

Certificate of Property Use

Environmental Protection Act, R.S.O. 1990, c.E.19, s.168.6 and 197

Certificate of Property use number 3285-ADAFNX-1
Risk Assessment number 3285-ADAFNX

Owner: Bruce Street Developments Limited
Suite 304 - 970 Lawrence Avenue West
North York, Ontario
M6A 3B6

Site: Northwest Quadrant, 135 Bruck Street
City of Oshawa, Regional Municipality of Durham

with a legal description of:

Part of Lot C-46, Sheet 17 and Part of Lot C-88, Sheet 19, Plan 335, Lots 20 to 24 inclusive, Lots 28 to 30 inclusive, Part of Lots 26 and 27, Part of Charles Street (closed by By-Law No. 20-96, Instrument No. D468412), Plan 46, designated as Part 1 on a draft reference plan dated September 9, 2015 prepared by Krcmar Surveyors Ltd., bearing Job No. 15097, DWG Name 15-097RP01 (the "Draft R-Plan"), a copy of which is attached hereto, City of Oshawa

Being Part of PIN 16350-0083 (LT)

The conditions of this Certificate of Property Use (CPU) address the Risk Management Measures in the Risk Assessment noted above and described in detail in Part 1 below (Risk Assessment). In the event of a conflict between the CPU and the Risk Assessment, the conditions of the CPU take precedence.

Summary:

Refer to Part 1 of the CPU, Interpretation, for the meaning of all the defined capitalized terms that apply to the CPU.

i) CPU requirements addressed in Part 4 of the CPU, Director Requirements, are summarized as follows:

- | | |
|--|-----|
| a. Installing/maintaining any equipment | Yes |
| b. Monitoring any contaminant | Yes |
| c. Refraining from constructing any building specified | Yes |
| d. Refraining from using the Property for any use specified | Yes |
| e. Other: Prohibiting the construction or use of any potable groundwater supply well; maintaining a barrier to site soils with a hard cap or fill cap; and preparing and implementing a soil management plan and health and safety plan for the Property | Yes |

ii) Duration of Risk Management Measures identified in Part 4 of the CPU is summarized as follows:

- a. The barrier to site soils over the entirety of the Property shall be maintained for as long as the Contaminants of Concern are present on the Property.
- b. The prohibition against potable groundwater use and construction of potable supply wells applies for as long as the Contaminants of Concern are present on the Property.
- c. The soil management and health and safety plans shall be required for the Property during any Intrusive Activities for as long as the Contaminants of Concern are present on the Property.
- d. All other Risk Management Measures shall continue indefinitely until the Director alters or revokes the CPU.

Part 1: Interpretation

In the CPU the following terms shall have the meanings described below:

“Act” means the *Environmental Protection Act*, R.S.O. 1990, c. E.19, as amended.

“Active SVIMS” means a soil vapour intrusion mitigation system designed and operated to collect and remove soil vapour from below a Building and convey the soil vapour through vent risers to the outside air by means of one or more electrical fan powered vents drawing air from below the Building.

“Adverse Effect” has the same meaning as in the Act; namely,

- (a) impairment of the quality of the natural environment for any use that can be made of it;
- (b) injury or damage to property or to plant or animal life;
- (c) harm or material discomfort to any person;
- (d) an adverse effect on the health of any person;
- (e) impairment of the safety of any person;
- (f) rendering any property or plant or animal life unfit for human use;
- (g) loss of enjoyment of normal use of property; and,
- (h) interference with the normal conduct of business.

“Approved Model” has the same meaning as in subsection 1 (1) of Schedule C of O. Reg. 153/04, namely, the data file entitled “Modified Generic Risk Assessment Model” and dated October 19, 2009 as amended from time to time, that is maintained by the Ministry as part of its Brownfield initiative and is available on the Internet and may be available in such other manner as the Minister considers appropriate.

“Barrier” means a Fill Cap Barrier, Hard Cap Barrier or Shallow Soil Cap Barrier.

“Building” means an enclosed structure occupying an area greater than ten square metres consisting of a wall or walls, roof and floor.

“Building Area” means the horizontal area of a Building at Grade within the outside surface of the exterior wall or walls.

“Building Code” means Ontario Regulation 332/12 (Building Code) as amended to January 1, 2015, made under the Building Code Act, 1992, S.O. 1992, c. 23.

“Capping Soil” means,

- (a) soil that meets the applicable site condition standards for the Property, or
- (b) soil that meets any higher standards for the contaminant or contaminants as generated by the Risk Assessment without incorporation of risk management measures, and as specified in section 3 of the Risk Assessment and in Schedule ‘A’ of the CPU.

“Competent Person” has the same meaning as in the Occupational Health and Safety Act, R.S.O. 1990, c. O.1.

“Contaminant” has the same meaning as in the Act; namely any solid, liquid, gas, odour, heat, sound, vibration, radiation or combination of any of them, resulting directly or indirectly from human activities that causes or may cause an Adverse Effect.

“Contaminants of Concern” has the meaning as set out in Item 3.2 of the CPU.

“CPU” means this Certificate of Property Use as may be altered from time to time and bearing the document number **3285-ADAFNX-1**.

"Director" means the undersigned Director or any other person appointed as a Director for the purpose of issuing a certificate of property use.

“EBR” means the *Environmental Bill of Rights, 1993*, S.O. 1993, c. 28, as amended.

“First Storey” has the same meaning as in the Building Code.

“Grade” has the same meaning as in the Building Code.

“Intrusive Activities” means any intrusive activity undertaken at the Property, such as excavating or drilling into soil or ground water, which may disturb or expose Property Specific Contaminants of Concern at the Property.

"Ministry" means Ontario Ministry of the Environment, Conservation and Parks.

“O. Reg. 153/04” means Ontario Regulation 153/04, “Record of Site Condition – Part XV.1 of the Act” as amended, made under the Act.

“Owner” means the owner(s) of the Property, beginning with the person(s) to whom the CPU is issued, described in the “Owner” section on Page 1 above, and any subsequent owner(s) of the Property.

"OWRA" means the *Ontario Water Resources Act*, R.S.O. 1990, c. O.40, as amended.

“Professional Engineer” means a person who holds a licence, limited licence or

temporary licence under the *Professional Engineers Act*, R.S.O. 1990, c. P. 28.

“Property” means the property that is the subject of the CPU and described in the “Site” section on page 1 above.

“Property Management Oversight” means management, on an ongoing basis, of all structural, mechanical, electrical, ventilation and other Building and Property services that relate to the installed Active SVIMS, as applicable for the Property as set out in section 7 of the Risk Assessment report including oversight of operation, inspection, monitoring, maintenance and repair activities, and of operational and reserve funding for these activities, by a property manager or management company engaged by the Owner or, in the case of collective ownership, by an authorized representative or representatives of the collective ownership of the Building and Property, such as a condominium board.

“Property Specific Contaminants of Concern” means one or more contaminants found on, in or under the Property at a concentration that exceeds the applicable site condition standards for the Property and any higher standards for the contaminant or contaminants as generated by the Approved Model without incorporation of risk management measures, and as specified in section 3 of the Risk Assessment.

“Property Specific Standards” means the property specific standards established for the Contaminants of Concern in the Risk Assessment number and in Item 3.2 of the CPU.

"Provincial Officer" means a person who is designated as a provincial officer for the purposes of the Act.

“Qualified Person” means a person who meets the qualifications prescribed in subsection 5 (2) of O. Reg. 153/04, namely a person who:

- a. Holds a licence, limited licence or temporary licence under the *Professional Engineers Act*, or
- b. Holds a certificate of registration under the *Professional Geoscientists Act*, 2000, and is a practising member, temporary member, or limited member of the Association of Professional Geoscientists of Ontario.

"Risk Assessment" means the Risk Assessment number **3285-ADAFNX** accepted by the Director on April 11, 2019 and set out in the following documents:

- Risk Assessment Report for Northwest Quadrant of 135 Bruce Street, Oshawa, Ontario, report prepared by Intrinsic Environmental Sciences Inc., dated May 1, 2017
- Revised Risk Assessment report for Northwest Quadrant of 135 Bruce Street, Oshawa, Ontario, report prepared by Intrinsic Environmental Sciences Inc., dated January 8, 2018
- An Addendum to a Revised Risk Assessment Report of Northwest Quadrant of 135 Bruce Street, Oshawa, Ontario, report prepared by Intrinsic Corp., dated October 2018
- “RE: Request for additional information - Northwest Quadrant of 135 Bruce Street, Oshawa; RA1540-16c; IDS#3285-ADAFNX”, e-mail from

Glenn Ferguson, Intrinsic Corp., received by TASDB on March 1, 2019, with the following document attached:

- RA1540-16c; IDS No. 3285-ADAFNX - Second Addendum to Revised RA Report - March 2019.pdf

"Risk Management Measures" means the risk management measures specific to the Property described in the Risk Assessment and/or Part 4 of the CPU.

"SVIMS" means soil vapour intrusion mitigation system

"Tribunal" has the same meaning as in the Act; namely, the Environmental Review Tribunal.

Part 2: Legal Authority

- 2.1 Section 19 of the Act states that a certificate of property use is binding on the executor, administrator, administrator with the will annexed, guardian of property or attorney for property of the person to whom it was directed, and on any other successor or assignee of the person to whom it was directed.
- 2.2 Subsection 132(1.1) of the Act states that the Director may include in a certificate of property use a requirement that the person to whom the certificate is issued provide financial assurance to the Crown in right of Ontario for any one or more of,
- a. the performance of any action specified in the certificate of property use;
 - b. the provision of alternate water supplies to replace those that the Director has reasonable and probable grounds to believe are or are likely to be contaminated or otherwise interfered with by a contaminant on, in or under the property to which the certificate of property use relates; and
 - c. measures appropriate to prevent adverse effects in respect of the property to which the certificate of property use relates.
- 2.3 Section 168.6 (1) of the Act states that if a risk assessment related to the property has been accepted under clause 168.5 (1) (a), the Director may issue a certificate of property use to the owner of the property, requiring the owner to do any of the following things:
- 1) Take any action that is specified in the certificate and that, in the Director's opinion, is necessary to prevent, eliminate or ameliorate any adverse effect that has been identified in the Risk Assessment, including installing any equipment, monitoring any contaminant or recording or reporting information for that purpose.
 - 2) Refrain from using the property for any use specified in the certificate or from constructing any building specified in the certificate on the property
- 2.4 Subsection 168.6(2) of the Act states that a certificate of property use shall not require an owner of property to take any action that would have the effect of reducing the concentration of a contaminant on, in or under the property to a level below the level that is required to meet the standards specified for the contaminant in the risk assessment.

- 2.5 Subsection 168.6(3) of the Act states that the Director may, on his or her own initiative or on application by the owner of the property in respect of which a certificate has been issued under subsection 168.6(1),
- a. alter any terms and conditions in the certificate or impose new terms and conditions; or
 - b. revoke the certificate.
- 2.6 Subsection 168.6(4) of the Act states that if a certificate of property use contains a provision requiring the owner of property to refrain from using the property for a specified use or from constructing a specified building on the property,
- a. the owner of the property shall ensure that a copy of the provision is given to every occupant of the property;
 - b. the provision applies, with necessary modifications, to every occupant of the property who receives a copy of the provision; and
 - c. the owner of the property shall ensure that every occupant of the property complies with the provision.
- 2.7 Subsection 197(1) of the Act states that a person who has authority under the Act to make an order or decision affecting real property also has authority to make an order requiring any person with an interest in the property, before dealing with the property in any way, to give a copy of the order or decision affecting the property to every person who will acquire an interest in the property as a result of the dealing.
- 2.8 Subsection 197(2) of the Act states that a certificate setting out a requirement imposed under subsection 197(1) may be registered in the proper land registry office on the title of the real property to which the requirement relates, if the certificate is in a form approved by the Minister, is signed or authorized by a person who has authority to make orders imposing requirements under subsection 197(1) and is accompanied by a registrable description of the property.
- 2.9 Subsection 197(3) of the Act states that a requirement, imposed under subsection 197(1) that is set out in a certificate registered under subsection 197(2) is, from the time of registration, deemed to be directed to each person who subsequently acquires an interest in the real property.
- 2.10 Subsection 197(4) of the Act states that a dealing with real property by a person who is subject to a requirement imposed under subsection 197(1) or 197(3) is voidable at the instance of a person who was not given the copy of the order or decision in accordance with the requirement.

Part 3: Background

- 3.1 The Risk Assessment was undertaken for the Property on behalf of the Owner to assess the human health risks and ecological risks associated with the presence or discharge of Contaminants on, in or under the Property and to identify appropriate Risk Management Measures to be implemented to ensure that the

Property is suitable for the intended use: “residential use” and/or “commercial use”, as defined in O. Reg. 153/04.

- 3.2 The Contaminants on, in or under the Property that are present above the Residential/Parkland/Institutional Property Use Standards within **Table 6** of the *Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Act published by the Ministry and dated April 15, 2011*, or for which there are no such standards are defined as the Contaminants of Concern. The Property Specific Standards for the Contaminants of Concern are set out in Schedule “A” attached to and forming part of the CPU. Also attached to and forming part of the CPU is the following figures:
- Figure 1: Site Map
 - Figure 2: Risk Management Measures – Soil Vapour Intrusion Mitigation System
- 3.3 I am of the opinion, for the reasons set out in the Risk Assessment that the Risk Management Measures described therein and outlined in Part 4 of the CPU are necessary to prevent, eliminate or ameliorate an Adverse Effect on the Property.
- 3.4 The Risk Assessment indicates the presence of Contaminants of Concern including: metals, petroleum hydrocarbons, volatile organic compounds and polycyclic aromatic hydrocarbons in soil and groundwater which require on-going pathway elimination. As such, it is necessary to impose Risk Management Measures including: a restriction on any potable groundwater use at the Property; a requirement for barriers to prevent contact with soils; a soil management plan for any Intrusive Activities; a health and safety plan for any Intrusive Activities; and SVIMS as part of any new building as set out in the Risk Assessment and in Parts 4 and 5 of the CPU.
- 3.5 I am of the opinion, that the requirements set out in Part 6 of the CPU are necessary to supplement the Risk Management Measures described in the Risk Assessment in Part 4 of the CPU.
- 3.6 I believe for the reasons set out in the Risk Assessment that it is also advisable to require the disclosure of the CPU and registration of notice of the CPU on title to the Property as set out in the section 197 order requirements in Part 7 of the CPU.

Part 4: CPU Risk Management Measures Relating to the Risk Assessment and the Property

I hereby require the Owner to do or cause to be done the following under the authority of section 168.6(1) of the Act:

- 4.1 Implement, and thereafter maintain or cause to be maintained, the following Risk Management Measures and requirements identified in the Risk Assessment and set out in Items 4.1 to 4.7 as applicable.

4.2 Prohibition on groundwater use

- a. Refrain from using groundwater in or under the Property as a source of potable water;
- b. Properly abandon any wells on the Property, as defined in section 35 of O. Reg. 153/04, according to R.R.O. 1990, Regulation 903 (Wells), as amended, made under the OWRA; and
- c. Refrain from constructing on the Property any wells as defined in section 35 of O. Reg. 153/04.

4.3 Barriers to site soils

- a. Hard cap and or fill cap barriers are required over the entire Property where Property Specific Contaminants of Concern are present within 1 metre of surface so as to prevent exposure to the Contaminants of Concern identified on the Property for as long as the Contaminants of Concern are present on the Property.
- b. Any new hard cap and or fill cap barriers that are to be installed on the Property, or portion (s) of the Property under development or redevelopment, shall be installed in accordance with Section 7 and Drawings 1 and 2 of Appendix K of the Risk Assessment. The hard cap and fill cap barriers shall consist of the following, at a minimum
 - i. The hard cap barrier(s) shall consist of an asphalt, concrete or impervious paving, above the Property Specific Contaminants of Concern, that is at least 75 millimetres thick, underlain by Granular "A" aggregate or equivalent material and includes a building slab or building foundation and floor slab meeting these specifications.
 - ii. The fill cap barrier (s) shall consist of a minimum of 1 m thick cover, consisting of Capping Soil, Granular "A" or equivalent material and underlain by a geotextile material.
- c. Within 90 days of completion of the installation of any hard cap and fill cap barriers on the Property, or any portion (s) of the Property under development or redevelopment, and upon issuance of this CPU, the Owner shall submit to the Director written confirmation signed by a Professional Engineer that the barriers have been installed in accordance with the requirements of Section 7 of the Risk Assessment and Section 4.2(c)(i) and 4.2 (c)(ii) of this CPU along with final design specifications/drawings and or as built drawings.
- d. Prior to first use and within 90 days of completion of the installation of the hard cap and fill cap barriers on the Property, or any portion (s) of the Property under development or redevelopment, the Owner shall submit to the Director a site plan that clearly identifies the location of each of the different barriers.
- e. In relation to Item 4.2 (a) of this CPU, areas of the Property that are ***not in use*** or ***not under development or redevelopment***, hard cap and fill cap barriers are not required as long as exposure to the Contaminants of Concern is prevented by a

fence that restricts access to those areas of the Property and a dust control plan is implemented.

4.4 Inspection, maintenance and reporting requirements for barriers

- a. Prepare and implement a written inspection and maintenance program, prepared by a Qualified Person and to be retained by the Owner, and to be available for inspection upon request by a Provincial Officer, so as to ensure the continuing integrity of each Barrier at the Property so long as the Property Specific Contaminants of Concern are present at the Property, including, at a minimum:
 - i. procedures and timing for implementing the program;
 - ii. semi-annual inspections, in spring and fall, of the Barrier;
 - iii. noting any deficiencies in the Barrier observed during the inspections, or at any other time;
 - iv. repairing promptly any such deficiencies, to the original design specifications, with written confirmation that the Barrier has been properly repaired;
 - v. contingency measures, such as fencing, to be implemented if cracks, breaches or any loss of integrity of the Barrier cannot be repaired or addressed in a timely manner, to prevent exposure to the Property Specific Contaminants of Concern in that area of the Property; and
 - vi. recording, in writing, all inspections, deficiencies, repairs and implementation of contingency measures, to be retained by the Owner and be available for inspection upon request by a Provincial Officer;and which are:
 - a. prepared within 90 days of issuance of the CPU; and
 - b. updated within 30 days following making any alteration to the program.
- b. Prepare a site plan of the entire Property, prepared by a Professional Engineer and to be retained by the Owner, and be available for inspection upon request by a Provincial Officer, showing the Property, any fencing, and the location, type and design of each Barrier at the Property, including cross-sectional drawings of the Barrier showing its design and vertical and lateral extent;
 - i. within 90 days of issuance of the CPU; and
 - ii. within 30 days following making any alteration to the location, design or extent of the Barrier, or other relevant feature shown on the site plan; and
- c. Prepare and implement written procedures, prepared by a Qualified Person and to be retained by the Owner, and be available for inspection upon request by a Provincial Officer, for written and oral communication to all persons who may be involved in Intrusive Activities at the Property that may disturb a Barrier at the Property, so as to ensure the persons are made aware of the presence and significance of the Barrier and the Property Specific Contaminants of Concern at the Property and the precautions to be taken to ensure the continued integrity of the Barrier when undertaking the Intrusive Activities, and if damaged, to ensure that the Barrier is repaired promptly to the original design specifications, or, if it cannot be repaired promptly, to ensure that the

contingency measures are implemented, and records kept, as specified in the inspection and maintenance program; and which are,

- i. prepared for any Intrusive Activities are undertaken at the Property; and
- ii. updated within 30 days of any alteration to the procedures.

4.5 Soil management plan

Prepare and implement a written soil management plan for the Property, prepared by a Qualified Person and to be retained by the Owner, and be available for inspection upon request by a Provincial Officer, for managing excavated soil or soil brought to the Property, during Intrusive Activities at the Property, so as to prevent exposure to or uncontrolled movement or discharge of the Property Specific Contaminants of Concern in soil at the Property, including, at a minimum:

- a. procedures and timing for implementing the plan, including the supervision of persons implementing the plan;
- b. measures to control dust and prevent tracking of soil by vehicles and persons from the Property, including the cleaning of equipment and vehicles;
- c. measures, in addition to any applicable measures specified in O. Reg. 153/04, to manage soil excavated at the Property and any soil brought to or removed from the Property, including:
 - i. characterizing for contaminant quality all excavated soil and any soil brought to the Property, including determining whether the soil:
 1. is Capping Soil;
 2. meets the Property Specific Standards; or
 3. exceeds the Property Specific Standards.
 - ii. managing excavated soil separately from any soil brought to the Property, including any excavated soil that is to be:
 1. used as Capping Soil at the Property;
 2. otherwise used as fill at the Property;
 3. removed from the Property.
 - iii. stockpiling of excavated soil and any soil brought to the Property in separate designated areas that:
 1. reflect the distinctions described in parts iii. (a) and (b);
 2. have been lined and covered, as appropriate, to prevent uncontrolled movement
 3. have been bermed, as appropriate, to restrict access by persons; and
 4. have storm water runoff controls in place to minimize storm water runoff contacting stockpiled soil, with provision for discharge of storm water runoff to a sanitary sewer or to other approved treatment if needed.
- d. measures to manage storm water and any ground water from dewatering at the Property to prevent the movement of entrained soil within and away from the Property, including, in addition to any applicable measures specified pursuant to other applicable law or other instruments, measures such as silt fences, filter socks for catch-basins and utility covers, and provision for discharge to a sanitary sewer or to other approved treatment if needed; and
- e. recording, in writing, the soil management measures undertaken, in addition to any applicable record keeping requirements specified in O. Reg. 153/04 or

pursuant to other applicable law or other instruments, to be retained by the Owner, and be available for inspection upon request by a Provincial Officer, including:

- i. dates and duration of the Intrusive Activities being undertaken;
- ii. weather and site conditions during the Intrusive Activities;
- iii. the location and depth of excavation activities,
- iv. dust control and soil tracking control measures;
- v. characterization results for excavated soil and any soil brought to or removed from the Property;
- vi. soil management activities including soil quantities excavated and brought to and removed from the Property, and stockpile management;
- vii. names and contact information for the Qualified Persons and on-site contractors involved in the Intrusive Activities;
- viii. names and contact information for any haulers and receiving sites for soil removed from the Property, and for haulers and source sites of any soil brought to the Property; and
- ix. any complaints received relating to the Intrusive Activities, and which is:
 - i. prepared before any Intrusive Activities are undertaken at the Property; and
 - ii. updated within 30 days following making any alteration to the plan.

4.6 Health and Safety Plan

A site-specific health and safety plan shall be developed for the Property and implemented during all Intrusive Activities and a copy shall be maintained on the Property for the duration of these intrusive activities. The Owner shall ensure that the health and safety plan accounts for the presence of the Contaminants of Concern, is designed to reduce or eliminate exposures to vapours in trench air and is implemented prior to any intrusive work being done on the Property in order to protect workers from exposure to the Contaminants of Concern. The health and safety plan shall be prepared in accordance with applicable Ministry of Labour health and safety regulations, shall address any potential risks identified in the Risk Assessment, and shall include, but not be limited to, occupational hygiene requirements, requirements for personal protective equipment, and contingency plan requirements including site contact information. Prior to initiation of any project (as defined in the Occupational Health and Safety Act, as amended) on the Property, the local Ministry of Labour office shall be notified of the proposed activities and that the Property contains contaminated soil and ground water. Implementation of the health and safety plan shall be overseen by persons qualified to review the provisions of the plan with respect to the proposed site work and conduct inspections as required. The Owner shall retain a copy of the plan, which shall be made available for review by a Provincial Officer upon request.

4.7 Active soil vapour intrusion mitigation system (SVIMS) Risk Management Measure

Refrain from constructing any Building on the Property unless the Building is constructed with an Active SVIMS, which meets the following requirements:

The SVIMS is designed and installed designed by a Professional Engineer in consultation with a Qualified Person and installed under the supervision of a Professional Engineer, so as to remove soil vapour from below the Building and prevent soil vapour containing the

Property Specific Contaminants of Concern from entering the Building air, including the following requirements and components for the SVIMS:

- a. the Active SVIMS is to;
 - i. be designed, installed and operated with the objective of achieving during all seasons at least a 4 Pascal lower air pressure differential below the foundation floor slab, relative to the indoor air pressure within the Building, across at least 90% of the Building Area; and
 - ii. have in place, measures, as appropriate based on an assessment carried out in accordance with EPA /625/R-93/011 and/or ASTM E2121.

SUB-SLAB FOUNDATION LAYER

- b. throughout the Building Area below the foundation floor slab, a sub-slab foundation layer, above soil containing the Property Specific Contaminants of Concern, designed by a Professional Engineer for the Building constructor in consultation with the Professional Engineer for the SVIMS.

SVIMS SOIL VAPOUR VENTING LAYER

- c. throughout the Building Area below the foundation floor slab and above the sub-slab foundation layer, a soil vapour venting layer designed for collection and venting of soil vapour from below the floor slab to vent risers for venting to the outdoor air, with the soil vapour venting layer consisting of:
 - i. vapour collection works and piping of sufficient size or diameter, frequency and locations to promote efficient collection and venting, consistent with the conceptual active vapour controls described in Figure 2;
 - ii. clean-outs, drains or openings to ensure drainage and removal of condensate or water, including any entrained dust, that may enter collection and venting components, and, if required, to ensure drainage or dewatering of the soil vapour venting layer in Property areas with a shallow ground water table.

SVIMS SOIL VAPOUR BARRIER MEMBRANE

- d. throughout the Building Area, a continuous leak free soil vapour barrier membrane, such as a sheet geomembrane or spray applied membrane, below the foundation floor slab and above the soil vapour venting layer, and below and along the walls of any subsurface structures such as a sump, and which:
 - i. is of appropriate thickness and meets the appropriate gas permeability and chemical resistance specifications to be considered substantially impermeable to the soil vapour, in accordance with the appropriate ASTM standards such as D412 and D543, as applicable; and
 - ii. has a suitable protective geotextile, or other suitable protective material, such as a sand layer, immediately below or above the soil vapour barrier membrane, as considered appropriate by the Professional Engineer; and

SVIMS VENT RISERS

- e. vent risers shall be of sufficient size or diameter, frequency and locations to promote efficient venting and that terminate outside the Building to convey soil vapour from the soil vapour venting layer to the outdoor air and that discharge at an appropriate distance from Building air intakes and openable windows, doors and other openings

through which exhausted vapours could be entrained in Building air and, consistent with the separation provisions in ASTM E2121 but modified as appropriate for the characteristics of the soil vapour and Building, including:

- i. at least one vent riser per isolated section of the soil vapour venting layer caused by interior grade beams or thickened slabs, unless analysis or testing indicates a lesser number of vent risers is required;
- ii. vent pipe riser diameter that is greater than the collection pipe diameter, to promote efficient venting; and
- iii. vent risers located within the Building, where appropriate, to promote temperature induced convective venting during colder weather; and
- iv. an electrical powered fan on each vent riser, and an automated monitoring system of fan operation which remotely detects and indicates system malfunctions; and

SVIMS MONITORING DEVICES

f. sufficient monitoring devices shall be installed below the foundation floor slab across the Building Area to measure the (lower) air pressure differential, relative to the indoor air pressure within the Building, being achieved by the soil vapour venting layer, with the number and locations of the monitoring devices installed being as considered appropriate by the Professional Engineer in consultation with the Qualified Person, taking into account factors such as the Building Area and the design and configuration of the Building foundation; and

SVIMS LABELING OF EQUIPMENT

g. equipment for the Active or Passive SVIMS shall be clearly labelled, and include information such as the installer's name, date of installation and identification of all visible piping, consistent with the labeling provisions in ASTM E1465 but modified as appropriate for the characteristics of the soil vapour and Building; and

UTILITY SEALING

h. where utilities or subsurface Building penetrations are a potential conduit for soil vapour migration, the SVIMS shall include:

- i. utility trench dams consisting of soil-bentonite mixture, cement-sand slurry or other appropriate material, installed as a precautionary measure to reduce the potential for soil vapour to migrate beneath the Building through relatively permeable trench backfill; and
- ii. conduit seals constructed of closed cell polyurethane foam, or other inert gas-impermeable material shall be installed at the termination of all utility conduits and at subsurface Building penetrations, such as sumps, to reduce the potential for vapour migration along the conduit to the interior of the Building.

4.8 Quality Assurance/Quality Control, Inspections, Maintenance and Reporting Requirements for Active SVIMS

SVIMS QUALITY ASSURANCE / QUALITY CONTROL

a. Prepare and implement a quality assurance and quality control program, prepared by a Professional Engineer to document the Active SVIMS installation, including inspections and verification testing. The program will be prepared prior to the installation of the Active SVIMS and will be updated within 30 days of any alteration to the program. The program will include at a minimum:

- i. procedures and timing for implementing the program, by a person acceptable to and under the supervision of a Professional Engineer;
- ii. daily inspections of the installation of the Active SVIMS, including of the quality assurance and quality control measures and procedures undertaken by the installer;
- iii. undertaking, at a minimum, the following quality control measures and verification testing of the soil vapour barrier membrane:
 1. daily inspection reports noting any deficiencies and corrective actions taken;
 2. smoke testing of the soil vapour barrier membrane, or equivalent alternative testing method that provides comparable results;
 3. verification of the type and thickness of the soil vapour barrier membrane through testing of representative samples of materials used, including destructive testing and repair of portions of the membranes to be conducted in a manner and at a frequency that meets or exceeds manufacturer's recommendations;
 4. verification of field seams of sheet geomembranes as being continuous and leak free, through vacuum or pressure testing, geophysical testing or other appropriate means; and
 5. verification that appropriate measures to prevent post-construction damage or degradation to the soil vapour barrier membrane have been taken, including at a minimum, appropriate preparation of the sub-slab foundation layer, placement of a protective geotextile, or other suitable protective material, below or above the soil vapour barrier membrane, if included in the design, and work practices to prevent post-construction damage;
- iv. noting any deficiencies in the materials or installation of the SVIMS;
- v. ensuring the prompt repair of any deficiencies, to the design specifications;
- vi. preparing a written report of all program activities, inspections, quality control measures and verification testing undertaken, and any deficiencies and repairs, prepared by the Professional Engineer and be available for inspection upon request by a Provincial Officer.

SVIMS AS-CONSTRUCTED PLANS

b. Prepare as constructed plans of the SVIMS , prepared by a Professional Engineer, showing the location of the Building and the location and specifications of the installed SVIMS, including cross-sectional drawings specifying the design and the vertical and lateral extent of the SVIMS relative to the Building and the ground surface, and which is:

- i. delivered to the Director before use of all or any part of the Building begins, or within 90 days following completion of installation of the Active SVIMS, whichever is earlier; and
- ii. updated and delivered to the Director within 30 days of any significant alteration to the Active SVIMS, or other relevant feature shown on the plans.

SVIMS INSPECTION AND MAINTENANCE

- c. Prepare and implement a written inspection and maintenance program, prepared by a Professional Engineer to be available for inspection upon request by a Provincial Officer, to ensure the continued integrity and effectiveness of the SVIMS, including, at a minimum:
- i. procedures and timing for implementing the program, by a person meeting the qualifications as set out in the program;
 - ii. maintenance and calibration of operational, monitoring and other equipment, as appropriate;
 - iii. inspections of the SVIMS including:
 1. semi-annual inspections, in spring and fall, of the visible areas of the foundation floor slab or subsurface walls in contact with soil, to identify any cracks, breaches or other deficiencies that may allow soil vapour to enter the Building;
 2. semi-annual inspections, in spring and fall, the visible components of the SVIMS, to identify any cracks, breaches or other deficiencies that may hinder the collection or venting of soil vapour from below the Building;
 3. additional inspections, on a more frequent basis as appropriate, of the electrical powered fans to confirm they turn freely, to confirm the automated monitoring system of fan operation is operational and to confirm operational parameters such as amperage levels are within appropriate ranges; and
 4. additional inspections during winter, as appropriate, to identify any significant accumulation of snow or ice requiring removal;
 - iv. noting any deficiencies with the floor slab and SVIMS identified during any inspection, or at any other time;
 - v. repairing promptly any deficiencies, including under the supervision of a Professional Engineer for a deficiency referred to in part iii. (b);
 - vi. factors and considerations for determining if additional inspections or monitoring should be undertaken;
 - vii. a contingency plan to be implemented in the event the deficiencies cannot be repaired promptly, including prompt notification of the Ministry if such deficiencies, along with operational monitoring results and any additional lines of evidence suggest that soil vapour intrusion into the Building may occur, as determined by a Professional Engineer; and
 - viii. preparing a written report of all inspections, deficiencies, repairs and maintenance, and of implementation of the contingency plan if necessary, prepared by a Professional Engineer and to be retained by the Owner, and be available for inspection upon request by a Provincial Officer;
 - ix. and which are,
 - x. completed before use of all or any part of the Building begins, or within 90 days following completion of installation of the SVIMS, whichever is earlier; and
 - xi. updated within 30 days following making any alteration to the program; and

OPERATIONAL AND INDOOR AIR QUALITY MONITORING

- d. Prepare and implement a written program for monitoring of the operation of the installed SVIMS and indoor air quality, prepared by a Professional Engineer in consultation with a Qualified Person, available for inspection upon request by a Provincial Officer, to ensure the continued integrity and effectiveness of the SVIMS, CONSIDERING THE Ministry's September 2013 "Draft Technical Guidance: Soil Vapour Intrusion Assessment" as updated, including, at a minimum:

- i. procedures and timing for implementing the program, by a person meeting the qualifications as set out in the program;
- ii. locations and description of the devices and equipment used, or tested, for each monitoring event;
- iii. procedures for undertaking the testing, measurement and evaluation during a monitoring event, including calibration of operational, monitoring and other equipment, as appropriate;
- iv. undertaking operational monitoring, including recording of the monitoring results, in accordance with the following:
 - 1. at least once before occupancy and quarterly after occupancy has commenced for a period of one year, and semi-annually for subsequent years measuring of the (lower) air pressure differential below the foundation floor slab across the Building Area, relative to the indoor air pressure within the Building, being achieved by the soil vapour venting layer, using all monitoring devices referred to in part vi. of section a. above. Sub-floor slab vapour depressurization is to be measured using a hand-held, high resolution digital manometer with a sensitivity of 0.25 Pa;
 - 2. indoor air quality monitoring at least once before occupancy and quarterly after occupancy has commenced for a period of one year, and semi-annually thereafter. Indoor air sampling will include a minimum of four interior locations in each Building and two exterior locations. Indoor air quality samples are to be collected in stainless steel canisters over 24 hour sampling periods;
 - 3. indoor air sample results are to be compared to Table 2 trigger values, and if a COC exceeds a trigger value, resampling will occur within 30 days of the exceedance;
 - 4. in the event of an exceedance of a trigger value, or where the minimum 4 Pa is not maintained, the Ministry will be notified within 14 days. This notification will include a discussion of potential contingency measures and anticipated timing.

INTRUSIVE ACTIVITIES CAUTION

- e. Prepare and implement written procedures, prepared by a Qualified Person and to be retained by the Owner, and be available for inspection upon request by a Provincial Officer, for written and oral communication to all persons who may be involved in Intrusive Activities at the Property that may disturb an installed SVIMS, so as to ensure the persons are made aware of the presence and significance of the SVIMS and the Property Specific Contaminants of Concern at the Property and the precautions to be taken to ensure the continued integrity of the SVIMS when undertaking the Intrusive Activities, and if damaged, to ensure the SVIMS is repaired promptly to the original design specifications, or if it cannot be repaired promptly, to ensure the contingency measures are implemented, and records kept, as specified in the inspection and maintenance program; and which are,
 - i. delivered to the Owner before any Intrusive Activities are undertaken at the Property; and
 - ii. updated and delivered to the Owner within 30 days following making any alteration to the procedures.

4.9 Annual Reports

The Owner shall prepare by March 31st of each year, an annual report documenting activities relating to the Risk Management Measures undertaken during the previous calendar year. A copy of this report shall be maintained on file by the Owner and shall be made available for review by a Provincial Officer upon request. The report shall include, but not be limited to, the following minimum information requirements:

- a. a copy of all records relating to the inspection and maintenance program for the barrier to site soils and SVIMS;
- b. a copy of all records related to pressure and indoor air monitoring of the SVIMS;
- c. a copy of all records relating to the soil management plan;
- d. a copy of all records relating to the health and safety plan;
- e. a copy of as constructed and updated plans for the SVIMS for any Building;
- f. a copy of site plans including barriers and any alternations; and
- g. a summary of inspection and monitoring program findings, recommendations relating to operation, inspection and monitoring.

Part 5: CPU Restrictions on Property Use, Building Construction and Notice Requirements

I hereby require the Owner to do or cause to be done the following under the authority of paragraph 168.6(1)2 of the Act:

Property Use Restrictions

- 5.1.1 Refrain from using the Property for any of the following use(s): all property uses, except for "residential use" and "commercial use" as defined in O. Reg 153/04.
- 5.1.2 Refrain from using the groundwater beneath the Property as a potable water supply. The installation of potable wells on the Property is also prohibited and any monitoring wells or test holes at the Property must be secured to ensure no potable use of these wells.

Building Construction Restrictions

- 5.2 Refrain from constructing the following building(s): Any new building that does not have a SVIMS as per Item 4.7 and 4.8.

Notice of Restrictions

- 5.3 Pursuant to subsection 168.6(4) of the Act, the Owner shall ensure that every occupant of the Property is given notice that the Ministry has issued this CPU and that it contains the provisions noted above in Items 5.1 and 5.2. For the purposes of this requirement, an occupant means any person with whom the Owner has a contractual relationship regarding the occupancy of all or part of the Property.

Part 6: Additional Requirements

I hereby require the Owner to do or cause to be done the following things under the authority of subsection 168.6(1) of the Act:

Site Changes Affecting Risk Management Measures

- 6.1 In the event of a change in the physical site conditions or receptor characteristics at the Property that may affect the Risk Management Measures and/or any underlying basis for the Risk Management Measures, the Owner shall forthwith notify the Director of such changes and the steps taken or proposed, to implement, maintain and operate any further Risk Management Measures as are necessary to prevent, eliminate or ameliorate any Adverse Effect that will result from the presence on, in or under the Property of any Contaminant of Concern or the discharge of any Contaminant of Concern into the natural environment from the Property. In support of this work, the Director may require a new risk assessment be completed in accordance with O. Reg. 153/04 and submitted to the Ministry for acceptance if the change in the physical site conditions or receptor characteristics is such that it is not contemplated by the existing Risk Assessment or cannot be adequately managed by the Risk Management Measures. An amendment to the CPU will be issued to address the changes set out in the notice received and any further changes that the Director considers necessary in the circumstances.

Report Retention Requirements

- 6.2 The Owner shall retain a copy of any reports required under the CPU for a period of seven (7) years from the date the report is created and within ten (10) days of the Director or a Provincial Officer making a request for a report, provide a copy to the requesting Director or Provincial Officer.

Owner Change Notification

- 6.3 While the CPU is in effect, the Owner shall, forthwith report in writing to the Director any changes of ownership of the Property.

Financial Assurance

- 6.4 The Director has not included in the CPU a requirement that the Owner provide financial assurance to the Crown in right of Ontario. If in the future, significant changes to the site development are proposed, a re-assessment of the need for financial assurance will be completed at that time.

Part 7: Section 197 Order – Property Notice and Certificate of Requirement Registration

I hereby order the Owner to do or cause to be done the following under the authority of

subsections 197(1) and (2) of the Act:

Property Notice Requirement

- 7.1 I hereby order the Owner and any other person with an interest in the Property, before dealing with the Property in any way, to give a copy of the CPU, including any amendments thereto, to every person who will acquire an interest in the Property as a result of the dealing with the Property.

Certificate of Requirement Registration

- 7.2 Within fifteen (15) days of receipt of a certificate of requirement, issued under subsection 197 (2) of the Act completed as outlined in Schedule "B", register the certificate of requirement on the title to the Property in the appropriate land registry office.

Verification

- 7.3 Immediately after registration of the certificate of requirement, provide to the Director written verification that the certificate of requirement has been registered on title to the Property.

Part 8: General Requirements

- 8.1 The requirements of the CPU are severable. If any requirement of the CPU or the application of any requirement to any circumstance is held invalid, the application of such requirement to other circumstances and the remainder of the CPU shall not be affected thereby.
- 8.2 An application under sub section 168.6(3) of the Act to,
a) alter any terms and conditions in the CPU or impose new terms and conditions; or
b) revoke the CPU;
shall be made in writing to the Director, with reasons for the request.
- 8.3 The Director may alter the CPU under subsections 132(2) or (3) of the Act to change a requirement as to financial assurance, including that the financial assurance may be increased or reduced or released in stages. The total financial assurance required may be reduced from time to time or released by an order issued by the Director under section 134 of the Act upon request and submission of such supporting documentation as required by the Director.
- 8.4 Subsection 186(3) of the Act provides that non-compliance with the requirements of the CPU constitutes an offence.
- 8.5 The requirements of the CPU are minimum requirements only and do not relieve the Owner from,
a. complying with any other applicable order, statute, regulation, municipal, provincial or federal law; or
b. obtaining any approvals or consents not specified in the CPU.

- 8.6 Notwithstanding the issuance of the CPU, further requirements may be imposed in accordance with legislation as circumstances require. The Director shall also alter the CPU where the approval or acceptance of the Director is required in respect of a matter under the CPU and the Director either does not grant the approval or acceptance or does not grant it in a manner agreed to by the Owner.
- 8.7 In the event that, any person is, in the opinion of the Director, rendered unable to comply with any requirements in the CPU because of,
- a. natural phenomena of an inevitable or irresistible nature, or insurrections,
 - b. strikes, lockouts or other labour disturbances,
 - c. inability to obtain materials or equipment for reasons beyond your control, or
 - d. any other cause whether similar to or different from the foregoing beyond your control,
- the requirements shall be adjusted in a manner defined by the Director. To obtain such an adjustment, the Director must be notified immediately of any of the above occurrences, providing details that demonstrate that no practical alternatives are feasible in order to meet the requirements in question.
- 8.8 Failure to comply with a requirement of the CPU by the date specified does not absolve the Owner from compliance with the requirement. The obligation to complete the requirement shall continue each day thereafter.
- 8.9 The Risk Management Measures identified in the Risk Assessment and also in Part 4 of the CPU and other requirements of the CPU shall commence upon the issuance of the CPU and continue in full force and effect until such time as the Director alters or revokes the CPU.
- 8.10 The provisions of the CPU shall take precedence in the event of a conflict between the provisions of the CPU and the Risk Assessment.

Part 9: Hearing before the Environmental Review Tribunal

- 9.1 Pursuant to section 139 of the Act, you may require a hearing before the Environmental Review Tribunal (the "Tribunal"), if within fifteen (15) days after service on you of a copy of the CPU, you serve written notice upon the Director and the Tribunal.
- 9.2 Pursuant to section 142 of the Act, the notice requiring the hearing must include a statement of the portions of the CPU and the grounds on which you intend to rely at the hearing. Except by leave of the Tribunal, you are not entitled to appeal a portion of the CPU, or to rely on a ground, that is not stated in the notice requiring the hearing.
- 9.3 Service of a notice requiring a hearing must be carried out in a manner set out in section 182 of the Act and Ontario Regulation 227/07: *Service of Documents*, made under the Act as they may be amended from time to time. The address, email address and fax numbers of the Director and the Tribunal are:

The Secretary
Environmental Review Tribunal
655 Bay Street, Suite 1500 Toronto, ON, M5G 1E5
Fax: (416) 326-5370
Email: ERTTribunalSecretary@ontario.ca

and

Celeste Dugas, Director
Ministry of the Environment, Conservation and Parks
230 Westney Road South, 5th Floor
Ajax, Ontario, L1S 7J5 Fax: (905) 427-5602
Email: Celeste.Dugas@ontario.ca

- 9.4 Unless stayed by application to the Tribunal under section 143 of the Act, the CPU is effective from the date of issue.
- 9.5 If you commence an appeal before the Tribunal, under section 47 of the Environmental Bill of Rights, 1993 (the “EBR”), you must give notice to the public in the EBR registry. The notice must include a brief description of the CPU (sufficient to identify it) and a brief description of the grounds of appeal. The notice must be delivered to the Minister of the Environment, Conservation and Parks who will place it on the EBR registry. The notice must be delivered to the Minister of the Ministry of the Environment, Conservation and Parks, College Park 5th Flr, 777 Bay St, Toronto, ON M7A 2J3 by the earlier of:
- (a) two (2) days after the day on which the appeal before the Tribunal was commenced; and
 - (b) fifteen (15) days after service on you of a copy of the CPU.
- 9.6 Pursuant to subsection 47(7) of the EBR, the Tribunal may permit any person to participate in the appeal, as a party or otherwise, in order to provide fair and adequate representation of the private and public interests, including governmental interests, involved in the appeal.
- 9.7 For your information, under section 38 of the EBR, any person resident in Ontario with an interest in the CPU may seek leave to appeal the CPU. Under section 40 of the EBR, the application for leave to appeal must be made to the Tribunal by the earlier of:
- (a) fifteen (15) days after the day on which notice of the issuance of the CPU is given in the EBR registry; and
 - (b) if you appeal, fifteen (15) days after the day on which your notice of appeal is given in the EBR registry.

Further information on the Environmental Review Tribunal requirements for an appeal can be obtained directly from the Tribunal at:

Tel: (416) 212- 6349 Fax: (416) 326-5370 www.ert.gov.on.ca

Issued at Ajax this [day of], 2019.

Celeste Dugas
Director, section 168.6 of the Act

Schedule “A”

Table 1: Property Specific Standards

Contaminant of Concern	Medium	Property Specific Standard
Acenaphthene	Soil	0.29 µg/g
Acenaphthylene	Soil	0.74 µg/g
Anthracene	Soil	1.4 µg/g
Antimony	Soil	15 µg/g
Benzo(a)anthracene	Soil	9.2 µg/g
Benzo(a)pyrene	Soil	9.5 µg/g
Benzo(b)fluoranthene	Soil	17 µg/g
Benzo(g,h,i)perylene	Soil	11 µg/g
Benzo(k)fluoranthene	Soil	4.3 µg/g
Boron (HWS)	Soil	2.8 µg/g
Cadmium	Soil	24 µg/g
Chrysene	Soil	14 µg/g
Copper	Soil	380 µg/g
Dibenz(a,h)anthracene	Soil	3.1 µg/g
Fluoranthene	Soil	11 µg/g
Indeno(1,2,3-cd)pyrene	Soil	7.9 µg/g
Lead	Soil	960 µg/g
Mercury	Soil	0.34 µg/g
PHC F2	Soil	260 µg/g
PHC F3	Soil	380 µg/g
Pyrene	Soil	13 µg/g
Phenanthrene	Soil	9.6 µg/g
Zinc	Soil	19000 µg/g

Contaminant of Concern	Medium	Property Specific Standard
Benzene	Groundwater	0.77
Benzo(a)pyrene	Groundwater	0.036
Ethylbenzene	Groundwater	3.1 µg/L
Hexane (n)	Groundwater	19 µg/L
Phenanthrene	Groundwater	1.8 µg/L
Trichloroethylene	Groundwater	0.94 µg/L

Table 2: Effects-Based Concentrations for COC in Indoor Air and Soil Vapour Protective of Human Health

Parameter	Trigger Criteria ($\mu\text{g}/\text{m}^3$)
Benzene	0.506
Hexane (n)	521
PHC F2 (>C10-C16)	471
Trichloroethylene	0.271

SCHEDULE 'B'

CERTIFICATE OF REQUIREMENT

s.197 (2)

Environmental Protection Act

This is to certify that pursuant to item 7.2 Certificate of Property Use Number 3285-ADAFNX-1 issued by Celeste Dugas, Director of the Ministry of the Environment, Conservation and Parks, dated [date issued], under sections 168.6 and 197 of the Environmental Protection Act, being a Certificate of Property Use and order under subsection 197(1) relating to the property municipally known as Northwest Quadrant, 135 Bruce Street, City of Oshawa, being part of Property Identifier Number (PIN) 16350-0083 (LT) (the "property") with respect to a Risk Assessment and certain Risk Management Measures and other preventive measure requirements on the property

Bruce Street Developments Limited

and any other persons having an interest in the property are required before dealing with the property in any way, to give a copy of the Certificate of Property Use, including any amendments thereto, to every person who will acquire an interest in the property as a result of the dealing.

Under subsection 197(3) of the Environmental Protection Act, the requirement applies to each person who, subsequent to the registration of the certificate, acquires an interest in the real property.

Figure 1: Site Map

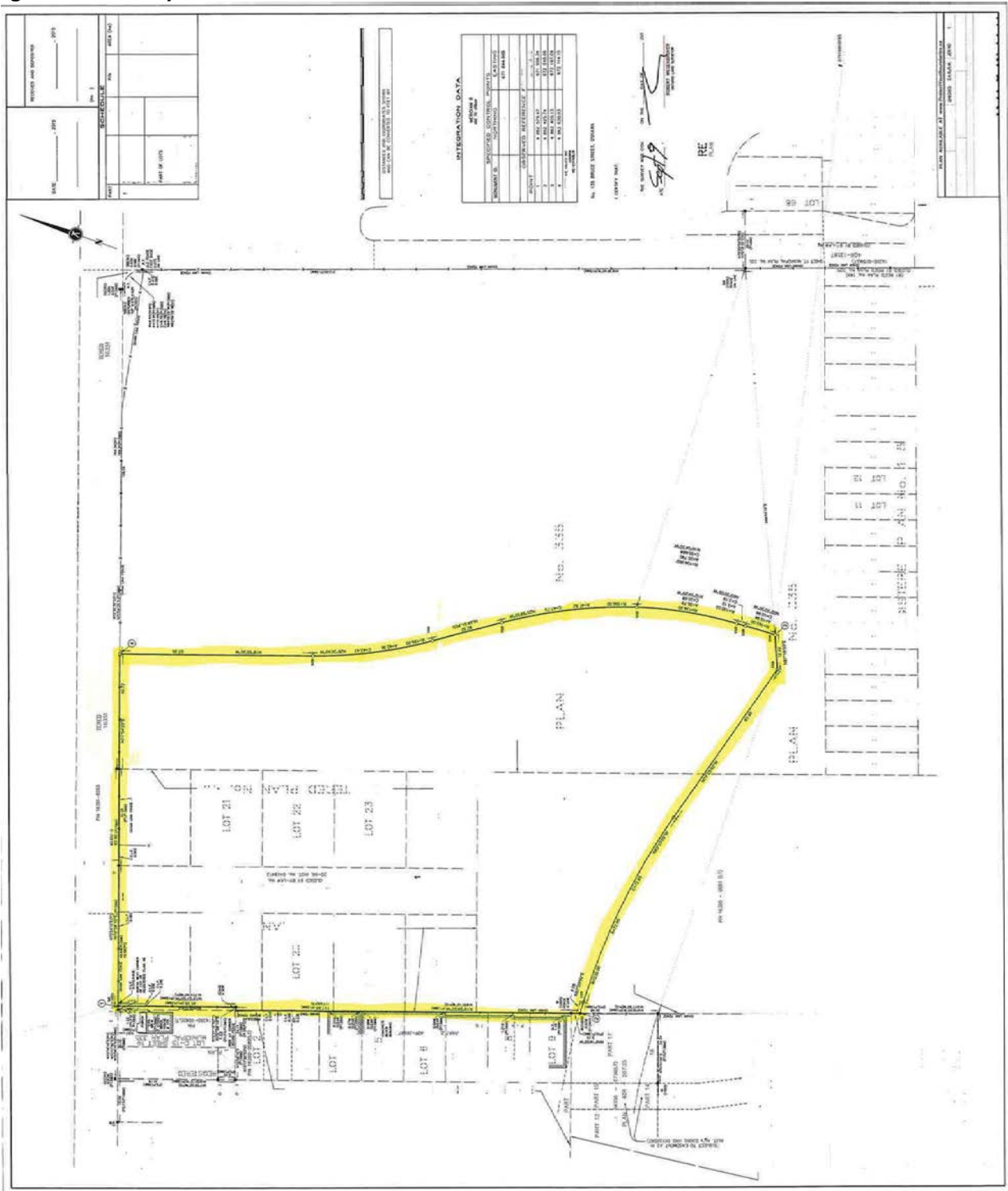
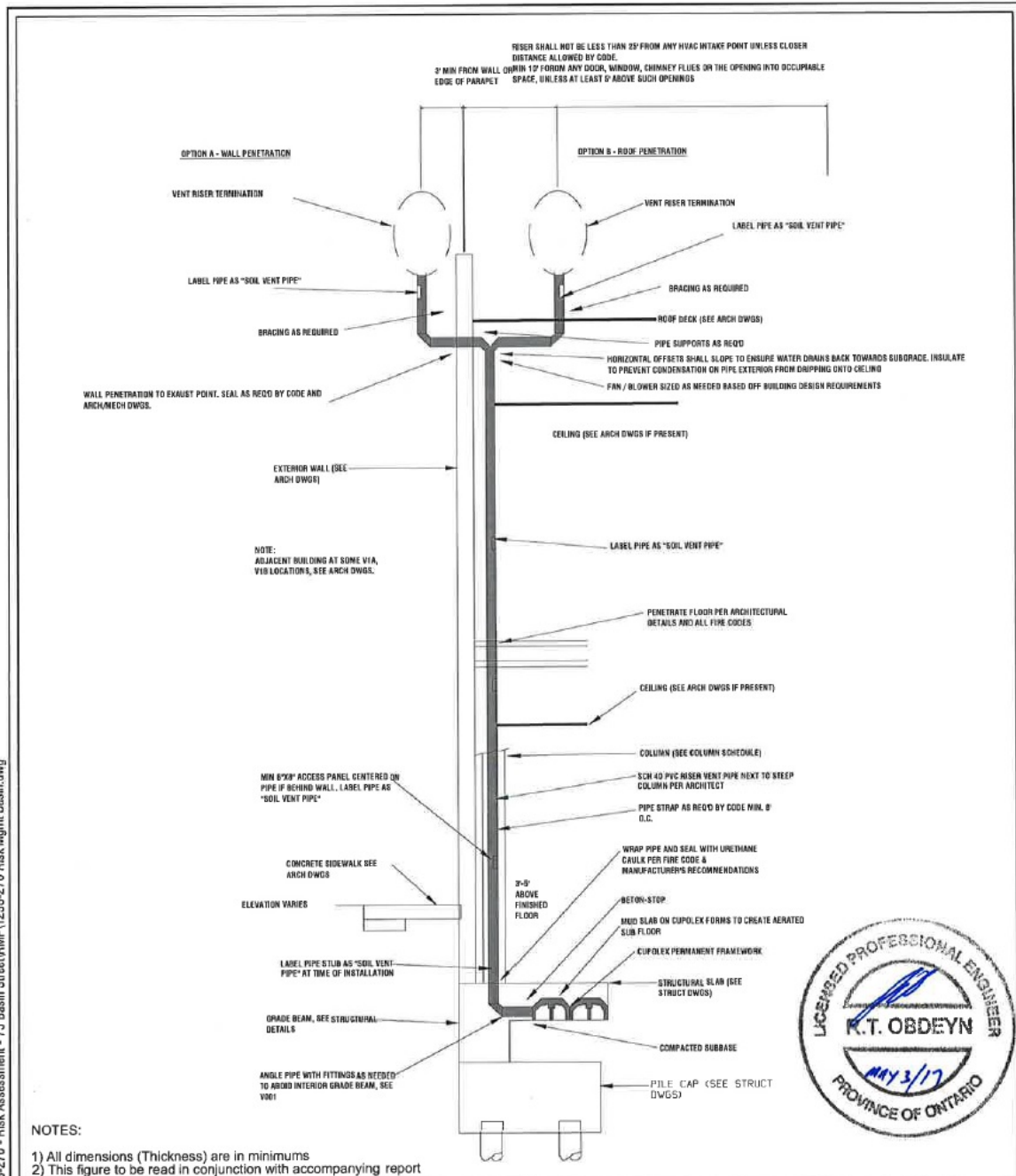


Figure 2: Risk Management Measures – Soil Vapour Intrusion Mitigation System



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Client:	135 BRUCE STREET DEVELOPMENTS	Project No.:	151-62320-00	Drawing No.:	3
Drawn:	RA	Approved:	RO	Title: RISK MANAGEMENT MEASURES - ACTIVE VAPOUR CONTROL	
Date:	May 2017	Scale:	N.T.S.	Project: RISK MANAGEMENT MEASURES NORTHWEST QUADRANT OF 135 BRUCE ST., OSHAWA, ON	
Original Size:	Letter	Rev:	1		