Boeing Canada Operations Ltd.
Boeing Canada Winnipeg
99 Murray Park Road
Winnipeg, Manitoba, Canada R3J 3M6

April 21st, 2017

Tracy Braun, M.Sc., Director,
Environmental Approvals Branch
Environmental Stewardship Division
Manitoba Sustainable Development
Suite 160, 123 Main Street
Winnipeg, Manitoba R3C 1A5

LICENCE NO. 2846 R **CLIENT FILE NO. 5346.10**

Dear Director,

RE: Boeing Canada Operation Ltd – 1345 Redwood Avenue – Notice of Alteration

The Boeing Canada Operations Ltd. facility located at 1345 Redwood Avenue in Winnipeg Manitoba and is currently operating under Environment Act Licence No.2846 R revised on July 22nd, 2016.

Section 14 of The Environment Act requires that the Director of Manitoba Sustainable Development be notified and approve of any alterations to a development.

This Notice of Alteration is intended to provide Manitoba Sustainable Development with notification of Boeing Canada Operations Ltd.'s plans for ventilation to support Tooling Operations at the development as the proposed equipment has changed from the Environment Act Proposal that was submitted on February 11th, 2016 and eventually approved by the director on July 22nd, 2016.

If you have any questions or require any further information; please contact the undersigned.

Sincerely,

R. Wroblewski

Rebecca Wroblewski
Environmental Specialist | Environment, Health & Safety
Boeing Canada Winnipeg
99 Murray Park Road, Winnipeg, MB R3J 3M6
Desk: (204) 833-7196
rebecca.wroblewski@boeing.com

Notice of Alteration Form

Manitoba
Sustainable Development

Client File No. : 5646.10	Environment Act Licence No. : 2846 R

Legal name of the Licencee: BOEING CANADA OPERATIONS LIMITED

Name of the development: BOEING CANADA OPERATIONS LIMITED

Category and Type of development per Classes of Development Regulation:

Manufacturing — Manufacturing and industrial plants

Licencee Contact Person: REBECCA WROBLEWSKI
Mailing address of the Licencee: 99 MURRAY PARK ROAD
City: WINNIPEG Province: MANITOBA Postal Code: R3J 3M6
Phone Number: (204) 833-7196 Fax: Email: rebecca.wroblewski@boeing.com

Name of proponent contact person for purposes of the environmental assessment (e.g. consultant):
REBECCA WROBLEWSKI

Phone: (204) 833-7196 Fax:	Mailing address: 99 MURRAY PARK ROAD WINNIPEG MB R3J 3M6

Email address: rebecca.wroblewski@boeing.com

Short Description of Alteration *(max 90 characters):*

Alteration to selection of ventilation equipment to support Tooling Operations

Alteration fee attached: Yes: ☐ No: ☑

If No, please explain: Alteration to equipment or works that do not change the environmental effects

Date: 2017-04-21	Signature: R. Wroblewski Printed name: REBECCA WROBLEWSKI

A complete Notice of Alteration **(NoA)** consists of the following components:

- ☑ **Cover letter**
- ☑ **Notice of Alteration Form**
- ☑ **4 hard copies and 1 electronic copy of the NOA detailed report** (see "Information Bulletin - Alteration to Developments with Environment Act Licences")
- ☐ **$500 Application fee, if applicable** (Cheque, payable to the Minister of Finance)

Submit the complete NOA to:

Director
Environmental Approvals Branch
Manitoba Sustainable Development
Suite 160, 123 Main Street
Winnipeg, Manitoba R3C 1A5

For more information:

Phone: (204) 945-8321
Fax: (204) 945-5229
http://www.gov.mb.ca/sd/eal

Notice of Alteration:
Ventilation for Tooling Operations
1345 Redwood Avenue

Boeing Canada Operations Ltd.
Winnipeg, Manitoba

April 21, 2017

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Appendices

Notice of Alteration:
Ventilation for Tooling Operations
1345 Redwood Ave

1. Executive Summary

The Boeing Canada Operations Ltd. Facility located at 1345 Redwood Avenue is currently operating under Environment Act Licence Number 2846 R.

This Notice of Alteration is to provide Manitoba Sustainable Development with notification of Boeing Canada Operations Ltd.'s plans for ventilation to support Tooling Operations at the development as the proposed equipment has changed from the Environment Act Proposal that was submitted on February 11th, 2016 and eventually approved by the director on July 22nd, 2016.

2. Proposed Changes to the Development as Licenced

The Environment Act Proposal submitted to the director on February 11th, 2016 provided notification to Manitoba Sustainable Development of Boeing Canada Operations Ltd.'s plans to install a three-sided open face environmental control booth (local exhaust system) to support the proposed Tooling Operations at the development. The proposed booth was to be equipped with a tube axial in-line exhaust fan (14,000 CFM with a 3HP 48-v/60/3 TEFC motor) vented directly to the outdoors. The booth was also initially proposed to be equipped with a polyester filter.

Boeing Canada Operations Ltd. later reviewed the specifications for the proposed three-sided open face environmental control booth (local exhaust system) and determined that a one-sided slotted backdraft local exhaust system vented directly to the outdoors would be more suitable for the development. It was determined that a one-sided slotted backdraft local exhaust system would eliminate the requirement for unnecessary infrastructure (custom made booth envelope, service platform, etc.), pose a less permanent impact to the development and be more cost effective.

Additionally, selecting a one-sided slotted backdraft local exhaust system as opposed to the proposed three-sided open face environmental control booth (local exhaust) would significantly reduce the ventilation capacity requirement of the development to support the proposed Tooling Operations.

The initially proposed three-sided open face environmental control booth (local exhaust) was specified at 16ft wide x 9ft high x 18ft deep to accommodate the largest production part requirement of 8.5ft in width. In order to maintain an average capture velocity of 100 CFM across the part; an air supply of 14,000 CFM was proposed.

The later proposed one-sided slotted backdraft local exhaust system is specified to be 8.5ft wide x 2ft high to accommodate the largest production part requirement of

8.5ft in width. In order to maintain an average capture velocity of 200 CFM at the slot opening; an air supply of 3,600 CFM was proposed.

It should be noted that the requirement of the work (materials being used, work being done) has not changed from the original proposal; the three-sided open face environmental control booth (local exhaust system) had an associated (higher) capacity and therefore an associated (higher) amount of air exiting the development.

Being that no fumes will be created as a result of the proposed Tooling Operations (organic vapours only); equipping the local exhaust system with a polyester filter (as originally proposed) would not provide any additional benefit.

3. Identification and Quantification of Changes to the Type or Quantity of Raw Materials or Substances Used or Processed

There will be no change to the type or quantity of product used with this alteration.

4. Quantification of Change in Environmental Effects as a Result of the Proposed Alteration

No significant changes in environmental effects are anticipated from this alteration to the proposed ventilation equipment.

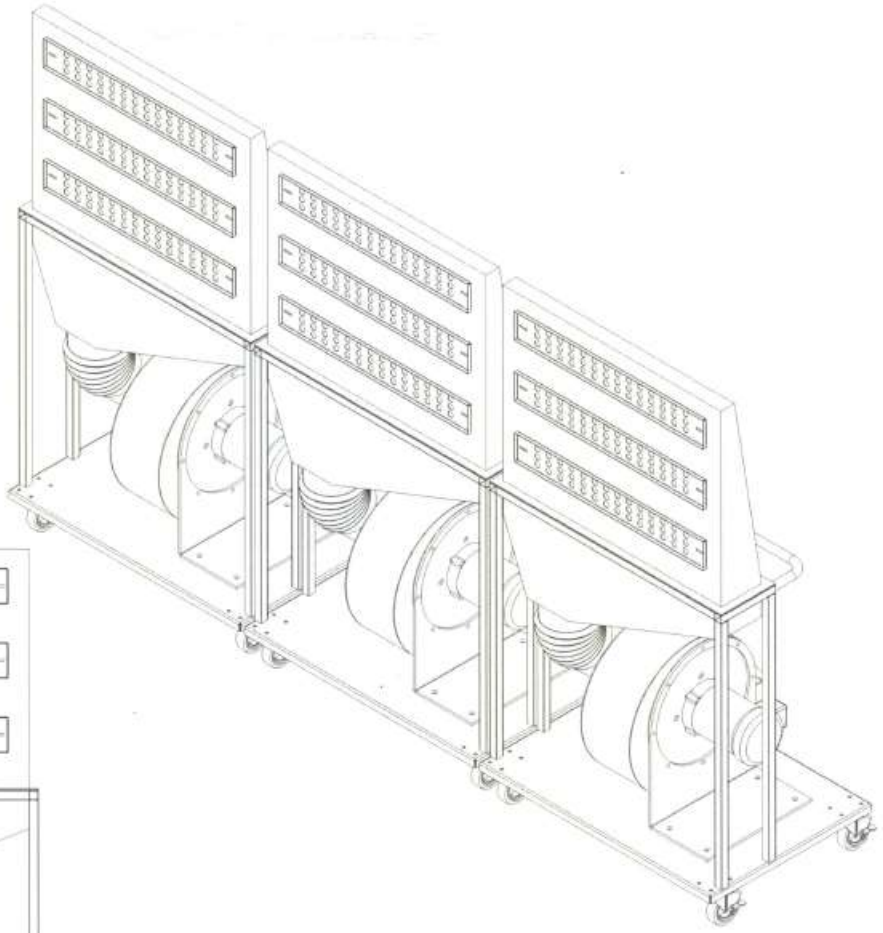
5. Maps, Drawings, Schematics, etc.

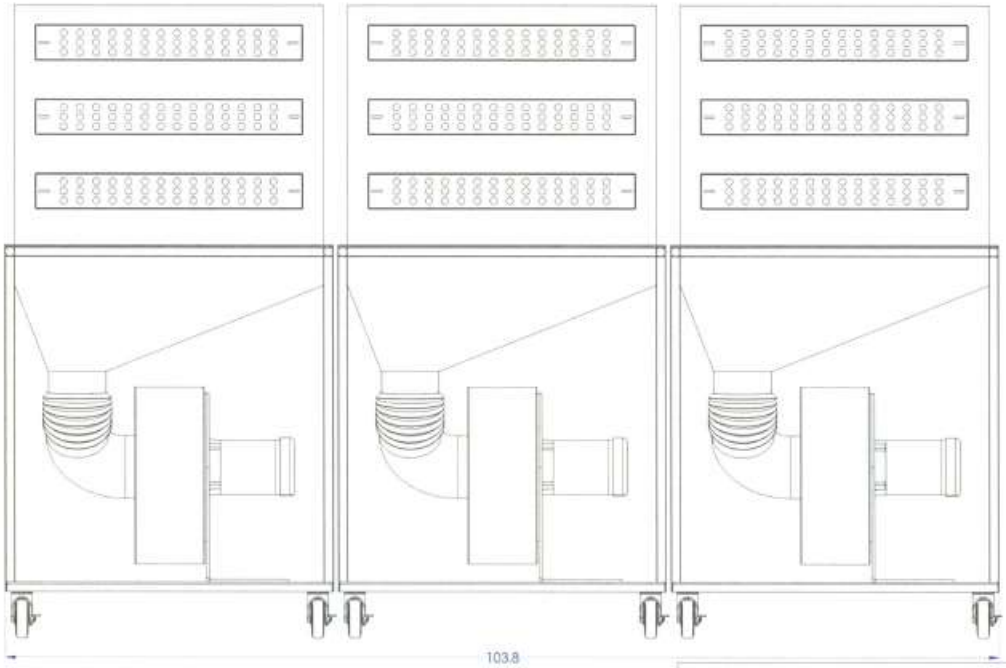
A schematic drawing of the proposed one-sided slotted backdraft local exhaust system is documented in Appendix A.

Appendix A

One-sided Slotted Backdraft Local Exhaust System Drawing

SPECIAL ARRANGEMENT FOR: BOEING WINNEPEG





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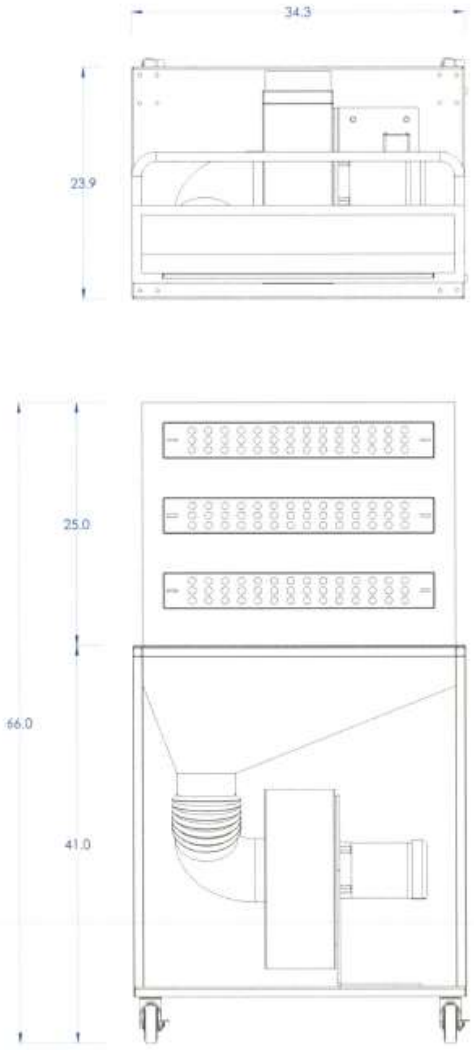
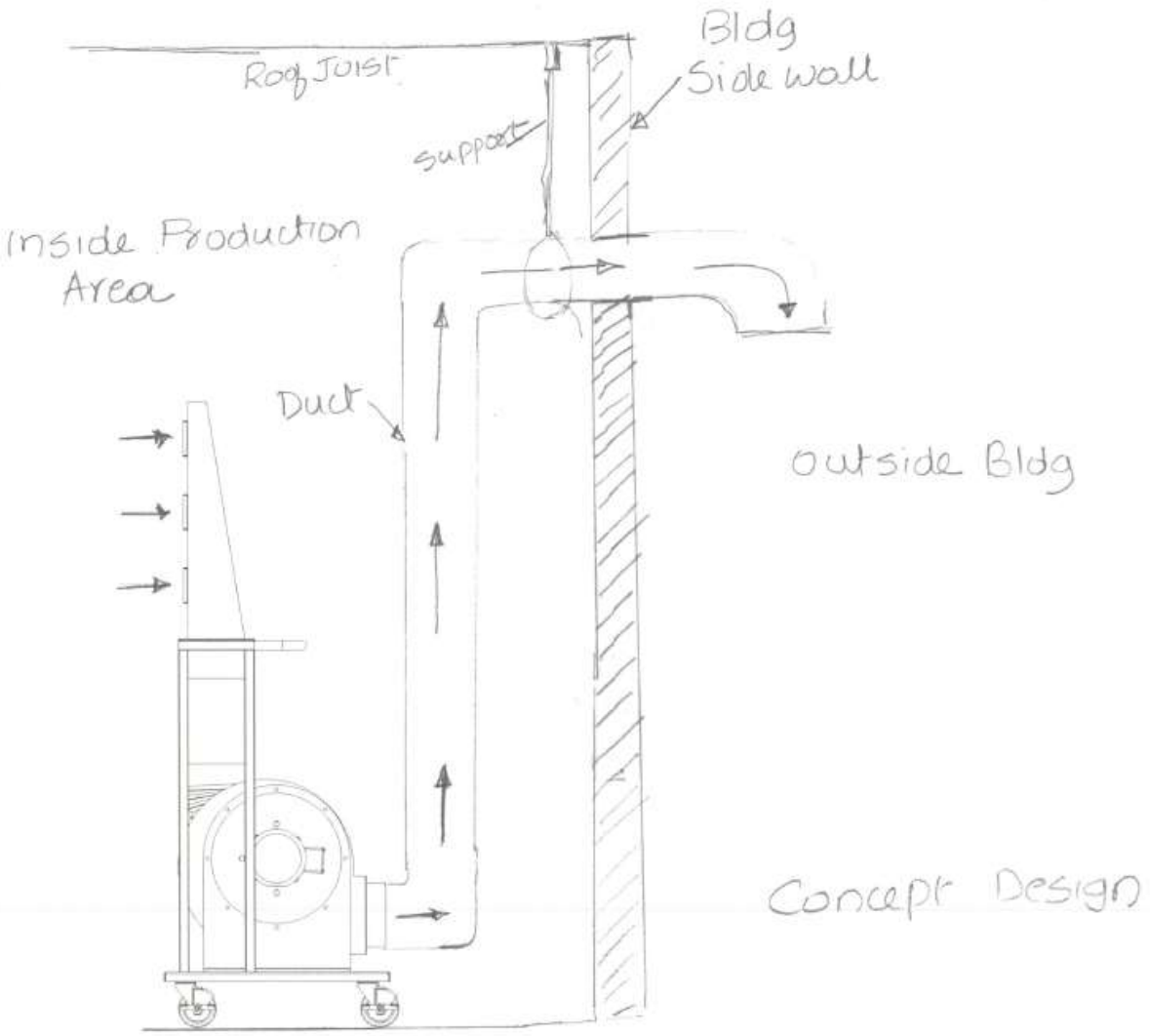
Views: T-F-R-Iso	DWG. NO. MOBILE BACKDRAFT WITH FAN	REV 0
SCALE: 1:1	CONCEPTUAL DRAWING	SHEET 2 OF 2

SPECIAL ARRANGEMENT FOR: BOEING WINNEPEG





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DATE: 26/01/2017
DRAWN BY: MUNZAR
DRAWN FOR: BOEING WINNEPEG
MATERIAL: Mild Carbon Steel
FINISH: Powder Coat

DESCRIPTION: Mobile Backdraft Hood with Fan

Views: T-F-R-Iso
DWG. NO. MOBILE BACKDRAFT WITH FAN
REV 0
SCALE: 1:1
CONCEPTUAL DRAWING
SHEET 1 OF 2