
**Certificate of Property Use
Environmental Protection Act, R.S.O. 1990, c.E.19, s.168.6**

Certificate of property use number: 6621-CY8SHW
Risk assessment number: 8631-BZCGJ3

**Owner: The Corporation of the Municipality of Port Hope
56 Queen Street
Port Hope, Ontario L1A 3Z9 (Owner)**

Site: 29 Thomas Street, Port Hope, Ontario (Property)

With a Legal Description of:

LT 488-492 PL Smith Estate Port Hope; PT Ross St PL Stewart Port Hope
(Closed by BPH150) as in PH235; Port Hope;

Lane PL Stewart Port Hope Lying Btn Ross St & Gifford St E of PL9; Port Hope;

LT 8-15, 48-52, 54-62 PL 9 Port Hope; LT 486-487 PL Smith Estate Port Hope;
Thomas St PL 9 Port Hope Closed By BPH121 Btn Strachan St & N Limit of LT 8
PL 9 Port Hope; PT LT 7 PL 9 Port Hope as in PH4746; PT Town Plot LT 66 PL
Stewart Port Hope As In C9457 (Secondly), C9558 (Secondly), PH21779 & PT 4
9R1186 Except PT 1 9R1838 & PT 3 9R2250; S/T PH65738 & PH67343; Port
Hope;

THOMAS ST PL 9 PORT HOPE BTN WALTON ST & N LIMIT OF LT 8 PL 9
PORT HOPE; Port Hope;

LT 53 PL 9 Port Hope; Port Hope; and

PT Town Plot LT 59 PL Stewart Port Hope.

being all of:

**PIN: 51071-0170 (LT), PIN: 51071-0179 (LT), PIN: 51071-0260 (LT), PIN:
51071-0265 (LT), PIN: 51071-0263 (LT) and PIN: 51071-0267 (R)**

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 (definition of 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) Risk Management Measures (RMMs) that are required to be implemented are found in Part 4 of the CPU, Director Requirements. Key RMMs specified in Part 4 include, but are not limited to:
 - Installing, inspecting and maintaining any new hard cap or soil cap barriers in an area of the Property as per Section 4.2 (a) of this CPU;
 - Prohibiting the construction of any Building(s) on the Property unless the new Building(s) is constructed as specified in Section 4.2 (i) of this CPU;
 - Installing, monitoring and maintaining any vapour mitigation systems as specified in Section 4.2 (k) and (m) of this CPU;
 - Implementing a soil management plan during any intrusive activities undertaken on the Property potentially in contact with COCs in soil that have been identified in the RA at concentrations that exceed the applicable site condition standards as per Section 4.2(t) of this CPU.
 - Implementing a health and safety plan during any intrusive activities undertaken on the Property potentially in contact with COCs in soil that have been identified in the RA at concentrations that exceed the applicable site condition standards as specified in Section 4.3 of this CPU;
 - Registering a certificate on the Property title in accordance with Section 197 of the *Environmental Protection Act* and that before dealing with the Property in any way, a copy of the CPU is to be given to any person who will acquire an interest in the Property as per Section 4.10, 4.11 and 4.12 of this CPU.
- ii) Duration of Risk Management Measures identified in Part 4 of the CPU is summarized as follows:
 - a. The soil management plan and the health and safety plan shall be required for the Property during any activities potentially in contact with or exposing site soils that have been identified in the RA at concentrations that exceed the applicable site condition standards for as long as the Contaminants of Concern are present on the Property.
 - b. 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:

“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;

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

“Applicable Site Condition Standards” and “ASCS” means soil and groundwater that meets the soil or groundwater criteria identified in Table 9: Generic Site Condition Standards for Use within 30m of a Water Body in a Non-Potable Ground Water Condition (coarse textured soils) (Residential/Parkland/Institutional use) of the Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Act published by the Ministry and dated April 15, 2011;

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

“Competent Person” as defined in the Ontario *Occupational Health and Safety Act*.

“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 may cause an Adverse Effect;

“Contaminants of Concern” & “COC” has the meaning as set out in section 3.2 of the CPU;

“CPU” means this Certificate of Property Use as it may be altered from time to time and bearing document # 6621-CY8SHW;

“Director” means the undersigned Director or any other person appointed as a Director for the purpose of issuing a certificate of property use;

“Existing Building” means the single storey currently occupying the property;

“Granular A” means a set of requirements for dense graded aggregates intended for use as granular base within the pavement structure, granular shouldering, and backfill, as specified in Ontario Provincial Standard Specification 1010 (OPSS.MUNI 1010);

“Impacted Soil” is soil in which one or more contaminants are present at a concentration greater than the Property Specific Standard for the contaminant as specified in Table 1A – Schedule A of this CPU without incorporation of risk management measures;

“Licensed Professional Engineer” means a person who holds a license, limited licence or temporary licence under the *Professional Engineers Act*, R.R.O. 1990, c.P.28;

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

“O. Reg. 153/04” means *Ontario Regulation 153/04 Records of Site Condition – Part XV.1 of the Act* under Environmental Protection Act, R.S.O. 1990, c. E.19.

“Reg. 347” means *R.R.O. 1990, Regulation 347: General - Waste Management* under Environmental Protection Act, R.S.O. 1990, c. E.19.

“O. Reg. 406” means *Ontario Regulation 406/19: On-Site and Excess Soil Management* under Environmental Protection Act, R.S.O. 1990, c. E.19.

“Owner” means **The Corporation of the Municipality of Port Hope**, the current owner of the Property, and any future Property Owner(s);

“Property” means the property that is the subject of the CPU and described in the “Site” section on page 1 above, and illustrated in Figure 1 of Schedule A which is attached to and forms part of this CPU;

“Property Specific Standards or PSS” means the property specific standards established for the Contaminants of Concern set out in the Risk Assessment and in section 3.2 of the CPU and are the same standards specified in the Risk Assessment;

"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;

"Risk Assessment" (RA) means the Risk Assessment No. **8631-BZCGJ3** accepted by the Director on July 27, 2023, and set out in the following documents:

- “Risk Assessment, 29 Thomas Street, Port Hope, Ontario”, report prepared by Golder Associates Ltd., dated March 2022;
- “Risk Assessment - Submission 2, 29 Thomas Street, Port Hope, Ontario”, report prepared by Golder Associates Ltd., dated October 2022;
- “Risk Assessment - Submission 3, 29 Thomas Street, Port Hope, Ontario”, report prepared by WSP Canada Inc., dated February 2023; and

- “RE: Risk Assessment for 29 Thomas Street, Port Hope (Lions Park); RA1940-21c; IDS# 8631-BZCGJ3”, email from Ruwan Jayasinghe, WSP, email received by TASDB on May 24, 2023, with following attachment:
 - Appendix L: Risk Management Plan, dated May 2023; file name: APX L_RMP – Lions Park_23May2023.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;

“Risk Management Plan or RMP” means the risk management plan specific to the Property detailed in Section 7.0 and Appendix L of the Risk Assessment and/or Part 4 of the CPU;

“SVIMS” means a soil vapour intrusion mitigation system.

“Tribunal” has the same meaning as in the Act; namely, the Ontario Land Tribunal;

“Unimpacted Soil” means soil that meets the soil criteria identified in Table 9: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition of the Ministry’s *Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act* published by the Ministry and dated April 15, 2011.

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 the Director accepts a risk assessment relating to a property, he or she may, when giving notice under clause 168.5 (1)(a), issue a certificate of property use to the owner of the property, requiring the owner to do any of the following things:

- a. Take any action specified in the certificate that, in the Director's opinion, is necessary to prevent, eliminate or ameliorate any adverse effect on the property, including installing any equipment, monitoring any contaminant or recording or reporting information for that purpose.
 - b. 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 the 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 196(1) of the Act states that the authority to make an order under the Act includes the authority to require the person or body to whom the order is directed to take such intermediate action or such procedural steps or both as are related to the action required or prohibited by the order and as are specified in the order.
- 2.8 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.
- 2.9 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.

- 2.10 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.
- 2.11 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 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: Parkland as defined in O. Reg. 153/04.
- 3.2 The Contaminants on, in or under the Property that are present either above **Table 9: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition** of the **Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, published by the Ministry and dated April 15, 2011** for coarse textured soils and groundwater or for which there are no such standards, are defined as the Contaminants of Concern. The Property Specific Standards for these Contaminants of Concern are set out in **Table 1A and Table 1B of Schedule "A"**, which is attached to and forms part of the CPU.
- 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 I am further of the opinion for the reasons set out in the Risk Assessment that it is necessary to restrict the use of the Property and/or the construction of Buildings at the Property as outlined in Part 4 of the CPU.

Part 4: Director Requirements

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

Risk Management Measures

- 4.1 Implement, and thereafter maintain or cause to be maintained, the Risk Management Measures.

4.2 Without restricting the generality of the foregoing in Section 4.1, carry out or cause to be carried out the following Risk Management Measures:

Barriers to Soil:

- a. Subject to section 4.2(b), fill cap and hard cap barriers shall be installed over the Property in accordance with the RMP and Figure L-1, wherever there is less than 0.5 m of Unimpacted Soil below the soil surface, so as to prevent exposure to the Contaminants of Concern (COCs) identified on the Property and shall be maintained for as long as the COCs are present on the Property.
- b. In relation to Section 4.2(a) of this CPU, areas of the Property that are not in use nor under development, hard cap and soil cap barriers are not required as long as exposure to the COCs at concentrations that exceed the ASCS (as determined by a Qualified Person) is prevented by a fence barrier that restricts access to those areas of the Property and a dust control plan is implemented as may be necessary to prevent surface soil from impacting adjacent areas.
- c. The fill cap and hard cap barriers shall consist of the following, at minimum:
 - (i) Subject to subsection (ii) fill cap barrier(s) shall consist of a minimum 0.5 metre of Unimpacted Soil (Table 9) material underlain by an indicator layer placed immediately on top of the Impacted Soil, as per Section 1.2.1.1 and Figure L-2A of the RMP.
 - (ii) In designated children's play areas, the fill cap barrier(s) shall consist of a minimum 1.0 metre of Unimpacted Soil material (which may also include non-soil material) placed immediately on top of the Impacted Soil, as per Section 1.2.1.1 and Figure L-2B of the RMP.
 - (iii) Subject to subsection (iv), for deep rooted vegetation, the tree shall be placed in an excavation with a minimum areal dimension of 300 mm between the root ball and existing site soils and extending to a depth of 1500 mm, per Section 1.2.1.1 and illustrated in Figure L-3 of the RMP.
 - (iv) Surrounding existing trees, identified as remaining, the barrier shall consist of 50 to 100 millimeters of Unimpacted Soil (Table 9) underlain by a perforated indicator layer placed immediately on top of the Impacted Soil, as per Section 1.2.1.1 and Figure L-4 of the RMP. The lateral distance of this alternative barrier shall be confirmed by a qualified professional (i.e. arborist) to protect the existing tree.
 - (v) The hard cap barrier(s) shall have a minimum total thickness of 225 millimetres consisting of a cover of asphalt, concrete, a building slab, or building foundation and floor slab, underlain by granular fill or aggregate, as per Section 1.2.1.1 and illustrated in Figure L-5 of the RMP.
- d. Prior to occupancy and following the installation of any new Barriers to Soil on the Property, the Owner shall submit to the Director written confirmation signed by a qualified Licensed Professional Engineer that the barriers have been installed in accordance with the requirements of Section 1.2.1.1 of the RMP and

Section 4.2(c) of this CPU along with final design specifications/drawings and/or as-built drawings.

- e. Prior to occupancy and following the installation of any new Barriers to Soil on the Property, the Owner shall submit to the Director a site plan that clearly identifies the final location(s) of each of the different barriers.
- f. An inspection and maintenance program shall be prepared and implemented to ensure the continuing integrity of the fill and hard cap barriers as long as the COCs are present on the Property at concentrations that exceed the ASCS. The inspection program shall include semi-annual inspections (spring and fall) of the barriers' integrity in accordance with Section 1.2.1.2 of the RMP. Any barrier deficiencies shall be repaired within a reasonable period of time in accordance with Section 1.2.1.2 of the RMP. If cracks, breaches or any loss of integrity in the barriers cannot be repaired or addressed in a timely manner, contingency measures, in accordance with Section 1.2.1.2 of the RMP, shall be implemented to ensure that no exposure to the COCs occurs. The restoration of any damaged portions of the barriers shall, at minimum, meet the original design specifications and Section 4.2(c) of this CPU. The Owner shall keep records of the inspections, maintenance and repairs and make them available for review by a Provincial Officer upon request.
- g. An inspection and maintenance program, as described in Section 4.2(f), with respect to any fencing on the Property or any part thereof shall be implemented so long as fencing is required.

New Enclosed Building(s):

- h. Refrain from constructing any new Building(s) on, in or under the portion of the Property as shown in Figure L-7, unless the requirement for a SVIMS is evaluated using a staged approach, as detailed in Section 1.2.2 of the RMP, along with Section 4.2(j) this CPU.
- i. The need for a SVIMS shall be evaluated beginning with a soil vapour monitoring program, designed in accordance with Section 1.4.2.1 of the RMP, in the area of the proposed Building. Should the results of the soil vapour monitoring program indicate that a SVIMS is not required, a report summarizing the methodology, quality assurance/quality control measures implemented, the results of the investigation and a recommendation from a Professional Engineer shall be submitted to the Director of the MECP. Should the results of the soil vapour monitoring program suggest that soil vapour impacts may be present in the area of the proposed Building, a SVIMS must be incorporated into the design of the proposed Building, in accordance with Section 4.2(i).
- j. The construction of any new Building(s) is permitted on the Property provided that the soil vapour monitoring program of Section 4.2(i) concludes that a SVIMS is not required or the new Building includes, and is constructed with, a SVIMS as identified in Section 1.2.2 of the RMP. The SVIMS shall be designed by an appropriately qualified Licensed Professional Engineer in consultation with a Qualified Person in accordance with the conceptual design detailed in Sections

1.2.2.1 and 1.2.2.2 of the RMP and shall also include the following components:

- (i) The Owner shall obtain an Environmental Compliance Approval, as necessary, and any other permits or approvals as may be required;
 - (ii) The installation of the SVMIS shall be completed under the supervision of an appropriately qualified Licensed Professional Engineer and a Qualified Person;
 - (iii) Should the passive vapour mitigation system detailed in Section 1.2.2.1 of the RMP be the preferred approach for any new Building the passive vapour mitigation system shall be designed and constructed such that the passive venting system can easily be converted to an active venting system with all applicable approvals and permits as may be necessary; and,
 - (iv) A quality assurance/quality control (QA/QC) program shall be undertaken during the installation of the vapour mitigation system and shall be completed by, and clearly documented in a report prepared by, a qualified contractor and overseen by an appropriately qualified Licensed Professional Engineer and Qualified Person.
- k. Within 90 calendar days of the completion of the construction of any Building(s) as specified in Section 4.2(i) of this CPU and prior to first occupancy, the Owner shall submit to the Director as-built drawings and detailed design specifications of the vapour mitigation system, including any verification and QA/QC reports, prepared by the qualified Licensed Professional Engineer along with a statement from the qualified Licensed Professional Engineer that the vapour mitigation system has been installed in accordance with the original design specifications and that it has been designed to meet the requirements and objectives specified in Section 1.2.2 of the RMP along with Section 4.2(i) of this CPU.
- l. The vapour mitigation system detailed in Section 1.2.2 of the RMP and 4.2(j) of this CPU shall be operated, monitored and maintained by the Owner for as long as the COCs are present on the Property. The qualified Licensed Professional Engineer that designed the vapour mitigation system shall prepare an operation, monitoring, and maintenance program consistent with Section 1.4.2.2 of the RMP at minimum, including a contingency plan consistent with Section 1.4.2.3 of the RMP at minimum, that is to be implemented by the Owner, prior to first occupancy, and shall be made available by the Owner to the Ministry upon request.
- m. The inspection, monitoring and maintenance program as specified in Section 4.2(l) of this CPU shall be implemented to ensure the continued integrity of the building floor slab and vapour mitigation system for as long as the COCs are present on the Property. The inspection program shall include, at minimum, semi-annual inspections of the integrity of the Building floor slab(s) and monitoring of the vapour mitigation system in accordance with the monitoring and maintenance program specified in Section 4.2(l) of this CPU. Any major cracks, breaches or loss of integrity observed in the Building floor slab or any observed deficiencies or necessary maintenance requirements with the vapour mitigation

system shall be repaired forthwith to the original design specification, at minimum. Repairs or maintenance shall be made by an appropriately qualified contractor, under the supervision of a qualified Licensed Professional Engineer as necessary. If repairs to the Building floor slab or the vapour mitigation system cannot be completed in a timely manner, the Owner shall ensure that the contingency measures prepared by a qualified Licensed Professional Engineer, as specified in Section 4.2(l) of this CPU, are implemented. All repairs are to be inspected by an appropriately qualified Licensed Professional Engineer and signed documentation shall be provided to the Owner that states that the repairs meet the original design specifications, at minimum. In the event of repairs to the floor slab or vapour mitigation system, the Owner shall submit to the Director, written confirmation, prepared and signed by a qualified Licensed Professional Engineer, that all repairs have been made to meet the original design specifications, at minimum. The written confirmation shall also include a description of any contingency measures that were put in place and shall be submitted to the Director within 30 days of the completion of any repairs to the vapour mitigation system. The Owner shall keep records of the inspections, monitoring and maintenance program, along with documentation of all repairs that were required to be undertaken and these records shall be made available by the Owner to the Ministry for review upon request.

- n. The Owner shall ensure that all individuals/contractors intending to undertake work which could potentially come into contact with or interfere with the vapour barrier installed as part of the vapour mitigation system as specified in Section 1.2.2 of the RMP along with Section 4.2 (j) of this CPU are made aware of the presence of the vapour mitigation system and the need to take appropriate precautions to ensure the integrity of the vapour mitigation system at all times. If the vapour mitigation system is damaged at any time, the Owner shall ensure that it is repaired forthwith by a qualified contractor, under the supervision of a qualified Licensed Professional Engineer as necessary, to the original design specifications, at minimum. If repairs to the vapour mitigation system cannot be completed in a timely manner, the Owner shall ensure that the contingency measures prepared by a qualified Professional Engineer are implemented. All repairs to the vapour mitigation system are to be inspected by a qualified Licensed Professional Engineer and signed documentation shall be provided to the Owner that states that the repairs meet the original design specifications, at minimum. The Owner shall submit to the Director the written confirmation, prepared and signed by a qualified Licensed Professional Engineer, that the vapour mitigation system has been repaired to meet the original design specifications, at minimum. The written confirmation shall also include a description of any contingency measures that were put in place and shall be submitted to the Director within 30 calendar days of the completion of any repairs to the vapour mitigation system. The Owner shall maintain records of all activities and repairs in relation to the vapour mitigation system and these records shall be made available by the Owner to the Ministry for review upon request.

- o. Once the final design of the vapour mitigation system is completed as specified in Section 4.2(j) of this CPU, the Owner shall submit to the Director, for review and acceptance, a performance monitoring program. The performance monitoring program shall be prepared by a qualified Licensed Professional Engineer in consultation with an appropriately Qualified Person, that consists of indoor air monitoring and pressure differential monitoring, as detailed in Section 1.4.2.2 of the RMP. Specifically, the performance monitoring program shall include the following key components:
 - (i) Be overseen by a qualified Licensed Professional Engineer.
 - (ii) The collection of indoor air samples and pressure differential measurements from an appropriate number of representative locations, including QA/QC samples, that is adequate for the size and configuration of any new Building(s) as determined appropriate by the qualified Licensed Professional Engineer at the following frequency:
 - a) Prior to first occupancy;
 - b) Quarterly (spring, summer, fall and winter) for a minimum of two (2) years; and,
 - c) Semi-annually thereafter, until written approval to discontinue the performance monitoring program by the Director is received by the Owner.
 - (iii) The indoor air samples shall be sent to an accredited laboratory and analyzed for the Target Analytes listed in Schedule 'A': Target Air Concentrations (Table 1C), which is attached to and forms part of this CPU.
 - (iv) An annual report documenting the performance monitoring program shall be prepared by a qualified Licensed Professional Engineer and submitted to the Director on or before March 31st following each year of monitoring for a minimum of two years and until written approval to discontinue the program is received by the Owner from the Director. The annual report shall include, but not be limited to:
 - a) Laboratory results and laboratory certificates of analysis;
 - b) Field logs, leak testing, and documentation of QA/QC;
 - c) Discussion and interpretation of the results in comparison to the respective Target Indoor Air Concentrations as listed in Table 1C; and,
 - d) Conclusions and recommendations with respect to the need for additional and/or continued monitoring, as may be warranted.
- p. Upon completion of the installation of the vapour mitigation system as specified in Section 4.2(k) of this CPU, and prior to first occupancy, the Owner shall implement the performance monitoring program, that has been accepted in writing by the Director, as required by Section 4.2(o) of this CPU and detailed in Section 1.4.2.2 of the RMP for a minimum of two years and until the Owner

receives written direction from the Director to discontinue the program. Any changes to the performance monitoring program that has been accepted by the Director, as required by Section 4.2(o) of this CPU, (i.e. sampling frequency, locations, methodology etc.) must be requested in writing by an appropriately qualified Licensed Professional Engineer and these changes shall only be implemented upon the Owner receiving written acceptance from the Director.

- q. In the event that the performance monitoring program detailed in Section 4.2(o) of this CPU identifies sub-slab pressure differential less than 6 Pascal and/or one or more of the target analytes at concentrations above the Target Indoor Air Concentrations specified in Table 1C, the Owner shall implement the contingency measures detailed in Section 1.4.2.3 of the RMP, and as follows:
 - (i) Written notice shall be submitted to the Director by the Owner within 7 calendar days of the Owner's receipt of the laboratory analysis. This written notice shall include the indoor air sampling results, the laboratory certificates of analysis, and the anticipated timeline for the implementation of the confirmatory sampling program along with any additional work as may be deemed necessary by a qualified Licensed Professional Engineer. Confirmatory sampling shall occur within 14 calendar days from the date of the Owner's receipt of the laboratory analysis and be completed by a qualified Licensed Professional Engineer.
 - (ii) In the event that the confirmatory sampling program verifies the exceedances of one or more of the target analyte concentrations above the Target Concentrations specified in Table 1C, the Owner shall:
 - a) Submit written notice to the Director within 7 calendar days of the Owner's receipt of the laboratory analysis. This written notice shall include the sample results, the laboratory certificates of analysis and the details of, and the anticipated timeline to implement contingency measures. The implementation of contingency measures, along with the implementation of a confirmatory sampling program, shall occur within 30 calendar days of the Owner's submission of the written notice of the exceedance to the Director or such time frame as approved by the Director;
 - b) Within 30 calendar days of the implementation of the contingency measures, the Owner shall submit to the Director a report prepared by a qualified Licensed Professional Engineer documenting the implementation of contingency measures, results of the implementation of the confirmatory sampling program along with the details and timelines for the implementation of a performance monitoring program as necessary. The report shall include, but not be limited to:
 - i. Laboratory results and laboratory certificates of analysis;
 - ii. Field logs, leak testing (as necessary), and documentation of QA/QC;

- iii. Discussion and interpretation of the results in comparison to the respective Target Indoor Air Concentrations as listed in Table 1C; and,
 - iv. Conclusions and recommendations with respect to the performance of the Building's vapour mitigation system along with the need for additional work and/or continued monitoring as may be deemed warranted.
- r. In the event that any new equipment is added to the SVIMS, the quarterly indoor air monitoring program must be resumed for a minimum of two years post-construction and until written direction to discontinue the program is received by the Owner from the Director.

Soil Management Plan:

- s. A property-specific soil management Plan (SMP) shall be developed for the Property and implemented during all intrusive activities potentially in contact with or exposing COCs in soil on the Property. A copy of the SMP shall be maintained on the Property for the duration of all planned intrusive activities. Any short-term intrusive activities required for the purposes of emergency repairs (i.e., for repairs to underground utilities etc.) will not require the submission of the SMP prior to undertaking the short-term emergency repairs. For planned intrusive activities, this SMP shall be submitted to the Director by the Owner at least 14 calendar days prior to any such intrusive activities being undertaken. The SMP shall include, but not be limited to, the following key components as deemed necessary by a Qualified Person:
- (i) oversight by a Qualified Person;
 - (ii) include dust control measures and prevention of soils tracking by vehicles and personnel from the Property;
 - (iii) management of excavated soils including cleaning equipment, placement of materials for stockpiling on designated areas lined and covered with polyethylene sheeting, bermed and fenced to prevent access, runoff control to minimize contact and provisions for discharge to sanitary sewers or other approved treatment;
 - (iv) storm water management measures to control the potential transport of COCs off-site during on-site construction/redevelopment activities. This may include, but not be limited to, silt fences and filter socks on catch-basins and utility covers as necessary;
 - (v) characterization of excavated excess soils intended for on-site reuse to determine if the excavated excess soils exceed the Property Specific Standards listed in Table 1A of Schedule "A" attached to this CPU (Table 1A) and/or the Applicable Site Condition Standards for parameters other than those identified in Table 1A, or if they require off-site disposal in accordance with the provisions of Reg. 347 and O. Reg. 406/19 made under the Act;

- (vi) record keeping. Record keeping is to include, but not to be limited to:
 - a) dates and duration of work
 - b) weather and site conditions
 - c) location and depth of excavation activities,
 - d) dust control measures,
 - e) stockpile management and drainage,
 - f) all soil characterization results obtained as part of the SMP,
 - g) names of the Qualified Persons, contractors, haulers, and receiving sites for any excavated excess soils removed from the property, and
 - h) any complaints received relating to site activities.

- (vii) copy of the SMP and any amendments and the records kept thereunder shall be made available for review by the Ministry upon request.

Health and Safety Plan:

- 4.3 A property-specific health and safety plan (H&S Plan) shall be developed for the Property, in accordance with Sections 1.2.3 of the RMP, and implemented during all planned intrusive activities undertaken potentially in contact with COCs in soil that have been identified in the RA. A copy of the H&S Plan shall be maintained on the Property for the duration of all intrusive activities. The Owner shall ensure that the H&S Plan takes into account the presence of the COCs and is implemented prior to any intrusive activities being undertaken on the Property or portion(s) of the Property in order to protect workers from exposure to the COCs. The H&S Plan shall be prepared in accordance with applicable Ministry of Labour health and safety regulations, along with all potential risks identified in the RA and include, but not limited to, occupational hygiene requirements, personal protective equipment, contingency plans and contact information. Prior to initiation of any Project as defined under O.Reg.213/91 (on the Property or portion(s) of the Property), the local Ministry of Labour office shall be notified, where so prescribed under the OHS Act, of the proposed activities and that COCs have been identified in soil on the Property. The plan shall be overseen by a Competent Person to review the provisions of the plan with respect to the proposed site work and conduct daily inspections. The Owner shall retain a copy of the plan to be available for review by the Ministry upon request.

Prohibition of potable ground water wells:

- 4.4 The Owner shall,
- a. refrain from using the ground water beneath the Property as source of potable water;
 - b. properly abandon any wells on the Property, in accordance with Regulation 903: Wells, made under the OWRA when no longer in use; and

- c. refrain from constructing on the Property any wells as defined in Regulation 903: Wells, made under the OWRA.
- 4.5 Further to Section 4.4 (c) of this CPU, the installation of ground water monitoring wells for environmental testing purposes is permitted.

Property Use Restrictions:

- 4.6 Refrain from using the Property for Residential Use as defined in O. Reg. 153/04.
- 4.7 Refrain from construction the following building(s): No building construction unless construction is in accordance with Item 4.2(h) of the CPU.

Site Changes

- 4.8 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, forthwith notify the Director of such changes and the steps taken, 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 or the discharge of any Contaminant of Concern into the natural environment from the Property. An amendment to the CPU may be issued to address the changes set out in the notice received and any further changes that the Director considers necessary in the circumstances.

Reports

- 4.9 Retain a copy of any reports required under the CPU, the Risk Assessment and any reports referred to in the Risk Assessment (until otherwise notified by the Director) and within ten (10) days of the Director or a Provincial Officer making a request for a report, provide a copy to the Director or Provincial Officer.

Property Requirement

- 4.10 For the reasons set out in the CPU and pursuant to the authority vested in me under subsection 197(1) of the Act, I hereby order you 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.

Certificate of Requirement

- 4.11 Within fifteen (15) days from the date of receipt of a certificate of requirement, issued under subsection 197(2) of the Act, register the certificate of requirement on title to the Property in the appropriate land registry office.

- 4.12 Within five (5) days after registering the certificate of requirement, provide to the Director a copy of the registered certificate and of the parcel register for the Property confirming that registration has been completed.

Owner / Occupant Change

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

Part 5: General

- 5.1 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, such finding does not invalidate or render unenforceable the requirement in other circumstances, nor does it invalidate or render unenforceable the other requirements of the CPU.

- 5.2 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.

- 5.3 The Director may amend 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 provided, 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.

- 5.4 Subsection 186(3) of the Act provides that failure to comply with the requirements of the CPU constitutes an offence.

- 5.5 The requirements of the CPU are minimum requirements only and do not relieve you 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.

- 5.6 Notwithstanding the issuance of the CPU, further requirements may be imposed in accordance with legislation as circumstances require.

- 5.7 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.

- 5.8 Failure to comply with a requirement of the CPU by the date specified does not absolve you from compliance with the requirement. The obligation to complete the requirement shall continue each day thereafter.

Part 6: Hearing before the Environmental Review Tribunal

With respect to those provisions relating to my authority in issuing a certificate of property use under section 168.6 and an order under section 197 of the Act:

- 6.1 Pursuant to section 139 of the Act, you may require a hearing before the Ontario Land 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.
- 6.2 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.
- 6.3 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
Ontario Land Tribunal
655 Bay Street, Suite 1500
Toronto, ON, M5G 1E5

Fax: (416) 326-5370
Email: OLTTribunalSecretary@ontario.ca

and

David Bradley, Director
Ministry of the Environment and Climate Change
300 Water St., South Tower

Peterborough, ON
K9J 3C7

Email: David.Bradley@ontario.ca

6.4 Unless stayed by the Tribunal under section 143 of the Act, the CPU is effective from the date of issue.

Further information on the requirements of the Tribunal regarding an appeal can be obtained directly from the Tribunal by:

Tel: (416) 212-6349 or Toll Free (866) 448-2248

Fax: (416) 326-5370

Email: OLT.General.Inquiry@ontario.ca

Website: <https://olt.gov.on.ca>

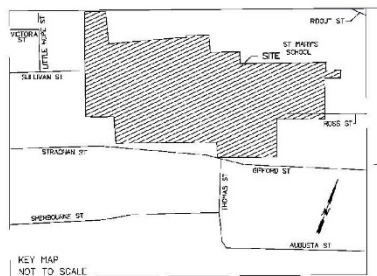
Issued at Peterborough, Ontario this ___th day of _____, 2024.

David Bradley
Director, section 168.6 of the Act

Schedule 'A': Figure 1

(not to scale)

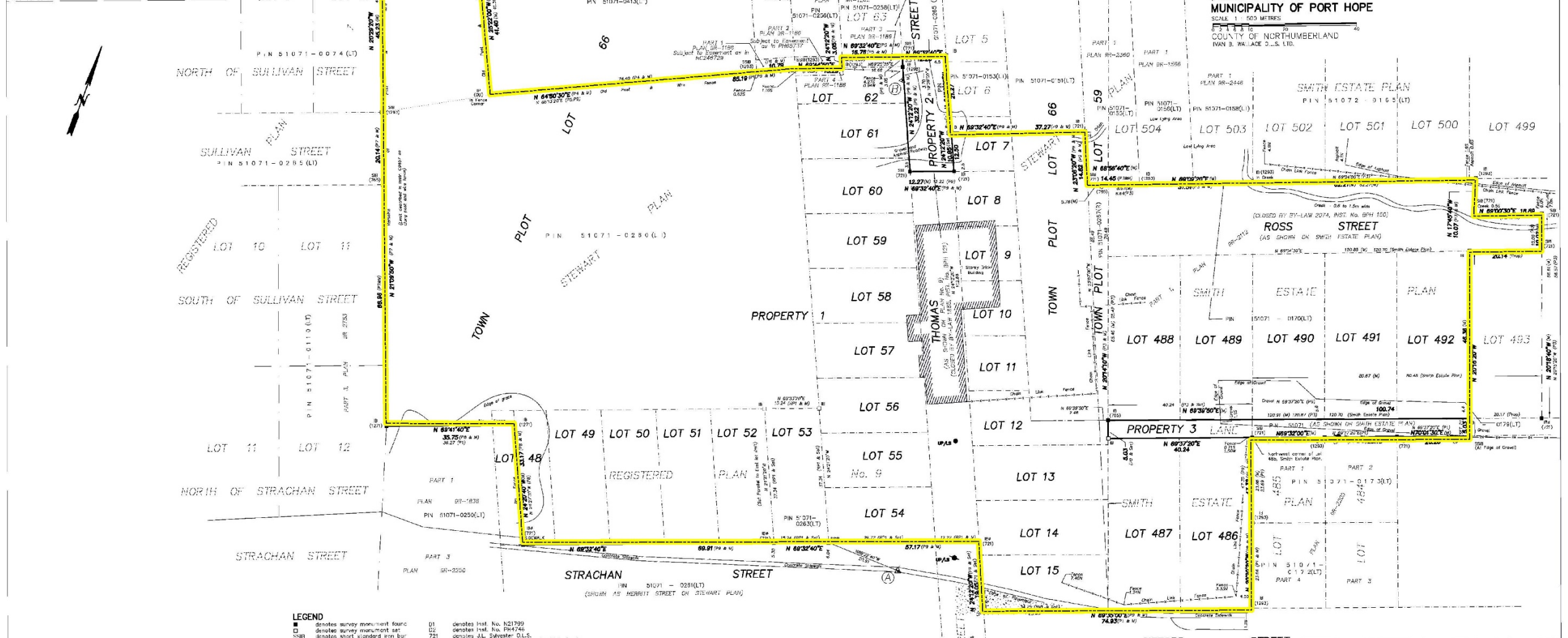
OFFICIAL USE ONLY



PROPERTY SCHEDULE

PROPERTY	PIN	AREA sq. ft.
PROPERTY 1	ALL OF PIN 51071-0280(LT) ALL OF PIN 51071-0170(LT) ALL OF PIN 51071-0267(O) ALL OF PIN 51071-0268(O) ALL OF PIN 51071-0269(O)	3,465 sq. ft.
PROPERTY 2	PART OF PIN 51071-0268(LT)	3948 sq. ft.
PROPERTY 3	PART OF PIN 51071-0170(LT)	5013 sq. ft.

COPYRIGHT © IVAN B. WALLACE LTD. O.S. 2013
PLAN OF SURVEY OF
LOTS 8, 9, 10, 11, 12, 13, 14, 15,
49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62 and
PART OF LOTS 7 and 48, and PART OF THOMAS STREET
(Closed by By-Law 1885, Inst No. 874, 121)
AND PART OF THOMAS STREET (Not Closed by By-Law)
REGISTERED PLAN 9 and
LOTS 486, 487 and 487, 488, 489, 490, 491, and 492
AND PART OF ROSS STREET (Closed by By-Law 2074, Inst No. 894 150)
SMITH ESTATE PLAN and
PART OF TOWN PLOT LOTS 59 and 66, and
PART OF THE LANE LYING BETWEEN ROSS STREET
AND GIFFORD STREET EAST (OF REGISTERED PLAN 9)
STEWART PLAN
(FORMERLY TOWN OF PORT HOPE)
MUNICIPALITY OF PORT HOPE
SCALE 1 : 500 METRES
1" = 50.0 METRES
1" = 1609.344 METRES
IVAN B. WALLACE O.S.S. LTD.



NOTES
Rubbed plan to show actual survey limits in the key map on February 2, 2021.

SURVEYOR'S CERTIFICATE
I, the undersigned, being duly sworn, depose and say that the above is a true and correct copy of the original plan of survey as filed in the office of the Registrar of Land in the Municipality of Port Hope, Ontario, Canada, on the 14th day of June, 2023.

- LEGEND**
- denotes survey monument found
 - denotes survey monument set
 - SMBI denotes short standard iron bar
 - SB denotes standard iron bar
 - IB denotes iron bar
 - CP denotes copper nail
 - WIT denotes witness
 - WT denotes witness
 - UT denotes utility pole/light standard
 - P1 denotes Plan 88-2725
 - P2 denotes Plan 88-2367
 - P3 denotes Plan 88-2119
 - P4 denotes Plan 288-12553
 - P5 denotes Plan 88-1182
 - P6 denotes Plan 88-1186
 - P7 denotes Plan 88-2723
 - P8 denotes Plan 88-1838
 - P9 denotes Plan of Survey by J.L. Sylvester Limited dated 4th February 1987
 - P10 denotes Plan of Survey by Sylvester & Brown Ltd dated 4th November, 1988 (File # 88182)
 - P11 denotes Plan of Survey by J.L. Sylvester Ltd dated 17th August, 1977 (File # 77111)
 - D1 denotes Inst. No. 821799
 - D2 denotes Inst. No. 104746
 - 721 denotes J.L. Sylvester O.L.S.
 - 755 denotes Ivan B. Wallace & Davies Ltd., O.S.
 - 1271 denotes N.E. Fife O.L.S.
 - 1293 denotes Sylvester & Brown Ltd., O.L.S.
 - Phase One ESA Property = Phase Two ESA Property = RA Property = KSC Property

BEARING NOTES
Bearings are UTM Grid, derived from observed reference points A and B, by Real Time Network observations, UTM Zone 17, NAD83(OSS)(1997).

For bearing computations, the following rotations were applied:
P5, P6, P8, P9 148°10' counter clockwise
P7 19°30' counter-clockwise
P1 181°00' counter-clockwise
P4 47°50' counter-clockwise
P3 130°50' counter-clockwise

DISTANCE NOTES - METRIC
Distances and coordinates are in metres and can be converted to feet by dividing by 0.3048.
Distances are ground and can be converted to grid by multiplying by the combined scale factor of 1.000186.

INTEGRATION DATA

POINT ID	NORTHING	EASTING	COMBINED SCALE FACTOR
A	469974.44	746255.32	1.000186
B	649202.97	746255.32	1.000186

IVAN B. WALLACE
ONTARIO LAND SURVEYOR LTD.
www.ibwallace.com

1000 Highway 5, Unit 105, Coburg, Ontario, Canada, L9A 5M4
phone: 724-5371 fax: 724-4663
coburg@ibwallace.com

Drawn by: DCC
Checked by: CC
FILE: 1-4-16A_PWOSC

PROJECT NO: K023276.117
DATE: 14-025
SHEET NO: 12-114-01

Schedule “A” – Table 1A: Property Specific Standards – Soil

<i>Parameter</i>	<i>Units</i>	<i>Maximum Soil Concentration</i>	<i>Site Condition Standard¹</i>	<i>Property Specific Standard</i>
Antimony	µg/g	2,400	1.3	2,880
Arsenic	µg/g	54	18	65
Barium	µg/g	27,000	220	32,400
Boron (Hot Water Soluble)	µg/g	220	1.5	264
Boron (Total)	µg/g	5,800	36	6,960
Cadmium	µg/g	5.0	1.2	6.0
Chromium Total	µg/g	197	70	236
Cobalt	µg/g	44	22	53
Copper	µg/g	1,300	92	1,560
Cyanide (CN-)	µg/g	0.42	0.051	0.50
Lead	µg/g	20,000	120	24,000
Mercury	µg/g	3.0	0.27	3.6
Molybdenum	µg/g	84	2	101
Naphthalene	µg/g	0.10	0.09	0.12
Nickel	µg/g	550	82	660
PHC F3	µg/g	1,600	240	1,920
PHC F4	µg/g	610	120	732
Selenium	µg/g	8.3	1.5	10
Silver	µg/g	1.6	0.5	1.9
Thallium	µg/g	1.2	1	1.4
Uranium	µg/g	210	2.5	252
Zinc	µg/g	33,000	290	39,600
Sodium Adsorption Ratio	NV ³	12	5	14
Calcium	µg/g	135,000	NV ²	162,000
Strontium	µg/g	175	NV ²	210

Notes:

- ¹ MECP (2011) Table 9: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional/Industrial/Commercial/Community Use
- ² Contaminant is not regulated under Ontario Regulation 153/04 and therefore there is no value (NV)
- ³ Sodium Adsorption Ratio is unitless

Schedule “A” – Table 1B: Property Specific Standards – Groundwater

<i>Parameter</i>	<i>Units</i>	<i>Maximum Groundwater Concentration</i>	<i>Site Condition Standard¹</i>	<i>Property Specific Standard</i>
Anthracene	µg/L	0.054	1	1
Phenanthrene	µg/L	0.17	380	380

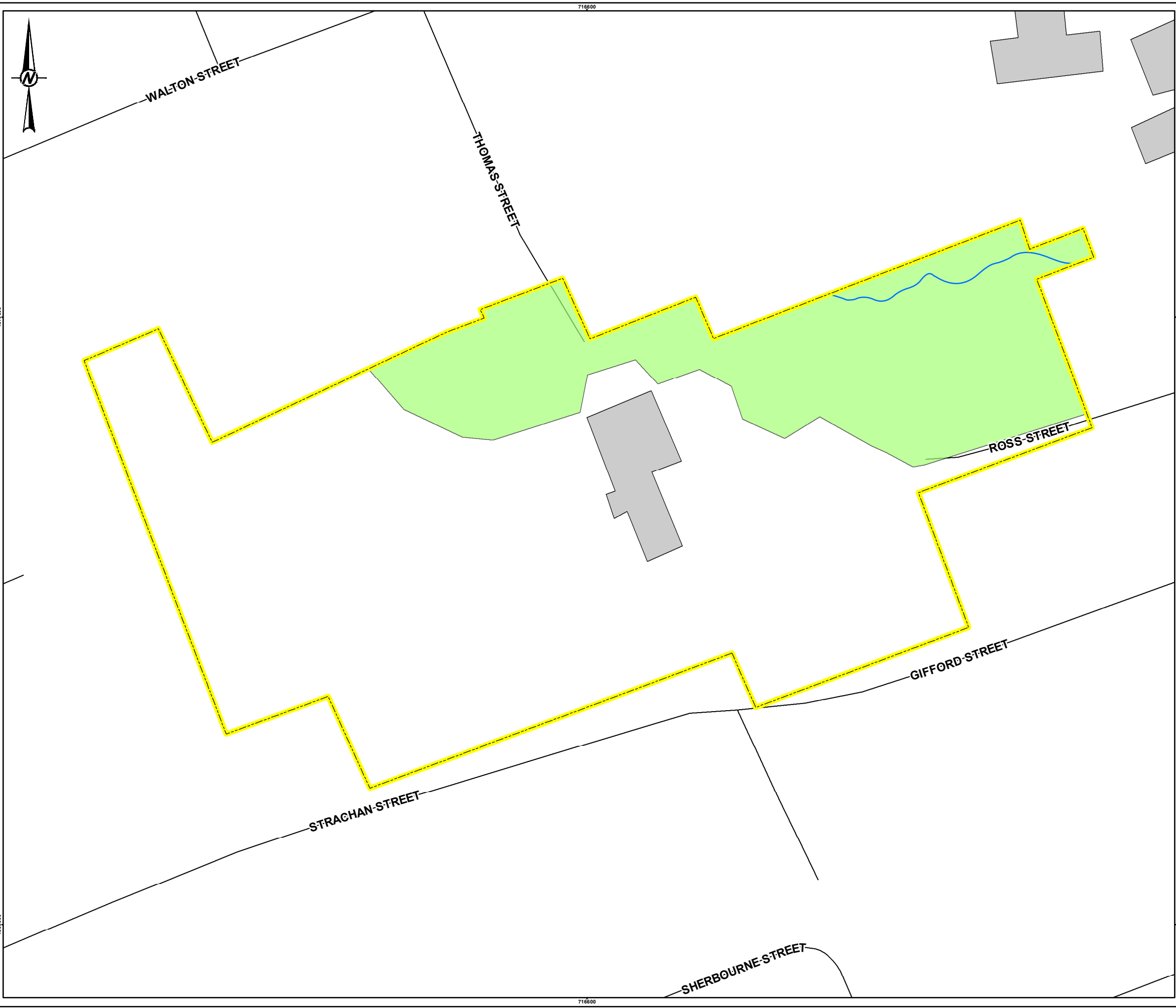
Notes:

¹ MECP (2011) Table 9: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional/Industrial/Commercial/Community Use

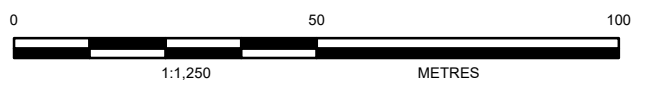
Schedule “A” – Table 1C: Indoor Air Trigger Values for Future Buildings

<i>Target Analyte</i>	<i>Commercial Target Indoor Air Vapour Concentrations (µg/m³)</i>
Cyanide (CN-)	5.72
Mercury	0.0644

Appendix: RMP Figures
(Figures L-1 to L-9)



- LEGEND**
- ST. MARY'S CREEK
 - ROAD
 - BUILDING
 - PHASE TWO ESA PROPERTY BOUNDARY = RA PROPERTY BOUNDARY = RSC PROPERTY BOUNDARY
 - AREA WHERE BARRIER TO SITESOILS RMM IS REQUIRED



NOTE(S)

1. EXTENT OF BARRIER TO SITE SOILS IS DETERMINED BASED ON THE FOLLOWING CRITERIA: (1) TABLE 9 STANDARD WITHIN 30M OF ST MARY'S CREEK AND (2) COMPONENT VALUES REPRESENTING POTENTIAL RISK TO HUMAN RECEPTORS RELATING TO DERMAL CONTACT.
2. TABLE 9 STANDARDS = MINISTRY OF THE ENIRONMENT, CONSERVATION, AND PARKS "SOIL, GROUND WATER, AND SEDIMENT STANDARDS FOR USE UNDER PART XV.1 ENVIRONMENTAL PROTECTION ACT, APRIL 2011" TABLE 9 STANDARDS: GENERIC SITE CONDITIONS STANDARDS FOR USE WITHIN 30 M OF A WATER BODY IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL / PARKLAND / INSTUTIONAL / INDUSTRIAL / COMMERCIAL / COMMUNITY PROPERTY USE FOR COARSE TEXTURED SOILS.
3. RELEVANT COMPONENT VALUES FOR DERMAL CONTACT REFERENCED FROM MECP RATIONALE FOR THE DEVELOPMENT OF SOIL AND GROUND WATER STANDARDS FOR USE AT CONTAMINATED SITES IN ONTARIO, APRIL 15, 2011.

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2020
 PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17N

CLIENT
 CANADIAN NUCLEAR LABORATORIES

PROJECT
 ENVIRONMENTAL RISK MANAGEMENT PLAN
 29 THOMAS STREET, PORT HOPE, ONTARIO

TITLE
 EXTENT OF BARRIER TO SITE SOILS RMM REQUIREMENT

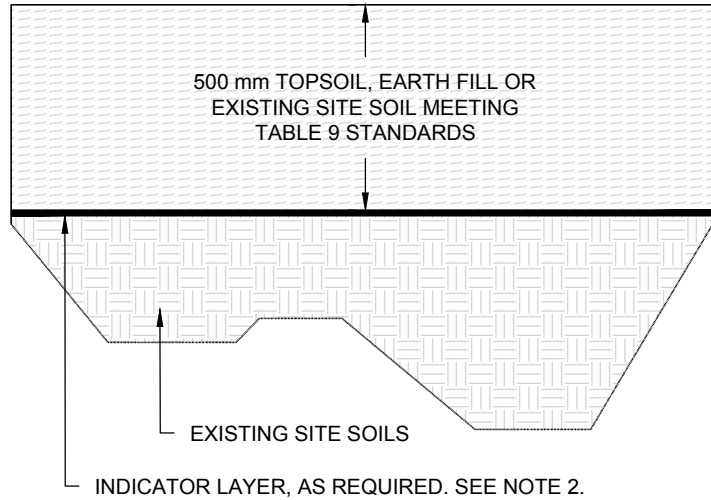
CONSULTANT	YYYY-MM-DD	2022-01-24
GOLDER MEMBER OF WSP	DESIGNED	JT
	PREPARED	SO
	REVIEWED	LKB
	APPROVED	LSB

PROJECT NO. 1783264 CONTROL 0033 REV. FIGURE L-1

PATH: S:\Client\CCanadian_Nuclear_Laboratories\Port_Hope\09_PRCO\1783264\033\4IS\003.mxd PRINTED ON: 2022-01-24 AT: 6:36:52 PM

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

DETAIL 1: TYPICAL FILL CAP BARRIER



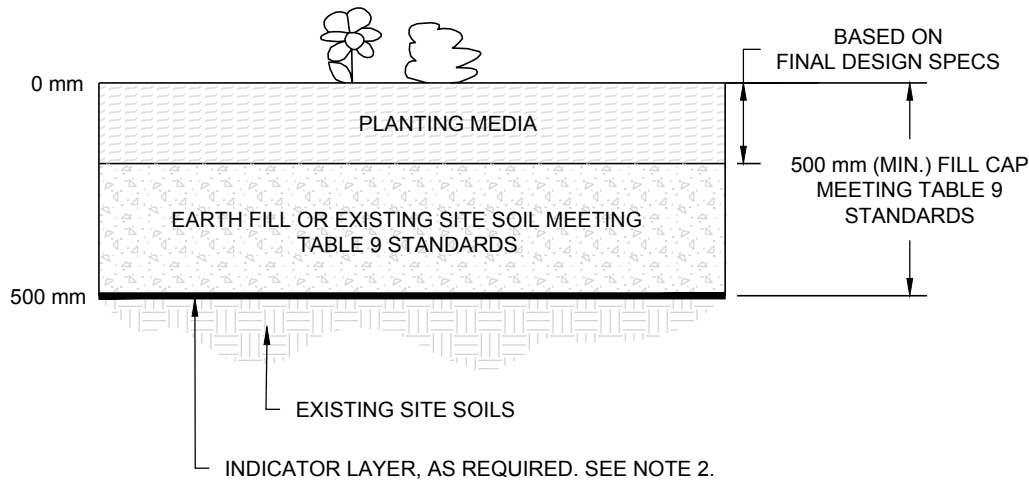
NOTE(S)

1. TABLE 9 STANDARDS = MINISTRY OF THE ENVIRONMENT, CONSERVATION, AND PARKS "SOIL, GROUND WATER, AND SEDIMENT STANDARDS FOR USE UNDER PART XV.1 ENVIRONMENTAL PROTECTION ACT, APRIL 2011" TABLE 9 STANDARDS: GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATER BODY IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL / PARKLAND / INSTUTIONAL / INDUSTRIAL / COMMERCIAL / COMMUNITY PROPERTY USE FOR COARSE TEXTURED SOILS.
2. INDICATOR LAYER TO BE PLACED BELOW RMM FILL CAP BARRIER WHERE CONSTRUCTED DEPTH IS LESS THAN 1000 mm. INDICATOR LAYER NOT REQUIRED WHERE RMM FILL CAP BARRIER ABUTS PROPERTY PERIMETER (LATERAL DIMENSION APPROXIMATELY 500 mm).



NOT TO SCALE

DETAIL 2: TYPICAL FILL CAP FOR PLANTING BEDS



CLIENT
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PROJECT
 ENVIRONMENTAL RISK MANAGEMENT PLAN
 29 THOMAS STREET, PORT HOPE, ONTARIO

TITLE
FILL CAP BARRIER TO SITE SOILS – TYPICAL DETAILS

CONSULTANT
 YYY-MM-DD 2023-05-15

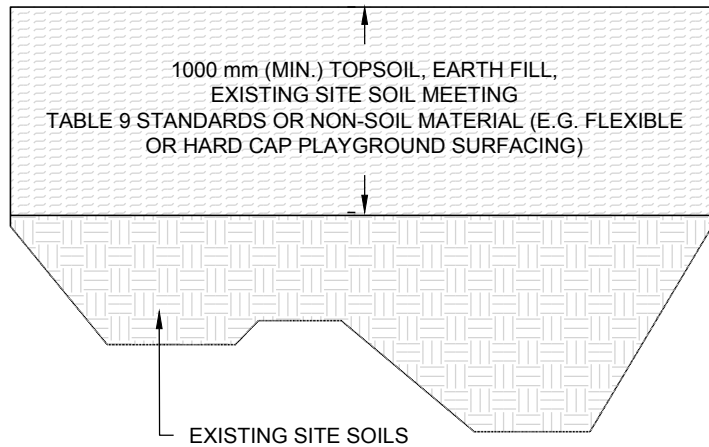


DESIGNED	
PREPARED	DD
REVIEWED	LKB
APPROVED	LSB

PROJECT NO. 1783264	PHASE	REV. A	FIGURE L-2A
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A 28 mm

DETAIL 3: BARRIER TO SITE SOILS FOR CHILDREN'S PLAY AREAS



NOTE(S)

- TABLE 9 STANDARDS = MINISTRY OF THE ENVIRONMENT, CONSERVATION, AND PARKS "SOIL, GROUND WATER, AND SEDIMENT STANDARDS FOR USE UNDER PART XV.1 ENVIRONMENTAL PROTECTION ACT, APRIL 2011" TABLE 9 STANDARDS: GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATER BODY IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL / PARKLAND / INSTUTIONAL / INDUSTRIAL / COMMERCIAL / COMMUNITY PROPERTY USE FOR COARSE TEXTURED SOILS.



NOT TO SCALE

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 CANADIAN NUCLEAR LABORATORIES

PROJECT
 ENVIRONMENTAL RISK MANAGEMENT PLAN
 29 THOMAS STREET, PORT HOPE, ONTARIO

TITLE
FILL CAP BARRIER TO SITE SOILS – TYPICAL DETAILS

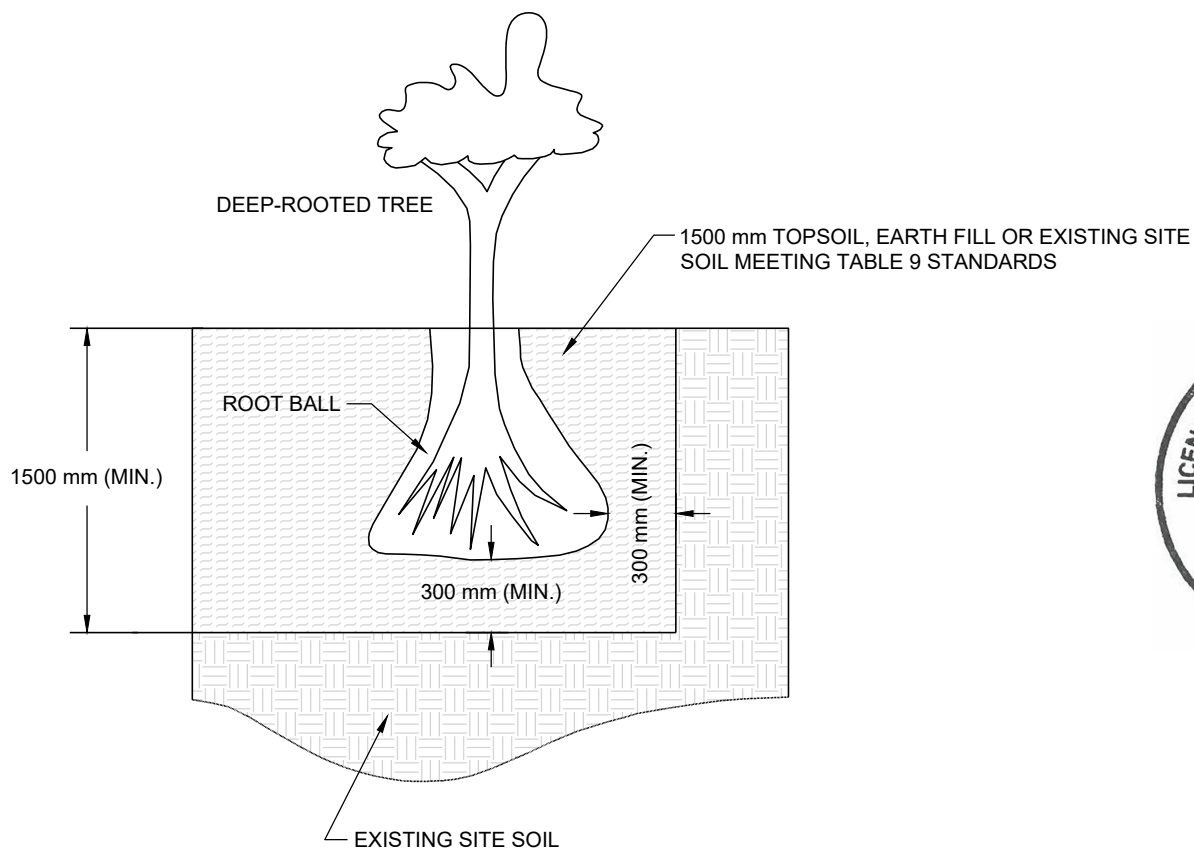
CONSULTANT
 YYYY-MM-DD 2024-03-07



DESIGNED	
PREPARED	DD
REVIEWED	LKB
APPROVED	LSB

PROJECT NO. 1783264	PHASE	REV. A	FIGURE L-2B
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
 25 mm



NOTE(S)

1. TABLE 9 STANDARDS = MINISTRY OF THE ENVIRONMENT, CONSERVATION, AND PARKS "SOIL, GROUND WATER, AND SEDIMENT STANDARDS FOR USE UNDER PART XV.1 ENVIRONMENTAL PROTECTION ACT, APRIL 2011" TABLE 9 STANDARDS: GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATER BODY IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL / PARKLAND / INSTUTIONAL / INDUSTRIAL / COMMERCIAL / COMMUNITY PROPERTY USE FOR COARSE TEXTURED SOILS.



NOT TO SCALE

CLIENT
 CANADIAN NUCLEAR LABORATORIES

PROJECT
 ENVIRONMENTAL RISK MANAGEMENT PLAN
 29 THOMAS STREET, PORT HOPE, ONTARIO

TITLE
FILL CAP BARRIER TO SITE SOILS IN AREAS OF DEEP-ROOTED TREES (NEW) – TYPICAL DETAILS

CONSULTANT	YYYY-MM-DD	2022-07-20
 GOLDER MEMBER OF WSP	DESIGNED	
	PREPARED	DD
	REVIEWED	LKB
	APPROVED	LSB

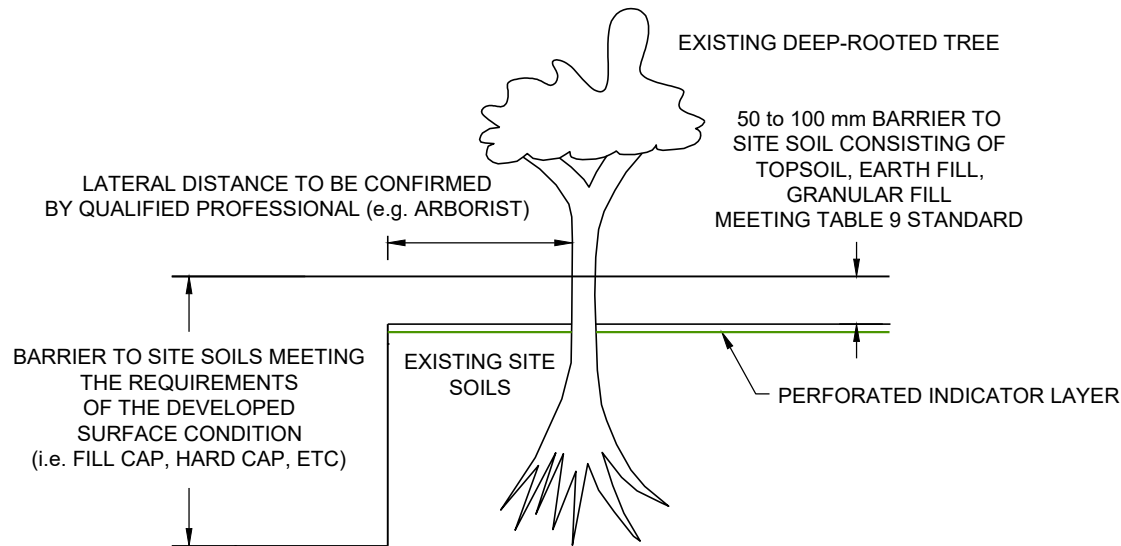
PROJECT NO. 1783264	PHASE	REV. A	FIGURE L-3
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
 25 mm



NOTE(S)

1. TABLE 9 STANDARDS = MINISTRY OF THE ENVIRONMENT, CONSERVATION, AND PARKS "SOIL, GROUND WATER, AND SEDIMENT STANDARDS FOR USE UNDER PART XV.1 ENVIRONMENTAL PROTECTION ACT, APRIL 2011" TABLE 9 STANDARDS: GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATER BODY IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL / PARKLAND / INSTITUTIONAL / INDUSTRIAL / COMMERCIAL / COMMUNITY PROPERTY USE FOR COARSE TEXTURED SOILS.
2. EXCAVATION (MANUAL) AND REMOVAL OF EXISTING SOIL TO 50 TO 100 mm BELOW GRADE IN PROXIMITY TO MATURE TREES WITHIN A RADIUS DETERMINED BY A QUALIFIED PROFESSIONAL (e.g. ARBORIST).
3. COARSELY PERFORATED OR GRID-STYLE INDICATOR LAYER TO BE PLACED AT BASE OF EXCAVATION.



NOT TO SCALE

CLIENT
 CANADIAN NUCLEAR LABORATORIES

PROJECT
 ENVIRONMENTAL RISK MANAGEMENT PLAN
 29 THOMAS STREET, PORT HOPE, ONTARIO

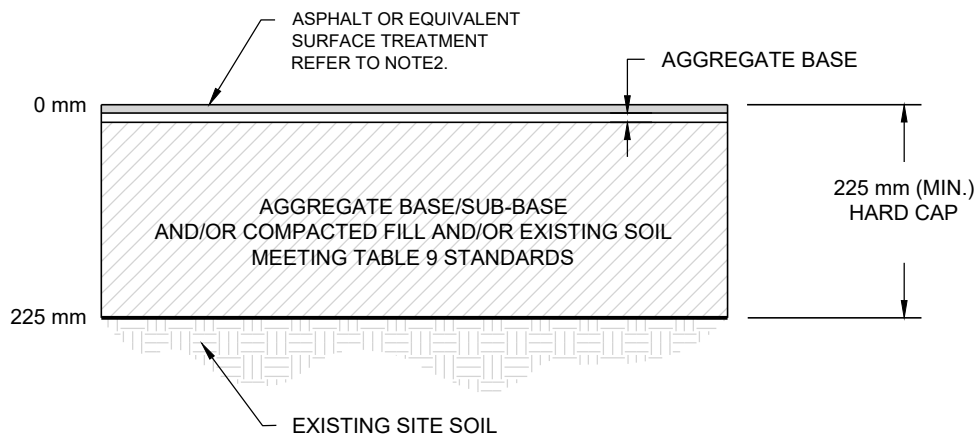
TITLE
FILL CAP BARRIER TO SITE SOILS IN AREAS OF DEEP-ROOTED TREES (EXISTING) – TYPICAL DETAILS

CONSULTANT	YYYY-MM-DD	2022-01-23
	DESIGNED	
	PREPARED	DD
	REVIEWED	LKB
	APPROVED	LSB



PROJECT NO. 1783264	PHASE	REV. A	FIGURE L-4
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A 28 mm



NOTE(S)

1. TABLE 9 STANDARDS = MINISTRY OF THE ENVIRONMENT, CONSERVATION, AND PARKS "SOIL, GROUND WATER, AND SEDIMENT STANDARDS FOR USE UNDER PART XV.1 ENVIRONMENTAL PROTECTION ACT, APRIL 2011" TABLE 9 STANDARDS: GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATER BODY IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL / PARKLAND / INSTUTIONAL / INDUSTRIAL / COMMERCIAL / COMMUNITY PROPERTY USE FOR COARSE TEXTURED SOILS.
2. FINAL PAVEMENT AND SUBGRADE DESIGN REQUIREMENTS SHALL BE DETERMINED BY A LICENSED PROFESSIONAL ENGINEER, AND MEETING OR EXCEEDING THE MINIMUM HARD CAP DIMENSION SHOWN.



NOT TO SCALE

CLIENT
 CANADIAN NUCLEAR LABORATORIES

PROJECT
 ENVIRONMENTAL RISK MANAGEMENT PLAN
 29 THOMAS STREET, PORT HOPE, ONTARIO

TITLE
HARD CAP BARRIER TO SITE SOILS – TYPICAL DETAILS

CONSULTANT
 YYYY-MM-DD 2022-01-23



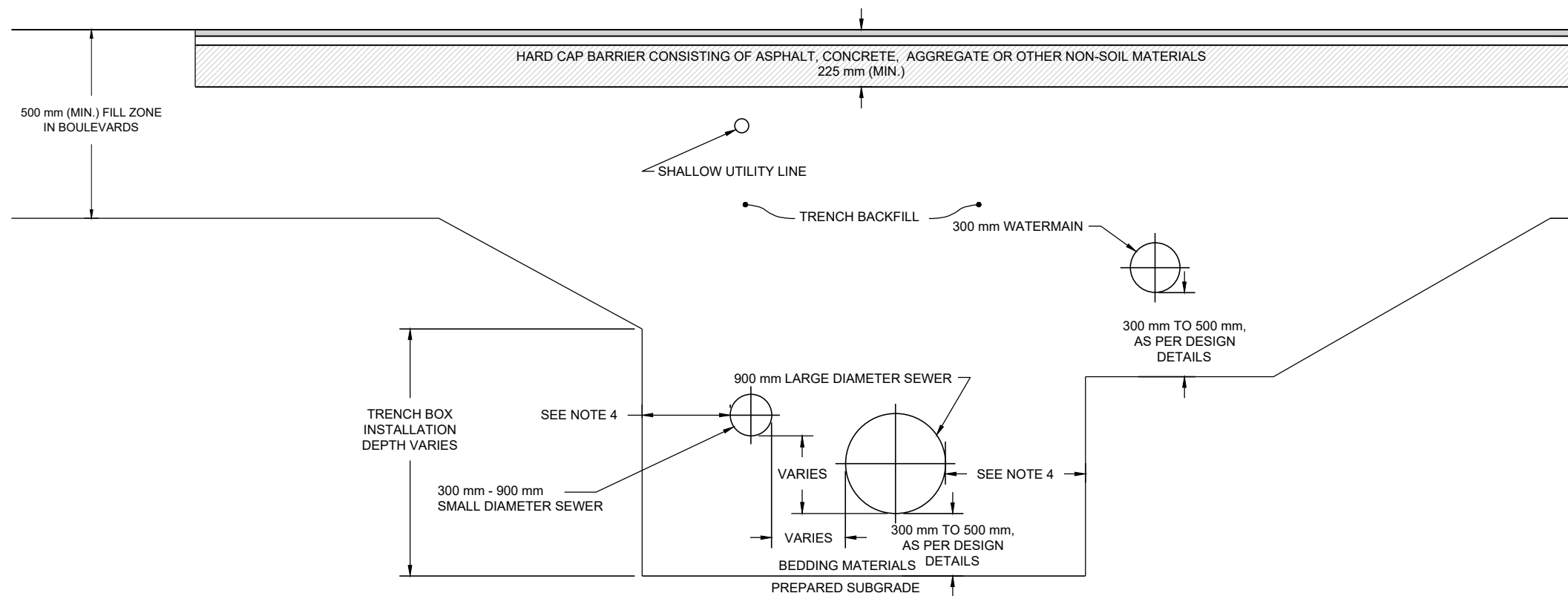
DESIGNED
 PREPARED DD
 REVIEWED LKB
 APPROVED LSB

PROJECT NO. 1783264 PHASE REV. A FIGURE L-5

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

25 mm

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NOTE(S)

1. VERTICAL AND NEAR VERTICAL UTILITY INSTALLATIONS MUST HAVE AN ZONE OF NON-SOIL, OR FILL MATERIAL MEETING TABLE 9 STANDARD TO A DIAMETER OF AT LEAST 600 mm SURROUNDING THE PIPE OR SHAFT.
2. CLEAN FILL ZONES ARE NOT REQUIRED ADJACENT TO AUGERED OR DRILLED FOUNDATIONS SUCH AS FOR UTILITY POLES OR CAISSON FOUNDATIONS FOR SIGNS.
3. TRENCH BACKFILL TO CONSIST OF NON-SOIL, OR FILL MATERIAL MEETING TABLE 9 STANDARD.
4. MINIMUM DIMENSIONS TO BE DETERMINED BY EXCAVATION REQUIREMENTS AND CITY REQUIREMENTS FOR INSTALLATIONS AND REPAIRS.
5. TABLE 9 STANDARDS = MINISTRY OF THE ENVIRONMENT, CONSERVATION, AND PARKS "SOIL, GROUND WATER, AND SEDIMENT STANDARDS FOR USE UNDER PART XV.1 ENVIRONMENTAL PROTECTION ACT, APRIL 2011" TABLE 9 STANDARDS: GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATER BODY IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL / PARKLAND / INSTITUTIONAL / INDUSTRIAL / COMMERCIAL / COMMUNITY PROPERTY USE FOR COARSE TEXTURED SOILS.



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PROJECT
ENVIRONMENTAL RISK MANAGEMENT PLAN
29 THOMAS STREET, PORT HOPE, ONTARIO

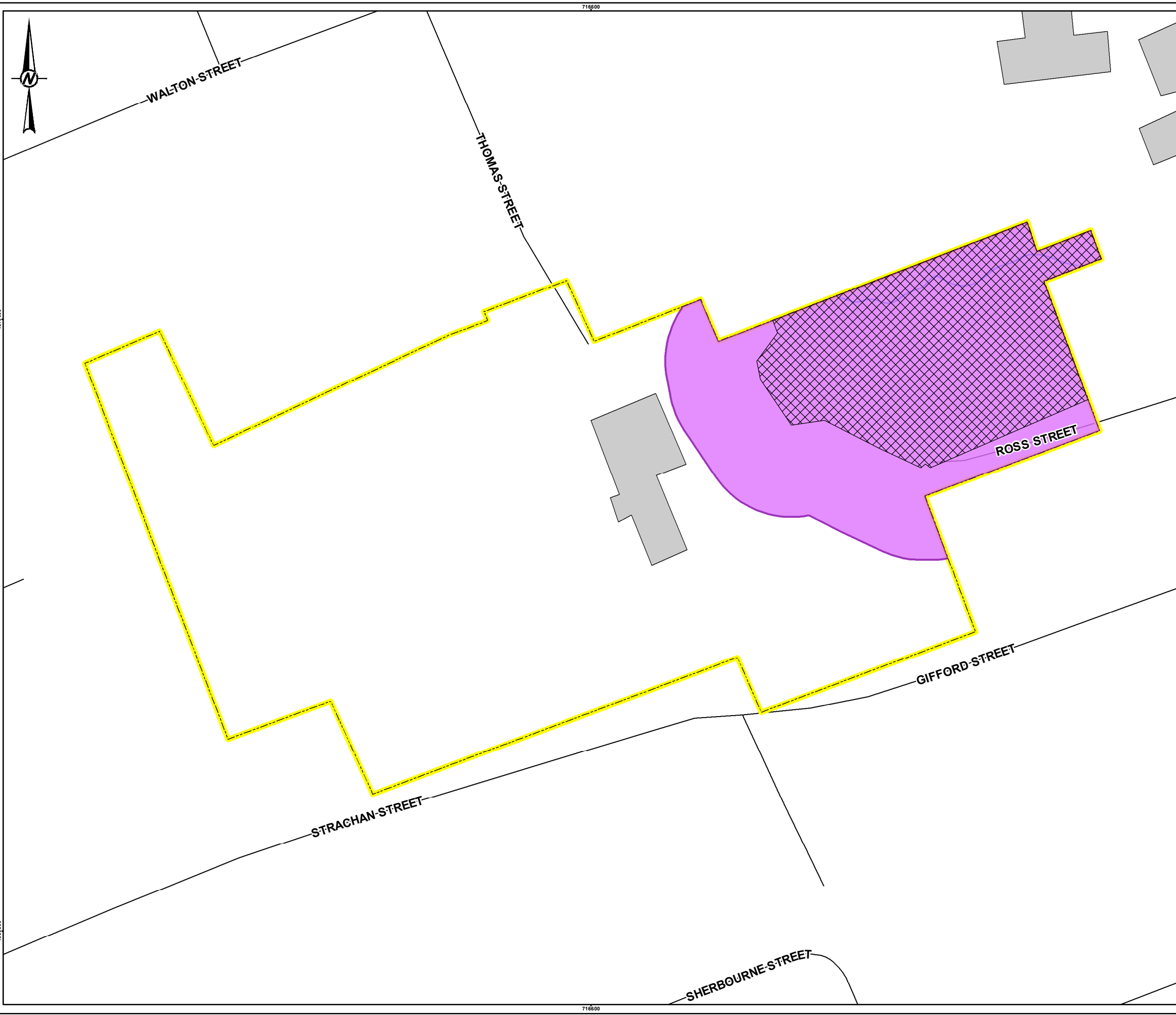
TITLE
HARD CAP BARRIER TO SITE SOILS FOR ROADWAYS AND UTILITIES – TYPICAL DETAILS

CONSULTANT
YYYY-MM-DD 2022-01-23

	DESIGNED	
	PREPARED	DD
	REVIEWED	LKB
	APPROVED	LSB

PROJECT NO. 1783264 PHASE REV. A FIGURE L-6

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- LEGEND**
- ST. MARY'S CREEK
 - ROAD
 - BUILDING
 - PHASE TWO ESA PROPERTY BOUNDARY = RA PROPERTY BOUNDARY = RSC PROPERTY BOUNDARY
 - EXTENT OF MERCURY AND CYANIDE IN SOIL ABOVE THE TABLE 9 STANDARDS
 - AREA WHERE VAPOUR INTRUSION RMM IS REQUIRED



NOTE(S)
 1. TABLE 9 STANDARDS = MINISTRY OF THE ENVIROMENT, CONSERVATION, AND PARKS "SOIL, GROUND WATER, AND SEDIMENT STANDARDS FOR USE UNDER PART XV.1 ENVIRONMENTAL PROTECTION ACT, APRIL 2011" TABLE 9 STANDARDS: GENERIC SITE CONDITIONS STANDARDS FOR USE WITHIN 30 M OF A WATER BODY IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL / PARKLAND / INSTUTIONAL / INDUSTRIAL / COMMERCIAL / COMMUNITY PROPERTY USE FOR COARSE TEXTURED SOILS.

REFERENCE(S)
 BASE DATA - MNR LIO, OBTAINED 2020
 PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17N

CLIENT
 CANADIAN NUCLEAR LABORATORIES

PROJECT
 ENVIRONMENTAL RISK MANAGEMENT PLAN
 29 THOMAS STREET, PORT HOPE, ONTARIO

TITLE
 EXTENT OF VAPOUR INTRUSION RMM REQUIREMENT

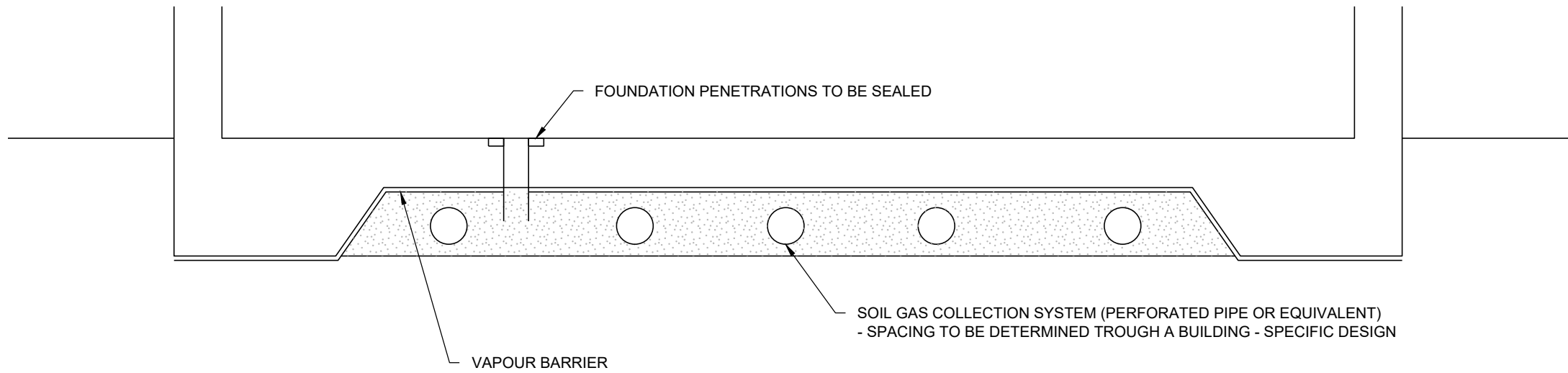
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GOLDER MEMBER OF WSP	DESIGNED	JT
	PREPARED	SO
	REVIEWED	LKB
	APPROVED	LSB

PROJECT NO. 1783264 CONTROL 0033 REV. FIGURE L-7

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

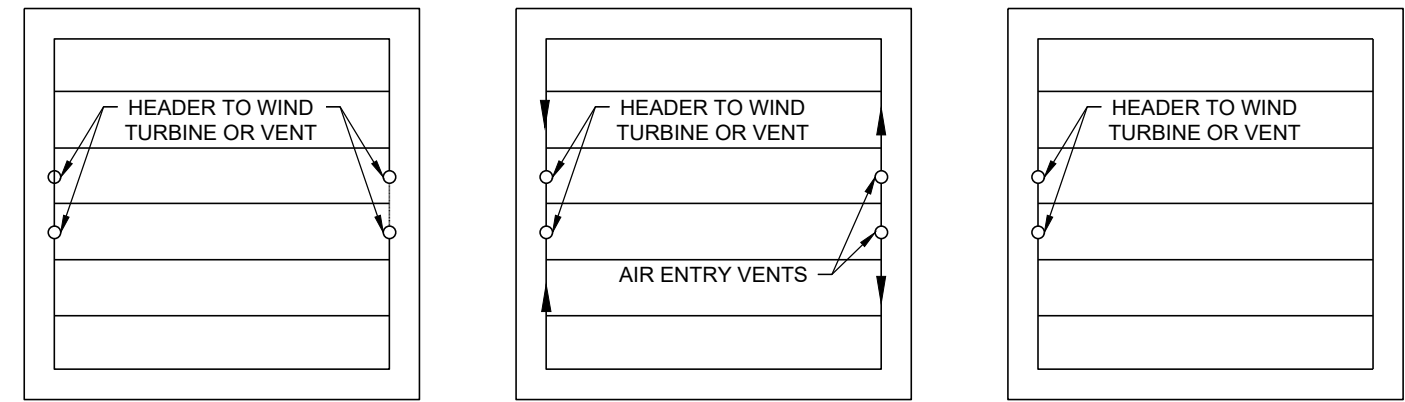
TYPICAL PROFILE VIEW FOR VENTING PIPES



LEGEND

1. CRACKS, OPENINGS AND UTILITY PENETRATIONS TO BE SEALED WITH AN ELASTOMERIC SEALANT MATERIAL.
2. AS AN ALTERNATIVE TO VENT PIPE INSTALLATION, A PLASTIC DOMEWORK AERATED SUBFLOOR MAY BE INSTALLED.
3. VENT PIPES ARE TO BE CONNECTED TO HEADERS AND RISERS HAVING A DIAMETER LARGER THAN THE LATERALS.
4. NON-PERFORATED PORTIONS OF THE VENTING PIPE SYSTEM SHALL BE SLOPED DOWNWARD AT A CONTINUOUS GRADE OF 1% OR GREATER TOWARD THE PERFORATED LATERALS.
5. FLEXIBLE EXPANSIONS JOINTS OR CONNECTORS SHOULD BE INSTALLED TO ACCOMMODATE DIFFERENTIAL SETTLEMENT.
6. REFER TO FIGURE L-9 FOR CORRESPONDING VENTING DETAILS.
7. FINAL VAPOUR MITIGATION SYSTEM DESIGN TO BE PREPARED BY A PROFESSIONAL ENGINEER.

TYPICAL LAYOUT PLAN VIEWS FOR VENTING PIPES



PERIMETER RING VENTING PIPE LAYOUT

TREE VENTING PIPE LAYOUT WITH AIR ENTRY PIPES

TREE VENTING PIPE LAYOUT WITHOUT AIR ENTRY PIPES

NOT TO SCALE

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PROJECT
ENVIRONMENTAL RISK MANAGEMENT PLAN
29 THOMAS STREET, PORT HOPE, ONTARIO

TITLE
CONCEPTUAL DESIGN FOR VENT PIPE AND RISER ON VAPOUR INTRUSION MITIGATION SYSTEM

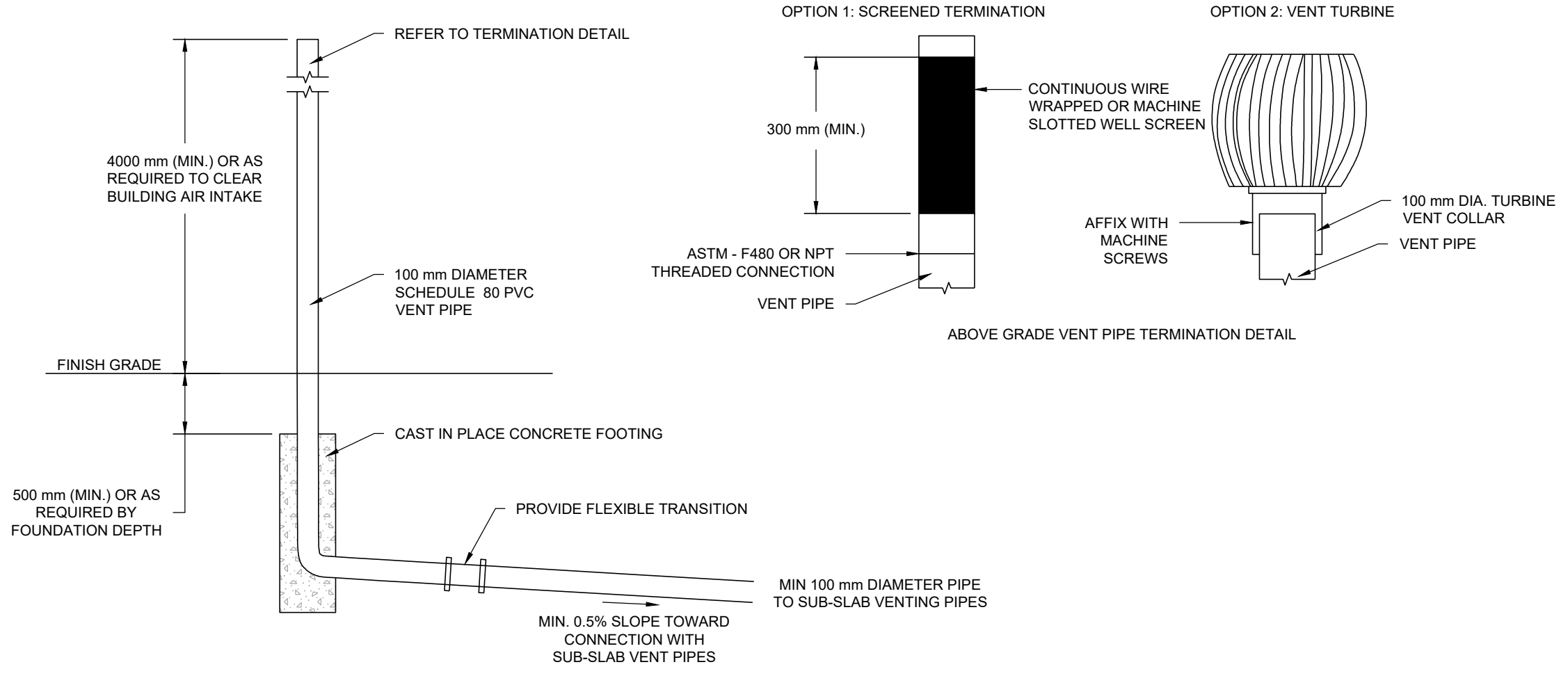
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DESIGNED		
PREPARED	DD	
REVIEWED	LKB	
APPROVED	LSB	

PROJECT NO.	PHASE	REV.	FIGURE
1783264		A	L-8

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ABOVE GRADE PIPING CONFIGURATION FOR SUB-SLAB VAPOUR MITIGATION SYSTEM

NOT TO SCALE



- LEGEND**
- REFER TO FIGURE L-8 FOR CORRESPONDING VENT PIPE AND RISER DETAILS.
 - FINAL VAPOUR MITIGATION SYSTEM DESIGN TO BE PREPARED BY A PROFESSIONAL ENGINEER.

CLIENT
CANADIAN NUCLEAR LABORATORIES

PROJECT
ENVIRONMENTAL RISK MANAGEMENT PLAN
29 THOMAS STREET, PORT HOPE, ONTARIO

TITLE
CONCEPTUAL VENTING DETAILS FOR VAPOUR INTRUSION MITIGATION SYSTEM

CONSULTANT	YYYY-MM-DD	2022-01-23
DESIGNED		
PREPARED	DD	
REVIEWED	LKB	
APPROVED	LSB	



PROJECT NO. 1783264 PHASE REV. A FIGURE L-9

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