



URBANTECH®

**FUNCTIONAL SERVICING AND STORMWATER MANAGEMENT
COMPLIANCE REPORT**

ARGO DRAFT PLAN WEST

TOWN OF CALEDON

REGION OF PEEL

**PREPARED FOR
ARGO DEVELOPMENT CORPORATION**

**Town File No.: 21T-22001 and RZ 2022-0002
Urbantech File No.: 15-458**

**1st SUBMISSION - DECEMBER 2021
2nd SUBMISSION – MAY 2023**

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1.0 INTRODUCTION

1.1 Study Purpose

Urbantech has been retained by Argo Macville I Corporation, Argo Macville II Corporation, Robert Speirs, Argo Macville V Corporation and Argo Humberking Corporation (herein referred to as the 'Owners') to continue to advance the applications for Draft Plan of Subdivision (**21T-22001**) and for Amendment to the Zoning By-Law (**RZ 2022-0002**) which were originally submitted in March 2022. These applications seek planning approvals to implement redevelopment of the lands legally described as Part of Lots 11, 12 and 13, Concession 4 (Albion), Town of Caledon (the 'Subject Lands') and are generally located in between The Gore Road and Humber Station Road, north of King Street.

It is important to note that the original applications submitted in March 2022 related to the ROPA 30 lands only and consisted of approximately 30.37 ha (75.05 ac) and were generally in the eastern portion of the future Caledon Station Secondary Plan lands. Since the applications were submitted in March 2022, the Region of Peel 2051 Official Plan was approved by the Province (Nov., 2022) and surrounding lands have been added to the 2051 Urban Area, including additional lands owned by the Owners noted above. Accordingly, the overall Subject Lands now consist of 107.19 ha (264.87 ac). and are now part of the subject Draft Plan of Subdivision and Rezoning applications.

The Subject Lands are entirely within the Region of Peel's Urban Area (ROP, Nov 2022) with the eastern portion of the Subject Lands being within the Region's Major Transit Station Area (MTSA). As well, the Subject Lands are currently part of the Caledon Station Secondary Plan process (POPA-2021-0002). The effect of the Secondary Plan will be to apply land use designations to the Subject Lands, including Low Density Residential, Medium Density Residential, Mixed Use, Institutional, Open Space Policy Area. The subject Draft Plan of Subdivision and Zoning By-Law Amendment for the Subject Lands will ensure the creation of a compact, pedestrian and transit-oriented development through implementation of the Secondary Plan policies.

It is also important to note that on March 5, 2021, the Province of Ontario issued a Ministerial Zoning Order ('MZO') under Ontario Regulation 171 / 21 ('O. Reg. 171 / 21') for the eastern portion of the Subject Lands. This MZO established zoning for the eastern portion of the Subject Lands as a 'Mixed Use Residential Zone'. This Zone permits a range of detached, semi-detached and townhouse dwellings as well as a range of mid-rise residential and commercial uses.

This Functional Serving and Stormwater Management Compliance Report has been prepared on behalf of the Owner in support of a Draft Plan of Subdivision ('DPS') and Zoning By-law Amendment ('ZBA' or 'Amendment') resubmission to facilitate the development of the Draft Plan of Subdivision consisting of a mixture of land uses, various built forms and densities. Refer to **Drawing 102 and 103**.

1.2 Background Studies

The FSR is intended to provide a further level of detail to implement findings and recommendations of several background studies listed below. In this instance, this FSR addresses findings and recommendations from the following studies and guidelines:

- **Beacon Environmental**, Comprehensive Environmental Impact Study and Management Plan, Caledon Station Secondary Plan, May 2023.
- **DS Consultants Ltd.**, Report On: Preliminary Hydrogeological Investigation, Prepared For: Bolton Option 3 Landowners Group, May 2023.
- **DS Consultants**, Preliminary Geotechnical Investigation, The Gore Road & King Street, November 2022
- **Ministry of the Environment, Conservation and Parks** (MECP, formerly Ministry of the Environment, MOE), Stormwater Management Practices, Planning and Design Manual, March 2003.
- **Region of Peel** and **GM BluePlan Engineering**, 2020 Water & Wastewater Master Plan for the Lake-Based System, Volumes 1 to 5.
- **Region of Peel, Public Works**, Design, Specifications and Procedures Manual – Watermain Design Criteria, June 2010.
- **Region of Peel, Public Works**, Linear Wastewater Standard, March 2023.
- **R.J. Burnside & Associates Limited**, Technical Memorandum, Bolton Option 3 Lands Preliminary Water Modelling, May 2023.
- **Toronto and Region Conservation Authority (TRCA)** and **Civica Infrastructure Inc.**, Final Report, Humber River Hydrology Update, April 2018.
- **Toronto and Region Conservation Authority (TRCA)**, Humber River Watershed Plan, Pathways to a Healthy Humber, June 2008.
- **Toronto and Region Conservation Authority (TRCA)**, Stormwater Management Criteria, August 2012.
- **Town of Caledon**, Development Standards Manual, Version 5.0, 2019.
- **Urbantech Consulting**, Functional Servicing Report, Caledon Station Secondary Plan, May 2023.

1.3 Study Team

Members of the study team involved in the preparation of the CEISMP/FSR documents, and their respective disciplines are listed below:

Beacon Environmental Limited	Ecology Fluvial Geomorphology	CEISMP
DS Consultants Ltd.	Geotechnical Hydrogeology	FSR
Gerrard Design	Land Use Design	FSR
R.J Burnside & Associates Ltd.	Water Distribution	FSR
Glenn Schnarr & Associates Inc.	Planning	CEISMP/FSR/PJR
NAK Design Strategies	Land Use Design	FSR
Urbantech Consulting	Municipal Design Water Resources Group Engineering	FSR

2.0 EXISTING CONDITIONS

2.1 Existing Drainage

The Subject Lands are situated at the drainage divide between the West Humber River and Main Humber River watersheds. **Drawing 201** illustrates existing drainage patterns and sub-catchments within the Subject Lands and immediate surrounding area.

The majority of the Subject Lands are within the West Humber River watershed. Surface drainage runoff from the West Humber sub-catchments is directed towards culverts along King Street and Humber Station Road.

The eastern portion of the Subject Lands is located within the Main Humber River watershed. In this portion, runoff flows easterly toward the Canadian Pacific Rail (CPR) line.

Refer to **Section 5** for the discussion regarding existing versus proposed drainage outlets.

External Drainage

In terms of external drainage, a 79 ha area within the West Humber River watershed north of the CSSP lands drains from northwest to southeast via an ephemeral swale into the Subject Lands as shown on **Drawing 201**.

2.2 Headwater Drainage Features

As indicated in the CSSP FSR, due to the poorly defined, vegetated nature of the HDFs within the Subject Lands, and overall lack of evidence of active geomorphic processes (i.e., erosion, aggradation or migration), the CEISMP recommended that the regulatory floodline would be more appropriate for delineating the hazard limits for applicable hydrologic features. Headwater drainage features are shown in as shown in **Figure 3.2.5.2a**, prepared by Beacon Environmental.

2.3 Existing Floodplain

The Humber River Hydrology Update (TRCA 2018) developed a hydraulic model for the Main and West Humber Rivers. The HEC-RAS hydraulic model was obtained from the TRCA in August 2020 to assess the existing conditions and Regulatory Floodplain within the CSSP lands.

For the CSSP FSR, Urbantech Consulting extended the 2018 existing model northwest towards Gore Road to represent headwater features that drain 75.6 hectares of external catchments north of the CSSP area. Refer to **Section 2.4** in the CSSP FSR for details on the revisions to the TRCA model and the existing conditions hydrologic flows.

Drawing 202 presents the existing conditions Regional Storm floodplain based on the updated model.



3.0 PROPOSED GRADING & ROADS

3.1 Grading Objectives

The grading plans established in the CSSP-FSR considered the following:

- Compatibility with the existing grades of King Street, a portion of Humber Station Road, The Gore Road and the CPR line.
- Maintenance of existing drainage patterns for lands situated to the north.
- Compatibility of future road extensions into lands situated to the north.
- Compatibility with existing or proposed elevations in the vicinity of natural features that are part of the community plan.
- Conformance with Town Standards
- Maintaining overall West Humber River and Main Humber River watershed drainage boundaries, where possible.
- Maintain drainage patterns in / out of the natural areas.
- Compatibility with neighboring properties that will develop after the subject lands and maintaining overall grading principles established in the CSSP-FSR.
- Provide overland flow conveyance for major storm conditions.
- Optimize cut and fill operations and work towards a balanced site.
- Maintain appropriate cover over buried utilities.

3.2 Preliminary Grading Design

The preliminary grading design for the CSSP lands is depicted on **Drawings 301 to 304**. The grading plans present proposed road centerline elevation and slopes, existing surface contours, and the direction of overland flow paths. Lot specific grading is not presented at this point. The following sections describe critical elements of the grading design.

3.2.1 Compatibility with EPAs

Grading adjacent to and within the greenway is consistent with the CSSP and contemplates one crossing of the EPA at Street EE. Refer to **Drawings 602A and 402** for details of the EPA crossings. The site is constrained by various natural wetland features as depicted on **DWG 303**.

3.2.2 Channel Corridor

The CSSP includes an open space channel situated in the southeastern portion of the plan as shown on **Drawing 304**. Although not located on the Subject Lands the channel is an integral part of the development. As such the implementation of the channel works that will be coordinated with the adjacent landowners. Refer to CSSP-FSR for further details. Typical channel cross sections for the Tributary WHT6 Enhanced Corridor / Greenway are provided on **Drawing 401**.

3.2.3 Road Centerline Gradients

The preliminary grading design general conforms to the objectives outlined in the CSSP.

3.2.4 Overland and Emergency Flow Routes

As it relates to Pond 1 and 2B the grading design is constant with the framework outlined in the CSSP and provides overland and emergency flow routes to the prescribed outlets. As it relates to the interim pond, emergency flows will be directed to Wetland W3.

3.3 Roads

The internal road design and proposed Right-of-Way (ROW) widths are shown on the draft plans of subdivision **Drawings 102 and 103**. The draft plan conforms to the Road Hierarchy plan from the CSSP-FSR. Refer to NAK Design for conceptual road cross sections. Select details of special road cross sections with Low Impact Development (LID) measures and civil infrastructure are provided on **Drawing 305**.

4.0 Environmental Policy Areas

The proposed channel design is consistent with the design objectives outlined in the CSSP-FSR. The Preliminary Framework Plan, **Drawing 102**, has provided Environmental Policy Areas (EPAs) to protect the environmental features identified in the CEISMP.

5.0 STORM DRAINAGE

5.1 Stormwater Drainage System

The major and minor drainage systems for the CSSP lands have been designed to convey storm runoff to the proposed SWM facilities prior to discharge to the outlets at the receiving drainage features. **Drawing 501** illustrates the overall drainage areas to the SWM facilities and existing flow nodes.

Major and minor system drainage has been designed in accordance with the CSSP-FSR. **Drawings 502** illustrates the minor system drainage plan and **Drawing 503** illustrates the major system flow paths within the overall catchments areas.

5.2 Clean Water Pipe

As indicated in the CSSP-FSR the existing external area north of Subject Lands will be directed to the proposed realigned channel west of Humber Station Road via a clean water pipe (CWP) as shown by the horizontal alignment on **Drawing 502** and vertical profile on **Drawing 504**. The extent of the external drainage area capture to the clean water pipe is illustrated on **Drawing 501**. As per grading details shown on **Drawings 301 and 302**, the temporary grade transition and stabilized interceptor swales are proposed along the north limit of the CSSP boundary to direct the external pre-development drainage to the clean water pipe via a headwall structure. The pipe will be a 1350 mm diameter concrete sewer which has been sized to convey the regional flows from the external area.

6.0 STORMWATER MANAGEMENT PLAN

6.1 Overall SWM Strategy

The SWM strategy in the CSSP-FSR generally maintained the pre-development watershed divide between the West Humber River and Humber River, as well as the individual sub-catchments/outlets within each watershed as described in **Section 5.1**. The proposed storm drainage plan is shown in **Drawing 501**.

The proposed SWM strategy aims to satisfy the TRCA SWM Criteria (2012) and the more recent Town of Caledon's Consolidated Linear Infrastructure Environmental Compliance Approval (CLIECA) SWM Criteria for water quantity and flood control, water quality control, erosion control, and water balance.

For the West Humber River watershed, three (3) end-of-pipe stormwater management facilities (wet ponds) were proposed in CSSP-FSR to provide water quantity, quality, and erosion controls for the post-development drainage areas. These ponds represent the ultimate development plan and were illustrated in CSSP-FSR. An interim pond will be required for catchment 105 prior to the development of Pond 2A. Preliminary sizing of the interim pond is provided herein, and the pond is illustrated in **Drawing 501**. Additional low impact developments and SWM measures are proposed where possible to provide a "treatment train" approach.

For the Main Humber River watershed, quantity controls are not required; however, water quality controls will be provided via a variety of low impact developments and end-of-pipe manufactured treatment devices (e.g., oil-grit-separators) as proposed in the CSSP-FSR.

Water balance is addressed for the overall site through proposed low impact developments and other infiltration measures discussed in **Section Error! Reference source not found.** of the CSSP-FSR.

6.1 Hydrologic Modelling

The hydrologic modelling of pre-development conditions was completed as part of the CSSP-FSR based on refinements to the hydrologic model in the 2018 Humber River Hydrology Update prepared by TRCA. The model was calibrated to ensure consistency between the Urbantech and TRCA models and it was determined that the 6-hour AES storm is to be used to determine the required stormwater management for the Subject Lands.

6.1 West Humber River SWM

Three (3) SWM facilities are proposed to control and treat stormwater runoff from the West Humber River catchments. As shown on **Drawings 501-503**, the SWM facilities are located at the proposed drainage outlets along King Street and are linked to a proposed EPA corridor (Pond 1) and existing EPA lands (Pond 2). These locations represent the low areas within the West Humber sub-catchments intersected by CSSP.

6.1.1 SWM Facility Targets

The CSSP-FSR outlines the SWM facility targets / sizing criteria for the CSSP lands based on the TRCA SWM Criteria (2012) and the TRCA pre-development hydrologic model presented in the

Humber River Hydrology Update (2018). The following specific SWM criteria were established for the interim pond:

Permanent Pool Volume - each stormwater management facility within CSSP must meet the Enhanced (Level 1) criteria as per the MOE SWM Planning and Design Manual (March 2003).

Extended Detention / Erosion Control – The extended detention volume for erosion control is based on detention of the 25 mm storm event from 48 hours to 72 hours for controlled release from the SWM ponds. An average release rate of 0.72 L/s/ha was utilized in accordance with the Town of Caledon Bolton Residential Expansion Study.

Quantity Control – Table E.1: Summary of Unit Flow Relationships, Humber River Watershed in the TRCA SWM Criteria (2012) provided the equations to determine the quantity control unit flow rates for the 2-year to 100-year storm events within the West Humber River watershed. The unit flow rates determined from these relationships are given below for the interim Pond in **Table 6-1**.

Table 6-1 SWM Facility Target Release Rates

Return Period	Interim Pond Drainage Area = 80.0 ha	
	Unit Flow Rate (m ³ /s/ha)	Target Release Rate (m ³ /s)
2-Year	0.007	0.150
5-Year	0.011	0.229
10-Year	0.014	0.282
25-Year	0.017	0.355
50-Year	0.020	0.414
100-Year	0.023	0.468

A Visual OTTHYMO 6.2 (VO6) model was prepared to calculate the storage requirements for the SWM facilities to achieve the target release rates. The evaluation analyzed the 6-hour hour AES storm distributions.

Regional Control – control post-development flow rates to pre-development levels at Node 2.

6.1.2 SWM Facility Design

Two permanent ponds and one interim pond are required to service the subject lands. Permanent Ponds 1 and 2B as described by the CSSP-FSR will serve the subject lands. Refer to **Drawing 501 and 600 series (SWM Pond) drawings**. The following outlines the interim pond design.

As noted in the preceding section, the SWM targets established in the subwatershed study are based on the drainage area and imperviousness being developed. The proposed drainage area to the interim pond is noted in **Table 6-2**.

Table 6-2 SWM Facility Drainage Areas

SWM Facility	Total Area to Pond (including Pond Block) (ha)	Imperviousness (%)
Interim Pond	20.41	77

The catchment imperviousness values were approximated based on the Town of Caledon's standard runoff coefficient values as outlined in the CSSP-FSR.

6.1.3 SWM Facility – Quantity Control

Based on the contributing drainage areas and imperviousness values and unit rates / targets shown in **Section 6.1.1**, stage-storage-discharge relationships have been established for the interim pond SWM facility. These results are included in **Appendix 4**. The provided volumes are based on the preliminary pond grading design presented in **Drawing 603**. The table below outlines the interim pond release rates as well as the required storage.

Table 6-3: Interim Pond Flow Rates and Storage

Storm Event	Target Release Rate (m ³ /s)	Interim Pond Release Rate (m ³ /s)	Required Active Storage (m ³)
2	0.150	0.150	4,870
5	0.229	0.229	6,316
10	0.282	0.282	8,212
25	0.355	0.355	9,711
50	0.414	0.414	10,808
100	0.468	0.468	11,920
Regional	-	5.510	27,537

Under existing conditions, the flows at downstream Node 2 are 2.457 m³/s during the Regional Storm, as they are proposed to be 2.456 m³/s under the interim proposed condition, the interim pond is providing adequate storage and flow control.

6.1.4 SWM Facility – Quality Control

Enhanced (Level 1) water quality protection through the removal of 80% of total suspended solids (TSS) will be provided in the permanent and interim ponds based on MOE Stormwater Management Planning and Design Manual Table 3.2.

The permanent pond pools will be as described in the CSSP-FSR. For the interim pond, based on an area of 20.41 ha and an imperviousness of 77%, approximately 3,998 m³ of permanent pool is required. As 7,307 m³ is being provided there will be adequate quality control.

In accordance with Town of Caledon standards a minimum orifice size of 75 mm will be proposed to achieve the required extended detention of the 25 mm event. Based on the recommended unit flow rate the anticipated release rate for the interim pond is 15 L/s. The detailed pond design including the outlet structure configuration will be determined at the detailed design stage.

6.1.5 SWM Facility Outfalls

The proposed permanent and interim pond outfall locations are illustrated on **Drawings 603**. The TRCA SWM criteria documents provide guidelines on outfall design and placement. The preliminary outfall works will be further developed at future design stages. At the detailed design stage, all SWM facility outfalls will be provided with the erosion protection details to prevent scour.

6.1.6 Treatment Train – Silva Cells

The wet ponds (Pond 1, Interim Pond, and 2B) will provide conventional end-of-pipe quality control to satisfy the 80% TSS removal requirement. However, a treatment train approach is also incorporated into the West Humber SWM strategy. The high groundwater level throughout the site limits the implementation of infiltration measures. Best efforts were made to incorporate low impact developments to provide retention and filtration. Silva Cell systems are proposed within the wider road right-of-way sections (Street SS, R, and D) along the proposed Linear Park. The proposed Silva Cell system will treat stormwater from approximately 10.3 hectares in Catchment 104 as illustrated in **Drawing 703**.

6.2 Main Humber River SWM

In accordance with TRCA SWM criteria, no quantity control is required within the Main Humber River watershed. However, on-site storage is proposed on private property to mitigate impacts on the CPR culverts.

6.2.1 Quantity Control

As outlined in the CSSP-FSR the following unit storage and flow rates in **Table 6-4** will be the targets for the residential areas being conveyed to the CPR culverts.

Table 6-4: Main Humber Unit Storage and Flow

Catchment	Storm	Unit Storage (m ³ /ha)	Unit Flow for Storage Tanks (L/s/ha)
103	5	228	43
	100	393	79
102	5	191	63
	100	327	112
101	5	239	39
	100	411	64

6.2.2 Quality Control

As outlined in the CSSP-FSR, quality control for the Main Humber River catchments will be addressed through a combination of LIDs, CB shields, OGS/jellyfish filters or isolator rows to achieve the 80% TSS removal prior to discharge to the CPR culverts.

7.0 Hydraulic Modelling

Hydraulic modelling was completed as part of the CSSP-FSR for the purposes of floodplain mapping and riparian storage analysis in support of the proposed development.

7.1 Proposed Floodplain

A proposed model was prepared as part of the CSSP-FSR to reflect the hydraulic changes and delineate the proposed floodplain resulting from the development of the CSSP, including the subject lands. The HEC-RAS model results illustrated that any changes to the existing floodplain are within an acceptable tolerance and will not have an impact on the overall system and the Subject Lands. **Drawing 604A and 604B** present the proposed conditions Regional Storm floodplain based on the proposed model.

7.2 Riparian Storage

The proposed Greenway (floodplain) grading was designed to provide sufficient storage volume to convey flows from the 2-year to 100-year and Regional Storm. The post-development riparian model prepared as part of the CSSP-FSR demonstrated that the existing riparian storage volumes are generally maintained or increased across the range of storm events.

8.0 LOW IMPACT DEVELOPMENT

8.1 Overall Site Water Balance

The CSSP-FSR provided an overall water balance for the CSSP lands which will be addressed for the Subject Lands and the CSSP as a whole. The 21,851 m³/year infiltration deficit outlined by DS Consultants and the CSSP-FSR will be mitigated by connected impervious to pervious areas and the incorporation of Silva Cell / LID devices in public owned ROW and parks.

8.2 Wetland, Feature-Based Water Balance

All existing wetlands within the CSSP are located outside of the Subject Lands and aside from Wetland W3, the existing drainage area to each is maintained during the interim condition. The proposed interim pond will be located adjacent to Wetland W3 and will discharge to the wetland which will provide adequate clean flows to match existing annual runoff volume. Refer to **Drawing 701** for the existing drainage contribution to the wetlands.

8.3 Low Impact Development

As outlined in the CSSP-FSR, water balance objectives and water quality could be achieved using low impact development (LID) measures. Proposed LID measures include the following:

- Downspout disconnection
- Additional topsoil depth
- Swales
- Infiltration/filtration facilities
- Rainwater harvesting

The CSSP-FSR provides additional information on the proposed LIDs. Refer to **Drawing 703** for the proposed LID locations.

9.0 SANITARY SERVICING

9.1 Internal Servicing

The internal servicing design is consistent with the recommendations of the CEISMP FSR. Refer to **Drawing 802** for the internal sanitary drainage plan.

9.2 External Servicing

The proposed development is tributary to the South Peel Wastewater System and is ultimately treated in the G.E. Booth Wastewater Treatment Plant.

The 2020 Bolton Residential Expansion Study (BRES) indicated that the Subject Lands are to be serviced by extensions and improvements of existing infrastructure located on Coleraine Drive. Since 2020, interim and ultimate sewer solutions have been contemplated by Peel Region that diverge from the approved Master Plan.

The CEISMP recommends implementing the ultimate solution which provides servicing for the greatest catchment area from day 1 and eliminates the expenditure of the interim solution.

Further coordination with the Region of Peel infrastructure planning group is required to confirm the best solution for servicing of the Subject Lands as well as the design and approval process to accomplish same.

Refer to **Drawings 801, 803-805** for the external sanitary servicing plan and trunk profiles.

10.0 WATER SERVICING

The CSSP-FSR provides the water servicing requirements for the interim and ultimate development of the CSSP. The existing and planned water distribution infrastructure is illustrated on **Drawing 901**.

The required water supply for the Subject Lands will require the Ultimate Condition water infrastructure to be constructed. R.J Burnside completed an updated water supply analysis dated May 11, 2023. This updated water analysis evaluates 9 different modelling scenarios for the build-out of Pressure Zone 7.

11.0 EROSION AND SEDIMENT CONTROL

Erosion and sediment control measures will be designed, implemented, and maintained throughout the construction period. At detailed design, an Erosion and Sediment Control Plan will be prepared in conformance with the Town and Conservation Authority guidelines.

The following erosion and sediment control measures should be considered for use during construction:

- Natural features will be staked and temporary fencing provided to keep machinery out of sensitive areas;
- Sediment control fence and snow fence will be placed prior to earthworks;
- Logistics/construction plan will be implemented to limit the size of disturbed areas, minimizing the non-essential clearing and grading areas;
- Temporary sediment ponds;
- Rock check-dams and cut-off swales will be provided, where required, in order to control, slow down and direct runoff to sediment basins;
- Sediment traps will be provided;
- Gravel mud mats will be installed at construction vehicle access points to minimize off-site tracking of sediments;
- All temporary erosion and sediment control measures will be routinely inspected / monitored and repaired during construction. Temporary controls will not be removed until the areas they serve are restored and stable; and,
- The “multiple barrier approach” will be applied to all construction stages to ensure erosion is prevented rather than reduced. Recommended measures are to be installed prior to the initiation of the earthworks and grading.
- During home building, sediment traps will be installed in catchbasins, and perimeter ESC fencing will be maintained until surfaces are stabilized.

Reference will be made to the *Guidelines for Erosion and Sediment Control for Urban Construction Sites* prepared by the Greater Toronto Conservation Authorities (2020) when preparing Erosion and Sediment Control Plans.

12.0 Conclusions

This FSR has demonstrated general compliance with the CSSP-FSR. The following specific conclusions are offered:

1. The Grading complies with intent of CSSP-FSR.
2. The grading is compatible on an interim basis with neighbours and accommodates future drainage.
3. The Sanitary sewer design complies with the intent of CSSP-FSR with some re-routing required to address anticipated development staging.
4. External sanitary routing will generally follow Humber Station Road from King Road to Mayfield based on recent studies and liaison with the Town and the Region.
5. One temporary Stormwater Management Pond is proposed to meet the intent of the CSSP-FSR. The temporary pond will be decommissioned when the entirety of the CSSP-FSR lands develop.
6. Further study and agency consultation is recommended regarding the existing CPR culverts as the FSR is advanced.
7. The proposed channel realignment maintains the flood water surface elevations and riparian storage from the pre- to post-development conditions.
8. Improvements to Humber Station Road should include an improvement to the existing culvert crossing of the West Humber River Tributary.
9. An interim water supply solution is proposed in advance of Regional capital works projects which has been endorsed by the Town and Region.

Report Prepared by:

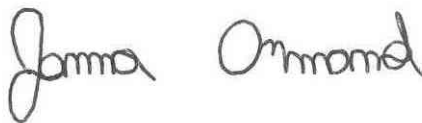
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Senior Project Manager



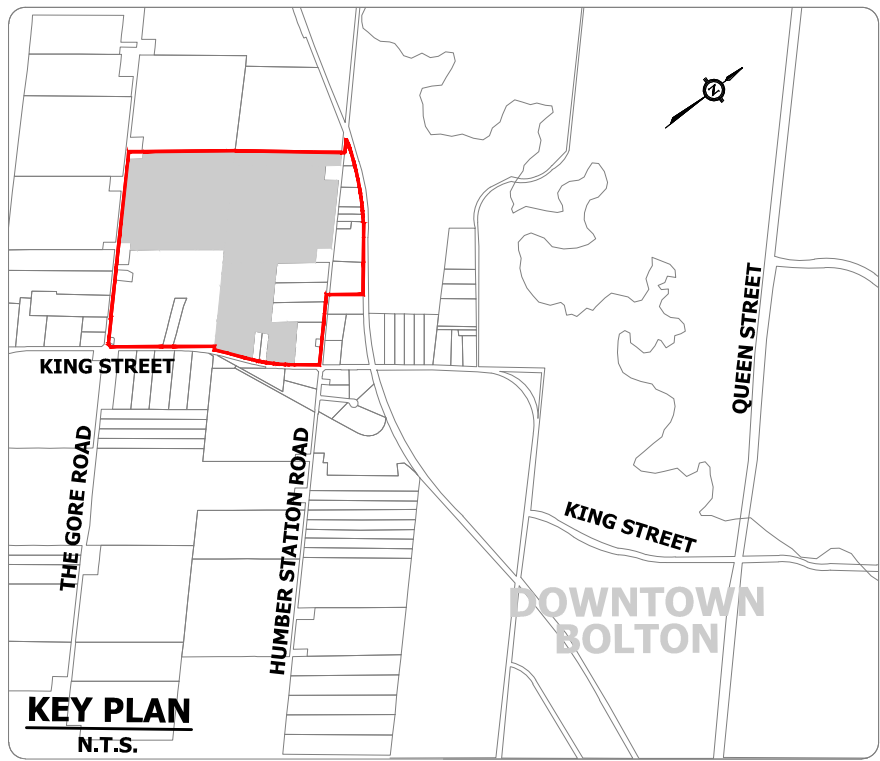
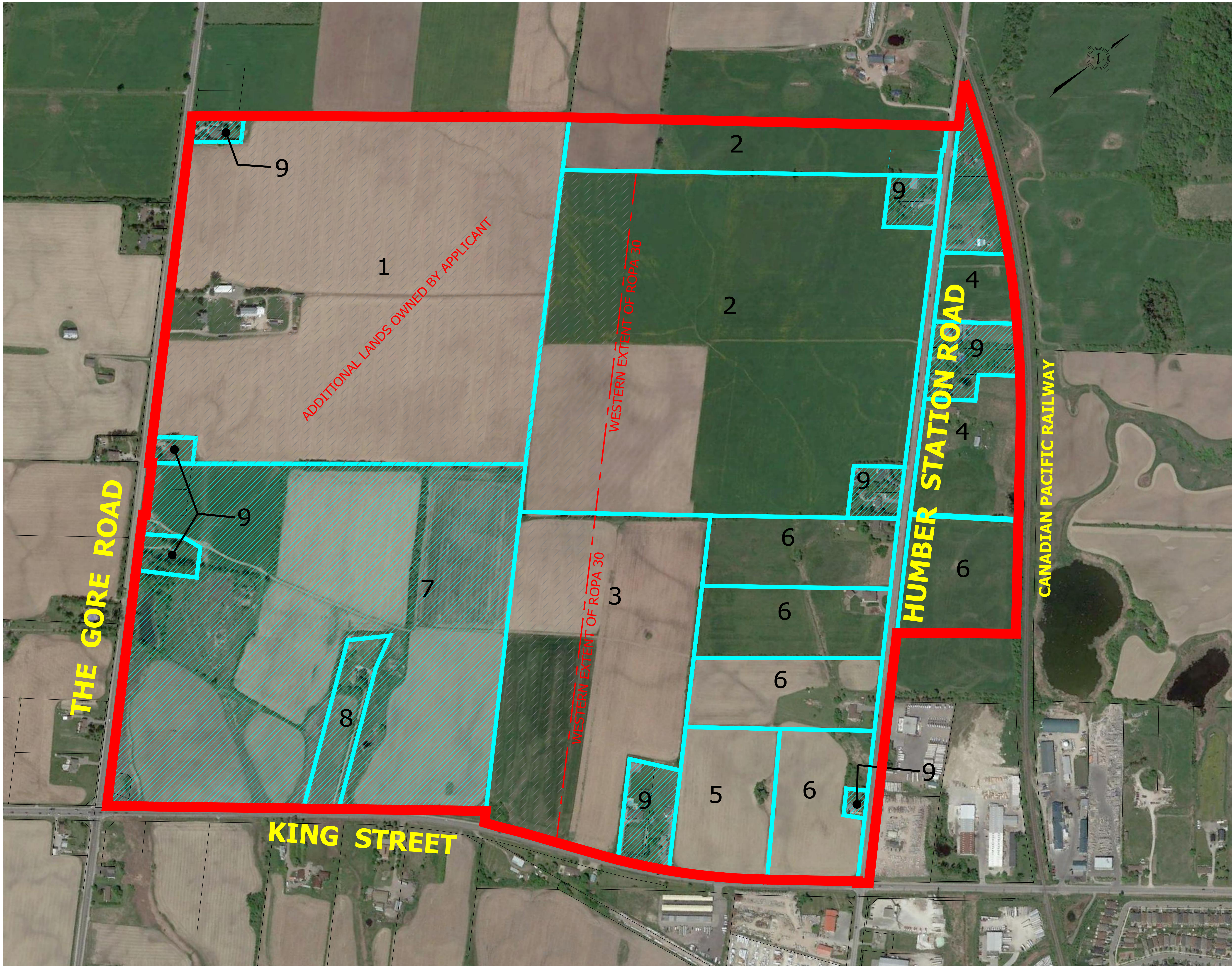
Adham Bakr, P.Eng.
Senior Water Resources Engineer



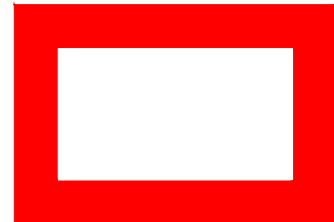
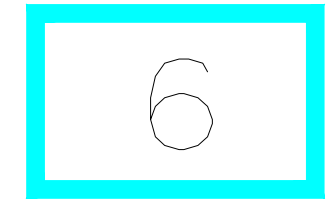
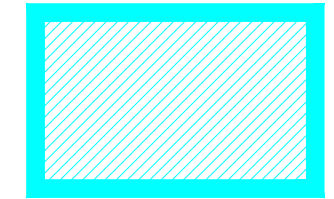
Janna Ormond, EIT
Water Resources Designer

APPENDIX 1

DRAWINGS



LEGEND:

-  CSSP LIMIT
-  PROPERTY BOUNDARY AND OWNER ID
-  NON-PARTICIPATING PROPERTY

Participating Owners

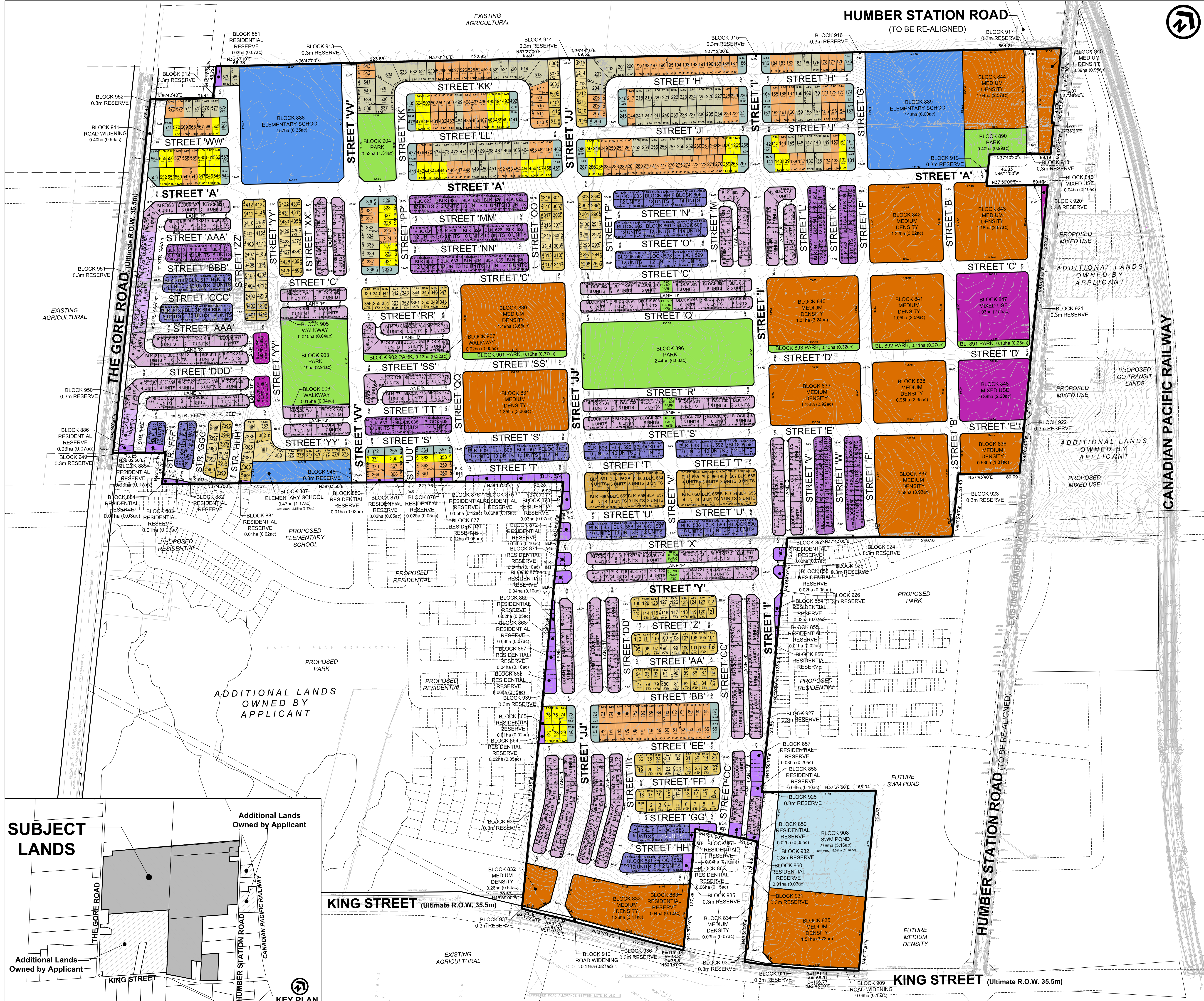
- 1 - Argo Macville I Corporation
- 2 - Argo Macville II Corporation
- 3 - Argo Macville III Corporation
- 4 - Argo Humberking
- 5 - Humberking Developments Ltd
- 6 - Argo Humber Station
- 7 - Speirs Family
- 8 - Basile
- 9 - Others



TOWN OF CALEDON
REGIONAL MUNICIPALITY OF PEEL
CALEDON STATION SECONDARY PLAN
ARGO DRAFT PLAN WEST

LAND OWNERSHIP MAP

SURVEYED BY: J.D.B.	DATE: 2020	JOB NO. 15-458
DRAWN BY: A.G./X.S.	CHECKED BY: S.H.	DRAWING NO. SHEET NO.
DESIGNED BY: S.K./E.L.	CHECKED BY: S.K./A.F.	101
SCALE: 1:3000	DATE: MAY 2023	



DRAFT PLAN OF SUBDIVISION ARGO MACVILLE I CORPORATION, ARGO MACVILLE II CORPORATION, ARGO MACVILLE V CORPORATION, ARGO HUMBERKING CORPORATION, & ROBERT SPEIRS FILE# 21T-22001

PART OF LOTS 11,12 AND 13,
CONCESSION 4
(TOWNSHIP OF ALBION)
TOWN OF CALEDON
REGIONAL MUNICIPALITY OF PEEL

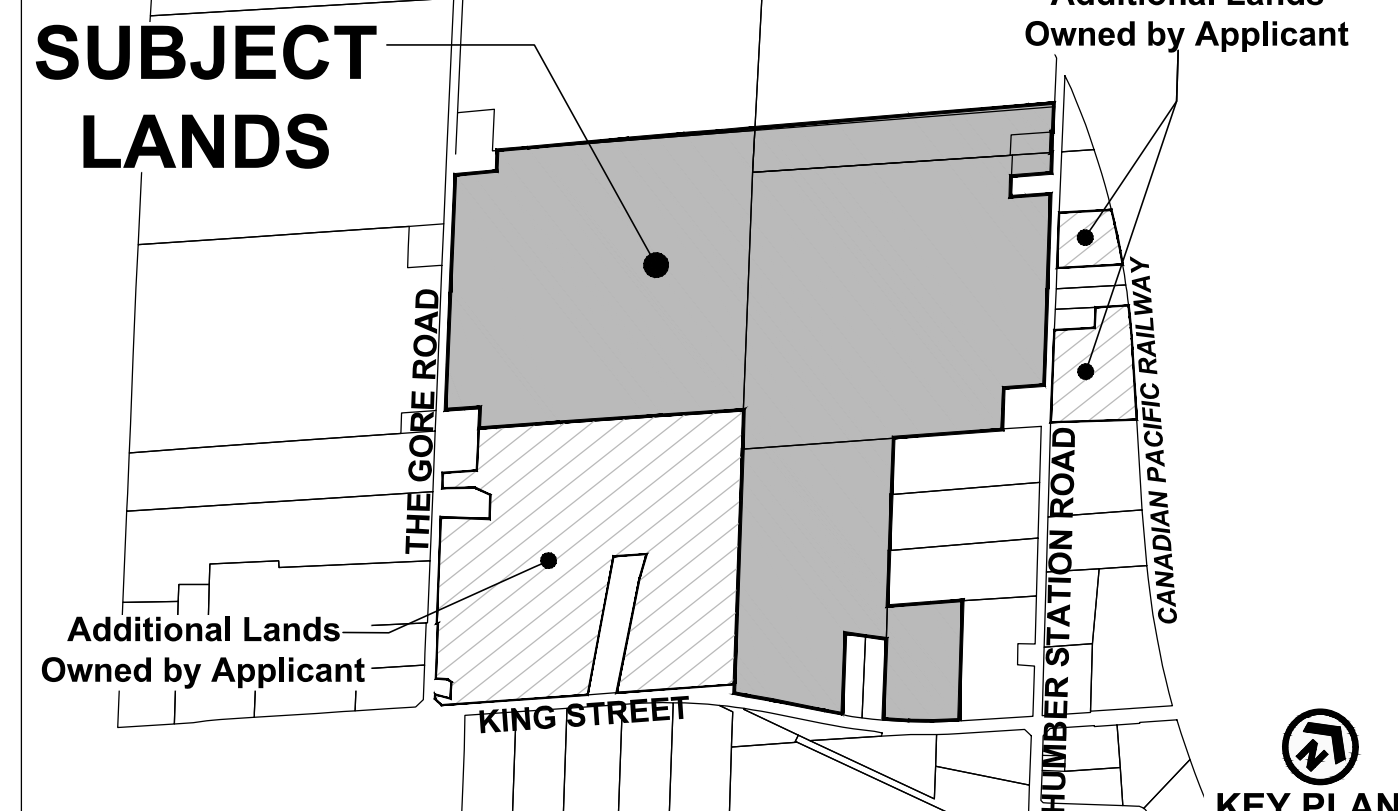
SURVEYORS CERTIFICATE
I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE CORRECTLY AND ACCURATELY SHOWN.

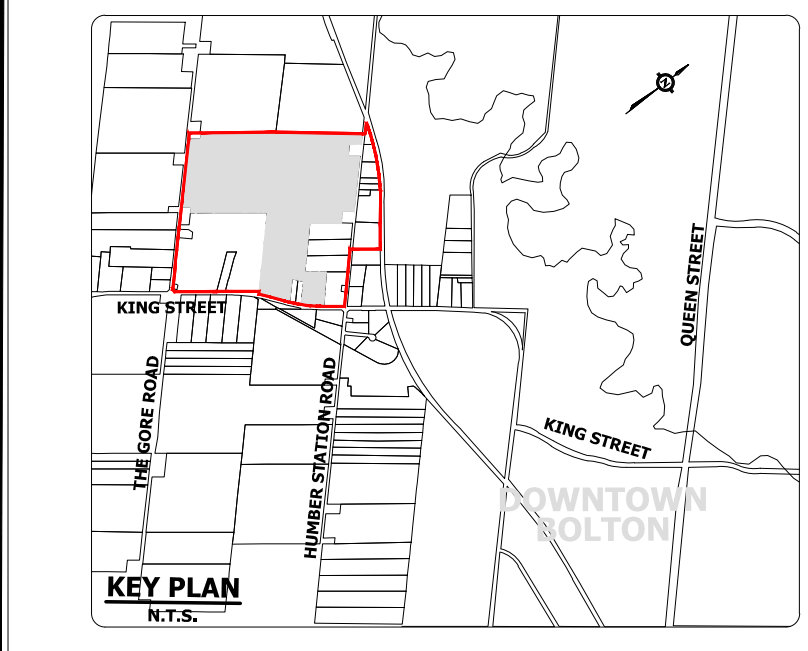
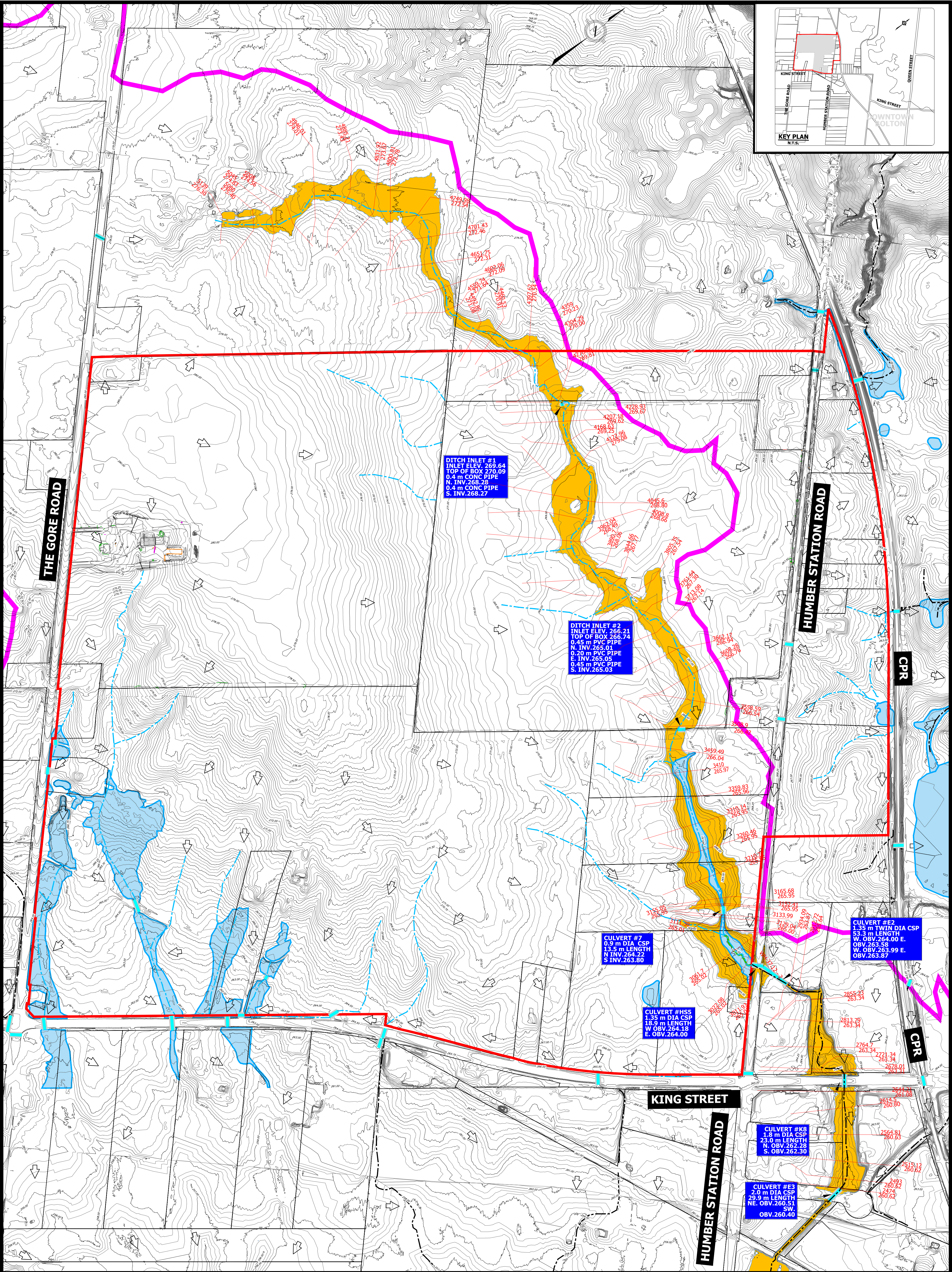
SIGNED Bredin DATE: MAY 15, 2023
MONIKA BUDZIAK, OLS
J. D. BARNES LIMITED
EMAIL: mbudziak@jdbarnes.com

ADDITIONAL INFORMATION
(UNDER SECTION 51(17) OF THE PLANNING ACT) INFORMATION REQUIRED BY CLAUSES A,B,C,D,E,F,G,J & L ARE SHOWN ON THE DRAFT AND KEY PLANS.
H) MUNICIPAL AND PIPED WATER TO BE PROVIDED
I) SANDY LOAM AND CLAY LOAM
K) SANITARY AND STORM SEWERS TO BE PROVIDED

LAND USE SCHEDULE				
LAND USE	LOTS / BLOCKS	AREA (ha)	AREA (ac)	UNITS
SINGLE DETACHED - 15.24m (50') (17m DEPTH)	1-580	2.05	5.07	76
SINGLE DETACHED - 12.8m (42')		3.47	8.57	91
SINGLE DETACHED - 12.8m (42') (17m DEPTH)		3.34	8.25	146
SINGLE DETACHED - 11.6m (38')		5.02	12.40	158
SINGLE DETACHED - 11.0m (36')		1.78	4.40	60
SINGLE DETACHED - 10.4m (34')		1.66	4.10	49
BACK-TO-BACK TOWNHOUSES - 6.4m (21')	581-618	3.89	9.61	410
BACK-TO-BACK TOWNHOUSES - 5.6m (18')	619-652	3.21	7.93	388
STREET TOWNHOUSES - 7.6m (25')	653-668	1.25	3.09	52
REAR LANE TOWNHOUSES - 6.05m (20')	669-824	10.68	26.39	815
DUAL FRONTAGE TOWNHOUSES - 6.1m (20')	825-829	0.42	1.04	30
MEDIUM DENSITY RESIDENTIAL	830-845	16.32	40.33	
MIXED USE	846-850	2.17	5.36	
RESIDENTIAL RESERVE	851-886	1.09	2.69	
ELEMENTARY SCHOOL	887-889	5.47	13.52	
PARK	890-904	5.37	13.27	
WALKWAYS	905-907	0.05	0.12	
SWM POND	908	2.09	5.16	
ROAD WIDENING	909-911	0.57	1.41	
0.3m RESERVE	912-952	0.06	0.15	
22.0m R.O.W. - (Length - 4.700m)		10.45	25.82	
18.0m R.O.W. - (Length - 12.901m)		23.33	57.65	
16.0m R.O.W. - (Length - 74m)		0.12	0.30	
14.0m R.O.W. - (Length - 500m)		0.70	1.73	
8.0m Laneway - (Length - 3,167m)		2.63	6.50	
TOTAL	952	107.19	264.87	2,275

NOTES
-STREET 'C' / THE GORE ROAD DAYLIGHT TRIANGLE: 15m x 15m
-STREET 'G' / THE GORE ROAD DAYLIGHT TRIANGLE: 15m x 15m
-COLLECTOR / COLLECTOR DAYLIGHT TRIANGLE: 7.5m x 7.5m
-PUBLIC LANE / TO COLLECTOR/LOCAL DAYLIGHT TRIANGLE: 3m x 3m
-LOCAL / COLLECTOR DAYLIGHT ROUNDINGS: 5m
-ALL INTERSECTIONS ARE 90 DEGREES UNLESS OTHERWISE NOTED





LEGEND:

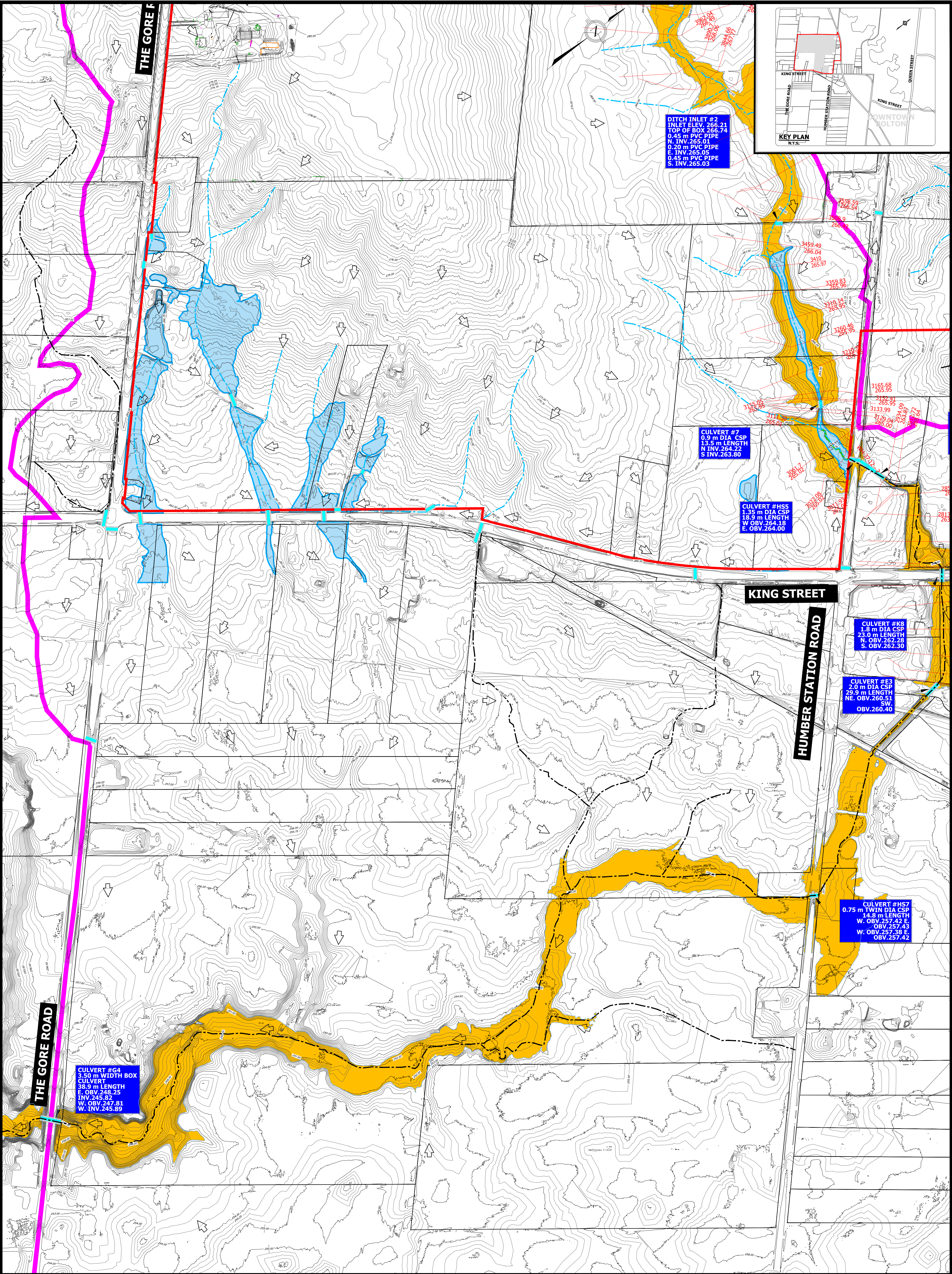
- CALEDON STATION SECONDARY PLAN LIMIT
- EXISTING CONTOURS
- EXISTING CULVERT LOCATION
- EXISTING CULVERT DESCRIPTION
- EXISTING OVERLAND FLOW DRAINAGE PATH
- UNEVALUATED WETLANDS
- WEST HUMBER WATERSHED BOUNDARY BASED ON UPDATED TOPOGRAPHY (URBANTECH)
- CEISMP HEADWATER DRAINAGE FEATURES (BEACON)
- UNEVALUATED CEISMP HEADWATER DRAINAGE FEATURES (BEACON)
- HEC-RAS STATION EXISTING FLOODLINE ELEVATION
- EXISTING WEST HUMBER (WHT6) FLOODPLAIN

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TOWN OF CALEDON
REGIONAL MUNICIPALITY OF PEEL
CALEDON STATION SECONDARY PLAN
ARGO DRAFT PLAN WEST

EXISTING FLOODPLAIN
MAPPING
WEST HUMBER RIVER TRIBUTARY 6 (WHT6)

SURVEYED BY:	J.D.B.	DATE:	2021	JOB NO.	15-458
DRAWN BY:	A.G./X.S.	CHECKED BY:	S.H.	DRAWING NO.	SHEET NO.
DESIGNED BY:	S.K./E.L.	CHECKED BY:	S.K./A.F.		202-A
SCALE:	1:3000	DATE:	MAY 2023		



LEGEND:

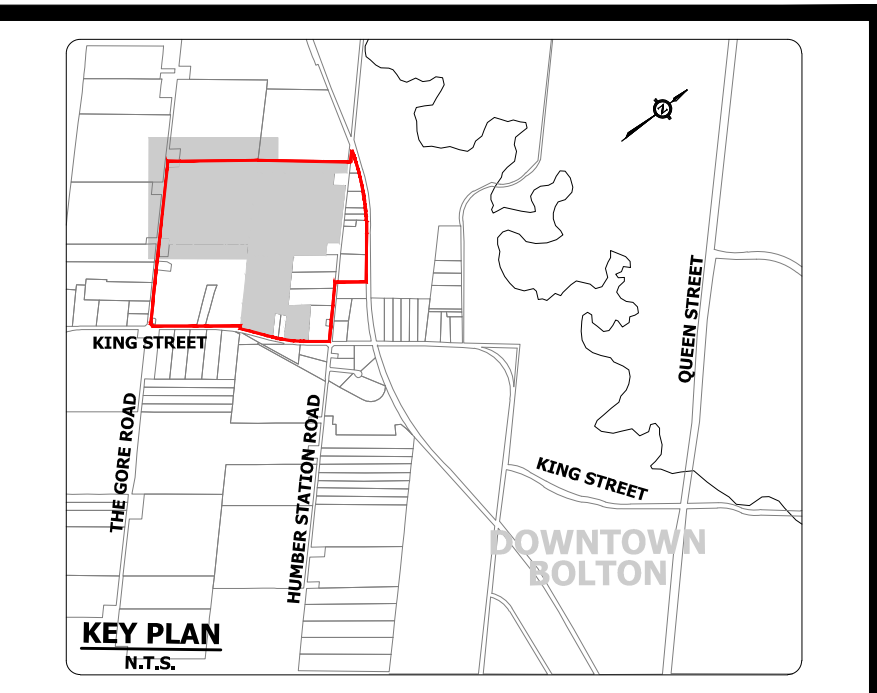
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TOWN OF CALEDON
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SCALE:	1:3000	DATE:	MAY 2023		202-B



- LEGEND:**
- PROPERTY BOUNDARY
 - GREENBELT
 - EXISTING WETLAND BOUNDARY
 - EXISTING WETLAND ID
 - ENVIRONMENTAL POLICY AREA (EPA) INCLUDING BUFFER TO PROPOSED LIMIT OF DEVELOPMENT
 - EXISTING DRAINAGE FEATURE
 - EXISTING ELEVATION
 - EXISTING CONTOUR AND ELEVATION
 - PRE-DEVELOPMENT OVERLAND FLOW DIRECTION
 - CSP STUDY AREA LIMIT
 - PROPOSED ELEVATION
 - POST-DEVELOPMENT OVERLAND FLOW DIRECTION
 - PROPOSED SWM POND
 - PROPOSED OPEN SPACE BLOCK
 - PROPOSED EPA (ENVIRONMENTAL POLICY AREA) / CHANNEL
 - PROPOSED GREEN TRAIL
 - PROPOSED FLOODLINE
 - HOLDOUT PROPERTIES

REFER TO 302



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A Division of Argus Inc. 1000 L.A.
2000 Hwy 101, Suite 200
Markham, ON L3R 3T7
TEL: 905.464.9400 • info@urbantech.com

**TOWN OF CALEDON
REGIONAL MUNICIPALITY OF PEEL
CALEDON STATION SECONDARY PLAN
ARGO DRAFT PLAN WEST**

**GRADING PLAN
(1 OF 4)**

SURVEYED BY: J.D.B. DATE: 2020 JOB NO: 15-458
DRAWN BY: A.G./S. CHECKED BY: S.H. DRAWING NO: SHEET NO.
DESIGNED BY: S.K./J.L. CHECKED BY: S.K./J.L. 301
SCALE: 1:1000 DATE: MAY 2023

REFER TO 303