Asbestos and Lead Reassessment Survey

Burlington Lift Bridge

Hamilton, Ontario

FINAL REPORT

Prepared for:

Public Services and Procurement Canada

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APPENDICES

1.0 EXECUTIVE SUMMARY

AET Group Inc (AET) was retained by Public Service and Procurement Canada (PSPC) to complete an update survey of Asbestos-Containing Materials (ACMs) and Lead-Containing Materials (LCMs) at the Burlington Lift Bridge, located in Hamilton, Ontario.

This report summarizes the rationale, scope of work, methodology and findings of the survey as performed by AET personnel on January 29-30, 2018.

The objectives of this survey were threefold;

- To conduct re-assessments for ACM and LCM where required;
- To review the Asbestos Management Plan (AMP) and Lead Management Plan (LMP) and;
- To provide PSPC with recommendations to ensure compliance with applicable legislation.

The project was conducted in accordance with AET Group's own internal project management and quality control procedures which address such issues as scheduling, conflict of interest, confidentiality, and communications/liaison with the client.

Prior to the site visit at the Burlington Lift Bridge, an audit plan and health and safety plan were prepared by AET Group and communicated with representatives of PSPC.

The re-assessments of ACM and LCM were completed through visual inspections. The work involved reviewing background documentation provided electronically by PSPC and documentation available for review at the facility, interviews with facility personnel, visual inspections on a "room-by-room" basis of ACM and LCM, and cross-referencing existing documentation with current, up to date, regulatory and policy requirements.

The primary findings of this re-assessment are summarized below;

- Control house, electrical room asbestos containing floor tile removed.
- Control house, electrical room asbestos containing cables removed.
- North and south towers exterior asbestos containing caulking remove except for 2 windows.
- Recent asbestos abatement work programs have been undertaken, however; the asbestos abatement documentation was not available at the time of the re-assessment.
- Controls house catwalk heavily peeling lead containing paint approx. 100M^2
- South and north towers exterior lead containing paint in poor condition.

2.0 INTRODUCTION

2.1 Background

AET Group Inc (AET) was retained by Public Service and Procurement Canada (PSPC) to complete an update survey of Asbestos-Containing Materials (ACMs) and Lead-Containing Materials (LCMs) historically inventoried by others at the Burlington Lift Bridge, located at 1157 Beach Boulevard in Hamilton, Ontario. The intent of the project was to confirm the existence, location, condition and quantity of previously identified ACMs and LCMs.

This ACM & LCM Re-assessment was conducted to satisfy the requirements of the Canada Labour Code Part ll – Canada Occupational Health and Safety Regulations (COHSR) PSPC Asbestos Management Standard, Ontario Regulation 278/05 Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations and the guideline, Lead on Construction Projects issued by the Ontario Ministry of Labour. As per the PSPC Asbestos Management Standard, on a yearly basis, the ACM inventory information is to be updated through a reassessment based primarily on change in condition and quantity. The Asbestos Management Plan shall be updated with new inventory information as changes are made at the various locations, or where new information identifies the existence of asbestos-containing material not previously identified. For the purposes of this reassessment, the same process is applied for LCM.

Reports provided and review by AET include; Designated Substances and Hazardous Material Survey, Burlington Lift Bridge, XCG, 2002; Lead Management Plan, Burlington Lift Bridge, Pinchin Environmental, March, 2005; Asbestos Management Plan, Burlington Lift Bridge, XCG, February 11, 2007; Asbestos and Lead Re-assessment, Genivar, March 31, 2011; Asbestos and Lead Re-assessment, Genivar, February 1, 2012; Asbestos and Lead Re-assessment, Genivar, December 12, 2012; and Asbestos and Lead Re-assessment, WSP, March 31, 2014. This ACM and LCM re-assessment report completed by AET relies on information contained in these previous reports and should be read in conjunction with them. It should be noted that, not all the above-mentioned documents were present on site.

This report summarizes the rationale, scope of work, methodology and findings of the survey as performed by AET personnel on January 29-30, 2018.

2.2 Project Objectives

The objectives of this survey were threefold;

1. To conduct re-assessments for ACM and LCM where required, to provide updated and accurate information on the existence, condition and level of compliance for these materials;
2. To review the Asbestos Management Plan (AMP) and Lead Management Plan (LMP) and provide accurate up to date information on material conditions, repair/abatement work undertaken, regulatory/policy requirements and updated procedures, and;
3. To provide PSPC with recommendations to ensure compliance with applicable legislation in the identification and management of these materials.

2.3 Site Description

The Burlington Lift Bridge is located at 1157 Beach Boulevard in Hamilton, Ontario. The property contains the lift bridge and associated infrastructure for operations and maintenance. The parcel on the north side of the canal is in the City of Burlington and consists of a parcel of land, a water lot, a bridge gatehouse, a Hydro One transmission tower and the north bridge tower. The parcel on the south side is in the City of Hamilton and consist of a three-storey bridge control house, a one-storey old maintenance workshop, a one-storey new maintenance workshop and the south bridge tower. Nearby structures not in the scope of the survey include a historic lighthouse and a two-storey unoccupied house (both owned by the Department of Fisheries and Oceans), a metal Quonset hut and temporary mobile facilities that house third party contractor equipment and offices.

2.4 Scope

The areas, materials and components inspected as part of this survey included;

- All building construction materials including; Transite siding, caulking, ceiling stucco, drywall joint compound and vinyl floor tiles that were noted to be ACM in previous reports;
- Certain interior and exterior finishes including beige, grey, yellow, green, white and red coloured paint that were noted to be LCM in previous reports, and;
- All accessible areas and building spaces within the specified buildings and structures including; the control house, gatehouse, workshops, North and South bridge towers and vertical lift bridge.

The survey consisted of the following tasks:

- A systematic survey of the above noted materials and areas to re-assess the condition of ACM and LCM and;
- A thorough review of the AMP and LMP was conducted prior to and following the re-assessment survey.

3.0 METHODOLOGY

The project was conducted in accordance with AET Group's own internal project management and quality control procedures which address such issues as scheduling, conflict of interest, confidentiality, and communications/liaison with the client.

AET Group assigned a team of three auditors for the project: Ms. Janet McKenzie, Mr. Larry Freiburger, and Mr. Stephen Boles. Mr. Freiburger served as the lead assessor of the reassessment project and lead author of the report. Prior to the site visit at the Burlington Lift Bridge, an audit plan and health and safety plan were prepared by AET Group and communicated with representatives of PSPC. In addition, a Health and Safety Plan was developed for the field work and prior arrangements were also made with Burlington Lift Bridge facility personnel/operators, Clare Lamont (Bridgemaster), to make facility personnel available to support the assessor on the day(s) of the re-assessment.

3.1 Asbestos-Containing Materials (ACM) Re-Assessment

A re-assessment survey of all known ACM was conducted by Larry Freiburger (assessor) of AET, on January 29 and 30, 2018.

The re-assessments of ACM and LCM were completed through visual inspections. The work involved reviewing background documentation provided electronically by PSPC and documents available for review at the facility, interviews with facility personnel, visual inspections on a "room-by-room" basis of ACM and LCM, and cross-referencing existing documentation with current, up to date, regulatory and policy requirements.

Previous survey and re-assessment survey reports identifying ACM on site were reviewed and summarized prior to conducting the current re-assessment survey.

The assessor performed a systematic review of the specified areas for the purposes of verifying the presents and conditions of previously identified ACM and documenting observations made about their existence, locations, estimated quantities and respective conditions.

A review of documents was conducted to provide accurate up to date information on material conditions, repair/abatement work undertaken, regulatory/policy requirements and updated procedures.

The action matrix and definitions from the PSPC Asbestos Management Standard is provided in Appendix D and establishes the recommended asbestos control actions.

3.2 Lead-Containing Materials (LCM) Re-assessment

A re-assessment survey of all known LCM was performed by AET personnel. Prior to the re-assessment, a list of all the previously identified LCM was generated based on a careful review of previous reports provided to AET, ensuring that all paint samples exceeding 90 ppm (0.009% by weight) were identified as LCM.

The assessor performed a systematic survey of the specified areas for the purposes of verifying the conditions of previously identified LCM and documenting observations made about their existence, locations, estimated quantities and respective conditions. Attention was paid to the condition of LCM (i.e. paint applications) found in the north and south towers which had previously been reported as being in poor condition, as well as, to the conditions of LCM (i.e. paint applications) found in the workshop, control house and gatehouse.

With regards to lead in paint, the Ontario Ministry of Labour (MoL) has published a guideline for the control of lead exposures on construction projects in Ontario, it does not include criteria for the classification of lead-paint. Instead, presuming, airborne lead concentrations for specific tasks as criteria for classifying work. However, in regulations set by the United States (U.S.) Department of Housing and Urban Development, Lead-Based Paint is classified as any paint application containing at least 1.0 milligrams of lead per square centimetre of surface area (1.0 mg/cm2) or at least 0.5% lead content by weight [(5,000 parts per million (ppm)]. This criterion was widely, although not universally, used in Canada. In Canada, the Federal Canada Consumer Product Safety Act's Surface Coating Materials Regulations SOR/2005-109 has lowered the allowable concentration of lead in paints for new consumer products to 0.009% lead content by weight (90 ppm). For the purposes of this re- assessment, paints having a lead content of 90 ppm or more are considered lead-containing.

The LMP prepared by Pinchin Environmental Limited in March 2005 entitled, Lead Management Plan, Burlington Lift Bridge, was reviewed to provide accurate up to date information on material conditions, repair/abatement work undertaken, regulatory/policy requirements and updated procedures.

As noted in the lead management plan, the condition of lead containing paints can be classified as: Good (paints observed without flaking, peeling, cracking or chipping), Fair (paints observed with light to moderate flaking, peeling, cracking, chipping) and/or Poor (paints observed with severe flaking, peeling cracking, chipping, associated debris).

4.0 FINDINGS

4.1 Asbestos

The following buildings/structures were surveyed to confirm the presence and evaluate the current condition of asbestos-containing materials (ACM) identified within those buildings in prior assessments and re-assessment reports;

- Control House
- Workshop (Old)
- North and South Bridge Towers
- One of the workshops (new workshop) was recently constructed (2003) and did not contain known or suspected ACM and LCM.

Previously identified ACM from the 2014 report are summarized in Table 4-1:

Table 4-1 Summary of Previously Identified ACM at the Burlington Lift Bridge

Type of Material	Location	Condition
Grey 9"x9" vinyl floor tile	Control House – 2nd Floor	Good
Electrical Cables	Control House – 2nd Floor	Good – Fair
Ceiling Stucco	Maintenance Workshop – Change/Tool Room	Good
Drywall Joint Compound	Maintenance Workshop – North Wing	Good
Drywall Joint Compound	Maintenance Workshop – Washroom	Good
Transite Siding	North & South Bridge Towers – Exterior of Mechanical Rooms	Good
Grey Caulking	North/South Bridge Tower – Exterior Cladding	Good
Caulk/Putty Sealant	North Bridge Tower – Interior Windowpane	Fair

* Data summarized from: *Final Asbestos Survey, Burlington Lift Bridge, 1157 Beach Boulevard, Hamilton, Ontario XCG Consultants Ltd., February 11, 2007; Lead-based Paints, Leachate and Asbestos Sampling Letter, Burlington Lift Bridge Pinchin Environmental, January 11, 2009; Environmental Sampling for Asbestos and Lead Content at the Burlington Lift Bridge Control Building, Burlington, Ontario, GENIVAR, April 21, 2008; Asbestos Update Survey Report, Burlington Lift Bridge, 1157 Beach Boulevard, Hamilton Ontario DST Consulting Engineers, March 24, 2009; Asbestos and Lead Re-Assessment Report, Burlington Lift Bridge, PWGSC Engineering Asset Properties, 1157 Beach Boulevard, Hamilton, Ontario, GENIVAR, March 31, 2011, and; Asbestos and Lead Re-Assessment Report, Burlington Lift Bridge, PWGSC Engineering Asset Properties, 1157 Beach Boulevard, Hamilton, Ontario, GENIVAR, December 12, 2012.*

AET conducted a re-assessment of previously identified ACM, which included; Transite siding/cladding, stucco, drywall joint compound, vinyl floor tiles, high voltage electrical cable

sheathing and caulk/putty sealant. Details regarding the existence, location, extent and condition of each ACM re-assessed are described in Table 4-2.

Recent asbestos abatement work programs have been undertaken, however; the asbestos abatement documentation was not available at the time of the re-assessment.

Table 4-2 Asbestos-Containing Materials Re-Assessment Burlington Lift Bridge – January 2018

	Location and Description	Friable	Condition (2014)	Condition (2018)	Access	Action	Asbestos Content	Approximate Quantity	Comment	Photo ID
Control House Building	Electrical Room (2nd Floor) – Grey, 9”x9” Vinyl Floor Tiles	No	Good	N/A	A	None	20-30% Chrysotile	None	All vinyl asbestos floor tiles were removed in 2017.	Photo 5
	Electrical Room (2nd Floor) – Electrical Cable Sheathing	No	Good - Fair	N/A		None	Assumed Asbestos	None	Existing high voltage wires were removed and replaced with non – ACM wiring in 2017.	Photo 6
Workshop	Workshop Change Room (Tool Room) – Ceiling Stucco	Yes	Good	Good	A	Proactive ACM Removal/Surveillance (5/7)	0.5-5% Chrysotile	40 m2	Material still present – no change in condition observed.	Photo13
	North Wing - Drywall Joint Compound (DJC)	No	Good	Good	A	Proactive ACM Removal/Surveillance (5/7)	0.7% Chrysotile	40 m2	Material still present – repair work observed.	Photo 8
North and South Bridge Towers	Exterior (Top) of North and South Bridge Towers – Transite Cladding/Siding	No	Good	Good	D	Routine Surveillance (7)	Assumed Asbestos	200 m2 cladding per tower	Exterior Transite cladding viewed from interior windows, and ground level – limited visibility. No change in condition was observed.	Photo 10
	Interior Windows of North and South Bridge Towers – Interior windowpane caulk/putty sealant	No	Fair	Good – Fair	A	Proactive ACM Removal/Repair (5/6) Routine Surveillance (7)	1.2% Chrysotile	20 linear feet (North Tower)	All interior caulking/putty was removed in January 2012, except for two (2) windows adjacent to the Peregrine Falcon nest in the North Tower. ACM repair/removal recommended.	Photo 4
	Exterior Windows of North and South Bridge Towers – Windowpane caulk/putty sealant	No	-	Fair	D	Routine Surveillance (7)	1.2% Chrysotile	Unknown	Exterior window putty presumed to also be ACM. Limited visibility and no access.	N/A

Condition, Accessibility, and Action based on the PSPC Asbestos Management Standard, June 5, 2017, Asbestos concentration based on the following reports: *Final Asbestos Survey, Burlington Lift Bridge, 1157 Beach Boulevard, Hamilton, Ontario XCG Consultants Ltd., February 11, 2007; Asbestos and Lead Re-Assessment Report, Burlington Lift Bridge, 1157 Beach Boulevard, Hamilton, Ontario, Genivar, March 31, 2011, Asbestos and Lead Re-Assessment Survey, Burlington Lift Bridge, Hamilton, ON, GENIVAR, February 1, 2012, Supervision of Lead-Based Paint and Asbestos Abatement, Burlington Lift Bridge,1157 Beach Boulevard, Hamilton, Ontario, DCS, March 2012, Asbestos and Lead Re-Assessment Report, Burlington Lift Bridge, PWGSC Engineering Asset Properties, 1157 Beach Boulevard, Hamilton, Ontario, GENIVAR, December 12, 2012, and Asbestos and Lead Re-Assessment Report, Burlington Lift Bridge, 1157 Beach Boulevard, Hamilton, Ontario, WSP, March 31, 2014.*

The action matrix and definitions, from the PSPC Asbestos Management Standard is provide in Appendix D, and establishes the recommended asbestos control actions.

Access A: Areas of the building within reach (from floor level) of all building users. Includes areas such as workshops and storage areas where activities of the building users may result in disturbance of ACM not normally within reach from floor level. Access D: Areas of the building behind inaccessible solid ceiling systems, walls, or mechanical equipment, etc., where demolition of the ceiling, wall or equipment, etc., is required to reach the ACM. Evaluation of condition and extent of ACM is limited or impossible, depending on the surveyor's ability to visually examine the materials in Access D.

4.1.1 Review of Asbestos Management Plan (AMP)

AET conducted a review of the facility's Asbestos Management Plan, entitled "Asbestos Management Plan, Burlington Lift Bridge, 1157 Beach Boulevard, Hamilton, Ontario" prepared by XCG Consultants Ltd., Ontario, in 2007, prior to conducting the asbestos-containing materials (ACM) re- assessment survey of the premises.

The annual re-assessment record forms (for asbestos), the annual re-assessment survey information forms (for asbestos) and the annual re-assessment checklist form (for asbestos) were completed by AET and are available in Appendix C. A copy of these forms need to be filed in AMP.

Upon completion of the ACM re-assessment, similar recommendations as in the 2014 report regarding updates and/or adjustments to the AMP are provided:

1) Since the implementation of the AMP in 2007, it was observed that some reports and relevant documentation were not filed in the proper corresponding sections of the AMP. The AMP should be reviewed, and any out of place documentation should be moved and filed into the proper section.
2) Certain re-assessment reports, records and survey information forms along with other pertinent information are not all filed in chronological order. These documents and forms should be filed chronologically.
3) Removal and/or abatement work activities which have taken place should be documented and filed accordingly in the AMP (known activities from 2012 and 2017 should be included as a minimum).

4.2 Lead

The following buildings/structures were surveyed to confirm the presence and evaluate the current condition LCM identified within those buildings in prior reports:

- Gate House
- Control House
- Workshop (Old)
- North and South Bridge Towers

Previously identified LCMs from the Asbestos and Lead Re-Assessment Report 1157 Beach Boulevard, Hamilton, Ontario, WSP, March 31, 2014 are summarized in the table 4-3:

Table 4-3 Summary of Previously Identified LCM at the Burlington Lift Bridge

Type of Material	Location	Condition
Beige Wall Paint	Tool Room of the Maintenance Workshop (Old)	Good
Grey Paint	Shelves of the Tool Room of the Maintenance Workshop (Old)	Good
White over Beige over Grey Paint	Exterior of the Maintenance Workshop (Old)	Good
Green paint	Exterior Structure (catwalk) leading to and from the Control House	Poor
Grey over Dark Grey Wall Paint	Control House Main Floor, Diesel Room	Good – Poor
White Wall Paint	Control House 2nd Floor	Good
Greenish Grey Door Trim Paint	Control House 3rd Floor	Good
Grey Paint on Railings	Control House Stairwell	Good
Green Wall/Ceiling Paint	Interior of Gatehouse	Good – Poor
Green Window Covering Paint	Gatehouse	Poor
Grey Wall Paint	South Bridge Tower	Good – Poor
Grey Floor Paint	South Bridge Tower Machine Room	Good – Fair
Yellow Bollard Paint	South Bridge Tower	Good
Green Paint	South Bridge Tower Exterior	Fair – Poor
Grey Wall Paint	Interior North Bridge Tower	Good – Poor
Grey Floor Paint	North Bridge Tower Machine Room	Good – Fair
Yellow Bollard Paint	North Bridge Tower	Good
Green Paint	North Bridge Tower Exterior	Fair – Poor
Red Primer Paint	Lift Span and Towers of Bridge	Fair

As discussed in Section 3.2, the current threshold limit for surface coating materials with lead concentrations that exceed 90 ppm (0.009% by weight) are “lead-based” surface coatings. The data obtained and summarized from previous survey reports indicates that all paint samples collected from the facility and analyzed are greater than 90 ppm (0.009% by weight), and therefore, are considered to be lead-based by current standards

AET re-assessed paint applications on the premises that were previously identified as lead-containing. Details regarding the existence, location, extent and condition of each LCM re-assessed are described in Table 4-4. It is understood from the 2014 Re-assessment Report

that, some lead-containing paints observed in the Control House, Maintenance Workshop (Old) and Gatehouse were encapsulated as part of a 2011 lead abatement work program.

As noted in the lead management plan, the condition of lead containing paints can be classified as; Good (paints observed without flaking, peeling, cracking or chipping), Fair (paints observed with light to moderate flaking, peeling, cracking, chipping) and/or Poor (paints observed with severe flaking, peeling cracking, chipping, associated debris).

Table 4-4 Lead Re-Assessment of Burlington Lift Bridge Premises – January 2018

	Location	Lead Conc. (%)	Condition* (2014)	Condition* (2018)	Comment	Photo ID
Workshop (Old)	Beige wall paint in the tool room of the workshop (Old)	0.01	Good	Good	The paint was observed without flaking, peeling, cracking and/or chipping.	Photo 14
	Grey wall paint on the shelves of the tool room in the workshop (Old)	0.35	Good	Good	The paint was observed without flaking, peeling, cracking and/ or chipping.	N/A
	White over beige over grey paint on the exterior of the workshop (Old)	0.67	Good	Good – Fair	Beige over grey paint on the exterior was repainted white in Oct. 2011. Assuming lead paint remains beneath new paint.	Photo 15
Control House	Green paint on the exterior structure (catwalk) leading to and from the control house	7.06	Poor	Poor	Approximately 100 m2 of heavily peeling paint observed on catwalk structure.	Photo 12
	Control house main floor (mechanical room), grey over dark grey wall paint	0.07	Good – Poor	Good – Poor	Approximately 7 m2 of heavily peeling paint observed on diesel generator walls.	Photo 16
	Control house 2nd floor white wall paint	0.10	Good	Good	White wall paint was repainted in Nov. 2011. Assuming lead paint remains beneath new paint.	Photo 17
	Control house 3rd floor beige over greenish- grey door trim paint	0.08	Good	Good	Greenish grey door trim paint was repainted beige in Nov. 2011. Assuming lead paint remains beneath new paint.	N/A
	Control house stairwell grey paint on railings	0.41	Good	Good – Fair	Grey railing paint was repainted in Nov. 2011. Assuming lead paint remains beneath new paint.	Photo 7
Gatehouse	Green wall/ceiling interior paint.	0.08	Good – Poor	Good - Poor	Approximately 1 m^2 of paint observed to be peeling, flaking, etc.	Photo 18
	Green window covering paint (on plywood) on exterior of the gatehouse	2.58	Poor	Poor	Approximately 1 m^2 of paint observed to be peeling, flaking, etc.	Photo 1
South	South tower interior grey wall paint, machine room and sheave room	0.44 – 0.58	Good – Poor	Fair – Poor	Approximately 120 m^2 of paint observed to be peeling, flaking, etc. in various locations throughout the room.	Photo 19

	Location	Lead Conc. (%)	Condition* (2014)	Condition* (2018)	Comment	Photo ID
	South tower grey floor paint in the machine room	0.33	Good – Fair	Good - Poor	Approximately 27 m^2 of paint observed to be peeling, flaking, etc. in various locations throughout the room.	Photo 20
	South tower yellow paint on the bollards	10.78	Good	Good	Bollards re-painted in 2011. Assuming lead paint remains beneath new paint.	Photo 21
	South tower green exterior paint	7.06	Fair – Poor	Fair - Poor	Limited visibility of exterior cladding paint from windows and the ground Visible paint appears to range from Fair to Poor condition.	Photo 10
North Bridge Tower	North tower interior grey wall paint, machine room and sheave room	Assumed[2]	Good – Poor	Fair – Poor	Approximately 250 m^2 of paint observed to be peeling, flaking, etc. in various locations throughout the room.	Photo 2
	North tower grey floor paint in the machine room	Assumed[2]	Good – Fair	Fair	Approximately 45 m^2 of paint observed to be peeling, flaking, etc. in various locations throughout the room.	Photo 3
	North tower yellow paint on the bollards	Assumed[2]	Good	Good	Bollards re-painted in 2011. Assuming lead paint remains beneath new paint.	Photo 3
	North tower green exterior paint	Assumed[2]	Fair – Poor	Fair - Poor	Limited visibility of exterior cladding paint from windows, and ground Visible paint appears to range from Fair to Poor condition.	Photo 22
Bridge	Lift span and towers (red primer)	Assumed	Fair	Fair	The entire lift span structure observed to have moderate peeling, flaking, etc. The red primer at the 'splash- zone' has been removed and repainted. Ten feet above the deck was repainted.	Photo 9

* Data summarized from: Lead Management Plan, Burlington Lift Bridge, Hamilton, Ontario, Pinchin March, 2005, *Asbestos and Lead Re-Assessment Report, Burlington Lift Bridge, PWGSC Engineering Asset Properties, 1157 Beach Boulevard, Hamilton, Ontario, GENIVAR, March 31, 2011; Asbestos and Lead Re-Assessment Survey, Burlington Lift Bridge, Hamilton, ON, GENIVAR, February 1, 2012, and; Asbestos and Lead Re-Assessment Report, Burlington Lift Bridge, PWGSC Engineering Asset Properties, 1157 Beach Boulevard, Hamilton, Ontario, GENIVAR, December 12, 2012. Supervision of Lead-Based Paint and Asbestos Abatement Burlington Lift Bridge, Hamilton, Ontario, DCS, March 2012, Asbestos and Lad Re-Assessment Report 1157 Beach Boulevard, Hamilton, Ontario, WSP, March 31, 2014*

*Condition – GOOD (paints observed without flaking, peeling, cracking or chipping), FAIR (paints observed with light to moderate flaking, peeling, cracking, chipping), POOR (paints observed with severe flaking, peeling cracking, chipping, associated debris)

4.2.1 Review of Lead Management Plan (LMP)

AET conducted a review of the facility's Lead Management Plan (LMP), entitled "Lead Management Plan, Burlington Lift Bridge" as prepared by Pinchin Environmental of Mississauga, Ontario, in 2005, prior to conducting the lead-containing materials (LCM) re-assessment survey of the premises.

Since the implementation of the LMP in 2005, federal and provincial regulations governing the designated substance "lead" have evolved or been revoked and replaced with new regulations.

In April 2005, the federal Surface Coating Materials Regulation (SOR/2005-109) limited the allowable concentration of total lead present in a surface coating material (with some exceptions) to 600 mg/kg (600 ppm). In December 2010, the Federal Government lowered the total lead limit in surface coating materials from 600 mg/kg to 90 mg/kg under subsections 4(1) and 5(1) and section 8 of the Surface Coatings Materials Regulations (SOR/2005-109). The lowering of this limit aligns Canada with the United States in respect of total lead levels in surface coating materials and certain products with surface coating materials applied to them.

Therefore, using the revised threshold limit, surface coating materials with lead concentrations that exceed 90 ppm (0.009% by weight) are now considered to be lead-based by today's standards.

Upon completion of the LCM re-assessment, the following recommendations regarding updates/adjustments to the LMP are provided:

1) A thorough review of the LMP was conducted and references to governing regulatory framework need to be updated and should reference the most up to date federal, provincial or ministry guidelines, regulations and established threshold limits.
2) Annual Plan Review Checklists were not observed for a number of years between 2005 and 2011. An annual review checklist should be completed for each calendar year and filed accordingly in the LMP.
3) Although modifications have been made to the regulatory framework governing designated substances which existed at the time the LMP was initially implemented, best practice guidelines have not, and the LMP still maintains its overall effectiveness of managing the lead-containing materials identified on site.
4) Lead Project Checklists were not observed for a number of years between 2005 and 2017. Removal and encapsulation work activities should be documented and filed accordingly in the LMP.

The annual reassessment record forms (for lead), the annual reassessment survey information forms (for lead) and the annual reassessment checklist form (for lead) were completed by AET and are available in Appendix C. A copy of these forms need to be filed in LMP.

No other recommendations, changes or updates to the LMP are suggested at this time.

5.0 RECOMMENDATIONS

5.1 Asbestos

The following recommendations are made for action or management of asbestos-containing materials at the Burlington Lift Bridge:

1) Asbestos-containing caulk/putty sealant is present on glazing (window panes) on the inside of the North bridge tower's sheave room adjacent to the Peregrine Falcon nest (approximately 6 linear metres). The Peregrine Falcon is protected under the Species at Risk Act and the Falcon's status has been upgraded to "Special Concern". PSPC should investigate the possibility of replacing the interior adjacent to the Falcons nest.
2) Although the exterior surfaces were not accessible for observation, it is presumed that the same type of caulk/putty sealant is present on the exterior window surfaces of both the North and South towers. PSPC should verify if the exterior caulking/putty is asbestos-containing material before removing the caulking/putty.

Under PSPC Asbestos Management Standard, PSPC has well-defined responsibilities and obligations related to the ongoing management of ACM. All recommendations made within this section are consistent with applicable procedures outlined in the PSPC Asbestos Management Standard.

The following upgrades are recommended regarding updates/adjustments to the AMP:

1) The AMP should be thoroughly reviewed, and any out of place documentation should be moved and filed into the proper section in accordance with the document's table of contents.
2) Re-assessment reports, records and survey information forms should be filed into chronological order to facilitate identification of current and changing conditions in ACM.
3) If the annual re-assessment record forms can be located, they should be filed appropriately in the binder.
4) Work records for the 2012 asbestos removal/repair (caulking/putty and 9"x9" vinyl floor tile) could not be located. Documentation should be retrieved and filed appropriately.

5) Work Records for the 2017 asbestos removal and/repair (9" x 9" vinyl floor tile and high voltage cables) could not be located. Documentation should be retrieved and filed appropriately.

5.2 Lead

The following recommendations are made for action or management of lead-containing paints present at the Burlington Lift Bridge:

1) It is recommended that areas of lead-containing paints observed to be in *fair* condition (minor cracking/chipping/flaking) as listed in Table 4-4, (workshop exterior walls, control house stairwell railings and north tower floor), be encapsulated with a fresh coat of paint to reduce the likelihood of inhalation, ingestion, and dermal absorption of lead.
2) It is recommended that areas of lead-containing paints observed to be in *poor* condition (severe cracking/chipping/flaking and debris) as listed in Table 4-4 (control house mechanical room walls, control house catwalk, gatehouse ceiling and walls, gatehouse exterior window covering, south tower interior walls and floors, south tower exterior mechanical room, north tower interior walls, north tower mechanical room exterior and lift span read primer) be removed by a professional environmental abatement contractor following either Type 2a Operations (using non-powered hand tools) or Type 3 Operations (using power tools as stipulated in the Ministry of Labour Guideline, "*Lead on Construction Projects"*).

Note: Recommendations for the removal of green paint on the North and South Bridge Tower exteriors are not provided since the lead-based green paint is applied to Transite panels. Lead abatement on asbestos-containing substrate materials is not recommended in this application.

Work activities that will pulverize or completely disrupt lead-containing materials should follow the recommendations provided in the Ministry of Labour *Guideline for Lead on Construction Projects,* September 2004. In addition, the aforementioned painted surfaces (containing lead) should be handled with appropriate health and safety precautions as detailed in the facility's LMP and in compliance with requirements of O. Reg. 490/09.

The following upgrades are recommended regarding updates/adjustments to the LMP:

1) The LMP should be thoroughly reviewed, and any out of place documentation should be moved and filed into the proper section in accordance with the document's table of contents.
2) Re-assessment reports, records and survey information forms should be filed into chronological order to facilitate identification of current and changing conditions in LCM.
3) A Health and Safety Contact List should be included in the LMP.

4) Removal and encapsulation work activities which have taken place between 2005 and 2013 should be documented and filed accordingly in the LMP.

6.0 DISCLAIMER

The conclusions presented in this report represent AET Group's professional opinion and are based upon the work described in this report and any limiting conditions in the terms of reference, scope of work, or conditions noted herein.

The findings presented in this report are based on conditions observed at the specified dates and locations, the analysis of sample documents for the specified parameters, and information obtained for this audit. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, locations that were not investigated directly, or types of analysis not performed.

AET Group makes no warranty as to the accuracy or completeness of the information provided by others, or of conclusions and recommendations predicated on the accuracy of that information. Nothing in this report is intended to constitute or provide a legal opinion. AET Group makes no representation as to compliance with occupational health and safety laws, rules, regulations or policies established by regulatory agencies.

This report has been prepared for PSPC. Any use a third party makes of this report, any reliance on the report, or decisions based upon the report, are the responsibility of those third parties unless authorization is received from AET Group in writing. AET Group accepts no responsibility for any loss or damages suffered by any unauthorized third party as a result of decisions made or actions taken based on this report.

Any comments given in this report on potential abatement problems and possible methods are intended only for the guidance of the designer. The scope of work may not be sufficient to determine all the factors that may affect construction, clean-up methods and/or costs. Contractors bidding on this project or undertaking clean-ups should, therefore, make their own interpretation of the information presented and draw their own conclusions as to how the conditions may affect their work.

Report Prepared By:

Larry Freiburger, Dip. C Eng., CEA,EP LEED AP

Director of Operations

Report Reviewed By:

Janet McKenzie, BSc., EP(CEA), EP (EMSLA)

Director, Environmental Services

Appendix A

Building Diagrams

GATE HOUSE

NORTH TOWER

BRIDGE SPAN

SOUTH TOWER

CONTROL HOUSE

WORKSHOP

aet

PROJECT:

BURLINGTON LIFT

BRIDGE

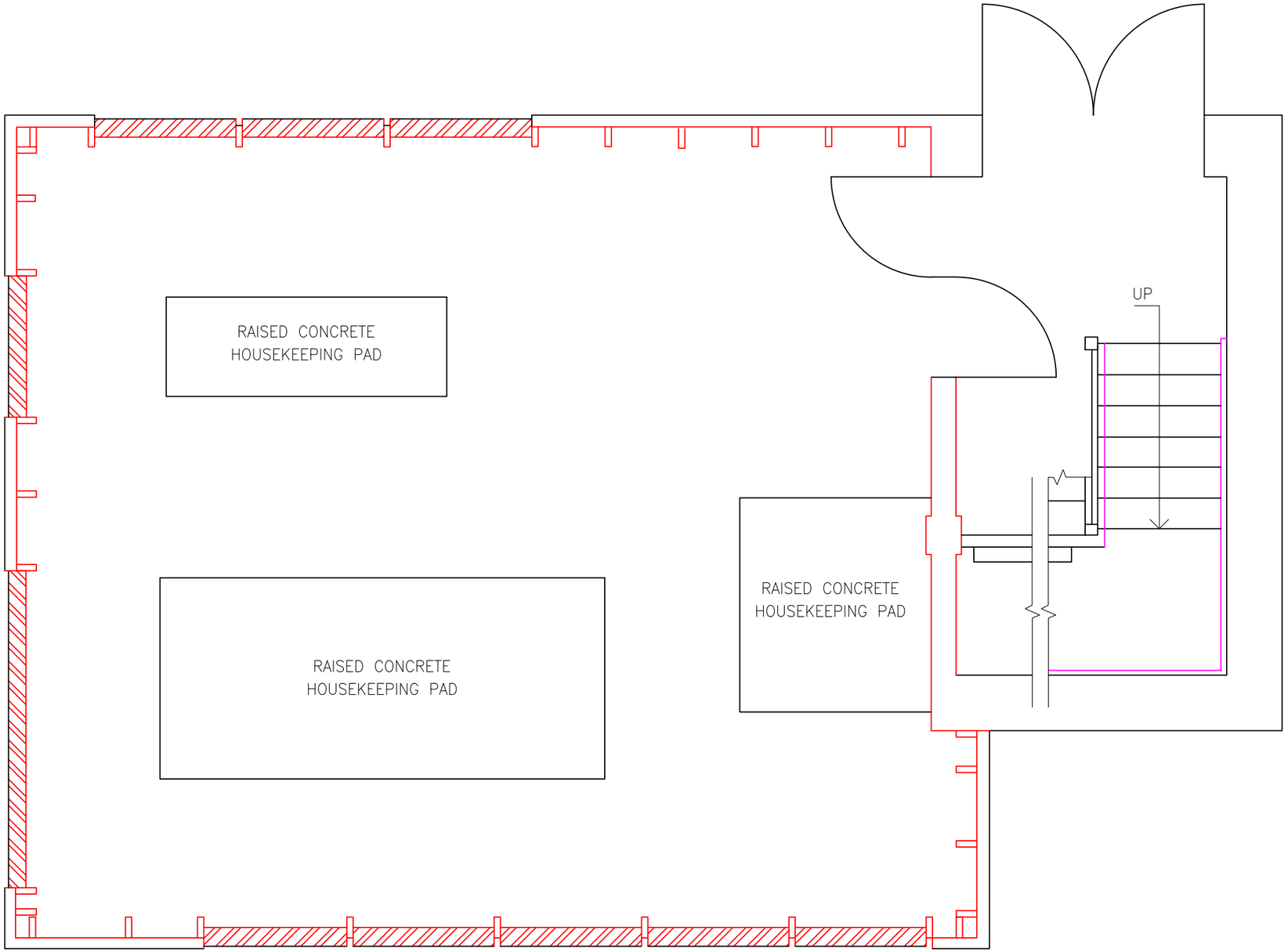
1157 BEACH BOULEVARD

BURLINGTON, ONTARIO

TITLE:

AS NOTED

DRAWN BY: ROB SAJKUNOVIC	PROJECT No. 18-890
SCALE: AS NOTED	DWG. No. FIGURE 1
DATE: MARCH, 2018	



LEGEND

GREY PAINT OVER LEAD CONTAINING DARK GREY WALL PAINT

LEAD–CONTAINING GREY RAILING PAINT *

DRAWING REFERENCE: DRAWING BASED ON FIELD SKETCHES

* NOTE: LEAD CONTAINING PAINT APPLICATION WAS PAINTED OVER WITH A PAINT APPLICATION TO IMPROVE ITS EXISTING CONDITION. LEAD–CONTAINING PAINT APPLICATION IS STILL PRESENT

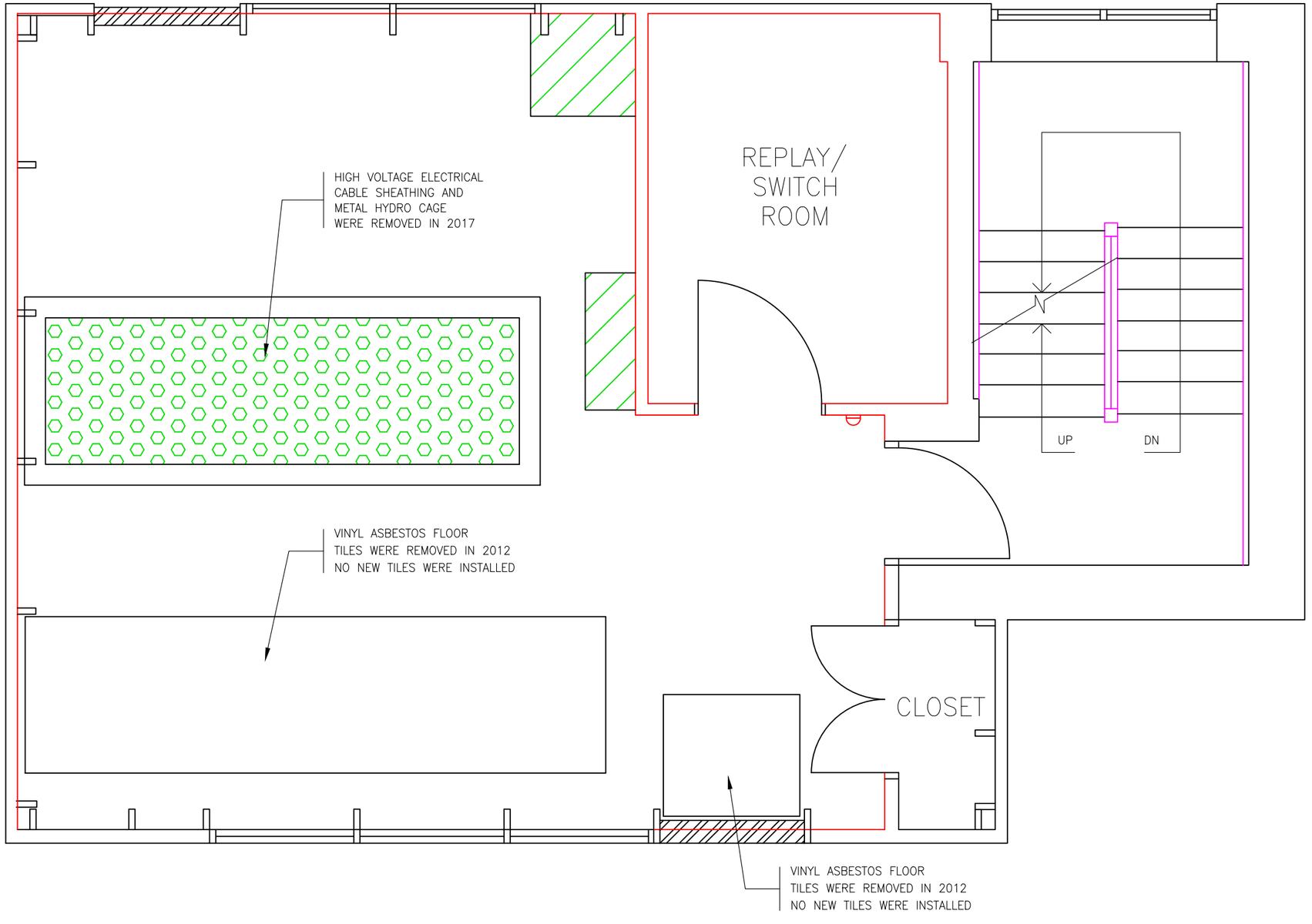
PROJECT:

BURLINGTON LIFT BRIDGE
1157 BEACH BOULEVARD
BURLINGTON, ONTARIO

TITLE:

AS NOTED

DRAWN BY: ROB SAJKUNOVIC	PROJECT No. 18–890
SCALE: AS NOTED	DWG. No. FIGURE 2
DATE: MARCH, 2018	



DRAWING REFERENCE: DRAWING BASED ON FIELD SKETCHES

* NOTE: LEAD CONTAINING PAINT APPLICATION WAS PAINTED OVER WITH A PAINT APPLICATION TO IMPROVE ITS EXISTING CONDITION. LEAD–CONTAINING PAINT APPLICATION IS STILL PRESENT

LEGEND

- VINYL ASBESTOS FLOOR TILES
- ELECTRICAL CABLE ASBESTOS SHEATHING
- LEAD–CONTAINING WHITE WALL PAINT
- LEAD–CONTAINING GREY RAILING PAINT *

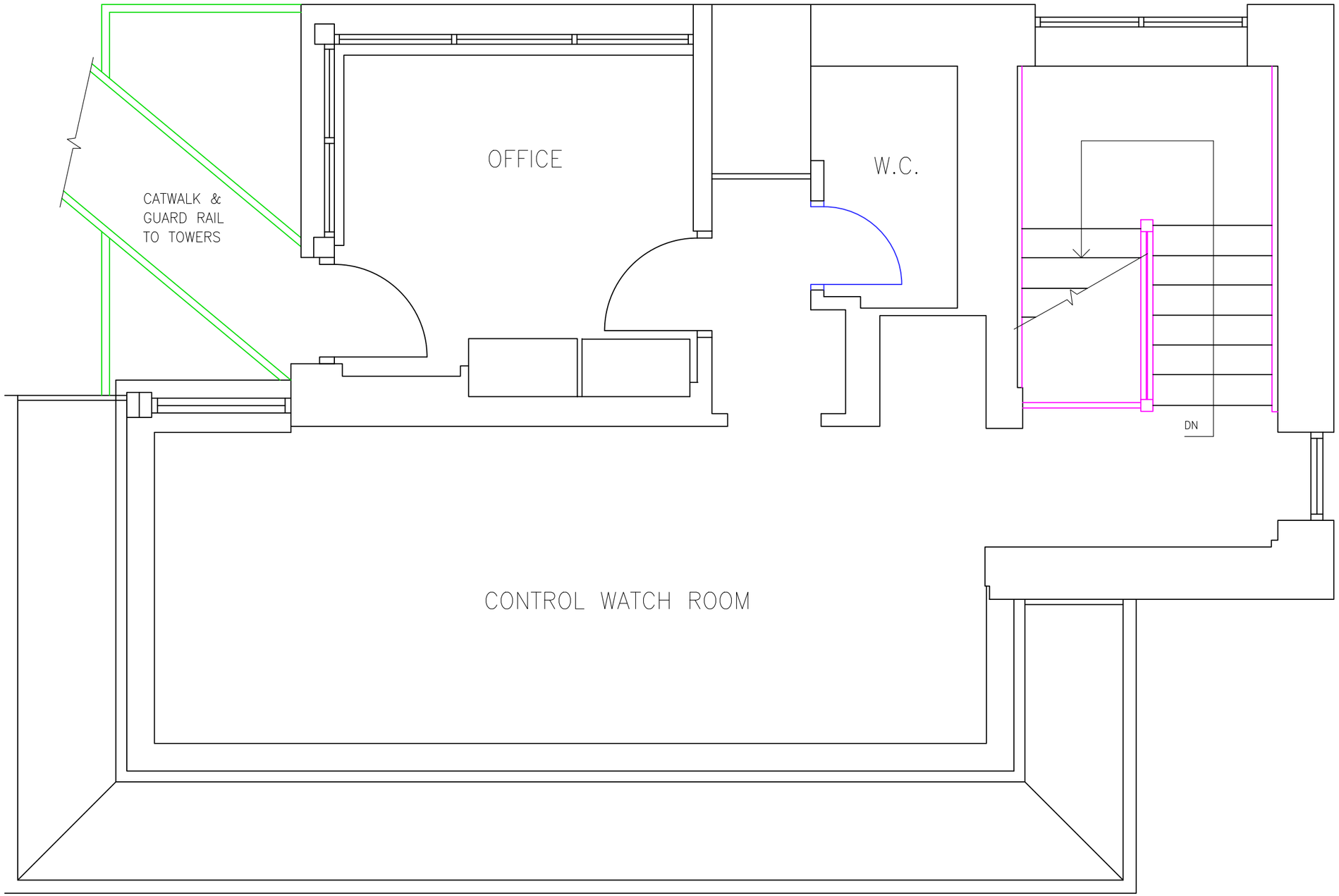
PROJECT:

BURLINGTON LIFT BRIDGE
1157 BEACH BOULEVARD
BURLINGTON, ONTARIO

TITLE:

AS NOTED

DRAWN BY: ROB SAJKUNOVIC	PROJECT No. 18–890
SCALE: AS NOTED	DWG. No. FIGURE 3
DATE: MARCH, 2018	



LEGEND

LEAD–CONTAINING GREY RAILING PAINT *

LEAD–CONTAINING GREEN CATWALK PAINT

BEIGE PAINT OVER LEAD–CONTAINING GREENISH GREY DOOR PAINT *

DRAWING REFERENCE: DRAWING BASED ON FIELD SKETCHES

* NOTE: LEAD CONTAINING PAINT APPLICATION WAS PAINTED OVER WITH A PAINT APPLICATION TO IMPROVE ITS EXISTING CONDITION. LEAD–CONTAINING PAINT APPLICATION IS STILL PRESENT

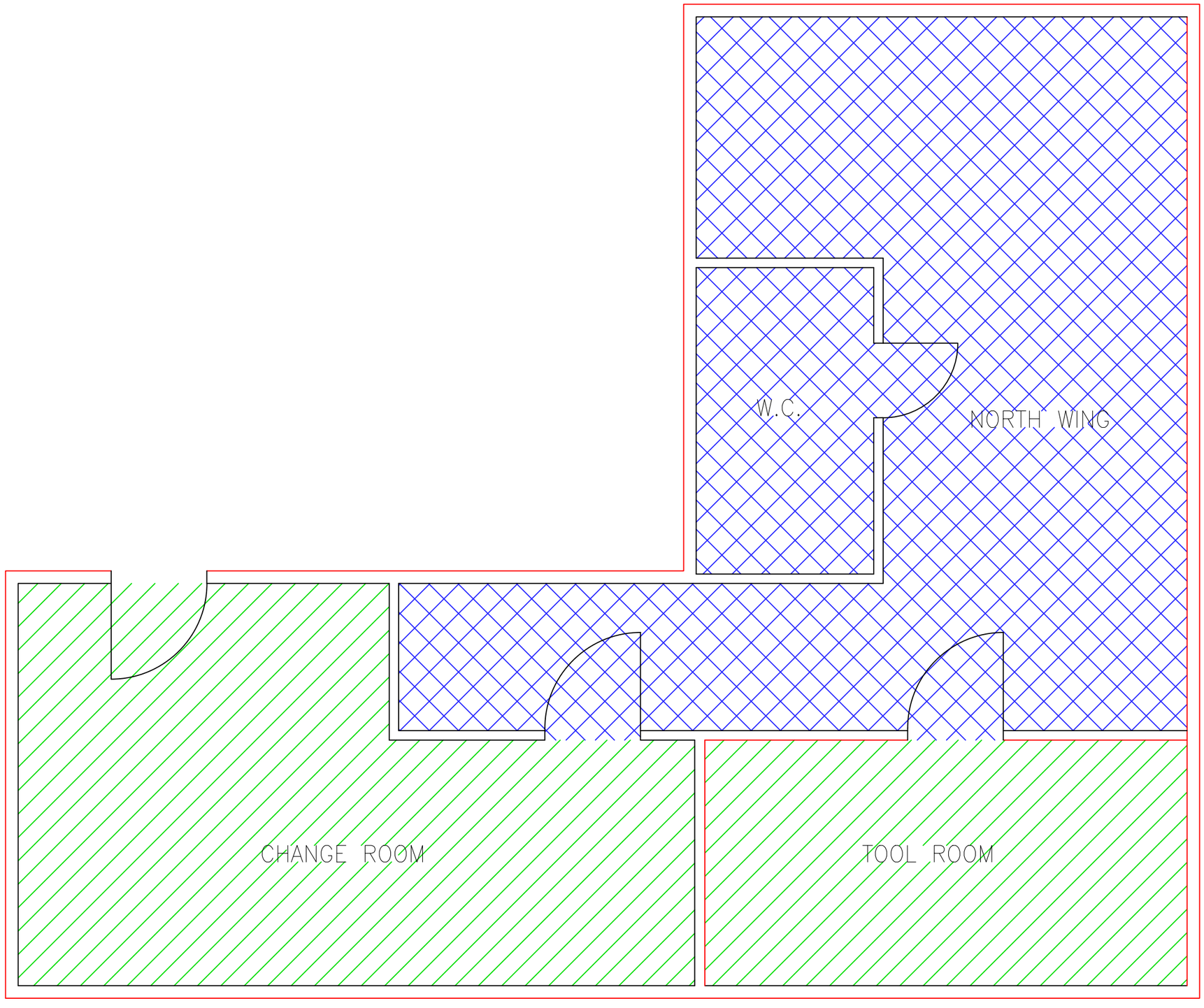
PROJECT:

BURLINGTON LIFT BRIDGE
1157 BEACH BOULEVARD
BURLINGTON, ONTARIO

TITLE:

AS NOTED

DRAWN BY: ROB SAJKUNOVIC	PROJECT No. 18–890
SCALE: AS NOTED	DWG. No. FIGURE 4
DATE: MARCH, 2018	



LEGEND

ASBESTOS CONTAINING CEILING STUCCO

ASBESTOS–CONTAINING DRYWALL JOINT COMPOUND

LEAD–CONTAINING BEIGE WALL PAINT & GREY WALL PAINT ON SHELVES

LEAD–CONTAINING WHITE/ BEIGE OVER GREY EXTERIOR WALL PAINT

aet

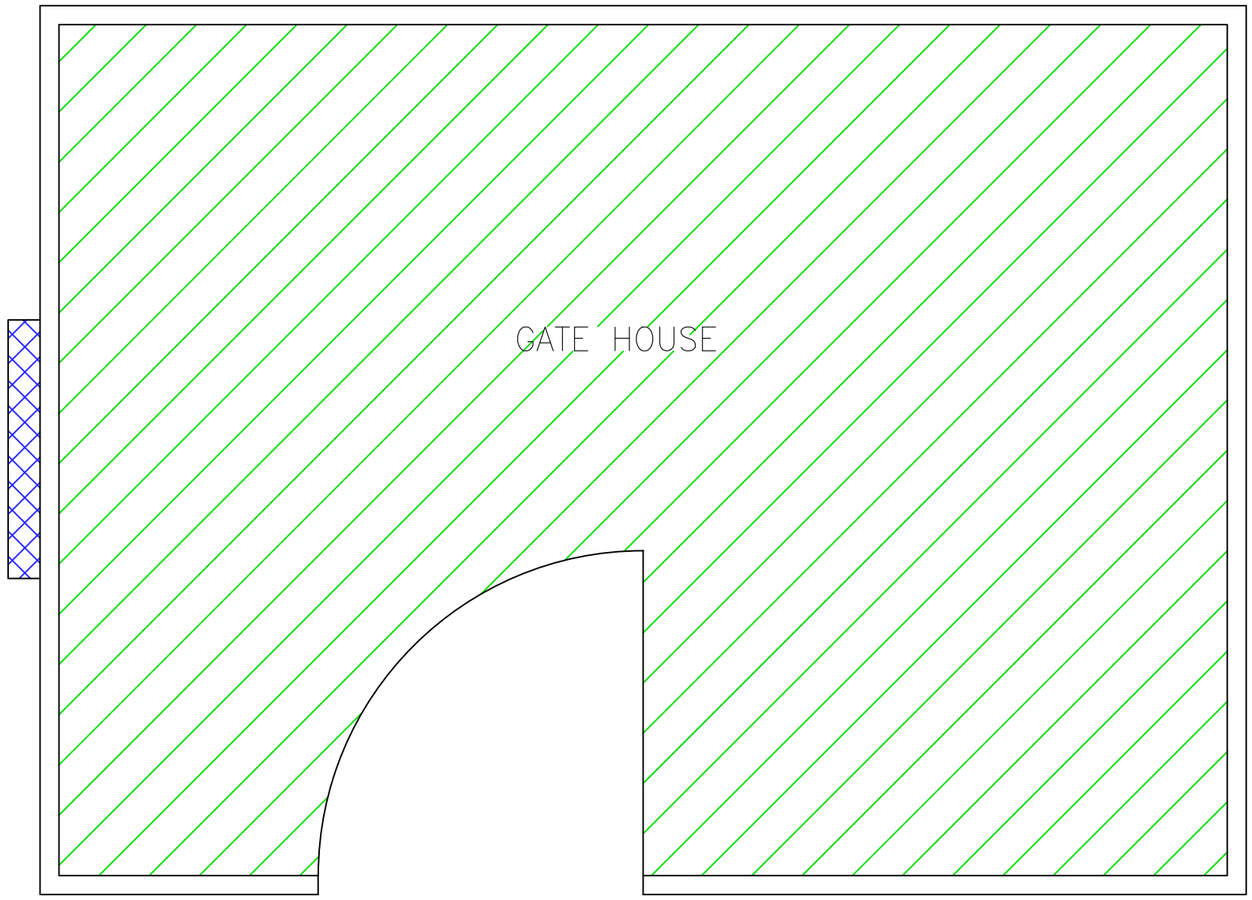
PROJECT:

BURLINGTON LIFT BRIDGE
1157 BEACH BOULEVARD
BURLINGTON, ONTARIO

TITLE:

AS NOTED

DRAWN BY: ROB SAJKUNOVIC	PROJECT No. 18–890
SCALE: AS NOTED	DWG. No. FIGURE 5
DATE: MARCH, 2018	



DRAWING REFERENCE: DRAWING BASED ON FIELD SKETCHES

LEGEND

LEAD CONTAINING GREEN WALL/CEILING INTERIOR PAINT

LEAD CONTAINING GREEN EXTERIOR WINDOW COVER PAINT

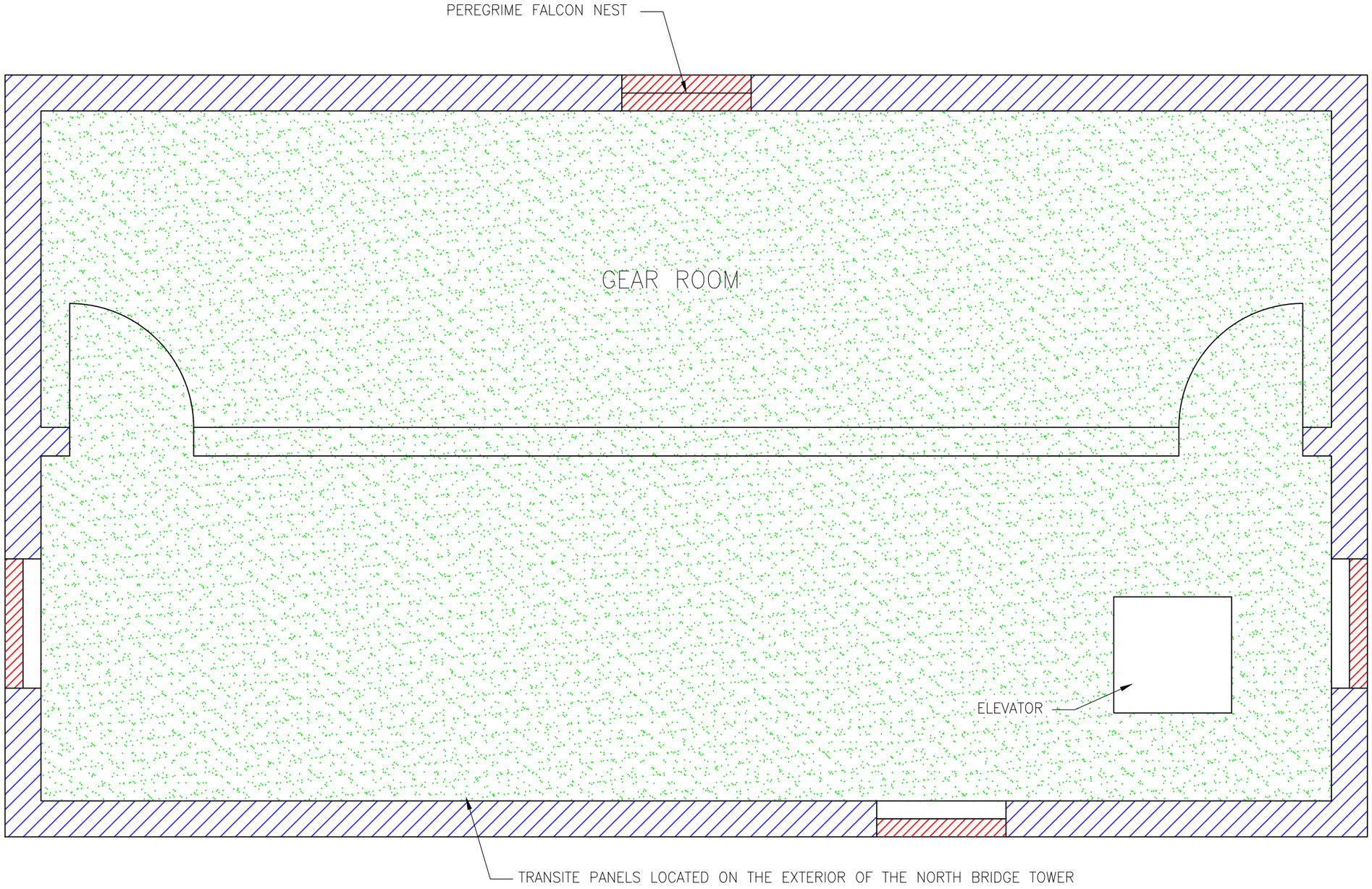
PROJECT:

BURLINGTON LIFT BRIDGE
1157 BEACH BOULEVARD
BURLINGTON, ONTARIO

TITLE:

AS NOTED

DRAWN BY: ROB SAJKUNOVIC	PROJECT No. 18-890
SCALE: AS NOTED	DWG. No. FIGURE 6
DATE: MARCH, 2018	



LEGEND

- ASBESTOS–CONTAINING WINDOW CAULKING
- ASBESTOS–CONTAINING WINDOW PANEL CAULKING (INTERIOR / EXTERIOR)
- VARIOUS LEAD–CONTAINING PAINTS APPLIED TO BOLLARDS, WALL AND FLOOR

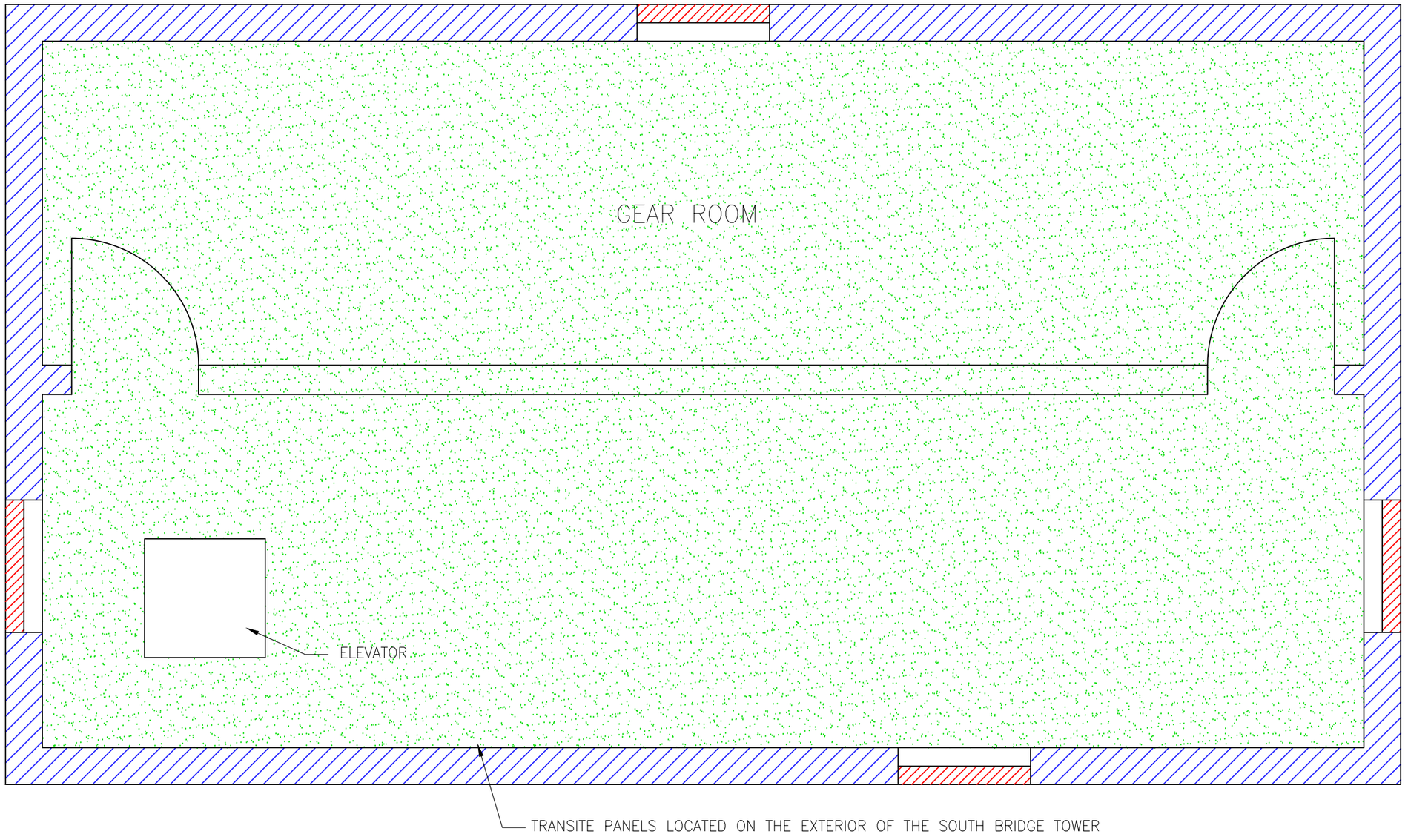
PROJECT:

BURLINGTON LIFT BRIDGE
1157 BEACH BOULEVARD
BURLINGTON, ONTARIO

TITLE:

AS NOTED

DRAWN BY: ROB SAJKUNOVIC	PROJECT No. 18–890
SCALE: AS NOTED	DWG. No. FIGURE 7
DATE: MARCH, 2018	



LEGEND

ASBESTOS–CONTAINING WINDOW CAULKING

ASBESTOS–CONTAINING WINDOW PANEL CAULKING (INTERIOR / EXTERIOR)

VARIOUS LEAD–CONTAINING PAINTS APPLIED TO BOLLARDS, WALL AND FLOOR

PROJECT:

BURLINGTON LIFT BRIDGE
1157 BEACH BOULEVARD
BURLINGTON, ONTARIO

TITLE:

AS NOTED

DRAWN BY: ROB SAJKUNOVIC	PROJECT No. 18–890
SCALE: AS NOTED	DWG. No. FIGURE 8
DATE: MARCH, 2018	

Appendix B

Project Photographs

Photo 1 : Gatehouse peeling paint

Photo 2: Peeling wall paint North Tower

Photo 3: North tower 9peeling floor paint and bollards

Photo 4: Window caulking South Tower

Photo 5: Vinyl tiles (ACM) removed electrical room

Photo 6: ACM high voltage cables removed

Photo 7: Control house stairwell wearing paint

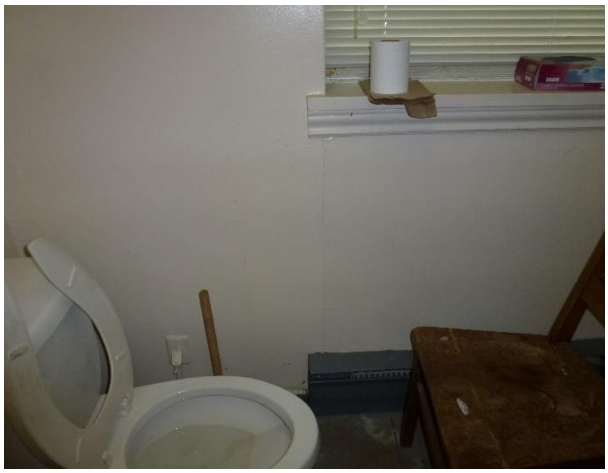


Photo 8: Old workshop ACM drywall joint compound

Photo 9: Lift bridge

Photo 10: South tower machine room exterior

Photo 11: LCM removed and painted yellow

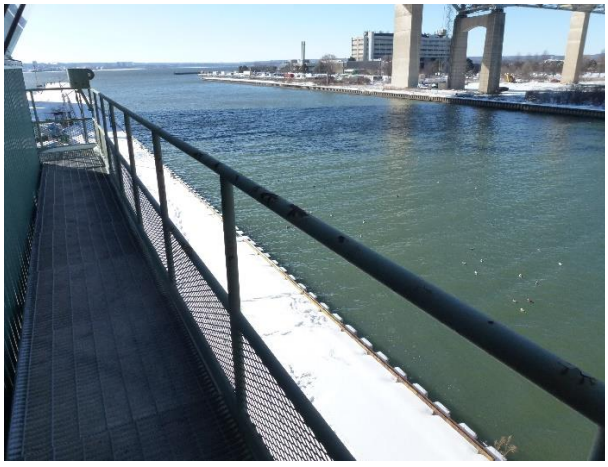


Photo 12: Control house catwalk peeling LCM paint

Photo 13: Ceiling Stucco old workshop

Photo 14: Beige wall paint old workshop

Photo 15: White over beige over grey old workshop

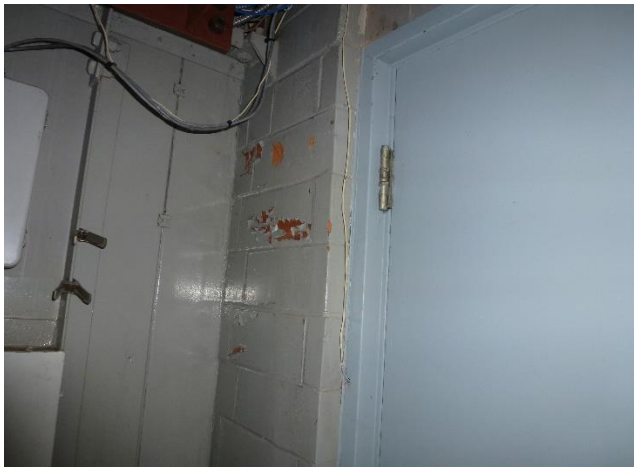


Photo 16: Control house mechanical room grey over LCM

Photo 17: Control house 2nd floor white wall paint

Photo 18: Gate house ceiling & wall LCM

Photo 19: South tower interior grey wall paint.

Photo 20: South tower interior floor paint.

Photo 21: South tower yellow paint on bollards

Photo 22: North tower machine room exterior

Appendix C

Completed Annual Re-assessment Form

Annual Re-assessment Record

Burlington Lift Bridge
FACILITY

Complete one entry for each Annual Re-assessment performed.

Re-assessment Date	Name	Representing	Signature
Jan 28, 2018	Larry Freiburger	AET Group Inc	[illegible]

Annual Re-assessment Survey Information

Burlington Lift Bridge
FACILITY

Upon completion of an Annual Re-assessment Survey, fill out the following form and file in this facility's Asbestos Management Plan under Appendix D.

Dates of Asbestos Re-assessment Survey: Jan 26, 2018

Organization Completing ~~Lead~~ Asbestos Re-Assessment Survey: AET Group Inc

Provide Names of All in Attendance:

	Name	Company
Surveyor #1	Lacey Freiburger	AET Group Inc
Surveyor #2		
Other		
Other		
Other		
Other		

Summary of Survey Findings:

Signature of Surveyor #1

Signature of Surveyor #2

Annual Re-assessment Survey Information

Burlington Lift Bridge
FACILITY

Upon completion of an Annual Re-assessment Survey, fill out the following form and file in this facility's Lead Management Plan under Appendix D.

Dates of Lead Re-assessment Survey: Jan 28, 2016

Organization Completing Lead Re-Assessment Survey: AET Group Inc

Provide Names of All in Attendance:

	Name	Company
Surveyor #1	Lanby Freibergs	AET Group Inc
Surveyor #2		
Other		
Other		
Other		
Other		

Summary of Survey Findings:

Signature of Surveyor #1

Signature of Surveyor #2

Annual Re-assessment Checklist and Abatement Records

Burlington Lift Bridge
FACILITY

Building: Control House
Surveyor: Larry Freiburger
Date: Jun 28, 2018

Location[1]			Asbestos-Containing Materials[2] Quantities and Condition			Abatement Records
Floor	Location/Material	Room Name	Good[3]	Fair[4]	Poor	Enter date and quantity abated. Keep copy of air clearance results in binder.
2nd	ACM Floor tile	Electrical Rm				Tile removed 2017
2nd	ACM Cables	Electrical Rm				Cables removed 2017

[1] Refer to drawings showing ACM locations.
[2] As part of re-assessment, include any relevant comments (such as additional suspected asbestos-related materials).
[3] Check box in GOOD column if all ACM is in GOOD condition.
[4] If ACM in FAIR or POOR condition is present, provide quantities and a brief description in the space provided. Refer to PWGSC Code of Practice for definitions of GOOD, FAIR, and POOR

Annual Re-assessment Checklist and Abatement Records

Burlington Lift Bridge
FACILITY

Building: ~~Maintenance~~ Workshop (Old)
Surveyor: Larry Freibergs

Date: Jan 28, 2018

Location[1]			Asbestos-Containing Materials[2] Quantities and Condition			Abatement Records
Floor	Location/Material	Room Name	Good[3]	Fair[4]	Poor	Enter date and quantity abated. Keep copy of air clearance results in binder.
Ground	~~Sprayed~~ Ceiling - Joint Compound	Tool Room	✓			No change.
11	Joint Compound	North Wing	✓			No change.

[1] Refer to drawings showing ACM locations.
[2] As part of re-assessment, include any relevant comments (such as additional suspected asbestos-related materials).
[3] Check box in GOOD column if all ACM is in GOOD condition.
[4] If ACM in FAIR or POOR condition is present, provide quantities and a brief description in the space provided. Refer to PWGSC Code of Practice for definitions of GOOD, FAIR, and POOR

Annual Re-assessment Checklist and Abatement Records

Burlington Lift Bridge
FACILITY

Building: North Bridge Tower
Surveyor: Lorray Freiburger Date: Jan. 28, 2018

Location[1]			Asbestos-Containing Materials[2] Quantities and Condition			Abatement Records
Floor	Location/Material	Room Name	Good[3]	Fair[4]	Poor	Enter date and quantity abated. Keep copy of air clearance results in binder.
Tower	Transite Cladding	Exterior	✓			Viewed from ground
Tower	Caulking Window	Exterior		✓		6M ACM Falcons Nest.
Tower	Window Caulking	Exterior				Unknown Condition

[1] Refer to drawings showing ACM locations.
[2] As part of re-assessment, include any relevant comments (such as additional suspected asbestos-related materials).
[3] Check box in GOOD column if all ACM is in GOOD condition.
[4] If ACM in FAIR or POOR condition is present, provide quantities and a brief description in the space provided. Refer to PWGSC Code of Practice for definitions of GOOD, FAIR, and POOR

Annual Re-assessment Checklist and Abatement Records

Burlington Lift Bridge
FACILITY

Building: South Bridge Tower
Surveyor: Lesley Freiburger

Date: Jan 25, 2018

Location[1]			Asbestos-Containing Materials[2] Quantities and Condition			Abatement Records
Floor	Location/Material	Room Name	Good[3]	Fair[4]	Poor	Enter date and quantity abated. Keep copy of air clearance results in binder.
Top	Transite Cladding	Exterior	✓			Viewed from Ground
Top	Window Caulking	Exterior	✓			Viewed from Ground
Top	Window Caulking	Interior		✓		Replace 2022

[1] Refer to drawings showing ACM locations.
[2] As part of re-assessment, include any relevant comments (such as additional suspected asbestos-related materials).
[3] Check box in GOOD column if all ACM is in GOOD condition.
[4] If ACM in FAIR or POOR condition is present, provide quantities and a brief description in the space provided. Refer to PWGSC Code of Practice for definitions of GOOD, FAIR, and POOR

Annual Re-assessment Checklist and Abatement Records

Burlington Lift Bridge
FACILITY

Building: ~~Maintenance~~ Workshop (Obl)
Surveyor: Larry Fréiburger

Date: Jan 28, 2018

Location[1]			Lead-Containing Materials[2] Quantities and Condition			Abatement Records
Floor	Location/Material	Room Name	Good[3]	Fair[4]	Poor	Enter date and quantity abated. Keep copy of air clearance results in binder.
Main	Bridge Wall Paint	tool Rm	✓			no change
11	Grey Steel Paint	tool Rm	✓			no change
11	White Wall Paint	Exterior	✓			LCM beneath

[1] Refer to drawings showing LCM locations.
[2] As part of re-assessment, include any relevant comments (such as additional suspected lead-related materials).
[3] Check box in GOOD column if all LCM is in GOOD condition.
[4] If LCM in FAIR or POOR condition is present, provide quantities and a brief description in the space provided.
Refer to PWGSC Code of Practice for definitions of GOOD, FAIR, and POOR

Annual Re-assessment Checklist and Abatement Records

Burlington Lift Bridge
FACILITY

Building: Control House
Surveyor: Larry Foeiburger Date: Jan 28, 2018

Location[1]			Lead-Containing Materials[2] Quantities and Condition			Abatement Records
Floor	Location/Material	Room Name	Good[3]	Fair[4]	Poor	Enter date and quantity abated. Keep copy of air clearance results in binder
3rd	Green Paint	Catwalk			✓	Heavy peeling paint
Main	Grey Wall paint	Mechanical Rm	✓	—	✓	7m² heavy peeling paint
2nd	White Wall Paint	Elect. Rm	✓			Repainted 2011
3rd	Beige Door Trim Paint	Control Rm	✓			Repainted 2011 over LCM
At 11	Grey railing Paint	Stairwell	✓			Repainted 2011, 1 heaving

[1] Refer to drawings showing LCM locations.
[2] As part of re-assessment, include any relevant comments (such as additional suspected lead-related materials).
[3] Check box in GOOD column if all LCM is in GOOD condition.
[4] If LCM in FAIR or POOR condition is present, provide quantities and a brief description in the space provided.
Refer to PWGSC Code of Practice for definitions of GOOD, FAIR, and POOR

Annual Re-assessment Checklist and Abatement Records

Burlington Lift Bridge
FACILITY

Building: Gatehouse
Surveyor: Larry Fleischer Date: Jan 25, 2018

Location[1]			Lead-Containing Materials[2] Quantities and Condition			Abatement Records
Floor	Location/Material	Room Name	Good[3]	Fair[4]	Poor	Enter date and quantity abated. Keep copy of air clearance results in binder.
Main	Green Wall Ceiling Paint		✓	—	✓	1 m² flaking
Exterior	Green Window Paint				✓	flaking 1 m²

[1] Refer to drawings showing LCM locations.
[2] As part of re-assessment, include any relevant comments (such as additional suspected lead-related materials).
[3] Check box in GOOD column if all LCM is in GOOD condition.
[4] If LCM in FAIR or POOR condition is present, provide quantities and a brief description in the space provided.
Refer to PWGSC Code of Practice for definitions of GOOD, FAIR, and POOR

Annual Re-assessment Checklist and Abatement Records

Burlington Lift Bridge
FACILITY

Building: South Bridge Tower
Surveyor: Landy Fréchette Date: Jan 28, 2018

Location[1]			Lead-Containing Materials[2] Quantities and Condition			Abatement Records
Floor	Location/Material	Room Name	Good[3]	Fair[4]	Poor	Enter date and quantity abated. Keep copy of air clearance results in binder.
Top	Grey wall Paint	Machine Shop		✓		120 m² flaking & peeling
Top	Grey floor Paint	Mechanical	✓			21 m² flaking cracking
Top	Yellow baseboard Paint	Mechanical	✓			Some chips
Top	Cream Wall Paint	Exterior		✓		View from ground

[1] Refer to drawings showing LCM locations.
[2] As part of re-assessment, include any relevant comments (such as additional suspected lead-related materials).
[3] Check box in GOOD column if all LCM is in GOOD condition.
[4] If LCM in FAIR or POOR condition is present, provide quantities and a brief description in the space provided.
Refer to PWGSC Code of Practice for definitions of GOOD, FAIR, and POOR

Annual Re-assessment Checklist and Abatement Records

Burlington Lift Bridge
FACILITY

Building: North Bridge Tower
Surveyor: Larry Freiburger Date: Jan 25, 2018

Location[1]			Lead-Containing Materials[2] Quantities and Condition			Abatement Records
Floor	Location/Material	Room Name	Good[3]	Fair[4]	Poor	Enter date and quantity abated. Keep copy of air clearance results in binder.
Top	Grey wall Paint	Machine/Sheave		✓		25 m² peeling
Top	Grey floor Paint	Machine Rm		✓		4.5 m² flaking various Areas
Top	Yellow/Black Paint	Machine Rm	✓			minor chips
Top	Green Wall Paint	Exterior		✓		View from ground

[1] Refer to drawings showing LCM locations.
[2] As part of re-assessment, include any relevant comments (such as additional suspected lead-related materials).
[3] Check box in GOOD column if all LCM is in GOOD condition.
[4] If LCM in FAIR or POOR condition is present, provide quantities and a brief description in the space provided.
Refer to PWGSC Code of Practice for definitions of GOOD, FAIR, and POOR

Annual Re-assessment Checklist and Abatement Records

Burlington Lift Bridge
FACILITY

Building: Lift Bridge Structure
Surveyor: Lacey Freibourger Date: Jan 28, 2018

Location[1]			Lead-Containing Materials[2] Quantities and Condition			Abatement Records
Floor	Location/Material	Room Name	Good[3]	Fair[4]	Poor	Enter date and quantity abated. Keep copy of air clearance results in binder.
	Red Paint	Deck		✓		Some flaking
	Yellow Paint	Lift structure		✓		LCM removed
	Green Paint	Structure		✓		Some flaking

[1] Refer to drawings showing LCM locations.
[2] As part of re-assessment, include any relevant comments (such as additional suspected lead-related materials).
[3] Check box in GOOD column if all LCM is in GOOD condition.
[4] If LCM in FAIR or POOR condition is present, provide quantities and a brief description in the space provided.
Refer to PWGSC Code of Practice for definitions of GOOD, FAIR, and POOR

Appendix D

Action Matrix

Annex A

Evaluation of Asbestos-Containing Materials and Recommendations for Control

1. Assessment of condition

1.1. Spray-applied fireproofing, insulation and texture finishes

In evaluating the condition of asbestos-containing material spray applied as fireproofing, thermal insulation, or texture, decorative or acoustic finishes, the following criteria apply:

GOOD Surface of material shows no significant signs of damage, deterioration or delamination. Up to one percent of the surface area having visible damage to surface is allowed within range of GOOD. Evaluation of sprayed fireproofing requires the assessor to be familiar with the irregular surface texture typical of sprayed asbestos products. GOOD condition includes un-encapsulated or unpainted fireproofing, insulation or texture finishes where no delamination or damage is observed, and encapsulated fireproofing, insulation or texture finishes where the encapsulation has been applied after the damage or fallout occurred.

POOR Sprayed materials show signs of damage, delamination or deterioration. More than one percent damage to surface of asbestos-containing material spray.

In observation areas, where damage exists in isolated locations, both GOOD and POOR condition may be reported. The extent or percentage of each condition will be recorded on the survey or reassessment form.

NOTE: FAIR condition is not used or considered as a valid criterion in the evaluation of sprayed fireproofing, sprayed insulation, or texture coat finishes.

The evaluation of asbestos-containing material spray applied as fireproofing, non-mechanical thermal insulation, or texture, decorative, or acoustic finishes which are present above ceilings may be limited by the number of observations made, and by building components such as ducts or full-height walls that obstruct the above-ceiling observations. Persons entering the ceiling area are advised to be watchful for asbestos-containing material debris prior to accessing or working above ceilings in areas of buildings with asbestos-containing material, regardless of the reported condition.

1.2. Detection limit of bulk analysis

Asbestos-containing material is defined as any material found to contain asbestos at or above the limit defined by provincial/territorial standards for an asbestos-containing material, as determined by the allowable analytical method for the analysis of bulk samples (refer to *Asbestos Management Standard*, Section 6.1.2.2). Except in the case of vermiculite, the provincially/territorially-regulated limits or generally-accepted guidelines to consider a

material as an asbestos-containing material, subject to asbestos in buildings regulation, are provided as follows:

MINIMUM CONCENTRATION TO CONSIDER AS AN ASBESTOS-CONTAINING MATERIAL (BY PROVINCE)	
QUEBEC (includes part of National Capital Area)	0.1%
MANITOBA, SASKATCHEWAN (for friable material)	0.1%
ONTARIO (includes part of National Capital Area) BRITISH COLUMBIA	0.5%
NOVA SCOTIA	0.5%
All other provinces and territories, (non-friable material in Manitoba, Saskatchewan)	1.0%

Note that these concentrations may change with regulatory amendments, therefore applicable legislation should be consulted to confirm that they are still valid.

Vermiculite is considered an asbestos-containing material in the presence of any concentration of asbestos measured in a composite sample taken in accordance with provincial/territorial sampling standards.

1.3. Mechanical insulation

In evaluating the condition of mechanical insulation (on boilers, breeching, ductwork, piping, tanks, equipment, etc.) the following criteria are used:

GOOD Insulation is completely covered in jacketing and exhibits no evidence of damage or deterioration, i.e. no insulation is exposed. Includes conditions where the jacketing has minor surface damage (i.e. scuffs or stains), but the jacketing is not penetrated.

FAIR Minor penetration damage to jacketed insulation (cuts, tears, nicks, deterioration or delamination), or undamaged insulation that has never been jacketed. Insulation is exposed but not showing surface disintegration. The extent of missing insulation should range from minor to none.

POOR Original insulation jacket is missing, damaged, deteriorated or delaminated. Insulation is exposed and significant areas have been dislodged. Damage cannot be readily repaired.

The evaluation of mechanical insulation may be limited by the number of observations made and building components such as ducts or full-height walls that obstruct observations. In these circumstances, it is not possible to observe each foot of mechanical insulation from all angles.

1.4. Non-friable and potentially-friable materials

Non-friable materials generally have little potential to release airborne fibres, even when damaged by mechanical breakage, but can become friable if disturbed by drilling or abrading.

However, some non-friable materials, e.g. exterior asbestos cement products, may have deteriorated so that the binder no longer effectively contains the asbestos fibres. In such cases of significantly-deteriorated non-friable material, the material will be treated as a friable product.

1.4.1. Asbestos-containing material debris

1.4.1.1. Debris from friable asbestos-containing material

The presence of fallen friable asbestos-containing material is noted separately from the presumed friable asbestos-containing material source (sprayed fireproofing, thermal insulation, texture, decorative or acoustic finishes or mechanical insulation) and is referred to as **debris**.

The presence of fallen asbestos-containing material from damaged non-friable asbestos-containing material is reported separately from the non-friable asbestos-containing material source. Fallen non-friable asbestos-containing material that has become friable is reported as debris. Workers are advised to be watchful for the presence of debris prior to accessing, or working in proximity to, mechanical insulation or above ceiling areas of buildings with asbestos-containing material, regardless of the reported presence or absence of debris.

1.4.2. Evaluation of accessibility

The accessibility of building materials known or suspected of being asbestos-containing material is rated according to the following criteria:

ACCESS (A) Areas of the building within reach (from floor level) of all building users. Includes areas such as gymnasiums, workshops, and storage areas where activities of the building users (e.g. basketball on gym ceiling) may result in disturbance of asbestos-containing material not normally within reach from floor level.

ACCESS (B) Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder. Includes: frequently entered pipe chases, tunnels and service areas or areas within reach from a fixed ladder or catwalk, e.g. tops of equipment, mezzanines.

ACCESS (C) EXPOSED Areas of the building above 8'0" where use of a ladder is required to reach the asbestos-containing material. Only refers to asbestos-containing material materials that are exposed to view, from the floor or ladder, without removing or opening other building components such as ceiling tiles, or service access doors or hatches. Does not include infrequently-accessed service areas of the building.

ACCESS (C)
CONCEALED Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems such as a ventilation plenum. Includes rarely-entered crawl spaces, attic spaces, etc. Observations are limited to the extent visible from the access points.

ACCESS (D) Areas of the building behind inaccessible solid ceiling systems, walls, or mechanical equipment, etc., where demolition of the ceiling, wall or equipment, etc., is required to reach the asbestos-containing material. Evaluation of condition and extent of asbestos-containing material is limited or impossible, depending on the assessor's ability to visually examine the materials in areas rated Access (D).

1.4.3. Action matrix and action descriptions

The action matrix below (Table 1) prioritizes the corrective actions in terms of potential health risk based on condition, accessibility, and potential for future disturbance.

The following factors shall be considered in making site-specific recommendations for corrective actions in conformance with the existing applicable regulation or codes of practice in most provinces, and for the practical implementation of asbestos management:

1. Asbestos-containing material in POOR condition is not routinely repairable. If an abatement action is necessary, removal is the recommended action (enclosure is a viable option in unusual circumstances, e.g. where removal is difficult or costly and the asbestos-containing material can be thoroughly enclosed).

2. Mechanical insulation in FAIR condition will be repaired or removed based on the following general recommendations, applied on a case-by-case basis:
   - Asbestos-containing mechanical insulation found in FAIR condition in ACCESS (B) or ACCESS (C) EXPOSED areas is to be repaired.
   - Asbestos-containing mechanical insulation found in FAIR condition in ACCESS (B) and ACCESS (C) EXPOSED areas, where future damage to the asbestos-containing material is likely to occur, is to be removed.

3. Asbestos-containing material in GOOD condition present in ACCESS (A) can be managed by surveillance, as long as it is not disturbed by future renovation, maintenance or demolition. Proactive removal of the asbestos-containing material in ACCESS (A) will be considered where damage is possible by ongoing occupant activity (accidental or intentional).

4. Non-friable or manufactured products are considered in the action matrix as follows:
   - Non-friable and manufactured products reported in POOR condition, or friable DEBRIS resulting from the deterioration of non-friable asbestos-containing material, are treated as friable materials and the appropriate action, depending on

accessibility, is determined from the action matrix for friable asbestos-containing material.

- For non-friable or manufactured products reported in GOOD condition, Action 7 (surveillance) is recommended regardless of accessibility.

5. All asbestos-containing material from a particular area is to be removed where small quantities of asbestos are present and removal will negate the need for the use of an Asbestos Management Program in that area.

The action matrix provided below establishes the recommended asbestos control action. The ACTIONS themselves are described in full following the table.

Table 1: Action matrix for determining actions required based on the location and condition of asbestos-containing materials.

ASBESTOS-CONTAINING MATERIAL				
ACCESS	CONDITION			DEBRIS
	GOOD	FAIR	POOR	
(A)	ACTION 5/7[1]	ACTION 5/6[2]	ACTION 3	ACTION 1
(B)	ACTION 7	ACTION 6/5[3]	ACTION 3	ACTION 1
(C) exposed	ACTION 7	ACTION 6	ACTION 4	ACTION 2
(C) concealed	ACTION 7	ACTION 7	ACTION 4	ACTION 2
(D)	ACTION 7	ACTION 7	ACTION 7	ACTION 7

[1] If material in **ACCESS (A)/GOOD** condition is not removed, **ACTION 7** is required.
[2] If material in **ACCESS (A)/FAIR** condition is not removed, **ACTION 6** is required.
[3] Remove asbestos-containing material in **ACCESS (B)/FAIR** condition if asbestos-containing material is likely to be disturbed.

ACTION 1 Immediate clean-up of debris that is likely to be disturbed.

Access that is likely to cause a disturbance of the ASBESTOS-CONTAINING MATERIAL DEBRIS is to be restricted and clean up ASBESTOS-CONTAINING MATERIAL DEBRIS is to be done immediately. Use correct asbestos procedures. This action is required for compliance with regulatory requirements and good practice. The assessor should immediately notify the Asset or Property and Facility Manager, or Regional/Area Asbestos Management Coordinator of this condition.

ACTION 2 Entry into areas with asbestos-containing material debris requires intermediate risk precautions.

At locations where ASBESTOS-CONTAINING MATERIAL DEBRIS can be isolated in lieu of removal or cleaned up, appropriate means to limit entry to the area is to be used. Access to the area is restricted to persons using intermediate risk asbestos-work precautions. The precautions will be required until the ASBESTOS-CONTAINING MATERIAL DEBRIS has been cleaned up, and the source of the DEBRIS has been stabilized or removed following intermediate risk (if minor) or high risk precautions.

ACTION 3 Asbestos-containing material removal required for compliance.

Asbestos-containing material must be removed for compliance with regulatory requirements and good practice. Use asbestos procedures appropriate to the scope of the removal work.

ACTION 4 Access into areas where asbestos-containing material is present and likely to be disturbed by access requires intermediate risk precautions.

Intermediate risk asbestos precautions are to be used when entry or access into an area is likely to disturb the asbestos-containing material. ACTION 4 must be used until the asbestos-containing material is removed (Use ACTION 1 or 2 if DEBRIS is present). Intermediate risk or high risk precautions should be used for removal (depending on extent of removal).

ACTION 5 Proactive asbestos-containing material removal.

Removal of asbestos-containing material in lieu of repair may be considered, even if it is in GOOD condition at locations, where asbestos-containing material is easily accessible, limited in quantity, and removal would be cost-effective.

ACTION 6 Asbestos-containing material repair.

Asbestos-containing material may be repaired if found in FAIR condition and not likely to be damaged again or disturbed by normal use of the area or room. Upon completion of the repair work, asbestos-containing material is to be treated as being in GOOD condition and ACTION 7 is to be implemented. If asbestos-containing material is likely to be damaged or disturbed during normal use of the area or room, ACTION 5 is to be implemented.

ACTION 7 Routine Surveillance.

Routine surveillance of the asbestos-containing material is to be instituted. Trained workers or service providers must use appropriate asbestos precautions (low, intermediate or high) during disturbance of the remaining asbestos-containing material.