Douglastown Third Access Pre-Design Review

Town of Fort Erie, Ontario

DRAFT

Prepared for:

Town of Fort Erie

12 July 2022

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Town of Fort Erie, Ontario

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Town of Fort Erie

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12 July 2022

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Table of Contents

Page

1.0 Introduction and Background 1
1.1 Introduction 1
1.2 Background 2
2.0 Existing Conditions (Background Information Review) 3
2.1 Transportation Environment 3
2.1.1 Road Network 3
2.2 Social and Economic Environment 4
2.2.1 Land-use 4
2.3 Cultural Environment 10
2.3.1 Archaeological Resources 10
2.3.2 Cultural Heritage 10
2.4 Natural Environment 12
2.4.1 Natural Heritage Features 12
2.5 Technical Environment 16
2.5.1 Utilities 16
3.0 Identification and Evaluation of Road Access Options 19
3.1 Identification of Road Access Options 19
3.2 Evaluation Criteria 22
3.3 Evaluation of Road Access Options 23
4.0 Conclusion 33
5.0 References 34

List of Figures

Figure 1-1: Study Area 1
Figure 2-1: MTO Controlled Area 5
Figure 2-2: Douglastown-Black Creek Secondary Plan - Transportation Systems 6
Figure 2-3: Black Creek Signature – Draft Plan of Subdivision 7
Figure 2-4: Douglastown-Black Creek Secondary Plan – Land Use Plan 8
Figure 2-5: Spring Creek Estates Subdivision Draft Plan of Subdivision (Not Approved) 9
Figure 2-6: Town of Fort Erie Archaeological Zones of Potential 11
Figure 2-7: Douglastown-Black Creek Secondary Plan – Natural Features and Open Space Plan 14
Figure 2-8: Douglastown-Black Creek Secondary Plan – Natural Hazards and Fish Habitat 15
Figure 3-1: Douglastown Neighbourhood Third Access Options 20
Figure 3-2: Town of Fort Erie Typical Urban Road Cross-section (20 metre road right of way) 21

List of Tables

Table 3-1: Evaluation Criteria for Alternative Alignments 22
Table 3-2: Scoring System / Evaluation Scale 23
Table 3-3: Evaluation of GROUP 1 (Westerly Access Options - 1A, 1B, 1C, 1D and 4A) 24
Table 3-4: Evaluation of GROUP 2 (Easterly Access Options - 2A, 2B, 2C, 2D, and 3A) 29
Table 3-5: Evaluation of GROUP 3 (Southerly Access Option - 5A) 32

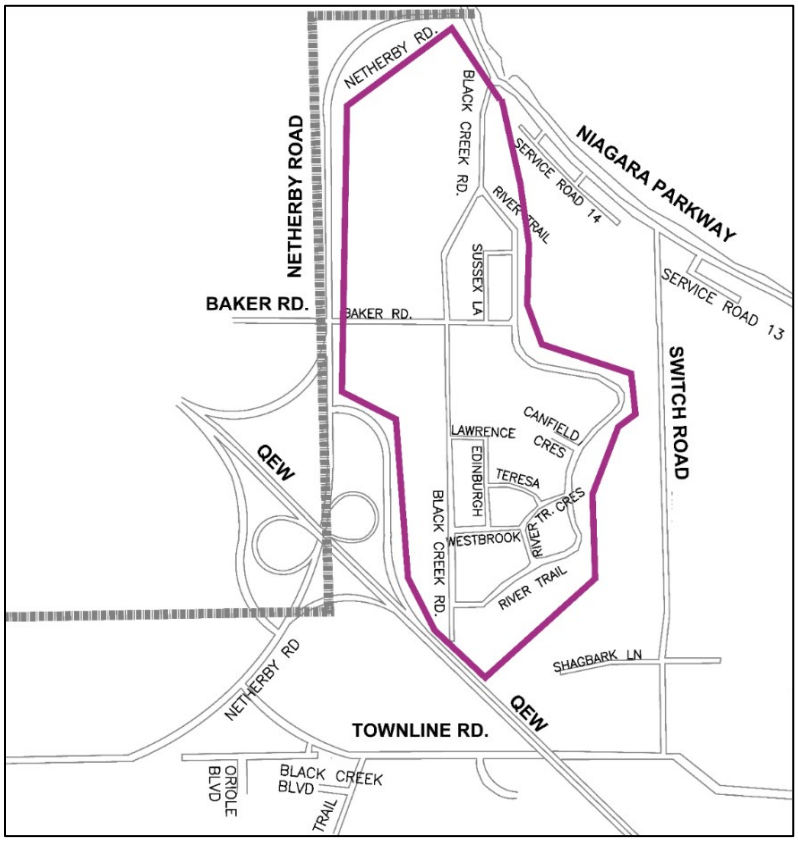
1.0 Introduction and Background

1.1 Introduction

Wood Environment & Infrastructure Solutions (Wood) was retained by the Town of Fort Erie to investigate options for a new road access to Douglastown neighbourhood, located in the most north-eastern portion of the Town. This document was developed to describe existing conditions within the Study Area and to describe and evaluate various road access options to identify whether there is a feasible option for a new third road access to Douglastown neighbourhood. In carrying out this exercise, secondary source information was used, and no dedicated field investigations were completed, traffic forecast were not part of the project scope. The Study Area includes Douglastown neighbourhood, which is bound by Netherby Road and Niagara Parkway to the north, QEW and Townline Road to the south, Switch Road to the east and Baker Road to the west (**Figure 1-1**).

It is important to note that this document provides a feasbility level review to identify a preferred option for third access to Douglastown neighbourhood. The preferred option identified (including any alternatives) in this document will be subject to Municipal Class Environmental Assessment process prior to implementation.

Figure 1-1: Study Area



1.2 Background

The Douglastown neighbourhood is currently accessed by two roads, Baker Road and Black Creek Road (Figure 1-1). A portion of Black Creek Road is a given road with a substandard road allowance width that limits the Town's ability to make improvements to the road cross section.

Recent construction activity of 2019 in the neighbourhood resulted in the closure of Baker Road for an extended period and this diverted all Douglastown traffic onto Black Creek Road. As a result, the Town Council has directed the Town staff to investigate options for a third access to Douglastown. It is anticipated a third access would significantly reduce traffic flow on Black Creek Road, south of Niagara Parkway.

2.0 Existing Conditions (Background Information Review)

A review of the following background information sources was completed to develop a high-level characterization of existing conditions within the Study Area:

- Douglastown-Black Creek Secondary Plan (By-law No. 34-2016), March 29, 2016 (Town of Fort Erie, 2016)
- Niagara Region Transportation Master Plan, October 2017 (IBI Group et al., 2017)
- Fort Erie Creeks - Watershed Plan, March 2008 (Philips Engineering Ltd., 2008)
- Niagara Navigator (Niagara Region, 2021)
- Niagara Peninsula Conservation Authority Watershed Explorer (Niagara Peninsula Conservation Authority, 2021)
- Aquatic species at risk map, 2021 (Fisheries and Oceans Canada, 2022)
- Ministry of Natural Resources and Forestry Make A Map: Natural Heritage Areas (Ministry of Natural Resources and Forestry, 2019)
- Black Creek Signature Draft Plan of Subdivision (dated June 6, 2016) (prepared by Upper Canada Consultants)
- Spring Creek Estates Subdivision Draft Plan of Subdivision (dated December 9, 2021) (prepared by Upper Canada Consultants)

2.1 Transportation Environment

2.1.1 Road Network

The existing roadways within and adjacent to the Study Area include the following:

- Netherby Road to the north and west (under Niagara Region's jurisdiction)
- Niagara River Parkway to the north (under Niagara Parks Commission jurisdiction)
- Queen Elizabeth Way (QEW) to the south (under Ministry of Transportation's jurisdiction – MTO Controlled Area **Figure 2-1**)
- Baker Road, an east-west Collector Road, and Black Creek Road, a north-south Collector Road (under Town of Fort Erie's jurisdiction)
- Local Roads (e.g., Switch Road, River Trail, Shagbark Lane) (under Town of Fort Erie's jurisdiction)

The existing and future road network within the Study Area is shown in Douglastown-Black Creek Secondary Plan Schedule DBC-4 - Transportation Systems (**Figure 2-2**). Future local roads north of Baker Road and east of Netherby Road are being implemented as part of the construction of Black Creek Signature Subdivision (Phase 1 – Registered) and (Phase 2 – Draft Plan) (**Figure 2-3**).

The Secondary Plan identifies that the Town collector roads will have an ultimate width of 23 metres and local roads will have an ultimate width of 20 metres. The Secondary Plan recognizes that these desired widths may not always be practical or obtainable, and the determination of municipal road widening will be reviewed by the Town at the time of road reconstruction/improvement projects. Further, any planned road intersections to Netherby Road or the Niagara River Parkway shall require approval of the respective authority (i.e., Niagara Region or Niagara Parks Commission) (Town of Fort Erie, 2016).

A review of the Niagara Region's Transportation Master Plan identified that Netherby Road is identified for capacity/operational improvements from QEW (on the east) to Doan's Ridge Road (on the west) within year 2022 – 2031 timeframe. In addition, future cycling facility is identified on Netherby Road from Niagara Parkway to Baker Road, as part of the Strategic Cycling Network (IBI Group et al., 2017).

It is important to note that the Niagara Parks Commission is planning to replace the Black Creek Bridge located on Niagara Parkway, immediately to the east of Black Creek Road (Niagara Parks Commission, 2020). Timeline for this bridge replacement is understood to be in 2023.

2.2 Social and Economic Environment

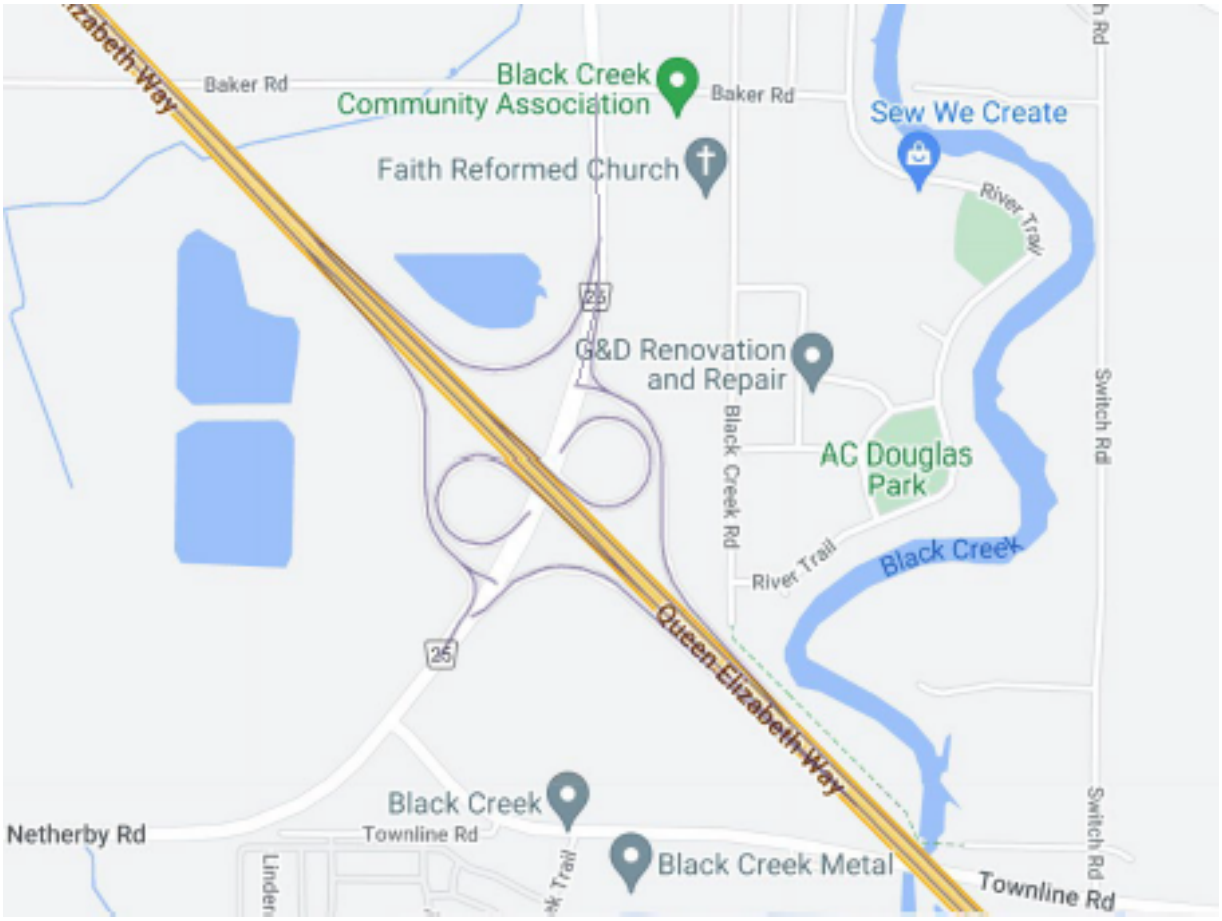
2.2.1 Land-use

As shown in Land Use Plan for the Douglastown-Black Creek Secondary Plan **(Figure 2-4**), the land-use within the Study Area is predominantly low density residential, with some medium density residential.

Black Creek Road in the northern part of the community is representative of the divide between original and more recent development activity. The west side of the neighborhood is vacant, with the exception of the ongoing and upcoming development of Black Creek Signature Subdivision (Phases 1 and 2) and several homes in the very northern extents and the existing Place of Worship, the Black Creek Community Centre. Currently, the southern half of the community has considerable vacant land adjacent to the QEW which exists as highway commercial designated lands (Town of Fort Erie, 2016). The lands south of Baker Road are currently being planned for future residential development as part of Spring Creek Estates Subdivision (Figure 2-5).

The existing church represents the only institutional use throughout the entire Plan Area and the privately operated Black Creek Community Centre provides area residents and groups with facilities for their operational needs. There are no schools located within the Secondary Plan Area and children of school age are transported either privately or by the School Boards. It is important to note that there is enhanced commercial land-use located immediately to the south of QEW.

Figure 2-1: MTO Controlled Area



Source: Ontario Ministry of Transportation Highway Corridor Management – MTO Controlled Areas (https://www.hcms.mto.gov.on.ca/PermitsControlledArea), Google

Figure 2-2: Douglastown-Black Creek Secondary Plan - Transportation Systems

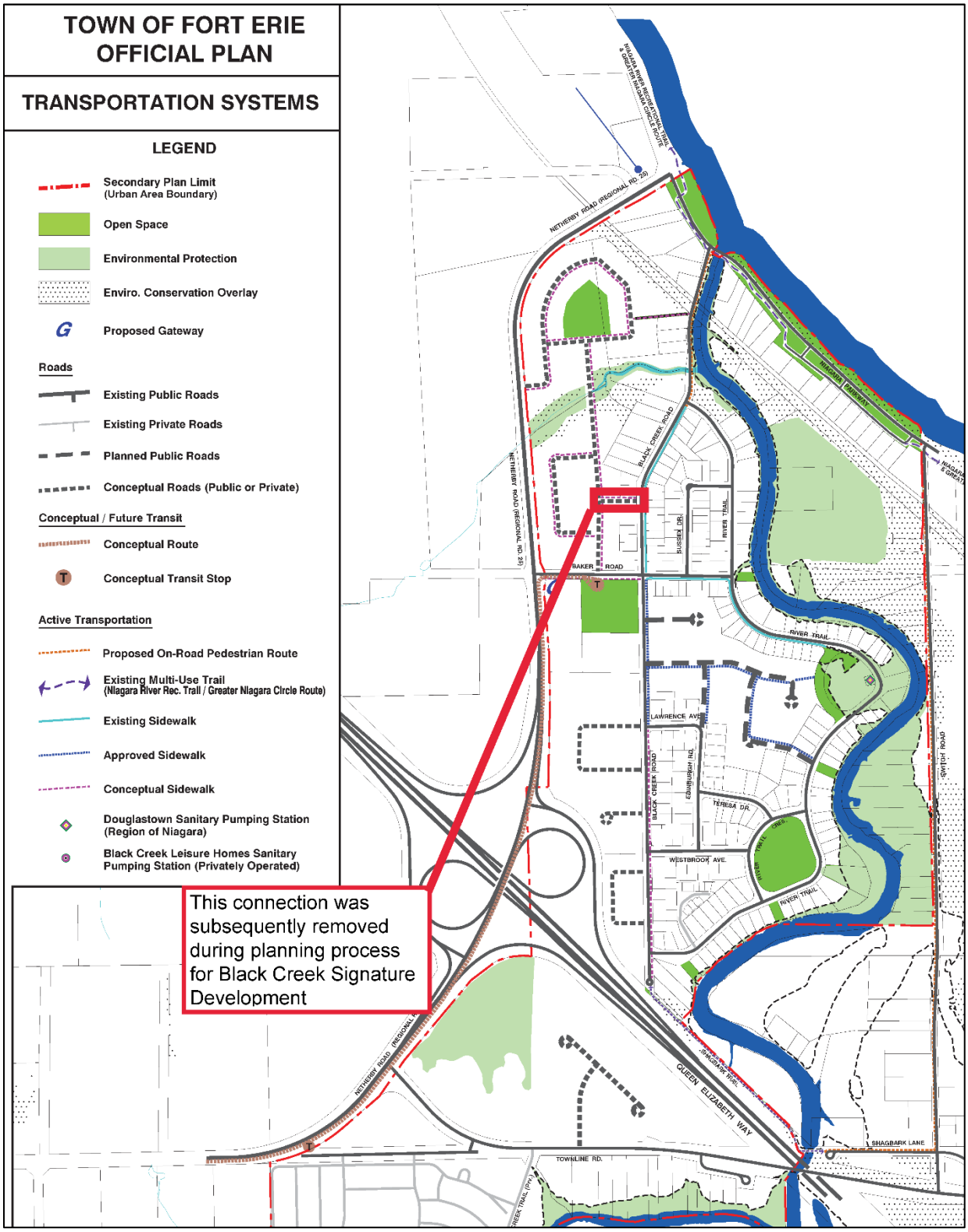


Figure 2-3: Black Creek Signature – Draft Plan of Subdivision

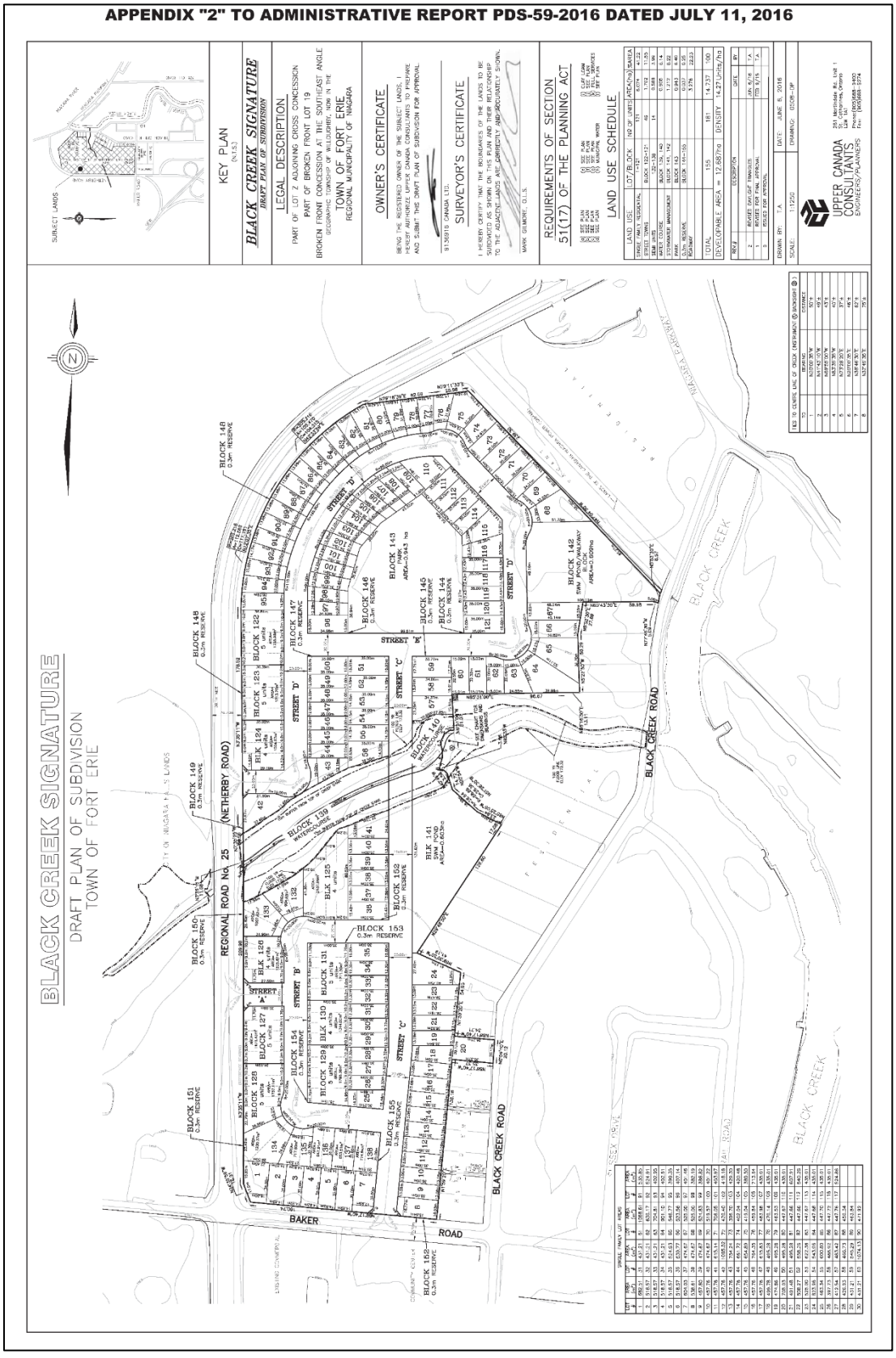


Figure 2-4: Douglastown-Black Creek Secondary Plan – Land Use Plan

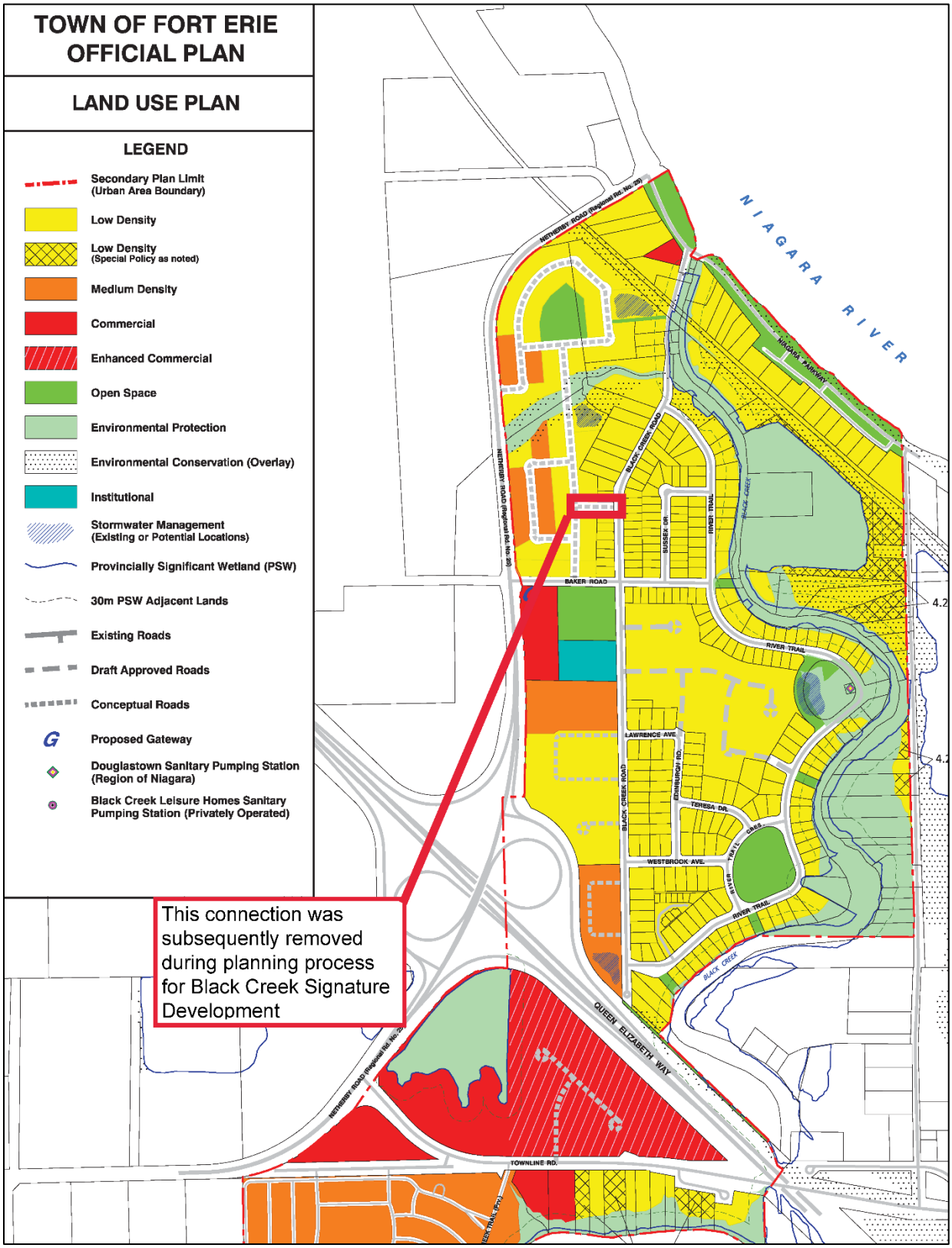
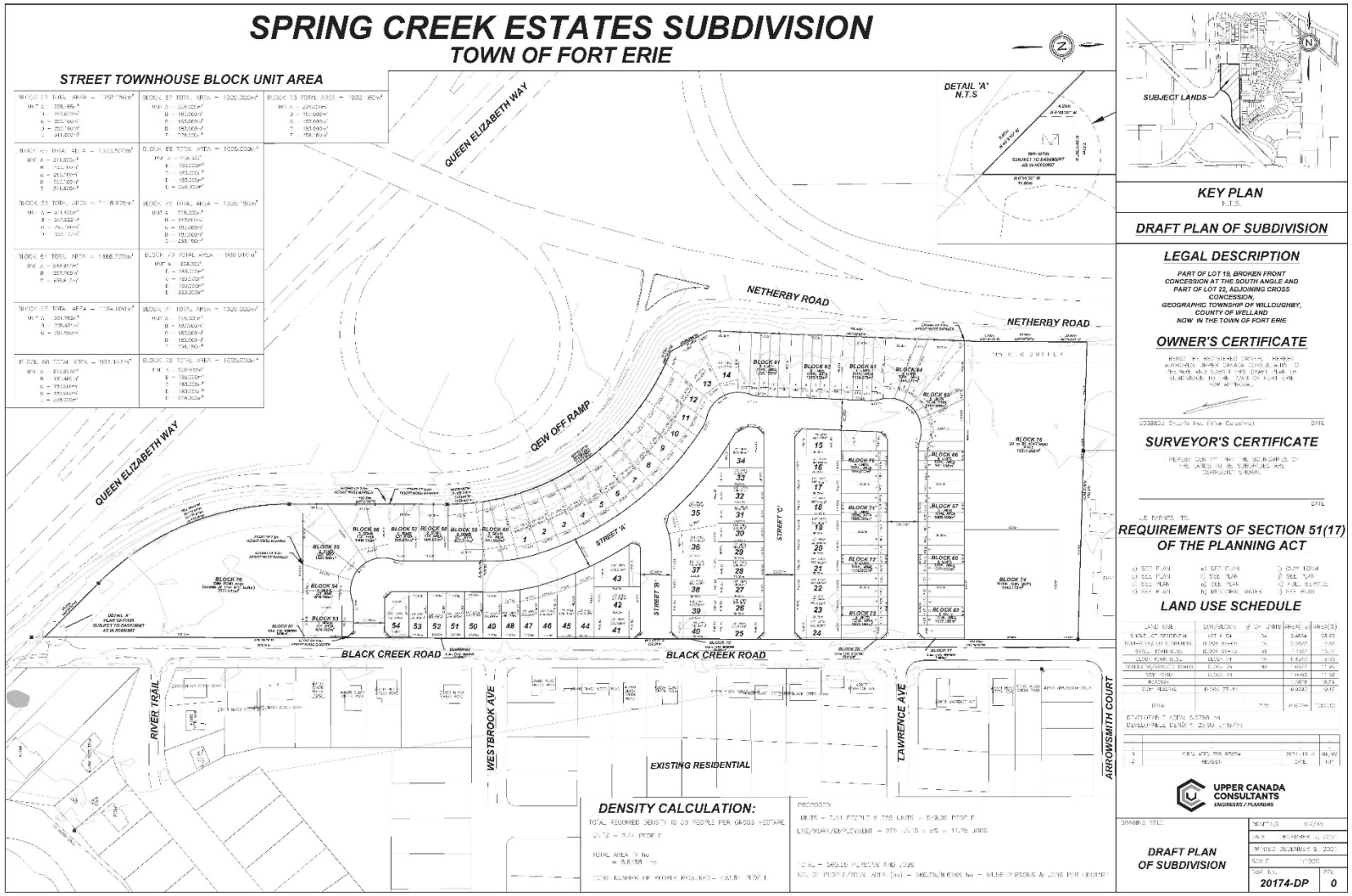


Figure 2-5: Spring Creek Estates Subdivision Draft Plan of Subdivision (Not Approved)



2.3 Cultural Environment

2.3.1 Archaeological Resources

The Town of Fort Erie Official Plan Schedule 'D' - Cultural Heritage Archeological Zones of Potential identifies areas of archaeological potential within the Town. This schedule is provided in **Figure 2-6.** A review of this schedule indicates that the Study Area contains areas of archaeological potential.

Policy VIII within Section 11.4 of the Official Plan requires that municipal and regional projects, except for the maintenance of existing municipal and agricultural drains, will be reviewed to determine impacts upon potential archaeological resources. An archaeological resource assessment will be required if the lands are located within the zone of archaeological potential as indicated on Schedule "D" or a Zone of Sensitivity as indicated on Schedule 'D1'.

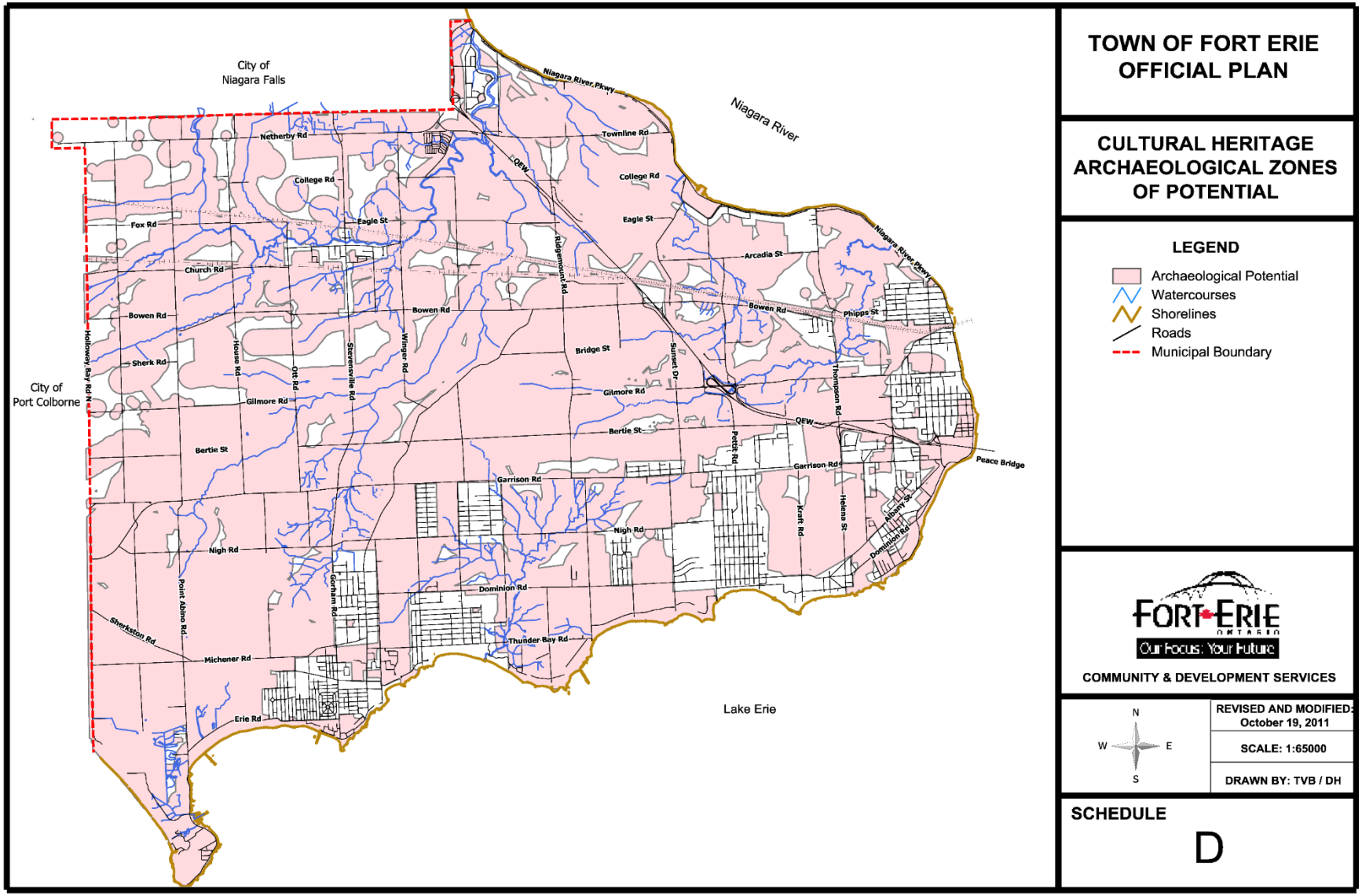
No archaeological assessment was completed as part of the development of this pre-design document.

2.3.2 Cultural Heritage

The setting and cultural heritage of Douglastown-Black Creek relate to a lumber and grain mill origin that date back as far back as the late 1700's and well into the 1800's. Most of the early settlement has been replaced in the area, however, there are a few residential dwellings of considerable vintage (Town of Fort Erie, 2016).

A review of the Town's register of heritage properties did not identify any Designated and Non-designated Cultural Heritage Properties within the Study Area (Town of Fort Erie , 2022).

Figure 2-6: Town of Fort Erie Archaeological Zones of Potential



2.4 Natural Environment

Various secondary information sources were reviewed to develop a high-level understanding of the natural environment features within the Study Area and to inform evaluation of road access options. As noted before, no field investigations were completed.

2.4.1 Natural Heritage Features

Douglastown – Black Creek Secondary Plan identifies the following Natural Heritage Features within the Study Area:

2.4.1.1 Environmental Protection Areas

Environmental Protection Areas in the Secondary Plan Area are comprised of Provincially Significant Wetlands (PSWs) and lands subject to natural hazard conditions. PSW's and Natural Hazards are identified on Schedules DBC-2 and DBC-3 of the Secondary Plan (**Figure 2-4** and **Figure 2-7**).

The Secondary Plan Area contains several locations where PSW's are identified. Most are associated and defined along the shoulders of the Black Creek. An Environmental Impact Study will be required for works within the areas designated as Environmental Protection Areas.

Black Creek and adjacent lands, south of Baker Road and east of Black Creek Road are identified as Natural Hazards. These lands are subject to flooding or erosion, or have unstable slopes, swampy conditions, or organic or unstable soils. Lands impacted by natural hazards are regulated by the NPCA and will be subject to regulatory controls under the NPCA's "Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses" (O. Reg. 155/06).

2.4.1.2 Environmental Conservation Overlay

Environmental Conservation Area designation overlay, as shown on Schedules DBC-2, DBC-3 and DBC-4, comprises wooded areas over 2.0 ha. and the most sensitive of natural areas identified by the Town's Natural Areas Inventory (**Figure 2-2**, **Figure 2-4**, **Figure 2-7,** and **Figure 2-8**). An Environmental Impact Study will be required for works within areas designated as Environmental Conservation Overlay. Tree Preservation Plan may be required to implement the recommendations of an Environmental Impact Study, or to protect trees identified as worthy for protection.

2.4.1.3 Environmental Corridors

Environmental Corridors represent a higher-level linkage and are intended to demonstrate where provision of wildlife and avian routes may be considered for enhancement. The Secondary Plan Area contains one such corridor, which is

directly associated with the Black Creek tributary and the Niagara River Shoreline.

2.4.1.4 Fish and Aquatic Habitat

The reach of Black Creek within the Study Area is classed as Critical Habitat (Type 1) by the Ministry of Northern Development, Mines, Natural Resources and Forestry (Ministry of Natural Resources, 2000). Critical Habitat are those fisheries habitats which have high productive capacity, are rare, highly sensitive to development, or have a critical role in sustaining fisheries (e.g., spawning and nursery areas for some species, and ground water discharge areas).

The fish community within Black Creek is typical of a low-gradient, warmwater stream, of moderate size, dominated by Centrarchids (largemouth bass, rock bass, sunfishes, crappies), bullheads, common white sucker, certain minnow species, and Esocids (northern pike, grass pickerel, and muskellunge) (Philips Engineering Ltd., 2008).

Aquatic species at risk map identified two Special Concern fish species within Black Creek (Grass Pickerel and Northern Sunfish) (Fisheries and Oceans Canada, 2022). Grass Pickerel was also identified to occur in Black Creek via Natural Heritage Information Centre (NHIC) mapping (Ministry of Natural Resources and Forestry, 2019). NHIC mapping also identified Lake Sturgeon (Great Lakes - Upper St. Lawrence River population) (Threatened) and Hickorynut (Endangered) as occurring within 1km X 1km squares that encompass Black Creek within the Study Area.

2.4.1.5 Species at Risk

Following species at risk were identified via NHIC mapping that may potentially be existing within the Study Area:

- False Hop Sedge (Endangered)
- White Wood Aster (Threatened)
- Eastern Meadowlark (Threatened)
- Wood Thrush (Special Concern)
- Snapping Turtle (Special Concern)

It is important to note that the Species at Risk and their habitat can only be confirmed via dedicated field investigations.

Figure 2-7: Douglastown-Black Creek Secondary Plan – Natural Features and Open Space Plan

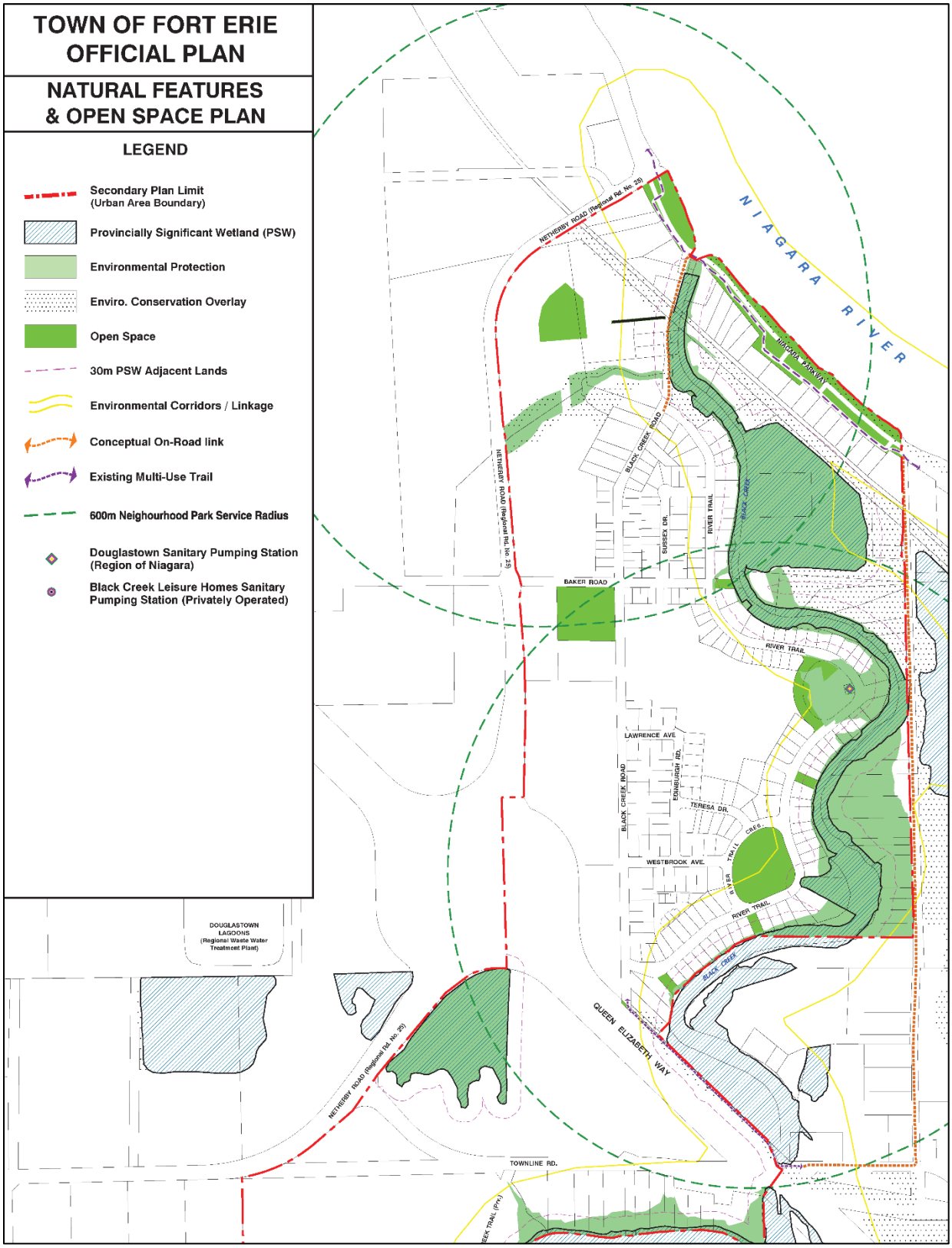
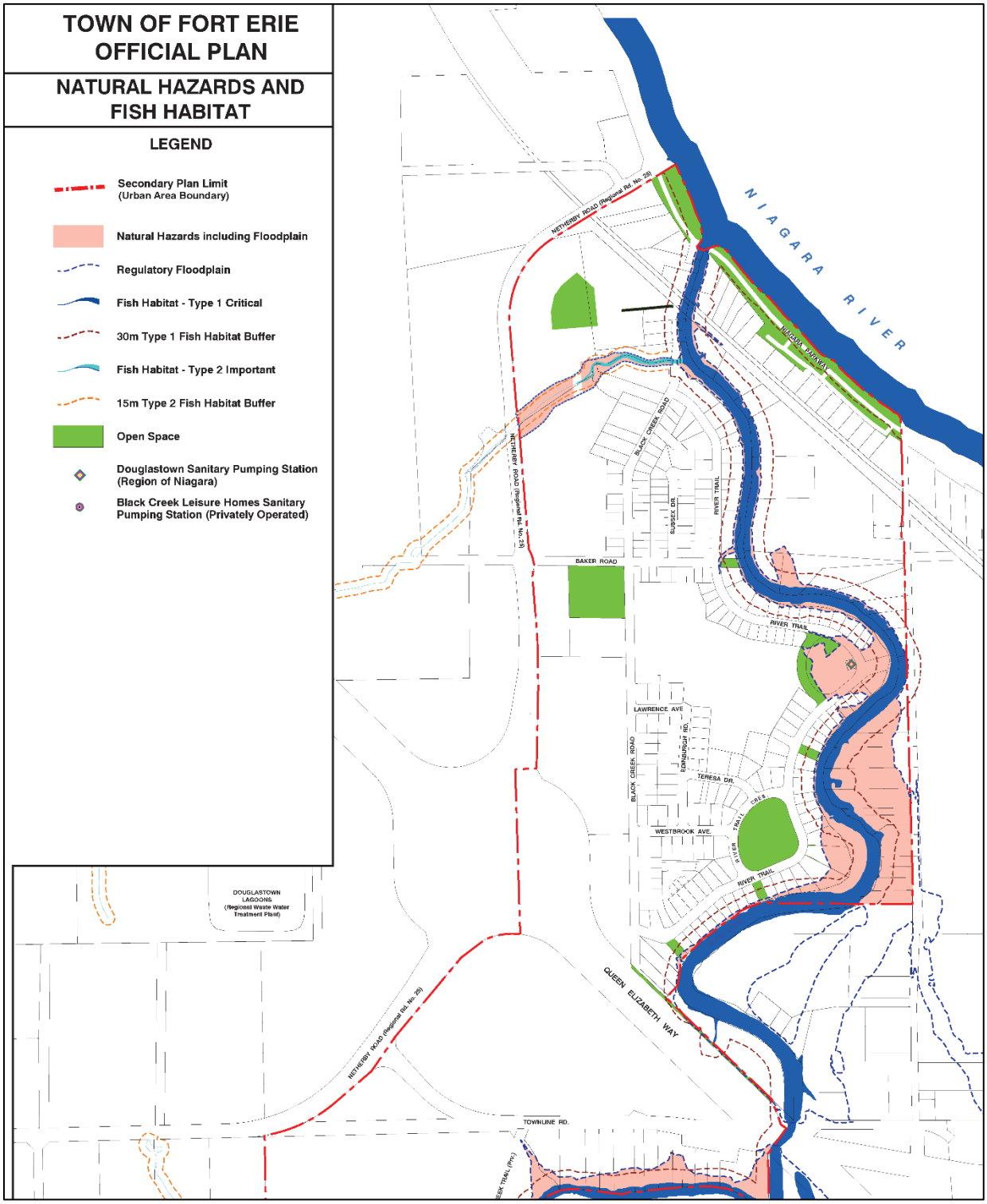


Figure 2-8: Douglastown-Black Creek Secondary Plan – Natural Hazards and Fish Habitat



2.5 Technical Environment

2.5.1 Utilities

2.5.1.1 Stormwater

As shown in Land Use Plan for the Douglastown-Black Creek Secondary Plan (**Figure 2-4**), a stormwater management pond is located on the west side of River Trail, approximately 300 metres south of Baker Road. In addition, there is a storm water outfall located immediately to the west side of River Trail, at the same location. This stormwater outfall appear to convey storm water from the stormwater management pond to Black Creek.

Pipe Size	Road	From	To
375mm to 450mm to 600mm to 675mm	Street C	North of Baker Road	
375mm to 450mm to 525mm	Baker Road	Regional Road 25	River Trail
300mm to 375mm to 450mm	Street B	North of Street C	South of Street C
375mm to 525mm to 600mm to 675mm	Black Creek Rd	Baker Rd	North of River Trail
525mm to 600mm	Sussex Lane	Baker Rd	North of River Trail
375mm to 600mm to 825mm to 750mm to 900mm Outlet	North of River Trail	Baker Rd	North of Black Creek Rd
675mm to 450mm to 375mm. 600mm to 825mm to Pond. 450mm to 525mm	South of River Trail	Baker Rd	South of Black Creek Rd
300mm to 375mm	Black Creek Rd	Baker Rd	Queen Elizabeth Way
750mm	Edinburgh Rd	Westbrook Ave	North of Lawrence Ave
300mm to 450mm to 525mm to 600mm	Cranfield Cres	River Trail	Unknown Street

375mm to 975mm to 900mm to 600mm to 525mm	Unknown Street	Black Creek Rd	East of Black Creek Rd

2.5.1.2 Sanitary

As shown in Land Use Plan for the Douglastown-Black Creek Secondary Plan (**Figure 2-4**), Douglastown Sanitary Pumping Station is located on the west side of River Trail, approximately 410 metres south of Baker Road.

Pipe Size	Road	From	To
200mm	Street C	North of Baker Road	
200mm to 250mm	Baker Road	Regional Road 25	River Trail
200mm	Street B	North of Street C	South of Street C
200mm	Black Creek Rd	Baker Rd	Niagara Parkway
200mm	Sussex Lane	Baker Rd	North of River Trail
300mm	North of River Trail	Baker Rd	North of Black Creek Rd
200mm to 250mm to 300mm	South of River Trail	Baker Rd	South of Black Creek Rd
200mm to 250mm	Black Creek Rd	Baker Rd	Queen Elizabeth Way
250mm	Lawrence Ave	Black Creek Rd	Edinburgh Rd
200mm to 250mm	Westbrook Ave	Black Creek Rd	River Trail Crescent
250mm	Teresa Ave	Edinburgh Rd	River Trail Crescent
200mm to 250mm	Edinburgh Rd	Westbrook Ave	North of Lawrence Ave
200mm	Cranfield Cres	River Trail	Unknown Street
200mm	Unknown Street	Black Creek Rd	East of Black Creek Rd
250mm	River Trail Cres	North of River Trail	SW of River Trail

2.5.1.3 Watermain

As shown in Land Use Plan for the Douglastown-Black Creek Secondary Plan (**Figure 2-4**), Douglastown Sanitary Pumping Station is located on the west side of River Trail, approximately 410 metres south of Baker Road.

Pipe Size	Road	From	To
200mm	Street C	North of Baker Road	
150mm	Baker Road	Regional Road 25	River Trail
150mm	Street B	North of Street C	South of Street C
150mm	Black Creek Rd	Baker Rd	Niagara Parkway
150mm	Sussex Lane	Baker Rd	North of River Trail
150mm	North of River Trail	Baker Rd	North of Black Creek Rd
150mm	South of River Trail	Baker Rd	South of Black Creek Rd
250mm	Black Creek Rd	Baker Rd	Queen Elizabeth Way
150mm	Lawrence Ave	Black Creek Rd	Edinburgh Rd
150mm	Westbrook Ave	Black Creek Rd	River Trail Crescent
150mm	Teresa Ave	Edinburgh Rd	River Trail Crescent
150mm	Edinburgh Rd	Westbrook Ave	North of Lawrence Ave
200mm	Cranfield Cres	River Trail	Unknown Street
200mm	Unknown Street	Black Creek Rd	East of Black Creek Rd
150mm	River Trail Cres	North of River Trail	SW of River Trail

2.5.1.4 Others

Other utilities available within the study area are Hydro/Utility poles, Streetlights.

3.0 Identification and Evaluation of Road Access Options

3.1 Identification of Road Access Options

Following options were identified for a new road access to Douglastown neighbourhood:

1) **Road link to connect Netherby Road and Black Creek Road, between the Queen Elizabeth Way and Niagara Parkway**
   A. A new road within Phase 1 of Black Creek Signature Subdivision
   B. A new road within Phase 2 of Black Creek Signature Subdivision
   C. A new road within vacant land (0-17508) to the north side of Black Creek Signature Phase 2
   D. A new road within vacant land south of Baker Road

      1D-1. New road between Faith Reformed Church and Black Creek Community Centre

      1D-2. New road south of Faith Reformed Church

      1D-3. New road through Spring Creek Estates

2) **Crossing over Black Creek and connection to Switch Road**
   A. Extending Baker Road from River Trail to Switch Road
   B. At Terranet parcel 64240012, opposite the sewage pump station
   C. Extending Canfield Crescent easterly
   D. Extending River Trail Crescent easterly

3) **Crossing over Black Creek and connect to Shagbark Lane**

   A. Extend Black Creek Road in a southeast direction and connect with Shagbark Lane

4) **Additional capacity on Baker Road**

   A. Widen Baker Road, from Netherby Road to Black Creek Road, to a four-lane undivided cross section

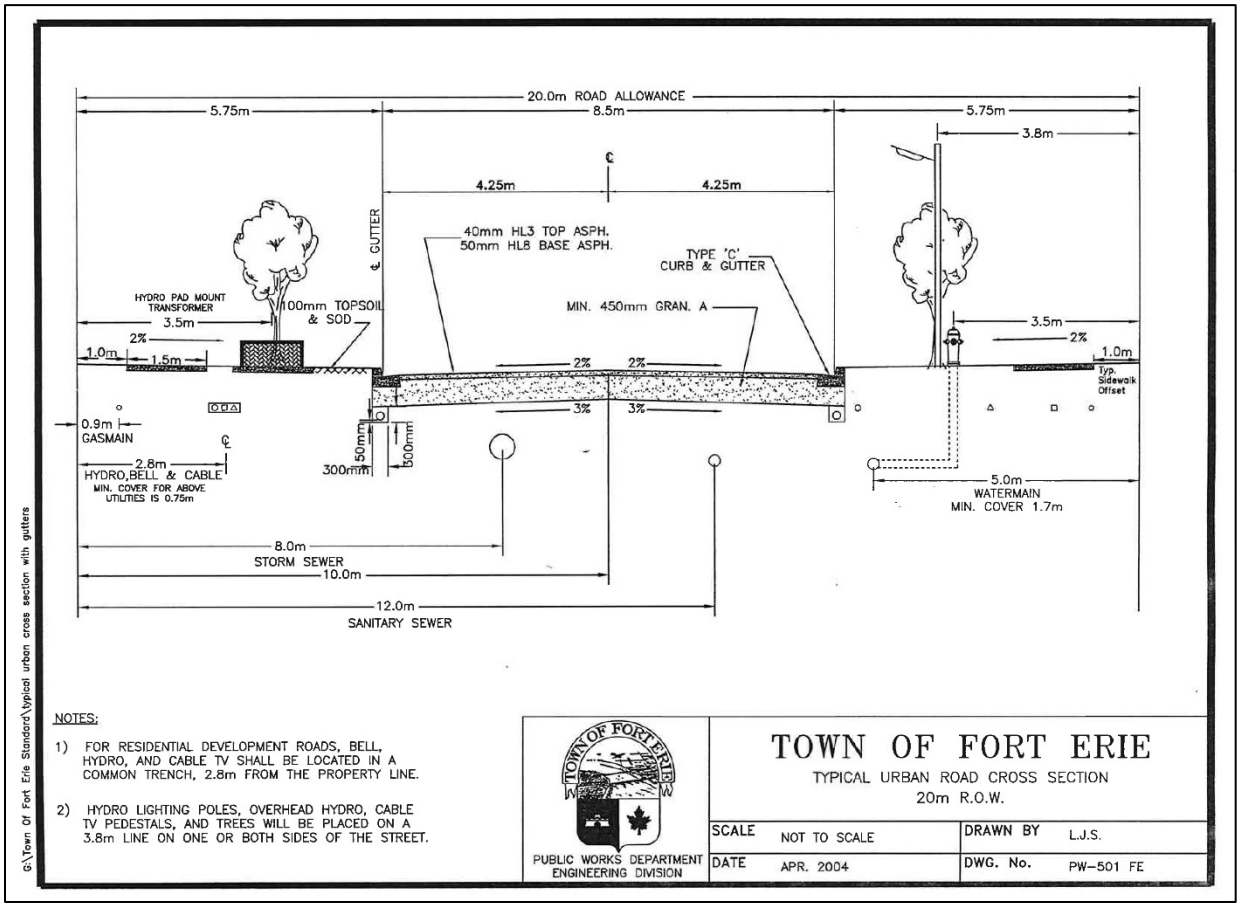
5) **Crossing over the Queen Elizabeth Way**
   A. Extend Black Creek Road, over the QEW, to connect with Townline Road.

These access options are shown on **Figure 3-1**. All access alternatives, (except 4A) will be based on the Town's typical urban cross section, shown in **Figure 3-2**. Detailed figures of these alternatives are provided as an attachment to the report.

Figure 3-1: Douglastown Neighbourhood Third Access Options



Figure 3-2: Town of Fort Erie Typical Urban Road Cross-section (20 metre road right of way)



3.2 Evaluation Criteria

To evaluate access options listed previously, an evaluation criteria was established to determine impacts to several key factors, presented in **Table 3-1** to evaluate the road access options:

Table 3-1: Evaluation Criteria for Alternative Alignments

Factor	Evaluation Criteria
Transportation	Effects on the existing roadway network Ability to meet geometric design guidelines Effects on travel time (i.e., increased or decreased travel time)
Social Environment	Effects on existing private properties Effects on or compatibility with future land use/development
Natural Environment	Effects on Environmental Protection Areas (Provincially Significant Wetlands) Effects on Environmental Protection Areas (Natural Hazards) Effects on Environmental Conservation Overlay (Wooded Areas) Effects on wildlife (including Species at Risk) Effects on fish and fish habitat (including Species at Risk)
Cultural Environment	Effects on lands identified to retain potential archaeological resources Effects on built heritage and cultural heritage landscapes
Engineering	Effects on existing and/or proposed infrastructure/utilities Complexity of construction, including staging and traffic disruption during construction
Economic Environment	Cost to acquire private properties (complete buyout or portion of properties) Cost to construct Cost to maintain

The options were assigned a score based on the scoring system presented in **Table 3-2**. Options represented by a full dark circle symbol were given the highest score where the evaluation criteria resulted in the lowest anticipated impacts, or highest benefits from the alternative. In cases where the option had the highest anticipated impact or lowest benefit according to the evaluation criteria, a lowest score respresented by white circle with black outline was assigned. Options with moderate anticipated impacts and benefits received a moderate score, as represented by a half dark circle. Alternatives were also assigned scoring in a similar fashion based on cost criteria (i.e., highest cost = lowest benefits, and lowest cost = greatest benefits).

Table 3-2: Scoring System / Evaluation Scale

○	◔	◑	◕	●
Highest negative impacts or lowest benefits Marked as '0'	Higher negative impacts or lower benefits Marked as '1'	Moderate negative impacts and benefits Marked as '2'	Lower negative impacts or greater benefits Marked as '3'	Lowest negative impacts or greatest benefits Marked as '4'

3.3 Evaluation of Road Access Options

For the purposes of evaluation, the access options were grouped in three as below:

- **Group 1 (Westerly Options):** The westerly options were grouped and evaluated against each other. Options in this grouping included: 1A, 1B, 1C, 1D and 4A.
- **Group 2 (Easterly Options):** The easterly options were grouped and evaluated against each other. Options in this grouping included: 2A, 2B, 2C, 2D and 3A.
- **Group 3 (Southerly Option):** This only include Option 5A, however, referred as group for uniformity.

The evaluation of road access options is provided in **Table 3-3**, **Table 3-4** and **Table 3-5**. Illustration of this grouped and individual options are provided in the attachment of this report. The estimates for cost to construct identified in tables 3-3 through 3-5, includes cost for curb and gutter, sidewalk, cycle track, roadway asphalt and granular material, sod & mulch, utility relocation including hydropoles and light standards, tree removal and replacement, crossing structure. The estimate does not include property acquisition cost.

Table 3-3: Evaluation of GROUP 1 (Westerly Access Options - 1A, 1B, 1C, 1D and 4A)

Evaluation Criteria	Option 1A – New Road within Phase 1 of Black Creek Signature Subdivision		Option 1B – New Road within Phase 2 of Black Creek Signature Subdivision		Option 1C – New Road within Vacant Land (0-17508) to the north side of Black Creek Signature Phase 2 Subdivision		Option 1D-1 – New Road Faith Reformed Church and Black Creek Community Centre		1D-2 - New Road south of Faith Reformed Church		1D-3 - New road through Spring Creek Estates		Option 4A - Widen Baker Road, from Netherby Road to Black Creek Road, to a Four-lane Undivided Cross section	
Transportation														
Effects on the existing roadway network	Low impact on existing roadway network, one additional intersection required.	◕	Moderate impact on existing roadway network, one additional intersection required. New intersection in close proximity to existing intersection.	◑	High impact on existing roadway network, two additional intersections required. New intersections in close proximity to existing intersections	◔	High impact to existing roadway network, two additional intersections required. One intersection in close proximity to MTO highway access. The proposed location is ±125m south of existing Baker Road, which is less than a typical minimum intersection spacing along arterial roadway of 200m (TAC 9.4.2.1). The spacing between proposed access and QEW S-E/W Off-Ramp taper end is ±170m, and QEW E/W-N On-Ramp taper end is ±60. As Per TAC (section 8.4.3), an access to a crossing road should be a minimum of 400m from the nearest interchange ramp intersection, or a minimum of 150m from the end of the interchange ramp taper.	◔	High impact to existing roadway network, two additional intersections required. One intersection in close proximity to MTO highway access. The proposed location is ±225m south of existing Baker Road, which is more than a typical minimum intersection spacing along arterial roadway of 200m (TAC 9.4.2.1). The spacing between proposed access and QEW S-E/W Off-Ramp taper end is ±55m, and QEW E/W-N On-Ramp taper end is negative 50m. As Per TAC (section 8.4.3), an access to a crossing road should be a minimum of 400m from the nearest interchange ramp intersection, or a minimum of 150m from the end of the interchange ramp taper.	○	High impact to existing roadway network, two additional intersections required. One intersection in close proximity to MTO highway access. The proposed location is ±225m south of existing Baker Road, which is more than a typical minimum intersection spacing along arterial roadway of 200m (TAC 9.4.2.1). The spacing between proposed access and QEW S-E/W Off-Ramp taper end is ±55m, and QEW E/W-N On-Ramp taper end is negative 50m. As Per TAC (section 8.4.3), an access to a crossing road should be a minimum of 400m from the nearest interchange ramp intersection, or a minimum of 150m from the end of the interchange ramp taper.	○	Very low impact to existing roadway network, existing roadway potentially be widened on the southside to minimize property impacts. Geometric adjustments will be required at Baker Road and Black Creek Road intersection to match existing.	●
Ability to meet geometric design guidelines	Low ability to meet design guidelines due to skewed intersections.	◔	High ability to meet design guidelines due to slight skew at one intersection.	◕	Moderate ability to meet design guidelines due to slight skew at one intersection.	◑	Very high ability to meet design guidelines due to no skews at intersections	●	Very high ability to meet design guidelines due to no skews at intersections	●	Very high ability to meet design guidelines due to no skews at intersections	●	Very high ability to meet design guidelines due to no changes required.	●

Evaluation Criteria	Option 1A – New Road within Phase 1 of Black Creek Signature Subdivision		Option 1B – New Road within Phase 2 of Black Creek Signature Subdivision		Option 1C – New Road within Vacant Land (0-17508) to the north side of Black Creek Signature Phase 2 Subdivision		Option 1D-1 – New Road Faith Reformed Church and Black Creek Community Centre		1D-2 - New Road south of Faith Reformed Church		1D-3 - New road through Spring Creek Estates		Option 4A - Widen Baker Road, from Netherby Road to Black Creek Road, to a Four-lane Undivided Cross section	
Effects on travel time (i.e., increased or decreased travel time) in the even of closure of Baker Road	Low increase in travel time if issues occur at Baker Road access.	◕	Moderate increase in travel time if issues occur at Baker Road access.	◑	Low decrease in travel time if issues occur at Baker Road access.	◔	Low increase in out of way travel if issues occur at Baker Road access.	◕	Low increase in out of way travel if issues occur at Baker Road access.	◕	Moderate increase in travel time if issues occur at Baker Road access.	◑	Very low increase in travel time if issues occur at Baker Road, additional lanes will alleviate any traffic or maintenance issues.	●
Social Environment														
Effects on existing private properties	This option will require complete buyout of one residential property with an existing residence. Additional private property area (approximately 262 sq-m) will also be required. In addition, there may be loss of property value of the property located on the east side of Black Creek Road, due to close proximity to the new access road	◔	Approximately 2,400 sq-m of private property area will be required. In addition, residents may have concerns about potential loss of property value of the property located on the west side of Black Creek Road, due to close proximity to the new access road	◑	This option will require complete buyout of the vacant land (0-17508) located on north side of Black Creek Signature Phase 2. In addition, residents may have concerns about potential loss of property value of the property located on the west side of Black Creek Road, due to close proximity to the new access road	◔	Approximately 3,900 sq-m of private property area will be required. In addition, this option will bisect the commercial property (currently undeveloped) located on the west side of Faith Reformed Church, which may result in loss of property value.	◑	Approximately 3,900 sq-m of private property area will be required. In addition, this option will impact currently an undeveloped property designated as Medium Density land use on the south side of Faith Reformed Church, which may result in loss of property value.	◑	Approximately 4,300 sq-m of private property area will be required. In addition, this option will impact two currently undeveloped properties, one of them is designated as a Medium and other as a Low density land use on the south side of Faith Reformed Church, which may result in loss of property value.	◑	Approximately 1,400 Sq m of private property area will be required. The road widening needs to be shifted south to avoid potential property buy-out and impact to new residences at northwest quadrant of Baker Road/Black Creek Road intersection.	◕
Effects on or compatibility with future land use/development	A portion of this option is not compatible with the future land use. The west portion of this option will take a small portion of the lands that are proposed to be converted into a stormwater management pond (Block 141) as part of Phase 1 of Black Creek Signature Subdivision. The remaining portion of this alternative will align with the roadway that was identified as part of the Draft Plan	○	A portion of this option is not compatible with the future land use. The north-east portion of this option will take a significant portion of the lands that are proposed to be converted into a stormwater management pond (Block 142) as part of Phase 2 of Black Creek Signature Subdivision. The remaining portion of this alternative will align with the roadway that was identified as	○	This option will not interfere with the proposed future development	●	This option will interfere with the proposed future development on the west side of Faith Reformed Church, resulting in potential loss of property value.	○	This option will interfere with the proposed future development on the south side of Faith Reformed Church, resulting in potential loss of property value.	○	This option will interfere with the proposed future development on the south side of Faith Reformed Church, resulting in potential loss of property value.	○	This option will not interfere with the proposed future development	●

Evaluation Criteria	Option 1A – New Road within Phase 1 of Black Creek Signature Subdivision		Option 1B – New Road within Phase 2 of Black Creek Signature Subdivision		Option 1C – New Road within Vacant Land (0-17508) to the north side of Black Creek Signature Phase 2 Subdivision		Option 1D-1 – New Road Faith Reformed Church and Black Creek Community Centre		1D-2 - New Road south of Faith Reformed Church		1D-3 - New road through Spring Creek Estates		Option 4A - Widen Baker Road, from Netherby Road to Black Creek Road, to a Four-lane Undivided Cross section	
	of Subdivision as part of the Planning Act process.		part of the Draft Plan of Subdivision as part of the Planning Act process.											
Natural Environment														
Effects on Environmental Protection Areas (Provincially Significant Wetlands and Natural Hazards)	No effects on Environmental Protection Areas (Provincially Significant Wetlands and Natural Hazards)	●	No effects on Environmental Protection Areas (Provincially Significant Wetlands and Natural Hazards)	●	No effects on Environmental Protection Areas (Provincially Significant Wetlands and Natural Hazards)	●	No effects on Environmental Protection Areas (Provincially Significant Wetlands and Natural Hazards)	●	No effects on Environmental Protection Areas (Provincially Significant Wetlands and Natural Hazards)	●	No effects on Environmental Protection Areas (Provincially Significant Wetlands and Natural Hazards)	●	No effects on Environmental Protection Areas (Provincially Significant Wetlands and Natural Hazards)	●
Effects on Environmental Conservation Overlay (Wooded Areas)	No effects on Environmental Conservation Overlay (Wooded Areas)	●	Minor effects on Environmental Conservation Overlay (Wooded Areas) (i.e., minor removal of vegetation and trees)	◕	Significant effects on Environmental Conservation Overlay (Wooded Areas) (i.e., significant removal of vegetation and trees)	○	No effects on Environmental Conservation Overlay (Wooded Areas)	●	No effects on Environmental Conservation Overlay (Wooded Areas)	●	No effects on Environmental Conservation Overlay (Wooded Areas)	●	No effects on Environmental Conservation Overlay (Wooded Areas)	●
Effects on Species at Risk	No potential for effects on Species at Risk	●	Potential for minor effects on Species at Risk due to removal of some vegetation and trees	◕	Potential for significant effects on Species at Risk due to removal of some vegetation and trees	○	No potential for effects on Species at Risk	●	No potential for effects on Species at Risk	●	No potential for effects on Species at Risk	●	No potential for effects on Species at Risk	●
Effects on fish and aquatic habitat	No effects on fish and aquatic habitat	●	No effects on fish and aquatic habitat	●	No effects on fish and aquatic habitat	●	No effects on fish and aquatic habitat	●	No effects on fish and aquatic habitat	●	No effects on fish and aquatic habitat	●	No effects on fish and aquatic habitat	●
Cultural Environment														
Effects on lands with archaeological potential	No effects are anticipated on archaeological resources, as the Lands within Phase 1 of Black Creek Signature Subdivision are under construction	●	No effects on archaeological resources are anticipated as the lands within Phase 2 of Black Creek Signature Subdivision are assumed to have been assessed through archaeological assessment(s)	●	Schedule 'D' of the Town's Official Plan identify lands associated with this option as areas of archaeological potential. Archaeological Assessment will be required	◕	Schedule 'D' of the Town's Official Plan identify lands associated with this option as areas of archaeological potential. Archaeological Assessment will be required	◕	Schedule 'D' of the Town's Official Plan identify lands associated with this option as areas of archaeological potential. Archaeological Assessment will be required	◕	Schedule 'D' of the Town's Official Plan identify lands associated with this option as areas of archaeological potential. Archaeological Assessment will be required	◕	Schedule 'D' of the Town's Official Plan identify lands associated with this option as areas of archaeological potential. Archaeological Assessment will be required	◕
Effects on built heritage and cultural heritage landscapes	No effects on built heritage and cultural heritage landscapes	●	No effects on built heritage and cultural heritage landscapes are anticipated	●	Significant effects on Environmental Conservation Overlay (Wooded Areas) (i.e., significant removal of	○	No effects on built heritage and cultural heritage landscapes	●	No effects on built heritage and cultural heritage landscapes	●	No effects on built heritage and cultural heritage landscapes	●	No effects on built heritage and cultural heritage landscapes	●

Evaluation Criteria	Option 1A – New Road within Phase 1 of Black Creek Signature Subdivision		Option 1B – New Road within Phase 2 of Black Creek Signature Subdivision		Option 1C – New Road within Vacant Land (0-17508) to the north side of Black Creek Signature Phase 2 Subdivision		Option 1D-1 – New Road Faith Reformed Church and Black Creek Community Centre		1D-2 - New Road south of Faith Reformed Church		1D-3 - New road through Spring Creek Estates		Option 4A - Widen Baker Road, from Netherby Road to Black Creek Road, to a Four-lane Undivided Cross section	
					vegetation and trees). Indigenous Nations consider natural features as cultural heritage									
Engineering														
Effects on existing and/or proposed infrastructure/utilities	The west portion of this option will take a small portion of the lands that are proposed to be converted into a stormwater management pond (Block 141) as part of Phase 1 of Black Creek Signature Subdivision	○	The north-east portion of this option will take a significant portion of the lands that are proposed to be converted into a stormwater management pond (Block 142) as part of Phase 2 of Black Creek Signature Subdivision	○	This option appears to be encroaching into an existing utility corridor, further details needs to be confirmed by field investigation.	◑	This option may require relocation of any buried infrastructure that may be located at this property	◑	This option may require relocation of any buried infrastructure that may be located at this property	◑	This option may require relocation of any buried infrastructure that may be located at this property	◑	There are hydro poles located on both sides of Baker Road. In addition, there may be underground utilities. Relocation of the aboveground and underground utilities will be required	◑
Complexity of construction, including staging and traffic disruption during construction	Very low complexity of construction due to minimal impact on existing traffic and simple construction environment. Schedule B or C Class EA would be required, depending on property costs.	●	Low complexity of construction due to minimal impact on existing traffic. One intersection is in close proximity to Black Creek. Draft plan of subdivision revision. Schedule B or C Class EA would be required, depending on property costs.	◕	Low complexity of construction due to minimal impact on existing traffic. One intersection is in close proximity to Black Creek. Schedule B or C Class EA would be required, depending on property costs.	◕	Very low complexity of construction due to minimal impact on existing traffic and simple construction environment. Schedule B or C Class EA would be required, depending on property costs.	●	Very low complexity of construction due to minimal impact on existing traffic and simple construction environment. Schedule B or C Class EA would be required, depending on property costs.	●	Very low complexity of construction due to minimal impact on existing traffic and simple construction environment. Schedule B or C Class EA would be required, depending on property costs.	●	Low complexity of construction due simple construction environment. Minor impact on existing traffic with construction staging required. Schedule B or C Class EA would be required, depending on property costs.	◕
Economic Environment														
Cost to acquire private properties (complete buyout or portion of properties)	Very high property acquisition costs due to purchase of one residential property with an existing residence, and additional private property (approximately 262 Sq m)	○	Moderate property acquisition costs (approximately 2,400 Sq m)	◑	Very High property acquisition costs due to purchase of the vacant land (0-17508) located on north side of Black Creek Signature Phase 2	○	Approximately 3,900 sq-m of private property area will be required. In addition, this option will bisect the commercial property (currently undeveloped) located on the west side of Faith Reformed Church, which may	◑	Approximately 3,900 sq-m of private property area will be required. In addition, this option will impact currently an undeveloped property designated as Medium Density land use on the south side of Faith Reformed Church, which may	◑	Approximately 4,300 sq-m of private property area will be required. In addition, this option will impact two currently undeveloped properties, one of them is designated as a Medium and other as a Low density land use on the south side of Faith Reformed	◑	Low property acquisition costs due to purchase of approximately 1,400 sq m of private property	◕

Evaluation Criteria	Option 1A – New Road within Phase 1 of Black Creek Signature Subdivision		Option 1B – New Road within Phase 2 of Black Creek Signature Subdivision		Option 1C – New Road within Vacant Land (0-17508) to the north side of Black Creek Signature Phase 2 Subdivision		Option 1D-1 – New Road Faith Reformed Church and Black Creek Community Centre		1D-2 - New Road south of Faith Reformed Church		1D-3 - New road through Spring Creek Estates		Option 4A - Widen Baker Road, from Netherby Road to Black Creek Road, to a Four-lane Undivided Cross section	
							result in loss of property value.		result in loss of property value.		Church, which may result in loss of property value.			
Cost to construct	Potential cost of road construction could be $380,000 approximately.	◕	Potential cost of road construction could be $440,000 approximately.	◕	Potential cost of road construction could be $610,000 approximately.	◕	Potential cost of road construction could be $460,000 approximately.	◕	Potential cost of road construction could be $460,000 approximately.	◕	Potential cost of road construction could be $450,000 approximately.	◕	Potential cost of road construction could be $590,000 approximately.	◕
Total Score		**39**		**39**		**28**		**44**		**43**		**42**		**53**

Table 3-4: Evaluation of GROUP 2 (Easterly Access Options - 2A, 2B, 2C, 2D, and 3A)

Evaluation Criteria	Option 2A – Extending Baker Road from River Trail to Switch Road		Option 2B – At Terranet Parcel 642400122 Opposite Sewage Pump Station		Option 2C – Extending Canfield Crescent easterly		Option 2D – Extending River Trail Crescent easterly		Option 3A – Extend Black Creek Road in a southeast direction and connect with Shagbark Lane	
Transportation										
Effects on the existing roadway network	Low impact on existing roadway network, one additional intersection required.	◕	Moderate impact on existing roadway network, two additional intersections are required.	◑	Low impact on existing roadway network, one additional intersection required.	◕	High impact to existing roadway network, two additional intersections required. One intersection in very close proximity to existing intersection.	◔	Very low impact on existing roadway network, no additional intersections required.	●
Ability to meet geometric design guidelines	Very high ability to meet design guidelines due to no intersection skews.	●	Low ability to meet design guidelines due to slight skews at both intersections, as well as poor sightlines	◔	Moderate ability to meet design guidelines due to poor to average sightlines at one intersection.	◑	High ability to meet design guidelines due to no skews at intersections	◕	Moderate ability to meet design guidelines due poor sightlines near existing Black Creek Road and River Trail intersection.	◑
Effects on travel time (i.e., increased or decreased travel time) in the even of closure of Baker Road	Very low decrease in travel time if issues occur at Baker Road access.	○	Low decrease in travel time if issues occur at Baker Road access.	◔	Low decrease in travel time if issues occur at Baker Road access.	◔	Moderate decrease in travel time if issues occur at Baker Road access.	◑	Moderate decrease in travel time if issues occur at Baker Road access.	◑
Social Environment										
Effects on existing private properties	This option will require complete buyout of two (2) residential properties with existing residences. Additional private property area (approximately 1,100 Sq m) will also be required at the easterly limit.	○	Private property (approximately 350 Sq m) will be required.	◕	This option will require purchase of three (3) residential properties with existing residences. Additional private property (approximately 600 Sq m) will also be required	○	This option will require purchase of two residential properties, one of them has an existing residence and the other one is undeveloped. Additional private property (approximately 9,100 Sq m) will also be required. There may also be loss of property value of at least one property due to severance.	○	This option will require complete buyout of one (1) existing residential property (3386 Black Creek Road).	◔
Effects on or compatibility with future land use/development	This option is located in an area of existing development. No effects on future development are anticipated	◕	This option is located in an area of existing development. No effects on future development are anticipated	◕	This option is located in an area of existing development. No effects on future development are anticipated	◕	This option is partially located on an undeveloped residential property, and will likely impact future development plan for that property, if development on that property is proposed	◔	This option will not interfere with the future development	◕
Natural Environment										
Effects on Environmental Protection Areas (Provincially Significant Wetlands and Natural Hazards)	This option crosses Black Creek, which is identified as Environmental Protection Area (Provincially Significant Wetlands and Natural	◔	This option crosses Black Creek, which is identified as Environmental Protection Area (Provincially Significant Wetlands and Natural Hazards) on the Secondary	◔	This option crosses Black Creek, which is identified as Environmental Protection Area (Provincially Significant Wetlands and Natural Hazards) on the Secondary Plan. A structure will be required to cross	◔	This option crosses Black Creek, which is identified as Environmental Protection Area (Provincially Significant Wetlands and Natural Hazards) on the Secondary	◔	This option crosses Black Creek. In addition, a retaining wall will potentially be required in close proximity of the creek. Significant effects on Environmental Protection	○

Evaluation Criteria	Option 2A – Extending Baker Road from River Trail to Switch Road		Option 2B – At Terranet Parcel 642400122 Opposite Sewage Pump Station		Option 2C – Extending Canfield Crescent easterly		Option 2D – Extending River Trail Crescent easterly		Option 3A – Extend Black Creek Road in a southeast direction and connect with Shagbark Lane	
	Hazards) on the Secondary Plan. A structure will be required to cross Black Creek. Consultation with the Niagara Peninsula Conservation Authority would be required to understand requirements for any technical investigations that may be required due to the crossing of Black Creek PSW and Natural Hazards		Plan. A structure will be required to cross Black Creek. Consultation with the Niagara Peninsula Conservation Authority would be required to understand requirements for any technical investigations that may be required due to the crossing of Black Creek PSW and Natural Hazards		Black Creek. Consultation with the Niagara Peninsula Conservation Authority would be required to understand requirements for any technical investigations that may be required due to the crossing of Black Creek PSW and Natural Hazards		Plan. A structure will be required to cross Black Creek. Consultation with the Niagara Peninsula Conservation Authority would be required to understand requirements for any technical investigations that may be required due to the crossing of Black Creek PSW and Natural Hazards		Areas (Provincially Significant Wetlands). Consultation with the Niagara Peninsula Conservation Authority would be required to understand requirements for any technical investigations that may be required due to the crossing of Black Creek PSW and Natural Hazards	
Effects on Environmental Conservation Overlay (Wooded Areas)	No effects on Environmental Conservation Overlay (Wooded Areas)	●	No effects on Environmental Conservation Overlay (Wooded Areas)	●	No effects on Environmental Conservation Overlay (Wooded Areas)	●	No effects on Environmental Conservation Overlay (Wooded Areas)	●	No effects on Environmental Conservation Overlay (Wooded Areas)	●
Effects on Species at Risk	Moderate potential for effects on Species at Risk (e.g., Snapping Turtle)	◑	Moderate potential for effects on Species at Risk (e.g., Snapping Turtle)	◑	Moderate potential for effects on Species at Risk (e.g., Snapping Turtle)	◑	Moderate potential for effects on Species at Risk (e.g., Snapping Turtle)	◑	Moderate potential for effects on Species at Risk (e.g., Snapping Turtle)	◑
Effects on fish and fish habitat (including Species at Risk)	Moderate potential for effects on fish and fish habitat (including aquatic Species at Risk)	◑	Moderate potential for effects on fish and fish habitat (including aquatic Species at Risk)	◑	Moderate potential for effects on fish and fish habitat (including aquatic Species at Risk)	◑	Moderate potential for effects on fish and fish habitat (including aquatic Species at Risk)	◑	Moderate potential for effects on fish and fish habitat (including aquatic Species at Risk)	◑
Cultural Environment										
Effects on lands identified to retain potential archaeological resources	Schedule 'D' of the Town's Official Plan does not identify areas of archaeological potential on lands associated with this option. No Archaeological Assessment will be required	●	Schedule 'D' of the Town's Official Plan does not identify areas of archaeological potential on lands associated with this option. No Archaeological Assessment will be required	●	Schedule 'D' of the Town's Official Plan does not identify areas of archaeological potential on lands associated with this option. No Archaeological Assessment will be required	●	Schedule 'D' of the Town's Official Plan identify a portion of the lands associated with this option as areas of archaeological potential. Archaeological Assessment will be required	◕	Schedule 'D' of the Town's Official Plan identify lands associated with this option as areas of archaeological potential. Archaeological Assessment will be required	◕
Effects on built heritage and cultural heritage landscapes	No effects on built heritage and cultural heritage landscapes	●	No effects on built heritage and cultural heritage landscapes	●	No effects on built heritage and cultural heritage landscapes	●	No effects on built heritage and cultural heritage landscapes	●	No effects on built heritage and cultural heritage landscapes are anticipated	●
Engineering										
Effects on existing and/or proposed infrastructure/utilities	There is a hydro pole located at Baker Road/River Trail intersection. In addition, there may be	◑	There is a storm water outfall located on the east side of River Trail, approximately 300 metres south of Baker Road. This road access	○	This option may require relocation of any buried infrastructure	◑	This option may require relocation of any buried infrastructure	◑	This option may require relocation of any buried infrastructure	◑

Evaluation Criteria	Option 2A – Extending Baker Road from River Trail to Switch Road		Option 2B – At Terranet Parcel 642400122 Opposite Sewage Pump Station		Option 2C – Extending Canfield Crescent easterly		Option 2D – Extending River Trail Crescent easterly		Option 3A – Extend Black Creek Road in a southeast direction and connect with Shagbark Lane	
	underground utilities. Relocation of the aboveground and underground utilities will be required		option is not feasible, as it would require relocation of the outfall, which may not be possible, given the developed nature of the area. Building around the outfall will also not be feasible as it will have wider impact footprint and may require wider bridge crossing or two separate structures over the creek.							
Complexity of construction, including staging and traffic disruption during construction	High complexity of construction due to bridge construction over creek. Schedule C Class EA would be required.	◔	Very high complexity of construction due to bridge construction over creek. Schedule C Class EA would be required.	○	High complexity of construction due to bridge construction over creek. Schedule C Class EA would be required.	◔	High complexity of construction due to bridge construction over creek. Schedule C Class EA would be required.	◔	Very high complexity of construction due to bridge construction over creek. A large portion of the road will run adjacent to the creek, creating further structural design considerations. Schedule C Class EA would be required.	○
Economic Environment										
Cost to acquire private properties (complete buyout or portion of properties)	Very high property acquisition costs due to purchase of two residential property with an existing residence, and additional private property (approximately 1,100 Sq m)	○	Moderate property acquisition costs due to purchase of approximately 3,150 Sq m of private property	◔	Very high property acquisition costs due to purchase of three residential property with an existing residence, and additional private property (approximately 600 Sq m)	○	Very high property acquisition costs due to purchase of two residential property with an existing residence, and additional private property (approximately 9,200 Sq m)	○	Moderate property acquisition costs due to purchase of one residential property with an existing residence.	◔
Cost to construct	Potential cost of road construction could be $790,000 approximately based on $150 per linear meter. Additionally, the cost of bridge structure at creek crossing would be approximately $3.195M based on $4500/sq-meter. Total road plus bridge construction cost estimate is $3.99M	◑	Potential cost of road construction could be $360,000 approximately based on $70 per linear meter. Additionally, the cost of bridge structure at creek crossing would be approximately $3.78M based on $4500/sq-meter. Total road plus bridge construction cost estimate is $4.14M	◑	Potential cost of road construction could be $560,000 approximately based on $110 per linear meter. Additionally, the cost of bridge structure at creek crossing would be approximately $3.3M based on $4500/sq-meter. Total road plus bridge construction cost estimate is $3.86M	◑	Potential cost of road construction could be $810,000 approximately based on $160 per linear meter. Additionally, the cost of bridge structure at creek crossing would be approximately $5.0M based on $4500/sq-meter. Total road plus bridge construction cost estimate is $5.81M	◔	Potential cost of road construction could be $1.17M approximately based on $230 per linear meter. Additionally, the cost of bridge structure at creek crossing would be approximately $5.2M based on $4500/sq-meter. Total road plus bridge construction cost estimate is $6.37M	◔
Total Score		**32**		**30**		**31**		**27**		**31**

Table 3-5: Evaluation of GROUP 3 (Southerly Access Option - 5A)

Evaluation Criteria	Option 5A – Extend Black Creek Road, over the QEW, to connect with Townline Road.	
Transportation		
Effects on the existing roadway network	High impact on existing roadway network, one additional intersection required. One intersection will require reconfiguration or changed to a cul-de-sac. Will provide a more direct connection between Douglas Town and commercial area.	◔
Ability to meet geometric design guidelines	Very high ability to meet design guidelines due to no intersection skews.	●
Effects on travel time (i.e., increased or decreased travel time) in the even of closure of Baker Road	High decrease in travel time if issues at Baker Road access.	◕
Social Environment		
Effects on existing private properties	This option will require complete buyout of six residential properties with existing residences. Additional private property area (approximately 275 Sq m) will also be required	○
Effects on or compatibility with future land use/development	This option may interfere with the proposed future development on the enhanced commercial property located on the south side of QEW, resulting in potential loss of property value. No development application(s) were made available for that property at the time of preparation of this document.	○
Natural Environment		
Effects on Environmental Protection Areas (Provincially Significant Wetlands and Natural Hazards)	No effects on Environmental Protection Areas (Provincially Significant Wetlands and Natural Hazards)	●
Effects on Environmental Conservation Overlay (Wooded Areas)	No effects on Environmental Conservation Overlay (Wooded Areas)	●
Effects on Species at Risk	Moderate potential for effects on Species at Risk (e.g., Snapping Turtle)	◑
Effects on fish and aquatic habitat	No effects on fish and fish habitat (including aquatic Species at Risk)	●
Cultural Environment		
Effects on lands identified to retain potential archaeological resources	Schedule 'D' of the Town's Official Plan identify lands associated with this option as areas of archaeological potential. Archaeological Assessment will be required	◕
Effects on built heritage and cultural heritage landscapes	No effects on built heritage and cultural heritage landscapes are anticipated	●
Engineering		
Effects on existing and/or proposed utilities	There are underground utilities, which will require relocation due to additional fill to accommodate the bridge crossing over the highway. Relocation of the aboveground and underground utilities will likely be required	◔
Complexity of construction, including staging and traffic disruption during construction	High complexity of construction due to bridge construction over highway. Schedule C Class EA would be required.	◔
Economic Environment		
Cost to acquire private properties (complete buyout or portion of properties)	Very high property acquisition costs due to purchase of six residential property with an existing residence, and additional private property (approximately 0.28 hectares). Costs to redesign lot layout for Spring Creeks Development.	○
Cost to construct	Potential cost of road construction could be $ 900 000 approximately based on $180 per linear meter. Additionally, the cost of bridge structure at highway crossing would be $17.6M based on $4500/sq-meter. Total road plus bridge construction cost estimate is $18.5M	○
Total Score		**30**

4.0 Conclusion

From the evaluation presented above it is noted that the options under Group 1 would have lesser impacts to natural environment, utilities, existing properties, future land development. These options are potentially cost effective since bridge structures will not be required as compared to rest of the options listed under Groups 2 and 3.

It is determined that **Option 4A** - Widen Baker Road, from Netherby Road to Black Creek Road, to a Four-lane Undivided Cross section would be a better solution to increase capacity should a travel direction be restricted.

While the Option 1D scored well, Town staff discussions with MTO have found that the MTO has designated Netherby Road, between the QEW Ramps and Baker Road, as a "Controlled Access Highway" and the Ministry will not entertain consideration of a new intersection to this section of Netherby Road.

The other Options with high scores are 1A and 1B. Under **Option 1A** connection between Black Creek Road and future Street 'C' is proposed. This location also provides an opportunity for creating a 4-legged intersection across Street 'B at Black Creek Road.

In **Option 1B**, the future road network as planned under Black Creek Signature Subdivision development plan (Figure 2-3) is connected to Black Creek Road. This link provides an opportunity of connection to Netherby Road immediately north of water course via Street 'D' & 'E', and connects to Black Creek Road as well.

It is concluded that all these options provide some degree of potential benefits, however, impacts to existing features and future developments, cost of construction is deemed to be much larger than benefits. More detailed evaluation of potentially feasible options with higher scores may be undertaken through Municipal Class Environmental Assessment process in a separate undertaking should the Town decide to proceed to the next level of detailed assessment.

5.0 References

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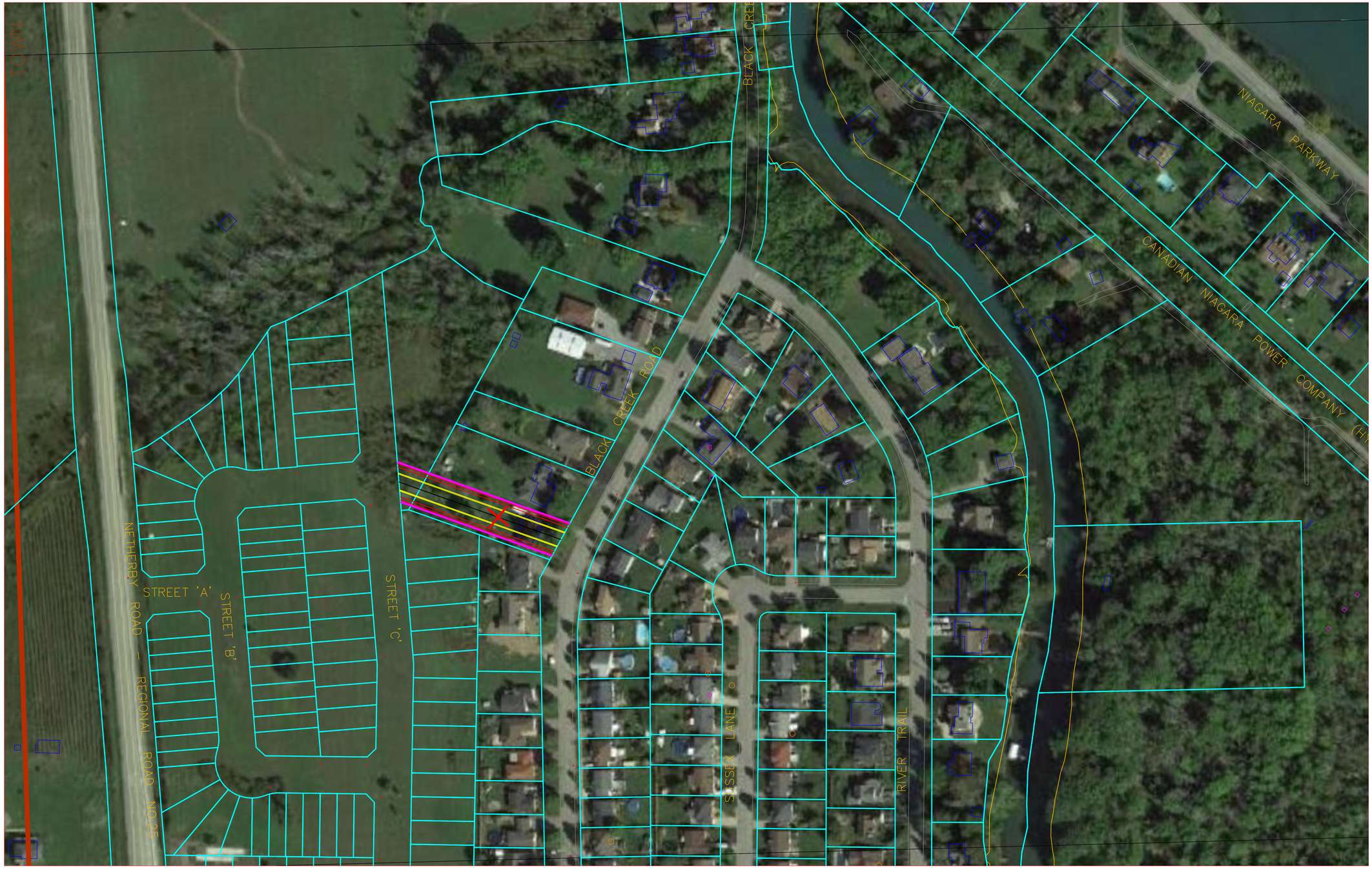
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OPTION 1A

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

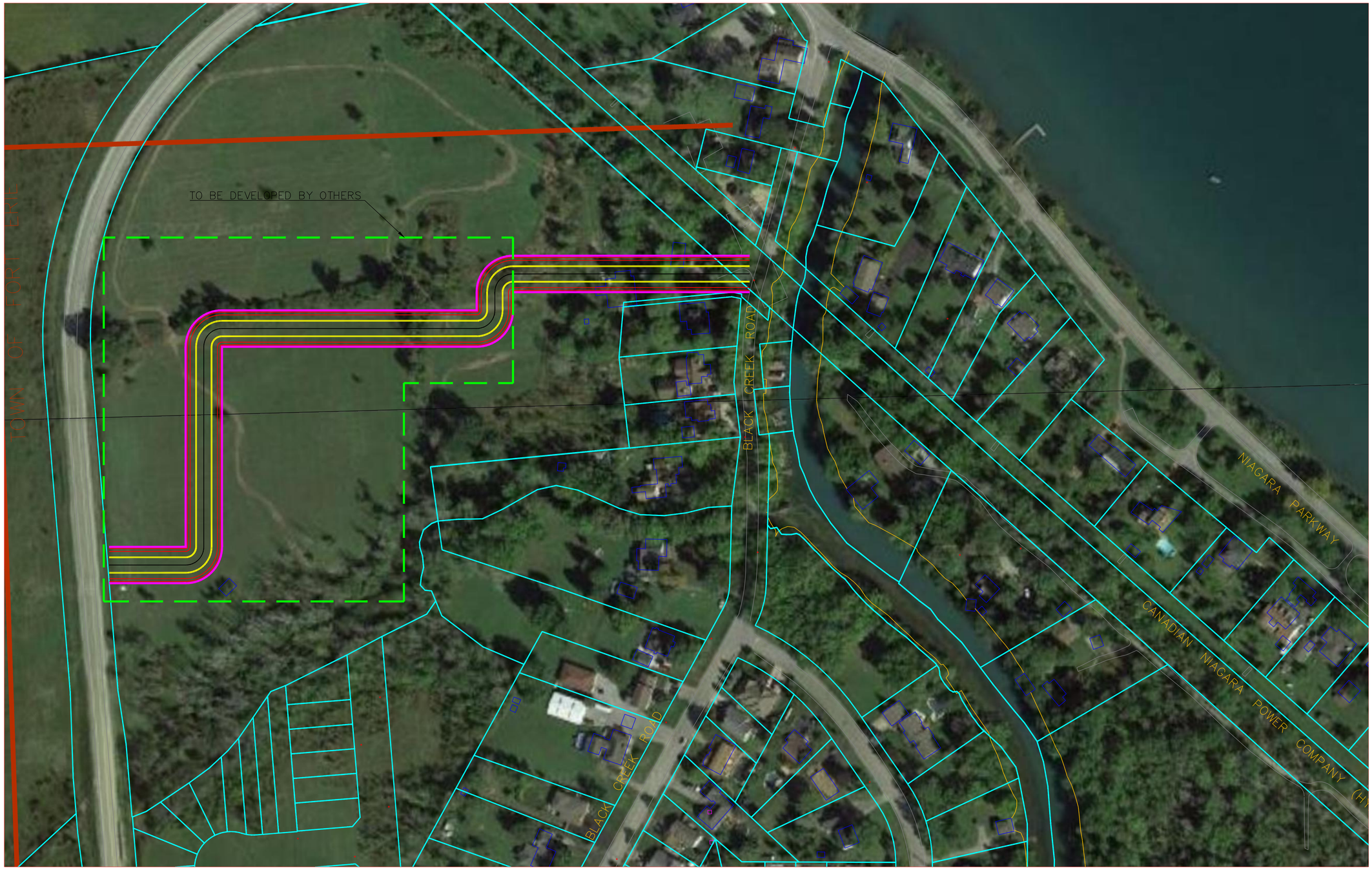
LEGEND

EX. HYDRO POLE		EX. ROW	
EX. STORM MANHOLE		PROP. ROW	
EX. STORM CATCHBASIN		PROP. CURB	
POTENTIAL BUYOUT		PROP. SIDEWALK	
		PROP. CROSSING	

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
OPTION 1A
from Street 'C' to Black Creek Road
TOWN OF FORT ERIE

CONSULTANT FILE No.	IM21202052
DATE	2022-02-16
SCALE	1:1000m
REF. No.	#
DWG No.	1
REV.	0

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OPTION 1B

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

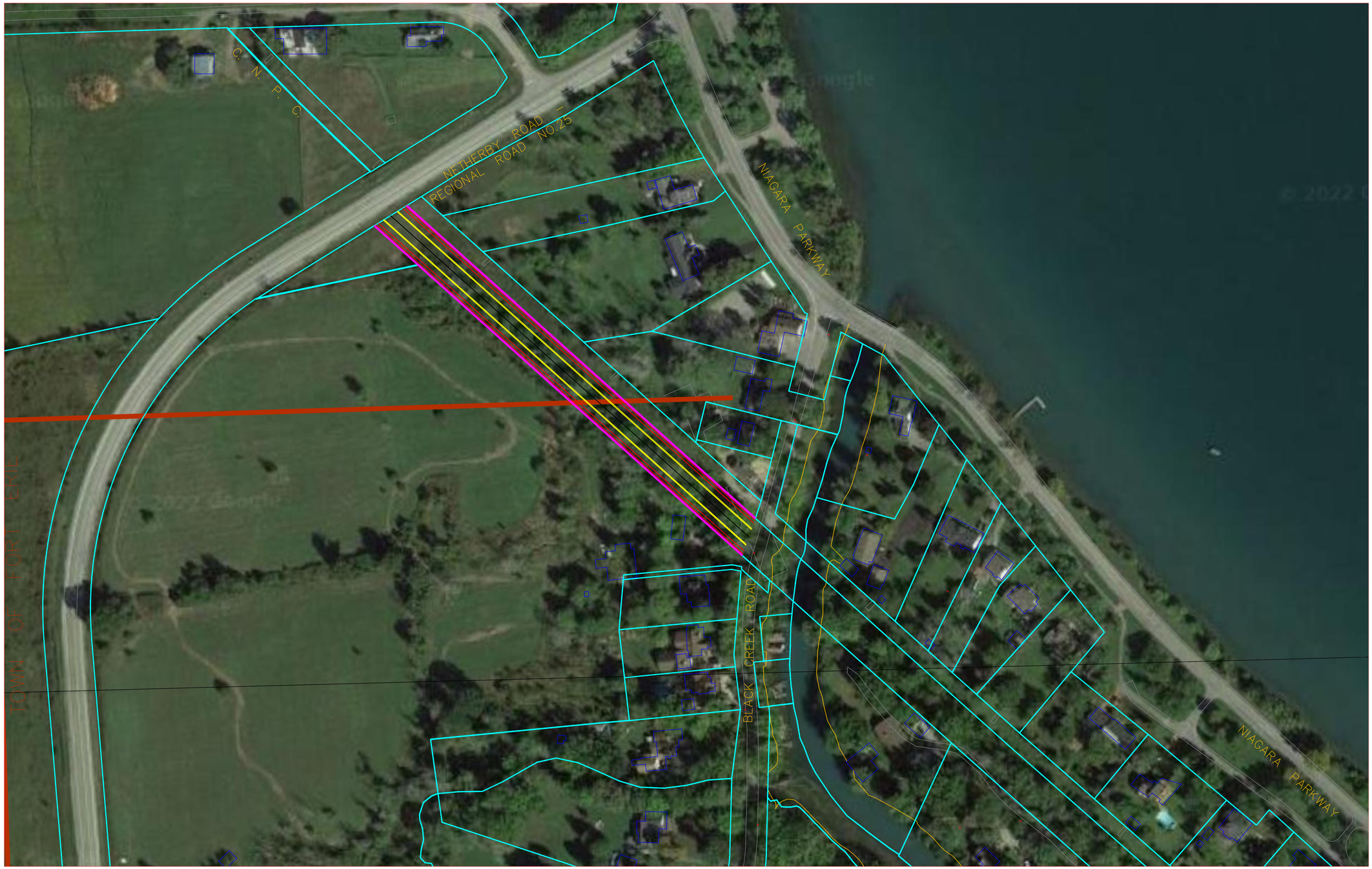
LEGEND

EX. HYDRO POLE		EX. ROW	
EX. STORM MANHOLE		PROP. ROW	
EX. STORM CATCHBASIN		PROP. CURB	
POTENTIAL BUYOUT		PROP. SIDEWALK	
		PROP. CROSSING	

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
OPTION 1B
from Netherby Road to Black Creek Road
TOWN OF FORT ERIE

CONSULTANT FILE No.	IM21202052
DATE	2022-02-16
SCALE	1:1000m
REF. No.	#
DWG No.	1
REV.	0

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OPTION 1C

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

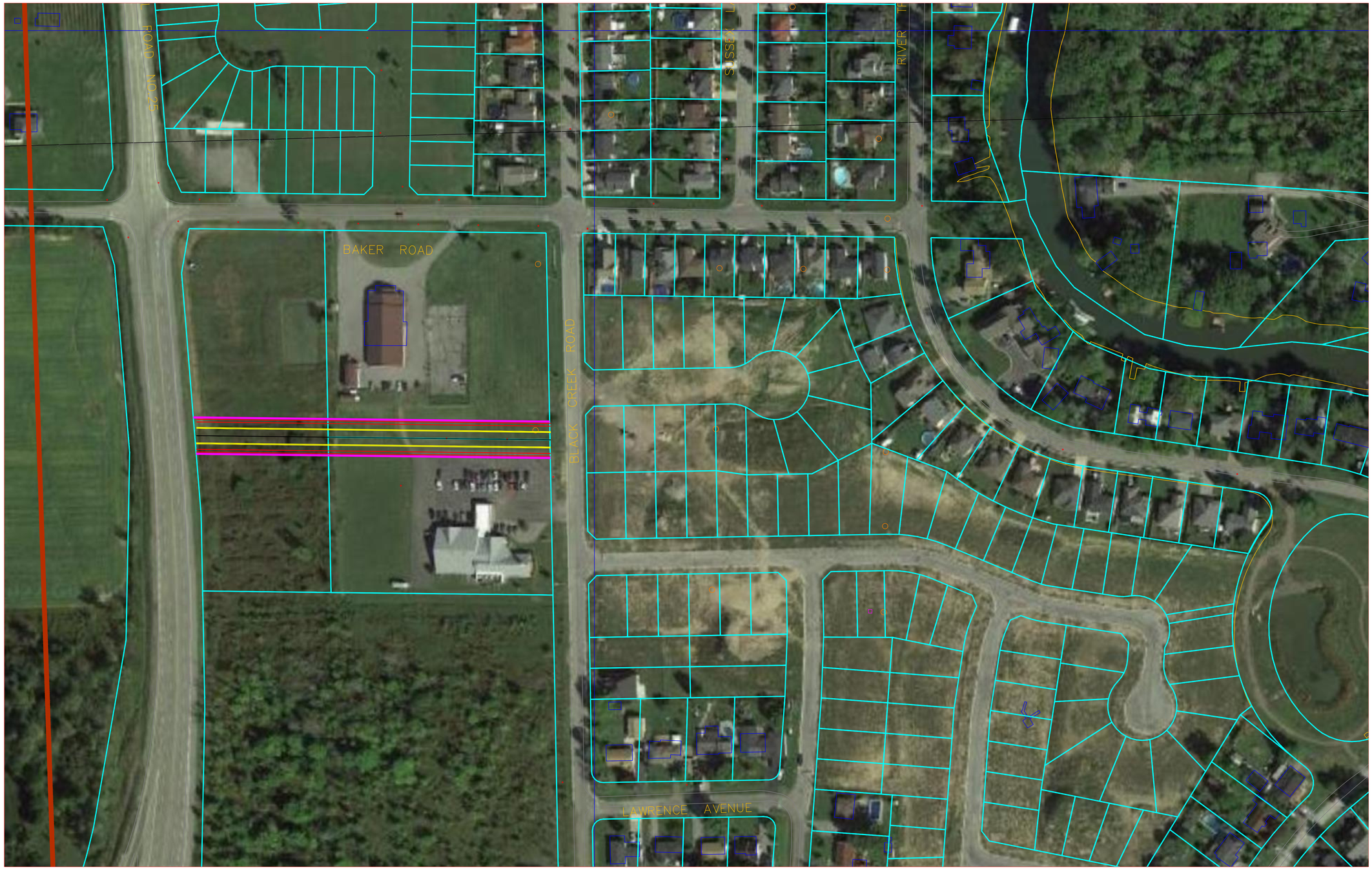
LEGEND

EX. HYDRO POLE		EX. ROW	
EX. STORM MANHOLE		PROP. ROW	
EX. STORM CATCHBASIN		PROP. CURB	
POTENTIAL BUYOUT		PROP. SIDEWALK	
		PROP. CROSSING	

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
OPTION 1C
from Netherby Road to Black Creek Road
TOWN OF FORT ERIE

CONSULTANT FILE No.	IM21202052
DATE	2022-02-16
SCALE	1:1000m
REF. No.	#
DWG No.	1
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OPTION 1D-1

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

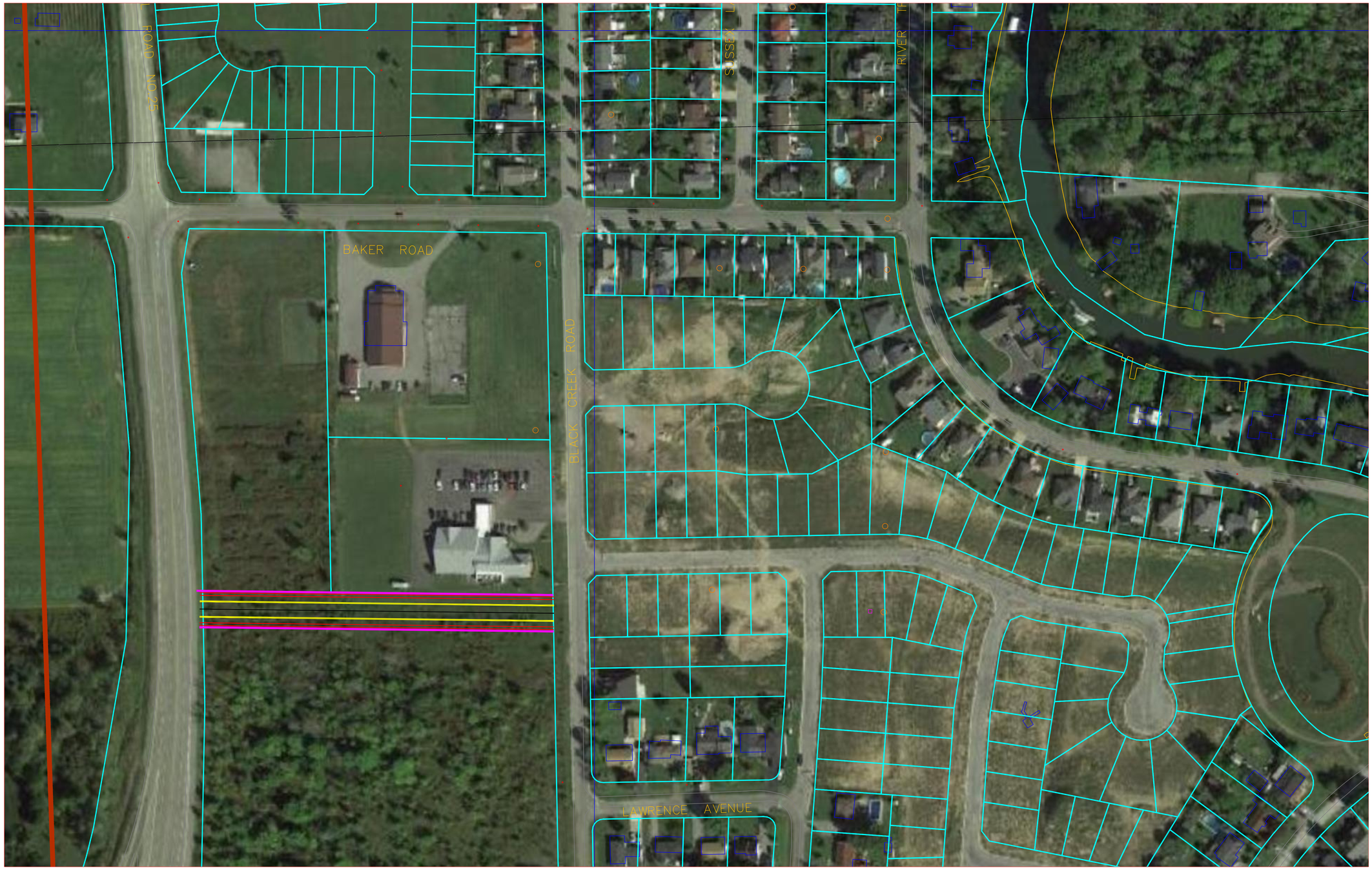
LEGEND

- EX. HYDRO POLE
- EX. STORM MANHOLE
- EX. STORM CATCHBASIN
- POTENTIAL BUYOUT
- EX. ROW
- PROP. ROW
- PROP. CURB
- PROP. SIDEWALK
- PROP. CROSSING

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
OPTION 1D
from Netherby Road to Black Creek Road
TOWN OF FORT ERIE

CONSULTANT FILE No.	IM21202052
DATE	2022-02-16
SCALE	1:1000m
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DWG No.	1
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OPTION 1D-2

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DESIGN JM
CHECKED BY MK
APPROVED BY KF

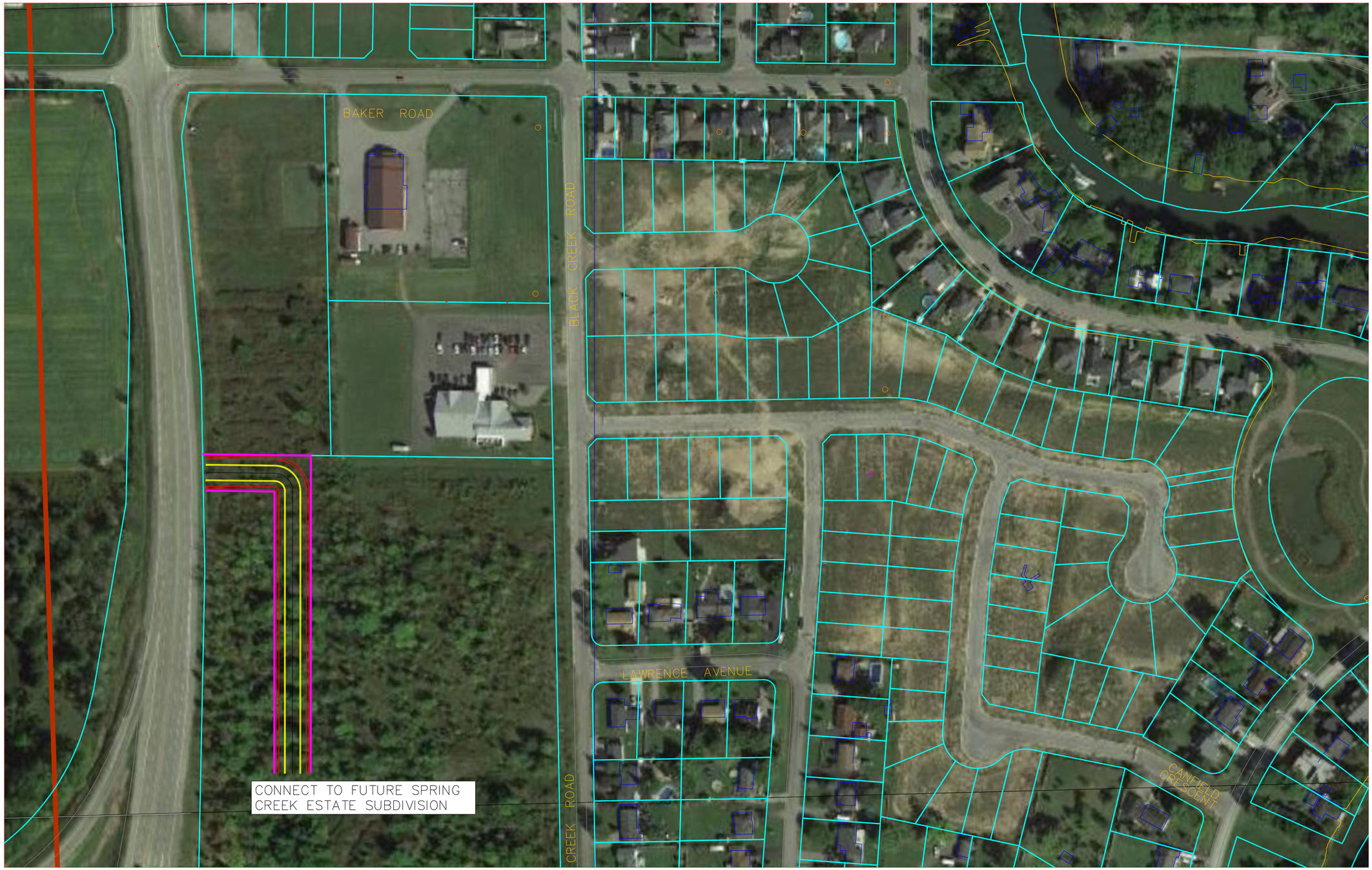
LEGEND

EX. HYDRO POLE
EX. STORM MANHOLE
EX. STORM CATCHBASIN
POTENTIAL BUYOUT
EX. ROW
PROP. ROW
PROP. CURB
PROP. SIDEWALK
PROP. CROSSING

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
OPTION 1D
from Netherby Road to Black Creek Road
TOWN OF FORT ERIE

CONSULTANT FILE No. IM21202052
DATE 2022-02-16
SCALE 1:1000m
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OPTION 1D-3

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

LEGEND

EX. HYDRO POLE		EX. ROW	
EX. STORM MANHOLE		PROP. ROW	
EX. STORM CATCHBASIN		PROP. CURB	
POTENTIAL BUYOUT		PROP. SIDEWALK	
		PROP. CROSSING	

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
OPTION 1D
from Netherby Road to Black Creek Road
TOWN OF FORT ERIE

CONSULTANT FILE No.	IM21202052
DATE	2022-02-16
SCALE	1:1000m
REF. No.	#
DWG No.	1
REV.	0

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OPTION 2A

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

LEGEND

EX. HYDRO POLE	○	EX. ROW	
EX. STORM MANHOLE	○	PROP. ROW	
EX. STORM CATCHBASIN	□	PROP. CURB	
POTENTIAL BUYOUT	X	PROP. SIDEWALK	
		PROP. CROSSING	

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
OPTION 2A
from River Trail to Switch Road
TOWN OF FORT ERIE

CONSULTANT FILE No.	IM21202052
DATE	2022-02-16
SCALE	1:1000m
REF. No.	#
DWG No.	1
REV.	0

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OPTION 2B

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

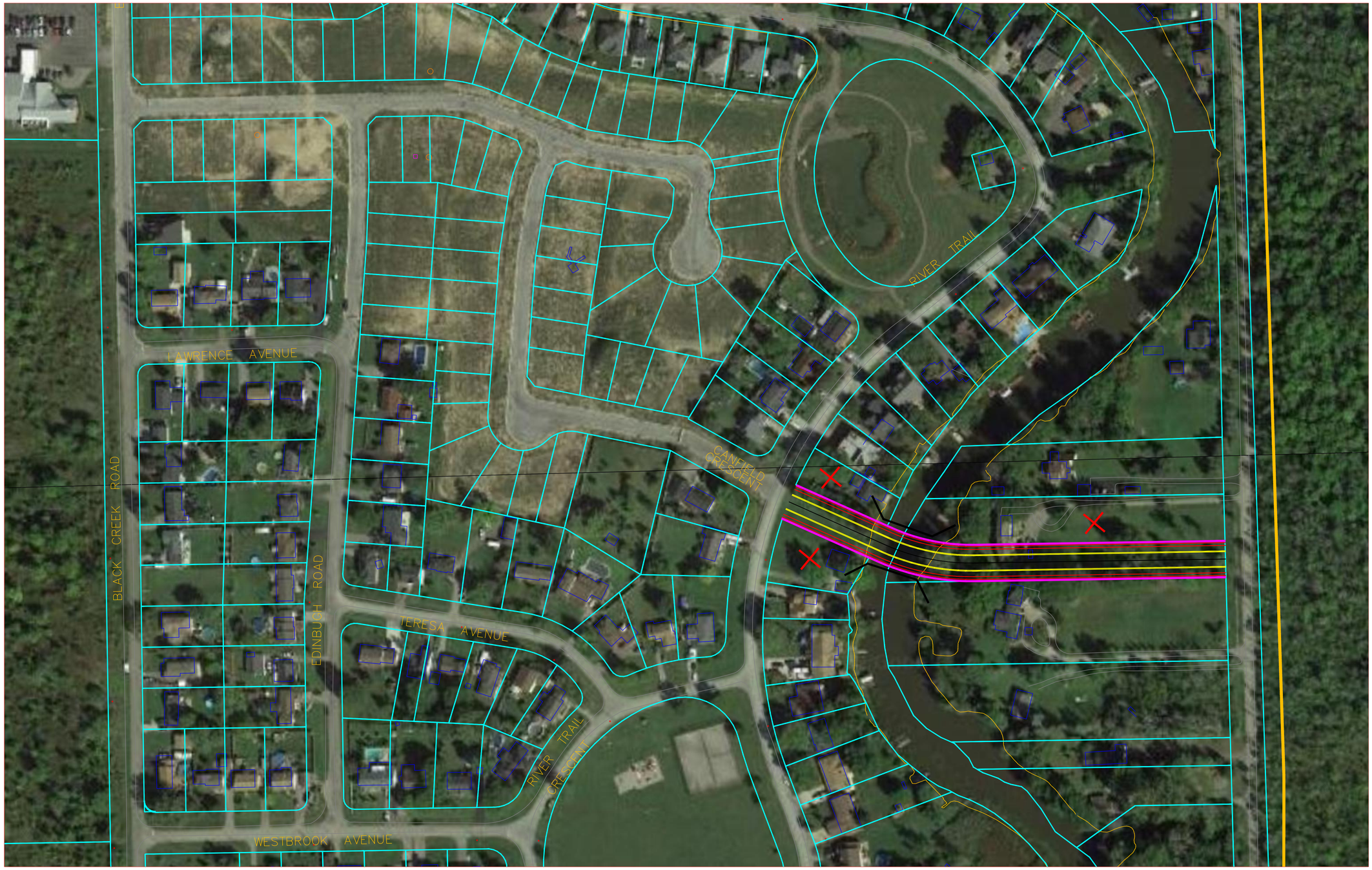
LEGEND

EX. HYDRO POLE	○	EX. ROW	
EX. STORM MANHOLE	○	PROP. ROW	
EX. STORM CATCHBASIN	□	PROP. CURB	
POTENTIAL BUYOUT	✕	PROP. SIDEWALK	
		PROP. CROSSING	

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
OPTION 2B
from River Trail to Switch Road
TOWN OF FORT ERIE

CONSULTANT FILE No.	IM21202052
DATE	2022-02-16
SCALE	1:1000m
REF. No.	#
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REV.	0

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OPTION 2C

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

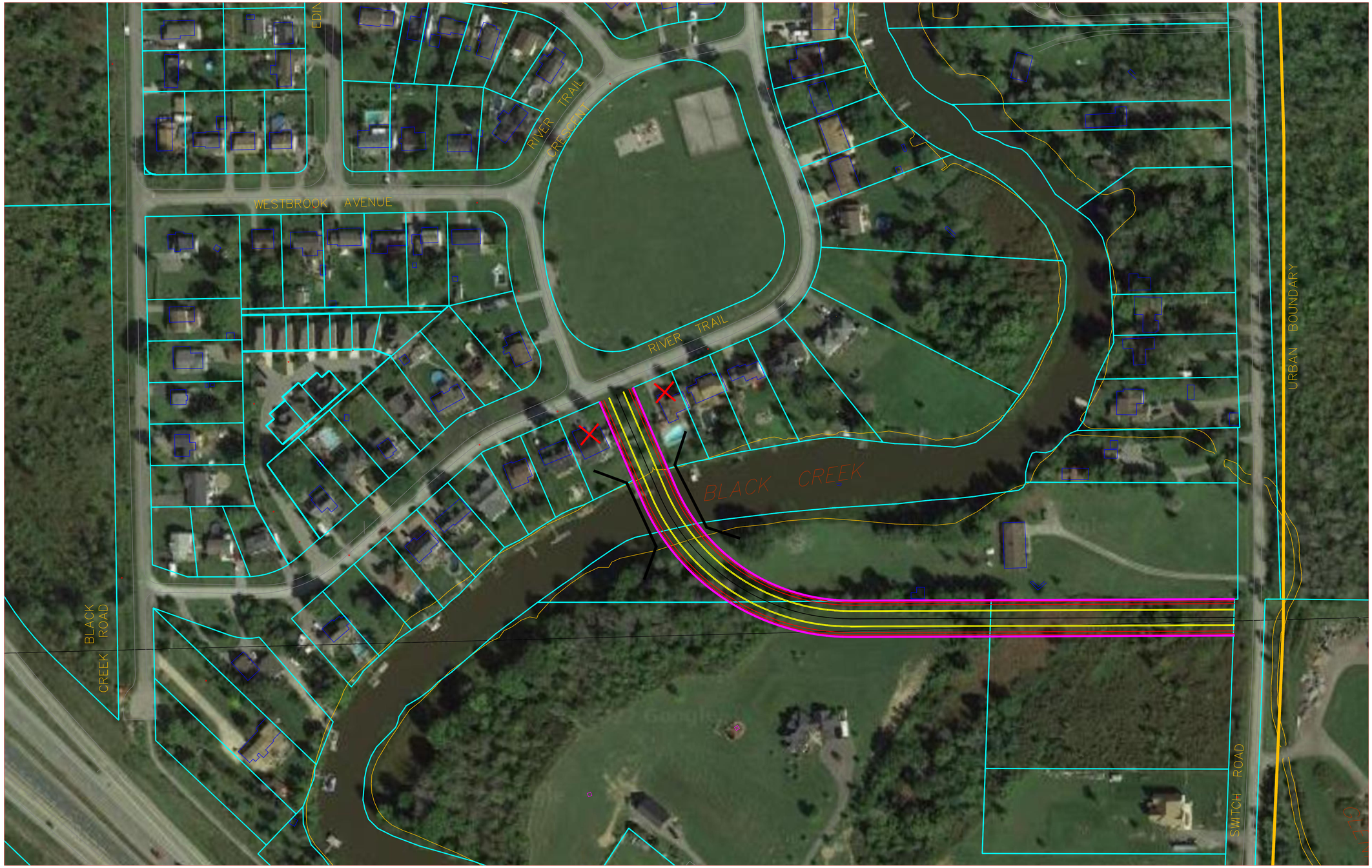
LEGEND

EX. HYDRO POLE		EX. ROW	
EX. STORM MANHOLE		PROP. ROW	
EX. STORM CATCHBASIN		PROP. CURB	
POTENTIAL BUYOUT	X	PROP. SIDEWALK	
		PROP. CROSSING	

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
OPTION 2C
from River Trail to Switch Road
TOWN OF FORT ERIE

CONSULTANT FILE No.	IM21202052
DATE	2022-02-16
SCALE	1:1000m
REF. No.	#
DWG No.	1
REV.	0

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OPTION 2D

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

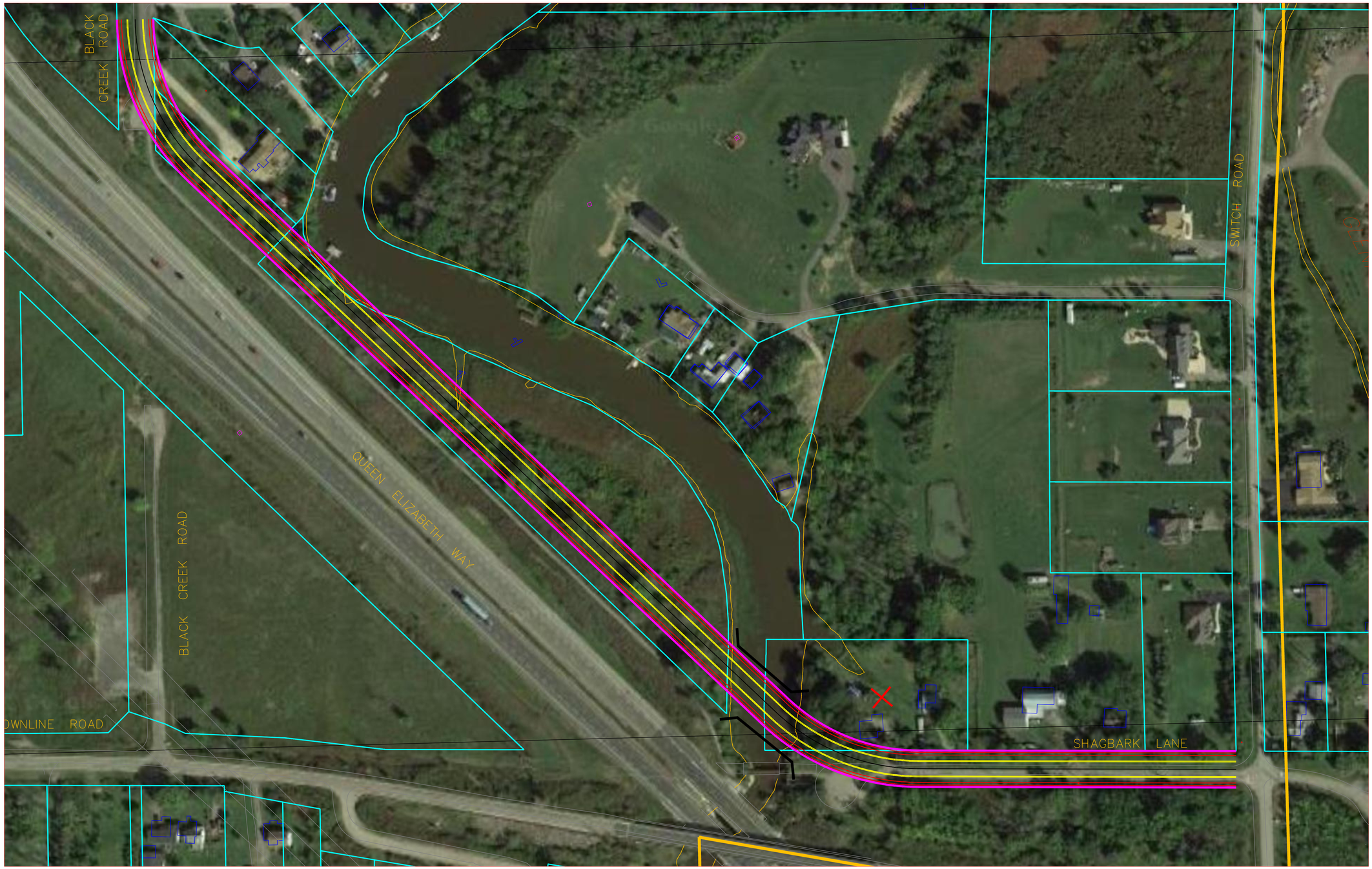
LEGEND

- EX. HYDRO POLE
- EX. STORM MANHOLE
- EX. STORM CATCHBASIN
- POTENTIAL BUYOUT
- EX. ROW
- PROP. ROW
- PROP. CURB
- PROP. SIDEWALK
- PROP. CROSSING

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
OPTION 2D
from River Trail to Switch Road
TOWN OF FORT ERIE

CONSULTANT FILE No.	IM2120205 2
DATE	2022-02-16
SCALE	1:1000m
REF. No.	#
DWG No.	1
REV.	0

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OPTION 3A

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

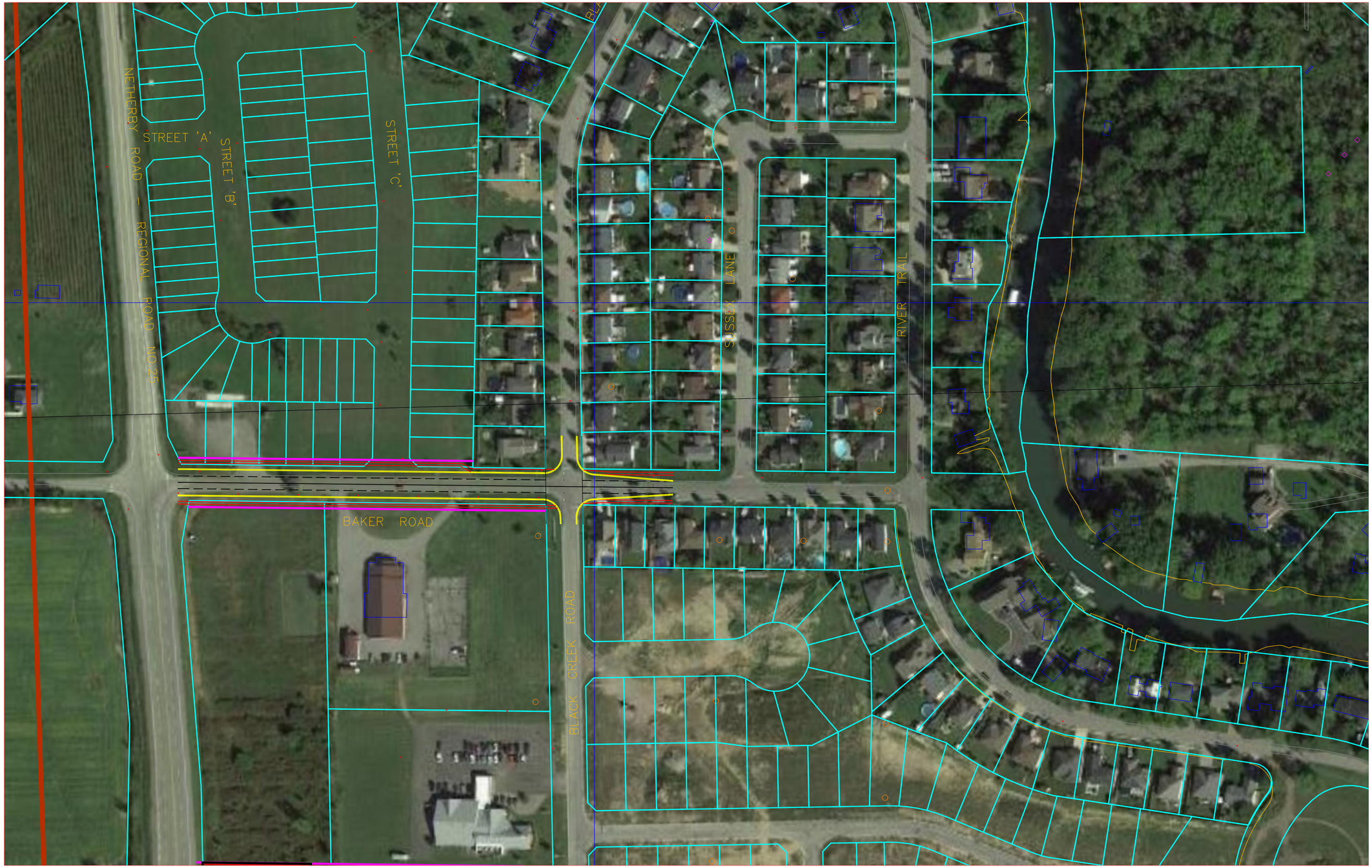
LEGEND

EX. HYDRO POLE		EX. ROW	
EX. STORM MANHOLE		PROP. ROW	
EX. STORM CATCHBASIN		PROP. CURB	
POTENTIAL BUYOUT		PROP. SIDEWALK	
		PROP. CROSSING	

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
OPTION 3A
from Black Creek Road to Shagbark Lane
TOWN OF FORT ERIE

CONSULTANT FILE No.	IM21202052
DATE	2022-02-16
SCALE	1:1000m
REF. No.	#
DWG No.	1
REV.	0

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OPTION 4A

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

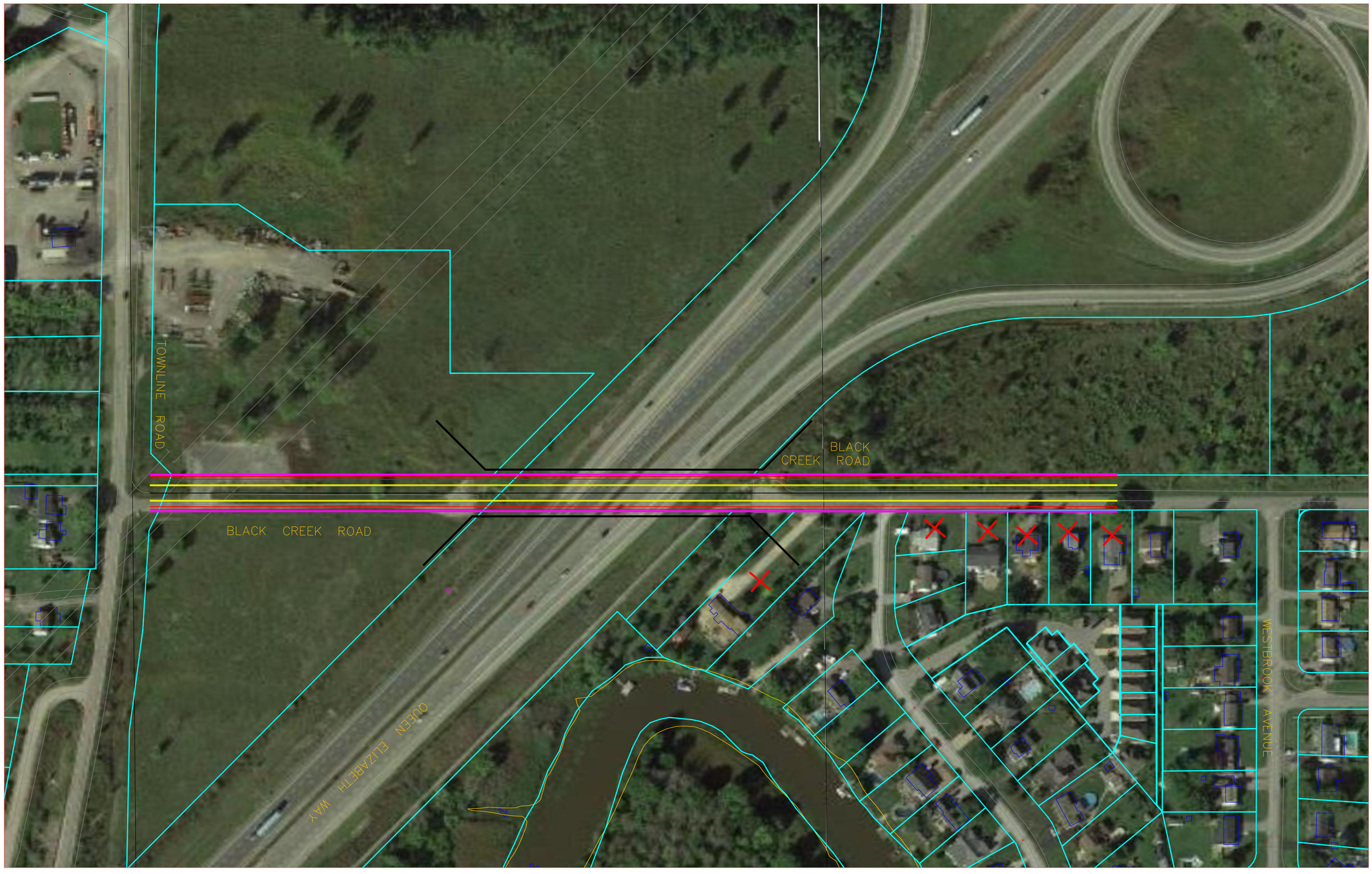
LEGEND

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EX. STORM MANHOLE	○	PROP. ROW	
EX. STORM CATCHBASIN	□	PROP. CURB	
POTENTIAL BUYOUT	X	PROP. SIDEWALK	
		PROP. CROSSING	

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
OPTION 4A
from Netherby Road to Black Creek Road
TOWN OF FORT ERIE

CONSULTANT FILE No.	IM2120205 2
DATE	2022-02-16
SCALE	1:1000m
REF. No.	#
DWG No.	1
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OPTION 5A

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

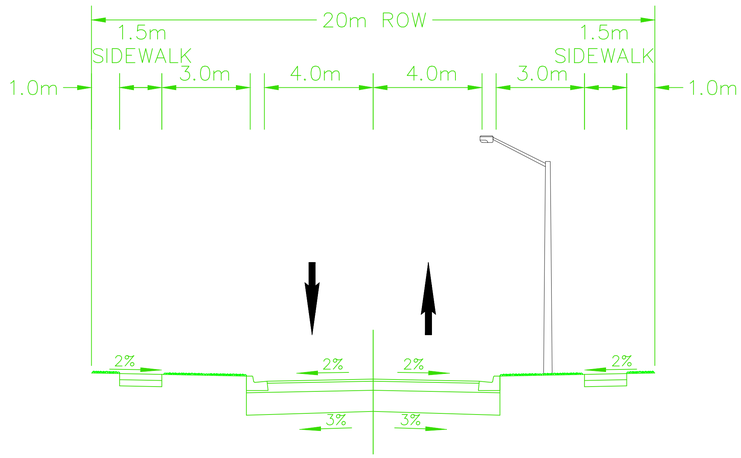
LEGEND

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EX. STORM MANHOLE		PROP. ROW	
EX. STORM CATCHBASIN		PROP. CURB	
POTENTIAL BUYOUT		PROP. SIDEWALK	
		PROP. CROSSING	

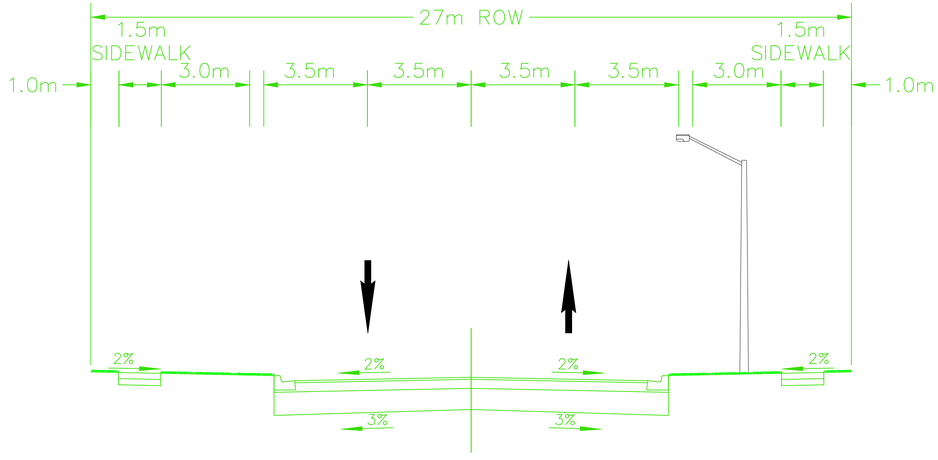
FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
OPTION 5A
from Black Creek Road to Townline Road
TOWN OF FORT ERIE

CONSULTANT FILE No.	IM21202052
DATE	2022-02-16
SCALE	1:1000m
REF. No.	#
DWG No.	1
REV.	0

DRAWING FILE: \\Brl-fs1\project\2021\Projects\IM21202052- Fort Erie Transportation Services\14 CAD\CIV\WKS\Sheets.dwg PLOTTED: Mar 09, 2022 - 2:26pm PLOTTED BY: jomes.milton



TWO-LANE TYPICAL CROSS SECTION



FOUR-LANE TYPICAL CROSS SECTION

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

LEGEND

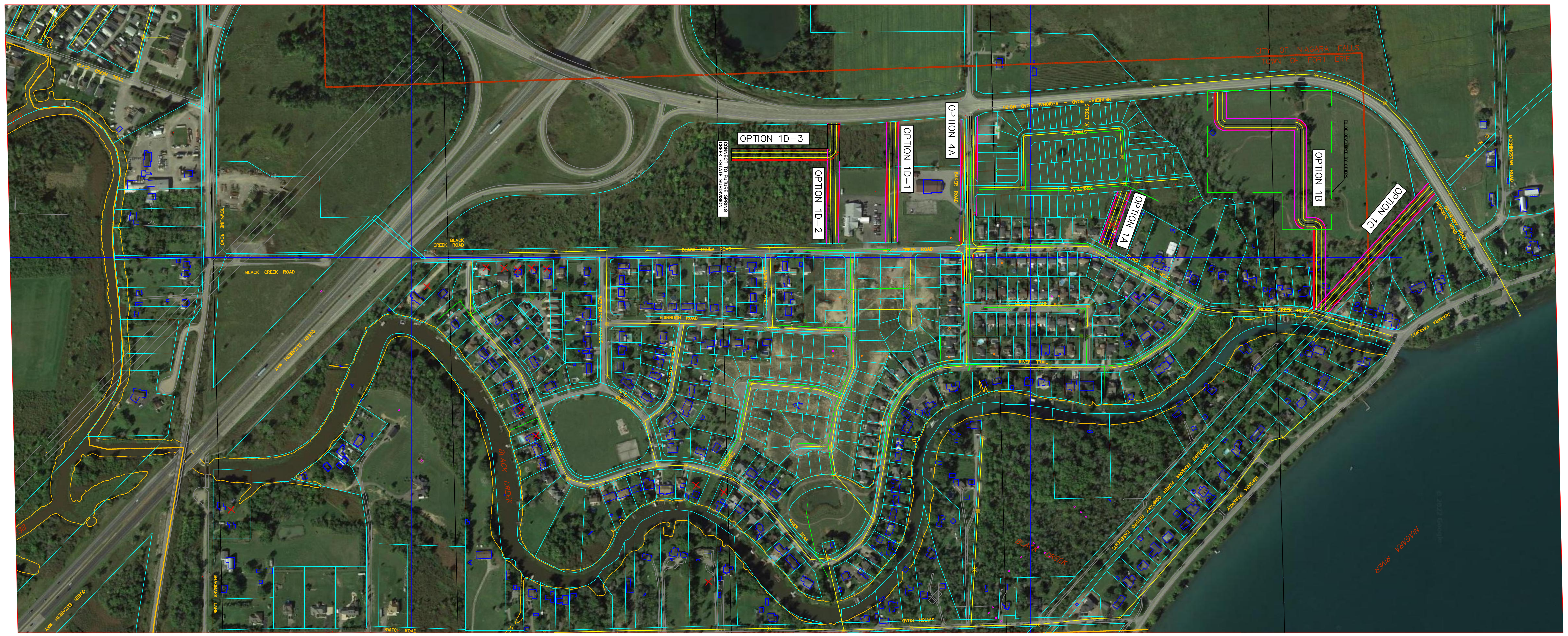
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EX. STORM CATCHBASIN		PROP. CURB	
POTENTIAL BUYOUT		PROP. SIDEWALK	
		PROP. CROSSING	

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
Typical Cross Sections

TOWN OF FORT ERIE

CONSULTANT FILE No.	IM21202052
DATE	2022-02-16
SCALE	N/A
REF. No.	#
DWG No.	1
REV.	0

DRAWING FILE: \\Brl-fs1\project\2021\Projects\IM21202052- Fort Erie Transportation Services\14 CAD\CIV\WKS\Sheets.dwg PLOTTED: Mar 09, 2022 - 2:27pm PLOTTED BY: james.milton



GROUP 1

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

LEGEND

EX. HYDRO POLE	○	EX. ROW	
EX. STORM MANHOLE	○	PROP. ROW	
EX. STORM CATCHBASIN	□	PROP. CURB	
POTENTIAL BUYOUT	✕	PROP. SIDEWALK	
		PROP. CROSSING	

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS

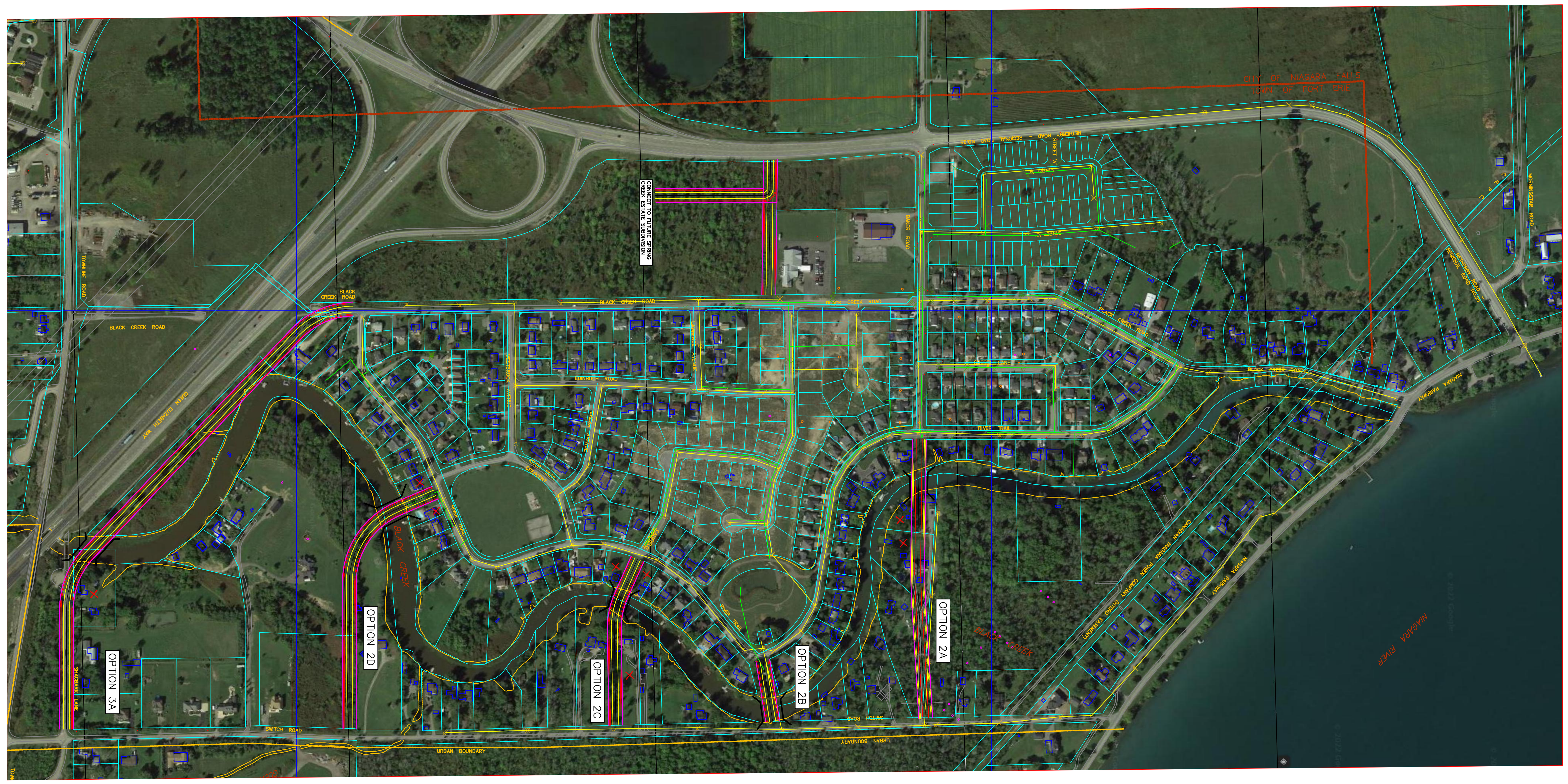
GROUP 1

WEST ACCESS

TOWN OF FORT ERIE

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SCALE	1:1000m
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DWG No.	1
REV.	0

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GROUP 2

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DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

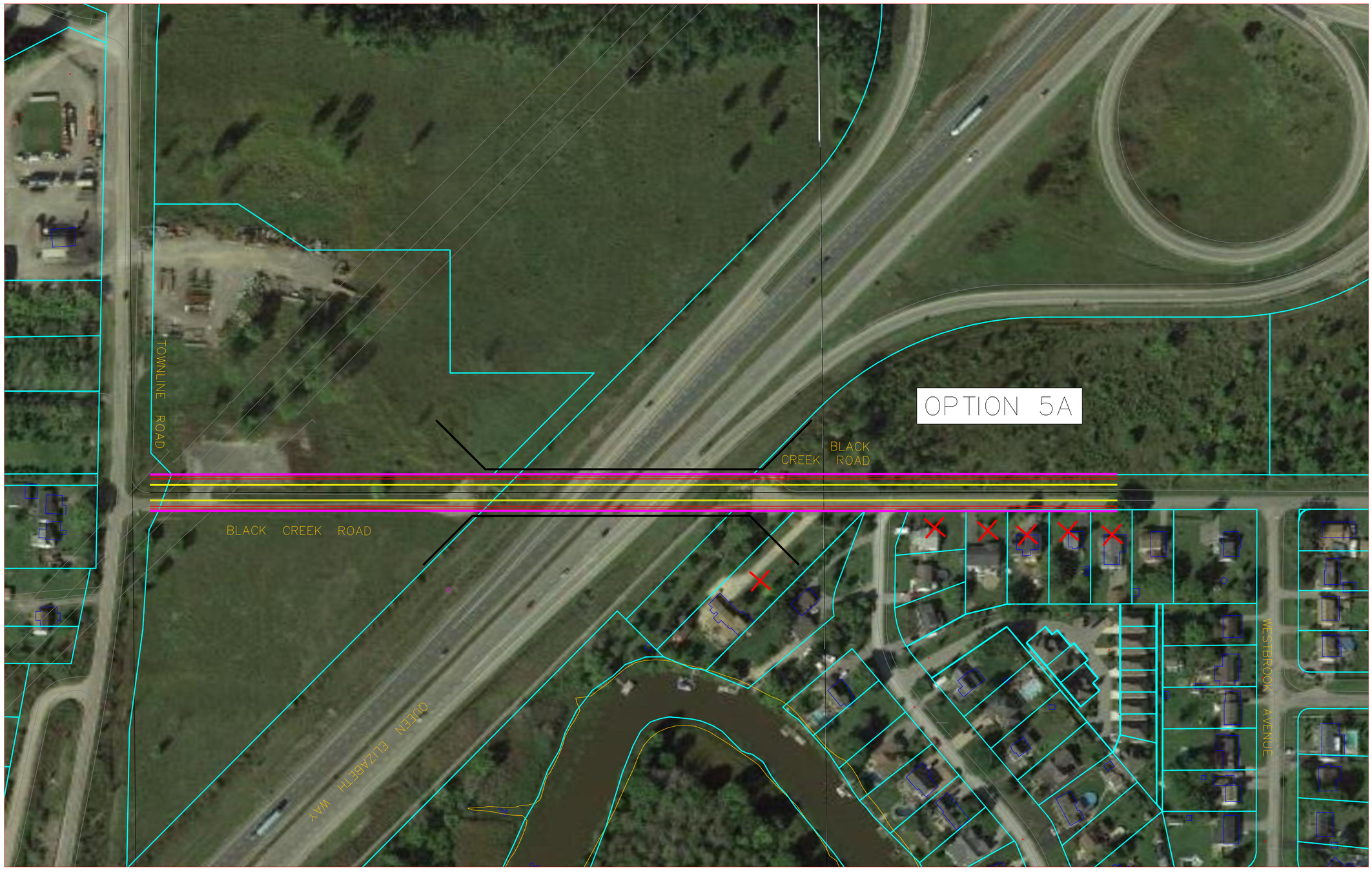
LEGEND

EX. HYDRO POLE	○	EX. ROW	
EX. STORM MANHOLE	○	PROP. ROW	
EX. STORM CATCHBASIN	□	PROP. CURB	
POTENTIAL BUYOUT	X	PROP. SIDEWALK	
		PROP. CROSSING	

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
GROUP 2
EAST ACCESS
TOWN OF FORT ERIE

CONSULTANT FILE No.	IM21202052
DATE	2022–02–16
SCALE	1:1000m
REF. No.	#
DWG No. 1	REV. 0

DRAWING FILE: P:\2021\Projects\IM21202052– Fort Erie Transportation Services\14 CAD\CIV\WKS\Sheets (2022–05–31).dwg PLOTTED: Jul 12, 2022 – 4:03pm PLOTTED BY: danial.tunio



GROUP 3

DRAFTING	JM
DESIGN	JM
CHECKED BY	MK
APPROVED BY	KF

LEGEND

EX. HYDRO POLE		EX. ROW	
EX. STORM MANHOLE		PROP. ROW	
EX. STORM CATCHBASIN		PROP. CURB	
POTENTIAL BUYOUT		PROP. SIDEWALK	
		PROP. CROSSING	

FORT ERIE TRANSPORTATION SERVICES
DOUGLASTOWN THIRD ACCESS
GROUP 3
SOUTH ACCESS
TOWN OF FORT ERIE

CONSULTANT FILE No.	IM21202052
DATE	2022-02-16
SCALE	1:1000m
REF. No.	#
DWG No.	1
REV.	0

DRAWING FILE: \\Brl-fs1\project\2021\Projects\IM21202052- Fort Erie Transportation Services\14 CAD\CIV\WKS\Sheets.dwg PLOTTED: Mar 09, 2022 - 2:27pm PLOTTED BY: james.milton