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CR LAURENCE CO, INC.

ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK
ASTM E90 SOUND TRANSMISSION LOSS TESTING ON A NFD FRAME WITH KINETICS KWAD-49 DOOR WITH TWO LAYERS OF 5/8" TYPE X GYPSUM BOARD EACH SIDE - (BOTH SIDES SEALED WITH MASTIC PUTTY)

REPORT NUMBER
H5843.01-303-11 R0

TEST DATE
09/25/17

ISSUE DATE
10/31/17

RECORD RETENTION END DATE
09/25/21

PAGES
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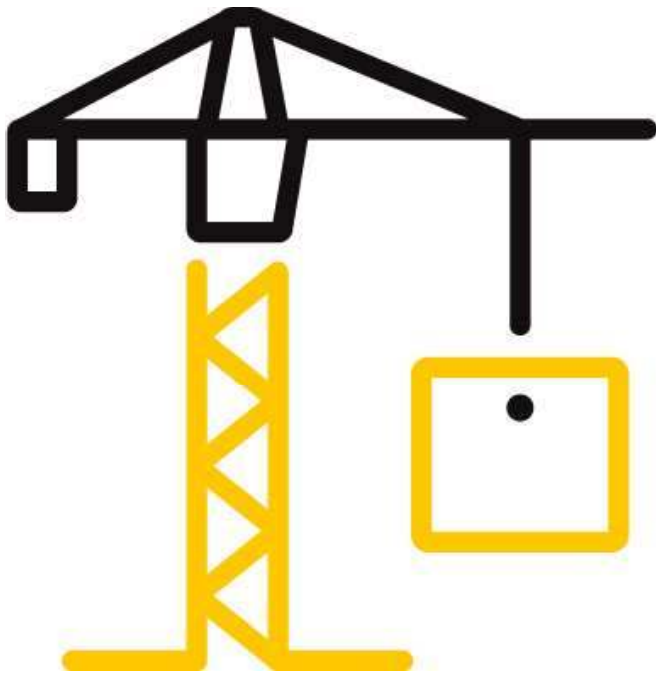

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Lake Forest, California 92630

Telephone: 949-460-9600
Facsimile: 717-764-4129
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TEST REPORT FOR CR LAURENCE CO, INC.
Report No.: H5843.01-303-11 R0
Date: 10/31/17

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 Co, Inc. to conduct a sound transmission loss test. 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. All measurements were conducted in the HT test chambers at Intertek B&C located in Lake Forest, California. 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 Door with two layers of 5/8" Type X Gypsum board each side - (Both sides sealed with mastic putty)
TEST CONDITION	Inoperable
DATA FILE NO.	H5843.01D
STC	52
OITC	43

For INTERTEK B&C:

COMPLETED BY:	Leeland S. Hoover	**REVIEWED BY:**	Bradlay D. Hunt
TITLE:	Technician I	**TITLE:**	Laboratory Manager
SIGNATURE:	Digitally Signed by: Leeland Hoover	**SIGNATURE:**	Digitally Signed by: Bradlay Hunt
DATE:	10/31/17	**DATE:**	10/31/17

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SECTION 3
TEST METHOD(S)

The specimens were evaluated in accordance with the following:

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

ASTM E413-16, *Classification for Rating Sound Insulation*

ASTM E1332-16, *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*

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 an isolation pad in the custom 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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INSTRUMENTATION

INSTRUMENT	MANUFACTURER	MODEL	DESCRIPTION	ASSET #	CAL DATE
Data Acquisition Unit	National Instruments	PXI-4462	Input Card	INT00627	10/16 *
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	INT00395	10/16
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	INT00396	10/16
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	INT00397	10/16
Source Room Microphone	PCB Piezotronics	378B20	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

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SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Garrett Osterode	CR Laurence Co., Inc.
Bradlay D. Hunt	Intertek B&C
Ryan R. Lau	Intertek B&C

SECTION 7
TEST PROCEDURE

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 level measurements were made simultaneously at each of five microphone positions in the receive and source rooms. The air temperature and relative humidity conditions were monitored and recorded during all measurements.

Data for flanking limit tests, repeatability measurements, and reference specimen tests are available upon request.

The specimen was returned per the client's request.

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.

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.

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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	CRL NP600 Gasket	1 Row	Stop face jambs and head
	Pemko S88 Gasket	1 Row	Jambs and head
HARDWARE	Butt hinge	3	Hinge stile
DRAINAGE	No Drainage		

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

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

COMMENTS

The door leaf was sealed in place with dense mastic putty. Two layers of 5/8" type X gypsum board was fastened to both sides of the door leaf. The perimeter of the gypsum board on both sides was sealed with dense mastic putty.

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SECTION 10
TEST RESULTS

ASTM E90
AIRBORNE SOUND TRANSMISSION LOSS

TEST DATE	09/25/17				
DATA FILE NO.	H5843.01D				
CLIENT	CR Laurence Co., Inc.				
DESCRIPTION	Series/Model: NFD Frame with Kinetics KWAD-49 Door with two layers of 5/8" type X gypsum board each side - Inoperable (Both sides sealed with mastic putty)				
SPECIMEN AREA	2.10 m²	RECEIVE TEMP.	21.1 °C	SOURCE TEMP	20.5 °C
TECHNICIAN	Leeland S. Ho	RECEIVE HUMIDITY	31%	SOURCE HUMIDIT	34%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION (m²)	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	45.4	4.9	103	71	30	1.72	-
100	35.4	4.8	105	71	32	1.61	-
125	39.9	5.3	106	68	35	1.15	1
160	43.6	5.3	104	63	38	0.67	1
200	36.4	6.4	106	60	42	0.43	0
250	23.9	7.2	106	59	42	0.66	3
315	19.0	7.2	106	58	43	0.61	5
400	20.0	6.0	105	58	43	0.52	8
500	18.2	5.3	105	53	48	0.19	4
630	21.0	5.6	106	51	51	0.30	2
800	19.5	5.9	106	48	54	0.16	0
1000	11.3	5.9	107	47	56	0.25	0
1250	8.3	6.3	105	44	56	0.29	0
1600	6.9	7.1	104	42	56	0.30	0
2000	6.6	8.6	101	41	54	0.22	2
2500	4.6	10.0	101	38	56	0.23	0
3150	4.7	12.0	100	34	59	0.40	0
4000	5.1	15.3	98	27	63	0.47	0
5000	5.7	20.6	97	22	65	0.48	-

STC RATING	52	*(Sound Transmission Class)*
DEFICIENCIES	26	*(Sum of Deficiencies)*
OITC RATING	43	*(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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SECTION 11
RESULTS GRAPH

ASTM E90
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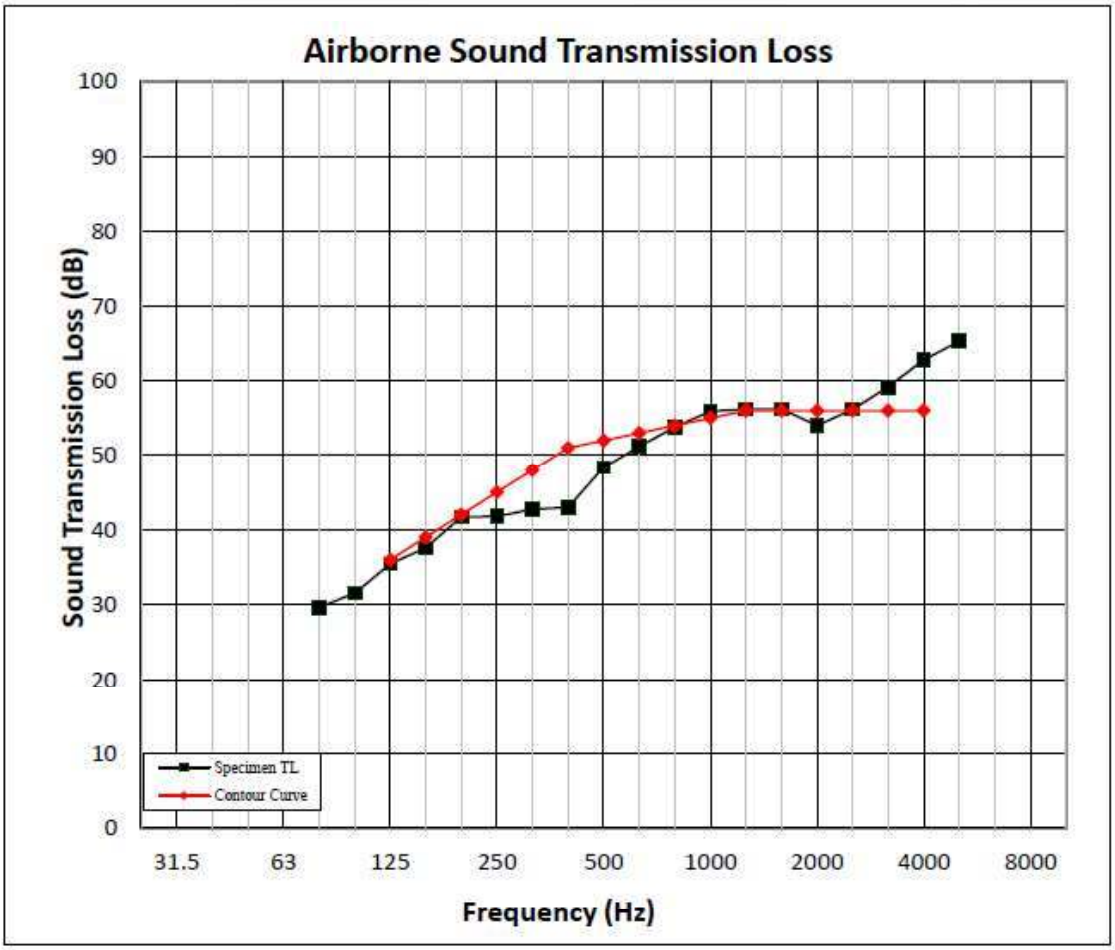

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SECTION 12
PHOTOGRAPHS

Source Room View of Test Specimen

Receive Room View of Test Specimen

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SECTION 13
REVISION LOG

REVISION #	DATE	PAGES	REVISION
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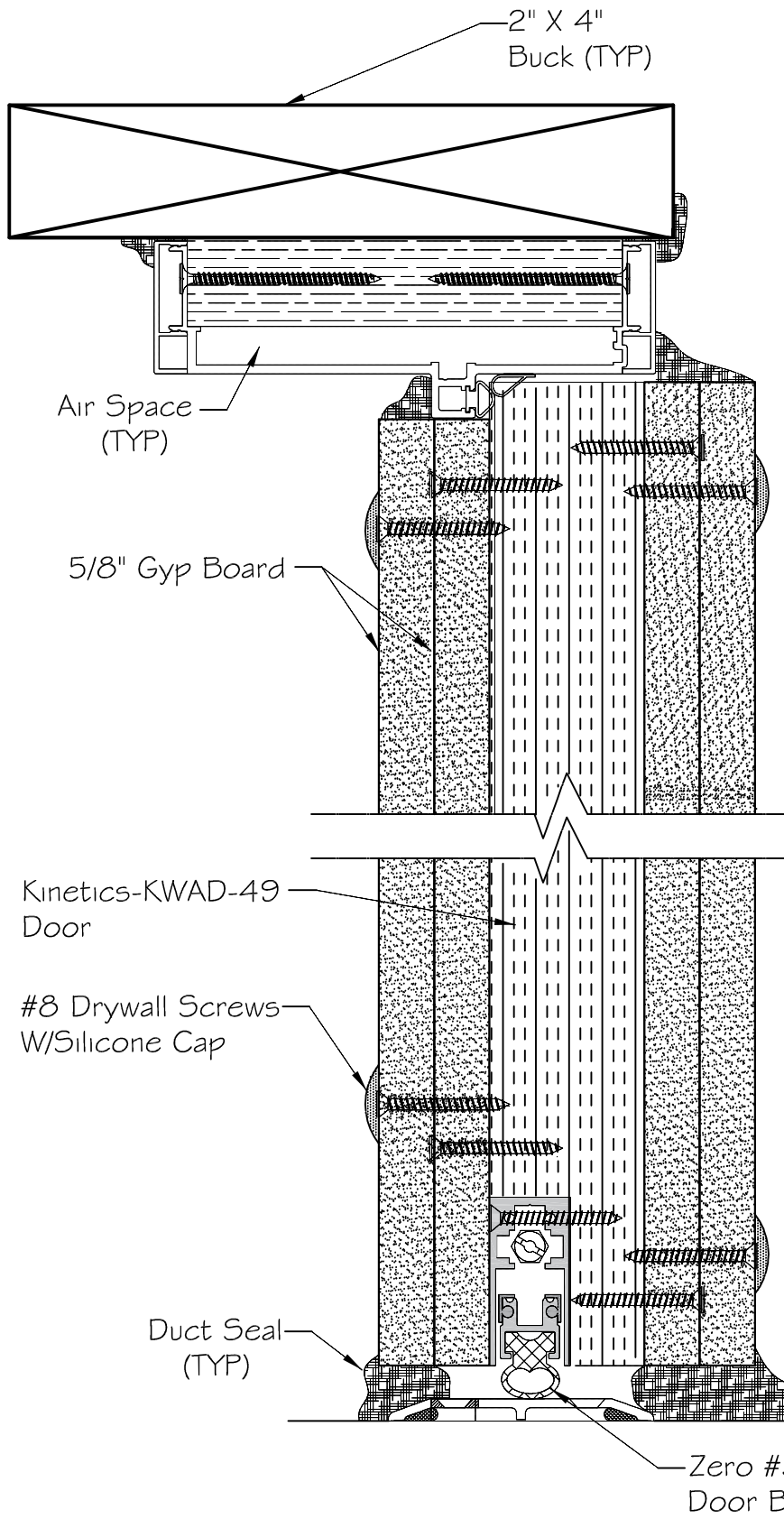

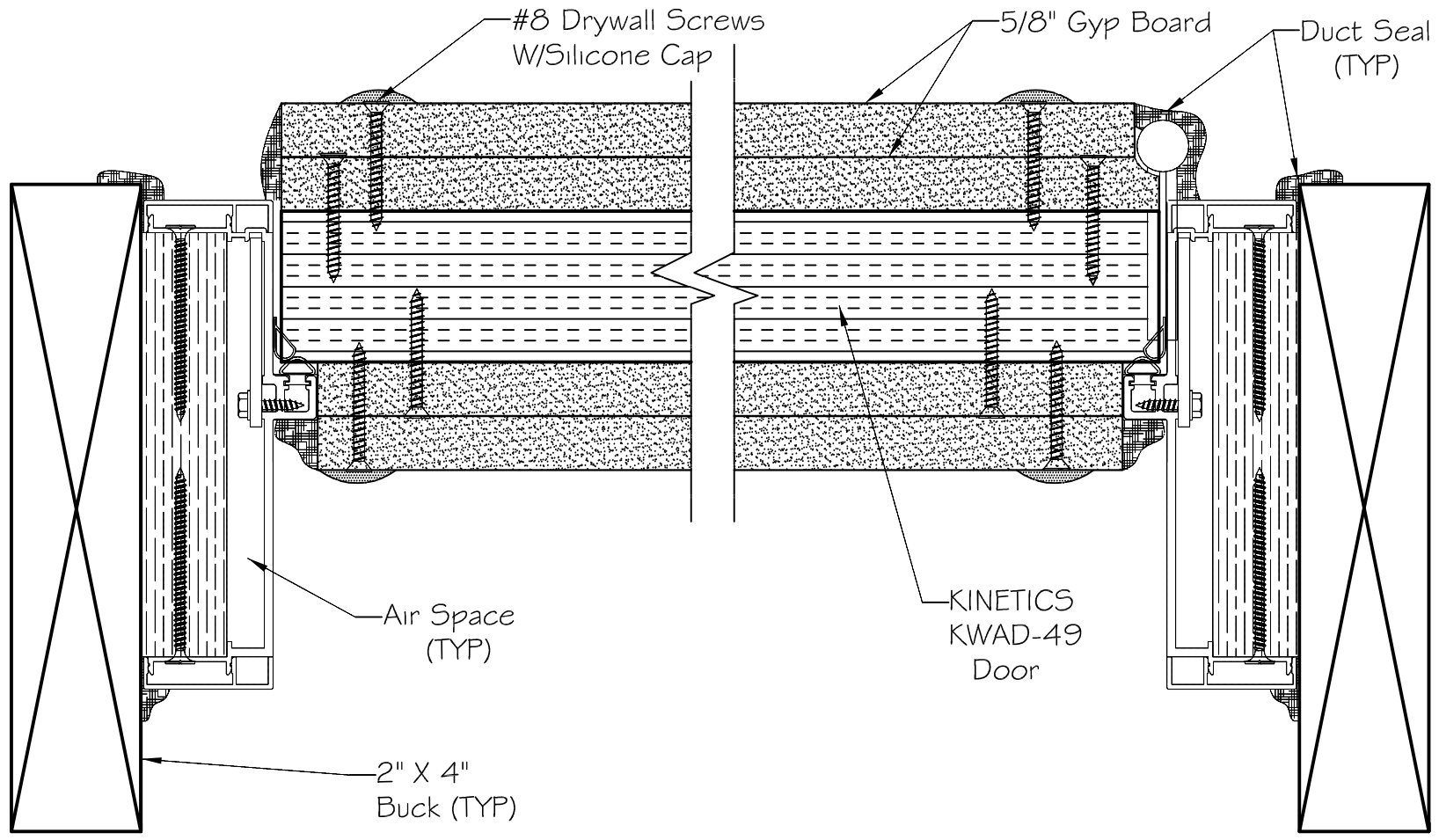

REVISIONS

C.R.LAURENCE CO.
ARCHITECTURAL PRODUCTS
2100 E. 38TH Street, Los Angeles, CA 90058
www.crlaurence.com

Job Name:

487-AR OFFICE PARTITION
ACOUSTIC CONTROL SYSTEM
ISOLATED FRAME TEST

DATE:	11.2.2017
DRAWN BY:	GDO
CHECKED BY:	XX
SCALE:	AS SHOWN
JOB #:	PTC411852

SHT 1 OF 1