RAMBOLL ENVIRON

ENVIRONMENT
& HEALTH

September 5, 2017

Environmental Approvals Branch
Manitoba Conservation and Water Stewardship
Suite 160, 123 Main Street, Box 80
Winnipeg, Manitoba R3C 1A5

Attention: Tracey Braun
Director
E-mail: Tracey.Braun@gov.mb.ca

RE: WALINGA INC. LICENCE NO. 3197 – NOTICE OF ALTERATION AND REQUEST FOR EXTENSION ON HARD CHROME PLATING PROCESS

Ramboll Environ
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Mississauga, ON L5N 6S2
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Dear Tracey Braun,

Walinga Inc. (Walinga) operates a custom truck body and a pneumatic conveying system manufacturing facility at 70 3rd Ave NE in Carman, Manitoba under Environmental Act Licence No. 3197 ("Licence" herein). The Licence was issued on August 24, 2016 to include continual operation and planned expansion for a new hard coating line.

The new hard nickel-based coating line is intended to replace the existing hard chrome plating process. Per item #4 of the General Terms and Conditions in the Licence, Walinga is required to decommission the existing hard chrome plating process by December 31, 2017 and notify the Director in writing of the decommissioning.

This date was mutually agreed upon by Walinga and Environmental Approvals Branch (EAB), and was intended to allow Walinga to operate the existing hard chrome plating line while the new line was installed, commissioned, and tested for product quality, etc.

Since the licence was issued, despite considerable efforts by Walinga, the planned expansion has been delayed due to a necessary redesign on aspects of the plating line tanks and ventilation system. As a result, the new plating line is not expected to be commissioned until Spring 2018, with testing to follow.

Walinga is requesting an extension to December 31, 2018 on item #4 of the General Terms and Conditions in the Licence. This will allow for sufficient time to redesign, fabricate, install, commission, and test the new plating line.

Walinga has operated the existing hard chrome plating line for several years in accordance with the terms and conditions of their Environmental Act Licence. The existing plating line is a critical process in Walinga's business; at least until the new plating line is operational. Without the existing line, Walinga would have to shut down key product lines, which would dramatically affect business since it is the hard coated components that have made Walinga a leader in the industry.

Notice of Alteration (NoA) for New Plating Line Redesign

Walinga has retained Ramboll Environ Canada Inc. (Ramboll) to complete the plating line redesign. Aspects of the redesign are still underway but the fundamental design as it pertain to the environmental effects have been finalized.

A Notice of Alteration (NoA) form and NoA report detailing the proposed alterations is attached. It is worth noting that the alterations do not affect the fundamental plating process as presented to EAB in the licence application (e.g. number of tanks and sequence, chemicals used, etc.). The design alterations completed by Ramboll include 1) smaller plating tanks, 2) the addition of secondary containment, and 3) a redesigned capture and ventilation system, all of which either do not change or in fact, reduce the environmental effects of the approved plating line.

Closing

We trust that this letter and supporting documentation meets with your requirements to 1) grant an extension to December 31, 2018 for operation of the existing hard chrome plating line and 2) grant the alteration to operations at the licensed development.

If you have any questions or comments, please contact the undersigned.

Respectfully submitted,

Ramboll Environ Canada Inc.

Taylor Roumeliotis, PhD, PEng
Managing Consultant

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Attachments: NoA Form
NoA Report

Notice of Alteration Form

Manitoba
Sustainable Development

Client File No. : 5841.00	Environment Act Licence No. : 3197

Legal name of the Licencee: Walinga Inc.

Name of the development: Walinga Inc.

Category and Type of development per Classes of Development Regulation:

Manufacturing — Manufacturing and industrial plants

Licencee Contact Person: Cor Lodder
Mailing address of the Licencee: Box 1790, 70 3rd Ave NE.
City: Carman Province: Manitoba Postal Code: R0G 0J0
Phone Number: (204) 745-2951 Fax: (204) 745-6309 Email: cor.lodder@walinga.com

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

Phone: (289) 290-0622 Fax: (905) 821-3711	Mailing address: 100-2400 Meadowpine Blvd Mississauga, Ontario L5N 6S2

Email address: troumeliotis@ramboll.com

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

Redesign of new hard nickel-based coating line for smaller tanks and ventilation system

Alteration fee attached: Yes: ☐ No: ☑

If No, please explain: Alterations do not change or reduce environmental effects (see attached report)

Date: 2017-09-05	Signature: Printed name: Cor Lodder

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

Intended for

Environmental Approvals Branch
Manitoba Conservation and Water Stewardship
Suite 160, 123 Main Street, Box 80
Winnipeg, Manitoba R3C 1A5

Document type

NoA Report

Date

September 5, 2017

NOTICE OF ALTERATION REPORT

WALINGA INC.

RAMBOLL ENVIRON

NOTICE OF ALTERATION REPORT
WALINGA INC.

Revision	**0**
Date	**September 5, 2017**
Prepared by	**Taylor Roumeliotis**
Checked by	**Paul Geisberger**
Approved by	**Taylor Roumeliotis**
Description	**NoA Report** **Walinga Inc., Carman Facility**

Ref CA12-00861A

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1. INTRODUCTION AND BACKGROUND

Walinga Inc. (Walinga) is a leading Canadian manufacturer of customized truck bodies and trailers, built primarily for the agricultural industry.

Walinga operates a custom truck body and a pneumatic conveying system manufacturing facility at 70 3rd Ave NE in Carman, Manitoba under Environmental Act Licence No. 3197 ("Licence" herein). The Licence was issued on August 24, 2016 to include continual operation and planned expansion for a new hard nickel-based coating line.

The Licence was granted in accordance with Walinga's Environmental Act Proposal (EAP), dated April 15, 2016 and then was updated and detailed on May 26, 2016. Included with this EAP was the description of a new hard nickel-based coating line for the Machining Division at the Carman facility, which is intended to replace the existing hard chrome plating process at the facility. This description included an assessment of the potential environmental and human health effects of the proposed coating line.

Pending Environmental Approvals Branch (EAB) approval of a request for extension, the transition to the new coating line will be complete before December 31, 2018 (currently December 31, 2017 deadline).

Since the licence was issued, Walinga determined that several aspects of the plating line tanks and ventilation system required redesign. The purpose of this report is to describe the redesign and the incremental change in environmental effects, if any, from the redesign to support the Notice of Alteration (NoA) Proposal.

2. DESCRIPTION OF ALTERATIONS

Complete details on the new hard nickel-based coating line and its associated local ventilation and exhaust system (pre-redesign) were provided in the 2016 EAP. Briefly, the coating line consists of a series of eight (8) tanks: in order of operation, one (1) cleaning tank (electroclean), one (1) cold water rinse tank, one (1) cleaning tank (acid wash), one (1) cold water rinse tank, followed by two (2) plating tanks (nickel) and then one (1) cold water rinse tank and one (1) hot water rinse tank. There is also one (1) stripper tank to strip the plating off parts should a manufacturing error occur and one (1) redundant tank to hold another tanks contents prior to disposal or during tank maintenance.

The cleaning tanks, plating tanks, and strip tank (5 tanks in total) were designed with a local ventilation system to draw fumes from the tanks away from the breathing zone of workers. Pre-redesign, this was accomplished using dedicated "horseshoe" shaped double slotted hoods, each with a dedicated exhaust fan and stack.

Most aspects of the process and design remain unchanged including number of tanks and sequence, chemicals used in the process, tank temperatures, fume control philosophy, etc. The aspects that have changed are detailed in the subsection below and in drawings provided in Appendix A.

2.1 Alterations to Design

Tank Size

All of the tanks in the original design were oversized for the parts to be plated at the facility. The cleaning, plating, strip, and redundant tanks have been redesigned to be appropriately sized for the parts to be plated. Details on the change in tank sizing are provided in Table 1 below.

Table 1: Summary of Changes to Tank Size

Tank ID	Tank Name	Process	Tank Capacity (L)		Open Surface Area (m^2)	
			Original	Redesign	Original	Redesign
T1	Electroclean	Cleaning	3,400	1,700	2.23	1.24
T3	Acid Wash	Cleaning	3,400	1,700	2.23	1.24
T5	CorVor Tank 1	Plating	3,400	1,700	2.23	1.24
T6	CorVor Tank 2	Plating	3,400	1,700	2.23	1.24
T9	Redundant Tank	Maintenance	3,400	1,700	2.23	1.24
T10	Stripper Tank	Strip	3,400	1,700	2.23	1.24

The rinse tanks containing water have not been resized.

Secondary Containment

The original tanks are already on-site and can be repurposed to serve as secondary containment for the new coating line tanks. These tanks meet the criteria of secondary containment defined in CCME (2003) document[1], which is referenced in Manitoba Regulation 188/2001. The CCME document and Manitoba regulation is not directly applicable to a nickel-based plating tank process but it provides guidance for secondary containment, which is considered good practice.

[1] Canadian Council of Ministers of the Environment (CCME; 2003). Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products. Ref. No. 1326. CCME, Winnipeg, Manitoba.

The secondary containment tanks will be retrofitted with a sloped metal sheet and drain to easily remove any liquid contents that spill into the tank. The secondary containment tank will also be covered and connected to the ventilation system (see below for details).

The rinse tanks containing water do not require secondary containment.

A drawing of the new coating line tanks and secondary containment is provided in Appendix A.

Ventilation Hoods

As outlined in the EAP design, the cleaning, plating, and strip tanks will still be equipped with a local ventilation system to draw fumes from the tanks away from the breathing zone of workers. However, with these coating line tanks contained within a secondary containment tank, it is not possible to install the same style of ventilation hood around tank as specified in the original design, i.e. "horseshoe" shaped hood.

Instead, the customized design incorporates the tanks into ventilation hood capture system by covering the space between the tanks to utilize this space as an air flow channel to draw air from a flanged double slot along the length of coating line tanks. A ventilation hood connected to an exhaust fan will be installed on the back end of the containment tank to draw air from the slots.

An engineering drawing of the tanks and customized hood design is provided in Appendix A.

Consistent with the design described in the EAP, the ventilation system design followed ACGIH guidelines[2] for air flow requirements, slot velocity, etc.

Less air flow is required to achieve the same level of capture because; 1) the tank surface area is smaller and 2) the flange above the double slot draws air down into the tank and through the slot limiting the amount of air flow "short-circuiting" from above the slot, which is inherent in the original design (e.g. hence, more flow required to compensate).

Table 2 summarizes the changes in air flow requirements for the coating line tanks during the plating process.

Table 2: Summary of Changes to Air Flow Requirements for Local Fume Extraction

Tank ID	Tank Name	Process	Air Flow (cfm)	
			Original	Redesign
T1	Electroclean	Cleaning	3,200	1,500
T3	Acid Wash	Cleaning	6,000	3,000
T5	CorVor Tank 1	Plating	6,000	3,000
T6	CorVor Tank 2	Plating	6,000	3,000
T10	Stripper Tank	Strip	6,000	3,000
Total			**27,200**	**13,500**

Furthermore, the tanks will be equipped with a retractable lid/cover, such that the tanks can be covered when not in use. While covered, a small amount of air will still be drawn from the tanks to

[2] American Conference of Government Industrial Hygienists (ACGIH; 2007). Industrial Ventilation – A Manual of Recommended Practice for Design, 26th Edition. ACGIH, Cincinnati, Ohio, USA.

maintain a negative pressure and prevent fumes from escaping (e.g. nominally 10% of air flow presented in Table 2).

Exhaust System

The original design specified dedicated exhaust fans and stacks for each tank to avoid cross-contamination of chemicals and possible chemical interaction.

There is no concern with combining the two (2) plating tanks since they contain the same chemicals. In addition, there are no known hazardous chemical interactions between the electroclean solution and CorVor tank solution, particularly at the low concentrations expected in the ductwork. Possible tank cross-contamination issues can be resolved with design of the ductwork layout. Therefore, the redesign combines the ductwork from these three (3) tanks to reduce the total number of fans and stacks in the design from five (5) to three (3).

The Acid Wash and Stripper tank still have dedicated exhaust fans and stacks.

Each set of ductwork will still be equipped with drains to collect condensate and precipitation.

The three (3) exhaust stacks will be located in the vicinity of stacks specified in the 2016 EAP. The stack tip will be the same elevation or higher than specified in the original design. Each exhaust stack will still be equipped with a velocity nozzle at the stack tip to exhaust air at higher velocities and enhance dispersion, as specified in the 2016 EAP.

Drawings of the ductwork layout and exhaust stacks are provided in Appendix A.

Make-up Air Unit

The original design specified a direct-fired make-up air unit (MAU) located outside the facility to replace the exhausted volume of air.

The MAU will be smaller for the redesign since less air is exhausted. It will be sized to supply 90% of the exhaust air flow to maintain negative room pressure and limit air flow to other areas of the building. The make-up air will be supplied to the room via an overhead duct inside the room along the wall opposite the tanks.

With lower total flow, the heating requirements for the make-up air will also be lower (i.e., less natural gas usage).

3. ENVIRONMENTAL EFFECTS

This chapter describes the incremental environmental effects, if any, resulting from the alterations detailed above.

3.1 Terrestrial Environment

No comments or concerns regarding the terrestrial environment were reported during Manitoba Sustainable Development's (SD) review process of the 2016 EAP. The alterations will not change the impacts of the development on the terrestrial environment.

It is also worth noting that the inclusion of secondary containment will provide another level of environmental protection for spills and leaks.

3.2 Aquatic Environment

No comments or concerns regarding the aquatic environment were reported during Manitoba Sustainable Development's review process of the 2016 EAP. The alterations will not change the impacts of the development on the aquatic environment.

3.3 Atmospheric Environment

No comments or concerns specifically regarding the new hard coating line were reported during Manitoba Sustainable Development's review process of the 2016 EAP.

By design, the alterations are not expected to change the effects on the atmospheric environment and may in fact reduce the effects for the following reasons:

1. The surface area of the coating line tanks is smaller implying that there is less surface evaporation and discharge of contaminants relative to the 2016 EAP design;
2. The tanks will include a lid/cover to limit emissions while the tanks are not in use;
3. The local ventilation hood is designed following the same guidelines for air flow requirements and slot velocity, etc. to capture fume from the tanks;
4. The release height of each stack will be at the same elevation or higher for consistent or improved atmospheric dispersion relative to the 2016 EAP design;
5. Each exhaust stack will still be equipped with a velocity nozzle at the stack tip to exhaust air at higher velocities and enhance dispersion, in accordance with the 2016 EAP design; and
6. The natural gas usage for the make-up air will be lower given the lower ventilation requirements so fewer greenhouse gas emissions are anticipated relative to the 2016 EAP design.

4. CONCLUSIONS

The proposed alterations to the new hard nickel-based coating line at Walinga's Carman, Manitoba facility are not expected to change, and may actually reduce the environmental effects of the development. If approved, Walinga intends to commission the new coating line in Spring 2018, with testing to follow.

Since the environmental effects of the development have not been altered, and are likely reduced, the application fees associated with the NoA review do not apply, as per Manitoba's SD Information Bulletin[3].

We trust this NoA report satisfies your requirements to grant the alteration to operations at the licensed development.

If you have any questions or comments, please contact the undersigned.

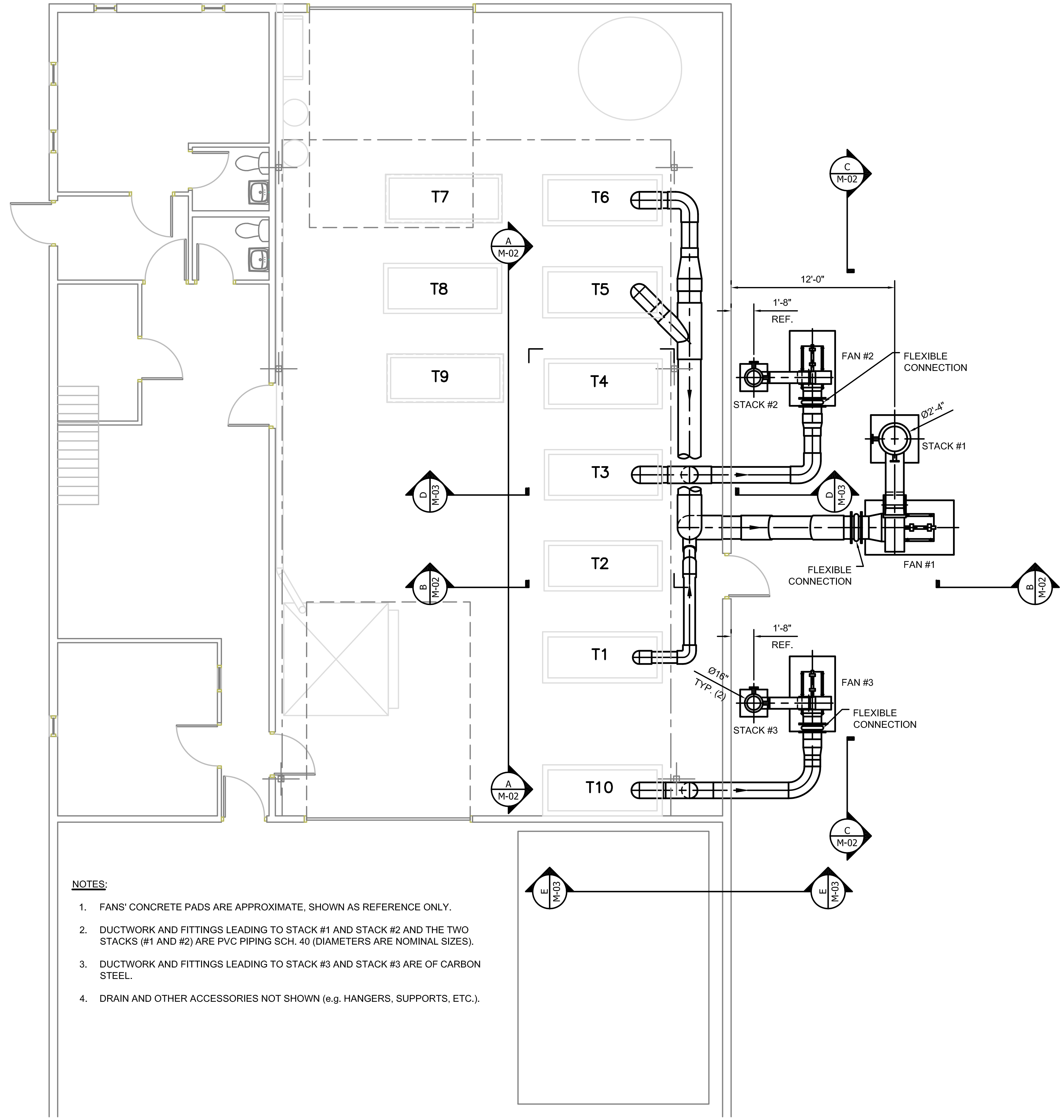
Respectfully submitted,

Ramboll Environ Canada Inc.

Taylor Roumeliotis, PhD, PEng
Managing Consultant
troumeliotis@ramboll.com

[3] Manitoba Sustainable Development (June 2016). Information Bulletin – Alterations to Developments with Environmental Act Licences. "When Fees Do Not Apply: Fees do not apply for alterations involving repairs, reductions in emissions including greenhouse gas emissions,..."

APPENDIX A:
ENGINEERING DRAWINGS



NOTES:

1. FANS' CONCRETE PADS ARE APPROXIMATE, SHOWN AS REFERENCE ONLY.
2. DUCTWORK AND FITTINGS LEADING TO STACK #1 AND STACK #2 AND THE TWO STACKS (#1 AND #2) ARE PVC PIPING SCH. 40 (DIAMETERS ARE NOMINAL SIZES).
3. DUCTWORK AND FITTINGS LEADING TO STACK #3 AND STACK #3 ARE OF CARBON STEEL.
4. DRAIN AND OTHER ACCESSORIES NOT SHOWN (e.g. HANGERS, SUPPORTS, ETC.).

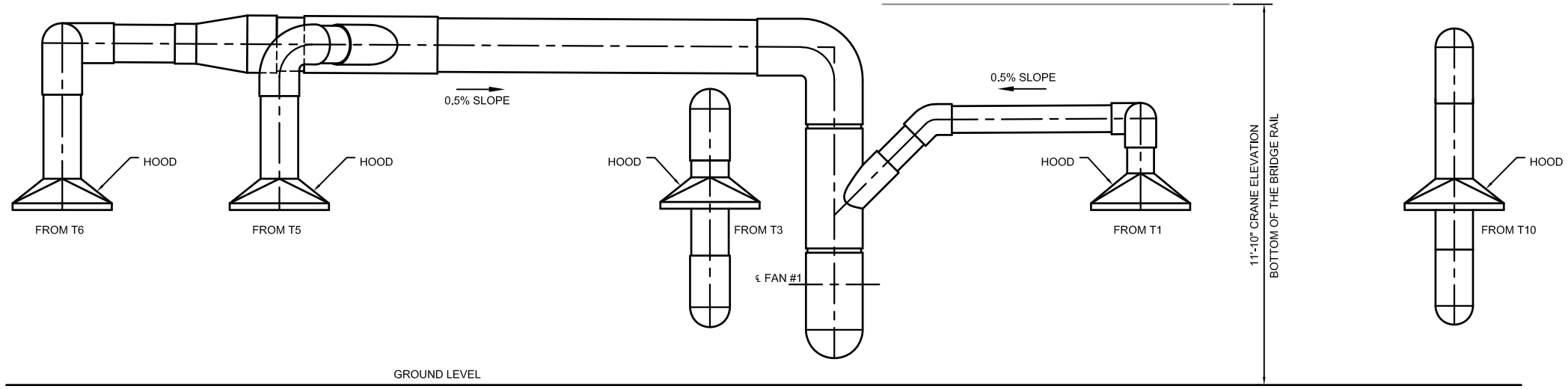
DATE	DR.	CH.	REVISION

VENTILATION SYSTEM LAYOUT
CorVor PLATING LINE

WALINGA INC.
CARMAN, MANITOBA

RAMBOLL ENVIRON

PREPARED BY: TR	DATE: SEP. 1, 2017	DWG NO.
DRAFTED BY: MB	SCALE: 1/4" = 1'-0"	M-01
APPROVED BY: WA	PROJECT: CA12-00861A	



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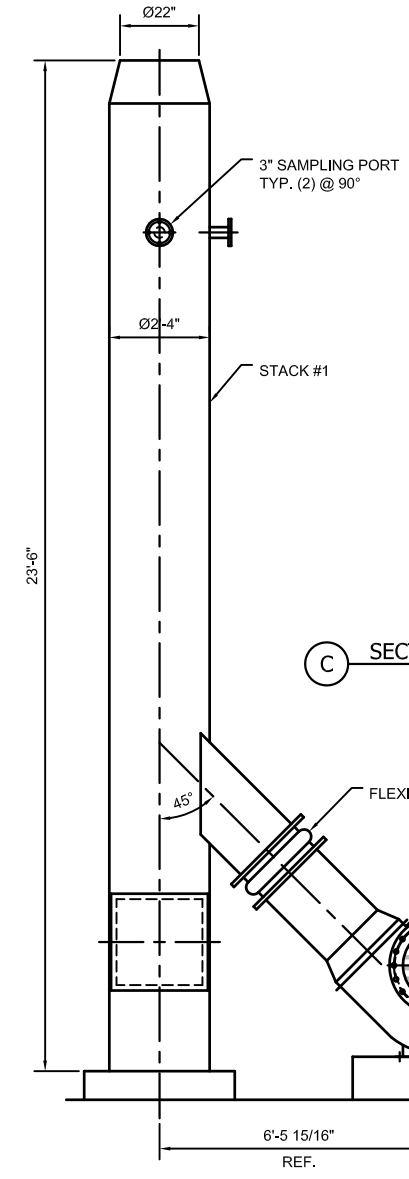

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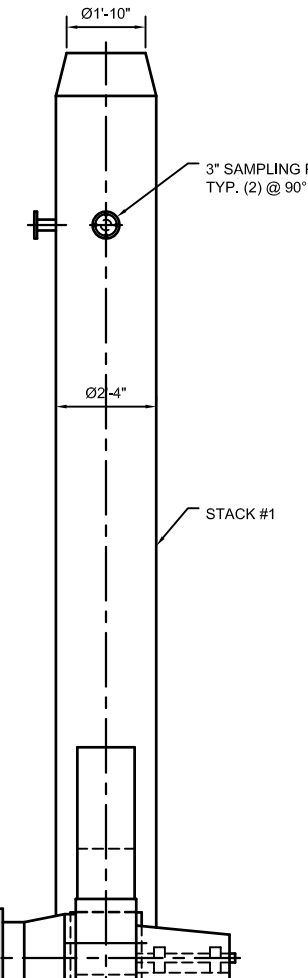

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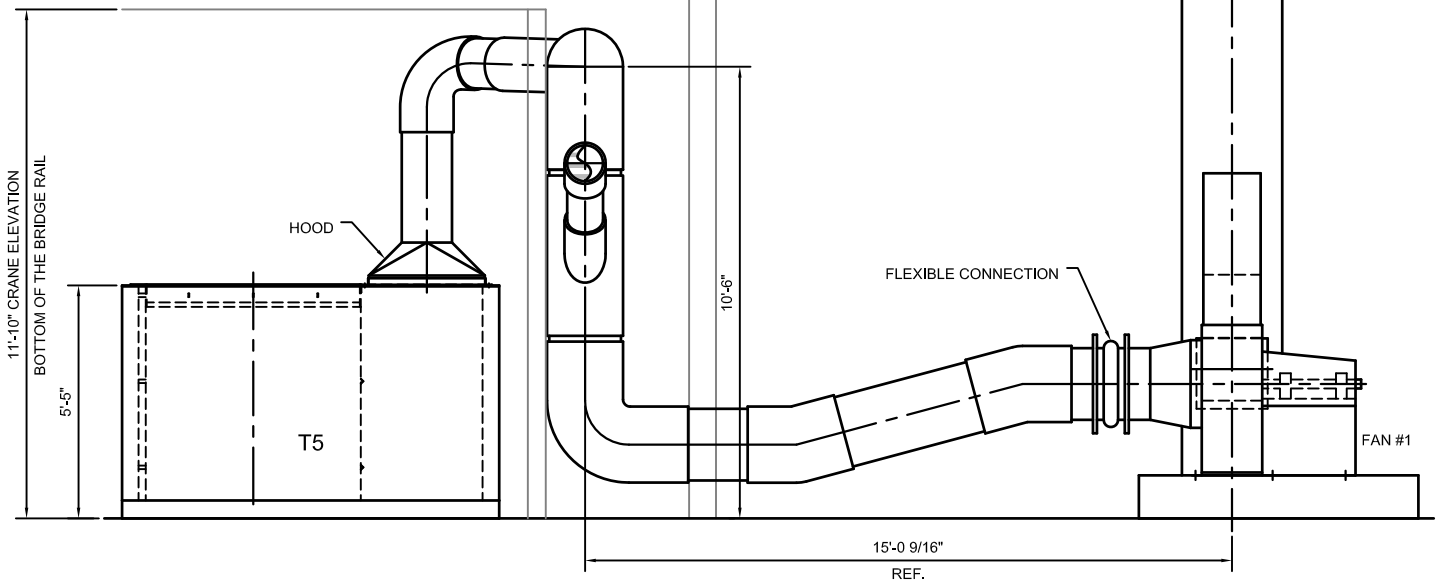


DATE	DR.	CH.	REVISION

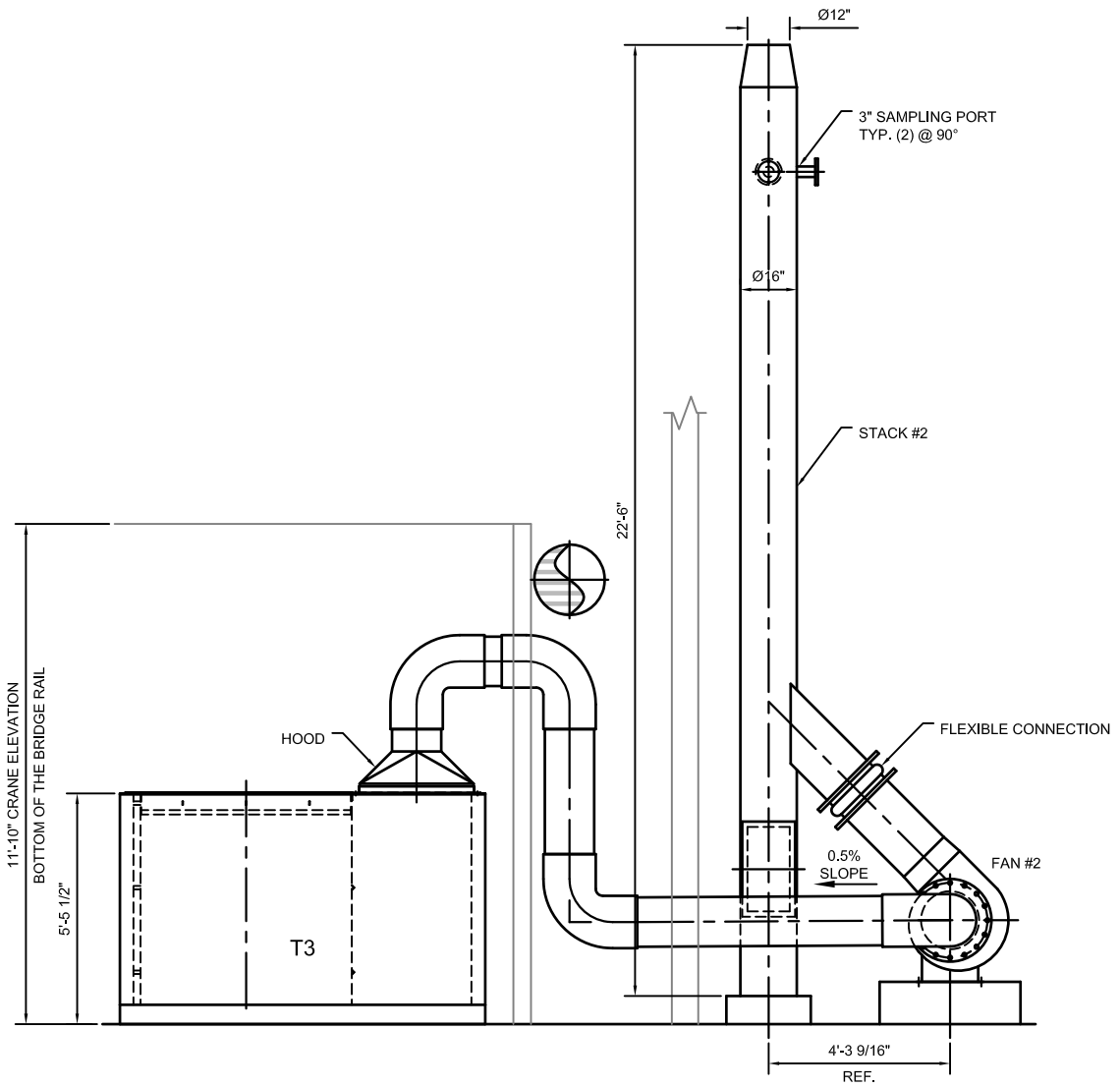
VENTILATION SYSTEM ELEVATIONS
CorVor PLATING LINE

WALINGA INC.
CARMAN, MANITOBA

RAMBOLL ENVIRON

PREPARED BY: MB	DATE: SEP. 1, 2017
DRAFTED BY: MB	SCALE: 1/2" = 1'-0"
APPROVED BY: WA	PROJECT: CA12-00861A

DWG NO.
M-02



D SECTION
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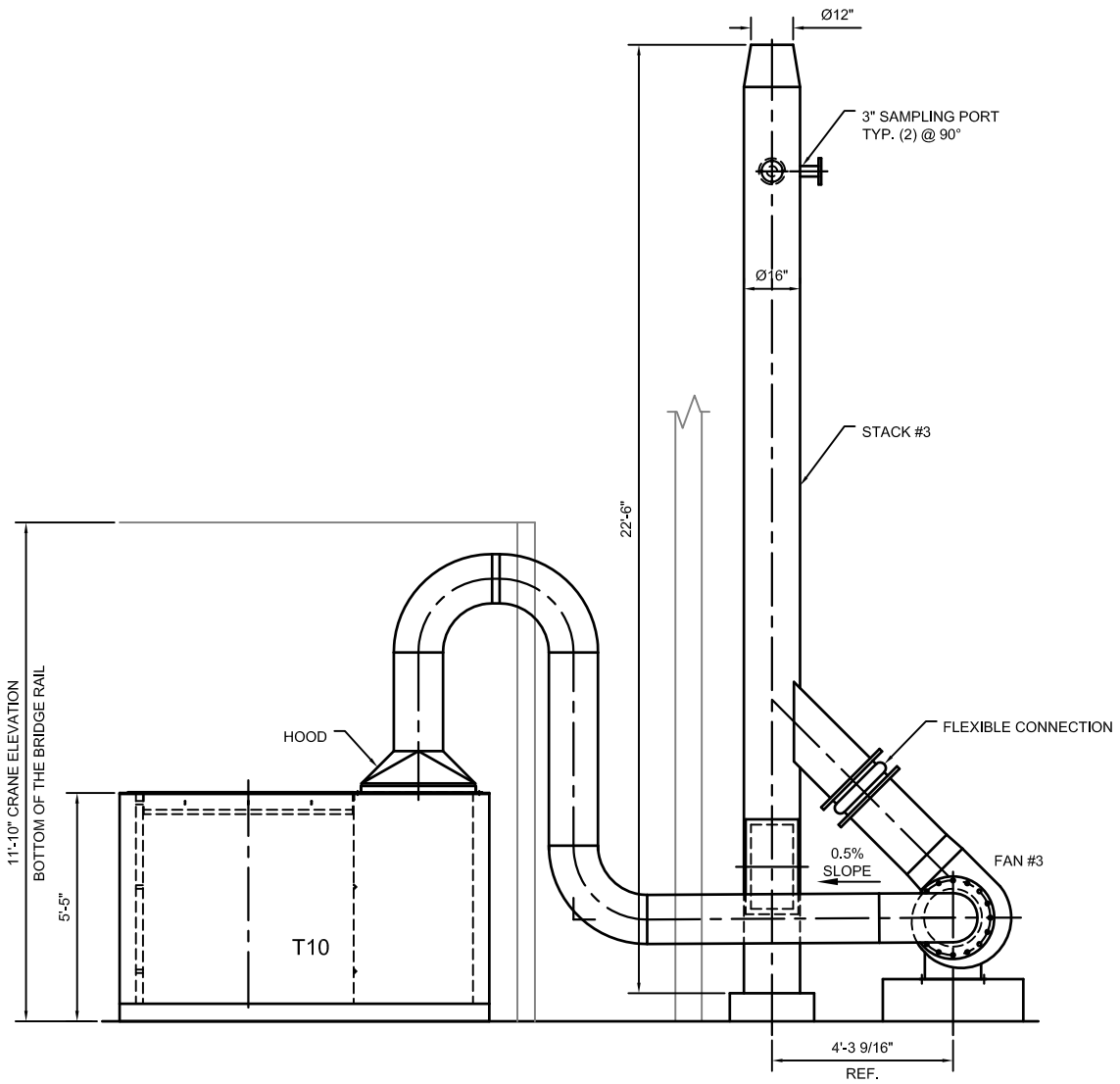


E ELEVATION
SCALE: 1/2" = 1'-0"

DATE	DR.	CH.	REVISION

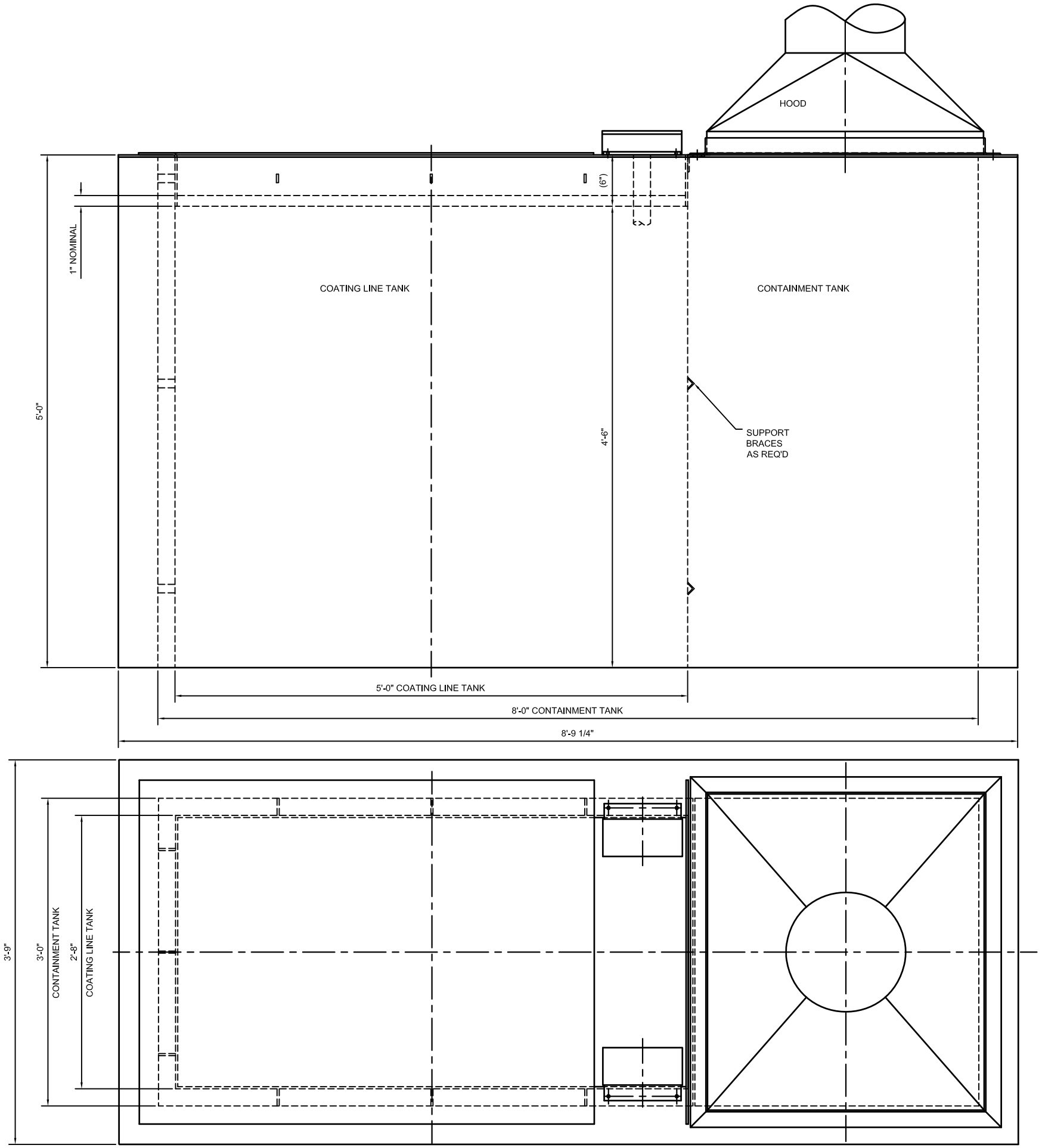
VENTILATION SYSTEM ELEVATIONS
CorVor PLATING LINE

WALINGA INC.
CARMAN, MANITOBA

RAMBOLL ENVIRON

PREPARED BY: MB	DATE: SEP. 1, 2017
DRAFTED BY: MB	SCALE: 1/2" = 1'-0"
APPROVED BY: WA	PROJECT: CA12-00861A

DWG NO.
M-03



DATE	DR.	CH.	REVISION

CorVor HARD COATING LINE & HOOD

RAMBOLL ENVIRON

WALINGA INC.
CARMAN, MANITOBA

PREPARED BY: TR	DATE: SEP. 1, 2017
DRAFTED BY: MB	SCALE: 2" = 1'-0"
APPROVED BY: WA	PROJECT: CA12-00861A

DWG NO.
M-04