



REPORT

GEC Architecture

EIA Amendment
Fort Edmonton Park
Steam Train Re-location



September 2018

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1 Introduction

1.1 BACKGROUND

Fort Edmonton Park (FEP) is one of the City of Edmonton's (City's) cultural highlights. Situated on 64 hectares of parkland in Edmonton's North Saskatchewan River Valley (NSRV), it currently includes over 80 original and reconstructed historical structures, representing the history of Edmonton from 1846 to 1929.

Currently, FEP is undergoing a variety of re-development projects to upgrade its aging infrastructure and facilities. Associated Engineering Ltd. (Associated) completed an Environmental Impact Assessment (EIA) for the proposed re-development projects in 2016 (Associated 2016) to meet the requirements of the North Saskatchewan River Valley Redevelopment Area Plan, Bylaw 7188 (City of Edmonton 2017). This EIA included an early and late season rare plant survey that was completed in 2014 and 2015.

Now the City is planning to re-locate the train barn for the steam train which was not included in the original EIA. The steam train is a popular attraction at FEP which transports visitors to various locations throughout the site during the summer months. A structural assessment was completed for the existing train barn infrastructure including an old pole shed, maintenance shop, and two pits that are currently being used for maintenance of the steam train. It was determined that the existing infrastructure is no longer safe for use. Consequently, a re-location of the train barn (the project) is required as part of the FEP re-development projects to provide a safe space to house the steam train for maintenance.

This EIA is intended to be an amendment to the existing EIA (Associated 2016) and to document the potential impacts associated with the proposed construction within the river valley and recommend mitigation strategies to minimize these impacts.

1.2 PUBLIC PARTICIPATION PLAN

As part of the overall park redevelopment, it is our understanding that public consultation has been completed by the City.

2 Project Description and Scope

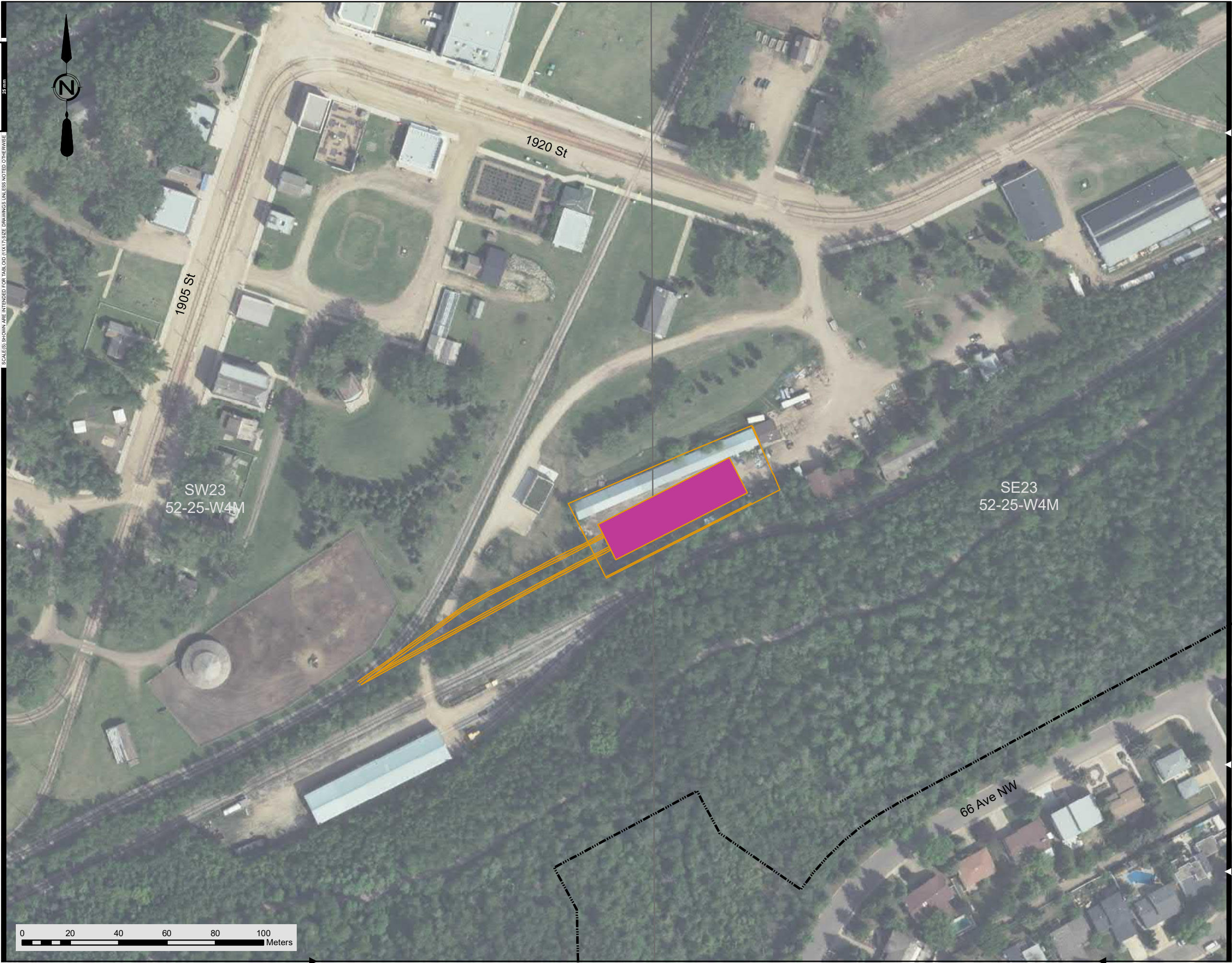
The project will involve re-locating the train barn to the existing maintenance yard and installing new tracks that will connect to the existing steam train tracks to the west (**Figure 2-1**). The train barn will serve as a maintenance building for train servicing and train storage. It will be approximately 9.5 m in height with a footprint of 950 m² and it will be constructed using a slab foundation on grade with perimeter beams and piles. Within the train barn, two maintenance pits, including a 49.77 m² inspection pit and a 11.81 m² wheel pit, will be constructed below grade. An existing fuel tank storage building will be relocated to the southeast corner of the new site. In addition, two sets of single tracks, constructed using steel rails and wooden ties, will connect the train barn to the existing steam train tracks. The existing main loop track will be re-aligned slightly to accommodate the new sets of tracks. Both sets of tracks will be approximately 80 m in length and 2.5 m in width. A detailed design drawing of the project site plan is shown on **Figure 2-2**.

The entire park is situated on the south bank of the North Saskatchewan River in Edmonton, Alberta (**Figure 2-3**) and is within the boundary of the NSRV that is regulated by Bylaw 7188 (City of Edmonton 2017).

IF NOT 25 mm AS JUST SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABL C/D (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

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DATE: 9/9/2018,



Legend:

- Steam Train Re-location Boundary
- Proposed Tracks
- Fort Edmonton Park Boundary
- Proposed Train Barn



FIGURE No. 2-1

STEAM TRAIN RE-LOCATION
EIA AMENDMENT

DETAILED PROJECT LOCATION

AE PROJECT No.	2018-8172
SCALE	1:1,500
COORD. SYSTEM	NAD 1983 3TM 114
DATE	2018 SEPTEMBER
REV DESCRIPTION	ISSUED FOR REPORT

SITE LEGEND

CONCRETE PAD (0.0742ha)

EXISTING ROAD TO REMAIN

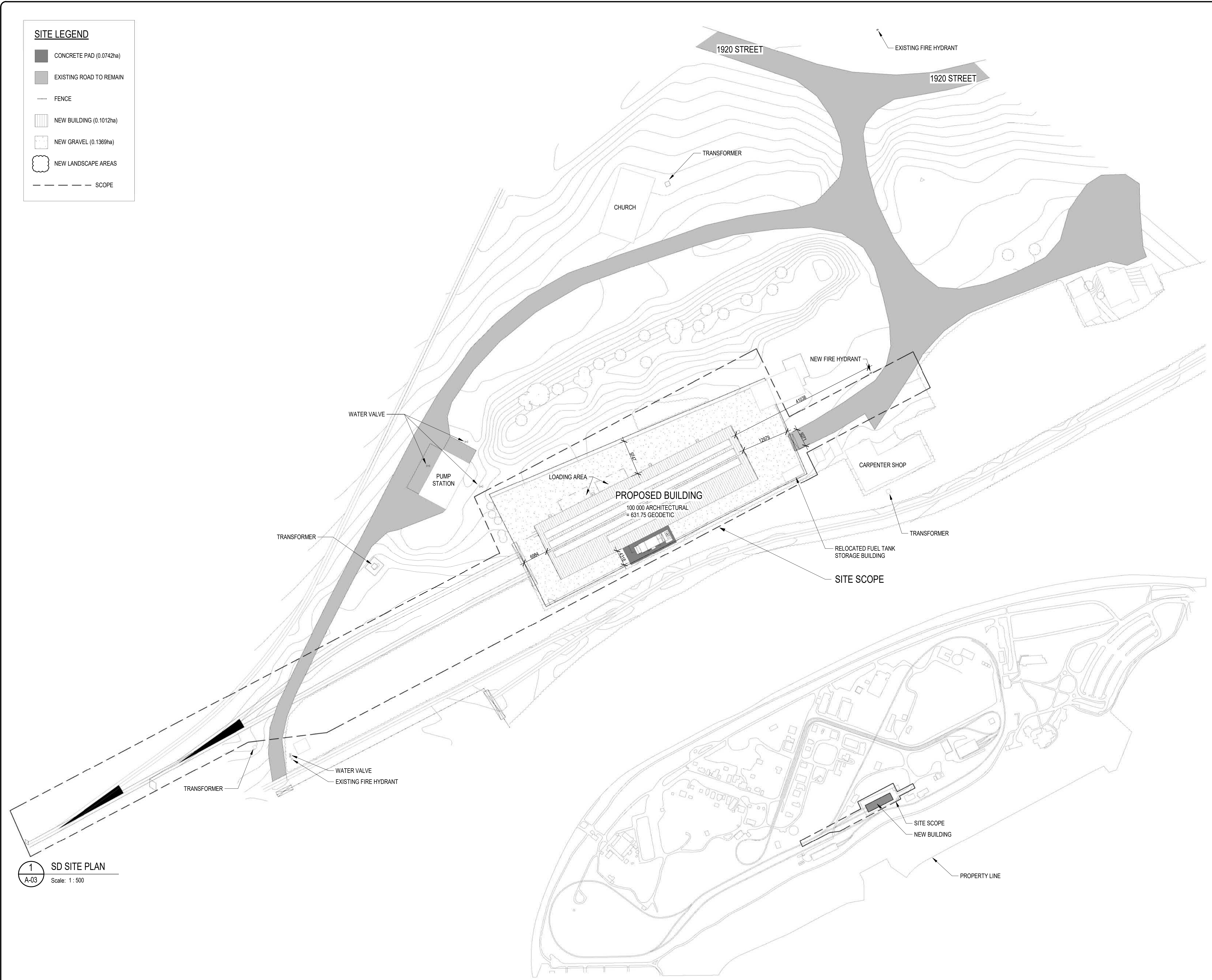
FENCE

NEW BUILDING (0.1012ha)

NEW GRAVEL (0.1369ha)

NEW LANDSCAPE AREAS

SCOPE



1

SD SITE PLAN

Scale: 1 : 500

2

SITE KEY PLAN

Scale: 1 : 4000



A	ISSUED FOR DESIGN DEVELOPMENT	2018-08-27	

ISSUE DATA	DATE

SEAL:

SEAL:

PERMIT:

gec

architecture

CONSULTANT PROJECT NO.: 5622

Edmonton

INTEGRATED INFRASTRUCTURE SERVICES

PROJECT NAME:

FORT EDMONTON TRAIN BARN

LOCATION: 7000 143 ST, EDMONTON, AB

DRAWING TITLE:

SITE PLAN

SCALE: AS SHOWN

DRAWN BY:

DRAWING NO.: A-03

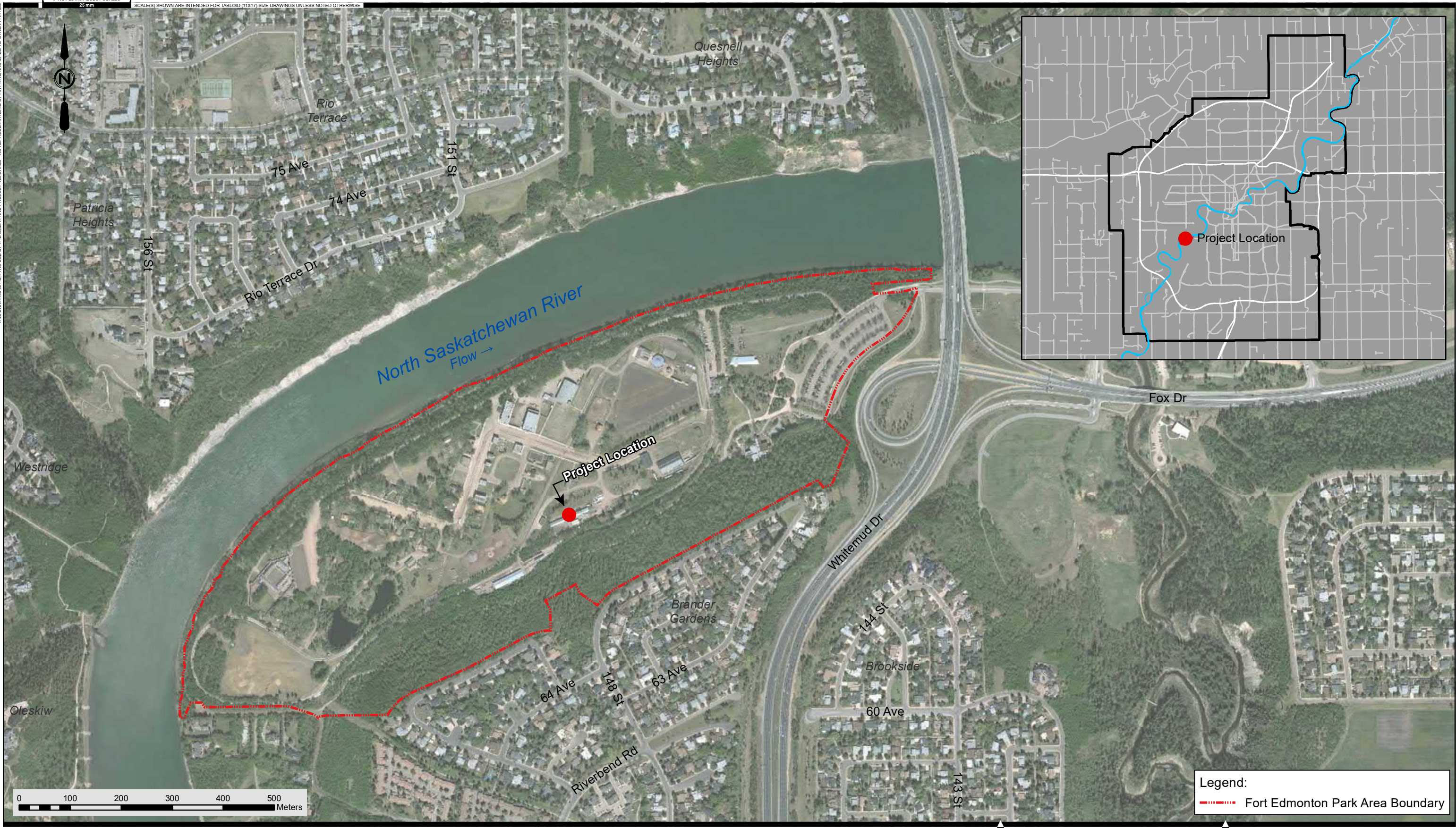
CHECKED BY:

PROJECT NO.: CP-8012

REVIEWED BY:

CAD FILE NAME:

\\sdrh-fs-01\projects\2018\172\00_FEP_Steam_Train_RE\Environmental_Sciences\04_00_Environmental_Assessments\010_GIS\Map2_-_Project_Location\Overview.mxd
DATE: 9/5/2018, Stephanie Tik



AE PROJECT No. SCALE APPROVED DATE REV DESCRIPTION	2018-8172	FIGURE No. 2-3
	1:7,000	
	2018SEP05	STEAM TRAIN RE-LOCATION EIA AMENDMENT
	ISSUED FOR REPORT	PROJECT LOCATION OVERVIEW

3 Site Location and Constraints Analysis

Fort Edmonton Park was established in 1974 and; therefore, existed in the NSRV prior to the North Saskatchewan River Valley Area Plan (Bylaw 7188) being adopted by City Council in 1985. As the project is a required component of the FEP re-developments only site locations within FEP were considered as part of the site planning. Development of the project is supported by the Fort Edmonton Park 2010 Master Plan Update (City of Edmonton 2010b) that was approved by City Council on May 12, 2010.

Two options were considered to meet the needs for updating and replacing the existing steam train building. The first option considered was to construct a new pre-engineered train barn at the existing site while using a temporary structure for train storage and maintenance until the new train barn was completed (Figure 3-1). However, the existing steam train site is not serviced and would require construction of utilities, as well as, stabilization of the embankment, and remediation work, which would be costly and involve potentially significant impacts to the environment. In addition, it was determined that a larger building would be required to allow for proper maintenance of the steam train in accordance with building code and Occupational Health & Safety standards and the current site does not provide sufficient space. The second option involved construction of a new pre-engineered train barn with tie in tracks at the site of a current maintenance yard located approximately 100 m northeast of the existing steam train location (Figure 3-1).

The maintenance yard is on low grade gravel and contains a tin storage shed, a fuel storage tank building, four wood sheds, two sea cans and, various pieces of equipment. West of the maintenance yard, where the proposed tracks will be located, there is a small naturally treed area and an open grassy area that have been previously fragmented by the existing steam train tracks and a service road. Ultimately, the second option of re-locating the steam train was selected as it can safely accommodate the size of building that is required for the new building as well as potential future expansions, it is fully serviced, and the steam train and its contents can remain in place until the new structure is completed.



Legend:

- Existing Steam Train Tracks
- Option 1
- Option 2
- Fort Edmonton Park Boundary



FIGURE No. 3-1

STEAM TRAIN RE-LOCATION
EIA AMENDMENT

STEAM TRAIN RE-LOCATION OPTIONS

AE PROJECT No.	2018-8172
SCALE	1:1,500
COORD. SYSTEM	NAD 1983 3TM 114
DATE	2018 SEPTEMBER
REV DESCRIPTION	ISSUED FOR REPORT

4 Regulatory Framework

The regulatory framework pertaining to the project consists of three jurisdictional levels including municipal, provincial and federal. A summary of the relevant municipal, provincial, and federal regulations for the project is provided below.

4.1 MUNICIPAL

4.1.1 North Saskatchewan River Valley Area Redevelopment Plan – Bylaw 7188

Adopted in 1985, the North Saskatchewan River Valley Area Plan (Bylaw 7188) identifies a boundary for the river valley and ravine system and a set of policies and development approval procedures for lands within this boundary. The purpose of Bylaw 7188 is to protect the NSRV and Ravine System as part of Edmonton's valuable open space heritage and to establish the principles for future implementation plans and programs for parks development. All development in the NSRV requires approval under Bylaw 7188 (City of Edmonton 2017).

4.1.2 Corporate Tree Management Policy (C456A)

The purpose of the Corporate Tree Management Policy C456A is to protect the tree canopy within the City of Edmonton from destruction, loss, or damage (City of Edmonton 2010a). Where salvage of trees is not possible, the City of Edmonton determines the financial value of the trees removed based on size and species. Vegetation clearing is anticipated as part of the construction of the new tracks and any trees marked for removal to accommodate project work will require evaluation by the City under this policy.

4.2 PROVINCIAL

4.2.1 Environmental Protection and Enhancement Act

The purpose of the *Environmental Protection and Enhancement Act* (EPEA) is to support and promote the protection, enhancement and wise use of the environment (Government of Alberta 2000). If contamination is discovered within the project area the handling and disposal of contamination would be regulated under EPEA.

4.2.2 Historical Resources Act

Archaeological and paleontological resources are regulated under the *Historical Resources Act* (R.S.A. 2000, C. H-9). The project is in an area that has high potential for archaeological and palaeontological resources (Historical Resource Value: 5, archaeological and palaeontological), and, therefore, clearance from Alberta Culture and Tourism (ACT) is required. ACT granted a *Historical Resources Act* approval for the project on October 26, 2018 ([Appendix A](#)).

4.2.3 Weed Control Act

The *Weed Control Act* (R.S.A., 2008, c. W-5.1) regulates weed species listed in Schedule 1 (prohibited noxious) and Schedule 2 (noxious) of the Act. Throughout construction activities the proponent must destroy weeds listed in Schedule 1, and control or prevent the spread of weeds listed in Schedule 2.

4.2.4 Wildlife Act

The provincial *Wildlife Act* (R.S.A. 2000, c. W-10) prohibits the wilful molestation, disruption, or destruction of wildlife, or a house, nest, or den of wildlife. Pre-construction wildlife surveys or any animal relocation requires a Research Permit/Collection Licence under this Act and will be obtained by a qualified environmental professional, if required.

4.3 FEDERAL

4.3.1 Migratory Birds Convention Act

The *Migratory Birds Convention Act, 1994* (S.C. 1994, c. 22) protects migratory birds, their eggs, and their nests. Any activities related to the Steam Train relocation that may impact migratory birds, their eggs, or nests, should be reviewed and appropriate mitigation implemented (e.g., tree/vegetation clearing timing to avoid the nesting season).

4.3.2 Species At Risk Act

Activities with potential to impact a species at risk and/or their habitat are regulated under the federal *Species at Risk Act* (SARA) (S.C. 2002, c. 29). A permit is required if any species listed in Schedule 1 of SARA may be handled as part of the Steam Train relocation.

5 Environmental Assessment Methods

5.1 DATABASE SEARCHES

A review of publicly available data and information was completed to identify potential environmental constraints specific to the project area. Sources of information included:

- Fish and Wildlife Management Information System (FWMIS) (Government of Alberta 2016);
- Alberta Conservation Information Management System (ACIMS) (Government of Alberta 2018a); and;
- Historical Resources Act listings (Government of Alberta 2018b).

5.2 LITERATURE REVIEW

The following documents were reviewed and relevant information was incorporated into this amendment report, as required:

- Fort Edmonton Park Train Barn Geotechnical Investigation (Thurber 2018) ([Appendix B](#));
- Phase I Environmental Site Assessment for Fort Edmonton Park (Nichol Environmental 2015)
- Phase I Environmental Site Assessment Update Fort Edmonton Park Maintenance Yard: 7000 – 143rd Street NW (Nichol Environmental 2018) ([Appendix C](#)); and
- Fort Edmonton Park Utility Replacement Design (CP-3247) EIA (Associated 2016).

5.3 FIELD VERIFICATION

On August 17, 2018 a field assessment was completed by Brett Bodeux, M.Sc..P.Biol., from Associated. Baseline environmental conditions within the proposed Steam Train relocation area were documented as part of this field assessment.

6 Baseline Environment

6.1 TRAIN BARN

The train barn will be constructed on a previously disturbed site that currently exists as a maintenance yard within FEP. The maintenance yard is graded and sparsely vegetated with weedy, disturbance adapted vegetation including alsike clover (*Trifolium hybridum*), common dandelion (*Taraxacum officinale*), foxtail barley (*Hordeum jubatum*), Kentucky bluegrass (*Poa pratensis*), slender wheatgrass (*Elymus trachycaulus*), timothy (*Phleum pratense*), and yellow sweet-clover (*Melilotus officinalis*). Two noxious weed species including common tansy (*Tanacetum vulgare*) and scentless chamomile (*Tripleurospermum inodorum*) were observed within the maintenance yard during the field verification assessment.

An open-faced storage shed extends along the entire north side of the maintenance yard and provides potential nesting habitat for various bird species such as American robin (*Turdus migratorius*) and barn swallow (*Hirundo rustica*). However, the maintenance yard is highly disturbed and it is surrounded by a chain-link fence, which limits its habitat potential for most wildlife species.

6.2 TRAIN TRACKS

The new tracks will connect with existing train tracks to the west of the maintenance yard and will be constructed through a small, deciduous forest stand that has been fragmented by previous disturbances within FEP. The forest stand is dominated by relatively young aspen (*Populus tremuloides*) with an understory consisting of shrubs, forbs and grasses including beaked hazelnut (*Corylus cornuta*), Canada buffaloberry (*Shepherdia canadensis*), prickly rose (*Rosa acicularis*), red-osier dogwood (*Cornus stolonifera*), Canada anemone (*Anemone canadensis*), common dandelion, Lindley's aster (*Symphyotrichum ciliolatum*), showy aster (*Eurybia conspicua*), star-flowered Solomon's-seal (*Maianthemum stellatum*), tall goldenrod (*Solidago altissima*), Kentucky bluegrass, and smooth brome (*Bromus inermis*).

A variety of bird species including black-capped chickadee (*Poecile atricapillus*), blue jay (*Cyanocitta cristata*), downy woodpecker (*Picoides pubescens*), pileated woodpecker (*Dryocopus pileatus*), red-eyed vireo (*Vireo olivaceus*), and yellow warbler (*Dendroica petechia*) were documented within and adjacent to the small, deciduous forest stand during the field verification assessment.

6.3 EXISTING ENVIRONMENTAL SENSITIVITIES

A search of the ACIMS database for rare plants revealed that creeping ancyliid (*Ferrissia rivularis*) has been previously documented within Section 23-052-23 W4M (Government of Alberta 2018). Two rare plant species, turned sedge (*Carex retrorsa*) and slender naiad (*Najas flexilis*), were documented as part of the original EIA; however, neither of these species nor their preferred habitat were observed within the Steam Train relocation area (Associated 2016). In addition, turned sedge is no longer considered a rare plant species (Government of Alberta 2018).

FEP and the project area is located within several sensitive wildlife species zones including a sensitive raptor range for bald eagle (*Haliaeetus leucocephalus*), a sharp-tailed grouse (*Tympanuchus phasianellus*) range, and a key wildlife and biodiversity zone (Government of Alberta 2016). A search of the FWMIS database for species at risk revealed that northern leopard frog (*Lithobates pipiens*), and peregrine falcon (*Falco peregrinus*), both listed as Threatened under the Alberta Wildlife Act (R.S.A. 2000, c. W-10), have been previously documented within a 5 km radius around the project area (Government of Alberta 2016). In addition, bank swallow (*Riparia riparia*) and barn swallow, both listed as Threatened under SARA (S.C. 2002, c. 29), have been previously documented within a 5 km radius around the project area (Government of Alberta 2016).

Generally, there is low habitat potential for rare plants and wildlife within the project area. Given the baseline environmental conditions the project is not anticipated to provide habitat for bald eagle, sharp-tailed grouse, northern leopard frog or peregrine falcon. However, the existence of an open-faced storage shed within the maintenance yard offers potential nesting habitat for barn swallow as this species commonly nests in eaves, rafters and cross beams of barns, sheds and stables (Cornell Lab of Ornithology 2017).

A Phase I Environmental Site Assessment (ESA) was completed for the entire FEP area in 2015 by Nichols Environmental (2015). In 2018, they completed a subsequent Phase I more specific to the project area (Nichols Environmental 2018). The main concerns from the 2018 Phase I ESA included 1) surficial staining observed between two intermodal storage containers located within the existing maintenance yard and 2) the likely presence of creosote-treated rail ties associated with the existing rail line.

7 Environmental Impact Analysis and Mitigation Strategies

7.1 IMPACT ANALYSIS METHODS

Environmental impacts related to the project were assessed by reviewing the baseline conditions and environmental sensitivities in relation to the anticipated conditions during construction (short-term) and post construction (long-term) time periods. Impacts were evaluated for each of the components of the project including the train barn and the tracks.

For each of the components of the project the significance of potential impacts was rated for major environmental categories including groundwater, soils, vegetation, fish, wildlife, and historical. The significance of potential impacts were rated as high, moderate or low as described in **Table 7-1**.

As part of the original EIA, vegetated areas within FEP were delineated into sensitivity classes that reflect the potential for the areas to provide functional wildlife habitat and their contribution to habitat connectivity in the regional area. A detailed description of the sensitivity classes is provided in **Table 7-2** and the delineated areas located within and adjacent to the Steam Train relocation area is shown on **Figure 7-1**.

Table 7-1
Significance Rating of Potential Impacts




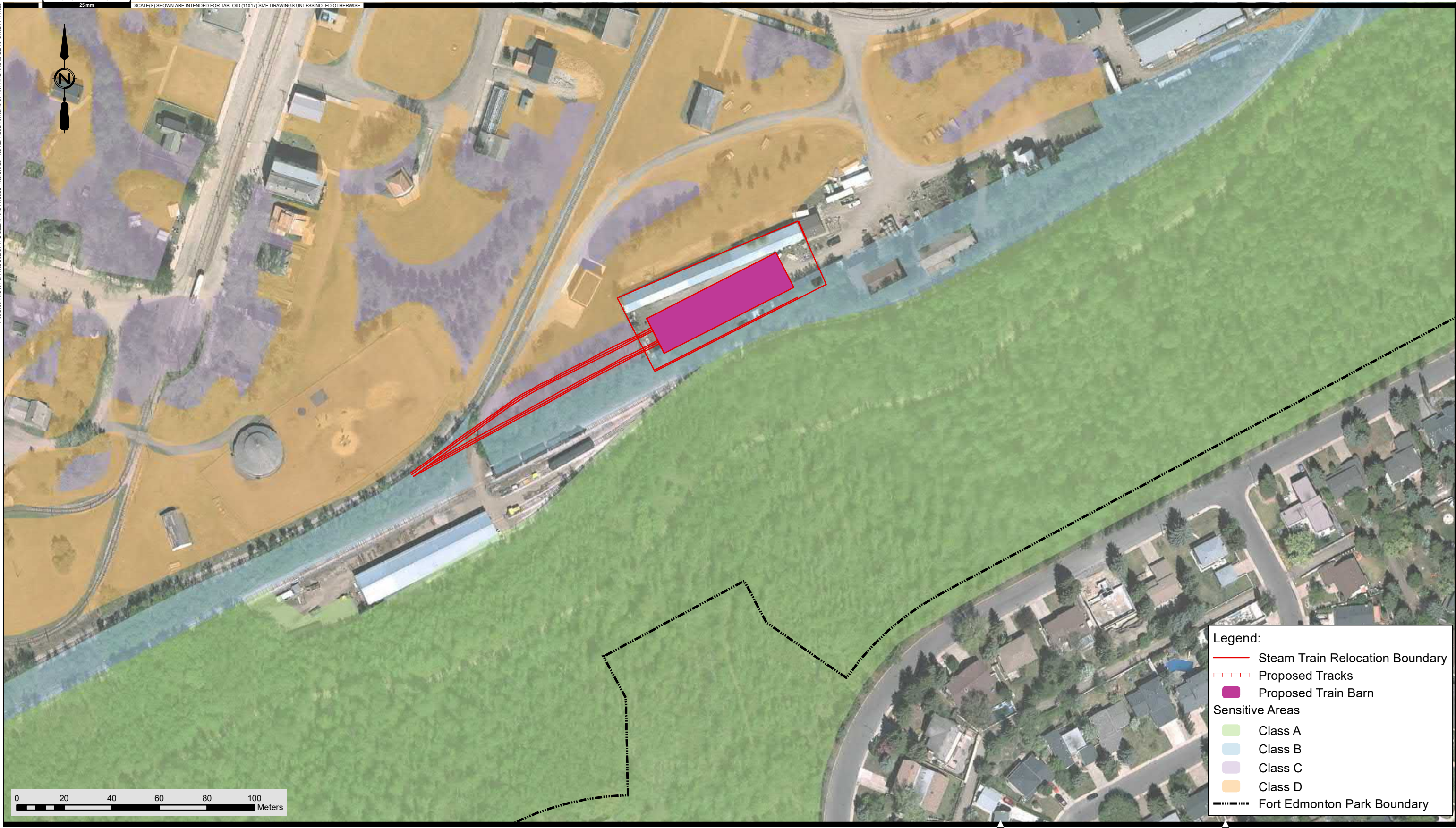
Significance	Rating	Legend Symbol
High	The difference between baseline and construction/post construction conditions is expected to be major resulting in effects that are difficult to mitigate, such as loss of functional wildlife habitat or significant vegetation loss.	
Moderate	The difference between baseline and construction/post construction conditions are expected to be limited in duration and/or spatial extent or result in effects that can be effectively reduced through mitigation.	
Low	The difference between baseline and construction/post construction conditions is expected to be minor resulting in effects that will be easily mitigated.	

Table 7-2
Description of Class Sensitivity Ratings for Vegetation and Wildlife Habitat

Class	Description
Class A Sensitivity	These areas present high sensitivity when considering vegetation removal and/or excavation. They are relatively large, unbroken, and undisturbed patches of mature forest with well-developed canopy, floor, and mid-story habitat structures. Class A sensitivity areas are found along much of the park's perimeter and therefore also provide edge effect. These areas contain excellent habitat for migratory species, raptors and mammals and likely contribute to wildlife movement corridors along the river valley.
Class B Sensitivity	These areas present moderate sensitivity as wildlife habitat when considering vegetation removal and/or excavation. They contain nesting habitat for migratory species and large edge effects as they are typically isolated stands of shrubs and trees. They are large enough that some raptor species may establish nests in these patches, but not so large as to be considered continuous or unbroken forest. They are not as likely to contribute to wildlife movement as they are not part of a continuous corridor.
Class C Sensitivity	These areas present low sensitivity as wildlife habitat when considering vegetation removal and/or excavation. Generally, these areas are comprised of a single large tree or a cluster of small trees and shrubs. Migratory bird nests in these areas are relatively easy to locate as the Class C areas are not large and habitat features are not as hidden as those of Class A and B areas.
Class D Sensitivity	These areas present limited sensitivity when considering impacts to wildlife habitat of vegetation removal and/or excavation. Generally, they are high traffic areas containing mostly grasses, forbs, and weeds. Few species are likely to use these areas due to the presence of park guests in visitor areas and livestock in the holding pens.

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DATE: 9/5/2018, Stephanie Tik



AE PROJECT No.	20123701.300.300	FIGURE No. 7-1
SCALE	1:1,500	STEAM TRAIN RE-LOCATION
APPROVED		EIA AMENDMENT
DATE	2018SEP05	
REV	ISSUED FOR REPORT	
DESCRIPTION		SENSITIVE AREAS

7.2 PROJECT-SPECIFIC DESCRIPTION AND IMPACT ANALYSIS

7.2.1 Train Barn



As previously mentioned, construction of the 1,000 m² train barn will occur in the existing maintenance yard. The train barn building is anticipated to be 9.5 m in height. A slab foundation will be constructed on grade with perimeter beams and piles. Minor regrading work may be required. Excavation of a 49.77 m² inspection pit and a 11.81 m² wheel pit, will be constructed below grade within the train barn building. Groundwater seepage is not expected to be a significant concern during excavation work associated with the train barn (Thurber 2018). Existing infrastructure will be disassembled and removed from site and transported to appropriate waste management facilities, as required. The existing above-ground storage tanks will be relocated to a storage structure in the southeast corner of the project area. As the construction of the train barn will occur within the existing maintenance yard, which has been previously disturbed, there will be no change in the amount of disturbed area or class A, B, C, or D habitats within FEP (Figure 7-1).

As the maintenance yard is previously disturbed the potential impacts associated with the construction of the train barn at this location are low. Potential environmental impacts to groundwater, soils, vegetation, wildlife, and historical resources are summarized in Table 7-3 along with associated mitigation strategies. Construction activities associated with the train barn will follow the recommendations and mitigations from the project specific geotechnical investigation (Thurber 2018) (Appendix B).

Table 7-3
Summary of Environmental Impacts and Mitigation Strategies – Train Barn

Environmental Component	Environmental Impacts	Mitigation Strategies
Groundwater	Encountering groundwater during excavation work.	Pump out groundwater following practices recommended within Environmental Construction Operations (ECO) Plan.
Soils	Potential contamination.	Follow the recommendations outlined in the updated Phase I ESA developed for this project as per Nichols Environmental 2018.

7 - Environmental Impact Analysis and Mitigation Strategies

Environmental Component	Environmental Impacts	Mitigation Strategies
Vegetation	Introduction and/or spread of weeds.	Ensure that equipment has been washed and cleaned of debris prior to arrival on-site to help prevent spread of weeds. Existing infestations of common tansy and scentless chamomile within the project area will be mechanically controlled through methods such as mowing or handpicking.
Wildlife	Disruption of birds nesting in existing storage building.	Disassembly and removal of existing storage building outside of migratory birds nesting period, mid April to late August . If storage building must be disassembled and removed within the migratory birds nesting period contact a qualified biologist to conduct a pre-construction wildlife survey to verify whether there are any active bird nests and follow recommendations made by qualified biologist.
Historical Resources	Discovery of archaeological or palaeontological resources during excavation of pits.	Report any historical resource finds to ACT.

7.2.2 Train Tracks



Two sets of single tracks, constructed using steel rails and wooden ties, will connect the train barn to the existing train tracks within FEP. Both sets of tracks will be approximately 80 m in length to the train barn. Permanent tree removal and vegetation clearing is required through a forest stand mapped as Class B and C sensitivity habitats. Approximately 520 m² of Class C and 126 m² of Class B sensitivity habitats will be cleared for the construction and installation of the train tracks (**Figure 7-1**). Additionally, the re-alignment activities of the main loop track may involve handling and removal of creosote-treated ties. Excavation is not anticipated for the construction of the tracks; however, if creosote-treated ties need to be removed they will need to be disposed of at an appropriate waste management facility.

Table 7-4
Summary of Environmental Impacts and Mitigation Strategies – Train Tracks

Environmental Component	Environmental Impacts	Mitigation Strategies
Soils	Potential contamination from creosote-treated rail ties.	Follow the recommendations outlined in the updated Phase I ESA developed for this project (Nichols Environmental 2018).
Vegetation	<p>Loss of trees and native vegetation.</p> <p>Introduction and/or spread of weeds.</p>	<p>Urban Forestry Department must be consulted on all vegetation disturbance and protection measures as they directly relate to the project work; the Urban Forestry Department will perform all tree/vegetation removal and maintenance activities.</p> <p>Survey and mark out construction boundaries for train tracks to avoid unnecessary vegetation clearing.</p> <p>Ensure that equipment has been washed and cleaned of debris prior to arrival on-site to help prevent spread of weeds. Existing infestations of Canada thistle within the project area will be mechanically controlled through methods such as mowing or handpicking.</p>
Wildlife	Disturbance to birds nesting in forested area.	Complete tree removal and vegetation clearing activities outside of migratory birds nesting period and early nesting period of some non-migratory birds, mid February to late August . If vegetation clearing must be completed within the migratory birds nesting period contact a qualified biologist to conduct a pre-construction wildlife survey to verify whether there are any active bird nests and follow recommendations made by qualified biologist.
Historical Resources	Discovery of archaeological or palaeontological resources.	Report any historical resource finds to ACT.

7.3 GENERAL RECOMMENDED MITIGATION STRATEGIES

General mitigation strategies and best management practices for this project will include:

- Limit extent of project footprint by overlapping with existing disturbed areas as much as possible. Survey and flag limits of work area prior to construction;
- Review tree pruning and removal requirements with the City of Edmonton Urban Forestry Department at least 4 weeks prior to site activities;
- Clean all equipment prior to arriving on site and upon leaving the work area to prevent the potential introduction and spread of invasive species and/or weeds;
- Remove construction waste at appropriate waste management facilities and ensure the site is clean of debris upon completion; and
- Retain emergency spill kits in all equipment in the event of an accidental spill or release.

The following plans must be completed by the Contractor and provided to the City ENVISO manager before proceeding with project work.

- An Environmental Construction Operations Plan that follows the requirements in the 2017 ECO Plan Framework and includes an Erosion and Sediment Control (ESC) Plan.
- A Restoration and Landscape Plan for any disturbed areas that meets existing site conditions; any damages to parkland must be restored to City of Edmonton Design and Construction Standards, and City Operations satisfaction; and
- Completion of an ENVISO Checklist.

A copy of the preliminary Landscape Plan is included in **Appendix D**.

8 Conclusion

The work associated with the re-location of the steam train is expected have minimal environmental impacts as it will occur on previously disturbed land and low sensitivity areas. Environmental impacts will be avoided or minimized by following the mitigation measures and recommendations described above.

Environmental monitoring is recommended during construction. City personnel should be notified immediately of any wildlife encounters or other environmental concerns relating to this project. Environmental permits and approvals, the project ECO Plan, and ESC Plan should be adhered to and available on site during all project work.

REPORT

Closure

This report was prepared for the GEC Architecture to meet the requirements of the City's Parks and Biodiversity office under Bylaw 7188.

The services provided by Associated Environmental Consultants Inc. in the preparation of this report were conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty expressed or implied is made.

Respectfully submitted,
Associated Environmental Consultants Inc.

A handwritten signature in blue ink, appearing to read "Brett Bodeux", with a long horizontal flourish extending to the right.

Brett Bodeux, M.Sc., P. Biol.
Environmental Scientist

References

- Associated Engineering Alberta Ltd. 2016. Utility Replacement Design (CP-3247) Environmental Impact Assessment. Edmonton, Alberta.
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Appendix A - Historical Resources Act Approval

Historical Resources Act Approval

Proponent: City of Edmonton
12th Floor, Edmonton Tower, 10111 104 Avenue NW, Edmonton, AB T5J 0J4

Contact: Ms. Aileen Simcic

Agent: Circle CRM Group Inc.

Contact: Margarita de Guzman

Project Name: Fort Edmonton Park Steam Train Relocation

Project Components: Cultural / Entertainment Facility

Application Purpose: Requesting HRA Approval / Requirements

Historical Resources Act approval is granted for the activities described in this application and its attached plan(s)/sketch(es) subject to Section 31, "a person who discovers an historic resource in the course of making an excavation for a purpose other than for the purpose of seeking historic resources shall forthwith notify the Minister of the discovery." The chance discovery of historical resources is to be reported to the contacts identified within [Standard Requirements under the Historical Resources Act: Reporting the Discovery of Historic Resources](#).



Martina Purdon
Head, Regulatory Approvals &
Information Management

Lands Affected: All New Lands

Proposed Development Area:

MER	RGE	TWP	SEC	LSD List
4	25	52	23	2-3,7

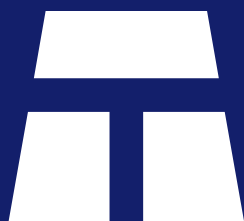
Documents Attached:

Document Name	Document Type
Project Plans	Illustrative Material



Appendix B - Project Specific Geotechnical Investigation

**FORT EDMONTON PARK TRAIN BARN
GEOTECHNICAL INVESTIGATION**



THURBER ENGINEERING LTD.



THURBER ENGINEERING LTD.

**FORT EDMONTON PARK TRAIN BARN
GEOTECHNICAL INVESTIGATION**

**Report
to
City of Edmonton**



Thomas Vogt, P.Eng.
Geotechnical Engineer

PERMIT TO PRACTICE THURBER ENGINEERING LTD.
Signature <u><i>R.W. Tweedie</i></u>
Date <u><i>Aug 21, 2018</i></u>
PERMIT NUMBER: P 5186
The Association of Professional Engineers and Geoscientists of Alberta

Date: August 21, 2018
File: 23350



Robin Tweedie, P.Eng.
Principal | Senior Geotechnical Engineer



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STATEMENT OF LIMITATIONS AND CONDITIONS

APPENDIX A

- Drawing 23350-1 - Site Plan Showing Approximate Test Hole Locations

APPENDIX B

- Symbols and Terms Used on Test Hole Logs
- Modified Unified Soils Classification
- Test Hole Logs
- Laboratory Test Results

APPENDIX C

- Recommended Construction Procedures



1. INTRODUCTION

This report presents the results of a geotechnical investigation undertaken by Thurber Engineering Ltd. (Thurber) for the proposed Train Barn Building at the Fort Edmonton Park (FEP) located in Edmonton, Alberta.

The geotechnical investigation was carried out in general accordance with our proposal letter dated June 18, 2018 to Ms. Christina Tatarniuk of the City of Edmonton. Authorization to proceed with the work was received from Ms. Tatarniuk via an e-mail dated June 26, 2018.

The scope of work did not include any environmental soil and groundwater contamination assessment.

It is a condition of this report that Thurber's performance of its professional services is subject to the attached Statement of Limitations and Conditions.

2. PROJECT DESCRIPTION

Based on information provided in the Schematic Design Report dated July 2018 by GEC Architecture, it is understood that two building types are being considered for the design of the FEP Train Barn building and their design strategy is as follows:

The first design strategy includes the design of a temporary sprung tent structure. This structure will be used to temporarily store the train while the existing train barn at FEP is demolished. Construction of a permanent pre-engineered building will be located on the existing train barn site. Once completed, the train will be relocated to the new facility. Geotechnical recommendations for this option can be provided upon request. Additional geotechnical test holes may be required depending on the proposed location of the sprung tent structure. An additional geotechnical investigation will be required at the existing train barn location to provide geotechnical recommendations for the pre-engineered building.

The second design strategy includes the design of a permanent pre-engineered building. The train will remain in the existing structure until completion of the new train barn facility. This design strategy includes the construction of a new train barn with a total footprint of about 835 m² and a reduced footprint option of about 420 m². The facility will include maintenance pits, an overhead crane, mezzanines and maintenance tracks. The development also includes a retaining wall and a gravel access road on the property. The geotechnical investigation presented herein was undertaken for this design option.



3. GEOTECHNICAL INVESTIGATION

3.1 Field Drilling Program

Four test holes, TH18-15 through -18, were drilled on July 12th, 2018 at the proposed location for the new train barn building. The test holes were advanced to a depth of 10.4 m below existing ground surface, using a track mounted drill rig operated by All Service Drilling Inc. The approximate test hole locations are shown on Drawing 23350-1, in Appendix A.

Prior to commencing the drilling program, Alberta-One-Call and a private locator was contacted, and the test hole locations were cleared of underground utilities.

Disturbed soil samples were obtained from the auger flights during drilling and Standard Penetration Tests (SPTs) were carried out at selected depths in the test holes. The undrained shear strength (C_{pen} value) of cohesive samples were estimated using a pocket penetrometer. Water levels were noted during and after completion of the drilling.

On completion of drilling, two standpipe piezometers were installed within the project site to allow future groundwater levels monitoring. The standpipe piezometers were monitored upon completion of the installation, and again on August 10, 2018, approximately one month after completion of drilling.

3.2 Laboratory Testing

Laboratory testing included visual classification and determination of the natural moisture content of all soil samples. In addition, grain size analysis, Atterberg Limits and water soluble sulphate content tests were carried out on selected representative soil samples.

The results of the drilling and laboratory program are presented and summarized on the test holes logs in Appendix B. An explanation of the symbols and terms used to describe observations in the test holes logs and the Modified Unified Soil Classification are also provided in Appendix B.

4. SITE DESCRIPTION

4.1 Surface Conditions

The proposed new location for the train barn is on the south side of an existing maintenance building at FEP. A gravel surfaced access road enters the east side of the development and



C-Can containers are currently located within the centre of the proposed train barn building footprint.

A retaining wall approximately 1.8 m in height is proposed on the north side of the proposed train barn building. A new gravel surfaced access road to provide access for fire trucks is also proposed for the new development. The current ground elevation based on the surveyed locations of the test holes is approximately 631 m.

4.2 Subsurface Conditions

The general subsurface conditions encountered at the test hole locations, in descending order, consisted of the following main stratigraphy:

- Fill
- Clay
- Sand and Gravel
- Clay shale and sandstone bedrock.

Further descriptions of the main soil layers are provided in the following sections. A detailed description of subsurface conditions observed at each test hole location is presented on the test hole logs in Appendix B. The detailed description in Appendix B should be used in preference to the generalized descriptions given below.

4.2.1 Fill

A thin brown silty gravel fill layer was encountered at ground surface in three test holes (TH18-16 through -18) and ranged in thickness from 50 mm to 125 mm. The moisture content of the gravel fill ranged from 5 to 6 percent.

Clay fill was encountered at ground surface or underlying the gravel fill in all test holes. The clay fill was generally brown, silty, with some sand and trace amounts of gravel, and extended to depths ranging from 0.8 m to 2.3 m. The moisture content of the clay fill ranged from 12 to 34 percent. One SPT N value in the clay fill was 28 blows per 300 mm penetration indicating a very stiff consistency.

One Atterberg Limits test conducted on a clay fill sample indicated liquid and plastic limits of 146 and 26 percent respectively, indicating that the clay fill is of high plasticity.



4.2.2 Clay

Clay was encountered below the fill in three test holes (TH18-15 through -17) and extended to depths ranging from 2.3 m to 5.3 m. The clay was generally brown, silty, sandy and contained trace amounts of gravel, coal and oxides. The natural moisture content of the clay ranged from about 10 to 17 percent. SPT N values in the clay ranged from 13 to 26 blows per 300 mm penetration indicating a stiff to very stiff consistency.

One Atterberg Limits test conducted on a clay sample indicated liquid and plastic limits of 47 and 24 percent respectively, indicating that the clay is of medium plasticity.

4.2.3 Sand and Gravel

Sand and gravel layers of various thickness were encountered at depths ranging from about 1.5 m to 5.3 m. The sand and gravel was generally brown, silty, clayey and contained traces of cobbles. The natural moisture content of the sand ranged from about 5 to 17 percent. SPT N values in the sand and gravel ranged from 9 to 30 blows per 300 mm penetration, indicating a compact relative density.

Grain size analysis tests undertaken on two selected sand and gravel samples from test holes TH18-15 and -17 indicated 45 to 46 percent gravel, 35 to 42 percent sand, and 13 to 19 percent fines content (silt and clay sizes passing the 80 µm sieve).

4.2.4 Clay Shale and Sandstone Bedrock

Clay shale and sandstone layers were encountered in all the test holes at depths ranging between 3.8 m and 5.3 m below ground surface and extended to the test hole termination depths of 10.4 m. The natural moisture content of the bedrock ranged from approximately 8 to 22 percent. SPT N values in the bedrock ranged from 26 to over 100 blows per 300 mm penetration, indicating a very stiff to very hard consistency in soil mechanics terminology, or extremely weak rock in rock strength classification.

4.3 Groundwater Conditions

Depths of groundwater seepage encountered in the test holes during drilling are shown on the test hole logs in Appendix B. Table 4.1 summarizes the groundwater levels measured during the field program and again on August 10, 2018.



TABLE 4.1
FORT EDMONTON PARK TRAIN BARN
SUMMARY OF GROUNDWATER, SEEPAGE, AND SLOUGH CONDITIONS

TEST HOLE	TEST HOLE DEPTH (m) B.G.S.*	PIEZOMETER DEPTH (m) B.G.S.*	SEEPAGE (m) B.G.S.*	SLOUGH ON COMPLETION (m) B.G.S.*	FREE WATER ON COMPLETION B.G.S* (m)	GROUNDWATER LEVEL IN STANDPIPE PIEZOMETERS August 10, 2018 (m) B.G.S.*	GROUNDWATER ELEVATION IN STANDPIPE PIEZOMETERS August 10, 2018 (m)
TH18-15	10.4	9.8	5.3	10.1	Dry	4.9	625.9
TH18-16	10.4	-	4.6	8.8	Dry	-	-
TH18-17	10.4	-	-	8.1	Dry	-	-
TH18-18	10.4	9.6	-	9.8	Dry	5.8	625.3

* Below existing ground surface at time of drilling

Based on the short term groundwater level readings in the standpipe piezometers, the groundwater levels at the site appears to range from about 4.9 m to 5.8 m below ground surface, with corresponding groundwater elevations of about 630.83 m and 631.10 m, respectively. The groundwater elevations are near the top of the bedrock stratum.

It should be noted that the groundwater levels can vary in response to seasonal factors and precipitation; hence, the actual groundwater conditions at the time of construction could vary from those recorded during this investigation.

4.4 Frost Effects

The expected depth of frost penetration was estimated for the averaged properties of the clay soils encountered in the test holes for both the mean annual Air Freezing Index (AFI) of 1440 °C and the 50 year return period Air Freezing Index of 2,400 °C days. The mean annual depth of frost penetration for the clay soils is estimated to be about 1.6 m, and the penetration for a 50 year period is about 2.4 m. The depth of frost penetration would be considerably deeper, up to 3.5 m deep, if sand or sand fill is used for backfilling of utility trenches.

The estimated depths of frost penetration are for uniform soil layers with no insulation cover. Snow cover and/or topsoil may reduce frost penetration. The 50-year return frost penetration depth is typically used for design.



5. GEOTECHNICAL RECOMMENDATIONS – TRAIN BARN BUILDING

5.1 Site Evaluation

Results of the geotechnical investigation indicate that the proposed train barn building site is underlain by a sequence of fill over clay, sand and gravel, and bedrock in descending order. Available information indicates that the majority of the train barn building will be set at one level. However, there will be maintenance pits that will be depressed about 1.6 m below the main floor level.

It is understood that the building may be founded on cast-in-place concrete end bearing piles and the interior building slab founded on friction piles. Recommendations for both foundation types are presented herein.

Recommendations for site grading, temporary excavation, drainage, backfilling and foundation design parameters are provided in the following sections.

5.2 Site Grading

All topsoil, organics and any deleterious material should be removed from below the new fill areas prior to fill placement. The base of the excavations should be proof rolled and inspected by qualified geotechnical personnel to confirm that all unsuitable materials have been removed below the building and paved areas and to identify wet or soft areas. Wet or weak areas may be subexcavated and replaced with drier soils or granular fill or alternatively modified with cement.

For paved areas where the design subgrade level is less than 0.3 m above the stripped ground level, the stripped grade should be subcut to a depth of 0.3 m below design subgrade level, or as required to reach a stable base.

Engineered fill (if required) for site grading should consist of low to medium plastic clay placed and compacted in lifts not exceeding 150 mm in compacted thickness. Silt and silty sand are not considered suitable for site grading around buildings as they are prone to frost susceptibility. The uniformity and compactive effort of the engineered fill are important in minimizing the potential for differential settlement. The following recommendations are provided for fill placement and compaction:

- All site grading fill to be placed under any access road or sidewalk should be placed in maximum 150 mm thick lifts and compacted to at least 98 percent of Standard Proctor Maximum Dry Density (SPMDD) within +/-2 percent of Optimum Moisture Content



(OMC) except for the upper 150 mm of the subgrades which should be compacted to at least 100 percent of SPMDD within +/-2 percent of OMC

- All fill used for landscaping purposes should be compacted to at least 92 percent of SPMDD to avoid potential future excessive settlements that could affect site drainage.
- Frozen soil should not be used for backfill.
- The lift thickness and in-situ density of compacted fills should be confirmed by field density test measurements during construction.

It is recommended that the finished subgrade below pavements and sidewalks be sloped at a minimum gradient of 1 percent toward catch basins or ditches to drain subsurface water away from the roadways and structures. This will reduce the likelihood of ponding of water which could result in frost heaving of the clay subgrade. The final compacted subgrade surface should be proof-rolled to confirm that surface deflections are minimal under the influence of construction traffic.

5.3 Excavation and Drainage

It is understood that the train barn will have maintenance pits that will be situated about 1.6 m below the main floor level.

Open excavations are considered feasible to construct the lower level. Temporary shoring may be used to support the excavation walls where sufficient space is not available.

Temporary excavation slopes through the clay soils for the train barn building should be sloped not steeper than 1H:1V. Flatter slopes may be required if soft clay or water bearing silt, gravel and sand layers are encountered during excavations. Excavated material should be kept back from the top of the excavation by at least a distance equal to the excavation depth.

Short term groundwater levels were measured at about 4.8 m or deeper below existing ground surface. On this basis, groundwater seepage is not expected to be a significant concern during construction. Where groundwater seepage is encountered it is expected to be of a magnitude that can be handled by perimeter ditches, sumps and pumps where necessary.

The ground surface outside the excavation should be sloped at a grade of at least 2 percent to shed water away from the building. Consideration should be given to covering the excavated slopes with tarps to reduce erosion, raveling, and sloughing of excavation walls during periods



of rain.

5.4 Building Foundations

It is understood that the preferred foundation type for the pre-engineered train barn building are cast-in-place concrete piles. The following foundation types are considered feasible for the train barn building:

- Cast-in-place Concrete End-Bearing Piles, and
- Cast-in-place Concrete Friction Piles.

Due to the presence of sand and gravel below clay, temporary casing will be required for the installation of cast-in-place concrete piles at this site.

Recommendations for design of cast-in-place concrete piles are provided in the following sections. Additional recommended construction procedures are provided in Appendix C.

5.4.1 Cast-in-Place Concrete End Bearing Piles

Cast-in-place concrete end bearing piles for support of the train barn building may be designed and installed according to the following recommendations:

- a) End bearing pile bases should be founded at least 2 m into the hard to very hard clay shale bedrock at a suggested basing elevation of about 623 m. Where water bearing sandstone layers are encountered within the belling depth, it may be necessary to extend the piles deeper such that the pile bells are completed within the self-supporting clay shale.
- b) End bearing piles founded at least 2 m into the hard to very hard clay shale may be designed using a factored ULS end-bearing resistance of 1,000 kPa, based on an ultimate end bearing resistance of 2,500 kPa and a geotechnical resistance factor of 0.4.
- c) Skin friction should not be included in the design of end bearing piles at this site.
- d) Straight shaft or belled piles may be used for end bearing piles. In the case of belled piles, the bell diameter to shaft diameter ratio should not exceed 3:1, and the roof of the bell should not be sloped at more than 30° to the vertical.

- e) A minimum pile depth of 2.5 times the bell diameter has been assumed in calculating the above bearing capacity. If less cover is provided, the specified bearing capacity must be reduced.
- f) A minimum pile spacing of belled piles of 2.5 shaft diameters is recommended. In addition, the edge to edge spacing between adjacent bells should be at least 0.5 m to minimize potential conflict during pile installations. Where bells are closer than one bell diameter, the adjacent piles in groups should not be excavated and poured until the initial pile base sets up for at least 24 hours to prevent potential blow out and disturbance of the concrete.
- g) A minimum pile shaft diameter of 400 mm is recommended to prevent voids from forming during pouring of the concrete. Larger pile diameters are expected to be required due to casing requirements and also due to expected pile loads.
- h) Longitudinal reinforcement should be provided to resist potential uplift forces on the pile due to frost action or seasonal moisture variations. If piles are designed as tension elements, longitudinal reinforcing steel should extend into the pile bells, and the piles should be designed to resist the anticipated uplift stresses.
- i) All pile excavations should be thoroughly cleaned and visually inspected by qualified geotechnical personnel prior to pouring of the concrete to ensure a satisfactory base has been achieved. No water, slough or disturbed material should be allowed to remain in the pile excavations.
- j) Temporary steel casing(s) may be required during pile installation to extend the piles through the sand and granular layers encountered below the clay stratum and to prevent seepage and/or sloughing.
- k) Cobbles and boulders, if encountered in the clay, could hamper the installation of the piles. The contractor should be suitably equipped to deal with this situation if it occurs.
- l) Concrete should be poured immediately after drilling in order to reduce the potential for seepage and sloughing soil.
- m) The concrete materials and construction methods used should comply with CSA A23.1-09/A23.2-09.



5.4.2 Cast-in-Place Concrete Friction Piles

Cast-in-place concrete friction piles should be designed and installed in accordance to the recommendations given below.

- a) Table 5.1 provides the ultimate and factored ULS shaft resistance values that may be used for the design of concrete friction piles:

**TABLE 5.1
CAST-IN-PLACE CONCRETE FRICTION PILES
ULS SHAFT RESISTANCE PARAMETERS**

DEPTH BELOW EXISTING GROUND LEVEL (m)	SOIL TYPE	ULTIMATE SHAFT RESISTANCE (kPa)	FACTORED ULS SHAFT RESISTANCE (kPa)	
			Compression ($\Phi = 0.4$)	Tension ($\Phi = 0.3$)
0 – 1.5 ⁽¹⁾	Fill	0	0	0
1.5 - 5	Clay /Sand and Gravel	40	16	12
Below 5	Clay Shale/Sandstone	80	32	24

Note: 1) Ignore upper 1.5 m below ground surface or depth of fill, whichever is greater

- b) The shaft resistance should not be included in the upper 1.5 m of the pile below final grade or within the depth of fill, whichever is greater to allow for the possibility of soil drying and shrinking away from the pile shaft.
- c) End-bearing resistance should not be included in calculating the design load of a friction pile.
- d) A minimum pile spacing of 2.5 shaft diameter is recommended for straight shaft concrete piles.
- e) A minimum pile shaft diameter of 400 mm is recommended to prevent voids from forming during pouring of the concrete.
- f) A minimum pile length of 6 m below finished site grade is recommended for lightly loaded friction piles that may be subjected to freezing temperatures, either during construction or long-term, to provide sufficient uplift resistance to frost heave forces in unheated areas.



- g) Longitudinal reinforcement should be provided through the pile shaft to resist potential uplift forces on the pile. If piles are designed as tension elements, the pile reinforcing should be designed to resist the anticipated uplift stresses.
- h) Water should not be allowed to accumulate at the base of the pile hole prior to placing concrete. A temporary casing should be available onsite and used as required to seal the pile holes during excavation.
- i) Concrete should be poured immediately after drilling of the pile hole to reduce the risk of groundwater seepage and sloughing soil.

5.5 Concrete Floor Slabs

Concrete slab on grades may be founded on the native soils or on well compacted granular fill subject to the following recommendations.

All soft and disturbed materials should be sub-excavated from below the basement slab and replaced with well compacted gravel fill or fillcrete.

It should be recognized that high plastic clay and clay shale may be present at shallow depth below the lower level floor slab. This material is prone to swelling and shrinkage in response to variation of water content as a result of drying or wetting. Care should be taken to prevent desiccation and drying of the clay shale. Any material that becomes overdried or wetted should be subexcavated and replaced with gravel.

It is recommended that, once exposed, the floor slab subgrades be inspected by geotechnical personnel to sample and assess its plasticity. If the floor slab subgrades consist of high plastic clay, the upper 300 mm should be subexcavated and replaced with crushed gravel to reduce the potential movement as a result of variation of water content.

A minimum of 150 mm of gravel backfill is recommended beneath floor slabs and along the outside of grade beams for leveling and drainage purposes. Coarse material greater than 50 mm in diameter should be avoided directly beneath the floor slab to prevent stress concentrations within the slab. The granular leveling course should be compacted to a uniform dry density of about 98 percent of SPMDD.

Where provisions for handling radon extraction are required, as outlined in the National Building Code Article 6.2.1.1, these should generally follow the requirements of EPA 625/R-92/016. This specified a minimum of 100 mm of coarse aggregate meeting Size #5 specification



(100, percent passing 37.5 mm, not more than 10 percent passing a 9.5 mm sieve) as defined in ASTM C-33-90 be provided directly below the floor slab. The gravel layer should be enveloped by a non-woven geotextile layer above and below, and a poly barrier (or equivalent) directly below the concrete slab.

5.6 Backfill Behind Lower Level Retaining Walls

Free-draining clean granular material (less than 5 percent passing a No. 200 sieve) would be the first choice of material for backfilling against the below ground retaining walls as it compacts relatively easily and does not settle significantly with time. The backfill should be carefully placed against the lower level walls to avoid over-compaction of the material and distress to the walls, and should be capped with an impervious barrier, such as a compacted clay layer of about 300 mm thickness.

The on-site clay material is not as desirable for backfilling because it remains in hard chunks and it is difficult to obtain uniform compaction resulting in non-uniform ground settlement with time. If it is necessary to use clay material against the train barn building walls, then it should be free from organic content and should be broken down with no large chunks of clay remaining. The clay should be carefully placed and hand tamped in lifts of 150 mm or less to ensure uniform compaction.

Backfilling should be delayed until the concrete in the foundation wall has gained sufficient strength. Premature backfilling or backfilling with excessive force may crack the foundation walls. Heavy compaction equipment should not be allowed to operate within a distance of about 1.5 m from the face of the wall to prevent potential for overstressing of the building walls.

The ground surface should be sloped at a grade of at least 2 percent away from the building to shed water away from the building.

5.7 Lateral Earth Pressures

A triangular earth pressure distribution may be used for design of structures resisting earth pressures. The parameters to be used will depend upon the extent and direction of movement of the soil, the nature and extent of the backfill, and groundwater conditions. The horizontal earth pressure, p_h , may be calculated as follows using the earth pressure coefficients given in Table 5.2 provided the backfilling is carried out as recommended in Section 5.6.



$$p_h = k [(W \times H) + q] \text{ (kPa)}$$

Where:

k = the appropriate coefficient of earth pressure from Table 5.2

W = the bulk unit weight, in kN/m³

H = the depth below backfill surface, in m

q = surcharge pressure (kPa)

TABLE 5.2
EARTH PRESSURE COEFFICIENTS FOR PERMANENT RETAINING WALL
ASSUMING VERTICAL WALL, GOOD SURFACE DRAINAGE, AND HORIZONTAL
BACKFILL

SOIL DESCRIPTION	BULK UNIT WEIGHT kN/m ³	ASSUMED FRICTION ANGLE	K _a ACTIVE	K _o AT-REST	K _p PASSIVE
Native Clay	20	25	0.41	0.58	2.5
Gravel Backfill (compacted to 95 percent of SPMDD)	21.5	35	0.27	0.43	3.7

For rigid foundation walls that are restrained from movement such as the maintenance pit walls, the at-rest earth pressure should be used. Active earth pressures may be used for the design of relatively low retaining walls, which can be allowed to move laterally at the top a distance of 0.01 times the height of the wall. Appropriate load factors should be applied to earth pressures in Limit States Design. The passive pressure will be mobilized when the top of the wall has moved into the backfill a distance of 0.02 times the height of the wall. A geotechnical resistance factor of 0.5 should be applied to the passive pressure determined from the values given in Table 5.2.

The earth pressures are governed by the soil type and the extent of selected backfill material behind the wall. To mobilize the recommended active earth pressure values, the mobilized soil zone behind the wall is typically defined by a wedge-shaped zone delineated by projecting a 1H:1V line to ground surface from a point located 0.5 m into the soil from the base of the wall footing. To mobilize the recommended passive earth pressure values, the mobilized soil zone



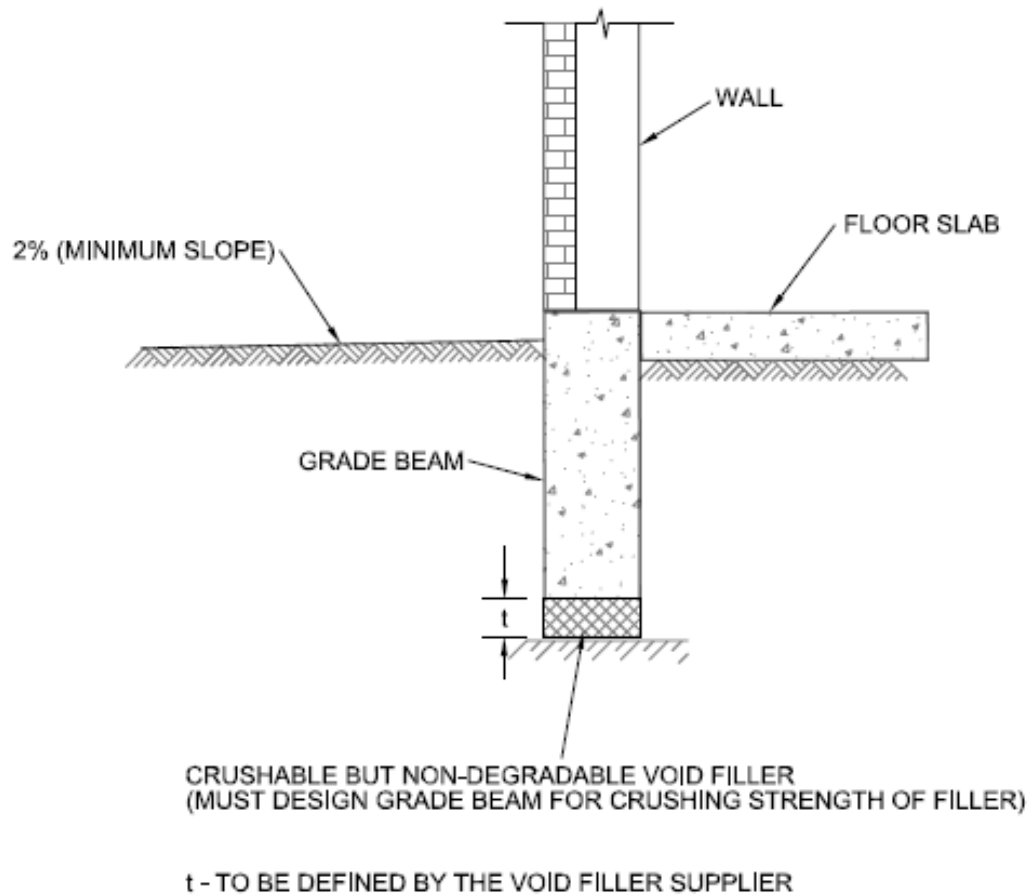
behind the wall is typically defined by a wedge-shaped zone delineated by projecting a 2H:1V line from the base of the wall footing.

Where traffic or other live loads may travel or operate near the retaining wall the horizontal pressures due to the live load should be superimposed on the static earth pressures.

5.8 Concrete Grade Beams

Piles used to support the building may require concrete grade beams and pile caps along the top of the piles. Precautions should be taken to prevent heaving of the grade beams due to seasonal moisture variation.

The recommended construction procedures for preventing heave under the grade beam are through use of a crushable non-degradable void form material (such as Beaver Plastics Frost Cushion) as shown in Figure 6.1. The grade beam must be designed in accordance with the crushing strength of the void filler used and the piles must be able to resist the resulting uplift load.



TYPICAL UNINSULATED GRADE BEAM
BASE OF GRADE BEAM ABOVE ZONE OF SEASONAL VOLUME CHANGE

FIGURE 6.1



5.9 Cement Type

Two tests were conducted to determine the water-soluble sulphate ion (SO_4) content of soil samples recovered from the boreholes. These tests showed the presence of 0.02 percent water-soluble sulphate ion content in the soil samples, indicating that there is no potential for sulphate attack on the subsurface concrete. As a result, CSA Type GU (General Use hydraulic cement) may be used in the subsurface concrete at this project site.

The recommendations stated above for the subsurface concrete at this site may require further additions and / or modifications due to structural, durability, service life or other considerations which are beyond the geotechnical scope.

In addition, if imported material is required to be used at the site and will be in contact with concrete, it is recommended that the fill soil be tested for sulphate content to determine whether the above stated recommendations remain valid.

5.10 Gravel Structure for Access Road

It is understood that the access road will be used by light vehicles with occasional fire trucks. For the access roadway, the following alternative pavement structures were determined:

UNREINFORCED STRUCTURE	REINFORCED STRUCTURE
450 mm Crushed Granular Base Course over 300 mm of prepared subgrade	300 mm Crushed Granular Base Course over Biaxial Geogrid (Tensar BX-1100 or equivalent) over Non-woven geotextile (Nilex 4551 or equivalent) over 300 mm prepared subgrade

A need for continuing grading and maintenance is to be anticipated for graveled surfaces, particularly where vehicles are turning and braking. Although the above granular surfaced sections would generally be expected to perform satisfactorily, maintenance will be required to repair localized structurally damaged areas and/or to fill and level rutted areas. Additional gravel may be required to restore the gravel section at the damaged or rutted areas.

Prior to placing the gravel, any surficial contamination or loose material should be removed. The replacement gravel should consist of suitable crushed gravel compacted to the specified compaction level. A stockpile of suitable crushed gravel should be kept at the site for maintenance of the gravel surfaces.

Access road materials should be supplied and constructed in accordance with the latest edition of the City of Edmonton Design and Construction Standards.



5.11 Seismic Site Classification

Based on the soil conditions encountered at the boreholes and the available geology information, the project site is classified as Site Class C in accordance with the site classification as per Table 4.1.8.4A of the National Building Code (NBCC 2005).

6. CONSTRUCTION INSPECTIONS

The performance of the buildings will depend upon the quality of workmanship during construction. This is particularly important in regard to foundation installations and other earthwork where variations in soil conditions could occur. Therefore, it is recommended that inspection be provided by qualified geotechnical personnel during foundation installation to confirm that they are installed in competent bearing material and that the stratigraphy is similar to those that have been assumed for the design. Compaction testing for backfill will also be required.

7. LIMITATIONS AND USE OF REPORT

There is a possibility that this report may form part of the design and construction documents for information purposes. This report was issued before any final design or construction details have been prepared or issued. Therefore, differences may exist between the report recommendations and the final design, the contract documents, or as observed during construction. In such instances, Thurber Engineering Ltd. should be contacted immediately to address these differences.

Designers and contractors undertaking or bidding the work should examine the factual results of the investigation, satisfy themselves to the adequacy of the information for design and construction, and make their own interpretation of the data as it may affect their proposed scope of work, cost, schedules, safety and equipment capabilities.

STATEMENT OF LIMITATIONS AND CONDITIONS

1. STANDARD OF CARE

This Report has been prepared in accordance with generally accepted engineering or environmental consulting practices in the applicable jurisdiction. No other warranty, expressed or implied, is intended or made.

2. COMPLETE REPORT

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment are a part of the Report, which is of a summary nature and is not intended to stand alone without reference to the instructions given to Thurber by the Client, communications between Thurber and the Client, and any other reports, proposals or documents prepared by Thurber for the Client relative to the specific site described herein, all of which together constitute the Report.

IN ORDER TO PROPERLY UNDERSTAND THE SUGGESTIONS, RECOMMENDATIONS AND OPINIONS EXPRESSED HEREIN, REFERENCE MUST BE MADE TO THE WHOLE OF THE REPORT. THURBER IS NOT RESPONSIBLE FOR USE BY ANY PARTY OF PORTIONS OF THE REPORT WITHOUT REFERENCE TO THE WHOLE REPORT.

3. BASIS OF REPORT

The Report has been prepared for the specific site, development, design objectives and purposes that were described to Thurber by the Client. The applicability and reliability of any of the findings, recommendations, suggestions, or opinions expressed in the Report, subject to the limitations provided herein, are only valid to the extent that the Report expressly addresses proposed development, design objectives and purposes, and then only to the extent that there has been no material alteration to or variation from any of the said descriptions provided to Thurber, unless Thurber is specifically requested by the Client to review and revise the Report in light of such alteration or variation.

4. USE OF THE REPORT

The information and opinions expressed in the Report, or any document forming part of the Report, are for the sole benefit of the Client. NO OTHER PARTY MAY USE OR RELY UPON THE REPORT OR ANY PORTION THEREOF WITHOUT THURBER'S WRITTEN CONSENT AND SUCH USE SHALL BE ON SUCH TERMS AND CONDITIONS AS THURBER MAY EXPRESSLY APPROVE. Ownership in and copyright for the contents of the Report belong to Thurber. Any use which a third party makes of the Report, is the sole responsibility of such third party. Thurber accepts no responsibility whatsoever for damages suffered by any third party resulting from use of the Report without Thurber's express written permission.

5. INTERPRETATION OF THE REPORT

- a) Nature and Exactness of Soil and Contaminant Description: Classification and identification of soils, rocks, geological units, contaminant materials and quantities have been based on investigations performed in accordance with the standards set out in Paragraph 1. Classification and identification of these factors are judgmental in nature. Comprehensive sampling and testing programs implemented with the appropriate equipment by experienced personnel may fail to locate some conditions. All investigations utilizing the standards of Paragraph 1 will involve an inherent risk that some conditions will not be detected and all documents or records summarizing such investigations will be based on assumptions of what exists between the actual points sampled. Actual conditions may vary significantly between the points investigated and the Client and all other persons making use of such documents or records with our express written consent should be aware of this risk and the Report is delivered subject to the express condition that such risk is accepted by the Client and such other persons. Some conditions are subject to change over time and those making use of the Report should be aware of this possibility and understand that the Report only presents the conditions at the sampled points at the time of sampling. If special concerns exist, or the Client has special considerations or requirements, the Client should disclose them so that additional or special investigations may be undertaken which would not otherwise be within the scope of investigations made for the purposes of the Report.
- b) Reliance on Provided Information: The evaluation and conclusions contained in the Report have been prepared on the basis of conditions in evidence at the time of site inspections and on the basis of information provided to Thurber. Thurber has relied in good faith upon representations, information and instructions provided by the Client and others concerning the site. Accordingly, Thurber does not accept responsibility for any deficiency, misstatement or inaccuracy contained in the Report as a result of misstatements, omissions, misrepresentations, or fraudulent acts of the Client or other persons providing information relied on by Thurber. Thurber is entitled to rely on such representations, information and instructions and is not required to carry out investigations to determine the truth or accuracy of such representations, information and instructions.
- c) Design Services: The Report may form part of design and construction documents for information purposes even though it may have been issued prior to final design being completed. Thurber should be retained to review final design, project plans and related documents prior to construction to confirm that they are consistent with the intent of the Report. Any differences that may exist between the Report's recommendations and the final design detailed in the contract documents should be reported to Thurber immediately so that Thurber can address potential conflicts.
- d) Construction Services: During construction Thurber should be retained to provide field reviews. Field reviews consist of performing sufficient and timely observations of encountered conditions in order to confirm and document that the site conditions do not materially differ from those interpreted conditions considered in the preparation of the report. Adequate field reviews are necessary for Thurber to provide letters of assurance, in accordance with the requirements of many regulatory authorities.

6. RELEASE OF POLLUTANTS OR HAZARDOUS SUBSTANCES

Geotechnical engineering and environmental consulting projects often have the potential to encounter pollutants or hazardous substances and the potential to cause the escape, release or dispersal of those substances. Thurber shall have no liability to the Client under any circumstances, for the escape, release or dispersal of pollutants or hazardous substances, unless such pollutants or hazardous substances have been specifically and accurately identified to Thurber by the Client prior to the commencement of Thurber's professional services.

7. INDEPENDENT JUDGEMENTS OF CLIENT

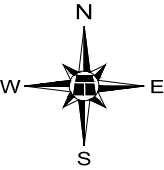
The information, interpretations and conclusions in the Report are based on Thurber's interpretation of conditions revealed through limited investigation conducted within a defined scope of services. Thurber does not accept responsibility for independent conclusions, interpretations, interpolations and/or decisions of the Client, or others who may come into possession of the Report, or any part thereof, which may be based on information contained in the Report. This restriction of liability includes but is not limited to decisions made to develop, purchase or sell land.





APPENDIX A

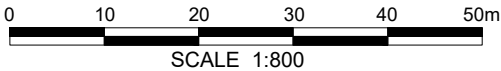
Drawing 23350-1 - Site Plan Showing Approximate Test Hole Locations

H:\23000\23350 Fort Edmonton Park Train barn Replacement Geo Inv\Drafting\23350-1.dwg - 1 - Aug. 16, 2018



LEGEND

-  APPROXIMATE TEST HOLE LOCATION
-  STANDPIPE PIEZOMETER



2015 AIR PHOTO FROM THE CITY OF EDMONTON



FORT EDMONTON PARK TRAIN BARN REPLACEMENT
GEOTECHNICAL INVESTIGATION

SITE PLAN SHOWING APPROXIMATE
TEST HOLE LOCATIONS

DWG No. 23350-1

DRAWN BY	ML
DESIGNED BY	TGV
APPROVED BY	RWT
SCALE	1:800
DATE	AUGUST 2018
FILE No.	23350



THURBER ENGINEERING LTD.



APPENDIX B

Symbols and Terms Used on Test Hole Logs

Modified Unified Soils Classification

Test Hole Logs

Laboratory Results

SYMBOLS AND TERMS USED ON TEST HOLE LOGS

1. VISUAL TEXTURAL CLASSIFICATION OF MINERAL SOILS

CLASSIFICATION	APPARENT PARTICLE SIZE	VISUAL IDENTIFICATION
Boulders	Greater than 200 mm	Greater than 200 mm
Cobbles	75 mm to 200 mm	75 mm to 200 mm
Gravel	4.75 mm to 75 mm	5 mm to 75 mm
Sand	0.075 mm to 4.75 mm	Visible particles to 5 mm
Silt	0.002 mm to 0.075 mm	Non-Plastic particles, not visible to the naked eye
Clay	Less than 0.002 mm	Plastic particles, not visible to the naked eye

2. TERMS DESCRIBING CONSISTENCY (COHESIVE SOILS ONLY)

DESCRIPTIVE TERM	APPROXIMATE UNDRAINED SHEAR STRENGTH	APPROXIMATE SPT * 'N' VALUE
Very Soft	Less than 10 kPa	Less than 2
Soft	10 - 25 kPa	2 to 4
Firm	25 - 50 kPa	4 to 8
Stiff	50 - 100 kPa	8 to 15
Very Stiff	100 - 200 kPa	15 to 30
Hard	200 - 300 kPa	Greater than 30
Very Hard	Greater than 300 kPa	

Modified from
National Building
Code

* SPT 'N' Value Standard Penetration Test 'N' Value - refers to the number of blows from a 63.5 kg hammer free falling a height of 0.76m to advance a standard 50mm outside diameter split spoon sampler for 0.3m depth into the undrilled portion of the test hole.

3. TERMS DESCRIBING DENSITY (COHESIONLESS SOILS ONLY)

DESCRIPTIVE TERM	STANDARD PENETRATION TEST (SPT) (Number of Blows per 300 mm)
Very Loose	0 - 4
Loose	4 - 10
Compact	10 - 30
Dense	30 - 50
Very Dense	Over 50








Modified from
National Building
Code

4. LEGEND FOR TEST HOLE LOGS

SYMBOL FOR SAMPLE TYPE

	Shelby Tube		A-Casing
	SPT		Grab
	No Recovery		Core

SYMBOLS USED FOR TEST HOLE LOGS

	WC - Water Content (% by weight) of soil sample
	Water Level
	SPT Standard Penetration Test 'N' Value (Blows/300mm)
	CPen Shear Strength determined by pocket penetrometer
	CVane Shear Strength determined by pocket vane
	Cu Undrained Shear Strength determined by unconfined compression test
	SO ₄ % Percent (%) of water soluble sulphate ions

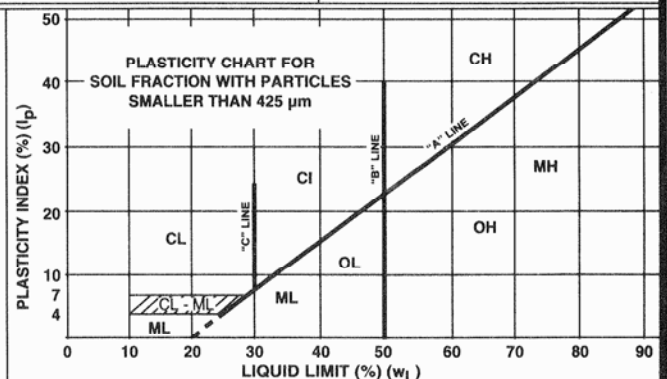
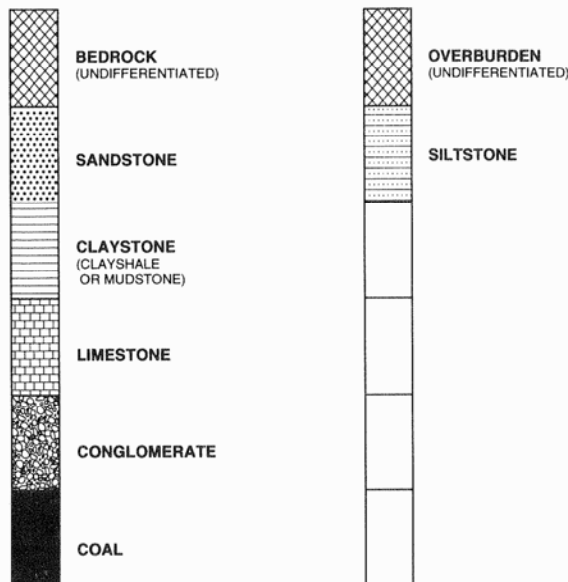


THURBER ENGINEERING LTD.

MODIFIED UNIFIED CLASSIFICATION SYSTEM FOR SOILS
(MODIFIED BY PFRA, 1985)

MAJOR DIVISION			GROUP SYMBOL	THURBER LOG SYMBOL	TYPICAL DESCRIPTION	LABORATORY CLASSIFICATION CRITERIA				
COARSE-GRAINED SOILS (MORE THAN HALF BY WEIGHT LARGER THAN 75µm)	GRAVELS MORE THAN HALF COARSE GRAINS LARGER THAN 4.75 mm	CLEAN GRAVELS (LITTLE OR NO FINES)	GW		WELL GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES	Determine percentages of gravel and sand from grain size curve. Depending on percentages of fines (fraction smaller than 75µm) coarse grained soils are classified as follows: Less than 5% GW, GP, SW, SP More than 12% GM, GC, SM, SC 5% to 12% Borderline cases requiring use of dual symbols	$C_u = \frac{D_{60}}{D_{10}} > 4$; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}} = 1 \text{ to } 3$			
			GP		POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES		NOT MEETING ALL GRADATION REQUIREMENTS FOR GW			
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)	GM		SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES		ATTERBERG LIMITS BELOW "A" LINE I_p LESS THAN 4	Above "A" line with I_p between 4 and 7 are borderline cases requiring use of dual symbols		
			GC		CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES		ATTERBERG LIMITS ABOVE "A" LINE I_p MORE THAN 7			
	SANDS MORE THAN HALF COARSE GRAINS SMALLER THAN 4.75 mm	CLEAN SANDS (LITTLE OR NO FINES)	SW		WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES		$C_u = \frac{D_{60}}{D_{10}} > 6$; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}} = 1 \text{ to } 3$	NOT MEETING ALL GRADATION REQUIREMENTS FOR SW		
			SP		POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES					
		SAND WITH FINES (APPRECIABLE AMOUNT OF FINES)	SM		SILTY SANDS, SAND-SILT MIXTURES			ATTERBERG LIMITS BELOW "A" LINE I_p LESS THAN 4	Above "A" line with I_p between 4 and 7 are borderline cases requiring use of dual symbols	
			SC		CLAYEY SANDS, SAND-CLAY MIXTURES			ATTERBERG LIMITS ABOVE "A" LINE I_p MORE THAN 7		
	FINE-GRAINED SOILS (MORE THAN HALF BY WEIGHT SMALLER THAN 75µm)	SILTS BELOW "A" LINE NEGLECTIBLE ORGANIC CONTENT	$w_L < 50\%$	ML			INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	CLASSIFICATION IS BASED UPON PLASTICITY CHART (see below)		
			$w_L > 50\%$	MH			INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS			
CLAYS ABOVE "A" LINE NEGLECTIBLE ORGANIC CONTENT		$w_L < 30\%$	CL		INORGANIC CLAYS OF LOW PLASTICITY, GRAVELLY, SANDY, OR SILTY CLAYS, LEAN CLAYS					
		$30\% < w_L < 50\%$	CI		INORGANIC CLAYS OF MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS					
		$w_L > 50\%$	CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS					
ORGANIC SILTS & CLAYS BELOW "A" LINE		$w_L < 50\%$	OL		ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW AND MEDIUM PLASTICITY					
		$w_L > 50\%$	OH		ORGANIC CLAYS OF HIGH PLASTICITY, ORGANIC SILTS					
HIGHLY ORGANIC SOILS		Pt		PEAT AND OTHER HIGHLY ORGANIC SOILS	STRONG COLOR OR ODOR, AND OFTEN FIBROUS TEXTURE					

SPECIAL SYMBOLS



THURBER ENGINEERING LTD.

**MODIFIED
UNIFIED CLASSIFICATION SYSTEM
FOR SOILS**
(MODIFIED BY PFRA, 1985)

CLIENT: City of Edmonton			PROJECT: Fort Edmonton Park Train Barn Geotechnical Investigation			BOREHOLE NO: TH18-15		
DRILLING COMPANY: ALL SERVICE DRILLING INC			DATE DRILLED: July 12, 2018			PROJECT NO: 23350		
DRILL/METHOD: 6" Solid Stem Auger			LOCATION: N5929852.463, E27970.535			ELEVATION: 630.83 (m)		
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE		<input checked="" type="checkbox"/> SPT				
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE		<input checked="" type="checkbox"/> DRILL CUTTINGS		<input type="checkbox"/> SLOUGH		
DEPTH (m)	SAMPLE TYPE	SPT (N)	REMARKS	SLOTTED PIEZOMETER	USC	SOIL SYMBOL	SOIL DESCRIPTION	ELEVATION (m)
		▲ CPEN (kPa) ▲ 50 100 150 200 ■ SPT Blows/300 mm ■ 10 20 30 40 PLASTIC W.C. LIQUID 10 20 30 40						
0					CH		CLAY (FILL) brown to dark brown, silty, some fine sand, trace gravel and rootlets	
1		26			CL		CLAY very stiff, dark brown, silty, fine sandy, trace gravel and oxides	630
2					CI		-gravelly, trace coal	629
3		30	-Gravel = 46.2%, Sand = 35.0% Fines = 18.8%		SC-GC		SAND AND GRAVEL dense, dark brown, clayey	628
4		15			CI		CLAY dark brown, silty, fine sandy, trace gravel	627
5					SC		SAND AND GRAVEL compact, dark brown, clayey	626
6		96	-Seepage >>■ Cpen > 215kPa		CI-SC		CLAY dark brown, silty, fine sandy, some cobbles up to 75mm size, trace gravel, clay shale, and sandstone	625
7		86/292	>>▲ Cpen > 215kPa		CI-SC		SANDSTONE very dense, grey, fine grained, silty, trace oxides and clay shale lenses	624
8			>>■ Cpen > 215kPa		CH		CLAY SHALE very hard, dark brown to dark grey, silty, trace coal and sandstone lenses	623
9		50/102	>>■ Cpen > 215kPa		CH		-grey	622
10					CH		-very hard, dark brown	621
					CH		-brown to grey, sandstone lenses	
 THURBER ENGINEERING LTD.				FIELD LOGGED BY: GS		COMPLETION DEPTH: 10.4 m		
				PREPARED BY: SEC / TGV		COMPLETION DATE: 7/12/18		
				REVIEWED BY: RWT		Page 1 of 2		

BOREHOLE LOG 23350.GPJ THRB AB GDT 8/21/18 - LIBRARY-NEW LOGO-N.E.G.L.B

CLIENT: City of Edmonton			PROJECT: Fort Edmonton Park Train Barn Geotechnical Investigation			BOREHOLE NO: TH18-15		
DRILLING COMPANY: ALL SERVICE DRILLING INC			DATE DRILLED: July 12, 2018			PROJECT NO: 23350		
DRILL/METHOD: 6" Solid Stem Auger			LOCATION: N5929852.463, E27970.535			ELEVATION: 630.83 (m)		
SAMPLE TYPE			<input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT					
BACKFILL TYPE			<input checked="" type="checkbox"/> BENTONITE <input checked="" type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SLOUGH					

DEPTH (m)	SAMPLE TYPE	SPT (N)	▲ CPEN (kPa) ▲ 50 100 150 200 ■ SPT Blows/300 mm ■ 10 20 30 40 PLASTIC W.C. LIQUID 10 20 30 40			REMARKS	SLOTTED PIEZOMETER	USC	SOIL SYMBOL	SOIL DESCRIPTION	ELEVATION (m)
10		50/76	●		>>> Cpen > 215kPa		CH		CLAY SHALE - CONTINUED -dark grey		
11									END OF TEST HOLE AT 10.4m UPON COMPLETION: (Below ground surface) -Slough at 10.1m -Trace of water Standpipe piezometer installed WATER LEVEL BELOW GROUND SURFACE: -July 12, 2018 = Dry -August 10, 2018 = 4.9m	620	
12										619	
13										618	
14										617	
15										616	
16										615	
17										614	
18										613	
19										612	
20										611	

 THURBER ENGINEERING LTD.	FIELD LOGGED BY: GS	COMPLETION DEPTH: 10.4 m
	PREPARED BY: SEC / TGV	COMPLETION DATE: 7/12/18
	REVIEWED BY: RWT	Page 2 of 2

BOREHOLE LOG 23350.GPJ THRB-AB.GDT 8/21/18- LIBRARY-NEW LOGO-N.E.GLB

CLIENT: City of Edmonton			PROJECT: Fort Edmonton Park Train Barn Geotechnical Investigation			BOREHOLE NO: TH18-16		
DRILLING COMPANY: ALL SERVICE DRILLING INC			DATE DRILLED: July 12, 2018			PROJECT NO: 23350		
DRILL/METHOD: 6" Solid Stem Auger			LOCATION: N5929862.868, E27994.413			ELEVATION: 630.86 (m)		
SAMPLE TYPE			<input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT					
DEPTH (m)	SAMPLE TYPE	SPT (N)	▲ CPEN (kPa) ▲ 50 100 150 200 ■ SPT Blows/300 mm ■ 10 20 30 40 PLASTIC W.C. LIQUID 10 20 30 40	REMARKS	USC	SOIL SYMBOL	SOIL DESCRIPTION	ELEVATION (m)
0					GM		GRAVEL (FILL), dark brown, silty, fine sand mix, trace clay lumps	
					CI		CLAY (FILL), dark brown, fine sandy, silty, trace gravel	
1		13			CL		CLAY stiff, dark brown, very silty, fine sandy, trace oxides, silt deposits, and gravel	630
				-SO ₄ = 0.02%	CI		-trace coal	629
2								
		9			GC		SAND AND GRAVEL loose, dark brown, fine grained, silty, gravel mix, some cobbles up to 75mm size, trace coal, oxides, and clay lumps	628
3					SC			
4		12		>>▲ Cpen > 215kPa	CI-SC		SANDSTONE compact, brown to grey, fine grained, silty, trace oxides and coal	627
				>>▲ Seepage >>▲ Cpen > 215kPa	CI-SC		-clay shale mixed, some oxides	626
5								
		74		>>■ Cpen > 215kPa	CI-SC		-very dense, grey, trace clay shale lenses and oxides	625
6				>>▲ Cpen > 215kPa	CH		CLAY SHALE dark brown, silty, trace sandstone lenses	624
7		50/102		>>■	CH		-very hard, trace coal	623
					CH			
8								
		50/152		>>■ Cpen > 215kPa	CI-SC		SANDSTONE very dense, dark brown to dark grey, trace clay shale	622
9					CH		CLAY SHALE dark brown to dark grey, silty, trace sandstone lenses	621
10								

BOREHOLE LOG 23350.GPJ THRB AB GDT 8/21/18 - LIBRARY-NEW LOGO-N.E.G.L.B



THURBER ENGINEERING LTD.

FIELD LOGGED BY: GS


PREPARED BY: SEC / TGV

REVIEWED BY: RWT

COMPLETION DEPTH: 10.4 m

COMPLETION DATE: 7/12/18

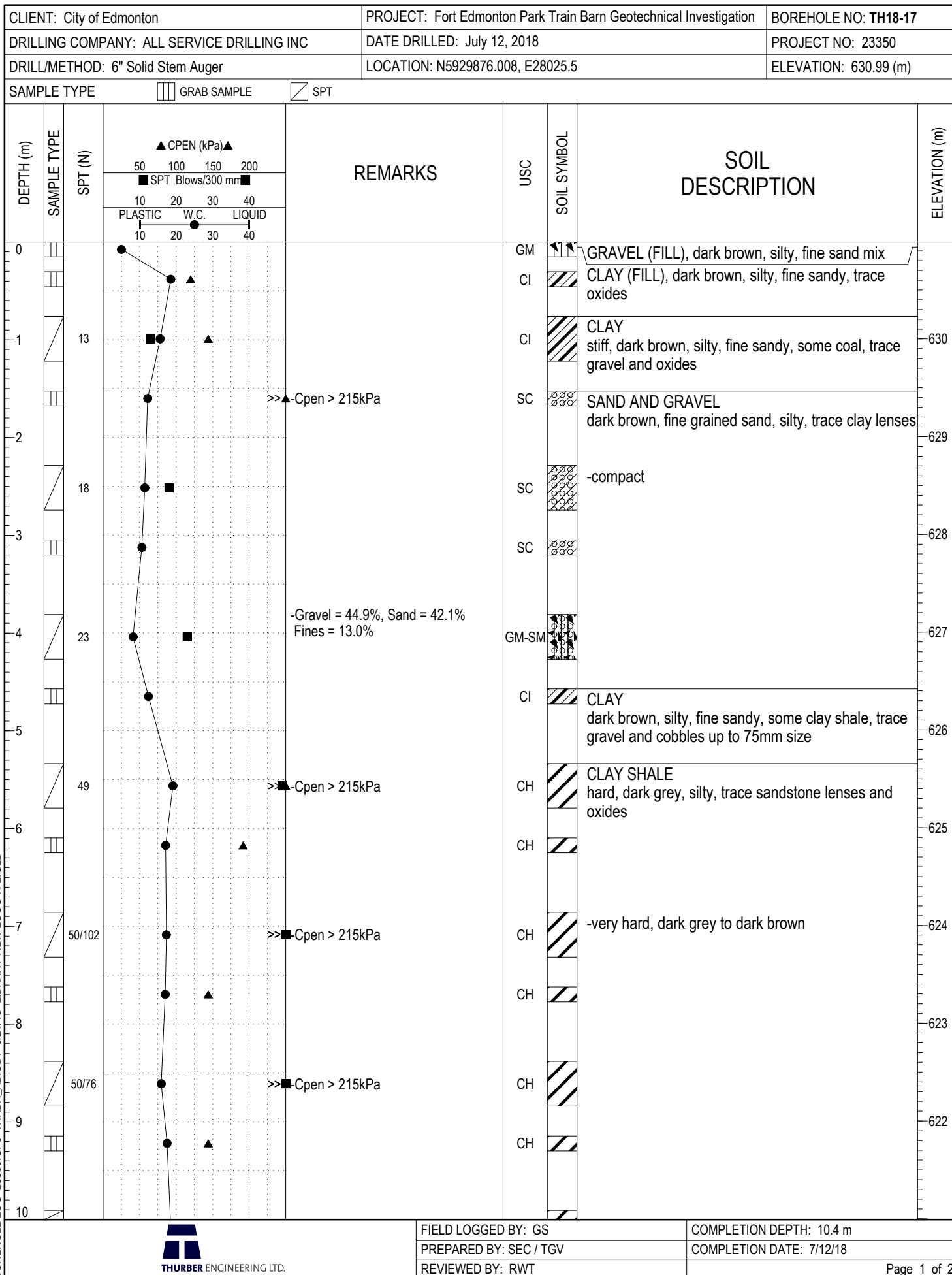
CLIENT: City of Edmonton			PROJECT: Fort Edmonton Park Train Barn Geotechnical Investigation			BOREHOLE NO: TH18-16		
DRILLING COMPANY: ALL SERVICE DRILLING INC			DATE DRILLED: July 12, 2018			PROJECT NO: 23350		
DRILL/METHOD: 6" Solid Stem Auger			LOCATION: N5929862.868, E27994.413			ELEVATION: 630.86 (m)		
SAMPLE TYPE			<input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT					
DEPTH (m)	SAMPLE TYPE	SPT (N)	▲ CPEN (kPa) ▲ 50 100 150 200 ■ SPT Blows/300 mm ■ 10 20 30 40 PLASTIC W.C. LIQUID 10 20 30 40	REMARKS	USC	SOIL SYMBOL	SOIL DESCRIPTION	ELEVATION (m)
10		50/76		>>> Cpen > 215kPa	CH		CLAY SHALE - CONTINUED	
11							END OF TEST HOLE AT 10.4m UPON COMPLETION: (Below ground surface) -Slough at 8.8m Backfilled with drill cuttings and bentonite chips at surface	620
12								619
13								618
14								617
15								616
16								615
17								614
18								613
19								612
20								611


 THURBER ENGINEERING LTD.


FIELD LOGGED BY: GS
 PREPARED BY: SEC / TGV
 REVIEWED BY: RWT

COMPLETION DEPTH: 10.4 m
 COMPLETION DATE: 7/12/18

BOREHOLE LOG 23350.GPJ THRBRR_AB.GDT 8/21/18- LIBRARY-NEW LOGO-N.E.GLB



CLIENT: City of Edmonton		PROJECT: Fort Edmonton Park Train Barn Geotechnical Investigation		BOREHOLE NO: TH18-17			
DRILLING COMPANY: ALL SERVICE DRILLING INC		DATE DRILLED: July 12, 2018		PROJECT NO: 23350			
DRILL/METHOD: 6" Solid Stem Auger		LOCATION: N5929876.008, E28025.5		ELEVATION: 630.99 (m)			
SAMPLE TYPE <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT							
DEPTH (m)	SAMPLE TYPE	SPT (N)	REMARKS	USC	SOIL SYMBOL	SOIL DESCRIPTION	ELEVATION (m)
10	50/152	<div> <div>▲ CPEN (kPa)▲</div> <div>50 100 150 200</div> <div>■ SPT Blows/300 mm■</div> <div>10 20 30 40</div> <div>PLASTIC W.C. LIQUID</div> <div>10 20 30 40</div> </div>	>>■	CH	<div>CLAY SHALE - CONTINUED</div> <div>-trace coal</div> <div>END OF TEST HOLE AT 10.4m</div> <div>UPON COMPLETION: (Below ground surface)</div> <div>-Slough at 8.1m</div> <div>Backfilled with drill cuttings and bentonite chips at surface</div>	630.99	
11							620
12							619
13							618
14							617
15							616
16							615
17							614
18							613
19							612
20							



THURBER ENGINEERING LTD.

FIELD LOGGED BY: GS

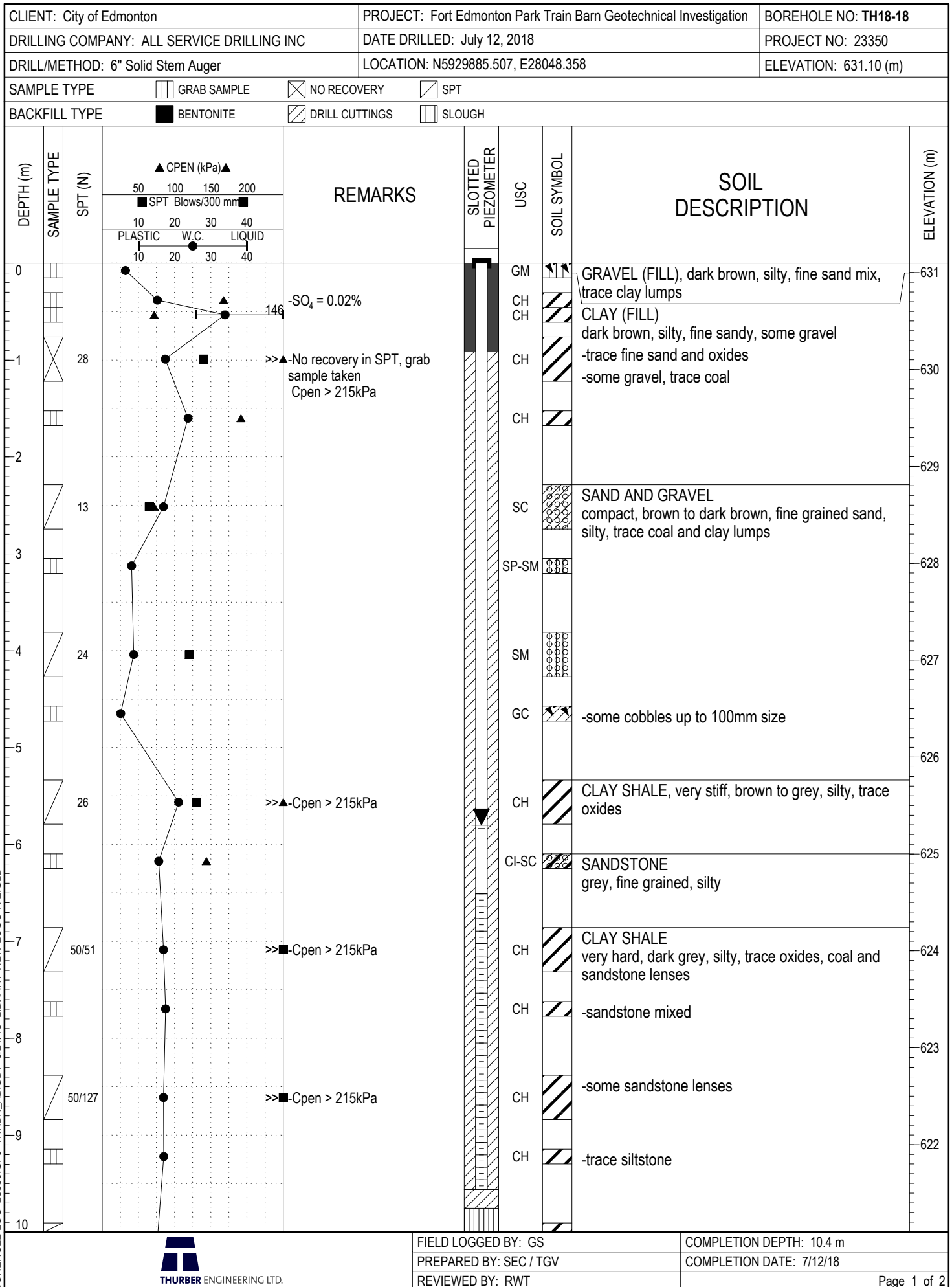
PREPARED BY: SEC / TGV

REVIEWED BY: RWT

COMPLETION DEPTH: 10.4 m


COMPLETION DATE: 7/12/18

BOREHOLE LOG 23350.GPJ THRBRR_AB.GDT 8/21/18- LIBRARY-NEW LOGO-N.E.GLB



CLIENT: City of Edmonton			PROJECT: Fort Edmonton Park Train Barn Geotechnical Investigation			BOREHOLE NO: TH18-18		
DRILLING COMPANY: ALL SERVICE DRILLING INC			DATE DRILLED: July 12, 2018			PROJECT NO: 23350		
DRILL/METHOD: 6" Solid Stem Auger			LOCATION: N5929885.507, E28048.358			ELEVATION: 631.10 (m)		
SAMPLE TYPE			<input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT					
BACKFILL TYPE			<input checked="" type="checkbox"/> BENTONITE <input checked="" type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SLOUGH					

DEPTH (m)	SAMPLE TYPE	SPT (N)	▲ CPEN (kPa) ▲ 50 100 150 200 ■ SPT Blows/300 mm ■ 10 20 30 40 PLASTIC W.C. LIQUID 10 20 30 40			REMARKS	SLOTTED PIEZOMETER	USC	SOIL SYMBOL	SOIL DESCRIPTION	ELEVATION (m)
10		50/76			>>> ■ Cpen > 215kPa			CH	<div>CLAY SHALE - CONTINUED</div> <div>END OF TEST HOLE AT 10.4m</div> <div>UPON COMPLETION: (Below ground surface)</div> <div>-Slough at 9.8m</div> <div>Standpipe piezometer installed</div> <div>WATER LEVEL BELOW GROUND SURFACE:</div> <div>-July 12, 2018 = Dry</div> <div>-August 10, 2018 = 5.8m</div>	621	
11										620	
12										619	
13										618	
14										617	
15										616	
16										615	
17										614	
18										613	
19										612	
20											

 THURBER ENGINEERING LTD.	FIELD LOGGED BY: GS	COMPLETION DEPTH: 10.4 m
	PREPARED BY: SEC / TGV	COMPLETION DATE: 7/12/18
	REVIEWED BY: RWT	Page 2 of 2

BOREHOLE LOG 23350.GPJ THRB-AB.GDT 8/21/18- LIBRARY-NEW LOGO-N.E.GLB



THURBER ENGINEERING LTD.

4127 Roper Road Edmonton, Alberta T6B 3S5 P: 780.438.1460 F: 780.437.7125

Client: COE

Project: Fort Edmonton Train Barn Replacement

SIEVE ANALYSIS REPORT

Project No.: 23350

Date: 20-Jul-18

Sample Source: TH18-15 P4 @ 7.5 - 9.0 ft.

Material Type:

Specification:

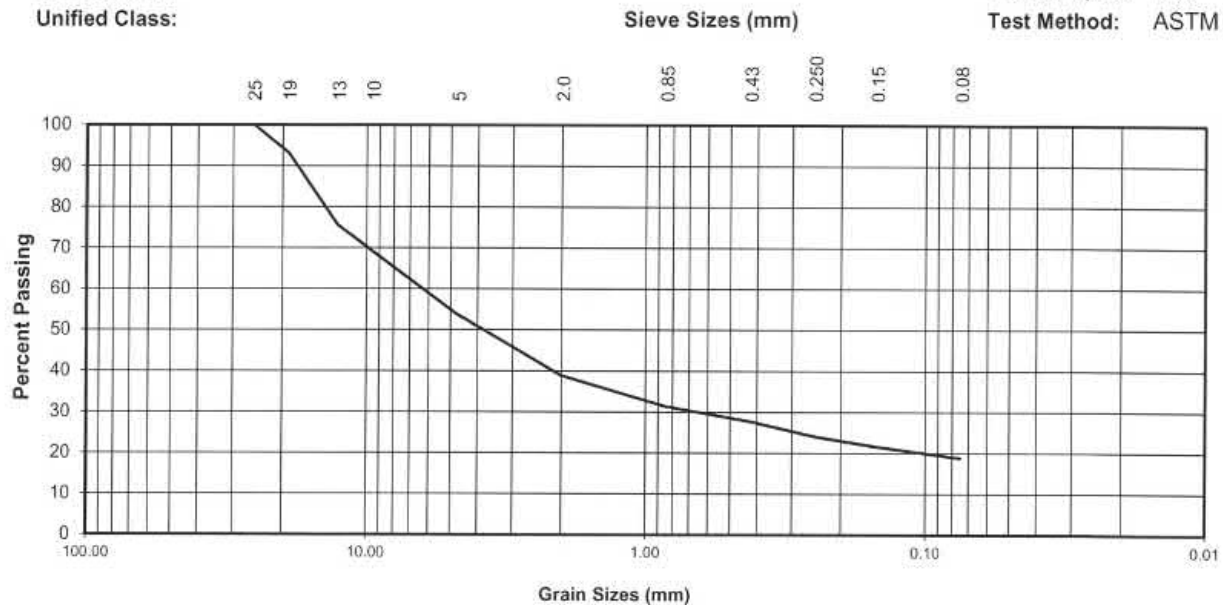
Unified Class:

Date Tested: 20-Jul-18

Sampled by: N/A

Date Sampled: N/A

Test Method: ASTM C 136



Sieve No.	Opening (mm)	Percent Passing	Gradation Limits	
			Max	Min
1.0 ins	25.4	100.0		
3/4 ins	19.1	93.1		
1/2 ins	12.7	75.6		
3/8 ins	9.53	69.2		
#4	4.75	53.8		
#10	2	38.8		
#20	0.85	31.3		
#40	0.425	27.7		
#60	0.25	24.1		
#100	0.15	21.6		
#200	0.075	18.8		

Total Sample Proportions

Gravel:	46.2 %
Sand:	35.0 %
Fines:	18.8 %

Silt and Clay

Silt	-
Clay	-
Total Fines:	

Moisture Content

As Received: 6.9%

Percent Crush:

Faces Counted: -

Comments:

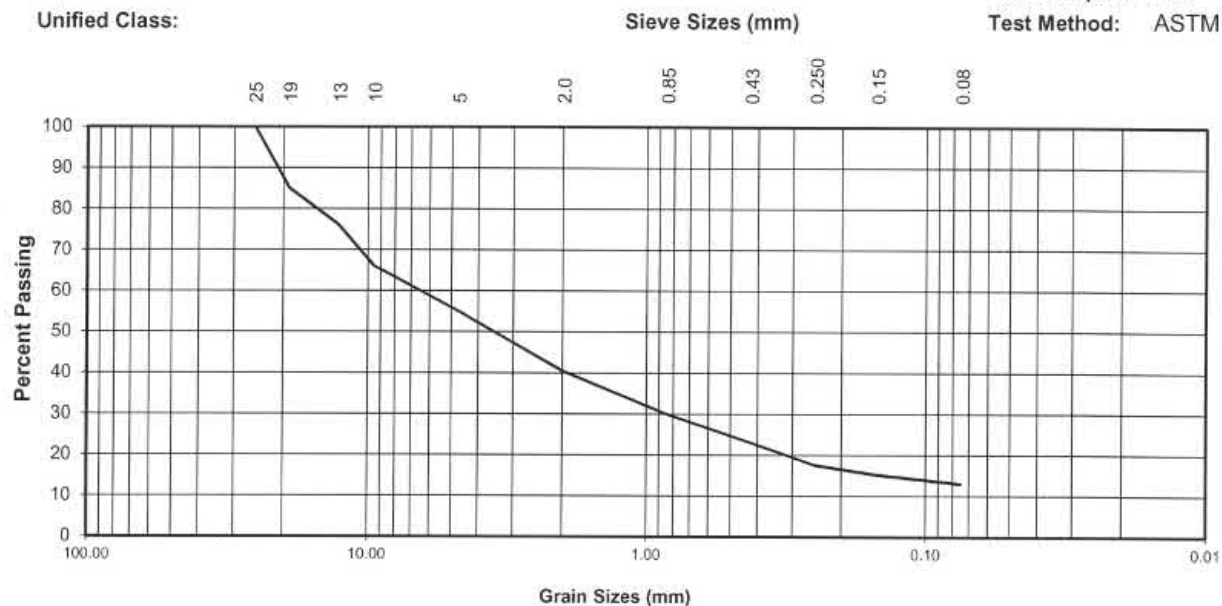
Computer File : TH18-15 P4

Series No.: N/A

Checked By: TGV

**THURBER ENGINEERING LTD.**

4127 Roper Road Edmonton, Alberta T6B 3S5 P: 780.438.1460 F: 780.437.7125

Client: COE**Project:** Fort Edmonton Train Barn Replacement**SIEVE ANALYSIS REPORT****Project No.:** 23350**Date:** 20-Jul-18**Sample Source:** TH18-17 P7 @ 12.5 - 14.0 ft.**Material Type:****Specification:****Unified Class:****Date Tested:** 20-Jul-18**Sampled by:** N/A**Date Sampled:** N/A**Test Method:** ASTM C 136

Sieve No.	Opening (mm)	Percent Passing	Gradation Limits	
			Max	Min
1.0 ins	25.4	100.0		
3/4 ins	19.1	85.0		
1/2 ins	12.7	76.0		
3/8 ins	9.53	66.1		
#4	4.75	55.1		
#10	2	40.4		
#20	0.85	30.0		
#40	0.425	23.1		
#60	0.25	17.6		
#100	0.15	15.2		
#200	0.075	13.0		

Total Sample Proportions

Gravel:	44.9 %
Sand:	42.1 %
Fines:	13.0 %

Silt and Clay

Silt	-
Clay	-
Total Fines:	

Moisture Content

As Received: 5.9%

Percent Crush: -

Faces Counted:

Comments:

Computer File : TH18-17 P7

Series No.: N/A

Checked By: *Tau*



ATTERBERG LIMITS ASTM D4318

Client: COE
Project: Fort Edmonton Train Barn Replacement
Project No: 23350
Test Hole: TH18-16
Sample No: G4
Depth: 5.0 ft.

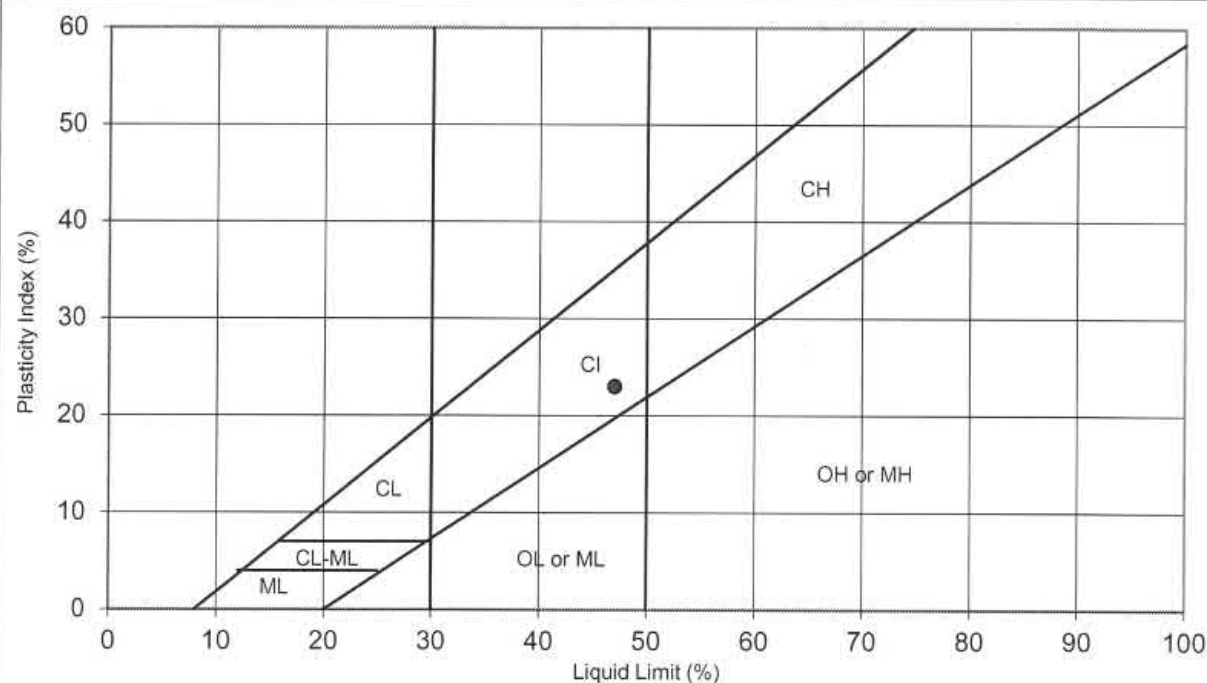
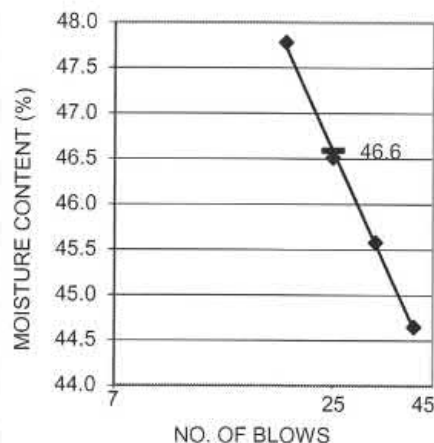
Date Tested: 19-Jul-18
Tested By: NM
Checked By: TGV

LIQUID LIMIT

Trial No:	1	2	3	4
No of Blows:	40	32	25	19
Container No.	1	2	3	4
Wet Soil + Container	12.7	13.83	14.49	12.96
Dry Soil + Container	8.78	9.50	9.89	8.77
Wt. Of Container	0	0	0	0
Moisture Content	44.6	45.6	46.5	47.8

PLASTIC LIMIT

	1	2	AVERAGE
Container No.	5	6	
Wet Soil + Container	28.46	28.48	
Dry Soil + Container	26.57	26.60	
Wt. Of Container	18.75	18.82	
Moisture Content	24.2	24.2	24.2



REMARKS

Liquid Limit:	47
Plastic Limit:	24
Plasticity Index:	23
USC Classification:	CI



ATTERBERG LIMITS ASTM D4318

Client: COE

Project: Fort Edmonton Train Barn Replacement

Project No: 23350

Test Hole: TH18-18

Depth: 1.5 ft.

Sample No.: G3

Date Tested: 19-Jul-18

Tested By: NM

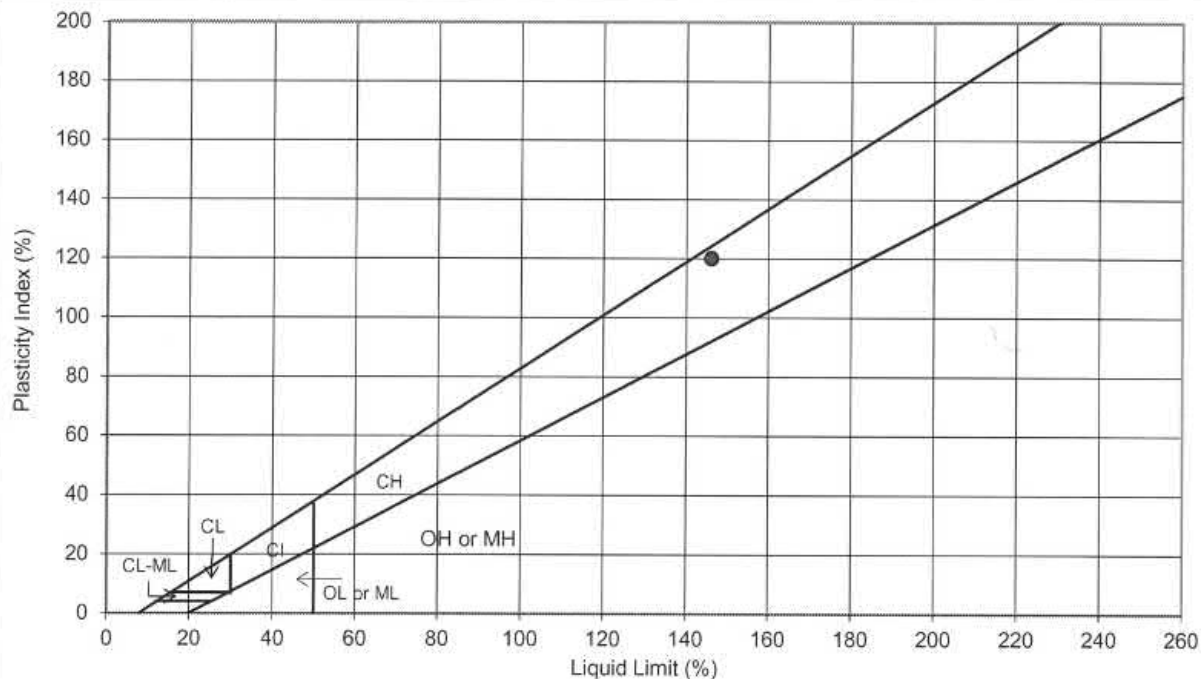
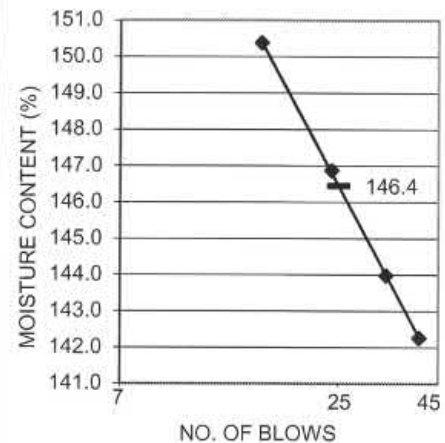
Checked By: TGV

LIQUID LIMIT

Trial No:	1	2	3	4
No of Blows:	40	33	24	16
Container No.	1	2	3	4
Wet Soil + Container	12.67	13.98	13.8	13.52
Dry Soil + Container	5.23	5.73	5.59	5.4
Wt. Of Container	0	0	0	0
Moisture Content	142.3	144.0	146.9	150.4

PLASTIC LIMIT

	1	2	3	AVERAGE
Container No.	5	6		
Wet Soil + Container	28.14	29.04		
Dry Soil + Container	26.18	26.93		
Wt. Of Container	18.8	18.93		
Moisture Content	26.6	26.4		26.5



REMARKS :

Liquid Limit: 146
Plastic Limit: 26
Plasticity Index: 120
USC Classification: CH

**THURBER ENGINEERING LTD.**

4127 Roper Road
Edmonton, Alberta T6B 3S5
Phone (780) 438-1460 | Fax (780) 437-7125

Job No:	23350
Client:	COE
Project:	Fort Edmonton Train Barn Replacement
HOLE/PIT:	TH18 - 16
DEPTH:	5.0 ft.
DATE:	18-Jul-18
SAMPLE:	G4
TECH:	NM
CHECKED BY:	TGV

SULPHATE TEST ON SOILS USING PFRA METHOD

BEAKER NO: 1 / D4 CRUCIBLE NO: 17-8

- 1- Add 100 g of oven dried soil, passing No. 40 sieve.
- 2- Add 500 mL of distilled water - or ratio of 20 g of soil to 100 g of water.
- 3- Add 3 drops of concentrated HCL acid.
- 4- Place mixture in oven (110C, 250F) for 1 hour or allow to sit overnight.
- 5- Draw off or filter 100 mL clear liquid from mixture into 250 mL beaker.
- 6- Add 100 mL distilled water on 5 mL concentrated HCL acid.
- 7- Heat in oven for 1 hour.
- 8- Add 10 mL of 10% BACL2 solution, mix thoroughly, observe reaction.

<input type="checkbox"/> Clear Solution No Reaction	<input checked="" type="checkbox"/> Slightly Milky No Precipitate	<input type="checkbox"/> Milky Solution With Precipitate
--	--	---

- 9- Filter mixture through crucible on vacuum setup, dry crucible thoroughly in oven

Wt of Crucible + BaSO ₄ (ppt) (oven dried)	<u>25.59</u> g
WTt of Crucible Empty	<u>25.58</u> g
Wt of BaSO ₄ (ppt)	<u>0.01</u> g
Wt of Soil Used (passing No. 40 sieve)	<u>100.03</u> g

CALCULATIONS

Gravimetric Factor

$$\text{Wt of Sulphate} = \frac{\text{Wt BaSO}_4 \text{ (ppt) gms}}{\text{Gravimetric Factor}} = \frac{0.01}{2.60} = 0.004 \text{ g}$$

$$\text{Percent Sulphate} = \frac{\text{Wt of SO}_4 \times 100\%}{\text{Wt of Soil Used (g)}} = \frac{0.38}{20.006} = 0.02 \%$$

<input checked="" type="checkbox"/>	0-0.1%	Clear Solution, No reaction
<input type="checkbox"/>	0.1-0.5%	Slightly Milky, No Precipitation Dangerous if Water Table is Too High
<input type="checkbox"/>	>0.5%	Milky with Precipitate Dangerous, use HS Cement



THURBER ENGINEERING LTD.

4127 Roper Road
Edmonton, Alberta T6B 3S5
Phone (780) 438-1460 | Fax (780) 437-7125

Job No:	23350		
Client:	COE		
Project:	Fort Edmonton Train Barn Replacement		
HOLE/PIT:	TH18 - 18	SAMPLE:	G2
DEPTH:	1.0 ft.	TECH:	NM
DATE:	18-Jul-18	CHECKED BY:	TGV

SULPHATE TEST ON SOILS USING PFRA METHOD

BEAKER NO: K18 / 7 CRUCIBLE NO: 17-7

- 1- Add 100 g of oven dried soil, passing No. 40 sieve.
- 2- Add 500 mL of distilled water - or ratio of 20 g of soil to 100 g of water.
- 3- Add 3 drops of concentrated HCL acid.
- 4- Place mixture in oven (110C, 250F) for 1 hour or allow to sit overnight.
- 5- Draw off or filter 100 mL clear liquid from mixture into 250 mL beaker.
- 6- Add 100 mL distilled water on 5 mL concentrated HCL acid.
- 7- Heat in oven for 1 hour.
- 8- Add 10 mL of 10% BACL2 solution, mix thoroughly, observe reaction.

<input type="checkbox"/>	Clear Solution No Reaction	<input checked="" type="checkbox"/>	Slightly Milky No Precipitate	<input type="checkbox"/>	Milky Solution With Precipitate
--------------------------	-------------------------------	-------------------------------------	----------------------------------	--------------------------	------------------------------------

- 9- Filter mixture through crucible on vacuum setup, dry crucible thoroughly in oven

Wt of Crucible + BaSO ₄ (ppt) (oven dried)	<u>25.76</u>	g
WTt of Crucible Empty	<u>25.75</u>	g
Wt of BaSO ₄ (ppt)	<u>0.01</u>	g
Wt of Soil Used (passing No. 40 sieve)	<u>100.03</u>	g

CALCULATIONS

Gravimetric Factor

$$\text{Wt of Sulphate} = \frac{\text{Wt BaSO}_4 \text{ (ppt) gms}}{\text{Gravimetric Factor}} = \frac{0.01}{2.60} = 0.004 \text{ g}$$

$$\text{Percent Sulphate} = \frac{\text{Wt of SO}_4 \times 100\%}{\text{Wt of Soil Used (g)}} = \frac{0.38}{20.006} = 0.02 \%$$

<input checked="" type="checkbox"/>	0-0.1%	Clear Solution, No reaction
<input type="checkbox"/>	0.1-0.5%	Slightly Milky, No Precipitation Dangerous if Water Table is Too High
<input type="checkbox"/>	>0.5%	Milky with Precipitate Dangerous, use HS Cement



APPENDIX C

Recommended Construction Procedures



RECOMMENDED CONSTRUCTION PROCEDURES

The following construction procedures are considered to represent good practice and are to be read in conjunction with the text of this report.

1. PROOF ROLLING

- 1.1 Proof rolling is a method of detecting soft areas in a subgrade for fill, pavement, floors or foundations. The intent is to detect softened areas not revealed by the test holes or visual examination of the site surface, and is used where normal scarification and compacting procedures would not be successful in detecting and eliminating soft areas. It is usually accomplished with the use of heavy 130 to 220 kN (15-25 ton) compaction equipment with high contact wheel pressures on independent axles, although heavily loaded single axle trucks will provide the equivalent result.
- 1.2 The procedure requires 2 complete passes with the heavy equipment in one direction and then a second series of 2 passes made at right angles to the first series.
- 1.3 While the passes are being made, any softened, rutted or displaced areas detected should be examined and either recompacted with additional fill or the existing material removed and replaced with better quality material.

2. EXCAVATED FOUNDATIONS

- 2.1 Excavation close to foundation level should be done carefully to avoid disturbance of the soil. It is essential to prevent the soil at foundation level from deterioration due to excessive drying or becoming wet from surface or seepage water. Good drainage both during and after construction is essential.
- 2.2 Sumps, if required, should be located well away from the foundation area. Softened or overdried soil must be removed and replaced by lean mix concrete or by extending the foundations.
- 2.3 The foundation must be kept from freezing both during and after construction. Foundation concrete should not be placed on or against frozen soil.



3. BACKFILLING

- 3.1 Backfill around foundations should be placed in such a manner so as to prevent settlement and to be relatively impervious near the surface so that water does not pond against foundations nor be allowed to seep into the soil.
- 3.2 Backfill should not be placed until the structure has sufficient strength to withstand the earth pressures resulting from placement and compaction.
- 3.3 All backfill around grade beams, foundation walls, etc. must be carefully and uniformly compacted. The backfill should be placed in even layers and no frozen or organic material should be incorporated into the fill. All lumps of material must be broken down or squeezed together during placing and compaction.
- 3.4 The final grade (allowing for some settlement of the backfill) should shed water away from the structure.
- 3.5 During construction, precautions should be taken to prevent water ponding in grade beam excavations thereby acting as a source of water to soften the soil under the floor slab area or providing a source of water for frost action if the building is not heated during freezing weather.

4. BORED CAST-IN-PLACE CONCRETE PILES

- 4.1 If there is evidence of water bearing and/or sloughing soil, casing should be used to seal off the water or prevent the sloughing of the sides of the hole. The concrete and reinforcing steel should be on hand and placed as soon as the pile hole has been completed and approved.
- 4.2 Pile bells, if used, should be formed entirely in self-supporting soil and it may be necessary in some cases to extend the pile bell if caving occurs at the location of the bell.
- 4.3 Water should not be left ponded on the pile base and should be removed, or dried by the use of dry cement when permitted by the engineer.
- 4.4 Concrete should be placed without segregation and carefully vibrated throughout the full length of the pile to ensure that voids do not exist in the pile shaft. The concrete slump should be between 75 and 125 mm with a minimum compressive strength at 28 days of



21 MPa (3000 psi). Higher compressive strengths may be required for structural or durability reasons, and higher slumps may be necessary for closely spaced reinforcing bars or where concrete is to be tremied under water.

- 4.5 Steel reinforcing should be tied into the grade beam reinforcing steel. This recommendation is important where the soil below grade beam can swell from a change in moisture content or by frost action before the building is heated.
- 4.6 Piles closer than 2 1/2 diameters should not be drilled and poured consecutively unless permitted by the engineer and depending upon soil conditions. Where the drilling operation might affect the concrete in the adjacent pile, the drilling should not be carried out until the concrete has at least 24 hours to set, or before the concrete has reached its initial set.



Appendix C - Project Specific Phase I Environmental Site Assessment

**PHASE I ENVIRONMENTAL SITE ASSESSMENT UPDATE
FORT EDMONTON PARK MAINTENANCE YARD
7000 - 143RD STREET NW
BLOCK A; PLAN 852 1469
EDMONTON, ALBERTA**



Nichols Environmental
(Canada) Ltd.

Head Office:
17331 - 107th Avenue NW
Edmonton, Alberta
T5S 1E5

nicholsenvironmental.com

P: 780 484 3377

PREPARED FOR:

**THE CITY OF EDMONTON
THE CITY OF EDMONTON, ALBERTA**

PREPARED BY:

**NICHOLS ENVIRONMENTAL (CANADA) LTD.
EDMONTON, ALBERTA**

PROJECT No.: 18-499-CFE

DATE ISSUED: NOVEMBER 13, 2018

**THE CITY OF EDMONTON
PHASE I ESA UPDATE
7000 - 143RD STREET NW
EDMONTON, ALBERTA**



EXECUTIVE SUMMARY

Nichols Environmental (Canada) Ltd. has completed a Phase I Environmental Site Assessment (ESA) Update of the Fort Edmonton Park Maintenance Yard located at 7000 - 143rd Street NW in Edmonton, Alberta and legally described as a portion of Block A; Plan 852 1469. The Property has been under the ownership of The City of Edmonton since May 2, 1969.

Given the age of the buildings on the Property (1987 to 1995), the potential for lead-based paint exists. On the northeast portion of the Property, surficial staining was noted on the wood floor of a shed and between two intermodal storage containers. The staining is not anticipated to pose a significant environmental risk to the Property. A small volume of pickled sand storage remains on the Property for sanding walkways. Given the low volume of storage, low salt content, and that the pile is covered, the risk associated with this practice may be considered reduced. A rail line that intersects the west boundary of the Property may also pose a level of environmental risk given the likely presence of creosote-treated rail ties.

Of the observed surrounding land uses, the rail line (approximately 10 m) and train shed (approximately 25 m) to the south of the Property may represent off-site environmental risks given their operations. However, given the low mobility of the potential contaminant (creosote), the use of secondary containment, and the distance from the Property, the risks may be reduced. The former aboveground fuel storage tank (AST) area at the train shed was also previously identified as a potential concern, due to lack of delineation of petroleum hydrocarbons (PHCs) to the north. However, this area is more than 40 m southwest of the westernmost portion of the Property, thus reducing the risk.

Records specific to the Property identified one gasoline AST and one 455-L diesel AST. At the time of inspection, both tanks were within concrete secondary containment and appeared to be in good condition with the exception of some rust on the diesel tank. No other potential environmental concerns were identified for the Property or surrounding area.

Based on the findings of the Phase I ESA Update, Nichols Environmental is of the opinion that the level of environmental risk associated with the Property is low to moderate, given the presence of the rail line on the west extent. Due to the likely continued operation of the rail line, these risks may be managed through a risk management plan (RMP) to specifically ensure that any soils within the area of the rail line are properly managed. As a best practice measure, the staining identified on the Property should be removed prior to further development, and the soils disposed of through an approved landfill. Otherwise, Nichols Environmental has no recommendations for further assessment (Phase II ESA) of the Property.

The statements made in this Executive Summary are subject to the same limitations included in Section 9.2 and are to be read in conjunction with the remainder of this report.



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The City of Edmonton
Phase I Environmental Site Assessment Update
Fort Edmonton Park Maintenance Yard: 7000 - 143rd Street NW
Edmonton, Alberta
Project No. 18-499-CFE
November 13, 2018
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FIGURES

- | | |
|----------|--|
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1.0 INTRODUCTION

Nichols Environmental was retained by The City of Edmonton to conduct a Phase I ESA Update on the Fort Edmonton Park Maintenance Yard municipally located at 7000 - 143rd Street NW in Edmonton, Alberta (herein referred to as "the Property"). The Property is legally described as Block A; Plan 852 1469. The location of the Property relative to the surrounding area is presented on Figure 1 and the Phase I ESA Update has been conducted for the development of the new train barn and track only, which is situated within Fort Edmonton Park.

The purpose of a Phase I ESA is to identify actual and potential site contamination. This involves the evaluation and reporting of existing information collected through a Records Review, a Site Visit and Interviews. The Phase I ESA may assist in reducing uncertainty about potential liabilities and may be a basis for further investigation of the Property. Phase I ESAs may be used to make informed decisions about property transactions, identify certain baseline environmental conditions, assist in meeting regulatory requirements, and as an initial step in site remediation (Canadian Standards Association Z768-01, Phase I Environmental Site Assessment).

1.1 Background

A copy of a Thurber Engineering Ltd. (Thurber) Geotechnical Investigation report was provided by The City of Edmonton for review. The geotechnical investigation was completed through July and August of 2018. Four test holes, two of which were completed as groundwater monitoring wells, were advanced to a depth of 10.4 metres below grade (mbg) throughout and in the vicinity of the Property. The groundwater monitoring wells were completed for the purpose of monitoring future groundwater levels. Depth to groundwater ranged from 4.9 to 5.9 mbg. Thurber's test hole logs did not indicate any observations of staining or petroleum hydrocarbon (PHC) odours.

Nichols Environmental completed a Phase I ESA for the whole of Fort Edmonton Park in June 2015. A number of environmental risks were identified throughout the park, including but not limited to widespread use of fill materials, operation of a rail line, and a former AST associated with the train shed. Results of assessments conducted by CRIMSON Environmental Limited identified PHC and polycyclic aromatic hydrocarbon (PAH) impacts along the rail line. Given that the use of the rail line would continue, it was recommended that an RMP for PHC and PAH-impacts along the rail line be put in place. Further delineation to the north of the fuel AST was also recommended to assess the status of soil and groundwater in relation to PHCs, as well as testing for PAHs, and metals.

As a result of the findings of the original Phase I ESA, Nichols Environmental proceeded with a Phase II ESA to assess for potential contaminants of concern (PCOCs) related to historical stockpiles and fill materials (specifically PHCs and metals) used during the various phases of construction that have occurred throughout the park. Concentrations of the analysed PCOCs were below the 2016 Alberta Tier 1 Guidelines for Residential/Parkland Land Use using fine-grained criteria at all locations tested and no recommendations of further work were made.



2.0 SCOPE OF WORK

The following scope of work for the Phase I ESA Update was presented in a proposal to The City of Edmonton on June 26, 2018, and was carried out as follows:

- Completed a review of any previous environmental reports completed for the Property since the date of the last report;
- Obtained and reviewed all records of land ownership and land use from the appropriate land title authority since the date of the last report;
- Obtained and reviewed all pertinent aerial photographs of the Property in question and adjacent properties since the date of the last report. The purpose of this is to determine the historical sequence of events that have transpired on the Property since its use as agricultural or naturally vegetated land. The photographs will also be used to gain further information concerning land use, construction activity, pipeline installations, and to determine if there is any visible evidence of waste disposal pits, open excavations, spills, vegetation stress, tank installations or other factors of environmental significance;
- Obtained and reviewed information from municipal, provincial and federal regulatory agencies regarding any environmental issues on record pertinent to the Property, including a historical review of municipal directories since the date of the last report:

Municipal

- Drainage Services - EPCOR;
- Current Planning Branch - The City of Edmonton Sustainable Development;
- Fire Rescue Services - The City of Edmonton;
- Transportation Services - The City of Edmonton;
- Waste Management Services - The City of Edmonton;

Provincial

- Abacus Datagraphics Ltd. (AbaData);
- Alberta Health Services;
- Environmental Law Centre - Enforcement Search;
- Environmental Site Assessment Repository - Alberta Environment and Parks (AEP);
- Freedom of Information Protection of Privacy Act (FOIPP) - AEP;
- FOIPP, Records & Information Management (FRIM) Branch - AEP;
- Petroleum Tank Management Association of Alberta (PTMAA);

Federal

- National Pollutant Release Inventory (NPRI) - Environment Canada;

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- Completed an inspection of the Property in question and adjacent lands;
- Had discussions with current and former land owners/tenants (where possible) to resolve questions and uncertainties which may arise from the above investigative steps; and
- Prepared a final report documenting the findings of the Phase I ESA Update including identification of areas of potential environmental concern (APECs) and potential contaminants of concern (PCOCs).

Authorization to proceed with the Phase I ESA Update was provided by The City of Edmonton on August 27, 2018.



3.0 PROPERTY DESCRIPTION

3.1 Location and Development Details

Location of Site:	7000 - 143 rd Street NW, Edmonton, Alberta
Legal Description:	Block A; Plan 852 1469, 23-52-25-W4M
Current Owner:	The City of Edmonton
Year Developed:	The present-day buildings on the Property were constructed between 1987 and 1995, as based on the previous aerial photograph review.
Water Supply:	EPCOR
Sewer Service:	EPCOR

3.2 Physical Description

The Property is located in the River Valley Fort Edmonton Park neighbourhood of Edmonton, Alberta and is currently zoned as a River Valley Active Node Zone (AN). At the time of the investigation, the Property was occupied by the Fort Edmonton Park maintenance yard and a portion of rail line.

The main building (used for storage) was located along the north Property boundary and was of single-storey wood and steel frame construction with a portion being slab-on-grade while the remainder was based on bare ground. A storage shed of wood construction was located on the northeast portion of the Property, and a fuel tank storage shed of tin-clad slab-on-grade construction was located on the south-central portion of the Property. No heat was supplied to the buildings.

The yard was surfaced with soil/gravel and utilized for the storage of two approximately 15 m-long intermodal containers. The Property was accessed from the northeast via 1920 Street. Site details are provided on Figure 2.

3.3 Geology, Topography and Drainage

The surficial geology of Edmonton primarily consists of glaciolacustrine deposits of bedded silt and clay with minor sand. The southeastern portion of Edmonton consists of glacial till composed of clay, silt and sand, with pebbles, and boulders. Modern alluvial gravel, sand and silt can be found along the North Saskatchewan River and smaller creeks. The area surrounding Edmonton is primarily glacial till with a large glaciolacustrine region to the north, southwest, and west. A large



aeolian dune region of medium- to fine-grained sand can also be found to the southwest, and glaciofluvial deposits of fine- to medium-grained sand are situated directly south of Edmonton.

Underlying the surficial sediments in the Edmonton area is the Horseshoe Canyon Formation of the Edmonton Group. This formation is Upper Cretaceous in age and consists of non-marine to marine fine-grained sandstone, siltstone, and mudstone with laterally continuous coal seams.

The North Saskatchewan River provides drainage for the Edmonton area and is more or less coincident with buried valleys containing sand and gravel deposits in the region. Groundwater flow has a downward component in most of the area. Infiltration of groundwater is greatly influenced by the lithology, soil type and topographic position of the area.

The local topography was primarily flat with a gradual slope away from the Property to the northwest. Surface drainage on the Property is anticipated to be primarily via infiltration or overland flow toward the adjacent roadways. No standing water was observed on the Property at the time of the inspection.



4.0 SITE VISIT FINDINGS

4.1 General Site Conditions

Nichols Environmental inspected the Property on September 7, 2018. The inspection consisted of a walk throughout the Property, as well as an observation of the adjacent lots. Ms. Aileen Simcic, Project Officer for The City of Edmonton, and Mr. Carl Damour, Vice President of Operations, accompanied Nichols Environmental through the site inspection and answered any questions. Selected photographs of the Property are provided in Appendix A, and site details are identified on Figure 2. Further information relating to the current and historical uses of the Property was also gathered via a questionnaire completed by Mr. Damour. A copy of the questionnaire is provided in Appendix B.

The purpose of the site visit was to observe the current uses of the Property, including the possible use, treatment, storage, disposal, or generation of hazardous materials, landfilling, or the storage of wastewater in impoundments.

4.2 Storage Tanks (Non-Petroleum)

In total, 12 9-kg propane tanks were observed throughout the south portion of the Property. A subset of the propane tanks was stored within a cage. All tanks appeared to be in good condition at the time of inspection.

4.3 Underground Storage Tanks (USTs) - Petroleum or Hydrocarbon Contents

No evidence of USTs was observed on the Property at the time of inspection.

It should be noted that the Property was occupied at the time of the assessment and storage/materials on the Property obstructed views of exterior surfaces, thus limiting observations for potential USTs.

Based on information from the questionnaire, no USTs are or are known to have been present on the Property.

4.4 Aboveground Storage Tanks (ASTs) - Petroleum or Hydrocarbon Contents

Two 455-L double-walled fuel tanks, one each of gasoline and diesel, were observed in the fuel storage shed within concrete secondary containment. The concrete containment appeared to be in good condition at the time of inspection and no staining was observed on or around the tanks. However, the diesel tank exhibited signs of wear, including rust.



Based on information from the questionnaire, the tanks are approximately five years old.

4.5 Polychlorinated Biphenyls (PCBs)

PCBs were historically used in cooling and insulating fluids for electrical equipment such as transformers, capacitors, hydraulics, voltage regulators, and lamp ballasts as they do not readily burn or conduct electricity. A number of health concerns were found to be associated with the chemicals. As a result of these findings, their use in electrical equipment was prohibited in the early 1980s. PCBs may still be found in equipment manufactured prior to this time.

No sources of PCBs were observed on the Property at the time of inspection. However, a pad-mounted transformer was noted to the northeast of the west portion of the Property at the time of inspection, adjacent the neighbouring pump station (as per Figure 2). The transformer appeared to be in good condition at the time of inspection, with no signs of staining on or surrounding the unit.

4.6 Asbestos-Containing Building Materials (ACBMs)

Asbestos is a naturally occurring fibrous mineral primarily used in building materials for its flame retardant and insulation properties. The material is often mixed with cement or woven into fabrics or mats. Asbestos fibres are most commonly found in boiler rooms and piping insulation, cement products, floor coverings, and ceiling tiles.

ACBMs contain microscopic asbestos fibres that may become airborne when damaged. The inhalation of asbestos fibres has been known to cause significant health problems. Until the early 1980s asbestos-containing insulation was used in office buildings, public buildings, and schools.

No obvious ACBMs were observed on the Property at the time of inspection.

It should be noted that a hazardous building materials assessment was beyond the scope of work.

4.7 Waste Management and Chemicals Handling

Chemicals stored on the Property were limited to those required for the maintenance of the rest of Fort Edmonton Park. Aside from the propane tanks and ASTs identified in Sections 4.2 and 4.4, respectively, other chemicals included jerry cans of fuel within the covered AST storage area, and small volumes of motor oil in containers of 20 L or less in size.



4.8 Liquid Waste Generation, Storage and Disposal

No evidence of liquid waste generation, storage, or disposal was observed on the Property at the time of inspection.

4.9 Hazardous Waste Generation, Storage and Disposal

No hazardous wastes were observed on the Property at the time of inspection.

4.10 Radon Gas

Radon is a colourless, odourless, tasteless gas produced by the natural breakdown of uranium found in concrete, brick, stone and soil. Radon gas can enter buildings through floor cracks, sumps, and joints and accumulate in poorly ventilated areas, such as basements and crawlspaces. Exposure to high levels of radon can be hazardous to human health.

The Edmonton area has low naturally occurring radon levels as shown in a study conducted by The City of Edmonton in 2007. Given this, and that no confined basement spaces were present on the Property at the time of inspection, the potential for radon gas accumulation would be considered low.

Radon gases were not further investigated on the Property as it would be considered beyond the scope of work.

4.11 Methane Gas

Methane is a colourless, odourless gas formed by the decay and decomposition of organic materials under anaerobic (oxygen-poor) conditions. Methane is commonly found in or near swamps, wetland areas, peat deposits, and landfills.

Methane is nontoxic; however, potential risks include explosion hazards in confined areas, and suffocation due to decreased oxygen concentrations. Building on or adjacent to a methane-generating site is dangerous due to the ability of methane to migrate beneath or into structures.

At the time of inspection, there was no evidence to suggest a potential for methane gas accumulation on the Property. Consequently, the potential for methane gas accumulation on the Property would be considered low.

Methane gases were not further investigated on the Property as it would be considered beyond the scope of work.



4.12 Gas and Oil Wells

No gas or oil wells were observed on the Property at the time of inspection.

4.13 Lead-Based Paint and Lead in Drinking Water

Exposure to lead, a highly toxic substance, can lead to a wide range of adverse health effects in adults and most commonly in children.

Drinking Water

Drinking water may become contaminated through leaching of lead from lead distribution lines and lead soldering in piping joints. Lead distribution lines are particularly common in buildings constructed prior to 1950.

Lead was not tested for in the drinking water at the time of inspection as it would be considered beyond the scope of work. Considering the age of the building on the Property, the risk of lead ingestion would be considered low.

Lead-Based Paint

Until 1976, lead was commonly used in industrial paints due to its ability to resist corrosion. Lead-based paints are considered a significant risk to humans, especially children, due to the possibility of ingestion of peeling or flaking lead-based paint. Lead-based paints may also be a risk to humans through inhalation if the paint becomes airborne via sanding or grinding.

The Hazardous Products Act limited the amount of lead in paint to 0.5 percent in 1976. The addition of lead in paint was eliminated in 1990 by the Canadian Paint and Coating Association. Lead-based paint may still be present beneath newer layers of paint on buildings constructed prior to 1990.

Lead-based paint was not tested for at the time of inspection as it would be considered beyond the scope of work. Considering the age of the building on the Property, there is a possibility that lead-based paint may be present beneath the existing paint layers.

Contractors should be made aware of this potential prior to any renovation or demolition of the building so that proper handling and disposal measures can be taken.



4.14 Mercury

Mercury is a metal that is a liquid at room temperature. Mercury is known to evaporate, or volatilize, easily. In the environment, mercury has the ability to migrate through all media, and is known to bio-accumulate. These characteristics may pose environmental and human health issues, including a number of adverse neurological health effects. Mercury is commonly found in thermostats, electrical switches, and fluorescent light bulbs in buildings.

No mercury-containing devices were observed on the Property at the time of inspection.

4.15 Ozone Depleting Substances (ODSs)

ODSs contain combinations of any substances capable of destroying the ozone in the atmosphere, specifically chlorofluorocarbons (CFCs), hydro chlorofluorocarbons (HCFCs), and halon. ODSs are used as foam-blowing agents, solvents, fire extinguishing agents, and refrigerants for air conditioning and refrigeration applications.

HCFCs are used extensively for refrigeration and coolant purposes, the most common of which being HCFC-22 (R-22).

No sources of ODSs were observed on the Property at the time of inspection.

4.16 Pesticides and Herbicides

No pesticide or herbicide storage was observed on the Property during the inspection.

4.17 Soil Fill and Land Reclamation

A groundwater monitoring well and soil bag were observed on the west portion of the Property at the time of inspection. A few yards of pickled sand were also identified under the cover of the main storage building. Based on information from the 2015 Phase I ESA, the pickled sand was placed on a tarp and also was of low salt content so as to not deteriorate the boardwalks it is used on. Based on documentation provided by The City of Edmonton, the monitoring well was advanced by Thurber for a geotechnical investigation as outlined in Section 1.1.

It should be noted that the Property was occupied at the time of the assessment and storage/materials on the Property limited observations of the exterior surfaces.



4.18 Urea-Formaldehyde Foam Insulation (UFFI)

UFFI is a type of insulation composed of urea-formaldehyde resin, a foaming agent, and compressed air. The mixture was injected into walls and used as an insulating agent in Canada during the 1970s to improve energy efficiency. Excess formaldehyde was often added to ensure complete curing with the urea to produce the urea-formaldehyde foam. This excess formaldehyde was released to the environment during curing. Present exposure to UFFI is limited as the majority of the excess formaldehyde was released during curing. However, UFFI may break down and release potentially hazardous chemicals when in contact with water or moisture.

No sources of UFFI were observed on the Property at the time of inspection. Considering the age of the building, the potential for UFFI would be considered low.

4.19 Air Emissions

No dangerous air emissions were observed on or near the Property at the time of inspection. To the best of our knowledge, Nichols Environmental is not aware of any licensed air discharges or processes on the Property at the time of inspection.

4.20 Microbial Contamination (Mould)

Moulds are fungi that grow in damp or humid environments. Mould can develop from poor ventilation, flooding, or building leaks. It can grow in damp basements, on bathroom surfaces, against outside walls, or on window frames. Mould spores can act as an allergen or irritant, causing some individuals to develop allergic reactions or respiratory disease.

No obvious potential mould growth was observed on the Property at the time of inspection.

4.21 Electromagnetic (EM) Frequencies

No high EM frequency emitters were observed on or within the vicinity of the Property at the time of inspection. Standard-voltage power lines were present on the Property at the south end of the main storage building and along the northwest side of the same building.

4.22 Radioactive Materials and Equipment

No radioactive material or equipment was observed on the Property at the time of inspection.

4.23 Spills and Soil Staining

Staining was observed on the wood floor of a shed and on soil between the two intermodal



containers, both locations within the northeast portion of the Property. Both stains were approximately 1 m² or less and appeared to be surficial in nature. The stains are not anticipated to pose a significant environmental risk to the Property.

It should be noted that the Property was occupied at the time of the assessment and storage/materials on the Property limited observations of the interior and exterior surfaces.

4.24 Unidentified Substances

No unidentified substances were observed on the Property at the time of inspection.

4.25 Storage Containers

Two intermodal storage containers approximately 15 m long were observed centrally on the Property at the time of inspection. The north intermodal container was utilized for storage of miscellaneous items. The south intermodal container was not accessible at the time of inspection. However, based on correspondence with Ms. Simcic, the south intermodal container is used for the storage of seasonal props.

4.26 Hydraulics

No underground hydraulic units were identified on the Property at the time of inspection.

It should be noted that the Property was occupied at the time of the inspection and storage/materials on the Property obstructed views of interior floors and building components, thus limiting observations for potential underground hydraulic hoists.

Based on information from the questionnaire, no underground hydraulic hoists are or are known to have been present on the Property.

4.27 Stressed Vegetation

No obviously stressed vegetation was observed on or immediately adjacent to the Property at the time of inspection.

4.28 Sumps

No industrial sumps were observed on the Property at the time of inspection.

Based on information from the questionnaire, no sumps are or are known to have been present on the Property.



5.0 ADJACENT LAND USE

The following adjacent land uses were observed surrounding the Property (Figure 1):

- Northwest, north, and northeast of the Property was a pump station and unnamed road followed by a rail line (northwest), Al Rashid Mosque (north), a house, intermodal/wood waste storage, and motordrome (northeast), beyond all of which was 1920 Street;
- East/southeast of the Property was a forested area as well as a carpenter shop and former administration building followed by a rail line oriented northeast-southwest, extending in both directions beyond the length of the Property;
- Southeast, south, and southwest of the Property was the aforementioned southwest-northeast rail line within a forested area, which was followed by a residential area (southeast), and the train shed (southwest); and
- West of the Property was the continuation of the rail line through the Property followed by Henderson Round Barn.

Based on observations of the surrounding land uses made at the time of inspection, the rail line and train shed to the south may be an off-site risk to the Property given that, based on conversations with Ms. Simcic, the building has been used for train maintenance. The train shed was not accessible at the time of inspection. However, based on the 2015 Phase I ESA, the train shed stored 220-L barrels containing oil within secondary containment units or on trays. At the time of the 2015 inspection, plastic totes containing bags of sodium sulphate were also stored in the train shed. Given the low mobility of the PCOCs (creosote), use of secondary containment (oil barrels in train shed), and the distance from the Property (approximately 10 m and approximately 25 m, respectively), the risk may be reduced. The fuelling tank for the train is also located more than 60 m from the Property.



6.0 SITE HISTORY AND RECORDS REVIEW

6.1 Prior Ownership and Usage

Land title documents for the Property dating back to 1916 were reviewed as part of the 2015 Phase I ESA. The Property legally described as Block A; Plan 852 1469 has been owned by The City of Edmonton since May 2, 1969. The current title is included in Appendix C.

The previous review did not identify any previous land owners of concern. However, a right-of-way (ROW) licensed to Trans Mountain Pipeline Inc. (December 29, 1952) is present on title. Given the distance from the pipeline ROW (approximately 440 m), it is not anticipated to pose a significant environmental risk to the Property and the associated environmental liability would remain with the pipeline licensee.

It should be noted that land titles do not indicate the lessee, tenants, or the nature of the business carried out on the Property.

6.2 Aerial Photography Review

Aerial photographs were reviewed for the following years: 2015 and 2017. The aerial photographs were obtained from Google Earth and are included in Appendix D, Plates 1 and 2. Aerial photographs prior to 2015 were reviewed as part of the 2015 Phase I ESA.

Year: 2015	Source: Google Earth	Reference: Plate 1
Description:		
<ul style="list-style-type: none">• The present-day buildings, rail line, and intermodal containers are apparent on the Property; and• The present-day Fort Edmonton Park infrastructure surrounding the Property is apparent and a forested area followed by residential area is present to the south.		

Year: 2017	Source: Google Earth	Reference: Plate 2
Description:		
<ul style="list-style-type: none">• The Property and surrounding area appear to remain relatively unchanged.		

Based on the aerial photograph review, no changes are apparent on the Property since the 2015 Phase I ESA. The surrounding area has also remained relatively unchanged.



6.3 Fire Insurance Maps

Fire insurance maps (FIMs) were reviewed as part of the 2015 Phase I ESA.

6.4 Municipal Directories

Municipal directories were reviewed as part of the 2015 Phase I ESA.

6.5 Regulatory Review

Correspondence with federal, provincial and municipal regulatory agencies is presented in Appendix E and is summarized below.

6.5.1 Federal

A search was conducted using Environment Canada's National Pollutant Release Inventory (NPRI) to determine whether there have been any significant releases in the vicinity of the Property, or whether there are any facilities which may pose an environmental risk to the Property. No facilities were identified within a 300-m radius of the Property.

6.5.2 Provincial

An inquiry was made to the Petroleum Tank Management Association of Alberta (PTMAA) to determine whether any petroleum/storage tanks are presently or have historically been located on the Property. No records for the Property were identified, and no new records for Fort Edmonton Park were identified. The record provided was regarding a 25,469-L steel AST being installed in 2001 which at the time of the 2015 Phase I ESA was confirmed to contain fuel for the train and was situated within the train shed yard to the south of the Property. The same records regarding the removal of one 58,000-L steel fuel oil AST were also provided. This AST was removed in May 2001, which included remediation of surface spills and shallow soil contamination, and disposal of an estimated 365 m³ of soil to the Leduc Landfill.

A search was completed of the GeoDiscover Alberta website for abandoned wellsites on or within a 250-m radius of the Property. No abandoned wellsites were identified.

A search was completed of the Abacus Datagraphics Ltd. (AbaData) website for any environmental incidents, gas/oil wells, abandoned wellsites, and pipeline ROWs on or within a 250-m radius of the Property. AbaData did not identify any records.



A search was completed of the Alberta Energy Regulator (AER) Coal Mine Map Viewer for any historical coal mines on or within a 250-m radius of the Property. No coal mines were identified on or near the Property.

A request was made to the AEP Freedom of Information and Protection of Privacy (FOIPP) Office, both under the FOIPP Act and also for information routinely available under the Environmental Protection and Enhancement Act (EPEA) Legislation, for any information related to any contamination associated with the Property. The request to access information under the FOIPP Act was denied as the address provided is pending investigation. Under the routine disclosure request, AEP indicated that three approvals were available with regard to the quarter-section on which the Property is situated. A review of these approvals indicated two authorizations were with regard to water diversion and the upgrading of eight stormwater outfalls on the North Saskatchewan River, Ramsay Ravine, and Mill Creek Ravine, neither of which pertains directly to the Property. The other approval was related to the Trans Mountain Pipeline, which is licenced to Kinder Morgan and located approximately 440 m southwest of the Property. This approval does not pertain directly to the Property.

A request was made to the Environmental Law Centre for records of enforcement actions issued to The City of Edmonton pertaining to the Alberta Environmental Protection and Enhancement Act and its predecessor legislation, the Hazardous Chemicals Act, Agricultural Chemicals Act, Clean Water Act and Clean Air Act to 1971, and/or pursuant to the Water Action from 1999 onwards. As of September 7, 2018, a number of warning letters, water quality control orders, administrative penalties and prosecutions have been issued against The City of Edmonton, none of which appear to pertain specifically to the Property.

A search was completed of the AEP Environmental Site Assessment Repository (ESAR) for scientific and technical information pertaining to the Property and/or assessed sites within the vicinity of the Property. The ESAR search did not identify any new records pertaining to the Property or surrounding area.

6.5.3 Local

An inquiry was made to Alberta Health Services (AHS) to determine if there are or have been any landfills, waste sites, or contamination present on the Property. AHS identified that a Phase I/II ESA at been reviewed for the Property address in which PHC Fraction 2 through 4, PAHs, and metals impacts were suggested. AHS requested a copy of confirmatory sampling and an RMP, which they have yet to receive. No further details were available for review.

An inquiry was made to EPCOR Drainage Services with respect to compliance with Edmonton's Sewer Use Bylaw No. 9675 and Sewers Bylaw No. 9425. The municipal address for the Property was inspected on a number of occasions (September 26 and 30, 2008; January 6, 2009; August 5, 2009; October 26 and 31, 2011; January 23 and 23, 2012; and May 10, 2018) and violations were



found related to the installation and/or maintenance of grease interceptors. However, none of the violations pertained specifically to the Property.

An inquiry was made to The City of Edmonton Waste Management Services to determine whether there was any information with respect to landfills or dump sites on or near the Property. Waste Management Services did not identify any former landfills or dump sites within a 500-m radius of the Property.

An inquiry was made to The City of Edmonton Sustainable Development Current Planning to determine whether there was any information with respect to infractions, complaints or investigations on the Property. A number of outstanding conditions in regard to the building, heating, and electrical requirements for buildings at the park were identified, and it is unclear if any specifically pertain to the buildings on the Property. However, none of the listed conditions are related to environmental concerns.

An inquiry was submitted to The City of Edmonton Fire Rescue Services for any relevant information with respect to the Property. Fire Rescue Services identified four ASTs and a former approximately 170 L used-oil tank that were present within Fort Edmonton Park. Of these, the two 455-L ASTs were observed on the Property, and a third 200-L AST containing gasoline was also listed as being located in the maintenance yard but was not observed.

An inquiry was made to Transportation Services of The City of Edmonton's Streets Engineering Branch for any information/incidents on file pertaining to the Property. Streets Engineering identified a number of reports pertaining to the surrounding area. Nine reports were requested for review through Transportation Services, none of which identified any potential environmental concerns relating to the Property or immediate surrounding area.



7.0 PHASE I ESA UPDATE CONCLUSIONS AND RECOMMENDATIONS

Nichols Environmental has completed a Phase I ESA Update of the Fort Edmonton Park Maintenance Yard located at 7000 - 143rd Street NW in Edmonton, Alberta and legally described as a portion of Block A; Plan 852 1469. The Property has been under the ownership of The City of Edmonton since May 2, 1969.

Based on the results of the Phase I ESA Update, Nichols Environmental makes the following conclusions regarding the Property:

- Given the age of the buildings on the Property (between 1987 and 1995), the potential for hazardous building materials exists, specifically lead-based paint;
- Chemicals on the Property consisted of small volumes of motor oil and jerry cans of fuel, as well as propane tanks. Two double-walled 455-L ASTs, one for diesel and one for gasoline, were also present on the Property within a sheltered, concrete secondary containment shed. All tanks on the Property appeared to be in good condition at the time of inspection with the exception of the diesel AST, which exhibited some rusting;
- Staining was noted centrally on the Property, between two intermodal storage containers. The staining appeared to be surficial in nature and as such, is not anticipated to pose a significant environmental risk to the Property. A small volume of pickled sand storage remains present on the Property for sanding walkways. Given the low volume of storage, low salt content, and that the pile is covered, the risk associated with this practice may be considered reduced. The rail line on the Property may also pose a level of environmental risk given the likely presence of creosote-treated rail ties;
- Of the observed surrounding land uses at the time of inspection, the rail line and train shed (approximately 10 and 25 m respectively) to the south of the Property may represent an off-site environmental risk to the Property given their operations. Based on the 2015 Phase I ESA, the train shed stored 220-L barrels containing oil within secondary containment units or on trays. At the time of the 2015 inspection, plastic totes containing bags of sodium sulphate were also stored in the train shed. Given the low mobility of the PCOCs (creosote), use of secondary containment, and the distance from the Property, the risk presented by these operations may be reduced. The former fuel AST area at the train shed was also previously identified as a potential concern, due to the lack of delineation of PHCs to the north. However, this area is more than 40 m to the southwest of the westernmost portion of the Property, thus reducing the risk; and



- Regulatory correspondence identified a number of records pertaining to the Property as well as neighbouring land uses. Records for the neighbouring land uses were primarily related to the Trans Mountain Pipeline (approximately 440 m) as well as a number of in-use and decommissioned ASTs within Fort Edmonton Park and drainage violations, none of which are anticipated to pose a significant environmental risk to the Property based on their distance. Records specific to the Property identified the two observed ASTs onsite.

Based on the findings of the Phase I ESA Update, Nichols Environmental is of the opinion that the level of environmental risk associated with the Property is low to moderate, given the presence of the rail line on the west extent. Due to the likely continued operation of the rail line, these risks may be managed through an RMP to specifically ensure that any soils within the area of the rail line are properly managed. As a best practice measure, the staining identified should be removed prior to further development of the Property, and the soils disposed of through an approved landfill. Otherwise, Nichols Environmental has no recommendations for further assessment (Phase II ESA) of the Property.



8.0 REFERENCES

Throughout this project, the following resources were used:

- Abacus Datagraphics Ltd. (AbaData):
<http://www.abacusdatagraphics.com/>;
- Alberta Energy Regulator (AER) Coal Mine Map:
<http://mapviewer.aer.ca/Html5/Index.html?viewer=aercoalmine>;
- Alberta Environment and Parks (AEP):
 - Aerial photographs;
 - Environmental Site Assessment Repository (ESAR):
<http://www.esar.alberta.ca>; and
 - Freedom of Information and Protection of Privacy (FOIPP);
- Alberta Government. GeoDiscover Alberta:
<http://geodiscover.alberta.ca/viewer>;
- Alberta Health Services (AHS);
- Bayrock, L. A. and Hughes, G. M. 1962. Surficial Geology of the Edmonton District, Alberta, Alberta Research Council Report 62-6, 40 pages;
- Carlson, V. A. 1966. Bedrock Topography and Surficial Aquifers of the Edmonton District, Alberta, Alberta Research Council Report 66-3, 21 pages;
- Environment Canada, National Pollutant Release Inventory (NPRI):
<http://www.ec.gc.ca/inrp-npri/>;
- Environmental Law Centre;
- EPCOR Drainage Services;
- Google Earth;
- Government of Alberta, Spatial Information System (Spin 2):
<https://alta.registries.gov.ab.ca/spinii/logon.aspx>;



- Nichols Environmental (Canada) Ltd. 2016. *Phase I Environmental Site Assessment Fort Edmonton Park, 7000 - 143rd Street NW*. Project No. 15-305-CFE;
- Nichols Environmental (Canada) Ltd. 2016. *Phase II Environmental Site Assessment Fort Edmonton Park, 7000 - 143rd Street NW*. Project No. 16-447-CFE;
- Petroleum Tank Management Association of Alberta (PTMAA);
- Service Alberta Land Title Office;
- The City of Edmonton:
 - Archives;
 - Fire Rescue Services;
 - Maps, Zoning Detail: <http://maps.edmonton.ca/>;
 - Streets Engineering Branch - Transportation Services;
 - Sustainable Development - Current Planning; and
 - Waste Management Services;
- The City of Edmonton Engineering Services. 2007. City of Edmonton Residential Radon Study, Radon Fact Sheet; and
- Thurber Engineering Ltd. 2018. Fort Edmonton Park Train Barn Geotechnical Investigation. File No. 23350.



9.0 QUALIFICATIONS AND LIMITATIONS

9.1 Qualifications

Ms Rena Hiebert, EPT, A.T.T., coordinated all aspects of the Phase I ESA Update, including the site inspection and completion of the final report. Ms. Hiebert has a B.A. in Environmental Studies from the University of Alberta, Augustana Faculty.

Mrs. Tawnya Anderson, B.Sc., EP, provided project management and peer review of the entire project and specifically the final report. Mrs. Anderson has a B.Sc. in Environmental Science from the University of Alberta, Augustana Faculty and more than ten years of consulting and industry experience.

Mr. Rob Dickie, P.Geol., R.E.T., EP, provided the senior project management and peer review of the entire project. Mr. Dickie has more than 30 years of consulting and industry experience.

9.2 Limitations

In conducting the Phase I ESA Update of the Property and in rendering our conclusions on the potential presence or level of contamination, Nichols Environmental (Canada) Ltd. gives the benefit of its best judgment based on its experience and in accordance with generally accepted professional standards for this type of investigation. Our conclusions are limited by the following:

- Nichols Environmental spent only a limited amount of time on the Property. Thus, any activities conducted on the Property following the site inspection that Nichols Environmental is not aware of may have an impact on the conclusions and recommendations presented;
- Nichols Environmental has assumed the genuineness of the documents and that the information provided in documents or statements is true and accurate;
- A hazardous building materials survey was not completed as it was beyond the scope of work;
- The Property was occupied at the time of the inspection and storage/materials limited observations of interior floors, building features, and exterior surfaces; and
- The study area was limited to the areas indicated in Section 3.0.

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This report is intended to provide information to reduce, but not necessarily eliminate, uncertainty regarding the potential for contamination of a property. This report has been prepared for the exclusive use of The City of Edmonton for the purpose of assessing the current environmental conditions that may be present at the location identified in Section 3.0. Any uses which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties. Nichols Environmental (Canada) Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.


The City of Edmonton
Phase I Environmental Site Assessment Update
Fort Edmonton Park Maintenance Yard: 7000 - 143rd Street NW
Edmonton, Alberta
Project No. 18-499-CFE
November 13, 2018
Page 24 of 24



10.0 CLOSURE


We trust this meets with your current requirements. Should you have any questions or concerns, please contact the undersigned at your convenience.

Yours truly,
NICHOLS ENVIRONMENTAL (CANADA) LTD.
APEGA PERMIT TO PRACTICE NO. P6730


Rena Hiebert, EPt, A.T.T.
Environmental Scientist

Reviewed by:


Tawnya Anderson, B.Sc., EP
Senior Project Manager

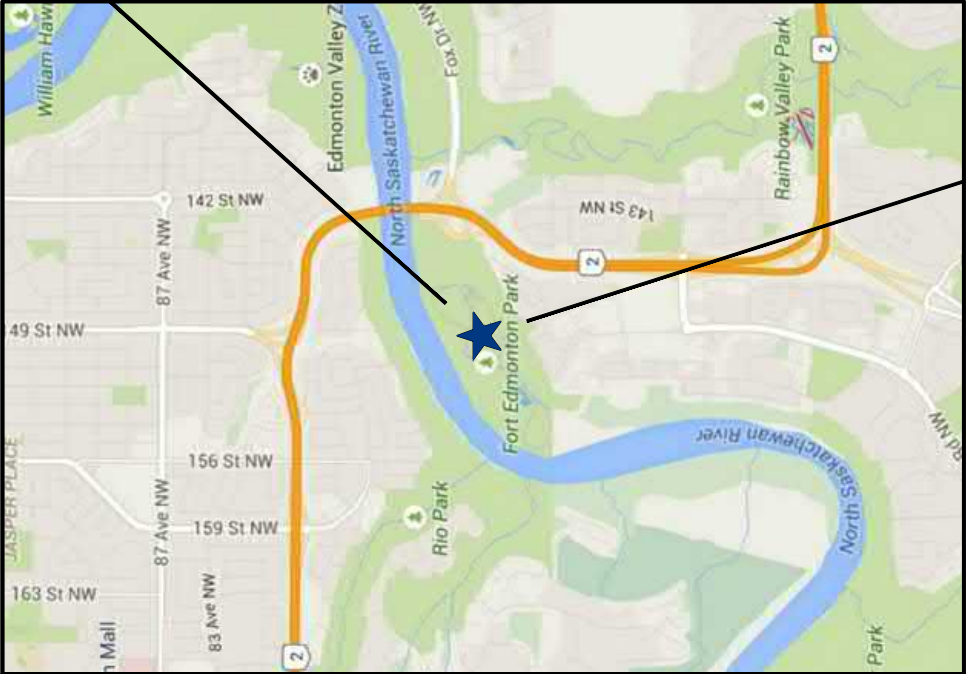

13Nov18
R.W. (Rob) Dickie, P.Geol., R.E.T., EP
President

Distribution

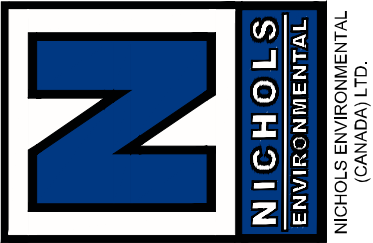
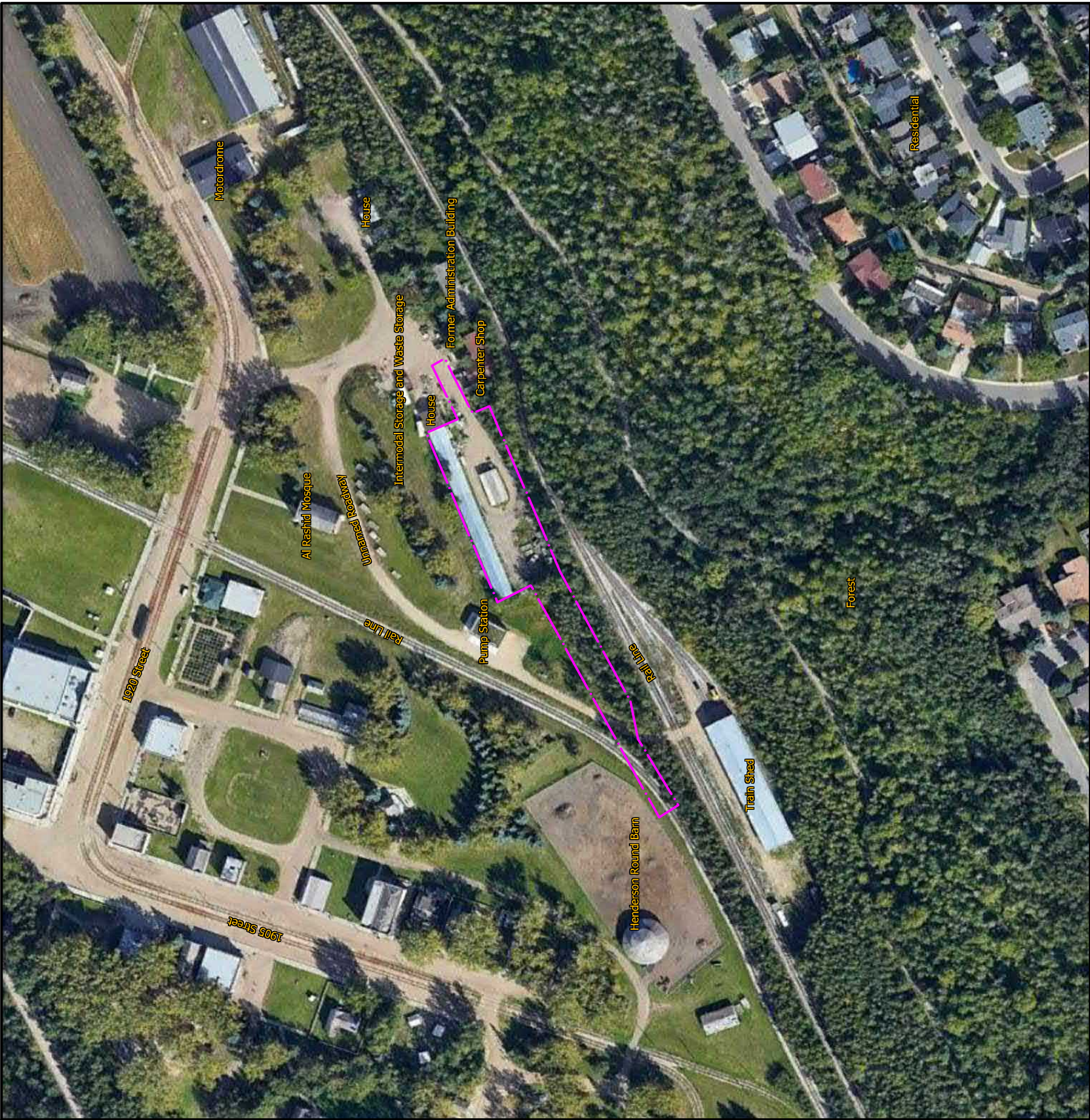
Hard Copy	1 via mail/courier	The City of Edmonton
PDF	tami.dolen@edmonton.ca	Tami Dolen



FIGURES

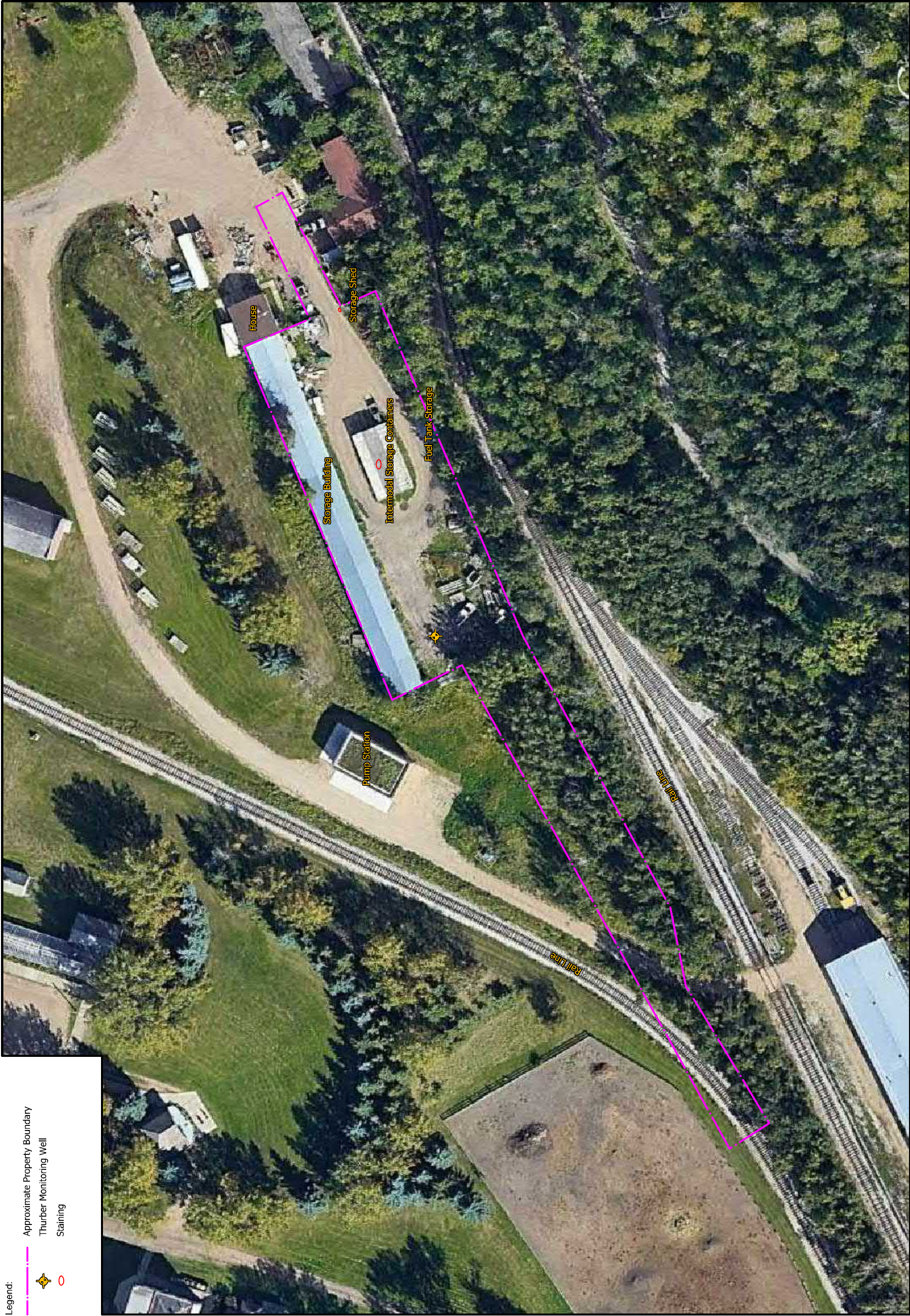
Reference image scale 1:45,000



Legend: --- Approximate Property Boundary



	
CLIENT	 The City of Edmonton
PROJECT	Phase I ESA Update Fort Edmonton Park Maintenance Yard 7000 - 143rd Street NW Edmonton, Alberta
DRAWING TITLE	Site Location and Surrounding Land Use
BASE/SITE PLAN PROVIDED BY Nichols Environmental (Canada) Ltd.	
REVISION DATE November 2018	
SCALE	1:2,000 APPROVED RH/LL
PROJECT NO.	18-499-CFE
DRAWING NO.	Figure 1



Legend:

- Approximate Property Boundary
- Thurber Monitoring Well
- Staining



CLIENT
The City of
Edmonton

PROJECT
Phase I ESA Update
Fort Edmonton Park Maintenance Yard
7000 - 143rd Street NW
Edmonton, Alberta

DRAWING TITLE
Site Detail

BASE/SITE PLAN PROVIDED BY
Nichols Environmental (Canada) Ltd.

REVISION DATE
November 2018

SCALE
1:800
APPROVED
RH/LL

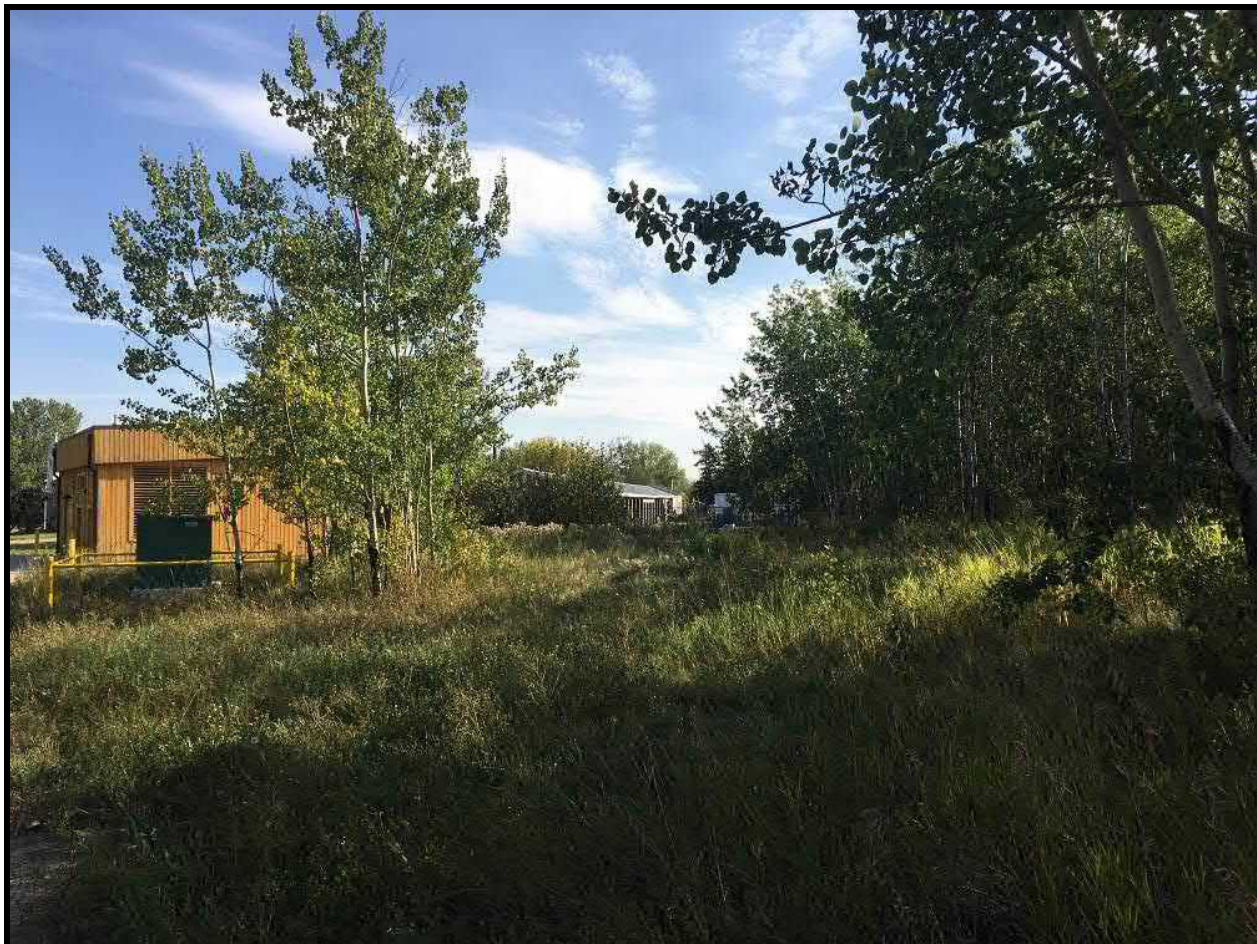
PROJECT NO.
18-499-CFE

DRAWING NO.
Figure 2

APPENDIX A



Photograph 1: The northeast portion of the Property, including the main storage building, intermodal containers, and AST shed (September 7, 2018).



Photograph 2: A transformer and pump station in the vicinity of the southwest portion of the Property, facing northeast (September 7, 2018).



Photograph 3: AST and propane tank storage on the northeast portion of the Property (September 7, 2018).



Photograph 4: Staining on the northeast portion of the Property, between two intermodal storage containers (September 7, 2018).



Photograph 5: A groundwater monitoring well (marked in red) and soil bag on the central portion of the Property (September 7, 2018).



Photograph 6: The rail line that intersects the southwest portion of the Property (September 7, 2018).



Photograph 7: The rail line present to the south of the Property (September 7, 2018).



Photograph 8: Intermodal containers and wood waste storage area to the east of the Property (September 7, 2018).

APPENDIX B

Phase I Environmental Site Assessment Questionnaire
Vacant Lot or Single Building
Last Revised: December 2016

Phase I Environmental Site Assessment Questionnaire

In order to assist us in our evaluation of the past and present environmental conditions of this site, we request that this questionnaire be completed. The information will be used for our Phase I Environmental Site Assessment only and a copy will be provided in the final report. Please answer all of the following questions to the best of your knowledge.

Name: CARL DAMOUR Signature: [Signature]

Date: SEPT 7/18 Position/Company: VP Operations

Nichols Project Number: _____ Site Address: _____

1. What are the current operations on the site?
TOURISM ATTRACTION MAINTENANCE/UTILITY YARD.
2. Are you aware of any past tenant operations on the site? If yes, what were they?
No
3. Building Description/Details (if present, please check all that apply and provide details):
Year of Construction 15 + YR.

Framing (check all that apply)	Foundation (check all that apply)	Heating (check all that apply)
Wood Frame <input type="checkbox"/>	Basement <input type="checkbox"/>	Forced-Air <input type="checkbox"/>
Steel Frame <input checked="" type="checkbox"/>	Crawl Space <input type="checkbox"/>	Boiler <input type="checkbox"/>
Cinderblock <input type="checkbox"/>	Slab-on-Grade <input checked="" type="checkbox"/>	Radiant <input type="checkbox"/>
Other <input type="checkbox"/>	Other <input type="checkbox"/>	Other <input type="checkbox"/>
Describe:	Describe:	Describe: <u>N/A.</u>

Are there any confirmed or suspected **asbestos-containing materials** on the site?
☐ Yes ☒ No If yes, please describe:

Building Renovations <input type="checkbox"/> Yes <input type="checkbox"/> No When: Extent:	Air Conditioning <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No How often are units inspected and by what company:	Commercial Refrigerators <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Halon Fire Extinguishers <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
---	--	--



Phase I Environmental Site Assessment Questionnaire
Vacant Lot or Single Building
Last Revised: December 2016

Roof Leaks or Sewer Backups <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No When & where: Fixed: <input type="checkbox"/> Yes <input type="checkbox"/> No	Sumps <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Use & Location: How often are they emptied and by what company: Connected to storm or sanitary sewer:	Hydraulics/Hoists/Elevators <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Aboveground <input type="checkbox"/> Underground <input type="checkbox"/> Elevators <input type="checkbox"/> How often is fluid added:
---	--	---

4. Property details (please check all that apply)

Fill Materials <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Where: Type & Source:	Dumpsites or Incinerators <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Where: 	Radioactive Materials <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Where: Use:
--	---	---

5. Utilities (if present, please check all that apply)

Water Service Municipal <input checked="" type="checkbox"/> Water Well <input type="checkbox"/> Tank <input type="checkbox"/> Not Applicable <input type="checkbox"/> Other: _____ <input type="checkbox"/>	Sewer Municipal <input checked="" type="checkbox"/> Septic Tank/Field <input type="checkbox"/> Lagoon <input type="checkbox"/> Not Applicable <input type="checkbox"/> Other: _____ <input type="checkbox"/>	Other Buried Power <input checked="" type="checkbox"/> Overhead Power <input checked="" type="checkbox"/> Natural Gas <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Other: _____ <input type="checkbox"/>
---	--	---



Phase I Environmental Site Assessment Questionnaire
Vacant Lot or Single Building
Last Revised: December 2016

6. Please check off the waste types generated on the site from the following list and provide the names of the disposal/recycling contractors used for collection of those wastes.

Waste Type Generated		Disposal/Recycling Contractor
<input type="checkbox"/>	Waste Oil	N/A
<input type="checkbox"/>	Solvent	
<input type="checkbox"/>	Antifreeze (glycol)	
<input type="checkbox"/>	Oil Filters	
<input type="checkbox"/>	Paper/Cardboard	
<input type="checkbox"/>	Used Tires	
<input type="checkbox"/>	Used Batteries	
<input type="checkbox"/>	Scrap Metal	
<input type="checkbox"/>	Biomedical Wastes	
<input type="checkbox"/>	Domestic	
<input type="checkbox"/>	Other:	

Are MSDS Sheets available for these chemicals/wastes?

☐ Yes ☐ No If yes, where are they kept? N/A

7. Have any herbicides or pesticides been stored or used on the site?

☐ Yes ☒ No If yes, where are they kept? What products?

8. On Site Incidents (please check all that apply and provide details)

Spills or Leaks	Fire	Spill Response Plan
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
What & Quantity:	When:	If yes, please provide details
	Where:	or a copy of the plan:
When:		Copy AVAILABLE ON SITE.
Where:		



Phase I Environmental Site Assessment Questionnaire
Vacant Lot or Single Building

Last Revised: December 2016

9. Are there or have there been any underground storage tanks (USTs) or aboveground storage tanks (ASTs) present on the site?

☒ Yes ☐ No

If yes, please list the capacity and contents of these tanks:

Tank Type	Contents	How Many?	Size	Age	Removed
Aboveground <input checked="" type="checkbox"/>	Diesel <input checked="" type="checkbox"/>	1	455L	Approx 5yr.	N/A
	Gasoline <input checked="" type="checkbox"/>	1	455L	Approx 5yr.	N/A
Underground <input type="checkbox"/>	Oil <input type="checkbox"/>		Litres <input type="checkbox"/>		<input type="checkbox"/> Yes
	Other: _____		Gallons <input type="checkbox"/>		<input type="checkbox"/> No
Aboveground <input type="checkbox"/>	Diesel <input type="checkbox"/>				
	Gasoline <input type="checkbox"/>				<input type="checkbox"/> Yes
Underground <input type="checkbox"/>	Oil <input type="checkbox"/>		Litres <input type="checkbox"/>		<input type="checkbox"/> No
	Other: _____		Gallons <input type="checkbox"/>		
Aboveground <input type="checkbox"/>	Diesel <input type="checkbox"/>				
	Gasoline <input type="checkbox"/>				<input type="checkbox"/> Yes
Underground <input type="checkbox"/>	Oil <input type="checkbox"/>		Litres <input type="checkbox"/>		<input type="checkbox"/> No
	Other: _____		Gallons <input type="checkbox"/>		

10. Are you aware of any past environmental or geotechnical assessments having been completed for the site?

☐ Yes ☒ No If yes, please describe and if possible please provide copies for review.

Thank you for your co-operation. Should you have any questions regarding this questionnaire, please contact us at 780-484-3377



NICHOLS ENVIRONMENTAL (CANADA) LTD.
HEAD OFFICE: 17331 - 107TH AVENUE NW EDMONTON, ALBERTA T5S 1E5
NICHOLSENVIROMENTAL.COM
P: 780 484 3377 F: 780 484 5093

APPENDIX C



LAND TITLE CERTIFICATE

S		
LINC	SHORT LEGAL	TITLE NUMBER
0011 023 017	8521469;A	852 149 449

LEGAL DESCRIPTION
PLAN 8521469
BLOCK A
EXCEPTING THEREOUT ALL MINES AND MINERALS
AREA: 62.7 HECTARES (155.02 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE
ATS REFERENCE: 4;25;52;23;N
ATS REFERENCE: 4;25;52;23;S

MUNICIPALITY: CITY OF EDMONTON

REGISTERED OWNER(S)				
REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
852 149 449	18/07/1985			NIL

OWNERS

THE CITY OF EDMONTON.
OF #1 SIR WINSTON CHURCHILL SQUARE, EDMONTON
ALBERTA T5J 2R7

ENCUMBRANCES, LIENS & INTERESTS		
REGISTRATION		
NUMBER	DATE (D/M/Y)	PARTICULARS
2924JG	29/12/1952	UTILITY RIGHT OF WAY GRANTEE - TRANS MOUNTAIN PIPELINE INC. AS TO PORTION OR PLAN:4125HW (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 072281609)
3257MF	18/05/1961	CAVEAT CAVEATOR - THE CITY OF EDMONTON. "PART"
4900MG	10/08/1961	CAVEAT

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

852 149 449

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

CAVEATOR - THE CITY OF EDMONTON.
"PART"

752 053 906 14/05/1975 UTILITY RIGHT OF WAY
GRANTEE - TRANS MOUNTAIN PIPELINE INC.
"PART"
(DATA UPDATED BY: TRANSFER OF UTILITY RIGHT
OF WAY 072330358)

782 069 887 07/04/1978 UTILITY RIGHT OF WAY
GRANTEE - TRANS MOUNTAIN PIPELINE INC.
AS TO PORTION OR PLAN:3784HW
(DATA UPDATED BY: TRANSFER OF UTILITY RIGHT
OF WAY 072330845)

TOTAL INSTRUMENTS: 005

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 15 DAY OF
OCTOBER, 2018 AT 03:11 P.M.

ORDER NUMBER: 36070444

CUSTOMER FILE NUMBER: 18-499-CFERH

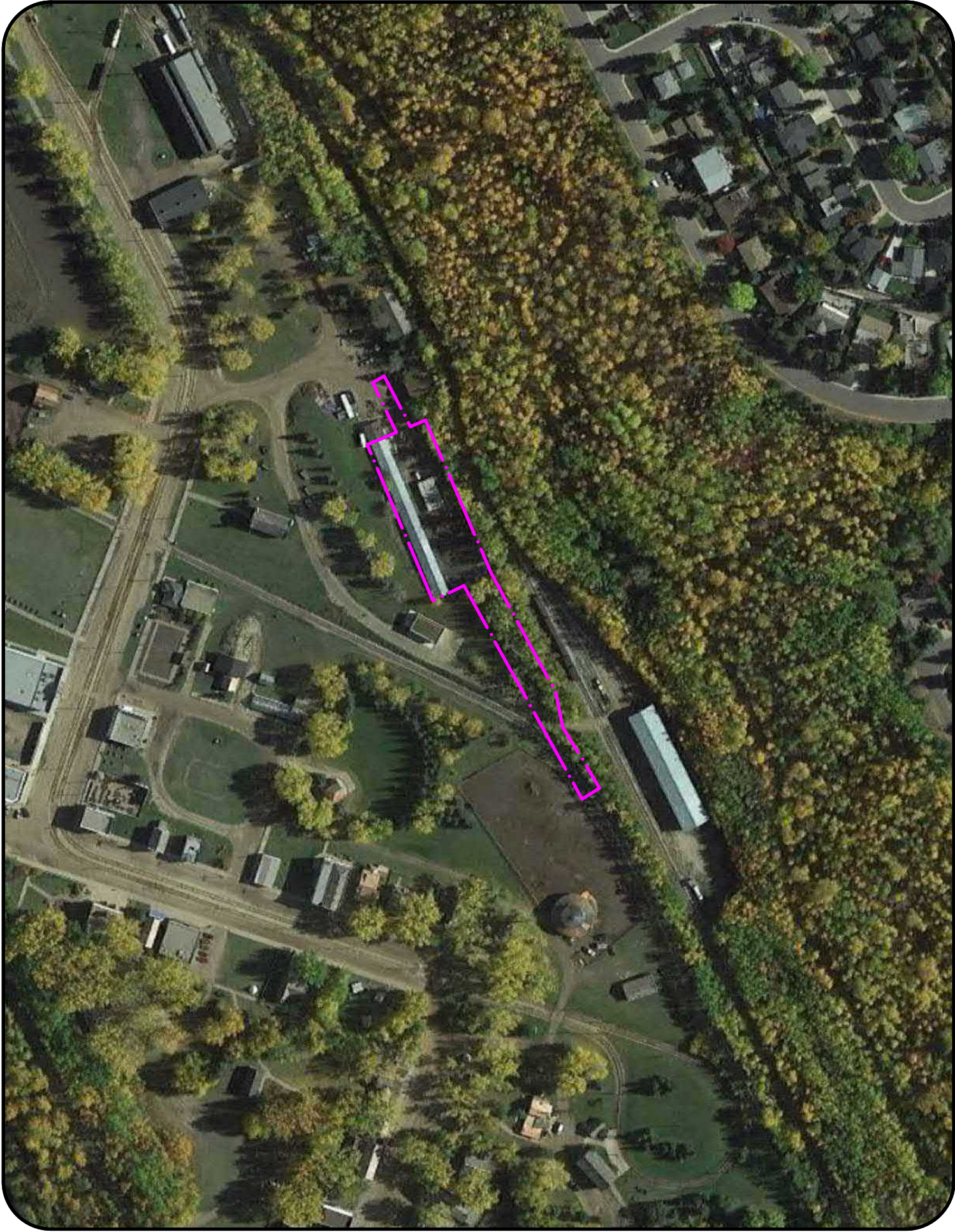


END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

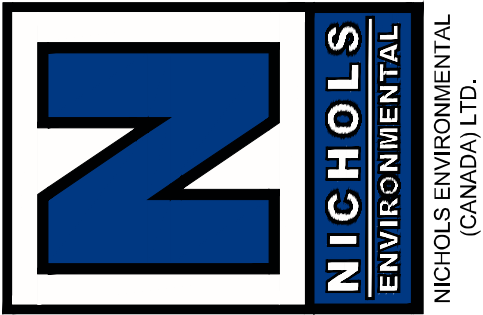
THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM
INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION,
APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



APPENDIX D

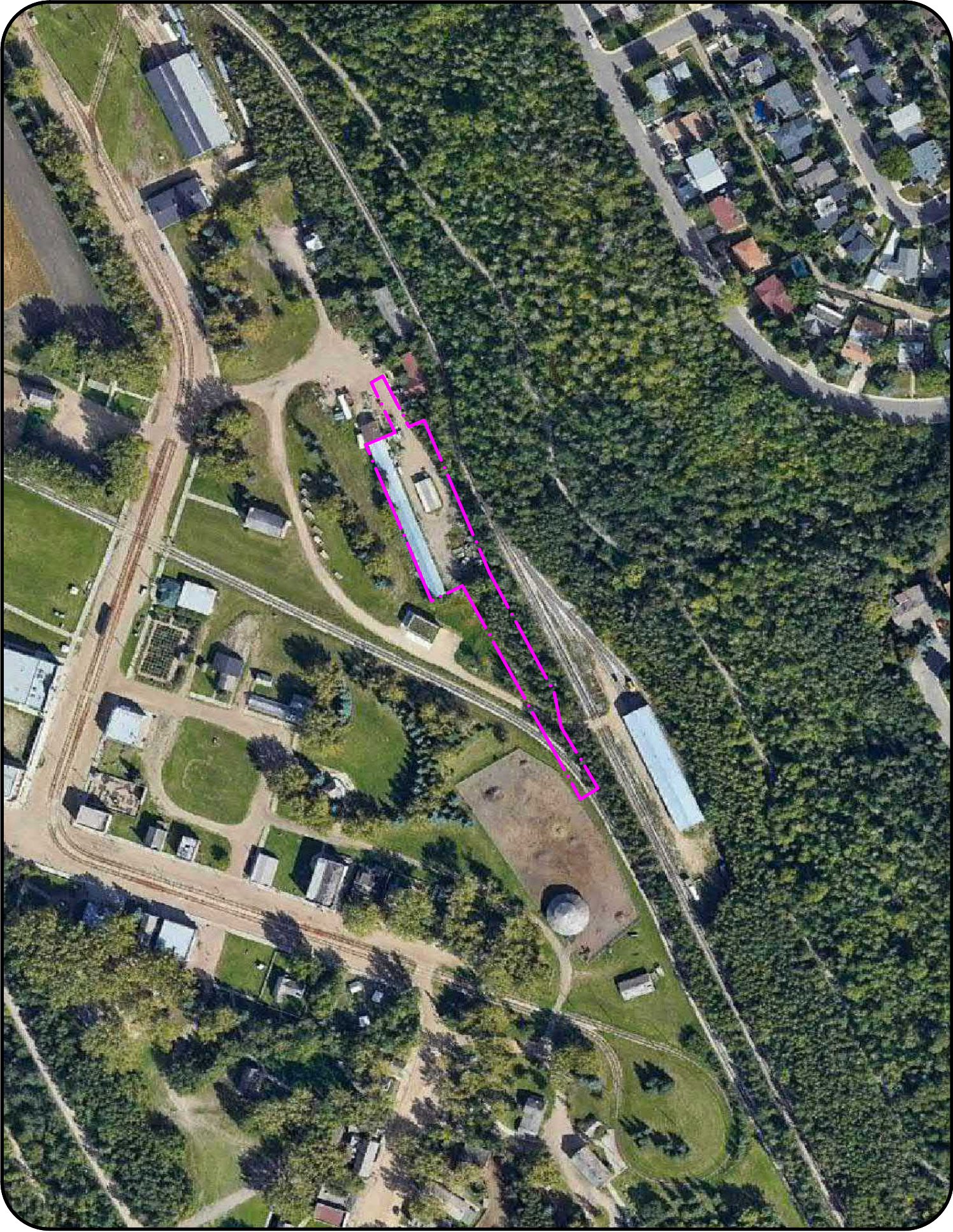


Legend:  Approximate Property Boundary

Air Photo Source: Google Earth




	
CLIENT	 The City of Edmonton
PROJECT	Phase I ESA Update Fort Edmonton Park Maintenance Yard 7000 - 143rd Street NW Edmonton, Alberta
DRAWING TITLE	2015 Aerial Photograph
BASE/SITE PLAN PROVIDED BY Nichols Environmental (Canada) Ltd.	
REVISION DATE November 2018	
SCALE 1:3,000	APPROVED RH/LL
PROJECT NO. 18-499-CFE	
DRAWING NO. Plate 1	





Legend:  Approximate Property Boundary

Air Photo Source: Google Earth

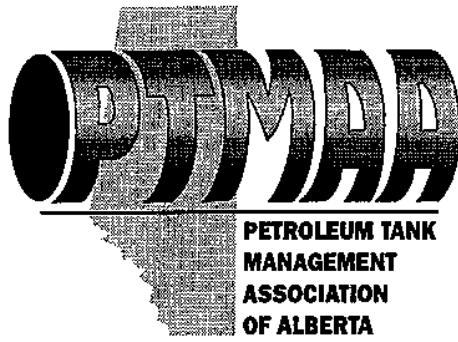


NICHOLS
ENVIRONMENTAL

NICHOLS ENVIRONMENTAL
(CANADA) LTD.

 -30 0 30 60 90m	
CLIENT	 The City of Edmonton
PROJECT	Phase I ESA Update Fort Edmonton Park Maintenance Yard 7000 - 143rd Street NW Edmonton, Alberta
DRAWING TITLE	2017 Aerial Photograph
BASE/SITE PLAN PROVIDED BY Nichols Environmental (Canada) Ltd.	
REVISION DATE November 2018	
SCALE 1:3,000	APPROVED RH/LL
PROJECT NO. 18-499-CFE	
DRAWING NO. Plate 2	

APPENDIX E



Petroleum Tank Management

Association of Alberta

Suite 980, 10303 Jasper Avenue

Edmonton, Alberta T5J 3N6

PH: (780)425-8265 or 1-866-222-8265

FAX: (780)425-4722

September 25, 2018

Rena Hiebert
Nichols Environmental (Canada) Ltd.
17331 - 107 Avenue
Edmonton, AB
T5S 1E5

Dear Rena Hiebert:

As per your request, the PTMAA has checked the registration of active tank sites and inventory of abandoned tank sites and have included records for the property with the legal land description:

7000 - 143 Street, Edmonton
Plan 8521469, Block A
23-52-25-W4

Information is provided is governed by the Freedom of Information and Protection of Privacy Act. Please note that both databases are not complete. The main limitation of these databases is that they only include information reported through registration or a survey of abandoned sites completed in 1992 and should not be considered as a comprehensive inventory of all past or present storage tank sites. The PTMAA **cannot** guarantee that tanks do not or have not existed at this location. Information in the databases is based on information supplied by the owner and the PTMAA cannot guarantee its accuracy. Information on storage tanks or on past or present contaminant investigations may be filed with the local Fire Department or Alberta Environment.

Yours truly,

Tonnie Jacobsen
PTMAA

Generic Site/Tank Detail by Site Name Reporting
(PUBLIC DOCUMENT)

(Section A General Information)

1. Site Name: FORT EDMONTON PARK-REFUELING DEPOT Site #: 8063 Class: B

2. Reference:

Status: Active

3a. Urban: Address: 7000-143 ST
City/Town: 0098 EDMONTON (A)

3b. Rural: County/MD/ID:

3b. Legal Land Description: LSD: ¼ of Sec. /Twp. /Rge. /W. of
Lot: Block: A Plan: 8521469

4. Owner: #610
CITY OF EDMONTON-FORT EDMONTON PARK
PO BOX 2359
EDMONTON AB T5J 2R7

5. Operator: #610
CITY OF EDMONTON-FORT EDMONTON
PARK
PO BOX 2359
EDMONTON AB T5J 2R7

6. Type of Facility: a. Petroleum Sales:
b. Facility Owner Usage: Municipal Government

7. Supplier of Petroleum Products:

8. Number of Tanks: Underground: 0 Aboveground: 1

Under the authority of the Safety Codes Act, this information is being collected by the Petroleum Tank Management Association of Alberta (PTMAA) and will be released to the public upon request in accordance with the Freedom of Information and Protection of Privacy (FOIP) Act.
If you have any questions, please contact the PTMAA at the address noted on the form or call (780)425-8265.

Generic Site/Tank Detail by Site Name Reporting
(PUBLIC DOCUMENT)

(Section B Petroleum Tank Information)

Site Name: FORT EDMONTON PARK-REFUELING DEPOT

Site #: 8063

Tank ID Number: 1

Tank Type: Aboveground

Split Tank:

Tank Serial #: A550238

Year & Month of Removal:

Removal Company:

Foreman's Name:

Foreman's Certification Number:

Reason for Removal:

Is the tank a: New

Facility Design Engineer:

Engineering Firm:

Professional Registration #: P153

Installer Company Name: SOUTHBEND
CONSTRUCTION

Foreman's Name:

Foreman's Certification Number: 498

Year and Month of Installation: 01/05

Condition at Installation: New

Years of previous service: 0

Status of Tank: Currently In Service

Year & Month of last use:

Tank Material: Steel

Other Tank Material:

Contents: Used Oil

Allied Petroleum Products:

Tank Capacity: 25,469 litres

Tank Construction Specifications: ULC 653

Other:

Generic Site/Tank Detail by Site Name Reporting
(PUBLIC DOCUMENT)

Site Name: FORT EDMONTON PARK-REFUELING DEPOT

Site #: 8063

Tank ID Number: 1

Tank Type: Aboveground

Cathodic Corrosion Protection:

Secondary Containment: Double Wall

Other:

Tank Collision Protection:

Spill Containment:

Overfill Prevention:

Other:

Leak Detection: Monitor Secondary
Containment

Other:

Sumps Installed:

Sump Leak Detection:

Tank Leak Test:

Date:

Method:

Testing Company:

Result:

Pipe Leak Test:

Date:

Method:

Testing Company:

Result:

Underground Piping: No

Piping Material:

Other:

Steel Piping Cathodic Protection:

Piping Secondary Containment:

Type of Pumping System:

Line Leak Detection:

Other:

TMS - Tank Management System
Generic Site/Tank Detail by Site Name Reporting
(PUBLIC DOCUMENT)

Site #: 8063

(Section C Site Sensitivity)

Site Name: FORT EDMONTON PARK-REFUELING DEPOT

- 1. Tanks located within 500 meters of a groundwater well: No
- 2. Tanks located within 200 meters of a surface water body: No

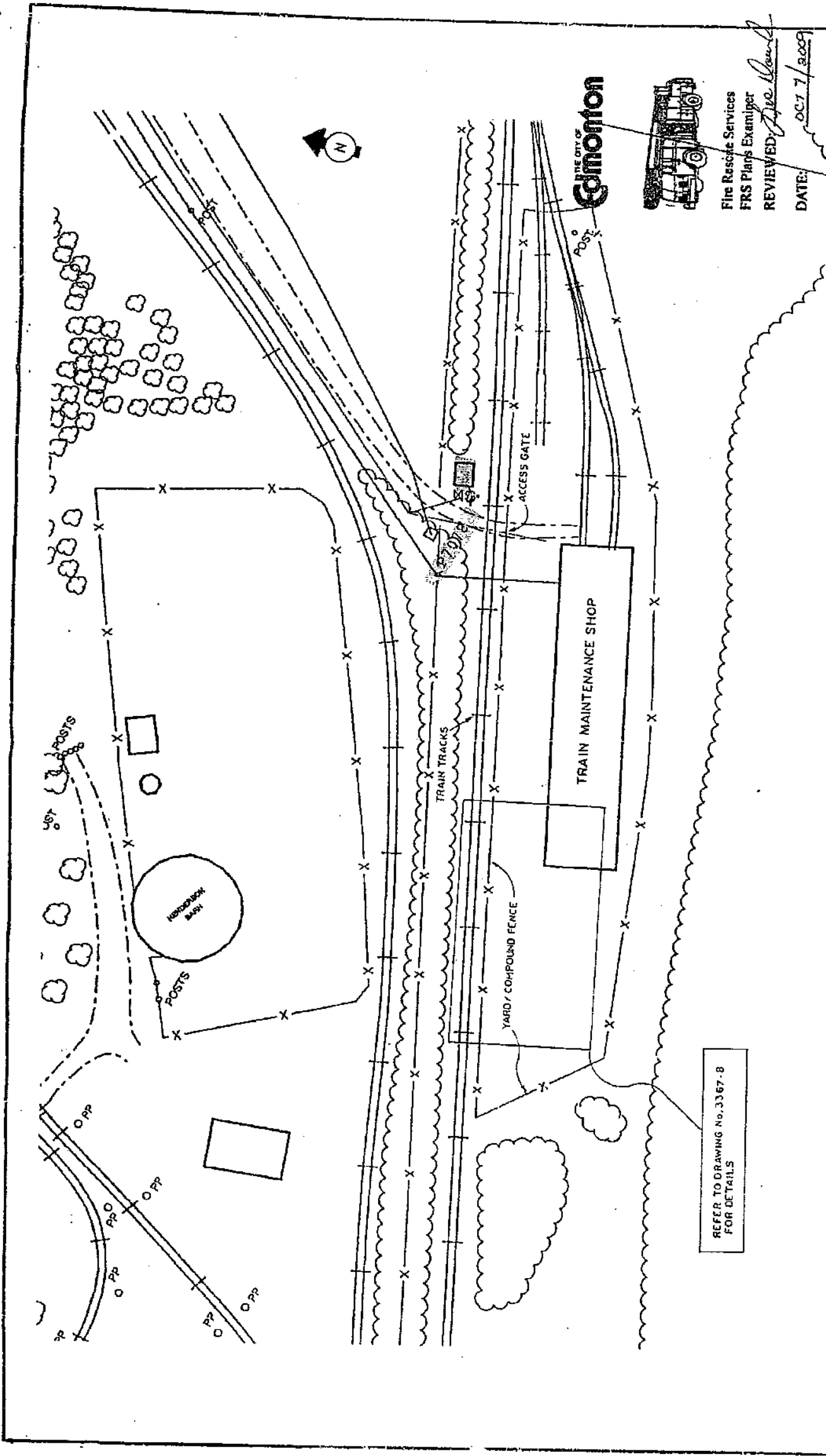
Type of surface water:
Other:

- 3. Tanks located within 150 meters of a major underground structure: No

Type of underground structure:
Other:

(Notepad)

Note:



FOR		CITY OF EDMONTON		SITE LAYOUT DRAWING FORT EDMONTON PARK - TRAIN REFUELING STATION EDMONTON, ALBERTA	
DESIGNED BY:	S.V.C.	SCALE:	A.T.S.	DRAWN BY:	DATE:
					01.08.20
				DRAWING NO.	3371-B

S-8063

06/26/01 07:44

780 496 6618

BLDG ENG. 20TH F

002/004

**Petroleum Tank Management
Association of Alberta**

Suite 1560, 10303 Jasper Avenue
Edmonton, AB Canada T5J 3N6
PH: 403-425-8265 FAX: 403-425-4722

JUN 26 2001

P.T.M.A.A.

**Petroleum Storage Tank
Closure Report
Part A**

Underground storage tank systems must be removed from the ground and disposed of in accordance with Section 4.10.3 and 4.10.4 of the Alberta Fire Code. Upon completion of the tank(s) removal, complete this form and mail or fax same to the PTMAA. If contamination is encountered during removal of tank(s), notification must be made to the fire authority in accordance with Article 4.3.16.3 of the Alberta Fire Code 1997 and Alberta Environmental Protection at 1-800-222-6514 in accordance with Section 99 of the Environmental Protection & Enhancement Act.

FOR PTMAA USE ONLY

Date Received: 201/06/26
Inspection by: P.C.D.
Fire Official

Municipality #: 904-00
☐ Yes ☐ No
☐ Yes ☐ No File #

Site # NOT REGISTERED
File #
GPB File #

SECTION 1: FACILITY INFORMATION

Facility Name: Fort Edmonton Park

Site #: Train Refueling Station

Address: West of Quesnel Bridge and South of North Saskatchewan River (Box 2359)

City: Edmonton, Alberta Postal Code: T5J 2R7

Telephone: (780) 944-7565

Legal Land Descr.: LSD 1/4 of Sec. 1 /Twp. 1 /Rge. 1 /W of 1 Mer. or Lot 1 Block A Plan 8521469

SECTION 2: TANK OWNER INFORMATION

Name: City of Edmonton - Land and Buildings Branch

Address: 20th Floor, 9803 -102A Avenue

City: Edmonton, Alberta

Postal Code: T5J 3A3 Contact Person: Mr. D. Raugust

Telephone: (780) 496-6612

SECTION 3: TANK REMOVAL INFORMATION

Tank Reg. #	Capacity (litres)	Age	Product Stored	Material	Date Removed	Reason For Removal (Decomm., Upgrade Leaking)	Tank Replaced Yes/No
NII	58,000	35 Yrs	Fuel Oil	Steel	May 15, 2001	Decommissioned	Yes

SECTION 4: INFORMATION ON PARTY PERFORMING TANK REMOVAL

Name: Petroleum Enviro Services

Telephone #: (780) 461-4799

Address: #2, 10016 29A Avenue

City: Edmonton

Postal Code: T6N 1A8 Certified Contractor : E.L. MacKeigan, P. Eng. Certification #: A-0058 A & B

PETROLEUM STORAGE TANK CLOSURE REPORT - Part B
Page 2

SECTION 5: TANK DISPOSAL INFORMATION

Tanks were transported to: Maple Leaf Metal Industries Ltd.

Name

4510 - 68 Avenue, Edmonton, Alberta T6B 2P3

Address

for: ☒ recycle (salvage) or ☐ landfill or ☐ unregulated use (specify) _____

SECTION 6: SITE REMEDIATION INFORMATION (where applicable)

Was contamination encountered during removal or decommissioning?
Was a site subsurface investigation conducted?☒ Yes ☐ No
☒ Yes ☐ NoIf yes,
Who did investigation: Shelby Engineering

Company

9632 - 54 Avenue, Edmonton, Alberta

Address

Mr. G. Hunter

Contact

(780) 438-2540

Telephone

Was remediation/clean-up work conducted at the site? (soil and/or groundwater). ☒ Yes ☐ No
(soil and/or groundwater)

Current Status of Work

Remediation/clean-up work ☒ Complete ☐ Ongoing If complete, date completed: 01/05/25
YY MM DDComplete to Level: ☒ Level I ☐ Level II ☐ Level III ☐ OtherNature of remediation: ☐ Insitu ☐ Onsite Treatment ☒ Offsite TreatmentMethod of soil treatment: ☒ Landfilling ☐ Landspreeding ☐ Other Specify: _____Was groundwater impacted? ☐ Yes ☒ NoExplain Surface Spills and Shallow Soil Contamination - Fuel OilRemediation supervised by: Petroleum Enviro Services

Company

Ms. L. Mazuryk

Contact

#2, 10016 - 29A Avenue, Edmonton, Alberta

Address

(780) 461-4799

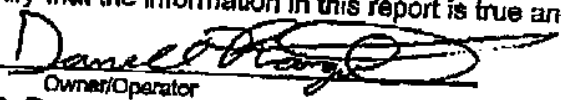
Telephone

If ongoing, date of anticipated completion: 1/1/
YY MM DDWas Alberta Environmental Protection notified? ☒ Yes ☐ No 01/04/23
YY MM DDNotification to: Alberta Environment
Mr. Dave Lapp, M. ScBranch: Contaminated SitesWas the Fire Official notified? ☐ Yes ☒ No 1/1/
YY MM DD

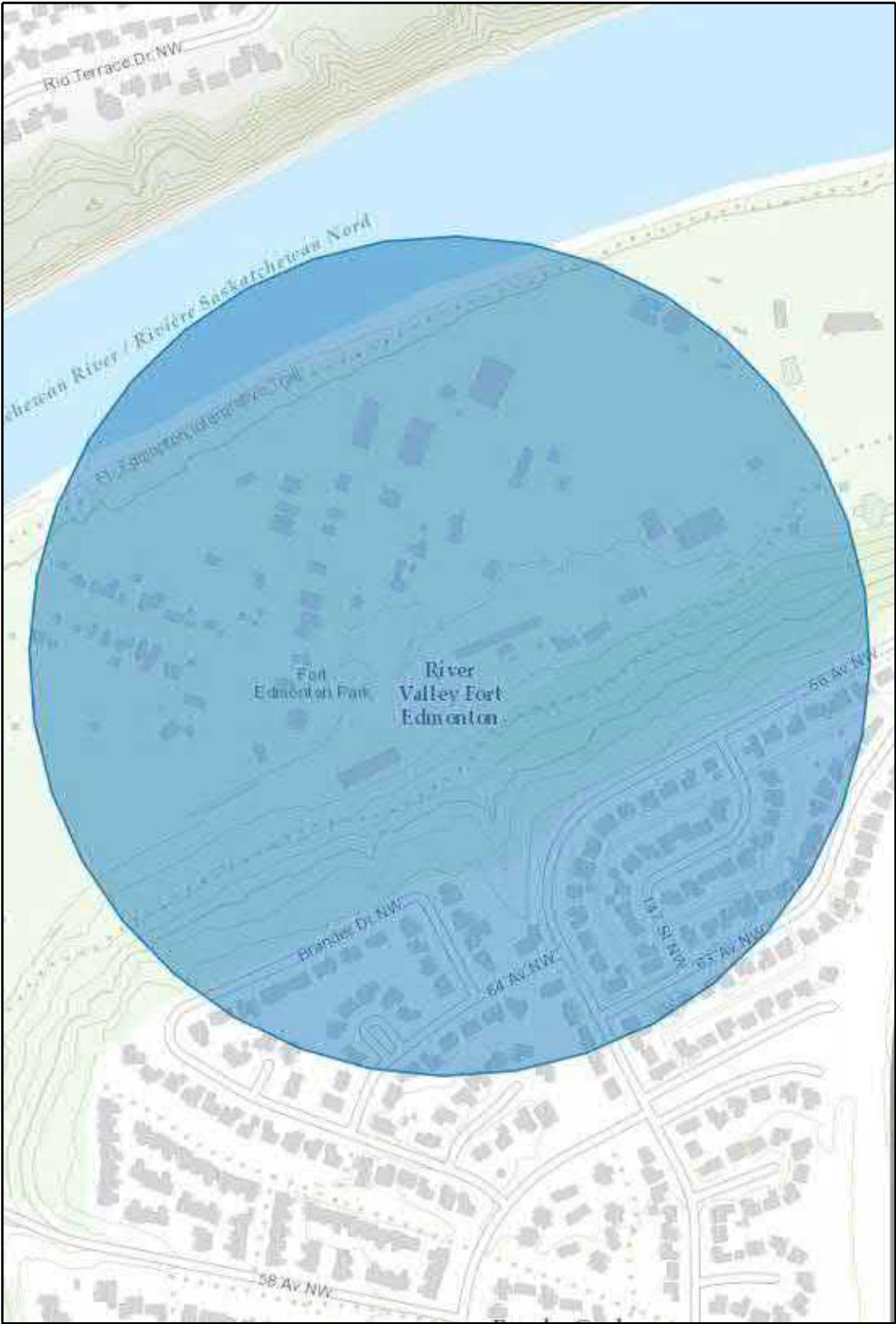
Notification to: _____ Department: _____

Report on remediation completed/submitted ☒ Yes ☐ NoSubmitted to: City of Edmonton, Mr. D. Raugust Department: Land and Buildings Branch

PETROLEUM STORAGE TANK CLOSURE REPORT - Part B
Page 3

SECTION 7: OFFSITE SOIL REMEDIATION/DISPOSAL INFORMATION (where applicable)	
365 cubic metres of contaminated soil transported to Leduc Landfill	
Soil removed/disposed by: Southbend Contruction Company Ltd. <small>Company</small>	Mr. Brian Forbes <small>Contact</small>
#1, 707 - 12th Avenue, Nisku, Alberta <small>Address</small>	(780) 955-7844 <small>Telephone</small>
Date(s) removed/disposed: 01/05/16 to 01/05/18 <small>YY MM DD YY MM DD</small>	
Comments:	
I certify that the information in this report is true and complete to the best of my knowledge. <div><div> Owner/Operator Mr. D. Raugust, Project Officer, City of Edmonton</div><div>01/05/31 (YY/MM/DD)</div></div>	

Map Results



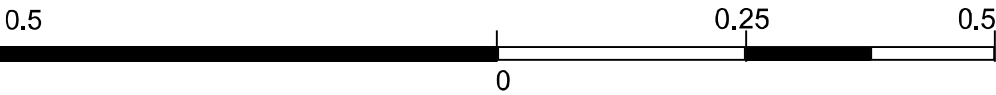
Legend

- ATS v4_1 Alberta Provincial Boun Citations
- Revised Location Pointer
- Revised Wel Location (Large Scal
- ⊗ Abandoned Wells (Large Scale)

© Government of Alberta

While every effort is made to ensure data from this site is accurate and current, the Government of Alberta is not liable for any loss or damage arising from the possession, publication, or use of, that data. This information is provided "as is" without warranty. Note: Any data on the map with licence jurisdiction through AltaLIS will not print.

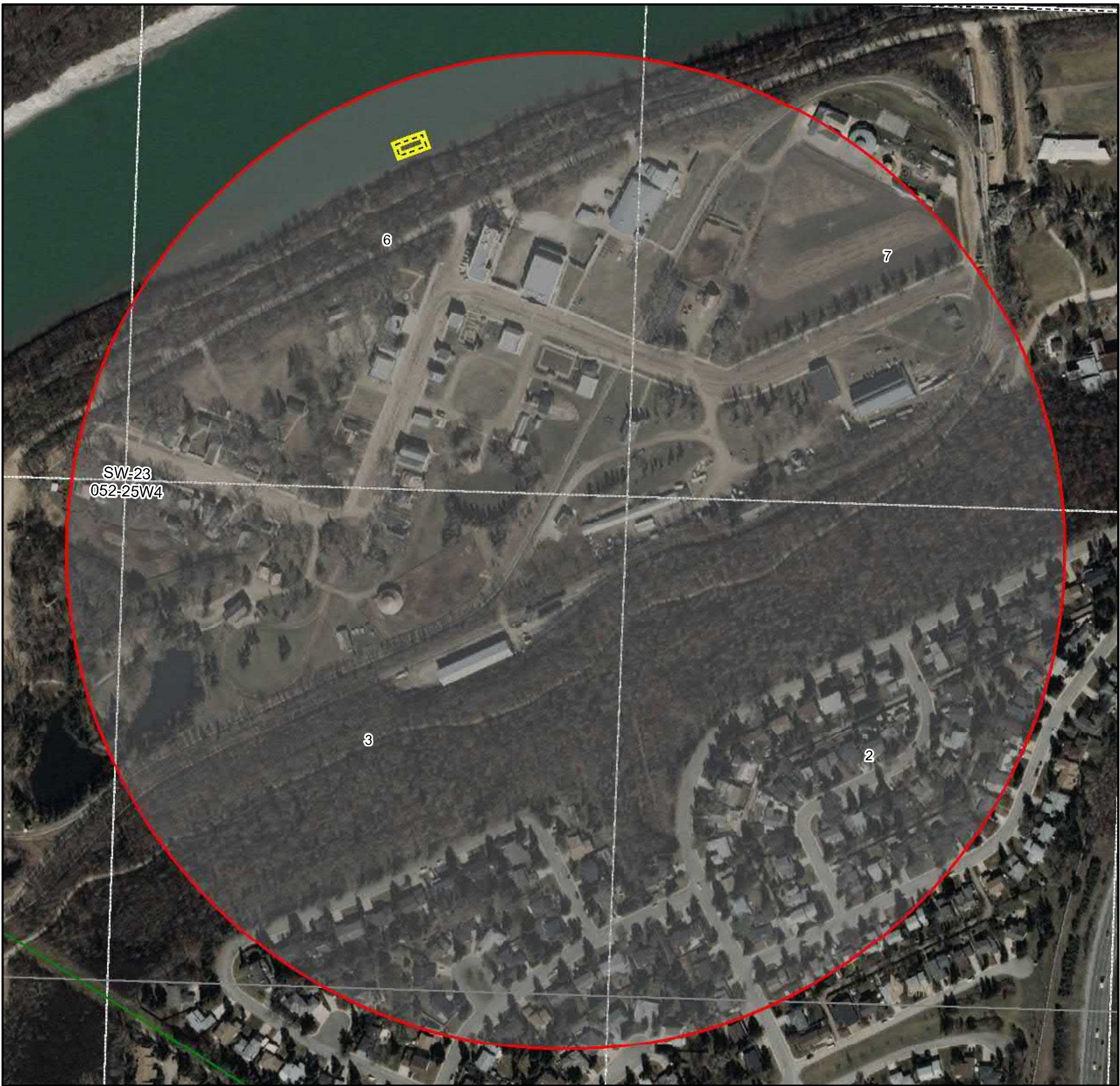
Thursday, September 06, 2018 15:16:37 -06:00



Map Scale: 1: 9,881

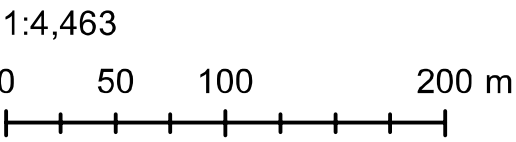


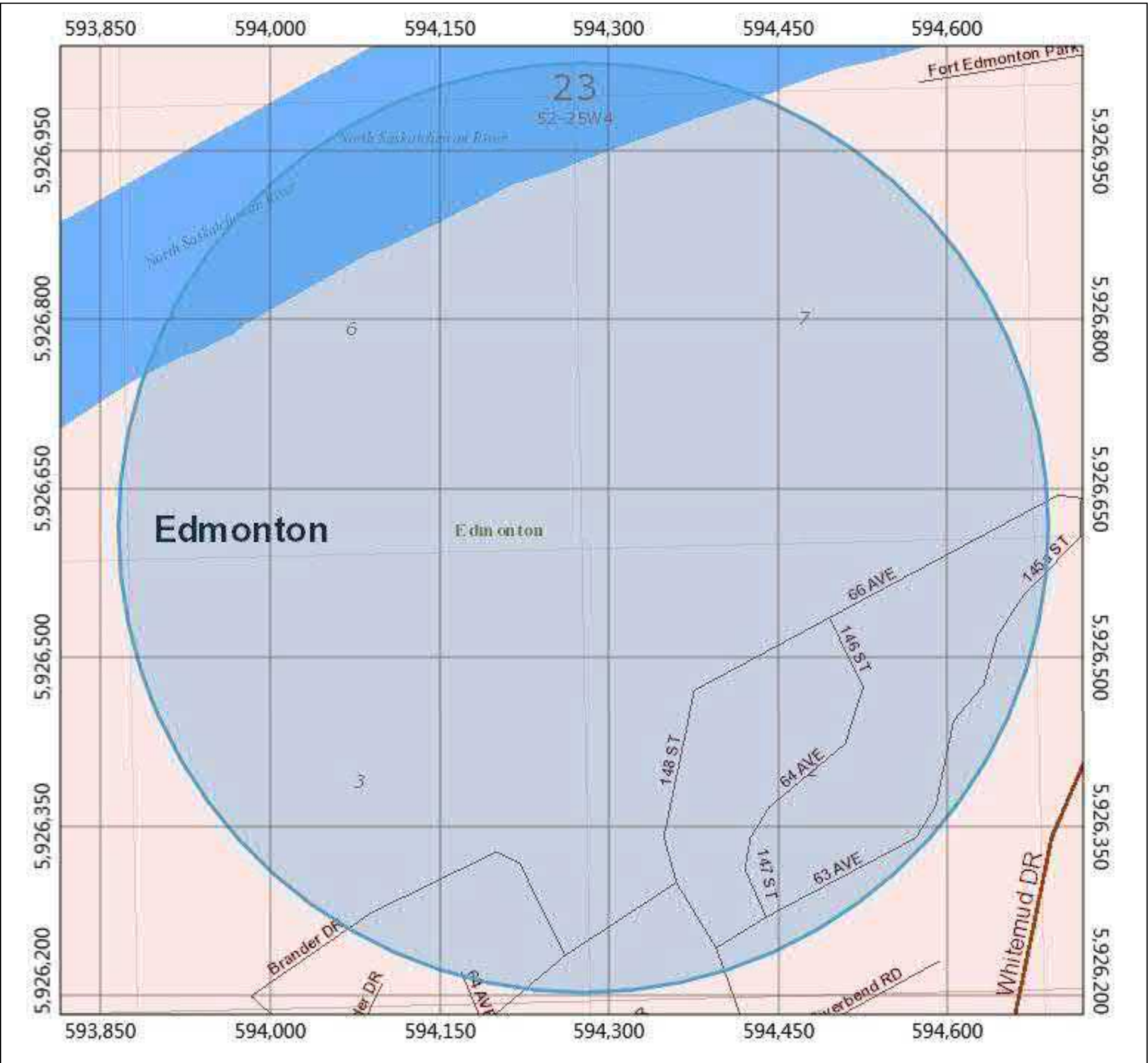
2018-09-06 18-499-CFE




SW-23
052-25W4

Thursday, September 6, 2018





AER Coal Mine Web Map	Base Data provided by: Government of Alberta	
	Author XXX	Printing Date: 9/6/2018
	Date Date (if applicable)	
	<div>The Alberta Energy Regulator (AER) has not verified and makes no representation or warranty as to the accuracy, completeness, or reliability of any information or data in this document or that it will be suitable for any particular purpose or use. The AER is not responsible for any inaccuracies, errors or omissions in the information or data and is not liable for any direct or indirect losses arising out of any use of this information. For additional information about the limitations and restrictions applicable to this document, please refer to the AER Copyright & Disclaimer webpage: http://www.aer.ca/copyright-disclaimer.</div>	<div>Scale: 4,948.68</div> <div>0.08 Kilometers 0</div> <div><div></div><div></div></div> <div>Projection and Datum:</div> <div>10TM AEP Forest, NAD83</div> <div></div>



FOIP Office, Informatics
5th Floor, Great West Life,
9920 - 108 Street
Edmonton, Alberta, T5K 2M4
Telephone: 780-427-4429
Fax: 780-427-9838
www.aep.alberta.ca

September 20, 2018

Ms. Rena Hiebert
Nichols Environmental (Canada) Ltd.
17331-107 Avenue NW
Edmonton, Alberta, T5S 1E5

FOIPNet Number: E18-G-1325
Order Number: FOIPRD-2018-3170

Dear Ms. Hiebert:

Re: Freedom of Information and Protection of Privacy Act Request for records pertaining to 7000 - 143 Street NW, Edmonton.

The following is in response to your request of August 30, 2018 for access under the *Freedom of Information and Protection of Privacy (FOIP) Act* to the subject records.

Alberta Environment and Parks conducted a search of all its record holdings, based on the search parameters you provided to this office. Unfortunately, the information you requested on the above site is part of a pending investigation and therefore access to all the information that you requested is denied, at this time, under the following sections:

- Section 20(1)(a) – Release of the records “could harm a law enforcement matter
- Section 20(1)(c) – harm the effectiveness of investigative techniques and procedures currently used, or likely to be used, in law enforcement
- Section 20(1)(d) – reveal the identity of a confidential source of law enforcement information

If you have any questions or concerns about the processing of your request, please write to the above address or call me at **780-427-7533**, so that we can look at ways to address these issues. Under section 65(1) of the Freedom of Information and Protection of Privacy Act, you may ask the Information and Privacy Commissioner to review [this decision]. To request a review, you must complete and deliver a Request for Review form within 60 days from the date of this notice to the Commissioner at 410, 9925 – 109 Street, Edmonton, Alberta, T5K 2J8. The form is available under the Resources tab on the Commissioner’s website www.oipc.ab.ca or you can call 1-888-878-4044 to request a copy of the form.

If you request a review please provide the Commissioner with a copy of your original request, any letter(s) of clarification, a copy of this letter and the reason why you are requesting a review.

Alberta Environment & Parks (AEP) Freedom of Information and Protection of Privacy (FOIP) office, has had a business disruption due to an unforeseen fire in our office building resulting in staff not being able to access this work site. We are working in a temporary location, and we will address your requests for information as expeditiously as possible.

Yours truly,

Sona Razi,
Access & Privacy Advisor

Attachments section



FOIP Office, Informatics
5th Floor, Great West Life,
9920 - 108 Street
Edmonton, Alberta, T5K 2M4
Telephone: 780-427-4429
Fax: 780-427-9838
www.aep.alberta.ca

September 20, 2018

Ms. Rena Hiebert
Nichols Environmental (Canada) Ltd.
17331-107 Avenue NW
Edmonton, Alberta

Your File #: 18-499-CFE
Order Number: FOIPRD-2018-3170

Dear Ms. Hiebert:

Re: Routine Disclosure Request FOIPRD-2018-3170 for Information Routinely Available Under the Environmental Protection and Enhancement (EPEA) Legislation.

Our office received your request on August 30, 2018 for the following subject records:

Location: Sec 23 Twp 52 Rge 25 W 4 M; Plan 8521469 Lot Block A; 7000 - 143 Street NW, Edmonton
Name(s): City of Edmonton
Time Frame: Historical to Aug 30, 2018
Records: Environmental incidents, site assessments, investigations, historical reports, soil and groundwater contamination
Exclude ESAR

Alberta Environment and Parks has conducted a search of department records based on the search parameters you provided to this office and has not identified any routinely available records relating to the subject of your request. As a result of our findings, your Routine Disclosure request has been closed.

A search of Alberta Environment and Parks record holdings identified publicly available Approvals. As this site is identified as an Approval site, you may obtain information about the Approval on our website (<https://avw.alberta.ca/ApprovalViewer.aspx>) by selecting the Approval Viewer link and entering the Approval number(s) 32058, 00138107 and 00387151. Check "Show Inactive Authorizations" to view all available documents. If you require more information pertaining to the Approval site, please contact the Approval holder. If after 30 days you do not receive the information, as identified in the Disclosure to Information, Ministerial Regulation 273/2004 of the Environmental Protection and Enhancement Act, please contact Sarah Boisvert at (780) 415-8497 for viewing of the records at Northern Regional Office in Edmonton.

If you have any further questions or concerns, please write or call me at **780-427-7533**.

Alberta Environment & Parks (AEP) Freedom of Information and Protection of Privacy (FOIP) office, has had a business disruption due to an unforeseen fire in our office building resulting in staff not being able to access this work site. We are working in a temporary location, and we will address your requests for information as expeditiously as possible.

Yours truly,

Sona Razi,
Access & Privacy Advisor

ENVIRONMENTAL LAW CENTRE

#410, 10115 - 100A Street, Edmonton, AB T5J 2W2

Phone: (780) 424-5099 Fax: (780) 424-5133

Internet: www.elc.ab.ca E-Mail: elc@elc.ab.ca

September 7, 2018

Our File: 121829

Ms. Rena Hiebert
Nichols Environmental (Canada) Ltd.
17331-107 St,
Edmonton, AB T5S 1E5

Dear Ms. Hiebert:

RE: Search Requested - The City of Edmonton

In response to your request of September 6, 2018, we have searched the Environmental Enforcement Historical Search Service database for an exact match with respect to the above request, and can advise that as of today's date, the enforcement actions listed in the attached report have been issued by Alberta Environment and Parks (AEP) pursuant to the Alberta "Environmental Protection and Enhancement Act" ("EPEA") and its predecessor legislation, the "Hazardous Chemicals Act", "Agricultural Chemicals Act", "Clean Water Act" and "Clean Air Act" to 1971, and/or pursuant to the "Water Act" from 1999 onwards. The attached report may also contain records which are not an exact match to your search request but may be related to the subject of your search.

This search is limited to the following enforcement actions under EPEA and its predecessor legislation: Tickets, Prosecutions, Administrative Penalties, Warnings, Enforcement Orders, Enforcement Orders Concerning Waste, Environmental Protection Orders, Emergency Environmental Protection Orders, Emission Control Orders, Chemical Control Orders, Water Quality Control Orders and Stop Orders. This search is limited to the following enforcement actions under the Water Act: Prosecutions, Administrative Penalties, Water Management Orders, Warnings and Enforcement Orders. It does not include Clean Up Orders issued under the Litter Act or Environmental Protection Orders respecting unsightly property issued under EPEA; this information may be available from the local municipality.

Enforcement actions are entered in the database following: (1) the decision date, for prosecutions; (2) the date an administrative penalty was paid or due (30 days after issuance), whichever is sooner; and (3) the date the document was issued for all other enforcement actions.

These search results are based on information provided by AEP. AEP advises that they try to provide the best information possible. However, AEP advises that it cannot guarantee that the information provided is complete or accurate and that any person relying on these search results does so at their own risk. More information may be gained by referring to original enforcement documents. Alberta Energy Regulator (AER) enforcement actions are not included (see the AER Public Compliance dashboard database).

Copies of orders are available from the Environmental Law Centre. Any other enforcement information may be available directly from Alberta Environment.

Yours sincerely,



Cindy Dewing
Enforcement Search Service
Encl.

ENVIRONMENTAL LAW CENTRE

#410, 10115 - 100A Street, Edmonton, AB T5J 2W2

Phone: (780) 424-5099 Fax: (780) 424-5133

Internet: www.elc.ab.ca E-Mail: elc@elc.ab.ca

Environmental Enforcement Historical Search Service

Accountable Party	Action	Decision Date/ Municipality/s		Legal Description/s	Act/s & Section/s	Comments/Disposition
		Penalty				
Edmonton, City of	Water Quality Control Order	05-Nov-1991 \$0.00	Edmonton	CWA 14(1)		Release of water contaminant (raw sewage); failure to report; company to take temporary measures to prevent discharges of raw sewage; submit written report outlining monitoring results and methods; submit written proposal for long term and permanent corrective actions; submit written proposal to identify magnitude of dry weather raw sewage overflows; submit written monthly reports detailing actions taken to comply with Order.
Edmonton, City of	Warning Letter	03-Mar-1992 \$0.00	Edmonton	HCA 17		Acceptance of prohibited material at Cloverbar Landfill, contrary to licence conditions and Hazardous Waste Regulations
Edmonton, City of	Water Quality Control Order	19-Feb-1993 \$0.00	Edmonton	CWA 14		Discharge of hydrofluosilicic acid from Rosedale Water Treatment and Clean Water Reservoir into the North Saskatchewan River; directed to install additional containment systems; undertake preventative maintenance inspections; develop a plan to ensure adequate (secondary) containment at both Rosedale and E.L. Smith treatment plants; detail existing methods used for keeping inventories of chemicals.
Edmonton, City of	Administrative Penalty	27-Sep-1995 \$2,000.00	Edmonton	AEPEA 99(2)		Failed to report the release of hydraulic oil from a City of Edmonton vehicle into the North Saskatchewan River (at Capilano Bridge); paid 23-OCT-1995.
Edmonton, City of	Warning Letter	21-Jul-1999	Edmonton	AEPEA 213(e)		The City of Edmonton contravened the terms of their approval to operate the Goldbar Wastewater Treatment Plant by bypassing the wastewater treatment plant and releasing untreated or partially treated wastewater to the North Saskatchewan River.

Report Printed:
September 7, 2018
3:27 PM

Page 1 of 6

Search Requested:

The City of Edmonton

Acts:
ACA: Agriculture Chemicals Act
AEPEA: Environmental Protection Enhancement Act(S.A.1992)
AEPEA(R) Environmental Protection & Enhancement Act(R.S.A.2000)
BCA: Beverage Container Act
CAA: Clean Air Act
CC: Criminal Code (Canada)
CWA: Clean Water Act
DEA: Dept. of Environment Act
FFA: Fisheries Act (Canada)
HCA: Hazardous Chemicals Act
LA: Litter Act
TDGCA: Transportation of Dangerous Goods Control Act
WA: Water Act

ENVIRONMENTAL LAW CENTRE

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Environmental Enforcement Historical Search Service

Accountable Party		Action	Decision Date/ Penalty	Municipality/s Legal Description/s	Act/s & Section/s	Comments/Disposition
Edmonton, The City of		Prosecution	07-Mar-2002		AEPEA 213(e)	Count 1: On or about September 16, 2000 at or near Edmonton, in the Province of Alberta did unlawfully contravene a term or condition of an approval, to wit: 9.2.1(a)(ii) of Approval No. 95-MUN-117 which provides as follows: The Approval Holder shall contact the Director of Pollution Control at 1-800-222-6514 immediately after any of the following events: (a) if untreated or partially treated sewage; (ii) from the wastewater collection system overflows under dry weather conditions, contrary to s.213(e) of the Environmental Protection and Enhancement Act. Withdrawn 7 March 2002.
Edmonton, The City of		Prosecution	07-Mar-2002 \$200,000.00		AEPEA 213(e)	Count 2: On or about September 16, 2000 at or near Edmonton, in the Province of Alberta did unlawfully contravene a term or condition of an Approval, to wit: 9.2.1(a)(iii) of Approval No. 95-MUN-117 which provides as follows: The Approval Holder shall contact the Director of Pollution Control at 1-800-222-6514 immediately after any of the following events: (a) if untreated or partially treated sewage; (iii) bypasses or overflows from lift stations contrary to s.213(e) of the Environmental Protection and Enhancement Act. Pled guilty 7 March 2002 and sentenced to a fine of 5,000 with a creative sentence. Fine paid 11 April 2002. An order requiring the City to pay a further \$5,000 to cover the costs of Alberta Environment's investigation into the matter, and a Creative Sentence Order of \$190,000 was issued 30 April 2002. The Creative Sentence Order was granted to fund a leading-edge university study to determine potential alternate uses for city wastewater. Order complied with 14 October 2005.

Report Printed: September 7, 2018 3:27 PM Page 2 of 6	Search Requested: The City of Edmonton	Acts: ACA: Agriculture Chemicals Act AEPEA: Environmental Protection Enhancement Act(S.A.1992) AEPEA(R) Environmental Protection & Enhancement Act(R.S.A.2000) BCA: Beverage Container Act CAA: CC: CWA: DEA: FFA: Clean Air Act Criminal Code (Canada) Clean Water Act Dept. of Environment Act Fisheries Act (Canada)	HCA: LA: TDGCA: WA: Hazardous Chemicals Act Litter Act Transportation of Dangerous Goods Control Act Water Act
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ENVIRONMENTAL LAW CENTRE

#410, 10115 - 100A Street, Edmonton, AB T5J 2W2

Phone: (780) 424-5099 Fax: (780) 424-5133

Internet: www.elc.ab.ca E-Mail: elc@elc.ab.ca

Environmental Enforcement Historical Search Service

Accountable Party	Action	Decision Date/ Penalty	Municipality/ Legal Description/s	Act/s & Section/s	Comments/Disposition
Edmonton, The City of	Prosecution	07-Mar-2002		AEPEA 213(e)	Count 3: On or between September 16, 2000 and September 18, 2000, both dates inclusive, at or near Edmonton, in the Province of Alberta, did unlawfully contravene a term or condition of an Approval, to wit: 5.1.2 of Approval No. 95-MJUN-117 which provides as follows: Untreated or partially treated wastewater into the treatment plant shall not be bypassed to the North Saskatchewan River during dry weather conditions, contrary to s.213(e) of the Environmental Protection and Enhancement Act. Withdrawn 7 March 2002.
Edmonton, The City of	Prosecution	17-Feb-2006	Edmonton Plan 2191EO, Block OT	AEPEA 98(2)	Count 1: On or between the 3rd day of August and the 8th day of August, 2001, at or near Edmonton, in the Province of Alberta, did unlawfully release or permit the release into the environment of a substance in an amount, concentration or level or at a rate of release that causes or may cause a significant adverse effect, contrary to section 98(2) of the Environmental Protection and Enhancement Act. Found not guilty 17 February 2006.
Edmonton, The City of	Prosecution	17-Feb-2006	Edmonton Plan 2191EO, Block OT	AEPEA 99(1)	Count 2: On or between the 3rd day of August, 2001 and the 9th day of August, 2001 at or near Edmonton, in the Province of Alberta, being a person who releases or causes or permits the release of a substance into the environment that has caused, is causing, or may cause an adverse effect, did fail, as soon as that person knows or ought to know of the release, report it to the Director, contrary to section 99(1) of the Environmental Protection and Enhancement Act. Found not guilty 17 February 2006.

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Page 3 of 6

Search Requested:

The City of Edmonton

Acts:
ACA: Agriculture Chemicals Act
AEPEA: Environmental Protection Enhancement Act(S.A.1992)
AEPEA(R) Environmental Protection & Enhancement Act(R.S.A.2000)
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Environmental Enforcement Historical Search Service

Accountable Party	Action	Decision Date/ Municipality/s		Act/s & Section/s	Comments/Disposition
		Penalty	Legal Description/s		
Edmonton, The City of	Prosecution	17-Feb-2006	Edmonton Plan 2191EO, Block OT	AEPEA 99(2)	Count 3: On or between the 3rd day of August, 2001 and the 9th day of August, 2001 at or near Edmonton in the Province of Alberta, being a person having control of a substance that is released into the environment that has caused, is causing, or may cause an adverse effect, did fail, immediately on becoming aware of the release, report it to the Director, contrary to section 99(2) of the Environmental Protection and Enhancement Act. Found not guilty 17 February 2006.
					Count 4: On or between the 4th day of August, 2001 and the 10th day of August, 2001 at or near Edmonton, in the Province of Alberta, being a person who releases or causes or permits the release of a substance into the environment that has caused, is causing, or may cause an adverse effect, did fail, as soon as that person knows or ought to know of the release, report it to the Director, contrary to section 99(1) of the Environmental Protection and Enhancement Act. Found not guilty 17 February 2006.
Edmonton, The City of	Prosecution	17-Feb-2006	Edmonton Plan 2191EO, Block OT	AEPEA 99(2)	Count 5: On or between the 4th day of August, 2001 and the 10th day of August, 2001 at or near Edmonton in the Province of Alberta, being a person having control of a substance that is released into the environment that has caused, is causing, or may cause an adverse effect, did fail, immediately on becoming aware of the release, report it to the Director, contrary to section 99(2) of the Environmental Protection and Enhancement Act. Found not guilty 17 February 2006.

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September 7, 2018
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Page 4 of 6

Search Requested:
The City of Edmonton

Ac/s:

ACA: Agriculture Chemicals Act
AEPEA: Environmental Protection Enhancement Act(S.A.1992)
AEPEA(R) Environmental Protection & Enhancement Act(R.S.A.2000)
BCA: Beverage Container Act

CAA: Clean Air Act
CC: Criminal Code (Canada)
CWA: Clean Water Act
DEA: Dept. of Environment Act
FFA: Fisheries Act (Canada)

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LA: Litter Act
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WA: Water Act

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Environmental Enforcement Historical Search Service

Accountable Party		Action	Decision Date/ Penalty	Municipality/s		Legal Description/s	Act/s & Section/s	Comments/Disposition
Edmonton, The City of		Prosecution	17-Feb-2006	Edmonton		Plan 2191EO, Block OT	AEPEA 99(1)	Count 6: On or between the 5th day of August, 2001 and the 10th day of August, 2001 at or near Edmonton, in the Province of Alberta, being a person who releases or causes or permits the release of a substance into the environment that has caused, is causing, or may cause an adverse effect, did fail, as soon as that person knows or ought to know of the release, report it to the Director, contrary to section 99(1) of the Environmental Protection and Enhancement Act. Found not guilty 17 February 2006.
Edmonton, The City of		Prosecution	17-Feb-2006	Edmonton		Plan 2191EO, Block OT	AEPEA 99(2)	Count 7: On or between the 5th day of August, 2001 and the 10th day of August, 2001 at or near Edmonton, in the Province of Alberta, being a person having control of a substance that is released into the environment that has caused, is causing, or may cause an adverse effect, did fail, immediately on becoming aware of the release, report it to the Director, contrary to section 99(2) of the Environmental Protection and Enhancement Act. Found not guilty 17 February 2006.
Edmonton, The City of		Prosecution	17-Feb-2006	Edmonton		Plan 2191EO, Block OT	AEPEA 99(1)	Count 8: On or between the 8th day of August, 2001 and the 10th day of August, 2001 at or near Edmonton, in the Province of Alberta, being a person who releases or causes or permits the release of a substance into the environment that has caused, is causing, or may cause an adverse effect, did fail, as soon as that person knows or ought to know of the release, to report it to the Director, contrary to section 99(1) of the Environmental Protection and Enhancement Act. Found not guilty 17 February 2006.

Report Printed: September 7, 2018 3:27 PM Page 5 of 6	Search Requested: The City of Edmonton	Acts: ACA: Agriculture Chemicals Act AEPEA: Environmental Protection Enhancement Act(S.A. 1992) AEPEA(R) Environmental Protection & Enhancement Act(R.S.A.2000) BCA: Beverage Container Act CAA: Clean Air Act CC: Criminal Code (Canada) CWA: Clean Water Act DEA: Dept. of Environment Act FFA: Fisheries Act (Canada) HCA: Hazardous Chemicals Act LA: Litter Act TDGCA: Transportation of Dangerous Goods Control Act WA: Water Act
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ENVIRONMENTAL LAW CENTRE
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Environmental Enforcement Historical Search Service

Accountable Party	Action	Decision Date/ Penalty	Municipality/s Legal Description/s	Act/s & Section/s	Comments/Disposition
Edmonton, The City of	Prosecution	17-Feb-2006	Edmonton Plan 2191EO, Block OT	AEPEA 99(2)	Count 9: On or between the 8th day of August, 2001 and the 10th day of August, 2001 at or near Edmonton in the Province of Alberta, being a person having control of a substance that is released into the environment that has caused, is causing, or may cause an adverse effect, did fail, immediately on becoming aware of the release, report it to the Director, contrary to section 99(2) of the Environmental Protection and Enhancement Act. Found not guilty 17 February 2006.

Report Printed:
September 7, 2018
3:27 PM
Page 6 of 6

Search Requested:
The City of Edmonton

Acts:

ACA: Agriculture Chemicals Act

AEPEA: Environmental Protection Enhancement Act(S.A.1992)

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CWA: Clean Water Act

DEA: Dept. of Environment Act

FFA: Fisheries Act (Canada)

HCA: Hazardous Chemicals Act

LA: Litter Act

TDGCA: Transportation of Dangerous Goods Control Act

WA: Water Act



Environmental Public Health
HSBC Building
Suite 700, 10055 – 106 Street,
Edmonton, AB T5J 2Y2
Fax 780.735.1802
Phone 780.735.1800
AHS.EZ.RecordsSearch@albertahealthservices.ca

October 3, 2018

Rena Hiebert
Nichols Environmental
17331 – 107 Avenue
Edmonton, AB T5S 1E5

Dear Rena,

Re: Your request for records search

On September 21, 2018, our office received your request for information regarding the following property:

7000 – 143 Street, Edmonton, Alberta

We have conducted a search for records created in accordance with public health legislation, including records relating to hazardous waste sites, abandoned landfills and contamination sources constituting a public health nuisance.

Our records indicate a phase I/II ESA were reviewed which suggested impacts from F2-F4, metals and PAH's. AHS requested a copy of confirmatory sampling and a risk management plan, which have not been received. No further documentation was available. It should be noted that the fact that records do not exist does not necessarily mean that the property complies with all applicable legislation.

Please be advised that records relevant to your search may be held by other agencies, such as Alberta Environment and Sustainable Resource Development, Alberta Energy and Utilities Board, local governments, and others. You should contact these agencies directly for further information.

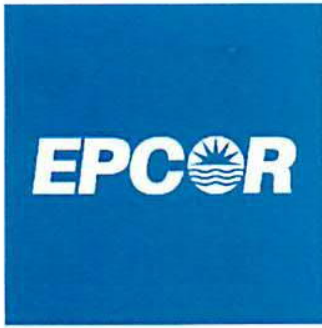
Enclosed is the invoice for this service.

\$50.00 x 1 file search
TOTAL OWING: \$50.00

Sincerely,
Alberta Health Services

A handwritten signature in blue ink, appearing to read "Chris Kelly", written over a horizontal line.

For Chris Kelly, B.Sc., CPHI(C)
Environmental Health Officer/Executive Officer



9504 – 49 Street NW
Edmonton, Alberta
T6B 2M9 Canada
epcor.com

October 5, 2018

Application No: 293715532-001
Customer File: 18-499-CFE

Rena Hiebert, B.A., EPt, A.T.T.
Environmental Scientist
Nichols Environmental (Canada) Ltd.
17331 – 107 Avenue NW
Edmonton AB T5S 1E5

Re: Legal Address: Plan 8521469, Block A
 Municipal Address: 7000 – 143 Street NW, Edmonton AB

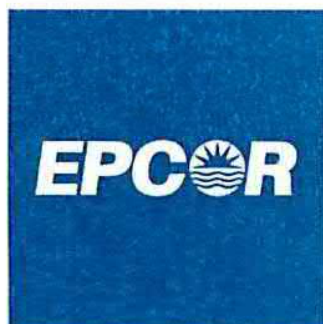
Attached are the results of a record search for the above noted premises with respect to compliance with City of Edmonton Sewers Use Bylaws, Sewers Bylaws, Drainage Bylaws, EPCOR Drainage Services Bylaw and EPCOR Water Services and Wastewater Treatment Bylaws. Inquiries with respect to this search should be directed to the undersigned at (780) 509-8067. You will be invoiced for this service at a later date.

Regards,

A handwritten signature in blue ink, appearing to read "D Johnston", is written over a light blue circular stamp.

Dave Johnston
Team Lead - Industrial Source Control
Drainage Services

Enclosure



9504 – 49 Street NW
Edmonton, Alberta
T6B 2M9 Canada
epcor.com

DRAINAGE SERVICES RECORD SEARCH

THIS SEARCH COVERS RECORDS RELATED TO THE FOLLOWING SECTIONS OF CITY BYLAWS: CITY OF EDMONTON SEWERS BYLAW # 9425, Sections 4-38, SEWERS USE BYLAW # 9675, Sections 4-37, DRAINAGE BYLAW # 16200, Sections 4-40, 50-51, DRAINAGE BYLAW # 18093 Sections 15-20, EPCOR DRAINAGE SERVICES BYLAW # 18100, Schedule 2 and EPCOR WATER SERVICES AND WASTEWATER TREATMENT BYLAW # 17698, Schedule 1, Part IV, Wastewater Overstrength Surcharges.

CUSTOMER: NICHOLS ENVIRONMENTAL (CANADA) LTD.

CUSTOMER FILE #: 18-499-CFE APPLICATION #: 293715532-001

PROPERTY DETAIL:

MUNICIPAL ADDRESS: 7000 - 143 STREET NW

LEGAL ADDRESS / DESCRIPTION: Plan 8521469 Blk A

NAME OF FACILITY: FORT EDMONTON PARK (HOTEL SELKIRK, MASONIC HALL, JASPER HOUSE

HOTEL, REEDS CHINA AND TEA, MOTORDOME, BILLS CONFECTIONARY

TYPE OF BUSINESS: HISTORIC AND HERITAGE SITE

☐ - NOT INSPECTED / NO RECORDS FOUND

☒ - INSPECTED - DATE OF INSPECTION: Sept. 26 & 30 2008, Jan. 6, 2009, Aug. 5, 2010, Oct. 26 & 31, 2011,
Jan. 23 & 24 2012, and May 10, 2018.

☐ - NO VIOLATION(S) FOUND

☒ - VIOLATION(S) FOUND: SEE COMMENTS/ATTACHMENTS

☒ - NOTICE TO COMPLY ISSUED: SEE COMMENTS/ATTACHMENTS

☐ - FINE(S) ISSUED: _____

☐ - OVERSTRENGTH SURCHARGES LEVIED: _____

COMMENTS: Notice to Comply 23-A1564 (Hotel Selkirk) issued September 30, 2008 to clean and maintain grease
interceptor. Notice to Comply 23-A1565 issued September 30, 2008 regarding Blatchford Hanger to clean and maintain
grease interceptor. Notice to Comply 23 - A1566 issued September 30, 2008 regarding Jasper House Hotel to install new
interceptor. Notice to Comply 23 - A1568 issued September 30, 2008 regarding Masonic Hall to clean and maintain
grease interceptor. No information on follow up found. Notice to Comply 116807130 issued October 31, 2011 regarding
Hotel Selkirk to install grease interceptor on plate prewash sink and maintain on a regular basis. Compliance achieved
January 24, 2012.

This Records Search is provided in accordance with City of Edmonton Bylaw 18100, EPCOR Drainage Services Bylaw. While EPCOR strives to provide complete and accurate information, no warranties, promises or guarantees are made about the accuracy, completeness or adequacy of this Records Search

SEARCH PERFORMED BY: Brandy McKay Bm DATE: October 4, 2018

REVIEWED BY: [Signature] DATE: October 9, 2018

POSSE

To Do List

Current Process

Utility Services

Address Expansion Search

Favorites

All Searches

Save

Retrieve

New

Delete

Reports

Remember

Locate

Search

Clear

*Return:

Titled lot, Entryways

Include Disposed:

House Number:

Suffix:

House Number:

From:

7000

To:

Street:

143 STR

Suite:

To:

Exact Match:

Search From Map

7000 - 143 STREET NW

Plan 8521469 Blk A (Title(s): 852149449)

Details

Zoning/Plans In Effect

Title History

Warning

Related Objects

Jobs

Hierarchy

Tax Roll Owner

New

Formatted Name:

CITY OF EDMONTON CITIZEN SERVICES

Formatted Address:

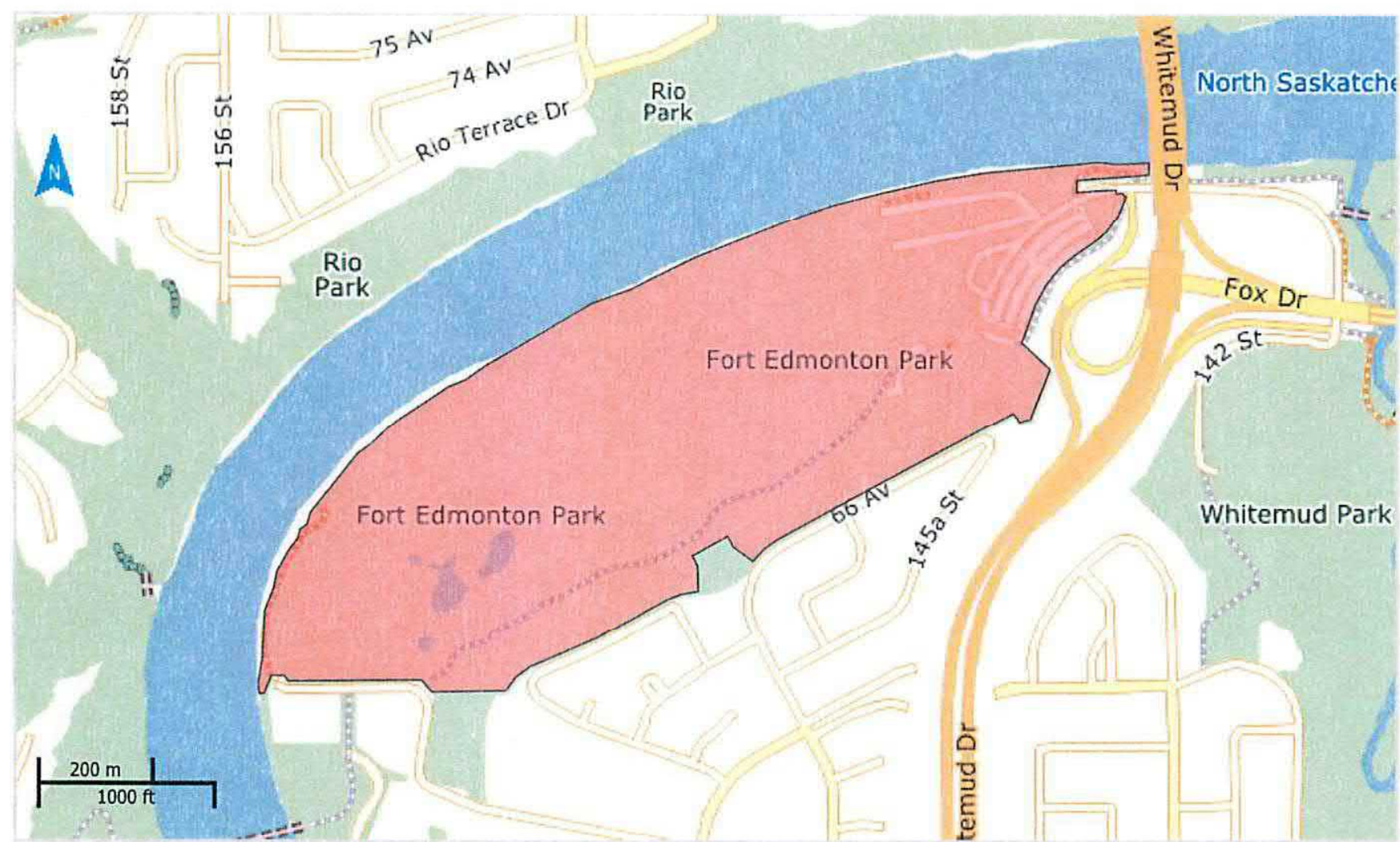
BOX 2359 EDMONTON AB T5J 2R7

4 of 4

Text Search...

Description	
7000 - 143 STREET NW	7000 - 143 STREET NW Plan 8521469 Blk A (Title(s): 852149449)
7000 - 143 STREET NW	7000 - 143 STREET NW Belongs to: 7000 - 143 STREET NW
7024 - 143 STREET NW	7024 - 143 STREET NW Belongs to: 7024 - 143 STREET NW
7080 - 143 STREET NW	7080 - 143 STREET NW Belongs to: 7080 - 143 STREET NW





Legend

Title Lots

7000 - 143 STREET NW

Address:	7000 - 143 STREET NW
Legal Description for Title Lot:	Lot , Block A, Plan 8521469
Area:	626,712.019 m ²
Year Built:	null
Neighbourhood:	River Valley Fort Edmonton
Ward:	Ward 9
Waste Collection:	Thursday (Weekly)
Current Zone:	River Valley Activity Node Zone (AN)
Current Bylaw:	12836
Proposed Applications:	None
Proposed Zone:	None
Proposed Bylaw:	None
Overlays:	Floodplain Protection Overlay North Saskatchewan River Valley and Ravine System Protection Overlay
Plan in Effect:	None



ASSET MANAGEMENT
AND PUBLIC WORKS

NOTICE TO COMPLY

Name: Dean Treichel Title: _____ Date Issued: September 30, 2008
Name of Business: City of Edmonton Date Inspected: September 26, 2008
Address: c/o Valley Zoo, P.O. Box 2359, Edmonton, AB T5T 2R7
Re: Hotel So Kirk - Fort Edmonton

OFFENSE

Flow monitoring point not constructed / maintained as required.
Means not provided to access flow monitoring point.
Interceptor not of sufficient capacity or appropriate design.
Interceptor not maintained.
Release to sanitary sewer of other than permitted matter.
Release to a combined sewer of other than permitted matter.
Release to storm sewer / watercourse of other than permitted matter.
Release of a hazardous waste to a sanitary sewer.
Release of a hazardous waste to a combined sewer.

BYLAW / Section

- ☐ 9425 / 18(2)
☐ 9425 / 18(8)
☐ 9425 / 19(4)(a)
☒ 9425 / 19(4)(c)
☐ 9675 / 4(1)
☐ 9675 / 5(1)
☐ 9675 / 10(1)
☐ 9675 / 4(2)
☐ 9675 / 5(2)
☐ _____
☐ _____

TO COMPLY:

Clean interceptor (grease trap) and maintain on a
regular basis

Problem to be remedied before: October 14, 2008
If you have any concerns contact Inspector Rolf Johannessen at 496-780-9444-0442

FAILURE TO COMPLY could result in the issuance of a PENALTY TICKET in the amount of \$ 1,000.

☒ MAILED

☐ HAND DELIVERED



ASSET MANAGEMENT
AND PUBLIC WORKS

NOTICE TO COMPLY

Name: Dawn Treichel Title: _____ Date Issued: September 30, 2008
Name of Business: City of Edmonton Date Inspected: September 26, 2008
Address: c/o Valley Zoo, PO Box 2359, Edmonton, AB T5J 2R7
Re: Blotchford Hanger - Fort Edmonton

OFFENSE

BYLAW / Section

Flow monitoring point not constructed / maintained as required.

☐ 9425 / 18(2)

Means not provided to access flow monitoring point.

☐ 9425 / 18(8)

Interceptor not of sufficient capacity or appropriate design.

☐ 9425 / 19(4)(a)

Interceptor not maintained.

☒ 9425 / 19(4)(c)

Release to sanitary sewer of other than permitted matter.

☐ 9675 / 4(1)

Release to a combined sewer of other than permitted matter.

☐ 9675 / 5(1)

Release to storm sewer / watercourse of other than permitted matter.

☐ 9675 / 10(1)

Release of a hazardous waste to a sanitary sewer.

☐ 9675 / 4(2)

Release of a hazardous waste to a combined sewer.

☐ 9675 / 5(2)

☐ _____
☐ _____

TO COMPLY:

Clean interceptor / gross trap and maintain on a
regular basis

Problem to be remedied before: October 14, 2008

If you have any concerns contact Inspector Rolf Johannesen at 496-780-944-0442

FAILURE TO COMPLY could result in the issuance of a PENALTY TICKET in the amount of \$ 1,000.00

☒ MAILED

☐ HAND DELIVERED



ASSET MANAGEMENT
AND PUBLIC WORKS

NOTICE TO COMPLY

Name: Don Treichel Title: _____ Date Issued: September 30, 2008
Name of Business: City of Edmonton Date Inspected: September 26, 2008
Address: c/o Valley Zoo PO Box 2359 Edmonton, AB T5J 2R7
Re: Jasper House Hotel - Fort Edmonton

OFFENSE

Flow monitoring point not constructed / maintained as required.
Means not provided to access flow monitoring point.
Interceptor not of sufficient capacity or appropriate design.
Interceptor not maintained.
Release to sanitary sewer of other than permitted matter.
Release to a combined sewer of other than permitted matter.
Release to storm sewer / watercourse of other than permitted matter.
Release of a hazardous waste to a sanitary sewer.
Release of a hazardous waste to a combined sewer.

BYLAW / Section

- ☐ 9425 / 18(2)
☐ 9425 / 18(8)
☒ 9425 / 19(4)(a)
☐ 9425 / 19(4)(c)
☐ 9675 / 4(1)
☐ 9675 / 5(1)
☐ 9675 / 10(1)
☐ 9675 / 4(2)
☐ 9675 / 5(2)
☐ _____
☐ _____

TO COMPLY:

New Interceptor (grease trap) needs to be installed

Problem to be remedied before: December 1, 2008

If you have any concerns contact Inspector Rob Johansson at 496-780-944-0442

FAILURE TO COMPLY could result in the issuance of a PENALTY TICKET in the amount of \$ 2,500.00

☒ MAILED

☐ HAND DELIVERED



ASSET MANAGEMENT
AND PUBLIC WORKS

NOTICE TO COMPLY

Name: _____ Title: _____ Date Issued: September 30, 2008
Name of Business: Royal Treats Ltd Date Inspected: September 26, 2008
Address: 8804-53 Avenue, Edmonton, AB T6E 5G2
Re: Masonic Hall - Fair Edmonton

OFFENSE

Flow monitoring point not constructed / maintained as required.

Means not provided to access flow monitoring point.

Interceptor not of sufficient capacity or appropriate design.

Interceptor not maintained.

Release to sanitary sewer of other than permitted matter.

Release to a combined sewer of other than permitted matter.

Release to storm sewer / watercourse of other than permitted matter.

Release of a hazardous waste to a sanitary sewer.

Release of a hazardous waste to a combined sewer.

BYLAW / Section

☐ 9425 / 18(2)

☐ 9425 / 18(8)

☐ 9425 / 19(4)(a)

☒ 9425 / 19(4)(c)

☐ 9675 / 4(1)

☐ 9675 / 5(1)

☐ 9675 / 10(1)

☐ 9675 / 4(2)

☐ 9675 / 5(2)

☐ _____

☐ _____

TO COMPLY:

clean interceptor (grate kept) and maintain on a
regular basis

Problem to be remedied before: October 14, 2008

If you have any concerns contact Inspector Rolf Johannessen at 496 - 780-944-0442

FAILURE TO COMPLY could result in the issuance of a PENALTY TICKET in the amount of \$ 1,000.00



INFRASTRUCTURE SERVICES
DRAINAGE SERVICES

COPY

NOTICE TO COMPLY

Job No: 116806589-001
(Ref Number: 116807130)

Name: _____ Title: _____ Date Issued: Oct 31, 2011
Name of Business: Hotel Selkirk Date Inspected: Oct 26, 2011
Violation Address: 7000 - 143 STREET NW
Legal Description: Plan 8521469 Blk A
City: Edmonton, AB

OFFENCE

Bylaw 9425 19(1) Interceptor not installed as required - \$2,500
Problem to be remedied by: Jan 04, 2012

TO COMPLY

Install grease trap on plate prewash sink and maintain on a regular basis. Clean all traps when 25% fat, oil and/or solids are present.

If you have any concerns contact Inspector Michelle Dzenkiw at 780-496-4077

FAILURE TO COMPLY could result in the penalty stated above.

☐ Mailed ☒ Hand Delivered

Cc
CITY OF EDMONTON ASSET MANAGEMENT & PUBLIC WORKS
20FLR 9803 - 102A AVENUE NW
EDMONTON AB T5J 3A3

J. C.



FINANCIAL SERVICES
AND UTILITIES

OFFICE OF THE CHIEF FINANCIAL
OFFICER & TREASURER
5TH FLOOR, CHANCERY HALL
3 SIR WINSTON CHURCHILL SQUARE
EDMONTON, ALBERTA
T5J 3A3

September 28, 2018

File No.: 71-020-008-001
Search ID: 4932

Rena Hiebert
Nichols Environmental (Canada) Ltd.
17331 - 107 AVENUE NW
Edmonton, Alberta
T5S 1E5

Dear Sir/Madam:

ADDRESS
SUBJECT: 7000 - 143 STREET NW

LEGAL
Plan 8521469 Blk A

In response to your recent inquiry, our limited records do not identify a former landfill or dump site on or within a 500 metre radius of the subject property. Please note that this information is provided without prejudice and the onus is on the developer/owner to verify by site tests the suitability of the property for their intended use of it. The search area is restricted to sites within the City of Edmonton's boundaries.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Demers", with a long horizontal flourish extending to the right.

Mark Demers
Supervisor of GIS Mapping
Waste Services

Enclosure



URBAN FORM AND
CORPORATE STRATEGIC
DEVELOPMENT

Development Services
2nd Floor, 10111 104 Avenue NW
Edmonton, Alberta
T5J 0J4

Date: October 5, 2018

Our File: 293640804-001

Your File: N/A

NICHOLS ENVIRONMENTAL
17331 - 107 AVENUE NW
EDMONTON, ALBERTA T5S 1E5

Attention: RENA HIEBERT:

Re: 7000 - 143 STREET NW Plan 8521469 Blk A

We acknowledge receipt of your inquiry dated Sep 24, 2018, regarding the property located at the above address. The following is the information you requested:

As of this date, the Development Services Branch files indicate the following outstanding conditions in regard to the building, heating and electrical requirements:

. Building Permit: #279881278-010; #267911107-018; #235204089-004 Requires inspections to be completed. These Commercial Permits require C1/C2 Schedules to be submitted prior to inspections.

Forward the documents to the office by fax (780) 496-6054 or by e-mail:

buildinginspectioncorrespondence@edmonton.ca. Please make attention to Dan or Curtis. #245372538-002; #141821729-001 These Commercial Permits only require inspections to be completed. Please speak with your Building Contractor to clarify any details. Call 311 to book inspections.

#279881278-005 Remains in More Information Required status with David Dykens. Architectural, Structural and Electrical plans are missing the stamps. Clarify any details with your Construction team and forward the documents to the office.

#267911107-024 Remains in More Information Required status with David Dykens. Please provide the list of Contractors and their contact information. Also, provide energy code summary and compliance reports for the design. Clarify any details with your Construction team and forward the documents to the office.

#267911107-013 Remains in More Information Required status with Steven May. The following is required:

Architectural drawings - stamped and signed

Structural drawings - stamped and signed

Geotechnical report

Survey

A and B schedules - with owner's signature on A2

Architectural

Structural

Geotechnical

Commercial Application forms; demolition, 4 new buildings, interior alterations to the Exhibit Hall.

Clarify any details with your Construction team and forward the documents to the office.

. Mechanical HVAC Permit: #267911107-030; #235204089-006; #70234047-006 Requires inspections to be completed. Speak with your HVAC Contractor to clarify any details. Call 311 to book inspections.

#267911107-025 Remains in More Information Required with David Dykens. The following is required:

Required fire resistance ratings on A 101

exterior wall has 1 hour rating unprotected openings permitted

Speak with your HVAC Contractor to clarify any details. Call 311 to book inspections.

. Electrical Permit: #294411908-001 or EDM2018-023573 (new application); #275970133-001 or EDM2018-004045; #275969449-001 or EDM2018-004044; #187155961-001 or EDM2016-002715; #267911107-005 or EDM2018-003721 Requires inspections to be completed. Please speak with your Master Electrician to clarify any details. Call 311 to book inspections.

As of this date, the Development Services Branch files do not indicate any adverse conditions in regard to the plumbing requirements.

Our records indicate that there are no infractions against this property that concern our office and the bylaws we are charged with enforcing.

The results from these searches are from an examination of the Development Services Branch records and Complaints and Investigations files only. Our office has not done a site inspection and therefore there may be deficiencies or bylaw infractions that we are currently unaware of. Therefore, these search results do not necessarily mean that the building or property complies with the Zoning Bylaw, General Bylaws, Building, Heating, Plumbing or Electrical Codes. These search results do not alter any conditions required by a current permit or Bylaw complaint.

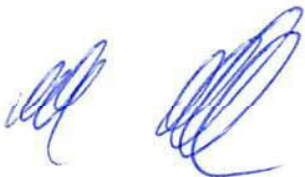
The information listed above is not warranted to be a complete history of the property as there may be other City of Edmonton departments that have files concerning this property. The above information is given on the express understanding that we incur no responsibility whatever in furnishing it.

The City of Edmonton does not conduct independent environmental checks of land within the City. If you are concerned about the suitability of this property for any purpose, you should conduct your own tests and reviews.

Should you require further information, you can contact the writer at (780) 496-3962.

NOTE: Bylaw Infraction Searches are conducted for a one (1) year time period from the date the request is received in our office. The following are the Bylaws and Acts that the Complaints and Investigation Section is charged with enforcing: 5535, 5590, 5825, 6046, 7083, 7255, 7608, 7829, 8081, 9668, 10396, 10398, 10406, 10670, 10874, 11468, 11869, 12020, 12308, 12452, 12513, 12800, 12972, 13138, 13145, 13333, 13521, 13777, Sections 545, 546 and 645 of the Municipal Government Act, Part 9 Division 2 of the Environmental Protection and Enhancement Act and the Weed Act. To view Bylaws on line visit the City Website at: www.edmonton.ca. Information related to the status and issuance of Municipal Tickets and Violation Tickets to individuals is not included.

Yours truly,



MARILYN LINTON, Records Advisor
Permits and Licensing Service Centre



Project Number: **279881278-010**
Application Date: **SEP 11, 2018**
Printed: **October 5, 2018 at 8:41 AM**
Page: **1 of 1**

Commercial Final Permit

This document is a Building Permit for the undertaking described below, subject to the conditions and limitations contained therein, issued pursuant to the Safety Codes Act RSA 2000, Safety Codes Act Permit Regulation, Alberta Building Code and City of Edmonton Bylaw 15894 Safety Codes Permit Bylaw.

Applicant CLARK BUILDERS 4703 - 52 AVENUE NW EDMONTON, ALBERTA CANADA T6B 3R6	Property Address(es) and Legal Description(s) 7000 - 143 STREET NW Plan 8521469 Blk A
	Location(s) of Work Entryway: 7080 - 143 STREET NW Building: 7080 - 143 STREET NW

Scope of Permit

To construct a FOOTING AND FOUNDATION ONLY for a futur Public Libraries and Cultural Exhibits building (Indigenous Peoples' Experience Cultural Centre, Fort Edmonton Park).

Building Permit Details: Any subcontractor work paid for and included in this Building Permit requires separate permits, however payment for these permits is covered under this Building Permit Application.

AEDARSA Approval Required:	Electrical: NOT - Included
Gas: NOT - Included	HVAC: NOT - Included
Plumbing: NOT - Included	Sewer: NOT - Included
Temporary Gas Heat: NOT - Included	Units/Dwellings Created or Demolished: 0
Unmetered Constr Water: NOT - Included	

I/We certify that the above noted details are correct.

Applicant signature: _____

Building Permit Decision

Issued

Conditions of Issuance

- * Permit issued by I. B-V
- * This is a Footing and Foundation Permit only and additional permit/s are required before construction beyond the foundation.
- ****Slab on grade requires separate permit ****
- * The site shall be protected from unauthorized access at all times.
- * All equipment and materials shall be stored entirely on the site.
- * Use of public property is NOT permitted.

Issue Date: Sep 12, 2018 **Safety Codes Officer:** BERNIER-VACHON, ISABELLE

Fees				
Permit fees are based on the cost of construction declared to be \$5,000.00.				
	Fee Amount	Amount Paid	Receipt #	Date Paid
Building Permit Fee	\$156.00	\$156.00	05330124	Sep 12, 2018
Safety Codes Fee	\$6.24	\$6.24	05330124	Sep 12, 2018
Total GST Amount:	\$0.00			
Totals for Permit:	\$162.24	\$162.24		



Commercial Final Permit

This document is a Building Permit for the undertaking described below, subject to the conditions and limitations contained therein, issued pursuant to the Safety Codes Act RSA 2000, Safety Codes Act Permit Regulation, Alberta Building Code and City of Edmonton Bylaw 15894 Safety Codes Permit Bylaw.

Applicant CLARK BUILDERS 4703 - 52 AVENUE NW EDMONTON, ALBERTA CANADA T6B 3R6	Property Address(es) and Legal Description(s) 7000 - 143 STREET NW Plan 8521469 Blk A
	Location(s) of Work Entryway: 7000 - 143 STREET NW Building: 7000 - 143 STREET NW

Scope of Permit
To construct Game Alley West for Fort Edmonton Park

Building Permit Details: Any subcontractor work paid for and included in this Building Permit requires separate permits, however payment for these permits is covered under this Building Permit Application.	
AEDARSA Approval Required: No Gas: Yes - Included Plumbing: Yes - Included Temporary Gas Heat: NOT - Included Unmetered Constr Water: NOT - Included	Electrical: Yes - Included HVAC: Yes - Included Sewer: NOT - Included Units/Dwellings Created or Demolished: 0

I/We certify that the above noted details are correct.
Applicant signature: _____

Building Permit Decision
Issued

Conditions of Issuance

- * Permit issued by Ralph Jonker SCO#114482
- * This permit is a building permit only and additional permits for mechanical & electrical are required before proceeding with that work.
- * Safety measures at construction sites to conform to ABC2014 Div.B Part 8
- * A Construction Fire Safety Plan must be approved by Edmonton FRS before any construction may begin.
- * Portable fire extinguishers shall be provided and installed in conformance with ABC2014 Div.B 3.2.5.16.
- * Exit signs shall be provided at each exit as per article ABC 2014 Div. B 3.4.5.
- * Provide emergency lighting as per article ABC 2014 Div. B 3.2.7..
- * All work to conform to the Barrier-free standards including doors, door thresholds, curb cuts, etc.

*Prior to booking a final inspection submit the following documents to the inspection department for review:
-C Schedules from all professionals

Approved permit plans shall be on site for mandatory final inspection.
Final inspection must be successfully completed prior to occupancy.
CONTACT buildingic@edmonton.ca

Allow up to 3 business days for inspection performance due to variable workload/capacity.

Issue Date: Sep 07, 2018 Safety Codes Officer: JONKER, RALPH

Fees Permit fees are based on the cost of construction declared to be \$773,729.00.



Commercial Final Permit

Fees

Permit fees are based on the cost of construction declared to be \$773,729.00.

	Fee Amount	Amount Paid	Receipt #	Date Paid
Com/Ind Gas Permit Fee	\$325.00	\$325.00	05275011	Aug 21, 2018
Electrical Permit Fee	\$769.00	\$769.00	05275011	Aug 21, 2018
Electrical Safety Codes Fee	\$30.76	\$30.76	05275011	Aug 21, 2018
Safety Codes Fee	\$368.30	\$368.30	05275011	Aug 21, 2018
Com/Ind Plumbing Fee	\$386.86	\$386.86	05275011	Aug 21, 2018
Fire Inspection Fee	\$386.00	\$386.00	05275011	Aug 21, 2018
Building Permit Fee	\$8,046.78	\$8,046.78	05275011	Aug 21, 2018
Com/Ind HVAC Permit Fee	\$448.76	\$448.76	05275011	Aug 21, 2018
Total GST Amount:	\$0.00			
Totals for Permit:	\$10,761.46	\$10,761.46		



Commercial Final Permit

This document is a Building Permit for the undertaking described below, subject to the conditions and limitations contained therein, issued pursuant to the Safety Codes Act RSA 2000, Safety Codes Act Permit Regulation, Alberta Building Code and City of Edmonton Bylaw 15894 Safety Codes Permit Bylaw.

Applicant RESCOM INC 12704 - 110 AVENUE NW EDMONTON, ALBERTA CANADA T5M 2L7	Property Address(es) and Legal Description(s) 7000 - 143 STREET NW Plan 8521469 Blk A
	Location(s) of Work Entryway: 7000 - 143 STREET NW Building: 7000 - 143 STREET NW

Scope of Permit
To construct an addition to an existing Public Libraries and Cultural Exhibits building (FREIGHT SHED EXPANSION).

Building Permit Details: Any subcontractor work paid for and included in this Building Permit requires separate permits, however payment for these permits is covered under this Building Permit Application.	
AEDARSA Approval Required: No Gas: NOT - Included Plumbing: Yes - Included Temporary Gas Heat: NOT - Included Unmetered Constr Water: NOT - Included	Electrical: Yes - Included HVAC: Yes - Included Sewer: NOT - Included Units/Dwellings Created or Demolished: 0

I/We certify that the above noted details are correct.

Applicant signature: _____

Building Permit Decision
Issued



Commercial Final Permit

Conditions of Issuance

PE Michael Weadick

- * Prior to commencing construction, a Fire Safety Plan must be approved by Fire Rescue Services (780 496 3628 or cmsfpts@edmonton.ca) as per ABC 2014 Div. B: 8.1.1.1.(3) and AFC 2014 Div. B: 5.6.1.3.(1)
- * Work shall be in accordance with the ABC 2014 + NECB 2011
- * Demolition work, and Site Safety measures shall be in accordance with the ABC 2014: Div. B: Part 8
- * Protect site from unauthorized access.
- * Material and equipment shall not be placed on any public property except as authorized.
- * Hoardings, tower cranes, public property encroachment, accessory structures or exterior signs not included in this permit.
- * Portable extinguishers shall be provided and installed in conformance with NFPA 10, (located in a cabinet, visible, maximum 75 feet travel distance apart, etc.).
- * Provide emergency lighting to an average level of not less than 10 lx at floor.
- * Required exits signs to be provided in accordance with ABC 3.4.5
- * All work to conform to the Barrier-free standards including washrooms, doors, door thresholds, curb cuts, etc.
- * All penetrations through required fire separations (walls or ceiling/floors) by structural, mechanical or electrical components are required to be protected by fire dampers, or approved fire-stopping materials.
- * Subject to HVAC review and conditions.

APPROVED PERMIT PLANS SHALL BE ON SITE FOR MANDATORY FINAL INSPECTION.
FINAL INSPECTION MUST BE SUCCESSFULLY COMPLETED PRIOR TO OCCUPANCY.

CONTACT: buildingic@edmonton.ca WITH REQUIRED:

- "C" SCHEDULES
- AND TO ARRANGE INSPECTION.

Allow up to 3 business days for inspection performance due to variable workload/capacity.

Issue Date: Jul 19, 2018 Safety Codes Officer: WEADICK, MICHAEL

Fees

Permit fees are based on the cost of construction declared to be \$460,000.00.

	Fee Amount	Amount Paid	Receipt #	Date Paid
Electrical Safety Codes Fee	\$23.96	\$23.96	04849368	Mar 12, 2018
Building Permit Fee	\$4,784.00	\$4,784.00	04849368	Mar 12, 2018
Fire Inspection Fee	\$379.00	\$379.00	04849368	Mar 12, 2018
Com/Ind HVAC Permit Fee	\$266.80	\$266.80	04849368	Mar 12, 2018
Safety Codes Fee	\$211.23	\$211.23	04849368	Mar 12, 2018
Com/Ind Plumbing Fee	\$230.00	\$230.00	04849368	Mar 12, 2018
Electrical Permit Fee	\$599.00	\$599.00	04849368	Mar 12, 2018
Total GST Amount:	\$0.00			
Totals for Permit:	\$6,493.99	\$6,493.99		



Commercial Final Permit

This document is a Building Permit for the undertaking described below, subject to the conditions and limitations contained therein, issued pursuant to the Safety Codes Act RSA 2000, Safety Codes Act Permit Regulation, Alberta Building Code and City of Edmonton Bylaw 15894 Safety Codes Permit Bylaw.

Applicant L.C. GREENOUGH CONSTRUCTION LTD. Care of: GARY GREENOUGH 2503 - PARSONS ROAD NW EDMONTON, ALBERTA CANADA T6N 1B8	Property Address(es) and Legal Description(s) 7000 - 143 STREET NW Plan 8521469 Blk A
	Location(s) of Work Entryway: 7000 - 143 STREET NW Building: 7000 - 143 STREET NW

Scope of Permit
To construct exterior alterations to a Natural Science Exhibit Building, John Janzen Roof Railing - Project # CP-3550 "John Janzen Nature Center".

Building Permit Details: Any subcontractor work paid for and included in this Building Permit requires separate permits, however payment for these permits is covered under this Building Permit Application.	
AEDARSA Approval Required: Gas: NOT - Included Plumbing: NOT - Included Temporary Gas Heat: NOT - Included Unmetered Constr Water: NOT - Included	Electrical: NOT - Included HVAC: NOT - Included Sewer: NOT - Included Units/Dwellings Created or Demolished: 0

I/We certify that the above noted details are correct.

Applicant signature:_____

Building Permit Decision
Issued

Conditions of Issuance

- * Permit issued by Dave Venhuis.
- * Ensure that all means of egress and required exits are kept clear of obstructions and all safety systems including fire suppression and fire alarm systems are fully functionally during construction.
- * All penetrations through required fire separations (walls or ceiling/floors) by structural, mechanical or electrical components are required to be protected by fire dampers, or approved fire-stopping materials.
- * Any asbestos abatement shall be carried out by authorized personnel only and the work must be completed prior to any demolition of the building. Contact Occupational Health & Safety Workplace Health & Safety Contact Centre at 1-866-415-8690. An electronic version of the pamphlet "Hazardous Materials in your Building" is also available online at www.worksafely.org.
- * APPROVED PERMIT PLANS TO BE ON SITE FOR FINAL INSPECTION and all required "C" SCHEDULES ARE TO BE SUBMITTED PRIOR TO FINAL INSPECTION

CALL 311 TO SCHEDULE MANDATORY FINAL INSPECTION PRIOR TO OCCUPANCY OR IF OUTSIDE OF EDMONTON, PHONE: 780 442-5311.

Issue Date: Oct 22, 2013 **Safety Codes Officer:** VENHUIS, DAVE

Fees				
Permit fees are based on the cost of construction declared to be \$49,000.00.				
	Fee Amount	Amount Paid	Receipt #	Date Paid
Building Permit Fee	\$480.20	\$480.20	01254484	Oct 15, 2013
Safety Codes Fee	\$19.21	\$19.21	01254484	Oct 15, 2013



Project Number: 141821729-001
Application Date: JUL 30, 2013
Printed: October 5, 2018 at 8:42 AM
Page: 2 of 2

Commercial Final Permit

Fees		Permit fees are based on the cost of construction declared to be \$49,000.00.		
	Fee Amount	Amount Paid	Receipt #	Date Paid
Total GST Amount:	\$0.00			
Totals for Permit:	\$499.41	\$499.41		



Commercial Final Permit

This document is a Building Permit for the undertaking described below, subject to the conditions and limitations contained therein, issued pursuant to the Safety Codes Act RSA 2000, Safety Codes Act Permit Regulation, Alberta Building Code and City of Edmonton Bylaw 15894 Safety Codes Permit Bylaw.

Applicant APPALLOFUS CONSTRUCTION LTD. Care of: GEORGE 12124 - 121A STREET EDMONTON, ALBERTA CANADA T5L 0A4	Property Address(es) and Legal Description(s) 7000 - 143 STREET NW Plan 8521469 Blk A
--	--

Scope of Permit
To demolish a Public Libraries and Cultural Exhibits building (windmill).

Building Permit Details: Any subcontractor work paid for and included in this Building Permit requires separate permits, however payment for these permits is covered under this Building Permit Application.	
AEDARSA Approval Required: Gas: NOT - Included Plumbing: NOT - Included Temporary Gas Heat: NOT - Included Unmetered Constr Water: NOT - Included	Electrical: NOT - Included HVAC: NOT - Included Sewer: NOT - Included Units/Dwellings Created or Demolished: 0

I/We certify that the above noted details are correct.

Applicant signature: _____

Building Permit Decision
Issued

Conditions of Issuance

*Safety measures at construction and demolition site to comply with Part 8 of the Alberta Building Code 2006.
*All utilities to be disconnected prior to demolition
*Excavation to be backfilled and the site cleared of debris.

8.2.2.2. Protection of Adjoining Property
1) If the stability of adjoining buildings may be endangered by the work of excavating, adequate underpinning, shoring and bracing shall be provided to prevent
a) damage to, or movement of, any part of the adjoining building, and
b) the creation of a hazard to the public.

8.2.3.2. Protection from Dangerous Activities
1) Operations such as the hoisting of major components onto a tall building or other activities that constitute a hazard from which the public cannot be protected by barricades, covered ways or similar means shall not be carried out until the street or other public way is closed.
2) If the safety of pedestrians cannot be assured during hoisting or the undertaking of other hazardous operations, then the gates required by Sentence 8.2.1.3.(3) and Clause 8.2.1.2.(1)(h) that are located in the danger zone shall be closed and locked and pedestrians shall be redirected away from the danger.

Subject to required final inspection.
Call 311 or if outside of Edmonton phone 780-442-5311 to schedule inspections.

Issue Date: Jun 07, 2017 **Safety Codes Officer:** WOOLSEY, ADAM



Commercial Final Permit

Fees

Permit fees are based on the cost of construction declared to be \$10,000.00.

	Fee Amount	Amount Paid	Receipt #	Date Paid
Building Permit Fee	\$152.00	\$152.00	04043733	Apr 10, 2017
Safety Codes Fee	\$6.08	\$6.08	04043733	Apr 10, 2017
Total GST Amount:	\$0.00			
Totals for Permit:	\$158.08	\$158.08		



Application for
Commercial Final Permit

Project Number: 279881278-005
Application Date: SEP 07, 2018
Printed: October 5, 2018 at 8:43 AM
Page: 1 of 1

This document is an application for a Building Permit for the development described below.

Applicant CLARK BUILDERS 4703 - 52 AVENUE NW EDMONTON, ALBERTA CANADA T6B 3R6	Property Address(es) and Legal Description(s) 7000 - 143 STREET NW Plan 8521469 Blk A
	Location(s) of Work Entryway: 7080 - 143 STREET NW Building: 7080 - 143 STREET NW

Scope of Application
To construct a Public Libraries and Cultural Exhibits building (Indigenous Peoples' Experience Cultural Centre, Fort Edmonton Park).

Building Permit Details: Any subcontractor work paid for and included in this Building Permit requires separate permits, however payment for these permits is covered under this Building Permit Application.	
AEDARSA Approval Required: Yes Gas: Yes - Included Plumbing: Yes - Included Temporary Gas Heat: Yes - Included Unmetered Constr Water: NOT - Included	Electrical: Yes - Included HVAC: Yes - Included Sewer: Yes - Included Units/Dwellings Created or Demolished: 0

I/We certify that the above noted details are correct.

Applicant signature: _____

Building Permit Decision
No decision has yet been made.

Fees Permit fees are based on the cost of construction declared to be \$14,077,970.00.				
	Fee Amount	Amount Paid	Receipt #	Date Paid
Com/Ind Gas Permit Fee	\$805.00	\$805.00	05320996	Sep 07, 2018
Electrical Safety Codes Fee	\$179.00	\$179.00	05320996	Sep 07, 2018
Temporary Gas Heat Fee	\$166.00	\$166.00	05320996	Sep 07, 2018
Com/Ind Plumbing Fee	\$7,038.99	\$7,038.99	05320996	Sep 07, 2018
Safety Codes Fee	\$1,215.09	\$1,215.09	05320996	Sep 07, 2018
Fire Inspection Fee	\$386.00	\$386.00	05320996	Sep 07, 2018
Electrical Permit Fee	\$4,475.00	\$4,475.00	05320996	Sep 07, 2018
Sewer Permit Fee	\$202.00	\$202.00	05320996	Sep 07, 2018
Building Permit Fee	\$132,548.24	\$132,548.24	05320996	Sep 07, 2018
Com/Ind HVAC Permit Fee	\$8,165.22	\$8,165.22	05320996	Sep 07, 2018
Total GST Amount:	\$0.00			
Totals for Permit:	\$155,180.54	\$155,180.54		

THIS IS NOT A PERMIT



Application for
Commercial Final Permit

Project Number: 279881278-005
Application Date: SEP 07, 2018
Printed: October 5, 2018 at 8:44 AM
Page: 1 of 1

This document is an application for a Building Permit for the development described below.

Applicant CLARK BUILDERS 4703 - 52 AVENUE NW EDMONTON, ALBERTA CANADA T6B 3R6	Property Address(es) and Legal Description(s) 7000 - 143 STREET NW Plan 8521469 Blk A
	Location(s) of Work Entryway: 7080 - 143 STREET NW Building: 7080 - 143 STREET NW

Scope of Application
To construct a Public Libraries and Cultural Exhibits building (Indigenous Peoples' Experience Cultural Centre, Fort Edmonton Park).

Building Permit Details: Any subcontractor work paid for and included in this Building Permit requires separate permits, however payment for these permits is covered under this Building Permit Application.	
AEDARSA Approval Required: Yes Gas: Yes - Included Plumbing: Yes - Included Temporary Gas Heat: Yes - Included Unmetered Constr Water: NOT - Included	Electrical: Yes - Included HVAC: Yes - Included Sewer: Yes - Included Units/Dwellings Created or Demolished: 0

I/We certify that the above noted details are correct.
Applicant signature: _____

Building Permit Decision
No decision has yet been made.

Fees Permit fees are based on the cost of construction declared to be \$14,077,970.00.				
	Fee Amount	Amount Paid	Receipt #	Date Paid
Com/Ind Gas Permit Fee	\$805.00	\$805.00	05320996	Sep 07, 2018
Electrical Safety Codes Fee	\$179.00	\$179.00	05320996	Sep 07, 2018
Temporary Gas Heat Fee	\$166.00	\$166.00	05320996	Sep 07, 2018
Com/Ind Plumbing Fee	\$7,038.99	\$7,038.99	05320996	Sep 07, 2018
Safety Codes Fee	\$1,215.09	\$1,215.09	05320996	Sep 07, 2018
Fire Inspection Fee	\$386.00	\$386.00	05320996	Sep 07, 2018
Electrical Permit Fee	\$4,475.00	\$4,475.00	05320996	Sep 07, 2018
Sewer Permit Fee	\$202.00	\$202.00	05320996	Sep 07, 2018
Building Permit Fee	\$132,548.24	\$132,548.24	05320996	Sep 07, 2018
Com/Ind HVAC Permit Fee	\$8,165.22	\$8,165.22	05320996	Sep 07, 2018
Total GST Amount:	\$0.00			
Totals for Permit:	\$155,180.54	\$155,180.54		

THIS IS NOT A PERMIT



Application for
Commercial Final Permit

Project Number: 267911107-013
Application Date: JUL 13, 2018
Printed: October 5, 2018 at 8:44 AM
Page: 1 of 1

This document is an application for a Building Permit for the development described below.

Applicant STANTEC CONSULTING LTD 10160 - 112 STREET NW EDMONTON, ALBERTA CANADA T5K 2L6	Property Address(es) and Legal Description(s) 7000 - 143 STREET NW Plan 8521469 Blk A
	Location(s) of Work Entryway: 7000 - 143 STREET NW Building: 7000 - 143 STREET NW

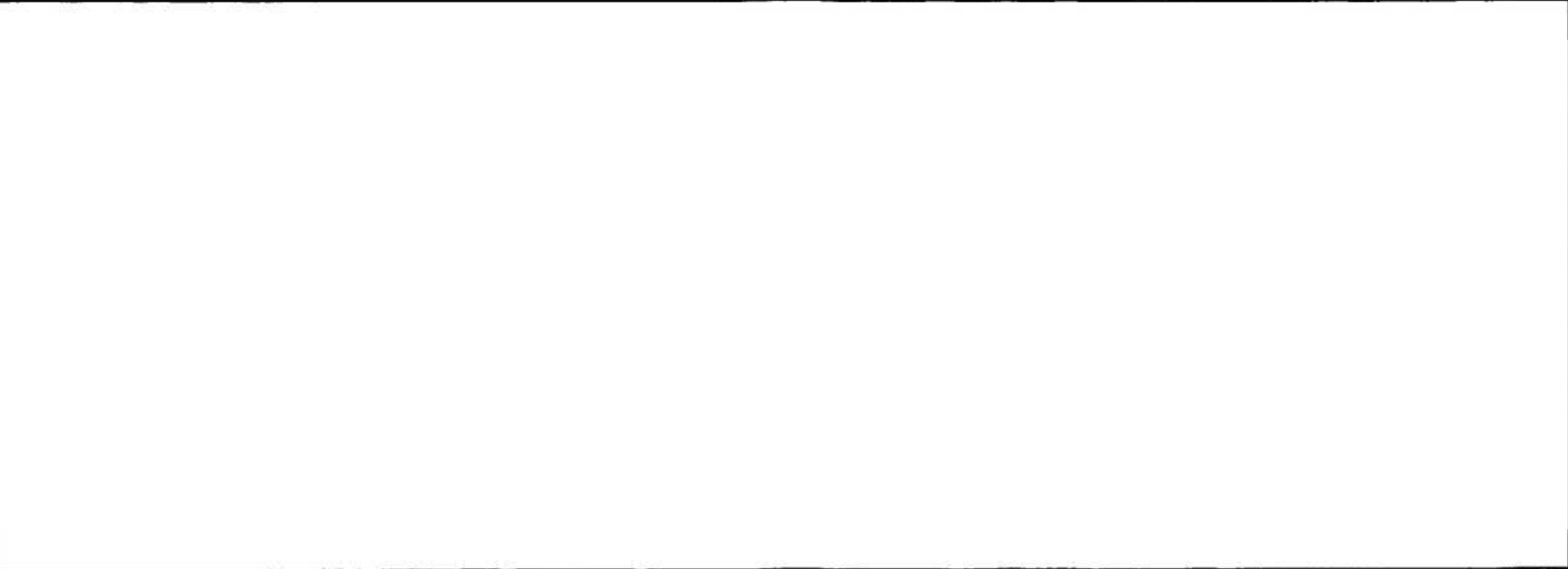
Scope of Application To construct a temporary special events tent with a permanent foundation. Permit valid till September 4, 2018. "Fort Edmonton Park"

Building Permit Details: Any subcontractor work paid for and included in this Building Permit requires separate permits, however payment for these permits is covered under this Building Permit Application.	
AEDARSA Approval Required: Gas: NOT - Included Plumbing: NOT - Included Temporary Gas Heat: NOT - Included Unmetered Constr Water: NOT - Included	Electrical: NOT - Included HVAC: NOT - Included Sewer: NOT - Included Units/Dwellings Created or Demolished: 0

I/We certify that the above noted details are correct.
Applicant signature: _____

Building Permit Decision No decision has yet been made.

Fees Permit fees are based on the cost of construction declared to be \$260,865.00.				
	Fee Amount	Amount Paid	Receipt #	Date Paid
Building Permit Fee	\$2,713.00	\$2,713.00	05275013	Aug 21, 2018
Safety Codes Fee	\$108.52	\$108.52	05275013	Aug 21, 2018
Total GST Amount:	\$0.00			
Totals for Permit:	\$2,821.52	\$2,821.52		



THIS IS NOT A PERMIT

HVAC Permit Report

267911107-030

Job Edit with Issue Date

Type:	HVAC Permit
Description:	Commercial: Combo HVAC Installation, Exhibits Building "H" at Fort Edmonton Park to construct interior alterations.
Job Number:	267911107-030
External File Number:	
Status:	Issued
Created By:	BERNIER-VACHON, ISABELLE
Date Created:	Aug 20, 2018
Date Issued:	Sep 11, 2018
Date Completed:	
Specific Location:	

Details

Applicant Customer ID:	223505
Applicant Name and Address:	CLARK BUILDERS (SD-Permits) 4703-52 AVENUE NW
Contact Person for this Application:	Justin Willis
Contact Email for this Application:	justin.willis@clarkbuilders.com
Contact Phone Number For This Application:	7808637946
BuildingContractorInternalId:	
Building Contractor Name & Address:	
Heating and Vent Contractor Internal Id:	
Heating and Vent Contractor Name & Address:	
Send Inspection Results to Contact E-mail::	Y

Customers

Applicant:	CLARK BUILDERS 4703 - 52 AVENUE NW (SD-Permits)
Other Contact	
Type	HVAC Permit Customer Applicant
View Name	r_HVACPERMIT_C_APP

267911107-030

Property

Building:	7000 - 143 STREET NW
Type	Type: Standard Building (Addressed) Year Built: 1987
View Name	HVAC Permit Buildings
Entryway:	r_HVACPERMIT_B_BUI
Type	7000 - 143 STREET NW
View Name	Belongs to: 7000 - 143 STREET NW
Entryway:	HVAC Permit Entryways
Type	r_HVACPERMIT_E_ENT
View Name	7000 - 143 STREET NW
Entryway:	Plan 8521469 Blk A (Title(s): 852149449)
Type	HVAC Permit Titled lot
View Name	r_HVACPERMIT_T_TIT

Warnings

HVAC Permit Report

235204089-006

Job Edit with Issue Date

Type: HVAC Permit

Description: Commercial: Combo HVAC Installation, To construct an addition to an existing Public Libraries and Cultural Exhibits building (FREIGHT SHED EXPANSION).

Job Number: 235204089-006

External File Number:

Status: Issued

Created By: KALLES, NATHAN

Date Created: Mar 09, 2018

Date Issued: Aug 07, 2018

Date Completed:

Specific Location: Fort Edmonton Park
AN (River Valley Activity Node Zone); Floodplain Protection Overlay; North Saskatchewan River Valley and Ravine System Protection Overlay

Details

Applicant Customer ID: 155383

Applicant Name and Address: RESCOM INC (WEB) (SD-Permits)
12704-110 AVENUE NW

Contact Person for this Application: Larry Marushy

Contact Email for this Application: larry.marushy@rescominc.com

Contact Phone Number For This Application: 7808864115

BuildingContractorInternalId:

Building Contractor Name & Address: 122835

Heating and Vent Contractor Internal Id: LEHMANN PLUMBING LTD, (PLUMBING & GAS) (WEB) (SD-Permits)
3645-73 AVENUE NW

Heating and Vent Contractor Name & Address:

Send Inspection Results to Contact E-mail:: Y

235204089-006

Customers

Applicant:	RESCOM INC Bus # 780-454-6500 12704 - 110 AVENUE NW (WEB) (SD-Permits)
Other Contact	
Type	HVAC Permit Customer Applicant
View Name	r_HVACPERMIT_C_APP
Heating and Vent Contractor:	LEHMANN PLUMBING LTD, (PLUMBING & GAS) Bus # 780-465-4434 3645 - 73 AVENUE NW (WEB) (SD-Permits)
Other Contact	
Type	HVAC Permit Customer Heating and Vent Contractor
View Name	r_HVACPERMIT_C_HVC
FromId	
Told	

Property

Building:	7000 - 143 STREET NW Type: Standard Building (Addressed) Year Built: 1987
Type	HVAC Permit Buildings
View Name	r_HVACPERMIT_B_BUI
Entryway:	7000 - 143 STREET NW Belongs to: 7000 - 143 STREET NW
Type	HVAC Permit Entryways
View Name	r_HVACPERMIT_E_ENT
 Titled Lot:	7000 - 143 STREET NW Plan 8521469 Blk A (Title(s): 852149449)
Type	HVAC Permit Titled lot
View Name	r_HVACPERMIT_T_TIT

Warnings

HVAC Permit Report

070234047-006

Job Edit with Issue Date

Type:

HVAC Permit

Description:

Commercial: Combo HVAC Installation

Job Number:

070234047-006

External File Number:

Status:

New

Created By:

KRYWKO, LOUIS

Date Created:

Jan 12, 2011

Date Issued:

Date Completed:

Specific Location:

Details

Applicant Customer ID:

216178

Applicant Name and Address:

BARR RYDER ARCHITECTS & INTERIOR DESIGNERS (SD-Permits)
10190-104 STREET NW

Contact Person for this Application:

Contact Email for this Application:

Contact Phone Number For This Application:

BuildingContractorInternalId:

Building Contractor Name & Address:

Heating and Vent Contractor Internal Id:

Heating and Vent Contractor Name & Address:

Send Inspection Results to Contact E-mail::

N

Customers

Applicant:

BARR RYDER ARCHITECTS & INTERIOR DESIGNERS Bus # 780-423-6606
210, 10190 - 104 STREET NW (SD-Permits)

Other Contact

Type

HVAC Permit Customer Applicant

View Name

r_HVACPERMIT_C_APP

070234047-006

Property

 Titled Lot:	7000 - 143 STREET NW Plan 8521469 Blk A (Title(s): 852149449)
Type	HVAC Permit Titled lot
View Name	r_HVACPERMIT_T_TIT

Warnings

Details

Received Date:	
Permit Type:	Commercial
TypeofWork:	Addition
Permit For:	Combo HVAC Installation
Job Description	
Comments:	
My Project Ref:	
Project Name:	
Job Site Contact:	
Job Site Phone Number:	
Number of Appliances:	
AFE:	N
ForcedAir:	N
Hydronic:	N
Refrigeration:	N
SheetMetal:	N
Construction Value:	
Commercial Combo Permit No.:	002
Owner/Occupant:	
OwnerPhoneNumber:	
Solar Thermal::	N
Number of Solar Thermal Systems::	
Installation Comments:	
Audit Flag:	N
Charge fee for Plans re-examination:	N
Blower Door Test Required ? :	N

HVAC Permit Report

267911107-025

Job Edit with Issue Date

Type:	HVAC Permit
Description:	Commercial: Combo HVAC Installation, To construct Cabinet of Curios building for Fort Edmonton Park
Job Number:	267911107-025
External File Number:	
Status:	More Information Required/Requested
Created By:	YAN, CINDY
Date Created:	Aug 08, 2018
Date Issued:	
Date Completed:	
Specific Location:	

Details

Applicant Customer ID:	223505
Applicant Name and Address:	CLARK BUILDERS (SD-Permits) 4703-52 AVENUE NW
Contact Person for this Application:	Justin Willis
Contact Email for this Application:	justin.willis@clarkbuilders.com
Contact Phone Number For This Application:	7808637946
BuildingContractorInternalId:	
Building Contractor Name & Address:	
Heating and Vent Contractor Internal Id:	
Heating and Vent Contractor Name & Address:	
Send Inspection Results to Contact E-mail::	Y

Customers

Applicant:	CLARK BUILDERS 4703 - 52 AVENUE NW (SD-Permits)
Other Contact	
Type	HVAC Permit Customer Applicant
View Name	r_HVACPERMIT_C_APP

267911107-025

Property

Building:	7000 - 143 STREET NW
Type	Type: Standard Building (Addressed) Year Built: 1987 HVAC Permit Buildings
View Name	r_HVACPERMIT_B_BUI
Entryway:	7000 - 143 STREET NW
Type	Belongs to: 7000 - 143 STREET NW HVAC Permit Entryways
View Name	r_HVACPERMIT_E_ENT
Titled Lot:	7000 - 143 STREET NW
Type	Plan 8521469 Blk A (Title(s): 852149449) HVAC Permit Titled lot
View Name	r_HVACPERMIT_T_TIT

Warnings



DEVELOPMENT SERVICES BRANCH
2nd Floor, 10111 104 Avenue NW
Edmonton, Alberta
T5J 0J4
PHONE: 311 or if outside of Edmonton 780-442-5311
Email: developmentsservices@edmonton.ca

Electrical Permit No.
EDM2018-023573
Job No. 294411908-001

ELECTRICAL PERMIT Created Date: (Y/M/D) 18/10/04 Date of Application: (Y/M/D) 18/10/04

Applicant: MCL POWER INC.
Address: 7000 - 143 STREET NW
Legal Description: Plan 8521469 Blk A

Service Connection Required: ☐

Cost of Installation: \$1,500.00

Home Owner: ☐

Certified Contractor: ☒

Owner's signature/declaration (homeowner permits only)

I hereby declare I am the owner of the premises in which the work will be conducted, and reside on the property. I am doing the work myself, and assume responsibility for compliance with the applicable Act and Regulations.

TYPE OF OCCUPANCY
(indicate major occupancy)

- ☐ Residential
☒ Commercial
☐ Industrial
☐ Institutional

TYPE OF WORK

- ☐ Annual
☒ New
☐ Rewire/Renovating
☐ Service Change
☐ Electrical Utility
☐ Communication
☐ Sign/Outline Lighting
☐ Other _____

**TYPE OF BUILDING
INSTALLATION**

- ☐ Single Family
☐ Multiple Family
☒ Temporary Service
☐ Relocatable Unit
☐ Other _____

Wire Type: _____ Wire Size: _____ Voltage: 120 / 208 Amperes: 200 Phase: 3 Phase 4 wire

Brief Description of Installation: Wiring, Other: Job# 18167 Fort Edmonton- Temporary Service at Trailer Compound fed from Existing Transformer.

The permit Holder hereby certifies that this installation will be completed in accordance with the Alberta Safety Codes Act and Regulations, and shall commence within 90 days. The permit expires after one year without an extension request.

Master Electrician: Les Rattai Master #: 1943 Expires: Jun 09, 2019

Contractor Name: MCL POWER INC.

Address: 100, 16821 - 107 AVENUE City: EDMONTON Postal Code: T5P 0Y8

Phone No: _____ Fax No: 780-462-4454 Signature: _____

FEE DETAILS

Electrical Permit Fee (\$144.00)
Electrical Safety Codes Fee (\$5.76)
Annual Electrical Permit Fee
Total: (\$149.76)

AUTHORIZATION

Issuing Officer: ELDON, FRANK
Designation #: D00009136
Date Issue: 10/05/2018 08:44:10
Signature: _____

The personal information on this form is collected under the authority of Section 33(c) of the Alberta Freedom of Information and Protection of Privacy Act, Section 642 of the Municipal Government Act and/or Section 63 of the Safety Codes Act. The information will be used to process your application(s) and your name and address of where the development/use is being proposed may be included on reports that are available to the public. If you have any questions on the collection and use of this information, please contact the City of Edmonton Call Centre at 311.

This permit is G.S.T. Exempt. *Plans may be required on any installation.



DEVELOPMENT SERVICES BRANCH
2nd Floor, 10111 104 Avenue NW
Edmonton, Alberta
T5J 0J4
PHONE: 311 or If outside of Edmonton 780-442-5311
Email: developmentservices@edmonton.ca

Electrical Permit No.
EDM2018-004045
Job No. 275970133-001

ELECTRICAL PERMIT Created Date: (Y/M/D) 18/03/01 Date of Application: (Y/M/D) 18/03/01

Applicant: CITY OF EDMONTON (WILL MOELLERING) ELECTRICAL		
Address: 7000 - 143 STREET NW		
Legal Description: Plan 8521469 Blk A		
Service Connection Required: <input checked="" type="checkbox"/>		
Cost of Installation: \$3,000.00	Home Owner: <input type="checkbox"/>	Certified Contractor: <input checked="" type="checkbox"/>
Owner's signature/declaration (homeowner permits only) I hereby declare I am the owner of the premises in which the work will be conducted, and reside on the property. I am doing the work myself, and assume responsibility for compliance with the applicable Act and Regulations.		
TYPE OF OCCUPANCY (indicate major occupancy) <input type="checkbox"/> Residential <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Institutional	TYPE OF WORK <input type="checkbox"/> Annual <input type="checkbox"/> New <input type="checkbox"/> Rewire/Renovating <input type="checkbox"/> Service Change <input type="checkbox"/> Electrical Utility <input type="checkbox"/> Communication <input type="checkbox"/> Sign/Outline Lighting <input checked="" type="checkbox"/> Other	TYPE OF BUILDING INSTALLATION <input type="checkbox"/> Single Family <input type="checkbox"/> Multiple Family <input type="checkbox"/> Temporary Service <input type="checkbox"/> Relocatable Unit <input checked="" type="checkbox"/> Other
Wire Type: Wire Size: Voltage: 120 / 208 Amperes: 600 Phase: 3 Phase 4 wire		
Brief Description of Installation: Wiring, Other: Inspection required for Epcor to re-energize after electrical maintenance at Fort Edmonton Park Blatchford Hanger on March 26 at 2pm. Contact Joe Parrotta 780-722-3637 cost center #750523		
The permit Holder hereby certifies that this installation will be completed in accordance with the Alberta Safety Codes Act and Regulations, and shall commence within 90 days. The permit expires after one year without an extension request.		
Master Electrician: WILL MOELLERING Master #: 7141 Expires: Jul 02, 2018		
Contractor Name: CITY OF EDMONTON (WILL MOELLERING) ELECTRICAL		
Address: 9744 - 45 AVE City: EDMONTON Postal Code: T6E 5C5		
Phone No: Fax No: Signature:		
FEE DETAILS Electrical Permit Fee (\$144.00) Electrical Safety Codes Fee (\$5.76) Annual Electrical Permit Fee Total: (\$149.76)	AUTHORIZATION Issuing Officer: FRATAR, DENNIS Designation #: D00007939 Date Issue: 03/02/2018 08:13:18 Signature:	

The personal information on this form is collected under the authority of Section 33(c) of the Alberta Freedom of Information and Protection of Privacy Act, Section 642 of the Municipal Government Act and/or Section 63 of the Safety Codes Act. The information will be used to process your application(s) and your name and address of where the development/use is being proposed may be included on reports that are available to the public. If you have any questions on the collection and use of this information, please contact the City of Edmonton Call Centre at 311.

This permit is G.S.T. Exempt. *Plans may be required on any installation.



DEVELOPMENT SERVICES BRANCH
2nd Floor, 10111 104 Avenue NW
Edmonton, Alberta
T5J 0J4
PHONE: 311 or If outside of Edmonton 780-442-5311
Email: developmentservices@edmonton.ca

Electrical Permit No.
EDM2018-004044
Job No. 275969449-001

ELECTRICAL PERMIT Created Date: (Y/M/D) 18/03/01 Date of Application: (Y/M/D) 18/03/01

Applicant: CITY OF EDMONTON (WILL MOELLERING) ELECTRICAL

Address: 7000 - 143 STREET NW

Legal Description: Plan 8521469 Blk A

Service Connection Required: ☒

Cost of Installation: \$3,000.00

Home Owner: ☐

Certified Contractor: ☒

Owner's signature/declaration (homeowner permits only)

I hereby declare I am the owner of the premises in which the work will be conducted, and reside on the property. I am doing the work myself, and assume responsibility for compliance with the applicable Act and Regulations.

TYPE OF OCCUPANCY
(indicate major occupancy)

- ☐ Residential
☒ Commercial
☐ Industrial
☐ Institutional

TYPE OF WORK

- ☐ Annual
☐ New
☐ Rewire/Renovating
☐ Service Change
☐ Electrical Utility
☐ Communication
☐ Sign/Outline Lighting
☒ Other

**TYPE OF BUILDING
INSTALLATION**

- ☐ Single Family
☐ Multiple Family
☐ Temporary Service
☐ Relocatable Unit
☒ Other

Wire Type: Wire Size: Voltage: 120 / 208 Amperes: 1600 Phase: 3 Phase 4 wire

Brief Description of Installation: Wiring, Other: inspection required for Epcor to re-energize after electrical maintenance shutdown on March 26 at 2pm at Fort Edmonton Park Capitol Theater. Site contact Joe Parrotta 722-3637 cost center 750523

The permit Holder hereby certifies that this installation will be completed in accordance with the Alberta Safety Codes Act and Regulations, and shall commence within 90 days. The permit expires after one year without an extension request.

Master Electrician: WILL MOELLERING Master #: 7141 Expires: Jul 02, 2018

Contractor Name: CITY OF EDMONTON (WILL MOELLERING) ELECTRICAL

Address: 9744 - 45 AVE City: EDMONTON Postal Code: T6E 5C5

Phone No: Fax No: Signature:

FEE DETAILS

Electrical Permit Fee (\$144.00)
Electrical Safety Codes Fee (\$5.76)
Annual Electrical Permit Fee
Total: (\$149.76)

AUTHORIZATION

Issuing Officer: FRATAR, DENNIS

Designation #: D00007939

Date Issue: 03/02/2018 08:14:07

Signature:

The personal information on this form is collected under the authority of Section 33(c) of the Alberta Freedom of Information and Protection of Privacy Act, Section 642 of the Municipal Government Act and/or Section 63 of the Safety Codes Act. The information will be used to process your application(s) and your name and address of where the development/use is being proposed may be included on reports that are available to the public. If you have any questions on the collection and use of this information, please contact the City of Edmonton Call Centre at 311.

This permit is G.S.T. Exempt. *Plans may be required on any installation.



DEVELOPMENT SERVICES BRANCH
2nd Floor, 10111 104 Avenue NW
Edmonton, Alberta
T5J 0J4
PHONE: 311 or if outside of Edmonton 780-442-5311
Email: developmentsservices@edmonton.ca

Electrical Permit No.
EDM2016-002715
Job No. 187155961-001

ELECTRICAL PERMIT Created Date: (Y/M/D) 16/02/11 Date of Application: (Y/M/D) 16/02/11

Applicant: <u>GABRIEL INDUSTRIES INC.</u>		
Address: <u>7000 - 143 STREET NW</u>		
Legal Description: <u>Plan 8521469 Blk A</u>		
Service Connection Required: <input type="checkbox"/>		
Cost of Installation: <u>\$5,000.00</u> Home Owner: <input type="checkbox"/> Certified Contractor: <input checked="" type="checkbox"/>		
Owner's signature/declaration (homeowner permits only) I hereby declare I am the owner of the premises in which the work will be conducted, and reside on the property. I am doing the work myself, and assume responsibility for compliance with the applicable Act and Regulations.		
TYPE OF OCCUPANCY (indicate major occupancy) <input type="checkbox"/> Residential <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Institutional	TYPE OF WORK <input type="checkbox"/> Annual <input type="checkbox"/> New <input type="checkbox"/> Rewire/Renovating <input type="checkbox"/> Service Change <input type="checkbox"/> Electrical Utility <input type="checkbox"/> Communication <input type="checkbox"/> Sign/Outline Lighting <input checked="" type="checkbox"/> Other _____	TYPE OF BUILDING INSTALLATION <input type="checkbox"/> Single Family <input type="checkbox"/> Multiple Family <input type="checkbox"/> Temporary Service <input type="checkbox"/> Relocatable Unit <input checked="" type="checkbox"/> Other _____
Wire Type: _____ Wire Size: _____ Voltage: <u>Other</u> Amperes: <u>Other</u> Phase: <u>1 Phase 2 wire</u>		
Brief Description of Installation: <u>Wiring, Commercial: Fire Alarm panel and device change out for fort Edmonton park midway</u>		
The permit Holder hereby certifies that this installation will be completed in accordance with the Alberta Safety Codes Act and Regulations, and shall commence within 90 days. The permit expires after one year without an extension request.		
Master Electrician: <u>Robert McKercher</u> Master #: <u>4422</u> Expires: <u>Jun 22, 2019</u>		
Contractor Name: <u>GABRIEL INDUSTRIES INC.</u>		
Address: <u>10741 - 181 STREET NW</u> City: <u>EDMONTON</u> Postal Code: <u>T5S 1N3</u>		
Phone No: _____ Fax No: _____ Signature: _____		
FEE DETAILS Electrical Permit Fee (\$189.00) Electrical Safety Codes Fee (\$7.56) Annual Electrical Permit Fee Total: (\$196.56)	AUTHORIZATION Issuing Officer: <u>GRAHAM, GARTH</u> Designation #: <u>D00007061</u> Date Issue: <u>02/11/2016 15:15:16</u> Signature: _____	
<small>The personal information on this form is collected under the authority of Section 33(c) of the Alberta Freedom of Information and Protection of Privacy Act, Section 642 of the Municipal Government Act and/or Section 63 of the Safety Codes Act. The information will be used to process your application(s) and your name and address of where the development/use is being proposed may be included on reports that are available to the public. If you have any questions on the collection and use of this information, please contact the City of Edmonton Call Centre at 311.</small>		

This permit is G.S.T. Exempt. *Plans may be required on any installation.



DEVELOPMENT SERVICES BRANCH
2nd Floor, 10111 104 Avenue NW
Edmonton, Alberta
T5J 0J4
PHONE: 311 or if outside of Edmonton 780-442-5311
Email: developmentservices@edmonton.ca

Electrical Permit No.
EDM2018-003721
Job No. 267911107-005

ELECTRICAL PERMIT Created Date: (Y/M/D) 18/02/26 Date of Application: (Y/M/D) 18/04/16

Applicant: STANTEC		
Address: 7000 - 143 STREET NW		
Legal Description: Plan 8521469 Blk A		
Service Connection Required: <input type="checkbox"/>		
Cost of Installation: \$3,000.00		
Home Owner: <input type="checkbox"/>		
Certified Contractor: <input checked="" type="checkbox"/>		
Owner's signature/declaration (homeowner permits only) I hereby declare I am the owner of the premises in which the work will be conducted, and reside on the property. I am doing the work myself, and assume responsibility for compliance with the applicable Act and Regulations.		
TYPE OF OCCUPANCY (indicate major occupancy) <input type="checkbox"/> Residential <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Institutional	TYPE OF WORK <input type="checkbox"/> Annual <input checked="" type="checkbox"/> New <input type="checkbox"/> Rewire/Renovating <input type="checkbox"/> Service Change <input type="checkbox"/> Electrical Utility <input type="checkbox"/> Communication <input type="checkbox"/> Sign/Outline Lighting <input type="checkbox"/> Other _____	TYPE OF BUILDING INSTALLATION <input type="checkbox"/> Single Family <input type="checkbox"/> Multiple Family <input type="checkbox"/> Temporary Service <input type="checkbox"/> Relocatable Unit <input checked="" type="checkbox"/> Other _____
Wire Type: _____ Wire Size: _____ Voltage: 120 / 208 Amperes: 100 Phase: 3 Phase 4 wire		
Brief Description of Installation: Wiring, Commercial: Fort Edmonton Park Signage		
The permit Holder hereby certifies that this installation will be completed in accordance with the Alberta Safety Codes Act and Regulations, and shall commence within 90 days. The permit expires after one year without an extension request.		
Master Electrician: Les Rattai Master #: 1943 Expires: Jun 09, 2019		
Contractor Name: MCL POWER INC.		
Address: 100, 16821 - 107 AVENUE City: EDMONTON Postal Code: T5P 0Y8		
Phone No: _____ Fax No: 780-462-4454 Signature: _____		
AUTHORIZATION		
Issuing Officer: HIDALGO, LYRIS		
Designation #: 121972		
Date Issue: 04/16/2018 14:44:14		
Signature: _____		
<small>The personal information on this form is collected under the authority of Section 33(c) of the Alberta Freedom of Information and Protection of Privacy Act, Section 642 of the Municipal Government Act and/or Section 63 of the Safety Codes Act. The information will be used to process your application(s) and your name and address of where the development/use is being proposed may be included on reports that are available to the public. If you have any questions on the collection and use of this information, please contact the City of Edmonton Call Centre at 311.</small>		

This permit is G.S.T. Exempt. *Plans may be required on any installation.

Citizen Services | City of Edmonton
Fire Rescue Services
Fire Prevention

10425 – 106 Avenue NW
Edmonton, Alberta T5H 0P5

T: 780-496-3628
F: 780-442-7364
edmonton.ca



September 26, 2018

Our Reference No.: 124441139-022

Nichols Environmental (Canada) Ltd.
17331 – 107 Avenue, NW
Edmonton, Alberta T5S 1E5

Attention: Rena Hiebert

RE: **Your File No.:** 18-499-CFE
Legal: Plan 8521469, Block A
Municipal: 7000 – 143 Street NW, Edmonton, Alberta

A Fire Rescue Services record file search was conducted on September 26, 2018. Your payment has been received.

The following information has been reported to Fire Prevention:

- One (1) x 25,469 liter aboveground steel fuel oil tank located at train garage
- One (1) x 200 liter aboveground steel gasoline tank located in maintenance yard
- One (1) x 455 liter aboveground steel gasoline tank located at Maintenance Admin building
- One (1) x 455 liter aboveground steel diesel tank located at Maintenance Admin building
- Records also show that there was a 45 gallon used oil tank at the motordrome

You may wish to contact the Petroleum Tank Management Association of Alberta at (780) 425-8265 for more detailed information.

We make no representations or warranties whatsoever as to the present condition of the property or whether the property complies with the Safety Codes Act. We recommend that you take steps to satisfy yourself as to the condition of the property and the property's compliance with the Safety Codes Act.

Future requests for information should be accompanied by a prepayment of the charge and forwarded to Fire Prevention, 10425 – 106 Avenue, Edmonton, Alberta T5H 0P5. Please note, effective February 13, 2018, the File Search fees per address are \$134.00 + \$6.70 (G.S.T.) = \$140.70.

.../2

E-MAILED
Sept 26, 18



Should you have any questions, please contact Fire Prevention at (780) 496-3628.

Yours truly,

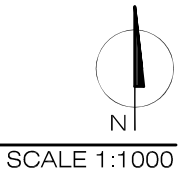
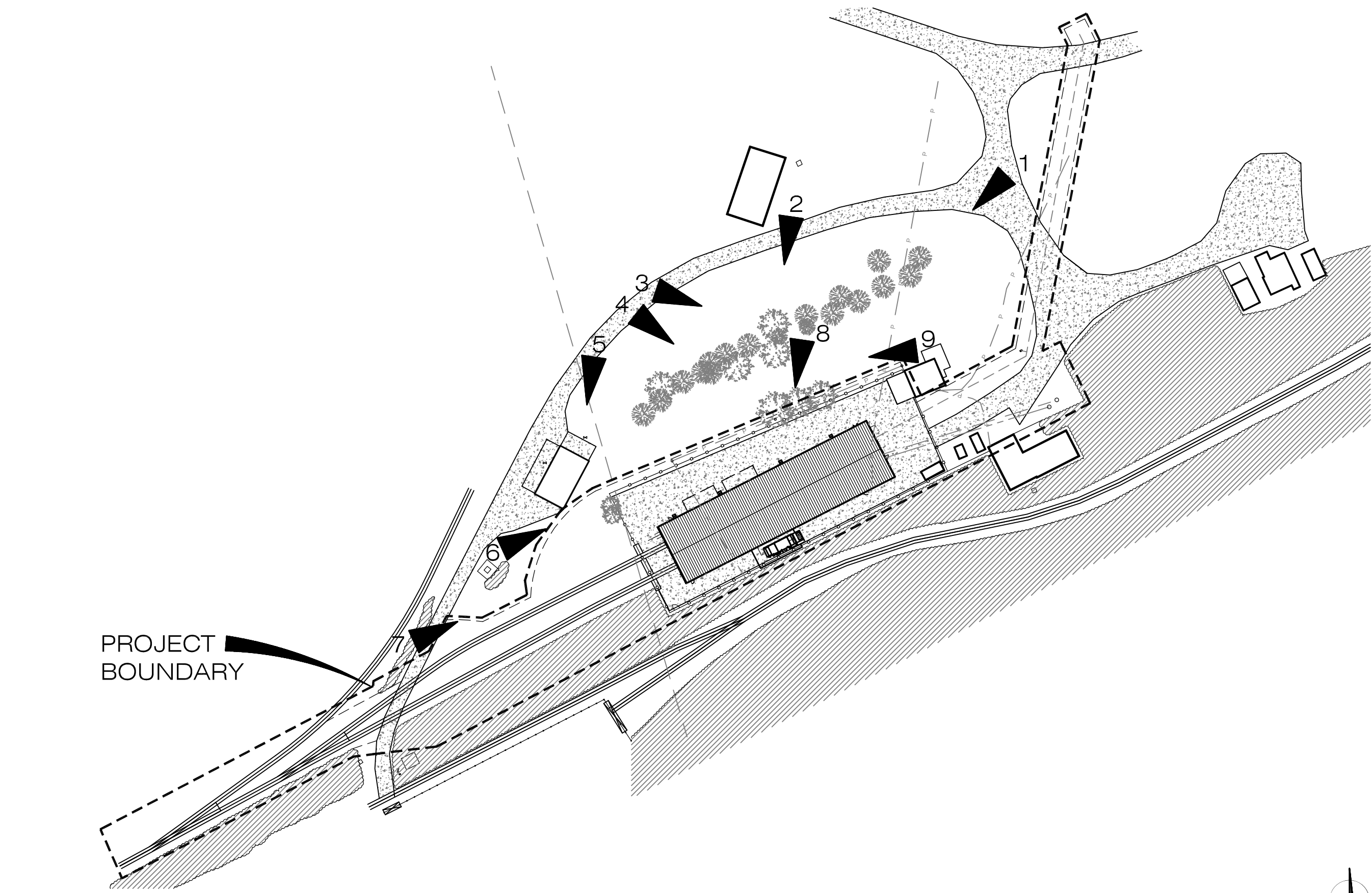
A handwritten signature in black ink, appearing to be 'G. Mayorchak', written in a cursive style.

G. Mayorchak
Fire Marshal

GGM/df/ms

Appendix D - Landscape Plan

1
L-01 | KEY PLAN



#1



#2



#3



#4



#5



#6



#7



#8



#9

2
L-01 | SITE PICTURES

LEGAL DESCRIPTION

BLOCK A
PLAN 852 1469
CITY OF EDMONTON, ALBERTA

ZONING

AN – RIVER VALLEY ACTIVITY NODE ZONE

THERE ARE NO ACTUAL LANDSCAPE REQUIREMENTS FOR THIS ZONE. HOWEVER, 10 CONIFEROUS TREES ARE PROPOSED OUTSIDE THE PROJECT BOUNDARY TO PROVIDE SOME SCREENING BETWEEN THE RAILWAY TRACKS AND THE PROPOSED BUILDING.

GENERAL NOTES

FOR SITE GRADING REFER TO ENGINEERS DRAWINGS.

FOR EXACT LOCATION OF ALL UNDERGROUND SHALLOW AND DEEP UTILITIES REFER TO ENGINEERS DRAWINGS.

ALL LANDSCAPE CONSTRUCTION AND MAINTENANCE TO BE COMPLETED BUT NOT LIMITED TO MINIMUM STANDARDS OF MOST RECENT EDITION OF CITY OF EDMONTON DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS, VOLUME 5 – LANDSCAPING.

LANDSCAPE MAINTENANCE AND WARRANTY PERIOD FOR ALL LANDSCAPED AREAS TO BE 2 YEARS AFTER ISSUANCE OF A CONSTRUCTION COMPLETION CERTIFICATE AND UNTIL ISSUANCE OF A FINAL ACCEPTANCE CERTIFICATE.

PLANTING SCHEDULE

TOTAL	BOTANICAL NAME	COMMON NAME	COMMENTS
CONIFEROUS TREES			
7	Larix sibirica	Siberian Larch	3.0 m ht. min., b. & b.
3	Picea glauca	White Spruce	3.0 m ht. min., b. & b.

PLANTING NOTES

ONLY NURSERY GROWN PLANT MATERIAL WILL BE ACCEPTED. ALL PLANTS SHALL BE NO.1 GRADE NURSERY STOCK AND CONFORM TO STANDARDS OF THE CANADIAN NURSERY TRADES ASSOCIATION AND THE LANDSCAPE ALBERTA NURSERY TRADES ASSOCIATION.

PRIOR TO INSTALLATION OF TREES AND SHRUBS, THE CONTRACTOR SHALL ENSURE COORDINATION WITH ALBERTA FIRST CALL TO STAKE ALL UTILITIES. ALL PLANT MATERIAL TO HAVE REQUIRED SETBACK FROM UTILITIES. NO TREE STAKES WITHIN 1.0m OF POWER LINE.

PRIOR TO INSTALLATION OF TREES AND SHRUBS THE CONSULTANT WILL APPROVE STAKING OF ALL TREES AND SHRUB BEDS. CONTRACTOR TO NOTIFY CONSULTANT 48h PRIOR TO INSPECTION.

IF EXCAVATIONS ARE REQUIRED CLOSER THAN 1.0m TO UNDERGROUND POWER, PHONE, CABLE AND GAS ALIGNMENTS, HAND DIGGING UNDER THE SUPERVISION OF THE AFFECTED UTILITY IS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE CONSULTANT AND THE APPROPRIATE UTILITY TO APPROVE, REVIEW AND DEFINE SAFE PROCEDURES FOR THESE EXCAVATIONS.

SUBSTITUTION OF PLANT MATERIAL TO APPROVAL OF CONSULTANT.

MUNICIPAL ADDRESS

700 – 143 STREET NW
EDMONTON, ALBERTA

EDGING: NO EDGING IS REQUIRED FOR THIS PROJECT.

MULCH: USE 100mm DEPTH MIN. SHREDDED CONIFEROUS WOOD MULCH FOR ALL TREE PLANTING. NO LANDSCAPE FABRIC REQUIRED FOR SHREDDED CONIFEROUS WOOD MULCH AREAS UNLESS NOTED OTHERWISE.

IRRIGATION: LANDSCAPED AREAS ARE NOT IRRIGATED.

ALL LANDSCAPE CONSTRUCTION AND MAINTENANCE TO BE COMPLETED BUT NOT LIMITED TO MINIMUM STANDARDS OF MOST RECENT EDITION OF CITY OF EDMONTON DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS, VOLUME 5 – LANDSCAPING.

LANDSCAPE MAINTENANCE AND WARRANTY PERIOD TO BE 2 YEARS.

TREE PLANTING SETBACKS

TREES SHALL BE SET BACK A MINIMUM DISTANCE, MEASURED FROM THE CENTRE OF THE TREE TRUNK, FROM ABOVE AND BELOW GRADE UTILITIES AND PROPERTY LINES AS FOLLOWS:

DISTANCE FROM LIGHT STANDARDS/POWER HARDWARE:	3.5m
DISTANCE FROM FIRE HYDRANTS:	3.5m
DISTANCE FROM STOP SIGNS:	3.5m
DISTANCE FROM YIELD SIGNS:	3.5m
DISTANCE FROM TRANSIT ZONES:	3.5m
DISTANCE FROM OTHER SIGNS:	2.0m
DISTANCE FROM PRIVATE PROPERTY ON WALKWAY ROW:	2.0m
DISTANCE FROM PRIVATE PROPERTY ON OPEN PARKLAND:	3.0m
DISTANCE FROM PRIVATE PROPERTY ON BOULEVARDS:	1.0m
DISTANCE FROM SHALLOW UNDERGROUND UTILITIES:	1.0m
DISTANCE FROM GAS AND OIL ROW:	CONTACT UTILITY
DISTANCE FROM DEEP UNDERGROUND UTILITIES:	1.5m
DISTANCE FROM SANITARY AND STORM SEWER SERVICES:	1.8m
DISTANCE TO SANITARY AND STORM SEWERS/MANHOLES:	2.0m
DISTANCE FROM WATER MAINS:	2.5m

DISTANCES FROM OVERHEAD POWER UTILITIES SHALL BE AS PER THE REQUIREMENTS ESTABLISHED BY THE UTILITY AUTHORITY.

WHERE POSSIBLE, LANDSCAPE IMPROVEMENTS AND PLANT MATERIALS ARE SUGGESTED TO HAVE INCREASED SETBACKS FROM UTILITIES.

IN THE EVENT A MINIMUM CLEARANCE OF 1.0m MAY NOT BE MAINTAINED FROM THE EDGE OF THE EXCAVATION BY THE TREE SHADE, THE INVOLVED UTILITY MUST BE CONTACTED FOR APPROVAL AND/OR SAFETY PROCEDURES, E.G. BY HAND DIGGING.

DISTANCE FROM LOW, INTERMEDIATE AND HIGH-PRESSURE PIPELINES AS TO BE OBSERVED AS DICTATED BY THE PIPELINE AUTHORITY.

SETBACK DISTANCES APPLY TO ALL TREE AND TREE FORM SHRUB SPECIES. SPECIES WITH SUCKERING ROOT SYSTEMS OR LARGE HANGING CANOPIES MAY REQUIRE INCREASED SETBACKS, E.G. POPLARS AND WILLOWS. REFER TO SECTION 7.4 OF THE CITY OF EDMONTON DESIGN AND CONSTRUCTION STANDARDS.

SEEDING NOTES

SEED MIX FOR NON MAINTAINED NATURALIZATION LANDSCAPING "DRY MEADOW SEED MIX":

20% JUNEGRASS	20% NAKISKA SHEEPS FESCUE
20% ROUGH FESCUE	10% GREEN NEEDLEGRASS
15% STREAMBANK WHEATGRASS	20% NORTHERN WHEATGRASS
10% SHEEPS FESCUE	5% ANNUAL RYEGRASS

SEED MIX FOR REHABILITATION OF EXISTING TURF AREA "PARKS MAINTENANCE #1 MIX":

30% TOUCHDOWN KENTUCKY BLUEGRASS
20% BANFF KENTUCKY BLUEGRASS
30% CREEPING RED FESCUE
20% FIESTA II PERENNIAL RYE GRASS

NOTE:

ALL SEEDING ON 150mm ROLLED AND COMPACTED CLASS 'B' TOPSOIL. ALL TOPSOIL INSTALLATION, FINE GRADING AND SEEDING AS PER CITY OF EDMONTON LANDSCAPE SPECIFICATIONS. ENSURE CONTROL OF NOXIOUS WEEDS FOR ALL SEEDED AREAS.

ADDITIONAL LANDSCAPE MAINTENANCE NOTES

ALL LANDSCAPE MAINTENANCE TO MEET OR EXCEED MINIMUM STANDARDS OF CITY OF EDMONTON DESIGN STANDARDS AND LANDSCAPE SPECIFICATIONS.

LANDSCAPE CONTRACTOR TO PROVIDE FULL MAINTENANCE FOR ALL LANDSCAPING FOR A MINIMUM OF 2 FULL YEARS AFTER COMPLETION OF LANDSCAPE CONSTRUCTION, OR UNTIL CITY OF EDMONTON HAS ISSUED A FINAL ACCEPTANCE CERTIFICATE (FINAL APPROVAL).

THE 2 YEAR MINIMUM MAINTENANCE PERIOD DOES ONLY START ONCE THE CITY OF EDMONTON HAS ISSUED A CONSTRUCTION COMPLETION CERTIFICATE.

THE 2 YEAR MINIMUM MAINTENANCE PERIOD IS ONLY COMPLETED ONCE THE CITY OF EDMONTON HAS ISSUED A FINAL ACCEPTANCE CERTIFICATE.

ALL LANDSCAPING HAS TO BE IN TOP SHAPE AND NEEDS TO BE WELL MAINTAINED UNTIL FINAL ACCEPTANCE BY THE CITY OF EDMONTON.

LANDSCAPE MAINTENANCE DOES INCLUDE, BUT IS NOT LIMITED TO: REGULAR MOWING, FERTILIZING, AERATING, WATERING, TOPDRESSING IF NECESSARY OF ALL GRASS AREAS.

LANDSCAPE MAINTENANCE DOES INCLUDE, BUT IS NOT LIMITED TO: WATERING, FERTILIZING, PRUNING, TOPPING UP OF MULCH, WEEDING, PEST AND DISEASE CONTROL, PLANT REPLACEMENT IF NECESSARY FOR ALL PLANT MATERIAL.

LANDSCAPE MAINTENANCE DOES INCLUDE FALL CLEAN UP AND SPRING CLEAN UP.

LANDSCAPE MAINTENANCE DOES INCLUDE REMOVAL OF GARBAGE IN LANDSCAPED AREAS.

LANDSCAPE CONTRACTOR TO ENSURE NO PARKED CARS GET DAMAGED.

LANDSCAPE MAINTENANCE TO BE PERFORMED BY QUALIFIED PERSONNEL.

LANDSCAPE CONTRACTOR TO PROVIDE A DETAILED MONTHLY MAINTENANCE LOG TO GENERAL CONTRACTOR AND LANDSCAPE ARCHITECT PRIOR TO RELEASE OF ANY PAYMENT FOR MAINTENANCE.

PRELIMINARY: NOT FOR CONSTRUCTION



REV #	DESCRIPTION	DATE	CHECKED
C	ISSUED FOR PRE-TENDER REVIEW	2018-10-31	SL
B	ISSUED FOR REVIEW	2018-10-02	SL
A	ISSUED FOR DESIGN DEVELOPMENT	2018-08-27	SL
REVISIONS			
ISSUE DATA			DATE
ISSUED FOR DESIGN DEVELOPMENT			2018-08-27
ISSUED FOR REVIEW			2018-10-02
ISSUED FOR PRE-TENDER REVIEW			2018-10-31

SEAL:

SEAL:

PERMIT:

CONSULTANT:

gec architecture

CONSULTANT PROJECT NO. 5662

Edmonton INTEGRATED INFRASTRUCTURE SERVICES

PROJECT:

FORT EDMONTON TRAIN BARN

BUILDING CODE:

LOCATION: 7000 143 ST NW, EDMONTON, AB

DRAWING TITLE:

LANDSCAPE KEY PLAN & NOTES

SCALE: AS SHOWN ALL DIMENSION ARE IN MILLIMETRES

DRAWN BY: IP
DATE: 2018-10-31

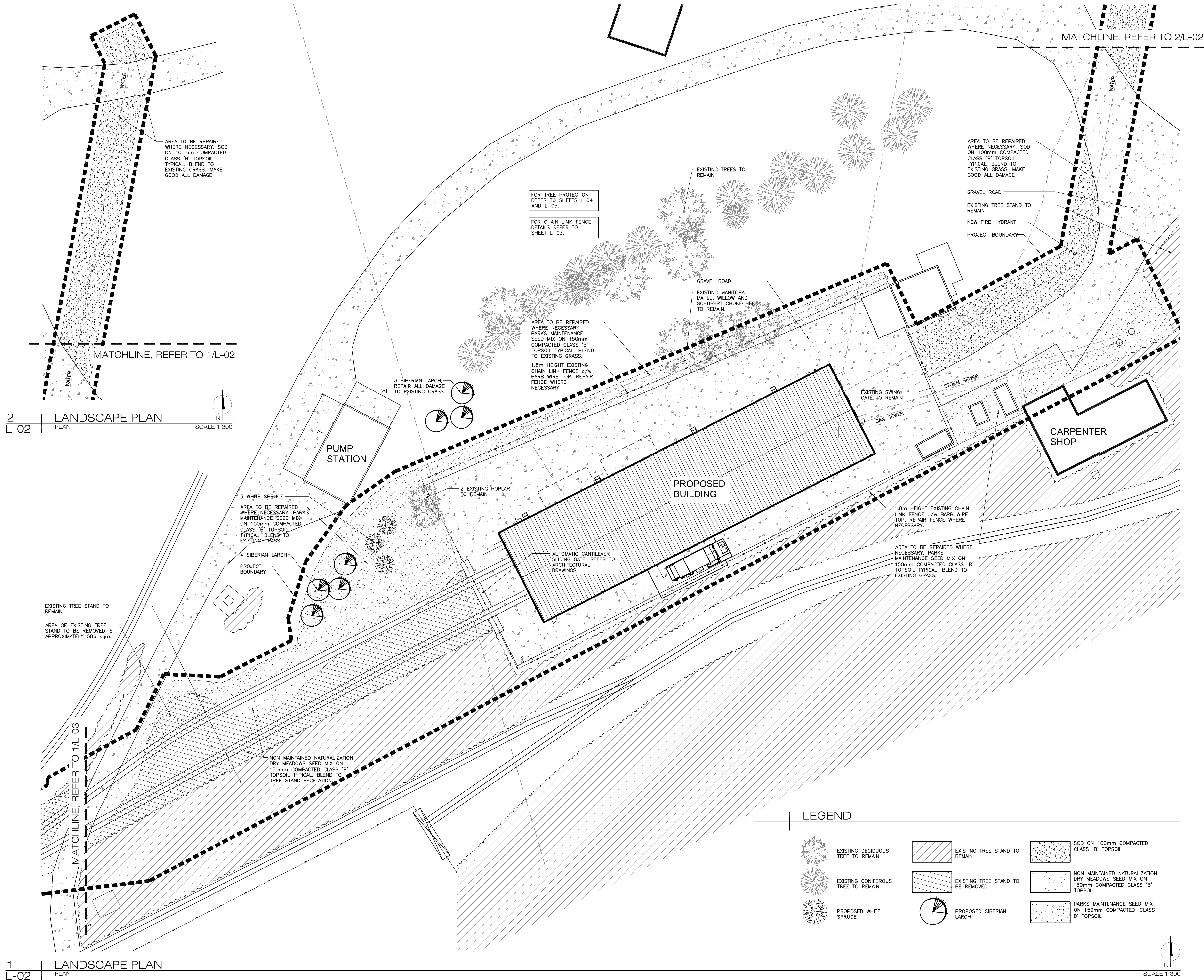
CHECKED BY: SL
DATE: 2018-10-31

REVIEWED BY: SL
DATE: 2018-10-31

PROJECT NO: CP-8012

DRAWING NO: L-01

FILE NAME:



PRELIMINARY: NOT FOR CONSTRUCTION

DESIGNNORTH
LANDSCAPE ARCHITECTURE INC.
282 - 150 CHIPPEWA ROAD
SHERWOOD PARK, ALBERTA
T8A 6A2
ph 780 417 9596 e-mail si@dnia.ca

REV #	DESCRIPTION	DATE	CHECKED
C	ISSUED FOR PRE-TENDER REVIEW	2018-10-31	SL
B	ISSUED FOR REVIEW	2018-10-02	SL
A	ISSUED FOR DESIGN DEVELOPMENT	2018-08-27	SL

ISSUE DATA		DATE
ISSUED FOR DESIGN DEVELOPMENT		2018-08-27
ISSUED FOR REVIEW		2018-10-02
ISSUED FOR PRE-TENDER REVIEW		2018-10-31

SEAL:

PERMIT:

CONSULTANT:

CONSULTANT PROJECT NO. 5662

PROJECT:

FORT EDMONTON
TRAIN BARN

BUILDING CODE:

LOCATION: 7000 143 ST NW, EDMONTON, AB

DRAWING TITLE:

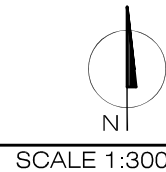
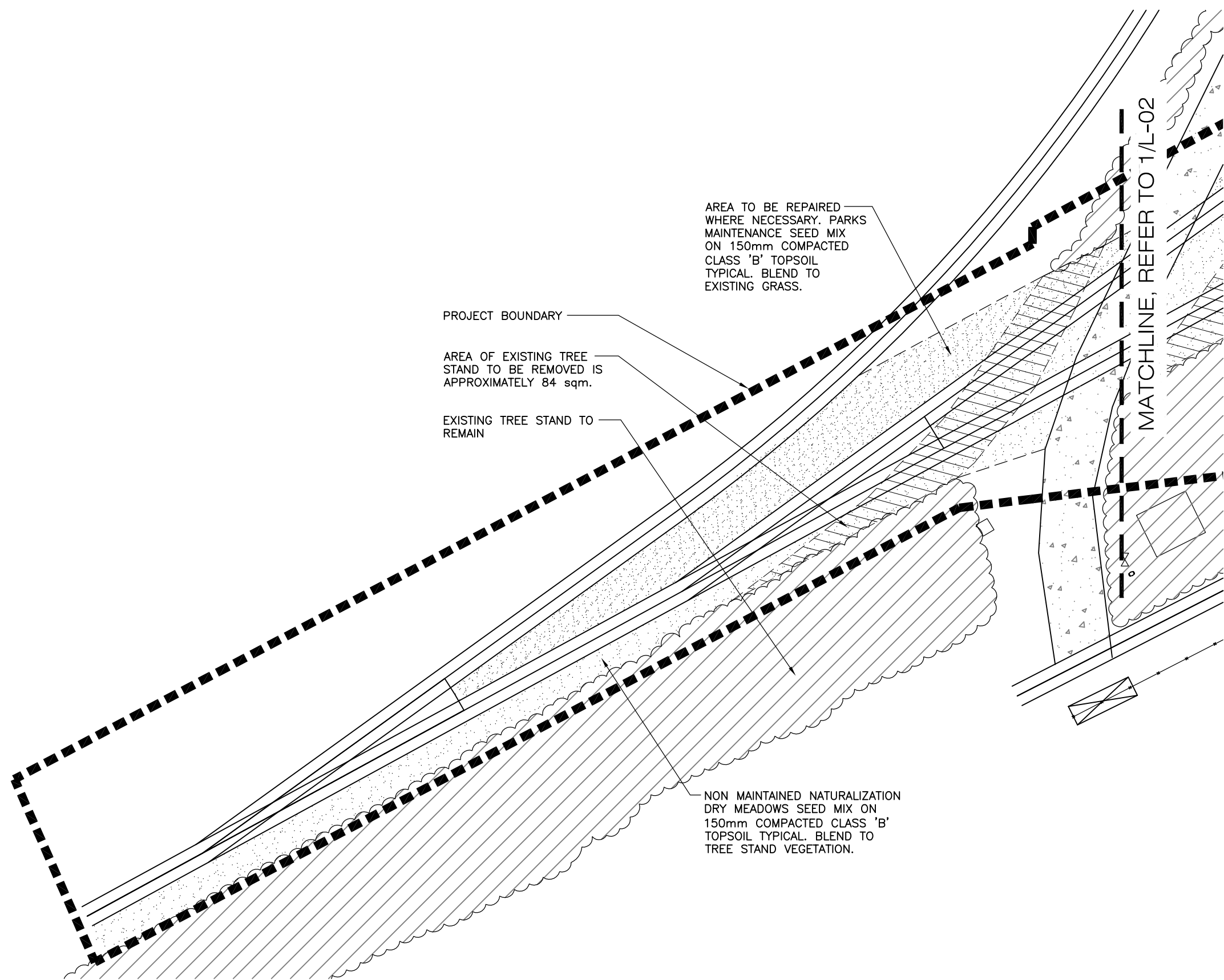
LANDSCAPE PLAN

SCALE: AS SHOWN ALL DIMENSION ARE IN MILLIMETRES

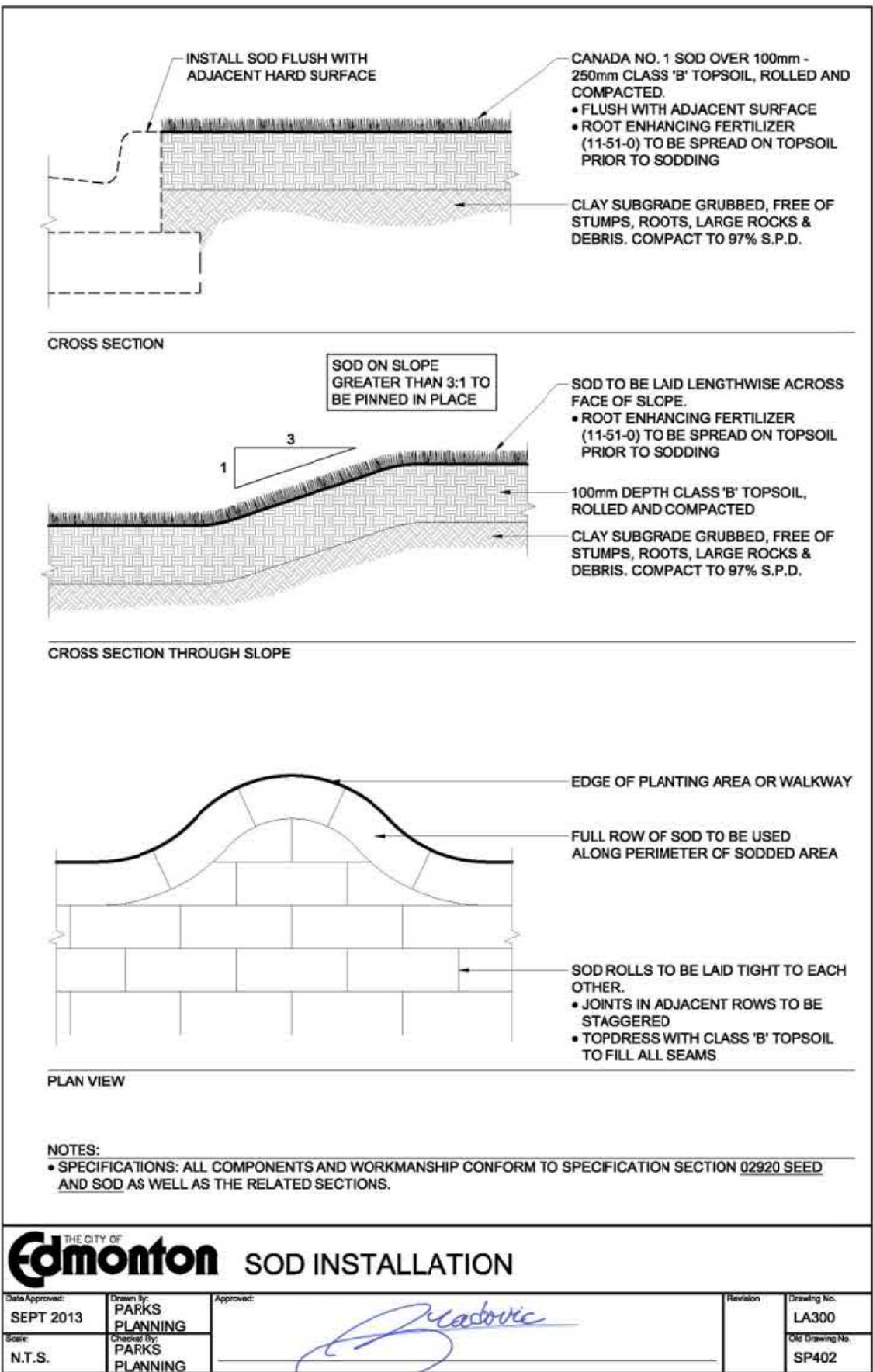
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DATE: 2018-10-31	
CHECKED BY: SL	DRAWING NO. L-02
DATE: 2018-10-31	
REVIEWED BY: SL	
DATE: 2018-10-31	

FILE NAME:

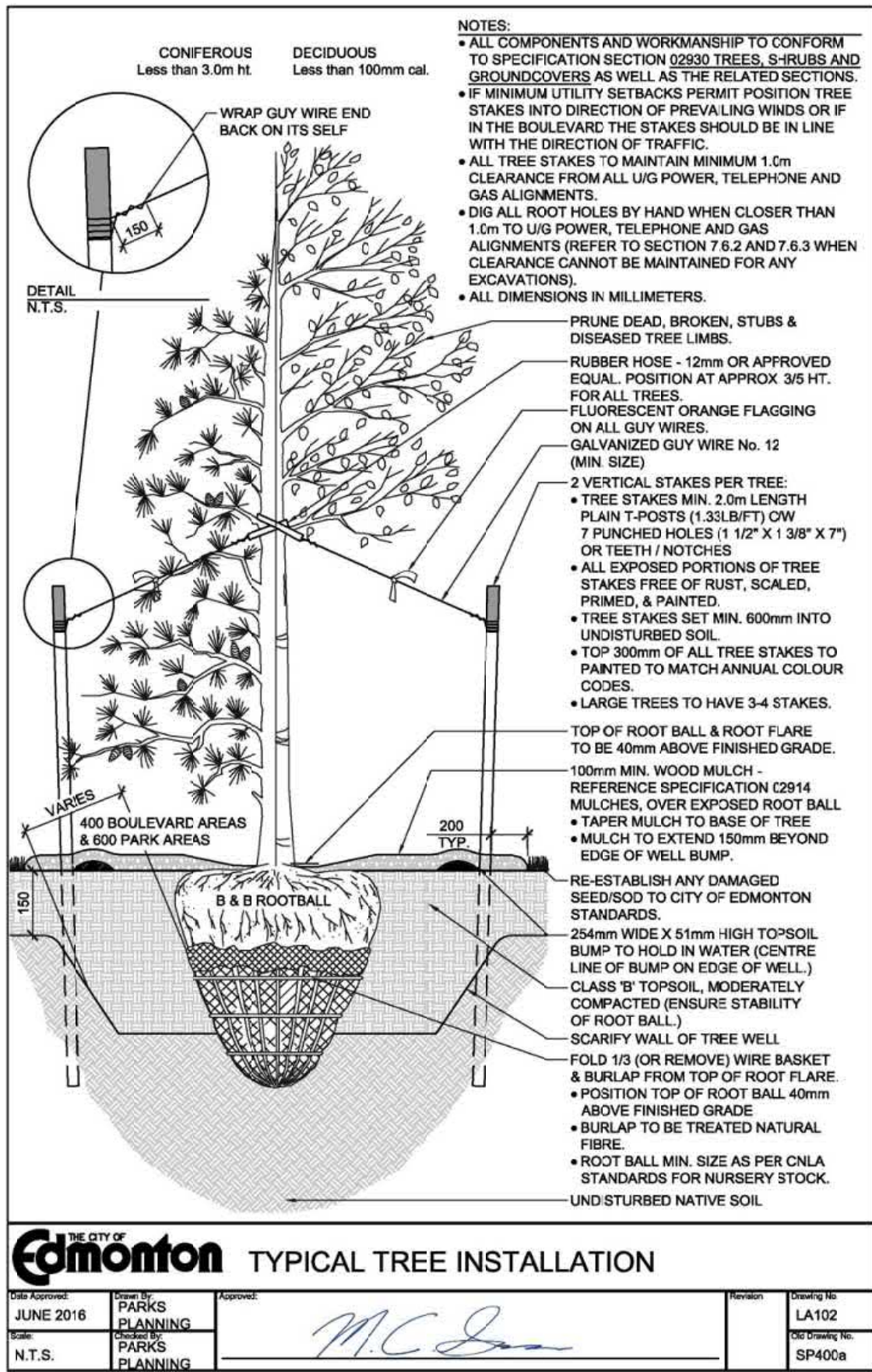
1 LANDSCAPE PLAN
L-03 PLAN



4 TYPICAL SOD INSTALLATION DETAIL
L-03 N.T.S.

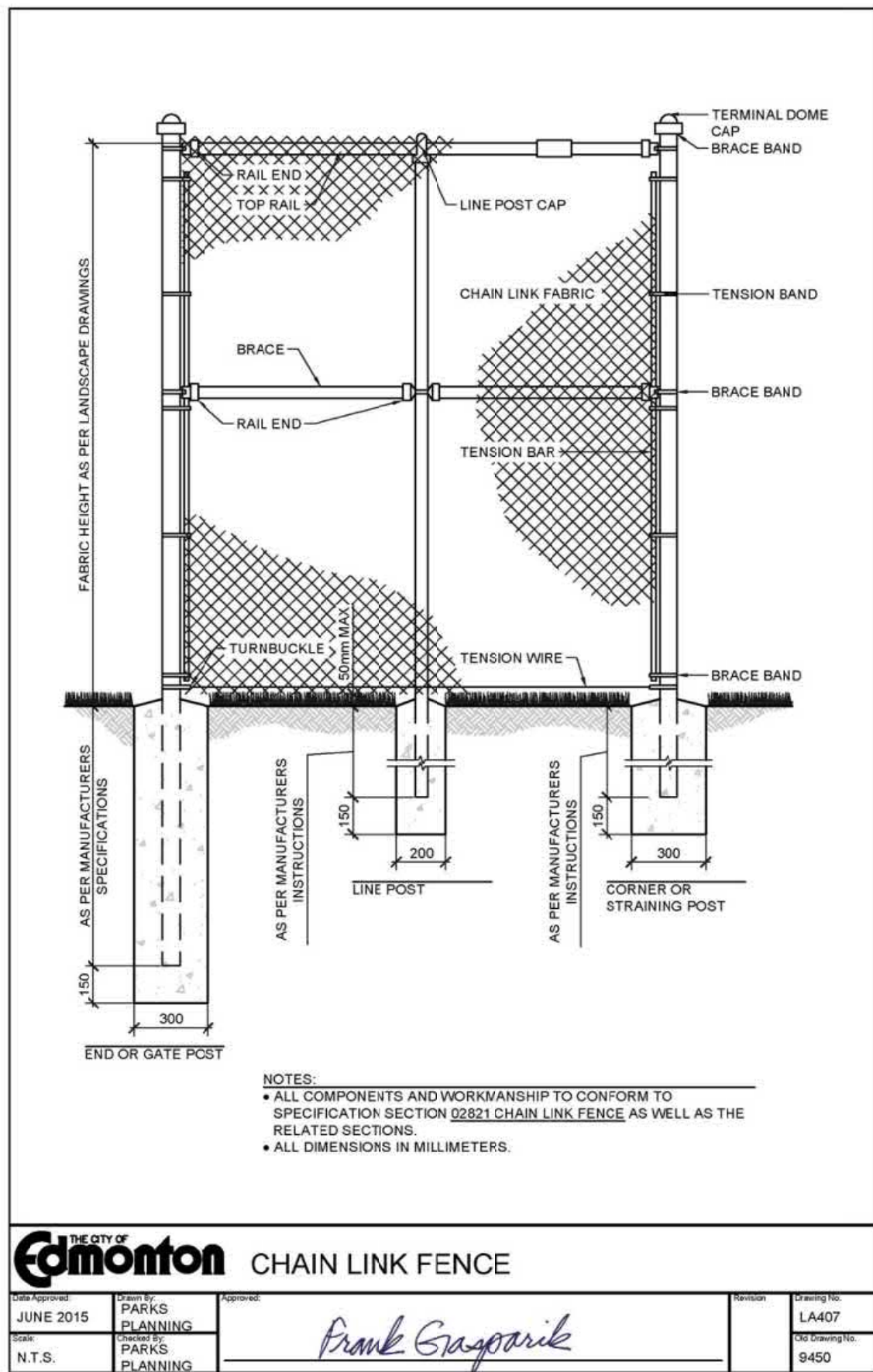


2 TYPICAL TREE PLANTING DETAIL
L-03 SECTION



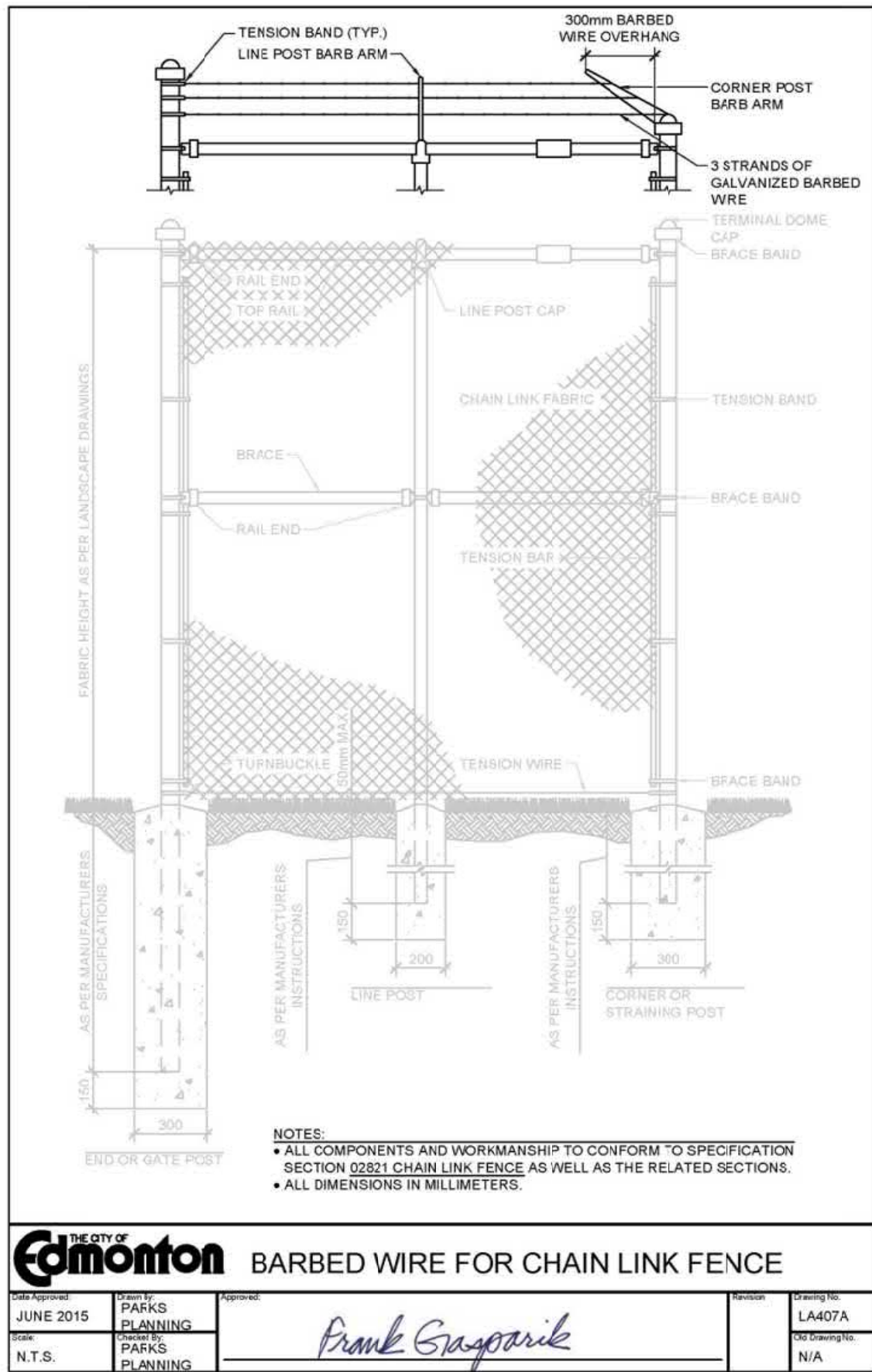
N.T.S.

3 TYPICAL CHAIN LINK FENCE DETAIL
L-03



N.T.S.

5 TYPICAL CHAIN LINK FENCE BARB WIRE DETAIL
L-03



N.T.S.

PRELIMINARY: NOT FOR CONSTRUCTION



REV #	DESCRIPTION	DATE	CHECKED
C	ISSUED FOR PRE-TENDER REVIEW	2018-10-31	SL
B	ISSUED FOR REVIEW	2018-10-02	SL
A	ISSUED FOR DESIGN DEVELOPMENT	2018-08-27	SL
REVISIONS			
ISSUE DATA		DATE	
ISSUED FOR DESIGN DEVELOPMENT		2018-08-27	
ISSUED FOR REVIEW		2018-10-02	
ISSUED FOR PRE-TENDER REVIEW		2018-10-31	

SEAL:

SEAL:

PERMIT:

CONSULTANT:

gec architecture

CONSULTANT PROJECT NO. 5662

Edmonton INTEGRATED INFRASTRUCTURE SERVICES

PROJECT:

FORT EDMONTON TRAIN BARN

BUILDING CODE:

LOCATION: 7000 143 ST NW, EDMONTON, AB

DRAWING TITLE:

LANDSCAPE DETAILS

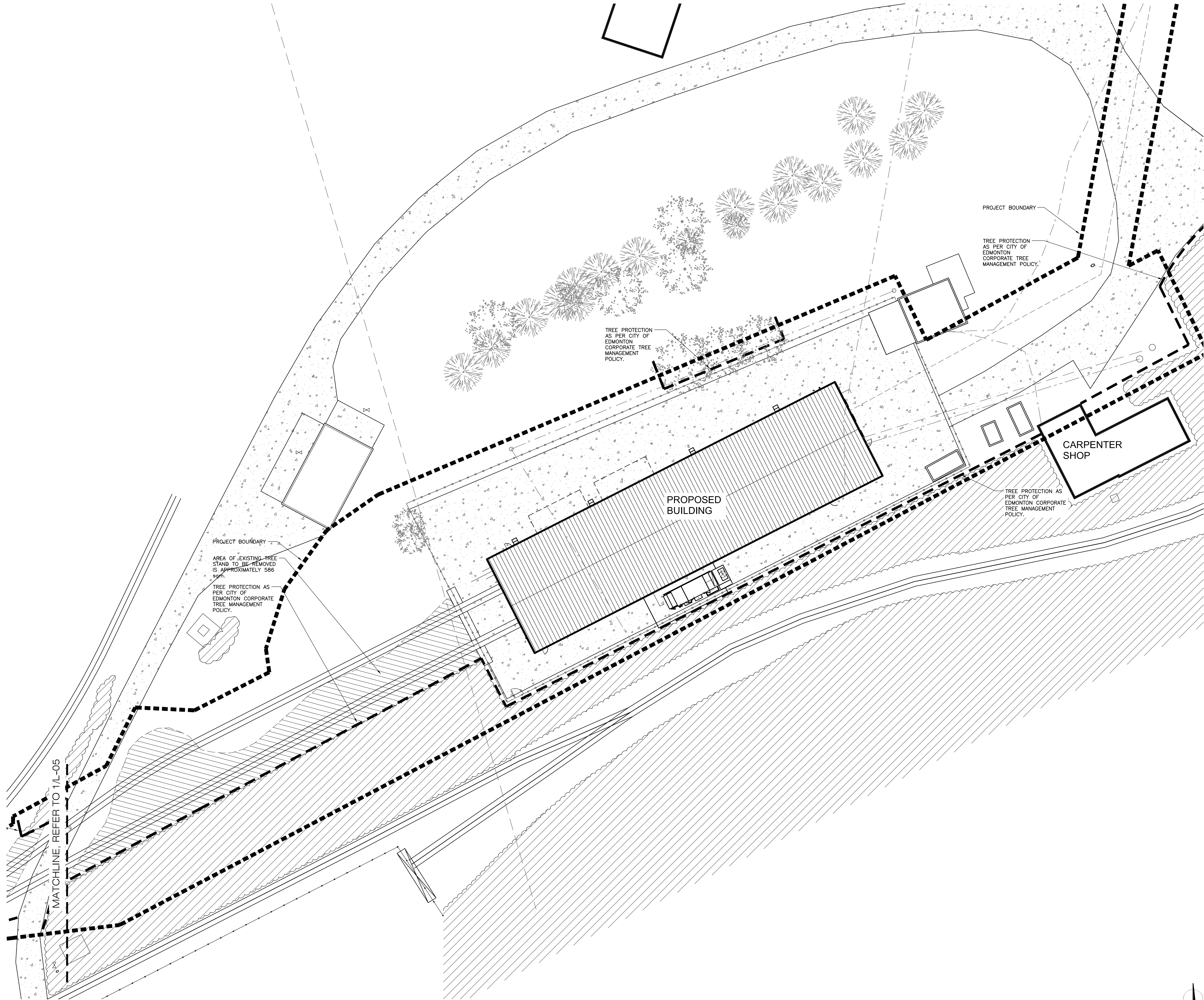
SCALE: AS SHOWN ALL DIMENSION ARE IN MILLIMETRES

DRAWN BY: IP
DATE: 2018-10-31
PROJECT NO: CP-8012

CHECKED BY: SL
DATE: 2018-10-31
DRAWING NO: L-03

REVIEWED BY: SL
DATE: 2018-10-31

FILE NAME:



1 | TREE PROTECTION PLAN
L-04 | PLAN

PRELIMINARY: NOT FOR CONSTRUCTION

DESIGNNORTH
LANDSCAPE ARCHITECTURE INC.
282 - 150 CHIPPEWA ROAD
SHERWOOD PARK, ALBERTA
T8A 6A2
ph 780 417 9598 e-mail si@dnia.ca

REVISIONS			
REV #	DESCRIPTION	DATE	CHECKED
ISSUE DATA			
ISSUED FOR DESIGN DEVELOPMENT			2018-08-27
ISSUED FOR REVIEW			2018-10-02
ISSUED FOR PRE-TENDER REVIEW			2018-10-31

SEAL:	SEAL:
<div></div>	<div></div>

PERMIT:

CONSULTANT:

gec architecture

CONSULTANT PROJECT NO: 5662

THE CITY OF
Edmonton INTEGRATED
INFRASTRUCTURE
SERVICES

PROJECT:

**FORT EDMONTON
TRAIN BARN**

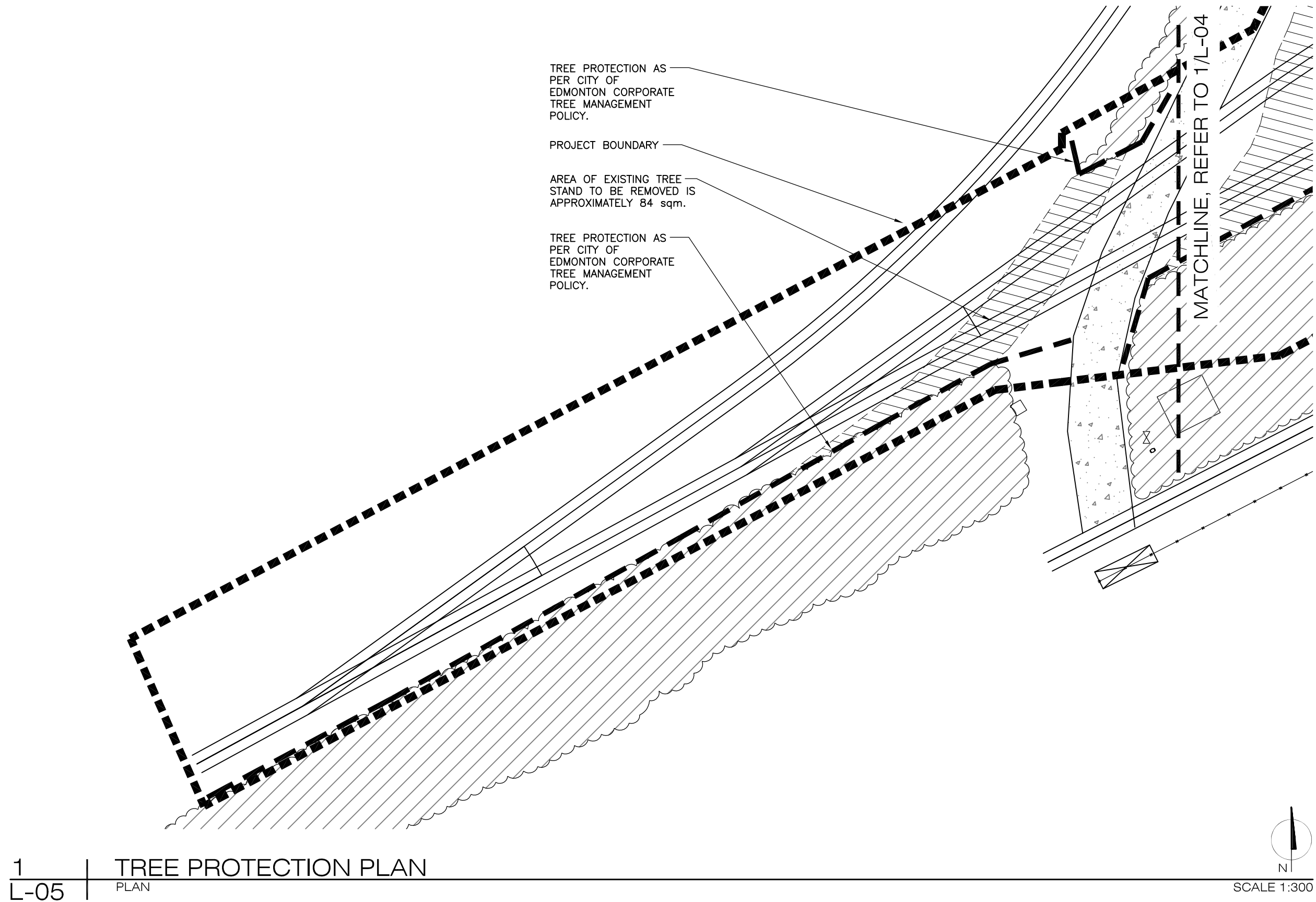
BUILDING CODE:

LOCATION: 7000 143 ST NW, EDMONTON, AB

DRAWING TITLE:

**TREE PROTECTION
PLAN**

SCALE: AS SHOWN	ALL DIMENSION ARE IN MILLIMETRES
DRAWN BY: IP	PROJECT NO: CP-8012
DATE: 2018-10-31	
CHECKED BY: SL	DRAWING NO: L-04
DATE: 2018-10-31	
REVIEWED BY: SL	
DATE: 2018-10-31	
FILE NAME:	



TREE PROTECTION & FORESTRY NOTES

A SITE MEETING WITH FORESTRY WILL BE REQUIRED A MINIMUM 4 WEEKS PRIOR TO CONSTRUCTION START DATE TO REVIEW CONSTRUCTION PLANS AND TREE PROTECTION DURING CONSTRUCTION.

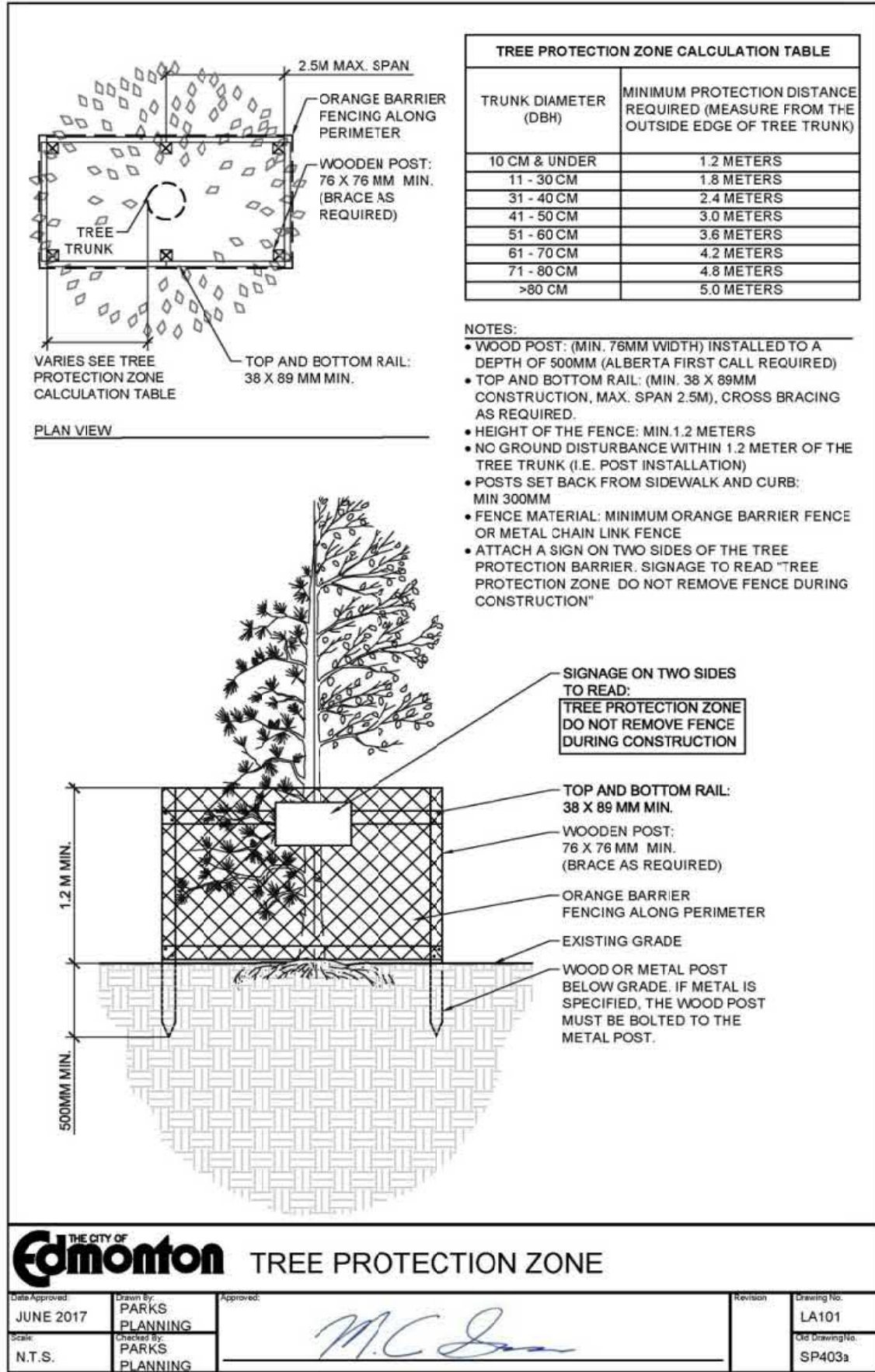
CONTACT GEORGE SZILAGYI, CITY OF EDMONTON, URBAN FORESTER, PH 780 496 4990, TO ARRANGE THIS MEETING.

ALL COSTS ASSOCIATED WITH HOARDING, ROOT-CUTTING REMOVAL, REPLACEMENT OR TRANSPLANTING OF TREES SHALL BE COVERED BY THE PROPONENT, AS PER THE CORPORATE TREE MANAGEMENT POLICY (C456A).

CITY OF EDMONTON FORESTRY WILL SCHEDULE AND CARRY OUT ALL REQUIRED TREE WORK FOR EXISTING TREES INVOLVED WITH THIS PROJECT.

PRIOR TO THE START OF CONSTRUCTION, A 2.0m LIMIT OF APPROACH (LOA) TO THE TREE TRUNKS WILL BE IMPLEMENTED. NO HEAVY EQUIPMENT CAN BE OPERATED WITHIN THIS LIMIT OF APPROACH WITH THE EXCEPTION OF APPROVED EQUIPMENT NEEDED FOR GRAVEL ROAD OR PAVING CONSTRUCTION.

DURING CONSTRUCTION, NO VEHICLES OR EQUIPMENT, CONSTRUCTION SUPPLIES OR DEBRIS SHALL BE PLACED WITHIN 5.0m OF ANY TREE SITUATED ON LANDSCAPED AREAS WITHOUT THE APPROVAL OF THE URBAN FORESTER. ANY SOIL DAMAGE OR COMPACTION COMPROMISING THE TREE ROOT SYSTEM SHALL BE CORRECTED BY AND AT COST TO THE PROPONENT/PROJECT.



PRELIMINARY: NOT FOR CONSTRUCTION



DESIGNNORTH
LANDSCAPE ARCHITECTURE INC.
282 - 150 CHIPPEWA ROAD
SHERWOOD PARK, ALBERTA
T8A 6A2
ph 780 417 9598 e-mail si@dnia.ca

REV #	DESCRIPTION	DATE	CHECKED
C	ISSUED FOR PRE-TENDER REVIEW	2018-10-31	SL
B	ISSUED FOR REVIEW	2018-10-02	SL
A	ISSUED FOR DESIGN DEVELOPMENT	2018-08-27	SL

REVISIONS	
ISSUE DATA	DATE
ISSUED FOR DESIGN DEVELOPMENT	2018-08-27
ISSUED FOR REVIEW	2018-10-02
ISSUED FOR PRE-TENDER REVIEW	2018-10-31

SEAL:

SEAL:

PERMIT:

CONSULTANT:

CONSULTANT PROJECT NO. 5662

PROJECT:

FORT EDMONTON
TRAIN BARN

BUILDING CODE:

LOCATION: 7000 143 ST NW, EDMONTON, AB

DRAWING TITLE:

TREE PROTECTION
PLAN

SCALE: AS SHOWN ALL DIMENSION ARE IN MILLIMETRES

DRAWN BY: IP
DATE: 2018-10-31

CHECKED BY: SL
DATE: 2018-10-31

REVIEWED BY: SL
DATE: 2018-10-31

PROJECT NO. CP-8012

DRAWING NO. L-05

FILE NAME: