TEST REPORT

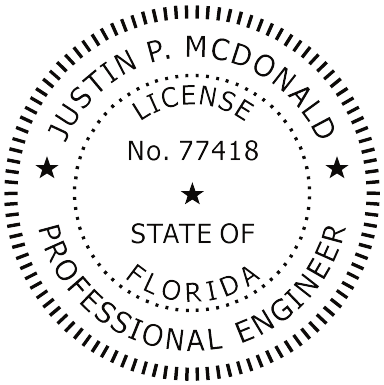
Report No.: F7657.02-550-44

Rendered to:

ALTECH PANEL SYSTEMS, LLC
Cartersville, Georgia

PRODUCT TYPE: Metal Wall Panel System
SERIES/MODEL: Low Profile Accu-Trac System DS without Stiffeners

Title	Summary of Results
Design Pressure	±2395 Pa (±50.00 psf)
Air Infiltration	<0.1 L/s/m^2 (<0.01 cfm/ft^2)
Water Penetration Resistance Test Pressure	360 Pa (7.50 psf)
Uniform Load Structural Test Pressure	±3593 Pa (±75.00 psf)



Digitally Signed by: JP McDonald

2016.06.16 09:43:14 -04'00'

Reference must be made to Report No. F7657.02-550-44, dated 06/13/16 for complete test specimen description and detailed test results.

1.0 Report Issued To: Altech Panel Systems, LLC
1 Johnson Street, #118
Cartersville, Georgia 30120

2.0 Test Laboratory: Architectural Testing, Inc., an Intertek company ("Intertek-ATI")
1701 Westfork Drive, Suite 106
Lithia Springs, Georgia 30122
770-941-6916

3.0 Project Summary:

3.1 Product Type: Metal Wall Panel System

3.2 Series/Model: Low Profile Accu-Trac System DS without Stiffeners

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test method(s). Test specimen description and results are reported herein.

3.4 Test Date(s): 04/18/16

3.5 Test Record Retention End Date: All test records for this report will be retained until April 19, 2020.

3.6 Test Location: Intertek-ATI test facility in Lithia Springs, Georgia.

3.7 Test Specimen Source: The test specimen(s) was provided by the client. Representative samples of the test specimen(s) will be retained by Intertek-ATI for a minimum of four years from the test completion date.

3.8 Drawing Reference: The test specimen drawings have been reviewed by Intertek-ATI and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek-ATI per the drawings located in Appendix C. Any deviations are documented herein or on the drawings.

3.9 List of Official Observers:

Name	Company
Doug McIntyre	Altech Panel Systems, LLC
Joel Ivey	Intertek-ATI
Ian McKenzie	Intertek-ATI
JP McDonald	Intertek-ATI

4.0 Test Method(s):

ASTM E283-04 (2012), *Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen*

ASTM E330/E330M-14, *Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference*

ASTM E331-00 (2009), *Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference*

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 8.9 m² (96.0 ft²)	**Width**		**Height**	
	millimeters	**inches**	**millimeters**	**inches**
Overall size	3658	144	2438	96
Top Left Panel TB2-06	914	36	876	34-1/2
Bottom Left Panel TB2-05	914	36	1518	59-3/4
Top Right Panel TB2-08	2702	106-3/8	876	34-1/2
Bottom Right Panel TB2-07	2702	106-3/8	1518	59-34

5.0 Test Specimen Description: (Continued)

5.2 Frame Construction:

Frame Member	Description
Perimeter support frame	Four C8 x 11.5 A36 C-channels
Bracing	One Bracing placed from frame end to frame end.
Bracing Brackets	Nine Bracing Brackets are placed between the stud and the brace.
End/Intermediate Studs	Ten total – 6" x 96" x 33 Ksi Steel studs. One on each end spaced 15-1/4" from the others and eight spaced at 16" on center.
Sheathing	5/8" DensGlas sheathing to Studs with screws 8" on center
Bottom Track	6" bottom track
Top Track	6" top track
Reveal	1/2" wide x 3/4" deep with accent strips
J-LP	Starter "J" extrusion at the bottom of the system. Fastened to steel stud through the sheathing via #12-14 Tek fasteners
F-LP	Shop attached to perimeter of all panels
MM-LP	Siding termination clip on the sides and head of system installed into key of F-LP extrusion. F-LP attached to framing via #12-14 Tek fasteners.
M-LP	Sliding attachment clip at the joints installed into key of F-LP extrusion (Section 2 of DWG# D01)

5.3 Panel Construction:

Panel Member	Material	Description
External Skin	Aluminum	4mm (0.157 in.) Aluminum Composite Material Panel

6.0 Installation:

Location	Anchor Description
Panels to Sheathing to Stud	The panels are secured to the sheathing using a sliding termination clip extrusion (MM-LP). The MM-LP Extrusion was fastened with #12-14 x 3/4" Tek screws every 16". Plastic Shims were placed in between every Tek fastener and silicone was placed around the frame edge. Sheathing was attached to studs using #6 self-tapping screws spaced 8" vertically and 16" on center horizontally.

7.0 Test Results: The temperature during testing was 26°C (78°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Air Leakage, per ASTM E283 at 75 Pa (1.57 psf)	<0.1 L/s/m^2 (<0.01 cfm/ft^2)	1.5 L/s/m^2 (0.3 cfm/ft^2) max.	1
Water Penetration, per ASTM E331 at 360 Pa (7.50 psf)	Pass	No leakage	
Uniform Load Deflection, per ASTM E330 Deflections taken at perimeter +2395 Pa (+50.00 psf) -2635 Pa (-55.00 psf)	 3.3 mm (0.13") 3.8 mm (0.15")	 15.5 mm (0.61") max. 15.5 mm (0.61") max.	 2, 3
Uniform Load Deflection, per ASTM E330 Deflections taken at span on of Panel TB1-03 +2395 Pa (+50.00 psf) -2635 Pa (-55.00 psf)	 0.5 mm (.02") 0.2 mm (.01")	 44.7 mm (1.76") max. 44.7 mm (1.76") max.	 2, 3
Uniform Load Structural, per ASTM E330 Permanent sets taken at Perimeter +3593 Pa (+75.00 psf) -3952 Pa (-82.50 psf)	 0.3 mm (0.03") 0.1 mm (0.04")	 Report Only	 2, 3
Uniform Load Structural, per ASTM E330 Permanent sets taken at span of Panel TB1-03 +3593 Pa (+75.00 psf) -3952 Pa (-82.5.00 psf)	 0.4 mm (0.01") 0.2 mm (0.01")	 Report Only	 2, 3

7.0 Test Results: (Continued)

***General Note**: All testing was performed in accordance with the referenced standard(s).*

Note 1: Test Date 04/18/16 / Time: 7:30 AM

Note 2: Loads were held for 30 seconds.

Note 3: Tape was used to seal against air leakage during structural testing. In our opinion, the tape did not influence the results of the test.

Intertek-ATI will service this report for the entire test record retention period. Test records such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Intertek-ATI for the entire test record retention period.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Intertek-ATI.

For ARCHITECTURAL TESTING, INC.:

Digitally Signed by: Ian J. McKenzie

Ian J. McKenzie
Regional Manager

Digitally Signed by: JP McDonald

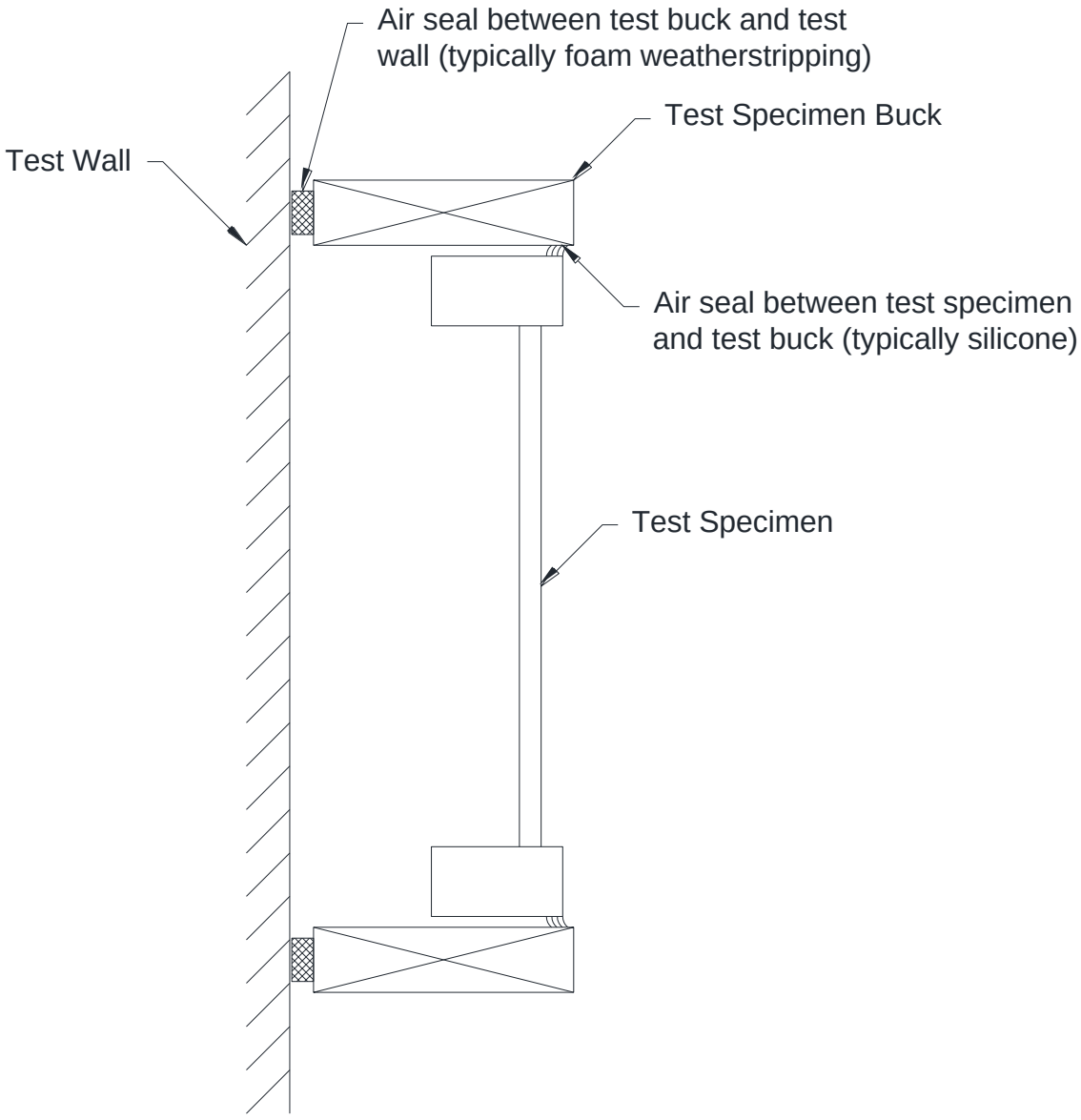
JP McDonald, P.E.
Director – Regional Operations

IJM:jab

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix A: Location of air seal (1)
Appendix B: Photograph(s) (1)
Appendix C: Drawings (7)

Appendix A

Location of Air Seal: The air seal between the test specimen and the test wall is detailed below. The seal is made of foam weatherstripping and is attached to the edge of the test specimen buck. The test specimen buck is placed against the test wall and clamped in place, compressing the weatherstripping and creating a seal.



Appendix B

Photograph

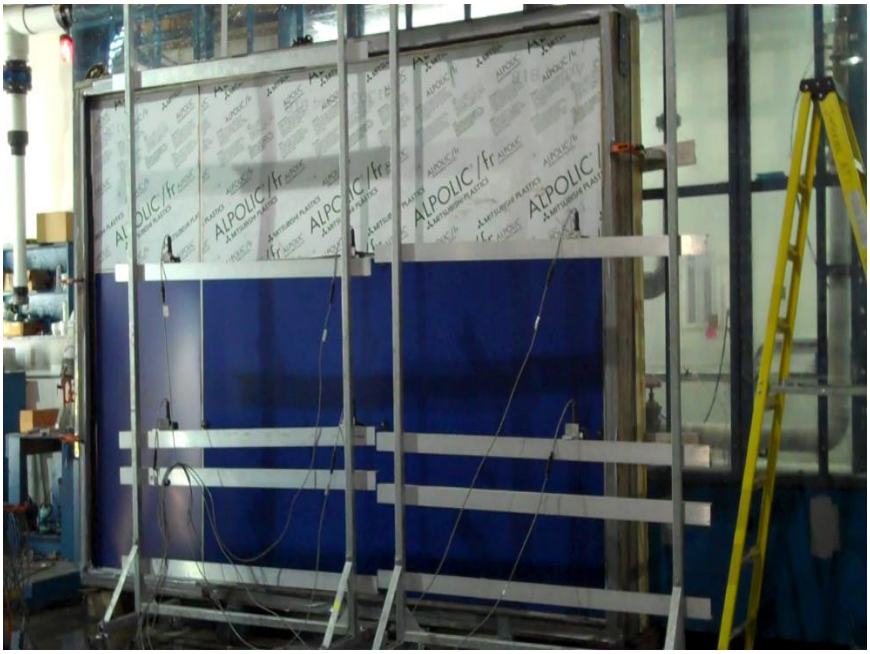


Photo No. 1
Test Unit

Appendix C

Drawings

ACCU-TRAC LOW PROFILE ES & DS TESTING

ALTECH PANEL SYSTEMS, CARTERSVILLE, GA. 30120

Intertek Architectural Testing
BuildingBetterTogether.
Test sample complies with these details.
Deviations are noted.
Report #: F7657.02-550-44 Date: 06/13/16
Verified by:

ALTECH PANEL SYSTEMS
1 JOHNSON ST. , SUITE 118.
CARTERSVILLE, GA. 30120
PH. (678) 721-4569
FAX (678) 721-4956
WEBSITE: WWW.ALTECHPANEL.COM

NOTE: DRAWINGS MARKED "APPROVED" OR "FURNISH AS CORRECTED" WILL BE INTERPRETED AS AUTHORIZATION FOR FABRICATION.

GENERAL NOTES:

IMPORTANT CUSTOMER NOTES:

- ALL OF ALTECH'S SHOP FABRICATED MATERIAL WILL BE MANUFACTURED TO THE DIMENSIONS SHOWN UNLESS OTHERWISE NOTED.
- IT IS CRUCIAL THAT ANY NECESSARY CHANGES, NOTATIONS, OR REQUESTED INFORMATION BE CLEARLY NOTED ON THE SHOP DRAWINGS AND RETURNED TO ALTECH FOR REVIEW.
- WHERE ALTECH SPECIFICALLY REQUESTS TO "FIELD VERIFY" OR "SPECIFY A DIMENSION," THE PROPER CUSTOMER RESPONSE WILL BE TO:
  - A) MARK WITH EITHER "OK" OR "✓" IF THE DIMENSION IS CORRECT.
    OR
  - B) NOTE THE CORRECT DIMENSION.
- IT IS IMPERATIVE THAT FIELD DIMENSIONS ARE TAKEN TO INSURE ACCURATE FABRICATION AND PROPER MATERIAL FIT.
- NO MATERIAL WILL BE CONSIDERED RELEASED FOR FABRICATION UNTIL ALL PERTINENT INFORMATION (i.e., COLOR, DIMENSIONS, MATERIAL CONFIGURATION) HAS BEEN RECEIVED AND AGREED UPON BY ALTECH.
- ALTECH MUST HAVE APPROVED SHOP DRAWINGS WITH AUTHORIZATION TO RELEASE THE MATERIAL FOR FABRICATION AS INDICATED BY A CUSTOMER AUTHORIZATION SIGNATURE.

MATERIAL NOTES:

- SHIMS - TO BE INSTALLED AS REQUIRED PER ACTUAL JOB-SITE CONDITIONS AND AS NOTED PER ALTECH SHOP DRAWINGS. (NOT SUPPLIED BY ALTECH PANEL SYSTEMS) (MINIMUM 1/4" SHIM REQUIRED TO MEET ALTECH STANDARD SYSTEM DEPTHS.)
- BACKER RODS - TO BE INSTALLED PER SHOP DRAWINGS. (NOT SUPPLIED BY ALTECH PANEL SYSTEMS)
- SEALANT - TO BE APPLIED ACCORDING TO MANUFACTURE'S INSTALLATION GUIDELINES. USE A HIGH QUALITY SEALANT COMPATIBLE WITH CORAFLON, KYNAR AND POLYESTER FINISHES. ALTECH PANEL SYSTEMS RECOMMENDS DOW 795. (NOT SUPPLIED BY ALTECH PANEL SYSTEMS)
- STORAGE - STORE ALL COMPONENTS IN A CLEAN, DRY STORAGE AREA. PREVENT CONTACT WITH CORROSIVE OR STAINING MATERIALS.
- MOISTURE BARRIER - MOISTURE BARRIERS ARE NOTED PER INDIVIDUAL PROJECT REQUIREMENTS. MOISTURE BARRIERS ARE NOT BY ALTECH PANEL SYSTEMS.
- STRAPPING / FURRING - STRAPPING OR EXTRA FURRING/ FRAMING MAY BE REQUIRED BY INSTALLER.

ACCU-TRAC PANEL NOTES:

- FOR ADDITIONAL ACCU-TRAC INSTALLATION ASSISTANCE, CONTACT ALTECH ENGINEERING.
- ALL PANEL CLIPS ARE TO BE FASTENED USING A MINIMUM #14 OR #12 SELF-TAPPING FASTENER 16" O.C. MAX OR AS NOTED ON ALTECH DETAILS.
- EXPOSED FASTENERS SHALL BE STAINLESS STEEL WITH GROMMETTED WASHERS OR ALUMINUM FOR RIVETS. ALL OTHER FASTENERS TO BE ZINC PLATED.

ALUMINUM EXTRUSIONS:

- EXTRUSIONS SUPPLIED ARE MADE FROM HIGH QUALITY 6063-T5 ALUMINUM UNLESS OTHERWISE NOTED.

DESIGN SPECS:

BUILDING CODE:
BUILDING HEIGHT: XXXXXX
EXPOSURE:
WIND SPEED:
IMPORTANCE FACTOR:

SPECIAL NOTES:

REL #:	DATE:	PAGES:	REL #:	DATE:	PAGES:
REL X	MM/DD/YY	P01 ,E01 ,E02			

SCOPE OF WORK:

1. SYSTEM:
   ACCU-TRAC LOW PROFILE-- ES/DS
2. MATERIAL TYPES:
   A. 4MM APOLIC PE CORE
   B. EXTRUDED ALUMINUM 6063-T5
3. FINISH:
   ANY

REL 1 TAGS 6/23/15

DRAWING INDEX

SHEET NO.	DESCRIPTION:	QTY.
C01	COVER SHEET	1
KP01	KEY PLANS	0
P01	PLANS/RCP'S	0
E01	ELEVATIONS	3
S01	SECTIONS	0
D01	DETAILS	2
	TOTAL	6

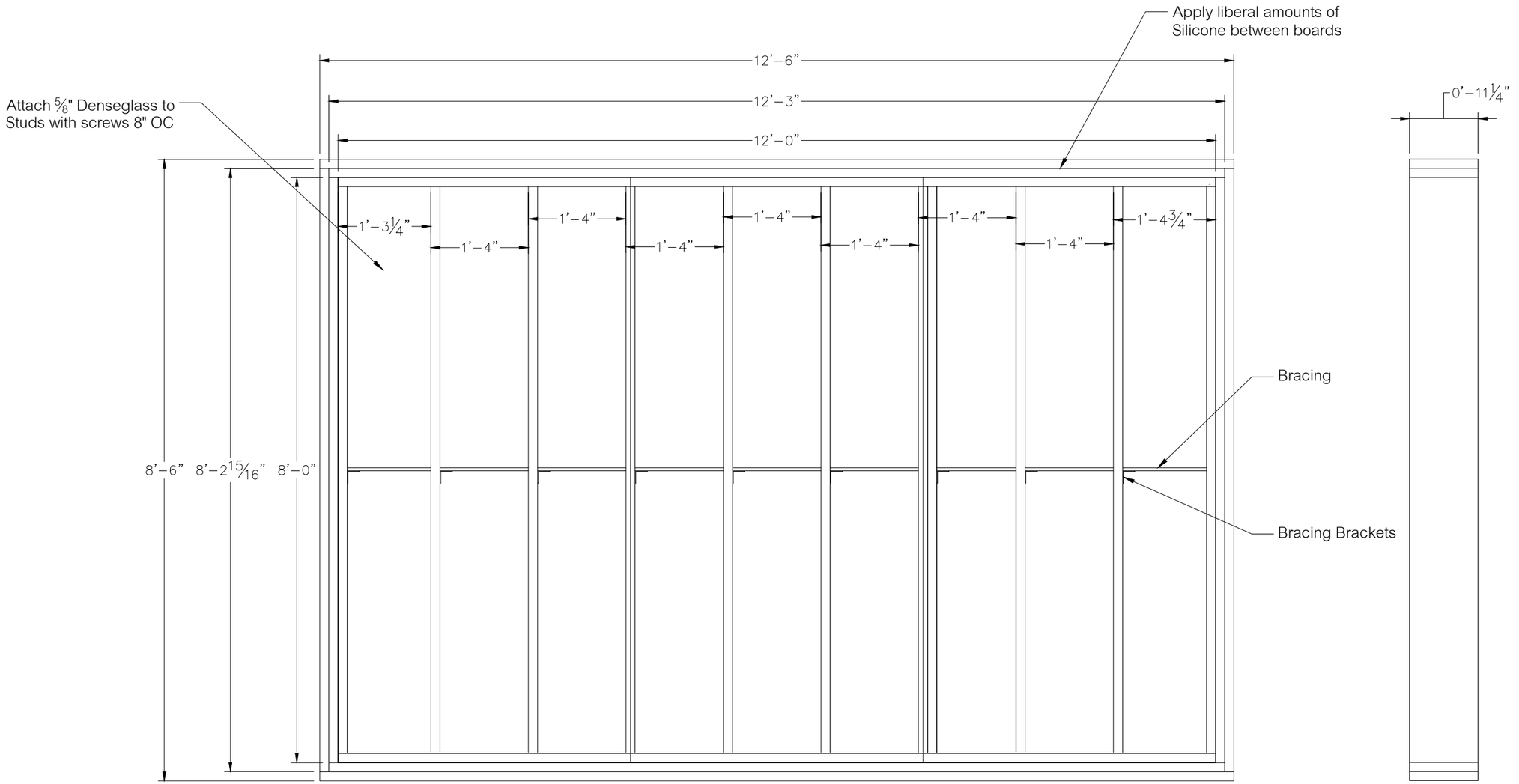
REV.	DATE	COMMENTS

PROJECT
ACCU-TRAC ES & DS STIFFENER TESTING
ARCH:
ARCH

CUSTOMER
ALTECH PANEL SYSTEMS

JOB. NO. XX-XXXX
CHECKED DWG
DATE 6/23/15
DRAWN CAW
DWG. NO. C01

FILENAME: LOW PROFILETEST BUCK NJE.DWG 4-7-2016 DATE PLOTTED: 4/7/2016 8:39:50 AM CURRENT SAVE DATE: 4/7/2016 8:39:04 AM



1 / E01 TEST BUCK FRAMING
1 1/2"=1'-0"

Intertek Architectural Testing
BuildingBetterTogether.
Test sample complies with these details.
Deviations are noted.
Report #: F7657.02-550-44 Date: 06/13/16
Verified by:

ALTECH PANEL SYSTEMS
1 JOHNSON ST., SUITE 118,
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WEBSITE: WWW.ALTECHPANEL.COM

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SHEET INFORMATION:

ELEVATION VIEWS

PROJECT

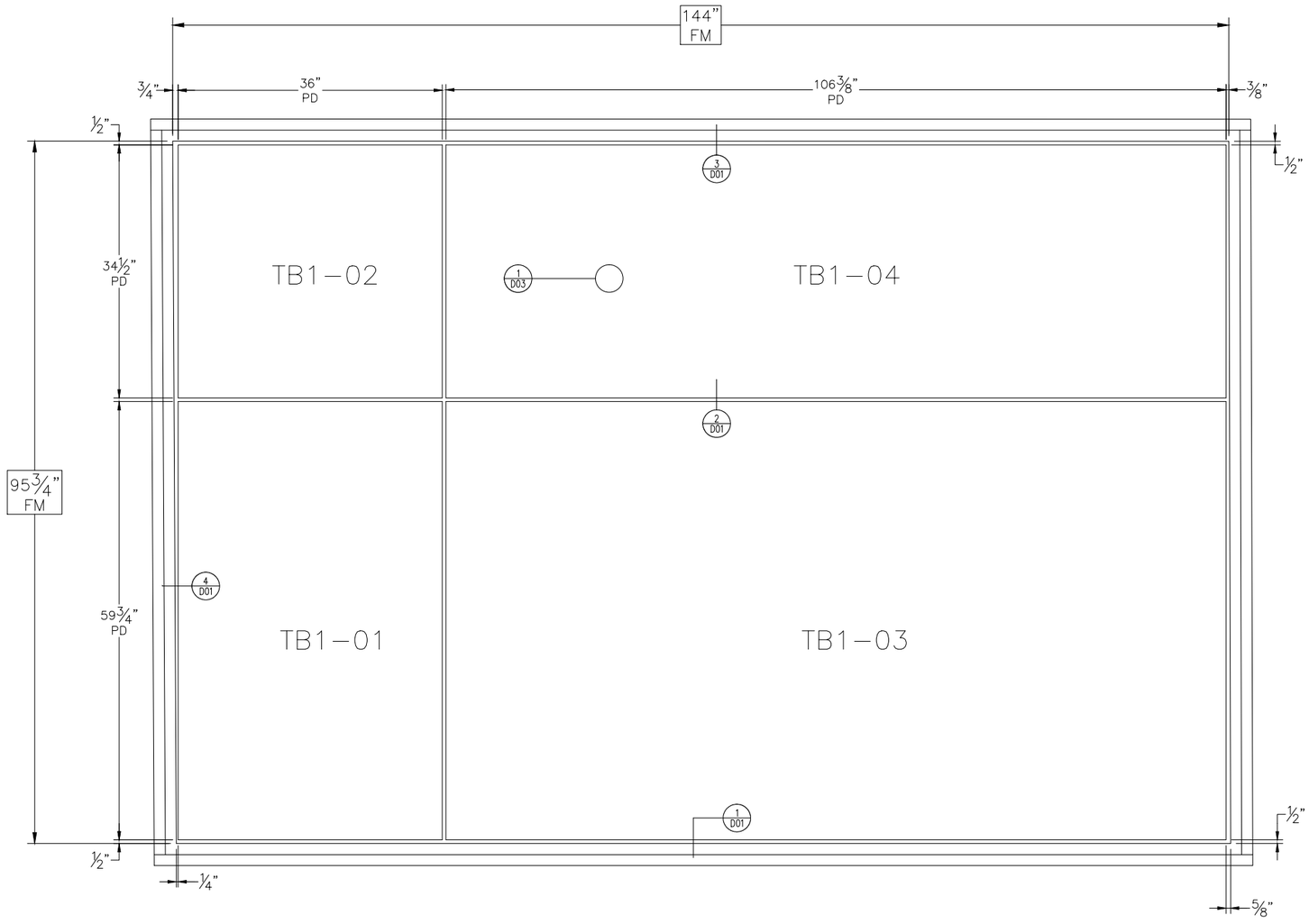
TEST BUCKS
JOB NAME

ARCH:
ARCH

CUSTOMER

ALTECH PANEL SYSTEMS

JOB. NO.	XX-XXXX
CHECKED	DWG
DATE	6/23/15
DRAWN	CAW
DWG. NO.	E01



2 / E02 TEST BUCK PANEL LAYOUT – ES WITH STIFFENERS
1 1/2"=1'–0"

Intertek Architectural Testing
BuildingBetterTogether.
Test sample complies with these details.
Deviations are noted.
Report #: F7657.02-550-44 Date: 06/13/16
Verified by:

ALTECH PANEL SYSTEMS
1 JOHNSON ST. , SUITE 118,
CARTERSVILLE, GA. 30120
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WEBSITE: WWW.ALTECHPANEL.COM

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SHEET INFORMATION:

ELEVATION VIEWS

PROJECT

TEST BUCKS
JOB NAME

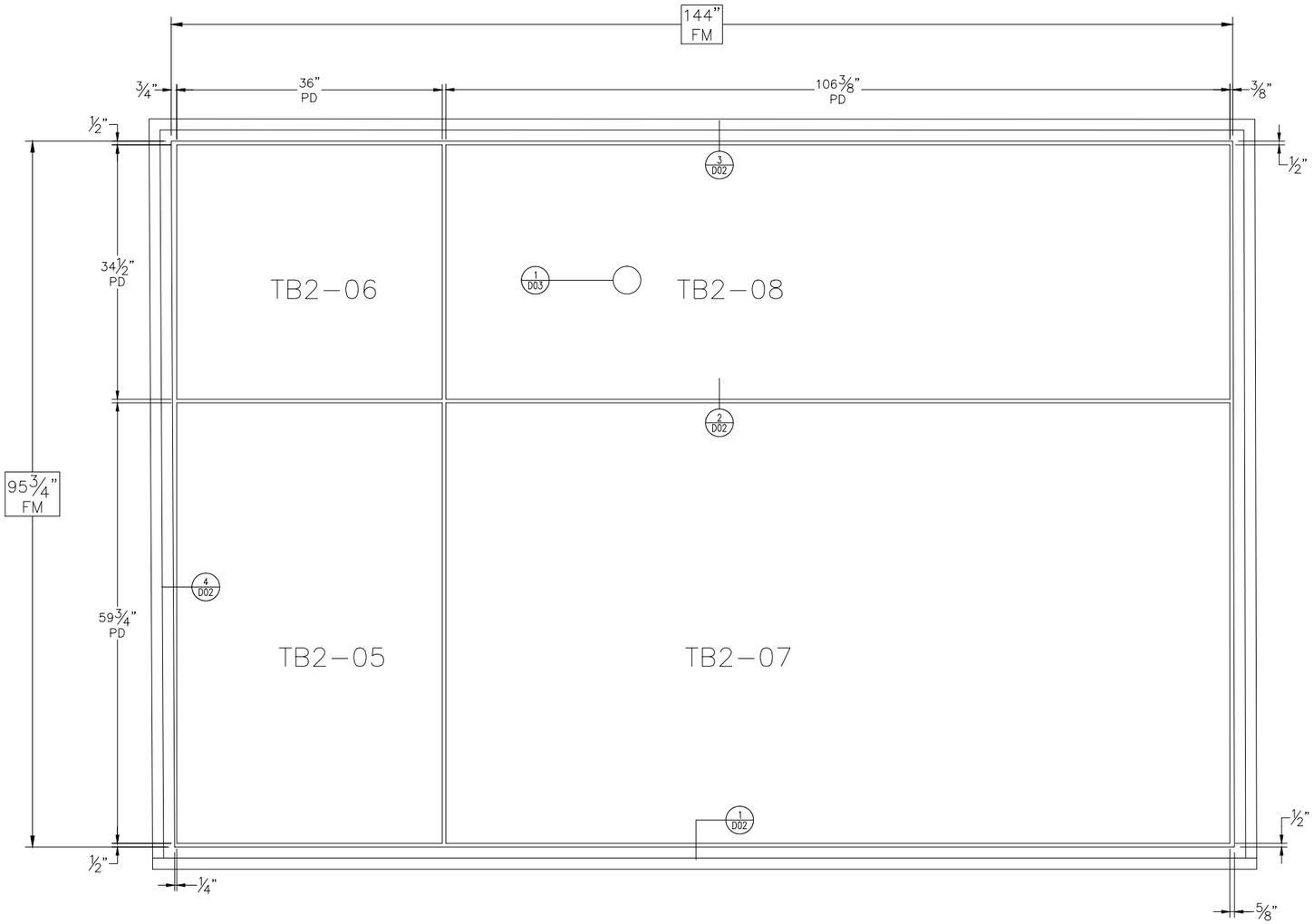
ARCH:
ARCH

CUSTOMER

ALTECH PANEL SYSTEMS

JOB. NO.
XX–XXXX
CHECKED
DWG
DATE
6/23/15
DRAWN
CAW
DWG. NO.
E02

Intertek Architectural Testing
BuildingBetterTogether.
Test sample complies with these details.
Deviations are noted.
Report #: F7657.02-550-44 Date: 06/13/16
Verified by:



3/E03 TEST BUCK PANEL LAYOUT – DS NO STIFFENERS
1 1/2"=1'-0"

ALTECH PANEL SYSTEMS
1 JOHNSON ST. , SUITE 118,
CARTERSVILLE, GA. 30120
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SHEET INFORMATION:

ELEVATION VIEWS

PROJECT

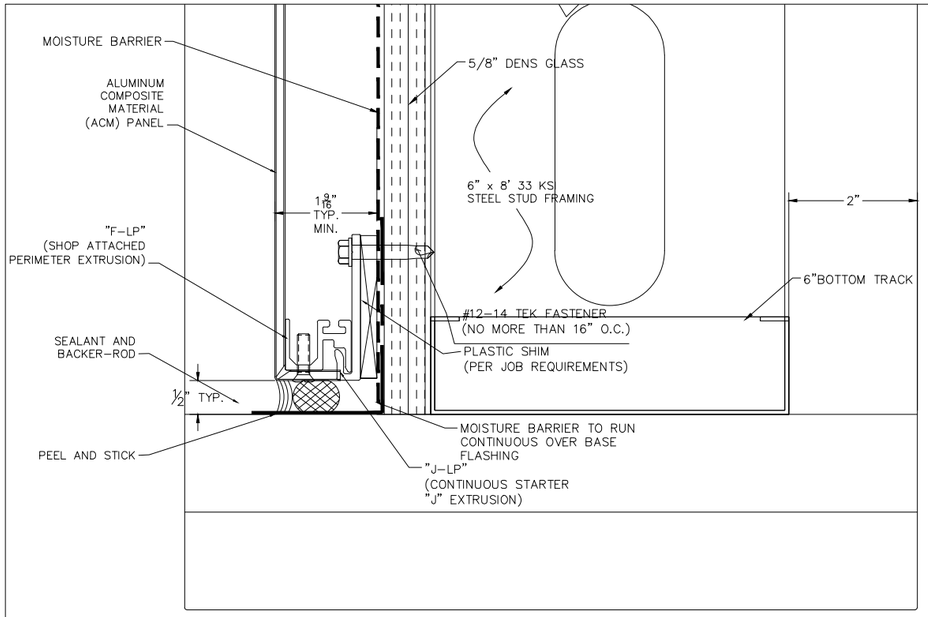
TEST BUCKS
JOB NAME

ARCH:
ARCH

CUSTOMER

ALTECH PANEL SYSTEMS

JOB. NO.	XX-XXXX
CHECKED	DWG
DATE	6/23/15
DRAWN	CAW
DWG. NO.	E03



1 D01 BASE DETAIL FOR ES
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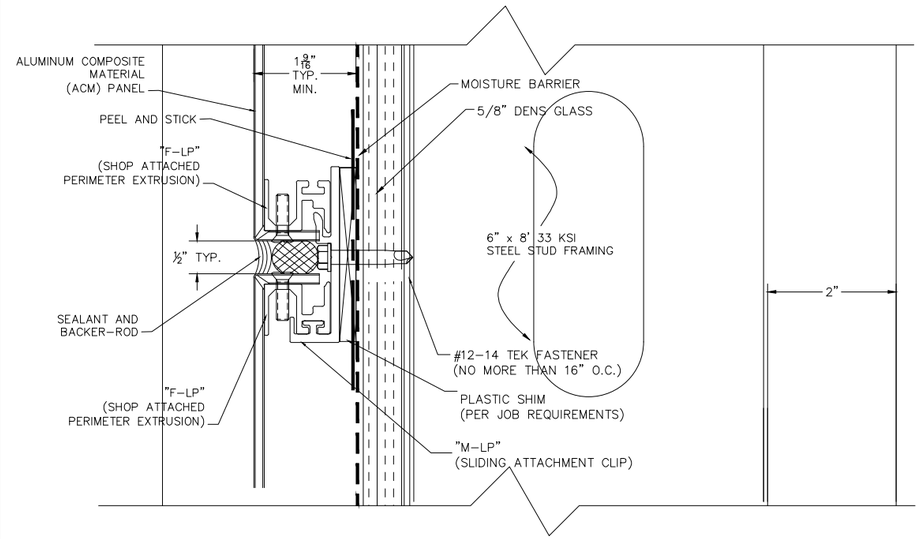

2 D01 JOINT DETAIL FOR ES
1'-0"=1'-0"

Intertek
Architectural Testing
BuildingBetterTogether.
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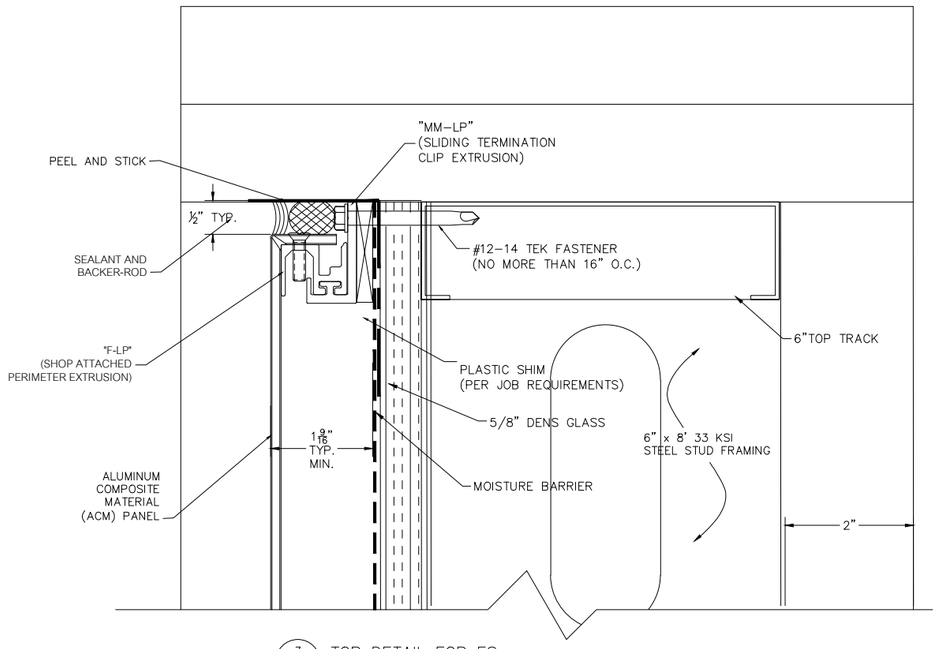
Verified by:



3 D01 TOP DETAIL FOR ES
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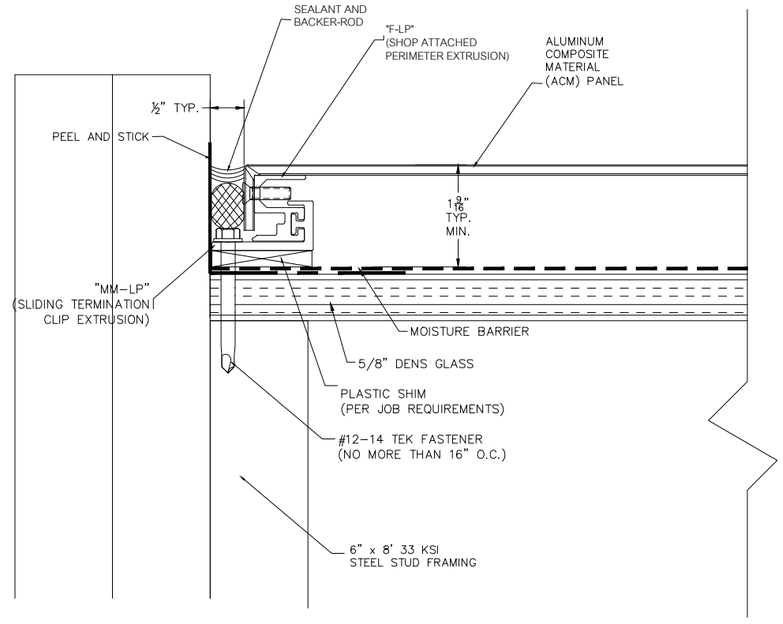

4 D01 SIDE DETAIL FOR ES
1'-0"=1'-0"

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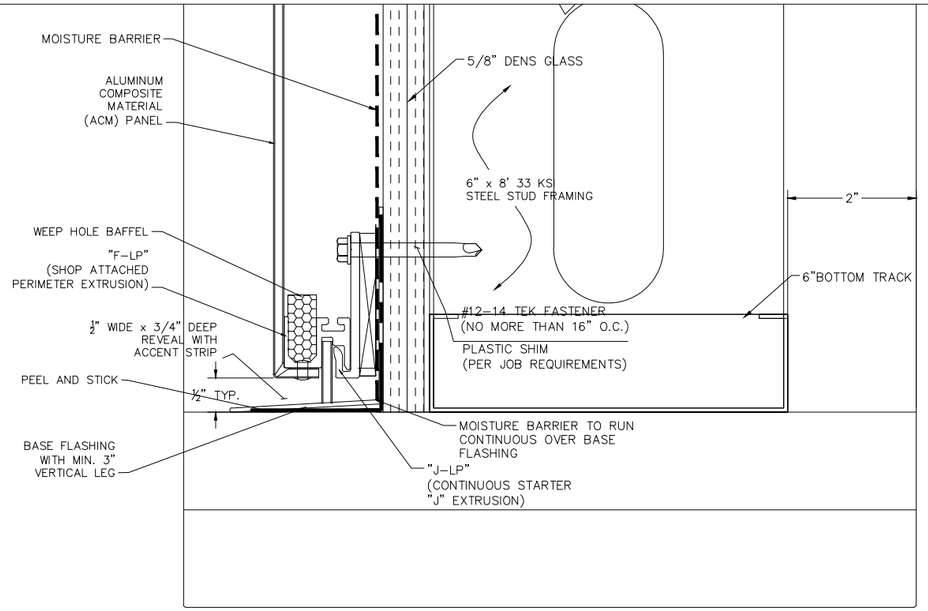
SHEET INFORMATION:

LINE 2
COVER SHEET

PROJECT
TEST BUCKS JOB NAME
ARCH:
ARCH

CUSTOMER
ALTECH PANEL SYSTEMS

JOB. NO.
XX-XXXX
CHECKED
DWG
DATE
6/23/15
DRAWN
CAW
DWG. NO.
D01



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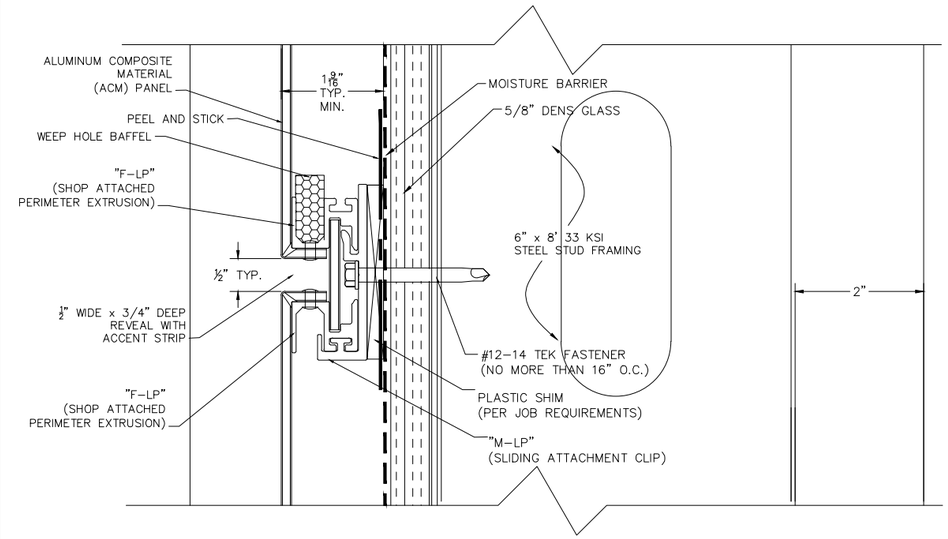

2 D02 JOINT DETAIL FOR DS
1'-0"=1'-0"

Intertek
Architectural Testing
BuildingBetterTogether.
Test sample complies with these details.
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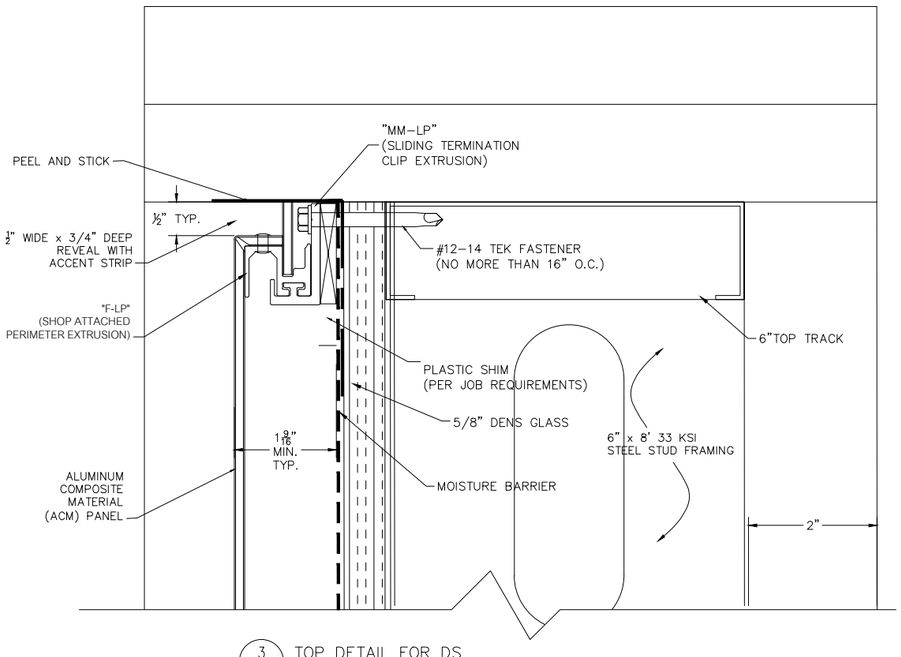
Report #: E7657.02-550-44 Date: 06/11/15
Verified by:



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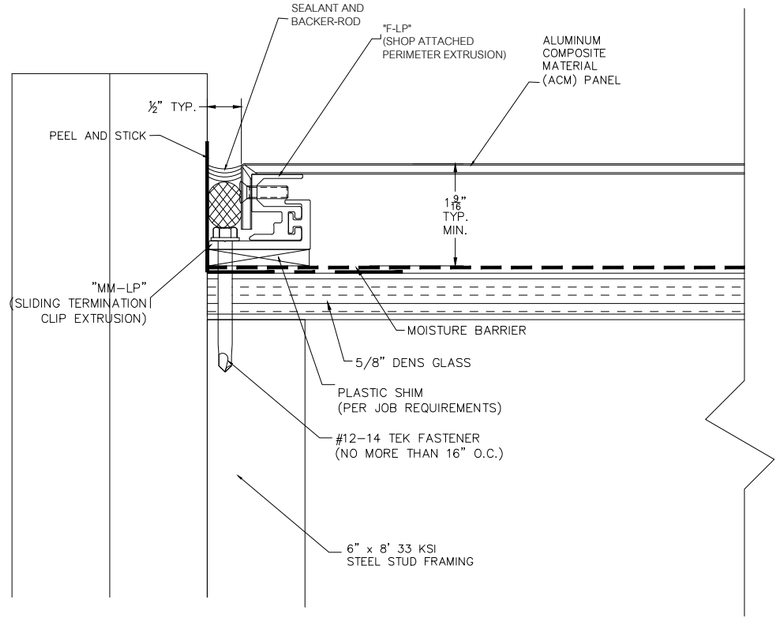
1'-0"=1'-0"



4 D02 SIDE DETAIL FOR DS
1'-0"=1'-0"

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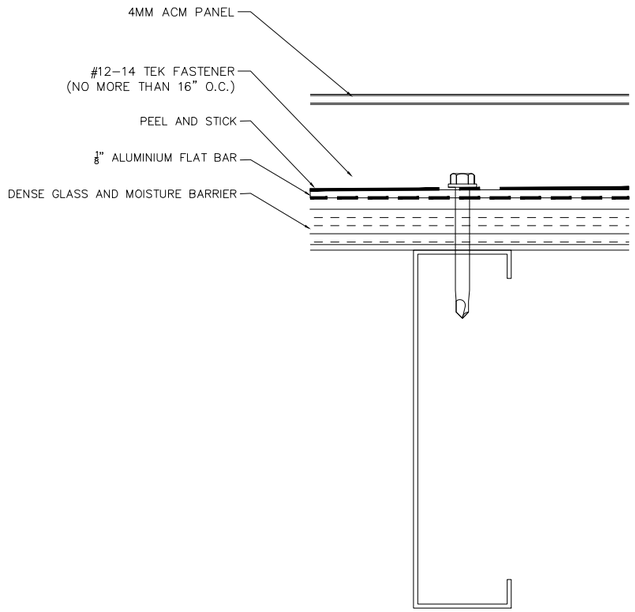
SHEET INFORMATION:

LINE 2
COVER SHEET

PROJECT
TEST BUCKS JOB NAME
ARCH:
ARCH

CUSTOMER
ALTECH PANEL SYSTEMS

JOB. NO.
XX-XXXX
CHECKED
DWG
DATE
6/23/15
DRAWN
CAW
DWG. NO.
D02



1 / D03 SECTION DETAIL FOR DS AND ES
1'-0"=1'-0"

Intertek Architectural Testing
BuildingBetterTogether.
Test sample complies with these details.
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Report #: F7657.02-550-44 Date: 06/13/16
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SHEET INFORMATION:

LINE 2
COVER SHEET

PROJECT

TEST BUCKS
JOB NAME

ARCH:
ARCH

CUSTOMER

ALTECH PANEL SYSTEMS

JOB. NO.
XX-XXXX
CHECKED
DWG
DATE
6/23/15
DRAWN
CAW
DWG. NO.
D03