



100 FULLARTON ST, 475-501 TALBOT ST, 93,95 DUFFERIN AVE.
BROWNFIELD BUSINESS CASE REPORT
RYGAR CORPORATION INC.
February 06, 2017



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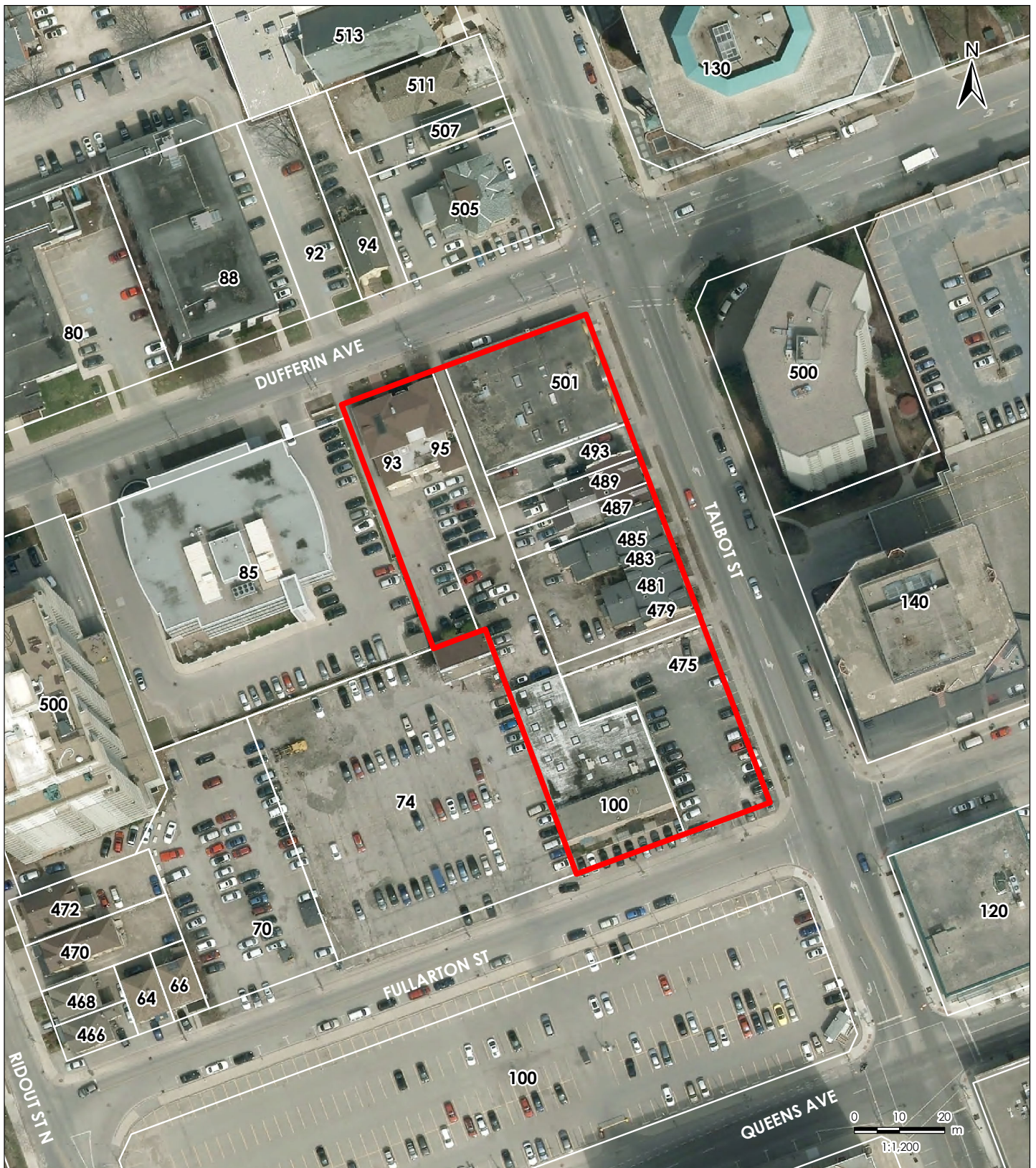
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 Revised: 2016-10-06 By: abrown

October 2016
161403388



Legend

Subject Site

Client/Project

Rygar Corporation
100 Fullarton St, 475-501 Talbot St
93/95 Dufferin Ave, London ON

Figure No.

1

Title

Location Plan

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. 2014 imagery and base features produced under license with the City of London © 2015.

February 6, 2017
File: 161403388

The Corporation of the City of London
Planning and Development Department
Planning Division
300 Dufferin Avenue
London, ON N6A 4L9

Attention: Mr. Jim Yanchula, Manager, Urban Regeneration

**Reference: 100 Fullarton Street, 475 to 501 Talbot Street and 93 and 95 Dufferin Avenue
Business Case Submission for Brownfield Incentives**

On behalf of Rygar Corporation Inc. (Rygar), please accept this Business Case submission as a request for consideration of funding under the City of London's Community Improvement Plan for Brownfield incentives and as a detailed summary of the process and cost of remediation for the above noted properties.

1.0 Location / Site Description

The study area contains nine properties on Talbot Street including 475, 479, 481, 483, 485, 487, 489, 493 and 501 Talbot Street, and two properties on Dufferin Avenue including 93 and 95 Dufferin Avenue. The total site area in the remediation limit is 0.597ha or 1.48ac. At the time of investigation, the site was occupied by an asphalt parking lot, a gravel parking lot, a commercial building, and structures converted to office use fronting Dufferin Avenue, refer to Figure 1.

2.0 Project Description and Brief Background

Rygar Corporation is proposing to build a landmark mixed use residential, retail, office tower at the north west corner of Talbot and Fullarton Streets.

The proposed project is located within the context of the downtown core on an existing Brownfield site. This infill project will be replacing under-utilized lands that currently consists of parking lots, commercial and retail buildings. The site's location will promote intensification, redevelopment, and compact form; encourage densities and a mix of uses which minimizes land consumption and servicing costs, efficiently uses infrastructure and public service facilities, and support active transportation and transit; and conserve significant cultural heritage resources within the site's parameter. The project hopes to act as a catalyst for positive change by complementing planning initiatives aimed at Downtown regeneration and through the creation



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of a vibrant pedestrian oriented place that serves to attract and retain people and businesses to the City.

The project comprises a comprehensive mixed-use redevelopment of the subject site which includes a 9-storey building in the central portion of the site along Talbot Street with approximately 491.7m² of commercial space on the ground floor with 110 residential units above, a 38-storey tower on the southern portion of the site with approximately 414.1m² of commercial space on the ground floor and 310 residential units above, and a 29-storey tower on the northern portion of the site with approximately 657m² of commercial space on the ground floor and 232 residential units above. Overall, the proposed redevelopment would provide for approximately 1,562.8m² of commercial space at street-level, 652 residential apartment units and a total of 657 parking spaces that would be provided through 4 levels of underground parking.

Due to the significant number of units to be developed, the full build out of the site will occur in a phased manner. It is intended the first phase would involve the 9-storey building in the central portion of the site, the second phase would involve the construction of the 38-storey tower at the southern portion of the site, and the final phase would involve the 29-storey tower at the north portion of the site.

The proposed development has zoning in place to permit a Bonus Zone which will provide for an increased height and increased density, in return for premium services and facilities with regards to the building design and site layout. Such features include a high-quality building design emphasizing a modern architectural design that utilizes vision glass and spandrel glass as the primary form of cladding. A low proportion of exposed concrete and wrap-around clear glass balconies will be used to enhance building aesthetics. The ground floor design will include large proportions of clear glazing, active commercial uses with separate direct entrances to individual units and pronounced ceiling heights, and the point tower will be glass with a visually interesting cap that conceals mechanical elements. The superior design features will create refined appearance in the city skyline, a vibrant pedestrian realm and minimize the overall mass, visual impact, and sunlight disruption.

The proposal contributes to various goals outlined in London's Downtown Plan, including supporting the development of a larger residential community in the downtown to foster an economic environment conducive to the health and vitality of commercial enterprises, and the integration of new development with existing heritage resources.

3.0 Historical Land Use

Exp Services Inc. (exp) was retained by Rygar to complete a Phase I and Phase II Environmental Site Assessment (ESA) of the properties located at 100 Fullerton Street, 475, 479-485, 487-489, 501 Talbot Street, and 93-95 Dufferin Avenue (see attached reports). The objective of the investigations was to support the filing of a Record of Site Condition and in accordance with generally accepted professional practices.



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A background review conducted by exp. indicates the properties at 100 Fullarton Street and 475 Talbot Street were formerly occupied by an automotive repair garage and gasoline service station with underground fuel storage tanks. Various former and current industrial and commercial businesses, including Ontario Dry Cleaners and Dryers, Central Chevrolet Oldsmobile, Stanfield Automotive, Middlesex Auto Wreckers, North American Wagon Factory were located historically within the vicinity of the site. Activities during the time of these uses may have included automotive repair, maintenance, manufacturing and salvage facilities, metals fabrication, brass foundry and various other industrial manufacturing, and former printing facilities. In addition to the historic uses on the site, the quality of fill material used throughout the above mentioned properties and within the boundaries of the subject site was unknown.

The findings of the Phase II ESA indicated the presence of metals, Petroleum Hydrocarbon and Poly Aromatic Hydrocarbons (PAHs) impacted soil on the site that exceeds Ministry of Environment soil, groundwater, and sediment standards. Petroleum impact was identified at the northeast portion of the property near the abandoned underground storage tank. The presence of metals and PAHs was identified under the existing asphalt parking lot and concrete slab of the building foundations.

Recommendations based on results from ESA include complete soil remediation for the petroleum, PAH and metals impact fill materials on the site. Further information is provided in Section 6.0 of this report.

4.0 Community Improvement Plan and Brownfield Incentives: Value, Benefits, and Cost

The City of London Community Improvement Plan (CIP) for Brownfield Incentives (2006) was approved with the intent to provide financial enticements to assist with the removal, or reduce the obstacles that hinder brownfield remediation and redevelopment in the City. Rygar is proposing a three tower infill development on an under-utilized contaminated site. The subject site characteristics and proposed development satisfy the requirements as a candidate development project for the City's CIP and Brownfield Incentives. This project conforms to the policies and supports the intent of both the incentive programs and City's London Plan.

History of brownfield redevelopment in the City have stimulated the local economy, community vitality, improved environmental conditions, all while utilizing existing infrastructure and maximizing land potential. Examples of successful brownfield redevelopments include Budweiser Gardens, Covent Garden Market, Convention Centre and the King Street Towers housing development. These properties were contaminated as a result of former activities, and as such, under-utilized or abandoned. Their previous brownfield state, environmental condition and potential liability concerns resulted in lost property tax revenue, inefficient use of existing infrastructure and lost employment opportunities.

Rygar is invested into a 300-million-dollar development atop a brownfield property for which real contamination occurs, and where remediation and redevelopment are feasible through a



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combination of incentives, including the City of London programs. The proposed development satisfies both the land use eligibility criteria and requirements for the City.

The proposed mixed use residential, retail, office development will set a new benchmark for exemplary architectural design and good planning practice, and provide a range of benefits to the City and Public Interest through environment, economic and social improvements. In addition to the multitude of advantages, the massing, location, and presence will bring a new landmark development to the downtown.

The proposed brownfield redevelopment supports provincial interest, as set out in the Provincial Policy Statement (2014):

- promoting cost-effective development standards to minimize land consumption and servicing costs;
- promoting intensification, redevelopment and compact form, while maintaining appropriate levels of public health and safety;
- using existing infrastructure and public service facilities;
- supporting long term economic prosperity by promoting the redevelopment of brownfield sites;
- contaminated sites should be remediated as necessary prior to any activity on the site associated with the proposed use such that there will be no adverse effects.

Rygar's project will provide environmental benefits through improvement of performance in energy, transportation, waste, water, and soil remediation. In addition to the reduction in the adverse environmental impacts associated with contaminated sites; the development will seek to provide a dense and well utilized site to be serviced by both vehicle and active transportation to the downtown core. The development will integrate active pedestrian connections between the new and existing downtown developments. The site is adjacent to public transportation routes, pedestrian and cycling networks and has an on-site bicycle storage. Future residents will have many active transportation choices, and the development is served by on-site and adjacent retail and commercial uses within walking distance. The active pedestrian connection provides residents ease of access to the commercial/retail core.

New trees and landscaping features on site, including green roofs and landscaping within amenity space areas, will contribute to the urban canopy, and new growth will add to the overall rejuvenation of the urban forest. Drought resistant plant material will be selected to reduce water consumption. The design and construction of the building will take into consideration building material, energy efficient design, efficient water use, energy efficiencies and use of natural light, and locally sourcing materials.

The proposed mixed use development will provide a multitude of value for the residents and business owners/employees utilizing the site, and opportunities for the public. The development will deliver a variation of housing choices in the downtown area, retail options, employment prospects, and proximity to parks and on-site amenity areas. This promotes live-work-play opportunities for residents within the downtown community. Rygar has committed a contribution



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of \$250,000 to public art to be illustrated through the landscape plan. This will enhance the streetscape and the pedestrian realm and provide a variety of large open space areas.

In addition to the social and environmental gains, this 300-million-dollar development will provide spin off construction costs, additional employment opportunities through the design and development of the site, future tax, and commercial opportunities for the local economy.

Upon completion of the Brownfield and CIP incentive programs, and based on City of London Tax Criteria (2016) provided to Rygar; the City of London will retain a total of \$1,445,880.65 per year in taxes (built out), inclusive of all three development phases. The estimated taxes to be retained by the City do not include the onsite commercial and office uses. A detailed cost and schedule breakdown of the brownfield remediation, construction period, assessments, incentive programs, rebates, and taxes are provided in **Appendix A - Figures 6 and 7**.

As discussed throughout this section, the social, environment and economic value anticipated from this landmark development exceeds the initial remediation costs, ensuring a promising investment for the City and its residents. The incentives provided through the CIP and City brownfield redevelopment programs are crucial to funding the remediation on the development site. This proposed brownfield redevelopment satisfies the intent and growth objectives as set out in policies from the Planning Act, Provincial Policy Statement, and London Plan. Rygar's 100 Fullarton Street project is a compatible and unique opportunity, ideal for approval of the City's existing incentive programs.

5.0 Planning Applications

Listed below is a record of activities relating to the Planning Application process:

- 1) Rygar Corporation has attended Pre-application consultation for ZBA and Site Plan application;
- 2) On June 15, 2016 Rygar Corporation presented to the Urban Design Peer Review Committee;
- 3) On September 6, 2016 Rygar Corporation presented ZBA application to Planning Committee;
- 4) On September 13, 2016 Council voted in favour of the development and passed the zoning bylaw.

The current zoning reflects Council's intent to redevelop the downtown, maintain a strong commercial corridor along Fullarton and Talbot Street, and to allow for residential development with Urban Design Principles incorporating, strong pedestrian connections and reduced surface parking.



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6.0 Site Contamination and Remediation Summary

It must be noted at the outset that the applicant (Rygar) for the Brownfield Incentive Program has not contributed to the existing site contamination.

Exp Services Inc. (exp) was retained to carry out a Phase I Environmental Site Assessment (ESA) of the subject site. The Phase I ESA indicated past industrial, commercial and residential usage of significant portions of the subject site including the presence of automotive businesses, gasoline service stations, and food shops. Available records reviewed as part of the Phase I ESA also showed that three underground storage tanks (UST's) were present on the site. Based on the findings from the Phase I ESA, a Phase II ESA was recommended to address the potential subsurface impacts identified.

Exp was subsequently retained to complete a Phase II ESA. Based on the findings from the Phase II ESA and a review of the proposed amendments to Ontario Regulation 153/04 and the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Act", several areas on site exceeded the standards under Table 3 for Residential/Parkland/Institutional land use for select metals, PAHs and petroleum hydrocarbons due to the past land use activities.

Due to the known and potential impacts as identified through the Phase I and II ESA on the subject site and the projected remediation costs which are based on the Ministry standards, remediation compensation is required in order to make redevelopment of this under-utilized site by Rygar feasible.

A summary of the projected remediation costs developed by Stantec Consulting Ltd. (Stantec) and exp is provided in Table 1. The remediation cost also includes Environmental consultant fees and laboratory fees required as part of the cleanup process and includes the preparation of a Record of Site Condition (RSC) to be submitted to the Ministry of the Environment and Climate Change (MOECC) prior to receiving final building approvals from the City.



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Table 1 – Summary of Estimated Brownfield Costs 100 Fullarton Street, 475 to 501 Talbot Street and 93, 95 Dufferin Avenue			
ITEM 1: HEAVY METAL IMPACTED SOIL			
Item	Description of Work	Methodology	Cost
<p>Based on a review of EXP Phase II ESA reports dated March 20, 2014, June 20, 2014, December 19, 2014 & December 23, 2014 and in reference to MOECC Table 3 of the Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, the following locations exceed the regulatory limit for the noted parameters:</p> <p>December 19 & 23, 2014</p> <ul style="list-style-type: none"> BH 303 SA1: Arsenic, Lead, Zinc, Anthracene, Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenz(a,h)anthracene, Fluoranthene, Indeno(1,2,3-CD)Pyrene BH301 SA1: Lead BH4 SA2: Cadmium, Copper, Lead, Selenium, Zinc BH304 SA1: Lead BH306 SA1: Lead BH1 SA1: Lead BH305 SA1: Lead BH3 SA1: Arsenic, Zinc, Lead, Barium, Cadmium, Benzo(a)pyrene, Fluoranthene BH2 SA1: Lead BH201 SA1: Lead, Benzo(a)pyrene, Benzo(b)fluoranthene, Fluoranthene 	<p>Area A Removal of heavy metal and PAH impacted soil to an approximate depth of 2.5m in Area A and 3.8m within the petroleum impacted area, amounts to 14,322 tonne based on Bore Hole information.</p> <p>Area B Removal of heavy metal and PAH impacted soil to an approximate depth of 1.5m amounts to 8,053.5 tonne based on Bore Hole information.</p>	<p>For estimating purposes, the entire site area was used (5970.8m²), including areas below the existing buildings as impact may have occurred prior to these buildings being constructed. Basements in existing building are accounted for in soil calculations. Of this total area, and based on the 1.5 – 3.8m approximate depth, the following allocation of impacted soil was assumed:</p> <p>-100% of the soil exceeding the MOECC, Table 3 limit and requiring removal as waste -\$35/t tipping fee x 22,375.5 tonnes -\$30/t for excavation and trucking x 22,375.5 tonnes -20% contingency added</p> <p>For estimating purposes approximate bulk density of 2.1Tonne/m³ is assumed for impacted soil.</p> <p>Contingency based on Cost Estimate Classification System – Estimate Class 3</p>	<p>Based on methodology noted, total estimated cost is:</p> <p>\$1,745,289</p>



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Table 1 – Summary of Estimated Brownfield Costs 100 Fullarton Street, 475 to 501 Talbot Street and 93, 95 Dufferin Avenue			
<ul style="list-style-type: none"> • BH205 SA1: Barium, Cadmium, Lead, Selenium, Zinc, Anthracene, Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Indeno(1,2,3-CD)pyrene, Phenanthrene • BH202 SA1: Lead • BH204 SA1: Barium, Lead, Zinc • BH203 SA1: Antimony, Barium, Copper, Lead, Zinc, Benz(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenz(a,h)anthracene, Fluoranthene, Indeno(1,2,3-CD)pyrene • BH206 SA1: Copper, Lead, Zinc <p>June 20, 2014</p> <ul style="list-style-type: none"> • BH2 SA1: Lead • BH3 SA1: Lead, Mercury • BH4 SA1: Mercury • BH5 SA1: Lead, Mercury • BH7 SA2: Barium, Chromium, Lead, Zinc, Mercury • BH8 SA1: Lead, Mercury • Duplicate 1 (BH4 SA1): Mercury <p>March 2014</p> <ul style="list-style-type: none"> • BH4 SA2: Lead, Zinc, Mercury • BH7 SA3: Mercury • BH9a SA2: Cadmium, Copper, Lead, Zinc, 	<p>Boundary Soils Retention Removal of petroleum impacted soil to an approximate depth of 6.5m to property limits on the west boundary (45.3m) the east limit of 475 Talbot Street (34.8m) require soil retention based on borehole information.</p>	<p>Based on heavy metal, PAH and petroleum impacted soil which exceeds guidelines, removal of these soils are required on subject site and at property limit (west and east). Soils Retention will be required for removal of soil at property limits.</p> <p>Boundary Soils Retention will only apply to depth of impacted soil, cost below impacted soil will not be charged to Brownfield cost.</p> <p>Boundary Soils Retention estimate based on Anchor Shoring and Caissons Limited.</p> <p>See Figures: Appendix A – Boundary Property Retention Letter – Tripodi, Jan 28, 2017 Appendix A - Boundary Property Retention Cross Section – Tarra Engineering & Structural Consultants Inc. Jan 25, 2017</p>	<p>Based on unit noted, total estimated cost is:</p> <p>\$420,000.00</p>



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Table 1 – Summary of Estimated Brownfield Costs 100 Fullarton Street, 475 to 501 Talbot Street and 93, 95 Dufferin Avenue			
<p>Mercury, F2 (C10 to C16), F3 (C16 to C34)</p> <ul style="list-style-type: none"> • BH11 SA2: Arsenic, Barium, Lead, Zinc, Mercury • BH12 SA2: Mercury • BH13 SA6: F2 (C10 to C16) • BH14 SA2: Lead, Fluoranthene • BH201 SA1: Lead, Mercury, Fluoranthene, Benzo(a)pyrene • BH 202 SA1: Lead • BH204 SA1: Cadmium, Copper, Lead, Zinc, Mercury • BH205 SA2: Cadmium, Lead, Zinc, Mercury • BH207 SA1: Lead, Mercury • BH208 SA2: Lead, Mercury • BH210 SA2: Lead, Mercury • BH211 SA3: Mercury, Fluoranthene, Benz(a)anthracene, Benzo(a)pyrene • BH212 SA2: Lead, Mercury • BH214 SA2: Lead, Mercury <p>March 20, 2014</p> <ul style="list-style-type: none"> • BH1 SA1: Lead • BH4 SA1: Lead • BH7 SA2: Benzo(a)pyrene • BH8 SA2: Lead • BH9 SA2: Lead • BH10 SA1: Lead <p>July 20, 2011</p> <ul style="list-style-type: none"> • BH4 SA8: Benzene • BH5 SA5: F2(C10 to C16) • BH5 SA6: F2 (C10 to C16), F3 (C16 to C34) 			



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Table 1 – Summary of Estimated Brownfield Costs 100 Fullarton Street, 475 to 501 Talbot Street and 93, 95 Dufferin Avenue			
ITEM 2 : REMOVAL OF PETROLEUM IMPACTED SOIL			
Item	Description of Work	Methodology	Cost
<p>In reference to Bore Holes at deeper depth, Petroleum sample was recovered from:</p> <p>March 2014</p> <ul style="list-style-type: none"> BH9a SA6 <p>March 20, 2014</p> <ul style="list-style-type: none"> BH7 SA7/SA8, BH13 SA6/SA7 <p>July 20, 2011</p> <ul style="list-style-type: none"> BH5 (Law report) 	<p>Removal and disposal of additional soil below 3.8m to approximate 6.5m depth, amounts to 3,591 tonne at the location of BH9a, BH7, BH13 And BH5.</p>	<p>Two anomalies identified by electromagnetic (EM) scan to be possible UST's(tanks) were detected on subject site. Based on Bore Hole information, Petroleum was discovered between approximate depths of 3.8 to 6.5m. It is assumed that all soil removed will be disposed as Brownfield waste. The following allocation of impacted soil was assumed:</p> <ul style="list-style-type: none"> 100% of the soil exceeding MOECC Table 3 limit and requiring removal as waste \$35/t tipping fee x 3,591 tonnes \$30/t for excavation and trucking x 3,591 tonnes 20% contingency added <p>For estimating purposes approximate bulk density of 2.1Tonne/m³ is assumed for impacted soil. Contingency based on Cost Estimate Classification System – Estimate Class 3</p>	<p>Based on methodology noted, total estimated cost is:</p> <p>\$280,098</p>



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Table 1 – Summary of Estimated Brownfield Costs 100 Fullarton Street, 475 to 501 Talbot Street and 93, 95 Dufferin Avenue			
ITEM 3: UNDERGROUND STORAGE TANK (UST) REMOVAL			
Item	Description of Work	Methodology	Cost
In reference to findings as noted in EXP Phase II ESA dated March 20, 2014.	Electromagnetic (EM) scan review revealed potentially two (2) UST's on the site sized as follows: <ul style="list-style-type: none"> two (2) 5000 gal tanks 	Work generally consists of pumping out any remaining liquid contents of the tank, removing the tank, and any impacted soil. For the estimating purposes, the following was assumed: <ul style="list-style-type: none"> Approximately 75% of the tank volume will contain liquid waste to be disposed of; Cost per gallon to remove liquid waste at \$1.50/gal; Estimated cost for vacuum truck (to remove liquid) at \$120/hr with 5 hours assumed to remove liquid from all tanks; Cost for disposal of impacted soil under tanks itemized in Item 2. Estimated cost for licensed contractor to undertake UST removal is \$20,000. 	Based on methodology noted, total estimated cost is: \$38,220.00



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Table 1 – Summary of Estimated Brownfield Costs 100 Fullarton Street, 475 to 501 Talbot Street and 93, 95 Dufferin Avenue			
		<ul style="list-style-type: none">• 20% contingency added	
		Contingency based on Cost Estimate Classification System – Estimate Class 3	



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**Table 1 – Summary of Estimated Brownfield Costs
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ITEM 4: ENVIRONMENTAL CONSULTANT FEES

Item	Description of Work	Methodology	Cost
<p>Estimated costs associated with environmental consultant fees and laboratory fees required as part of the Brownfield Remediation work to verify site condition.</p>	<p>Site review for UST removals, impacted soil removal, recover pre-remediation delineation soil samples and groundwater samples from existing monitoring wells, recover confirmatory soil samples from limits of remedial excavation for testing of metals, PAHs, and PHCs to confirm completeness of Brownfield remediation, and achieve Record of Site Condition from MOECC</p>	<p>The following estimates are provided based on costs for Environmental Consultant review and costs incurred for Laboratory Analysis as part of the consultant review and confirmation (disbursements required as part of the review process):</p> <p><u>Review Consultant</u></p> <ul style="list-style-type: none"> • Coordination of Brownfield process for owner and review: \$50,000.00 <p><u>Environmental Consultant:</u></p> <ul style="list-style-type: none"> • Site Remediation (UST Removal): \$10,000 • Drilling Contractor-Drilling for post remedial monitoring, installation of monitoring wells (if required), drilling through concrete slabs following demolition of buildings: \$15,000 • Fieldwork-Monitoring of excavation of petroleum and metals impacted soils: \$27,000 • Fieldwork-Resampling of existing monitoring wells (11): \$5,000 • Record of Site Condition /Preparation of Conceptual Site Model (CSM): \$14,000 • Reporting-including preparation of remediation report, cross-sections, and submission report to City: \$35,000 	<p>Based on unit costs noted, total estimated cost is:</p> <p style="text-align: right;">\$251,400</p>



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Table 1 – Summary of Estimated Brownfield Costs 100 Fullarton Street, 475 to 501 Talbot Street and 93, 95 Dufferin Avenue			
		<u>Laboratory Costs:</u> <ul style="list-style-type: none"> • Water Analytical Testing from existing monitoring wells for PHC/VOC, metals, PAHs: \$9,000 • Confirmatory Soil Analytical Testing for UST removal: \$4,500 • Confirmatory Soil Analytical testing for metals and PAH's following cleanup - \$30,000 • Confirmatory Soil Analytical testing for PHC's/VOC's following cleanup of petroleum impacted soils - \$10,000 • 20% contingency added 	
TOTAL ESTIMATED BROWNFIELD COSTS excluding taxes (Items 1, 2, 3, 4)			\$2,735,007

The remediation costs provided in Table 1 are based upon estimates of soil quantity that may be impacted to levels above MOECC standards as determined through interpolation of the borehole data, and preliminary Contractor costs provided or otherwise estimated based on costs from previous projects. However, given that soil conditions may differ between test locations and the potential that the Ministry standards may be further adjusted following via stakeholder input through the current guideline review process, final remediation costs may vary. Accordingly, the estimates contained within should be considered budgetary in nature and the final cost will be based on the actual cost of the remediation.

7.0 Summary of Application Requests

As previously noted, the total of the grant and rebates cannot exceed the Brownfield site remediation cost which is presently estimated at \$2,735,007 (taxes not included).

8.0 Closing

In accordance with the Brownfield Incentives Requirements, we confirm the following:

- Rygar has not contributed to the site contamination.



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- There are no outstanding taxes, municipal orders or by-law infractions on the subject property.
- A Phase II ESA has been provided to the City of London.
- The incentives are considered necessary to make the remediation and redevelopment on the subject property feasible.

Rygar has proposed to create a new and vibrant infill community within the downtown core which is sensitive to its neighbours, addresses the major street frontage and promotes an improved environment by emphasizing attractive residential design with pedestrian linkage.

We believe this development meets the objectives of design and intensification and request your support for the costs required for remediation under the Brownfield program.

We trust this submission meets your acceptance. Should you have any questions regarding our information, please contact the undersigned.

STANTEC CONSULTING LTD.

Jeff Paul, P.Eng.
Principal
Phone: 519-675-6604
Fax: 519-645-6575
Jeff.Paul@stantec.com

Brian Blackwell
Senior Project Manager
Phone: 519-675-6627
Fax: 519-645-6575
Brian.Blackwell@stantec.com

EXP SERVICES INC.

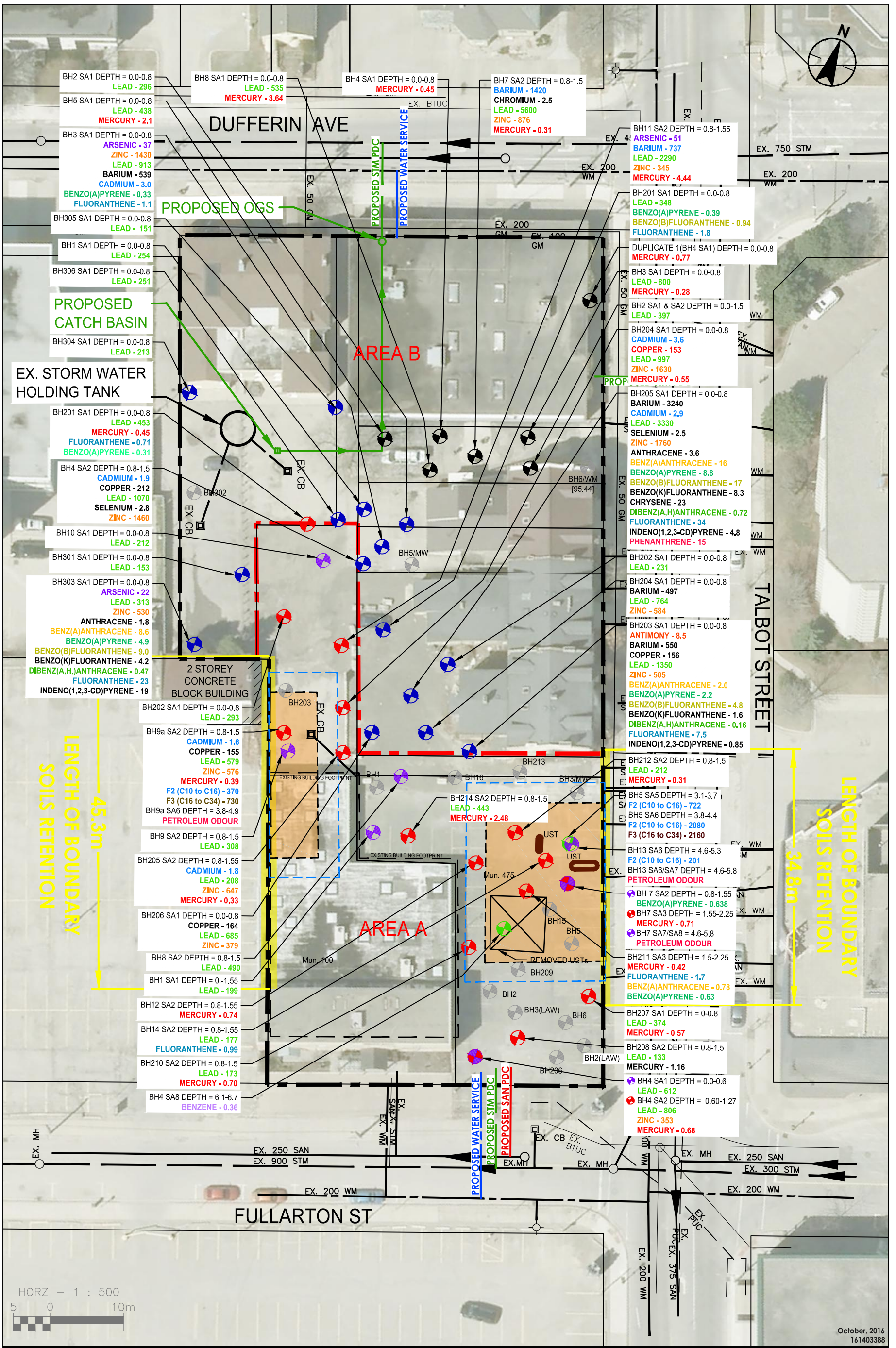
Scott Aziz, P. Eng.
Senior Project Manager and Team Leader
Phone: 519-963-3000 x3421
Fax: 519-963-1152
Scott.Aziz@exp.com


c. Rygar, John Rodgers

APPENDIX A

Figures

V:\01614\active\161403388 - 475 Fullarton Street\drawing\161403388_Proposed Servicing Bore Hole Plan.dwg
 2017-11-30 4:14 PM by: Brown, Alexander





Stantec

600-171 Queens Avenue
 London ON N6A 5J7
 Tel. 519-645-2007
 www.stantec.com

Legend

- BORE HOLE EXCEEDS GUIDELINES DRAFT PHASE II ENVIRONMENTAL SITE ASSESSMENT LAW ENGINEERING JULY 20, 2011
- BORE HOLE EXCEEDS GUIDELINES PHASE II ENVIRONMENTAL SITE ASSESSMENT EXP. MARCH 20, 2014
- BORE HOLE EXCEEDS GUIDELINES DRAFT PHASE II ENVIRONMENTAL SITE ASSESSMENT EXP. (ADDITIONAL BORE HOLE INFORMATION) MARCH, 2014
- BORE HOLE EXCEEDS GUIDELINES LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT EXP. DEC 19 & 23, 2014
- BORE HOLE EXCEEDS GUIDELINES PHASE II ENVIRONMENTAL SITE ASSESSMENT EXP. JUNE 20, 2014

- EXISTING UST LOCATION PHASE I ENVIRONMENTAL SITE ASSESSMENT EXP. DECEMBER 20, 2013
- REMOVED UST LOCATION PHASE II ENVIRONMENTAL SITE ASSESSMENT LAW ENGINEERING JULY 20, 2011
- EXISTING BUILDING FOOTPRINT
- PETROLEUM EXCAVATION LIMIT
- LOCATION OF PROPERTY BOUNDARY SOILS RETENTION (TOTAL LENGTH = 80.1m)
- PETROLEUM IMPACT SOIL
- BORE HOLE DID NOT EXCEED GUIDELINES

Client/Project
RYGAR CORPORATION
 100 FULLARTON STREET
 London ON Canada

Figure No.
2.0

Title
**BOREHOLE PLAN
 OCTOBER 24, 2016**

October, 2016
 161403388

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Consultants

Legend

- BORE HOLE EXCEEDS GUIDELINES DRAFT PHASE II ENVIRONMENTAL SITE ASSESSMENT LAW ENGINEERING JULY 20, 2011
- BORE HOLE EXCEEDS GUIDELINES PHASE II ENVIRONMENTAL SITE ASSESSMENT EXP. MARCH 20, 2014
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- BORE HOLE DID NOT EXCEED GUIDELINES
- EXISTING UST LOCATION PHASE I ENVIRONMENTAL SITE ASSESSMENT EXP. DECEMBER 20, 2013
- REMOVED UST LOCATION PHASE II ENVIRONMENTAL SITE ASSESSMENT LAW ENGINEERING JULY 20, 2011
- PETROLEUM EXCAVATION LIMIT
- EXISTING BUILDING FOOTPRINT
- PROPOSED BUILDING FOOTPRINT

Notes

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

File Name:	161403388.boreholes-sections	DL	BB	DL	16.10.24
		Dwn.	Chkd.	Dgn.	YY.MM.DD

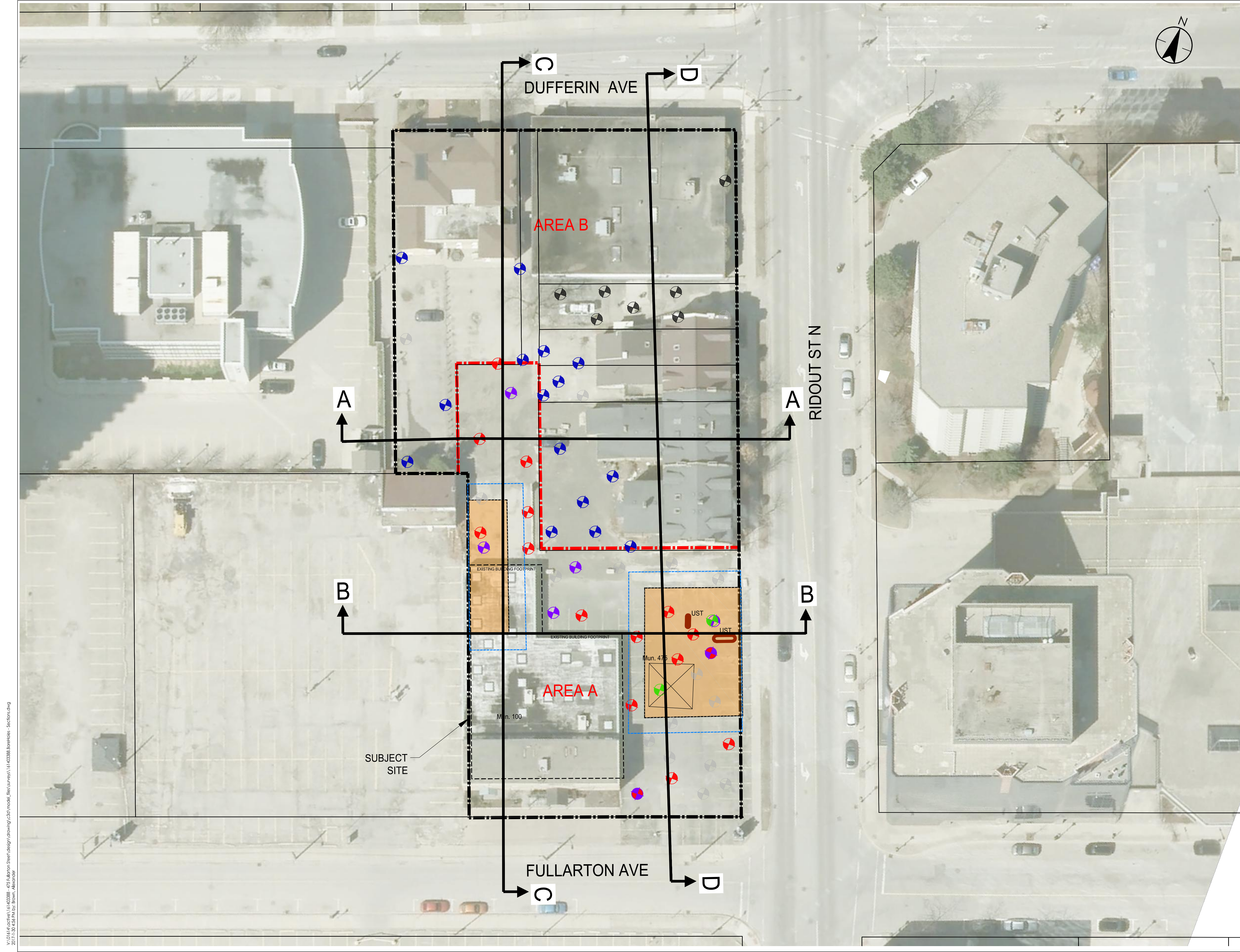
Permit-Seal

Client/Project
Rygar Corporation Inc.

100 FULLARTON STREET &
475 Talbot Street
London, ON Canada

Title
BROWNFIELD CASE REPORT
SECTION LOCATION PLAN
FIGURE 3

Project No.	Scale	HORZ - 1 : 200
161403388		4m
Drawing No.	Sheet	Revision
1	1 of 3	0



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Consultants

Legend

- HEAVY METAL IMPACTED SOIL
- PETROLEUM IMPACTED SOIL
- BOUNDARY SOILS RETENTION

Notes

Revision

Issued

File Name: 161403388_v-et	D.J.L.	B.J.B.	D.J.L.	16.10.17
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

Client/Project

Rygar Corporation Inc.

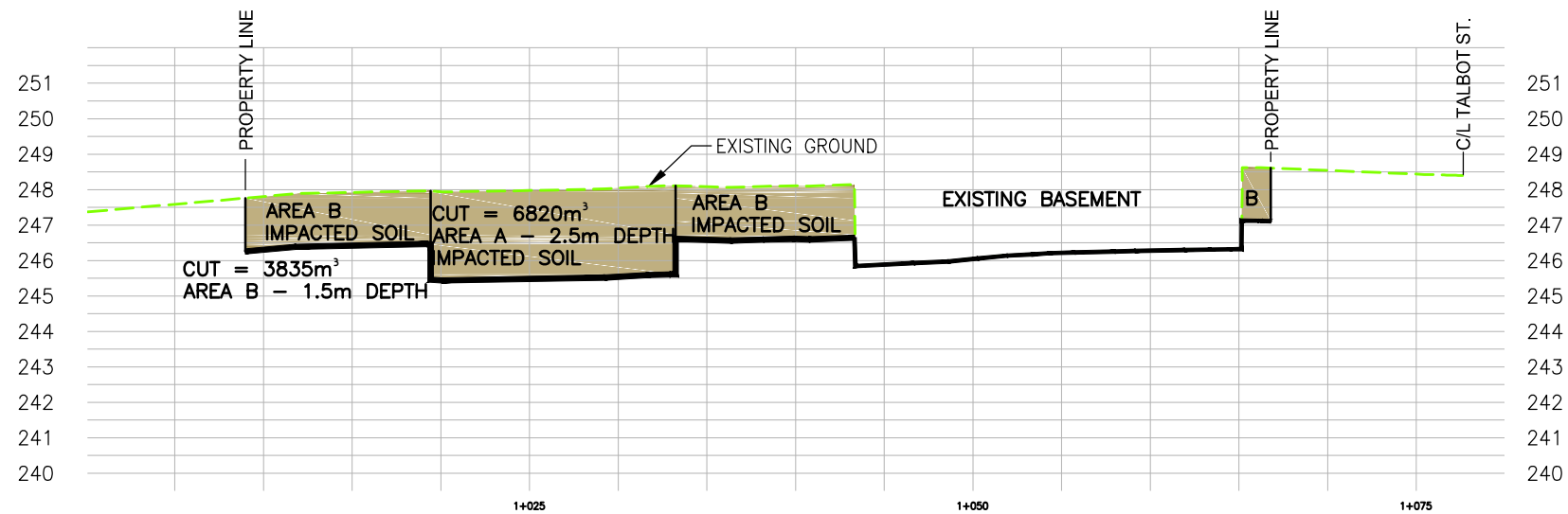
100 Fullarton Street &
475-501 Talbot Street & 93-95 Dufferin Avenue
London, ON Canada

Title

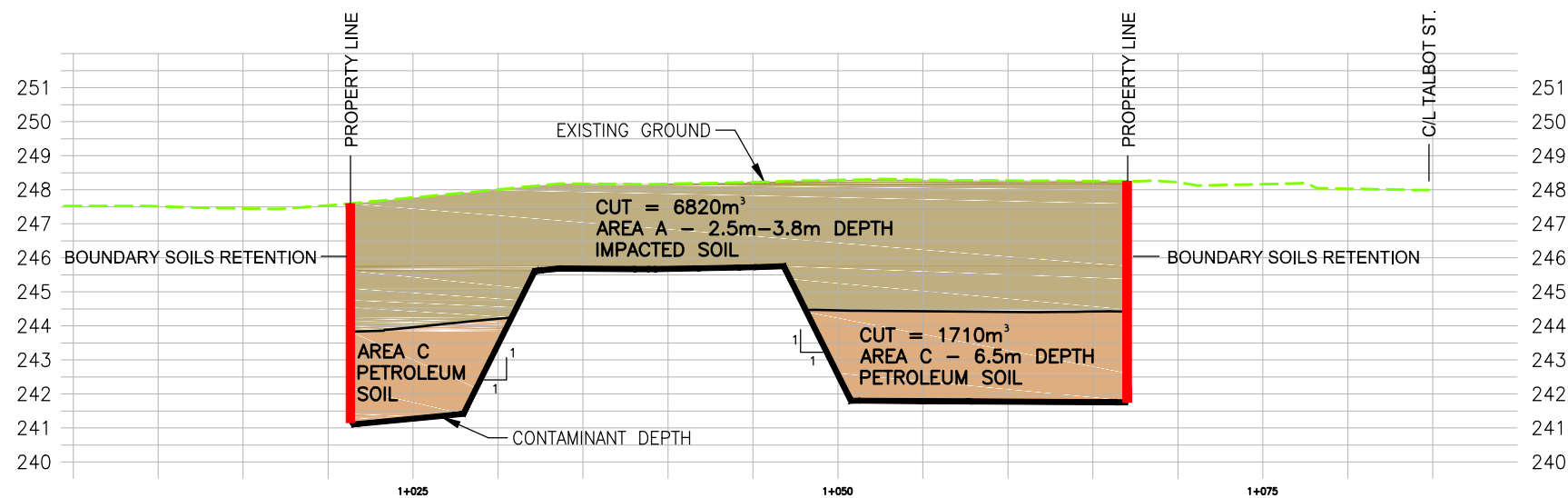
BROWNFIELD CASE REPORT
SECTION A-A & B-B
FIGURE 4

Project No. 161403388	Scale AS SHOWN	
Drawing No.	Sheet	Revision

2 2 of 3 0



SECTION A-A
SCALE = H 1:200





SECTION B-B
SCALE = H 1:200

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Consultants

Legend

-  HEAVY METAL IMPACTED SOIL
-  PETROLEUM IMPACTED SOIL

Notes

Revision

Issued

File Name:	D.J.L.	B.J.B.	D.J.L.	16.10.17
161403388_v-01	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

Client/Project

Rygar Corporation Inc.

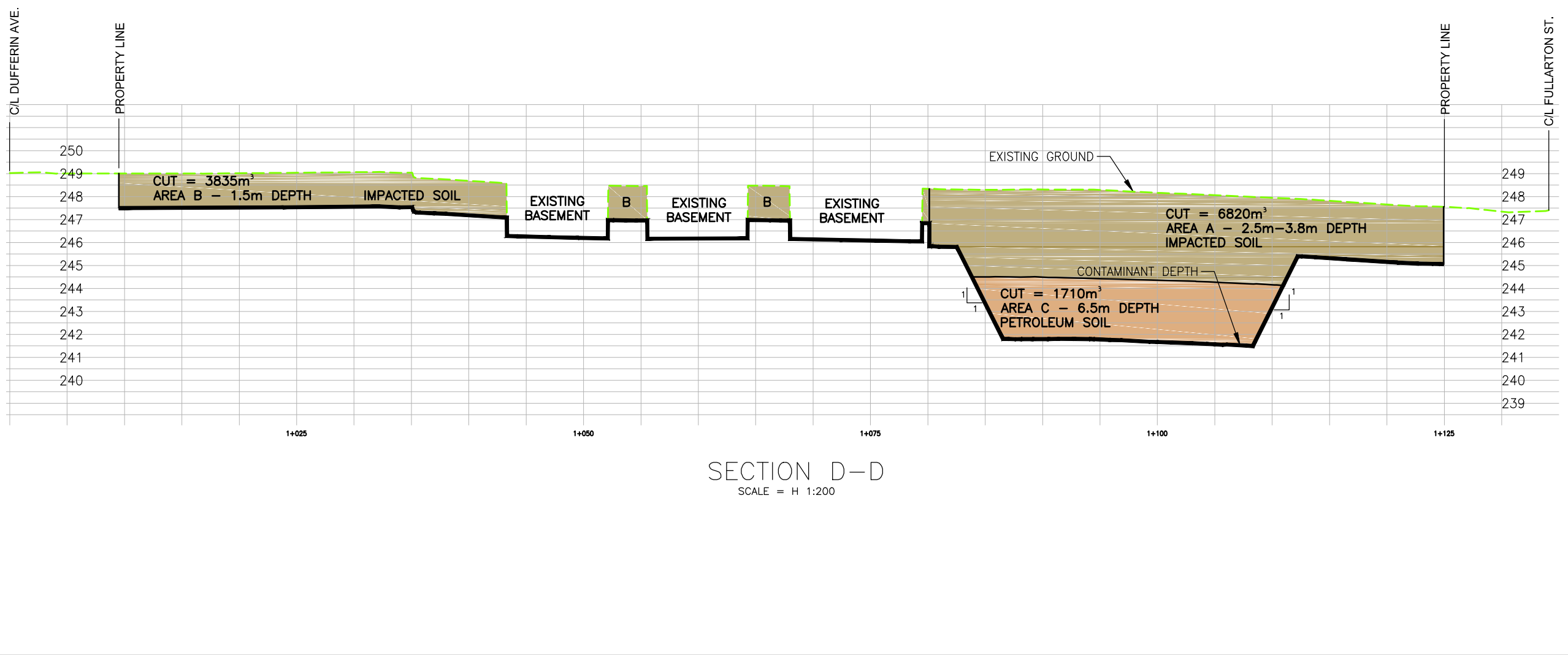
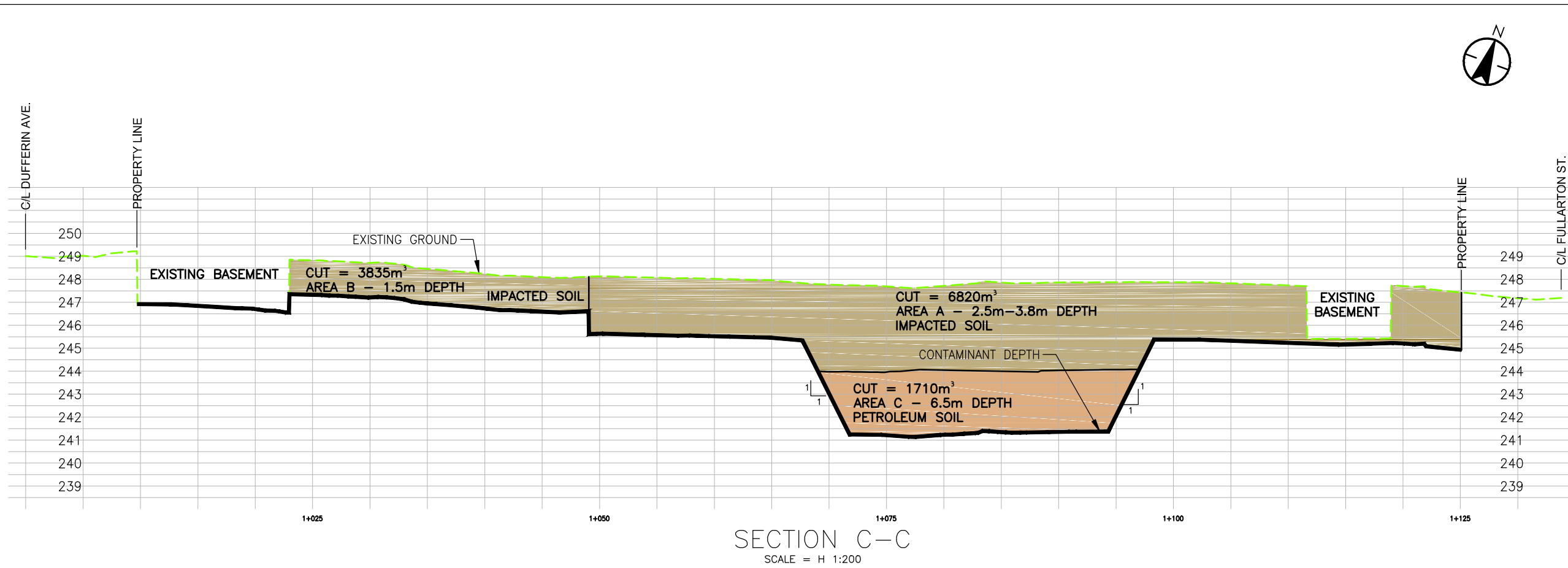
100 Fullarton Street &
475-501 Talbot Street & 93-95 Dufferin Avenue
London, ON Canada

Title

BROWNFIELD CASE REPORT
SECTION C-C & D-D
FIGURE 5

Project No.	Scale	
161403388	AS SHOWN	
Drawing No.	Sheet	Revision

3	3 of 3	0
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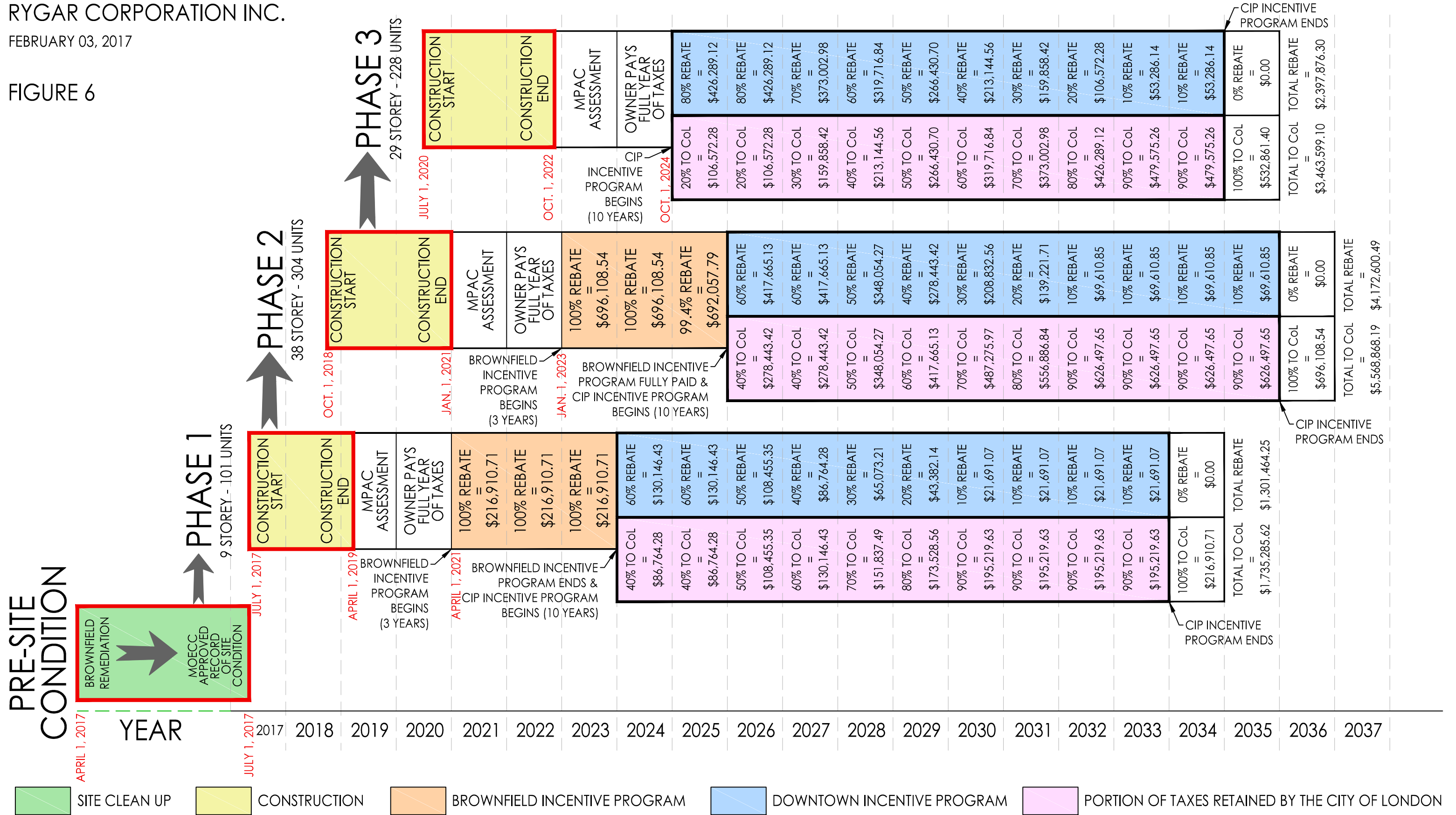
BROWNFIELD & DOWNTOWN COMMUNITY IMPROVEMENT PLAN INCENTIVE PROGRAMS



100 FULLARTON STREET
RYGAR CORPORATION INC.

FEBRUARY 03, 2017

FIGURE 6



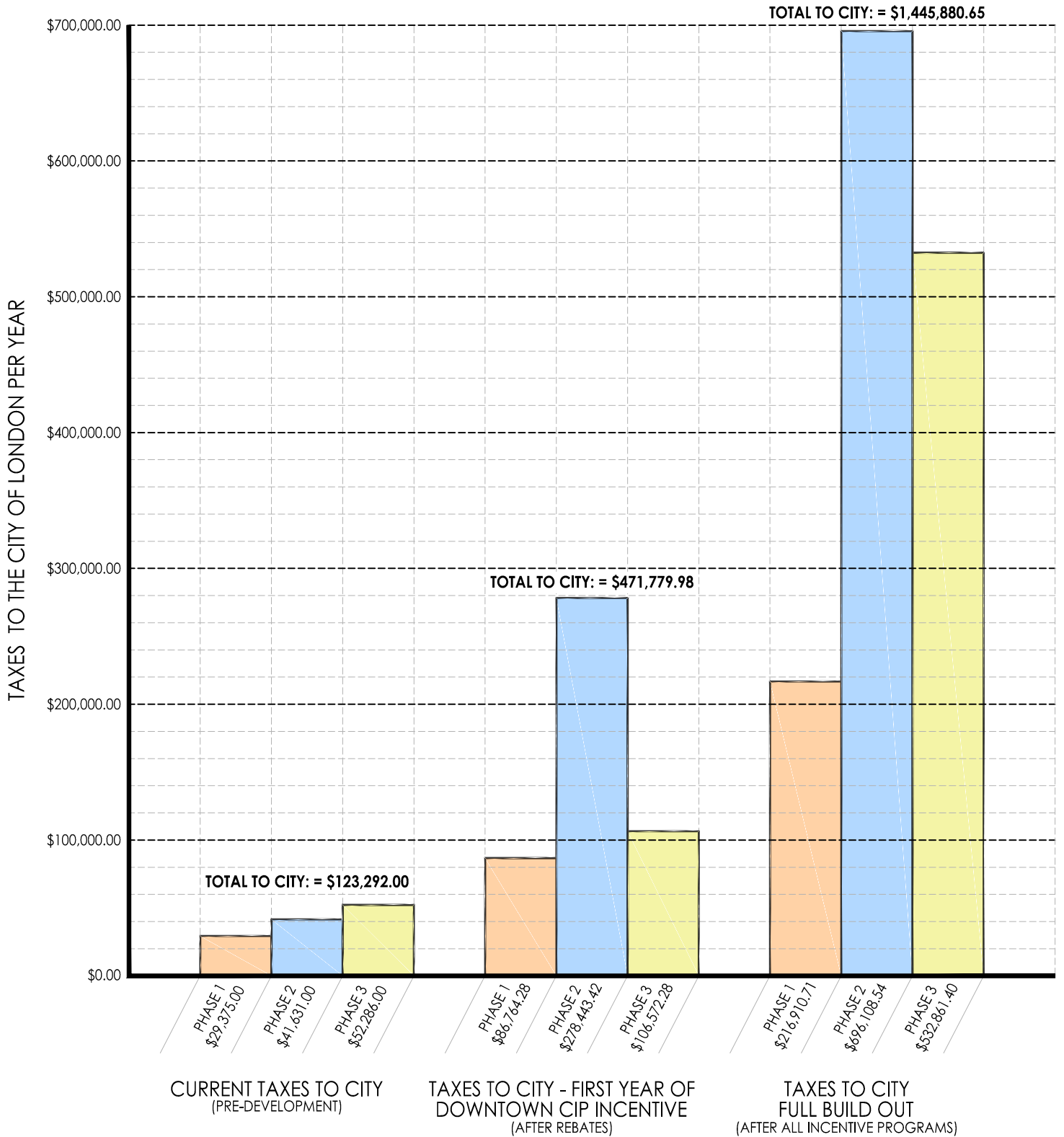
TAX BREAKDOWN TO THE CITY OF LONDON



100 FULLARTON STREET
RYGAR CORPORATION INC.

FEBRUARY 03, 2017

FIGURE 7



January 28, 2017

Rygar Properties Inc.
100 Fullerton Street
London, ON N6A 1K1
Attention: John Rogers

Re: Boundary Property Retention/ Brownfield Remediation Requirement
Fullerton St. High Rise Remediation

In order minimize the effect on neighbouring lands and the City ROW Boundary, a Soils Retention System will be required for the removal of petroleum impacted soil to an approximate depth of 6.5m on west boundary limit (43.3m) and east limit at Talbot Street property limit (34.8m), based on borehole information (see Borehole Plan, Figure 1 in Business Case).

We have examined several possible solutions including sloping away from existing lands, and concluded that a system of Pile and Lagging will be required. Please see the attached for the details of the shoring. This Boundary Retention System, would be installed as follows:

A vertical hole will be bored near the property line
A Steel H pile will be installed and plumbed
Concrete would be placed in the borehole to secure the steel Pile.
Excavation will then commence to 2 feet below original ground
Tie-Backs will be drilled and installed at an angle to secure the steel
Concrete will be placed in the tie-back hole to secure the tie-back.
Wood Lagging members would be place horizontally as excavation proceeds, allowing the lagging to be installed to the base of the excavation.

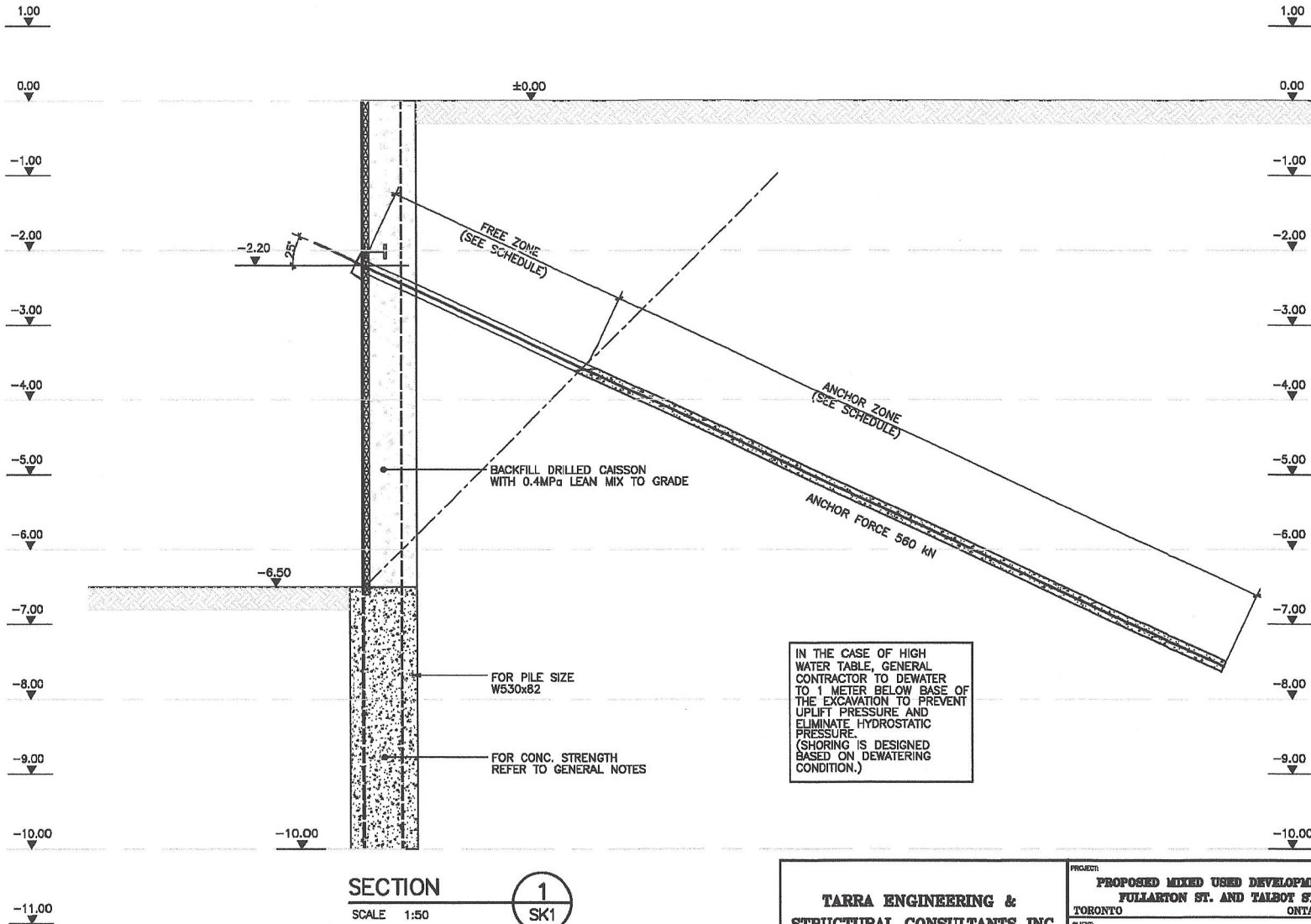
Using the above system, the removal of the contaminated material will minimal effect on adjoining lands.

I wish to confirm that the Boundary Property Retention cost of \$420,000, only relates to the Brownfield heavy metal impacted soil removal.

Your truly,
TRIPODI DEVELOPMENT CONSULTING INC.



Richard M. Tripodi, P.Eng.



SECTION

1
SK1

SCALE 1:50

BOUNDARY PROPERTY RETENTION

TARRA ENGINEERING &
STRUCTURAL CONSULTANTS INC.

5977 Woodbine Avenue Markham, ON, L3B 0J9
Telephone (905) 470-8952 Fax (416) 470-8128

PROJECT: PROPOSED MIXED USED DEVELOPMENT
FULLARTON ST. AND TALBOT ST.
TORONTO ONTARIO

CLIENT: RYGAR CORPORATION INC.
LONDON ONTARIO

TITLE: BOUNDARY PROPERTY
RETENTION

DRAWN: N.Y. PROJECT NO. 16024

SCALE: 1:50 ISSUE DATE: JAN. 25/17

FILE: 16024-SK1 DWG. NO. SK1

APPENDIX B

Environmental Site Assessment Reports

The following reports have been previously submitted to the City and are available upon request:

- Phase II ESA - 475 Talbot - Law Engineering Inc. - 2011.07.20
- Phase II ESA - 475 Talbot & 100 Fullarton - EXP - 2014.03.20
- Phase II ESA - 493 & 501 Talbot - EXP - 2014.06.20
- Phase II ESA - 487-489 Talbot - EXP - 2014.12.19
- Phase II ESA - 93-95 Dufferin - EXP - 2014.12.23
- Phase II ESA - 479-785 Talbot - EXP - 2014.12.23