

AGENDA ITEM NO: 7.7

MEETING DATE: April 2, 2024

**STAFF REPORT – COVER SHEET**

SUBJECT: 41723, 7652, 7560 Cannor Road DATE: February 15, 2024  
Floodplain Site Specific Exemption

DEPARTMENT: Development & Regulatory Enforcement PREPARED BY: Olivia St. Jean  
Services (DARES)

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**1. SUMMARY OF ISSUE:**

Kerr Properties Ltd. has requested a site specific exemption for 41723, 7652 and 7560 Cannor Road to permit industrial uses below the flood construction level stipulated for industrial use in the Floodplain Regulation Bylaw 2018, No. 4519. A report has been prepared by a Qualified Professional, which reviews the flood hazards/risks, outlines mitigation measures, and includes a Flood Assurance Statement that “the land may be used safely for the use intended.”

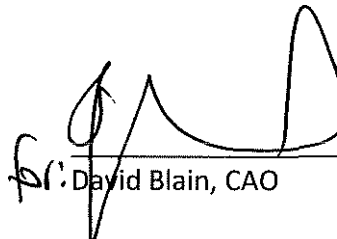
**2. RECOMMENDATION:**

That Council grant a site specific exemption under the Floodplain Regulation Bylaw for the proposed industrial uses at 41723, 7652 and 7560 Cannor Road to be situated at an elevation of 10.10m, subject to the conditions specified in the Staff Report dated February 15, 2024.

  
Glen White, Director of DARES

**3. CHIEF ADMINISTRATIVE OFFICER'S  
RECOMMENDATION/COMMENTS:**

Supports recommendation.

  
David Blain, CAO

**STAFF REPORT ON  
FLOODPLAIN SITE SPECIFIC EXEMPTION**

PREPARED BY:	<u>Olivia St. Jean</u>	DATE:	<u>February 15, 2024</u>
POSITION:	<u>Assistant Manager of Land Development</u>	DEPARTMENT:	<u>Development &amp; Regulatory Enforcement Services</u>

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**1. DEFINITION OF ISSUE:**

Kerr Properties Ltd. has requested a site specific exemption for 41723, 7652 and 7560 Cannor Road to permit industrial uses below the flood construction level stipulated for industrial use in the Floodplain Regulation Bylaw 2018, No. 4519. A report has been prepared by a Qualified Professional, which reviews the flood hazards/risks, outlines mitigation measures, and includes a Food Assurance Statement that “the land may be used safely for the use intended.”

A decision is required to grant the site specific exemption.

**2. BACKGROUND:**

2.1 The Floodplain Regulation Bylaw sets minimum Flood Construction Levels (FCLs) for buildings to reduce the risk of flood damage and protect public safety. For properties in the Fraser River floodplain protected by the dike system, the FCLs are based on estimated water elevations associated with the 1894 flood of record, plus provide an additional 0.6m of freeboard.

2.2 The Bylaw includes general exemptions for industrial uses:

20. The elevation requirements in this Bylaw shall not apply to:

- (1) industrial uses within areas designated for industrial use in the City of Chilliwack “Official Community Plan”, as amended from time to time, or occupied by an industrial use and which are protected by a Standard Dike, provided that:
  - (a) the underside of the lowest floor system or surface of the floor slab is no lower than 0.15 m above the crown of the nearest road where water may pond; and,
  - (b) fixed equipment susceptible to damage by floodwaters is no lower than the FCL.

2.3 The Bylaw allows Council to consider site specific exemptions where a property owner requests a variance to the elevations and/or setbacks stipulated in the Bylaw. Kerr Properties Ltd. has requested a variance to the elevation to allow industrial use below the flood construction level stipulated in the Bylaw.

**3. FACTORS:**

- 3.1 To support the site-specific exemption application, a Qualified Professional (QP) (Hydrotechnical Engineer) with McElhanney has prepared a report that lays out why the exemption is being sought, reviews the flood hazards and risks for the property, and outlines mitigation measures to reduce the flood risk. A copy of the report is attached.
- 3.2 Through the recent subdivision development, a Covenant was registered requiring an FCL of 11.10m, which was determined without considering the Bylaw's general exemptions for industrial uses. The Bylaw permits industrial use buildings to be constructed 0.15m above the crown of the nearest road where water may pond. Since Cannor Road comprises the City Standard dike, the QP rationalizes that this requirement may be interpreted as the 0.15 m above the lowest area where water may pond since there are no local roads within Cannor Road.
- 3.3 The QP states the lowest area where water would pond is at the Cattermole Drainage Pump Station and Outfall at an elevation of 5.0m. However, Section 8 of the Bylaw also specifies that no building shall be constructed lower than 0.6 m above the top of bank of any drainage ditch. Assuming the drainage ditch bank is at elevation 6.85 m, the QP determines the FCL would be at 7.45m.
- 3.4 The QP is proposing that the main floor of future industrial building(s) proposed for 41723, 7652 and 7560 Cannor Road be at an elevation of 10.10m, which would protect the building from flooding due to localized water runoff, but flood damage would occur under extreme flooding conditions (e.g. dike breach during a large flood on the Fraser River).
- 3.5 The QP notes the protection afforded by the City's dike, and advance warning for floods on the Fraser River as mitigating factors.
- 3.6 The report also notes that fixed equipment susceptible to damage by floodwaters shall not be lower than the 10.5 m.
- 3.7 The QP has provided a signed Flood Assurance Statement in accordance with Engineers & Geoscientists BC's (EGBC's) Professional Practice Guidelines – Legislated Flood Assessments in a Changing Climate in BC, stating that "the land may be used safely for the use intended."
- 3.8 If the site specific exemption is granted by Council, it should be subject to the following conditions:
  - That the property owner provide a letter to the City acknowledging the flood hazard and risk identified in the QP report, and committing to implement the mitigation measures recommended by the QP.
  - That the property owner enter into a covenant under Section 219 of the *Land Title Act*, absolving the City of Chilliwack of any liability with respect to the flooding of the property or flood damage to land, structures, and contents thereof. A copy of the QP report would form part of the covenant.

**4. RECOMMENDATION & SUBSTANTIATION:**

Recommendation:

That Council grant a site specific exemption under the Floodplain Regulation Bylaw for the proposed industrial use at 41723, 7652 and 7560 Cannor Road, subject to the conditions specified in the Staff Report dated February 15, 2024.

Substantiation:

The site specific exemption would allow future industrial buildings to be constructed at an elevation of 10.10m, which is within the same range as other industrial buildings in the Cannor Road area.

**5. ATTACHMENT:**

- Location Map & Orthophoto
- Technical Memo "Construction Level Exemption Letter – 7652, 7560 and 41723 Cannor Road, Chilliwack" March 18, 2024



### Location Map



### Orthophoto



Our File: 2121-01131-00

# TECHNICAL MEMO

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**To**

Travis Tournier, Development Manager  
Kerr Properties 002 Ltd.

**From**

Amr Fathalla, P.Eng., Senior Hydrotechnical  
Engineer

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**Re**

Construction Level Exemption Letter – 7652, 7560 and  
41723 Cannor Road, Chilliwack (Rev. 03)

**Date**

March 18, 2024

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## 1. Background

Kerr Properties 002 Ltd. (Kerr) requested that McElhanney Ltd. (McElhanney) carry out an assessment of the construction levels for the proposed industrial properties at 7652, 7560 and 41723 Cannor Road, Chilliwack, BC. The project includes new industrial uses of the lots. Kerr has a covenant that identifies a Flood Construction Level (FCL) of 11.10 m within the vicinity of the project (see *Appendix A*).

The City of Chilliwack (City) BL 4519 Section 20(1) outlines the permitted industrial exemptions in the Bylaw. The elevation requirements in this Bylaw shall not apply to industrial uses as indicated in the Chilliwack "Official Community Plan", and which are protected by a Standard Dike, provided the underside of the lowest floor system or surface of the floor slab is no lower than 0.15 m above the crown of the nearest road where water may pond. Fixed equipment susceptible to damage by floodwaters shall not be lower than the FCL.

Cannor Road surrounding the site is a part of the City dike. The average dike elevation is approximately 11.10 m. The existing ground, local site roads and other commercial and industrial buildings close to the site are lower than 9.90 m. We understand that Kerr has had initial discussions with the City confirming that the City would approve the proposed development if an exemption letter and associated flood hazard assessment technical report is provided. The report should show that the development meets the floor slab elevation requirements outlined in the City's BL 4519. The site location is shown in *Figure 1*.





Figure 1: Site Location

## 2. Site Conditions

The site will be developed to include three lots:

- Lot 1;
- Lot 2; and
- Lot 3.

A layout of the site is shown in *Figure 2*. A site survey and site servicing drawings can be found in *Appendix A*.



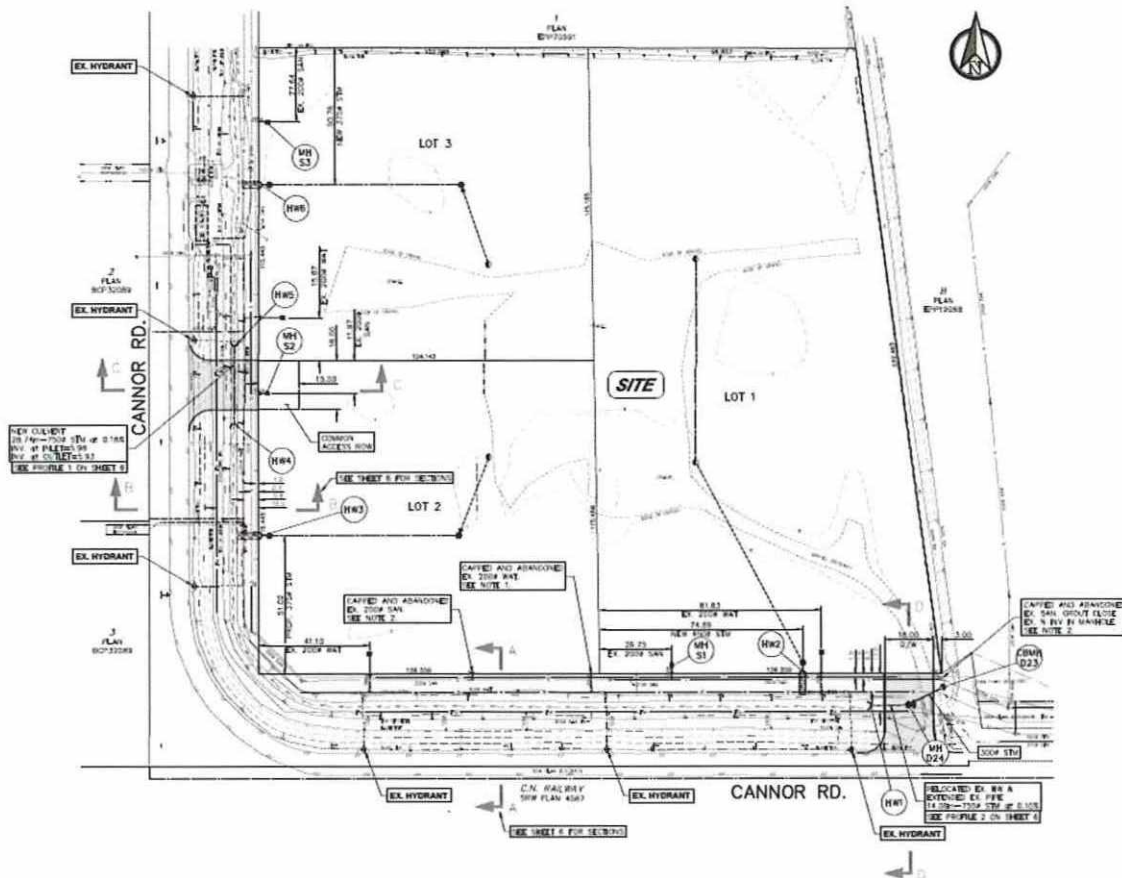


Figure 2: Site Layout

Amr Fathalla (McElhanney) met with Travis Tournier (Kerr) at the site on November 14, 2023. An aerial photo combined with the flood levels (Figure 3) shows the existing site conditions. The site is contained within the City Standard Dike from all sides (red). The flood elevation map and the extent of the City Standard Dike are included in Appendix D. Photos from the site visit can be found in Appendix B.



Figure 3: Existing Site Conditions

### 3. Flood Construction Level City Bylaws

The City's Bylaw No. 4519 is a bylaw to designate land as Floodplain and make provisions in relation to flood control, flood hazard management and development of land that is subject to flooding or erosion. Section 8 of the bylaw sets the general flood construction level requirements, as follows:

#### **Elevation Requirements for Areas Protected by a Standard Dike**

8. Within areas protected by a Standard Dike, unless specified elsewhere in this Bylaw, no building or any part of a building, Manufactured Home or unit, shall be constructed, reconstructed, moved or extended with the underside of a wooden floor system or top of a concrete foundation of any Habitable Area, nor shall any Pad be located lower than (whichever elevation is greater):

- (1) the applicable FCL for the Fraser River, Chilliwack River, Vedder River or Vedder Canal as indicated on Schedule "A", attached hereto and forming part of this Bylaw, plus 0.6 m Freeboard;
- (2) 1.5 m above the boundary of any other natural watercourse;
- (3) 0.6 m above the top of bank of any drainage ditch;
- (4) 0.3 m above the crown of the adjacent road.





The 0.6m Freeboard requirement may be waived on the condition that the owner registers a Covenant against the title and also provides a Qualified Professional's report indicating that the property may be safely used for the intended purpose.

Sections 20(3) and 20(4) outline the permitted commercial exemptions in the Bylaw, as follows:

**20.** The elevation requirements in this Bylaw shall not apply to: (1) industrial uses within areas designated for industrial use in the City of Chilliwack "Official Community Plan", as amended from time to time, or occupied by an industrial use and which are protected by a Standard Dike, provided that:

- (a) the underside of the lowest floor system or surface of the floor slab is no lower than 0.15 m above the crown of the nearest road where water may pond; *and*, (AB#4557)
- (b) fixed equipment susceptible to damage by floodwaters is no lower than the FCL.

As noted in Section 20(1) and 20(4), the industrial uses are exempt. The underside of the lowest floor system or surface of the floor slab is no lower than 0.15m above the crown of the nearest road where water may pond.

Kerr is seeking the City exemption of the flood construction level under Section 23:

#### **SITE SPECIFIC APPLICATION**

**23.** Notwithstanding the above, Council may grant a site-specific exemption with respect to the setback requirements or elevation requirements elsewhere in this Bylaw where:

- (1) a Qualified Professional has submitted an application in accordance with the City of Chilliwack "Guidelines for Site Specific Application", attached hereto as Schedule "B", and forming part of this Bylaw;
- (2) a Qualified Professional has submitted a site specific report, consistent with Provincial Guidelines and EGBC Professional Practice Guidelines, and supplemented with a flood hazard and risk assurance statement as specified in Appendix J of EGBC Professional Practice Guidelines, that certifies that the property can be safely used for the intended use and that protection from a 1 in 200 year flood on the Chilliwack River, Vedder River and Vedder Canal or from the 1894 flood on the Fraser River can be achieved through an engineered design without reliance on a Standard Dike; *and*,
- (3) the owner enters into a Covenant absolving the City of Chilliwack of any liability with respect to the flooding of the property or flood damage to land, structures and contents thereof.

## **4. Historic, Existing and Proposed Conditions**

The site and adjacent lots are contained within the City Dike from all the sides as shown in *Figure 4*.



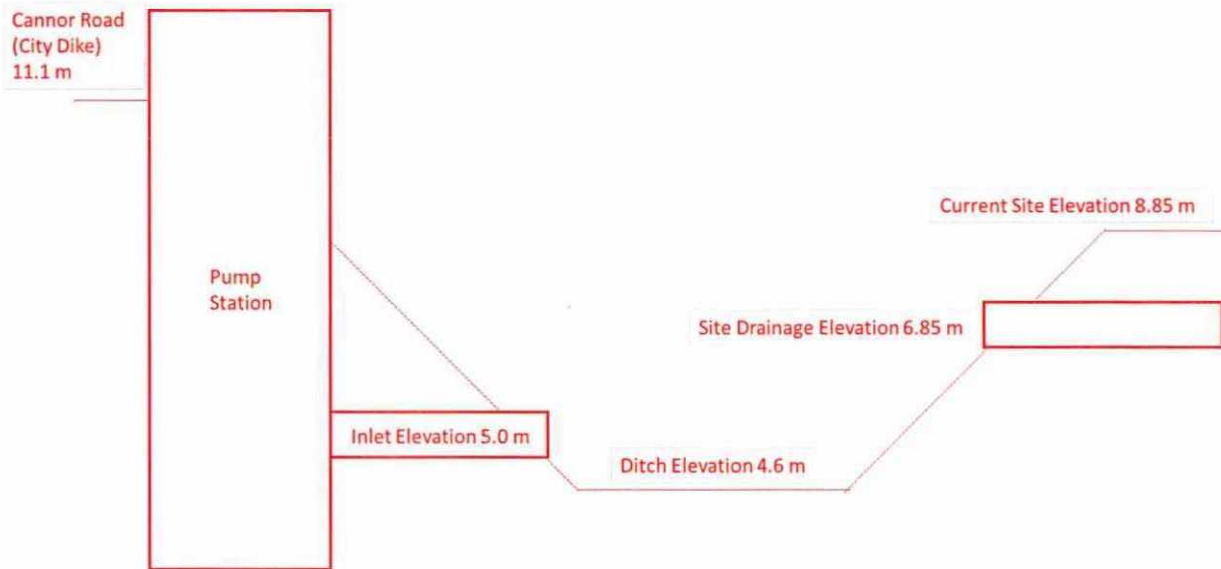


Figure 4: City Dike around the Site and adjacent Lots

The Flood Construction Level (FCL) is estimated 11.1 m (City Bylaw No. 4519 Schedule A). For the industrial uses protected by the City Dike, the required ground floor elevation is 0.15 m above the crown of the nearest road. The nearest road is Cannor Road, which constitutes the City Dike, is approximately at elevation 11.1 m. There are no public roads within the lots. The following information regarding the buildings and yards contained within the dike shows the key elevations:

- Langley Concrete building at elevation 10.5 m. (Built less than 20 years ago)
- Langley Concrete yard low area at approximately elevation 9.8 m.
- Ritchie Bros building at elevation 9.8 m. (Built less than 20 years ago)
- Ritchie Bros yard low area at approximately elevation 9.3 m.
- Natural ground is approximately below 9.3 m.
- Current site elevation 8.85 m.

The area contained within the City Dike drains toward a pumping station at the west side of the dike. Approximate elevations at the pump station are shown in *Figure 5*.



*Figure 5: Approximate Key Elevations at the Cattermole Stormwater Pump Station*

McElhanney received the pump station design information from the City. A summary of the key design parameters (i.e., flows and elevations) is shown in *Figure 6*.

Cattermole Stormwater Pump Station has a capacity to handle the 1 in 100 peak flows. The estimated 1 in 100 peak flow is 1,050 lit/s. The pump design flow is 1,200 lit/s. The estimated maximum water elevation is 7.3 m. The maximum water elevation I expected to occur for a short period during the 1 in 100 event.



The 100-year storm water flow of 1050 Liters/sec was obtained from Omega Engineering and used as the design flow for the pump station. It is our understanding this flow constitutes drainage from the entire 35 Ha Cattermole Industrial Estate. See attached catchment plan by Omega Engineering for details. A mass balance of storm water in the storage ditch (as designed by Omega) was completed to estimate the water elevations in the sump during a storm. It is expected that during the 100-year storm event for certain critical storm durations the water elevation in the ditch may reach approximately 7.3m for short periods of time.

Criteria	Elevation (m)
Extreme Fraser River Freshet	10.5 (provided by City of Chilliwack)
Typical Low Fraser River	3
Pump ON	6.4
Pump OFF	5.8
Flood Box High Level	11.1
Pump Box High Level	11.3
Ditch Maintenance Road at pump stn	8.0
Sump High Level Alarm	7.0

The pump station has two submersible Flygt 100hp axial flow PL7061 pumps with 23 degrees of trim on the impeller. Each pump is capable of pumping up to about 1200 L/sec; however, they are equipped with variable frequency drives that can reduce the pumped flow to about 700 L/sec. The actual flow depends on the drive frequency and water elevations in the sump and the Fraser.

Figure 6: Key Pump Station Key Design Parameters (by Urban Systems 2007)

As per Section 20 (1), commercial buildings that are protected by a Standard Dike, the lowest floor system or surface of the floor slab should be no lower than 0.15 m above the crown of the nearest road where water may pond. The local drainage of the area protected by the City Dike is directed to a pump station via a system of pipes and ditches. The lowest point at the drainage area is at approximately elevation 5.0 m. Observations during the Atmospheric River flood event indicate that the water level in the ditch leading to the pump station was lower than 6.85 m.

## 5. Request for Flood Construction Level Exemption

Kerr considered the requirements to implement the City Floodplain Bylaw. Currently, there is a Covenant (*Appendix D*) that requires a FCL of 11.10 m (Part 2 - Section 1.1 (b)). The Covenant assumes that the Lands are located within a floodplain and the City requires registration of a covenant as a condition for development of the Lands (Part 2 - Section B). However, the Covenant does not recognize and consider that the Lands are protected by the City Dike shown in the flood map (*Appendix E*).



The City's Bylaw No. 4519 (Section 8) requires that for the industrial uses which are protected by a Standard Dike, the underside of the lowest floor system or surface of the floor slab is no lower than 0.15 m above the crown of the nearest road where water may pond. Cannor Road comprises the City Standard dike. As there are no local roads within Cannor Road, this requirement may be interpreted that the underside of the lowest floor system or surface of the floor slab is no lower than 0.15 m above the lowest area where water may pond. The lowest area where water would pond is at the pump station (*Figure 5*) at approximately elevation 5.0 m. This requirement sets a FCL at 5.15 m. However, another requirement is 0.6 m above the top of bank of any drainage ditch. Assuming the drainage ditch bank is at elevation 6.85 m, the FCL would be at 7.45 m.

The requirements of 0.15 m above the crown of the road where water would pond, or 0.6 m above the drainage ditch are for local drainage. These requirements are not for the river flood protection as this is provided by the City Dike. Therefore, the minimum FCL would be at elevation 7.45 m.

The two major buildings, approved by the City and built within the past 20 years:

- Langley Concrete building at elevation 10.5 m; and
- Ritchie Bros building at elevation 9.8 m.

Kerr's request is to get the City's approval for a FCL of 10.1 m. The requested FCL is higher than another building within the same area by 0.3 m. Fixed equipment susceptible to damage by floodwaters shall not be lower than the FCL. Kerr is willing to enter into a Covenant absolving the City of any liability with respect to the flooding of the property or flood damage to land and structures.

The current site elevation at 8.85 m is used for storage at Kerr's own risk. The use of the yard would be acceptable given that:

- The industrial yard storage is for outdoor storage only;
- There is no buildings or occupants;
- Kerr understands that there is a risk of flooding and is responsible in case of damage of any stored materials; and
- The stored materials would not cause contamination or cause negative impact to the environment in case the yard is flooded.

Kerr may continue to use the industrial yard for outdoor storage under the above conditions until the site is developed.

## 6. Flood Hazard Analysis

Flood mapping is provided by the City as part of the Floodplain Regulation Bylaw. (City Bylaw No. 4519 Schedule A). The flood mapping confirms that portions of the City are located within the floodplain and protected by a Standard Dike for floods up to the 200-year event, including allowances for climate change and freeboard. The Kerr project is located within the floodplain area protected by a Standard Dike. In the





event of a failure of the Standard Dike, the neighbourhoods protected by the Standard Dike would be subject to flooding, including the location of the Kerr project. Flood warnings would be issued through the BC Ministry of Emergency Management and Climate Readiness in conjunction with The City and local authorities as water levels rise within the Fraser River and well in advance of overtopping of the Standard Dike.

McElhanney received comments from the City regarding the dike design. The dike protecting the Cattermole Lands was designed in 2007 as a Standard Dike meeting the provincial DWL at that time plus 0.6m freeboard. The DWL was based on the 1894 flood of record for Fraser River, which is approximately 500-year event. The Province updated the DWL. Although the dike still offers a very high level of protection, it does not have 0.6m freeboard for the 2014 updated 500-year modelled event. In conclusion, the dike still provides protection up to the 200-year event, including allowances for climate change and 0.6 m freeboard.

## 7. Flood Risk Analysis

The City bylaws protect the industrial uses from **local runoff** by imposing that the underside of the lowest floor system or surface of the floor slab is no lower than 0.15 m above the crown of the nearest road where water may pond (Bylaw 20(41) or 0.6 m above the drainage ditch. The commercial buildings are not protected from flooding in case of the City Standard Dike failure. Kerr shall be conforming to the City Bylaw 20(1) regarding industrial uses.

## 8. Assurance Statement

Assurance Statement can be found in *Appendix C*. The Assurance Statement is to be read in conjunction with this flood exemption letter. The current Engineers and Geoscientists BC Professional Practice Guidelines – Legislated Flood Assessments in a Changing Climate in BC (“the guidelines”) and the Provincial Hazard Area Land Use Management Guidelines were taken into consideration for conducting the flood assessment. The Assurance Statement is provided for flood assessments for the purposes of the Land Title Act, Community Charter, or the Local Government Act.

For floodplain bylaw exemption, as required by the Local Government Act (Section 524), “the land may be used safely for the use intended”, the Assurance Statement with regard to the industrial uses flood level exemption is valid with consideration to the following items:

- The City Standard Dike is the main river flood protection for the properties within the City limits.
- The proposed FCL for the industrial uses is 10.1 m to be considered and implemented.
- Fixed equipment susceptible to damage by floodwaters shall not be lower than the 10.5 m.
- The property local drainage is handled by Cattermole Stormwater Pump Station designed for the 1 in 100 instantaneous peak flow with elevations reaching 7.3 m for short periods.
- Kerr would enter into a Covenant absolving the City and McElhanney of any liability with respect to the flooding of the property or flood damage to land and the structures.



Floodplain Regulation Bylaw 2018, No. 4519" – Schedule "B" can be found in *Appendix F*.



## 9. Closing

This assessment has been prepared by McElhanney for the benefit of Kerr. The information and data contained herein represent McElhanney's best professional judgement considering the knowledge and information available to McElhanney at the time of preparation.

McElhanney denies any liability whatsoever to other parties who may obtain access to this report for any injury, loss or damage suffered by such parties arising from their use of, or reliance upon, this document or any of its contents without the express written consent of McElhanney and Kerr.

We thank you for the opportunity to work on this project. Please do not hesitate to contact us if you have any questions.

Sincerely,

**McElhanney Ltd.**

**EGBC Permit to Practice 1003299**

Prepared by:



2024-03-19  
Amr Fathalla, M.Sc., P.Eng.  
Senior Hydrotechnical Engineer  
[afathalla@mcelhanney.com](mailto:afathalla@mcelhanney.com)  
778-693-2693

Reviewed by:

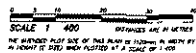
A handwritten signature in blue ink, likely belonging to Nav Sandhu.

Nav Sandhu, P.Eng.  
Senior Engineer  
[nsandhu@mcelhanney.com](mailto:nsandhu@mcelhanney.com)  
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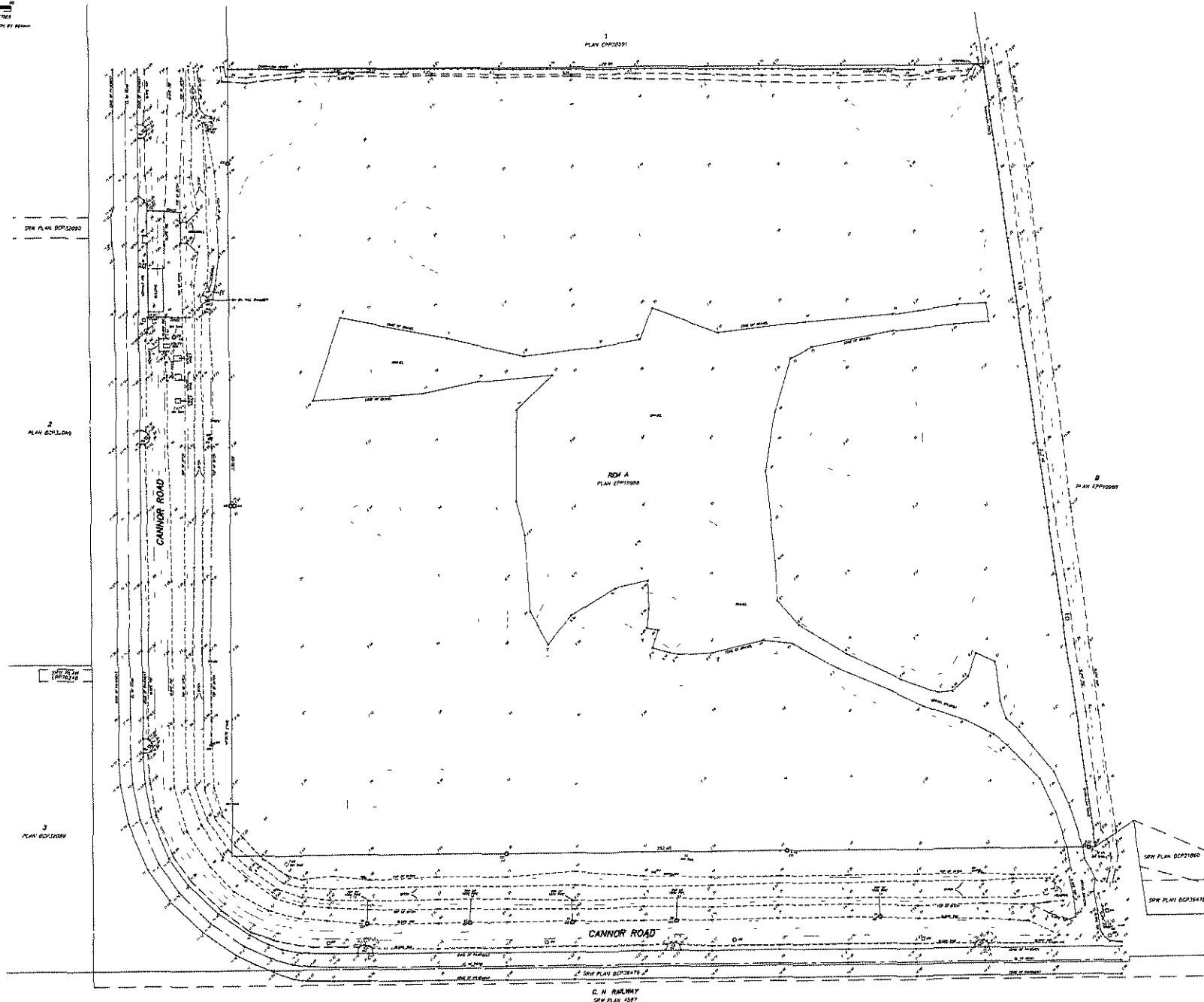
# **APPENDIX A**

## **SITE SURVEY**

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**ADDITIONAL NOTES**  
EASEMENTS ARE IN REVERSE ORDER  
AND ARE DERIVED FROM OPS OBSERVATIONS  
(ENCLOSURE(S))  
  
PROPERTY LINE (EASEMENTS) ARE DERIVED  
FROM PLAN (ENCLOSURE)

LEGAL DESCRIPTION:  
LOT 4 DISTRICT LOT 279 GROUP 2  
NORTHWESTER DISTRICT PLAN 1990000  
TRACT PLAN 1990001 AND PLAN 1990002  
PARCEL IDENTIFICATION: 218-048-074  
DOCUMENT NUMBERS 00002012, C0177513  
AND C0177514 ARE REGISTERED ON TITLE  
AND MAY AFFECT THE LOCATION OF  
IMPROVEMENTS.



CONTINUED CORRECT THIS DAY OF  
JANUARY 2022

*[Signature]*  
J. F. BARNES

KERR PROPERTIES  
7582 CANNOR ROAD  
CHILLIWACK, BC

203 084

05/20/2016

AS 124750C

54  
CHC-ED BY

**AXIS**  
AXIS LAND SURVEYING LTD  
8 C & CANADA LANDS SURVEYORS  
202 33711 LAUREL STREET  
ABERDEEN, ONT. L9B 3X3  
TEL 604 853 2700 F 778 727 1226

## REVISION

**DATA**

44

DATE  
NOVEMBER 2 2020

XIB NO. A 6063

SHEET  
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OF  
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# GENERAL NOTES

- ANY SIGNIFICANT REVISIONS TO THESE DRAWINGS MUST BE APPROVED BY THE OWNER'S ENGINEER, WHO SHALL REVIEW ANY CHANGES WITH THE MUNICIPAL ENGINEER, PRIOR TO ANY CONSTRUCTION.
- WORKSAFE BC IS TO BE GIVEN NOTICE OF CONSTRUCTION PRIOR TO THE START OF CONSTRUCTION.
- EXISTING UNDERGROUND UTILITIES ARE TO BE LOCATED (EXCAVATED AND SURVEYED) PRIOR TO INSTALLING ANY NEW UNDERGROUND SERVICES. ANY DISCREPANCY IN ELEVATION OR LOCATION IS TO BE REFERRED TO KM CIVIL CONSULTANTS IMMEDIATELY.
- THE OWNER AND CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE CAUSED TO EXISTING STREETS OR SERVICES BY CONSTRUCTION EQUIPMENT AND/OR TRUCKS HAULING MATERIALS TO THE SITE. THIS WILL INCLUDE DAILY CLEANING AND SWEEPING OF EXISTING ROADS OF DIRT AND DEBRIS CAUSED BY CONSTRUCTION ACTIVITY.
- TRAFFIC CONTROL IS TO BE MAINTAINED AT ALL TIMES WHEN WORKING ON OR ADJACENT TO MUNICIPAL RIGHTS-OF-WAY (SIGNS, BARRICADES, CERTIFIED FLAGPERSONS).
- CONSTRUCTION IN AND CLOSE TO A WATERCOURSE MUST RECEIVE PRIOR APPROVAL FROM THE PROVINCIAL MINISTRY OF ENVIRONMENT AND/OR THE FEDERAL DEPT. OF FISHERIES AND OCEANS, WHERE APPLICABLE, BEFORE THE CITY OF CHILLIWACK ACCEPTS OWNER'S CIVIL PLANS.
- LEGAL SURVEY POSTS, MONUMENTS, STAKES AND INTEGRATED SURVEY MONUMENTS ARE TO BE REPLACED IF DESTROYED OR DAMAGED DURING CONSTRUCTION AT THE OWNER'S EXPENSE. THIS WORK IS TO BE UNDERTAKEN BY A B.C. LAND SURVEYOR UNLESS OTHERWISE NOTED.
- THE CITY OF CHILLIWACK SURVEY MONUMENTS ARE TO BE PROTECTED. SHOULD THEY REQUIRE Raising OR RELOCATING, THE CONTRACTOR MUST NOTIFY THE MUNICIPAL INSPECTOR AT LEAST 72 HOURS IN ADVANCE OF SCHEDULING WORK AFFECTING THEM.
- MATERIAL SUPPLIED AND CONSTRUCTION PERFORMED ARE TO BE IN ACCORDANCE WITH THE SUBDIVISION & LAND DEVELOPMENT BYLAW 2004, NO. 3053, HMCD SPECIFICATIONS, AND APPLICABLE DESIGN CRITERIA AND SPECIFICATION STANDARD DRAWINGS IN EFFECT AT THE TIME OF DRAWING ACCEPTANCE.
- APPROVED GRANULAR MATERIAL MUST BE USED FOR BACKFILL IN TRENCHES WHEN INSIDE ROAD LIMITS. APPROVED NATIVE MATERIAL MAY BE USED ONLY AS CONFIRMED IN WRITING BY A GEOTECHNICAL ENGINEER, AND ACCEPTED BY THE MUNICIPAL ENGINEER.
- WHERE UTILITY OR SERVICE CROSSINGS ARE REQUIRED ACROSS EXISTING PAVEMENT, AUGERING AND JACKING ARE REQUIRED UNLESS THE OWNER'S CONTRACTOR RECEIVES APPROVAL FROM THE MUNICIPAL ENGINEER FOR OPEN CUT OPERATIONS. ALL EXISTING PAVEMENT, BOULEVARDS, DRIVEWAYS, ETC. WHICH ARE DISTURBED DURING CONSTRUCTION MUST BE RESTORED TO ORIGINAL OR BETTER CONDITION. WHERE NO IMPROVEMENT IS OTHERWISE PROVIDED IN THIS CONTRACT, EXISTING DRIVEWAYS MUST BE SHAPED ACROSS THE WIDTH OF BOULEVARD TO FORM A SMOOTH TRANSITION WITH NEW PAVEMENT. THE FINISHED PAVEMENT SURFACE OVER TRENCH EXCAVATIONS MUST BE SMOOTH WITH EXISTING PAVEMENT.
- WHERE INFILLING OF DITCHES ETC. IS REQUIRED OR PROPOSED, AND WHERE SERVICES ARE CONSTRUCTED IN FILL SECTIONS, THE FILL MATERIAL MUST BE APPROVED GRANULAR MATERIAL PLACED IN LIFTS NOT EXCEEDING 300mm AND COMPACTED TO 95% MODIFIED PROCTOR DENSITY.
- FIGURED DIMENSIONS SHALL GOVERN OVER SCALED DIMENSIONS.
- OFFSETS AND SIZES OF ALL EXISTING MAINS, CONNECTIONS AND OTHER UTILITIES MUST BE DETICED ON THE KEY PLAN.
- ALL REFERENCES TO HMCD REFER TO THE MOST RECENT EDITION.
- ALL REFERENCES TO HMCD MASTER MUNICIPAL SPECIFICATIONS INCLUDE CITY OF CHILLIWACK SUPPLEMENTARY SPECIFICATIONS, WHICH SUPERCEDE THE HMCD SPECIFICATIONS.

## LOT GRADING

- FOR URBAN DEVELOPMENT, LOTS ARE TO BE GRADED TO DESIGN GRADES AT CONTROL POINTS AND +/- 100mm BETWEEN CONTROL POINTS PRIOR TO THE INSPECTION FOR SUBSTANTIAL COMPLETION, UNLESS OTHERWISE NOTED.
- LOTS ARE TO BE GRADED TO A MINIMUM SLOPE OF 1.0%. LOT GRADING MUST BE UNIFORM AND CONSISTENT.
- GRADING IS TO REFLECT EXISTING GROUND ELEVATIONS AT PROPERTY LINES COMMON WITH ADJOINING PROPERTIES UNLESS OTHERWISE NOTED. WHERE GRADING DOES NOT MEET EXISTING GROUND ELEVATIONS, APPROPRIATE PROTECTION MEASURES ARE TO BE TAKEN BY THE CONTRACTOR, TO THE SATISFACTION OF THE MUNICIPAL ENGINEER.
- MINIMUM BUILDING ELEVATION (M.B.E.) FOR LOTS ARE SET IN ACCORDANCE WITH THE SUBDIVISION AND LAND DEVELOPMENT BYLAW 2004, NO. 3053, AND THE FLOODPLAIN REGULATION BYLAW 2004, NO. 3060.
- RAIN WATER LEADERS ARE TO DISCHARGE TO UNDERGROUND STORM MAIN UNLESS OTHERWISE APPROVED.
- RETAINING WALLS MUST BE ENGINEERED IF OVER 1.2m IN HEIGHT.

## ROADWORKS

- THE CONTRACTOR IS TO EMPLOY A GEOTECHNICAL ENGINEER TO PERFORM IN-PLACE TESTING DURING THE PREPARATION OF THE SUBGRADE AND CONSTRUCTION OF THE ROAD STRUCTURE TO VERIFY THE ADEQUACY OF THE PROPOSED AND EXISTING ROAD STRUCTURE AND SUBGRADE.
- CHANGES OF GRADE ARE TO BE FORMED BY SMOOTH VERTICAL CURVES. GRADE TRANSITIONS ARE TO BE FORMED TO BE UNOBTAINABLE TO VEHICULAR TRAFFIC WHEN BEING TRAVERSED.
- LOOSE OR ORGANIC MATERIAL IS TO BE EXCAVATED FROM ROADWAY PRISM.
- GRANULAR SUB-BASE AND OTHER BASE MATERIALS MUST BE COMPACTED TO 95% MODIFIED PROCTOR DENSITY.
- THE ROAD BASE MUST EXTEND A MINIMUM OF 0.3m BEYOND THE SIDEWALK AND/OR CURB & GUTTER.
- CATCH BASIN ELEVATIONS GIVEN ARE FOR TOP OF RIM. RIM IS TO BE SET 30mm BELOW GUTTER GRADE.

- EXISTING VALVE BOXES, MANHOLES, ETC. WITHIN THE RIGHT-OF-WAY ARE TO BE ADJUSTED TO FINISHED GRADE.
- BERKELMAN BEAM TESTING WILL BE REQUIRED TO CONFIRM THE SUSTAINABILITY OF THE ROAD STRUCTURE PRIOR TO PAVING.
- PLACEMENT OF ASPHALT CONCRETE AND PORTLAND CEMENT CONCRETE IS TO BE UNDERTAKEN ONLY WHEN WEATHER CONDITIONS ARE IN CONFORMANCE WITH HMCD SPECIFICATIONS.
- UNLESS OTHERWISE ACCEPTED BY THE MUNICIPAL ENGINEER, ASPHALT CONCRETE IS TO BE LAD IN A MINIMUM OF 2 LIFTS TO A MAXIMUM OF 85mm PER LIFT AND A MINIMUM OF 35mm PER LIFT.
- ASPHALT TAPERS TO BE CONSTRUCTED TO PAVEMENT DESIGN SPECIFICATIONS AS SHOWN IN THE SUBDIVISION AND LAND DEVELOPMENT BYLAW.
- MACHINERY AND MATERIALS MUST NOT BE PARKED OR PLACED IN THE MUNICIPAL RIGHT-OF-WAY OVERNIGHT WHERE POSSIBLE. ANY SUCH PLACEMENT WILL REQUIRE A HIGHWAY USE PERMIT AND ILLUMINATED BARRICADES AND SIGNAGE.

## WATERWORKS

- FOR TYPICAL "UTILITY TRENCH" SECTION DETAIL, SEE HMCD STANDARD DETAIL DRAWING, PAVEMENT RESTORATION TO BE IN ACCORDANCE WITH THE CITY OF CHILLIWACK STANDARDS.
- WATERMAIN MATERIALS MUST CONFORM TO HMCD MASTER MUNICIPAL SPECIFICATIONS, AND SECTION 3.1 OF THE SUBDIVISION AND LAND DEVELOPMENT BYLAW.
- TIE-INS OF PROPOSED MAINS AND SERVICE CONNECTIONS TO EXISTING WATERMANS WILL BE PERFORMED BY THE CITY OF CHILLIWACK AT THE DEVELOPER'S EXPENSE.
- NEW WATERMAIN IS TO BE INSTALLED TO WITHIN 2.0m OF EXISTING WATERMAIN AT CONNECTION LOCATION EXCEPT AS ACCEPTED BY THE MUNICIPAL ENGINEER.
- THE CONTRACTOR MUST ENSURE NEW WATERMAIN ELEVATION MATCHES EXISTING WATERMAIN ELEVATION AT THE CONNECTION LOCATION.
- THE CONTRACTOR MUST EXPOSE AND CONFIRM ELEVATION & OFFSET OF ALL UTILITIES BETWEEN NEW WATERMAIN & EXISTING WATERMAIN AT THE CONNECTION LOCATION.
- CONNECTIONS MUST NOT BE MADE WITHIN 1.0m OF EXISTING CONNECTIONS, BENDS, VALVES, OR OTHER SYSTEM FITTINGS.
- CONNECTIONS MUST BE PERPENDICULAR TO MAIN, EXCEPT AS ACCEPTED BY THE MUNICIPAL ENGINEER.
- MINIMUM COVER ON WATERMANS IS TO BE 1.0m.
- SERVICE CONNECTIONS ARE TO BE 25mm DIAMETER UNLESS OTHERWISE NOTED.
- WATER SERVICE CONNECTIONS ARE TO BE SET SO THAT AN ADJUSTMENT OF 200mm ABOVE FINAL GRADE IS AVAILABLE BY THE TELESCOPING BURY-BOX, MINIMUM DEPTH 0.80m, MAXIMUM DEPTH 1.0m.
- HYDRANTS IN URBAN AREAS MUST BE SUPPLIED WITH THE CORRECT DEPTH OF BURY TO MEET FINAL BOULEVARD GRADES. FOR HYDRANT DETAILS, SEE HMCD STANDARD DETAIL DRAWING. HYDRANTS IN RURAL AREAS; REFER TO SUPPLEMENTAL DRAWING DW-1.
- FOR VALVE-BOX AND VALVE INSTALLATION DETAILS, SEE HMCD STANDARD DRAWING.
- THRUST BLOCKS AS SHOWN ON HMCD STANDARD DRAWING ARE TO BE LOCATED AT VALVES, BENDS, TEES, VES, REDUCERS AND PLUGS. REVERSE THRUST BLOCKS ARE REQUIRED ON CAPS AND BLOWOFFS.
- HYDRANTS MUST HAVE A 1.2m OFFSET FROM PROPERTY LINE UNLESS OTHERWISE NOTED. DURING CONSTRUCTION, AND AT ANY TIME PRIOR TO ACCEPTANCE OF WATERMANS BY THE CITY OF CHILLIWACK, THE CONTRACTOR SHALL INSTALL A 300mm x 300mm SQUARE 15mm SHEET OF PLYWOOD (PAINTED WHITE) OVER THE PUMPER NOZZLE OF EACH HYDRANT TO INDICATE THAT THE HYDRANT IS NOT IN SERVICE. HYDRANTS TO HAVE A STORC GYKID RELEASE NOZZLE INSTALLED.
- THE CONTRACTOR MUST ENSURE THAT ALL SECTIONS OF LINES HAVE TEST POINTS AND TEMPORARY BLOW-OFFS SUITABLE TO ENSURE ADEQUATE PRESSURE TESTING, CHLORINATION AND FLUSHING. DISCHARGE OF CHLORINATED WATER IS NOT PERMITTED INTO DITCHES, STORM SEWERS OR WATERCOURSES UNLESS NEUTRALIZED WITH SODIUM THIO SULPHATE OR APPROVED EQUIVALENT ACCEPTED BY THE MUNICIPAL ENGINEER.
- TESTING AND CHLORINATION OF WATERMANS IS THE RESPONSIBILITY OF THE CONTRACTOR WITH INSPECTION AUTHORIZED BY THE MUNICIPAL ENGINEER. WATERMANS MUST PASS PRESSURE AND BACTERIOLOGICAL TESTING BEFORE CONNECTION IS MADE TO EXISTING WATER SYSTEM.
- WHERE APPLICABLE, ALL SERVICE CONNECTIONS ARE TO BE MARKED ON THE CURB WITH A 2mm DEEP SAW CUT AND A 50mm x 100mm STAKE 0.3m FROM PROPERTY LINE. BOTH ARE TO BE PAINTED BLUE.
- SERVICE CONNECTION PIPE MUST BE COPPER PIPE, EXCEPT AS ACCEPTED BY THE MUNICIPAL ENGINEER. THE TYPE OF CURB STOP AND BURY BOX SHOWN ON THE APPROVED DRAWING SHALL BE USED IN ALL CASES, UNLESS AN ALTERNATIVE IS ACCEPTED BY THE MUNICIPAL ENGINEER.

## STORM SEWER

- STORM SEWER MATERIALS ARE TO CONFORM TO THE HMCD SPECIFICATIONS AND SECTION 3.1 OF THE SUBDIVISION AND LAND DEVELOPMENT BYLAW.
- FOR TYPICAL "UTILITY TRENCH" SECTION DETAIL, SEE HMCD STANDARD DETAIL DRAWING.
- EXISTING DRAINS FROM PRIVATE PROPERTIES ARE TO BE TIED INTO THE NEW STORM SYSTEM WHEN INFILLING EXISTING DITCHES, CONNECTIONS ARE NOT TO PROTRUDE INTO MAIN.
- FOR TYPICAL CATCH BASIN DETAILS REFER TO HMCD STANDARD DETAIL DRAWING UNLESS OTHERWISE SPECIFIED BY MUNICIPAL ENGINEER.
- FOR TYPICAL DETAILS OF ALL STORM SEWER CONNECTIONS, SEE CITY OF CHILLIWACK SUPPLEMENTARY DRAWINGS.
- ALL SINGLE CATCH BASIN LEADS ARE TO BE MINIMUM 200mm DIAMETER. ALL DOUBLE CATCH BASIN LEADS ARE TO BE MINIMUM 300mm DIAMETER. NO CURVES OR BENDS ARE PERMITTED IN THE LEADS.

- ON-SITE CATCH BASIN LEADS SHALL BE 150mm DIAMETER AT A MINIMUM GRADE OF 1.0%.
- ALL STORM SEWER SERVICE CONNECTIONS ARE TO BE MINIMUM 100mm DIAMETER FOR RESIDENTIAL AND 150mm FOR INDUSTRIAL/COMMERCIAL.
- DIAMETER OF ALL STORM SEWER MANHOLES MUST CONFORM TO THE HMCD STANDARD DETAIL DRAWING UNLESS OTHERWISE NOTED.
- TIE-INS OF MAINS TO EXISTING STORM SEWER SYSTEMS ARE TO BE PERFORMED BY THE CONTRACTOR.
- MANUFACTURED WYES ARE TO BE USED ON STORM PIPE UNDER 450mm DIAMETER.
- STORM SEWERS ARE TO BE CONSTRUCTED WITH SEALED JOINTS UNLESS OTHERWISE SPECIFIED ON THE DESIGN DRAWINGS.
- WHERE APPLICABLE ALL STORM SEWER CONNECTIONS ARE TO BE MARKED BY ALL OF THE FOLLOWING - 2mm DEEP SAW CUT ON THE CURB, 50mm x 100mm STAKE (PAINTED GREEN) AND PLACED AT END OF PIPE, AND THE END OF THE PIPE TO BE CAPPED AND PAINTED GREEN. STORM I.C. LID IS ALSO PAINTED GREEN.
- TOP OF INSPECTION CHAMBER STANDPIPES IS TO BE CONSTRUCTED TO 600mm ABOVE FINAL LOT GRADE.
- SEWER MAINS AND CONNECTIONS TO BE VIDEO INSPECTED PRIOR TO USE. CONTRACTOR TO PROVIDE A VIDEO COPY ON DVD TO THE CITY OF CHILLIWACK.

## SANITARY SEWER

- SANITARY SEWER MATERIALS MUST CONFORM TO THE HMCD SPECIFICATIONS AND SECTION 3.1 OF THE SUBDIVISION AND LAND DEVELOPMENT BYLAW.
- MANHOLE DETAILS TO BE IN ACCORDANCE WITH HMCD STANDARD DETAIL DRAWINGS.
- FOR TYPICAL DETAILS OF ALL SEWER CONNECTIONS, SEE CITY OF CHILLIWACK SUPPLEMENTARY DRAWINGS.
- FOR TYPICAL "UTILITY TRENCH" SECTION DETAIL, SEE HMCD STANDARD DETAIL DRAWING.
- SERVICE CONNECTIONS ARE TO BE 100mm DIAMETER FOR RESIDENTIAL AND 150mm DIAMETER FOR INDUSTRIAL, UNLESS OTHERWISE ACCEPTED BY THE MUNICIPAL ENGINEER.
- TOP OF INSPECTION CHAMBER STANDPIPES ARE TO BE CONSTRUCTED TO 600mm ABOVE FINAL LOT GRADE.
- NEW SEWER LINES TIED INTO EXISTING LINES MUST BE PLUGGED UNTIL THEY ARE TESTED, FLUSHED AND ACCEPTED BY THE CITY OF CHILLIWACK.
- SERVICE CONNECTIONS MUST BE MADE TO THE MAIN WHENEVER POSSIBLE. SHOULD A CONNECTION HAVE TO BE MADE TO A MANHOLE, IT MUST BE AT A HIGHER ELEVATION THAN THE CROWN OF THE HIGHEST SEWER MAIN ENTERING THE MANHOLE.
- TIE-INS OF PROPOSED MAINS TO EXISTING SANITARY SEWER MAINS ARE TO BE PERFORMED BY THE CONTRACTOR UNLESS OTHERWISE DIRECTED.
- TESTING IS THE RESPONSIBILITY OF THE CONTRACTOR WITH INSPECTION AUTHORIZED BY THE MUNICIPAL ENGINEER. SEWER MAINS MUST PASS PRESSURE TESTING BEFORE CONNECTION IS MADE TO EXISTING SEWER SYSTEM.
- THE CONTRACTOR MUST DISCONNECT AND SEAL ABANDONED SERVICES TO THE ACCEPTANCE OF THE MUNICIPAL ENGINEER.
- CONNECTIONS TO MAIN MUST BE PERPENDICULAR TO MAIN EXCEPT AS ACCEPTED BY THE MUNICIPAL ENGINEER.
- WHERE APPLICABLE, ALL SANITARY SEWER CONNECTIONS ARE TO BE MARKED BY ALL OF THE FOLLOWING - 2mm DEEP SAW CUT ON CURB, 50mm x 100mm STAKE (PAINTED RED) AT END OF PIPE, AND THE END OF THE PIPE TO BE PAINTED RED. SANITARY I.C. LID IS ALSO PAINTED RED.
- CONTRACTOR IS RESPONSIBLE FOR ENSURING OWNER'S ENGINEER OR CITY INSPECTOR IS PRESENT TO WITNESS SERVICE CONNECTION TIE-INS TO EXISTING SEWERS.
- SEWER MAINS AND CONNECTIONS TO BE VIDEO INSPECTED PRIOR TO USE. CONTRACTOR TO PROVIDE A VIDEO COPY ON DVD TO THE CITY OF CHILLIWACK.

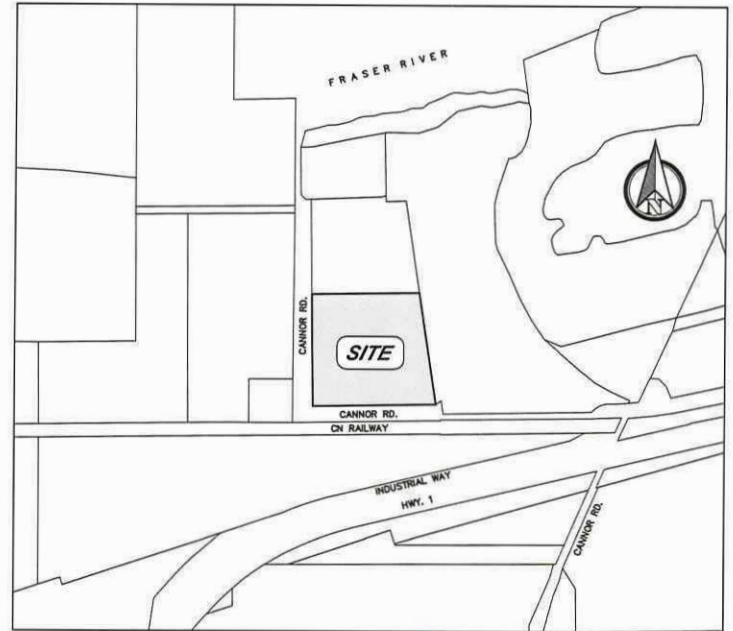
## STREETLIGHTS

- WORKS MUST COMPLY WITH THE CURRENT HMCD CONSTRUCTION DOCUMENTS AND THE SUBDIVISION AND LAND DEVELOPMENT BYLAW.
- THE CONTRACTOR MUST ARRANGE FOR EXACT HYDRO SERVICE BOX LOCATIONS PRIOR TO THE START OF WORK AND IS TO REFER TO B.C. HYDRO STANDARDS, REGULATIONS AND SPECIFICATIONS FOR CONNECTION DETAILS.
- STREET LIGHT POLES ARE TO BE GALVANIZED.
- LUMINAIRES ARE TO BE 100W & 150W WITH TYPE 2 MC DISTRIBUTION, FLAT GLASS HIGH PRESSURE SODIUM (UNLESS OTHERWISE SPECIFIED ON PLAN).
- THE CONTRACTOR MUST OBTAIN BASE TEMPLATES FROM THE POLE MANUFACTURER FOR ANCHOR BOLT INSTALLATION.
- STAGGER CONNECTIONS IN EACH POLE SO THAT ONE FEEDLINE CONNECTS TO THE BLACK PHASE CONDUCTOR AND THE OTHER TO THE RED PHASE CONDUCTOR (SEE SUBDIVISION AND DEVELOPMENT SERVICING BYLAW).
- PRODUCING MUST BE EXTENDED ACROSS THE ROAD UNLESS OTHERWISE NOTED.
- ALL STREETLIGHT POLES TO INCLUDE ANTI-WIRE THEFT DEVICE SUCH AS WIRE SENTRY OR APPROVED EQUIVALENT.
- CONDUCTORS INSIDE POLES ARE TO BE NO. 12 RW90 X-LINK, NO. 8 RW90 BOND.
- CONDUCTOR INSIDE CONDUIT ARE TO BE NO. 6 RW90 X-LINK.
- PLOUGHING OF CONDUIT WILL NOT BE ALLOWED.
- ALL STREETLIGHT CONNECTIONS ARE TO BE MADE WITH WIRE NUT. SEALING OF THE CONNECTIONS IS TO BE WITH PVC TAPE.

DRAWING INDEX	
SHEET NO.	DRAWING TITLE
1	LOCATION PLAN AND GENERAL NOTES-INTERIM
2	KEY PLAN-INTERIM
3	LOT GRADING PLAN-INTERIM
4	SITE SERVICING PLAN-INTERIM
5	STORMWATER MANAGEMENT PLAN-INTERIM
6	CONSTRUCTION DETAILS-INTERIM

## LEGEND

PROPOSED	EXISTING	DESCRIPTION
		BENCH MARK - GEODETIC DATUM
		GRAVEL SURFACE TREATMENT
		EDGE OF PAVEMENT
		CURB AND GUTTER
		SANITARY SEWER
		SANITARY FORCE MAIN
		SANITARY SEWER SERVICE (c/w INSPECTION CHAMBER)
		STORM SEWER
		STORM SEWER SERVICE (c/w INSPECTION CHAMBER)
		CATCH BASIN - TOP INLET
		CATCH BASIN - SIDE INLET
		LAWN DRAIN
		SWALE
		SIDEWALK (ASPHALT)
		SIDEWALK (CONCRETE)
		WATERMAIN
		WATER SERVICE CONNECTION
		WATER VALVE
		AIR VALVE
		HYDRANT AND VALVE ASSEMBLY
		CAPPED END
		BLOW-OFF
		TEMPORARY BLOW-OFF
		JUNCTION BOX
		UNDERGROUND HYDRO/TELEPHONE
		GAS MAIN
		UTILITY POLE
		UTILITY POLE WITH LIGHT
		STREET LIGHT



LOCATION PLAN  
SCALE 1:5000

No.	DATE	REVISION	DRN	TECH	ENG
8	2023.05.31	RECORD DRAWING	DBL	SJB	SIM
7	2023.01.18	ISSUED FOR CONSTRUCTION	SIM	SIM	SIM
6	2022.08.03	REVISED DRIVEWAY DETAILS	SIM	SIM	SIM
5	2022.04.27	REVISED SERVICING	SIM	SIM	SIM
4	2021.08.20	ISSUED FOR REVIEW	GL	SIM	SIM
3	2021.06.01	ISSUED FOR REVIEW	GL	GL	SIM

EGBC PERMIT TO PRACTICE NO. 1000138

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2023-09-28

KING HOE EXCAVATING LTD.  
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ATTENTION: TRAVIS TOURNIER  
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LOCATION PLAN AND  
GENERAL NOTES-INTERIM

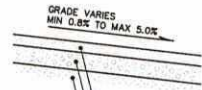
7582 CANNOR ROAD

DESIGNED: GL  
DRAWN: NWP  
REVIEWED: SIM  
APPROVED: SIM  
SCALE: HORIZ  
VERT: AS SHOWN

CHILLIWACK PROJECT NUMBER  
CHILLIWACK DRAWING NUMBER  
KM CIVIL PROJECT NO.  
200567.1-C  
DATE: NOVEMBER, 2020  
REVISION NO.: 8

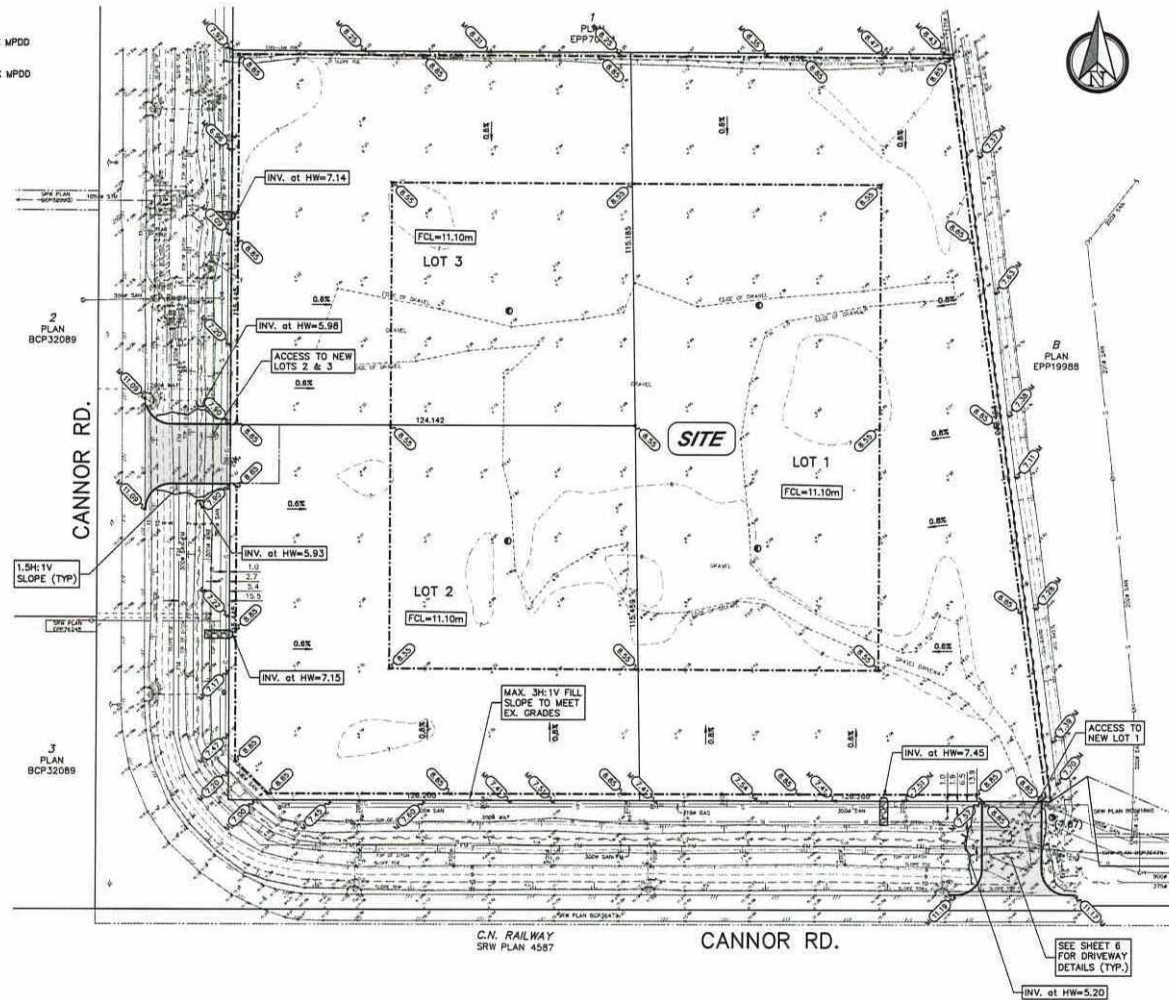






**TYPICAL GRAVEL STRUCTURE SECTION**  
N.T.S.

EARTHWORKS VOLUMES:	
1. BULK FILL:	67,200m <sup>3</sup>
2. SUBBASE GRAVELS:	16,300m <sup>3</sup>
3. BASE GRAVEL:	8,150m <sup>3</sup>



SITE GRADING LEGEND:	
FIRST FLOOR ELEVATION OF BUILDING	3.50
EXISTING SURVEY ELEVATION	19.00
PROPOSED GRADE ELEVATION	19.00 TW
FINISHED GROUND AT TOP OF WALL. TOP OF WALL TO BE 0.15m ABOVE FINISHED GROUND.	19.00 BW
FINISHED GROUND AT BOTTOM OF WALL	19.00 BW
DIRECTION OF OVERLAND FLOW	→
EXISTING GROUND CONTOUR	10
LANDSCAPED AREA - SEE LANDSCAPE ARCHITECTS PLANS DETAILS	
PROPOSED CONCRETE PAVEMENT STRUCTURE PER GEOTECHNICAL RECOMMENDATIONS	
PROPOSED ASPHALT PAVEMENT STRUCTURE PER GEOTECHNICAL RECOMMENDATIONS	
PROPOSED CONCRETE SIDEWALK - SEE ARCHITECTURAL DRAWINGS FOR DETAILS	
CONCRETE CURB & GUTTER - SEE ARCHITECTURAL DRAWINGS FOR DETAILS	
RETAINING WALL	
PROPOSED CATCH BASIN (RIM ELEVATION)	(23.54)
PROPOSED LAWN DRAIN (RIM ELEVATION)	(23.54)
SWALE	
RIDGELINE	

- NOTES:**
- ALL DIMENSIONS AND ELEVATIONS ARE METRIC.
  - REFER TO ARCHITECTURAL PLANS FOR DETAILED CURB AND BUILDING ALIGNMENT/LAYOUT, AS WELL AS DETAILS OF CONCRETE SIDEWALKS, STYLES, COLOURING, AND TYPES.

No.	DATE	REVISION	DRN	TECH	ENG
8	2022.08.31	RECORD DRAWING	DBL	SJB	SIM
7	2022.01.16	ISSUED FOR CONSTRUCTION	SIM	SIM	SIM
6	2022.08.03	REVISED DRIVEWAY DETAILS	SIM	SIM	SIM
5	2022.04.27	REVISED SERVICING	SIM	SIM	SIM
4	2021.08.30	ISSUED FOR REVIEW	QL	SIM	SIM
3	2021.08.01	ISSUED FOR REVIEW	QL	QL	SIM

**KM Civil**  
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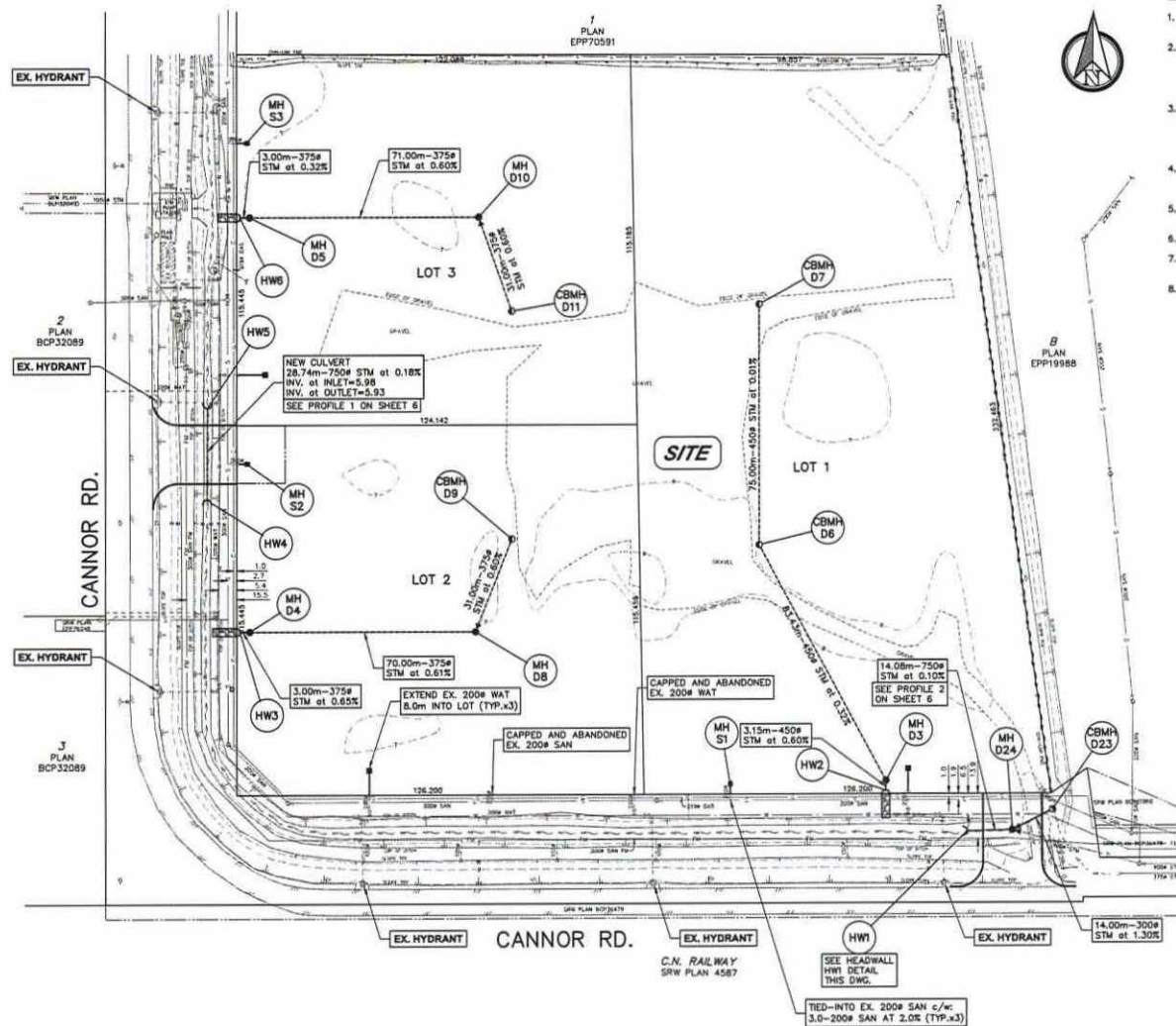
**LOT GRADING  
PLAN-INTERIM**  
7582 CANNOR ROAD

DESIGNED	DRWN	REVISED	APPROVED	SCALE	DATE
QL	NWP	SIM	SIM	1:750	NOVEMBER, 2022

CLIENT/PROJECT NUMBER	Drawn by No.
CLIENT/PROJECT NUMBER	3
KM CIVIL PROJECT No.	6
200567.1-C	
DATE, NOVEMBER, 2022	REVISION No. 8

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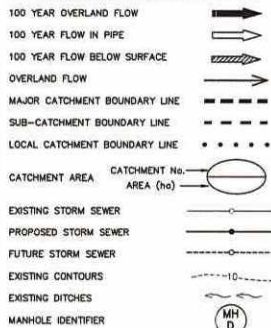
# NOTES:

- ALL DIMENSIONS AND ELEVATIONS ARE METRIC.
- SEE ARCHITECTURAL DRAWINGS FOR DETAILED CURB AND BUILDING ALIGNMENT/LAYOUT, AS WELL AS DETAILS OF CONCRETE SIDEWALKS, STYLES, COLOURING, AND TYPES.
- ALL WORKS AND MATERIALS ARE IN ACCORDANCE WITH THE BC PLUMBING CODE, MMCD, AND THE CITY OF CHILLIWACK STANDARDS AND SPECIFICATIONS.
- REFER TO MECHANICAL PLANS FOR ALL SERVING DETAILS WITHIN ONE METRE OF THE BUILDING.
- TYPE 1 BEDDING AND 100mm GRANULAR BACKFILL PER MMCD STD. DWG. G4.
- ALL WATER FITTINGS ARE D.I.
- ALL WATER MAIN PIPE ARE PVC C900 UNLESS OTHERWISE NOTED.
- ALL PVC C900 WATER MAIN ARE INSTALLED WITH MIN. 1.2m COVER AND MIN. 0.10% GRADE.
- ALL SANITARY MAIN PIPE ARE PVC SDR35 UNLESS OTHERWISE NOTED.
- ALL TRENCH DRAIN AND WALL DRAIN LEADS ARE 150mm DIAMETER PVC DWV AT MINIMUM 1.0% UNLESS OTHERWISE NOTED.
- ALL STORM MAIN PIPE ARE PVC SDR35 UNLESS OTHERWISE NOTED.
- ALL CATCH BASINS AND LAWN DRAINS ARE C/W TRAPPING HOODS AND 600mm SUMPS.
- ALL LAWN DRAINS ARE 800# c/w 150# PVC SDR35 LEAD AT MIN. 1.0% UNLESS OTHERWISE NOTED.
- ALL STORM MAINS ARE INSTALLED C/W GASKETED JOINTS.
- ALL CATCH BASINS ARE AS PER DOBNEY No. 23 (GRATE) AND No. 24 (FRAME) OR APPROVED EQUIVALENT C/W 150# PVC SDR 35 LEAD AT MIN. 1.0% UNLESS OTHERWISE NOTED.
- ALL STORM CONNECTIONS TO EXCLUDE BUILDING SUMPS, JUMPS TO BE BY OTHERS.
- ALL SANITARY AND WATER MAINS AND CONNECTIONS WITH LESS THAN 1.0m COVER ARE CONCRETE ENCASED PER MMCD STD. DWG. G7.
- ALL STORM PIPES WITH LESS THAN 1.0m COVER ARE CONCRETE ENCASED PER MMCD STD. DWG. G7 OR DWV PIPE IN ACCORDANCE WITH BRITISH COLUMBIA PLUMBING CODE, 2018.
- WATER MAIN JOINTS ARE WRAPPED WITH PETROLATUM TAPE WITHIN 3.0m ON EACH SIDE OF ALL CROSSINGS, WHERE 0.5m CLEARANCE FROM OTHER UTILITIES CANNOT BE ACHIEVED, IN ACCORDANCE WITH THE LATEST VERSION OF AWWA STANDARDS C217, C214 OR C209.
- ALL WATER MAIN TEES AND BONDS HAVE THRUST RESTRAINTS.
- ALL STORM MANHOLES HAVE 600mm DEEP SUMPS.

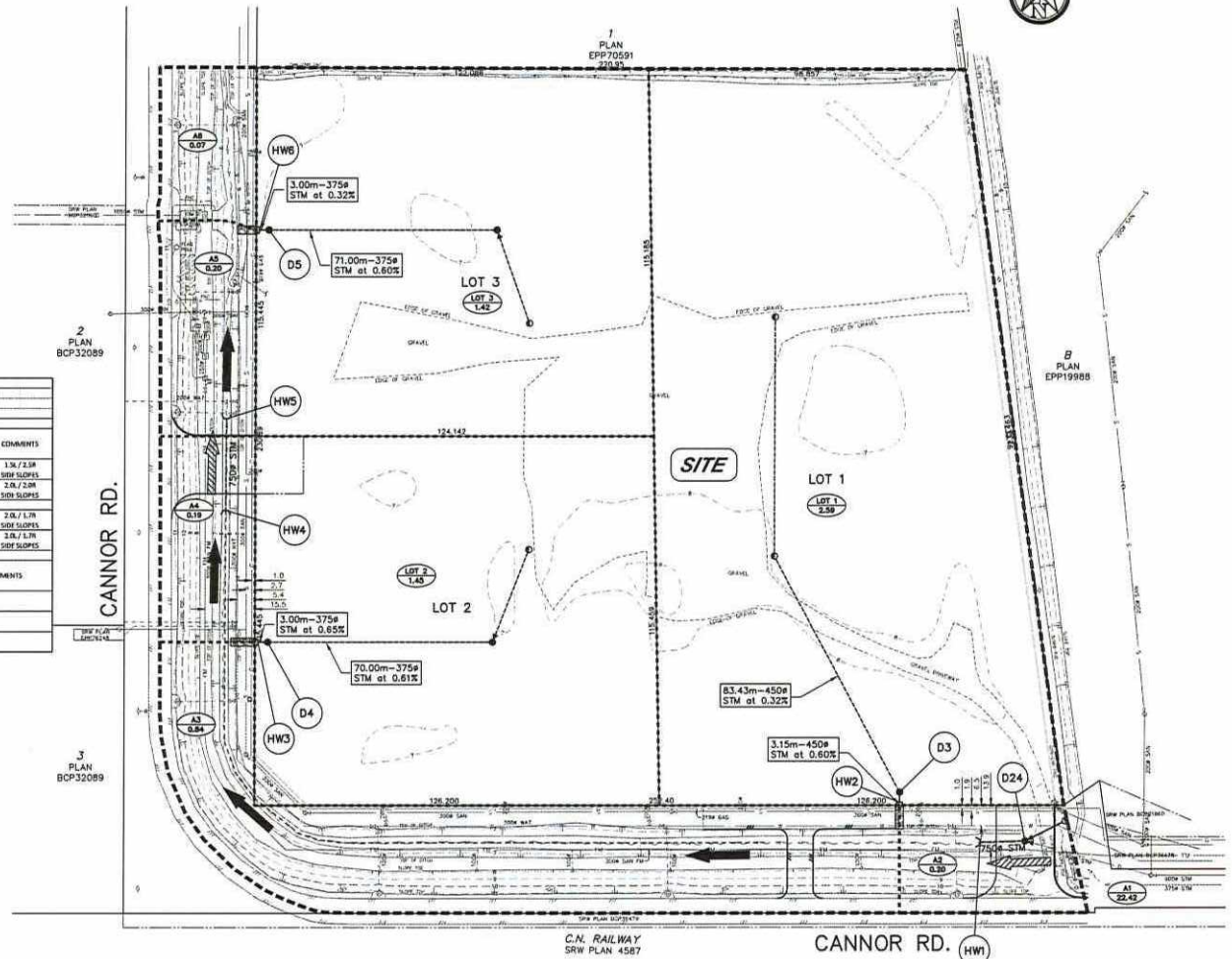
## STORM MANHOLE INFORMATION

STM MH D3 STORMCEPTOR E74 RIM = 8.04 INV.N = 7.45 INV.W = 7.48	STM HW1 (TYPE 14-15) RIM = 8.20 INV.E = 5.20	STM HW4 (TYPE 14-15) RIM = 6.99 INV.N = 5.98	STM CBMH D6 (1050#) RIM = 8.55 INV.S = 7.75 INV.W = 7.75
STM MH D4 STORMCEPTOR E73 RIM = 7.63 INV.E = 7.15 INV.W = 7.15	STM HW2 (TYPE 11-13) RIM = 8.13 INV.N = 7.43	STM HW5 (TYPE 14-15) RIM = 6.94 INV.S = 5.93	STM CBMH D7 (1050#) RIM = 8.55 INV.S = 7.76
STM MH D5 STORMCEPTOR E73 RIM = 7.63 INV.E = 7.15 INV.W = 7.15	STM HW3 (TYPE 11-13) RIM = 7.76 INV.E = 7.13	STM HW6 (TYPE 11-13) RIM = 7.76 INV.E = 7.13	STM MH D8 (1050#) RIM = 8.55 INV.N = 7.58 INV.W = 7.58
STM MH D6 STORMCEPTOR E73 RIM = 7.63 INV.E = 7.15 INV.W = 7.15	CBMH D2 (1350#) RIM = 7.87 INV.S = 5.48	STM MH D10 (1050#) RIM = 8.55 INV.S = 7.57 INV.S = 7.57	STM CBMH D9 (1050#) RIM = 8.55 INV.N = 7.77
STM MH D24 STORMCEPTOR E73 RIM = 8.40 INV.E = 5.21 INV.S = 5.22 INV.W = 5.20			STM CBMH D11 (1050#) RIM = 8.55 INV.S = 7.76

# STORM WATER MANAGEMENT LEGEND:



CITY OF CHILLWACK STORMWATER CALCULATION SHEET																				
PROJECT NUMBER: 200567.1-C						MANNING'S N: 0.013 CONCRETE / PVC														
PROJECT LOCATION: 7582 CANNOR ROAD, CHILLWACK						DATE: 05/09/2023														
CATCHMENT ID	MANHOLE	AREA, A	COEFF, C	A x C	A/C x 100	DITCH FLOWS										COMMENTS				
						TC (MIN)	INLET INCH	INCH	INCH	INCH	INCH	INCH	INCH	INCH	INCH		INCH			
LOT 1 + A2	HW1	HW2	2.79	0.85	2.372	21.431	43.3	0.96	0.72	17.86	0.138	7.713	0.05	0.83	4.4	45.31	0.79	0.79	1.36 / 2.58 SEW SLOPES	
LOT 2 + A3 + A4	HW7	HW4	2.48	0.85	2.108	21.339	44.4	0.92	0.74	17.67	0.135	7.713	0.05	0.83	4.4	45.31	0.79	0.79	2.08 / 2.58 SEW SLOPES	
LOT 3 + A5	HW5	HW6	1.62	0.85	1.377	24.916	53.38	1.05	0.89	16.31	0.129	9.403	0.05	0.82	5.5	62.14	0.99	0.46	2.08 / 1.78 SEW SLOPES	
A6	-	HW6	0.07	0.85	0.060	0.606	10.00	0.81	0.17	13.73	0.006	9.400	0.05	1.01	2.5	48.26	0.99	0.46	3.04 / 1.71 SEW SLOPES	
CATCHMENT ID	MANHOLE	AREA, A	COEFF, C	A x C	A/C x 100	PIPE FLOWS										COMMENTS				
						TC (MIN)	INLET INCH	INCH	INCH	INCH	INCH	INCH	INCH	INCH	INCH		INCH			
EAST OF DITCH (A1)	D1	HW1	22.42	0.85	19.058	19.058	49.00	0.29	43.30	0.72	17.86	0.138	7.713	0.05	0.83	4.4	45.31	0.79	0.79	1.36 / 2.58 SEW SLOPES
LOT 1 + A2	HW8	HW7	2.79	0.85	2.372	21.431	43.3	0.96	0.72	17.86	0.138	7.713	0.05	0.83	4.4	45.31	0.79	0.79	1.36 / 2.58 SEW SLOPES	
LOT 2 + A3 + A4	HW4	HW3	2.48	0.85	2.108	21.339	44.4	0.92	0.74	17.67	0.135	7.713	0.05	0.83	4.4	45.31	0.79	0.79	2.08 / 2.58 SEW SLOPES	



No.	DATE	REVISION	DRN	TECH	ENG
8	2023.05.31	RECORD DRAWING	DBL	SJB	SIM
7	2023.01.16	ISSUED FOR CONSTRUCTION	SIM	SIM	SIM
6	2022.09.03	REVISED DRIVEWAY DETAILS	SIM	SIM	SIM
5	2022.04.27	REVISED SERVICING	SIM	SIM	SIM
4	2021.08.30	ISSUED FOR REVIEW	GL	SIM	SIM
3	2021.08.01	ISSUED FOR REVIEW	GL	GL	SIM

**KM Civil**  
CONSULTANTS LTD.  
EGBC PERMIT TO PRACTICE No. 1000138

ABBOTSFORD OFFICE  
# 400 - 34077 Gladys Avenue  
Abbotsford, BC V2S 2E8  
Tel: 604-853-6821 Fax: 604-853-1580  
VANCOUVER OFFICE  
# 110 - 2520 Virtual Way  
Vancouver, BC V6M 0C4  
Tel: 604-294-6622 Fax: 604-294-6655



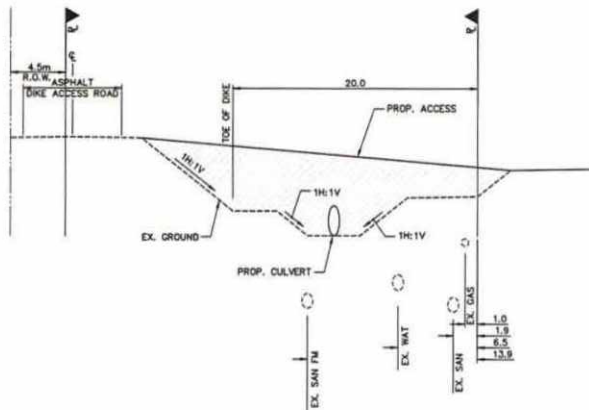
**KING HOE EXCAVATING LTD.**  
26138 31<sup>st</sup> AVENUE, ALDERGROVE, B.C. V4W 2Z8  
ATTENTION: TRAVIS TOURNIER  
TEL: (604) 856-9772 FAX: (604) 856-2325

**STORMWATER MANAGEMENT  
PLAN-INTERIM**  
7582 CANNOR ROAD

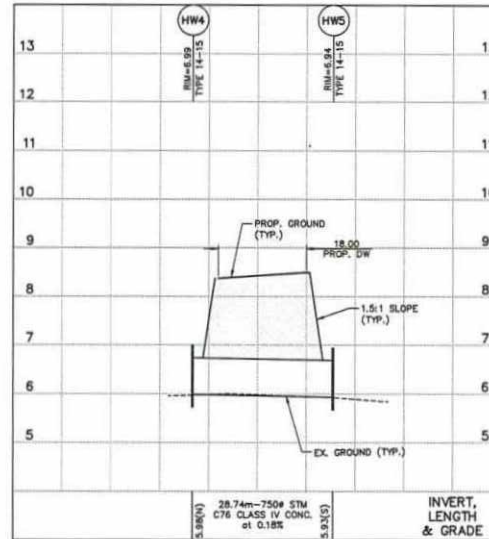
DATE: NOVEMBER 2020  
REVISION: 8

CHILLWACK PROJECT NUMBER	5
CHILLWACK DRAWING NUMBER	200567.1-C
NO. CIVIL PROJECT NO.	200567.1-C
DATE	NOVEMBER 2020
REVISION	8

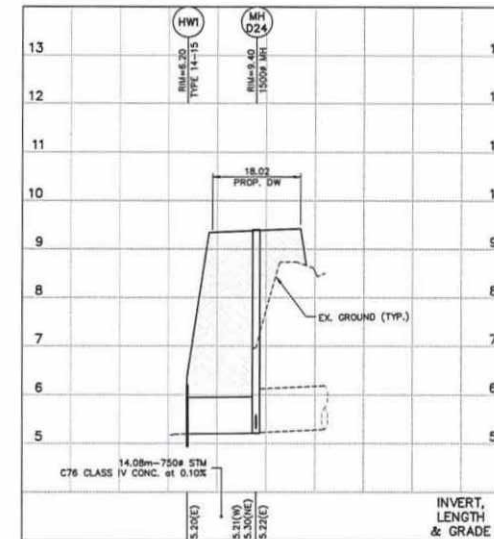




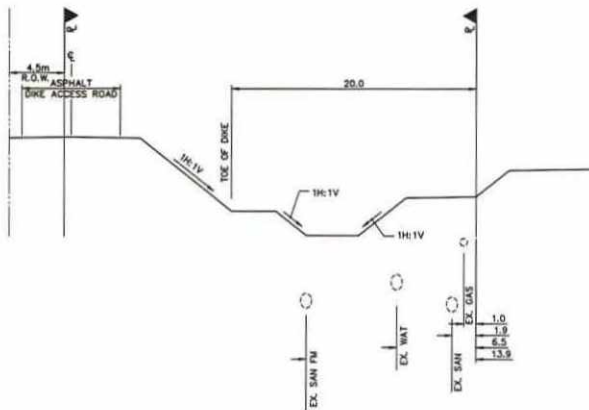
SECTION D-D  
N.T.S.



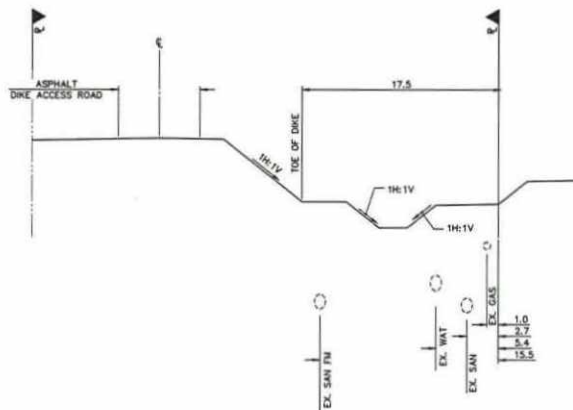
PROP. CULVERT PROFILE 1



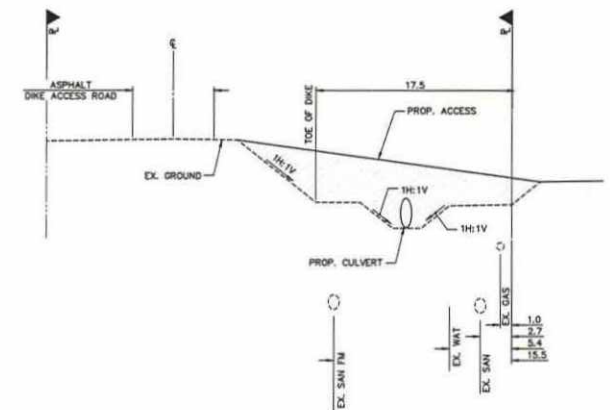
PROP. CULVERT PROFILE 2



SECTION A-A  
N.T.S.



SECTION B-B  
N.T.S.



SECTION C-C  
N.T.S.

8	2023.05.31	RECORD DRAWING	DBL	SJB	SM
7	2023.01.18	ISSUED FOR CONSTRUCTION	SM	SM	SM
6	2022.08.03	REVISED DRIVEWAY DETAILS	SM	SM	SM
5	2022.04.27	REVISED SERVICING	SM	SM	SM
4	2021.08.28	ISSUED FOR REVIEW	GL	SM	SM
3	2021.08.01	ISSUED FOR REVIEW	GL	GL	SM
No.	DATE	REVISION	DRN	TECH	ENG

**KM Civil**  
CONSULTANTS LTD.  
EGBC PERMIT TO PRACTICE No. 1000138

ABBOTSFORD OFFICE  
# 400 - 34077 Gladys Avenue  
Abbotsford, BC V2S 2E9  
Tel: (604) 855-8831 Fax: (604) 855-1580  
VANCOUVER OFFICE  
# 110 - 2020 Virtual Way  
Vancouver, BC V6M 0C4  
Tel: (604) 264-6662 Fax: (604) 264-6665



**KING HOE EXCAVATING LTD.**  
26138 31<sup>ST</sup> AVENUE, ALDERGROVE, B.C., V4W 2Z5  
ATTENTION: TRAVIS TOURNIER  
TEL: (604) 856-9772 FAX: (604) 856-2325

**CONSTRUCTION  
DETAILS-INTERIM**  
7582 CANNOR ROAD

DESIGNED: GL DRAWN: MWP REVIEWED: SM APPROVED: SM SCALE: HORIZ: 1:500 U.O.N. VERT: 1:80 U.O.N.

CAD/PLOT/PROJECT NUMBER: 200567.1-C  
DATE: NOVEMBER, 2023  
DRAWING NO: 6  
# 6

# **APPENDIX B**

## **PHOTOS**





Photo Index



Photo 1





Photo 2

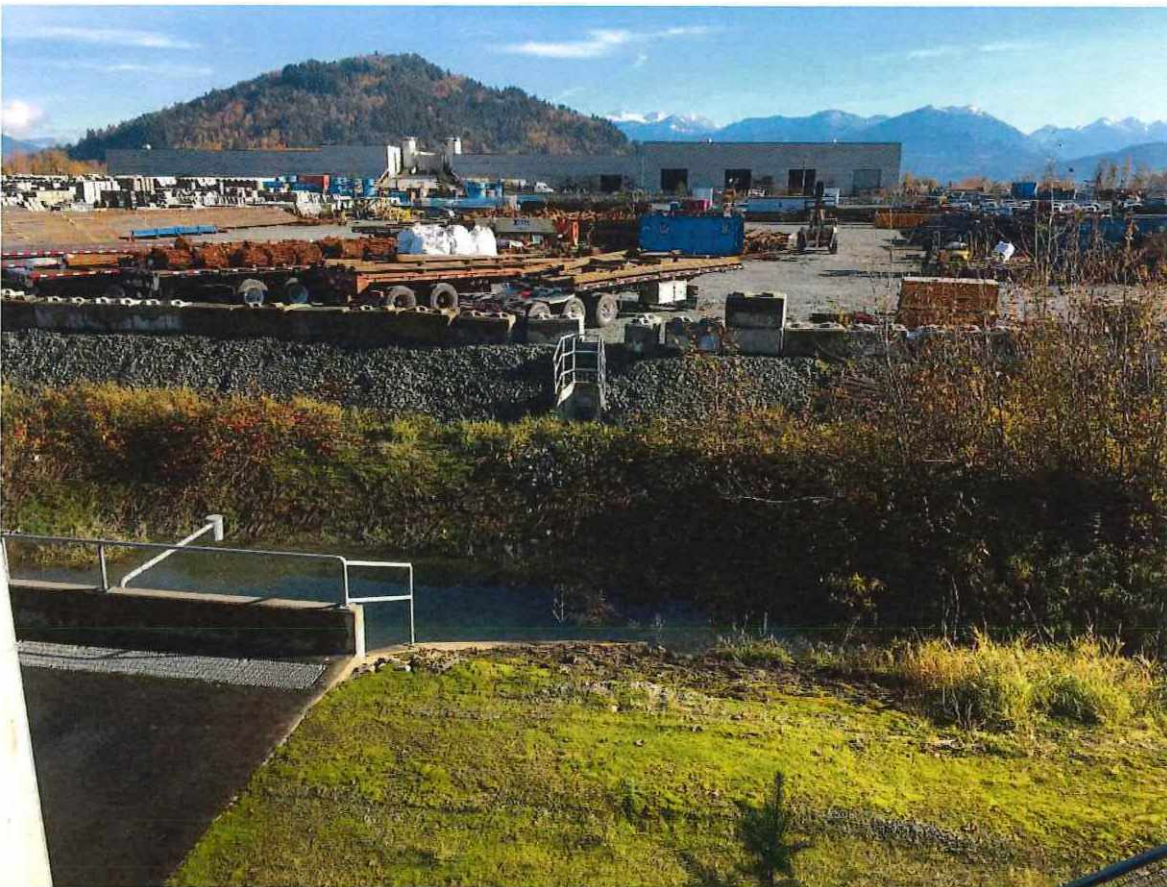


Photo 3





Photo 4

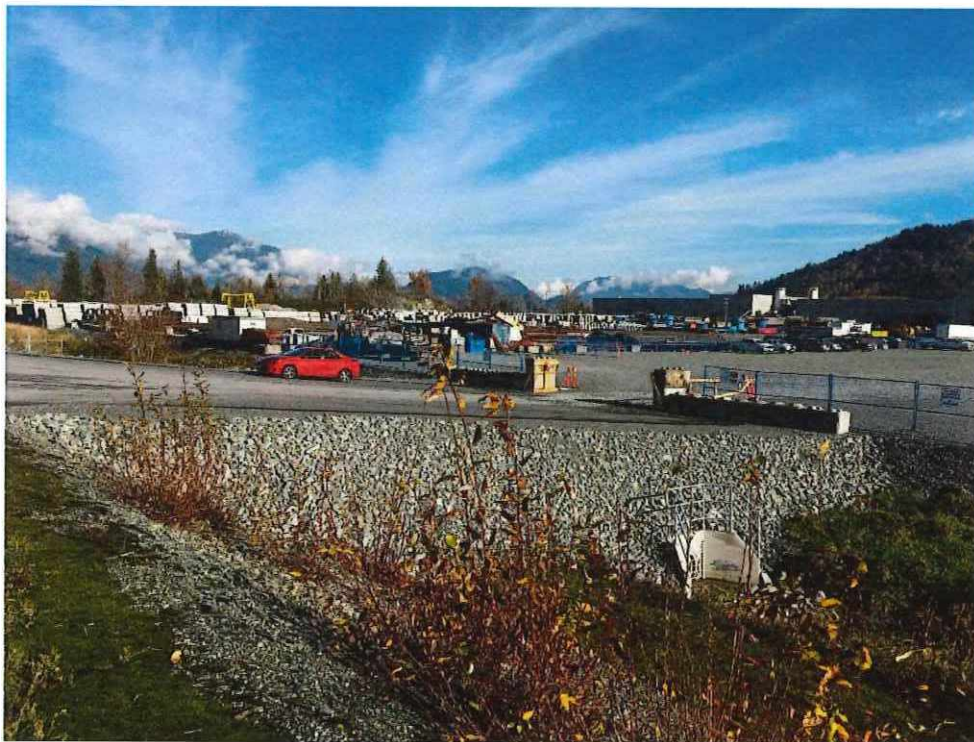


Photo 5



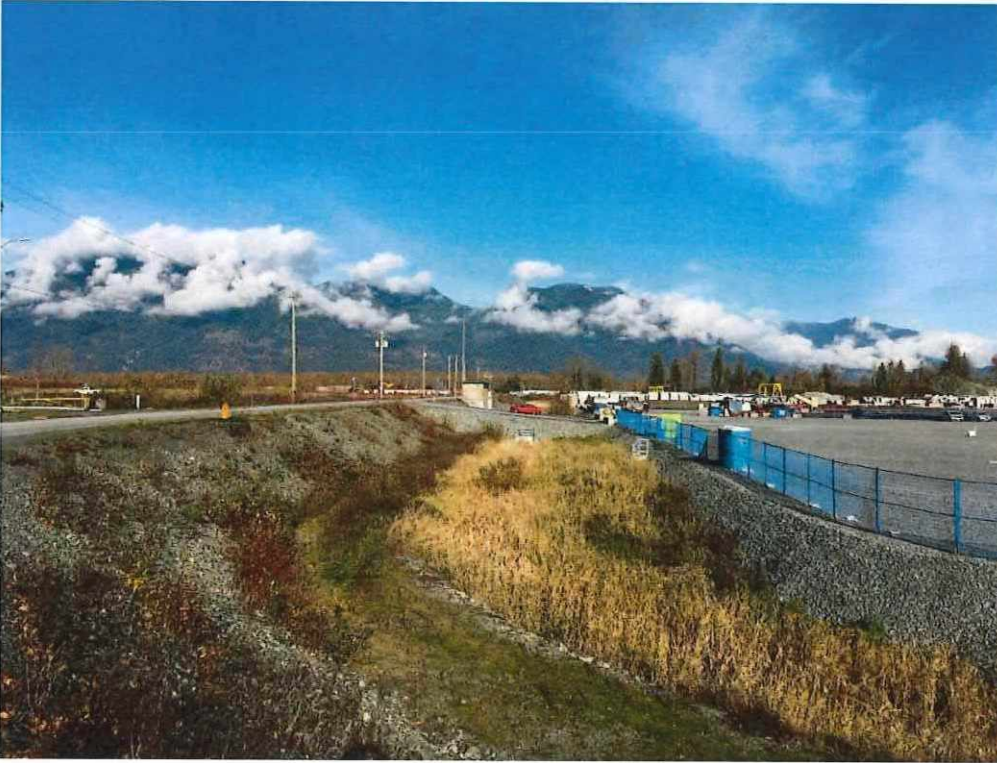


Photo 6



Photo 7



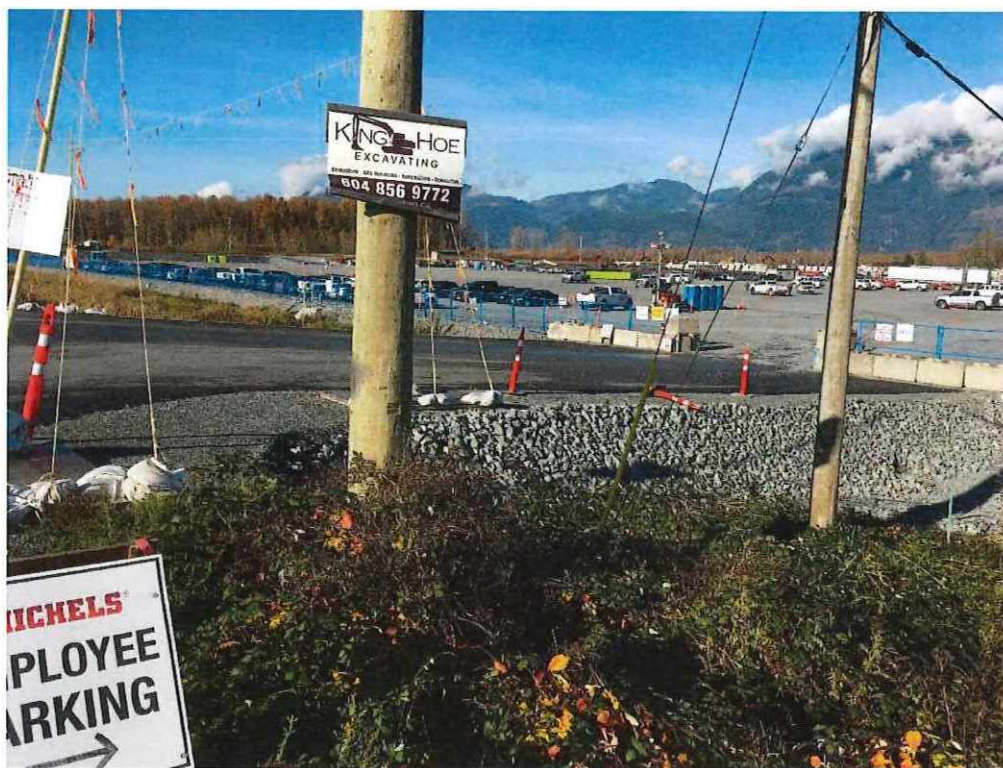


Photo 8



Photo 9



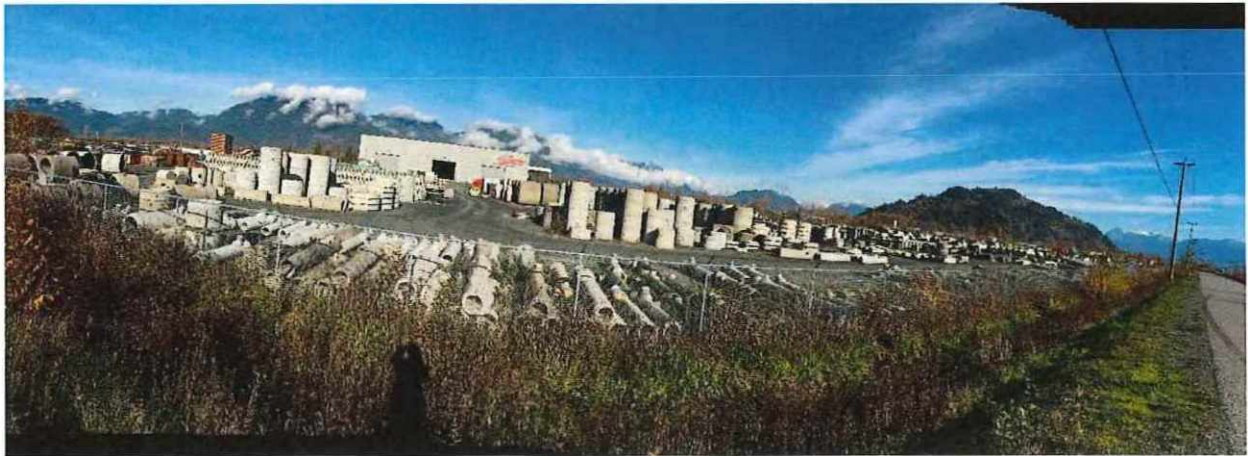


Photo 10



Photo 11



Photo 12



Photo 13



Photo 14





Photo 15

# **APPENDIX C**

## **FLOOD ASSURANCE STATEMENT**

## FLOOD ASSURANCE STATEMENT

Note This statement is to be read and completed in conjunction with the current Engineers and Geoscientists BC *Professional Practice Guidelines – Legislated Flood Assessments in a Changing Climate in BC* ("the guidelines") and is to be provided for flood assessments for the purposes of the *Land Title Act*, *Community Charter*, or the *Local Government Act*. Defined terms are capitalized, see the Defined Terms section of the guidelines for definitions.

To The Approving Authority  
**City of Chilliwack**

Date **November 20, 2023**

**8550 Young Road Chilliwack, BC, Canada, V2P 8A4**

Jurisdiction and address

With reference to (CHECK ONE)

- ☐ *Land Title Act* (Section 86) – Subdivision Approval
- ☐ *Local Government Act* (Part 14, Division 7) – Development Permit
- ☐ *Community Charter* (Section 56) – Building Permit
- ☐ *Local Government Act* (Section 524) – Flood Plain Bylaw Variance
- ☒ *Local Government Act* (Section 524) – Flood Plain Bylaw Exemption

For the following property ("the Property").

**7582 Cannor Road, Chilliwack, BC, Canada, V2R 4H8**

Legal description and civic address of the Property

The undersigned hereby gives assurance that he/she is a Qualified Professional and is a Professional Engineer or Professional Geoscientist who fulfils the education, training, and experience requirements as outlined in the guidelines.

I have signed, sealed, and dated, and thereby certified, the attached Flood Assessment Report on the Property in accordance with the guidelines. That report and this statement must be read in conjunction with each other. In preparing that Flood Assessment Report I have

[CHECK TO THE LEFT OF APPLICABLE ITEMS]

- X 1 Consulted with representatives of the following government organizations  
Flood exemption request letter (November 20, 2023) was sent to the City of Chilliwack
- X 2 Collected and reviewed appropriate background information
- X 3 Reviewed the Proposed Development on the Property
- \_\_\_ 4 Investigated the presence of Covenants on the Property, and reported any relevant information
- X 5 Conducted field work on and, if required, beyond the Property
- X 6 Reported on the results of the field work on and, if required, beyond the Property
- X 7 Considered any changed conditions on and, if required, beyond the Property
- 8 For a Flood Hazard analysis I have:
  - \_\_\_ 8.1 Reviewed and characterized, if appropriate, Flood Hazard that may affect the Property
  - \_\_\_ 8.2 Estimated the Flood Hazard on the Property
  - \_\_\_ 8.3 Considered (if appropriate) the effects of climate change and land use change
  - X 8.4 Relied on a previous Flood Hazard Assessment (FHA) by others
  - \_\_\_ 8.5 Identified any potential hazards that are not addressed by the Flood Assessment Report
- 9 For a Flood Risk analysis I have:
  - X 9.1 Estimated the Flood Risk on the Property
  - \_\_\_ 9.2 Identified existing and anticipated future Elements at Risk on and, if required, beyond the Property
  - \_\_\_ 9.3 Estimated the Consequences to those Elements at Risk

PROFESSIONAL PRACTICE GUIDELINES

LEGISLATED FLOOD ASSESSMENTS IN A CHANGING CLIMATE IN BC



## FLOOD ASSURANCE STATEMENT

- 10 In order to mitigate the estimated Flood Hazard for the Property, the following approach is taken.
- ☐ 10.1 A standard-based approach
  - ☒ 10.2 A Risk-based approach
  - ☐ 10.3 The approach outlined in the guidelines, Appendix F Flood Assessment Considerations for Development Approvals
  - ☐ 10.4 No mitigation is required because the completed flood assessment determined that the site is not subject to a Flood Hazard
- 11 Where the Approving Authority has adopted a specific level of Flood Hazard or Flood Risk tolerance, I have
- ☐ 11.1 Made a finding on the level of Flood Hazard or Flood Risk on the Property
  - ☒ 11.2 Compared the level of Flood Hazard or Flood Risk tolerance adopted by the Approving Authority with my findings
  - ☐ 11.3 Made recommendations to reduce the Flood Hazard or Flood Risk on the Property
- 12 Where the Approving Authority has not adopted a level of Flood Hazard or Flood Risk tolerance, I have
- ☐ 12.1 Described the method of Flood Hazard analysis or Flood Risk analysis used
  - ☐ 12.2 Referred to an appropriate and identified provincial or national guideline for level of Flood Hazard or Flood Risk
  - ☐ 12.3 Made a finding on the level of Flood Hazard or Flood Risk tolerance on the Property
  - ☐ 12.4 Compared the guidelines with the findings of my flood assessment
  - ☐ 12.5 Made recommendations to reduce the Flood Hazard or Flood Risk
- ☐ 13 Considered the potential for transfer of Flood Risk and the potential impacts to adjacent properties
- ☐ 14 Reported on the requirements for implementation of the mitigation recommendations, including the need for subsequent professional certifications and future inspections

Based on my comparison between

[CHECK ONE]

- ☒ The findings from the flood assessment and the adopted level of Flood Hazard or Flood Risk tolerance (item 11.2 above)
- ☐ The findings from the flood assessment and the appropriate and identified provincial or national guideline for level of Flood Hazard or Flood Risk tolerance (item 12.4 above)

I hereby give my assurance that, based on the conditions contained in the attached Flood Assessment Report

[CHECK ONE]

- ☐ For subdivision approval, as required by the *Land Title Act* (Section 86), "that the land may be used safely for the use intended"

[CHECK ONE]

- ☐ With one or more recommended registered Covenants
- ☐ Without any registered Covenant
- ☐ For a development permit, as required by the *Local Government Act* (Part 14, Division 7), my Flood Assessment Report will "assist the local government in determining what conditions or requirements it will impose under subsection (2) of this section [Section 491 (4)]"
- ☐ For a building permit, as required by the *Community Charter* (Section 56), "the land may be used safely for the use intended"

[CHECK ONE]

- ☐ With one or more recommended registered Covenants
- ☐ Without any registered Covenant
- ☐ For flood plain bylaw variance, as required by the *Flood Hazard Area Land Use Management Guidelines* and the *Amendment Section 3.5 and 3.6* associated with the *Local Government Act* (Section 524), "the development may occur safely"
- ☒ For flood plain bylaw exemption, as required by the *Local Government Act* (Section 524), "the land may be used safely for the use intended".

## FLOOD ASSURANCE STATEMENT

I certify that I am a Qualified Professional as defined below.

**February 28, 2024**

Date

Prepared by

**Amr Fathalla, P.Eng.**

Name (print)



Signature

Reviewed by

**Nav Sandhu, P.Eng.**

Name (print)



Signature

Address

**12 – 556 North Nechako Road, Prince George BC Canada, V2K 1A1**

**778 693 2693**

Telephone

**afathalla@mcelhanney.com**

Email

(Affix PROFESSIONAL SEAL here)

If the Qualified Professional is a member of a firm, complete the following:

I am a member of the firm

**McElhanney Ltd.**

and I sign this letter on behalf of the firm.

(Name of firm)

The background of the page is a topographic map with contour lines. The map is oriented horizontally, with the top of the page showing higher elevations and the bottom showing lower elevations. The contour lines are more densely packed in the upper left and right areas, indicating steeper slopes. The overall color scheme is a gradient of dark blues and greens, with the text in white for high contrast.

# **APPENDIX D**

## **FLOODPLAIN COVENANT**





1 Application

**Lindsay Kenney LLP**  
**Barristers and Solicitors**  
**400, 8621 - 201 Street**  
**Langley, BC BC V2Y 0G9**  
**6048885811**

File 20230244  
City: SUB02421  
Covenant (Floodplain)

2 Description of Land

PID/Plan Number	Legal Description
<b>028-968-824</b>	<b>LOT A DISTRICT LOT 277 GROUP 2 NEW WESTMINSTER DISTRICT PLAN EPP19988 EXCEPT PLAN EPP59417 AND PLAN EPP70591</b>

3 Nature of Interest

Type	Number	Additional Information
<b>COVENANT</b>		<b>Section 219</b>
<b>PRIORITY AGREEMENT</b>		<b>Granting the covenant herein priority over Mortgage No. CA9144536 and Assignment of Rents No. CA9144537</b>

4 Terms

Part 2 of this instrument consists of  
**(b) Express Charge Terms Annexed as Part 2**

5 Transferor(s)

**KERR PROPERTIES 002 LTD., NO.BC0813930**  
**THE TORONTO-DOMINION BANK (AS TO PRIORITY)**

6 Transferee(s)

**CITY OF CHILLIWACK**  
**8550 YOUNG ROAD**  
**CHILLIWACK BC V2P 8A4**

7 Additional or Modified Terms



8 Execution(s)

This instrument creates, assigns, modifies, enlarges or governs the priority of the interest(s) described in Item 3 and the Transferor(s) and every other signatory agree to be bound by this instrument, and acknowledge(s) receipt of a true copy of the filed standard charge terms, if any

Witnessing Officer Signature

Execution Date

Transferor / Transferee / Party Signature(s)

\_\_\_\_\_

YYYY-MM-DD
------------

**Kerr Properties 002 Ltd.**  
By their Authorized Signatory

\_\_\_\_\_  
**Patrick Jackson Kerr**

**Officer Certification**

Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the *Evidence Act*, R S B C 1996, c 124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the *Land Title Act* as they pertain to the execution of this instrument.

Witnessing Officer Signature

Execution Date

Transferor / Transferee / Party Signature(s)

\_\_\_\_\_

YYYY-MM-DD
------------

**The Toronto-Dominion Bank**  
By their Authorized Signatory

\_\_\_\_\_  
**Print Name:**

\_\_\_\_\_  
**Print Name:**

**Officer Certification**

Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the *Evidence Act*, R S B C 1996, c 124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the *Land Title Act* as they pertain to the execution of this instrument.



Land Title Act  
**Charge**  
General Instrument – Part 1

Witnessing Officer Signature

\_\_\_\_\_

Execution Date

YYY-MM-DD

Transferor / Transferee / Party Signature(s)

**City of Chilliwack**  
By their Authorized Signatory

\_\_\_\_\_  
**Print Name:**

\_\_\_\_\_  
**Print Name:**

**Officer Certification**

Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the *Evidence Act*, R S B C 1996, c 124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the *Land Title Act* as they pertain to the execution of this instrument

**Electronic Signature**

Your electronic signature is a representation that you are a designate authorized to certify this document under section 168 4 of the *Land Title Act*, RSBC 1996 c 250, that you certify this document under section 168 41(4) of the act, and that an execution copy, or a true copy of that execution copy, is in your possession



## TERMS OF INSTRUMENT - PART 2

### SECTION 219 COVENANT (Floodplain)

#### WHEREAS:

- A. The Owner is the registered owner in fee simple of the Lands;
- B. The Lands are located within a floodplain and the City requires registration of a covenant as a condition for development of the Lands;
- C. Section 219 of the *Land Title Act* permits registration of a covenant in favour of a municipality, whether of a negative or positive nature, in respect of the use of land or the use of a building on or to be erected on land and that land is not to be subdivided or built on except in accordance with the covenant.

**NOW THEREFORE** in consideration of the mutual covenants and agreements contained herein and the sum of \$1 00 paid by the City to the Owner (the receipt and sufficiency of which is hereby acknowledged), the parties covenant and agree as follows:

#### 1. DEFINITIONS AND INTERPRETATION

##### 1.1 In this Agreement

- (a) **"Agreement"** means Part 1 and these Terms together,
- (b) **"Applicable FCL"** means the flood construction level for the Lands, which is: **11.10 m**;
- (c) **"Building"** means any new building, residential dwelling, mobile home or unit or modular home or any structure or any addition, structural renovation or other work or improvements to any existing building or structure requiring a building permit, constructed on the Lands, or any portion thereof;
- (d) **"City"** means the City of Chilliwack;
- (e) **"City Parties"** means the City, its elected officials, officers, employees, representatives, agents, successors and assigns;
- (f) **"Claims and Expenses"** means all actions, causes of action, suits, judgments, proceedings, demands and claims, whether at law or in equity, losses, damages, expenses and costs (including legal fees and disbursements on an indemnity basis) of any kind or nature whatsoever, at law or in equity, for any damage, loss, injury or death;
- (g) **"Habitable Area"** means any room or space within a building or structure that is or can be used for human occupancy, assembly, or Institutional Use, commercial sales, or storage of goods, possessions or equipment (including furnaces) which would be subject to damage if flooded,
- (h) **"Institutional Use"** means a use providing for public functions and includes federal, provincial, regional and municipal offices, schools, churches, colleges,

hospitals, community centres, libraries, museums, jails, courts of law and similar facilities, but specifically excludes public storage and works yards and public utility uses,

- (i) **"Lands"** means the lands and premises legally described in Item 2 of Part 1,
- (j) **"Natural Ground Elevation"** means the average of the undisturbed ground elevations at the four corners of the proposed building site;
- (k) **"Owner"** means the person named in Item 5 of Part 1;
- (l) **"Ponding Elevation"** means the water surface elevation as controlled by the lowest ground or road elevation of the area, which would act as the outlet to that area, if a storm runoff exceeds the capacity of culverts or other in-ground drainage works;
- (m) **"Recreation Use"** means a use providing for indoor or outdoor recreation and includes parks, playgrounds, and sports facilities,
- (n) **"Part 1"** means the General Instrument - Part 1 (*Land Title Act* Form C) to which these Terms are attached as Part 2; and
- (o) **"Terms"** means these Terms of Instrument - Part 2, including attached schedules, as amended from time to time

## 2. USE OF THE LANDS

### 2.1 The Owner acknowledges that

- (a) there is a potential flood danger to the Lands;
- (b) the Building or Buildings on the Lands may be susceptible to floodwater damage, and
- (c) the City has made no representations to the Owner that the Lands or any Buildings located on the Lands from time to time will not be damaged by flooding

### 2.2 The Owner agrees that area below the Applicable FCL as applied to a residential or Institutional Use may be used for entrance foyer, utility room, workshop or indoor Recreation Uses provided that the floor level of all of these areas is at least 0.30 m above the crown of the nearest road where water may pond.

### 2.3 The Owner:

- (a) hereby releases, and
- (b) shall indemnify,

the City Parties from and against all Claims and Expenses arising out of or in connection with or related to:

- (c) the design, construction, maintenance, use, occupation or existence of any Building, any breach of any covenants or agreements on the part of the Owner contained in this Agreement;

- (d) flooding or erosion of the Lands by water including, but not limited to, water from a watercourse, lake, pond, marsh area, reservoir or alluvial fan, runoff from adjacent lands, storm sewer and sanitary sewer discharges, or any combination thereof,
- (e) the deposit upon the Lands of fill, soil, mud, rock or other debris, whether from adjacent property or by water from a watercourse, lake, pond, marsh area, reservoir or alluvial fan,
- (f) instability or subsidence of the Lands whether induced by earthquake or otherwise;
- (g) the City issuing, granting or withholding the issuance of any approvals or permits including any building permits with respect to any Buildings on the Lands, or any portion thereof, or the failure or refusal to issue any such permits;
- (h) the City permitting the construction of any Building on the Lands;
- (i) the City permitting the occupation or use of any Building,
- (j) this Agreement and the performance by the Owner of its obligations hereunder; and
- (k) any breach of any covenants or agreements on the part of the Owner contained in this Agreement.

This release and indemnity will survive the termination or release of this Agreement and this indemnity forms an integral part of this section 219 covenant, pursuant to section 219(6) of the *Land Title Act*.

### **3. GENERAL**

- 3.1 If any portion of this Agreement is held invalid by a court of competent jurisdiction, the invalid portion will be severed and the decision that it is invalid will not affect the validity of the remainder of this Agreement.
- 3.2 The City may seek specific performance or a prohibitory or mandatory injunction in order to compel performance of the obligations in this Agreement. All remedies under or in connection with this Agreement will be cumulative with all other remedies at law and in equity.
- 3.3 This Agreement will charge the Lands pursuant to section 219 of the *Land Title Act* and will run with the Lands and bind the Lands and every part or parts of the Lands. Any transferee of any part of the Lands will automatically be deemed, by acceptance of title to the Lands, or any part thereof, to have assumed all obligations in this Agreement, including (without limitation) the release and indemnity in section 2.3.
- 3.4 The Owner will only be liable for breaches of this Agreement that occur while the Owner is the registered owner of the Lands. The Owner will not be liable for any breach of any covenant, promise or agreement herein with respect to any portion of the Lands sold, assigned, conveyed or otherwise disposed of, occurring after the Owner has ceased to be the owner thereof.



- 3.5 Wherever the singular or masculine is used in this Agreement, the same will be construed as meaning the plural, the feminine or body corporate where the context or the parties thereto so require.
- 3.6 This Agreement will restrict the use of the Lands in the manner provided herein notwithstanding any right or permission to the contrary contained in any bylaw of the City.
- 3.7 The parties will execute and do all such further deeds, acts, things and assurances that may be reasonably required to carry out the intent of this Agreement
- 3.8 Waiver by the City of a default by the Owner will be in writing and will not be deemed to be a waiver of any subsequent or other default.
- 3.9 Nothing in this Agreement will derogate from the obligations of the Owner under any other agreement with the City or prejudice the City's rights, powers, duties or obligations in the exercise of its functions pursuant to the *Community Charter* and the *Local Government Act*, or any other Act of the legislature of British Columbia, as amended from time to time
- 3.10 Every reference to each party is deemed to include the heirs, executors, administrators, personal representatives, successors, assigns, servants, employees, agents, contractors, officers, licensees and invitees of such party, wherever the context so requires or allows
- 3.11 This Agreement will enure to the benefit of and be binding upon the parties hereto and their respective successors and assigns
- 3.12 The Owner will take all steps necessary to ensure that this Agreement is registered in the Land Title Office in priority to all charges and encumbrances which may impair the covenants granted in this Agreement and, in any event, in priority to all financial charges.
- 3.13 The Owner will pay or, if paid by the City, reimburse the City for all legal costs including fees, disbursements and taxes incurred by the City with respect to the negotiation, preparation, administration and enforcement of this Agreement.
- 3.14 This Agreement may be executed in any number of counterparts and delivered via facsimile or e-mail, each of which will be deemed to be an original and all of which taken together will be deemed to constitute one and the same instrument, provided that any party delivering this Agreement via facsimile or e-mail will deliver to the other party an originally executed copy of this Agreement forthwith upon request by the other party

**IN WITNESS OF THIS AGREEMENT** the City and the Owner have executed this Agreement by signing the "Form C - General Instrument - Part 1" attached hereto.

## **PRIORITY AGREEMENT**

### **WHEREAS:**

- A. The Toronto-Dominion Bank (the "**Chargeholder**") is the holder of Mortgage No. CA9144536 and Assignment of Rents No. CA9144537 (the "**Financial Charge**") encumbering the Lands described in the Agreement to which this Priority Agreement is attached; and
- B a section 219 covenant is being granted pursuant to the Terms to which this Priority Agreement is attached (the "**City's Charge**"), which is or will be registered against title to the Lands

**NOW THEREFORE** for one dollar (\$1.00) paid by the City to the Chargeholder and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged and agreed to by the Chargeholder, the Chargeholder hereby grants to the City priority for the City's Charge over all the Chargeholder's right, title and interest in and to the Lands as if the City's Charge had been executed, delivered and registered prior to the execution and registration of the Financial Charge and prior to the advance of any monies pursuant to the Financial Charge. The grant of priority is irrevocable, unqualified and without reservation or limitation.

**IN WITNESS WHEREOF** the Chargeholder has duly executed this Priority Agreement by signing the "Form C - General Instrument - Part 1" attached hereto.

The background of the page is a topographic map with contour lines. The map is oriented vertically, with the top of the page showing higher elevations and the bottom showing lower elevations. The contour lines are more densely packed in the upper half, indicating steeper slopes, and more widely spaced in the lower half, indicating flatter terrain. The colors transition from a dark, almost black, at the top to a deep teal or green at the bottom.

# **APPENDIX E**

## **FLOODPLAIN MAP**



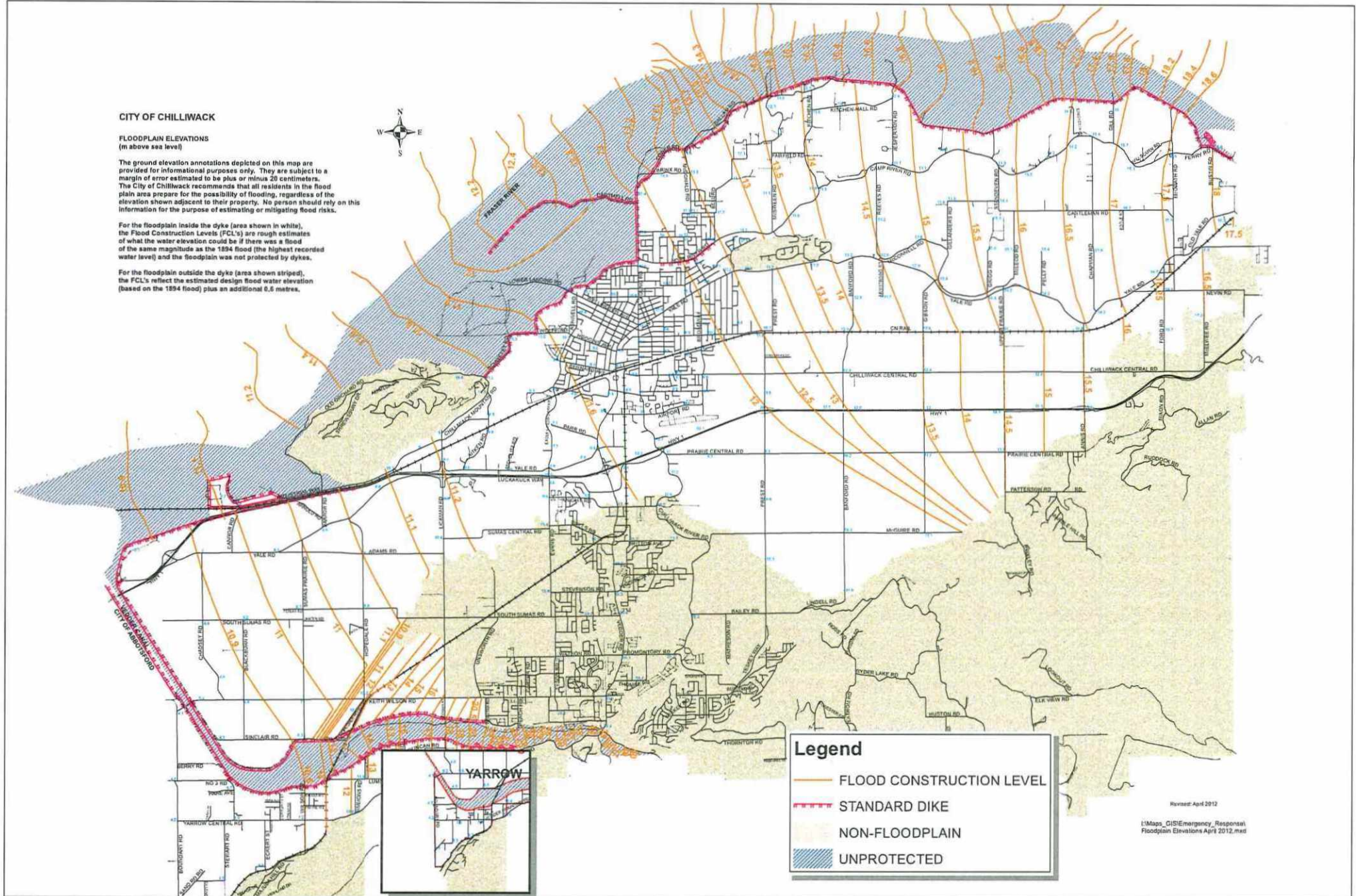
# CITY OF CHILLIWACK

## FLOODPLAIN ELEVATIONS (m above sea level)

The ground elevation annotations depicted on this map are provided for informational purposes only. They are subject to a margin of error estimated to be plus or minus 20 centimeters. The City of Chilliwack recommends that all residents in the flood plain area prepare for the possibility of flooding, regardless of the elevation shown adjacent to their property. No person should rely on this information for the purpose of estimating or mitigating flood risks.

For the floodplain inside the dike (area shown in white), the Flood Construction Levels (FCL's) are rough estimates of what the water elevation could be if there was a flood of the same magnitude as the 1894 flood (the highest recorded water level) and the floodplain was not protected by dikes.

For the floodplain outside the dike (area shown striped), the FCL's reflect the estimated design flood water elevation (based on the 1894 flood) plus an additional 0.6 metres.



## Legend

- FLOOD CONSTRUCTION LEVEL
- - - STANDARD DIKE
- NON-FLOODPLAIN
- UNPROTECTED

Revised: April 2012

I:\Maps\_CID\Emergency\_Response\Floodplain Elevations April 2012.mxd



**APPENDIX F**  
**FLOODPLAIN REGULATION BYLAW 2018,**  
**NO. 4519” – SCHEDULE “B”**

## SCHEDULE “B”

### DEFINITIONS<sup>1</sup>

#### GUIDELINES FOR SITE SPECIFIC APPLICATION BY A QUALIFIED PROFESSIONAL

##### 1. Quality Assurance Statement

I hereby certify:

I am a Professional Engineer or Professional Geoscientist, with experience in geotechnical engineering, geohazard assessment and river hydrology;

I am licensed in the Province of British Columbia; and,

I am qualified to carry out the following flood hazard assessment and that I have performed an evaluation of the area of the proposed development in accordance with the ‘Flood Hazard Area Land Use Management Guidelines’ of the Province of British Columbia and the ‘Professional Practice Guidelines – Legislated Flood Assessments in a Changing Climate in BC’ adopted by EGBC.

Name: Amr Fathalla

Signature



##### 2. General Requirements

- (1) Legal Description of the property.
- (2) General Location map of the property.
- (3) Detailed map of the property showing property boundaries, safe areas for development, watercourses, topography and physical features.
- (4) Statement of conformance to “Floodplain Regulation Bylaw 2018, No. 4519”, in force from time to time, and Provincial Guidelines.
- (5) Review of all relevant Covenants registered on title (copies of Covenants, if relevant, should be attached to the report.)
- (6) Review of all relevant previous reports and flood hazard maps affecting the site and surrounding area.
- (7) Review of current and historical air photos.
- (8) Description of site visits and observations.
- (9) Review of historical flood information including stream flow data, climate data and local observations.

<sup>1</sup> Definitions from 2012 APEGBC Guidelines, 2004 Provincial Guidelines and City of Chilliwack “Floodplain Regulation Bylaw 2018, No. 4519”.



**2. General Requirements (continued)**

- (10) Assessment of the nature, extent, magnitude, frequency and potential effect of all flood or Debris Flow hazards that may affect the property.
- (11) Description of the scientific methodology(s) and assumptions used to undertake the assessment in sufficient detail to facilitate a professional review.
- (12) The location of all proposed building sites and specified setback distances from the Natural Boundary of watercourses. (Maps must be delineated with sufficient accuracy and detail to allow the preparation of a legal reference plan for attachment to a Covenant).
- (13) Recommendations to ensure safe use of a site. (These should be clearly stated with sufficient detail and clarity to facilitate inclusion in a Covenant).
- (14) Description of proposed mitigation works and/or actions designed to mitigate the hazard with confirmation that the Provincial Guidelines have been considered.
- (15) Where mitigation works and/or actions are proposed, an assessment of the effects that the proposed works and/or actions may have on other properties including public infrastructure.
- (16) Where mitigative works and/or actions designed to reduce hazards are contemplated, prior to completion the report and expending time and money on the detailed design, the proponent should confirm that the works and/or actions proposed will be accepted by the City of Chilliwack and that they would meet Provincial regulatory requirements and will be approved by the Inspector of Dikes.

**SPECIAL CASES**

**3. Watercourses**

- (1) Where Floodplain maps are used to recommend FCLs, document which map was used.
- (2) Where an existing FCL shown on a Floodplain map is deemed inappropriate, or where a new FCL is recommended, provide details of the calculation and confirmation that the Guidelines were considered in the process
- (3) For property adjacent to or within a meandering and/or braided river Floodplain, use air photos, maps and other information to describe and assess relevant ongoing river processes that may pose a hazard to the property.
- (4) When recommending the use of minimum setback and elevation guidelines for smaller streams, provide a map of the stream watershed area to determine drainage area

**5. Alluvial Fans**

- (1) Provide a suitably scaled topographic map depicting watershed area, fan boundaries, existing and abandoned channels, hydraulic structures, existing and proposed mitigation works, potential avulsion and overland flow paths for the 1 in 200 year flood event, features on the fan that would serve to give direction to and/or impede overland and/or channel avulsion flow paths and the property boundaries.
- (2) Provide channel cross-sections, stream profiles, and depths of flow and flow velocities used in the analysis
- (3) Provide an assessment of the sensitivity of the watershed area, with respect to hydrology and sediment and debris loading
- (4) Provide an assessment of the long-term channel bed load and debris maintenance requirements in relation to any recommended flood hazard mitigation measures.
- (5) Where existing channel capacity and topographic features on the fan are identified as features contributing to the safe use of the property, provide an assessment of the effects of any future changes to the channel or fan topography
- (6) Provide plan, cross-sections and design specification for proposed building foundation treatments and to the site specific measures.

**6. Area Subject to Debris Flows**

- (1) Provide a suitably scaled topographic map and/or air photographic base map depicting watershed area, all existing and potential Debris Flow start, transport and run out zones, hydraulic structures, existing and proposed mitigation works, features on the Debris Flow transport path and/or run out area which could serve to give direction and/or impede Debris Flows, existing depositional features, cohorts, soil test pit locations, carbon dating and dendrochronology sample sites, and property boundaries.
- (2) Provide a statement of return periods considered in the hazard assessment and design of proposed mitigation works.
- (3) Provide a centerline profile from Debris Flow start zones to toe of run out zones.
- (4) Provide plans, cross-sections and design specifications for proposed mitigation works, event volume, depth and velocity of flow and impact forces used in the design of mitigation works
- (5) Provide an assessment of the sensitivity of watershed area with respect to hydrology and sediment and debris loading.
- (6) Where existing channel capacity and topographic features on the fan are identified as features contributing to the safe use of the property, provide an assessment of the effects of any future changes to the channel or fan topography.

# **APPENDIX G**

## **STATEMENT OF LIMITATIONS**



## Statement of Limitations

*Use of this Report.* This report was prepared by McElhanney Ltd. ("McElhanney") for the particular site, design objective, development and purpose (the "Project") described in this report and for the exclusive use of the client identified in this report (the "Client"). The data, interpretations and recommendations pertain to the Project and are not applicable to any other project or site location and this report may not be reproduced, used or relied upon, in whole or in part, by a party other than the Client, without the prior written consent of McElhanney. The Client may provide copies of this report to its affiliates, contractors, subcontractors and regulatory authorities for use in relation to and in connection with the Project provided that any reliance, unauthorized use, and/or decisions made based on the information contained within this report are at the sole risk of such parties. McElhanney will not be responsible for the use of this report on projects other than the Project, where this report or the contents hereof have been modified without McElhanney's consent, to the extent that the content is in the nature of an opinion, and if the report is preliminary or draft. This is a technical report and is not a legal representation or interpretation of laws, rules, regulations, or policies of governmental agencies.

*Standard of Care and Disclaimer of Warranties.* This report was prepared with the degree of care, skill, and diligence as would reasonably be expected from a qualified member of the same profession, providing a similar report for similar projects, and under similar circumstances, and in accordance with generally accepted engineering and scientific judgments, principles and practices. McElhanney expressly disclaims any and all warranties in connection with this report.

*Information from Client and Third Parties.* McElhanney has relied in good faith on information provided by the Client and third parties noted in this report and has assumed such information to be accurate, complete, reliable, non-fringing, and fit for the intended purpose without independent verification. McElhanney accepts no responsibility for any deficiency, misstatements or inaccuracy contained in this report as a result of omissions or errors in information provided by third parties or for omissions, misstatements or fraudulent acts of persons interviewed.

*Effect of Changes.* All evaluations and conclusions stated in this report are based on facts, observations, site-specific details, legislation and regulations as they existed at the time of the site assessment/report preparation. Some conditions are subject to change over time and the Client recognizes that the passage of time, natural occurrences, and direct or indirect human intervention at or near the site may substantially alter such evaluations and conclusions. Construction activities can significantly alter soil, rock and other geologic conditions on the site. McElhanney should be requested to re-evaluate the conclusions of this report and to provide amendments as required prior to any reliance upon the information presented herein upon any of the following events: a) any changes (or possible changes) as to the site, purpose, or development plans upon which this report was based, b) any changes to applicable laws subsequent to the issuance of the report, c) new information is discovered in the future during site excavations, construction, building demolition or other activities, or d) additional subsurface assessments or testing conducted by others.

*Independent Judgments.* McElhanney will not be responsible for the independent conclusions, interpretations, interpolations and/or decisions of the Client, or others, who may come into possession of this report, or any part thereof. This restriction of liability includes decisions made to purchase, finance or sell land or with respect to public offerings for the sale of securities.