

TECHNICAL MEMO

To:	Nancy Reid, City of Thorold.	Project No.:	2022-0091-10	Date:	January 22, 2026
Subject:	Pre-Engineering Investigation Summary	Project:	Cataract Road Lands, City of Thorold		
		From:	R. Barnett, CET		

INTRODUCTION

This memo outlines the pre-engineering work completed for Primont (Welland and Thorold) Inc.'s lands on Cataract Road, south of Merrit Road ("Subject Lands"). It summarizes the project and discusses servicing the Subject Lands for residential development. A development concept prepared by Urbantypology on November 6th, 2025, is attached.

1. SITE LOCATION AND BACKGROUND

The Subject Lands are located on the southwest quadrant of the intersection of Cataract Road and Merrit Road. The site is bound by the north by the unopened Merrit Road right-of-way, Cataract Road to the east, the boundary with the City of Welland to the south and the boundary with the Town of Pelham to the west.

Under the current condition, the lands are vacant with an existing wetland located in the northeast corner of the site and the remaining land is used for agricultural purposes. A tributary of the Singers Drain bisects the southern portion of the site and outletting to the wetland.

The Subject Lands are located within Phase 2 of the Port Robinson West Secondary Area (PRWSA) and are designated for residential use. A portion of the southwest quadrant is also located within the current City of Thorold Urban Boundary. A portion of the northwest quadrant is also located within the current City of Thorold Urban Boundary, but is outside of the Port Robinson West Secondary Plan Area.

Under the current conditions, the Subject Lands are un-serviced by municipal "wet" services (water, wastewater and storm). Servicing of the Subject Lands has been included in the servicing scheme for the PRWSA and will be serviced via the extension of the existing regional and municipal water and wastewater systems with storm and stormwater management servicing addressed locally.

The Subject Lands have also been included in the study area for the Singers Drain Subwatershed Study Update which is to be undertaken shortly with a schedule of two years to completion. It should be noted that based on existing catchment area mapping, a portion of the Subject Lands in fact drains to the Towpath Drain, located south of the site within the City of Welland.

As illustrated in the attached Concept Plan, the proposed development will include residential lots and blocks for a variety of housing products, park lands, environmental areas, blocks for stormwater management infrastructure, a block for the realignment of the Singers Drain Tributary bisecting the Subject Lands and proposed network of local roads connecting into existing and future roads. The area of focus for this memo shall be the land within the current Urban Boundary located in the southeast corner of the Subject Lands hereinafter referred to as Phase 1, having an approximate area of 4.2 ha. Refer to the attached Concept Plan (Attachment A) for further information.

2. SINGERS DRAIN SUBWATERSHED UPDATE

As previously noted, a portion of the Subject Lands, located in the southeast quadrant of the Subject Lands do not contribute flow to the Singers Drain catchment area and in fact drain to the Towpath Drain located south of the Subject Lands within the City of Welland. Refer to the Singers Drain Watershed Plan prepared in support of the Port Robinson Subwatershed Study found in Attachment B.

As illustrated on the Concept Plan this area coincides with the area of Phase 1, with only a small portion of the land adjacent to the wetland contributing flows to the Singers Drain via the wetland. These lands include portions of the proposed open space blocks, single family residential lots, the park block and the SWM facility block.

Based on a desktop review and the preliminary SWM assessment, the flows discharging to the wetland can be controlled to match pre-development flow rates, with adjustments as required to maintain base flows once detailed modeling has been completed.

As discussed with city and regional staff during the joint meeting with the proponent and their consulting team on December 3rd, 2025, the anticipated impact of Phase 1 development on the Singers Drain is considered insignificant. This is due to the small portion of the site located within the Singers Drain catchment area, its proximity to the top of the catchment, and the fact that this area outlets to an existing wetland, which helps offset peak flows to the Singers Drain.

Based on the above, it is requested that the limits of the study area be reviewed and the Phase 1 lands be removed from the subwatershed study, permitting planning permit applications prior to the completion of the Singers Drain Subwatershed Update.

3. SERVICING OF THE THOROLD LANDS

As previously noted, the Phase 1 lands are currently un-serviced with water, wastewater, stormwater or stormwater management. Based on the PRWSP servicing strategy, water and wastewater are to be provided via the extension of regional and municipal services from the existing terminus located at the intersection of Hansler Road and Secord Street, approximately 2.6 kilometers east of Phase 1. Based on this strategy the services will be extended north on Hansler Road to Merrit Road, before heading west on Merrit Road to the intersection of Merrit and Cataract Roads before continuing west through the unopened Merrit Road right-of-way to the Town of Pelham. Municipal services will then be extended from the intersection of Merrit and Cataract Roads south to the Phase 1 lands. Refer to Attachment C for the PRWSP servicing layouts.

As discussed at the meeting with city and regional staff, WalterFedy has undertaken a preliminary engineering investigation to develop and assess alternate and efficient servicing strategies to bring the Phase 1 lands on-line for development. The following offers a summary of this investigation.

3.1. Wastewater

As noted, wastewater servicing is to be extended from the existing terminus on Hansler Road to the site (Option 1), a length of approximately 2.6km along Merrit Road to the municipal boundary of Pelham and Thorold. Another 500m of service will be required down Cataract Road to the municipal boundary of Thorold and Welland. The total length of the water service will be 3.1km at an estimated cost of \$3.65 million (Refer to Attachment E for estimated costs).

In reviewing alternate servicing options, it was noted that the flows from the main on Merrit Road will ultimately discharge to the Towpath Wastewater Pump Station (WWPS) before being pumped under the Welland River and conveyed to the Welland Wastewater Treatment Plant (WWTP).

Upon review of existing and proposed wastewater infrastructure, the potential of servicing the Phase 1 lands via the extension of the proposed wastewater main from the south on First Avenue in Welland, across the municipal boundary was examined as a potential servicing solution (Option 2). Review of available capacity noted that

sufficient capacity within the Quaker Road trunk sewer exists under the existing condition. Refer to Attachment D for Sewer Design Sheet.

At the request of the City of Thorold staff, WalterFedy has also reviewed the extension of the wastewater main to determine if additional land within the City of Thorold could also be serviced via this extension. A desktop review found that a portion of the developable lands to the east of Cataract Road could also be serviced via First Avenue, with the exact limits to be determined by grading of the site to ensure the required cover over the wastewater main is maintained.

Refer to Attachment C for the proposed wastewater main layouts for both options. Design flows are summarized in the sewer design sheet provided in Attachment D. Estimated costs for Option 1 and 2 can be found in Attachment E.

3.2. Water

As with extension of wastewater services to the Subject Lands, the watermain is to be extended from the Hasler Road terminus to the site via the extension to Merrit Road, continuing down Merrit Road to the intersection of Merrit and Cataract Roads. A local municipal watermain would then be extended from the intersection south on Cataract Road to Phase 1 (Option 1). This requires the extension of 2.6km along Merrit Road to the municipal boundary of Pelham and Thorold. Another 500m of service will be required down Cataract Road to the municipal boundary of Thorold and Welland. The total length of the water service will be 3.1km at an estimated cost of \$1.6 million. Refer to Attachment C for the Option 1 watermain layout and Attachment E for the estimated costs.

Review of the proposed water servicing notes that a watermain is being extended north on First Avenue to service the proponent's lands within Welland. As with the wastewater main, this watermain could be sized and extended to service the Phase 1 lands. Further, the proposed road pattern would help facilitate the looping of the watermain through Phase 1 should modelling find increased flows and pressures are required.

As the City of Welland completes watermain modelling for the extension of the watermain system further information would be required to confirm the available capacity within the City of Welland's system to service these lands and what, if any, system upgrades would be required. It is noted that initial discussions with City staff have not identified any immediate concerns.

3.3. Storm

Based on the preliminary engineering investigation, it is noted that storm servicing will be addressed at a local level and will not require the extension of existing municipal infrastructure. As outlined above, the majority of the Phase 1 lands are within the Towpath Drain catchment area and as such will need to be conveyed to the drain through the City of Welland via a storm sewer on First Avenue / Cataract Road. The area contributing to the Singers Drain outlets to the existing wetland in the northeast quadrant of the Subject Lands prior to being conveyed to the Singers Drain.

3.4. Stormwater Management (SWM)

As illustrated on the proposed Concept Plan, a SWM Facility Block has been proposed to provide quality and quantity control for the proposed development to meet the requirement of the City of Thorold, and NPCA as well as the City of Welland as the facility will be discharging to the Towpath Drain located in the City of Welland.

Rear-yard and roof areas anticipated to drain to the existing wetlands are considered clean runoff and will not require quality control. Quantity control for these areas will also not be provided. For the remainder of the development area consisting of the future rights-of-way and residential lot areas, runoff will be directed to an MECP dry pond facility that will provide post-to-pre-development quantity control and quality control (Basic, 60% TSS removal). An

oil-grit separator unit will be installed upstream of the dry pond to provide a water quality treatment train that will achieve an Enhanced (80% TSS removal) level of water quality protection.

4. RECOMMENDATIONS

Based on the foregoing summary, it is recommended the following action items be reviewed and discussed if required:

1. The City of Thorold and agencies having jurisdiction, review the Study Area for the Singers Drain Subwatershed Study and remove the portion of the Subject Lands identified herein as Phase 1, thereby permitting planning applications relevant to the development of Phase 1.
2. The City of Welland review and update their existing water modelling to confirm available capacity and volume to service the Phase 1 Lands.
3. The Region of Niagara review the calculated design flows resulting from the servicing of the Thorold Lands and confirm based on internal monitoring that capacity exists within the Quaker Road Trunk Sewer.

4. **Coordination between the Proponent, their consultants, the region, municipal and NPCA staff continue as the project progresses.**

Further review by the City of Thorold is recommended for the life cycle and initial costs of installing water and wastewater infrastructure from the existing terminus at Hansler Road westward to service this area at a preliminary cost of \$5.25 million.

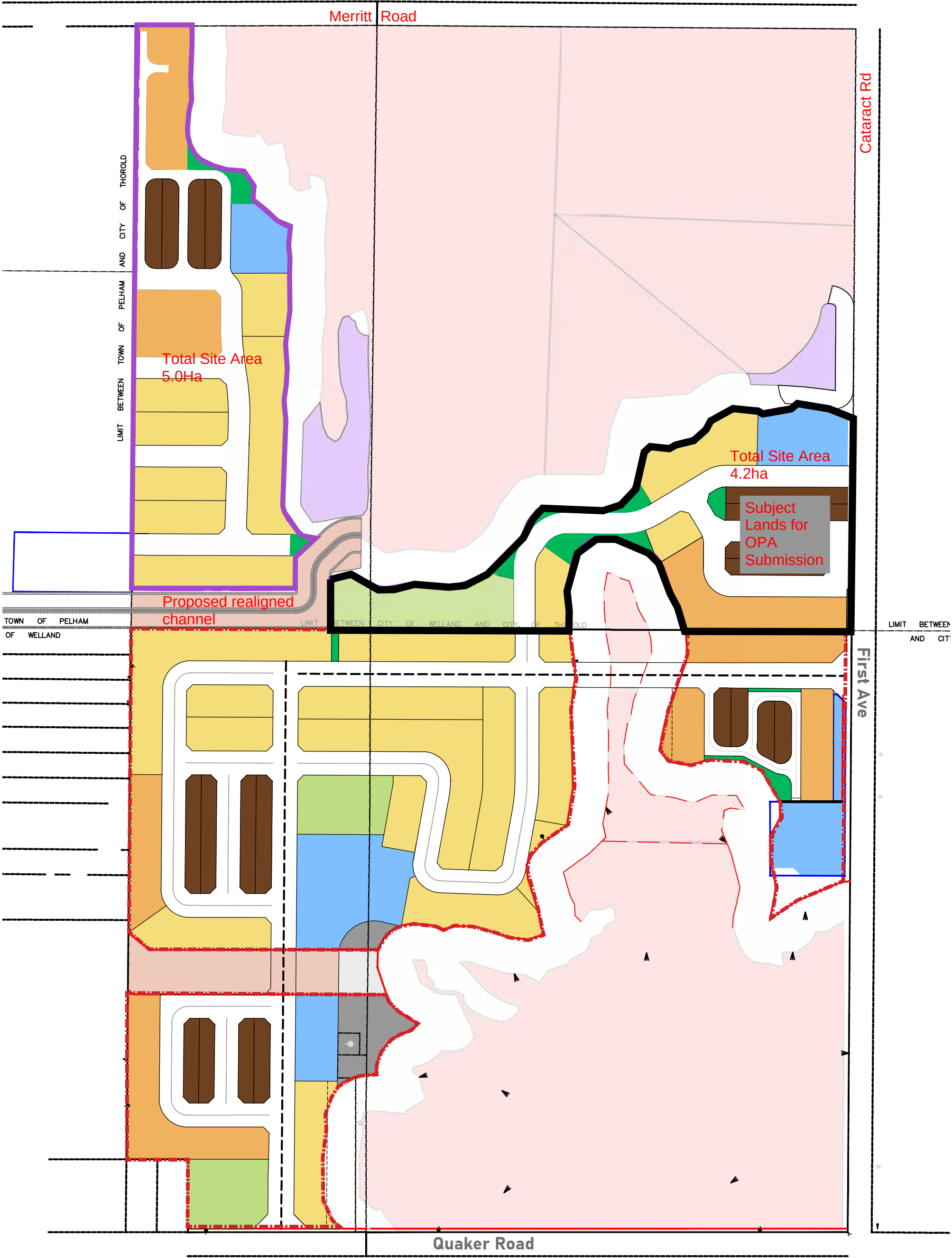
5. ATTACHMENTS

Attachment A: Development Concept Plan
Attachment B: Singers Drain Information
Attachment C: Servicing Option Layouts
Attachment D: Sewer Design Sheets and Information
Attachment E: Cost Estimates

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ATTACHMENT A

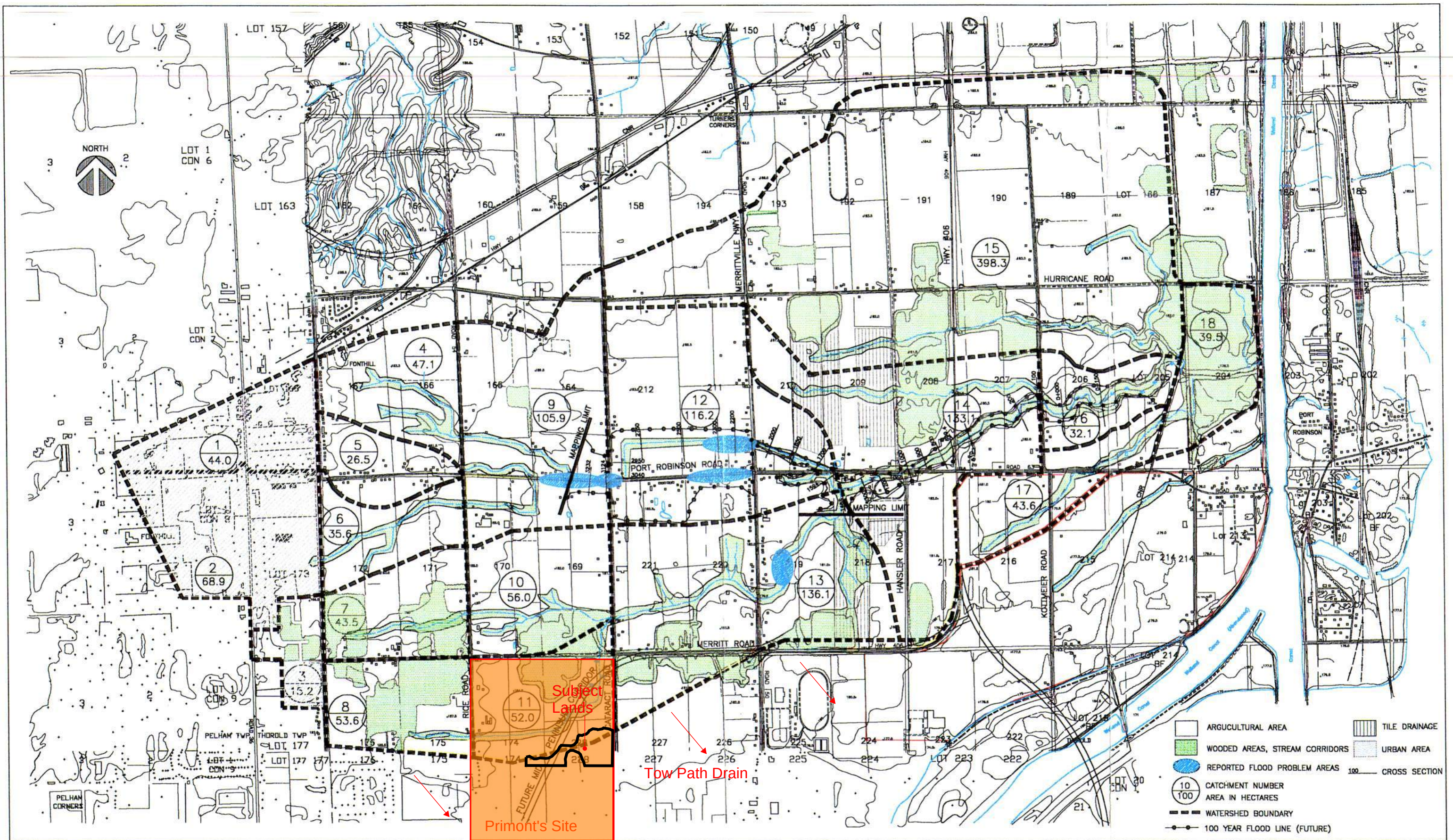
Development Concept – Urbantypology



- | | | |
|--|--|--|
|  Single Detached |  Park |  Environment Area Buffer |
|  Front Drive Townhome |  SWM Pond |  Buffer (3m) |
|  Back-to-Back Townhome |  Previous SWM Pond Boundary |  Thorold - Developable Boundary |
|  Open Space |  Environment Area |  Welland - Developable Boundary |

ATTACHMENT B

Singers Drain Information



TOTTEN SIMS HUBICKI ASSOCIATES LIMITED
 RAY BLACKPORT (FORMERLY OF STANLEY)
 NATURAL RESOURCE SOLUTIONS

SINGERS DRAIN WATERSHED
 SCALE : 1 : 20000

Project PORT ROBINSON SUBWATERSHED STUDY

Title EXISTING LAND USE, DRAINAGE AREAS

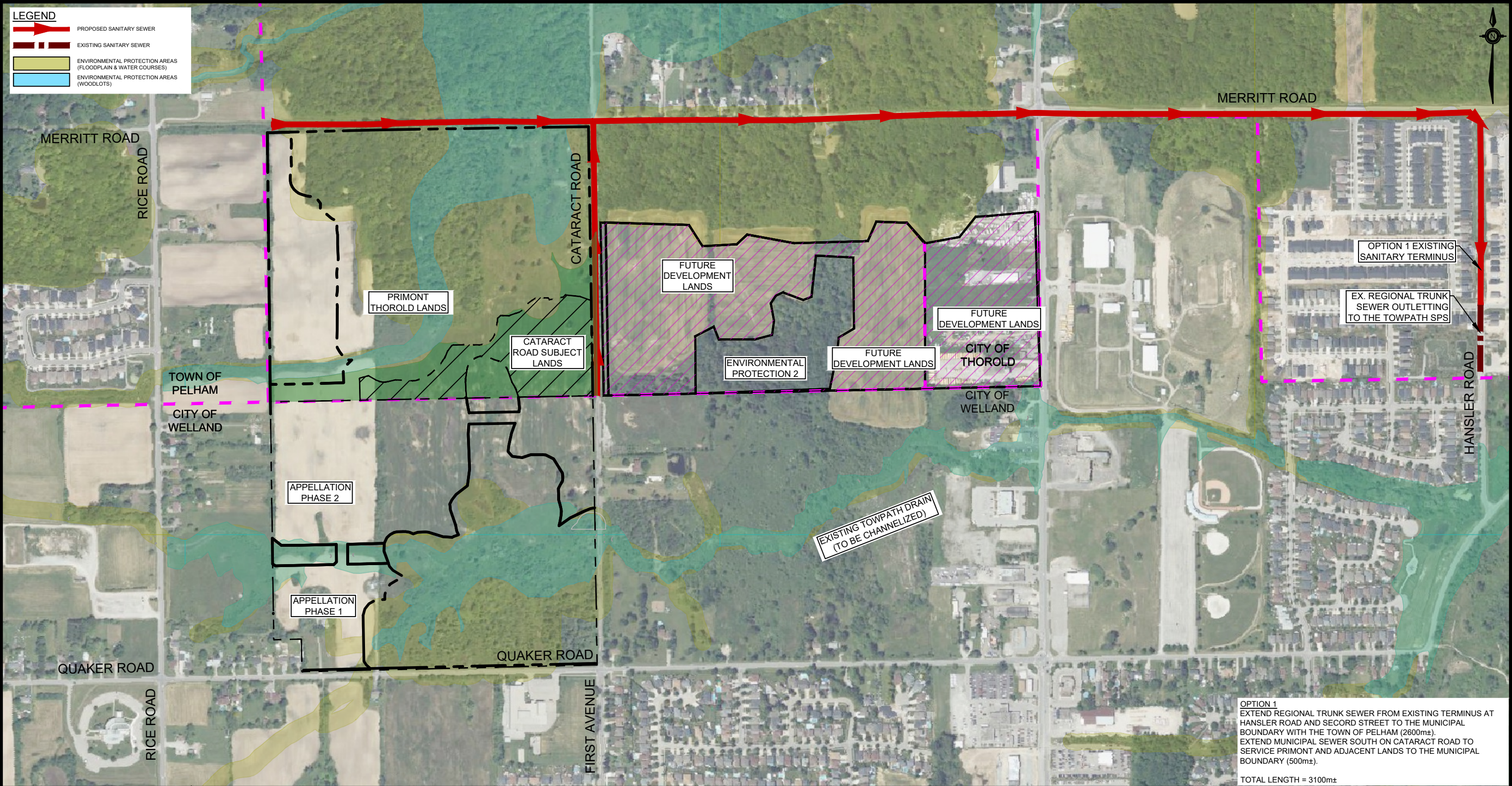
Date MARCH 1998

4.3.1

ATTACHMENT C

Servicing Option Layouts

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OPTION 1
EXTEND REGIONAL TRUNK SEWER FROM EXISTING TERMINUS AT HANSLER ROAD AND SECORD STREET TO THE MUNICIPAL BOUNDARY WITH THE TOWN OF PELHAM (2600m±).
EXTEND MUNICIPAL SEWER SOUTH ON CATARACT ROAD TO SERVICE PRIMONT AND ADJACENT LANDS TO THE MUNICIPAL BOUNDARY (500m±).

TOTAL LENGTH = 3100m±

PROJECT:
CATARACT ROAD LANDS

TITLE:
SANITARY CONCEPT PLAN - OPTION 1
EXTENSION OF REGIONAL SANITARY SEWER

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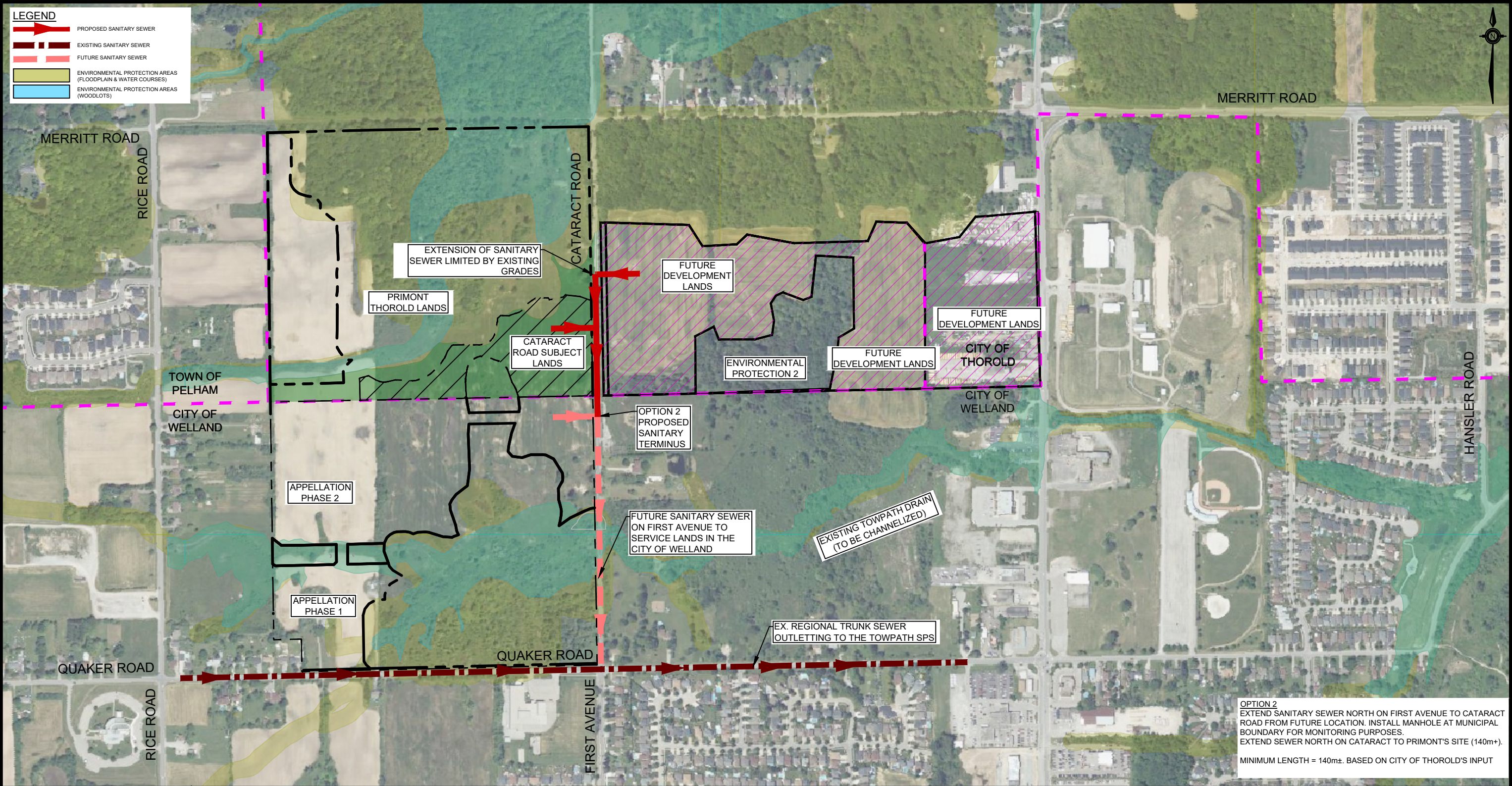
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CHECKED BY:	ES	FILE:	2022-0091-10_SAN_Concept

SHEET NO.:
C802

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PROJECT:
CATARACT ROAD LANDS

TITLE:
SANITARY CONCEPT PLAN - OPTION 2
EXTENSION OF REGIONAL SANITARY SEWER

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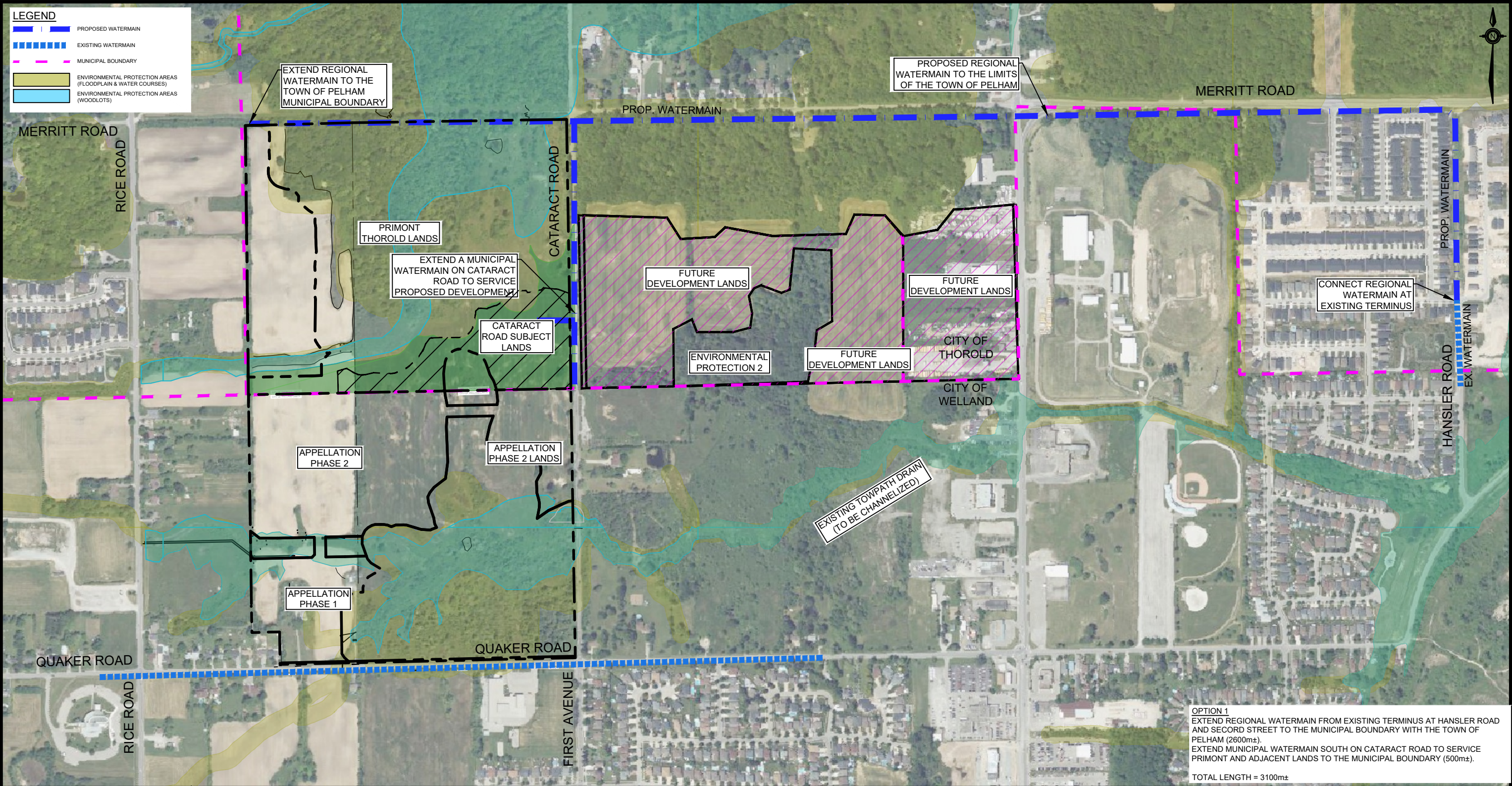
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C803

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PROJECT:
CATARACT ROAD LANDS

TITLE:
WATERMAIN CONCEPT PLAN - OPTION 1
EXTENSION OF REGIONAL WATERMAIN

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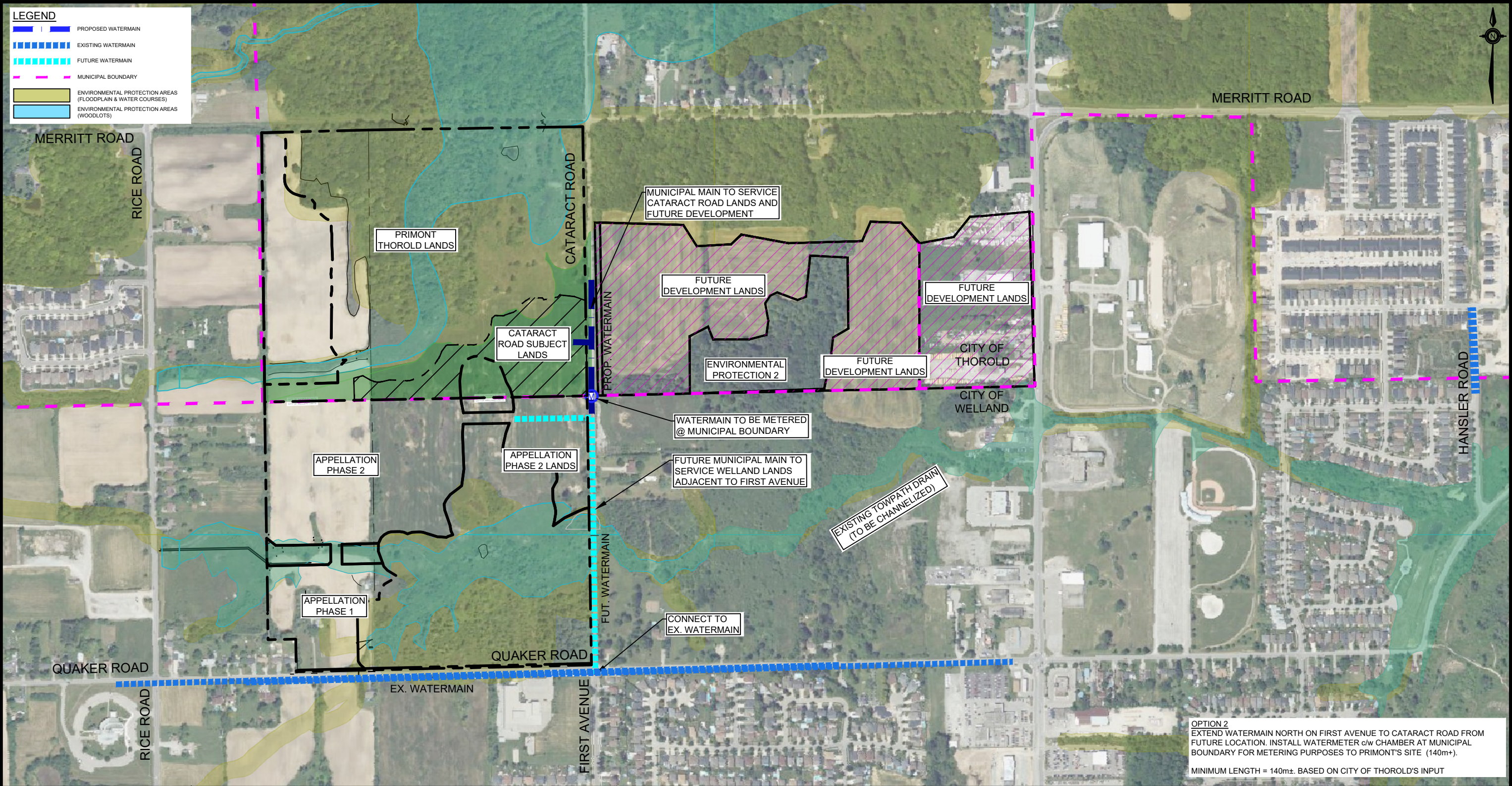
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C804

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OPTION 2
EXTEND WATERMAIN NORTH ON FIRST AVENUE TO CATARACT ROAD FROM FUTURE LOCATION. INSTALL WATERMETER c/w CHAMBER AT MUNICIPAL BOUNDARY FOR METERING PURPOSES TO PRIMONT'S SITE (140m+).
MINIMUM LENGTH = 140m±. BASED ON CITY OF THOROLD'S INPUT

PROJECT:
CATARACT ROAD LANDS

TITLE:
WATERMAIN CONCEPT PLAN - OPTION 2
EXTENSION OF REGIONAL WATERMAIN

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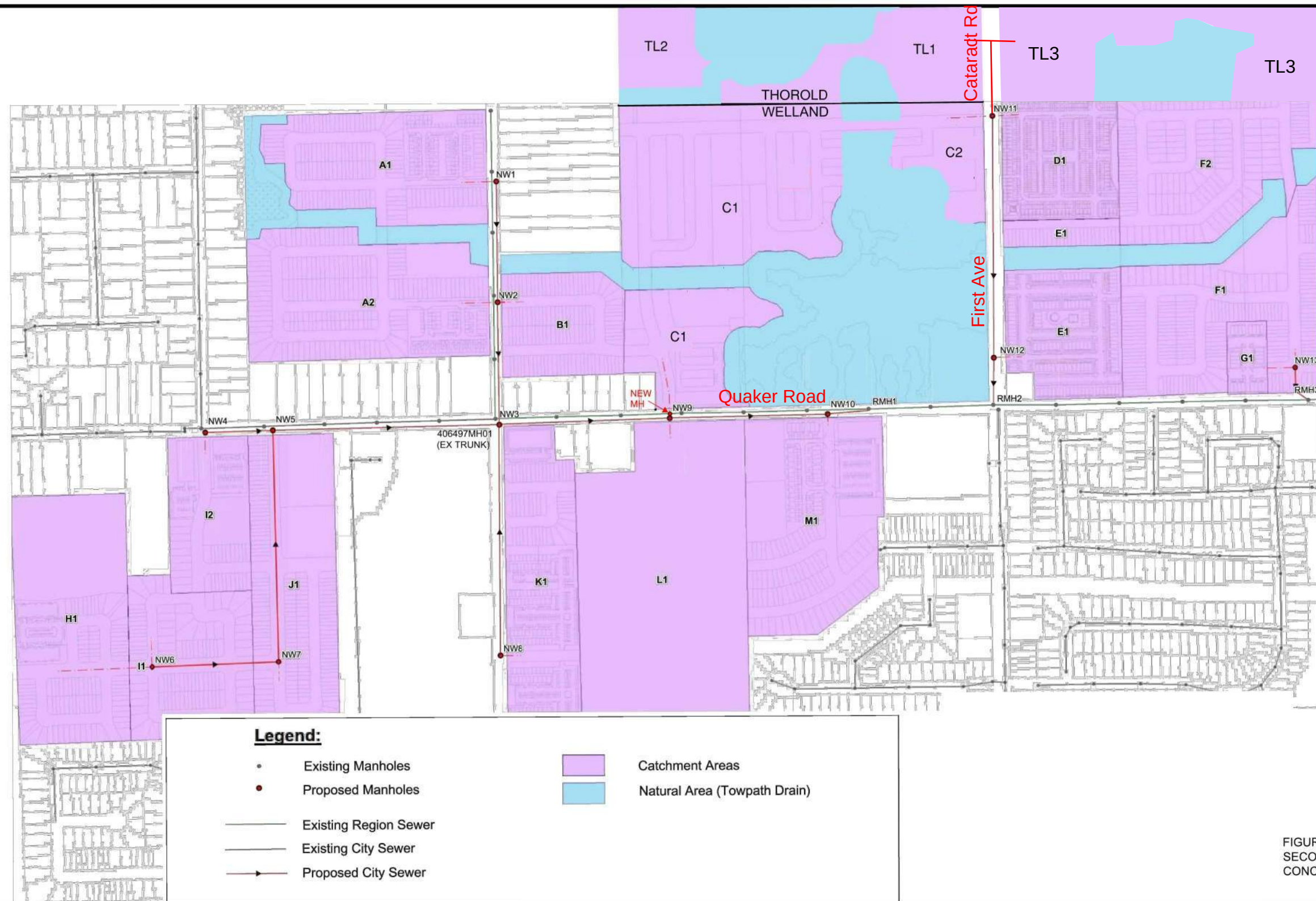
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C805

ATTACHMENT D

Sewer Design Sheets and Information



PROJECT:
PRIMONT
436 QUAKER ROAD WELLAND

TITLE: NORTHWEST SECONDARY PLAN MUNICIPAL SERVICING
SANITARY SEWER DESIGN (WITH ADDITIONAL THOROLD LANDS)

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FIGURE 1

ATTACHMENT E

Cost Estimates

Rule of Thumb - Construction Cost per m - Merritt Road (Water and San Extension)

LEGEND					
	Update costs as required				
	update information as required				
Item		Description			\$/m
Sanitary	\$1,000.00	\$166.67	\$0.00	\$10.00	\$1,176.67
	\$/m pipe	\$15,000.00		\$/m Video/Testing	
675	6-7 m deep	\$/ m MH's	\$/m services		
		1 MH every 90 m	per unit		
Water	\$400.00	\$50.00	\$0.00	\$86.67	\$536.67
	\$/m pipe	\$25,000.00		\$13,000.00	
	400mm	\$/ m valves	\$/m services	\$/ m FH	
		1 Valve every 500 m	per unit	1 m every 150 m	

Services to extend from the existing terminus on Hansler Road 2.6km west on Merrit Road to the municipal boundary of Pelham and Thorold. Services will then be extended south on Cataract Road to the municipal boundary of Welland the Thorold (500m).

Sanitary Sewer Extension

\$1176.67 (per m cost) x 3100m = \$3,650,000

Watermain Extension

\$536.67 (per m cost) x 3100m = \$1,600,000

Rule of Thumb - Construction Cost per m -Cataract Road (Water and San Extension)

LEGEND					
	Update costs as required				
	update information as required				
Item		Description			\$/m
Sanitary	\$400.00	\$4.17	\$0.00	\$10.00	\$414.17
	\$/m pipe	\$375.00		\$/m Video/Testing	
375	3-4 m deep	\$/ m MH's	\$/m services		
		1 MH every 90 m	per unit		
Water	\$350.00	\$100.00	\$0.00	\$86.67	\$536.67
	\$/m pipe	\$10,000.00		\$13,000.00	
	300mm	\$/ m valves	\$/m services	\$/ m FH	
		1 Valve every 100 m	per unit	1 m every 150 m	

Services to extend from future location on First Ave, north crossing the municipal boundary to the proposed site access on Cataract Road (140m).

Sanitary Sewer Extension

\$414.17 (per m cost) x 140m = \$58,000+ \$25,000(flow monitoring equipment) = \$83,000

Watermain Extension

\$536.67 (per m cost) x 140m = \$76,000+ \$35,000(flow monitoring equipment) = \$111,000