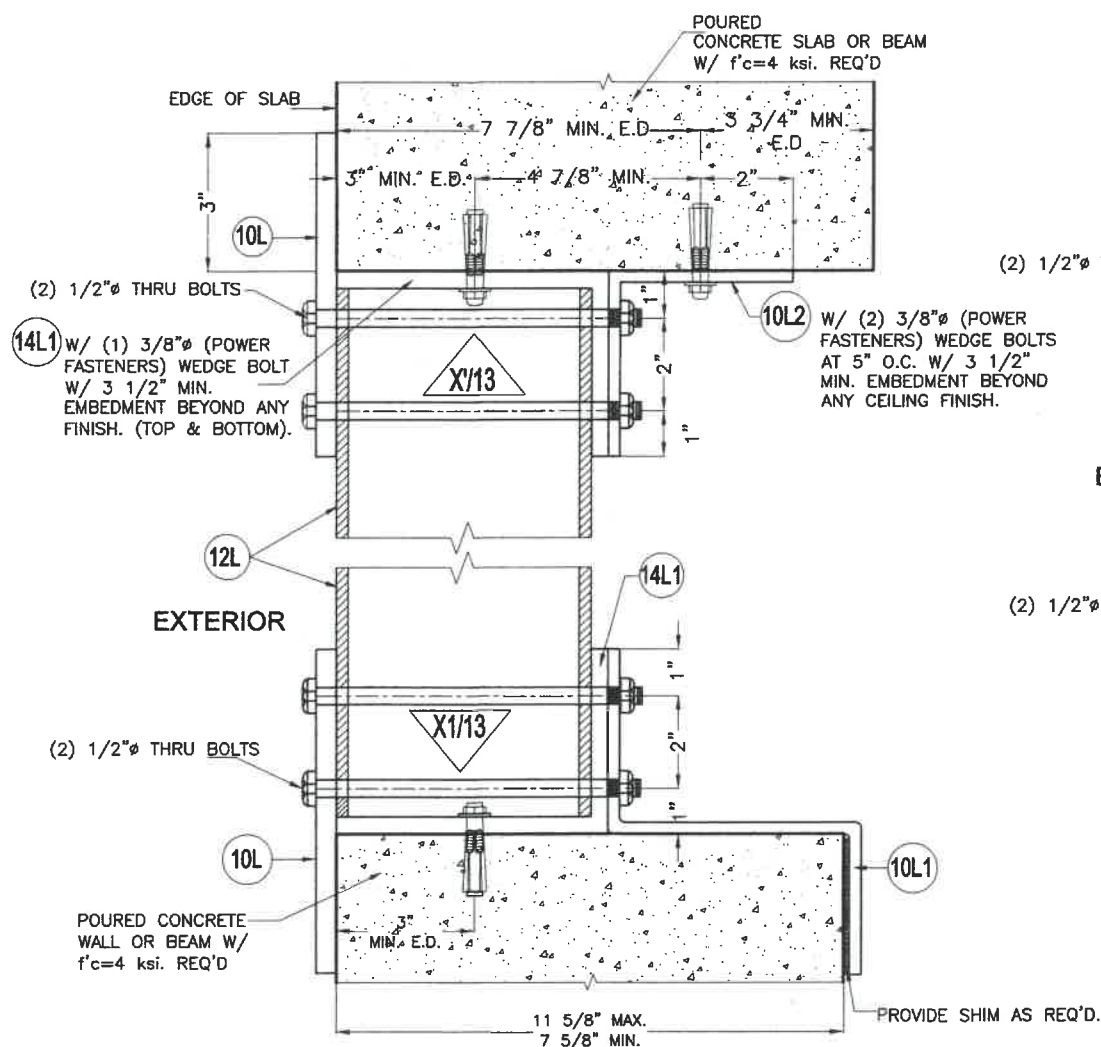


**DETAIL - 1**



**DETAIL - 2**

(SEE SHEET 15 FOR MAX. MULLION HEIGHT SCHEDULE GIVEN A MULLION SPACING AND DESIGN PRESSURE RATING FOR APPLICABILITY OF THIS DETAIL)



**CONNECTION DETAILS**

SCALE: 1/4" = 1"

NOTE: TOP & BOTTOM MOUNTINGS MAY BE INTERCHANGEABLE

**DETAIL - 3**

(SEE SHEET 15 FOR MAX. MULLION HEIGHT SCHEDULE GIVEN A MULLION SPACING AND DESIGN PRESSURE RATING FOR APPLICABILITY OF THIS DETAIL)

STATE OF TEXAS  
 WALTER A. TILLIT, JR.  
 90691  
 PROFESSIONAL ENGINEER  
 P.E. SEAL/SIGNATURE/DATE

**TEXAS DEPARTMENT OF INSURANCE - 2018**

WALTER A. TILLIT Jr P.E.  
 PROFESSIONAL ENGINEER  
 6355 N.W 36 STREET, STE. 305  
 VIRGINIA GARDENS, FL 33166  
 PHONE:(305) 871-1530 FAX (305) 871-1531  
 TEXAS LIC. # 90691  
 FIRM REGISTRATION # F-13790

**SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ASSEMBLY**

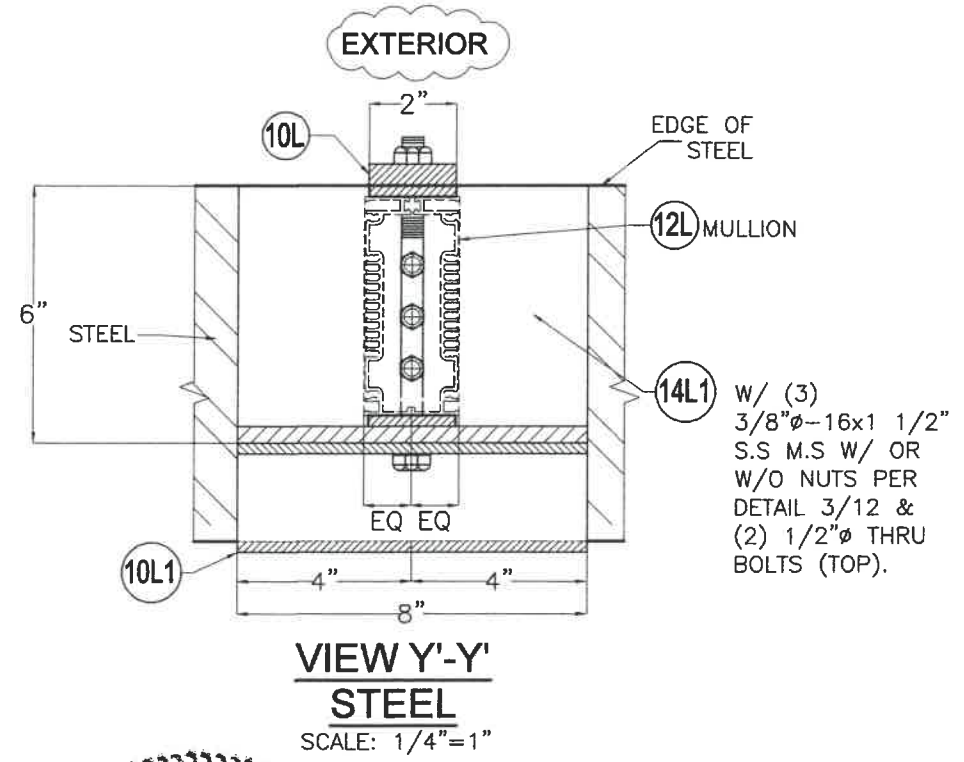
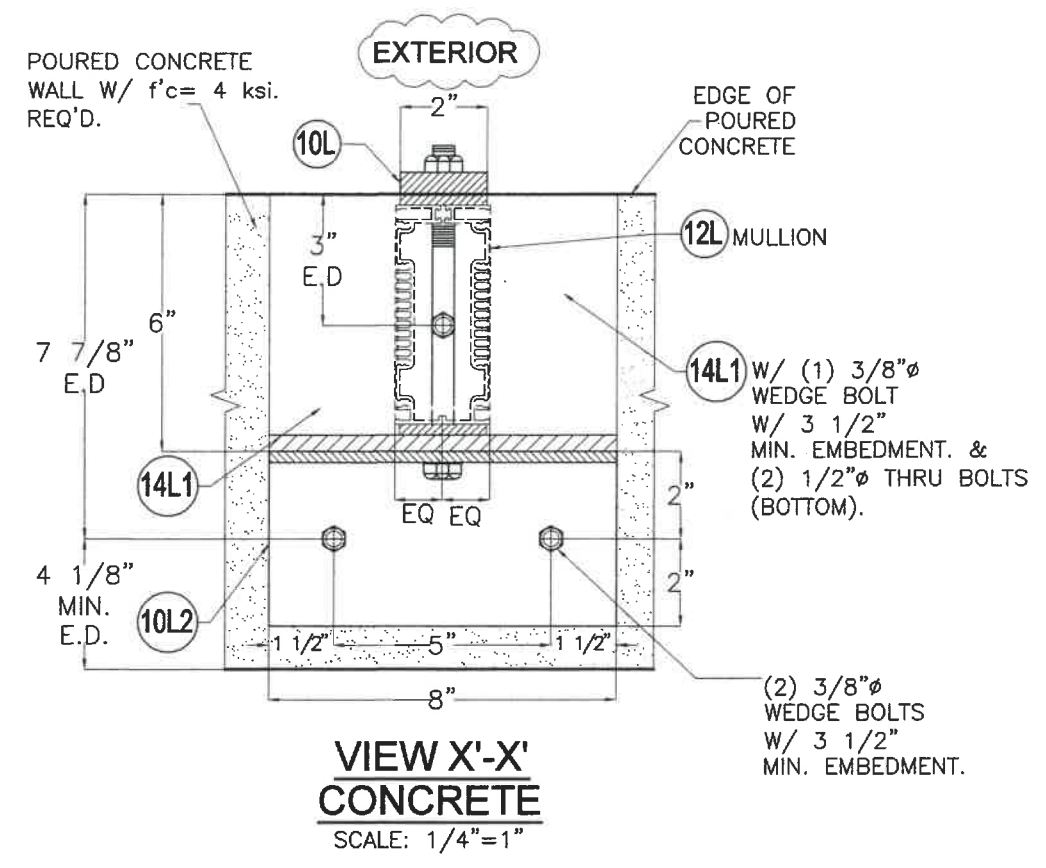
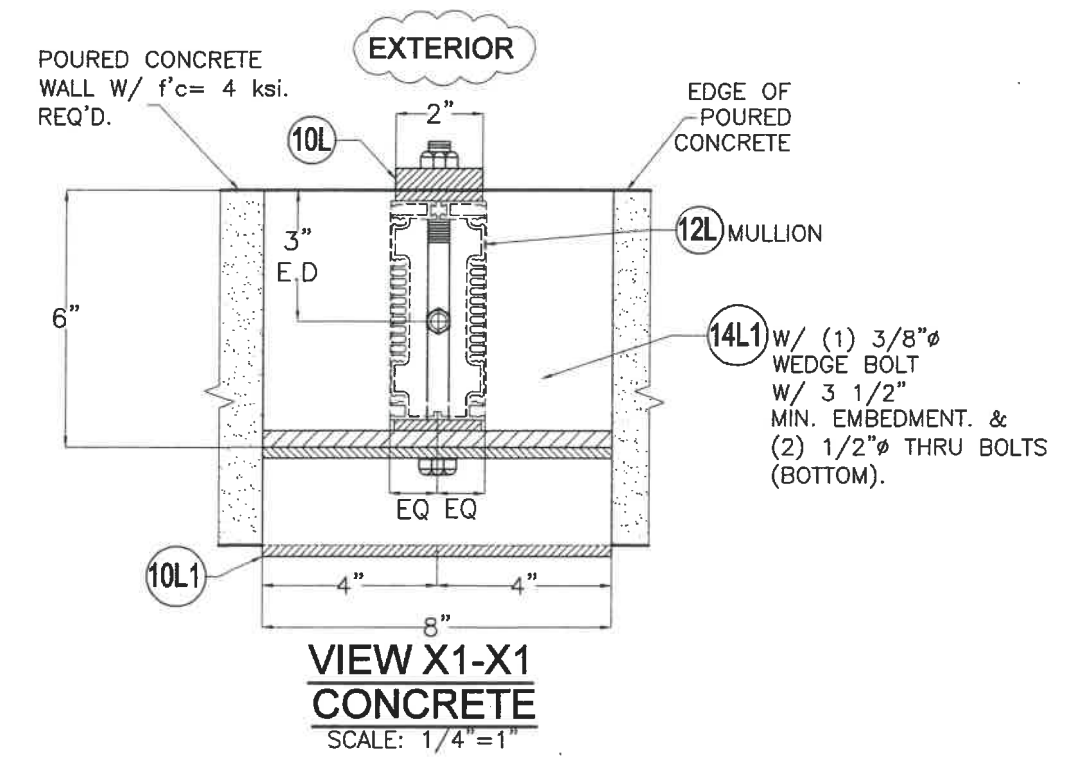
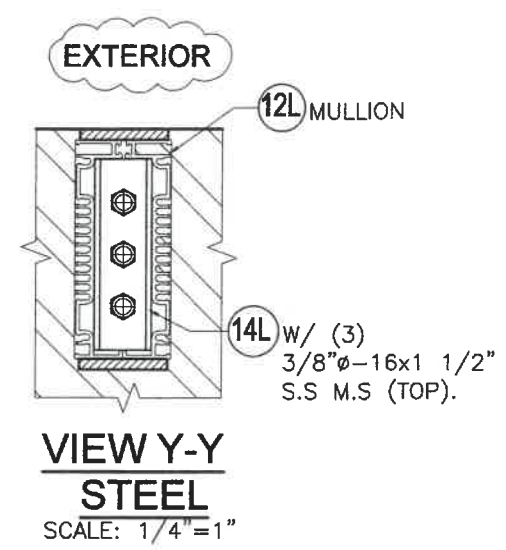
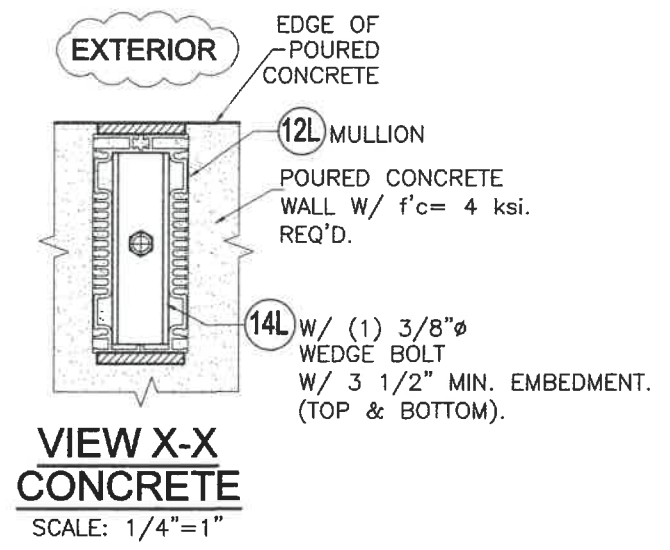
**UNITED ENERTECH HOLDINGS, LLC**  
 3005 SOUTH HICKORY ST. 159 GENCO DRIVE  
 CHATTANOOGA, TN 37407 HARTFORD, AL 36344  
 PHONE: (423)698-7715 FAX:(423)698-6629

M.P.  
 DRAWN BY:

12/16/2021  
 DATE:

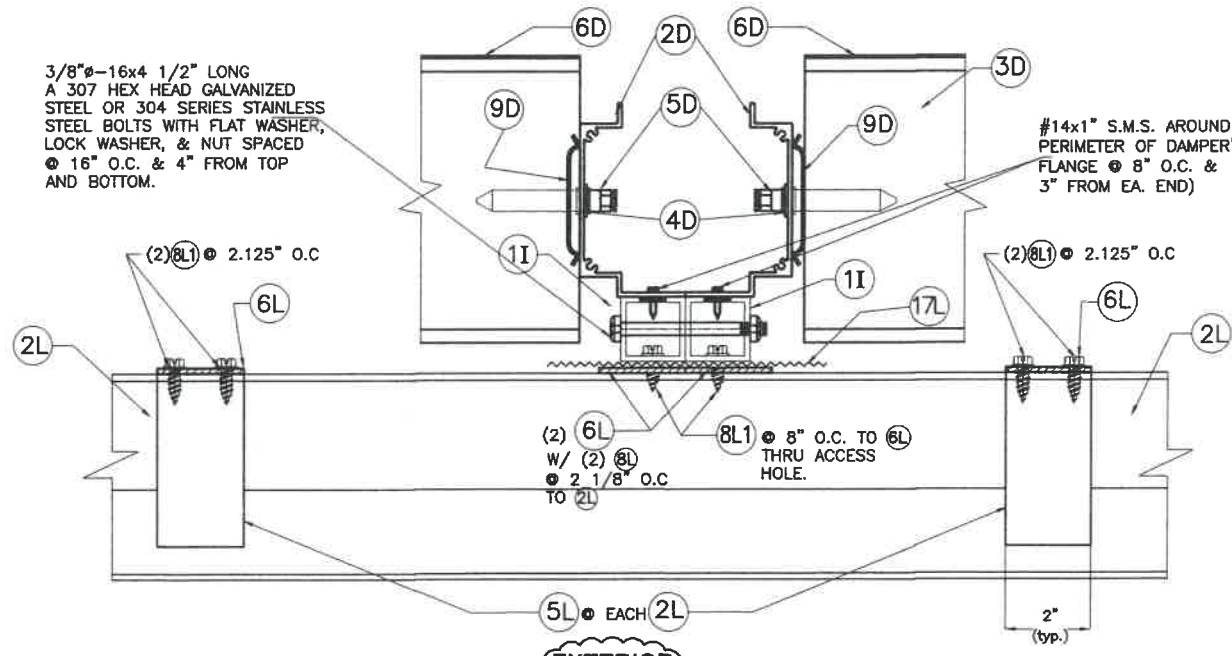
**21-150**  
 DRAWING No.

| REV. NO | DESCRIPTION | DATE     | REV. No | DESCRIPTION | DATE |
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| 1       | OLD 16-005  | 12-16-21 | 3       | -           | -    |
| 2       | -           | -        | 4       | -           | -    |

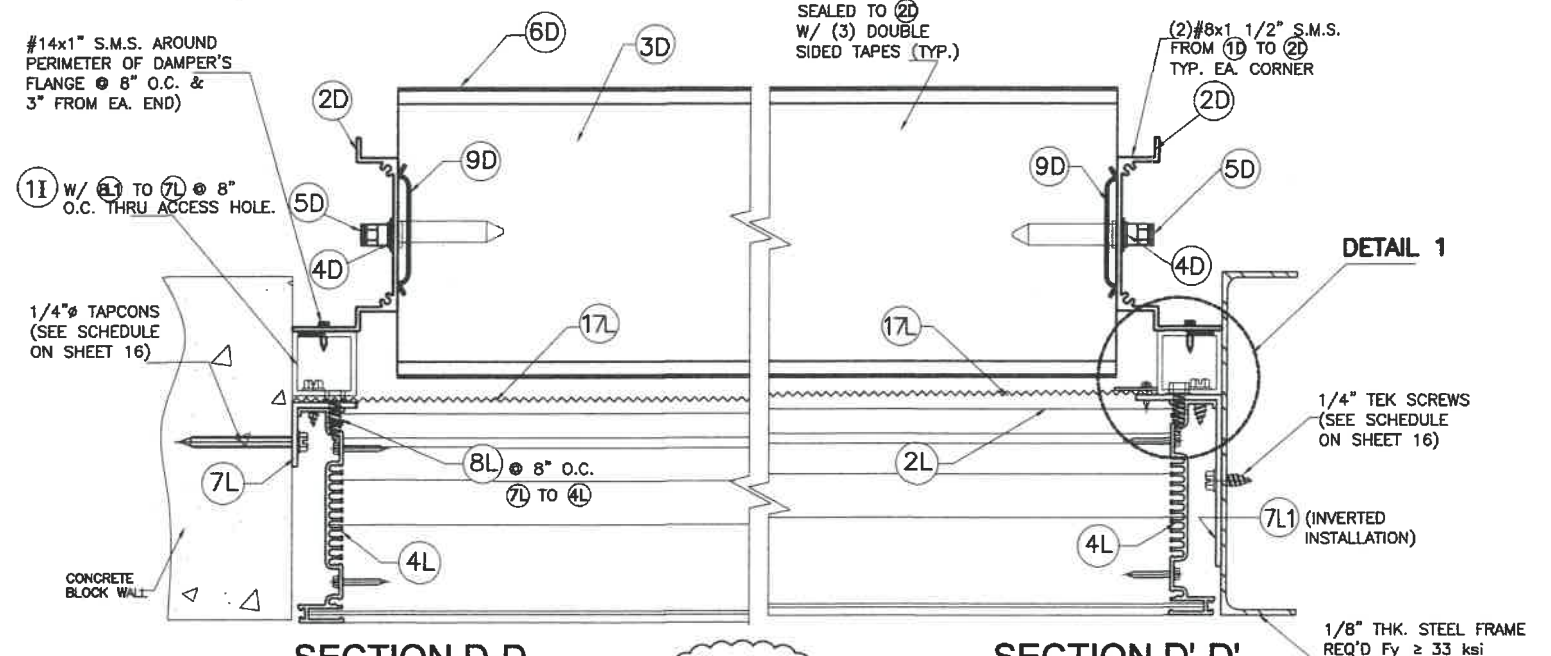


STATE OF TEXAS  
WALTER A. TILLIT JR.  
90691  
LICENSED PROFESSIONAL ENGINEER  
P.E. SEAL/SIGNATURE/DATE

| TEXAS DEPARTMENT OF INSURANCE - 2018  |             |          |         |   |                |
|---|-------------|----------|---------|---|----------------|
| WALTER A. TILLIT Jr P.E.<br>PROFESSIONAL ENGINEER<br>6355 N.W. 36 STREET, STE. 305<br>VIRGINIA GARDENS, FL 33166<br>PHONE(305) 871-1530 FAX (305) 871-1531<br>TEXAS LIC. # 90691<br>FIRM REGISTRATION # F-13790 |             |          |         | <b>SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ASSEMBLY</b><br><b>UNITED ENERTECH HOLDINGS, LLC</b><br>3005 SOUTH HICKORY ST. CHATTANOOGA, TN 37407<br>159 GENCO DRIVE HARTFORD, AL 36344<br>PHONE: (423)698-7715 FAX:(423)698-6629 |                |
|   |             |          |         | M.P. DRAWN BY:  | 12/16/2021     |
|   |             |          |         | DATE:   | 21-150         |
|   |             |          |         | DRAWING No.   | SHEET 13 OF 16 |
| REV. NO   | DESCRIPTION | DATE     | REV. No | DESCRIPTION   | DATE           |
| 1   | OLD 16-005  | 12-16-21 | 3       | -   | -              |
| 2   | -           | -        | 4       | -   | -              |

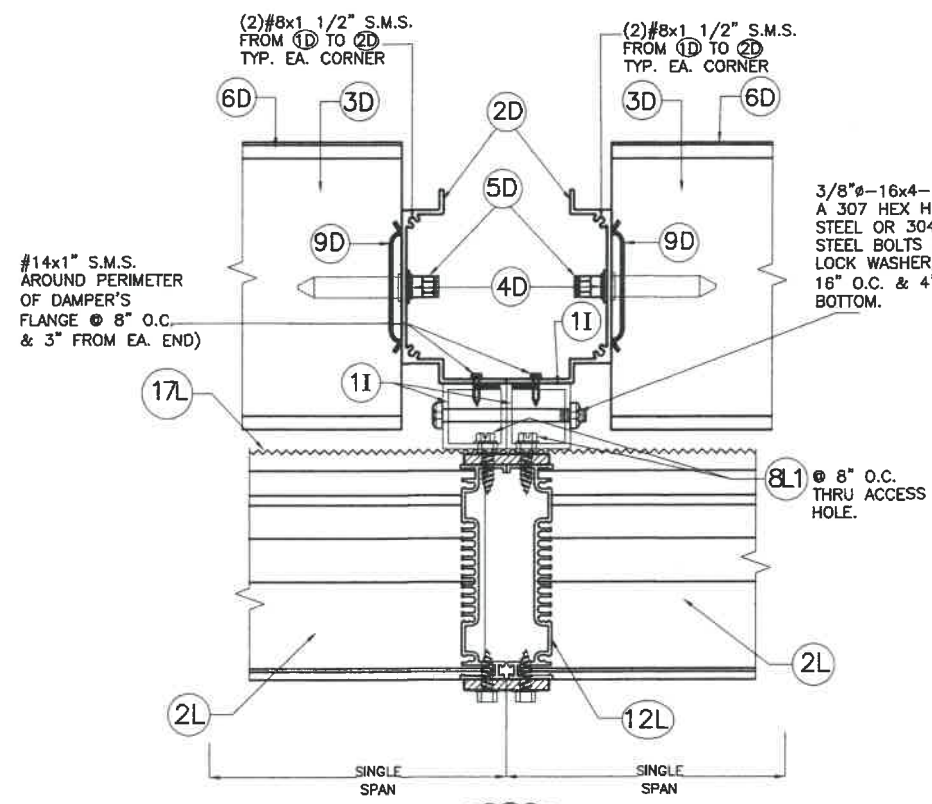


**EXTERIOR**  
**SECTION "C-C"**  
SCALE: 3/16"=1"

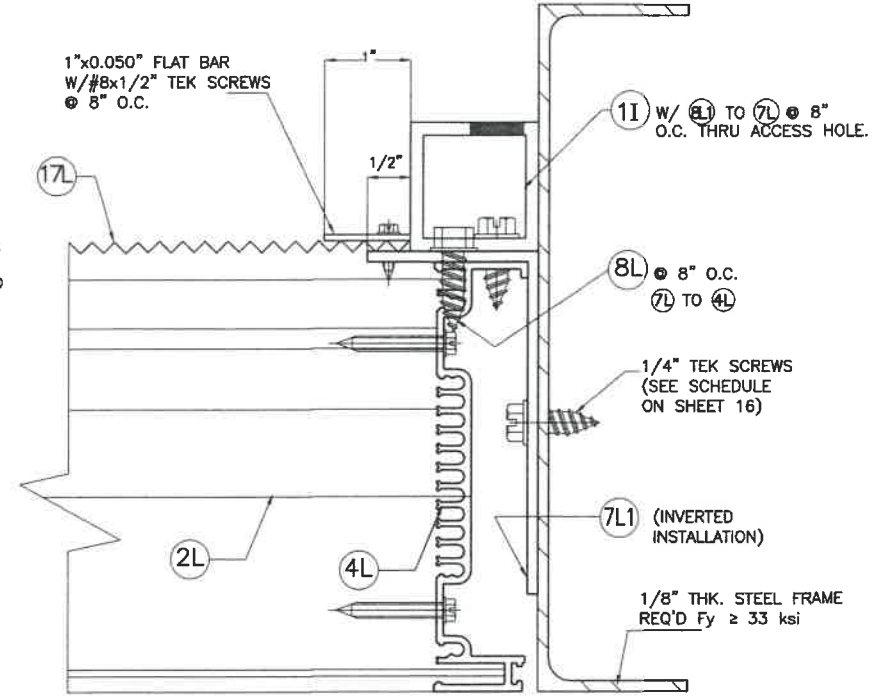


**SECTION D-D**  
SCALE: 3/16"=1"

**SECTION D'-D'**  
SCALE: 3/16"=1"



**EXTERIOR**  
**SECTION B-B**  
**@ MULLION 12L**  
SCALE: 3/16"=1"



**EXTERIOR**  
**DETAIL 1 (PLAN)**  
**1ST LOUVER**  
**BLANK OFF LOCATION**  
SCALE: 3/8"=1"

WALTER A. TILLIT, JR.  
90691  
LICENSED PROFESSIONAL ENGINEER  
12/17/2021  
P.E. SEAL/SIGNATURE/DATE

TEXAS DEPARTMENT OF INSURANCE - 2018

WALTER A. TILLIT Jr P.E.  
PROFESSIONAL ENGINEER  
6355 N.W. 36 STREET, STE. 305  
VIRGINIA GARDENS, FL 33166  
PHONE (305) 871-1530 FAX (305) 871-1531  
TEXAS LIC. # 90691  
FIRM REGISTRATION # F-13790

SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ASSEMBLY

**UNITED ENERTECH HOLDINGS, LLC**  
3005 SOUTH HICKORY ST. CHATTANOOGA, TN 37407  
159 GENCO DRIVE HARTFORD, AL 36344  
PHONE: (423)698-7715 FAX:(423)698-6629

M.P.  
DRAWN BY:  
12/16/2021  
DATE:  
**21-150**  
DRAWING No.  
SHEET 14 OF 16

| REV. NO | DESCRIPTION | DATE     | REV. No | DESCRIPTION | DATE |
|---------|-------------|----------|---------|-------------|------|
| 1       | OLD 16-005  | 12-16-21 | 3       | -           | -    |
| 2       | -           | -        | 4       | -           | -    |

**MAXIMUM LOUVER SYSTEM HEIGHT (ft) SCHEDULE FOR A GIVEN DESIGN PRESSURE RATING (psf) AND A 12" MULLION SPACING (ft). APPLICABLE TO MULLION CONNECTION TO CONCRETE OR STEEL TOP AND BOTTOM COVERED BY DETAIL 2, SHEET 12 W/ ED. = 3" (FOR CONCRETE W/ MIN. f<sub>c</sub> = 4 ksi.)**

| Design Pressure Rating (psf) | Concrete    |             | Mullion Spacing (ft) | Steel       |             |        |
|------------------------------|-------------|-------------|----------------------|-------------|-------------|--------|
|                              | Height (ft) | Height (ft) |                      | Height (ft) | Height (ft) |        |
| 40                           | 48          | 10'-0"      | 10'-0"               | 48          | 4'-11"      | 6'-10" |
|                              | 60          | 9'-10"      | 10'-0"               | 60          | 3'-11"      | 5'-5"  |
|                              | 72          | 8'-3"       | 10'-0"               | 72          | 3'-3"       | 4'-7"  |
| 45                           | 48          | 10'-0"      | 10'-0"               | 48          | 4'-8"       | 6'-6"  |
|                              | 60          | 8'-9"       | 10'-0"               | 60          | 3'-9"       | 5'-2"  |
|                              | 72          | 7'-4"       | 10'-0"               | 72          | 3'-2"       | 4'-4"  |
| 50                           | 48          | 9'-10"      | 10'-0"               | 48          | 4'-6"       | 6'-2"  |
|                              | 60          | 7'-11"      | 10'-0"               | 60          | 3'-7"       | 4'-12" |
|                              | 72          | 6'-7"       | 9'-1"                | 72          | 2'-12"      | 4'-2"  |
| 55                           | 48          | 8'-12"      | 10'-0"               | 48          | 4'-3"       | 5'-11" |
|                              | 60          | 7'-2"       | 9'-11"               | 60          | 3'-5"       | 4'-9"  |
|                              | 72          | 5'-12"      | 8'-3"                | 72          | 2'-10"      | 3'-11" |
| 60                           | 48          | 8'-3"       | 10'-0"               | 48          | 4'-1"       | 5'-8"  |
|                              | 60          | 6'-7"       | 9'-1"                | 60          | 3'-3"       | 4'-7"  |
|                              | 72          | 5'-6"       | 7'-7"                | 72          | 2'-9"       | 3'-9"  |
| 65                           | 48          | 7'-7"       | 10'-0"               | 48          | 3'-11"      | 5'-5"  |
|                              | 60          | 6'-1"       | 8'-5"                | 60          | 3'-2"       | 4'-4"  |
|                              | 72          | 5'-1"       | 6'-12"               | 72          | 2'-8"       | 3'-8"  |
| 70                           | 48          | 7'-1"       | 9'-9"                | 48          | 3'-10"      | 5'-3"  |
|                              | 60          | 5'-8"       | 7'-10"               | 60          | 3'-0"       | 4'-2"  |
|                              | 72          | 4'-8"       | 6'-6"                | 72          | 2'-6"       | 3'-6"  |
| 75                           | 48          | 6'-7"       | 9'-1"                | 48          | 3'-8"       | 5'-1"  |
|                              | 60          | 5'-3"       | 7'-3"                | 60          | 2'-11"      | 4'-0"  |
|                              | 72          | 4'-5"       | 6'-1"                | 72          | 2'-5"       | 3'-4"  |
| 80                           | 48          | 6'-2"       | 8'-6"                | 48          | 3'-6"       | 4'-10" |
|                              | 60          | 4'-11"      | 6'-10"               | 60          | 2'-10"      | 3'-11" |
|                              | 72          | 4'-1"       | 5'-8"                | 72          | 2'-4"       | 3'-3"  |
| 85                           | 48          | 5'-10"      | 8'-0"                | 48          | 3'-5"       | 4'-8"  |
|                              | 60          | 4'-8"       | 6'-5"                | 60          | 2'-9"       | 3'-9"  |
|                              | 72          | 3'-10"      | 5'-4"                | 72          | 2'-3"       | 3'-2"  |
| 90                           | 48          | 5'-6"       | 7'-7"                | 48          | 3'-3"       | 4'-7"  |
|                              | 60          | 4'-5"       | 6'-1"                | 60          | 2'-8"       | 3'-8"  |
|                              | 72          | 3'-8"       | 5'-1"                | 72          | 2'-2"       | 3'-0"  |
| 95                           | 48          | 5'-2"       | 7'-2"                |             |             |        |
|                              | 60          | 4'-2"       | 5'-9"                |             |             |        |
|                              | 72          | 3'-6"       | 4'-9"                |             |             |        |

**MAXIMUM LOUVER SYSTEM HEIGHT (ft) SCHEDULE FOR A GIVEN DESIGN PRESSURE RATING (psf) AND A 12" MULLION SPACING (ft). APPLICABLE TO MULLION CONNECTION TO CONCRETE OR STEEL TOP AND BOTTOM COVERED BY DETAIL 2, SHEET 12 W/ ED. = 4" (FOR CONCRETE W/ MIN. f<sub>c</sub> = 4 ksi.)**

| Design Pressure Rating (psf) | Concrete    |             | Mullion Spacing (ft) | Steel       |             |        |
|------------------------------|-------------|-------------|----------------------|-------------|-------------|--------|
|                              | Height (ft) | Height (ft) |                      | Height (ft) | Height (ft) |        |
| 40                           | 48          | 10'-0"      | 10'-0"               | 48          | 6'-12"      | 7'-3"  |
|                              | 60          | 10'-0"      | 10'-0"               | 60          | 5'-7"       | 5'-10" |
|                              | 72          | 10'-0"      | 10'-0"               | 72          | 4'-8"       | 4'-10" |
| 45                           | 48          | 10'-0"      | 10'-0"               | 48          | 6'-8"       | 6'-11" |
|                              | 60          | 10'-0"      | 10'-0"               | 60          | 5'-4"       | 5'-6"  |
|                              | 72          | 10'-0"      | 10'-0"               | 72          | 4'-5"       | 4'-7"  |
| 50                           | 48          | 10'-0"      | 10'-0"               | 48          | 6'-4"       | 6'-7"  |
|                              | 60          | 10'-0"      | 10'-0"               | 60          | 5'-1"       | 5'-3"  |
|                              | 72          | 9'-4"       | 9'-8"                | 72          | 4'-3"       | 4'-5"  |
| 55                           | 48          | 10'-0"      | 10'-0"               | 48          | 6'-1"       | 6'-4"  |
|                              | 60          | 10'-0"      | 10'-0"               | 60          | 4'-10"      | 5'-1"  |
|                              | 72          | 8'-6"       | 8'-10"               | 72          | 4'-1"       | 4'-3"  |
| 60                           | 48          | 10'-0"      | 10'-0"               | 48          | 5'-10"      | 6'-1"  |
|                              | 60          | 9'-4"       | 9'-8"                | 60          | 4'-8"       | 4'-10" |
|                              | 72          | 7'-9"       | 8'-1"                | 72          | 3'-11"      | 4'-0"  |
| 65                           | 48          | 10'-0"      | 10'-0"               | 48          | 5'-7"       | 5'-10" |
|                              | 60          | 8'-7"       | 8'-11"               | 60          | 4'-6"       | 4'-8"  |
|                              | 72          | 7'-2"       | 7'-5"                | 72          | 3'-9"       | 3'-10" |
| 70                           | 48          | 9'-12"      | 10'-0"               | 48          | 5'-5"       | 5'-7"  |
|                              | 60          | 7'-12"      | 8'-4"                | 60          | 4'-4"       | 4'-6"  |
|                              | 72          | 6'-8"       | 6'-11"               | 72          | 3'-7"       | 3'-9"  |
| 75                           | 48          | 9'-4"       | 9'-8"                | 48          | 5'-2"       | 5'-5"  |
|                              | 60          | 7'-6"       | 7'-9"                | 60          | 4'-2"       | 4'-4"  |
|                              | 72          | 6'-3"       | 6'-5"                | 72          | 3'-5"       | 3'-7"  |
| 80                           | 48          | 8'-9"       | 9'-1"                | 48          | 4'-12"      | 5'-2"  |
|                              | 60          | 6'-12"      | 7'-3"                | 60          | 3'-12"      | 4'-2"  |
|                              | 72          | 5'-10"      | 6'-1"                | 72          | 3'-4"       | 3'-6"  |
| 85                           | 48          | 8'-3"       | 8'-7"                | 48          | 4'-10"      | 5'-0"  |
|                              | 60          | 6'-7"       | 6'-10"               | 60          | 3'-10"      | 4'-0"  |
|                              | 72          | 5'-6"       | 5'-8"                | 72          | 3'-3"       | 3'-4"  |
| 90                           | 48          | 7'-9"       | 8'-1"                | 48          | 4'-8"       | 4'-10" |
|                              | 60          | 6'-3"       | 6'-5"                | 60          | 3'-9"       | 3'-10" |
|                              | 72          | 5'-2"       | 5'-5"                | 72          | 3'-1"       | 3'-3"  |
| 95                           | 48          | 7'-4"       | 7'-8"                |             |             |        |
|                              | 60          | 5'-11"      | 6'-1"                |             |             |        |
|                              | 72          | 4'-11"      | 5'-1"                |             |             |        |

**MAXIMUM LOUVER SYSTEM HEIGHT (ft) SCHEDULE FOR A GIVEN DESIGN PRESSURE RATING (psf) AND A 12" MULLION SPACING (ft). APPLICABLE TO MULLION CONNECTION TO CONCRETE OR STEEL TOP AND BOTTOM COVERED BY DETAIL 3, SHEET 12 W/ ED. = 3" (FOR CONCRETE W/ MIN. f<sub>c</sub> = 4 ksi.)**

| Design Pressure Rating (psf) | Concrete    |             | Mullion Spacing (ft) | Steel       |             |
|------------------------------|-------------|-------------|----------------------|-------------|-------------|
|                              | Height (ft) | Height (ft) |                      | Height (ft) | Height (ft) |
| 40                           | 48          | 10'-0"      | 100                  | 48          | 9'-2"       |
|                              | 60          | 10'-0"      | 100                  | 60          | 8'-6"       |
|                              | 72          | 10'-0"      | 100                  | 72          | 8'-0"       |
| 45                           | 48          | 10'-0"      | 105                  | 48          | 9'-0"       |
|                              | 60          | 10'-0"      | 105                  | 60          | 8'-5"       |
|                              | 72          | 10'-0"      | 105                  | 72          | 7'-11"      |
| 50                           | 48          | 10'-0"      | 110                  | 48          | 8'-11"      |
|                              | 60          | 10'-0"      | 110                  | 60          | 8'-3"       |
|                              | 72          | 10'-0"      | 110                  | 72          | 7'-9"       |
| 55                           | 48          | 10'-0"      | 115                  | 48          | 8'-9"       |
|                              | 60          | 10'-0"      | 115                  | 60          | 8'-2"       |
|                              | 72          | 9'-9"       | 115                  | 72          | 7'-8"       |
| 60                           | 48          | 10'-0"      | 120                  | 48          | 8'-8"       |
|                              | 60          | 10'-0"      | 120                  | 60          | 8'-0"       |
|                              | 72          | 9'-6"       | 120                  | 72          | 7'-6"       |
| 65                           | 48          | 10'-0"      | 125                  | 48          | 8'-6"       |
|                              | 60          | 9'-10"      | 125                  | 60          | 7'-11"      |
|                              | 72          | 9'-3"       | 125                  | 72          | 7'-5"       |
| 70                           | 48          | 10'-0"      | 130                  | 48          | 8'-5"       |
|                              | 60          | 9'-7"       | 130                  | 60          | 7'-10"      |
|                              | 72          | 9'-0"       | 130                  | 72          | 7'-4"       |
| 75                           | 48          | 10'-0"      | 135                  | 48          | 8'-4"       |
|                              | 60          | 9'-4"       | 135                  | 60          | 7'-8"       |
|                              | 72          | 8'-10"      | 135                  | 72          | 7'-3"       |
| 80                           | 48          | 9'-11"      | 140                  | 48          | 8'-2"       |
|                              | 60          | 9'-2"       | 140                  | 60          | 7'-7"       |
|                              | 72          | 8'-8"       | 140                  | 72          | 7'-2"       |
| 85                           | 48          | 9'-8"       | 145                  | 48          | 8'-1"       |
|                              | 60          | 8'-12"      | 145                  | 60          | 7'-6"       |
|                              | 72          | 8'-6"       | 145                  | 72          | 7'-1"       |
| 90                           | 48          | 9'-6"       | 150                  | 48          | 8'-0"       |
|                              | 60          | 8'-10"      | 150                  | 60          | 7'-5"       |
|                              | 72          | 8'-4"       | 150                  | 72          | 7'-0"       |
| 95                           | 48          | 9'-4"       |                      |             |             |
|                              | 60          | 8'-8"       |                      |             |             |
|                              | 72          | 8'-2"       |                      |             |             |

NOTE: TOP & BOTTOM MOUNTINGS AT DETAIL 3 MAY BE INTERCHANGEABLE.

**MAXIMUM MULLION (12") HEIGHT FOR MULTIPLE LOUVER SYSTEM SED 5.1 W/ OR W/O DAMPER FOR A GIVEN DESIGN PRESSURE RATING, MULLION SPACING AND CONNECTION TYPE FOR CONNECTIONS INTO CONCRETE OR STEEL SUBSTRATES.**

STATE OF TEXAS  
 WALTER A. TILLIT, JR.  
 90691  
 LICENSED PROFESSIONAL ENGINEER  
 P.E. SEAL/SIGNATURE/DATE

TEXAS DEPARTMENT OF INSURANCE - 2018

SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ASSEMBLY

UNITED ENERTECH HOLDINGS, LLC  
 3005 SOUTH HICKORY ST. CHATTANOOGA, TN 37407  
 159 GENCO DRIVE HARTFORD, AL 36344  
 PHONE: (423)698-7715 FAX:(423)698-6629

M.P. DRAWN BY: 12/16/2021 DATE: 21-150 DRAWING No. SHEET 15 OF 16

| REV. NO | DESCRIPTION | DATE     | REV. No | DESCRIPTION | DATE |
|---------|-------------|----------|---------|-------------|------|
| 1       | OLD 16-005  | 12-16-21 | 3       | -           | -    |
| 2       | -           | -        | 4       | -           | -    |

WALTER A. TILLIT Jr P.E.  
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 6355 N.W 36 STREET, STE. 305  
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 PHONE(305) 871-1530 FAX (305) 871-1531  
 TEXAS LIC. # 90691  
 FIRM REGISTRATION # F-13790



**ANCHOR SPACING SCHEDULE AT JAMBS, VALID FOR CONNECTION TO  
CONCRETE, CONCRETE BLOCK & STEEL SUBSTRATES.**

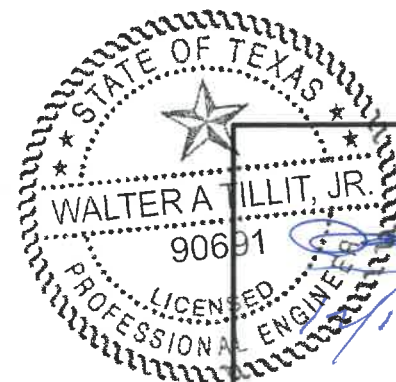
| ANCHOR SPACING SCHEDULE AT JAMBS<br>W/7L (1 1/2"x1 1/2"x1/8" ANGLE) |                               |                   |                   |            |
|---|-------------------------------|-------------------|-------------------|------------|
| DESIGN PRESSURE RATING  | SINGLE UNIT WIDTH OR MULLION  | MAX. SPACING (in) |                   |            |
| (psf.)  | SPACING (S) AT MULTIPLE UNITS | TO CONCRETE       | TO CONCRETE BLOCK | TO STEEL   |
| 75 OR LESS  | 48                            | 8" O.C            | 4" O.C            | 8" O.C     |
|   | 60                            | 8" O.C            | 3" O.C            | 8" O.C     |
|   | 72                            | 8" O.C            | 3" O.C            | 8" O.C     |
| > 75 TO 110   | 48                            | 8" O.C            | 3" O.C            | 8" O.C     |
|   | 60                            | 8" O.C            | 3" O.C**          | 8" O.C     |
|   | 72                            | 7" O.C            | N/A               | 7 1/2" O.C |
| > 110 TO 150  | 48                            | 8" O.C            | 3" O.C *          | 8" O.C     |
|   | 60                            | 6 1/2" O.C        | N/A               | 6 1/2" O.C |
|   | 72                            | 5" O.C            | N/A               | 5 1/2" O.C |

\* LIMITED TO 114.0 psf. DESIGN PRESSURE RATING.

\*\* LIMITED TO 91.0 psf. DESIGN PRESSURE RATING.

| ANCHOR SPACING SCHEDULE AT JAMBS<br>W/7L1 (2"x4"x1/8" ANGLE) |                               |                   |                   |          |
|--|-------------------------------|-------------------|-------------------|----------|
| DESIGN PRESSURE RATING                                       | SINGLE UNIT WIDTH OR MULLION  | MAX. SPACING (in) |                   |          |
| (psf.)   | SPACING (S) AT MULTIPLE UNITS | TO CONCRETE       | TO CONCRETE BLOCK | TO STEEL |
| 75 OR LESS   | 48                            | 8" O.C            | 7" O.C            | 8" O.C   |
|  | 60                            | 8" O.C            | 6" O.C            | 8" O.C   |
|  | 72                            | 8" O.C            | 5" O.C            | 8" O.C   |
| > 75 TO 110  | 48                            | 8" O.C            | 5" O.C            | 8" O.C   |
|  | 60                            | 8" O.C            | 4" O.C            | 8" O.C   |
|  | 72                            | 8" O.C            | 3" O.C            | 8" O.C   |
| > 110 TO 150   | 48                            | 8" O.C            | 3" O.C            | 8" O.C   |
|  | 60                            | 8" O.C            | 3" O.C            | 8" O.C   |
|  | 72                            | 7 1/2" O.C        | 3" O.C ***        | 8" O.C   |

\*\*\* LIMITED TO 127.0 psf. DESIGN PRESSURE RATING.



P.E. SEAL/SIGNATURE/DATE

| TEXAS DEPARTMENT OF INSURANCE - 2018   |             |          |         |  |            |
|--|-------------|----------|---------|--|------------|
| WALTER A. TILLIT Jr P.E.<br>PROFESSIONAL ENGINEER<br>6355 N.W 36 STREET, STE. 305<br>VIRGINIA GARDENS, FL 33166<br>PHONE(305) 871-1530 FAX (305) 871-1531<br>TEXAS LIC. # 90691<br>FIRM REGISTRATION # F-13790 |             |          |         | SED-5.1 LOUVER SYSTEM WITH OR WITHOUT CD-151 DAMPER ASSEMBLY<br><br><b>UNITED ENERTECH HOLDINGS, LLC</b><br>3005 SOUTH HICKORY ST. CHATTANOOGA, TN 37407<br>159 GENCO DRIVE HARTFORD, AL 36344<br>PHONE: (423)698-7715 FAX:(423)698-6629 |            |
|  |             |          |         | M.P. DRAWN BY:   |            |
|  |             |          |         | DATE:  | 12/16/2021 |
|  |             |          |         | DRAWING No.  | 21-150     |
| REV. NO  | DESCRIPTION | DATE     | REV. No | DESCRIPTION  | DATE       |
| 1  | OLD 16-005  | 12-16-21 | 3       | -  | -          |
| 2  | -           | -        | 4       | -  | -          |

SHEET 16 OF 16