

CR LAURENCE CO, INC.

ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK

AAMA 1801 SOUND TRANSMISSION LOSS TESTING ON A
NFD FRAME WITH KINETICS KWAD-49 DOOR

REPORT NUMBER

H9326.01-303-11-R0

TEST DATE

12/22/17

ISSUE DATE

01/17/18

RECORD RETENTION END DATE

12/22/21

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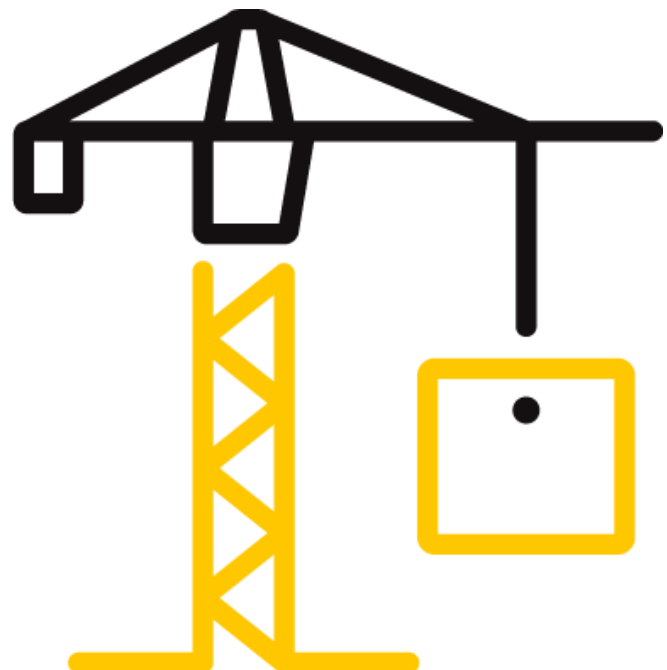
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TEST REPORT FOR CR LAURENCE CO, INC.

Report No.: H9326.01-303-11-r0

Date: 01/17/18

REPORT ISSUED TO

CR LAURENCE CO, INC.

2503 E. Vernon Avenue

Los Angeles California, 90058

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by CR Laurence to conduct a sound transmission loss test in accordance with AAMA 1801. Results obtained are tested values and were secured by using the designated test method(s). The complete test data is included herein. The client provided the test specimen. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

TYPE	Side Hinged Door
Description	NFD Frame with Kinetics KWAD-49 Side Hinged Door with 1 row Pemko S773 head and jambs, 1 row NP600-CRL Door Frame Gasket head and jambs, 1 row Zero 475 head and jambs, and Zero 368 automatic door bottom
DATA FILE NO.	H9326.01B3
STC	39
OITC	36
AIR INFILTRATION AT 1.57 PSF	0.06 cfm/ft ²

For INTERTEK B&C:

COMPLETED BY: Leeland S. Hoover

TITLE: Technician I

SIGNATURE:

DATE: 01/17/18

REVIEWED BY: Bradley D. Hunt

TITLE: Laboratory Manager

SIGNATURE:

DATE: 01/17/18

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SECTION 3

TEST METHOD(S)

The specimens were evaluated in accordance with the following:

AAMA 1801-13, *Voluntary Specification for the Acoustical Rating of Exterior Windows, Doors, Skylights and Glazed Wall Sections*

ASTM E1425-14, *Standard Practice for Determining the Acoustical Performance of Windows, Doors, Skylight, and Glazed Wall Systems*

ASTM E90-09 (2016), *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements*

ASTM E413-10, *Classification for Rating Sound Insulation*

ASTM E1332-10a, *Standard Classification for Rating Outdoor-Indoor Sound Attenuation*

ASTM E2235-04 (2012), *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*

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

SECTION 4

SPECIMEN INSTALLATION

A sound transmission loss test was initially performed on a filler wall.

The specimen plug was removed from the filler wall assembly. The specimen was placed on a foam isolation pad in the test opening. Duct seal was used to seal the perimeter of the specimen to the test opening on both sides. The interior side of the specimen, when installed, was approximately 1/4" from being flush with the receive room side of the filler wall. A stethoscope was used to check for any abnormal air leaks around the test specimen prior to testing. Operable portions of the test specimen, if any, were cycled at least five times prior to testing.

SECTION 5

EQUIPMENT

The equipment listed meets the requirements of the test methods stated in Section 3 of this report.

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INSTRUMENT	MANUFACTURER	MODEL	DESCRIPTION	ASSET #	CAL DATE
Data Acquisition Card	National Instruments	PXIe-4464	Data Acquisition Card	INT00627	10/17 *
Data Acquisition Card	National Instruments	PXIe-4464	Data Acquisition Card	INT00395	10/17 *
Data Acquisition Card	National Instruments	PXIe-4464	Data Acquisition Card	INT00396	10/17 *
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00239	04/17
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00240	04/17
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00241	04/17
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00242	04/17
Source Room Microphone	PCB piezotronics	378C20	Microphone and Preamplifier	INT00243	04/17
Receive Room Microphone	PBC Piezotronics	378C20	Microphone and Preamplifier	INT00244	04/17
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00245	04/17
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00246	04/17
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00247	04/17
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00228	04/17
Receive Room Environmental Indicator	Comet	T7510	Receive Room	INT00299	10/17
Source Room Environmental Indicator	Comet	T7510	Source Room	INT00300	10/17
Microphone Calibrator	Norsonic	1251	Pistonphone Calibrator	INT00288	06/17

*- Note: The calibration frequency for this equipment is every two years per the manufacturer's recommendation.

TEST CHAMBER

	VOLUME	DESCRIPTION
RECEIVE ROOM	231 m ³	Rotating vane and stationary diffusers Temperature and humidity controlled Isolation pads under the floor
SOURCE ROOM	196 m ³	Stationary diffusers only Temperature and humidity controlled

	MAXIMUM SIZE	DESCRIPTION
TL TEST OPENING	4.27 m wide by 3.05 m high	Vibration break between source and receive rooms

N/A-Not Applicable

SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Garrett Osterode	CR Laurence Co., Inc.
Bradley D. Hunt	Intertek B&C
Ryan R. Lau	Intertek B&C
Leeland S. Hoover	Intertek B&C

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SECTION 7

TEST PROCEDURE

All measurements were conducted in the HT test chambers at Intertek B&C located in Lake Forest, California.

Air Infiltration

The perimeter of a pressure chamber was placed over the test specimen and sealed to the receive room face of the filler wall with duct tape. The chamber was connected to a centrifugal blower/vacuum pump, airflow meter, and a pressure sensing device that was designed to maintain a constant air pressure differential across the assembly. Pressure was applied and the total air infiltration was measured. The specimen exterior was sealed with plastic sheet and duct tape. The extraneous air infiltration was measured. Environmental corrections were applied to the both airflow results. The airflow rate was calculated by subtracting the extraneous airflow from the total airflow and dividing the difference by the specimen area.

Acoustical Tests

The sensitivity of the microphones was checked before measurements were conducted.

The transmission loss values were obtained for a single direction of measurement. Two background noise sound pressure level and five sound absorption measurements were conducted at each of five microphone positions.

Two sound pressure levels were made simultaneously in the receive and source rooms at each of five microphone positions.

The air temperature and relative humidity conditions were monitored and recorded during all measurements.

SECTION 8

ACOUSTICAL TEST CALCULATIONS

Transmission loss (TL) at each 1/3 octave frequency is the average source room sound pressure level minus the average receive room sound pressure level, plus, 10 times the log of the specimen area divided by the sound absorption of the receive room with the sample in place.

STC Rating

To obtain the Sound Transmission Class (STC), read the TL of the contour curve at 500 Hz. The sum of the deficiencies below the contour curve must not exceed 32. The maximum deficiency at any one frequency must not exceed 8.

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OITC Rating

The Outdoor-Indoor Transmission Class (OITC) is calculated by subtracting the logarithmic summation of the TL values from the logarithmic summation of the A-weighted transportation noise spectrum stated in ASTM E1332.

SECTION 9

SPECIMEN DESCRIPTION

	FRAME	LEAF
SIZE	38-15/16" by 83-7/8"	35-13/16" by 81-1/4"
THICKNESS	5-11/16"	1-3/4"
CORNERS	Mitered	N/A
FASTENERS	Clip and screws	N/A
MATERIAL	Aluminum	Wood with proprietary core (see comments)

	TYPE	QUANTITY	LOCATION
WEATHERSTRIP	Pemko S773	1 row	Head and jambs
	Zero 475	1 row	Head and jambs
	NP600-CRL Door Frame Gasket	1 row	Head and jambs
	Zero 368	1	Bottom rail
	487 Series Threshold	1	Sill
HARDWARE	Cylindrical lockset	1	Strike stile
DRAINAGE	N/A		

TOTAL WEIGHT (lbs)	AVERAGE WEIGHT (lbs / ft ²)
188	8.31

* - Stated per Client/Manufacturer, N/A-Not Applicable

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SECTION 10

TEST RESULTS

ASTM E90 AIRBORNE SOUND TRANSMISSION LOSS



TEST DATE	12/22/17				
DATA FILE NO.	H9326.01B3				
CLIENT	CR Laurence Co, Inc.				
DESCRIPTION	Series/Model: NFD Frame with Kinetics KWAD-49 Side Hinged Door with 1 row Pemko S773 head and jambs, 1 row NP600-CRL Door Frame Gasket head and jambs, 1 row Zero 475 head and jambs, and Zero 368 automatic door bottom				
SPECIMEN AREA	2.11 m ²	RECEIVE TEMP.	17.4 °C	SOURCE TEMP	17.8 °C
TECHNICIAN	Ryan R. Lau	RECEIVE HUMIDITY	33%	SOURCE HUMIDIT	31%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION (m ²)	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	46.5	4.2	104	74	27	1.34	-
100	36.0	4.5	106	76	27	1.63	-
125	39.8	5.3	106	77	26	1.49	0
160	44.0	5.2	104	67	34	0.52	0
200	37.3	6.1	106	65	36	0.53	0
250	24.7	6.7	106	65	36	0.68	0
315	18.4	6.6	106	65	36	0.45	0
400	20.0	5.8	105	62	39	0.42	0
500	17.5	5.2	106	63	39	0.28	0
630	18.2	5.5	107	64	38	0.35	2
800	21.6	5.6	106	64	38	0.30	3
1000	9.4	5.9	107	64	39	0.24	3
1250	5.9	6.4	105	62	38	0.21	5
1600	5.2	7.3	103	60	38	0.22	5
2000	3.9	9.0	100	56	38	0.16	5
2500	3.7	10.8	100	54	40	0.35	3
3150	4.0	13.1	99	49	43	0.33	0
4000	4.6	17.3	97	42	46	0.49	0
5000	5.4	23.0	96	38	48	0.68	-
STC RATING	39 (Sound Transmission Class)						
DEFICIENCIES	26 (Sum of Deficiencies)						
OITC RATING	36 (Outdoor-Indoor Transmission Class)						

- Notes:**
- 1) Receive Room levels less than 5 dB above the Background levels are red.
 - 2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
 - 3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

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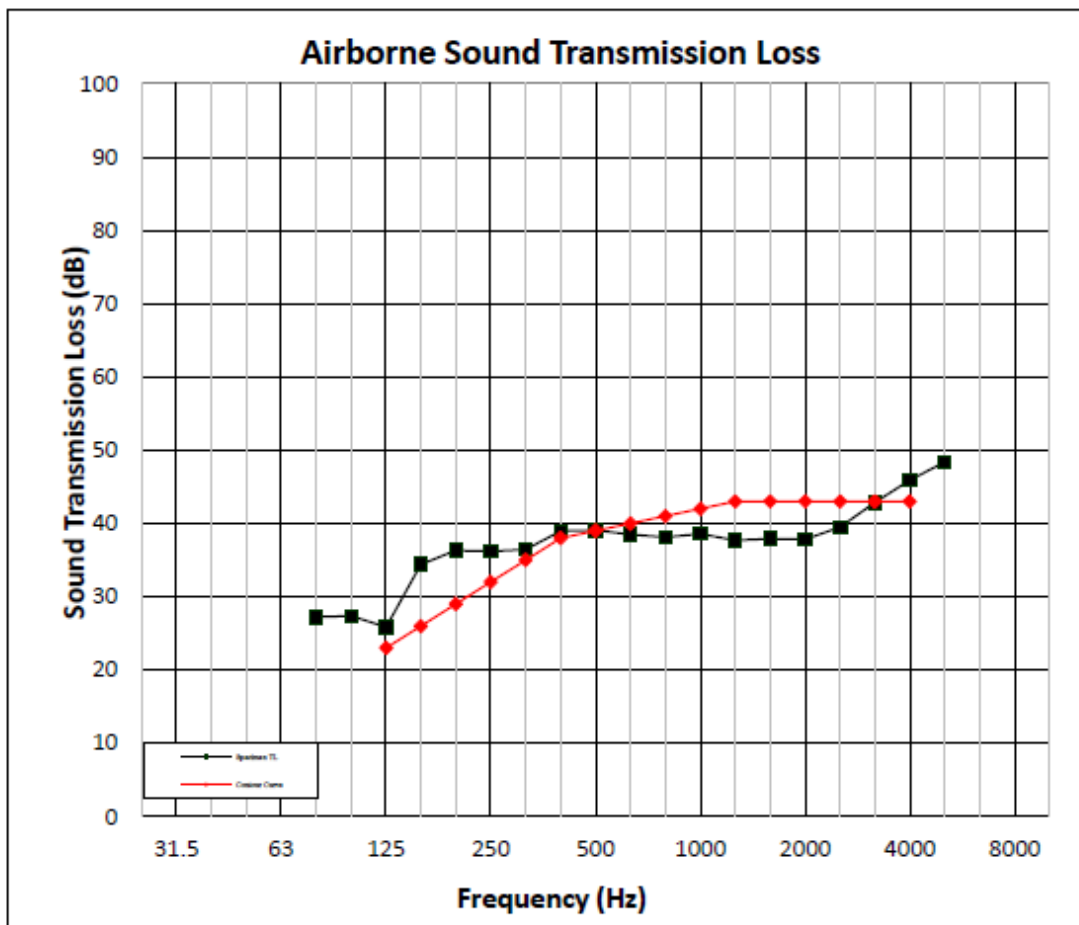
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ASTM E90 AIRBORNE SOUND TRANSMISSION LOSS



TEST DATE	12/22/17				
DATA FILE NO.	H9326.01B3				
CLIENT	CR Laurence Co, Inc.				
DESCRIPTION	Series/Model: NFD Frame with Kinetics KWAD-49 Side Hinged Door with 1 row Pemko S773 head and jambs, 1 row NP600-CRL Door Frame Gasket head and jambs, 1 row Zero 475 head and jambs, and Zero 368 automatic door bottom				
SPECIMEN AREA	2.11 m ²	RECEIVE TEMP.	17.4 °C	SOURCE TEMP	17.8 °C
TECHNICIAN	Ryan R. Lau	RECEIVE HUMIDITY	33%	SOURCE HUMIDIT	31%



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SECTION 11

PHOTOGRAPHS



Photo No. 1
Source Room View of Installed Specimen

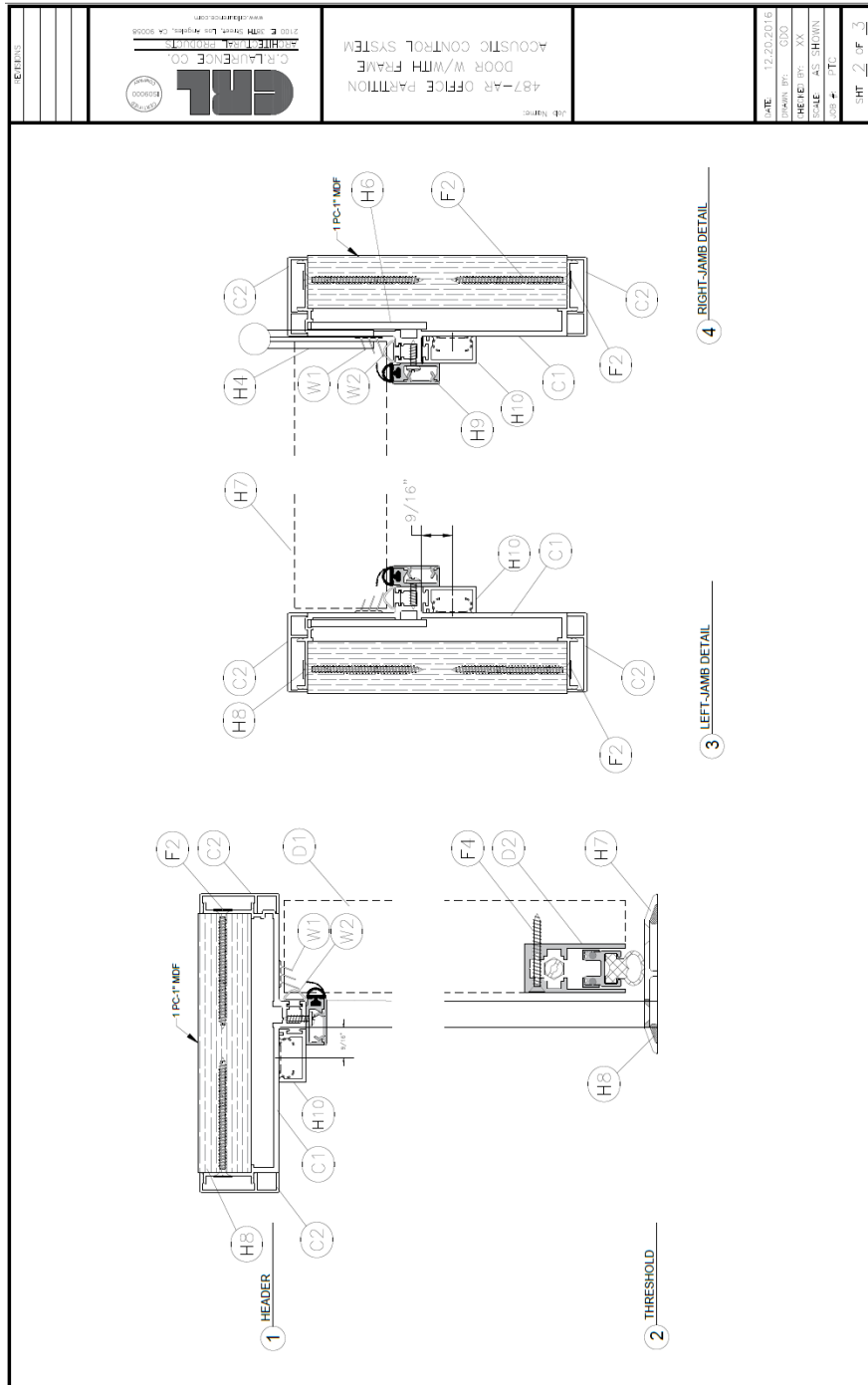


Photo No. 2
Receive Room View of Installed Specimen

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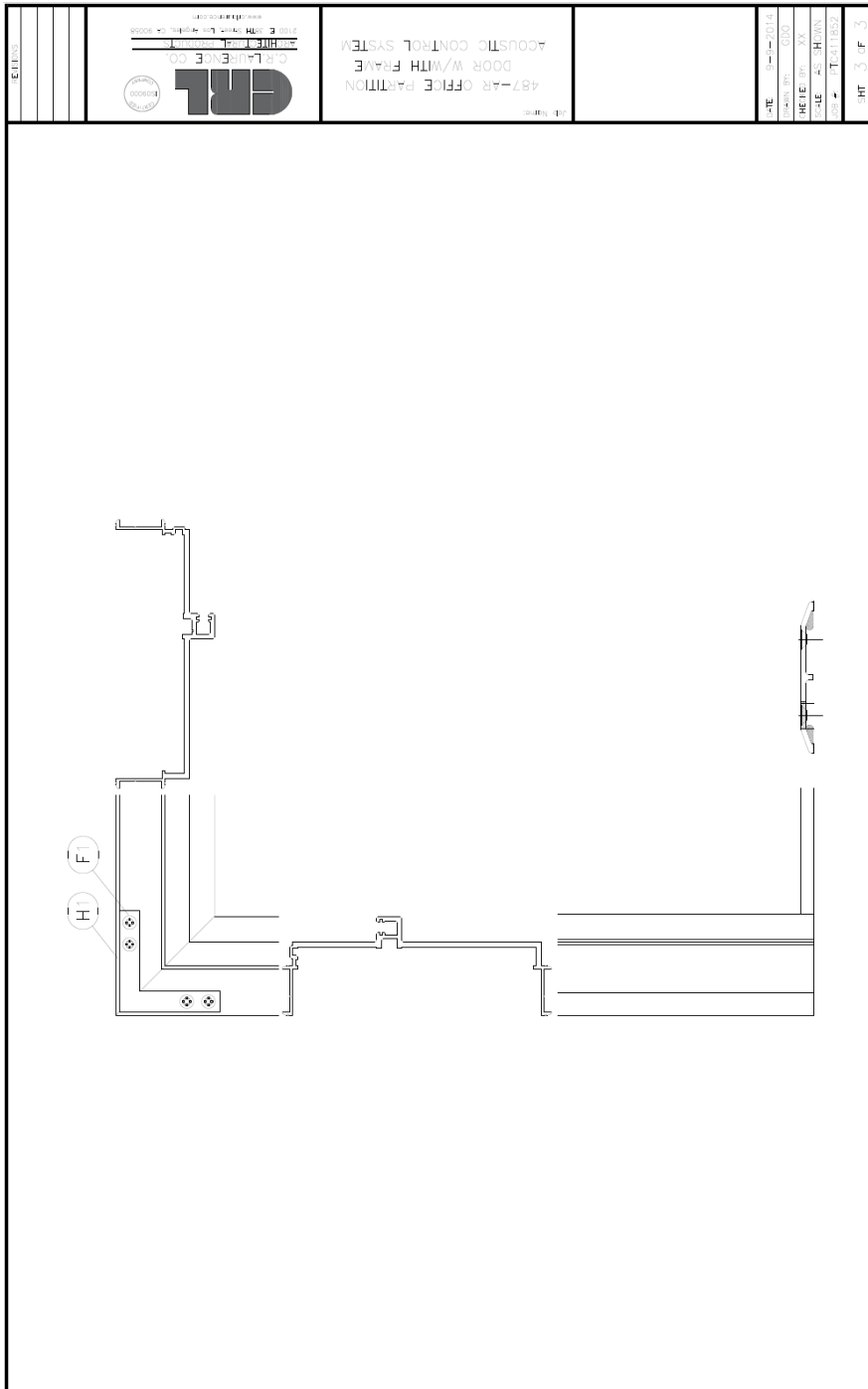
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SECTION 13

REVISION LOG

REVISION #	DATE	PAGES	REVISION
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