

GENERAL NOTES:

1. ALUMINUM LOUVER SYSTEM MODEL FL-D-6 SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2018 EDITIONS 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 SHEET.

IN ORDER TO VERIFY THE ABOVE CONDITION, ULTIMATE DESIGN WIND LOADS DETERMINED PER ASCE 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 COMPONENTS AND 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.

ALUMINUM LOUVER SYSTEM MODEL FL-D-6 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 OF SOUTH FLORIDA REPORTS # 0604.01-01 AND 1207.01, AS WELL AS PER AMCA IMPACT STANDARD 540, PER INTERTEK/ARCHITECTURAL TESTING REPORT # E 0370.1-550-18, 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.

- 2. ALL ALUMINUM EXTRUSIONS SHALL BE 6063-T6 ALLOY (UNLESS OTHERWISE NOTED).
- 3. ALL SCREWS INSTALLED 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 ANSI 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. JAMB ANCHOR REQUIREMENTS: EMBEDMENT AND EDGE DISTANCE ARE BEYOND ANY FINISH.
 - (A) TO EXISTING POURED CONCRETE: (MIN. $f'c = 3192$ psi), MIN. EDGE DISTANCE (E.D.) = 2 1/2". - 1/4"Ø TAPCON ANCHORS W/ 1 3/4" MIN. EMBEDMENT, AS MANUFACTURED BY ITW BUILDEX.
 - (B) TO EXISTING A.S.T.M. C-90 CONCRETE BLOCK WALL. MIN. EDGE DISTANCE (E.D.) = 2 1/2". - 1/4"Ø TAPCON ANCHORS W/ 1 1/4" MIN. EMBEDMENT, AS MANUFACTURED BY ITW BUILDEX.
 - (C) TO EXISTING 2x P.T. WOOD BUCK. MIN. EDGE DISTANCE (E.D.) = 1 1/2". - 1/4"Ø LAG SCREWS W/ 1 1/2" MIN. EMBEDMENT, AS PER N.D.S. 2018.
 - (D) TO EXISTING MIN. 1/8" THICK STEEL MEMBER (ASTM A-500, A-653 OR A-36) MIN. EDGE DISTANCE (E.D.) = 1/2". - 1/4"Øx3/4", AS MANUFACTURED BY ITW BUILDEX.
 - (E) ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.

7. ANCHORS REQUIRED FOR MULLION CONNECTIONS: SHALL BE AS SPECIFIED ON APPLICABLE SECTIONS SHOWN ON SHEETS 6, 7 & 8 RESPECTIVELY, AND SHEETS 10, 10A, 11 AND 12 RESPECTIVELY.

ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.

- 8. THIS LOUVER SYSTEM 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.
- 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. WOOD BUCKS BY OTHERS, MUST BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE BUILDING STRUCTURE. WOOD BUCKS MUST BE SOUTHERN PINE, $G = 0.55$.
- 14. (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 LATTER 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.
- 15. 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.

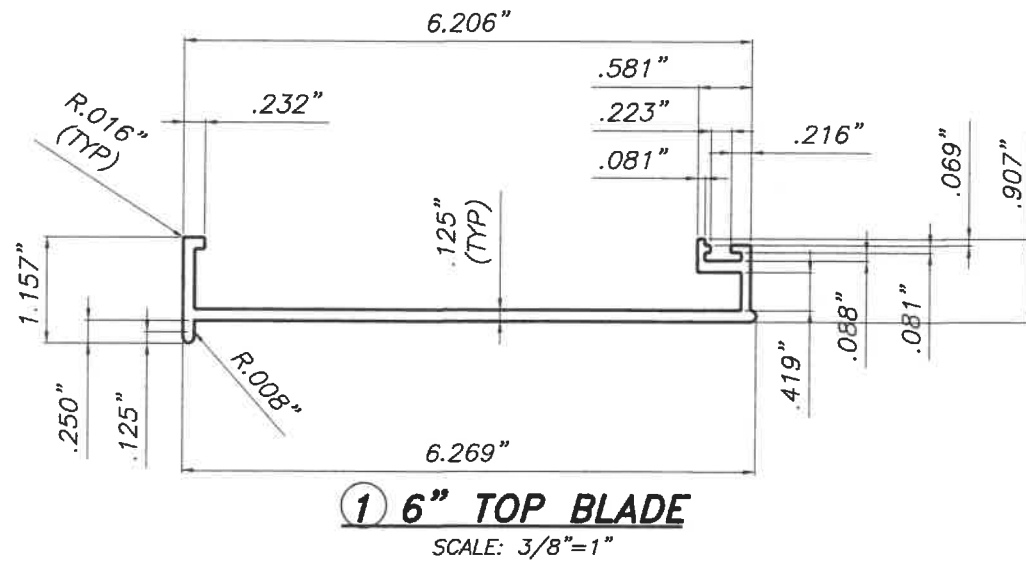
**MAXIMUM DESIGN PRESSURE RATING
+150.0, -150.0 psf.
LARGE MISSILE IMPACT RESISTANCE.**

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

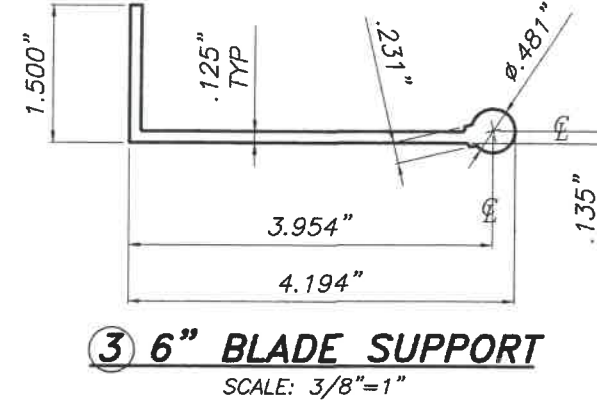


TEXAS DEPARTMENT OF INSURANCE - 2018

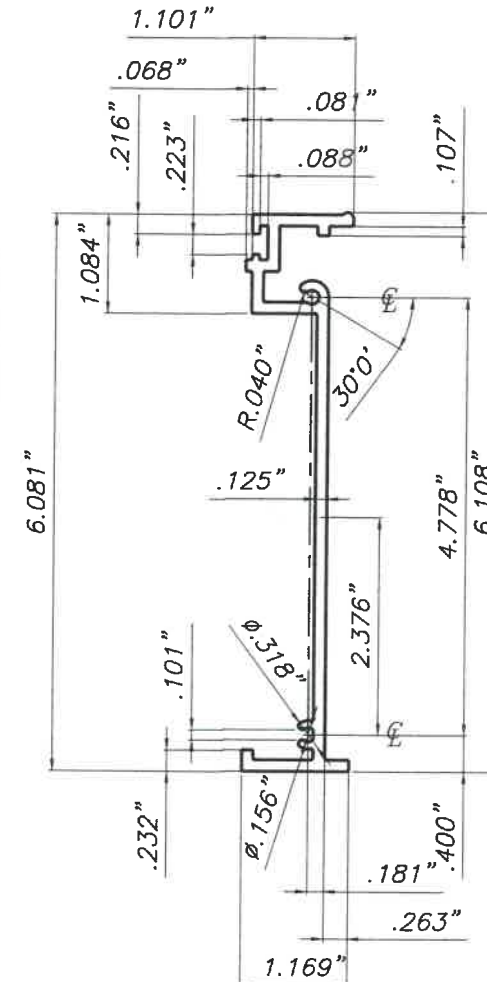
WALTER A. TILLIT Jr P.E. PROFESSIONAL ENGINEER 6355 N.W 36 STREET, STE. 305 VIRGINIA GARDENS, FL 33166 PHONE(305) 871-1530 FAX (305) 871-1531 TEXAS LIC. # 90691 FIRM REGISTRATION # F-13790		ALUMINUM LOUVER SYSTEM MODEL FL-D-6 UNITED ENERTECH HOLDINGS, LLC 3005 SOUTH HICKORY ST. 159 GENCO DRIVE CHATTANOOGA, TN 37407 HARTFORD, AL 36344 PHONE: (423)698-7715 FAX: (423)698-6629	M.P. DRAWN BY: 12/15/2021 DATE: 21-149 DRAWING No.																		
<table border="1"> <thead> <tr> <th>REV. NO</th> <th>DESCRIPTION</th> <th>DATE</th> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OLD 16-007</td> <td>12-16-21</td> <td>3</td> <td>-</td> <td>-</td> </tr> <tr> <td>2</td> <td>-</td> <td>-</td> <td>4</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	1	OLD 16-007	12-16-21	3	-	-	2	-	-	4	-	-	SHEET 1 OF 13		
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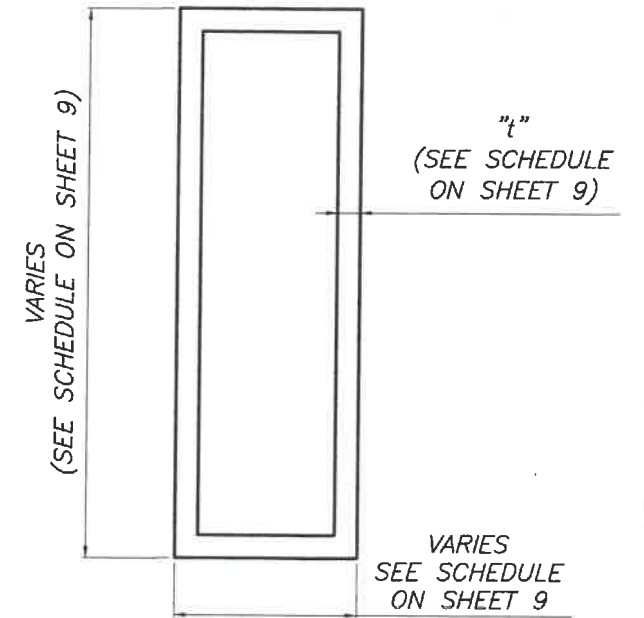
① 6" TOP BLADE
SCALE: 3/8"=1"



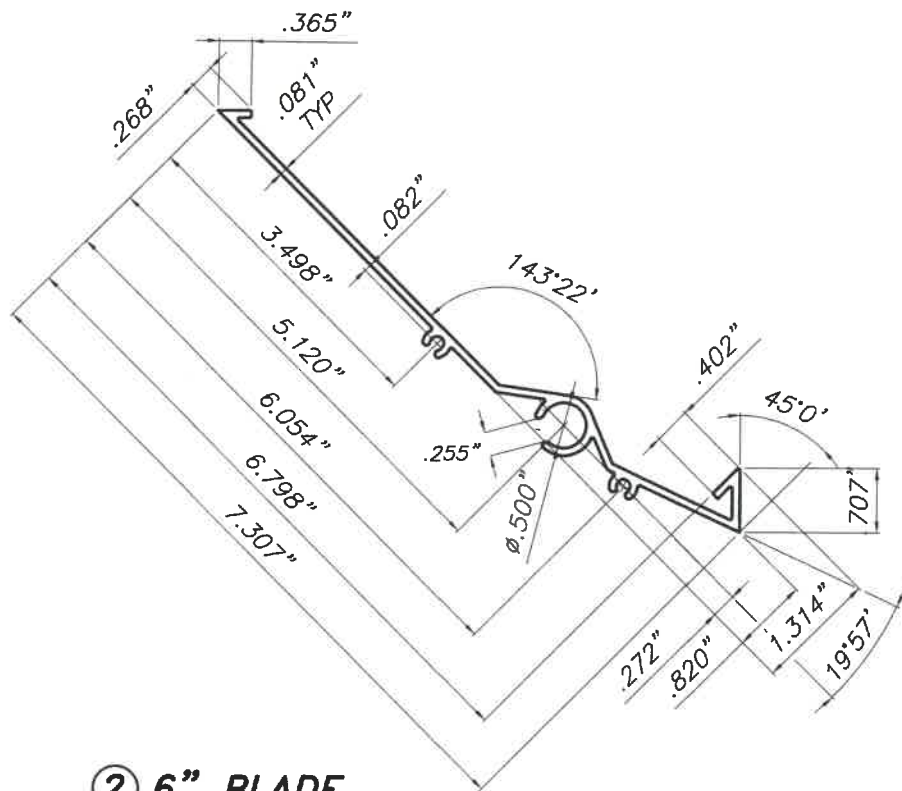
③ 6" BLADE SUPPORT
SCALE: 3/8"=1"



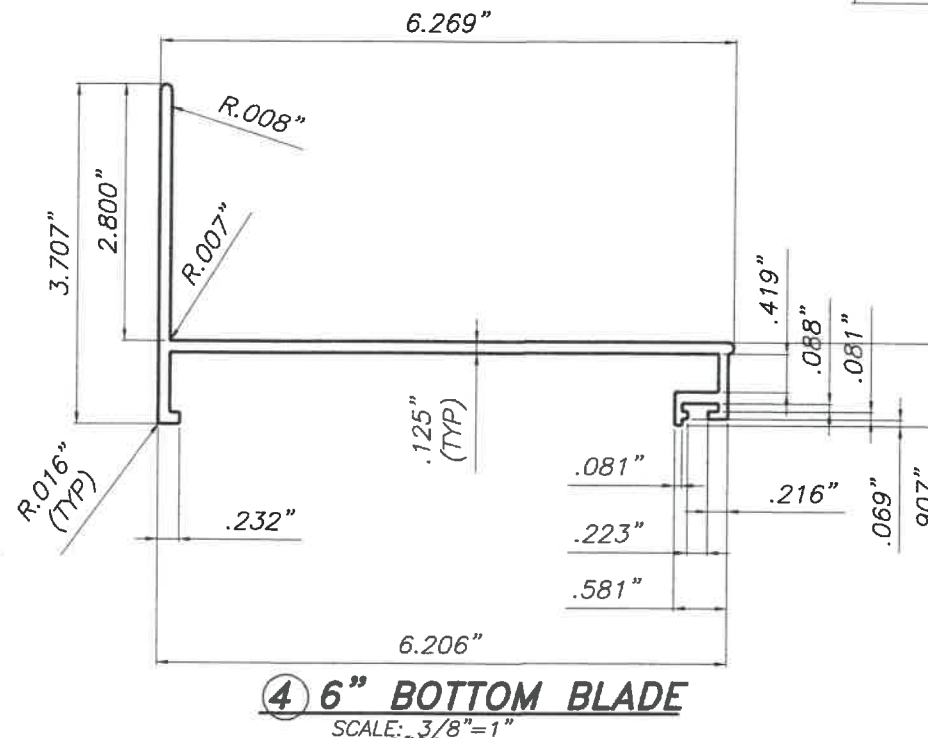
⑤ 6" SIDE JAMB
SCALE: 3/8"=1"



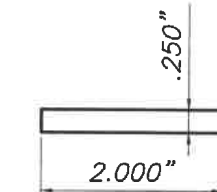
⑦ MULLION
6063-T6 ALLOY
SCALE: 3/8"=1"



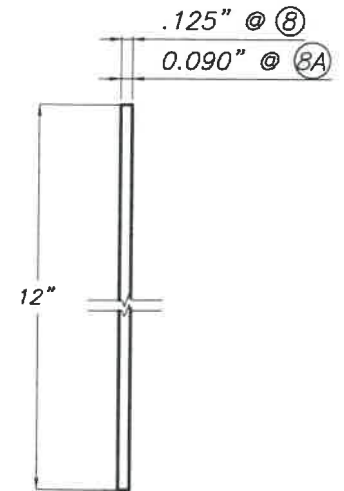
② 6" BLADE
SCALE: 3/8"=1"



④ 6" BOTTOM BLADE
SCALE: 3/8"=1"



⑥ LOUVER IMPACT STRAP
6463-T6 ALLOY
SCALE: 3/8"=1"



⑧ & ⑧A ALUMINUM SLEEVES
(OPTIONAL)
3003-H14 ALLOY

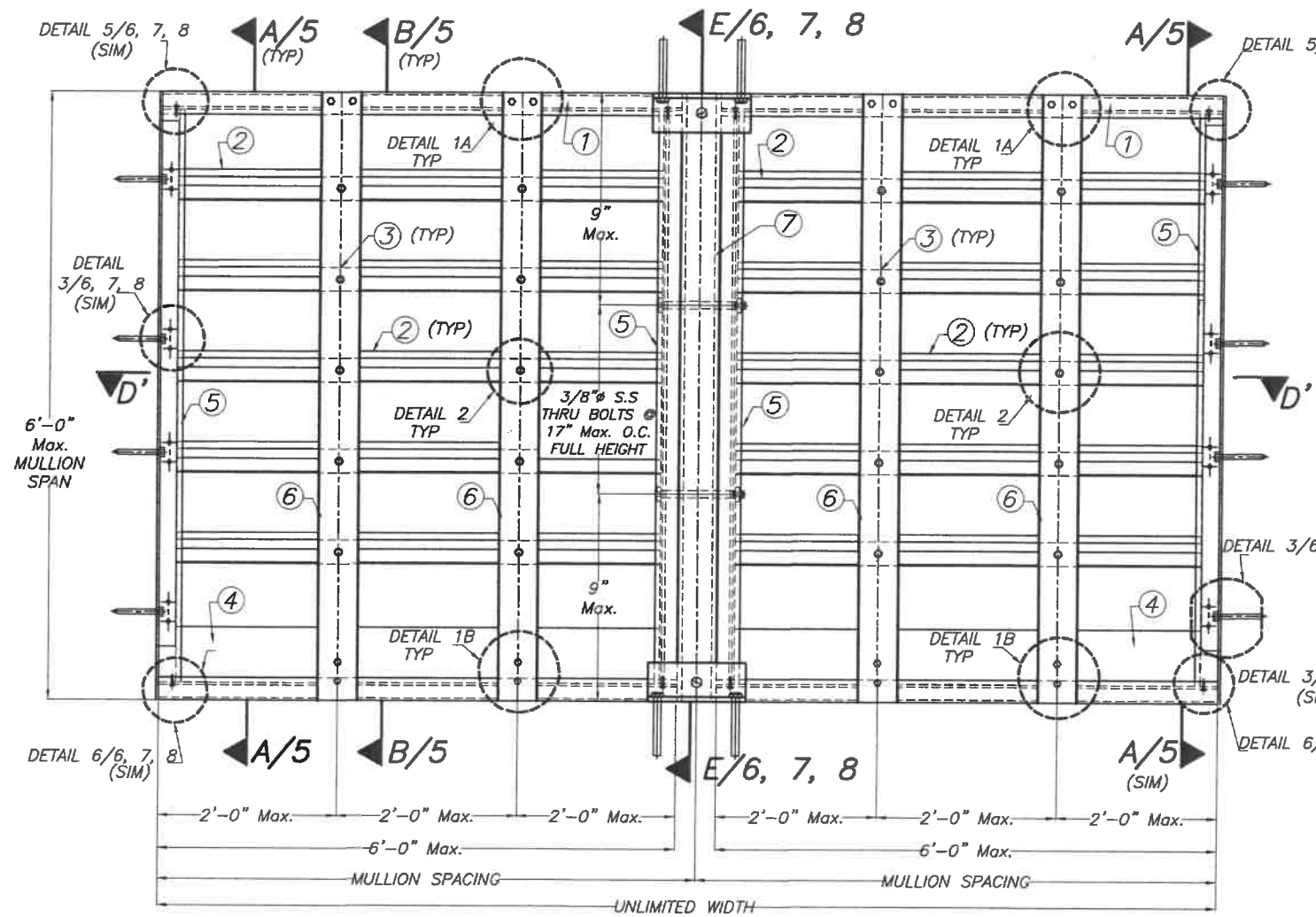
COMPONENTS

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

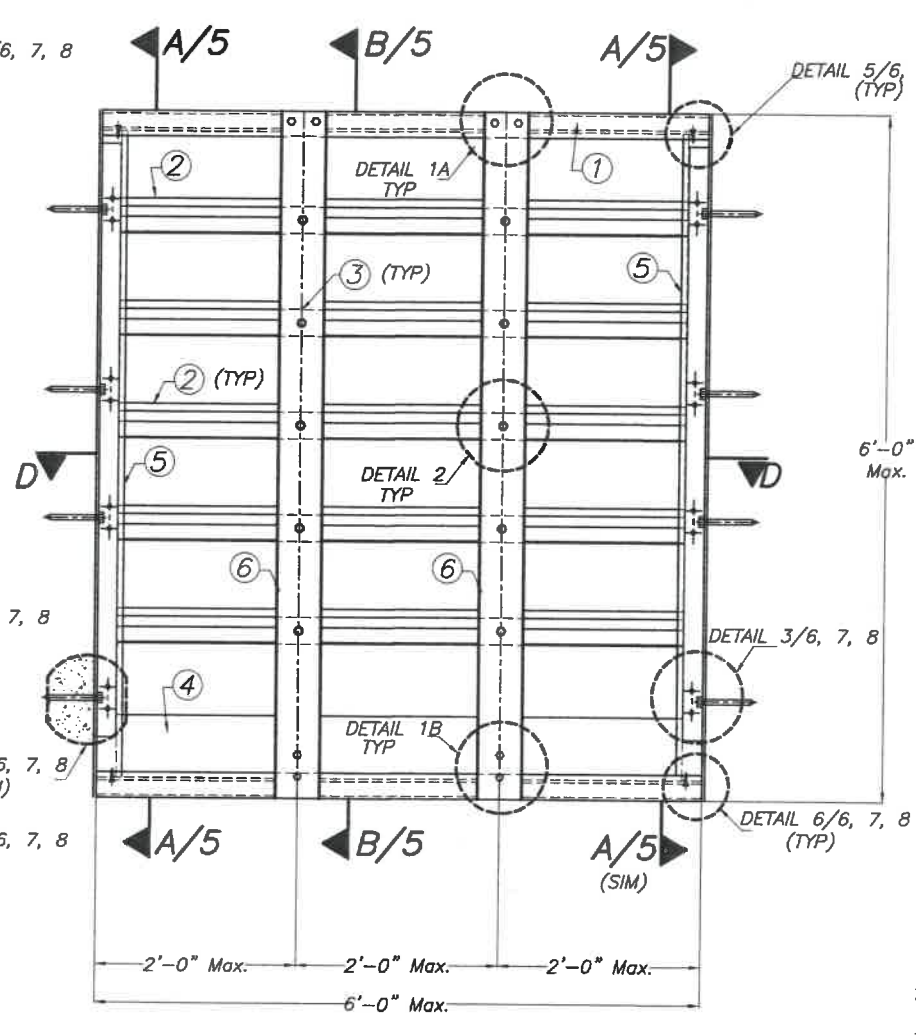
TEXAS DEPARTMENT OF INSURANCE - 2018					
ALUMINUM LOUVER SYSTEM MODEL FL-D-6				M.P. DRAWN BY:	
UNITED ENERTECH HOLDINGS, LLC				12/15/2021	
3005 SOUTH HICKORY ST. CHATTANOOGA, TN 37407				DATE:	
159 GENCO DRIVE HARTFORD, AL 36344				21-149	
PHONE: (423)698-7715 FAX: (423)698-6629				DRAWING No.	
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FIRM REGISTRATION # F-13790

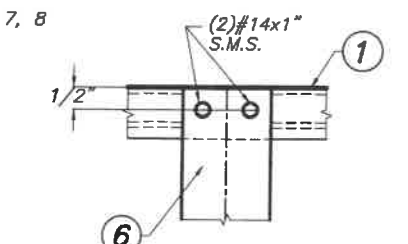
SHEET 2 OF 13



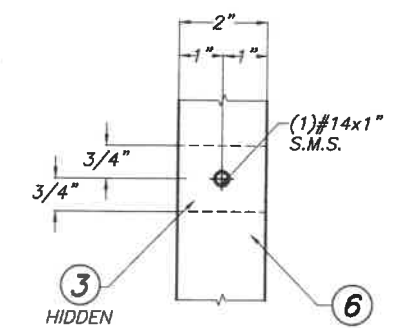
MULTIPLE UNITS HORIZONTALLY EXPANDED (INTERIOR ELEVATION)
N.T.S.



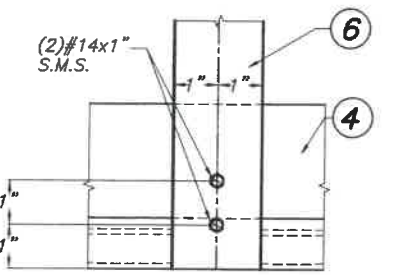
SINGLE UNIT (INTERIOR ELEVATION)
N.T.S.



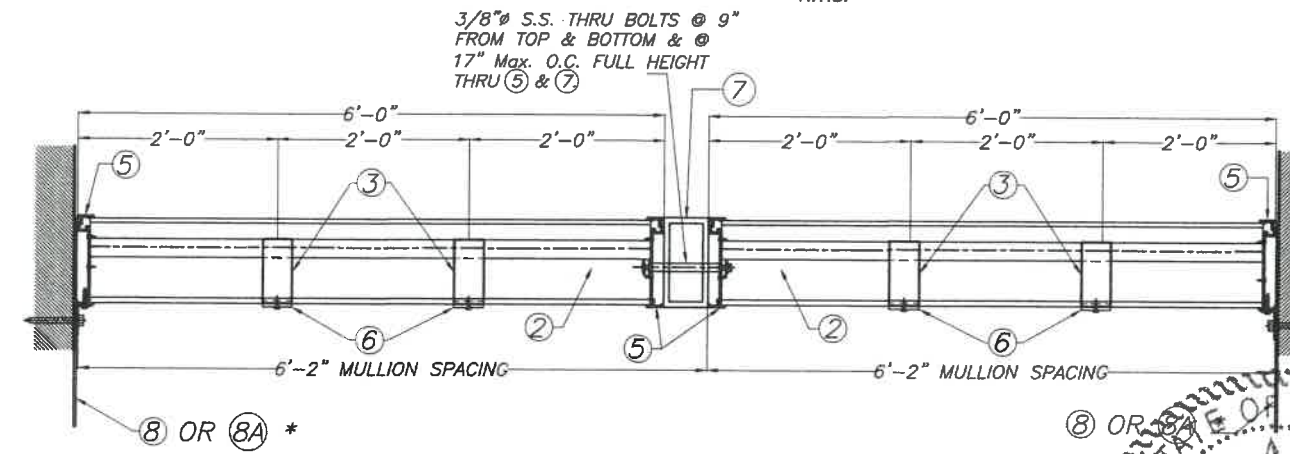
DETAIL 1A
N.T.S.



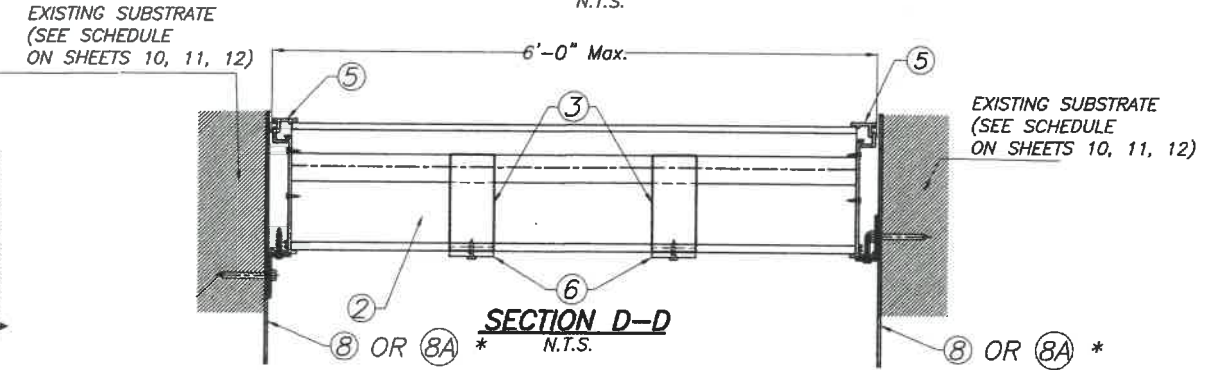
DETAIL 2
N.T.S.



DETAIL 1B
N.T.S.



SECTION D-D'
N.T.S.



SECTION D-D'
N.T.S.

* (8) OR (8A) ARE OPTIONAL



P.E. SEAL/SIGNATURE/DATE

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TEXAS DEPARTMENT OF INSURANCE - 2018

ALUMINUM LOUVER SYSTEM MODEL FL-D-6

UNITED ENERTECH HOLDINGS, LLC
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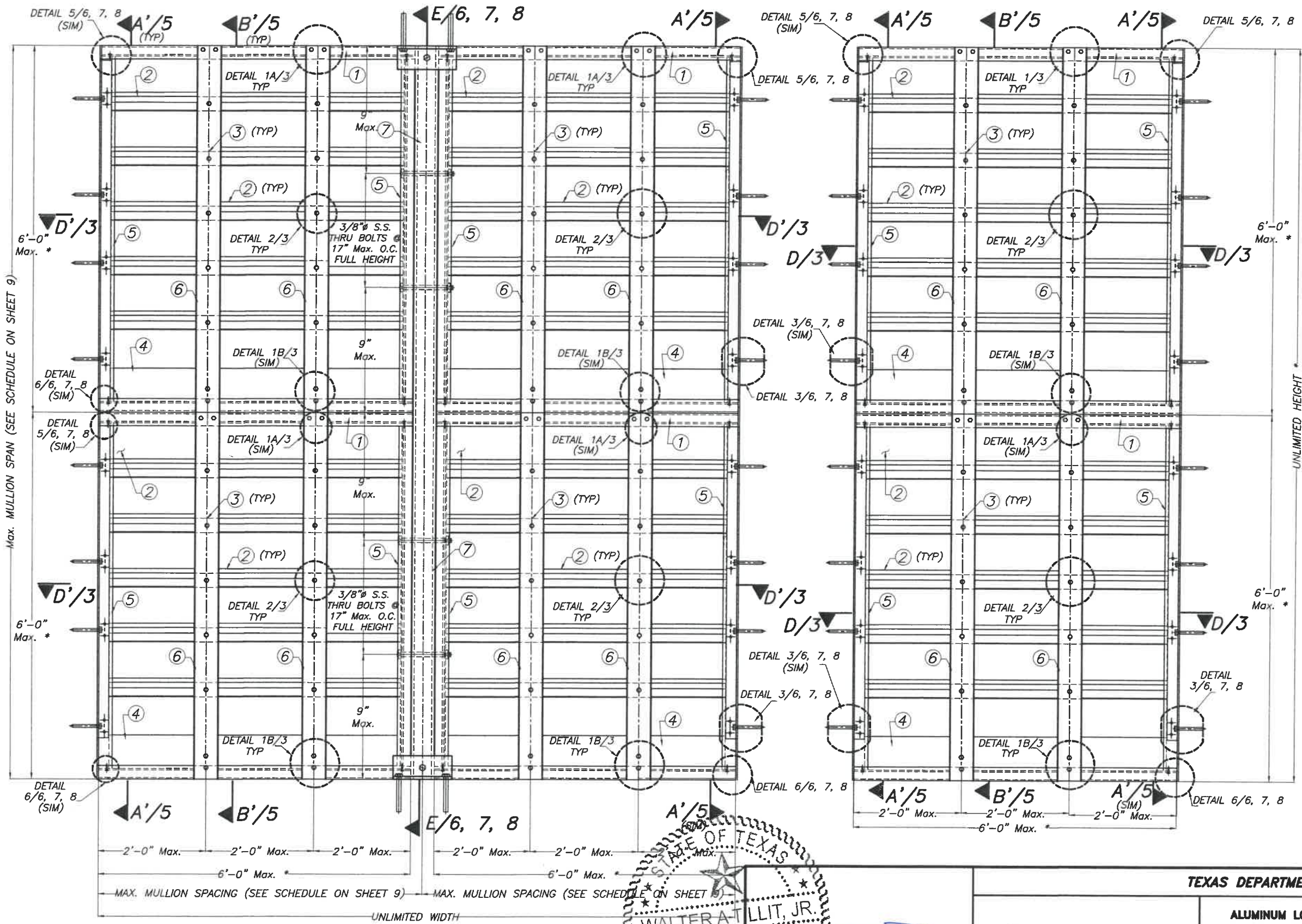
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12/15/2021
DATE:

21-149
DRAWING No.

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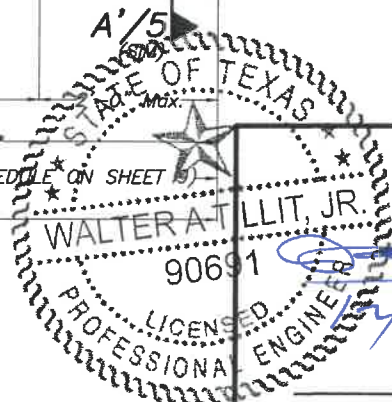
SHEET 3 OF 13



* NUMBER OF LOUVER PANEL UNITS NEEDED TO ACHIEVE THE OPENING HEIGHT AND WIDTH MAY VARY HOWEVER MAXIMUM UNIT HEIGHT AND WIDTH SHALL NO EXCEED 6'-0".

**SINGLE UNIT
(INTERIOR ELEVATION)**
N.T.S.

**MULTIPLE UNITS HORIZONTALLY & VERTICALLY
EXPANDED (INTERIOR ELEVATION)**
N.T.S.



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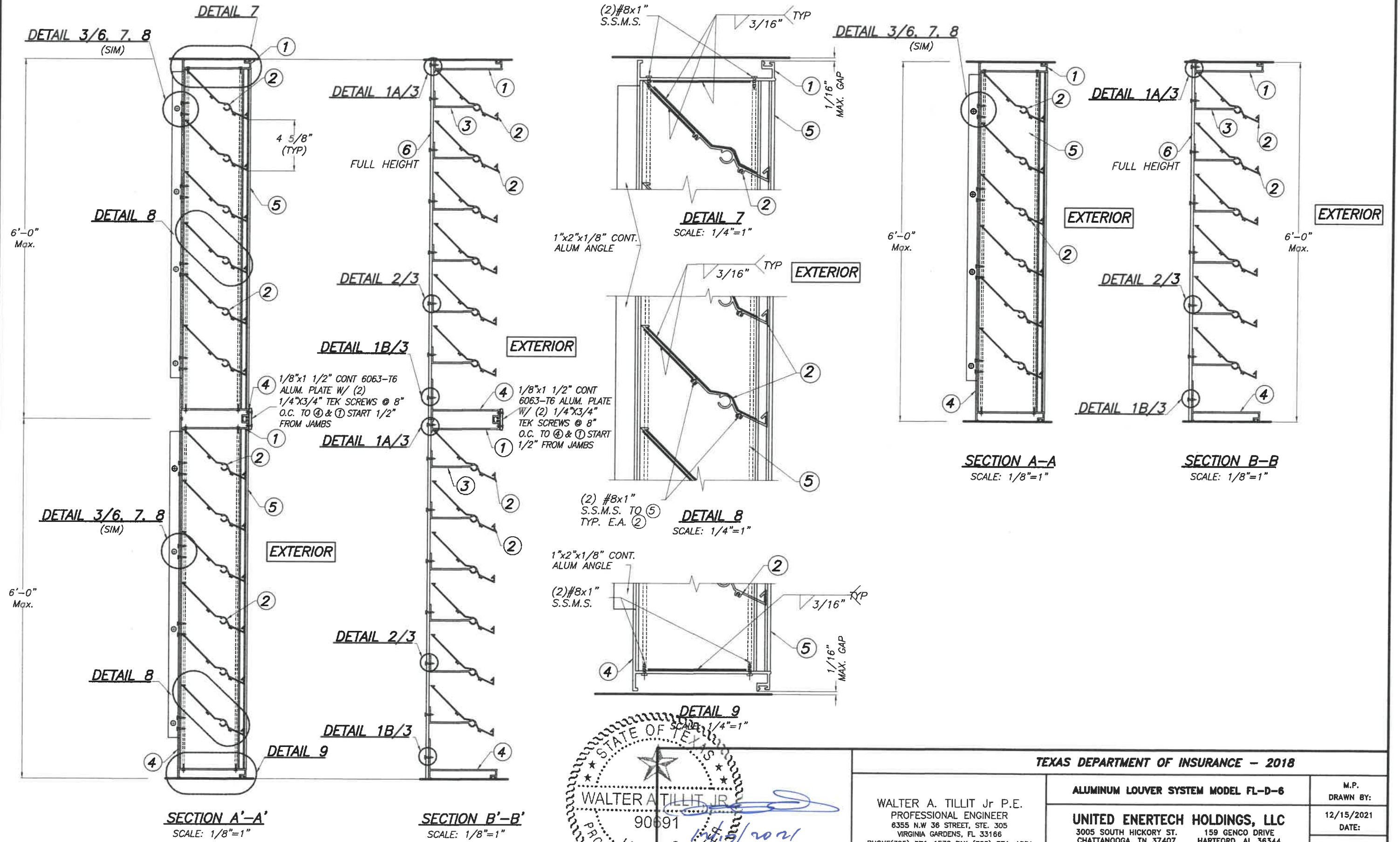
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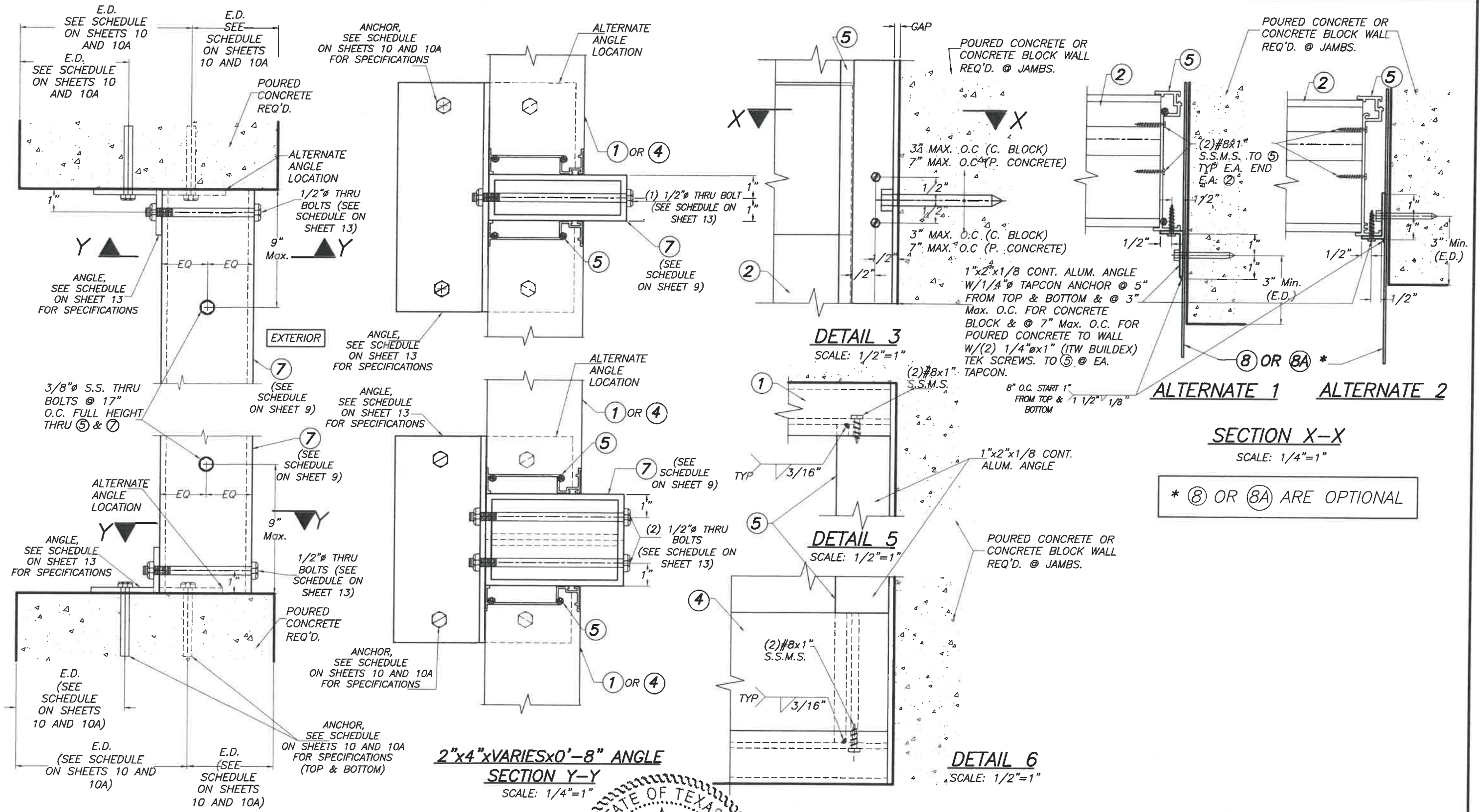
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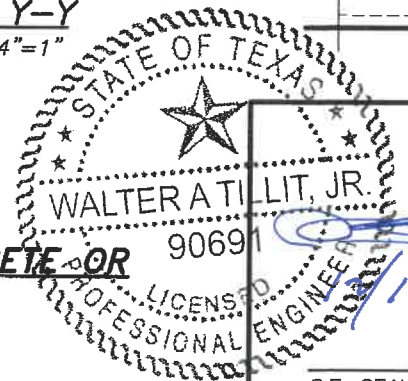
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2	-	-	4	-	-

SHEET 5 OF 13



MULLION AND JAMB INSTALLATION INTO POURED CONCRETE OR CONCRETE BLOCK.

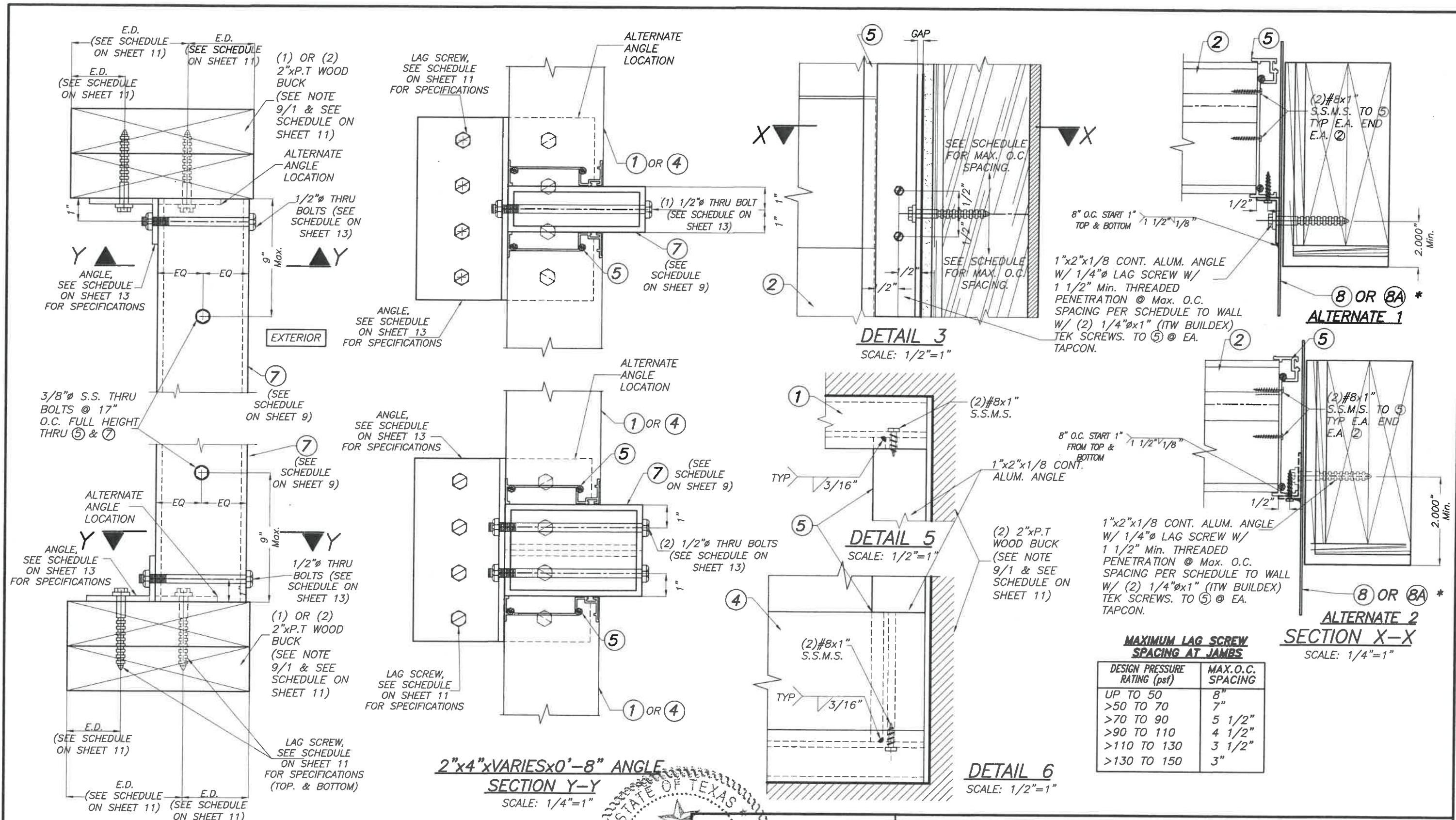


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1 OLD 18-007 12-18-21	3 - - -	
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TEXAS LIC. # 90691
FIRM REGISTRATION # F-13790



SECTION E-E
SCALE: 1/4"=1"

MULLION AND JAMB INSTALLATION INTO WOOD

* (8) OR (8A) ARE OPTIONAL

2" x 4" x VARIES x 0'-8" ANGLE
SECTION Y-Y
SCALE: 1/4"=1"

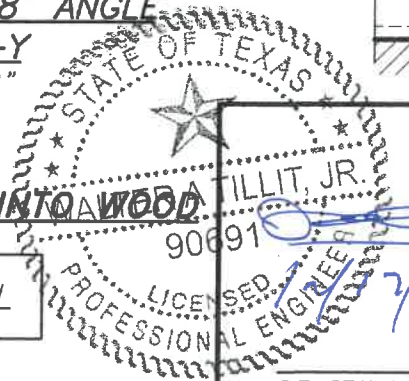
DETAIL 3
SCALE: 1/2"=1"

DETAIL 5
SCALE: 1/2"=1"

DETAIL 6
SCALE: 1/2"=1"

MAXIMUM LAG SCREW SPACING AT JAMBS

DESIGN PRESSURE RATING (psf)	MAX. O.C. SPACING
UP TO 50	8"
>50 TO 70	7"
>70 TO 90	5 1/2"
>90 TO 110	4 1/2"
>110 TO 130	3 1/2"
>130 TO 150	3"



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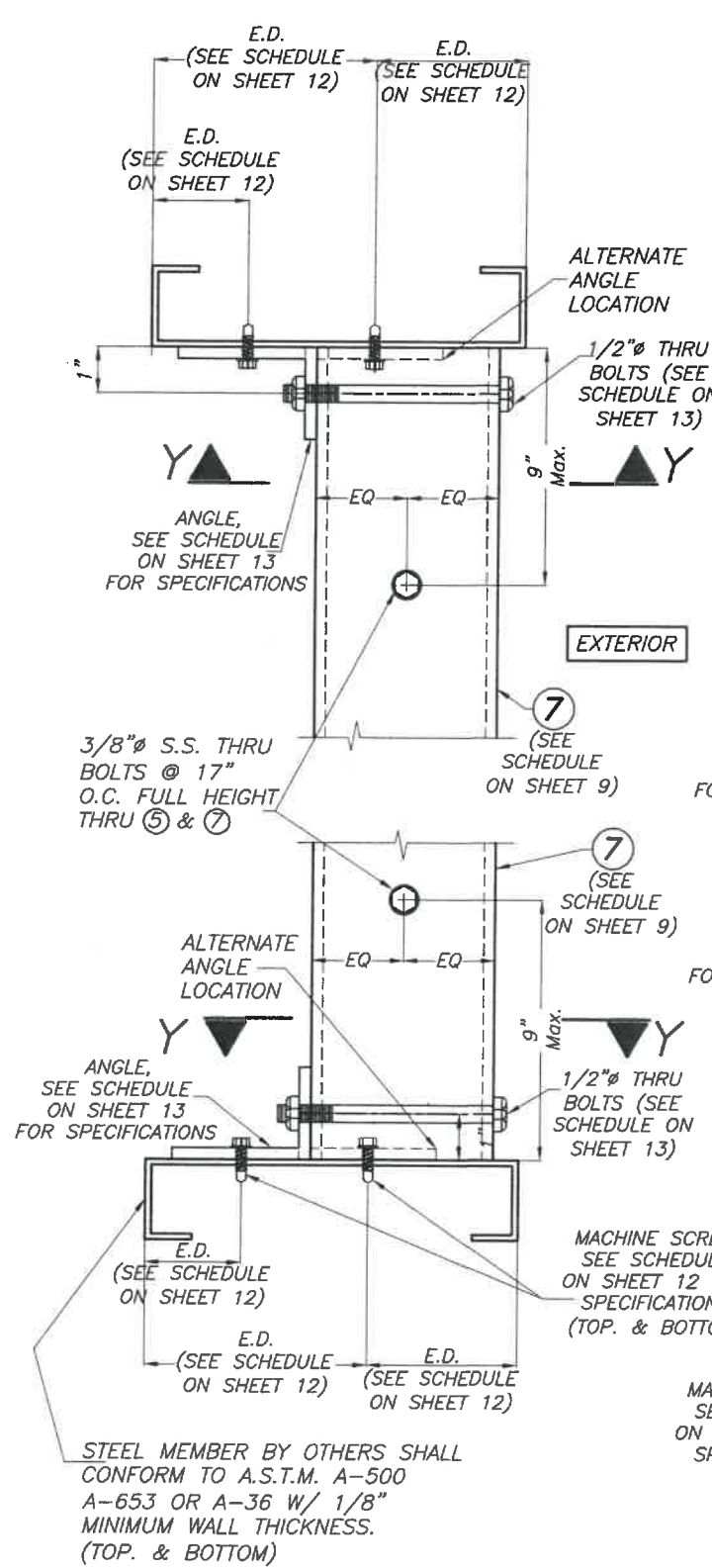
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ALUMINUM LOUVER SYSTEM MODEL FL-D-6

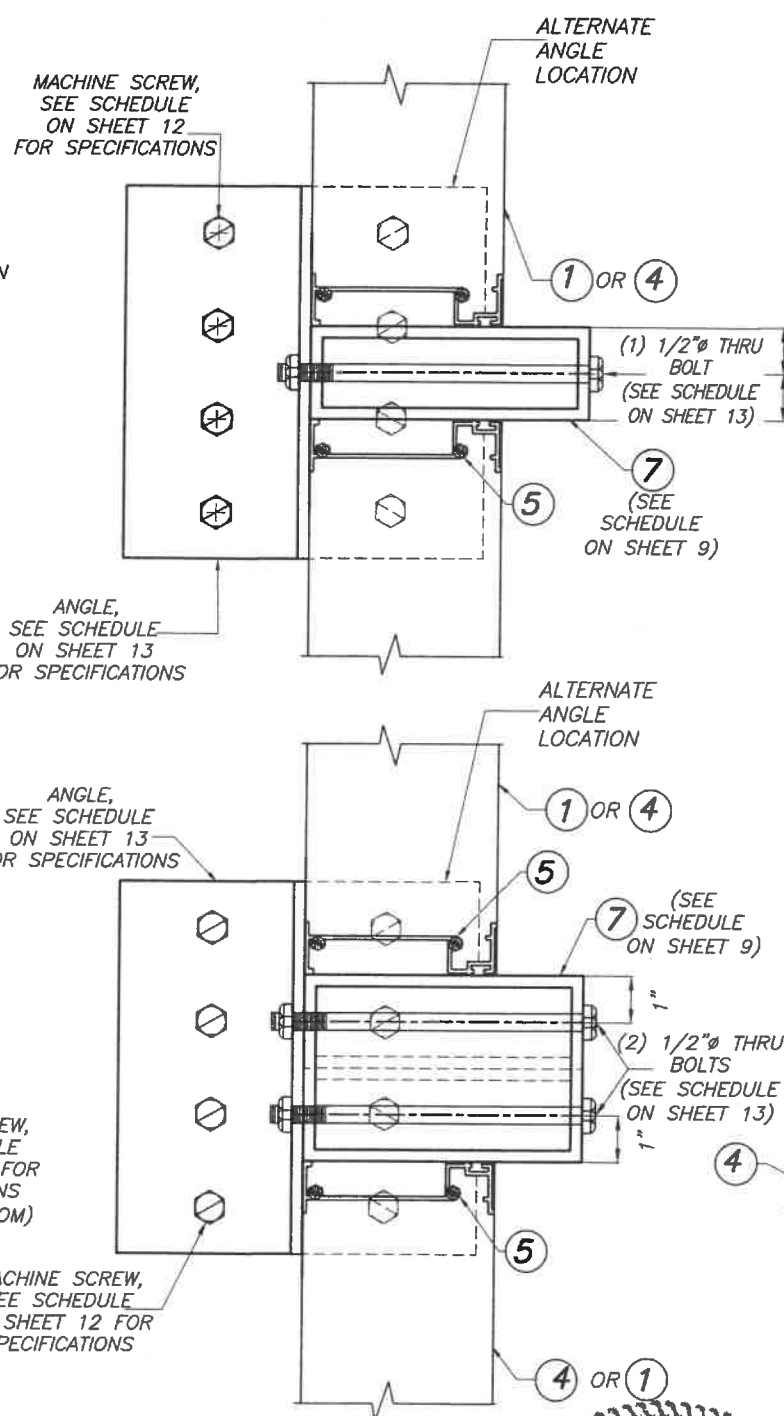
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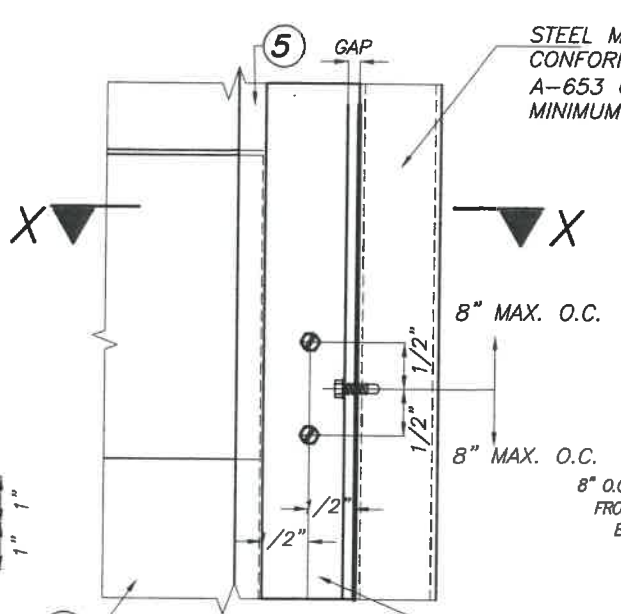
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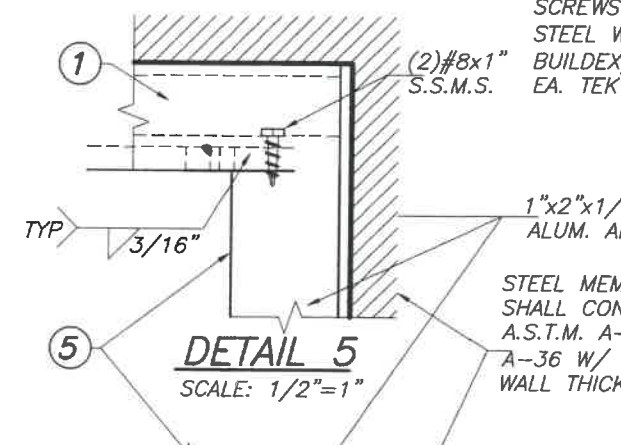
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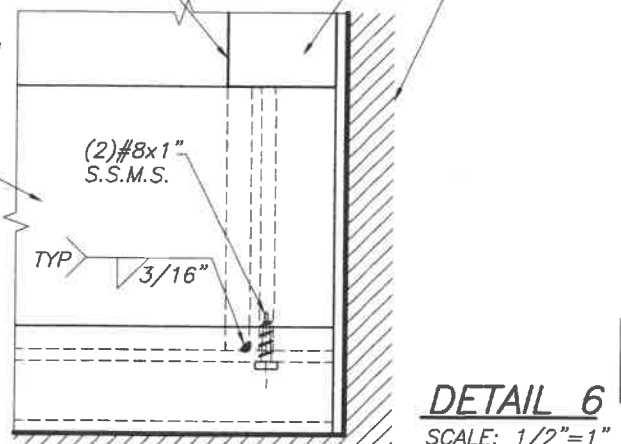
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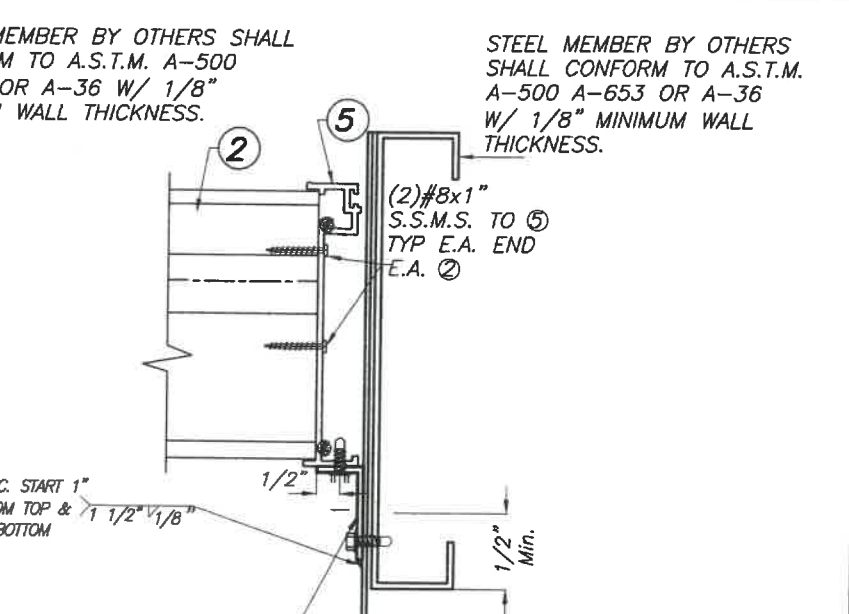
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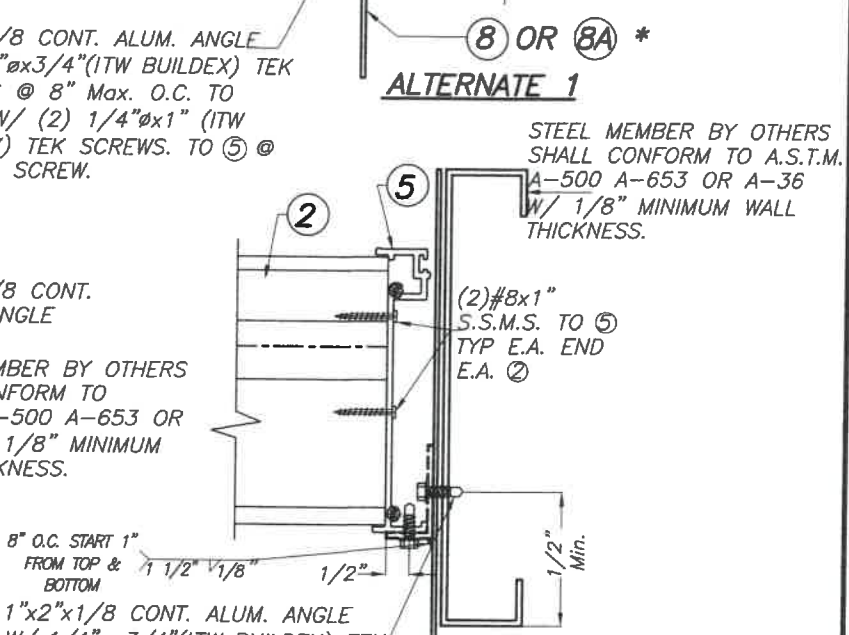
DETAIL 5
SCALE: 1/2"=1"



DETAIL 6
SCALE: 1/2"=1"



ALTERNATE 1



ALTERNATE 2

SECTION X-X
SCALE: 1/4"=1"

* (8) OR (8A) ARE OPTIONAL

MULLION AND JAMB INSTALLATION INTO 1/8" THICK MIN. STEEL

STATE OF TEXAS
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90691
LICENSED PROFESSIONAL ENGINEER
P.E. SEAL/SIGNATURE/DATE

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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

ALUMINUM LOUVER SYSTEM MODEL FL-D-6						M.P. DRAWN BY:
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						12/15/2021 DATE:
REV. NO. DESCRIPTION DATE REV. No. DESCRIPTION DATE						21-149 DRAWING No.
1	OLD 16-007	12-16-21	3	-	-	SHEET 8 OF 13
2	-	-	4	-	-	

MAX. MULLION SPAN SCHEDULE FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING *												
DESIGN PRESSURE RATING (psf)	MULLIONS											
	2"x6"x1/4"				4"x6"x1/4" OR (2) 2"x6"x1/4"				4"x8"x1/4"			
	MULLION SPACING				MULLION SPACING				MULLION SPACING			
	3'	4'	5'	6'	3'	4'	5'	6'	3'	4'	5'	6'
30	10' - 0"	10' - 0"	10' - 0"	10' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"
40	10' - 0"	10' - 0"	10' - 0"	10' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"
50	10' - 0"	10' - 0"	10' - 0"	10' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"
60	10' - 0"	10' - 0"	10' - 0"	10' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"	12' - 0"
70	10' - 0"	10' - 0"	10' - 0"	10' - 0"	12' - 0"	12' - 0"	12' - 0"	11' - 10"	12' - 0"	12' - 0"	12' - 0"	12' - 0"
80	10' - 0"	10' - 0"	10' - 0"	9' - 9"	12' - 0"	12' - 0"	12' - 0"	11' - 4"	12' - 0"	12' - 0"	12' - 0"	12' - 0"
90	10' - 0"	10' - 0"	10' - 0"	9' - 5"	12' - 0"	12' - 0"	11' - 7"	10' - 11"	12' - 0"	12' - 0"	12' - 0"	12' - 0"
100	10' - 0"	10' - 0"	9' - 8"	9' - 0"	12' - 0"	12' - 0"	11' - 2"	10' - 6"	12' - 0"	12' - 0"	12' - 0"	12' - 0"
110	10' - 0"	10' - 0"	9' - 4"	8' - 7"	12' - 0"	11' - 8"	10' - 10"	10' - 2"	12' - 0"	12' - 0"	12' - 0"	12' - 0"
120	10' - 0"	9' - 9"	9' - 0"	8' - 2"	12' - 0"	11' - 4"	10' - 6"	9' - 11"	12' - 0"	12' - 0"	12' - 0"	12' - 0"
130	10' - 0"	9' - 6"	8' - 7"	7' - 10"	12' - 0"	11' - 0"	10' - 3"	9' - 8"	12' - 0"	12' - 0"	12' - 0"	12' - 0"
140	10' - 0"	9' - 3"	8' - 4"	7' - 7"	11' - 10"	10' - 9"	10' - 0"	9' - 5"	12' - 0"	12' - 0"	12' - 0"	11' - 11"
150	10' - 0"	9' - 0"	8' - 0"	7' - 4"	11' - 7"	10' - 6"	9' - 9"	9' - 2"	12' - 0"	12' - 0"	12' - 0"	11' - 6"

* SEE ADDITIONAL LIMITATIONS FOR MAXIMUM MULLION SPAN ON SHEETS 10, 10A, 11, 12 & 13 FOR A MULLION CONNECTION TYPE. MAXIMUM FINAL MULLION SPAN SHALL BE THE MINIMUM VALUE BETWEEN THIS SCHEDULE AND ANY OTHER SCHEDULE GIVEN ON ABOVE MENTIONED SHEETS.



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
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TEXAS LIC. # 90691
FIRM REGISTRATION # F-13790

ALUMINUM LOUVER SYSTEM MODEL FL-D-6

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:

12/15/2021
DATE:

21-149
DRAWING No.

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 18-007	12-18-21	3	-	-
2	-	-	4	-	-

SHEET 9 OF 13

MAX. MULLION SPAN (L.F.) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 1 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	11'-3"
80	12'-0"	12'-0"	11'-9"	9'-10"
90	12'-0"	12'-0"	10'-6"	8'-9"
100	12'-0"	12'-0"	9'-5"	7'-10"
110	12'-0"	12'-0"	8'-7"	7'-2"
120	12'-0"	12'-0"	7'-10"	6'-7"
130	12'-0"	12'-0"	7'-3"	6'-1"
140	12'-0"	8'-5"	6'-9"	5'-7"
150	10'-6"	7'-10"	6'-3"	5'-3"

TYPE 1 CONNECTION TO POURED CONCRETE:
2-1/2" KWIK BOLT TZ (HILTI, INC.) W/4" MIN. EMBEDMENT & 8" MIN. MEMBER THICKNESS. W/3" MIN. E.D & 6" MIN. SPACING

MAX. MULLION SPAN (L.F.) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 2 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	12'-0"
80	12'-0"	12'-0"	12'-0"	11'-3"
90	12'-0"	12'-0"	12'-0"	10'-0"
100	12'-0"	12'-0"	10'-10"	9'-0"
110	12'-0"	12'-0"	9'-10"	8'-2"
120	12'-0"	11'-3"	9'-0"	7'-6"
130	12'-0"	10'-5"	8'-4"	6'-11"
140	12'-0"	9'-8"	7'-9"	6'-5"
150	12'-0"	9'-0"	7'-2"	6'-0"

TYPE 2 CONNECTION TO POURED CONCRETE:
2-5/8" KWIK BOLT TZ (HILTI, INC.) W/5" MIN. EMBEDMENT & 8" MIN. MEMBER THICKNESS. W/3" MIN. E.D & 6" MIN. SPACING

MAX. MULLION SPAN (L.F.) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 3 CONNECTION *

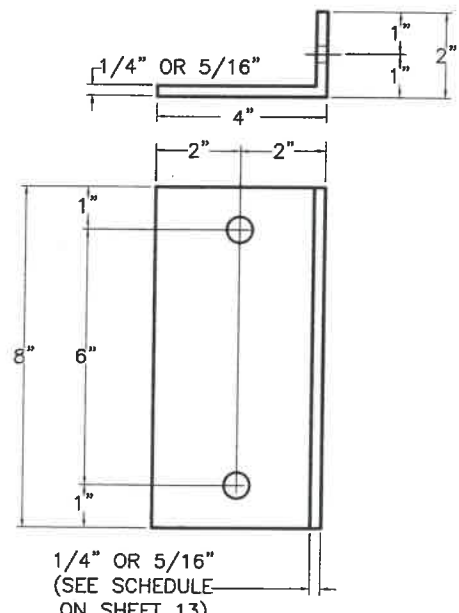
D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	12'-0"
80	12'-0"	12'-0"	12'-0"	12'-0"
90	12'-0"	12'-0"	12'-0"	10'-5"
100	12'-0"	12'-0"	11'-3"	9'-5"
110	12'-0"	12'-0"	10'-3"	8'-6"
120	12'-0"	11'-9"	9'-5"	7'-10"
130	12'-0"	10'-10"	8'-8"	7'-3"
140	12'-0"	10'-1"	8'-0"	6'-8"
150	12'-0"	9'-5"	7'-6"	6'-3"

TYPE 3 CONNECTION TO POURED CONCRETE:
2-3/4" KWIK BOLT TZ (HILTI, INC.) W/5" MIN. EMBEDMENT & 8" MIN. MEMBER THICKNESS. W/3" MIN. E.D & 6" MIN. SPACING

MAX. MULLION SPAN (L.F.) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 4 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	12'-0"
80	12'-0"	12'-0"	12'-0"	12'-0"
90	12'-0"	12'-0"	12'-0"	11'-0"
100	12'-0"	12'-0"	11'-10"	9'-10"
110	12'-0"	12'-0"	10'-9"	9'-0"
120	12'-0"	12'-0"	10'-9"	8'-3"
130	12'-0"	11'-5"	9'-1"	7'-7"
140	12'-0"	10'-7"	8'-6"	7'-1"
150	12'-0"	9'-10"	7'-11"	6'-7"

TYPE 4 CONNECTION TO POURED CONCRETE:
2-M16 HSL-3 HEAVY DUTY (HILTI, INC) W/5" MIN. EMBEDMENT & 8" MIN. MEMBER THICKNESS. W/3" MIN. E.D & 6" MIN. SPACING



2"x4"xVARIESx0'-8" ALUMINUM ANGLE

MAX. MULLION SPAN (L.F.) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 5 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	11'-11"
80	12'-0"	12'-0"	12'-0"	10'-5"
90	12'-0"	12'-0"	11'-1"	9'-3"
100	12'-0"	12'-0"	10'-0"	8'-4"
110	12'-0"	11'-4"	9'-1"	7'-7"
120	12'-0"	10'-5"	8'-4"	6'-11"
130	12'-0"	9'-7"	7'-8"	6'-5"
140	11'-11"	8'-11"	7'-2"	5'-11"
150	11'-1"	8'-4"	6'-8"	5'-7"

TYPE 5 CONNECTION TO POURED CONCRETE:
2-1/2" KWIK BOLT TZ (HILTI, INC.) W/4" MIN. EMBEDMENT & 8" MIN. MEMBER THICKNESS. W/4" MIN. E.D & 6" MIN. SPACING

MAX. MULLION SPAN (L.F.) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 6 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	12'-0"
80	12'-0"	12'-0"	12'-0"	11'-10"
90	12'-0"	12'-0"	12'-0"	10'-7"
100	12'-0"	12'-0"	11'-5"	9'-6"
110	12'-0"	12'-0"	10'-4"	8'-8"
120	12'-0"	11'-10"	9'-6"	7'-11"
130	12'-0"	11'-0"	8'-9"	7'-4"
140	12'-0"	10'-2"	8'-2"	6'-9"
150	12'-0"	9'-6"	7'-7"	6'-4"

TYPE 6 CONNECTION TO POURED CONCRETE:
2-5/8" KWIK BOLT TZ (HILTI, INC.) W/5" MIN. EMBEDMENT & 8" MIN. MEMBER THICKNESS. W/4" MIN. E.D & 6" MIN. SPACING

MAX. MULLION SPAN (L.F.) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 7 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	12'-0"
80	12'-0"	12'-0"	12'-0"	12'-0"
90	12'-0"	12'-0"	12'-0"	11'-0"
100	12'-0"	12'-0"	11'-10"	9'-10"
110	12'-0"	12'-0"	10'-9"	9'-0"
120	12'-0"	12'-0"	9'-10"	8'-3"
130	12'-0"	11'-5"	9'-1"	7'-7"
140	12'-0"	10'-7"	8'-6"	7'-1"
150	12'-0"	9'-10"	7'-11"	6'-7"

TYPE 7 CONNECTION TO POURED CONCRETE:
2-3/4" KWIK BOLT TZ (HILTI, INC.) W/5" MIN. EMBEDMENT & 8" MIN. MEMBER THICKNESS. W/4" MIN. E.D & 6" MIN. SPACING

MAX. MULLION SPAN (L.F.) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 8 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	12'-0"
80	12'-0"	12'-0"	12'-0"	12'-0"
90	12'-0"	12'-0"	12'-0"	11'-6"
100	12'-0"	12'-0"	12'-0"	10'-4"
110	12'-0"	12'-0"	11'-4"	9'-5"
120	12'-0"	12'-0"	10'-4"	8'-8"
130	12'-0"	12'-0"	9'-7"	8'-0"
140	12'-0"	11'-1"	8'-11"	7'-5"
150	12'-0"	10'-4"	8'-4"	6'-11"

TYPE 8 CONNECTION TO POURED CONCRETE:
2-M16 HSL-3 HEAVY DUTY (HILTI, INC) W/5" MIN. EMBEDMENT & 8" MIN. MEMBER THICKNESS. W/4" MIN. E.D & 6" MIN. SPACING

MAX. MULLION SPAN (L.F.) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 9 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	12'-0"
80	12'-0"	12'-0"	12'-0"	11'-3"
90	12'-0"	12'-0"	12'-0"	10'-0"
100	12'-0"	12'-0"	10'-10"	9'-0"
110	12'-0"	12'-0"	9'-10"	8'-2"
120	12'-0"	11'-3"	9'-0"	7'-6"
130	12'-0"	10'-5"	8'-4"	6'-11"
140	12'-0"	9'-8"	7'-9"	6'-5"
150	12'-0"	9'-0"	7'-2"	6'-0"

TYPE 9 CONNECTION TO POURED CONCRETE:
2-1/2" KWIK BOLT TZ (HILTI, INC.) W/4" MIN. EMBEDMENT & 8" MIN. MEMBER THICKNESS. W/6.75" MIN. E.D & 6" MIN. SPACING

MAX. MULLION SPAN (L.F.) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 10 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	12'-0"
80	12'-0"	12'-0"	12'-0"	12'-0"
90	12'-0"	12'-0"	12'-0"	12'-0"
100	12'-0"	12'-0"	12'-0"	11'-0"
110	12'-0"	12'-0"	12'-0"	10'-0"
120	12'-0"	12'-0"	11'-0"	9'-2"
130	12'-0"	12'-0"	10'-2"	8'-6"
140	12'-0"	11'-9"	9'-5"	7'-10"
150	12'-0"	11'-0"	8'-10"	7'-4"

TYPE 10 CONNECTION TO POURED CONCRETE:
2-5/8" KWIK BOLT TZ (HILTI, INC.) W/5" MIN. EMBEDMENT & 8" MIN. MEMBER THICKNESS. W/6.75" MIN. E.D & 6" MIN. SPACING

MAX. MULLION SPAN (L.F.) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 11 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	12'-0"
80	12'-0"	12'-0"	12'-0"	12'-0"
90	12'-0"	12'-0"	12'-0"	12'-0"
100	12'-0"	12'-0"	12'-0"	12'-0"
110	12'-0"	12'-0"	12'-0"	12'-0"
120	12'-0"	12'-0"	12'-0"	11'-3"
130	12'-0"	12'-0"	12'-0"	10'-5"
140	12'-0"	12'-0"	11'-7"	9'-8"
150	12'-0"	12'-0"	10'-10"	9'-0"

TYPE 11 CONNECTION TO POURED CONCRETE:
2-M16 HSL-3 HEAVY DUTY (HILTI, INC) W/5" MIN. EMBEDMENT & 8" MIN. MEMBER THICKNESS. W/10" MIN. E.D & 6" MIN. SPACING

SCHEDULE FOR MULLION CONNECTION TO POURED CONCRETE (Min. f'c=3 ksi)

*** NOTES:**

- (1) SEE SHEET 9 FOR ADDITIONAL MAXIMUM MULLION SPAN LIMITATIONS FOR A GIVEN DESIGN PRESSURE RATING AND MAXIMUM SPACING. MAXIMUM MULLION SPAN SHALL BE THE MINIMUM BETWEEN SCHEDULES ON SHEETS 9, 10 AND 11 FOR A CONNECTION TYPE.
- (2) SEE SHEET 13 FOR ANGLE SCHEDULE INDICATING MAXIMUM ALLOWABLE DESIGN PRESSURE RATING, MULLION SPACING AND MULLION SPAN FOR 1/4" THICK & 5/16" THICK ALUMINUM ANGLES USED TOP & BOTTOM FOR MULLION CONNECTION TO SUBSTRATE.

STATE OF TEXAS
 WALTER A. TILLIT, JR.
 9069
 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				M.P. DRAWN BY: 12/15/2021 DATE: 21-149 DRAWING No.	
ALUMINUM LOUVER SYSTEM MODEL FL-D-6					
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					
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 16-007	12-16-21	3	-	-
2	-	-	4	-	-

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING (psf) & MULLION SPACING FOR TYPE 12 CONNECTION *

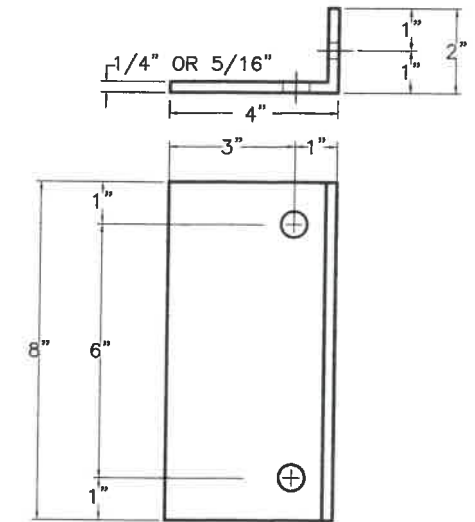
DESIGN PRESSURE RATING	MULLION SPACING			
	3	4	5	6
30	12'-0"	11'-3"	9'-0"	7'-6"
40	12'-0"	8'-5"	6'-9"	5'-8"
50	11'-3"	6'-9"	5'-5"	4'-6"
60	9'-0"	5'-8"	4'-6"	3'-9"
70	7'-6"	4'-10"	3'-10"	3'-3"
80	6'-5"	4'-3"	3'-5"	2'-10"
90	5'-8"	3'-9"	3'-0"	2'-6"
100	5'-0"	3'-5"	2'-8"	2'-3"
110	4'-6"	3'-1"	2'-6"	2'-1"
120	4'-1"	2'-10"	2'-3"	1'-11"
130	3'-9"	2'-7"	2'-1"	1'-9"
140	3'-6"	2'-5"	1'-11"	1'-7"
150	3'-0"	2'-3"	1'-10"	1'-6"

TYPE 12 CONNECTION TO POURED CONCRETE:
 2 - 1/4" Ø CRETE-FLEX SS4 (ELCO CONSTRUCTION PRODUCTS) W/ 2" MIN. EMBEDMENT TO POURED CONCRETE;
 8" MIN. MEMBER THICKNESS. W/ 2 1/2" MIN. E.D & 6" MIN. SPACING

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING (psf) & MULLION SPACING FOR TYPE 13 CONNECTION *

DESIGN PRESSURE RATING	MULLION SPACING			
	3	4	5	6
30	12'-0"	11'-7"	9'-3"	7'-8"
40	11'-7"	8'-8"	6'-11"	5'-9"
50	9'-3"	6'-11"	5'-7"	4'-7"
60	7'-8"	5'-9"	4'-7"	3'-10"
70	6'-7"	4'-11"	3'-12"	3'-4"
80	5'-9"	4'-4"	3'-6"	2'-11"
90	5'-2"	3'-10"	3'-1"	2'-1"
100	4'-7"	3'-6"	2'-9"	2'-4"
110	4'-2"	3'-2"	2'-6"	2'-1"
120	3'-10"	2'-11"	2'-4"	1'-11"
130	3'-7"	2'-8"	2'-2"	1'-9"
140	3'-4"	2'-6"	1'-12"	1'-8"
150	3'-1"	2'-4"	1'-10"	1'-7"

TYPE 13 CONNECTION TO POURED CONCRETE:
 2 - 5/16" Ø ULTRACON (ELCO CONSTRUCTION PRODUCTS) W/ 3/4" MIN. EMBEDMENT TO POURED CONCRETE;
 8" MIN. MEMBER THICKNESS. W/ 2 3/16" MIN. E.D & 6" MIN. SPACING



1/4" OR 5/16"
 (SEE SCHEDULE ON SHEET 13)

2"x4"xVARIESx0'-8" ALUMINUM ANGLE

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING (psf) & MULLION SPACING FOR TYPE 14 CONNECTION *

DESIGN PRESSURE RATING	MULLION SPACING			
	3	4	5	6
30	12'-0"	10'-10"	8'-8"	7'-2"
40	10'-10"	8'-1"	6'-6"	5'-5"
50	8'-8"	6'-6"	5'-2"	4'-4"
60	7'-2"	5'-5"	4'-4"	3'-7"
70	6'-2"	4'-8"	3'-8"	3'-1"
80	5'-5"	4'-1"	3'-3"	2'-8"
90	4'-10"	3'-7"	2'-11"	2'-5"
100	4'-4"	3'-3"	2'-7"	2'-2"
110	3'-11"	2'-11"	2'-4"	1'-12"
120	3'-7"	2'-8"	2'-2"	1'-10"
130	3'-4"	2'-6"	1'-12"	1'-8"
140	3'-1"	2'-4"	1'-10"	1'-7"
150	2'-11"	2'-2"	1'-9"	1'-5"

TYPE 14 CONNECTION TO POURED CONCRETE:
 2 - 5/16" Ø TAPPER PLUS (POWER FASTENERS) W/ 3" MIN. EMBEDMENT TO POURED CONCRETE;
 8" MIN. MEMBER THICKNESS. W/ 2 1/2" MIN. E.D & 6" MIN. SPACING

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING (psf) & MULLION SPACING FOR TYPE 15 CONNECTION *

DESIGN PRESSURE RATING	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	10'-3"
40	12'-0"	11'-7"	9'-3"	7'-8"
50	12'-0"	9'-3"	7'-5"	6'-2"
60	10'-3"	7'-8"	6'-2"	5'-2"
70	8'-10"	6'-7"	5'-3"	4'-5"
80	7'-8"	5'-9"	4'-7"	3'-10"
90	6'-10"	5'-2"	4'-1"	3'-5"
100	6'-2"	4'-7"	3'-8"	3'-1"
110	5'-7"	4'-2"	3'-4"	2'-10"
120	5'-2"	3'-10"	3'-1"	2'-7"
130	4'-9"	3'-7"	2'-10"	2'-4"
140	4'-5"	3'-4"	2'-8"	2'-2"
150	4'-1"	3'-1"	2'-6"	2'-1"

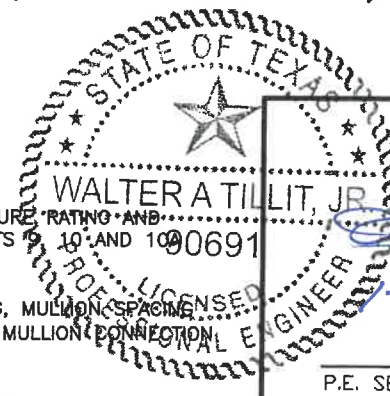
TYPE 15 CONNECTION TO POURED CONCRETE:
 2 - 3/8" Ø WEDGE BOLT (POWER FASTENERS) W/ 3" MIN. EMBEDMENT TO POURED CONCRETE;
 8" MIN. MEMBER THICKNESS. W/ 2 1/2" MIN. E.D & 6" MIN. SPACING

SCHEDULE FOR MULLION CONNECTION TO POURED CONCRETE
 (Min. f'c = 3 ksi)

*** NOTES:**

(1) SEE SHEET 9 FOR ADDITIONAL MAXIMUM MULLION SPAN LIMITATIONS FOR A GIVEN DESIGN PRESSURE RATING AND MAXIMUM SPACING. MAXIMUM MULLION SPAN SHALL BE THE MINIMUM BETWEEN SCHEDULES ON SHEETS 9, 10, AND 11 FOR A CONNECTION TYPE.

(2) SEE SHEET 13 FOR ANGLE SCHEDULE INDICATING MAXIMUM ALLOWABLE DESIGN PRESSURE RATING, MULLION SPACING AND MULLION SPAN FOR 1/4" THICK & 5/16" THICK ALUMINUM ANGLES USED TOP & BOTTOM FOR MULLION CONNECTION TO SUBSTRATE.



P.E. SEAL/SIGNATURE/DATE

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 TEXAS LIC. # 90691
 FIRM REGISTRATION # F-13790

TEXAS DEPARTMENT OF INSURANCE - 2018

ALUMINUM LOUVER SYSTEM MODEL FL-D-6

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:

12/15/2021 DATE:

21-149 DRAWING No.

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 16-007	12-16-21	3	-	-
2	-	-	4	-	-

SHEET 10A OF 13

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 12 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
50	6'-6"	4'-10"	3'-11"	3'-3"
60	5'-0"	4'-1"	3'-3"	2'-8"
70	4'-0"	3'-6"	2'-9"	2'-4"
80	4'-0"	3'-0"	2'-5"	2'-0"
90	3'-0"	2'-8"	2'-2"	1'-10"

TYPE 12 CONNECTION W/ 1/4" THICK ALUMINUM ANGLE TO WOOD
4-3/8" LAG SCREWS W/ 1.5" Min. THREADED PENETRATION
W/ 2" E.D & 2" SPACING

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 13 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
50	12'-0"	9'-11"	7'-11"	6'-7"
60	11'-0"	8'-3"	6'-7"	5'-6"
70	9'-0"	7'-1"	5'-8"	4'-9"
80	8'-0"	6'-2"	4'-11"	4'-2"
90	7'-0"	5'-6"	4'-5"	3'-8"
65	12'-0"	9'-0"	7'-2"	6'-0"

TYPE 13 CONNECTION W/ 1/4" THICK ALUMINUM ANGLE TO WOOD
4-3/8" LAG SCREWS W/ 3" Min. THREADED PENETRATION
W/ 2" E.D & 2" SPACING

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 14 CONNECTION *

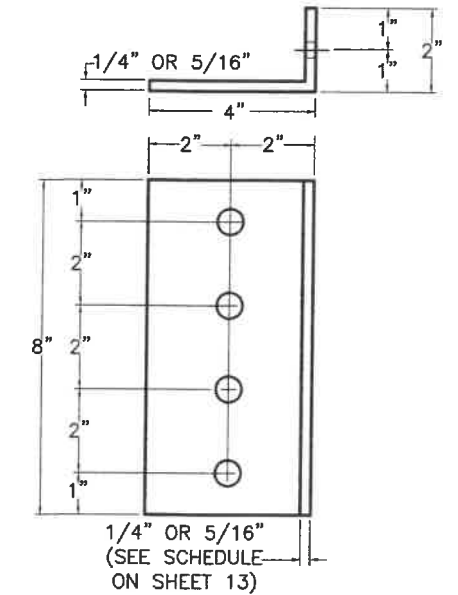
D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
50	7'-2"	5'-5"	4'-4"	3'-7"
60	6'-0"	4'-6"	3'-7"	3'-0"
70	5'-0"	3'-10"	3'-1"	2'-7"
80	4'-0"	3'-5"	2'-8"	2'-3"
90	4'-0"	3'-0"	2'-5"	2'-0"

TYPE 14 CONNECTION W/ 5/16" THICK ALUMINUM ANGLE TO WOOD
4-3/8" LAG SCREWS W/ 1.5" Min. THREADED PENETRATION
W/ 2" E.D & 2" SPACING

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 15 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
50	12'-0"	10'-10"	8'-8"	7'-2"
60	12'-0"	9'-0"	7'-2"	6'-0"
70	10'-0"	7'-9"	6'-2"	5'-2"
80	9'-0"	6'-9"	5'-5"	4'-6"
90	8'-0"	6'-0"	4'-10"	4'-0"
60	12'-0"	9'-0"	7'-2"	6'-0"

TYPE 15 CONNECTION W/ 5/16" THICK ALUMINUM ANGLE TO WOOD
4-3/8" LAG SCREWS W/ 3" Min. THREADED PENETRATION
W/ 2" E.D & 2" SPACING



2"x4"xVARIESx0'-8"
ALUMINUM ANGLE

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 16 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
50	12'-0"	9'-4"	7'-6"	6'-3"
60	10'-0"	7'-10"	6'-3"	5'-2"
70	8'-0"	6'-8"	5'-4"	4'-5"
80	7'-0"	5'-10"	4'-8"	3'-11"
90	6'-0"	5'-2"	4'-2"	3'-6"
52	12'-0"	9'-0"	7'-2"	6'-0"

TYPE 16 CONNECTION W/ 1/4" THICK ALUMINUM ANGLE TO WOOD
8-3/8" LAG SCREWS W/ 1.5" Min. THREADED PENETRATION
W/ 1.25" E.D & 2" SPACING

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 17 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	10'-6"
70	12'-0"	12'-0"	10'-10"	9'-0"
80	12'-0"	11'-10"	9'-5"	7'-11"
90	12'-0"	10'-6"	8'-5"	7'-0"
105	12'-0"	9'-0"	7'-2"	6'-0"

TYPE 17 CONNECTION W/ 1/4" THICK ALUMINUM ANGLE TO WOOD
8-3/8" LAG SCREWS W/ 3" Min. THREADED PENETRATION
W/ 1.25" E.D & 2" SPACING

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 18 CONNECTION *

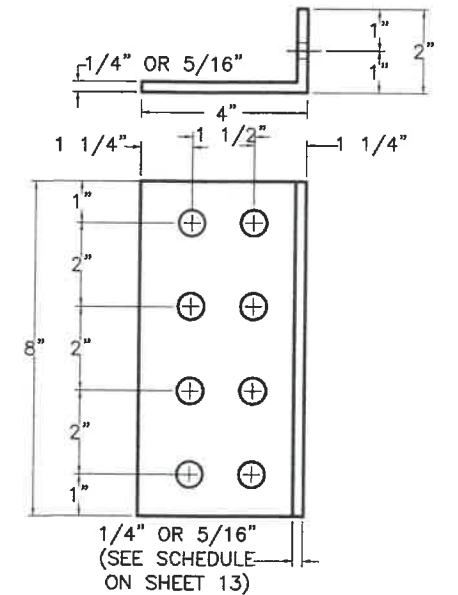
D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
50	12'-0"	9'-9"	7'-9"	6'-6"
60	10'-0"	6'-1"	6'-6"	5'-5"
70	9'-0"	6'-11"	5'-7"	4'-8"
80	8'-0"	6'-1"	4'-10"	4'-1"
90	7'-0"	5'-5"	4'-4"	3'-7"
64	12'-0"	9'-0"	7'-2"	6'-0"

TYPE 18 CONNECTION W/ 5/16" THICK ALUMINUM ANGLE TO WOOD
8-3/8" LAG SCREWS W/ 1.5" Min. THREADED PENETRATION
W/ 1.25" E.D & 2" SPACING

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 19 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	10'-5"
80	12'-0"	12'-0"	11'-0"	9'-2"
90	12'-0"	12'-0"	9'-9"	8'-2"
122	12'-0"	9'-0"	7'-2"	6'-0"

TYPE 19 CONNECTION W/ 5/16" THICK ALUMINUM ANGLE TO WOOD
8-3/8" LAG SCREWS W/ 3" Min. THREADED PENETRATION
W/ 1.25" E.D & 2" SPACING



2"x4"xVARIESx0'-8"
ALUMINUM ANGLE

SCHEDULE FOR MULLION CONNECTION TO WOOD

(Min. G = 0.55)

*** NOTES:**

(1) SEE SHEET 9 FOR ADDITIONAL MAXIMUM MULLION SPAN LIMITATIONS FOR A GIVEN DESIGN PRESSURE RATING AND MAXIMUM SPACING. MAXIMUM MULLION SPAN SHALL BE THE MINIMUM BETWEEN SCHEDULES ON SHEET 9 AND THIS SHEET FOR A CONNECTION TYPE.

(2) SEE SHEET 13 FOR ANGLE SCHEDULE INDICATING MAXIMUM ALLOWABLE DESIGN PRESSURE RATING, MULLION SPACING AND MULLION SPAN FOR 1/4" THICK & 5/16" THICK ALUMINUM ANGLES USED TOP & BOTTOM FOR MULLION CONNECTION TO SUBSTRATE.

STATE OF TEXAS
WALTER A. TILLIT JR.
9069
PROFESSIONAL ENGINEER
P.E. SEAL/SIGNATURE/DATE

TEXAS DEPARTMENT OF INSURANCE - 2018

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ALUMINUM LOUVER SYSTEM MODEL FL-D-6

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M.P.
DRAWN BY:

12/15/2021
DATE:

21-149
DRAWING No.

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 15-007	12-16-21	3	-	-
2	-	-	4	-	-

SHEET 11 OF 13

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 20 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	12'-0"
80	12'-0"	12'-0"	12'-0"	12'-0"
90	12'-0"	12'-0"	12'-0"	12'-0"
100	12'-0"	12'-0"	12'-0"	11'-9"
110	12'-0"	12'-0"	12'-0"	10'-8"
120	12'-0"	12'-0"	11'-9"	9'-9"
130	12'-0"	12'-0"	10'-10"	9'-0"
140	12'-0"	12'-0"	10'-1"	8'-5"
150	12'-0"	11'-9"	9'-5"	7'-10"

TYPE 20 CONNECTION W/ 1/4" THICK ALUMINUM ANGLE* TO STEEL
4 -3/8"-16 MACHINE SCREWS W/ 3/4" E.D.
& W/ 1/8" MIN. MEMBER THICKNESS

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 21 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	12'-0"
80	12'-0"	12'-0"	12'-0"	12'-0"
90	12'-0"	12'-0"	12'-0"	12'-0"
100	12'-0"	12'-0"	12'-0"	11'-9"
110	12'-0"	12'-0"	12'-0"	10'-8"
120	12'-0"	12'-0"	11'-9"	9'-9"
130	12'-0"	12'-0"	10'-10"	9'-0"
140	12'-0"	12'-0"	10'-1"	8'-5"
150	12'-0"	11'-9"	9'-5"	7'-10"

TYPE 21 CONNECTION W/ 5/16" THICK ALUMINUM ANGLE* TO STEEL
4 -3/8"-16 MACHINE SCREWS W/ 3/4" E.D.
& W/ 1/8" MIN. MEMBER THICKNESS

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 22 CONNECTION *

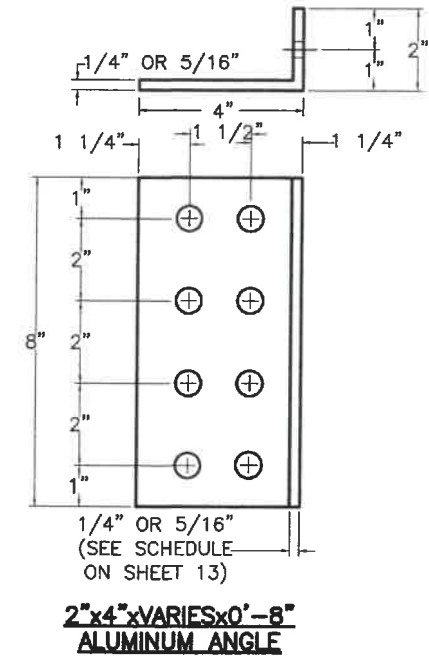
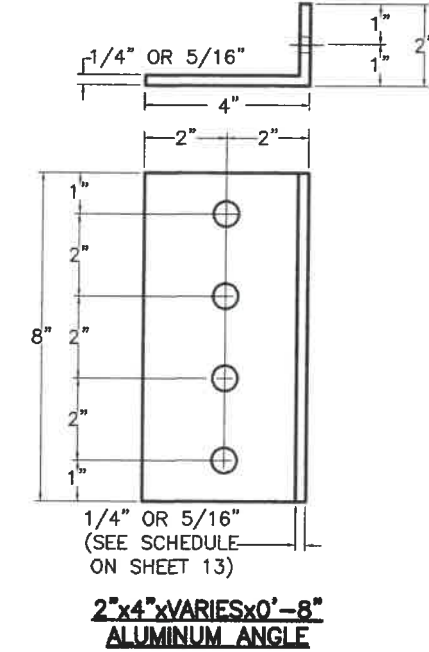
D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	12'-0"
80	12'-0"	12'-0"	12'-0"	12'-0"
90	12'-0"	12'-0"	12'-0"	12'-0"
100	12'-0"	12'-0"	12'-0"	12'-0"
110	12'-0"	12'-0"	12'-0"	12'-0"
120	12'-0"	12'-0"	12'-0"	12'-0"
130	12'-0"	12'-0"	12'-0"	12'-0"
140	12'-0"	12'-0"	12'-0"	12'-0"
150	12'-0"	12'-0"	12'-0"	12'-0"

TYPE 22 CONNECTION W/ 1/4" THICK ALUMINUM ANGLE* TO STEEL
8 -3/8"-16 MACHINE SCREWS W/ 3/4" E.D.
& W/ 1/8" MIN. MEMBER THICKNESS

MAX. MULLION SPAN (L ft) FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING FOR TYPE 23 CONNECTION *

D.P.R. (psf)	MULLION SPACING			
	3	4	5	6
30	12'-0"	12'-0"	12'-0"	12'-0"
40	12'-0"	12'-0"	12'-0"	12'-0"
50	12'-0"	12'-0"	12'-0"	12'-0"
60	12'-0"	12'-0"	12'-0"	12'-0"
70	12'-0"	12'-0"	12'-0"	12'-0"
80	12'-0"	12'-0"	12'-0"	12'-0"
90	12'-0"	12'-0"	12'-0"	12'-0"
100	12'-0"	12'-0"	12'-0"	12'-0"
110	12'-0"	12'-0"	12'-0"	12'-0"
120	12'-0"	12'-0"	12'-0"	12'-0"
130	12'-0"	12'-0"	12'-0"	12'-0"
140	12'-0"	12'-0"	12'-0"	12'-0"
150	12'-0"	12'-0"	12'-0"	12'-0"

TYPE 23 CONNECTION W/ 5/16" THICK ALUMINUM ANGLE* TO STEEL
8 -3/8"-16 MACHINE SCREWS W/ 3/4" E.D.
& W/ 1/8" MIN. MEMBER THICKNESS



SCHEDULE FOR MULLION CONNECTION TO STEEL

(Min. Fy= 33 ksi)

*** NOTES:**

(1) SEE SHEET 9 FOR ADDITIONAL MAXIMUM MULLION SPAN LIMITATIONS FOR A GIVEN DESIGN PRESSURE RATING AND MAXIMUM SPACING. MAXIMUM MULLION SPAN SHALL BE THE MINIMUM BETWEEN SCHEDULES ON SHEET 9 AND THIS SHEET FOR A CONNECTION TYPE.

(2) SEE SHEET 13 FOR ANGLE SCHEDULE INDICATING MAXIMUM ALLOWABLE DESIGN PRESSURE RATING, MULLION SPACING AND MULLION SPAN FOR 1/4" THICK & 5/16" THICK ALUMINUM ANGLES USED TOP & BOTTOM FOR MULLION CONNECTION TO SUBSTRATE.

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

TEXAS DEPARTMENT OF INSURANCE - 2018

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ALUMINUM LOUVER SYSTEM MODEL FL-D-6

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M.P.
DRAWN BY:

12/15/2021
DATE:

21-149
DRAWING No.

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 16-007	12-16-21	3	-	-
2	-	-	4	-	-

SHEET 12 OF 13

SCHEDULE FOR MAX. MULLION SPAN FOR A GIVEN DESIGN PRESSURE RATING & MULLION SPACING IN ORDER TO USE 1/4" THICK ALUMINUM ANGLE FOR MULLION CONNECTION TO SUBSTRATE

D.P.R. (psf)	MULLION SPACING (ft)			
	3	4	5	6
30	12' - 0"	12' - 0"	12' - 0"	12' - 0"
40	12' - 0"	12' - 0"	12' - 0"	12' - 0"
50	12' - 0"	12' - 0"	12' - 0"	12' - 0"
60	12' - 0"	12' - 0"	12' - 0"	12' - 0"
70	12' - 0"	12' - 0"	12' - 0"	12' - 0"
80	12' - 0"	12' - 0"	12' - 0"	11' - 3"
90	12' - 0"	12' - 0"	12' - 0"	10' - 0"
100	12' - 0"	12' - 0"	10' - 10"	9' - 0"
110	12' - 0"	12' - 0"	9' - 10"	8' - 2"
120	12' - 0"	11' - 3"	9' - 0"	7' - 6"
130	12' - 0"	10' - 5"	8' - 4"	6' - 11"
140	12' - 0"	9' - 8"	7' - 9"	6' - 5"
150	12' - 0"	9' - 0"	7' - 2"	6' - 0"

*** NOTES:**

(1) ANY MULLION SPACING OR MULLION SPAN LARGER THAN THE ONES INCLUDED ON THIS SCHEDULE WILL REQUIRE A 5/16" THICK ALUMINUM ANGLE INSTEAD OF 1/4" THICK ALUMINUM ANGLE

(2) SEE SHEET 9 FOR ADDITIONAL MAXIMUM MULLION SPAN LIMITATIONS FOR A GIVEN DESIGN PRESSURE RATING AND MAXIMUM SPACING. MAXIMUM MULLION SPAN SHALL BE THE MINIMUM BETWEEN SCHEDULES ON SHEETS 9, 10, 10A, 11, 12 FOR A CONNECTION TYPE, AND SCHEDULE ON THIS SHEET.

1/2"Ø THRU BOLT REQUIREMENTS FOR CONNECTION OF ALUMINUM ANGLE TO MULLION FOR MULLION END CONNECTION TO SUBSTRATE.

MULLION TYPE	1/2"Ø THRU BOLT REQUIRED
2"x4" & 2"x6"	(1) REQUIRED
(2) 2"x6"	(2) REQUIRED & (1) EACH TUBE
4"x6" & 4"x8"	(2) REQUIRED

WALTER A. TILLIT JR.
 90691
 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				ALUMINUM LOUVER SYSTEM MODEL FL-D-6 M.P. DRAWN BY:	
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				12/15/2021 DATE: 21-149 DRAWING No.	
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 18-007	12-18-21	3	-	-
2	-	-	4	-	-