

Certificate of Property Use

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

Certificate of property use number:8733-B5UL2N-A

Risk assessment number: 0503-7PYNVA

Client: **River Realty Development (1976) Inc.**
PO Box 576 Stn Main
Niagara Falls, Ontario
L2E 6V2
(Owner)

Site: **104-120 Welland Avenue**
St. Catharines, Ontario

with a legal description as set out in Schedule "A" attached:

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. Barrier to site soils. | Yes |
| f. implementing a soil management plan. | Yes |
| g. 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 shall be maintained for as long as Contaminants of Concern are present on the Property.

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- b. The site specific health and safety plan for workers exposed to site soils shall be required for as long as the Contaminants of Concern are present on the Property.
- c. A soil management plan for any activities potentially in contact with or exposing site soils shall be required for as long as the Contaminants of Concern are present on the Property.
- d. The indoor air monitoring for any building on the Property shall commence upon issuance of the CPU and will be carried out on a quarterly basis (every three months) for the first year, tri annually (every four months) for the second year and thereafter until such time as the Director, upon application by the Owner, has reviewed the data available and either alters or revokes the CPU.
- e. The ground water monitoring program on the Property shall commence upon issuance of the CPU and shall be carried out on a quarterly basis (every three months) for the first year, semi annually (every six months) for the second year and thereafter until such time as the Director, upon application by the Owner, has reviewed the data available and either alters or revokes the CPU.
- f. The other Risk Management Measures shall continue indefinitely until the Director amends 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, as amended.

“**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 section 3.2 of the CPU.

“**CPU**” means this Certificate of Property Use Number 8733-B5UL2N-A, as may be altered from time

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to time.

"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.

"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, including the person to whom this CPU is issued, River Realty Development (1976) Inc., the current registered owner of the Property.

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

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

"Property Specific Standards" 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.

"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 O. Reg. 153/04.

"Risk Assessment" means the Risk Assessment number 0503-7PYNVA accepted by the Director on October 23, 2018 and set out in the following documents:

- *"Risk Assessment, 104-120 Welland Ave and 2 North Street, St Catharines, Ontario"*, by Barenco Inc, dated August 21, 2009;
- *"Addendum 1, Risk Assessment for 104-120 Welland Avenue and 2 North Street, St. Catharines, Ontario"*, by Barenco Inc., dated April 9, 2010;
- *"Addendum 2, Risk Assessment for 104-120 Welland Avenue and 2 North Street, St. Catharines, Ontario"*, by Barenco Inc., dated January 31, 2011;
- *"Addendum 2, Risk Assessment, Appendix G – CD Attachments, 104-120 Welland Avenue and 2 North Street, St. Catharines, Ontario"*, by Barenco Inc., dated February 18, 2011;
- *"Addendum 3, Risk Assessment for 104-120 Welland Ave. and 2 North St., St. Catharines, Ontario"*, by Barenco Inc., dated November 24, 2011;

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- “Addendum 4, Risk Assessment for 104-120 Welland Ave. and 2 North St., St. Catharines, Ontario”, by Barenco Inc., dated July 25, 2012;
- “Addendum 5, Risk Assessment for 104-120 Welland [Avenue] and 2 North Street, St. Catharines, Ontario”, by Exp Services Inc., dated October 23, 2012;
- “Addendum 6, Risk Assessment for 104-120 Welland Ave. and 2 North St., St. Catharines, Ontario”, by Exp., dated September 13, 2013 ;
- “Addendum 7, Risk Assessment for 104-120 Welland Ave. and 2 North St., St. Catharines, Ontario”, by Exp., dated July 15, 2014;
- “RE: RA for 104-120 Welland Avenue, 2 North St, St Catharines; RA1051-09; IDS# 0503-7PYNVA”, email from Theresa Phillips, exp Services Inc., rec’d by SDB on November 24, 2014, with following attachments:
 - Phase Two CSM_Welland Avenue + Figures 1-8.pdf;
 - 10348-CSM Figures Welland Avenue - Figures 16-19.pdf;
 - 10348-CSM Figures Welland Avenue - Figures 9a-15.pdf;
 - Phase Two CSM_North Street +Figures 1-11.pdf; and,
 - 10348-CSM Figures North Street - Figures 12d-19.pdf
- “Addendum 8, Risk Assessment for 104-120 Welland Ave. and 2 North St., St. Catharines, Ontario”, by Exp, dated September 18, 2015;
- “Risk Assessment Addendum 9, 104-120 Welland Avenue and 2 North Street, St. Catharines, Ontario”, prepared by Exp Services Inc., dated September 19, 2016;
- “Risk Assessment Addendum 10, 104-120 Welland Avenue and 2 North Street, St. Catharines, Ontario”, prepared by Exp Services Inc., dated March 26, 2018;
- “RE: RA1051-09 RA for 104-120 Welland Avenue and 2 North St, St Catharines; IDS# 0503-7PYNVA”, email from Travis Tan, Exp, received by TASDB on August 17, 2018, with following attachments:
 - “Risk Assessment Addendum 11, 104-120 Welland Avenue and 2 North Street, St. Catharines, Ontario”, prepared by Exp Services Inc., dated August 17, 2018, File name: RA1051-09_Add11_Aug2018.pdf;
 - Proposed severance site plan; file name: Proposed Severance.pdf
- “RE: RA1051-09 RA for 104-120 Welland Avenue and 2 North St, St Catharines; IDS# 0503-7PYNVA”, email from Tara Tait, Exp, received by TASDB on October 15, 2018; and
- “RE: RA1051-09 RA for 104-120 Welland Avenue and 2 North St, St Catharines; IDS# 0503-7PYNVA”, email from Tara Tait, Exp, received by TASDB on October 19, 2018, with following attachment:
 - Updated Financial Assurance; file name: 10348_104 to 120 Welland Ave_Revised FA.pdf

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

"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.

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- 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: *“commercial” or “community” or “industrial” use*, as defined in O. Reg. 153/04.
- 3.2** The Contaminants on, in or under the Property that are present either above the Industrial/Commercial/Community Property Use Standards within Table 3 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 or for which there are no such standards, are set out in the Risk

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Assessment (Contaminants of Concern). The Property Specific Standards for these Contaminants of Concern are set out in Schedule 'B' which are attached to and form part of the CPU. Also attached to and forming part of the CPU for reference purposes are:

- *“Plan of Survey of Part of Lots 273 & 273A, Corporation Plan 2, City of St. Catharines, Regional Municipality of Niagara”*, prepared by Matthews, Cameron, Heywood-Kerry T. Howe Surveying Ltd., dated November 22, 2018;
- Figure 1 entitled *“Ground Water Monitoring Program – Monitoring Well Locations 104-120 Welland Avenue St. Catharines, Ontario”*, dated November 2018 prepared by exp;
- Figure Q-1 entitled *“Areal Extent of Soil Capping Risk Management Measures 104-120 Welland Avenue St. Catharines, Ontario”*, dated November 2018 prepared by exp;
- Figure Q-2 entitled *“Soil Barrier Details 104-120 Welland Avenue and 2 North Street St. Catharines, Ontario”*, dated September, 2013 by exp;
- Figure Q-3 entitled *“Soil Vapour Membrane Barrier Details – New Building Construction 104-120 Welland Avenue and 2 North Street St. Catharines, Ontario”*, dated September, 2013 by exp;
- Figure Q-4 entitled *“Conceptual Passive Sub Slab Depressurization System, Slab-On-Grade 104-120 Welland Avenue and 2 North Street St. Catharines, Ontario”*, dated July 2014 by exp;
- Figure Q-5 entitled *“Conceptual Passive Sub-Slab Depressurization System Building with Basement 104-120 Welland Avenue and 2 North Street St. Catharines, Ontario”*, dated September 2015 by exp;
- Figure Q-6 entitled *“Conceptual Active Subslab Depressurization System Building with Basement 104-120 Welland Avenue and 2 North Street St. Catharines, Ontario”*, dated September 2015 by exp;
- Figure Q-7 entitled *“Conceptual Active Sub Slab Depressurization System, Slab-on-Grade 104-120 Welland Avenue and 2 North Street St. Catharines, Ontario”*, dated July 2014 by exp;
- Figure Q-8 entitled *“Sub-Slab Depressurization System Site Plan View 104-120 Welland Avenue St. Catharines, Ontario”*, dated March 2016 by exp;
- Figure Q-9 entitled *“Plan View of Plenum and Areas for Saw Cut Sub-Slab Depressurization Details 104-120 Welland Avenue St. Catharines Ontario”*, dated June 2015 by exp;
- Figure Q-10 entitled *“Vertical Riser and Plenum Connections Cross Section Sub-Slab Depressurization Details 104-120 Welland Avenue St. Catharines Ontario”*, dated June 2015 by exp;
- Figure Q-11 entitled *“Plan View of Plenum and Areas for Saw Cut Sub-Slab Depressurization Details 104-120 Welland Avenue St. Catharines Ontario”*, dated June 2015 by exp;
- Figure Q-12 entitled *“Vertical Riser and Plenum Connections Cross Section Sub-Slab Depressurization Details 104-120 Welland Avenue St. Catharines Ontario”*, dated June 2015 by exp;
- Figure Q-13 entitled *“Horizontal Header Pipe Sub-Slab Depressurization Details 104-120 Welland Avenue St. Catharines Ontario”*, dated June 2015 by exp;
- Figure Q-14 entitled *“Sub-Slab Depressurization System Specifications 104-120 Welland Avenue St. Catharines Ontario”*, dated June 2015 by exp;

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- Figure Q-15 entitled “*Plan View of Plenum and Areas for Saw Cut Sub-Slab Depressurization Details –Cartridge World 104-120 Welland Avenue St. Catharines Ontario*”, dated March 2016 by exp;
- Figure Q-16 entitled “*Plan View of Plenum and Areas for Saw Cut Sub-Slab Depressurization Details – Kims Jewelers 104-120 Welland Avenue St. Catharines Ontario*”, dated March 2016 by exp;
- Figure Q-17 entitled “*Vertical Rise and Plenum Connections Cross Section Sub-Slab Depressurization System Details- Cartridge World 104-120 Welland Avenue St. Catharines Ontario*”, dated March 2016 by exp;
- Figure Q-18 entitled “*Vertical Rise and Plenum Connections Cross Section Sub-Slab Depressurization System Details- Kims Jewelers 104-120 Welland Avenue St. Catharines Ontario*”, dated March 2016 by exp;
- Figure Q-19 entitled “*Horizontal Header Pipe Sub-Slab Depressurization System Details- Cartridge World 104-120 Welland Avenue St. Catharines Ontario*”, dated March 2016 by exp; and
- Figure Q-20 entitled “*Horizontal Header Pipe Sub-Slab Depressurization System Details- Kims Jewelers 104-120 Welland Avenue St. Catharines Ontario*”, dated March 2016 by exp.

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 that has been identified in the Risk Assessment.

3.4 The Risk Assessment indicates the presence of Contaminants of Concern which require on-going restriction of land use and pathway elimination. As such, it is necessary to restrict the use of the Property as set out in the Risk Assessment and 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 Item 4.1, carry out or cause to be carried out the following key elements of the Risk Management Measures:
- (a) The Property shall be covered by a barrier to the site soils designed, installed and maintained so as to prevent exposure to the Contaminants of Concern. The barrier to site soils shall consist of a building slab, building foundation, asphalt areas, and/or soil, as specified below:

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- i. Building slab, or a building foundation and floor slab consisting of concrete to a minimum depth of 75 mm followed by 150 mm of Granular "A";
 - ii. Asphalt areas to consist of a minimum of 75 mm asphalt mix followed by 150 mm of Granular "A";
 - iii. Placement of a minimum depth of 0.50 m of soil meeting the Commercial/Industrial/Community Property use criteria in Table 3 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 in landscaped areas with shallow rooting plants having a rooting depth no greater than 0.15 metres;
 - iv. Placement of a minimum depth of 1.0 m of soil meeting the Commercial/Industrial/Community Property use criteria in Table 3 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 in landscaped areas with shallow rooting plants having a rooting depth greater than 0.15 metres; and
 - v. Where use or development commences on portion(s) of the Property, those portions of the Property not under development or in use need not be covered with a barrier, provided that exposure to the Contaminants of Concern is prevented by a fence barrier to prevent the general public from accessing the site and a dust control plan to prevent surface soil from impacting the adjacent properties.
- (b) Inspection and maintenance program shall be prepared and implemented to ensure the continuing integrity of the barrier risk management measure. The inspection program shall include, at a minimum, semi-annual (spring and fall) inspections of the barriers to site soil and/or any fencing. Where there is evidence that the soil barrier has been compromised by perturbation or erosion, soil testing may be required to ensure site soils has not been exposed and that soil barriers remain at a minimum of 0.50 m thickness for protection of ecological and human health. If a compromise is detected at any of the barrier risk management measures, these barriers shall be repaired immediately to the original standards as specified in section 4.2 (a) of the CPU. Results of all inspections, including any analytical test results if applicable, and any maintenance and repairs of the barrier shall be recorded in a log book maintained by the Owner and made available upon request by a Provincial Officer.
- (c) The ground water monitoring program shall commence upon issuance of the CPU and be carried out on a quarterly basis (every three months) for the first year, semi-annually (every six months) for the second and third year and each year thereafter until such time as the Director, upon application by the Owner, has reviewed the data available and either amends or revokes the CPU. The monitoring shall be carried out as follows:
- i. The ground water monitoring program shall consist of the sampling of wells MW501, MW502, MW503, MW205 and MW405 as shown on Figure 1 of the CPU;
 - ii. Samples shall be taken for tetrachloroethylene;
 - iii. Water from all monitoring wells shall be sampled according to Ministry's Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (MOE, 2011) as amended from time to time;

- iv. The Owner shall keep a copy of all sampling data available for inspection by a Provincial Officer upon request;
 - v. Should there be a reason to change the selected ground water monitoring wells, the Owner shall immediately notify the Director in writing;
 - vi. Should the measured ground water concentrations of tetrachloroethylene exceed its respective standard in the All types of Property use criteria in Table 3 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 at any of the wells - MW501, MW502 or MW503, the Owner shall immediately notify the Director and re-sample the monitoring well(s) within 30 days of receipt of the analytical data;
 - vii. Should the measured ground water concentrations of tetrachloroethylene at MW205 or MW405 exceed the risk based concentration of 268 ug/L, the Owner shall immediately notify the Director and re-sample the monitoring well(s) within 30 days of receipt of the analytical data;
 - viii. Should the resampling program confirm that COC concentrations are elevated above its respective trigger criteria at any of the wells, the Owner shall provide the Director with a plan to mitigate the elevated concentrations within 30 days of receipt of the second set of analytical results;
 - ix. Should the resampling program confirm that the COC concentrations are below its respective trigger criteria at any of the wells, no further action will be taken until the next scheduled monitoring event;
 - x. Should any monitoring well be destroyed during construction or site activities, the well shall be replaced with a similarly constructed well proximate to the same location as the destroyed well; and,
 - xi. All monitoring wells that are no longer required as part of the groundwater monitoring program and have been approved by the Director for abandonment, shall be decommissioned in accordance with good standard practice that will prevent contamination through the abandoned well and in accordance with Ontario Regulation 903 as amended. A report on the decommissioning shall be provided in the annual monitoring report for the period during which the well was decommissioned.
- (d) Indoor air monitoring shall be carried out upon issuance of the CPU for the existing building on the Property and will continue on a quarterly basis (every three months) for the first year, tri-annually (every four months) for second year and each year thereafter until such time as the Director, upon application by the Owner, has reviewed the data available and either amends or revokes the CPU. The air monitoring shall be for a 8 hour period and in accordance to US EPA Method TO-15 and the Ministry's "Operations Manual for Air Quality Monitoring in Ontario", dated March 2008 for the contaminants of concern listed in Schedule 'C':
- i. Sampling locations are as follows:
 - i. Dollar Mart, Kim Jewelers, The Den Barber, Linwell X-Ray, Cartridge World, Cash 4 U, Physio Therapy and Buckners Sports as shown on Figure Q-8 as attached;

- ii. Giant Tiger, Pharmacy, Rac Rent-A-Car and the Beer Store as shown on Figure Q-8 as attached shall be sampled on a semi-annual basis for a one year period;
- ii. For each sampling location, at least one event per year shall be conducted between December and March inclusive;
- iii. Each sampling event shall include the collection and submission of one travel blank, one outdoor air sample and one blind duplicate sample;
- iv. The monitoring program shall include analysis of the contaminants listed in Schedule "C" of the CPU;
- v. If the air concentration for any Contaminants of Concern exceeds Schedule "C" (air trigger levels), the Owner shall notify the Director in writing of the exceedance(s) within ten (10) days of receipt of the analytical results and collect a second sample at the same location(s) within thirty (30) days of receipt of the analytical results which is to be analyzed for all the contaminants that pose an unacceptable risk to indoor receptors and were included in the indoor air monitoring program ;
- vi. If the second sample(s) meets the applicable trigger value(s), no further action will be taken until the next scheduled monitoring event;
- vii. If the second sample has concentrations above the applicable trigger value for the Contaminant of Concern in question, the Owner shall provide a contingency plan to the Director within thirty (30) days of receipt of the analytical results;
- viii. The contingency measures must be designed, stamped and sealed by a Professional Engineer licensed to practice in Ontario and include but not be limited to the following:
 - i. Engineered measures to improve building ventilation;
 - ii. Enhancement of the sub-slab depressurization or vapour extraction systems or implementation of other engineered measures to redirect sub-slab vapours from entering the building;
 - iii. Conversion to an active system which generally involves the installation of a roof level fan with required sensors, and a control panel with alarm notification; and/or
 - iv. Soil and/or ground water remediation on-site with the objective of reducing indoor air COC concentrations to below the trigger levels.
- ix. For the units labelled Giant Tiger, Pharmacy, Rac Rent-A-Care and the Beer Store, the Owner may submit an application any time after the first year of monitoring to review the available data and amend the air monitoring requirements for the above units. Any such application must include a report from a Qualified Person regarding the air monitoring results obtained to that date, an opinion that the proposed amendment is consistent with the Risk Assessment and represents an appropriate change to the Risk Management Measures and such other supporting documentation as required by the Director.
- x. For the other units not identified in item 4.2 (d) ix, the Owner may apply to the Director, anytime after the second year of monitoring to review the available data and amend the air monitoring requirements for the building. Any such application must include a report from a Qualified Person regarding the air monitoring results obtained to that date, an opinion that the proposed amendment is consistent with

the Risk Assessment and represents an appropriate change to the Risk Management Measures and such other supporting documentation as required by the Director.

- (e) Indoor air monitoring shall be carried out upon completion of any future building on the Property and will continue on a quarterly basis (every three months) for the first year, tri-annually (every four months) for second year and each year thereafter until such time as the Director, upon application by the Owner, has reviewed the data available and either amends or revokes the CPU. The air monitoring shall be for a 8 hour period and in accordance to US EPA Method TO-15 and the Ministry's "Operations Manual for Air Quality Monitoring in Ontario", dated March 2008 for the contaminants of concern listed in Schedule 'C':
- i. Sampling locations shall be identified by an industrial hygienist or a person who has demonstrated the knowledge, experience and expertise in areas related to soil vapour and indoor air monitoring and sampling to be protective of human health for any persons using or occupying the buildings on the Property;
 - ii. For each sampling location, at least one event per year shall be conducted between December and March inclusive;
 - iii. Each sampling event shall include the collection and submission of one travel blank, one outdoor air sample and one blind duplicate sample;
 - iv. The monitoring program shall include analysis of the contaminants listed in Schedule "C" of the CPU;
 - v. If the air concentration for any Contaminants of Concern exceeds Schedule "C" (air trigger levels), the Owner shall within ten (10) days of receipt of the analytical results, notify the Director in writing of the exceedance(s) and collect a second sample at the same location within thirty (30) days of receipt of the analytical results which is to be analyzed for all the contaminants that pose an unacceptable risk to indoor receptors and were included in the indoor air monitoring program ;
 - vi. If the second sample meets the applicable trigger value, no further action will be taken until the next scheduled monitoring event;
 - vii. If the second sample has concentrations above the applicable trigger value for the Contaminant of Concern in question, the Owner shall provide a contingency plan to the Director within thirty (30) days of receipt of the analytical results;
 - viii. The contingency measures must be designed, stamped and sealed by a Professional Engineer licensed to practice in Ontario and include but not be limited to the following:
 - i. Engineered measures to improve building ventilation;
 - ii. Enhancement of the sub-slab depressurization or vapour extraction systems or implementation of other engineered measures to redirect sub-slab vapours from entering the building;
 - iii. Conversion to an active system which generally involves the installation of a roof level fan with required sensors, and a control panel with alarm notification; and/or
 - iv. Soil and/or ground water remediation on-site with the objective of reducing indoor air COC concentrations to below the trigger levels.

- ix. The Owner may apply to the Director, any time after the second year of monitoring to review the available data and amend the air monitoring requirements for the building. Any such application must include a report from a Qualified Person regarding the air monitoring results obtained to that date, an opinion that the proposed amendment is consistent with the Risk Assessment and represents an appropriate change to the Risk Management Measures and such other supporting documentation as required by the Director.
- (f) A soil management plan shall be prepared and implemented for the Property during any activities potentially in contact with or exposing site soils. A copy of the plan shall be made available for review by the Provincial Officer upon request. The plan shall be overseen by a Qualified Person and comply with the requirements of sections 30 to 39 of Schedule “E” of O. Reg. 153/04 as amended and shall include, but not be limited to, provisions for soils excavation, stockpiling, sorting, characterization, disposal and record keeping specified below:
- i. Dust control measures and prevention of soil tracking by vehicles and personnel from the Property, including wetting of soil with potable water, reduced speeds for on-site vehicles, tire washing stations and restricting working areas in high wind conditions;
 - ii. Management of excavated materials 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;
 - iii. Sampling of soil to be received at the Property shall be undertaken in accordance with Section 34 of Schedule “E” of O. Reg. 153/04;
 - iv. Characterization of excavated material to determine if materials exceed the Property Specific Standards. Excavated materials requiring off-site disposal shall be disposed of in accordance with the provisions of O. Reg. 347, as amended, made under the Act. Excavated material meeting the Property Specific Standards may be placed on-site below the barrier if deemed suitable by a Qualified Person and in accordance with the Risk Assessment ; and
 - v. Record keeping including dates and duration of work, weather and site conditions, location and depth of excavation activities, dust control measures, stockpile management and drainage, all materials characterization results, names of the Qualified Person, contractors, haulers and receiving sites for any materials removed from the Property and any complaints received relating to site activities.
- (g) The Owner shall ensure that a health and safety plan which takes into account the presence of the Contaminants of Concern is prepared and implemented prior to any excavation work including the work described in item 4.2 (f) 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, along with all potential risks identified in the Risk Assessment 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 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 soils. The health and safety plan shall be overseen by an appropriately qualified 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 upon request by a Provincial Officer.

- (h) The Owner shall submit a site plan prepared and signed by a Qualified Person within three (3) months of completion of site development which will describe the Property and placement and quality of all of the barriers to site soils. The site plan will include a plan and cross section drawings specifying the vertical and lateral extent of the barriers. This site plan shall be submitted to the Director and the Owner shall retain one copy for inspection upon request by a Provincial Officer. The site plan shall be revised and resubmitted to the Director following the completion of any alteration to the extent of the barriers.
- (i) The Owner shall ensure that the sub-slab depressurization system in the current building is maintained and operated in accordance with the Risk Assessment and Figures Q-8 to Q-14 attached to this CPU. No alterations or additions to the existing building may be made unless an assessment of the risk to human receptors is provided to the Director and the Director approves the alterations or additions to the existing building.
- (j) The Owner shall prepare by March 31 each year, annual reports documenting activities relating to the Risk Management Measures undertaken during the previous calendar year. A copy of this report shall be kept at the Property for inspection and available upon request by a Provincial Officer. The report shall include as a minimum the following information:
 - i. a copy of all inspection logs of the barrier and fence risk management measures and any deficiency repairs carried out as a result of the inspections along with any analytical test results of the soil;
 - ii. a copy of all records relating to the soil management plan; and
 - iii. a copy of all records relating to the health and safety plan.

4.3 Refrain from using the Property for any of the following use(s): Type of property use specified in O. Reg. 153/04, other than “industrial use”, “commercial use” or “community use.”

4.4 Refrain from constructing the following building(s): Any new buildings on the property that do NOT have

4.4.1 a soil vapour membrane; and

4.4.2 a sub-slab passive venting system with the flexibility to convert to an active venting system or an active sub-slab venting system.

4.5 All new buildings must be designed and built with a vapour membrane barrier and sub-slab venting system designed by a Professional Engineer licensed to practice in Ontario and shall be consistent with Figures Q-3 to Q-7 inclusive attached to this CPU. Upon completion of the final design, a copy shall be provided to the Director.

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- 4.6** The Owner shall retain a copy of all vapour barrier and vapour extraction systems as-built drawings signed by a Professional Engineer along with the proposed testing and performance requirements for the vapour barrier and vapour extraction system of any building on the Property for inspection by a Provincial Officer. The Owner shall submit to the Director within three (3) months of the completion of any building on the Property, the as-built drawings of the vapour barrier and vapour extraction system.
- 4.7** An inspection and maintenance program shall be prepared and implemented to ensure the continuing integrity of the above Risk Management Measure if implemented. With regards to the vapour barrier, inspections of the inside surface of the below grade exterior walls and floors will be made for potential breaches where visually accessible. With regard to the Vapour extraction System, inspections of the venting system, where visually accessible, will be made for potential breaches. The inspection program shall include semi annually (spring and fall) inspections of all barriers and any barrier deficiencies shall be repaired forthwith. The inspection results shall be recorded in a log book maintained by the Owner and available upon request by a Provincial Officer.
- 4.8** 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 sections 4.3 and 4.4, unless noted. 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.

Site Changes

- 4.9** 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 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.

Reports

- 4.10** 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

- 4.11** 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.

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Certificate of Requirement

4.12 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.

4.13 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.

Owner Change

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

Financial Assurance

4.15 Within fifteen (15) days of the date of the CPU, the owner shall provide financial assurance to the Crown in the right of Ontario in the amount of one hundred and fourteen thousand and one hundred dollars (\$114,100) in a form satisfactory to the Director and in accordance with Part XII of the Act to cover the costs for the performance of groundwater and indoor air monitoring as identified in Condition 4.2 (c) and 4.2 (d) of the CPU.

4.16 In the event any new buildings are constructed on the Property, the Owner shall prepare and submit to the Director for approval a Financial Assurance plan that will cover the cost of any indoor monitoring as identified in Condition 4.2 (e) of the CPU. The Financial Assurance plan shall be submitted to the Director for approval no later than thirty (30) days after completion of construction of the building.

4.17 Upon approval of the Financial Assurance plan, the Owner shall provide the amount of Financial Assurance specified by the Director in a form satisfactory to the Director within fifteen (15) days of the Director's approval.

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, the application of such requirement to other circumstances and the remainder of the CPU shall not be affected thereby.

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

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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 non-compliance with the requirements of the CPU constitutes an offence.
- 5.5** The requirements of the CPU are minimum requirements only and do not provide relief 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. In particular, the Director shall alter the CPU where the approval or acceptance by the Director is required in respect of a matter under the CPU and the Director does not grant the approval or acceptance or does not grant it in a manner agreed to by the Owner.
- 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 their control, or
 - d. any other cause whether similar to or different from the foregoing beyond their 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 any person from compliance with the requirement. The obligation to complete the requirement shall continue each day thereafter.

Part 6: Hearing before the Environmental Review Tribunal

- 6.1** 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.
- 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

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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
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario M5G 1E5

Fax (416) 326-5370 or 1-877-849-2066
Telephone: (416) 212-6349 or 1-866-448-2248
E-mail: ERTTribunalSecretary@ontario.ca

and

Kim Groombridge, Director
Ministry of the Environment
Niagara District Office
301 St. Paul Street, 9th Floor, Suite 15
St. Catharines, Ontario L2R 7R4

Fax: (905) 704-4015
Telephone: (905) 704-3914
E-mail: Kim.Groombridge@ontario.ca

- 6.4** Unless stayed by application to the Tribunal under section 143 of the Act, the CPU is effective from the date of issue.
- 6.5** 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 Environmental Commissioner of Ontario who will place it on the EBR registry. The notice must be delivered to the Environmental Commissioner at 605-1075 Bay Street, Toronto, Ontario M5S 2B1 by the earlier of:

- 6.5.1** two (2) days after the day on which the appeal before the Tribunal was commenced;
and
- 6.5.2** fifteen (15) days after service on you of a copy of the CPU.

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- 6.6** 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.
- 6.7** 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:
- 6.7.1 fifteen (15) days after the day on which notice of the issuance of the CPU is given in the EBR registry; and
 - 6.7.2 if you appeal, fifteen (15) days after the day on which your notice of appeal is given in the EBR registry.

Issued at St. Catharines, Ontario this _____ day of _____, 2019.

Kim Groombridge

Director, section 168.6 of the Act

Schedule 'A'
Legal Description
104-120 Welland Avenue, St. Catharines, Ontario

PCL 273-1, SEC CORPORATION PLAN No. 2, ST. CATHARINES, PT LTS
273A & 273, CP PL 2, PTS 1 & 2, LR 40, S/T RIGHT OF WAY OVER PT 2, LR
40; IN FAVOUR OF THOSE ENTITLED TO USE THE SAME; EXCEPT
THEREFROM PT 1, LR 56 AS IN LT1436 AND FURTHER EXCEPT PT 1,
30R1390 AS IN LT9970 FROM THE RIGHT OF WAY; ST. CATHARINES AND
BEING PIN 46220-0014 (LT).

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Schedule "B"
Property Specific Standards (Soil and Ground Water)
104-120 Welland Avenue, St. Catharines, Ontario

Soil (full depth)

Contaminants of Concern (COC)	Property Specific Standards (µg/g)
ANTHRACENE	40
ACENAPHTHYLENE	4.4
BENZO(A)ANTHRACENE	57
BENZO(A)PYRENE	52
BENZO(B)FLUORANTHENE	54
BENZO(G,H,I)PERYLENE	40
BENZO(K)FLUORANTHENE	45
CHRYSENE	50
DIBENZO(A,H)ANTHRACENE	14
FLUORANTHENE	825
INDENO(1,2,3-CD)PYRENE	50
NAPHTHALENE	13.3
PHENANTHRENE	805
PYRENE	670
LEAD	656
TETRACHLOROETHYLENE	8.5
ELECTRICAL CONDUCTIVITY (mS/cm)	2.49
SODIUM ADSORPTION RATIO (unitless)	37.5

Ground Water

Contaminants of Concern (COC)	Property Specific Standards (ug/L)
CHLOROFORM	24
DICHLOROETHYLENE, cis-1,2	57
TETRACHLOROETHYLENE	880
TRICHLOROETHYLENE	2.8
VINYL CHLORIDE	2.2

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Schedule "C"
Target indoor air and/or Sub-Slab vapour concentrations

Contaminant of Concern	Indoor Air Target Concentration (µg/m³)	Sub-Slab Vapour Criteria (µg/m³)
Tetrachloroethylene (PCE)	13.8	3,450
Trichloroethylene (TCE)	0.872	218
1,1-Dichloroethylene	50.1	12,525
Cis-1,2-Dichloroethylene	107	26,750
Trans-1,2-Dichloroethylene	42.9	10,725
Naphthalene	2.65	662.5
Vinyl Chloride	0.406	101.5

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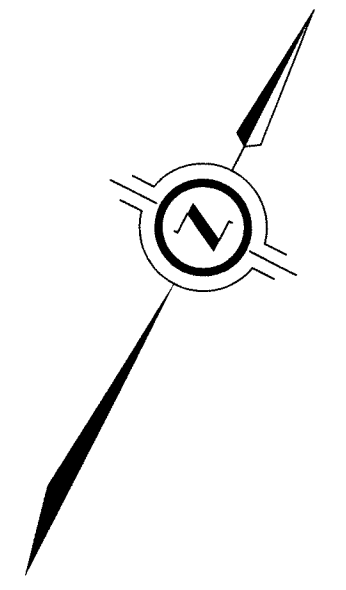
PLAN OF SURVEY OF
PART OF LOTS 273 AND 273A,
CORPORATION PLAN 2

CITY OF ST. CATHARINES
REGIONAL MUNICIPALITY OF NIAGARA
SCALE 1 : 400



MATTHEWS, CAMERON, HEYWOOD - KERRY T. HOWE SURVEYING LTD.
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METRIC DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.



PART 1, PLAN 30R-7446

WELLAND AVENUE

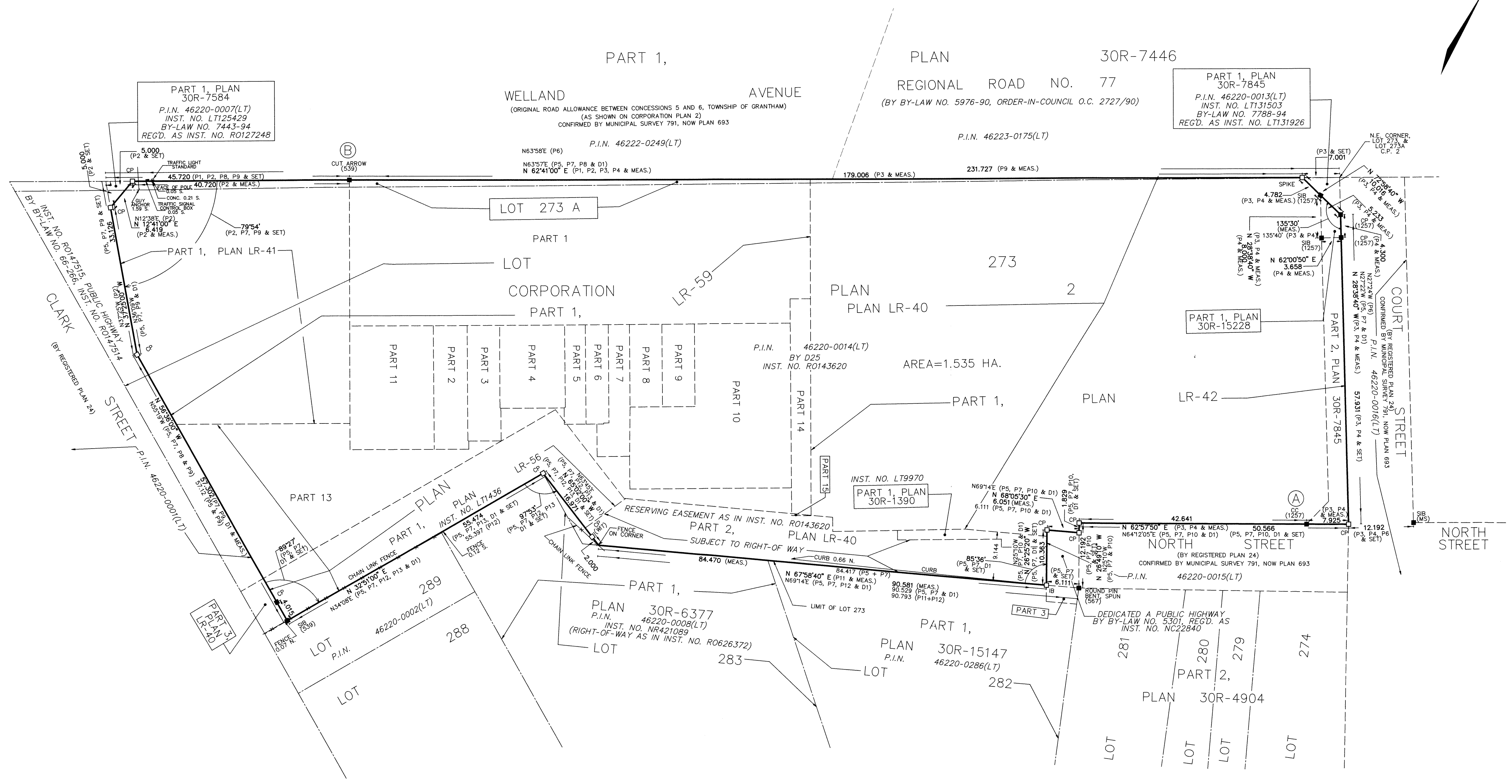
REGIONAL ROAD NO. 77
(BY BY-LAW NO. 5976-90, ORDER-IN-COUNCIL O.C. 2727/90)

PART 1, PLAN 30R-7845
P.I.N. 46220-0013(LT)
INST. NO. LT131503
BY-LAW NO. 7788-94
REGD. AS INST. NO. LT131926

PART 1, PLAN 30R-7584
P.I.N. 46220-0007(LT)
INST. NO. LT125429
BY-LAW NO. 7443-94
REGD. AS INST. NO. RO127248

P.I.N. 46222-0249(LT)

P.I.N. 46223-0175(LT)



NOTES

BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS A AND B, BY REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17, NAD83 (CSRS) (2010.0).

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999840

INTEGRATION DATA

OBSERVED REFERENCE POINTS (ORPs): UTM ZONE 17, NAD83 (CSRS) (2010.0).
COORDINATES TO URBAN ACCURACY PER SECTION 14 (2) OF O.REG 216/10.

POINT ID	EASTING	NORTHING
ORP (A)	642729.62	4780478.60
ORP (B)	642540.31	4780453.82

COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

LEGEND

- DENOTES SURVEY MONUMENT FOUND
- DENOTES SURVEY MONUMENT SET
- SIB DENOTES STANDARD IRON BAR
- IB DENOTES ROUND IRON BAR
- IB DENOTES IRON BAR
- CC DENOTES CUT CROSS
- CP DENOTES CONCRETE PIN AND WASHER
- WT DENOTES WITNESS
- P1 DENOTES PLAN 30R-7446
- P2 DENOTES PLAN 30R-7584
- P3 DENOTES PLAN 30R-7845
- P4 DENOTES PLAN 30R-15228
- P5 DENOTES PLAN LR-42
- P6 DENOTES PLAN M5791
- P7 DENOTES PLAN LR-40
- P8 DENOTES PLAN LR-59
- P9 DENOTES PLAN LR-41
- P10 DENOTES PLAN 30R-1390
- P11 DENOTES PLAN 30R-15147
- P12 DENOTES PLAN 30R-6377
- P13 DENOTES PLAN LR-56
- D1 DENOTES INST. NO. RO143620
- 539 DENOTES D.G. URE, O.L.S.
- 567 DENOTES R.B. ERWIN, O.L.S.
- 1257 DENOTES R. LAROCQUE, O.L.S.
- C.P. DENOTES CORPORATION PLAN 2
- M.S. DENOTES MUNICIPAL SURVEY 791

N=NORTH / S=SOUTH / E=EAST / W=WEST

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON NOVEMBER 21, 2018.

Nov. 22, 2018 DATE
Allan J. Heywood
ALLAN J. HEYWOOD
ONTARIO LAND SURVEYOR

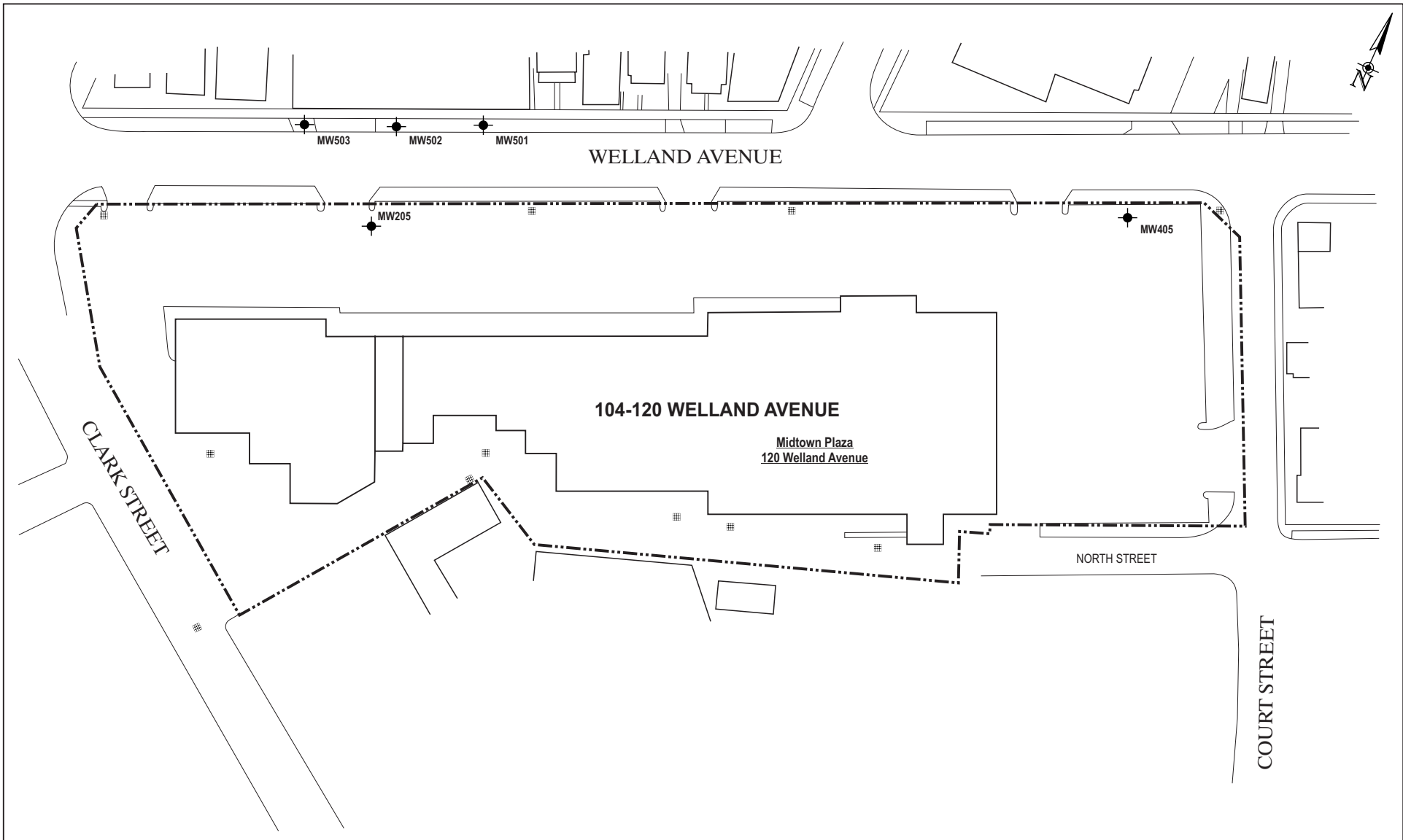
THIS PLAN IS NOT VALID UNLESS EMBOSSED BY A SURVEYOR'S SEAL

MATTHEWS, CAMERON, HEYWOOD - KERRY T. HOWE SURVEYING LIMITED
A wholly owned subsidiary of J.D. Bames Limited
5233 STANLEY AVENUE, UNIT 1, NIAGARA FALLS, ON L2E 7C2
T: (905) 358-3693 F: (905) 358-6224 www.jdbames.com

DRAWN BY: S.S. CHECKED BY: A.C. REFERENCE NO.: 18-16-433

FILE: G:\2018\18-16-433\00\Drawing\18-16-433-CS.dgn DATED: 11/21/2018

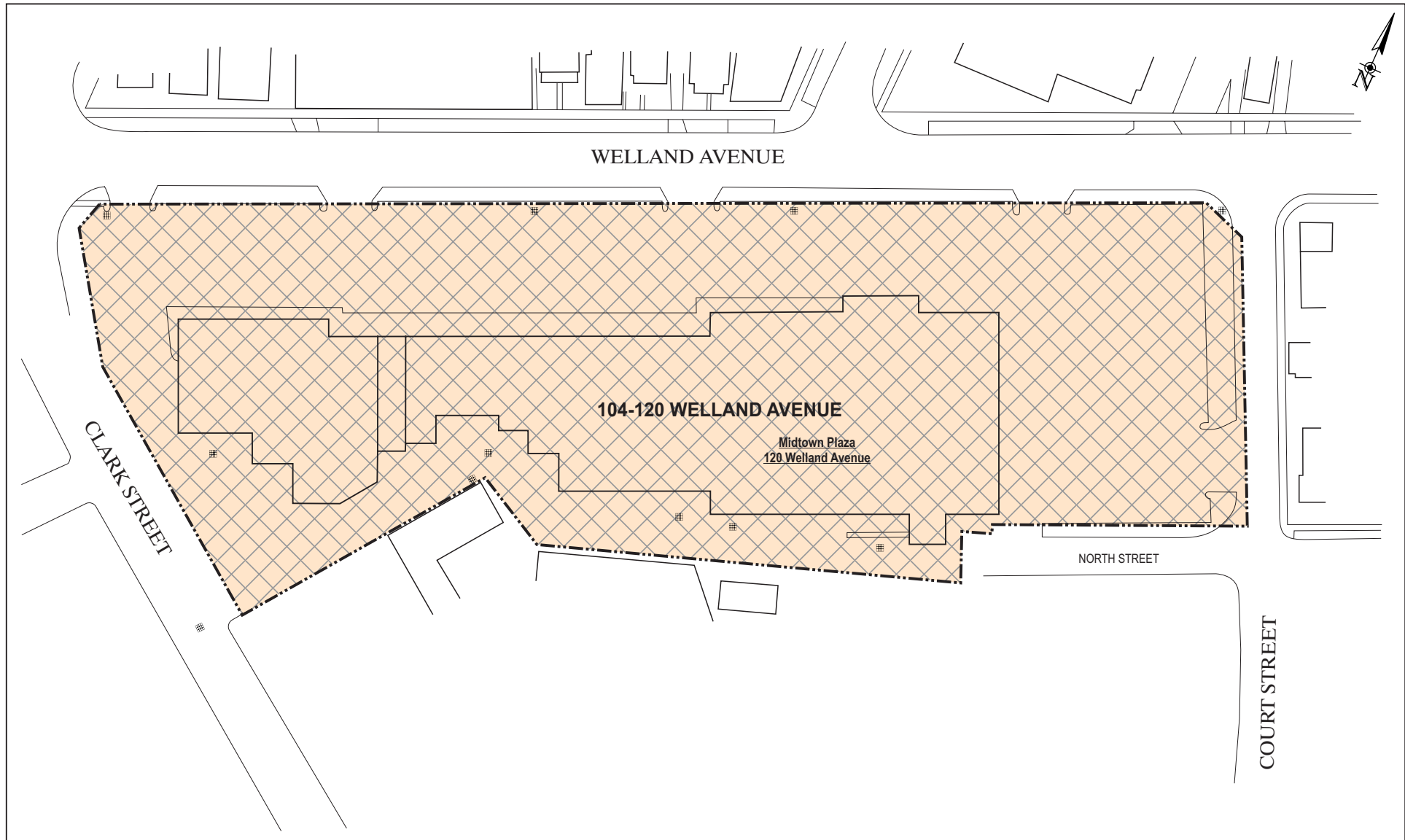
PLOTTED: 11/22/2018



SCALE:		
SOURCE:		
BASED ON SURVEY PLAN BY MACKAY, MACKAY & PETERS LTD, DATED JAN. 2009 AND FIELD MEASUREMENTS BY EXP STAFF		
	DRAWN BY	CHECKED BY
	K.G.	T.N.T.

LEGEND:
PROPERTY BOUNDARY CATCH BASIN TEST HOLE WITH MONITOR MW SERIES (AMEC 2005, 2006)

GROUND WATER MONITORING PROGRAM - MONITORING WELL LOCATIONS		FIGURE
		1
104-120 WELLAND AVENUE ST. CATHARINES, ONTARIO		
PROJECT NUMBER: 10348		DATE: NOVEMBER 2018



SCALE:

SOURCE:
 BASED ON SURVEY PLAN BY MACKAY,
 MACKAY & PETERS LTD, DATED JAN. 2009
 AND FIELD MEASUREMENTS BY EXP STAFF

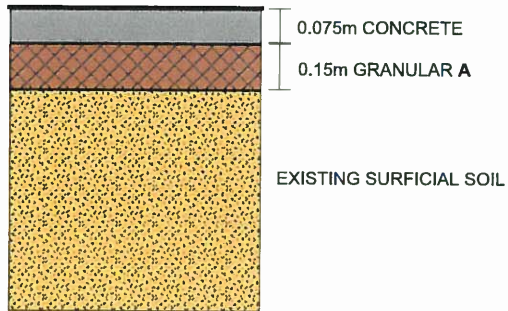
	DRAWN BY	CHECKED BY
	K.G.	T.N.T.

LEGEND:

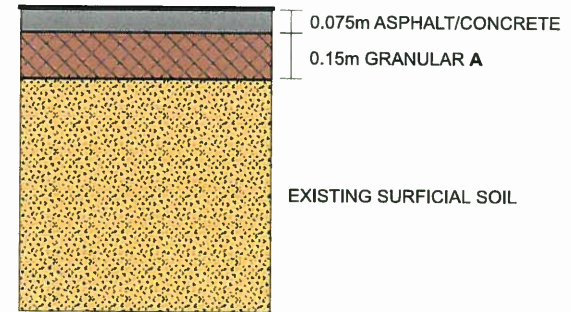
- PROPERTY BOUNDARY
- CATCH BASIN
- AREAL EXTENT OF SOIL CAPPING RISK MANAGEMENT MEASURES

AREAL EXTENT OF SOIL CAPPING RISK MANAGEMENT MEASURES		FIGURE Q-1
104-120 WELLAND AVENUE ST. CATHARINES, ONTARIO		
PROJECT NUMBER: 10348	DATE: NOVEMBER 2018	

BUILDING FLOOR SLAB

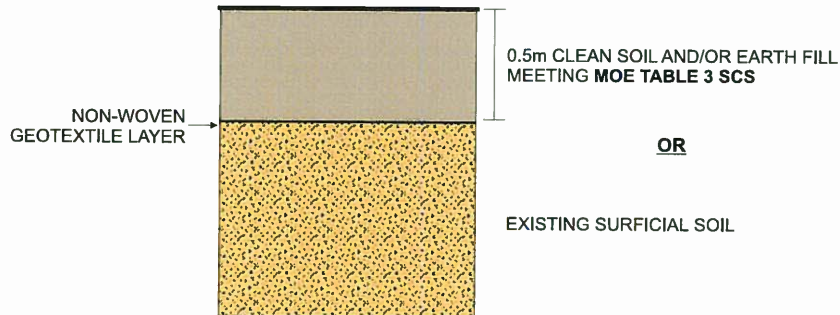


ROADWAY PARKING AREAS AND SIDEWALKS

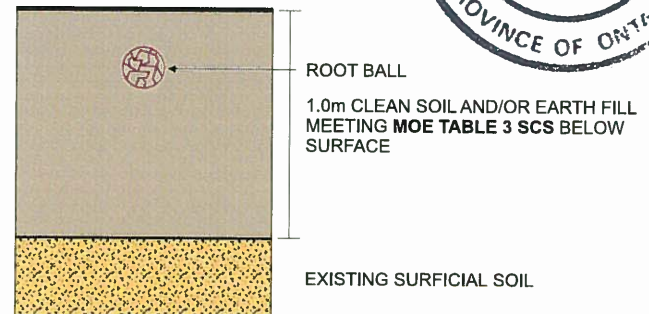


LANDSCAPED AREAS

TYPE I:
SUITABLE FOR PLANTS WHOSE
ROOT EXTEND LESS THAN
0.5 METRES BELOW GRADE



TYPE II:
SUITABLE FOR TREES AND SHRUBS
WHERE ROOT DEPTH EXCEEDS
0.15 METRES BELOW GRADE

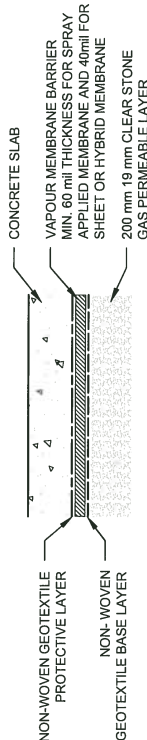


DRAWN BY	CHECKED BY
M.W.	B.H.

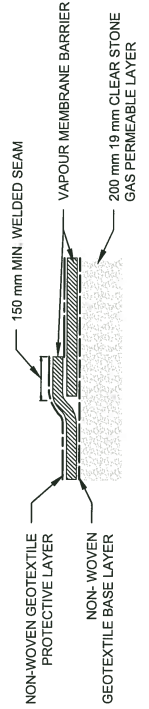
- NOTES:**
1. MOE TABLE 3 (2011) COMMERCIAL/INDUSTRIAL SITE CONDITION STANDARDS (SCS) FOR COARSE TEXTURED SOIL FOR SOIL ENVIRONMENTAL QUALITY GIVEN IN ONTARIO REG. 153/04 (APRIL, 2011)
 2. ADDITIONAL CLEAN SOIL MAY BE PLACED ABOVE THE RA BARRIER TO MEET LANDSCAPING REQUIREMENTS
 3. CONCRETE SLAB DESIGN SHOULD BE DETERMINED BY STRUCTURAL ENGINEER RESPONSIBLE FOR BUILDING AND/OR ROAD/SIDEWALK CONSTRUCTION AND SHOULD MEET OR EXCEED THE MINIMUM REQUIREMENTS SHOWN IN THIS DRAWING
 4. FINAL PAVEMENT DESIGN REQUIREMENT SHOULD BE DETERMINED BY A GEOTECHNICAL ENGINEER WITH PAVEMENT LAYERS EQUALLING OR EXCEEDING THE MINIMUM REQUIREMENTS SHOWN IN THIS DRAWING

SOIL BARRIER DETAILS	FIGURE Q-2
104-120 WELLAND AVENUE AND 2 NORTH STREET ST. CATHARINES, ONTARIO	
JOB NUMBER: 10348	DATE: SEPTEMBER 2013

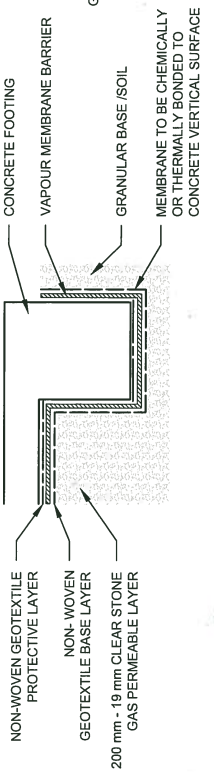




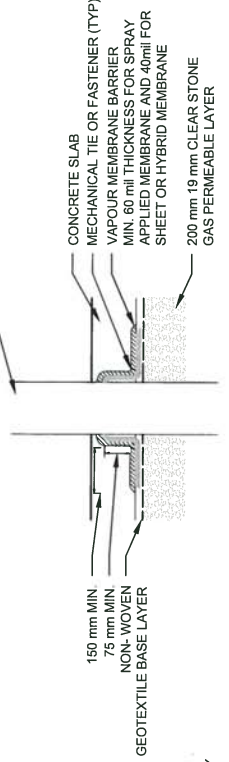
3.1 VAPOUR MEMBRANE BARRIER INSTALLATION BENEATH CONCRETE SLAB
NTS
Q-3



3.2 MEMBRANE OVERLAP
NTS
Q-3



3.3 VAPOUR MEMBRANE BARRIER AT FOOTING
NTS
Q-3



3.4 VAPOUR MEMBRANE BARRIER INSTALLATION AT VERTICAL PENETRATION
NTS
Q-3



JOB #	GOR-0010348-A0	DWN	MD
SCALE	NTS	CHKD	BH
DATE	SEPTEMBER, 2013	DWG No.	Q-3

LOCATION
104-120 WELLAND AVENUE &
2 NORTH STREET
ST. CATHERINES, ON

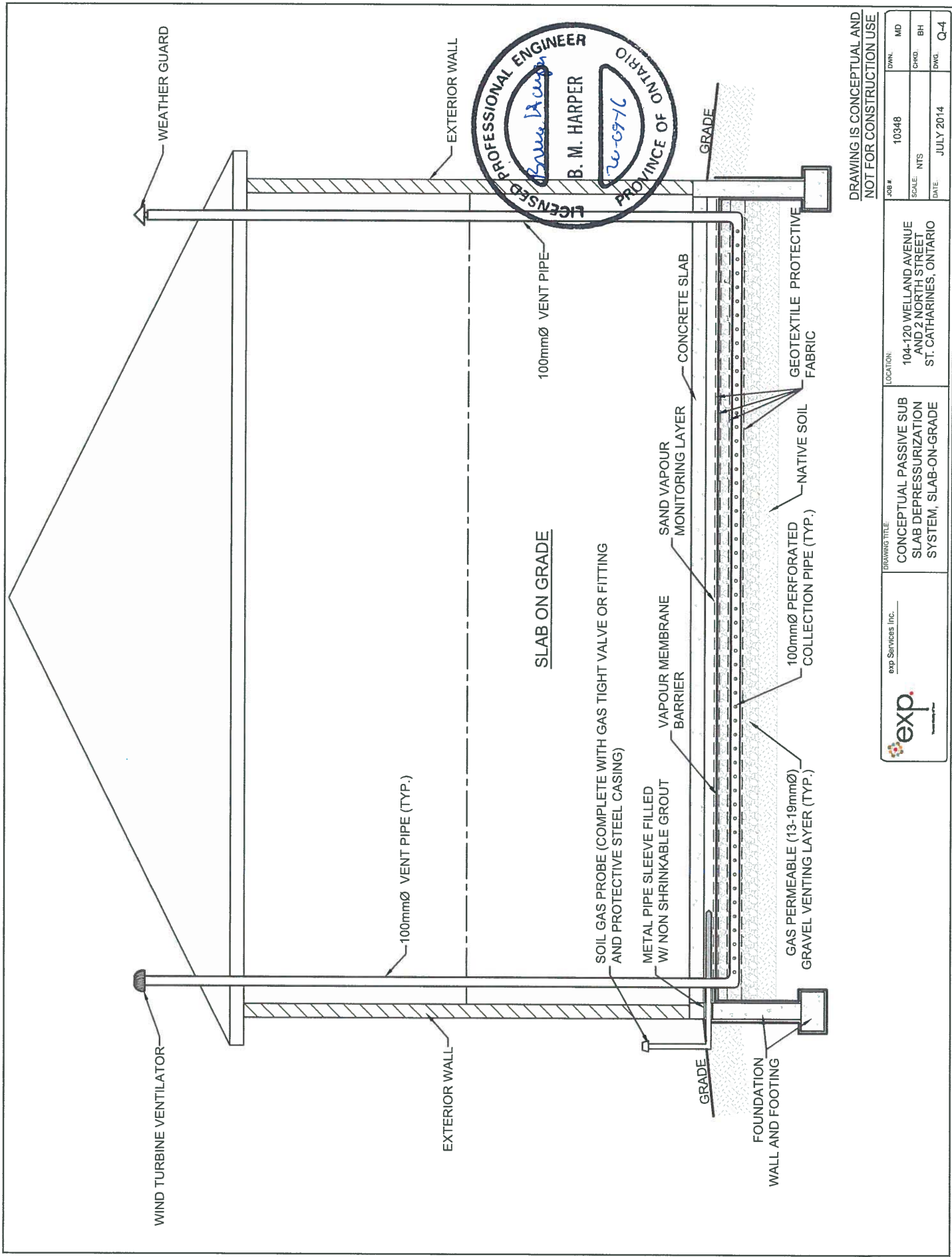
DRAWING TITLE:
SOIL VAPOUR MEMBRANE
BARRIER DETAILS - NEW
BUILDING CONSTRUCTION

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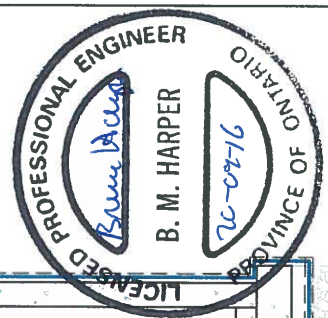
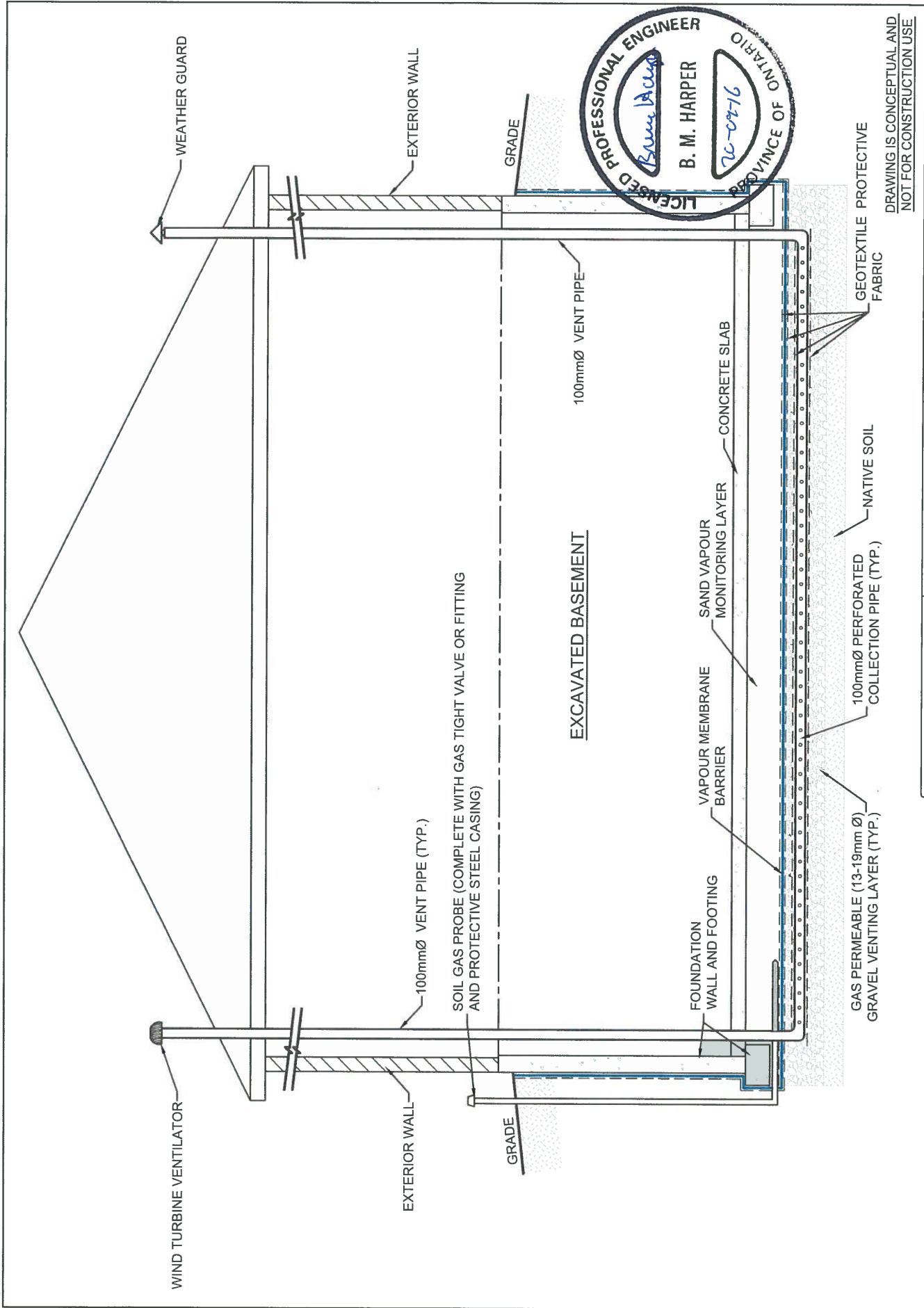
JOB #	10348	DWN.	MD
SCALE	NTS	CHKD.	BH
DATE	JULY 2014	DWG.	Q-4

LOCATION:
 104-120 WELAND AVENUE
 AND 2 NORTH STREET
 ST. CATHARINES, ONTARIO

DRAWING TITLE:
 CONCEPTUAL PASSIVE SUB
 SLAB DEPRESSURIZATION
 SYSTEM, SLAB-ON-GRADE

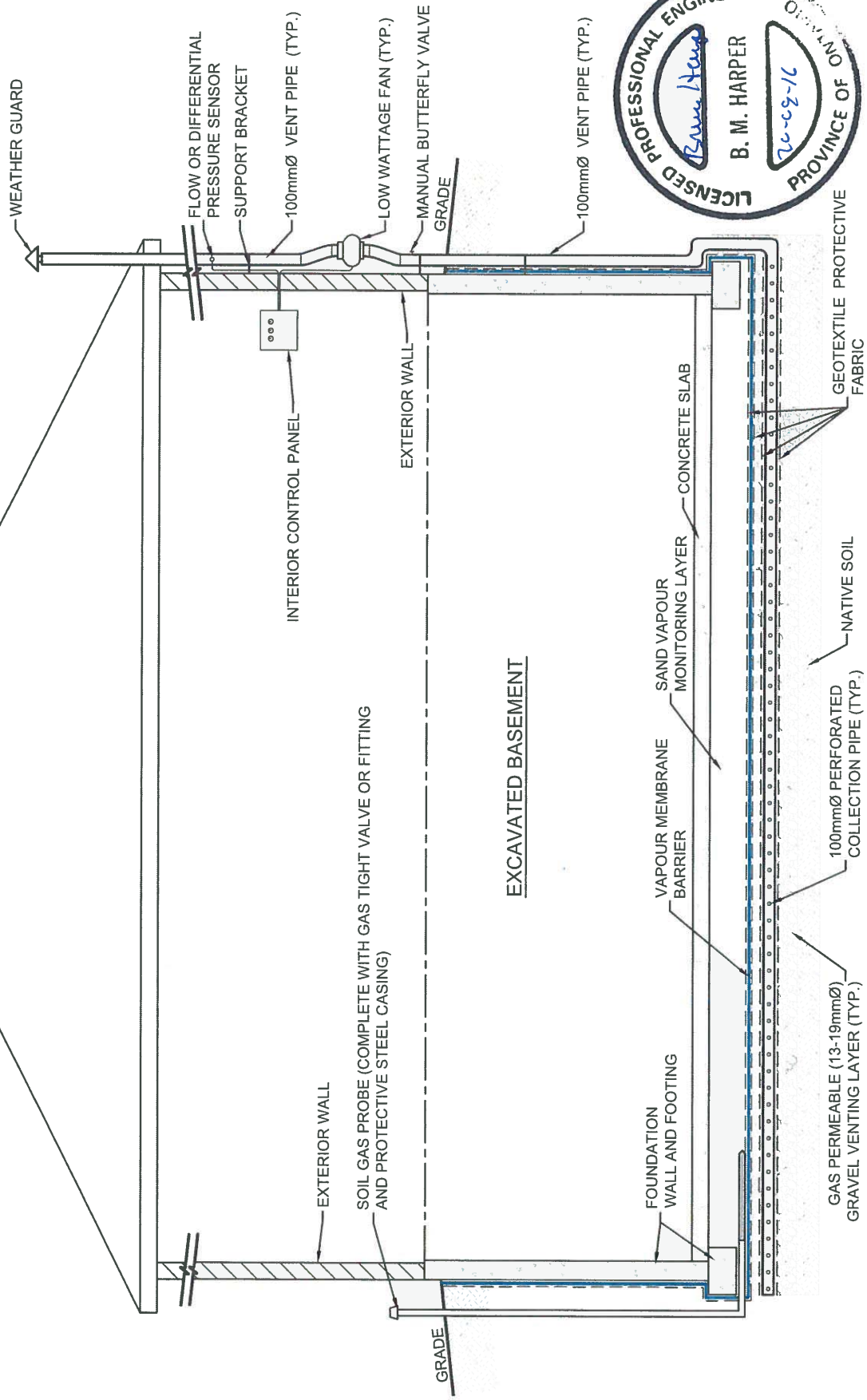
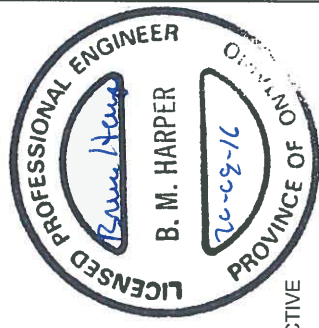
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	DRAWING TITLE CONCEPTUAL PASSIVE SUB-SLAB DEPRESSURIZATION SYSTEM BUILDING WITH BASEMENT	LOCATION 104-120 WELLDAN AVENUE AND 2 NORTH STREET ST. CATHARINES, ONTARIO	PROJ. # 10348	DRAWN MD
	SCALE NTS	DATE SEPTEMBER 2015	CHKD BH	DWG. Q-5



EXCAVATED BASEMENT

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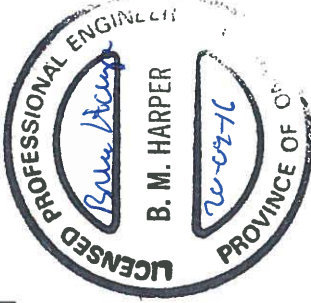
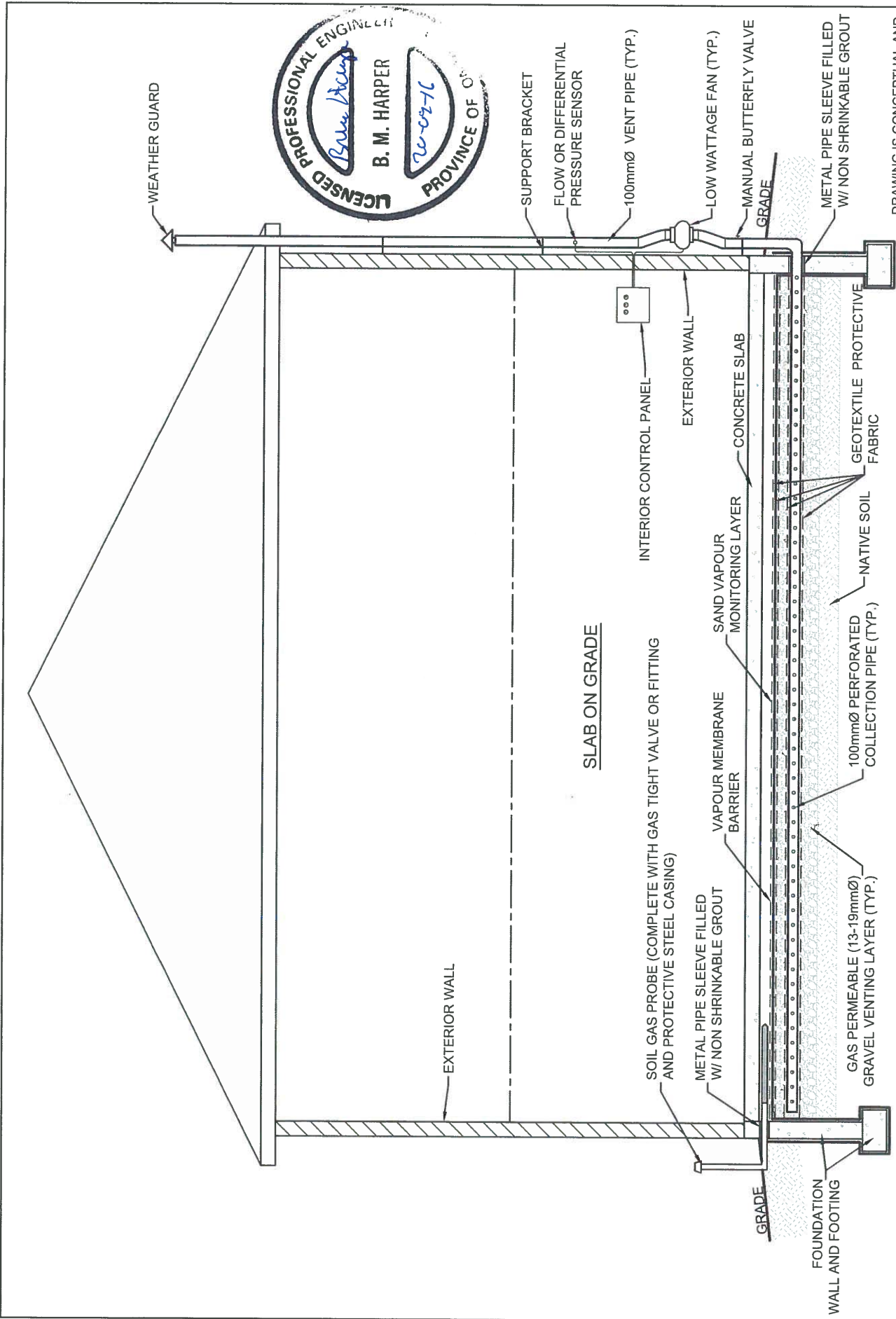
JOB # 10348
 SCALE NTS
 DATE SEPTEMBER 2015

LOCATION
 104-120 WELAND AVENUE
 AND 2 NORTH STREET
 ST. CATHARINES, ONTARIO

DRAWING TITLE
CONCEPTUAL ACTIVE SUBSLAB DEPRESSURIZATION SYSTEM BUILDING WITH BASEMENT



DRAWN	MD
CHECKED	BH
FIGURE	Q-6



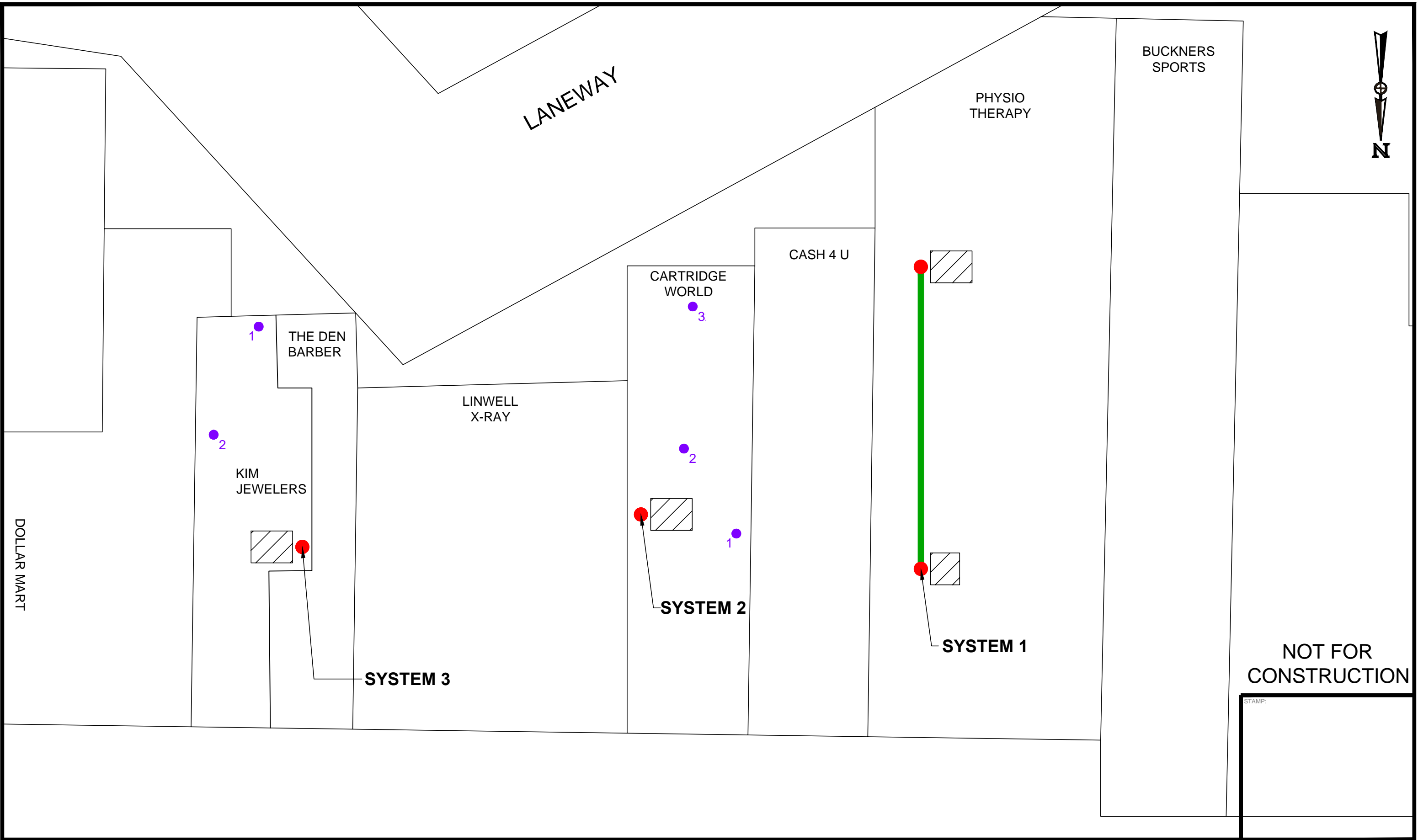
DRAWING IS CONCEPTUAL AND NOT FOR CONSTRUCTION USE

JOB #	10348	DRWN	MD
SCALE	NTS	CHKD	BH
DATE	JULY 2014	DWG	Q-7

LOCATION:
 104-120 WELAND AVENUE
 AND 2 NORTH STREET
 ST. CATHARINES, ONTARIO

DRAWING TITLE:
 CONCEPTUAL
 ACTIVE SUB SLAB
 DEPRESSURIZATION SYSTEM,
 SLAB-ON-GRADE

Exp. Services Inc.



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STAMP:

exp Services Inc.
 T: +1.905.793.9800 | F: +1.905.793.0641
 1595 Clark Boulevard
 Brampton, ON L6T 4V1
 Canada
 www.exp.com

LEGEND:

- APPROXIMATE LOCATION OF VERTICAL RISER FOR EXTRACTION PLENUMS
- HORIZONTAL HEADERS
- ▨ LOCATION OF PLENUM BOX
- PILOT HOLE

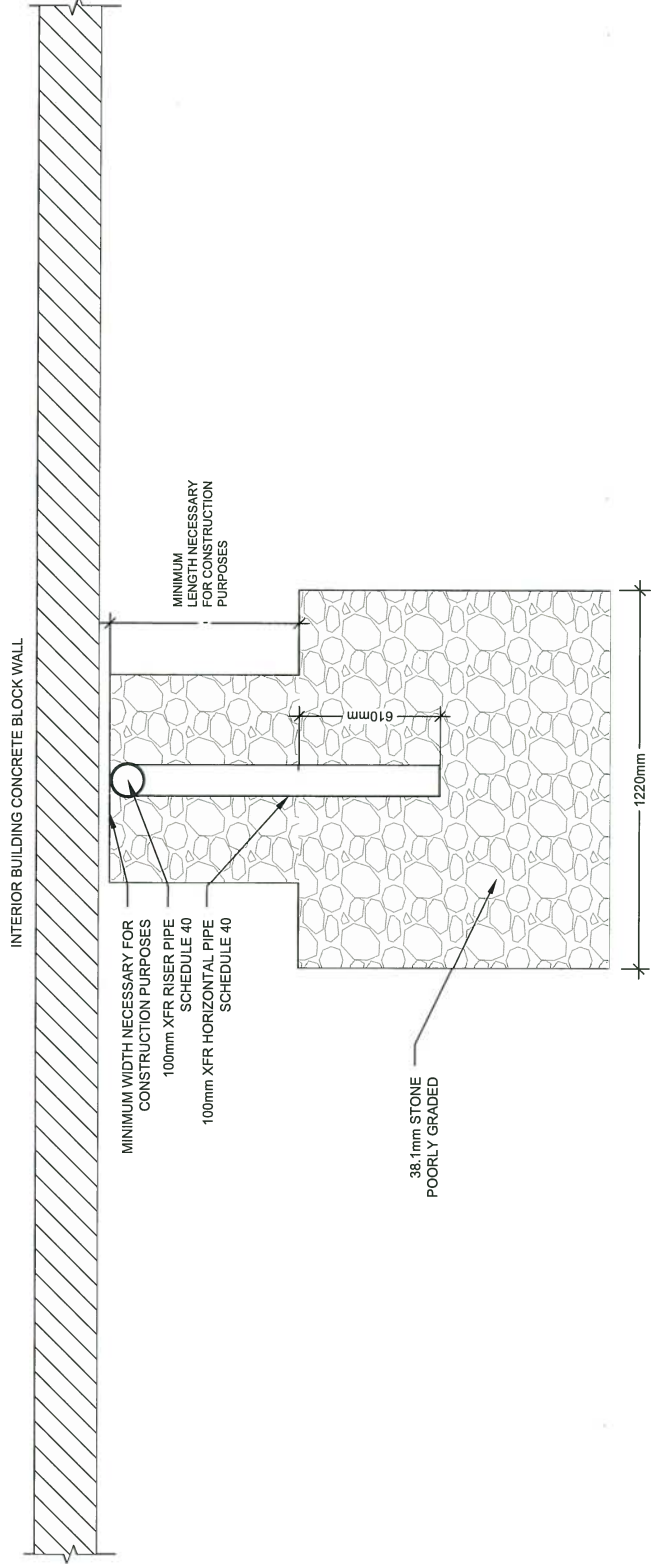
PROJECT TITLE AND LOCATION:

102-120 WELLAND AVENUE
 ST. CATHARINE'S, ONTARIO

DRAWING TITLE:

SUB-SLAB DEPRESSURIZATION
 SYSTEM
 SITE PLAN VIEW

JOB NO.:	GOR-00010348	DRAWN BY:	SG
SCALE:	NTS	CHECKED BY:	DS
DATE:	MARCH 2016	DWG NO.:	Q-8



SUB-SLAB DEPRESSURIZATION SYSTEM NORTH PLAN VIEW

1:16

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PROFESSIONAL ENGINEER
B. M. HARPER
PROVINCE OF ONTARIO

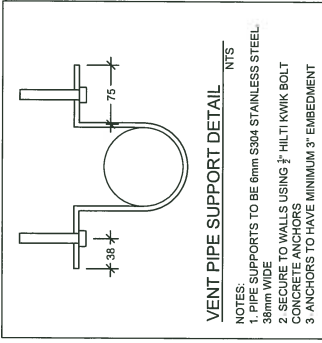
PROJECT NO.	GOR-00010348	DRAWN BY	SG
SCALE	NTS	CHECKED BY	DS
DATE	JUNE 2015	DWG NO.	Q-9

PLAN VIEW OF PLENUM AND AREAS FOR SAW CUT SUB-SLAB DEPRESSURIZATION SYSTEM DETAILS

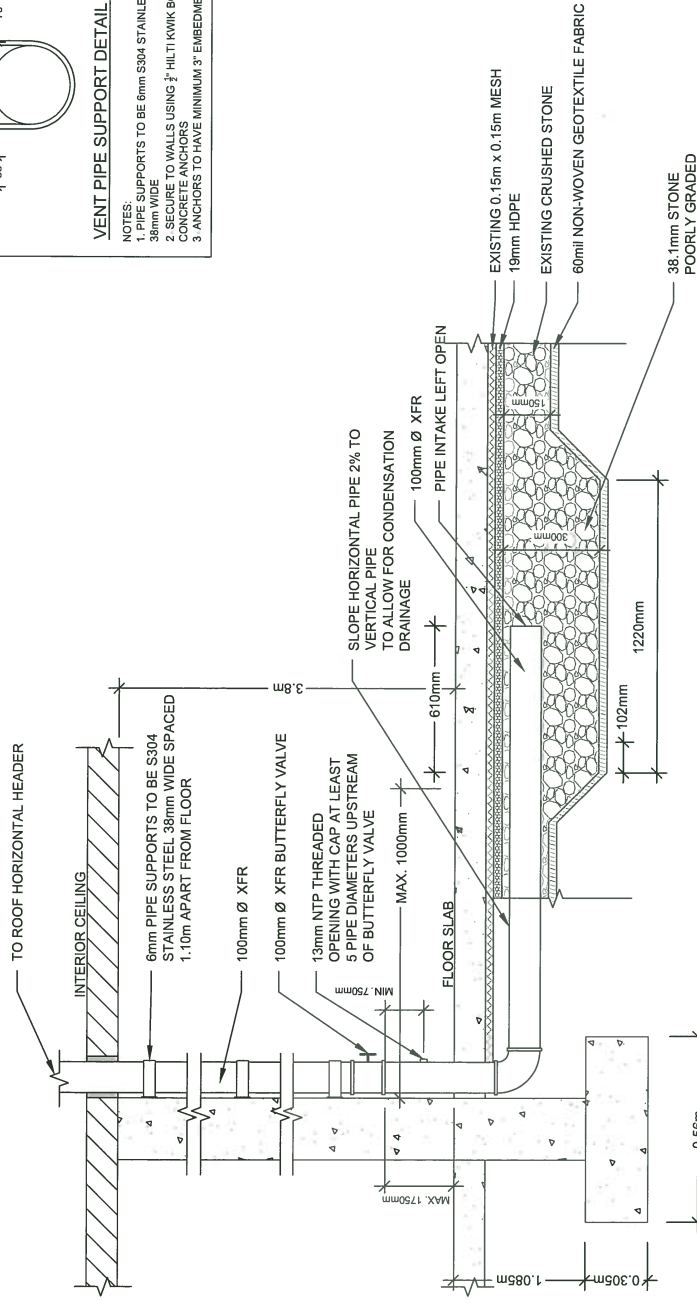
104-120 WELAND AVENUE ST. CATHARINE'S, ONTARIO

NOTE: TO BE ADJUSTED AS NECESSARY DEPENDING ON SITE ACCESS

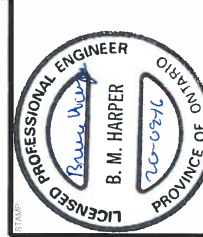
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NOTES:
 1. PIPE SUPPORTS TO BE 6mm S304 STAINLESS STEEL 38mm WIDE
 2. SECURE TO WALLS USING 3/8" HILTI KWIK BOLT CONCRETE ANCHORS
 3. ANCHORS TO HAVE MINIMUM 3" EMBEDMENT



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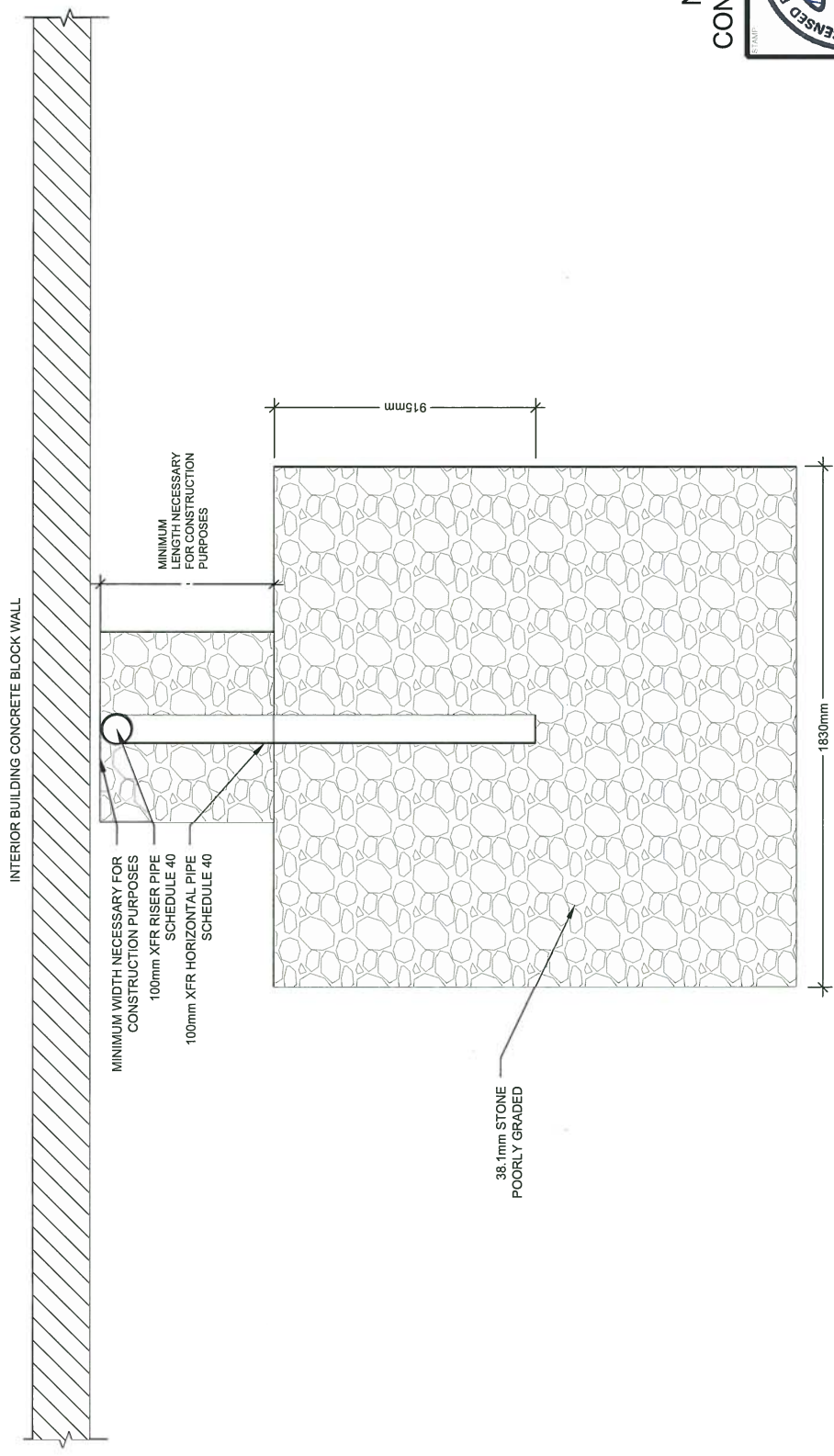
PROJECT NO.	GOR-00010348	ISSUED BY	SG
SCALE	AS NOTED	CHECKED BY	DS
DATE	JUNE 2015	DWG NO.	Q-10

VERTICAL RISER AND PLENUM
 CONNECTIONS CROSS SECTION
 SUB-SLAB DEPRESSURIZATION
 SYSTEM DETAILS

104-120 WELLAND AVENUE
 ST. CATHARINE'S, ONTARIO

SUB-SLAB DEPRESSURIZATION SYSTEM NORTH
 CROSS SECTION 1:16

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LICENSED PROFESSIONAL ENGINEER
B. M. HARPER
PROVINCE OF ONTARIO
2009-16

PROJECT NO.	GOR-00010348	REVISION BY	SG
SCALE	NTS	CHECKED BY	DS
DATE	JUNE 2015	DWG NO.	C-11

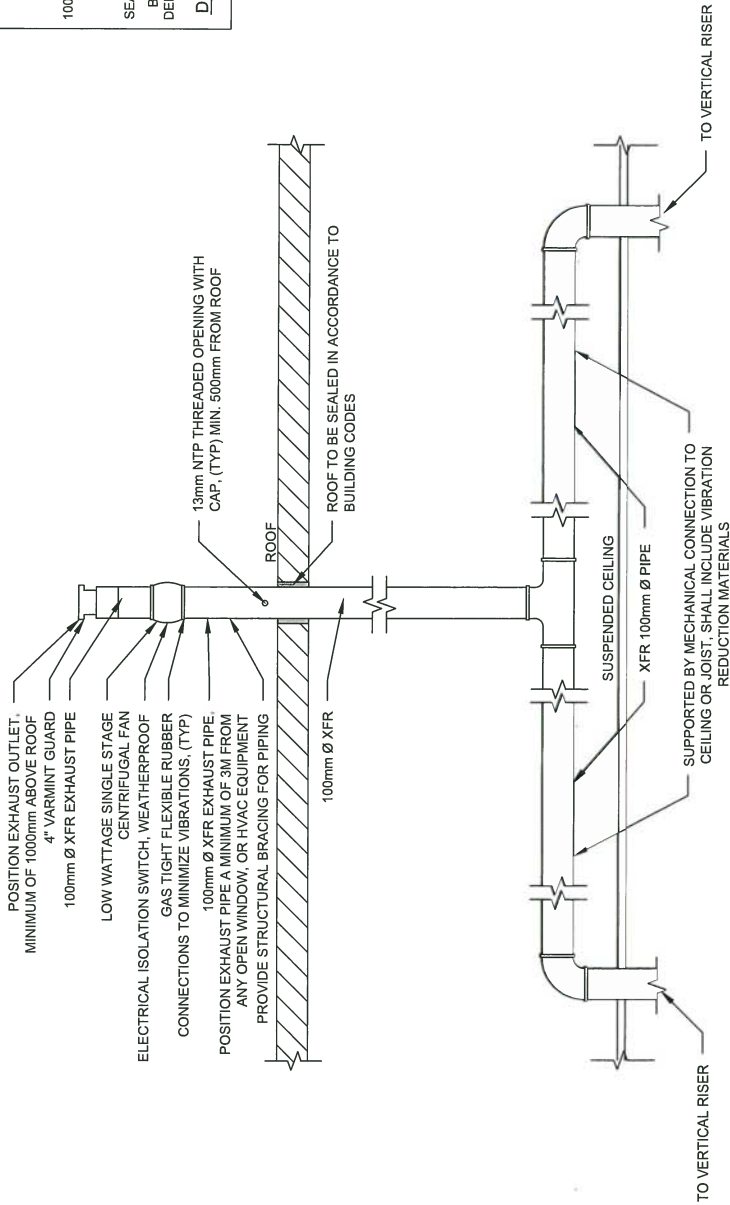
PLAN VIEW OF PLENUM AND AREAS FOR SAW CUT SUB-SLAB DEPRESSURIZATION SYSTEM DETAILS

104-120 WELLAND AVENUE
ST. CATHARINES, ONTARIO

NOTE: TO BE ADJUSTED AS NECESSARY DEPENDING ON SITE ACCESS

SUB-SLAB DEPRESSURIZATION SYSTEM SOUTH
PLAN VIEW
1:16

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- POSITION EXHAUST OUTLET. MINIMUM OF 1000mm ABOVE ROOF
- 4" VARMINT GUARD
- 100mm Ø XFR EXHAUST PIPE
- LOW WATTAGE SINGLE STAGE CENTRIFUGAL FAN
- ELECTRICAL ISOLATION SWITCH, WEATHERPROOF
- GAS TIGHT FLEXIBLE RUBBER CONNECTIONS TO MINIMIZE VIBRATIONS. (TYP)
- 100mm Ø XFR EXHAUST PIPE. ANY OPEN WINDOW, OR HVAC EQUIPMENT PROVIDE STRUCTURAL BRACING FOR PIPING
- 100mm Ø XFR

13mm NTP THREADED OPENING WITH CAP, (TYP) MIN. 500mm FROM ROOF

ROOF TO BE SEALED IN ACCORDANCE TO BUILDING CODES

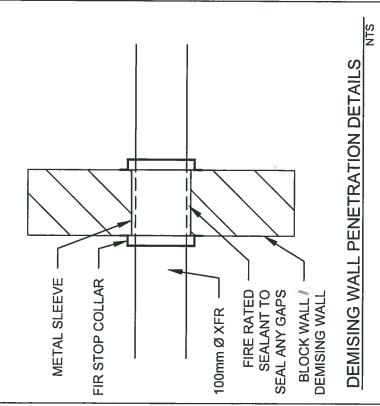
TO VERTICAL RISER

SUPPORTED BY MECHANICAL CONNECTION TO CEILING OR JOIST, SHALL INCLUDE VIBRATION REDUCTION MATERIALS

SUSPENDED CEILING

XFR 100mm Ø PIPE

TO VERTICAL RISER



DEMISING WALL PENETRATION DETAILS
NTS

SUB-SLAB DEPRESSURIZATION SYSTEM

SCALE: 1:16

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LICENSED PROFESSIONAL ENGINEER
B. M. HARPER
 20-05-16
 PROVINCE OF ONTARIO

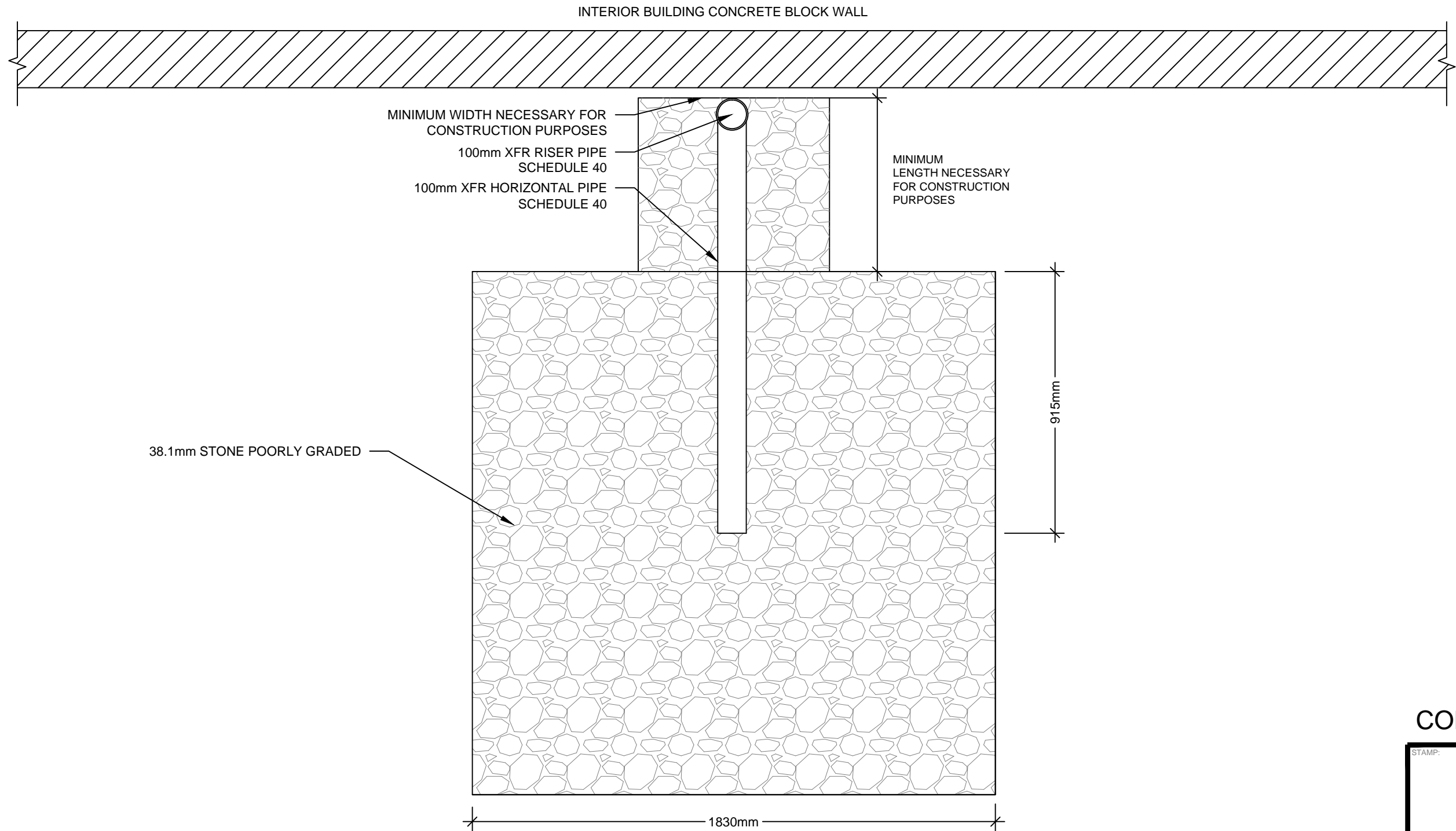
PROJECT NO.	GOR-00010348	DRAWN BY	SG
SCALE	AS NOTED	CHECKED BY	DS
DATE	JUNE 2015	DWG NO.	Q-13

HORIZONTAL HEADER PIPE SUB-SLAB DEPRESSURIZATION SYSTEM DETAILS

104-120 WELAND AVENUE ST. CATHARINES, ONTARIO

NOTE:
 A TOTAL OF FOUR BUILDING UNITS REQUIRE DEPRESSURIZATION; DRAWING SHOWS SYSTEM FOR 2 BUILDING UNITS. A SECOND SYSTEM WITH INDEPENDENT FAN BUT COMMON ALARM AND CONTROLS WILL BE REQUIRED FOR THE 2 REMAINING UNITS.

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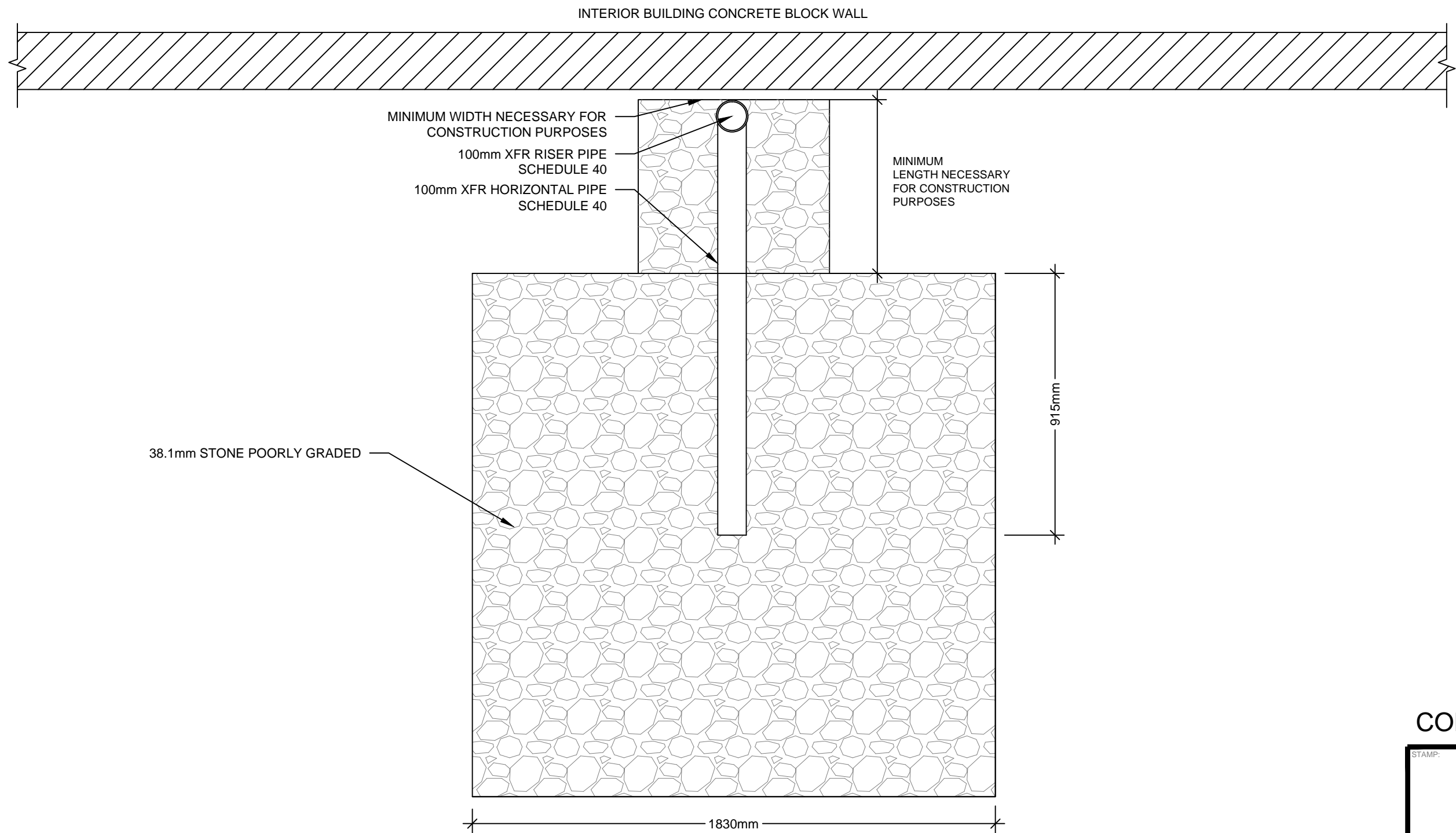


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SUB-SLAB DEPRESSURIZATION SYSTEM CARTRIDGE WORLD
PLAN VIEW 1:16

NOTE: TO BE ADJUSTED AS NECESSARY DEPENDING ON SITE ACCESS

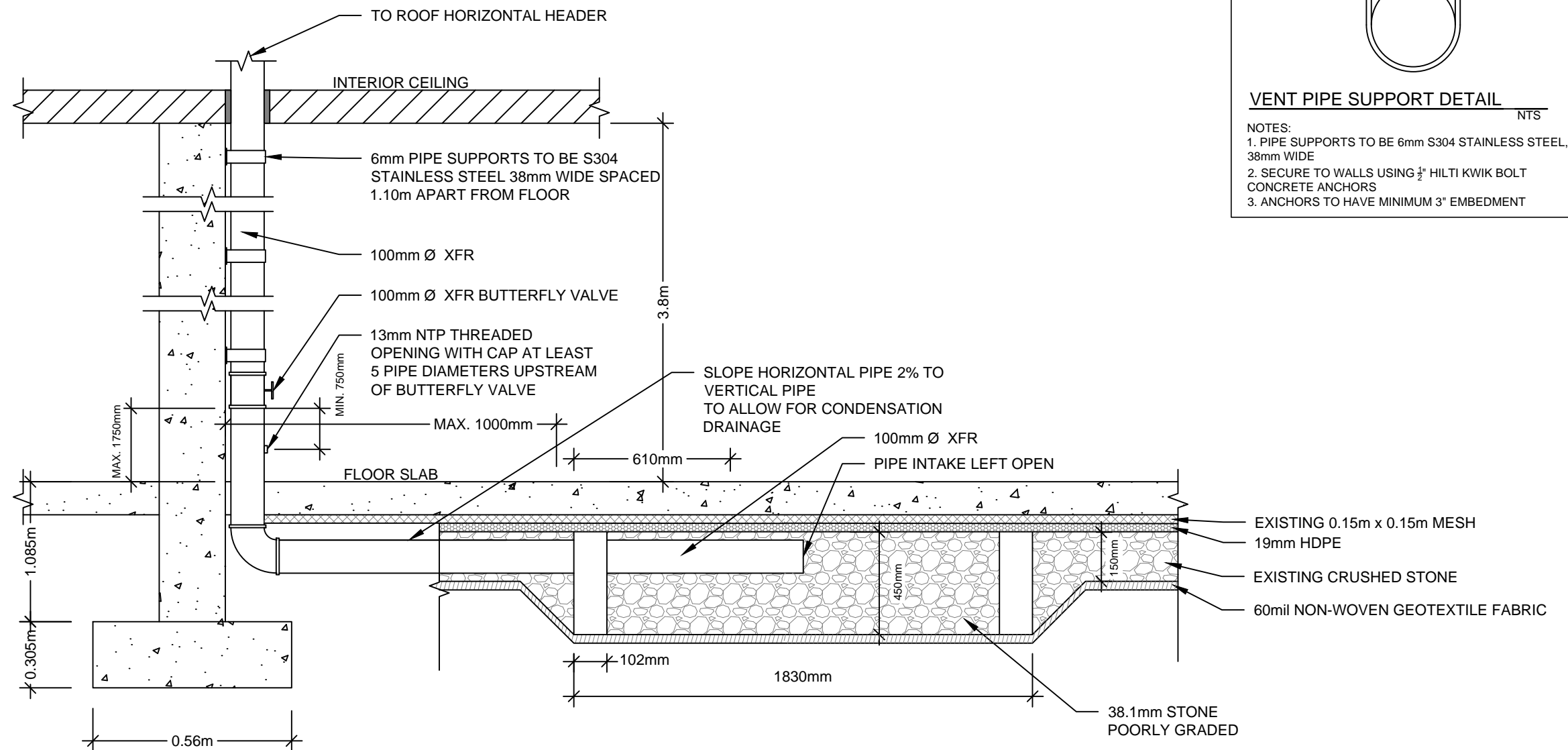


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SUB-SLAB DEPRESSURIZATION SYSTEM KIMS JEWELERS
PLAN VIEW 1:16

NOTE: TO BE ADJUSTED AS NECESSARY DEPENDING ON SITE ACCESS



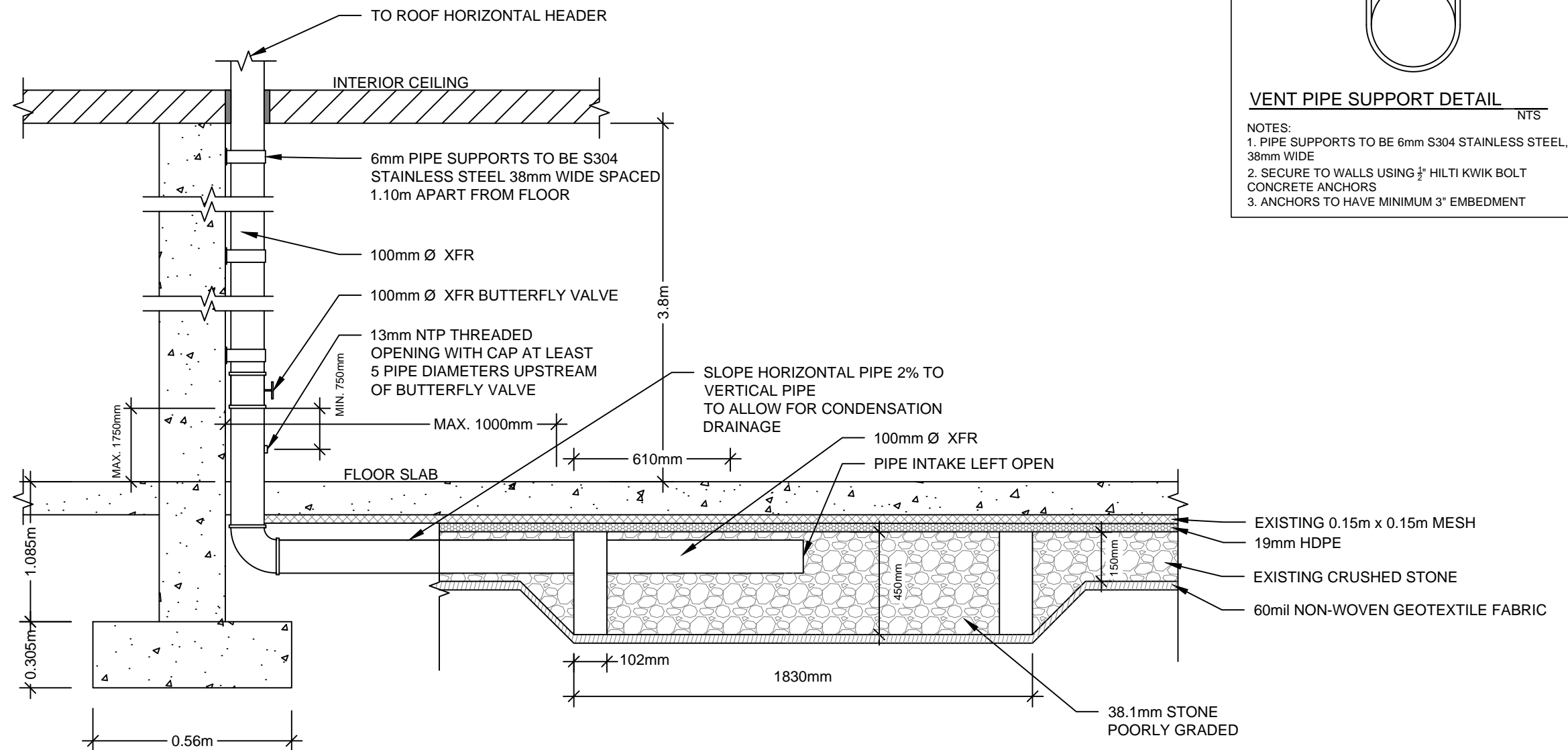
VENT PIPE SUPPORT DETAIL NTS

- NOTES:
1. PIPE SUPPORTS TO BE 6mm S304 STAINLESS STEEL, 38mm WIDE
 2. SECURE TO WALLS USING 1/2" HILTI KWIK BOLT CONCRETE ANCHORS
 3. ANCHORS TO HAVE MINIMUM 3" EMBEDMENT

SUB-SLAB DEPRESSURIZATION SYSTEM CARTRIDGE WORLD
CROSS SECTION 1:16

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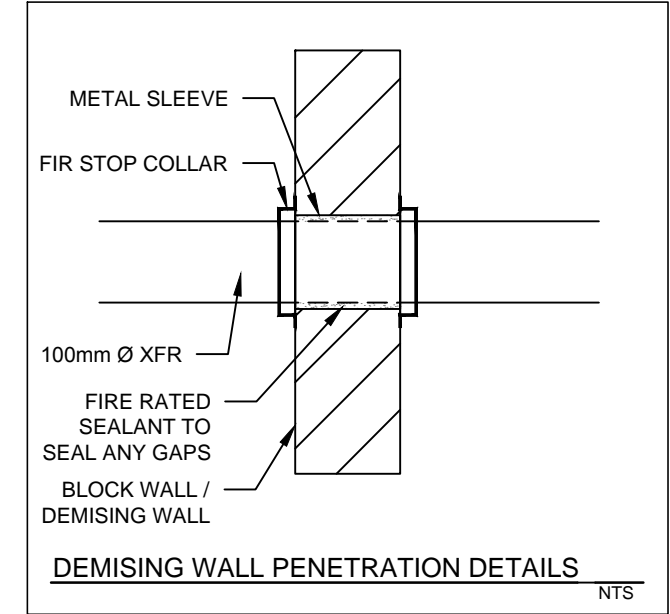
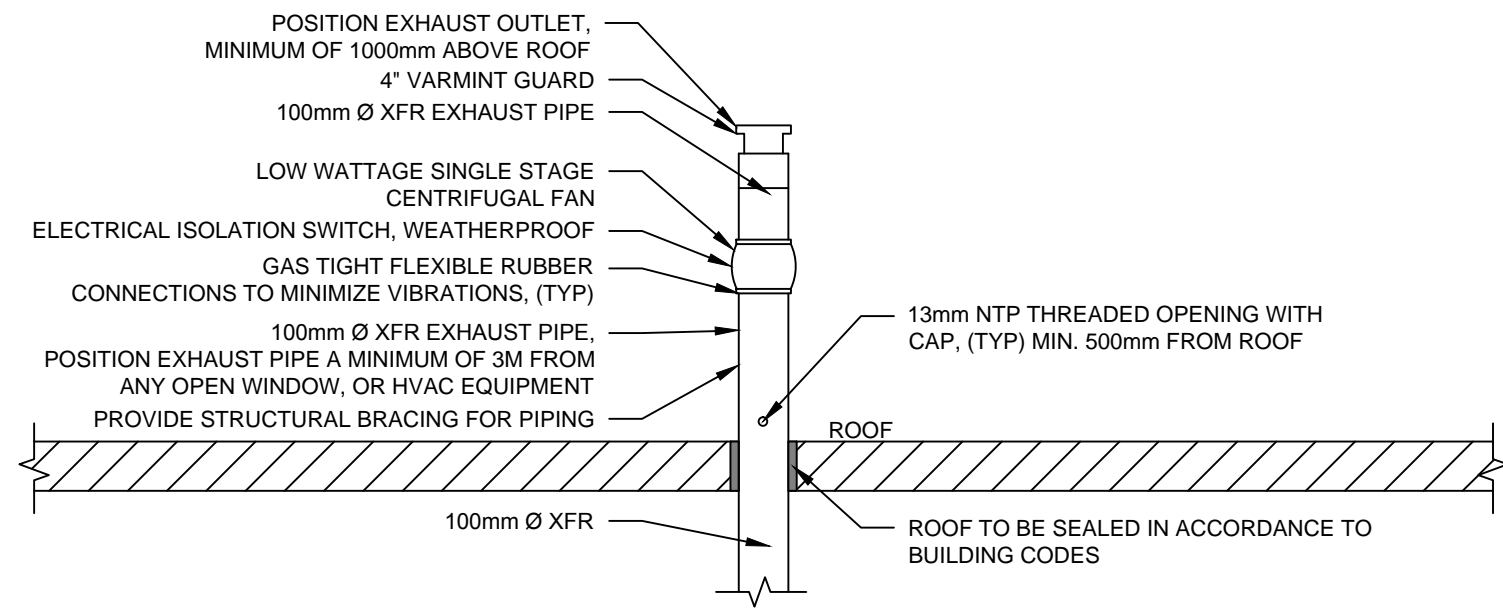
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JOB NO.: GOR-00010348	DRAWN BY: SG
SCALE: AS NOTED	CHECKED BY: DS
DATE: MARCH 2016	DWG NO.: Q-17



SUB-SLAB DEPRESSURIZATION SYSTEM KIMS JEWELERS
CROSS SECTION 1:16

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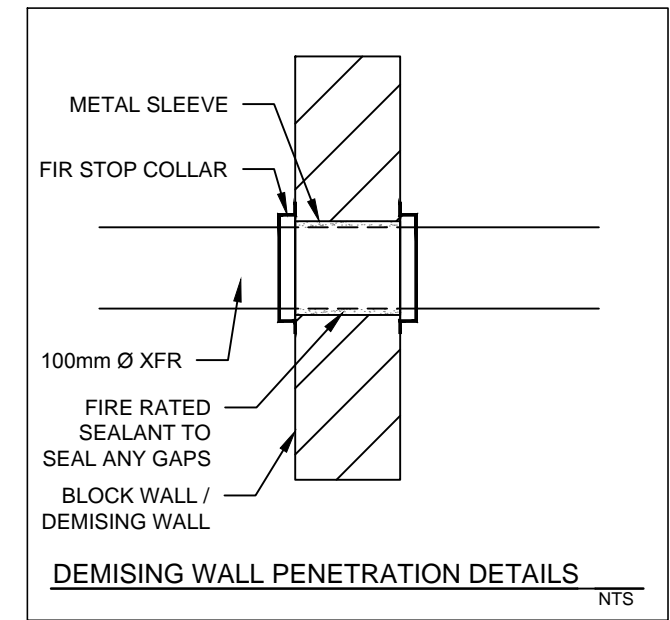
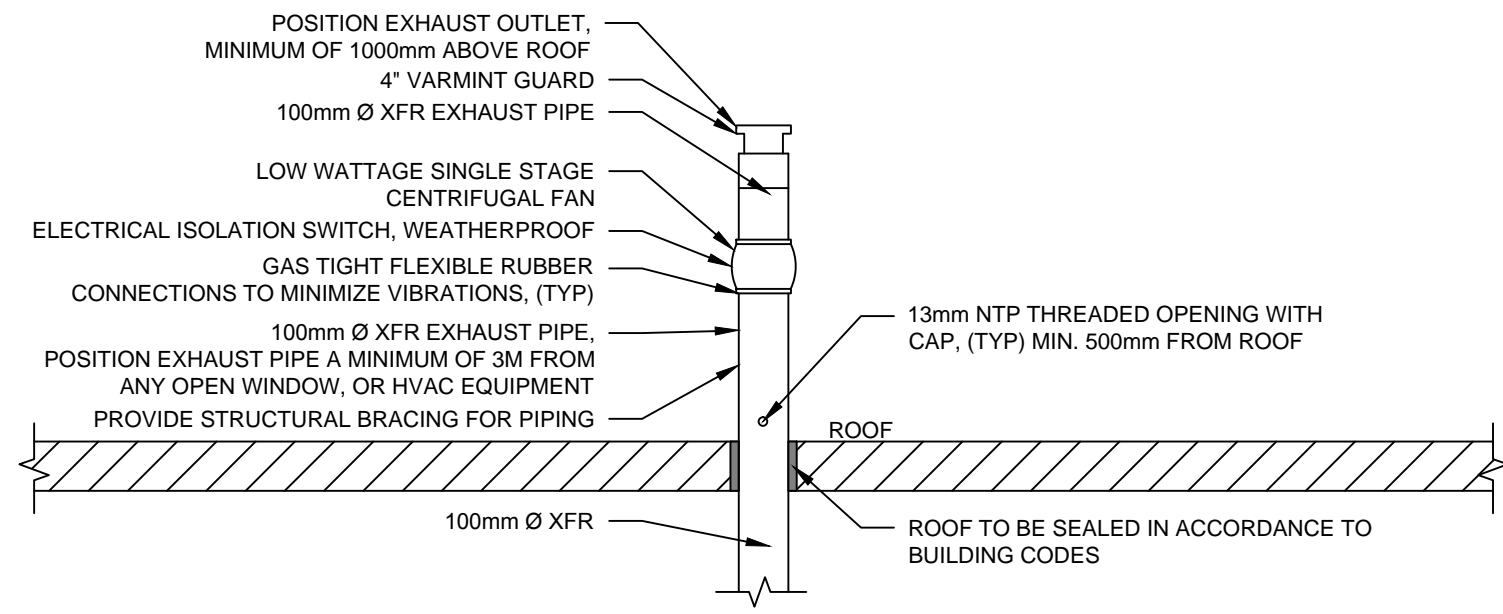
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SUB-SLAB DEPRESSURIZATION SYSTEM- CARTRIDGE WORLD
 SCALE: 1:16

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SUB-SLAB DEPRESSURIZATION SYSTEM- KIMS JEWELERS
SCALE: 1:16

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