

City Council Meeting

Date: Monday, November 23, 2020

Time: 10:00 o'clock a.m.

Location: Council Chambers, 1st Floor, Windsor City Hall

All members will be participating electronically and will be counted towards quorum in accordance with Procedure By-law 98-2011 as amended, which allows for electronic meetings during a declared emergency. The minutes will reflect this accordingly.

MEMBERS:

Mayor Drew Dilkens

Ward 1 – Councillor Fred Francis

Ward 2 – Councillor Fabio Costante

Ward 3 – Councillor Rino Bortolin

Ward 4 – Councillor Chris Holt

Ward 5 – Councillor Ed Sleiman

Ward 6 – Councillor Jo-Anne Gignac

Ward 7 – Councillor Jeewen Gill

Ward 8 – Councillor Gary Kaschak

Ward 9 – Councillor Kieran McKenzie

Ward 10 - Councillor Jim Morrison

ORDER OF BUSINESS

- | Item # | Item Description |
|---------------|---|
| 1. | ORDER OF BUSINESS |
| 1.1. | In the event of the absence of the Mayor, Councillor Holt has been Appointed Acting Mayor for the month of November, 2020 in accordance with By-law 176-2018, as amended. |
| 2. | CALL TO ORDER |
| 3. | DISCLOSURE OF PECUNIARY INTEREST AND THE GENERAL NATURE THEREOF |
| 4. | ADOPTION OF THE MINUTES |
| 5. | NOTICE OF PROCLAMATIONS
Flag Raising Ceremony
“The Lebanese Centre of Bachir Gemayel – 77 th Anniversary of the Independence of Lebanon” – November 22, 2020 |
| 6. | COMMITTEE OF THE WHOLE |
| 7. | COMMUNICATIONS INFORMATION PACKAGE (This includes both Correspondence & Communication Reports) |
| 8. | CONSENT AGENDA |
| 8.1. | Capitol Theatre Legacy Grant Application (C 224/2020) |
| 8.2. | Healthy Workplace Awards 2020 - City Wide (CM 28/2020) |
| 8.3. | 2021 Schedule of Council and Standing Committee Meetings (C 210/2020) |
| 8.4. | Sewer and Coastal Flood Protection Master Plan Environmental Assessment - Filing the Notice of Study Completion - City-Wide (C 212/2020) |

- 8.5. A By-Law for the Repair and Improvements to the Cahill Drain - Ward 1 (C 213/2020)
- 8.6. Amendment to the Purchase Order PO5961 - Preventative Maintenance for Ruston Diesel Engines - City Wide (C 214/2020)
- 8.7. Parking Bylaw 9023 – Recommended Amendments on Sandwich Street (C 215/2020)

9. **REQUEST FOR DEFERRALS, REFERRALS AND/OR WITHDRAWALS**

10. **PRESENTATIONS AND DELEGATIONS**

PRESENTATION: (10 minute maximum)

- 10.1. Sparky's Toy Drive - Windsor Firefighter Sean Costello presenting

11. **REGULAR BUSINESS ITEMS** (Non-Consent Items)

- 11.1. Contracting Out Caretaking Services – Phase II- City Wide (C 219/2020)
- 11.2. Corporate Security Plan and Risk Assessment-City Wide (C 220/2020)
- 11.3. Declaration of the Property Municipally Known as 680 Goyeau Street Surplus and Authority to Offer for Sale - Ward 3 (C 216/2020)
- 11.4. Declaration of Improved Property Municipally Known as 1253-1257 Wyandotte Street East Surplus and Authority to Offer for Sale - Ward 4 (C 217/2020)
- 11.5. Response to CQ 25-2020 – August 28, 2020 Flood Event ----Ward 1 and 9 (C 221/2020)

12. **CONSIDERATION OF COMMITTEE REPORTS**

- 12.1. (i) Report of the Special In-Camera meeting or other Committee as may be held prior to Council (if scheduled)

13. **BY-LAWS** (First and Second Reading)

14. **MOVE BACK INTO FORMAL SESSION**

15. **NOTICES OF MOTION**

16. **THIRD AND FINAL READING OF THE BY-LAWS**

17. **PETITIONS**

18. **QUESTION PERIOD**

19. **STATEMENTS BY MEMBERS**

20. **UPCOMING MEETINGS**

Development & Heritage Standing Committee Meeting
Monday, November 16, 2020
4:30 p.m.

Windsor Essex County Environment Committee
Tuesday, November 17, 2020
4:00 p.m.. Zoom Video Conference

Windsor Accessibility Advisory Committee
Tuesday, November 24, 2020
10:00 a.m., Zoom Video Conference

Housing & Homelessness Advisory Committee
Wednesday, November 25, 2020
9:30 a.m., Zoom Video Conference

Environment, Transportation & Public Safety Standing Committee
Wednesday, November 25, 2020
4:30 p.m.

Corporate Services Standing Committee
Monday, November 30, 2020
Time TBD

Diversity Committee
Tuesday, December 1, 2020
10:00 a.m., Zoom Video Conference

Community Services and Parks Standing Committee
Wednesday, December 2, 2020
9:00 a.m.

21. **ADJOURNMENT**



Subject: Capitol Theatre Legacy Grant Application-Ward 3

Reference:

Date to Council: November 23, 2020

Author: Melissa Osborne

Senior Manager Asset Planning

mosborne@citywindsor.ca

519-255-6100 x6111

Asset Planning

Report Date: November 10, 2020

Clerk's File #: SR/13763

To: Mayor and Members of City Council

Recommendation:

I) THAT City Council **APPROVE** Administration to submit the application to the Legacy Fund – Building Communities Through Arts and Heritage Grant (the “Grant”) for the project identified in this report; and,

II) THAT City Council **CONFIRM** their commitment to the Project submission in the amount of \$1,600,000 as outlined in the financial matters section of this report; and further,

III) THAT City Council **APPROVES** the acceptance of work or materials donated from reputable organizations in connection with the Project, subject to the City's Donation Policy; and,

IV) THAT the Chief Administrative Officer **BE AUTHORIZED** to execute any agreements, declarations or approvals required to submit the application to the Grant; and,

V) THAT the Chief Administrative Officer and the City Clerk **BE AUTHORIZED** to take any such action and sign any such documentation as may be required to effect the recommendations and funding for the Grant, subject to all documentation being satisfactory in legal form to the City Solicitor, in technical content to the Commissioner Parks, Recreation & Culture, and Facilities and in financial content to the City Treasurer; and,

VI) THAT upon written confirmation that the City's grant application has been received City Council **APPROVES** the following recommendations:

THAT total City funding of \$1,600,000, to be funded as follows:

1. Capitol Theatre Capital Rehabilitation (ENG-010-16)

- a. 2020 \$150,000 Service Sustainability funding
- b. 2021 \$250,000 Service Sustainability funding PRECOMMITTED for immediate use
- 2. Corporate Heating and Cooling Replacement / Repair Program (PFO-009-11)
 - a. 2022 \$1,200,000 Service Sustainability funding PRECOMMITTED for immediate use; and

VII) THAT the Chief Administrative Officer and City Clerk **BE AUTHORIZED** to sign agreements or contracts with successful vendors / proponent / bidders satisfactory in technical content for all projects to the Commissioner for Parks, Recreation & Culture, and Facilities, in financial content to the City Treasurer, and in legal form to the City Solicitor; and,

VIII) THAT the Purchasing Manager **BE AUTHORIZED** to issue Purchase Orders / RFPs / RFTs / Contract Purchase Orders as may be required to effect all recommendations in this report, subject to all specification being satisfactory in technical content to the Commissioner for Parks, Recreation & Culture, and Facilities, in legal form to the City Solicitor and in financial content to the City Treasurer; and,

IX) THAT in the event the City receives written confirmation of the Grant funding being awarded to the City, then City Council **APPROVES** the following recommendations:

a) THAT the Chief Administrative Officer **BE AUTHORIZED** to delegate signing of claims and applicable schedules and other such documents required as part of the request for payment to the Corporate Leader for Parks, Recreation & Culture, and Facilities or designate, subject to financial content approval from the area's Finance Manager; and,

b) THAT surplus City funding, not exceeding the amount of the Grant funding, **BE REDIRECTED** to fund as many of the additional capital works items as possible, which are noted in the financial matters section and requested by the Windsor Symphony Orchestra for the Capitol Theatre; and,

c) THAT the Chief Administrative Officer and City Clerk **BE AUTHORIZED** to sign an amendment to the lease agreement between the City and the Windsor Symphony Orchestra for the Capitol Theatre for these additional capital works items, satisfactory in legal form to the City Solicitor, in technical content to the Corporate Leader for Parks, Recreation & Culture, and Facilities and in financial content to the City Treasurer.

Executive Summary:

N/A.

Background:

The following description illustrates the significance of the Capitol Theatre (“Theatre”) to the City:

“In the heart of Downtown Windsor, the Capitol Theatre boasts a rich history as a local heritage landmark and arts and entertainment hub.

Celebrating its centennial anniversary, the Capitol Theatre opened its door December 30th, 1920, as part of Loew’s vaudeville and film theatre chain. Throughout the years and changes in ownership, technology, bankruptcy, and restorations, the Capitol has been a place for Windsor to come together, present art and entertainment, and generate lasting memories.

Today, the Capitol is owned by the City of Windsor, managed by its anchor tenant, the Windsor Symphony Orchestra, and is the proud home of organizations including WIFF-Windsor International Film Festival, Windsor Dance eXperience, Art Cite, and Arts Collective Theatre. The Capitol Theatre provides local artists and community groups a multi-purpose venue for dance, literature, music, drama, film, and more. The Theatre is also used by touring professional companies. The Theatre is a cultural and entertainment hub in the city centre and is working with other partners (WIFF, UWindsor, St. Clair College, City of Windsor, Downtown Windsor Business Improvement Association) to revitalize the heart of the city.”

As part of the ongoing maintenance of the facility, there are several items that require addressing in the immediate future, such as basement leak repairs, carpeting and HVAC system.

Discussion:

The Ministry of Canadian Heritage offers many funding opportunities, one of which includes the Legacy Fund and is part of the Building Communities Through Arts and Heritage program.

The Legacy Fund is meant to support capital projects that:

- commemorate a significant local historical event or pay tribute to a significant local historical personality;
- mark a 100th anniversary or greater, in increments of 25 years;
- involve the restoration, renovation, or transformation of existing buildings or exterior spaces with local community significance that are intended for community use;
- encourage arts and heritage activities in the local community that are intended for and accessible to the general public.

Applications for Legacy Fund support are accepted on a continuous basis and if successful, the City could receive funding of up to 50% of eligible expenses to a maximum of \$500,000.

As mentioned above, a number of maintenance items require addressing at the Capitol Theatre. These works include basement leak repairs, carpeting, flooring and HVAC replacement. All of these works were identified in the recently approved 2020 8-Year Capital Budget. While funding for the work was allocated over several years, the ability to pre-commit the funds and start the work now will strengthen the grant application and improve conditions of the facility in recognition of the centennial anniversary.

With the Theatre's 100th anniversary approaching on December 30, 2020, as well as the cultural significance of the Theatre and the nature of the proposed improvements, Administration sees these renovations as part of a viable application for the Legacy Fund. Administration, as a result, is requesting Council approval to proceed with submitting an application for funding.

As part of a partnership with the Windsor Symphony Orchestra ("WSO"), a number of additional renovations have been identified for the Theatre. Should the City be successful in its' Legacy Fund application, City funding equal to the contribution received from the Legacy Fund could be redirected to pay for these additional capital items.

The WSO has identified four goals for the additional capital items and improvements:

- to increase energy efficiency;
- to meet the growing technical requirements of renters of both performance and meeting spaces;
- to reduce the sometimes-considerable costs associated with renting equipment for performances and;
- to improve general operating efficiencies.

Currently, the Theatre operates using equipment and electrical installations that were part of the major renovations completed in the early 1990s. The identified capital improvement will replace outdated equipment, fill gaps in equipment, and reduce energy and repair costs currently being incurred. The Theatre struggles now to meet renters' technical requirements, often spending funds to rent equipment or staff time in finding an alternative solution. Without the capital improvements, the Theatre will fall even further behind in its' capacity to meet renters' technical requirements, thus compromising its' revenue generation capacity. Lastly, the WSO, as the operator of the Capitol Theatre, hopes these capital improvements will provide the lasting benefits that often flow from centennial projects by increasing the value of this asset for the entire community.

It should be noted that the Theatre is designated as a Heritage Site. All guidelines associated with maintaining this status will be adhered to and respected as part of these renovations.

Independent of the City's Legacy Fund application, the WSO is considering the submittal of an application for the Community Anniversaries Fund, also administered by the Ministry of Canadian Heritage. The Community Anniversaries Fund provides up to \$25,000 for small capital projects, or \$200,000 for large events tied to the centennial anniversary. If the WSO is successful, the funds received would be used for community events and would not replace or duplicate the projects identified in the City's application.

Risk Analysis:

There is the potential risk that the application is not selected for funding or receives an amount less than the requested \$500,000. If so, this would reduce the amount of City funding that could be reallocated for the additional capital items identified by WSO and list above. This is considered possible to occur and would impact the efficiencies which could be gained by such investments. This risk can be mitigated by future capital budget requests to address these projects.

Should the City be successful in its' grant application and receive funding in part or in full, Administration is recommending that the surplus City funding, up to a maximum of \$500,000, be used to fund the additional capital items as requested by the WSO. Some of these capital items are physically movable and, although improbable, could be removed from the site while the Theatre is being leased or upon lease termination. Administration is working with the City's Legal department to ensure that the lease agreement between the City and the WSO is amended to reflect that all capital items funded by the Grant shall remain the sole property of the City, and may not be removed from the Theatre by WSO. This risk is considered unlikely to occur and is of medium impact.

Council should also be aware that all City funding for this project is derived from the Service Sustainability Reserve, which is partially funded by the incremental 1.16% annual Asset Management tax levy recently approved by City Council for six years to address the City's infrastructure deficit and which was approved as part of the 2020 budget deliberations. A reduction or elimination of this annual increase in subsequent years will require other projects to be pushed out or cancelled to accommodate the pre-commitment of these funds.

Climate Change Risks

Climate Change Mitigation:

A new HVAC system will be more efficient than the current system reducing energy consumption and green house gas emissions.

Climate Change Adaptation:

Upgrading the HVAC system will increase the Capital Theatre's resiliency to extreme temperatures (both lows and highs) as mechanical breakdowns are less likely with newer systems

Financial Matters:

Administration identified the following items, along with their respective funding sources, as part of the 2020 8-Year Capital Plan and total \$2,150,000. While the original submission for this project was intended to be for the full \$2,150,000, the delays due to the pandemic have resulted in a subset of these initiatives to ensure compliance with grant timelines for completion can be met. In addition, some work, in particular the carpet replacement, has already commenced, resulting in those costs being ineligible. While not all projects will be committed to the grant, Administration intends to demonstrate in the application the City's continued support of the Capitol Theatre through our past, present and future investments.

Description	Amount	Current Funding Source
Basement Leak Repairs – Grant Submission	100,000	ENG-010-17 - 2020 Service Sustainability
Basement Interior Finishing – Future	225,000	ENG-010-17 - 2020 Service Sustainability
Carpet Replacement – Current	50,000	ENG-010-17 - 2020 Service Sustainability
Plaster Repairs - Phase 1 – Future	125,000	ENG-010-17 - 2020 Service Sustainability
Plaster Repairs - Phase 2 – Future	200,000	ENG-010-17 - 2022 Service Sustainability
Other Flooring Repairs – Grant Submission	250,000	ENG-010-17 - 2021 Service Sustainability
HVAC Replacements – Grant Submission	1,200,000	PFO-009-11 - 2022 Service Sustainability
Total	2,150,000	

A total of \$1,600,000 in capital works for Basement Leak Repairs, Other Flooring Repairs, Carpet Repairs and HVAC replacement make up the defined projects for the grant submission request of \$500,000.

In the interest of starting these significant renovations in a timely manner, Administration recommends that these funding amounts be pre-committed for immediate use. Starting work on these renovations will not put any of the requested grant funding at risk. The Ministry has indicated that any eligible expenses incurred after submission of the grant application would be eligible for funding. Should the City's application be unsuccessful, the City would be entirely responsible for the \$1,600,000 in project costs, as was originally recommended in the Capital Budget.

The additional \$500,000 in work requested by the WSO will only proceed if the City is successful with its grant application as the City's contribution to the \$1,600,000 could be reduced to \$1,100,000. As such, there is no risk that City funding expended at the Theatre would be more than what was presented in the 2020 8 Year Capital Budget. Should the grant be awarded at an amount less than \$500,000, the list of additional projects would be reduced to ensure the City's total investment in the Theatre based on this report does not exceed \$1,600,000. Regardless of the outcome of the grant funding decision, sufficient City funding has been identified in the 2020 8-year Capital Budget to fund the \$1,600,000 in renovations discussed above.

Preliminary estimates of the additional \$500,000 in work requested by the WSO are provided in the table below.

Description	Amount
Technology - Audio	270,000
Technology - Lights	35,000
Technology - Video	35,000
Technology - Stage	60,000
Draperies	30,000
Electrical upgrades	70,000
Total	500,000

Administration will work in conjunction with the WSO to complete this work. All improvements made to the facility will become assets of the City and will not be permitted to be removed from the site while the Theatre is being leased or upon lease termination. As such, Administration recommends that an amendment to the existing lease agreement between the City and the WSO regarding the Theatre be completed to address this matter should the grant be successful and these additional works are completed.

Consultations:

Derek Thachuk – Manager, Parks & Facility Assets & Projects

Sheila Wisdom – Executive Director, Windsor Symphony Orchestra

Kate Tracey – Legal Counsel

Conclusion:

It is recommended that Council approve the submission of the application for the Legacy Fund – Building Communities Through Arts and Heritage Grant, approve a commitment to the required City funding and, conditional upon a successful funding application, reallocate City funding to additional capital works at the Capitol Theatre.

Planning Act Matters:

N/A

Approvals:

Name	Title
Melissa Osborne	Senior Manager Asset Planning
Shelby Askin-Hager	City Solicitor
Jan Wilson	Commissioner Parks, Recreations, Culture and Facilities
Joe Mancina	Chief Financial Officer / City Treasurer
Onorio Colucci	Chief Administrative Officer

Notifications:

Name	Address	Email

Appendices:



Subject: Healthy Workplace Awards 2020 – City Wide

Reference:

Date to Council: November 23, 2020

Author: Vincenza Mihalo, Executive Director Human Resources

519-255-6515, ext. 6259; vmihalo@citywindsor.ca

Sarah Fox, Ergonomics & Wellness Specialist

519-255-6515, ext. 6539; sfox@citywindsor.ca

Human Resources

Report Date: November 6, 2020

Clerk's File #: MH/13786

To: Mayor and Members of City Council

Recommendation:

I) THAT the Report entitled Healthy Workplace Award 2020 **BE RECEIVED** for information.

II) THAT City Council **RECOGNIZE** the efforts put forward by the Employees of Corporation of the City of Windsor during the Covid Pandemic.

Executive Summary:

N/A

Background:

This year the annual Gord Smith Healthy Workplace & Bike Friendly Workplace Awards were suspended by the Working Toward Wellness (WTW) Committee for 2020. Instead, the Committee in collaboration with the Canadian Mental Health Association (CMHA) – Windsor-Essex County Branch, Family Services Windsor Essex (FSWE), and the Windsor Essex County Health Unit (WECHU) decided to offer the Healthy Workplace Awards to recognize the steps workplaces have made during the Covid-19 pandemic. Three awards were created:

1. Health & Safety – workplaces were asked to demonstrate ways they supported the health, safety, and well-being of their employees, clients, and customers in response to the COVID-19 pandemic;
2. Mental Health Promotion – workplaces were asked to demonstrate activities or measures that were taken to facilitate mental health promotion in their business or workplace during the COVID-19 pandemic; and

3. Organizational Social Responsibility – workplaces were asked to demonstrate steps taken to support the health, safety, and well-being of the community in response to the COVID-19 pandemic.

Discussion:

In collaboration with all our Union Groups and our employees, the Corporation of the City of Windsor's commitment and dedication since the start of the pandemic resulted in achieving the following three (3) separate awards:

- Health & Safety Gold Award,
- Mental Health Promotion Gold Award, and
- Organizational Social Responsibility Award.

As the COVID-19 pandemic evolved, our Employees, together with their Union Executive, allowed the Corporation of the City of Windsor to adapt to this fluid situation with a goal to keep an open line of communication with our employees who were experiencing a new normal. Community involvement, continuance of services and corporate pride shone thru as employees were deployed to alternative work assignments in different environments (ie. Unemployed Help Centre, Shelters), or offered services in alternate means (ie from home or by appointments).

Efforts were made to address the health and safety of each worksite by conducting individual questionnaires, departmental risk assessments and implementing a variety of measures to address identified hazards such as:

- Promotion of proper hand hygiene, wearing masks in public areas and respiratory etiquette through signage and posters hung at the various City of Windsor sites in common departmental areas to provide awareness of new Health & Safety protocols to employees.
- Elevator protocols and physical distancing process.
- Staggered start/end/break/lunch times.
- Implementing a return of 50% of employees at any one time to provide for similar cohorts.
- Regular and mandatory education of Health & Safety information through additional online training and communication. All information was made available on a central Covid-19 Information Page on the Corporation's intranet site.
- Enhanced cleaning protocols were put in place.
- Workplace/office modifications such as a change to table configuration set-up in the lunch rooms, training rooms and installation of plexiglass barriers and floor decals.

- Health Screening of members of the public entering buildings
- Daily Health Screening of all employees

The Corporation also recognized that change can be difficult and the state of uncertainty can potentially lead to additional personal stresses. The goal was to focus on a number of topics, since staff members are dealing with a variety of unique challenges. Using our internal communication strategies, various Employee Committees and posters, new policies and procedures were rolled out and additional webinar training was offered on topics such as:

- Available work arrangement options
- Tips for working from home
- Available Employee Family Assistance Plan programs
- Financial resources and financial wellness assistance
- Opportunities to help stay connected
- Ways to stay active while still practicing physical (social) distancing
- Self-care strategies
- Various resources to promote and continue with Mental Health Month in May

Additionally, the corporation's commitment to support the health and well-being in the community was multi-faceted. Examples included:

- Distributing hand sanitizer in the community
- Donating medical products to frontline healthcare staff across the region
- Offering day program shelters for homeless residents
- Providing two Isolation and Recovery Centres (IRC) to individuals experiencing homelessness and who present with symptoms
- Packaging and organizing good donations for the Unemployed Help Centre

Risk Analysis:

N/A

Climate Change Risks

Climate Change Mitigation:

N/A

Climate Change Adaptation:

N/A

Financial Matters:

N/A

Consultations:

Julie Ryckman, Occupational Health & Safety and Wellness Manager

Conclusion:

The Corporation of the City of Windsor recognizes the benefit of providing a healthy workplace for its employees.

Planning Act Matters:

N/A

Approvals:

Name	Title
Vincenza Mihalo	Executive Director, Human Resources
Valerie Critchley	City Clerk & Licence Commissioner - Corporate Leader of Public Engagement & Human Services
Onorio Colucci	Chief Administrative Officer

Notifications:

Name	Address	Email

Appendices:



Council Report: C 210/2020

Subject: 2021 Schedule of Council and Standing Committee Meetings - City Wide

Reference:

Date to Council: November 23, 2020
Author: Steve Vlachodimos
Deputy City Clerk/Senior Manager of Council Services
519-255-6222 ext. 6488
svlachodimos@citywindsor.ca
Council Services
Report Date: 10/22/2020
Clerk's File #: ACO2020

To: Mayor and Members of City Council

Recommendation:

That the schedule of City Council and Standing Committee meetings for 2021 attached as Appendix A, along with the "Deadlines for Submission of Reports Scheduled for Consideration at City Council & Corporate Services Standing Committee Meetings" attached as Appendix B, and "Deadlines for Submission of Reports Scheduled for Consideration at Standing Committee Meetings" attached as Appendix C for January 1, 2021 to December 31, 2021 **BE APPROVED**; and further,

That administration **CONTINUE** to maintain flexibility in terms of meeting dates and start times due to the declared emergency as a result of the ongoing COVID-19 pandemic.

Executive Summary:

N/A.

Background:

City Council, at its June 7, 2011 meeting adopted the Procedure By-law 98-2011 that includes provision 3.2(b) for the City Clerk to present a meeting calendar in November of each year detailing the dates for all regular meetings of Council.

Discussion:

For reference purposes, attached is the schedule of proposed regular Council meeting dates and Standing Committee dates for the calendar year 2021, along with the deadlines for submitting administrative reports for both Council meetings as well as Standing Committee meetings.

Council meetings will be held the 1st and 3rd Mondays of the month, or, where there is a holiday on the Monday, on the Tuesday or following Monday, with a start time of 6:00 o'clock p.m.

Risk Analysis:

The calendar and deadline schedules have been provided to Administration to allow proper planning and scheduling of issues to be considered by Council and Standing Committees. The risk is minimal to non-existent.

Climate Change Risks

N/A.

Financial Matters:

N/A.

Consultations:

The Greater Essex County District School Board was consulted in terms of March Break; the Association of Municipalities of Ontario (AMO) provided the dates for the annual AMO Conference, which will be held in London, Ontario; and the Federation of Canadian Municipalities (FCM) provided the dates for the annual FCM Conference which will be held in Montreal, QC. These dates were taken into consideration when formulating the 2021 Council Calendar.

Conclusion:

As required by the Procedure By-law, it is recommended that the attached Schedule of City Council and Standing Committee meetings for January 1, 2021 to December 31, 2021 be approved. Once adopted, this 2021 schedule will be posted to www.citywindsor.ca for citizens to reference, as well as on Dashboard for employee reference.

Planning Act Matters:

N/A.

Approvals:

Name	Title
Steve Vlachodimos	Deputy City Clerk/Senior Manager of Council Services
Valerie Critchley	City Clerk
Onorio Colucci	Chief Administrative Officer

Notifications:

Name	Address	Email
Cliff Danby	YourTV	cliff.danby@cogeco.com
National Captioning Canada Inc.		normajeau@natcapcan.ca natcap@natcapcan.ca

Appendices:

- 1 Appendix A-2021 Schedule of Meeting Calendar
- 2 Appendix B-Deadlines for Submission of Reports Scheduled for City Council and Corporate Services Standing Committee Meetings
- 3 Appendix C-Deadlines for Submission of Reports Scheduled for Consideration at Standing Committee Meetings

CITY OF WINDSOR SCHEDULE OF MEETINGS - 2021

JANUARY 2021						
S	M	T	W	TH	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

FEBRUARY 2021						
S	M	T	W	TH	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

MARCH 2021						
S	M	T	W	TH	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

APRIL 2021						
S	M	T	W	TH	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

MAY 2021						
S	M	T	W	TH	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

JUNE 2021						
S	M	T	W	TH	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

JULY 2021						
S	M	T	W	TH	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

AUGUST 2021						
S	M	T	W	TH	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

SEPTEMBER 2021						
S	M	T	W	TH	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

OCTOBER 2021						
S	M	T	W	TH	F	S
						1
2						3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NOVEMBER 2021						
S	M	T	W	TH	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

DECEMBER 2021						
S	M	T	W	TH	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

- Statutory Declared Holidays - Windsor City Hall Closed
- School Holidays ~ January & March
- Regular City Council Meetings (6:00 p.m. Council Chambers, 1st floor, Windsor City Hall)
- FCM Conference ~ June 3-6, 2021, Montreal QC
- AMO Conference ~ August 15-18, 2021, London ON

STANDING COMMITTEES

- Corporate Services Standing Committee 6:00 p.m. (all members of Council)
- Development & Heritage Standing Committee (5 members of Council + 8 citizens) 4:30 p.m.
- Community Services and Parks Standing Committee (5 members of Council) 9:00 a.m.
- Environment, Transportation & Public Safety Standing Committee (5 members of Council) 4:30 p.m.

**DEADLINES FOR SUBMISSION OF REPORTS
SCHEDULED FOR CONSIDERATION AT
CITY COUNCIL &
CORPORATE SERVICES STANDING COMMITTEE MEETINGS
2021**

DATE OF COUNCIL or CORPORATE SERVICES MEETING	DEADLINE FOR PROPOSED/ DRAFT REPORTS FOR AGENDA REVIEW (Noon Monday) (See notes below)	AGENDA REVIEW MEETING (Tuesday 11:00 a.m.)	DEADLINE FOR SIGNED REPORTS TO CAO (4:00 p.m. Wednesday)	ISSUANCE OF AGENDA BY COUNCIL SERVICES (9:00 a.m. Friday)
January 18	January 4	January 5	January 6	January 8
January 25	January 11	January 12	January 13	January 15
February 1	January 18	January 19	January 20	January 22
February 22	February 8	February 9	February 10	February 12
March 8	February 22	February 23	February 24	February 26
March 29	March 15	March 16	March 17	March 19
April 19	April 1 *	April 6	April 7	April 9
April 26	April 12	April 13	April 14	April 16
May 3	April 19	April 20	April 21	April 23
May 17	May 3	May 4	May 5	May 7
May 31	May 17	May 18	May 19	May 21
June 7	May 21 *	May 25	May 26	May 28
June 21	June 7	June 8	June 9	June 11
July 5	June 21	June 22	June 23	June 25
July 19	July 5	July 6	July 7	July 9
July 26	July 12	July 13	July 14	July 16
August 9	July 26	July 27	July 28	July 30
August 30	August 16	August 17	August 18	August 20
September 20	September 3 *	September 7	September 8	September 10
September 27	September 13	September 14	September 15	September 17
October 4	September 20	September 21	September 22	September 24
October 18	October 4	October 5	October 6	October 8
October 25	October 8 *	October 12	October 13	October 15
November 1	October 18	October 19	October 20	October 22
November 15	November 1	November 2	November 3	November 5
November 22	November 8	November 9	November 10	November 12
December 6	November 22	November 23	November 24	November 26
December 20	December 6	December 7	December 8	December 10

Directions: Staff involved in drafting and/or approving Council reports are encouraged to keep this schedule handy to ensure that reports will appear on the Council meeting dates intended.

- * early/late due to holiday
- ✗ No supplementary items **unless emergency.**
- ✓ Each Council report must be created using *agenda.net*.
- ✓ **Shaded row** indicates Corporate Services Standing Committee meeting

Updated November 2020

**DEADLINES FOR SUBMISSION OF REPORTS
SCHEDULED FOR CONSIDERATION AT
STANDING COMMITTEE MEETINGS**

2021

DATE OF STANDING COMMITTEE MEETING	NAME OF STANDING COMMITTEE	DATE OF AGENDA REVIEW MEETING (Tuesday 11:00 a.m.)	DEADLINE FOR SIGNED REPORTS TO CAO (Wednesday 4:00 p.m.)	ISSUANCE OF STANDING COMMITTEE AGENDA
January 6	Comm Svcs & Parks	December 15 2020	December 16 2020	December 18 2020
January 11	Develop & Heritage	December 15 2020	December 16 2020	December 18 2020
January 20	Enviro Transp & PS	January 5	January 6	January 8
February 3	Comm Svcs & Parks	January 19	January 20	January 22
February 8	Develop & Heritage	January 26	January 27	January 29
February 17	Enviro Transp & PS	February 2	February 3	February 5
March 3	Comm Svcs & Parks	February 16	February 17	February 19
March 22	Develop & Heritage	March 9	March 10	March 12
March 24	Enviro Transp & PS	March 9	March 10	March 12
April 7	Comm Svcs & Parks	March 23	March 24	March 26
April 12	Develop & Heritage	March 30	March 31	April 1 *
April 21	Enviro Transp & PS	April 6	April 7	April 9
May 5	Comm Svcs & Parks	April 20	April 21	April 23
May 10	Develop & Heritage	April 27	April 28	April 30
May 26	Enviro Transp & PS	May 11	May 12	May 14
June 2	Comm Svcs & Parks	May 18	May 19	May 21
June 14	Develop & Heritage	June 1	June 2	June 4
June 23	Enviro Transp & PS	June 8	June 9	June 11
July 7	Comm Svcs & Parks	June 22	June 23	June 25
July 12	Develop & Heritage	June 29	June 30	July 2
July 21	Enviro Transp & PS	July 6	July 7	July 9
August 4	Comm Svcs & Parks	July 20	July 21	July 23
August 23	Develop & Heritage	August 10	August 11	August 13
August 25	Enviro Transp & PS	August 10	August 11	August 13
September 1	Comm Svcs & Parks	August 17	August 18	August 20
September 13	Develop & Heritage	August 31	September 1	September 3
September 22	Enviro Transp & PS	September 7	September 8	September 10
October 6	Comm Svcs & Parks	September 21	September 22	September 24
October 12	Develop & Heritage	September 28	September 29	October 1
October 27	Enviro Transp & PS	October 12	October 13	October 15
November 3	Comm Svcs & Parks	October 19	October 20	October 22
November 8	Develop & Heritage	October 26	October 27	October 29
November 24	Enviro Transp & PS	November 9	November 10	November 12
December 1	Comm Svcs & Parks	November 16	November 17	November 19
December 13	Develop & Heritage	November 30	December 1	December 3
December 15	Enviro Transp & PS	November 30	December 1	December 3

Directions: Staff involved in drafting and/or approving Council reports are encouraged to keep this schedule handy to ensure that reports will appear on the intended Council/Standing Committee meeting dates.

Use *agenda.net* to create all standing committee reports.

NOTE: Any "P & C" attachments to council reports are to be signed by all who approved the public council report. The CAO is to sign all P & C attachments as well.

Key:

* early/late due to holiday

Comm Svcs & Parks = Community Services & Parks Standing Committee

Develop & Heritage = Development & Heritage Standing Committee

Enviro Transp & PS = Environment, Transportation & Public Safety Standing Committee

Updated November 2020

**Subject: Sewer and Coastal Flood Protection Master Plan
Environmental Assessment - Filing the Notice of Study Completion -
City-Wide**

Reference:

Date to Council: November 23, 2020
Author: Anna Godo
Engineer III
(519) 255-6100 ext. 6508
agodo@citywindsor.ca
Engineering Department
Design and Development
Report Date: November 3, 2020
Clerk's File #: SW/12983

To: Mayor and Members of City Council

Recommendation:

- I. THAT the report Sewer and Coastal Flood Protection Master Plan Environmental Assessment – Filing the Notice of Study Completion **BE RECEIVED** for information; and,
- II. THAT Administration **BE DIRECTED** to issue the Notice of Study Completion for the Sewer and Coastal Flood Protection Master Plan Environmental Assessment.

Executive Summary:

N/A

Background:

On November 6, 2017, Council provided approval to retain Dillon Consulting Limited to develop the Sewer Master Plan (CR660/2017).

The objectives of the Sewer Master Plan were to:

1. Understand the causes of basement, surface and coastal flooding
2. Identify vulnerable areas
3. Identify and evaluate short-term and long-term solutions to reduce the impacts and risks of flooding
4. Identify improvements to City infrastructure
5. Identify actions that homeowners can take to reduce their risk of flooding
6. Develop preliminary designs and cost estimates for the recommended infrastructure improvements
7. Develop recommendations for an implementation strategy

Public consultation is an important part of the Municipal Class Environmental Assessment (MCEA) process. Project related information and updates have been maintained on the project website throughout the study (www.WeatheringTheStorm.ca). Public consultation was undertaken through Public Information Centre (PIC) Meetings that were held at PIC #1 on June 12, 13 & 14, 2018 and at PIC #2 on February 11, 12 & 13, 2020 and at eight meetings of the Stakeholder Advisory Committee. Levels of service were established and used as a benchmark to determine where problem areas exist and where improvements are needed in order to reduce the risk of flooding. Alternate solutions were evaluated following the MCEA process, comparing each solution based on natural, social, cultural and economic environment considerations.

Updates on the progress of the project were reported to Council on a quarterly basis. The Final Recommendations Solutions Summary was presented to Council on July 27, 2020 and City Council approved the following:

CR379/2020

1. That Council **ENDORSE** the 'Final Council Recommendation Summary of the Sewer and Coastal Flood Protection Master Plan' prepared by Dillon Consulting Limited dated July 20, 2020 included within Appendices 1 through 4; and,
2. That Administration **BE DIRECTED** to develop an implementation strategy for the Final Council Recommendations Summary of the Sewer and Coastal Flood Protection Master Plan to be considered as part of the 2021 Capital Budget process; and,

3. That Council **APPROVE** \$1,500,000 to proceed with immediate short term projects/programs to be charged to Sewer Master Plan Implementation Project, Project ID#7199004 which will include the following:
 - i. Mandatory downspout disconnection pilot program and monitoring
 - ii. Contract to seal maintenance hole covers in low lying areas
 - iii. Develop an educational program to outline measures that can be implemented on private property to reduce the risk of flooding

4. That City Council **APPROVE** the funding, as outlined below, from the Sewer Master Plan Implementation Project (ENG-002-19), in order to proceed with the engineering and land acquisition for the Lauzon Parkway Sewer and Road Rehabilitation Project as well as identified City matching funding to apply for any grants which may become available for this project:
 - a. **PRECOMMIT** for immediate use \$3,440,000 in 2021 for engineering and land acquisition, and
 - b. Establish the following funding as **PLACEHOLDER** totalling \$15,860,000 in funding to be leveraged as the City's matching portion of a grant, should any grant opportunities become available for this project:
 - i. \$530,000 in 2021
 - ii. \$3,970,000 in 2022 and 2023 and;
 - iii. \$6,500,000 from 2024 and;
 - iv. \$890,000 from 2025

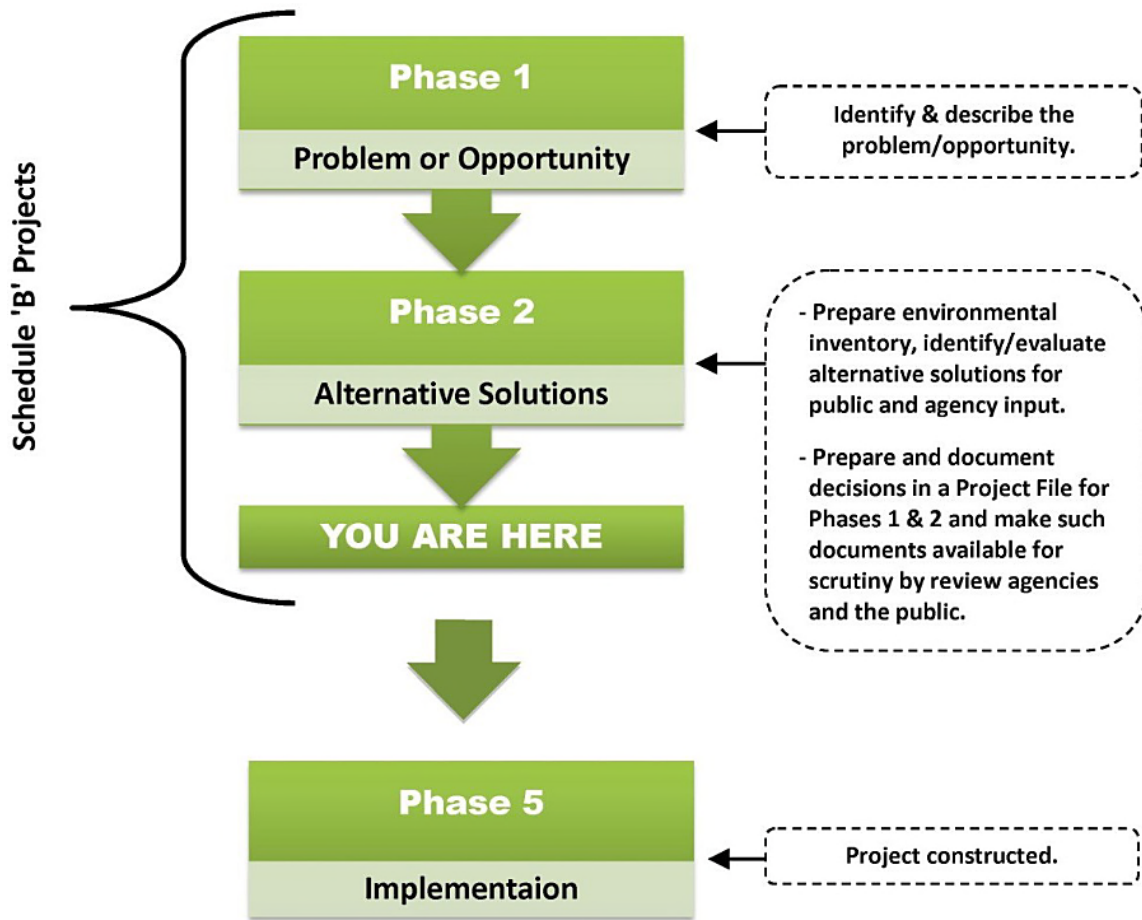
5. That City Council **APPROVE** the following recommendations in the event a grant for this project becomes available, and the placeholder funding identified above has not be redirected by a subsequent report to City Council, :
 - a. That the Chief Administrative Officer, under Delegation of Authority 3.25, approve the grant submission for the project and;
 - b. That the City's matching funding for the grant be deemed to be the placeholder funding identified above and;
 - c. That Administration provide a report to City Council as soon as possible post grant submission to advise of the submission and obtain approval on additional recommendations required should the City's grant submission be successful, and

6. That the Chief Administrative Officer and City Clerk **BE AUTHORIZED** to sign any agreements necessary to achieve the above purposes, subject to the contract being within the approved budget, satisfactory in legal form to the City Solicitor, in financial content to the Chief Financial Officer and City Treasurer, and in technical content to the City Engineer.

The report is now complete. The Executive Summary is provided as Appendix 1 of this report. The next step is to publish the Notice of Study Completion and commence the 30 day public review period.

Discussion:

The Sewer and Coastal Flood Protection Master Plan Environmental Assessment has been carried out as a Master Plan, Approach 2, in accordance with requirements under the MCEA process. As such the study completed phases 1 and 2 and satisfies the MCEA requirements for the Schedule B projects, as outlined below.



Schedule B Process for Class EAs

Prior to implementing any Schedule C projects additional consultation and investigation, to fulfill Phases 3 and 4 of the MCEA, will need to be completed.

The Sewer and Coastal Flood Protection Master Plan has identified both short-term and long-term alternative solutions that will reduce the risk of basement and surface flooding in the City of Windsor, while also considering the ongoing impacts of climate change, low impact development (LID) best management practices, and water quality.

The recommended solutions are comprised of:

1. Increase downstream outlet capacity

- Treatment Capacity Improvements
- Retention Treatment Basin (RTB) at Lou Romano Water Reclamation Plant
- New or upgraded pumping stations – 12 sites

2. Source control, with both private property and public infrastructure improvements

- Mandatory Foundation Drain Disconnection
- Downspout Disconnection
- Low Impact Development (LID) Measures
- Sealing Sanitary Sewer Systems (1500 units)

3. Improve sewer system, for conveyance and storage

- Increase sewer sizes
 - Sanitary Sewer System improvements – 48 km
 - Storm Sewer System improvements – 61 km
- Combined sewer separation
- Surface/underground storage
 - New or modified stormwater underground or surface storage – 8 sites

4. Coastal flood protection

Earth berm to protect low-lying areas from high river water levels (6kms)

The next step in the MCEA process requires the publication of the Notice of Study Completion. Upon authorization by Council, the Notice of Study Completion will be:

- Published in the Windsor Star.
- E-mailed or mailed to those whom have requested to be included on the project contact list for the EA.
- E-mailed to relative Agencies and Stakeholders, and
- Posted on the Project Website [www.WeatheringTheStorm.ca].

A copy of the draft notice is provided as Appendix 2 of this report.

The EA report will be available for review during the minimum 30 calendar day review period on the project website www.WeatheringTheStorm.ca.

Risk Analysis:

No significant or critical risks are associated with this report. The recommendation requires a mandatory 30-day review period which provides an opportunity for the public to provide written comments to the project proponent contacts. A request may be made to the Ministry of the Environment, Conservation and Parks for an order requiring a higher level of study, or that conditions be imposed, only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. In the event an objection is filed, the Minister of the Environment will undertake a review and render a decision which may deny with or without conditions, refer the matter to mediation, or require the proponent to comply with Part II of the EA Act.

Climate Change Risks

Climate Change Mitigation:

Future pumping stations designs will be completed following the latest standards including considerations for energy efficiency.

Client Change Adaption:

Extreme precipitation and high surface water levels were considered when developing and evaluating the recommended basement, surface and coastal flooding solutions.

Extreme Precipitation Events: Sewer and overland drainage modelling was completed for various intensity storms including the Urban Stress Test (Climate Change Storm). The recommended solutions include consideration for maintaining emergency access and access to vulnerable areas under the Climate Change Storm. To minimize the risk from sanitary sewer back-ups, backflow preventers and sewage ejector pumps are recommended.

High Surface Water levels: To reduce risk from overland flow in the event of Lake St Clair or the Detroit River reaching its 1:100 year water surface elevation, extension of and improvements to the existing barrier landform system along approximately 6km of Riverside Drive, and installation of backflow prevention devices on sewers, are recommended.

Financial Matters:

In 2019 and 2020 City Council approved changes to the Sewer Surcharge funding resulting in a dedicated allocation of approximately \$11M annually for

the implementation of projects recommended in the Sewer and Coastal Flood Protection Master Plan.

There also remains additional funding in the Sewer Master Plan Implementation project from 2025 through 2027 in the amount of \$25,157,950 that was approved in principal as part of the 2020 Capital Budget, to be considered for other projects. Additionally, funding allocated to the Basement Flooding Abatement Program, City Wide Sewer Rehabilitation and Local Improvement project funding, may in part be leveraged to implement additional programs and or projects recommended in the Sewer and Coastal Flooding Protection Master Plan as appropriate.

Recommendations on which Sewer and Coastal Flood Protection Master Plan projects to undertake and in which order will be presented annually to Council as part of the City's Capital Budget process where they will be considered amongst the City's other infrastructure, planning and growth management responsibilities. When establishing the priority of the recommendations contained in the Sewer Master Plan work, Administration will use a set of Guiding Principles taking into consideration not only the priority assigned to it as part of the Sewer Master Plan but also other factors such as harmonizing capital projects with overlapping goals. In addition, the results of pilot projects and other Sewer Master Plan recommendations already undertaken will be considered. (i.e. downspout disconnection, maintenance hole sealing, foundation drain disconnection).

It is also important to note that the operational and maintenance costs resulting from the implementation of these various recommendations, as well as the capital requirements to sustain them may result in additional operational and or capital costs. As is consistent with the City's asset management policy and procedures, Public Works, Operations and Pollution Control will continue to track the impact new assets and or practices may have on their costs. These will be reported to City Council as part of the annual operational budget and or the 2023 Asset Management Plan, as appropriate, to ensure the City is able to keep these assets in good working order to achieve the benefits associated with them.

Consultations:

Melissa Osborne – Senior Manager of Asset Planning
Michael Dennis – Manager of Capital Budget & Reserves
Carrie McCrindle – Financial Planning Administrator
Dwayne Dawson – Executive Director of Operations
Rob Slater – Executive Initiatives Coordinator

Conclusion:

Upon receiving authorization from Council, the Notice of Study Completion will be published in the Windsor Star, on the Project Website, and will be provided to those whom have requested to be included on the project contact list for the EA. The Study Report will be made available on-line on the Project Website.

Planning Act Matters:

N/A

Approvals:

Name	Title
Fahd Mikhael	Manager of Design and Development
France Isabelle-Tunks	Senior Manager of Engineering / Deputy City Engineer
Mark Winterton	City Engineer and Corporate Leader Environmental Protection and Infrastructure Services
Onorio Colucci	Chief Administrative Officer

Notifications:

Name	Address	Email
Flavio Forest Dillon Consulting		fforest@dillon.ca
Distribution list to interested parties submitted to Clerk's office		

Appendices:

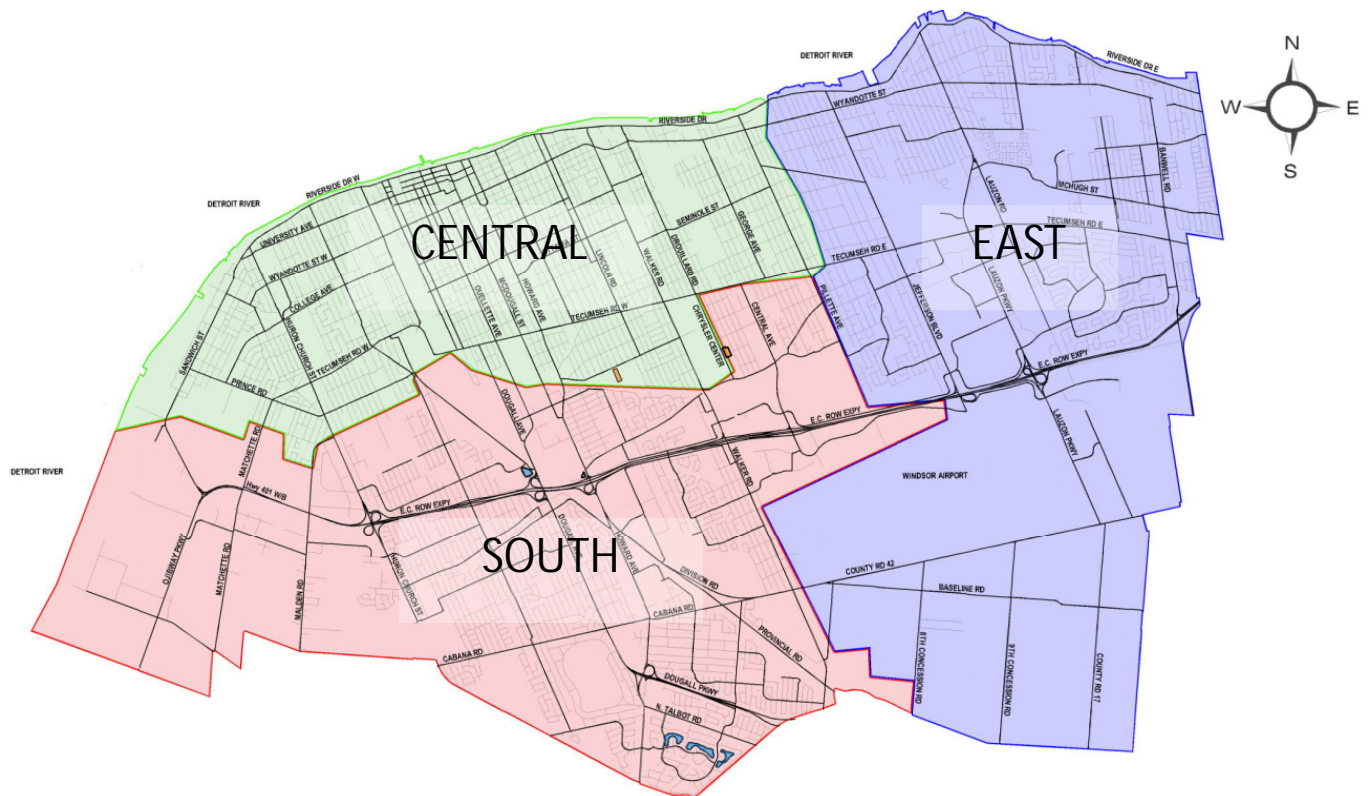
- 1 Sewer and Coastal Master Plan Executive Summary
- 2 Draft Notice of Study Completion

Sewer and Coastal Flood Protection Master Plan

The City of Windsor has experienced several significant storm events in recent years that have resulted in widespread basement and surface flooding throughout the City. In addition to these events, current high Lake St. Clair and Detroit River Water Levels are putting strain on the municipal sewer system and posing risks to property owners in coastal and low lying areas. The City has undertaken this master plan to understand the causes of flooding, identify and evaluate solutions, complete high level design and cost estimates for proposed infrastructure improvements, and to provide an implementation strategy for the recommended solutions.

This Sewer and Coastal Flood Protection master plan follows the Municipal Class Environmental Assessment process which provides the framework for the public to have an active role in the development of the solutions.

This executive summary document is intended to provide a summary of the findings and final recommendations of the City's master plan. Further details will be available in the Master Plan Environmental Assessment report and appendices.



Report Overview

Book 1

- Master Plan Report
- Acronyms, Abbreviations, Definitions
- Appendix A - Background Literature Review

Book 2

- Appendix B – Stakeholder Consultation Summary Report and Consultation Documentation

Book 3

- Appendix C – Short Term Solution Recommendation Report
- Appendix D – Technical Volume 1: Sewer Model Development and Existing Conditions
- Appendix E – Technical Volume 2: Flood Reduction Solutions Alternative Development

Book 4

- Appendix F – Technical Volume 3: Functional Design, Estimated Cost and Implementation
- Appendix G – Environmental Assessment Comparative Evaluation Matrices

Book 5

- Appendix H – Natural Environment Assessment
- Appendix I – Archaeological Assessment Stage 1 Report
- Appendix J – Geotechnical Desktop Review
- Appendix K– Sewer Model Results (Available Upon Request)

Master Plan Objectives

Master Plan
Section 1.0

- Understand the causes of basement, surface, and coastal flooding.
- Identify areas vulnerable to basement, surface, and coastal flooding.
- Identify and evaluate short-term and long-term solutions to reduce the risks and impacts of this flooding.
- Identify improvements to City infrastructure.
- Identify actions homeowners can take to reduce their risk of flooding and reduce strain on the City's system.
- Develop preliminary designs and cost estimates for the recommended infrastructure improvements.
- Recommend an implementation strategy.

Community Engagement

Appendix B

To keep the community informed of this study and to obtain valuable feedback regarding the study's recommendations, an enhanced level public engagement was implemented. The master plan's engagement plan included;

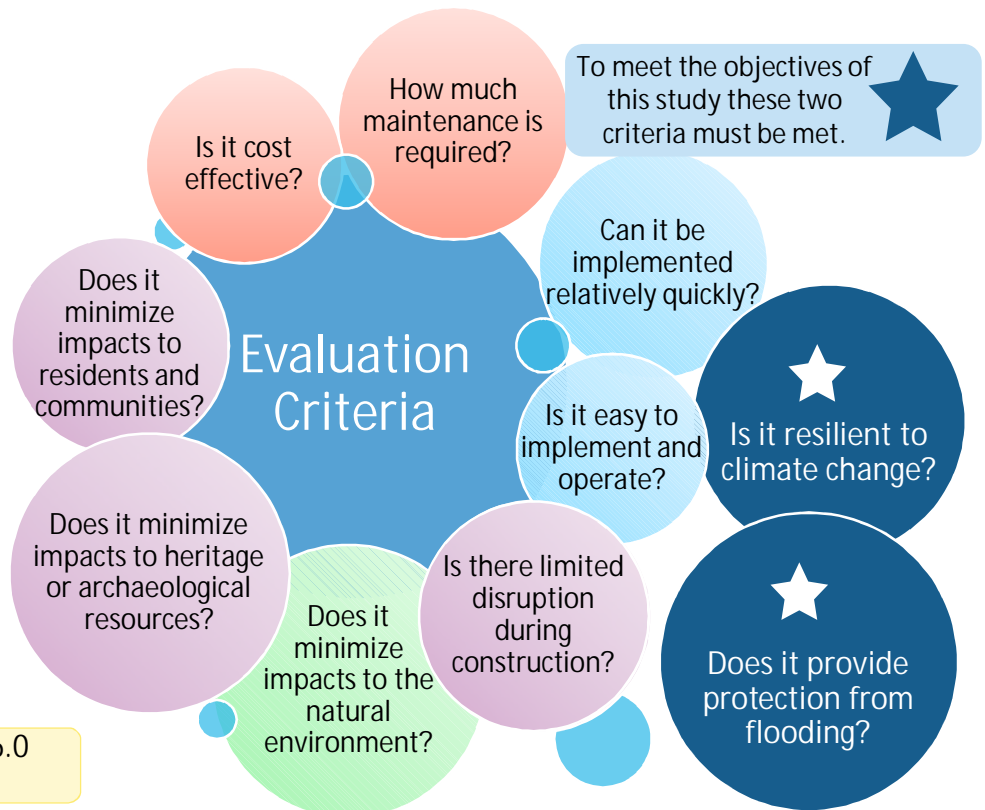
- Several popup events
- Public information centres
- Flooding Survey for residents
- Project website (weatheringthestorm.ca)
- A Stakeholder Advisory Committee (SAC)
- Engagement with regulative agencies, first nations and adjacent municipalities.

Evaluation of Alternative Solutions

Using the City-Wide Sewer Computational Model, various alternative solutions were developed to meet the established level of service.

Alternative solutions were evaluated following the Municipal Class Environmental Assessment process, comparing each solution based on a number of evaluation criteria.

The recommended solutions summarized in this document represent the preferred solution determined through this process.



Master Plan Section 6.0
And Appendix G

Problem Identification

Appendix E

A number of key principles were considered in the identification of problem areas and mitigation of flood risk:

- More stringent design criteria should be used to mitigate flooding for vulnerable areas;
- Solutions recognize that residents and property owners play an integral part in achieving the goals of this initiative, and
- Solutions cannot rely on only one level of intervention and need to include all components of the drainage system.

Level of Service is a benchmark used to determine where problem areas exist and determine where improvements are needed to mitigate the risks of flooding.

Level of Service

Level of Service: 1:100 Year Storm (85 mm over 4 hours):

Sanitary System: Sewer surcharge below typical basement floor level (1.8 m (6.0 ft) below ground).

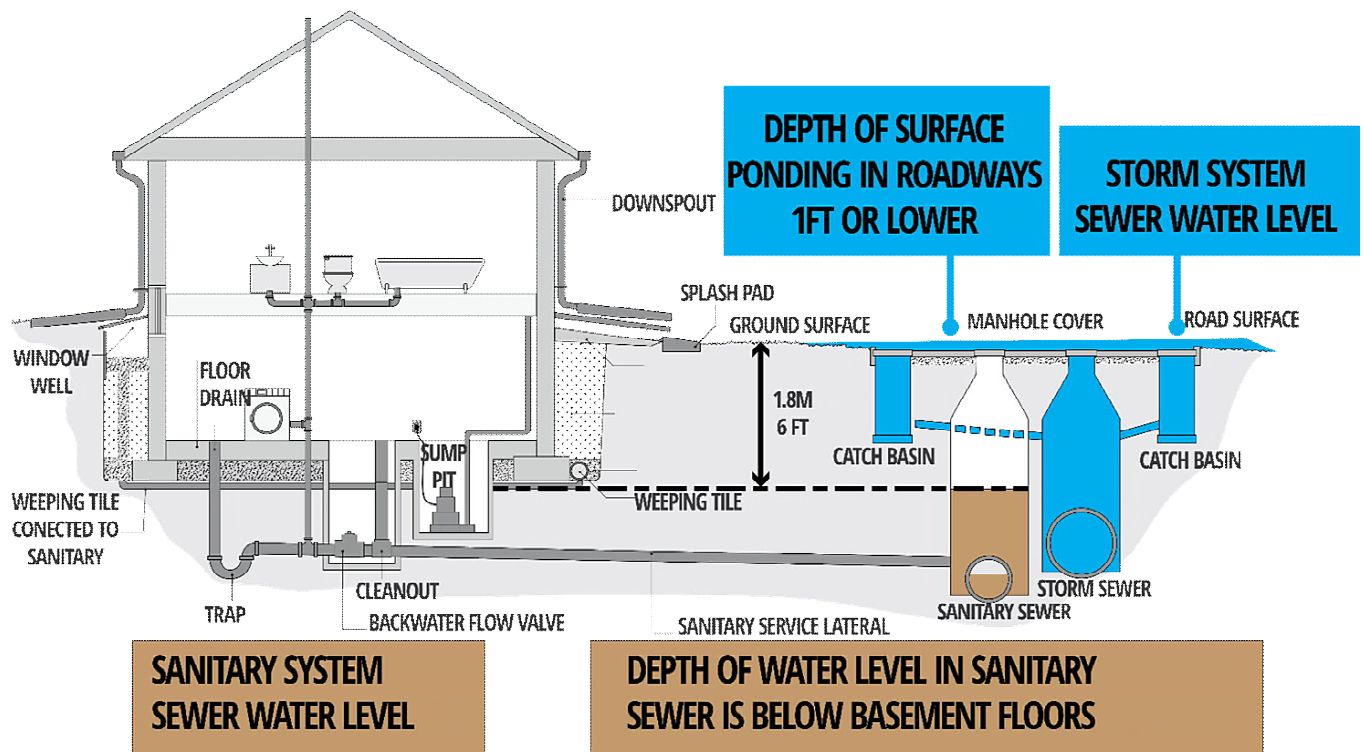
Storm System: Limit surface (roadway) ponding to less than 30 cm (1 ft).

Coastal Flood Protection Infrastructure: Protect lower-lying inland areas from impacts of high lake levels based on projected high lake level elevation (176.50 m).

Enhanced Level of Service: "Climate Change" Storm (120 mm over 4 hours):

More severe storm criteria were used for major roadways and vulnerable areas.

Vulnerable areas include schools, hospitals, long term care centres, emergency services, evacuation centres.



Recommended Solutions

Appendix E

Flooding solutions are made up of a combination of various levels of improvement. Each level represents a part of the City’s drainage system, these include:

Increase Downstream Outlet Capacity
(Increased treatment capacity or larger outlets to receiving water bodies)

Source Control and Private Property Measures

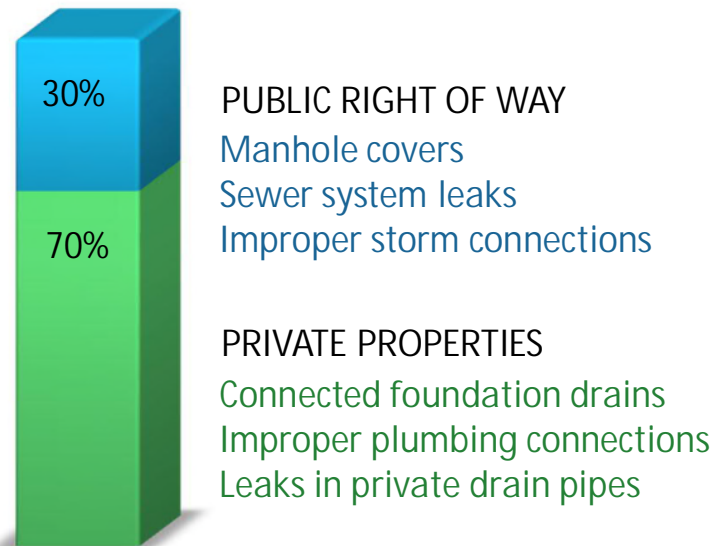
Coastal Flood Protection
(Overland flood barriers and backflow prevention)

Improve Sewer System Conveyance and Storage Capacity
(Large sewer pipes and storage facilities)

Key Assumptions:

1. The effectiveness of solutions rely on a partnering approach between private property owners and the City. Integration of private property measures and public infrastructure upgrades are required to reduce the risk and impacts of flooding.
2. Solutions will reduce, but not completely eliminate flooding risks.
3. The infrastructure improvements are expected to require an extended period of time to implement due to the scope and costs. The City will incorporate these improvements into their asset management plan and implement projects in conjunction with other initiatives.
4. The City will need to enhance their current operation and maintenance programs for a new and larger infrastructure.
5. Recommended solutions do not eliminate the need for property owners to implement property protection measures and plumbing improvements.

Sources of Inflow and Infiltration into the Sanitary System



Source Control: City Projects

- ✓ Pilot Projects to measure the benefit of Downspout Disconnection, Foundation Disconnection and Low Impact Development (LID) Measures.
 - ✓ Confirm the criteria and assumptions used in the development of these solutions are valid and that measurable reductions in inflow are observed.
- ✓ Updating and implementing new City by-laws:
 - ✓ City-Wide Downspout Disconnection By-Law (By-law 26-2008)
 - ✓ Foundation Drain Disconnection By-Law
- ✓ Updating the City's Development Standards to reflect a new flood mitigation criteria.
 - ✓ Revise a new sewer design criteria and mechanisms to control excess inflow.
 - ✓ Developers must demonstrate that new builds will not impact downstream areas.
 - ✓ Mandatory sewage ejector pumps for new development.
 - ✓ Develop Standards for the implementation of LIDs.
- ✓ Enhanced Educational Program
 - ✓ Homeowner and Contractor Information Sessions.
 - ✓ Develop and Distribute Education Materials and Guidelines.
 - ✓ Continue Project Website: Weatheringthestorm.ca.
- ✓ Implementing Low Impact Development (LIDs) measures, such as:
 - ✓ Exfiltration trenches (Example: Matthew Brady Construction).
 - ✓ Bioswales, Rain Gardens and Stormwater Retention Features.
 - ✓ Permeable Pavements (Example: Tranby Park Parking Lot).
- ✓ Installing rain catchers on manholes in high priority areas and eventually all manholes.
- ✓ Placement of Backflow Prevention Devices, to:
 - ✓ Protect the City's Sewer System from high river levels.
 - ✓ Place at storm and sanitary sewer system interconnections.

Appendix C



Manhole Rain Catcher

Installing rain catchers city-wide will reduce wet weather volume entering sanitary system up to 5% under a 1:100 year storm (85 mm rain event).



Areas Recommended for Immediate Rain Catcher Installation

Source Control: Private Property Improvements

In order to meet the level of service and to mitigate the risks of flooding property owners will need to take an active role to mitigate their property's strain on the municipal system.

Basement Flooding Solution

- ✓ Foundation Drain Disconnection
- ✓ Correct Improper Connections
- ✓ Backflow Prevention Valves

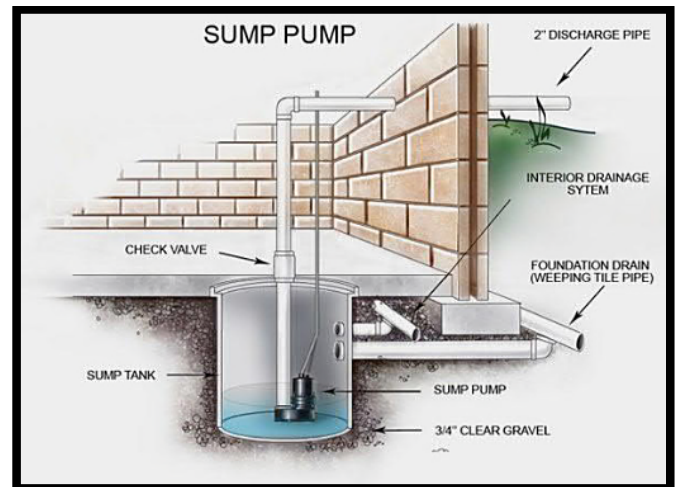
Surface Flooding Solution

- ✓ Downspout Disconnection
- ✓ Improve Lot Grading
- ✓ Low Impact Development (LID) measures, such as:
 - ✓ Rain Barrels and Rain Gardens
 - ✓ Seal window wells
 - ✓ Permeable pavements

These measures are key components of the overall recommended solution strategy. The City will need to partner with property owners to meet flood reduction goals.

Appendix E

Private property measures and property owner cooperation are an integral part of the comprehensive recommended solutions. Foundation drain disconnection and downspout disconnection will have a benefit to the City's system if implemented City-wide.



Is it recommended that the City move forward with the following:

- Implement necessary By-Law to provide the framework for a City Wide policy.
- Coordinate with neighbouring municipalities to implement source control measures (Town of Tecumseh and Town of LaSalle).
- Complete Pilot Projects, whereby the City shall implement this bylaw in an isolated area, which will be monitored and assessed to confirm the benefit of these measures.
- Implement a subsidy program.
- Develop a program to inspect and enforce compliance with the new by-law.
- Develop an Approved Contractor List for residents.

Sewer System Conveyance and Storage Improvements

Basement Flooding Solutions

- ✓ Enhanced sewer separation strategy for combined sewer areas (Downtown/Central Area and Fontainebleau Area).
- ✓ Construction of large sanitary trunk sewers to provide underground storage and improve flow conveyance:
 - 47 km of sanitary sewer upgrades in East Windsor area.
 - 8 km of sanitary sewer upgrades in South Windsor area.

Appendix E and F

Surface Flooding Solutions

- ✓ Large storm trunk sewers to provide underground storage and improve flow conveyance:
 - 40 km in East Windsor area and 9 km in South Windsor area.
 - 17 km of trunk storm sewer in Central Windsor area.
- ✓ 3 New and 4 Upgraded stormwater management (SWM) ponds:
 - Little River Golf Course New SWM Pond.
 - Dougall Ave. and Howard Ave. SWM Ponds.
 - Modifications to ponds serving Southwood Lakes
 - Increase size of the Central Ave. SWM Pond.
- ✓ Underground storage systems under parks, parking lots, and commercial properties.
- ✓ Construction of Low impact development (LID) measures:
 - Tranby Park Permeable Parking Lot, Matthew Brady Exfiltration Trenches.

Downstream Outlet Capacity Improvements

Basement Flooding Solutions

- ✓ Little River Pollution Control Plant:
 - Future plant expansion to provide service for population growth and to provide some wet weather treatment capacity.
 - In the interim, improve the existing bypass outlet at the treatment plant (Pontiac Pumping Station improvements).
- ✓ Lou Romano Water Reclamation Plant:
 - Construct a Retention Treatment Basin Facility and Sandwich Street Combined Relief Trunk Sewer. (Combined Sewer Overflow Control in the Riverfront Area, West of Caron Avenue, Class EA).

Surface Flooding Solutions

- ✓ Improved or construct a new storm sewer outlets to the Detroit River.
 - Detroit St., Bruce Ave., Cameron St., Albert Rd., Marentette Ave.
- ✓ New or improved stormwater pumping station (PS) capacities including emergency back-up power.
 - New St. Rose Ave. PS (St. Rose Park) – Improved outlet capacity and provide flood relief to drainage area.
 - Improve St. Paul PS – Pumping Station Expansion to provide relief to drainage area.
 - East Marsh PS – Maintain current capacity for a reduced drainage area.
 - Improve Ford Blvd. PS (Reaume Park) – Upsize pumps to improve resiliency of the drainage area.
 - Improve Drouillard PS (Cadillac Park) – Replace existing pumping station with a new pumping station to improve flooding along Drouillard Rd.
 - Improve Lakeview PS (South Rendezvous Park) - Replace existing pumping station with a new pumping station to improve the Blue Heron Pond outlet.
 - New Pump Station at Chappell Ave. – Required to drain the storm system after rain events.

Appendix E and F

Coastal Flood Protection

The purpose of Coastal Flood Protection:

- ✓ Protect in-land areas from high lake/river levels.
- ✓ Protect low lying residents, who live North of Riverside Dr., from overland surface flooding on Riverside Dr.
- ✓ Mitigate inflow of lake/river water into the municipal storm sewer system.
- ✓ Utilize existing private property grades to meet minimum protection levels.
- ✓ Prevent backflow of high lake levels into the sanitary and storm sewers systems.

Appendix E and F



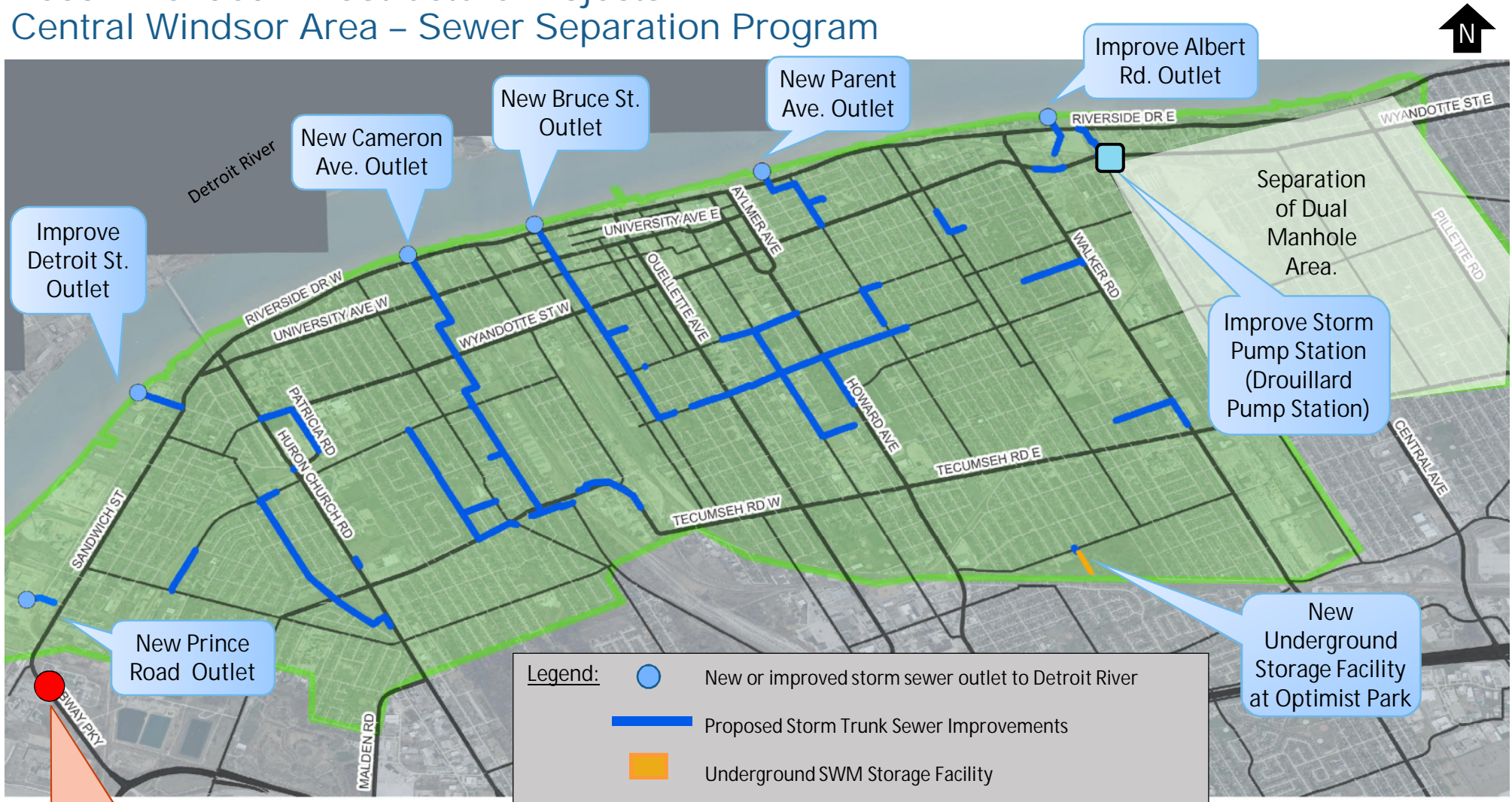
The recommended landform barrier will be an earth berm built to an elevation of 176.50, located along the North or South boulevard of Riverside Drive East. Construction of the berm will require:

- Acquisition of property or an easement along the Riverside Drive East right of way.
- Where properties are above the established protection elevation, the earth berm will not be required. The City will work with these property owners to incorporate lot elevation as part of the property's legal status.
- Maintenance of acceptable driveway grades for vehicle and barrier free access.
- Storm sewers and catch basins to capture local drainage north of the berm.
- In Area 1: Riverside Drive East, Ford Blvd. to St. Rose. Ave., berm construction will be integrated into the reconstruction of Riverside Drive (Vista Phase 2A Construction Limits).
- In Area 2: Riverside Drive East, St. Rose Ave. to Riverdale Ave., much of the berm construction has been completed as part of the recent Riverside Vista Phase 1 construction.
- In Area 3: East Riverside Area, Riverdale Ave. to East City limits (Ganatchio Trail), construction will require infill where the existing berm or intersection streets do not meet minimum protection grades.

Two flood protection elevation scenarios have been elevated based on the existing regulatory flood protection levels and recent climate change projections.

Based on the environmental assessment, the barrier elevation of 176.50 was found to be preferred. The landform barrier elevation of 176.80 would have significant impacts on private property would require extensive surface area to construct.

Recommended Infrastructure Projects Central Windsor Area – Sewer Separation Program

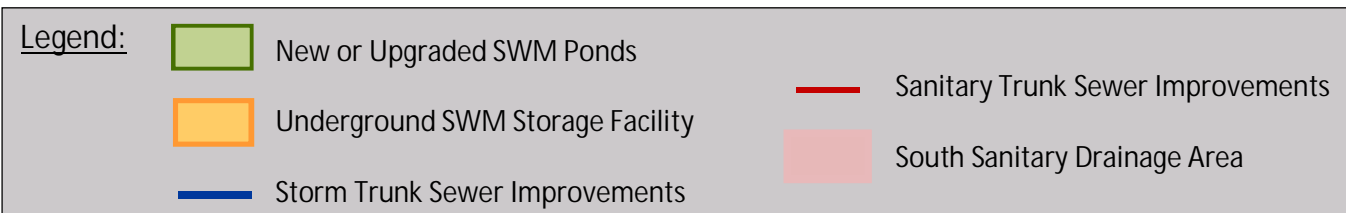
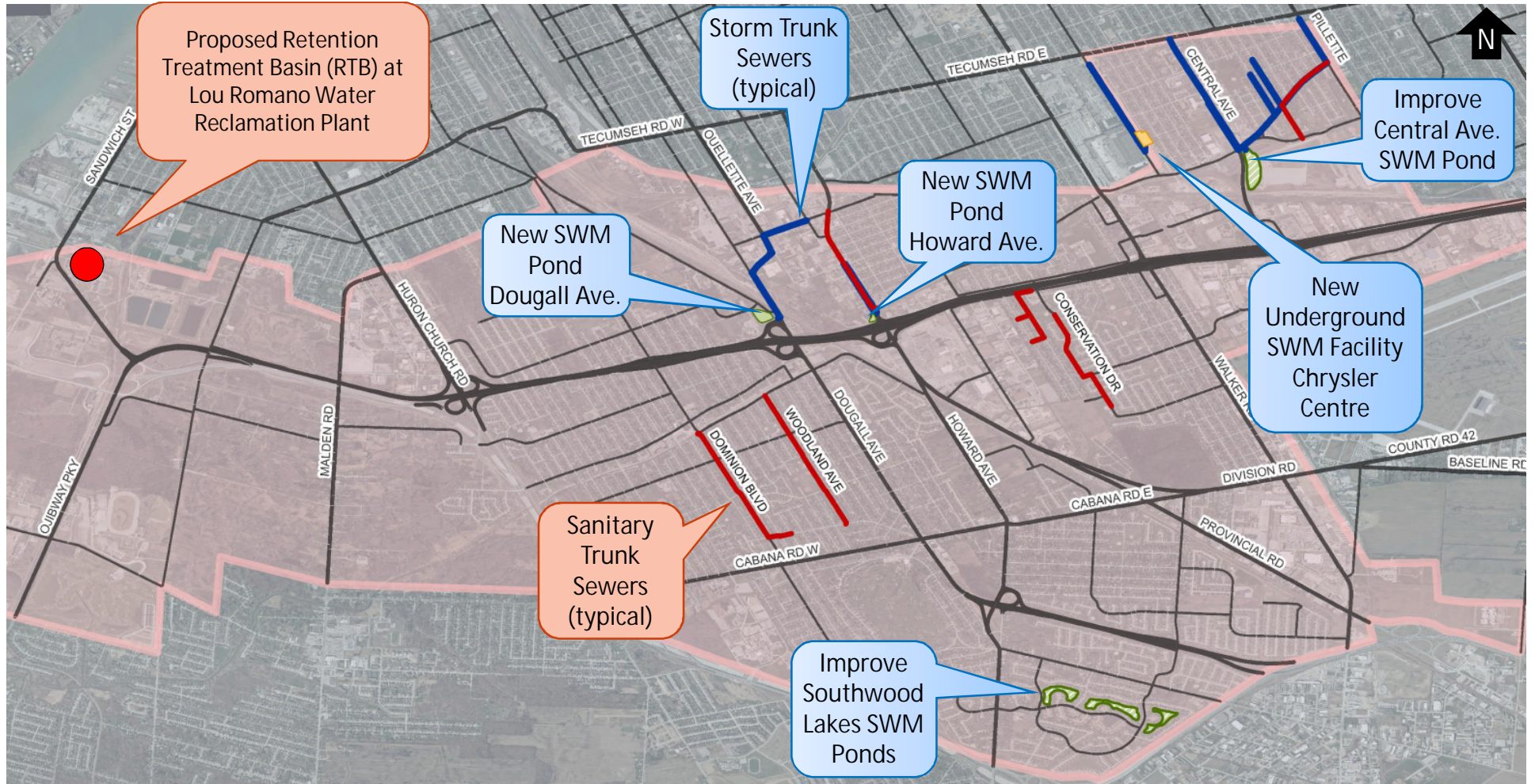


Proposed Retention Treatment Basin (RTB) at Lou Romano Water Reclamation Plant

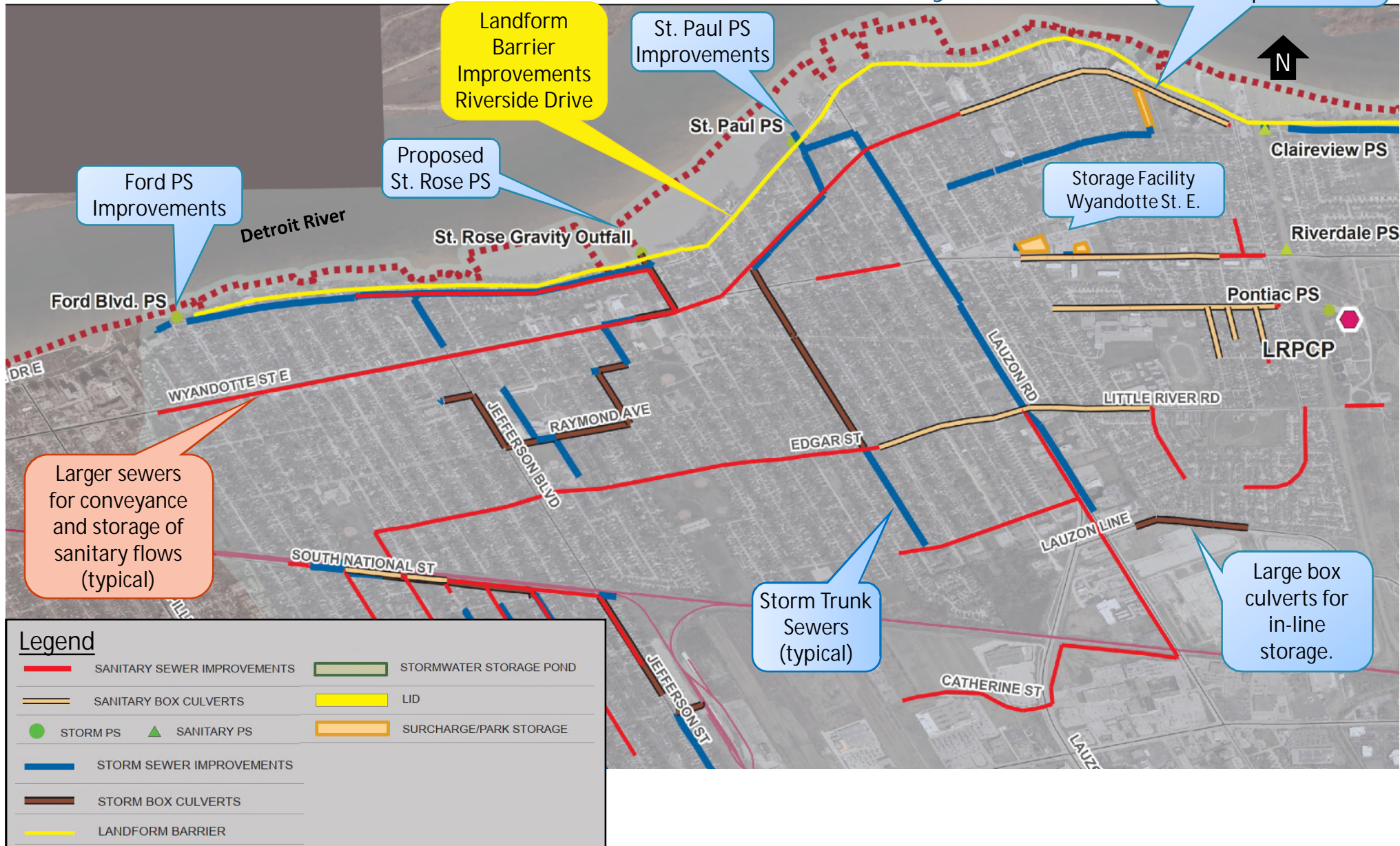
These improvements include the construction of 4 new storm sewer outlets and improvement to 2 existing outlets. This solution requires the direction of both municipal and private property drainage, such as drainage from roofs, front and rear yards and alleys, to the storm sewer system and out of the combined sewage system.

In addition, a Retention Treatment Basin (RTB) is proposed at the Lou Romano water reclamation plant, which will reduce the frequency of CSOs and better manage wet weather inflow at the treatment plant.

Recommended Infrastructure Projects South Windsor Area



Recommended Infrastructure Projects East Windsor Area, West of Little River, North of VIA Railway



Larger sewers for conveyance and storage of sanitary flows (typical)

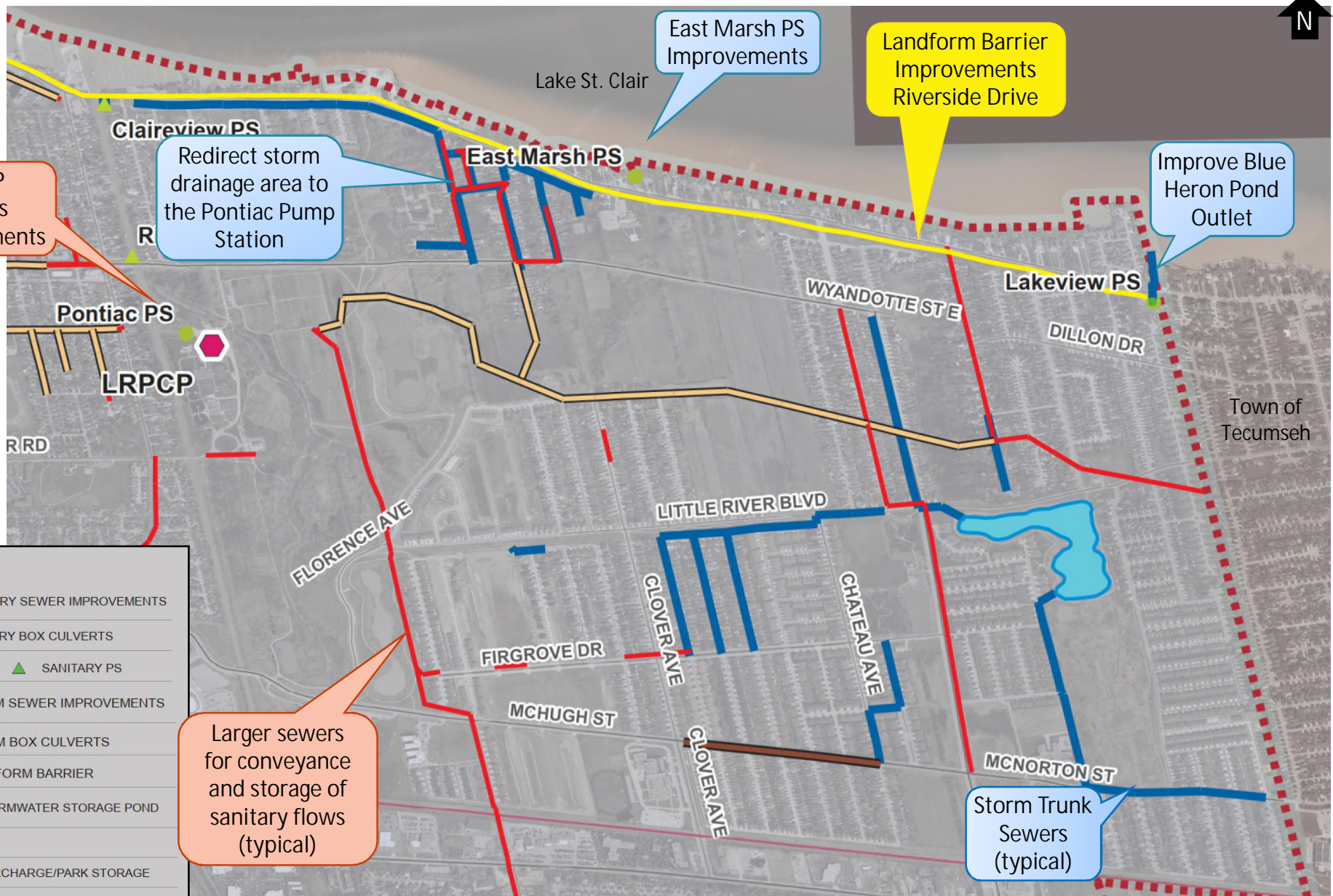
Storm Trunk Sewers (typical)

Large box culverts for in-line storage.

Underground Stormwater Storage Brumpton Park



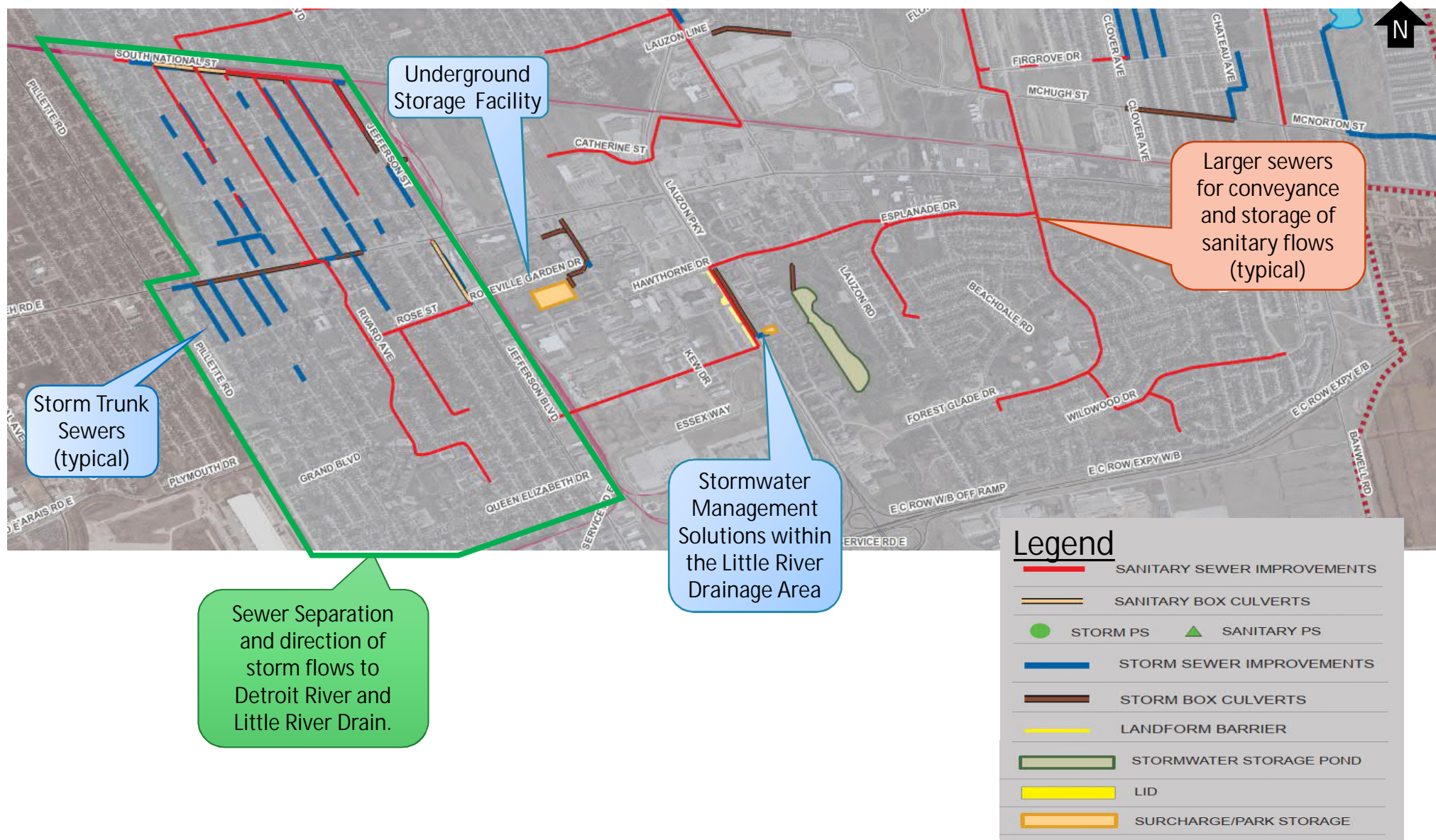
Recommended Infrastructure Projects East Windsor Area – East of Little River, North of Via Railway



Legend

	SANITARY SEWER IMPROVEMENTS
	SANITARY BOX CULVERTS
	STORM PS
	SANITARY PS
	STORM SEWER IMPROVEMENTS
	STORM BOX CULVERTS
	LANDFORM BARRIER
	STORMWATER STORAGE POND
	LID
	SURCHARGE/PARK STORAGE

Recommended Infrastructure Projects East Windsor Area - South of VIA RAIL



Estimated Construction Costs

Source Control Measures and Private and Public Improvements

Solution Component	Sub-Total Costs
Private Property Programs:	
City-wide Foundation Drain Program	\$950M
City-wide Downspout Disconnection Program	\$50M
Public Infrastructure Improvements	
Sanitary Manhole Sealing Program	\$0.5M
Sewer Backflow Prevention Device Program Allowance	\$8M
Sub-Total	\$1,009M

Sewer System and Downstream Improvements

Solution Component	Sub-Total Costs
Conveyance and Storage	
Sanitary System Improvements	\$3,040M
Storm System Improvements	\$883M
Coastal Flood Protection	
Barrier Landform and Sewer Backflow Protection	\$9M
Outlet Capacity	
LRWRP - Retention Treatment Basin	\$70M
LRPCP - Improved Bypass	\$5M
New or Upgraded Stormwater Pumping Stations	\$40M
Grand Total	\$4,047M

Appendix F

Costs Are in Million of Dollars.

Total Summary of Construction Costs

Recommended Solutions	Central Windsor	South Windsor	East Windsor	Total Costs
Grand Total	\$3,475M	\$429M	\$1,158M2	\$5,056M

Improvements require significant investment however it is important to recognize these improvements are meant to be implemented over the next 50+ years.

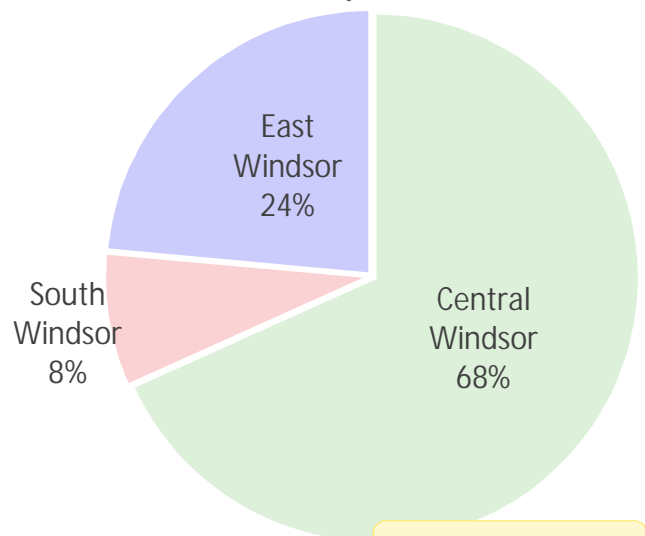
Improvements will be integrated into the City’s Capital Works program and asset management plan.

As new infrastructure is implemented necessary operation and maintenance costs should be incorporated into the City’s Annual Capital Works budget.

Estimated Construction Cost Assumptions

- These high level budgetary costs shall be used for capital works planning however they are not based on detailed design of proposed infrastructure.
- Cost estimates are based on 2020 construction prices and exclude applicable taxes.
- Construction cost estimates are Class D Estimates and a +30% contingency has been added.
- An allowance of 20% has been included for engineering including design and site construction observation.
- Landform barrier estimates assume that the flood protection will be provided with an earth berm only. Flood protection measure estimates do not include costs for walls, partial walls or mechanical gate structures.
- Construction costs includes full road reconstruction of ensure City.
- Storm sewer improvements includes an allowance to implement Low Impact Development (LID) measures. The type of LID suitable for each project will need to be evaluated on a site by site basis.
- Construction costs exclude
 - Utility relocation.
 - Land acquisition, land appraisal, legal costs, and expropriation costs.
 - Additional studies or additional site environmental assessments.
 - Demolition of existing buildings.
 - Fees associated with agency reviews, permits, and approvals.
 - Costs for annualized maintenance of identified improvements has not been included in the construction cost estimates.
 - Phasing and staging works have not been included.

Costs per Area



Appendix F

Implementation

To assist City administration in planning and scheduling recommended solutions, projects have been assigned a priority level based on various criteria. Projects that are already funded or are required to facilitate source control or private property improvements are considered immediate. The remaining projects were ranked (High, Medium and Low), using a ranking system developed to score projects based on the below criteria.

- Condition of Existing Sewers
- Flood Reduction Effectiveness
- Emergency Access
- Cost Efficiency
- Reduction of Combined Sewer Overflows (CSOs)
- Access to Vulnerable Areas

It is recommended that the City continuously review and re-evaluate the prioritization list, especially as it relates to future climate change projections, and how the list overlaps with other road/capital projects or maintenance programs.

It is important to note that public infrastructure improvements are only one part of the comprehensive solution to mitigate flooding and that the implementation of private property source control and protection measures are critical in achieving the established level of service. Continuous sewer system monitoring and modelling analysis will be required to confirm that the anticipated benefit is achieved.

As projects and source control measures are implemented, the risk of flooding will be reduced.

Upcoming Programs and Construction Projects (0-8 years)

- ✓ Completion of various ongoing programs (Inflow and Infiltration reduction program, basement subsidy programs, etc.).
- ✓ Sealing manhole covers in low lying areas.
- ✓ Determining how to fund stormwater projects (Stormwater Financing Study).
- ✓ Prepare and facilitate an Enhanced Educational Program to educate the community on measures residents can do in their home.
- ✓ Updating the City's Development Standards Manual.
- ✓ Implementing Pilot Projects, Sewer Monitoring and Evaluation of Solutions to test the benefit of recommended source control measures.
- ✓ Storm Sewer System Improvement in Riverside Area funded by Disaster Mitigation and Adaptation Fund (DMAF), see below.

Disaster Mitigation and Adaptation Fund - Round 1

- Little River Pollution Control Plant Overflow Improvements.
- St. Paul and East Marsh Pumping Station Improvements.
- Brumpton Park Stormwater Management Improvements.
- Riverside Vista Reconstruction -Phase 2A: Large storm trunk sewer and landform barrier (2020-2024).
- Storm sewer improvements along Belleperche Place, Cedarview St., Matthew Brady Blvd., Belle Isle View Blvd., Eastlawn Ave. and within the East Marsh Drainage Areas.

The following projects have also been identified as 'immediate' because they must be constructed in conjunction with the DMAF funded projects listed above.

- St. Rose Ave. and Ford Blvd. Pumping Station Improvements.
- St. Rose Ave. Storm and Sanitary Trunk Sewers.
- Sanitary Trunk Sewer along Riverside Vista Phase 2A project limits.

Appendix F

Basement Flooding – Project Prioritization Central/Combined Area

Priority	Trunk Storm Sewer Improvement and Enhanced Sewer Separation	
Immediate Priority (0 – 10 Years)	Lou Romano Water Reclamation Plant Retention Treatment Basin and Sandwich St. Sanitary Sewer Prince Road Storm Trunk Sewer Outlet and Pump Station at Chappelle Ave.	
High	Cameron Ave. Trunk Sewers	Wellington Ave. Trunk Sewers
Medium	McDougall Ave. Trunk Sewers	Bruce St. Outlet and Trunk Sewers
	Lincoln Ave. Trunk Sewers	Detroit St. Outlet and Trunk Sewers
	Parent Ave. Outlet and Trunk Sewers	
Low	Huron Church Trunk Sewers Trunk Sewers	Askin Ave. Sewer Separation
	Albert Rd. Outlet and Trunk Sewers	Felix Ave. Trunk Sewers
	Dual Manhole Area Separation	Prince Road Sewer Separation

East and South Area

Priority	Basement Flooding Solutions
Immediate Priority Projects (0 – 10 Years)	<ul style="list-style-type: none"> Little River Pollution Control Plant Overflow Improvements Riverside Drive Sanitary Trunk Sewer - Ford Blvd. To St. Rose Blvd. Sanitary Sewer Improvements along Riverside Drive E. and St. Rose Ave.
High	East Windsor <u>Area 1</u> : Martinique Inlet Sanitary Sewer Infrastructure Riverside Dr. E., St. Rose Ave., Ganatchio Trail, Clairview Ave.
Medium	South Windsor Area: Sanitary Sewer Infrastructure (Howard Ave., Dominion Blvd., Roselawn Dr., Woodland Ave., Parkwood Ave., Sydney Ave., Malcolm Ave., Foster Ave., Calderwood Ave., EC Row Ave. E, Conservation Dr., Grand Marais Rd. E., Tourangeau Rd.)
	East Windsor <u>Area 2</u> : Wyandotte Inlet Sanitary Sewer Infrastructure (Wyandotte St. E., Carling Cres.)
	East Windsor <u>Area 4</u> : Edgar Inlet Sanitary Sewer Infrastructure (Edgar St., Tranby Ave., Little River Rd., Little River Acres Dr., Catherine St., Lauzon Pkwy., Lauzon Rd., South National St., Jefferson St., Balfour Blvd., Glendale Ave., Ferndale Ave., Ford Blvd., Tecumseh Rd. E., Rivard Ave., Grandview St., Courtland Cres., Coronation School Yard/Pikes Park/WECHC, Rose St., Jos St. Louis Ave.)
Low	East Windsor <u>Area 3</u> : Jerome Inlet Sanitary Sewer Infrastructure (Jerome St., Westchester Dr., Rholaine Dr., Greendale Dr., Thompson Park)
	Sanitary Sewer Infrastructure East <u>Area 5</u> : East/South Inlet via Aspenshore and Beverly Glen (East Riverside, Forest Glade and Sandwich South)

Appendix F

Surface Flooding - Project Prioritization

Priority	Road Surface Flooding Solutions		
Immediate Projects (0-10 Years)	Dorchester Rd.	Ellis St. and Giles Blvd. -McDougall Ave. to Howard Ave.	
	Totten St.	Prince Rd. Storm Outlet at Chappell Ave.	
	Felix Ave.	Lauzon Parkway	
High	Dougall Ave. at the CN Rail Crossing and Eugenie St. E.	Howard Ave. at EC Row Expressway	
		Tecumseh Rd. W. at Crawford Ave.	
Medium	McNorton St., East of Banwell Ave.	Banwell Ave.	Lauzon Rd.
	Roseville School and Rose-Ville Garden Dr.	Jefferson Blvd. and Raymond Ave.	Jefferson Blvd. and South National St.
	Giles Blvd./McDougall Ave./Erie St.	Huron Church Rd.	Ypres Ave.
	Mc Hugh St., East of Lauzon Rd.	Parent Ave.	
Low	Chrysler Centre	College Ave.	Patricia Rd.
	Mc Hugh St., West of Banwell Ave.	Drouillard Rd.	Lincoln Rd.
	Wyandotte St. East at Watson Ave.	Walker Rd.	Ontario St.

Priority	Regional Surface Flooding Solutions		
Immediate	DMAF Round 1 Projects and related projects (St. Rose Pump Station, St. Rose Sewer, etc.)		
High	Storm Problem Areas 1 and 2 – Riverside - Ford Blvd to Lauzon Road		
	Storm Problem Area 3 and 4 - Fontainebleau and Lauzon Parkway		
Medium	Storm Problem Area 7 - Central/Pillette/Grand Marais		
	Storm Problem Area 8 - Southwood Lakes		
Low	Storm Problem Area 5 - Blue Heron Pond		
	Storm Problem Area 6 - Pontiac and East Marsh Drainage Area		

Priority	Coastal Flood Protection (Landform Barrier/Backflow Prevention Solutions)		
Immediate	Area 1: Riverside Dr. E., Ford Blvd. to St. Rose. Ave. (Riverside Vista Ph. 2A).		
High	Area 2: Riverside Dr. E., St. Rose Ave. to Riverdale Ave.		
	Area 3: East Riverside Area, Riverdale Ave. - East City limits (Ganatchio Trail)		

Appendix F

Class EA Project Schedules

This master plan will satisfy the EA requirements for Schedule B projects. The following is a general description of Schedule B and C projects that have been identified among the preferred solutions:

Schedule B Projects:

- New and Improved Stormwater Pumping Stations;
- New Stormwater Management Ponds and Underground Storage Facilities on Private Property;
- New Low Impact Development (LID) Measures on Private Property;
- New Sanitary/Storm Trunk Sewers and Box Culverts Requiring Additional Property;
- New Storm Sewers including Upgrades to Existing Outlets to the Detroit River; and
- Barrier Landform Improvements on Riverside Drive that Require Additional Property.

Schedule C Projects:

- New Stormwater Pumping Stations;
- New Trunk Storm Sewers that require new outlets to the Detroit River;
- Improvements to the Little River Pollution Control Plant wastewater treatment facility, including:
 - Improvements to the existing bypass at the Pontiac pumping station;
 - Interim measures to optimize the operation of the Little River Pollution Control Plant for existing wet weather flows; and
 - Future treatment plant expansion to meet the ultimate development needs.

The project schedules for each recommended solution are noted in the Master Plan and will be identified in the Notice of Completion. Prior to implementing any Schedule C project, additional consultation and investigation, which will fulfill Phases 3 and 4 of the Municipal Cass EA, will need to be completed and provided for public review.

During the Review Period (45 Days), any person who has significant concerns about the project may provide written comments to our project team or the Ministry of Environment Conservation and Parks (MECP). Requests should specify what kind of order is being requested, how an order may prevent, mitigate or remedy potential adverse impacts, and any information in support of the statements in the request.

Conclusions

- ✓ Recommendations to mitigate risk of basement, surface and coastal flooding have been developed based on the established level of service.
- ✓ The total cost of recommendation solutions will be \$5.0 Billion Dollars, which will be integrated into the City's capitals works program.
- ✓ The ultimate solution recommendations will need to be integrated into the City's asset management program.
- ✓ City will need to enhance their current operation and maintenance programs for new and larger infrastructure. Flooding solutions are based on a partnering approach between private property owners and the City.
- ✓ Flooding solutions will require an extended period of time to be fully implemented due to their scope and costs.
- ✓ Flooding solutions will reduce, but not completely eliminate flooding risks.

Master Plan
Section 8.0

Notice of Completion

Sewer and Coastal Flood Protection Master Plan

Over the past few years, thousands of Windsor residents were impacted by flooding both in and around their homes. In fall 2017, the Mayor released an 8-Point Plan aimed to assist the Windsor community to address flooding issues which included completing the City's Sewer and Coastal Flood Protection Master Plan. The City of Windsor has now completed this plan which includes recommendations to mitigate flood risks through the City. The recommended flood mitigation approach requires a partnership between private property owners and the City, as it includes private property improvements to reduce flood risk and to mitigate impacts to the municipal system.

This study was carried out over 3 years and has been conducted in accordance with the Master Plan Approach No. 2 of the Municipal Class Environmental Assessment (EA) (Municipal Engineers Association, 2015) process. Work fulfilled Class EA requirements for Schedule B projects and completed Phases 1 and 2 of the process for Schedule C projects. Subject to comments received as a result of this Notice, the City intends to proceed with design and construction of the Schedule B projects.

A list of the Schedule B projects and their location, and the Sewer and Coastal Flood Protection Master Plan report can be obtained by visiting the project web site: weatheringthestorm.ca

Hard copies of the Master Plan will be available for review upon request between **December 2, 2020** and **January 22, 2021 by calling 311**. Interested persons may provide written comments to our project team by **January 25, 2021**. All comments and concerns should be sent directly to:

Anna M. Godo, P. Eng., Senior Engineer, City of Windsor

350 City Hall Square West, 3rd Floor, Windsor, Ontario,
N9A 6S1

Email: agodo@citywindsor.ca

Flavio Forest, P.Eng, Project Manager, Dillon Consulting Ltd.

3200 Deziel Drive, Suite 608
Windsor, ON N8W 5K8

Email: fforest@dillon.ca

In addition, a request may be made to the Ministry of the Environment, Conservation and Parks for an order requiring a higher level of study (i.e. requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g. require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the ministry.

Requests should specify what kind of order is being requested (request for additional conditions or a request for an individual/comprehensive environmental assessment), how an order may prevent, mitigate or remedy those potential adverse impacts, and any information in support of the statements in the request. This will ensure that the ministry is able to efficiently begin reviewing the request. The request should be sent in writing or by email to:

Minister of Environment, Conservation and Parks

777 Bay Street, 5th Floor

Toronto ON M7A 2J3

minister.mecp@ontario.ca

Director, Environmental Assessment Branch

Ministry of Environment, Conservation and Parks

135 St. Clair Ave. W, 1st Floor

Toronto ON, M4V 1P5

EABDirector@ontario.ca

Requests should also be sent to the City of Windsor (see contact above) by mail or by e-mail.

All comments and information received on this study are being collected to assist the City of Windsor in completing the Sewer Master Plan. Information is collected in accordance with the Municipal Freedom of Information and Protection of Privacy Act and with the exception of personal information, all information provided will become part of the public record. This notice is also available on the City's website at:

<https://www.citywindsor.ca/residents/Construction/Environmental-Assessments-Master-Plans>, under 'Environmental Assessments and Master Plans'.



Subject: A By-Law for the Repair and Improvements to the Cahill Drain - Ward 1

Reference:

Date to Council: November 23, 2020
Author: Joseph Bressan
Engineer I
(519) 255-6100 ext. 6890
jbressan@citywindsor.ca
Public Works - Operations
Design and Development
Report Date: November 3, 2020
Clerk's File #: SW2020

To: Mayor and Members of City Council

Recommendation:

THAT Council **GIVE 3rd READING** to Provisional By-law 130-2019 which adopted the Drainage Report for the Repair and Improvement to the Cahill Drain in accordance with Section 58 of the Drainage Act, and as amended by Council Resolution CR136/2020, by **PASSING** By-law ____-2020.

Executive Summary:

N/A

Background:

The Upper Part of the Cahill Drain is an open municipal drain located on the north side of Cousineau Road between Howard Avenue and the Herb Gray Parkway, in the Geographic Township of Sandwich West. The Cahill Drain continues from the Herb Gray Parkway, in a northwest and westerly direction, through the municipal boundary of the Town of LaSalle and outlets into Turkey Creek.

Pursuant to the Roster Method in accordance with section 113 of Purchasing *By-law 93-2012*, Rood Engineering Inc. was appointed as the Drainage Engineer to make an examination of the Cahill Drain. Rood Engineering prepared a Drainage Report to make recommendations for any repairs and improvements to the drain. This was done in accordance with Section 78 of Ontario's *Drainage Act, R.S.O. 1990, Chapter D.17*.

At the City Council Meeting of December 2, 2019, Council considered the Drainage Report for the Repair and Improvement to the drain. Council Resolution *CR613/2019* approved the first and second readings of Provisional By-law 130-2019, and the Drainage Report was adopted in accordance with Section 45 of the *Drainage Act*.

City Council's landowner assessment policy for drainage works is through Council Resolutions *CR388/2007* and *CR64/2015*. Only a portion of the cost inherent in rebuilding from private structures is assessed to property owners; whereas, the general rate funds all remaining costs of drain maintenance rather than apportioning to the landowners themselves. The policy as consolidated by both resolutions is as follows:

- I. *City of Windsor CONTINUE to use the general tax levy or the sewer surcharge levy, depending on location for drain maintenance costs in accordance with the City of Windsor Act, 1968:*
 - a. *with the exception of private access structures and "special benefit" works benefiting individual properties;, which are to be assessed to the benefiting property owners as per a completed engineer's report and assessment schedule as a "special benefit" in accordance with s. 24 of the Drainage Act;*
 - b. *Municipal Drains, excluding access structures will be maintained at the general tax rate or sewer surcharge, depending on location, provided the landowners allow soil from the drains to be spread on their lands, as provided for in the Engineer's Report.*
- II. *That Council APPROVE provision of payment options for property owners, for payment of assessments and special charges as identified in a Drainage Report under the Drainage Act and adopted by by-law, as follows:*

Property owners are offered the option to pay the assessments and special charges including HST in a single payment within 30 days of the invoice, or added to property taxes in 10 (ten) equal instalments with interest calculated at prime + 1% per annum established as of the date the drainage cost is determined by the City Treasurer or designate.

Discussion:

In accordance with Section 46 of the *Drainage Act*, copies of the Provisional By-law and Notice of the Court of Revision meeting were sent to all affected landowners listed in the Schedule of Assessment.

The notice informed each landowner of their right to appeal their drainage assessment and/or allowances to a Court of Revision, by filing notice with the City Clerk no later than 10 days prior to the first sitting of the Court of Revision.

Three appellants filed notice with the City Clerk to appeal their drainage assessment. At the Court of Revision held on January 7, 2020, all appellants were present to substantiate their reasons for appealing. Their main reasons were:

- They, and other property owners, cannot afford their assessment for the bridge improvements and repairs that was determined in the Engineer's Drainage Report.
- Some property owners have to pay a small amount while others have to pay a more significant amount for comparable work.
- There is an unfair assessment, as indicated in the Engineer's drainage report, given to some of the property owners that abut the drain.
- The term to pay for the bridge improvements on their municipal taxes is punitive and ought to be increased 5 to 10 years above the current 10 year practice.

In response to the reasons mentioned above, Mr. Gerard Rood, of Rood Engineering, explained that the establishment of cost sharing was completed in accordance with practices that are used across the province for assessing bridge costs under drainage works on municipal drains pursuant to the Drainage Act.

The size of the bridge and corresponding assessment amount is dependent on where the bridge is located along the municipal drain. A bridge located in the mid-point along the length of the drain would have 50% of the cost sharing assessed to the owner and 50% to the upstream lands and road. A bridge is typically of a smaller size when it is located upstream, leading to a lesser costs. The cost-sharing ratio reflects that the owners have less cost to pay. A bridge located further downstream, normally larger in size because of the increased flow, would be assessed at a lower rate because there are more upstream lands, properties, and roads that rely on the bridge and would contribute to the necessary cost of the bridge.

The bridge replacement is also influenced by additional work warranted by the location or the drainage works. Design of the bridge is affected by the depth and width of the drain, the amount of materials that are required, and accessory items such as railings and pavement.

In their decision, the Court of Revision recommended that Administration review financial options to allow for an extension of 5 to 10 years for the cost of drainage repairs to be added to the property owner's municipal taxes. This was later brought to City Council for decision as noted below.

A property owner filed an appeal of the engineer's report to the Agriculture, Food and Rural Affairs Tribunal (Drainage Tribunal) as allowed for under section 54 of the Drainage Act. Due to the COVID-19 pandemic, the hearing of appeal was delayed.

Council Resolution CR136/2020 was adopted at the April 27, 2020 meeting of City Council, and reads:

*That the report of the City Engineer dated February 6, 2020 entitled "Response to CQ3-2020 – Extended Payment Terms for Drainage/Local Improvement Assessments" **BE RECEIVED**; and further,*

*That a 20-year payment option for property owners to repay special charges for drainage and local improvements **BE IMPLEMENTED** at interest rates deemed appropriate by administration.*

The 10 year interest rate for the costs of the work is 2.46% and the 20 year interest rate is 6.09%. The property owners have a right to select either a single payment or the special equal annual rate sufficient to pay the principal and interest over the period of ten or twenty years.

Ultimately, the Drainage Tribunal was held virtually on September 30, 2020. The appellant made mention that they were not aware of the decision of Council and advised all parties that they wished to withdraw their appeal. The hearing concluded on official withdrawal of the appeal.

Following both the Court of Revision and the Drainage Tribunal, no changes or amendments were made to the report as all appeals filed had been resolved. The By-law may now be passed by City Council in giving the third and final reading of the Provisional By-law.

Risk Analysis:

The risk of not undertaking this drain project includes the potential for flooding damages to adjacent lands, which could present a financial liability against the City.

Climate Change Risks

Climate Change Mitigation:

N/A

Client Change Adaption:

N/A

Financial Matters:

Expenses associated with the repair and improvements to the Cahill Drain will be assessed to the Corporation of the City of Windsor in accordance with CR388/2007 and CR64/2015, with the exception of a portion of the private structure work deemed to be a Special Benefit as defined by the Drainage Act and identified by the consulting engineer. All costs are outlined in the attached drainage report.

The total estimated cost to undertake this project is \$614,000.00 (including non-recoverable HST). The net cost to the City of Windsor is estimated to be \$432,341.00 [estimated cost of \$614,000.00 (less) recoveries from Windsor property owners of \$181,659.00]. Funding for this project will come from future years within ECP-004-08 Municipal Drains Capital Rehabilitation Program, which will be further addressed in a future Council Report when Administration tenders the work.

Consultations:

Carrie McCrindle – Financial Planning Administrator
 Wira Vendrasco – Deputy City Solicitor
 Andrew Dowie – Engineer III / Drainage Superintendent

Conclusion:

Administration recommends that City Council give 3rd reading to Provisional By-law 130-2019, which provisionally adopted the Drainage Report entitled, “Cahill Drain – Upper Part”, dated September 10, 2019 in accordance with Section 58 of the *Drainage Act*.

Planning Act Matters:

N/A

Approvals:

Name	Title
Fahd Mikhael	Manager of Design and Development
France Isabelle-Tunks	Senior Manager of Engineering / Deputy City Engineer
Mark Winterton	City Engineer and Corporate Leader Environmental Protection and Infrastructure Services
Shelby Askin Hager	City Solicitor and Corporate Leader Economic Development and Public Safety
Joe Mancina	Chief Financial Officer/City Treasurer and Corporate Leader Finance and Technology
Onorio Colucci	Chief Administrative Officer

Notifications:

Name	Address	Email

Name	Address	Email
Rood Engineering Inc.	9 Nelson Street Leamington, ON N8H 1G6	gerard@roodengineering.ca

Appendices:

- 1 2019 Drainage Report (Rood Eng) - Pages 1 to 75
- 2 2019 Drainage Report (Rood Eng) - Pages 76 to 150

CAHILL DRAIN – UPPER PART

Geographic Township of Sandwich West

CITY OF WINDSOR



The City of Windsor
350 City Hall Square West
Windsor, Ontario N9A 6S1
519-255-2489

Rood Engineering Inc.

Consulting Engineers

9 Nelson Street

Leamington, Ontario N8H 1G6

519-322-1621

REI Project 2017D012

September 10th, 2019

TABLE OF CONTENTS
CAHILL DRAIN

REPORT

I. INTRODUCTION	1
II. BACKGROUND	1
III. PRELIMINARY EXAMINATION AND ON-SITE MEETINGS	3
IV. FIELD SURVEY AND INVESTIGATIONS	5
V. PIPES AND BRIDGES REVIEW	5
VI. THE DRAINAGE ACT	8
VII. FINDINGS AND RECOMMENDATIONS	9
VIII. ESTIMATE OF COST	10
IX. DRAWINGS AND SPECIFICATIONS	17
X. SCHEDULE OF ASSESSMENT	17
XI. FUTURE MAINTENANCE	18

SCHEDULE OF ASSESSMENT 21

SPECIFICATIONS

I. GENERAL SCOPE OF WORK	1
II. E.R.C.A. AND D.F.O. CONSIDERATIONS	1
III. M.N.R.F. & M.O.E.C.P. ENDANGERED SPECIES ACT CONSIDERATIONS	2
IV. ACCESS TO WORK	3
V. REMOVAL OF BRUSH, TREES AND RUBBISH	4
VI. FENCING	4
VII. DETAILS OF OPEN DRAIN WORK	5
VIII. DETAILS OF BRIDGE WORK	5

IX. CONCRETE BRIDGE INSTALLATION	6
X. REMOVALS	8
XI. PRECAST & CONCRETE FILLED JUTE BAG HEADWALLS	9
XII. BENCH MARKS	10
XIII. ANCILLARY WORK	10
XIV. TOPSOIL, SEED AND MULCH	11
XV. SPECIAL PROVISIONS FOR REPLACEMENT, REPAIR AND IMPROVMENTS	12
XVI. GENERAL CONDITIONS	14
<u>CITY OF WINDSOR GENERAL CONDITIONS</u>	1 to 48

APPENDICES

- APPENDIX REI-A - Standard E.R.C.A. and D.F.O. Mitigation Requirements
Measures to Avoid Causing Harm to Fish and Fish Habitat
SECTION II – Specifications for Fish Salvage
Standard D.F.O. Requirements for Bridges
- APPENDIX REI-B - Schedule C Mitigation Plan & Seasonal Timing Windows Chart
- APPENDIX REI-C - Standard Specifications for Access Bridge Construction including
Precast Concrete Block Headwalls
- APPENDIX REI-D - Open Air Burning – City of Windsor Fire Department
- APPENDIX REI-E - Cahill Drain Plans and Details

September 10th, 2019

Mayor and Municipal Council
The Corporation of the City of Windsor
350 City Hall Square West
Windsor, Ontario
N9A 6S1

Mayor Dilkens and Members of Council:

CAHILL DRAIN – UPPER PART
Former Geographic Twp. of Sandwich West
Project REI2017D012
City of Windsor, County of Essex

I. INTRODUCTION

In accordance with the instructions provided at your July 17th, 2017 meeting and received from the City by letter dated July 26th, 2017 from Steve Vlachodimos, your Deputy City Clerk/Senior Manager of Council Services, we have prepared the following report that provides for repair and improvements of the Cahill Drain – Upper Part, along with bridge repairs and improvements along the drain, together with ancillary work. The Cahill Drain – Upper Part comprises of an open municipal drain generally located on the north side of Cousineau Road between Howard Avenue and the Herb Gray Parkway, in the geographic township of Sandwich West, City of Windsor. The Cahill Drain continues on from the Herb Gray Parkway in a generally northwest and westerly direction, through the Municipal Boundary of the Town of LaSalle and the City of Windsor, until it outlets into the Turkey Creek in LaSalle. A plan showing the Cahill Drain - Upper Part, as well as the general location of the bridges along the drain, is included herein as part of the report.

Our appointment and the works relative to the repair and improvements to the Cahill Drain – Upper Part, proposed under this report, is in accordance with Section 78 of the “Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2010”. We have performed all of the necessary survey, investigations, etcetera, for the proposed repairs and improvements to the bridges and drain, and we report thereon as follows.

II. BACKGROUND

From our review of the information provided from the City’s drainage files we have established the following reports that we utilized as reference for carrying out this project:

- | | | | |
|----|--------------------|--|----------------------|
| 1) | January 20th, 2017 | Lennon Drain | Gerard Rood, P.Eng. |
| 2) | June 6th, 1997 | S.W.M. Study, Westbrook Estates
Subdivision | W.L. Knowles, P.Eng. |

Report -Cahill Drain – Upper Part
(Former Geographic Township of Sandwich West)
City of Windsor - REI2017D012

2019-09-10

- | | | | |
|----|--------------------|--|--------------------------|
| 3) | May 11th, 1992 | Cahill/Lennon Drainage System
S.W.M. Plan | W.L. Knowles, P.Eng. |
| 4) | December 7th, 1990 | Lennon/Cahill Master Drainage
Plan | Ken Chisholm, P.Eng. |
| 5) | July 26th, 1944 | Cahill Drain Report | C.G.R. Armstrong, P.Eng. |
| 6) | October 16th, 1896 | Cahill Drain Report | G.M. McPhillips, D.L.S. |

The 2017 report by Gerard Rood, P.Eng. provided for drain repairs and improvements to the Lennon Drain including drain cleaning, bridge repairs and improvements, drain widening and the installment of flow control structures in accordance with the AECOM study and plans, and the installment of buffer strips for erosion control measures. The report included the watershed boundary for the Lennon Drain which borders the north side of the Cahill Drain – Upper Part watershed boundary.

The 1997 report by W.L. Knowles, P.Eng. provided for stormwater management in the Westbrook Estates subdivision. Additionally, the report recommended for the flattening of the drain grade from Huron Church Lone Road to the Herb Gray Parkway to allow for more additional storage.

The 1992 and 1990 reports prepared by W.L. Knowles, P.Eng. and Ken Chisholm, P.Eng., respectively provided for hydraulic modelling of the Lennon and Cahill Drain watersheds. This report gave consideration to existing developments and predicted future flows from new developments for the said drains. Recommendations were made for the entire study to control future runoff rates from new developments. The 1990 Lennon/Cahill Master Drainage Plan delineated subwatersheds for future planning of new development within the Master Drainage Plan.

The 1944 report by C.G.R. Armstrong, P.Eng. will be referenced in regards to the watershed area, and changes made to the drainage scheme due to new development. This report also included for repair and improvements to the drain based on the October 16th, 1896 report.

The 2000 report by Gerard Rood, P.Eng. aided us in determining the north watershed boundary between the Lennon Drain and Cahill Drain watersheds. The 1992 and 1990 reports supplied us with the recommended watersheds for future development. The City of Windsor provided us with plans of the storm sewers as accessible on the City of Windsor “MyWindsorSewerSystem” mapping which was used for consideration when determining the eastern and southern watershed limits as seen on our plans in **Appendix “REI-E”**.

As-Built plans were provided to us by the City of Windsor prepared by Aleo Associates Inc. for the Stormwater Outlet for the South Cousineau Subdivision. These plans called for the lowering of the Cahill Drain immediately downstream of the storm pipe outlet.

We arranged with the City to provide us with the updated assessment roll information for the affected parcels. We also reviewed reports for the abutting drains and spoke to the owners to help in establishing the current watershed limit for the Cahill Drain – Upper Part.

III. PRELIMINARY EXAMINATION AND ON-SITE MEETING

After reviewing all of the drainage information provided by the City, we arranged with the City Drainage Engineer, Fahd Mikhael, to schedule an on-site meeting for June 14th, 2018. The following people were in attendance at said meeting: Frank Mallat, Danny Vujovik, Charlie Simpson, Bob and Mary Ellen Ohrling, Tim Robinet, Mario Iatonna, Larry Timbers, Patricia Godden, Michael and Lisa Morgan, Ray Hawco, Greg and Daphne Law, Steve Nimigon, Maureen Kelly, Kevin Peifer, Walter and Heather Bennen, Bill & Thelma Richards, Robert Jez, Bonnie & Michael Harasemchuk, Lena Colucci, Bill Snyder, Peter Valore, Jim Beach, Danut Murariu, Karen Gudrun, Mariangela Vasile, Prasanth Nagalingam, Saeed Chaudhry, Fahd Mikhael (City of Windsor Drainage Superintendent), Kory Snelgrove (Rood Engineering), and Gerard Rood (Rood Engineering).

Gerard Rood completed introductions and outlined the purpose of the meeting. Details of the drain were discussed with the primary concern being significant sediment accumulation in the drain with some bank erosion. Some owners voiced their opinion that some bridges located within the drain appeared to be too high. It was discussed that the bridges along the drain would be surveyed and inspected and the drainage report would provide for any repair and improvements to them that are required to meet standards and capacity requirements. Once the work scope is confirmed, a final report is then prepared and submitted to Council and goes through the Drainage Act process of a Consideration meeting and Court of Revision meeting.

Gerard explained that once the bridges are surveyed and inspected and if any appeared to be failing, set too high, or under capacity, the report will include for the replacement with a new bridge to the City of Windsor's standards. Mr. Rood explained that any replacement bridges would normally be centred on the existing structure matching the existing top width if greater than the minimum top width of 6.10m (20.0 ft.). The owners were advised that the minimum standard top width for an access bridge is 6.10 metres (20 ft.) and that any extra length will be borne 100% to the benefitting landowner for construction or future maintenance. We went on to explain that sloped quarried limestone on filter cloth ends, concrete filled jute bag walls, or precast concrete block walls were typical end treatment options used in today's practise. A standard 5.0 metre turning radius will be provided at the gravel shoulder to enhance access across the bridge. Mr. Rood explained that it is expected that any bridges or drain repairs or improvements will not be grantable as lands within the watershed do not hold the farm property tax class designation that is required for grant eligibility from the Ontario Ministry of Agriculture, Food and Rural Affairs (O.M.A.F.R.A.).

Mr. Rood confirmed that the project design would be based on the 1944, 1990, and 1992 drainage report information. Mr. Rood asked the City and owners to provide information on any drainage changes that they might be aware of.

The owner at Municipal Number (M.N.) 656 said that he needs a new access bridge to his vacant lot that they plan to build on. Details were received from the owner regarding location and the top width of the new bridge that is desired. Gerard explained that the first bridge installation will be assessed at 100% to the benefiting owners. Once the bridge is installed as a legal crossing to the drain, cost sharing will be provided for in the report for any future maintenance needed to be completed on the bridge access. It was discussed with the owner that precast block ends or jute bag end treatments would be the preferred option for this bridge installation due to the close proximity to the neighboring bridge just upstream to the east.

Some landowners to the south of Cousineau Road asked if they would be assessed for the drainage works that are being completed. Gerard explained that there are no direct costs

assessed to individual owners as the City of Windsor will be picking up all costs for repairs and improvements to the drain under the general tax levy. However, benefiting landowners would be assessed their share of benefit for bridges if any repairs or improvements are needed to be completed to bridge accesses. A landowner asked if the Southwood Lakes development will be assessed for their contribution within the watershed. Mr. Rood explained that the said development, and all other development and lands within the watershed limit for the Cahill Drain – Upper Part will be assessed as blocks.

One landowner asked about enclosing the drain completely which would eliminate the need for maintaining the drain on a regular basis. Gerard explained how this option would not be feasible as there is too much environmental legislation to satisfy for this option. Additionally, with a drain of this capacity, the pipe size required would be very large, making the costs for this option significant. Mr. Rood explained that in most cases we are able to enclose a drain up to 14.0 to 16.0 metres before causing limitations to aquatic species within the drain.

One landowner raised concern over flooding in the past that has occurred on Sutherland Avenue due to pipes downstream being too high. Gerard explained that they will investigate this matter, and if the design grades confirm this statement, they will make the necessary provisions to correct the issue.

A landowner raised concern about bridge cost sharing and how lands to the south of Cousineau Road such as Southwood Lakes development receive benefit from bridges but do not pay direct benefit. Gerard explained how, in the past, bridge cost sharing used to be shared 50 percent to the benefitting owner of the bridge access and 50 percent to the upstream lands and roads for any legal bridge access located in the drain. Mr. Rood explained lands upstream of the bridge access pay for their share of the outlet as a benefit to having a sufficient outlet. They will further investigate bridges and determine a fair and equitable outcome for cost sharing of bridges in the drain utilizing the current basis for cost sharing.

One landowner expressed that they did not want any trees removed from the drain. It was discussed that all trees within the drain cross section from top of bank to top of bank will be removed to prevent obstruction of drainage; however, some mature or decorative trees may be able to be saved if the Contractor can work around them and they are outside of the drain channel. Material excavated along lawn areas will be done from the road side and will be trucked away. The City wants to restore the drain to an adequate capacity and wants a more accurate and fair assessment schedule for drain maintenance.

A landowner requested that the turning radius be improved at Mount Royal Drive as Transit Windsor has expressed the difficulties in turning off Mount Royal Drive to drop pedestrians off closer to the school. It was expressed that this is a safety concern as children are getting dropped off on Mount Royal Drive and walking in high traffic areas at risk of being hit by vehicular traffic. Also, it was discussed that a pedestrian crosswalk should be installed across from the Mt. Carmel School with a pedestrian bridge separate from the driveway access for vehicles. Mr. Rood assured the owners that this matter will be investigated, and proper provisions will be set out in the report.

The City expects to hold a Public Information Centre meeting with the owners to review the Draft report and get their input and address their questions on the project. It was discussed that owners may pay a lump sum amount or special equal annual rate sufficient to pay the principal and interest on the cost of the work over a 10 year period to reduce the immediate cost burden of their assessment for the work.

The procedures for the project pursuant to the Drainage Act were reviewed. All directly affected owners will be mailed a copy of the drainage report and notifications for the meetings will be provided as required by the Drainage Act. The overall drainage report procedure, future maintenance processes and grant eligibility were generally reviewed with the owners.

The owners were also advised that the works will be subject to the approval of the Department of Fisheries and Oceans (D.F.O.), the Ministry of Natural Resources and Forestry (M.N.R.F.), and the Essex Region Conservation Authority (E.R.C.A.). We further discussed bridge maintenance, sizing, and use of reinforced concrete material for the bridge installation.

IV. FIELD SURVEY AND INVESTIGATIONS

Subsequent to the on-site meeting we arranged for a topographic survey of the drain and bridges to be completed. We further arranged to receive updated assessment roll information from the City and obtained information on the tax class of each of the properties affected by the Municipal Drain.

The City worked in close cooperation with the Essex Region Conservation Authority (E.R.C.A.) regarding their requirements or any D.F.O. (Department of Fisheries and Oceans) requirements for work that would be proposed to be carried out on the Cahill Drain – Upper Part. A response from the Conservation Authority was received by email on June 27th, 2017 and indicated that the City must apply for a permit and follow standard mitigation requirements. Additionally, E.R.C.A. required that any proposed structure must not adversely impact the flow regime of the drain for all storms up to and including a 1 in 100 year storm event. We also reviewed the City and D.F.O. maps for fish and mussel species at risk and find that there are no species indicated in the vicinity of this project for the Class 'F' drain. A copy of the concerns and requirements to satisfy E.R.C.A. and D.F.O. is included in **Appendix "REI-A"** of this report.

Former Ministry of Natural Resources & Forestry (M.N.R.F.) agreements are replaced with new legislation provisions under Ontario Regulation 242/08, Section 23.9 which allows repairs, maintenance and improvements to be conducted by the City within existing municipal drains administered by the Ministry of Environment, Conservation and Parks (M.E.C.P.). These works are exempt from Sections 9 and 10 of the Endangered Species Act provided that the rules in the regulations are followed by the City and their contractor. When eligible, the new regulations allow Municipalities to give notice to M.N.R.F. by registering their drainage activities through an online registry system.

V. PIPES AND BRIDGES REVIEW

As part of our investigations, we made detailed inspections of all of the bridges along the open drain. Their condition and proposed work, if any, is summarized as follows:

Bridge Summary

1. This bridge serves parcel 080-140-00100-0000. The bridge, which comprises of a reinforced concrete box culvert with reinforced concrete headwalls, serves as the primary access and is in good condition. As this is the primary access for the lands, we would also recommend that the bridge, for which the maintenance costs are to be shared with the upstream lands and roads within the watershed, be maintained by the City and that said maintenance would include works to the bridge culvert, bedding, backfill and end

- treatment. The report and plans will provide the City with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
2. This bridge is a shared access which serves parcels 080-140-00100-0000 and 080-130-08300-0000. The bridge is in good condition and was installed more recently than some others. In discussions with some landowners, it was established that a pedestrian crosswalk may be installed in front of the school with separate access from the driveway used by vehicular traffic. The report and plans will provide the City with the details needed for construction of a gravel shoulder on the west end and for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
 3. This bridge serves parcel 080-130-08300-0000. The bridge is a small footbridge that is a secondary access to the property and is in poor condition. The bridge abutments are failing causing unsafe crossing conditions for pedestrians and the risk of creating blockage in the drain. The bridge will be abandoned pursuant to the Drainage Act and removed as part of the work under this report.
 4. This bridge serves Mount Royal Drive owned by the City of Windsor. This bridge is in good condition and does not require any work at this time. Since the bridge is serving the public road crossing and therefore would not be needed if the road was taken out of service, we recommend that 100% of all future maintenance costs for works to the bridge be borne by the owners of the roadway pursuant to Section 26 of the Drainage Act. In discussions with some landowners, it was established that the west turning radius should be improved to allow for safer egress for City buses for dropping off pedestrians closer to the school building. Investigations by the City with the transit people confirmed that they have no current concerns with the bridge. The report and plans will provide the City with the details needed for future work on the bridge including additional length on the west end pursuant to the maintenance provisions of the Drainage Act.
 5. This bridge serves parcel 080-130-00100-0000. The culvert is in good condition and comprises corrugated steel pipe. After surveying and making investigations of the bridge, it was established that new concrete jute bag end treatment repairs would be provided for construction. The report and plans will provide the City with the details needed for construction and for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
 6. This bridge serves Casgrain Drive owned by the City of Windsor. This bridge is in poor condition and requires replacement as the corrugated steel pipe is deteriorating at the bolted pipe joints with soil migrating through the said joints forming sinkholes. Since the bridge is serving the public road crossing and therefore would not be needed if the road was taken out of service, we recommend that 100% of all construction and future maintenance costs for works to the bridge be borne by the owners of the roadway pursuant to Section 26 of the Drainage Act. The report and plans will provide the City with the details needed for construction and for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
 7. This bridge serves parcel 080-080-03707-0000. The bridge is in fair condition and does not require any work at this time. The report and plans will provide the City with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act. Should the owner no longer require the bridge in the future, the City may abandon it pursuant to Section 84. (2) of the Drainage Act.
 8. This bridge serves parcel 080-080-00200-0000. The bridge pipe is in fair condition; however, the pipe is undersized and does not meet the capacity required. Additionally, the driveway is raised by wood shims and cinder blocks with steel beams and old railroad timber supports and asphalt being used as the driving surface. This driveway is found to be unsafe and requires replacement. The report and plans will provide the City with the details needed for construction and for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.

9. This bridge is a shared access which serves parcels 080-080-00300-0000 and 080-080-00400-0000. This bridge pipe is in poor condition and requires replacement with corrosion occurring along the riveted joints and deformation starting to occur. Additionally, the pipe is undersized and does not meet the capacity required. The report and plans will provide the City with the details needed for construction and for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
10. This bridge is a shared access which serves parcels 080-080-00405-0000 and 080-080-00500-0000. This bridge is in good condition and does not require any work at this time. The report and plans will provide the City with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
11. This bridge access serves parcel 080-080-00600-0000. This bridge is in good condition; however, it is undersized and does not meet the capacity required and therefore requires replacement. The report and plans will provide the City with the details needed for construction and for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
12. This bridge access serves parcel 080-080-00601-0000. This bridge pipe is in poor condition and requires replacement as rusting and significant deformation is starting to occur. The report and plans will provide the City with the details needed for construction and for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
13. This bridge access serves parcel 080-080-00700-0000. This bridge is in good condition and does not require any work at this time. The report and plans will provide the City with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
14. This bridge access serves parcel 080-080-00701-0000. This bridge is in fair condition and does not require any work at this time. The report and plans will provide the City with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
15. This bridge access serves parcel 080-080-00800-0000. This bridge is in good condition and does not require any work at this time. The report and plans will provide the City with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
16. This bridge access serves parcel 080-080-00900-000. Although the bridge is in fair condition, it is set too high, appears to be deforming and is too short and narrow to be safe. Lowering the pipe to the required grade would further affect the top width. The report and plans will provide the City with the details needed for construction and for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
17. This bridge serves Sutherland Avenue owned by the City of Windsor. This bridge is in good condition and does not require any work at this time. Since the bridge is serving the public road crossing and therefore would not be needed if the road was taken out of service, we recommend that 100% of all future maintenance costs for works to the bridge be borne by the owners of the roadway pursuant to Section 26 of the Drainage Act. The report and plans will provide the City with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act, including reduction of the hump over the centre of the bridge span.
18. This bridge access serves parcel 080-080-00800-0000. This bridge is in good condition and does not require any work at this time. The report and plans will provide the City with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
19. This bridge access serves parcel 080-080-01100-0000. This bridge pipe is in poor condition and requires replacement as the pipe shows significant rusting and deformation. The report and plans will provide the City with the details needed for construction and for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.

20. This bridge access serves parcel 080-080-01200-0000. This concrete box culvert is in fair condition and does not require any work at this time. The report and plans will provide the City with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
21. This bridge access serves parcel 080-080-01300-0000. This bridge is in poor condition and requires replacement as the concrete span bridge shows significant signs of spalling and cracking at the abutment and deck joint. The report and plans will provide the City with the details needed for construction and for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
22. This bridge access serves parcel 080-080-01400-0000. This bridge is in poor condition and requires replacement as the concrete box culvert shows significant signs that the cracking at the abutment and deck has caused displacement of the abutment. This displacement has resulted in a considerable amount of sink holes forming on the driveway surface. The report and plans will provide the City with the details needed for construction and for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
23. This bridge access serves parcel 080-080-01401-0000. This bridge is in fair condition and does not require any work at this time. The report and plans will provide the City with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
24. This bridge access serves parcel 080-080-01500-0000. This bridge is in good condition and does not require any work at this time. The report and plans will provide the City with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
25. This bridge access serves parcel 080-080-01600-0000. This bridge is in fair condition and does not require any work at this time. The report and plans will provide the City with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.

VI. THE DRAINAGE ACT

Owners are reminded that they have the opportunity to present their concerns to Council regarding the report details at the Consideration meeting, and assessment questions at the Court of Revision meeting, along with appeal rights to the Agriculture, Food and Rural Affairs Appeals Tribunal (A.F.R.A.A.T.) and to the Drainage Referee as provided for in the Drainage Act.

The Drainage Act definitions and applicable clarifications are as follows:

“Benefit” means the advantages to any lands, roads, buildings or other structures from the construction, improvement, repair or maintenance of a drainage works such as will result in a higher market value or increased crop production or improved appearance or better control of surface or subsurface water, or any other advantages relating to the betterment of lands, roads, buildings or other structures.

“Outlet Liability” means the part of the cost of the construction, improvement or maintenance of a drainage works that is required to provide such outlet or improved outlet. Lands and roads that use a drainage works as an outlet, or for which, when the drainage works is constructed or improved, an improved outlet is provided either directly or indirectly through the medium of any other drainage works or of a swale, ravine, creek or watercourse, may be assessed for outlet liability. The assessment for outlet liability shall be based upon the volume and rate of flow of the water artificially caused to flow upon the injured land or road or into the drainage works from the lands and roads liable for such assessments. Every drainage works constructed under this Act shall be continued to a sufficient outlet.

Owners are advised that they have a legal responsibility to convey their drainage to a sufficient outlet. For this reason, they have a share in the cost for upkeep of the drain adjacent to and downstream of their lands and this obligation is reflected in the assessment for Outlet Liability. Owners are reminded that the responsibility for carrying out maintenance on a Municipal drain rests with the City as set out in the Drainage Act. Any owner can notify the City that the drain requires maintenance and the City has to take action pursuant to the Act. This system is generally reactive and requires the property owners to raise their concerns and issues to the City. Owners are reminded that keeping brush clear along their portion of the drain and having buffer strips provides them with a direct benefit of improved drain protection. Owners have an Outlet Liability for the downstream portion of the drain. The owners are reminded that Municipal drainage is a communal project and basically a user pay system. As an example, when work is carried out downstream, the owners that are outletting to the drain will be responsible for a portion of the cost, along with the other owners in the watershed upstream of the work that is conducted.

Owners may appeal their assessment as set out in the drainage report. They are advised that they should submit their appeal to the Court of Revision 10 days before the scheduled date of the meeting; however, the Court of Revision can agree to hear appeals presented at the meeting. If owners are still dissatisfied with the report after that meeting, they may submit an appeal to the Agriculture, Food and Rural Affairs Appeals Tribunal (A.F.R.A.A.T.) through the City Clerk within 21 days of the closing of the Court of Revision pursuant to Section 54 of the Drainage Act.

The cost sharing for bridges is based on the location of same along the overall length of the drainage system. Each owner has the right for one access across each Municipal drain abutting or crossing their lands. The owner generally pays 100% of the cost for the first bridge installation and it becomes part of the drain when included in an engineer's report and is then to be maintained by the drain with costs shared as set out in the drainage report. The majority of cost for bridges serving roadways are assessed to the City pursuant to Section 26 that states that all increase in cost to the drainage works resulting from the roadway are to be borne by the road authority. Section 26 also applies to lands of the railway and hydro as it states that "the public utility or road authority shall be assessed for and shall pay all the increase of cost of such drainage works caused by the existence of the works of the public utility or road authority". For access bridges serving private lands, agreements can be drawn up to reflect the cost sharing for the drainage works associated with them. A secondary access to a parcel is assessed 100% to the owners of the parcel served by the secondary access for both construction and all future maintenance.

Owners should be aware that existing grass buffers and accesses will be protected and maintained as set out in the report specifications. Allowances as set out in the report are provided for land taken for buffer areas and to offset damages to lands from the construction work and the Contractor is responsible to guarantee the work performed on the drain with a maintenance period of one year from the date of substantial completion.

VII. PRECONSIDERATION MEETING

The draft report for this project was reviewed with affected owners that were all notified of a meeting held on July 9th, 2019 at the Roseland Golf and Curling Club. The following people were in attendance: William Snider, Steve Nimigon, Mike & Bonnie Harasemchuk, Peter & Karen Morgan, Mario Iatonna, Kevin & Maureen Peifer, Dana Sepetance, Carmen Samson, Danut Murariu, Tim Robinet, Lucian & Stefania Smuczer, Laura & Peter Valore, Frank Mallat, Fahd Mikhael (City Drainage Superintendent), Kory Snelgrove (Rood Engineering), Sarah Minard (Rood Engineering) and Gerard Rood (Rood Engineering).

The draft report mailed to them and the details outlined above and below were generally reviewed with the owners. They were then given the opportunity to ask questions about the project and procedures pursuant to the Drainage Act. Answers and clarifications were provided by Fahd Mikhael and Gerard Rood. There were several concerns with the cost of bridge repairs and replacements and it was explained that the cost of those works are shared between the owners of lands served by the bridge and the upstream lands and roads that contribute flows through the bridge in accordance with standard drainage practice and as set out in the report. The owners were advised that there are opportunities to debenture their cost for the works and the City later confirmed that an owner may request that the costs be debentured on their property taxes for 10 years if desired.

VIII. FINDINGS AND RECOMMENDATIONS

We find that the drain requires improvements in accordance with our detailed report, plans, and specifications. Based on our detailed survey, investigations, examinations, and discussions with the affected Owners and governing Authorities, we would recommend that drain improvement works be carried out as follows:

- a) We recommend that all drain improvements, be carried out in accordance with the requirements established by E.R.C.A. and D.F.O. as set out in the documents within **Appendix “REI-A”** attached to this report.
- b) As this is an existing Municipal drain, and natural conditions have not changed and there is no information to indicate any new species concerns, the repair and improvement can be carried out based on the mitigation measures and new legislation provisions under Ontario Regulation 242/08, Section 23.9 which allows repairs, maintenance and improvements to be conducted by the City within existing municipal drains. These works are exempt from Sections 9 and 10 of the Endangered Species Act provided that the rules in the regulations are followed. When eligible, the new regulations allow Municipalities to give notice to M.N.R.F. by registering their drainage activities through an online registry system. A copy of said mitigation measures is included in **Appendix “REI-B”** within this report. We recommend that any work being completed shall be carried out in accordance with the **Schedule “C” Mitigation Plan** of the former agreements as included in **Appendix “REI-B”** for reference by the land owners, the City of Windsor, and the Contractor who will be conducting the works.
- c) We find that portions of the open drain have significant accumulation of silt and debris and we recommend that these be cleaned out as set out further in this report. We also recommend that the entire length of the Cahill Drain – Upper Part include brushing and grubbing works within the design cross section and working easement on the working side of the drain as further set out in this report.
- d) As provided for by Section 18 of the Drainage Act, we recommend that the bridges along the drain be repaired and improved as outlined further in this report including the specifications and the plans that form part of the report. Due to the poor condition, safety concerns and risk of drain blockage, we recommend that the existing footbridge number 3 be completely removed from the drainage works and be abandoned pursuant to Section 19 of the Drainage Act.

- e) We recommend that the existing grass areas adjacent to the drain be protected as part of this project. These grass areas reduce the amount of erosion and the sediment entering the drain and enhance water quality.
- f) Since all of the work will be carried out at the existing or new driveways, and is primarily within the road allowance and limits of the drain, and because full restoration will be provided, we find that there is no requirement for damages or allowances pursuant to Sections 29 and 30 of the Drainage Act.

We recommend that the Cahill Drain – Upper Part be repaired and improved, in accordance with this report, the attached specifications and the accompanying drawings, and that all works associated with same be carried out pursuant to Section 78 of the “Drainage Act, R.S.O. 1990, Chapter D.17 as amended 2010”.

IX. ESTIMATE OF COST

Our estimate of the Total Cost of this work, including all incidental expenses, is the sum of **SIX HUNDRED FOURTEEN THOUSAND DOLLARS (\$614,000.00)**, made up as follows:

CONSTRUCTION

Item 1)	<u>Station 0+000.0 to Station 1+472.1;</u> Carry out excavation of the drain to remove accumulated sediment and restore the drain to the profile grade shown on the plans, including all disposal and hauling of material, approximately <u>1,472.1</u> metres (approximately 1594 cubic metres). Lump Sum	\$ 19,800.00
Item 2)	<u>Station 0+000.0 to 1+472.1;</u> Spread scavenged top soil and carry out seeding and mulching on all newly excavated side slopes as indicated on the plans for approx. 623 lineal metres of affected area, complete. Lump Sum	\$ 5,000.00
Item 3)	<u>Station 0+000.0 to 1+472.1;</u> provide all labour, equipment and materials to clear the drain bottom, bank slopes, and top of bank along working side along the length of the drain including all flailing, cutting, piling, chipping or burning, loading, hauling and disposal, complete. Lump Sum	\$ 15,000.00
Item 4)	<u>Station 0+000.0 to Station 1+472.1;</u> carry out cleaning of the drain bridges to remove accumulated sediment and restore the drain to the profile grade on the plans, including removal of any deleterious materials, all hauling and disposal of material, complete:	
	a) Bridge No. 2: <u>15.9</u> metres at <u>\$70.00</u> per lineal metre	\$ 1,113.00
	b) Bridge No. 4: <u>19.3</u> metres at <u>\$120.00</u> per lineal metre	\$ 2,316.00

Report -Cahill Drain – Upper Part
(Former Geographic Township of Sandwich West)
City of Windsor - REI2017D012

2019-09-10

c) Bridge No. 5: <u>12.0</u> metres at <u>\$70.00</u> per lineal metre	\$	840.00
d) Bridge No. 7: <u>6.3</u> metres at <u>\$70.00</u> per lineal metre	\$	441.00
e) Bridge No. 10: <u>13.0</u> metres at <u>\$70.00</u> per lineal metre	\$	910.00
f) Bridge No. 11: <u>6.1</u> metres at <u>\$70.00</u> per lineal metre	\$	427.00
g) Bridge No. 13: <u>5.2</u> metres at <u>\$70.00</u> per lineal metre	\$	364.00
h) Bridge No. 14: <u>4.4</u> metres at <u>\$70.00</u> per lineal metre	\$	308.00
i) Bridge No. 15: <u>6.2</u> metres at <u>\$70.00</u> per lineal metre	\$	868.00
j) Bridge No. 17: <u>9.8</u> metres at <u>\$70.00</u> per lineal metre	\$	1,372.00
k) Bridge No. 18: <u>9.4</u> metres at <u>\$70.00</u> per lineal metre	\$	1,316.00
l) Bridge No. 20: <u>6.2</u> metres at <u>\$120.00</u> per lineal metre	\$	1,488.00
m) Bridge No. 23: <u>6.1</u> metres at <u>\$70.00</u> per lineal metre	\$	854.00
n) Bridge No. 24: <u>6.2</u> metres at <u>\$70.00</u> per lineal metre	\$	868.00
o) Bridge No. 25: <u>4.4</u> metres at <u>\$120.00</u> per lineal metre	\$	1,056.00

Item 5) **Bridge No. 2;** Provide all labour, equipment and material to construct a new gravel shoulder on the west end as seen on the attached plans; provide standard precast concrete block end protection with geogrid reinforcement for the west headwall with 1.0 metre wide sloped quarried limestone erosion protection on the banks adjacent to the precast headwall; supply and install O.P.S.D. 980.101 pedestrian barricade handrails on the west side of the bridge with concrete footings and O.P.S.D. 972.130 chain link fence including concrete footings; the Contractor shall cut or disconnect the existing guide rail at its nearest connection for access to the gravel shoulder and provide new rail ends; granular bedding, backfill, and Granular 'A' approach; excavation, compaction, silt and sediment controls, traffic control, cleanup and restoration, complete.
(080-130-08300-0000 & 080-140-00100-0000) Lump Sum \$ 11,800.00

Item 6) **Bridge No. 3;** Provide all labour, equipment and material to remove the existing concrete span pedestrian bridge and abutments; remove and dispose of brush, sod, and deleterious materials at the existing bridge location; restore the drain cross section to its designed parameters and provide seeding and mulch to disturbed areas; excavation,

Report -Cahill Drain – Upper Part
(Former Geographic Township of Sandwich West)
City of Windsor - REI2017D012

2019-09-10

	compaction, silt and sediment controls, traffic control, cleanup and restoration, complete. (080-130-08300-0000)	Lump Sum	\$	900.00
Item 7)	Bridge No. 5; Provide all labour, equipment and material to construct new concrete jute bag end protection with 1.0 metre wide sloped quarried limestone erosion protection on the drain banks adjacent to headwalls; granular bedding, concrete footing, granular backfill, excavation, compaction, silt and sediment controls, removal and disposal of existing endwall materials, hauling, traffic control, cleanup and full restoration, complete. (080-130-00100-0000)	Lump Sum	\$	9,200.00
Item 8)	Bridge No. 6; Provide all labour, equipment and material to construct a replacement access bridge consisting of 17.5 metres (57.4 ft.) of 2400x1500mm C.H.B.D.C., O.P.S.S. 1821 Precast Box Culvert, including waterproofing and shear plate connections; remove and dispose of existing pipe, brush, sod, and deleterious materials at the existing bridge location; provide standard precast concrete block end protection with geogrid reinforcement; 1.0 metre wide sloped quarried limestone erosion protection on drain banks adjacent to precast headwalls; granular bedding, granular backfill including 300mm thick Granular “A” bedding and asphalt travel surface (min. 150mm thick asphalt surface); excavation, compaction, silt and sediment controls, traffic control, cleanup and restoration, complete. (City of Windsor)	Lump Sum	\$	86,700.00
Item 9)	Bridge No. 8; Provide all labour, equipment and material to construct a replacement access bridge consisting of 8.0 metres (26.2 ft.) of 1800mm diameter 65-D reinforced concrete pipe with bell and gasket connection; remove and dispose of existing pipe, brush, sod, and deleterious materials at the existing bridge location; provide standard precast concrete block end protection with geogrid reinforcement; 1.0 metre wide sloped quarried limestone erosion protection adjacent to precast headwalls on drain banks; granular bedding, backfill, and asphalt approach and transition; excavation, compaction, silt and sediment controls, traffic control, cleanup and restoration, complete. (080-080-00200-0000)	Lump Sum	\$	36,500.00
Item 10)	Bridge No. 9; Provide all labour, equipment and material to construct a replacement access bridge consisting of 8.0 metres (26.2 ft.) of 1800mm diameter 65-D reinforced concrete pipe with bell and gasket connection; remove and dispose of existing pipe, brush, sod, and deleterious materials at the existing bridge location; provide standard precast concrete block end protection with geogrid reinforcement; 1.0 metre wide sloped quarried limestone erosion protection			

Report -Cahill Drain – Upper Part
(Former Geographic Township of Sandwich West)
City of Windsor - REI2017D012

2019-09-10

- adjacent to precast headwalls on drain banks; granular bedding, backfill, and asphalt approach and transition; excavation, compaction, silt and sediment controls, traffic control, cleanup and restoration, complete.
(080-080-00300-0000 & 080-080-00400-0000) Lump Sum \$ 37,100.00
- Item 11) **Bridge No. 11;** Provide all labour, equipment and material to construct a replacement access bridge consisting of 8.0 metres (26.2 ft.) of 1800mm diameter 65-D reinforced concrete pipe with bell and gasket connection; remove and dispose of existing pipe, brush, sod, and deleterious materials at the existing bridge location; provide standard precast concrete block end protection with geogrid reinforcement; 1.0 metre wide sloped quarried limestone erosion protection adjacent to precast headwalls on drain banks; granular bedding, backfill, and gravel approach and transition; excavation, compaction, silt and sediment controls, traffic control, cleanup and restoration, complete.
(080-080-00600-0000) Lump Sum \$ 39,100.00
- Item 12) **Bridge No. 12;** Provide all labour, equipment and material to construct a replacement access bridge consisting of 8.0 metres (26.2 ft.) of 1800mm diameter 65-D reinforced concrete pipe with bell and gasket connection; remove and dispose of existing pipe, brush, sod, and deleterious materials at the existing bridge location; provide standard precast concrete block end protection with geogrid reinforcement; 1.0 metre wide sloped quarried limestone erosion protection adjacent to precast headwalls on drain banks; granular bedding, backfill, and Granular 'A' approach and transition; excavation, compaction, silt and sediment controls, traffic control, cleanup and restoration, complete.
(080-080-00601-0000) Lump Sum \$ 41,100.00
- Item 13) **Bridge No. 16;** Provide all labour, equipment and material to construct a replacement access bridge consisting of 8.0 metres (26.2 ft.) of 1350mm diameter 65-D reinforced concrete pipe with bell and gasket connection; remove and dispose of existing pipe, brush, sod, and deleterious materials at the existing bridge location; provide standard precast concrete block end protection with geogrid reinforcement; 1.0 metre sloped quarried limestone erosion protection adjacent to precast headwalls on drain banks; granular bedding, backfill, and asphalt approach and transition; excavation, compaction, silt and sediment controls, traffic control, cleanup and restoration, complete.
(080-080-00900-0000) Lump Sum \$ 33,100.00
- Item 14) **Bridge No. 19;** Provide all labour, equipment and material to construct a replacement access bridge consisting of 8.0 metres (26.2 ft.) of 1350mm diameter 65-D reinforced concrete pipe with bell and gasket connection; remove and

	dispose of existing pipe, brush, sod, and deleterious materials at the existing bridge location; provide standard precast concrete block end protection with geogrid reinforcement; 1.0 metre wide sloped quarried limestone erosion protection adjacent to precast headwalls on drain banks; granular bedding, backfill, and Granular 'A' approach and transition; excavation, compaction, silt and sediment controls, traffic control, cleanup and restoration, complete. (080-080-01100-0000)	Lump Sum	\$	27,500.00
Item 15)	Bridge No. 21; Provide all labour, equipment and material to construct a replacement access bridge consisting of 8.0 metres (26.2 ft.) of 1350mm diameter 65-D reinforced concrete pipe with bell and gasket connection; remove and dispose of existing pipe, brush, sod, and deleterious materials at the existing bridge location; provide standard precast concrete block end protection with geogrid reinforcement; 1.0 metre wide sloped quarried limestone erosion protection adjacent to precast headwalls on drain banks; granular bedding, backfill, and Granular 'A' approach and transition; excavation, compaction, silt and sediment controls, traffic control, cleanup and restoration, complete. (080-080-01300-0000)	Lump Sum	\$	30,500.00
Item 16)	Bridge No. 22; Provide all labour, equipment and material to construct a replacement access bridge consisting of 8.0 metres (26.2 ft.) of 1350mm diameter 65-D reinforced concrete pipe with bell and gasket connection; remove and dispose of existing pipe, brush, sod, and deleterious materials at the existing bridge location; provide standard precast concrete block end protection with geogrid reinforcement; 1.0 metre wide sloped quarried limestone erosion protection adjacent to precast headwalls on drain banks; granular bedding, backfill, and asphalt approach and transition; excavation, compaction, silt and sediment controls, traffic control, cleanup and restoration, complete. (080-080-01400-0000)	Lump Sum	\$	30,900.00
Item 17)	Bridge No. 26; Provide all labour, equipment and material to construct a new access bridge consisting of 8.0 metres (26.2 ft.) of 1350mm diameter 65-D Reinforced Concrete pipe with bell and gasket connection; remove and dispose of brush, sod, and deleterious materials at the new bridge location; provide standard precast concrete block end protection with geogrid reinforcement; 1.0 metre wide sloped quarried limestone erosion protection adjacent to precast headwalls on drain banks; granular bedding, backfill, and Granular 'A' approach and transition; excavation, compaction, silt and sediment controls, traffic control, cleanup and restoration, complete. (080-080-01015-0000)	Lump Sum	\$	29,100.00

Report -Cahill Drain – Upper Part
(Former Geographic Township of Sandwich West)
City of Windsor - REI2017D012

2019-09-10

Item 18)	<u>Station 0+000.0 to Station 1+472.1;</u> provide quarried limestone rip rap on filter cloth general erosion protection on drain banks at surface water inlets, eroded main tile outlets, slumped bank areas and for rock chute inlets, including excavation, removal of any deleterious materials, all hauling and disposal of material, supply and place rock on filter cloth, complete:		
	a) Quarried limestone: approximately <u>150.0</u> tonnes at <u>\$65.00</u> per tonne	\$	9,750.00
	b) Filter cloth: approximately <u>300</u> square metres at <u>\$5.00</u> per square metre	\$	1,500.00
Item 19)	<u>Station 0+000.0 to Station 1+472.1;</u> supply and install new heavy duty H.D.P.E. plastic tile end extensions, including connections, rodent grate, removal of any deleterious materials, excavation, backfill, compaction and restoration, complete:		
	a) 3.0 metres (10') of 100mm (4") diameter pipe for 100mm diameter tiles: approx. <u>10</u> required at <u>\$120.00</u> each	\$	1,200.00
	b) 3.0 metres (10') of 150mm (6") diameter pipe for 150mm diameter tiles: approx. <u>5</u> required at <u>\$200.00</u> each	\$	1,000.00
	c) 3.0 metres (10') of 200mm (8") diameter pipe for 200mm diameter tiles: approx. <u>5</u> required at <u>\$300.00</u> each	\$	1,500.00
Item 20)	Contingency amount for construction.	\$	45,000.00
	SUBTOTAL FOR CONSTRUCTION	\$	527,291.00
	Net H.S.T. (1.76%) on Construction	\$	9,280.00
	TOTAL FOR CONSTRUCTION	\$	536,571.00

INCIDENTALS

1)	Meetings, Report, Estimate, & Specifications	\$	10,500.00
2)	Survey, Assistants, Expenses, and Drawings	\$	30,375.00

Report -Cahill Drain – Upper Part
(Former Geographic Township of Sandwich West)
City of Windsor - REI2017D012 2019-09-10

3) Duplication Cost of Report and Drawings	\$ 2,000.00
4) Estimated Cost of Letting Contract	\$ 1,500.00
5) Estimated Cost of Layout and Staking	\$ 1,800.00
6) Estimated Cost of Supervision and Inspection During Construction	\$ 24,100.00
7) Net H.S.T. on Incidental Items Above (1.76%)	\$ 1,237.00
8) Estimated Cost of Interim Financing	\$ 2,500.00
9) Contingency Allowance	\$ 3,417.00
	<hr/>
TOTAL FOR INCIDENTALS	\$ 77,429.00
TOTAL FOR CONSTRUCTION (brought forward)	\$ 536,571.00
	<hr/>
TOTAL ESTIMATE	\$ 614,000.00
	<hr/>

X. DRAWINGS AND SPECIFICATIONS

As part of this report, we have attached design drawings for the construction of the drain improvements. The design drawings show the subject improvement locations and the details of the work, as well as the approximate location within the watershed area. The drain design drawings are attached to the back of this report and are labelled **Appendix “REI-E”**.

Also attached, we have prepared Specifications which set out the required construction details for the drain repair and improvements, which also include Standard Specifications labelled therein as **Appendix “REI-C”**.

XI. SCHEDULE OF ASSESSMENT

We would recommend that the Total Cost for construction of this project, including incidental costs, be charged against the lands and roads affected in accordance with the attached Schedule of Assessment. Since the City of Windsor has approved under CR388/2007 that all costs of repairs and improvements to the drain are to be borne by the City, we have shown block assessments for the portions allocated to the lands and to the roads within the watershed, except for those lands which will receive a Benefit or Special Benefit for the drainage works, which will be assessed as per Council Resolution CR64/2015 with respect to private access structure and special benefit works to individual properties. Accordingly, we have assessed a Benefit to the parcels in need of a replacement or new access bridge for their portion of the costs for the bridge replacement, based on the same pipe material as the existing C.S.P. (corrugated steel pipe) culvert, or equal, being a Benefit to their property. The City will pick up the cost difference for the pipe material upgrade to concrete culvert on the Cahill Drain – Upper Part. Each parcel with an access bridge is assessed a Special Benefit for their share of the cost to survey the bridge, establish the required

design and cost estimate, and for determining the cost sharing between the owner(s) served by the bridge and the upstream lands and roads.

Pursuant to Section 26 of the Drainage Act, the Public Utility or Road Authority is responsible for all increase in cost to the drainage works due to the existence of their services or roadways. This requirement has been reflected in the following **Bridge Cost Sharing** table related to sharing of future maintenance costs for the access bridges. This provision shall apply to the to the Mount Royal Drive (Br. 4), Casgrain Drive (Br. 6), and Sutherland Avenue (Br. 17) road crossings which are owned by the City of Windsor.

Where a bridge structure has increased top width beyond the standard 6.10 metre (20.0 ft.) top width, or any other special features, all of the increased costs resulting from same are assessed 100% to the Owner of the lands served by the bridge. Should concrete, asphalt or other decorative driveway surfaces over a bridge culvert require removal as part of the drainage works, these surfaces should also be repaired or replaced as part of the works. Likewise, if any fencing, gate, decorative walls, guard rails or other special features exist that will be impacted by the maintenance work, they are also to be removed and restored or replaced as part of the bridge maintenance work. However, the cost of the supply and installation of any surface material other than Granular “A” material, and the cost of removal and restoration or replacement, if necessary, of any special features, shall be totally assessed to the benefiting adjoining Owner(s) served by said access bridge.

XII. FUTURE MAINTENANCE

When maintenance work is carried out in the future on the open drain portion, the cost for said future maintenance shall be assessed in accordance with the attached Schedule of Assessment excluding any Special Benefit or any Benefit shown to the individual private lands. When future maintenance work is carried out, the assessment to the affected Owners shall be based on the actual future maintenance cost shared on a pro-rata basis with the block assessment values shown in this assessment schedule. Since the upstream areas are assessed as blocks pursuant to the Drainage Act, the costs to each block shall be paid in accordance with City of Windsor provisions for dealing with Municipal drainage work costs.

When maintenance work is carried out on any public road or other bridges on lands owned by the City of Windsor in the future, we recommend that the cost be assessed 100% to the City. When maintenance work is carried out on any primary landowner bridges in the future, we recommend that part of the cost be assessed as a Benefit to the abutting parcel served by the access bridge, and the remainder shall be assessed to the upstream lands and roads based on their affected area and block assessments as set out in the attached Schedule of Assessment. The share for Benefit and Outlet Liability shall be as set out in the Bridge Cost Sharing table below. Since Bridge 2 is a shared access bridge and secondary access for 080-140-00100-0000, we recommend that 100% of the cost of future maintenance to their share of the bridge be assessed as a Benefit to the abutting parcel served by the bridge.

The City of Windsor requires that all new culverts that are installed be reinforced concrete pipes. We recommend that legal crossings adopted in this report be replaced with pipe sizes and design grades as shown in the plans.

BRIDGE COST SHARING

<u>Bridge</u>	<u>Owners</u>	<u>Benefit to Owner</u>	<u>Outlet Upstream</u>
1	(080-140-00100-0000)	37.4%	62.6%
2	(080-140-00100-0000) & (080-130-08300-0000)	50.0% 21.2%	28.8%
3	(080-130-08300-0000)	Abandon	Abandon
4	City of Windsor, Mount Royal Drive	100.0%	0.0%
5	(080-130-00100-0000)	38.8%	61.2%
6	City of Windsor, Casgrain Drive	100.0%	0.0%
7	(080-080-03707-0000)	38.8%	61.2 %
8	(080-080-00200-0000)	41.2%	58.8%
9	(080-080-00300-0000) & (080-080-00400-0000)	19.5% 19.5%	61.0%
10	(080-080-00405-0000) & (080-080-00500-0000)	30.7% 27.3%	42.0%
11	(080-080-00600-0000)	38.8%	61.2%
12	(080-080-00601-0000)	38.8%	61.2%
13	(080-080-00700-0000)	38.8%	61.2%
14	(080-080-00701-0000)	38.8%	61.2%
15	(080-080-00800-0000)	41.2%	58.8%
16	(080-080-00900-0000)	53.4%	46.6%
17	City of Windsor, Sutherland Avenue	100.0%	0.0%
18	(080-080-01006-0000)	50.7%	49.3%
19	(080-080-01100-0000)	50.7%	49.3%
20	(080-080-01200-0000)	50.7%	49.3%

Report -Cahill Drain – Upper Part
(Former Geographic Township of Sandwich West)
City of Windsor - REI2017D012

2019-09-10

21	(080-080-01300-0000)	50.7%	49.3%
22	(080-080-01400-0000)	53.0%	47.0%
23	(080-080-01401-0000)	50.7%	49.3%
24	(080-080-01500-0000)	53.4%	46.6%
25	(080-080-01600-0000)	50.7%	49.3%
26	(080-080-01015-0000)	50.7%	49.3%

We recommend that the bridge structures as identified herein, be maintained in the future as part of the drainage works. We would also recommend that the access bridges, for which the maintenance costs are to be shared with the upstream lands and roads within the watershed, be maintained by the City and that said maintenance would include works to the bridge culvert, bedding, backfill and end treatment. Should concrete, asphalt, or other decorative driveway surfaces over these bridge culverts require removal as part of the maintenance works, these surfaces shall also be repaired or replaced as part of the works. Likewise, if any fencing, gate, decorative walls, guardrails, or other special features exist that will be impacted by the maintenance work, they are also to be removed and restored or replaced as part of the bridge maintenance work. However, the cost of the supply and installation of any surface materials other than Granular "A" material and the cost of removal and restoration or replacement, if necessary, of any special features, shall be totally assessed to the benefiting adjoining Owner(s) served by said access bridge.

We further recommend that the maintenance cost sharing as set out above shall remain as aforesaid until otherwise determined and re-established under the provisions of the "Drainage Act, R.S.O. 1990, Chapter D.17 as amended 2010".

All of which is respectfully submitted.

Rood Engineering Inc.



Gerard Rood, P.Eng.



tm

att.

Rood Engineering Inc.

Consulting Engineers
9 Nelson Street
LEAMINGTON, Ontario N8H 1G6

SCHEDULE OF ASSESSMENT
CAHILL DRAIN - UPPER PART
CITY OF WINDSOR

3. MUNICIPAL LANDS:

Tax Roll No.	Hectares Afft'd	Acres Afft'd	Structure No.	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
Block A - Roads	42.824	105.82		\$ -	\$ 40,948.00	\$ -	\$ 40,948.00
Block B - Roads	5.653	13.97		\$ -	\$ 9,999.00	\$ -	\$ 9,999.00
Block C - Roads	5.868	14.50		\$ -	\$ 10,460.00	\$ -	\$ 10,460.00
Block E - Roads	0.830	2.05		\$ -	\$ 262.00	\$ -	\$ 262.00
Block F - Roads	2.989	7.39	4, 6, 17	\$ 108,761.00	\$ 3,126.00	\$ 4,500.00	\$ 116,387.00
Total on Municipal Lands.....				\$ 108,761.00	\$ 64,795.00	\$ 4,500.00	\$ 178,056.00

4. PRIVATELY OWNED - NON-AGRICULTURAL LANDS:

Tax Roll No.	Hectares Afft'd	Acres Afft'd		Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
080-080-00200-0000	0.223	0.55	8	\$ 15,038.00	\$ -	\$ 618.00	\$ 15,656.00
080-080-00300-0000	0.202	0.50	9	\$ 7,235.00	\$ -	\$ 293.00	\$ 7,528.00
080-080-00400-0000	0.202	0.50	9	\$ 7,235.00	\$ -	\$ 293.00	\$ 7,528.00
080-080-00405-0000	0.093	0.23	10	\$ -	\$ -	\$ 461.00	\$ 461.00

Schedule of Assessment - Cahill Drain - Upper Part
 City of Windsor

Tax Roll No.	Hectares Afft'd	Acres Afft'd	Structure No.	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
080-080-00500-0000	0.109	0.27	10	\$ -	\$ -	\$ 410.00	\$ 410.00
080-080-00600-0000	0.111	0.28	11	\$ 15,171.00	\$ -	\$ 582.00	\$ 15,753.00
080-080-00601-0000	0.074	0.18	12	\$ 15,947.00	\$ -	\$ 582.00	\$ 16,529.00
080-080-00700-0000	0.097	0.24	13	\$ -	\$ -	\$ 582.00	\$ 582.00
080-080-00701-0000	0.105	0.26	14	\$ -	\$ -	\$ 582.00	\$ 582.00
080-080-00800-0000	0.202	0.50	15	\$ -	\$ -	\$ 618.00	\$ 618.00
080-080-00900-0000	0.202	0.50	16	\$ 17,411.00	\$ -	\$ 789.00	\$ 18,200.00
080-080-01006-0000	0.083	0.21	18	\$ -	\$ -	\$ 684.00	\$ 684.00
080-080-01015-0000	0.085	0.21	26	\$ 29,100.00	\$ -	\$ 1,500.00	\$ 30,600.00
080-080-01100-0000	0.247	0.61	19	\$ 13,943.00	\$ -	\$ 761.00	\$ 14,704.00
080-080-01200-0000	0.113	0.28	20	\$ -	\$ -	\$ 761.00	\$ 761.00
080-080-01300-0000	0.206	0.51	21	\$ 15,464.00	\$ -	\$ 761.00	\$ 16,225.00
080-080-01400-0000	0.121	0.30	22	\$ 16,377.00	\$ -	\$ 795.00	\$ 17,172.00
080-080-01401-0000	0.094	0.23	23	\$ -	\$ -	\$ 761.00	\$ 761.00
080-080-01500-0000	0.202	0.50	24	\$ -	\$ -	\$ 801.00	\$ 801.00
080-080-01600-0000	0.202	0.50	25	\$ -	\$ -	\$ 761.00	\$ 761.00
080-080-03707-0000	0.105	0.26	7	\$ -	\$ -	\$ 582.00	\$ 582.00
080-130-00100-0000	2.946	7.28	5	\$ 3,570.00	\$ -	\$ 582.00	\$ 4,152.00
080-130-08300-0000	0.939	2.32	2,3	\$ 5,900.00	\$ -	\$ 1,650.00	\$ 7,550.00
080-140-00100-0000	2.809	6.94	1,2	\$ 5,900.00	\$ -	\$ 1,311.00	\$ 7,211.00
Block A - Lands	125.477	310.06		\$ -	\$ 119,963.00	\$ -	\$ 119,963.00
Block B - Lands	28.328	70.00		\$ -	\$ 50,081.00	\$ -	\$ 50,081.00
Block C - Lands	28.951	71.54		\$ -	\$ 51,288.00	\$ -	\$ 51,288.00
Block D - Lands	11.453	28.30		\$ 2,877.00	\$ 9,234.00	\$ -	\$ 12,111.00

Tax Roll <u>No.</u>	Hectares <u>Afft'd</u>	Acres <u>Afft'd</u>	Structure <u>No.</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	Value of Special <u>Benefit</u>	TOTAL <u>VALUE</u>
Block E - Lands	4.483	11.08		\$ 1,126.00	\$ 1,357.00	\$ -	\$ 2,483.00
Block F - Lands	15.035	37.15		\$ 8,025.00	\$ 6,182.00	\$ -	\$ 14,207.00
Total on Privately Owned - Non-Agricultural Lands.....				\$ 180,319.00	\$ 238,105.00	\$ 17,520.00	\$ 435,944.00
TOTAL ASSESSMENT				\$ 289,080.00	\$ 302,900.00	\$ 22,020.00	\$ 614,000.00

=====

1 Hectare = 2.471 Acres
 Project No. REI2017D012
 September 10th, 2019

NOTE: The Value of Benefit shown to the Privately Owned Non-Agricultural Lands are based on the extra drainage works needed to be completed due to specific details of each parcel generally related to bridge work.
 The Value of Special Benefit shown to the Privately Owned Non-Agricultural Lands are based on the share to the affected parcel to survey the bridge, establish the design requirements, prepare plans, determine cost estimates, and the cost sharing for the works.

SPECIFICATIONS**CAHILL DRAIN – UPPER PART****Repair and Improvement****(Geographic Township of Sandwich West)****CITY OF WINDSOR****I. GENERAL SCOPE OF WORK**

The Cahill Drain – Upper Part currently comprises of an open Municipal drain generally located on the north side of Cousineau Road between Howard Avenue and the Herb Gray Parkway, in the geographic township of Sandwich West, City of Windsor. The Cahill Drain continues on from the Herb Gray Parkway in a generally northwest and westerly direction, through the municipal boundary of the Town of LaSalle and the City of Windsor, until it outlets into the Turkey Creek in LaSalle. The work under this project generally comprises of improvements to the upper part of the open drain to provide a suitable cross section for conveyance of flows, replacing some of the bridges, cleaning of the other bridges along the course of the drain, installment of a new bridge, and abandonment of a bridge as laid out in the schedule of items and prices and the specifications below. The proposed work is intended to address the repair and improvement of the open drain, bridges, any tile end improvements, and erosion protection in accordance with current standards.

All work shall be carried out in accordance with these specifications, City of Windsor General Conditions, the plans forming part of this drainage project, as well as the Standard Details included in **Appendix “REI-C”**. The drain repairs and improvements shall be completed in accordance with these specifications, as is shown in the accompanying drawings, as determined from the Benchmarks, and as may be further laid out at the site at the time of construction. All work carried out under this project shall be completed to the full satisfaction of the City of Windsor Engineering and Drainage Department staff, the Project Drainage Superintendent and the Consulting Engineer.

II. E.R.C.A. AND D.F.O. CONSIDERATIONS

The Contractor will be required to implement stringent erosion and sedimentation controls during the course of the work to help minimize the amount of silt and sediment being carried downstream into the Cahill Drain – Lower Part and Turkey Creek. It is intended that work on this project be carried out during relatively dry weather to ensure proper site and drain conditions and to avoid conflicts with sediment being deposited into the outlet drainage system. All disturbed areas shall be restored as quickly as possible with grass seeding and mulching (per Ontario Provincial Standard Specification (O.P.S.S.) Form 803 dated November 2010 and Form 804, dated November 2013, or as subsequently amended) installed to ensure a protective cover and to minimize any erosion from the work sites subsequent to construction. The Contractor may be required to provide temporary silt fencing and straw bales as outlined further in these specifications.

All of the work shall be carried out in accordance with any permits or authorizations issued by the Essex Region Conservation Authority (E.R.C.A.) or the Department of Fisheries and Oceans (D.F.O.), copies of which will be provided, if available, and the notes in **Appendix “REI-A”**. The Contractor is advised that no work may be carried out in the existing drain from March 15th to June 30th of any given year because this is classified as a sensitive time that can have impacts on aquatic life and habitats as per E.R.C.A. and D.F.O.

As part of its work, the Contractor will implement the following measures that will ensure that any potential adverse effects on fish and fish habitat will be mitigated:

- a) As per standard requirements, work will not be conducted at times when flows in the drain are elevated due to local rain events, storms, or seasonal floods. Work will be done in the dry.
- b) All disturbed soils on the drain banks and within the channel, including spoil, must be stabilized immediately upon completion of work. The restoration of the site must be completed to a like or better condition to what existed prior to the works. The spoil material must be hauled away and disposed of at a suitable site or spread an appropriate distance from the top of the drain bank to ensure that it is not washed back into the drain.
- c) To prevent sediment entry into the Drain, in the event of an unexpected rainfall, silt barriers and/or traps must be placed in the channel during the works and until the site has been stabilized. All sediment and erosion control measures are to be in accordance with related Ontario Provincial Standards. It is incumbent on the proponent and their Contractors to ensure that sediment and erosion control measures are functioning properly and are maintained and upgraded as required.
- d) Silt or sand accumulated in the barrier traps must be removed and stabilized on land once the site is stabilized.
- e) All activities including maintenance procedures should be controlled to prevent the entry of petroleum products, debris, rubble, concrete, or other deleterious substances into the water. Vehicular refuelling and maintenance should be conducted away from the water.

III. M.N.R.F. & M.E.C.P. ENDANGERED SPECIES ACT CONSIDERATIONS

The Contractor is to note that the Ministry of Environment, Conservation and Parks (M.E.C.P.) screening process by way of a Species at Risk (S.A.R.) review of the M.E.C.P. “Endangered Species Act, 2007” (E.S.A.) will be completed as a self-assessment by the City pursuant to Section 23.9 of the E.S.A. prior to construction. This Section allows the City to conduct eligible works of repair, maintenance and improvement to existing municipal drains under the Drainage Act, and exemptions from Sections 9 and 10 of the E.S.A., provided that the requirements are followed in accordance with Ontario Regulation 242/08. The results of the review will be provided to the Contractor and copies of the mitigation measures, habitat protection and identification sheets will be included within **Appendix “REI-B”**.

The Ministry of Natural Resources and Forestry (M.N.R.F.) - M.E.C.P. mapping has basically confirmed that snake species including Butler’s Garter Snake and Eastern Fox Snake are threatened and endangered, respectively, on this project. Because snakes are mobile and

indicated as sensitive and endangered in the area, we have included herein a copy of the M.N.R.F. - M.E.C.P. mitigation requirements for them in **Appendix “REI-B”**.

Providing mitigation requirements are implemented, it was concluded that present wildlife Species at Risk will be protected from negative impacts and the works will not contravene Section 9 (species protection) or Section 10 (habitat protection) of the Endangered Species Act, 2007.

The Contractor is to review **Appendix “REI-B”** in detail and is required to comply in all regards with the contents of said M.N.R.F. & M.E.C.P. measures, and follow the special requirements therein included during construction. Throughout the course of construction, the Contractor will be responsible to ensure that all necessary provisions are undertaken to protect all species at risk and their habitats. If a threatened or sensitive species is encountered, the Contractor shall notify the City and M.N.R.F. - M.E.C.P. and provide all the equipment and materials stipulated by the mitigation requirements for handling the species and cooperate fully with the City and M.N.R.F. - M.E.C.P. staff in the handling of the species.

IV. ACCESS TO WORK

The Contractor is advised that the majority of the work to be carried out on this project extends along the north side of Cousineau Road and along the south side of the Cahill Drain – Upper Part. The Contractor shall have access for the full width of the roadway abutting the proposed drainage works. The Contractor may utilize the right-of-way as necessary, to permit the completion of all of the work required to be carried out for this project. The Contractor shall also have access into the driveways as necessary to carry out the removal of the existing access bridge and to construct the new and replacement access bridges, as set out on the plans and in these specifications, along with a sufficient area in the vicinity of the bridges to carry out the required construction of the removal of sediment, new bridge structure installation and replacements, and ancillary work.

The Contractor shall ensure that the traveling public is protected at all times while utilizing the roadway for its access. The Contractor shall provide traffic control, including flag persons when required. Should the Contractor have to close Cousineau Road for the proposed works and when work is done on road crossings over the drain, it shall obtain the permission of the City Drainage Engineer or Consulting Engineer and arrange to provide the necessary notification of detours around the site. The Contractor shall also ensure that all emergency services including police, ambulance and fire, school bus companies, etcetera are contacted about the disruption to access at least 48 hours in advance of same. All detour routes shall be established in consultation with the City of Windsor Engineering and Works Departments and proper signage installed.

Throughout the course of the work it is imperative that the Contractor protect as much landscaping and vegetation as possible when accessing along the drain. This will be of particular concern along the lawn areas of residential properties. Due to the extent of the work and the area for carrying out the work, the Contractor will be required to carry out all of the necessary steps to direct traffic and provide temporary diversion of traffic around work sites, including provision of all lights, signs, flag persons, and barricades required to protect the safety of the traveling public. Any accesses or areas used in carrying out the works are to be fully restored to their original conditions by the Contractor at its cost, including topsoil placement and lawn restoration as directed by the City Drainage Engineer and the Consulting Engineer. Restoration shall include but not be limited to all necessary leveling, grading, shaping, topsoil placement, seeding, mulching, and granular and hard surface placement required to make good any damage caused.

V. REMOVAL OF BRUSH, TREES AND RUBBISH

Where there is any brush, trees or rubbish along the course of the drainage works, for the full width of the drain channel cross section, including the full width of the work access, all such brush, trees or rubbish shall be close cut and grubbed out, and the whole shall be chipped up for recycling, or otherwise satisfactorily disposed of by the Contractor. The brush and trees removed along the course of the work are to be put into piles by the Contractor in locations where they can be safely chipped and disposed of, or burned by it, or hauled away and disposed of by the Contractor to a site to be obtained by it at its expense. Prior to and during the course of any burning operations, the Contractor shall comply with the guidelines prepared by the Air Quality Branch of the Ontario Ministry of the Environment and shall ensure that the Environmental Protection Act is not violated. The Contractor will be required to notify the local fire authorities to obtain any permits and co-operate with them in the carrying out of any work. The removal of brush and trees shall be carried out in close consultation with the City Drainage Engineer or Consulting Engineer to ensure that no decorative trees or shrubs are disturbed by the operations of the Contractor that can be saved. It is the intent of this project to save as many trees and bushes as practical within the roadway allowances and on private lands. Where decorative trees or shrubs are located directly over drainage pipes, the Contractor shall carefully extract same and turn them over to the Owner when requested to do so, and shall cooperate with the Owner in the reinstallation of same if required.

The Contractor shall protect all other trees, bushes, and shrubs located along the length of the drainage works except for those trees that are established, in consultation with the City Drainage Engineer, the Consulting Engineer, and the Owners, to be removed as part of the works. The Contractor shall note that protecting and saving the trees may require the Contractor to carry out hand work around the trees, bushes, and shrubs to complete the necessary final site grading and restoration.

Following the completion of the work, the Contractor is to trim up any broken or damaged limbs on trees which are to remain standing, and it shall dispose of said branches along with other brush, thus leaving the trees in a neat and tidy condition.

The Contractor shall remove all deleterious materials and rubbish along the course of the open drain in the location of the work areas and any such materials located in the bridge culverts while carrying out its cleaning of same. All such deleterious materials and rubbish shall be loaded up and hauled away by the Contractor to a site to be obtained by it at its cost.

VI. FENCING

Where it is necessary to take down any fence to proceed with the work, the same shall be done by the Contractor across or along that portion of the work where such fence is located. The Contractor will be required to exercise extreme care in the removal of any fencing so as to cause a minimum of damage to same. The Contractor will be required to reinstall any fence that is taken down in order to proceed with the work, and the fence shall be installed in a neat and workmanlike manner. The Contractor will not be required to procure any new materials for rebuilding the fence provided that it has used reasonable care in the removal and reinstatement

of same. When any fence is removed by the Contractor, and the Owner thereof deems it advisable and procures new material for replacing the fence so removed, the Contractor shall replace the fence using the new materials and the materials from the present fence shall remain the property of the Owner.

VII. DETAILS OF OPEN DRAIN WORK

The open drain shall be excavated to the lines, levels, grades and cross-sections as shown on the accompanying drawings, or as may be further established by the City Drainage Engineer or the Consulting Engineer at the time of the work. The drain shall be carefully excavated so as not to disturb the existing banks, rock protection and vegetation, except for those portions of the drain where widening or restoration of a stable drain bank configuration is required. The bottom width of the drain and the sideslopes of the excavation shall conform to the dimensions given on the drawings.

The drain shall be of the size, type, depth, etcetera as shown on the accompanying drawings. When completed, the drain shall have a uniform and even bottom and in no case shall such bottom project above the grade line, as shown on the accompanying drawings, and as determined from the Benchmarks. The finished side slopes of the drain shall be 1.5 metres horizontal to 1.0 metre vertical.

Where the drain crosses any lawn, garden, orchard, roadway or driveway, etcetera, the excavated material for the full width of the above-mentioned areas shall be hauled away by the Contractor and disposed of to a site to be obtained by the Contractor at its expense. All work at the disposal site shall be established between the Contractor and the site owner. The Contractor shall be responsible for any permits required and shall provide copies of same to the City and Consulting Engineer when requested.

Where there is any brush or rubbish in the course of the drain, including both side slopes of the drain, all such brush or rubbish shall be close cut and grubbed out. Where there is any brush or rubbish where the earth is to be spread, or on that strip of land between where the earth is to be spread and the edge of the drain, all such brush or rubbish shall be close cut and grubbed out. The whole is to be burned, chipped or otherwise satisfactorily disposed of by the Contractor.

VIII. DETAILS OF BRIDGE WORK

The Contractor shall provide all material, labour and equipment to repair and improve or replace the existing access bridges in the Cahill Drain – Upper Part requiring work, along with endwall repairs and other improvements as noted. The existing bridge number 3 is to be completely removed and disposed of with full restoration of the drain cross section, including topsoil, seeding and mulching.

The existing bridges slated to be improved shall be replaced with new concrete Class 65-D pipe or C.H.B.D.C. O.P.S.S.-1821 concrete box culvert as noted in the schedule of items and on the plans. The new and replacement access bridge installations shall comprise of precast concrete pipe or box culvert. All piping sections shall be connected by the use of bell and spigot joints with rubber gaskets installed in accordance with the manufacturer's recommendation. Each joint shall be sealed to ensure that there will be no soil migration through the joints and into the pipe through said connections.

The culvert replacements and new pipe installation on this project shall be set to the grades as shown on the plans or as otherwise established herein and the City Drainage Superintendent or the Consulting Engineer may make minor changes to the bridge alignment as they deem necessary to suit the site conditions. All work shall be carried out in general accordance with the items in the **“STANDARD SPECIFICATIONS FOR ACCESS BRIDGE CONSTRUCTION”** attached to this report and labelled **Appendix “REI-C”**.

IX. CONCRETE BRIDGE INSTALLATION

The new concrete pipe to be installed on this project is required to be reinforced precast concrete Class 65-D. The Contractor shall connect the pipe sections together by use of a rubber gasket bell and spigot joint installed in accordance with the manufacturer’s recommendations. All joints shall be installed to ensure a positive seal against soil migration through the joints. The reinforced concrete pipe shall be placed on a bedding of not less than 150 mm of Granular "A" compacted to 95% Standard Proctor Density (S.P.D.) and shaped to suit the bottom contour of the pipe. The Granular "A" bedding and cover shall extend from 150 mm (min.) below pipe bottom to 300 mm (min.) above the top of the pipe. In the boulevards the pipe shall be backfilled with inorganic native material compacted to 95% S.P.D. The top 100 mm shall be topsoil and the area shall be seeded and mulched. Backfill material shall be placed to finished grade elevation. In the roadway and at driveways, the pipe shall be backfilled with Granular “A”, “B” or recycled granular material meeting the requirements of Granular “A” or “B”, compacted to 100% S.P.D. Driveways shall be restored with a minimum of 300 mm thick Granular “A”. Roads shall be restored with a minimum of 450 mm thick Granular “A”, 65 mm thick HL-4 and 40 mm thick HL-3 asphalt or Superpave equivalent, or as noted in the schedule of items and on the plans. Where “NR” is noted in the schedule of items and prices or on the plans only non-recycled material shall be used.

The new precast concrete box culvert structure to be installed on this project is required to conform to the most recent Canadian Highway Bridge Design Code (C.H.B.D.C.) truck loading standards and adhere to the Ontario Provincial Standard Specification (O.P.S.S.) 1821. The **minimum cover** over the reinforced concrete box culvert O.P.S.S. 1821 shall be 600mm minimum. The installation of this precast concrete box culvert shall comply with O.P.S.S. 904, and any additional references identified within the said Standards Specification. The precast concrete box culvert unit shall include reinforcing steel, dowels, grouting and curing of joints, waterproofing, and shear plate connections in accordance with O.P.S.S. 422. Bonding agents such as “Intralok” by W.R. Meadows manufacturer, or equal, shall be used for joint connections and on exposed lifting sockets on the precast concrete box culvert. Curing and sealing compounds such as “Cure N’ Seal CS309” by W.R. Meadows manufacturer, or equal, shall be applied to all joints and exposed concrete. Waterproofing membrane such as “MEL-ROL”, a roll on self-adhering heavy-duty membrane made by manufacturer W.R. Meadows, or equal, shall be applied to the joint connections following bonding agents and cure and seal applications. Stainless steel shear connection plates and anchor rods are to be installed on the precast concrete box culvert at all joints as seen on the plans in **Appendix “REI-E”**. The contractor shall obtain shop drawings showing the fabrication, assembly, and steps for installation and provide said drawings to the Consulting Engineer for approval prior to the construction of the bridge. The shop drawings shall have the seal and signature of a Professional Engineer licensed in Ontario certifying that the design meets minimum design standards and includes fabrication details, hardware, and reinforcing schedules which are to be strictly followed.

The Contractor shall note that the placement of any new culvert shall be performed totally in the dry and it shall be prepared to take whatever steps are necessary to ensure same, all to the full

satisfaction of the City Drainage Superintendent or the Consulting Engineer. As part of the work, the Contractor will be required to clean out the drain along the full length of the pipe and for a distance of 3.05 metres (10 ft.) upstream and downstream of the pipe. The Contractor shall note that the pipe inverts are set at least 10% of the pipe diameter (or the pipe rise) below the drain bottom to provide the embedment required by E.R.C.A. and D.F.O. and to meet the minimum cover requirements for the pipe.

The installation of the complete length of the new culvert pipe, including all appurtenances, shall be completely inspected by the City Drainage Superintendent or the Consulting Engineer's Inspector prior to backfilling any portions of same. Under no circumstance shall the Contractor commence the construction or backfill of the new culvert pipe without the site presence of the City Drainage Superintendent or the Consulting Engineer's Inspector to inspect and approve said installation. The Contractor shall provide a minimum of two (2) working days' notice to the City Drainage Superintendent or the Consulting Engineer prior to commencement of the work. The installation of the new culvert structure is to be performed during normal working hours of the City Drainage Superintendent and the Consulting Engineer from Monday to Friday unless written authorization is provided by them to amend said working hours.

For the access bridge installations, once the new culvert has been satisfactorily set in place, the Contractor shall completely backfill same with granular material M.T.O. Type "B" O.P.S.S. Form 1010 with the following exception. The contractor is to ensure that backfilling occurs on both sides of the culvert simultaneously, or so that the fill on one side of the culvert does not exceed 500mm (19.7") to the other side of the culvert. For road crossings the top 450mm (18") and for residential driveway the top 300mm (12") of the backfill material for the full top width of the access, and the full top width of the drain or the excavated trench, and any approaches shall be granular material M.T.O. Type "A" O.P.S.S. Form 1010. All of the approach areas extending over the new bridge culvert shall be backfilled with compacted granular material M.T.O. Type "A" O.P.S.S. Form 1010, but only after all topsoil material has been completely removed and disposed of, and the minimum thickness of this granular material shall be 450mm (18") for roadways and 300mm (12") for driveways. All areas outside of the access shall be backfilled with native material compacted to 95% of Standard Proctor Density and topped with a minimum of 100mm of topsoil, and shall be seeded and mulched.

For hard surface roadway and driveway crossings, the contractor is to ensure that no backfill exceeds 300mm (12") per lift. Additionally, at roadways the top 450mm (18") and at driveways the top 300mm (12") of the backfill over the pipe below the hard surface treatment shall comprise granular material M.T.O. Type "A" O.P.S.S. Form 1010 compacted to a minimum of 100% Standard Proctor Density. The Contractor shall at all times be very careful when performing its backfilling and compaction operations so that no damage is caused to the pipe. To ensure that no damage is caused to the proposed pipe, alternative methods of achieving the required backfill compaction shall be submitted to the Consulting Engineer or the City Drainage Engineer for their approval prior to the commencement of this work. The Contractor shall restore the asphalt surface by placing a minimum of the existing thickness, using materials as shown in the schedule of items and prices or notes on the plans, or a 90mm minimum thickness of Type HL-4 hot mix asphalt or Superpave equivalent. The asphalt shall be supplied and placed in two (2) approximately equal lifts compacted to a value ranging from 92% to 96% of maximum relative density as per O.P.S.S. 310. For existing concrete driveways, the Contractor shall carefully remove the concrete to the nearest expansion joint. The concrete shall be restored to the original length and width that was removed and include 150mm thick, 30MPa concrete, with 6% ±1% air entrainment and 6x6-6/6 welded wire fabric reinforcing installed at the midpoint of the slab. All slab surfaces shall be

finished to provide an appearance approximating the finish on the existing concrete abutting the replacement.

The Contractor will be responsible to restore any damage caused to the roadways at its cost. All damaged hard surface roadway areas shall be neatly saw cut and the damaged materials removed and disposed of by the Contractor prior to carrying out any restoration work. The extent of the repairs shall be established in consultation with the City Drainage Superintendent, the Road Authority, and the Consulting Engineer and the repairs shall be completed to their full satisfaction. All work shall be in accordance with standard City of Windsor requirements and the applicable O.P.S.S. and O.P.S.D. standards.

The Contractor is to note that any intercepted pipes or tiles along the length of the constructed bridge access are to be extended and connected at its cost to the open drain at the end of the new bridge unless otherwise provided for in the schedule of items or as noted in the accompanying drawings. All pipe extensions shall comprise of minimum solid Big 'O' "standard tile ends" or equal plastic pipe of the same diameter as the existing tile and shall be installed in accordance with the "**Standard Lateral Tile Detail**" included in the plans, unless otherwise noted.

The Contractor shall also note that the placing of the new access bridge culvert shall be completed so that it totally complies with the parameters established and noted in the Bridge Details on the plans for the culvert replacement. The culvert shall be set on an even grade and the placement shall be performed totally in the dry, and the Contractor should be prepared to take whatever steps are necessary to ensure same, all to the full satisfaction of the City Drainage Engineer or the Consulting Engineer. The Contractor shall also be required to supply a minimum of 150mm (6") of 20mm (3/4") clear stone or Granular "A" bedding underneath the culvert pipe extending from the bottom of the drain to the culvert invert grade, all to the full satisfaction of the City Drainage Superintendent or the Consulting Engineer. Furthermore, if an unsound base is encountered, it must be removed and replaced with 20mm (3/4") clear stone satisfactorily compacted in place to the full satisfaction of the City Drainage Superintendent or the Consulting Engineer. The Contractor is to note that when replacing an access bridge or enclosure culvert, it shall be required to excavate a trench having a width not less than the new pipe outside diameter plus a 600mm working width on both sides of the new pipe to allow for proper installation of granular backfill and compaction of same. The Contractor shall also note that all culvert pipe installations are to be carried out with a minimum of 10% of their diameter or rise embedded below the drain design bottom, as shown and noted on the plan for each of the access bridge installations.

X. REMOVALS

Where existing access bridges are to be completely removed and replaced, the Contractor shall be required to excavate and completely extract the existing concrete structure or culvert pipe and the existing endwalls in their entirety, as well as any other deleterious materials that may be encountered in removing same, excluding poured concrete headwalls that are to be reused. The Contractor shall neatly saw cut any concrete or asphalt surfaces over the pipes for a sufficient width to allow for the safe removal of same or go to the nearest expansion joint panel of the concrete driveways. The Contractor shall also be required to completely dispose of all removed materials to a site to be obtained by it at its own expense. The Contractor shall note that when headwalls are shown to be left in place, the Contractor shall protect same and carry out its work for the pipe replacement as noted above and dispose of any debris resulting from the work.

All unsuitable and deleterious materials from the excavation and removal of the existing bridge and enclosure culverts and drain cleaning shall be hauled away and disposed of by the Contractor to a site to be obtained by it at its expense. Likewise, any material excavated to allow for the granular approaches to the bridge, driveway transitions, or installation of new headwalls shall also be hauled away and disposed of by the Contractor.

XI. PRECAST & CONCRETE FILLED JUTE BAG HEADWALL

Unless otherwise shown or noted, the Contractor is to provide new precast concrete block headwalls or concrete filled jute bag headwalls for the access bridges being replaced, repaired, or constructed under this project.

The Contractor shall install vertical interlocking precast concrete blocks with filter cloth backing for walls on both ends of the bridge requiring same. The blocks shall be minimum 600X600X1200mm in size as available from Underground Specialties - Wolseley, in Windsor, Ontario, or equal, and installed as set out in **Appendix "REI-C"**. Vertical joints shall be staggered by use of half blocks where needed and wingwall deflections when required shall employ 45-degree angled blocks. Voids between the blocks and the pipe shall be grouted with 30MPa concrete grout having 6% ±1% air entrainment and extend for the full thickness of the wall, and have a smooth uniform finish on the face that blends with the precast blocks. The installation of the endwalls, as well as the backfilling of the pipe where applicable, shall be provided in compliance with Items 1), 3), and 4) of the "Standard Specifications for Access Bridge Construction" attached within **Appendix "REI-C"** and in total compliance and in all respects with the General Conditions included in said Appendix. The Contractor shall submit shop drawings for approval of the wall installation that includes details for a minimum 300mm thick concrete footing that extends from the pipe invert downward. The footing shall extend into the drain banks each side for the required embedment of the blocks and be constructed to ensure that the completed wall will be completely vertical or tipped slightly back towards the driveway. Where the block walls extend more than 1.8 metres in height, the supplier shall provide the Contractor with uni-axial geogrid (SG350 or equivalent) reinforcement for installation to tie the wall back into the granular backfill. The Contractor, in all cases, shall comply with these specifications and upon completion of the stacked precast concrete block end protection installation shall restore the adjacent areas to their original conditions. The Contractor shall supply quarried limestone rock on filter cloth protection adjacent to the headwalls at each corner of the bridge as seen on the plans in **Appendix "REI-E"**. All rock protection shall be 1.0 metres wide and 305mm (12") thick, installed on non-woven filter cloth, and shall be installed in accordance with Item 2) of the "Standard Specifications for Access Bridge Construction". The synthetic filter mat to be used shall be non-woven geotextile GMN160 conforming to O.P.S.S. 1860 Class I, as available from Armtex Construction Products through Underground Specialties - Wolseley in Windsor, Ontario, or equal. The quarried limestone to be used shall be graded in size from a minimum of 100mm to a maximum of 250mm, and is available from Walker Industries Amherst Quarries, in Amherstburg, Ontario, or equal.

The concrete filled jute bags are to be provided and laid out as is shown and detailed in the accompanying drawings and as is noted in the Standard Specifications in **Appendix "REI-C"**. In all cases, the concrete filled jute bag headwalls shall be topped with a minimum 100mm (4") thick continuous concrete cap for the entire length of the headwalls. The headwalls shall be installed on an inward batter to be not less than 1 horizontal to 5 vertical, and under no circumstances shall this batter, which is measured from the top of the headwall to the projection of the end of the pipe, be less than 305mm (12").

The installation of the concrete filled jute bag headwalls, unless otherwise specified, shall be provided in total compliance with the Items included in the **“STANDARD SPECIFICATIONS FOR ACCESS BRIDGE CONSTRUCTION”**. These are attached to the back of this specification and labelled **Appendix “REI-C”**. The Contractor shall comply in all respects with the General Conditions included in Item 4 and the **“Typical Concrete Filled Jute Bag Headwall End Protection”** detail also shown therein.

XII. BENCHMARKS

Also, for use by the Contractor, we have established a number of Benchmarks along the course of the work for the Cahill Drain – Upper Part, as shown on the plans. The Contractor shall work with the City Drainage Superintendent or Consulting Engineer or their Inspector to transfer the benchmark as necessary to be used in setting the drain and pipe design grades.

For each of the bridge replacements and new bridge, the plans include details illustrating the work to be carried out. For each bridge detail a Benchmark has been indicated and the Elevation has been shown and may be utilized by the Contractor in carrying out its work. The Contractor shall note that in each case a specific design elevation grade has been provided for the invert at each end of the pipe in the table accompanying each detail. The table also sets out the pipe size, materials, and other requirements relative to the installation of the culvert structure. In all cases, the Contractor is to utilize the specified drain grade to set any new pipe installation. The Contractor shall ensure that it takes note of the direction of flow and sets all pipes to assure that all grades flow from east to west to match the direction of flow within the drain. The Contractor's attention is drawn to the fact that the pipe invert grades established herein provide for the pipes to be set at least 10% of their diameter or pipe rise below the existing drain bottom or the design grade of the drain, whichever is lower.

XIII. ANCILLARY WORK

During the course of any work to the bridges and enclosures along the length of the project, the Contractor will be required to protect or extend any existing tile ends or swales and connect them to the drainage works to maintain the drainage from the adjacent lands. All existing tiles shall be extended utilizing solid Big 'O' "standard tile ends" or equal plastic pipe of the same diameter as the existing tile and shall be installed in accordance with the **“Standard Lateral Tile Detail”** included in the plans, unless otherwise noted. Connections shall be made using a manufacturer's coupling where possible. Wherever possible, tiles shall be extended to outlet beyond the end of any access culverts. When required, openings into new pipes shall be neatly bored, saw cut or burned with a torch to the satisfaction of the City Drainage Engineer or the Consulting Engineer. All cuts to steel pipes shall be touched up with a thick coat of zinc rich paint (Galvicon or equal) in accordance with the manufacturer's recommendations. For other connections, the Contractor shall utilize a grouted connection. Grouted mortar joints shall be composed of three (3) parts of clean, sharp sand to one (1) part of Portland cement with just sufficient water added to provide a stiff plastic mix, and the mortar connection shall be performed to the full satisfaction of the City Drainage Superintendent or the Consulting Engineer. The mortar joint shall be of a sufficient mass around the full circumference of the joint on the exterior side to ensure a tight, solid seal. The Contractor is to note that any intercepted pipes along the length of the existing culverts and enclosures are to be extended and connected to the open drain unless otherwise noted in the accompanying drawings.

Where the bridge or enclosure installation interferes with the discharge of an existing swale, the Contractor shall re-grade the existing swales to allow for the surface flows to freely enter the drain. Any disturbed grass areas shall be fully restored with topsoil, seed and mulch.

All granular backfill for the bridge and enclosure installations shall be satisfactorily compacted in place to a minimum Standard Proctor Density of 98% by means of mechanical compaction equipment. All other good, clean, native fill material or topsoil to be utilized, where applicable, shall be compacted in place to a minimum Standard Proctor Density of 95%. All of the backfill material, equipment used, and method of compacting the backfill material shall be provided and performed to the full satisfaction of the City Drainage Superintendent or Consulting Engineer.

Where the Contractor removes concrete or asphalt hard surfaces over the pipes, the Contractor shall restore the hard surfaces as previously outlined. The Contractor will be responsible to restore any damage caused to these driveways at its cost. All damaged hard surface driveway areas shall be neatly saw cut and the damaged materials removed and disposed of by the Contractor prior to carrying out any restoration work.

The new concrete culverts for these installations are to be provided with a minimum depth of cover measured from the top of the pipe of 450mm (17.7") for a round pipe and 600mm (23.6") for an elliptical pipe or concrete box culvert. If the bridge culvert pipes are placed at their proper elevations, same should be achieved. If the Contractor finds that the minimum cover is not being met, they shall notify the City Drainage Superintendent and the Consulting Engineer immediately so that steps can be taken to rectify the condition prior to the placement of any backfill. The minimum cover requirement is **critical** and must be attained. In order for these new access bridge culverts to properly fit the channel parameters, **all of the design grade elevations must be strictly adhered to.**

As a check, all of the above access bridge and enclosure culvert design grade elevations should be confirmed before commencing to the next stage of the access bridge or enclosure installation. The Contractor is also to check that the pipe invert grades are correct by referencing the primary Benchmark on the plans.

Although it is anticipated that the culvert installation at each site shall be undertaken in the dry, the Contractor shall supply and install a temporary straw bale or silt curtain check dam in the drain bottom immediately downstream of each culvert site during the time of construction. The straw bale or silt curtain check dam shall be to the satisfaction of the City Drainage Superintendent or Consulting Engineer and must be removed upon completion of the construction. The check dam materials may be reused at each site subject to their condition. All costs associated with the supply and installation of this straw bale or silt curtain check dam shall be included in the cost bid for the bridge installation.

Where shown on the plans, the Contractor shall supply and install sloped end protection consisting of quarried limestone as available from Walker Aggregates Amherst Quarries, in Amherstburg, Ontario, or equal. The quarried limestone erosion protection shall be embedded into the sideslopes of the drain a minimum thickness of 305mm and shall be underlain in all cases with non-woven synthetic filter mat. The filter mat shall not only be laid along the flat portion of the erosion protection, but also contoured to the exterior limits of the quarried limestone and the unprotected slope. All work shall be completed to the full satisfaction of the City Drainage Superintendent and the Consulting Engineer and in accordance with O.P.S.S. and

O.P.S.D. provisions.

XIV. TOPSOIL, SEED AND MULCH

The Contractor shall be required to restore all existing grassed areas and drain side slopes damaged by the structure replacements, construction or cutting of the drain cross section, by placing topsoil, and then seed and mulch over said areas including any specific areas noted on the bridge details. The Contractor shall be required to provide all the material and to cover the above-mentioned surfaces with approximately 50mm of good, clean, dry topsoil on slopes and 100mm of good, clean, dry topsoil on horizontal surfaces, fine graded and spread in place ready for seeding and mulching. The placing and grading of any topsoil shall be carefully and meticulously carried out in accordance with Ontario Provincial Standard Specifications, Form 802 dated November 2010, or as subsequently amended, or as amended by these specifications and be readied for the seeding and mulching process. The seeding and mulching of all of the above-mentioned areas shall comply in all regards to Ontario Provincial Standard Specifications, Form 803 dated November 2010 and Form 804, dated November 2013, or as subsequently amended, or as amended by these specifications. The seeding mixture shall be the Standard Roadside Mix (Canada No. 1 Lawn Grass Seed Mixture) as set out in O.P.S.S. 804. All cleanup and restoration work shall be performed to the full satisfaction of the City Drainage Superintendent or Consulting Engineer.

When all of the work for this installation has been completed, the Contractor shall ensure that positive drainage is provided to all areas, and shall ensure that the site is left in a neat and workmanlike manner, all to the full satisfaction of the City Drainage Superintendent or Consulting Engineer.

XV. SPECIAL PROVISIONS FOR REPLACEMENT, REPAIR AND IMPROVEMENTS

Timing of work on the bridges shall be established in consultation with the property owners. The Contractor shall provide for the construction and improvements to the access bridges along the Cahill Drain – Upper Part, for the structures noted, as follows:

Bridge 2

The Contractor shall completely remove the existing west poured concrete sloped end wall protection and any other deleterious materials. The Contractor shall supply all equipment, material, and labour to install the precast concrete block on filter cloth wall on the west end of the bridge. The Contractor shall then install Granular “B” and “A” backfill as detailed in “**Section IX Concrete Bridge Installation**” in the specifications. The Contractor shall modify the existing traffic guide rail to provide for access to the gravel shoulder, install the pedestrian barricade handrail at the new block end wall in accordance with Ontario Provincial Standard Drawing (O.P.S.D.) 980.101, and extend the existing fence to abut to the new pedestrian barricade handrail as shown on the plans. The Contractor shall provide and install 1.0 metres of sloped quarried limestone on filter cloth end protection on the drain banks at the end of the new west vertical precast concrete block headwall. The gravel shoulder extension top width shall consist of Granular “A” material as called out on the plans. All work shall be carried out in accordance with these specifications, the plans in **Appendix “REI-E”**, and the requirements in **Appendix “REI-C”**.

Bridge 3

The Contractor shall completely remove the existing reinforced concrete span pedestrian bridge, railings, and abutments that currently exist. The Contractor is then required to restore the drain to its designed channel parameters including bank shaping, topsoil placement, seeding and mulching. All work shall be carried out in accordance with these specifications and plans in **Appendix “REI-E”**.

Bridge 5

The Contractor shall completely remove the existing headwalls and deleterious materials that currently exist on the structure. The Contractor shall then install a replacement concrete filled jute bag headwall on both sides of the bridge structure including concrete footings as needed. All work shall be carried out in accordance with these specifications, plans in **Appendix “REI-E”**, and the requirements in **Appendix “REI-C”**.

Bridges 6, 8, 9, 11, 12, 16, 19

The Contractor shall completely remove the existing corrugated steel pipe and any unsuitable end protection and dispose of same as outlined previously in these specifications, and on the plans. The Contractor shall then supply and install a new Class 65-D reinforced concrete pipe as set out in the chart forming part of the details for the said Bridges on the plans. The Contractor shall provide and install precast concrete block end protection with geogrid reinforcement at each level of blocks. The Contractor shall provide and install 1.0 metre wide sloped quarried limestone on filter cloth protection on the drain banks at each end of the new vertical precast concrete block headwall. The driveway top width shall consist of granular ‘A’, asphalt, or concrete materials as called out on the plans. All work shall be carried out in accordance with these specifications, plans in **Appendix “REI-E”**, and the requirements in **Appendix “REI-C”**.

Bridges 21, 22

The Contractor shall completely remove the existing concrete box culvert, wing walls, abutments, barricade railings, and any unsuitable end protection and dispose of same as outlined previously in these specifications, and on the plans. The Contractor shall then supply and install a new Class 65-D reinforced concrete pipe as set out in the chart forming part of the details for the said Bridges on the plans. The Contractor shall provide and install precast concrete block end protection with geogrid reinforcement at each level of blocks. The Contractor shall provide and install 1.0 metre wide sloped quarried limestone on filter cloth protection on the drain banks at each end of the new vertical precast concrete block headwall. The driveway top width shall consist of granular ‘A’, asphalt, or concrete materials as called out on the plans. All work shall be carried out in accordance with these specifications, plans in **Appendix “REI-E”**, and the requirements in **Appendix “REI-C”**.

Bridge 26

The Contractor shall completely remove all organic materials within the drain channel and driveway top width, and shall dispose of same as outlined previously in these specifications, and on the plans. The Contractor shall then supply and install a new Class 65-D reinforced concrete pipe as set out in the chart forming part of the details for Bridge No. 26 on the plans. The Contractor shall provide and install precast concrete block end protection with geogrid

reinforcement at each level of blocks. The Contractor shall provide and install 1.0 metre wide sloped quarried limestone on filter cloth protection on the drain banks at each end of the new vertical precast concrete block headwall. The driveway top width shall consist of granular 'A' material as called out on the plans. All work shall be carried out in accordance with these specifications, plans in **Appendix "REI-E"**, and the requirements in **Appendix "REI-C"**.

Station 0+000.0 to Station 1+472.1

The Contractor shall carry out cleaning of the pipes in the drain as set out in the schedule of items and plans to remove accumulated sediment and restore the drain to the profile grade on the plans, including removal of any deleterious materials, all loading, hauling and disposal of materials. All work shall be carried out in accordance with the plans, these specifications and the requirements in **Appendix "REI-C"**.

General Bridge and Drain Work

For all bridges not being replaced, the Contractor shall clean through the existing structures, to remove all sediment and accumulated materials, and provide for the drain cross section as shown on the profiles and plans. All cleaning and flushing work shall be carried out to the complete satisfaction of the City Drainage Superintendent or the Consulting Engineer. The Contractor will be required to remove all material taken out of the access culverts and drains and haul away and dispose of same, at a site to be obtained by it, at its own expense.

XVI. GENERAL CONDITIONS

- a) The City Drainage Superintendent or Consulting Engineer shall have authority to carry out minor changes to the work where such changes do not lessen the efficiency of the work.
- b) The Contractor shall satisfy itself as to the exact location, nature and extent of any existing structure, utility or other object which it may encounter during the course of the work. The Contractor shall indemnify and save harmless the City of Windsor and the Consulting Engineer and their representatives for any damages which it may cause or sustain during the progress of the work. It shall not hold the City of Windsor or the Consulting Engineer liable for any legal action arising out of any claims brought about by such damage caused by it.
- c) The Contractor shall provide a sufficient number of layout stakes and grade points so that the City Drainage Superintendent and Consulting Engineer can review same and check that the work will generally conform to the design and project intent.
- d) The Contractor will be responsible for any damage caused by it to any portion of the City road system, especially to the travelled portion. When excavation work is being carried out and the excavation equipment is placed on the travelled portion of the road, the travelled portion shall be protected by having the excavation equipment placed on satisfactory timber planks or timber pads. If any part of the travelled portion of the road is damaged by the Contractor, the City shall have the right to have the necessary repair work done by its' employees and the cost of all labour and materials used to carry out the repair work shall be deducted from the Contractor's contract and credited to the City . The Contractor, upon completing the works, shall clean all debris and junk, etcetera from the roadside of the drain, and leave the site in a neat and workmanlike manner. The Contractor shall be responsible

- for keeping all public roadways utilized for hauling materials free and clear of mud and debris.
- e) The Contractor shall provide all necessary lights, signs, and barricades to protect the public. All work shall be carried out in accordance with the requirements of the Occupational Health and Safety Act, and latest amendments thereto. If traffic control is required on this project, signing is to comply with the M.T.O. Manual of Uniform Traffic Control Devices (M.U.T.C.D.) for Roadway Work Operations and Ontario Traffic Manual Book 7.
 - f) During the course of the work the Contractor shall be required to connect existing drainage pipes to the Municipal Drain. In the event that polluted flows are discovered, the Contractor shall delay the connection of the pipe and leave the end exposed and alert the City, the City Drainage Superintendent and the Consulting Engineer so that steps can be taken by the City of Windsor to address the concern with the owner and the appropriate authorities. Where necessary the Contractor shall cooperate with the City of Windsor in providing temporary measures to divert the drain or safely barricade same. Should the connection be found acceptable by the authorities, the Contractor shall complete the connection of the drain as provided for in the specifications, at no extra cost to the project.
 - g) Following the completion of the work, the Contractor is to trim up any broken or damaged limbs on trees which are to remain standing, and it shall dispose of said branches along with other brush, thus leaving the trees in a neat and tidy condition.
 - h) The whole of the work shall be satisfactorily cleaned up, and during the course of the construction, no work shall be left in any untidy or incomplete state before subsequent portions are undertaken.
 - i) All driveways, laneways and access bridges, or any other means of access onto the job site shall be fully restored to their former condition at the Contractor's expense. Before authorizing Final Payment, the City Drainage Superintendent and the Consulting Engineer shall inspect the work in order to be sure that the proper restoration has been performed. In the event that the Contractor fails to satisfactorily clean up any portion of these accesses, the Consulting Engineer shall order such cleanup to be carried out by others and the cost of same be deducted from any monies owing to the Contractor.
 - j) The Contractor will be required to submit to the City of Windsor, a Certificate of Good Standing from the Workplace Safety and Insurance Board prior to the commencement of the work and the Contractor will be required to submit to the City of Windsor, a Certificate of Clearance for the project from the Workplace Safety and Insurance Board before Final Payment is made to the Contractor.
 - k) The Contractor shall furnish a Performance and Maintenance Bond along with a separate Labour and Material Payment Bond within ten (10) days after notification of the execution of the Agreement by the Owner. One copy of said bonds shall be bound into each of the executed sets of the Contract. Each Performance and Maintenance Bond and Labour and Material Payment Bond shall be in the amount of 100% of the total Tender Price. All Bonds shall be executed under corporate seal by the Contractor and a surety company, authorized by law to carry out business in the Province of Ontario. The Bonds shall be acceptable to the Owner in every way and shall guarantee faithful performance of the contract during the period of the contract, including the period of guaranteed maintenance which will be in effect for twelve (12) months after substantial completion of the works.

The Tenderer shall include the cost of bonds in the unit price of the Tender items as no additional payment will be made in this regard.

- l) The Contractor shall be required, as part of this Contract, to provide Comprehensive Liability Insurance coverage for not less than \$5,000,000.00 on this project, and shall name the City of Windsor and its' officials and the Consulting Engineer and their staff as additional insured under the policy. The Contractor must submit a copy of this policy to both the City Clerk and the Consulting Engineer prior to the commencement of work.

- m) Monthly progress orders for payment shall be furnished the Contractor by the City Drainage Superintendent. Said orders shall be for not more than 90% of the value of the work done and the materials furnished on the site. The paying of the full 90% does not imply that any portion of the work has been accepted. The remaining 10% will be paid 60 days after the final acceptance and completion of the work and payment shall not be authorized until the Contractor provides the following:
 - i) a Certificate of Clearance for the project from the Workplace Safety and Insurance Board
 - ii) proof of advertising
 - iii) a Statutory Declaration, in a form satisfactory to the Consulting Engineer and the City, that all liabilities incurred by the Contractor and its Sub-Contractors in carrying out the Contract have been discharged and that all liens in respect of the Contract and Sub-Contracts thereunder have expired or have been satisfied, discharged or provided for by payment into Court.

The Contractor shall satisfy the Consulting Engineer or City of Windsor that there are no liens or claims against the work and that all of the requirements as per the Construction Act, 2018 and its' subsequent amendments have been adhered to by the Contractor.

- n) In the event that the Specifications, Information to Tenderers, or the Form of Agreement do not apply to a specific condition or circumstance with respect to this project, the applicable section or sections from the Canadian Construction Documents Committee C.C.D.C.2. shall govern and be used to establish the requirements of the work.

CITY OF WINDSOR GENERAL CONDITIONS

TABLE OF CONTENTS

GC 1	INTERPRETATION	3
GC 1.01	CAPTIONS.....	3
GC 1.02	GENDER AND SINGULAR REFERENCES.....	3
GC 1.03	DEFINITIONS	3
GC 2	CONTRACT DOCUMENTS.....	7
GC 2.01	GENERAL.....	7
GC 2.02	ACCURACY OF DRAWINGS AS TO LOCATIONS OF STRUCTURES AND UTILITIES.....	7
GC 2.03	SOUNDINGS, BORINGS & INSPECTION OF SITE.....	7
GC 2.04	DOCUMENTS MUTUALLY EXPLANATORY.....	8
GC 2.05	CUSTODY OF DRAWINGS.....	8
GC 2.06	ORDER OF PRECEDENCE.....	9
GC 3	ADMINISTRATION OF CONTRACT.....	10
GC 3.01	ENGINEERS AUTHORITY	10
GC 3.02	DUTIES AND POWERS OF ENGINEER'S REPRESENTATIVES	12
GC 3.03	WORKING DRAWINGS.....	12
GC 3.04	RIGHT OF THE ENGINEER TO MODIFY METHODS AND EQUIPMENT	13
GC 3.05	ASSIGNMENT AND SUB-LETTING	13
GC 3.06	WORKING AREA.....	14
GC 3.07	REMOVAL OF WORKERS	15
GC 3.08	SERVICE OF NOTICE ON CONTRACTOR.....	15
GC 3.09	LAYOUT.....	15
GC 3.10	ACCESS TO SITE.....	16
GC 3.11	EXAMINATION OF WORK BEFORE COVERING UP.....	16
GC 3.12	QUALITY OF MATERIALS, WORKMANSHIP AND TESTS.....	16
GC 3.13	PAYMENT FOR TESTING.....	17
GC 3.14	URGENT REPAIRS	17
GC 3.15	SUSPENSION OF WORK.....	18
GC 3.16	EXTENSION OF TIME FOR COMPLETION	18
GC 3.17	DELAYS.....	18
GC 3.18	VARIATIONS	19
GC 3.19	EXTRA WORK.....	20
GC 3.20	ADDITIONAL WORK.....	20
GC 3.21	CLAIMS, NEGOTIATIONS, MEDIATION, ARBITRATION	20
GC 3.22	NOTICES.....	25
GC 3.23	NOTICE OF COMPLETION OF WORKS.....	25
GC 3.24	END OF MAINTENANCE PERIOD	26
GC 3.25	ASSUMPTION OF WORKS	26
GC 3.26	SITE MEETINGS	26
GC 3.27	DEFAULT BY CONTRACTOR.....	26
GC 4	CONTRACTOR'S RESPONSIBILITIES AND CONTROL OF THE WORK.....	29
GC 4.01	GENERAL.....	29
GC 4.02	LAYOUT.....	32
GC 4.03	TRAFFIC CONTROL REQUIREMENTS.....	32
GC 4.04	MAINTAINING ROADWAYS AND DETOURS	33

GC 4.05	ACCESS TO PROPERTIES ADJOINING THE WORK AND INTERRUPTION OF UTILITY SERVICES.....	34
GC 4.06	APPROVALS AND PERMITS	34
GC 4.07	EXCESS MATERIALS AND DISPOSAL	35
GC 4.08	TRAFFIC AND PARKING SIGNS.....	35
GC 4.09	SIDE CASTING.....	35
GC 4.10	NOTICE TO OWNERS.....	35
GC 4.11	ARTIFACTS.....	36
GC 4.12	PATENT RIGHTS AND ROYALTIES	36
GC 4.13	FACILITIES FOR OTHER CONTRACTORS.....	36
GC 4.14	PRESERVATION OF TREES	36
GC 4.15	SHRUBBERY.....	36
GC 4.16	LABOUR CLASSIFICATION AND RATES	37
GC 4.17	DUST CONTROL.....	37
GC 4.18	EMPLOYMENT.....	37
GC 4.19	LIMITATIONS OF OPERATIONS	37
GC 4.20	CLEARANCE OF SITE ON COMPLETION.....	37
GC 4.21	PERIOD OF MAINTENANCE.....	37
GC 5	MATERIAL	38
GC 5.01	SUPPLY OF MATERIAL	38
GC 5.02	QUALITY OF MATERIAL	38
GC 5.03	REJECTED MATERIAL	39
GC 6	INSURANCE, PROTECTION AND DAMAGE	39
GC 6.01	PROTECTION OF WORK, PERSONS AND PROPERTY.....	39
GC 6.02	LIABILITY INSURANCE.....	40
GC 7	MEASUREMENT AND PAYMENT	41
GC 7.01	QUANTITIES	41
GC 7.02	WEIGHING GRANULAR MATERIALS.....	41
GC 7.03	VALUATION OF VARIATIONS	42
GC 7.04	VARIATIONS IN TENDER QUANTITIES	43
GC 7.05	USE OF CONTINGENCY ITEMS.....	44
GC 7.06	CLAIMS.....	44
GC 7.07	SUPPLY OF PLANT AND MATERIAL.....	44
GC 7.08	CERTIFICATES AND PAYMENTS	45
GC 7.09	EXTRA WORK.....	45
GC 7.10	PAYMENT FOR EXTRA WORK.....	45

GC 1 INTERPRETATION

GC 1.01 Captions

The captions appearing in these general conditions have been inserted as a matter of convenience and for ease of reference only and in no way define, limit or enlarge the scope or meaning of the general conditions or any provision hereof.

GC 1.02 Gender and Singular References

References to the masculine or singular throughout the Contract Documents shall be considered to include the feminine and the plural and vice versa as the context requires.

GC 1.03 Definitions

In the Contract (as hereinafter defined) the following words and expressions shall have the meanings hereby assigned to them except where the context requires otherwise:

<i>"ENGINEER"</i>	the City Engineer or his/her representative placed in responsible charge of the work by the City of Windsor.
<i>"SITE REPRESENTATIVE"</i>	Authorized assistants of the Engineer such as construction inspector, quality control inspectors, maintenance supervisors, who are assigned to inspect the materials and workmanship in whole or in part, entering in the work.
<i>"PLANS"</i>	the official plan, profiles, cross-section and other drawings, or reproductions of the same which show the location, dimensions and details of the work to be done.
<i>"SPECIFICATIONS"</i>	the directions, requirements, etc., pertaining to the method or manner of performing the work and to the qualities of the materials to be furnished for the work.
<i>"PROPOSAL"</i>	the offer of the bidder, filed with the Purchasing Manager.

<i>"CONTRACT"</i>	the agreement entered into between the Contractor and the Corporation of the City of Windsor for the work described therein in accordance with these specifications.
<i>"CONTRACT DOCUMENTS"</i>	consists of the Agreement, Form of Tender, Form of Bond, General Conditions, the Drawings and the Specifications, together with the Schedule of Unit Prices, Instructions to Tenderers, and any modifications thereof, incorporated in the documents before their execution.
<i>"CITY" OR "CORPORATION"</i>	the Corporation of the City of Windsor.
<i>"TENDERER"</i>	a person, firm, or company who submits a tender for these works, which tender is subsequently accepted.
<i>"CONSTRUCTOR"</i>	means, for the purpose of, and within the meaning of the Occupational Health & Safety Act, R.S.O. 1980, C.321 and amendments thereto, the contractor who executes the contract.
<i>"CONTRACTOR"</i>	a person, firm, or company who submits a tender for these works, which tender is subsequently accepted.
<i>"WORKS"</i>	the works described in these tender documents for either or both supply, and installation or construction.
<i>"BASE"</i>	means a layer of material of specified type and thickness placed immediately below the pavement, driving surface, finished grade, curb and gutter or sidewalk.
<i>"CONTRACT TIME"</i>	means the time stipulated in the Contract Documents for Substantial Performance of the Work, including any extension of Contract Time made pursuant to the Contract Documents.
<i>"DAILY WORK RECORDS"</i>	mean daily records kept detailing the number and categories of workers and hours worked or on standby; types and quantities of equipment and number of hours in use or on standby; and description and quantities of material utilized.

<i>"EARTH GRADE"</i>	means the earth surface, whether in cut or fill, as prepared for the Base or Sub-base.
<i>"EQUIPMENT"</i>	means all machinery and equipment used for preparing, fabricating, conveying or erecting the work and normally referred to as construction machinery and equipment.
<i>"EXTRA WORK"</i>	means work not provided for in the Contract as awarded but considered by the Engineer essential to the satisfactory completion of the Contract within its intended scope.
<i>"ADDITIONAL WORK"</i>	means work not provided for in the Contract and not considered by the Engineer to be essential to the satisfactory completion of the Contract within its intended scope.
<i>"HAND TOOLS"</i>	means tools that are commonly called tools or implements of the trade and include small power tools. Individually, a tool will be considered as a Hand Tool where the maximum cost is \$250.00.
<i>"HAUL ROAD"</i>	means any public road excluding the road under contract, which forms part of a materials haul route.
<i>"MAJOR ITEM"</i>	means any tender item that has a value, calculated on the basis of its actual or estimated tender quantity whichever is the larger, multiplied by its tender unit price, which is equal to or greater than the lesser of: <ul style="list-style-type: none"> a) \$100,000. Or b) 5% of the total tender value calculated on the basis of the total of all the estimated tender quantities and the tender unit prices.
<i>"OWNER"</i>	means the party to the Contract for whom the Work is being performed, as identified in the Agreement.
<i>"PAVEMENT"</i>	means a wearing course or courses placed on the Roadway and consisting of asphaltic concrete, portland cement concrete, or plant or road mixed mulch.
<i>"PROFILE GRADE"</i>	means the required elevation of the surface of

	the Base.
<i>"ROAD ALLOWANCE"</i>	means the lands acquired at any time for use as a Highway.
<i>"ROADBED"</i>	means that part of the Work which is designed to support the wearing surface and shoulders of the Roadway.
<i>"ROADWAY"</i>	means that part of the Highway designed or intended for use by vehicular traffic and includes the shoulders.
<i>"SHOULDER"</i>	means that portion of the Roadway between the edge of the wearing surface and the top inside edge of the ditch or fill slope.
<i>"SPECIAL PROVISIONS"</i>	means special directions containing requirements peculiar to the Work.
<i>"STANDARD SPECIFICATION"</i>	means a standard practice required and stipulated by the Owner for performance of the work.
<i>"SUBBASE"</i>	means a layer of material of specified type and thickness between the Subgrade and the Base.
<i>"SUBCONTRACTOR"</i>	means a person, partnership or corporation undertaking the execution of a part of the Work by virtue of an agreement with the Contractor.
<i>"SUPERINTENDENT"</i>	means the Contractor's authorized representative in responsible charge of the Work.
<i>"WORK"</i>	means the total construction and related services required by the Contract Documents.
<i>"WORKING AREA"</i>	means all the lands and easements owned or acquired by the Owner for the construction of the Work.

GC 2 CONTRACT DOCUMENTS

GC 2.01 GENERAL

The works shall be constructed as called for in the specifications and as shown on the Contract Drawings.

GC 2.02 ACCURACY OF DRAWINGS AS TO LOCATIONS OF STRUCTURES AND UTILITIES

- i. The Corporation does not assume any responsibility for the correctness, accuracy or completeness of the Drawings, with respect to the location of existing structures, utilities, services, pipes, catchbasins, manholes, chambers or other objects (man made or natural) above the ground, on the surface and/or accessible from the surface and should the Drawings be found to be incorrect or incomplete, the Contractor shall not have any claim on this account.
- ii. The Corporation does not warrant the exact location of any utility or other subsurface condition that is identified in the Drawings. The Contractor will be responsible for all locates to identify exact locations of any utility or other subsurface condition that is identified within the limits of construction. The Contractor shall not be responsible for any utility or other man-made obstruction that is not identified in the Drawings or described in the specifications, if the presence and/or location of the obstruction could not be identified by site inspection made by the Contractor in accordance with these General Conditions.

GC 2.03 SOUNDINGS, BORINGS & INSPECTION OF SITE

- i. The Tenderer shall be required to carry out all the necessary site investigation to arrive at his Total Tender Price for this Contract and under no circumstances will he, as the Contractor, be entitled to receive any extra payment because he may have neglected to investigate the site or because he may encounter ground conditions which he might have thought were not present. He shall satisfy himself; as to the nature of the soil, the bearing capacity and other physical characteristics as well as the location of various earth and rock strata, ground water level, etc. He shall be entirely responsible for determining all of the necessary information relevant to the construction of the Works and he shall not hold the Corporation liable for any item in this regard. He shall verify all matters concerning access to the work, power supplies, location of existing services, utilities, etc., prior to submission of his Tender. Should the Corporation, prior to asking for tenders, have made a soil investigation, soil engineering report, and environmental audits, copies of the same shall be kept on file at the office of the Engineer, and the Tenderer may at

any time between the hours of 8:30 a.m. and 4:30 p.m. local time, visit the said office of the Engineer on any working day and examine the said soil report. The Tenderer shall note that the said soil report will have been prepared for the purpose of designing the Works, and he shall in no way hold the Corporation liable for any of the contents of the said report. The report shall be intended to be a guide for the Contractor in ascertaining the best possible construction methods to be used by him in carrying out the Contract.

- ii. If any time during the execution of the works, the Engineer shall require the Contractor to make bore holes or to carry out exploratory excavation, such requirement shall be ordered in writing and shall be deemed to be an addition ordered under the provisions of Clause 7.03 hereof, unless provisional sum in respect of such anticipated work shall have been included in the Schedule of Unit Prices.

GC 2.04 DOCUMENTS MUTUALLY EXPLANATORY

The several documents forming the Contract are to be taken as mutually explanatory of the one another, and in case of ambiguities or discrepancies, the same shall be explained and adjusted by the Engineer, who shall thereupon issue to the Contractor instructions directing in what manner the work is to be carried out.

GC 2.05 CUSTODY OF DRAWINGS

- i. The Drawings shall remain in the sole custody of the Engineer but up to six (6) copies thereof shall be furnished to the Contractor free of cost. The Contractor shall provide and make at his own expense any further copies required by him. At the completion of the Contract, the Contractor shall return to the Engineer all drawings provided under the Contract.
- ii. The Contractor shall give adequate notice in writing to the Engineer of any further drawing or specification that may be required for the execution of the Works, or otherwise, under the Contract.
- iii. One copy of the Drawings furnished to the Contractor as aforesaid, shall be kept by the Contractor on Site, and the same shall at all reasonable times, be available for inspection and use by the Engineer, the Engineer's Representative, and by any other person authorized by the Engineer in writing.
- iv. The Engineer shall have full power and authority to supply to the Contractor, from time to time, during the progress of the Works, such further drawings and instructions as shall be necessary for the purpose of

the proper and adequate execution and maintenance of the Works, and the Contractor shall carry out and be bound by the same.

GC 2.06 ORDER OF PRECEDENCE

- i. In the event of any inconsistency or conflict in the contents of the following documents, such documents shall take precedence and govern in the following order:
 - a. Agreement
 - b. Addenda
 - c. Special Provisions
 - d. Contract Drawings
 - e. Supplementary Specifications and Mandatory Procedures and Practices
 - f. Standard Specifications
 - g. Form of Tender
 - h. Supplemental General Conditions
 - i. General Conditions
 - j. Working Drawings

Later dates shall govern within each of the above categories of documents.

- ii. In the event of any conflict among or inconsistency in the information shown on Drawings, the following rules shall apply:
 - a. Dimensions shown in figures on a Drawing shall govern where they differ from dimensions scaled from the same Drawing;
 - b. Drawings of larger scale shall govern over those of smaller scales;
 - c. Detailed Drawings shall govern over general Drawings; and
 - d. Drawings of a later date shall govern over those of an earlier date in the same series.
- iii. In the event of any conflict in the contents of Standard Specifications the following order of precedence shall govern:
 - a. Specifications approved or modified by the Engineer
 - b. City of Windsor Standard Specifications

GC 3 ADMINISTRATION OF CONTRACT

GC 3.01 ENGINEERS AUTHORITY

- i. The Engineer will be the Corporation's representative during the construction and until the issuance of the Completion Certificate or the issuance of the final acceptance certificate whichever is later. All instructions to the Contractor will be issued by the Engineer. The Engineer will have the authority to act on behalf of the Corporation only to the extent provided in the Contract Documents.
- ii. All claims, disputes and other matters in question relating to the performance and the quality of the Work or the interpretation of the Contract Documents shall be initially referred to the Engineer in writing by the Contractor. The Engineer will give a decision in writing within a reasonable time.
- iii. The Engineer will inspect the Work for its conformity with the plans and specifications, and will record the necessary data to establish payment quantities under the schedule of tender quantities and unit prices or to make an assessment of the value of the Work completed in the case of a lump sum price contract.
- iv. The Engineer will determine the amounts owing to the Contractor under the Contract and will issue certificates for payment in such amounts as provided for in Section 7. Measurement and Payment.
- v. The Engineer will, with reasonable promptness, review and take appropriate action upon the Contractor's submissions such as shop drawings, product data, and samples in accordance with the Contract Documents.
- vi. The Engineer will investigate all allegations of a change in the character of the Work made by the Contractor and issue appropriate instructions.
- vii. The Engineer will prepare Change Orders for the Contractor's signature and the Commissioner's approval.
- viii. Upon written application by the Contractor, the Engineer and the Contractor will jointly conduct an inspection of the Work to establish the date of Substantial Performance of the Work and/or the date of Completion of the Work.
- ix. The Engineer will be, in the first instance, the interpreter of the Contract Documents and the judge of the performance thereunder by both parties

to the Contract. Interpretations and decisions of the Engineer shall be consistent with the intent of the Contract Documents.

- x. The Engineer will have the authority to reject work or material which does not conform to the Contract Documents.
- xi. Defective work, whether the result of poor workmanship, use of defective material or damage through carelessness or other act or omission of the Contractor and whether incorporated in the Work or not, which has been rejected by the Engineer as failing to conform to the Contract Documents shall be removed promptly from the Work by the Contractor and replaced or re-executed promptly in accordance with the Contract Documents at no additional cost to the Corporation.
- xii. Any part of the Works destroyed or damaged by such removals, replacements or re-executions shall be made good, promptly, at no additional cost to the Corporation.
- xiii. If, in the opinion of the Engineer, it is not expedient to correct defective work or work not performed in accordance with the Contract Documents, the Corporation may deduct from monies otherwise due to the Contractor the difference in value between the work as performed and that called for by the Contract Documents, the amount of which will be determined in the first instance by the Engineer.
- xiv. In case of default on the part of the Contractor in carrying out the corrections of defective work, the Corporation shall be entitled to employ and pay other persons to carry out the same, and all expenses consequent thereon, or incidental thereto, shall be borne by the Contractor, and shall be recoverable from him by the Corporation, or may be deducted by the Corporation from any monies due, or which may become due, to the Contractor.
- xv. Notwithstanding any inspections made by the Engineer or the issuance of any certificates or the making of any payment by the Corporation, the failure of the Engineer to reject any defective work or Material shall not constitute acceptance of defective work or Material.
- xvi. The Engineer will have the authority to temporarily suspend the Work for such reasonable time as may be necessary to facilitate the checking of any portion of the Contractor's construction layout or the inspection of any portion of the Work. There shall not be any extra compensation for this suspension of work.

GC 3.02 DUTIES AND POWERS OF ENGINEER'S REPRESENTATIVES

- i. The duties of the Site Representative are to monitor and inspect the Works and to test and examine any materials (GC 3.12 & GC 3.13) to be used, or workmanship employed, in connection with the works. The Site Representative shall have no authority to relieve the Contractor of any of his duties or obligations under the Contract.
- ii. The Site Representative will inspect the work for conformity with plans and specifications, and will measure, tabulate and record quantities under the schedule of tender quantities and unit prices.
- iii. In the case of extra work, the Site Representatives will keep records of quantities, materials, labour and equipment as per section GC 7.09.
- iv. The Site Representative will investigate all allegations of a change in character of the Work, made by the Contractor, and will report the details to the Engineer.
- v. The Site Representative will have the authority to reject work or material which does not conform to Contract Specifications.
- vi. The Site Representative will have the authority to temporarily suspend the work for such reasonable time as it may be necessary to facilitate the checking of any portion of Contractor's construction layout or the inspection on any portion of the work. There will be no compensation for the suspension of work.

GC 3.03 WORKING DRAWINGS

- i. The Contractor shall arrange for the preparation of clearly identified and dated Working Drawings as called for by the Contract Documents.
- ii. The Contractor shall submit Working Drawings to the Engineer with reasonable promptness and in orderly sequence so as to not cause delay in the Work. If either the Contractor or the Engineer so requests they shall jointly prepare a schedule fixing the dates for submission and return of Working Drawings. Working Drawings shall be submitted in the form of prints. At the time of submission the Contractor shall notify the Engineer in writing of any deviations from the Contract requirements that exist in the Working Drawings.
- iii. The Engineer will review and return Working Drawings in accordance with an agreed upon schedule, or otherwise, with reasonable promptness so as not to cause delay.

- iv. The Engineer's review will be to check for conformity to the design concept and for general arrangement only and such review shall not relieve the Contractor of responsibility for errors or omissions in the Working Drawings or of responsibility for meeting all requirements of the Contract Documents unless a deviation on the Working Drawings has been approved in writing by the Engineer.
- v. The Contractor shall make any changes in Working Drawings which the Engineer may require consistent with the Contract Documents and resubmit unless otherwise directed by the Engineer. When resubmitting, the Contractor shall notify the Engineer in writing of any revisions other than those requested by the Engineer.
- vi. Work related to the Working Drawings shall not proceed until the Working Drawings have been reviewed by the Engineer.
- vii. The Contractor shall keep one set of the reviewed Working Drawings, marked as above, at the site at all times.

GC 3.04 RIGHT OF THE ENGINEER TO MODIFY METHODS AND EQUIPMENT

- i. The Contractor shall, when requested in writing, make alterations in the method, equipment or work force at any time the Engineer considers the Contractor's actions to be unsafe, or damaging to either the Work or existing facilities or the environment.
- ii. The Contractor shall alter the sequence of operations on the Contract, when requested in writing, so as to avoid interference with other work.
- iii. Notwithstanding the foregoing, the Contractor shall ensure that all necessary safety precautions and protection are maintained throughout the Work.

GC 3.05 ASSIGNMENT AND SUB-LETTING

- i. The Contractor shall not assign the Contract, or any part thereof, or any benefit or interest therein, or thereunder, without the written consent of the Corporation.
- ii. The Contractor shall, at the request of the Engineer, notify the Engineer in writing of the names of the Sub-Contractors proposed for the principal parts of the Work and for such others as the Engineer may direct and shall not employ any to whom the Engineer may object.
- iii. If the Engineer should object or refuse to accept any Sub-Contractor or manufacturer's product for inclusion in the Work, he shall not be required

to give any reason whatsoever for such objection or refusal. Further, neither the Contractor nor the Sub-Contractor nor any other person shall pursue the matter in any way or at any time subsequently after the Engineer's decision in such matter has been given.

- iv. The Contractor shall preserve and protect the rights of the parties under the Contract with respect to the work to be performed under subcontract and shall:
 - a. enter into agreements with the intended Subcontractors to require them to perform their work in accordance with the Contract Documents; and
 - b. be as fully responsible to the Corporation for acts and omissions of the Contractor's Subcontractors and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the Contractor.
- v. Neither a subcontracting, nor the Corporation's consent to a subcontracting by the Contractor, shall be construed to relieve the Contractor from any obligation under the Contract or to impose any liability upon the Corporation. Nothing contained in the Contract Documents shall create a contractual relationship between a Subcontractor and the Corporation.

GC 3.06 WORKING AREA

- i. The Corporation will acquire all property rights which are deemed necessary by the Corporation for the construction of the work including temporary working easements and will indicate the full extent of the working area on the Contract Drawings.
- ii. Should the Contractor require additional temporary right of ways or easements, not shown on the contract drawings, the Contractor shall bear all expenses and charges. The Contractor shall also provide at his own cost, any additional accommodation outside the site required by him for the purpose of the Works.
- iii. The Contractor's sheds, site offices, toilets, other temporary structures and storage areas for material and equipment shall be grouped in a compact manner and maintained in a neat and orderly condition at all times.
- iv. The Contractor shall not enter upon or occupy any private property for any purpose, unless the Contractor has received prior written permission from the property owner.

GC 3.07 REMOVAL OF WORKERS

The Contractor shall employ in and about the execution of the works, only such persons as are careful, skilled and experienced in their several trades and callings, and the Engineer shall be at liberty to object to, and require the Contractor to remove from the works, who in the opinion of the Engineer misconducts himself, or is incompetent or negligent in the proper performance of his duties; and such persons shall not be again employed upon the works without the permission of the Engineer. This clause does not apply to the provisions of the Occupational Health & Safety Act.

GC 3.08 SERVICE OF NOTICE ON CONTRACTOR

- i. Any notice to be given to the Contractor under the terms of the Contract, shall be served by sending the same by post, or leaving the same at the Contractor's principal place of business, (or in the event of the Contractor being a Company, to or at its registered office).
- ii. Any notice, given to the Corporation under the terms of the Contract, shall be served by sending the same by registered mail to the Engineer of the Corporation of the City of Windsor, P. O. Box 1607, City Hall, Windsor, Ontario, N9A 6S1.

GC 3.09 LAYOUT

- i. The Engineer will provide base lines, monuments and bench marks only, as shown on the drawings and as required by the Contractor for establishing line and grade. The Corporation will be responsible only for the correctness of the information provided by the Engineer.
- ii. The Contractor shall give the Engineer at least forty-eight (48) hours notice before requiring any setting out of any base lines or bench marks on any portion of the Works and shall state clearly in such notice the exact locality or localities where setting out is required.
- iii. The Contractor shall supply, at his own expense, incidental labour and material required by the Engineer for setting base lines and bench marks and shall facilitate such work in every way.
- iv. The Contractor will be held responsible for the preservation in their proper position of all bench marks, reference points, iron bars and stakes, and if any of them are disturbed, lost or destroyed after once being given, he shall at once notify the Engineer and the cost incurred in replacing them be borne by the Contractor.

GC 3.10 ACCESS TO SITE

The Engineer, and any person authorized by him, shall at all times have access to the Works and to the Site, and to all workshops and places where work is being prepared, or when materials, manufactured articles and machinery are being obtained for the works; and the Contractor shall afford every facility for, and every assistance in, or in obtaining, the right to such access.

GC 3.11 EXAMINATION OF WORK BEFORE COVERING UP

- i. No work shall be covered up or put out of view without the approval of the Engineer, and the Contractor shall afford full opportunity for the Engineer to examine and measure any work which is about to be covered up, or put out of view, and to examine foundations before permanent work is placed thereon. The Contractor shall give due notice to the Engineer whenever any such work or foundations is, or are ready, or about to be ready for examination, and the Engineer shall without reasonable delay, unless he considers it unnecessary and advises the Contractor accordingly, attend for the purpose of examining and measuring such work, or of examining such foundations.
- ii. The Contractor shall uncover any part or parts of the Works, or make openings in or through the same as the Engineer may from time to time direct, and shall reinstate and make good such part or parts to the satisfaction of the Engineer. If any such part or parts have been covered up, or put out of view, after compliance with the above requirements, and are found to be executed in accordance with the Contract, the expense of uncovering, making openings in, or through, reinstating and make good the same, shall be borne by the Corporation; but in any other case, all such expenses shall be borne by the Contractor and shall be recoverable from him by the Corporation, or may be deducted by the Corporation from any monies due, or which may become due to the Contractor.

GC 3.12 QUALITY OF MATERIALS, WORKMANSHIP AND TESTS

- i. All materials and workmanship shall be of the respective kinds described in the Contract, and in accordance with the Engineer's instructions, and shall be subjected from time to time to such tests as the Engineer may direct, at the place of manufacture or fabrication, or on the Site, or at all or any of such places. The Contractor shall provide such assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work, and the quality, weight or quantity of any material used; and shall supply samples of materials before incorporation in the Works, for testing, as may be selected and

required by the Engineer. All samples shall be supplied by the Contractor at his own cost.

- ii. The Contractor shall supply at his own expense, certified copies of all tests upon all materials entering into the Contract. Such tests shall be made, as and when directed by the Engineer, and by an approved testing laboratory.

GC 3.13 PAYMENT FOR TESTING

- i. The following tests, called for as required by the Engineer, will be paid for by the Corporation:
 - 1. Air entrainment tests during concrete work.
 - 2. Slump tests during concrete work.
 - 3. Casting and compression testing of concrete cylinders.
 - 4. Compaction tests. Limit of one test per location. If the result of any compaction test is below that specified, the Engineer may call for retesting, and all costs associated with such retesting shall be paid by the Contractor.
 - 5. Analysis of granular materials and approval of sources. Limit of one analysis per type of materials.
 - 6. Asphalt extraction tests.
- ii. The above tests are for compliance purposes only. The test results shall not be the basis for any mix designs and shall not bind the Corporation to accept any material for use in the Contract.
- iii. The Contractor and suppliers are responsible for maintaining an adequate quality control program and for conducting tests on all materials incorporated into the Contract at their own expense. The results of the quality control program and material tests shall be made available to the Engineer promptly, upon request.

GC 3.14 URGENT REPAIRS

If by reason of any accident or failure or other event occurring to, in, or in connection with, the Works or any part thereof, either during the execution of the Works or during the Period of Maintenance, any remedial or other work or repair shall in the opinion of the Engineer be urgently necessary for security, and the Contractor is unable or unwilling at once to do such work or repair, the Corporation may have its own or other workers to do such work as the Engineer may consider necessary. If the work or repair, so done by the Corporation is work, which in the opinion of the Engineer, the Contractor was liable to do at his own expense under the Contract all costs and charges properly incurred by the Corporation in so doing, shall

on demand, be paid by the Contractor to the Corporation from any monies due, or which may become due to the Contractor. Provided always that the Engineer shall as soon after the occurrence of any such emergency as may be reasonably practicable, notify the Contractor thereof in writing.

GC 3.15 SUSPENSION OF WORK

The Contractor shall, on the written order of the Engineer, suspend the progress of the Works or any part thereof for such time or times and in such manner as the Engineer may consider necessary and shall during such suspension properly protect and secure the work so far as is necessary in the opinion of the Engineer.

GC 3.16 EXTENSION OF TIME FOR COMPLETION

- i. Should the amount of extra or additional work of any kind, or other special circumstances of any kind whatsoever which may occur, be such as fairly to entitle to the Contractor to an extension of time for the completion of the work, the Engineer shall determine the amount of such extension. Provided that the Engineer is not bound to take into account any extra or additional work or other special circumstances unless the Contractor has, within fourteen (14) calendar days after such work has been commenced, or such circumstances have arisen, or as soon thereafter as is practicable, delivered to the Engineer full and detailed particulars of any claim to extension of time to which he may consider himself entitled, in order that such claim may be investigated at the time.
- ii. Circumstances suitable for consideration include the following:
 - a. Delays GC 3.17
 - b. Variations GC 3.18
 - c. Extra Work GC 3.19
 - d. Additional Work GC 3.20
- iii. The terms and conditions of the contract shall continue for such extension of Contract time.

GC 3.17 DELAYS

If the Contractor is delayed in the performance of the Work by:

- a. War, blockades, and civil commotions, errors in the Contract Documents; an act of omission of the Corporation Engineer, other contractors, or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the Contract Documents; or
- b. A stop work order issued by a court or public authority, provided that such order was not issued as the result of an act or omission of the

- Contractor or anyone employed or engaged by the Contractor directly or indirectly; or
- c. The Engineer giving notice under subsection 3.15 Suspension of Work; or
 - d. Abnormal inclement weather;

then consideration may be given to reimburse the Contractor by the Corporation for reasonable costs incurred by the Contractor as the result of such delay. Extension of Contract Time will be granted in accordance with subsection GC 3.16 Extension of Contract Time.

The Contractor shall not be entitled to payment for the cost of delays incurred as a result of a dispute between the Contractor and Owner. The Contractor shall execute the Work and may pursue resolution of the dispute in accordance with subsection GC 3.21, Claims, Negotiations, Mediation, Arbitration.

GC 3.18 VARIATIONS

- i. The Engineer will make any variations of the form, quality or quantity of the Works, or any part thereof, that may in his opinion be necessary, and for that purpose, or if for any other reason it shall in his opinion be desirable, will have the power to order the Contractor to do, and the Contractor shall do, any of the following:
 - a. increase or decrease the quantity of any work included in the Contract,
 - b. omit any such work,
 - c. change the character or quality or kind of such work,
 - d. change the levels, lines, position and dimensions of any part of the Works, and
 - e. execute additional work of any kind necessary for the completion of the Works

and no such variations shall in any way vitiate, or invalidate, the Contract, but the value (if any), of all such variations shall be taken into account in ascertaining the amount of the Contract Price.

- ii. No such variation shall be made by the Contractor without an order in writing of the Engineer. Provided that no order in writing shall be required for increase or decrease in the quantity of any work, where such increase or decrease is not the result of an order given under this Clause, but is the result of the quantities exceeding or being less than those stated in the Schedule of Prices. Provided also that if for any reason the Engineer shall consider it desirable to give any such order verbally, the Contractor

shall comply with such order, and any confirmation in writing of such verbal order given by the Engineer, whether before or after the carrying out of the order, shall be deemed to be an order in writing within the meaning of this Clause. Provided further that if the Contractor shall confirm in writing to the Engineer any verbal order of the Engineer, and such confirmation shall not be contradicted in writing by the Engineer, it shall be deemed to be an order in writing by the Engineer.

- iii. The Contract may apply for an extension of Contract Time.
- iv. If the Changes in the Work relate solely to quantities as in the pay items, payment will be made according to the contract. If the Changes in the Work do not solely relate to pay items, payment may be negotiated.

GC 3.19 EXTRA WORK

- i. The Corporation, or Engineer where so authorized, may instruct the Contractor to perform Extra Work without invalidating the Contract. The Contractor shall not be required to proceed with the Extra Work until receipt of a Written Order. Upon receipt of the Written Order the Contract shall proceed with the Work.
- ii. The Contractor may apply for an extension of Contract Time.

GC 3.20 ADDITIONAL WORK

- i. The Corporation, or Engineer where so authorized, may request the Contractor to perform Additional Work without invalidating the Contract, if the Contractor agrees to perform Additional Work, the Contractor shall proceed with such work upon receipt of a Written Order.
- ii. The Contractor may apply for an extension of Contract Time.

GC 3.21 CLAIMS, NEGOTIATIONS, MEDIATION, ARBITRATION

GC 3.21.01 Continuance of the Work

- i. Unless the Contract has been terminated or completed, the Contractor shall in every case, after serving or receiving any notification of a claim or dispute, verbal or written, continue to proceed with the Work with due diligence and expedition. It is understood by the parties that such action shall not jeopardize any claim it may have.

GC 3.21.02 Record Keeping

- i Immediately upon commencing work that may result in a claim, the Contractor shall keep Daily Work Records during the course of the Work, sufficient to substantiate the Contractor's claim, and the Engineer shall keep Daily Work Records to be used in assessing the Contractor's claim. The Contractor shall preserve all such original Records until 12 months after the Final Acceptance Certificate is issued or until all claims have been settled, whichever is longer. The Contractor shall require that Subcontractors employed by the Contractor preserve all original Records pertaining to the Work, Changes in the Work, Extra Work, and claims arising therefrom for a similar period of time.
- ii The Contractor and the Engineer shall attempt to reconcile their respective Daily Work Records on a daily basis, to simplify review of the claim, when submitted. If the Contractor and the Engineer fail to reconcile their respective Daily Work Records, then the Contractor shall submit its Daily Work Records as part of its claim, whereby the resolution of the dispute about the Daily Work Records shall not be resolved until there is a resolution of the claim.
- iii The keeping of Daily Work Records by the Engineer or the reconciling of such Daily Work Records with those of the Contractor shall not be construed to be acceptance of the claim.

GC 3.21.03 Claims Procedure

- i The Contractor shall give verbal notice of any situation that may lead to a claim for additional payment immediately upon becoming aware of the situation.
- ii The Contractor shall provide written notice within 7 calendar Days of the commencement of any part of the Work that may be affected by the situation.
- iii The Contractor shall submit detailed claims as soon as reasonably possible and in any event no later than 30 Days after completion of the work affected by the situation. The detailed claim shall:
 - a identify the item or items in respect of which the claim arises;
 - b state the grounds, contractual or otherwise, upon which the claim is made; and
 - c include the Records maintained by the Contractor supporting such claim. In exceptional cases, the 30 Days may be increased to a maximum of 90 Days with approval in writing from the Engineer.
- iv Within 30 Days of the receipt of the Contractor's detailed claim, the Engineer may request the Contractor to submit any further and other particulars as the Engineer considers necessary to assess the claim. The

-
- Contractor shall submit the requested information within 30 Days of receipt of such request.
- v Within 90 Days of receipt of the detailed claim, the Engineer shall advise the Contractor, in writing, of the Engineer's opinion with regard to the validity of the claim.

GC 3.21.04 Negotiations

- i The parties shall make all reasonable efforts to resolve their dispute by amicable negotiations and agree to provide, without prejudice, open and timely disclosure of relevant facts, information, and documents to facilitate these negotiations.
- ii Should the Contractor disagree with the opinion given in paragraph GC 3.21.03 (v), with respect to any part of the claim, the Engineer shall enter into negotiations with the Contractor to resolve the matters in dispute. Where a negotiated settlement cannot be reached and it is agreed that payment cannot be made on a Time and Material basis in accordance with clause GC 7.10, Payment for Extra work, the parties shall proceed in accordance with clause GC 3.21.05, Mediation, or subsection GC 3.21.08, Arbitration.

GC 3.21.05 Mediation

- i If a claim is not resolved satisfactorily through the negotiation stage noted in clause GC 3.21.04, Negotiations, within a period of 30 Days following the opinion given in paragraph GC 3.21.03 (v), and the Contractor wishes to pursue the issue further, the parties may, upon mutual agreement, utilize the services of an independent third party mediator.
- ii The mediator shall be mutually agreed upon by the Owner and Contractor.
- iii The mediator shall be knowledgeable regarding the area of the disputed issue. The mediator shall meet with the parties together or separately, as necessary, to review all aspects of the issue. In a final attempt to assist the parties in resolving the issue themselves prior to proceeding to arbitration the mediator shall provide, without prejudice, a non-binding recommendation for settlement.
- iv The review by the mediator shall be completed within 90 Days following the opinion given in paragraph GC 3.21.03 (v).
- v Each party is responsible for its own costs related to the use of the third party mediator process. The cost of the third party mediator shall be equally shared by the Owner and Contractor.

GC 3.21.06 Payment

- i Payment of the claim shall be made no later than 30 Days after the date of resolution of the claim or dispute.

GC 3.21.07 Rights of Both Parties

- i It is agreed that no action taken under subsection GC 3.21, Claims, Negotiations, Mediation, by either party shall be construed as a renunciation or waiver of any of the rights or recourse available to the parties, provided that the requirements set out in this subsection are fulfilled.

GC 3.21.08 Arbitration

GC 3.21.08.01 Conditions of Arbitration

- i If a claim is not resolved satisfactorily through the negotiation stage noted in clause GC 3.21.04, Negotiations, or the mediation stage noted in clause GC 3.21.05, Mediation, either party may invoke the provisions of subsection GC 3.21.08, Arbitration, by giving written notice to the other party.
- ii Notification that arbitration shall be implemented to resolve the issue shall be communicated in writing as soon as possible and no later than 60 Days following the opinion given in paragraph GC 3.21.03 (v). Where the use of a third party mediator was implemented, notification shall be within 120 Days of the opinion given in paragraph GC 3.21.03 (v).
- iii The parties shall be bound by the decision of the arbitrator.
- iv The rules and procedures of the *Arbitration Act*, 1991, S.O. 1991, c.17, as amended, shall apply to any arbitration conducted hereunder except to the extent that they are modified by the express provisions of subsection GC 3.21.08, Arbitration.

GC 3.21.08.02 Arbitration Procedure

- i The following provisions are to be included in the agreement to arbitrate and are subject only to such right of appeal as exist where the arbitrator has exceeded his or her jurisdiction or have otherwise disqualified him or herself:
 - a All existing actions in respect of the matters under arbitration shall be stayed pending arbitration;
 - b All outstanding claims and matters to be settled are to be set out in a schedule to the agreement. Only such claims and matters as are in the schedule shall be arbitrated; and
 - c Before proceeding with the arbitration, the Contractor shall confirm that all matters in dispute are set out in the schedule.

GC 3.21.08.03 Appointment of Arbitrator

- i The arbitrator shall be mutually agreed upon by the Owner and Contractor to adjudicate the dispute.
- ii Where the Owner and Contractor cannot agree on a sole arbitrator within 30 Days of the notification of arbitration noted in paragraph GC 3.21.08.01 (ii), the Owner and the Contractor shall each choose an appointee within 37 Days of the notice of arbitration.
- iii The appointees shall mutually agree upon an arbitrator to adjudicate the dispute within 15 Days after the last appointee was chosen or they shall refer the matter to the Arbitration and Mediation Institute of Ontario Inc., which may select an arbitrator to adjudicate the dispute within 7 Days of being requested to do so.
- iv The arbitrator shall not be interested financially in the Contract nor in either party's business and shall not be employed by either party.
- v The arbitrator may appoint independent experts and any other persons to assist him or her.
- vi The arbitrator is not bound by the rules of evidence that govern the trial of cases in court but may hear and consider any evidence that the arbitrator considers relevant.
- vii The hearing shall commence within 90 Days of the appointment of the arbitrator.

GC 3.21.08.04 Costs

- i The arbitrator's fee shall be equally shared by the Owner and the Contractor.
- ii The fees of any independent experts and any other persons appointed to assist the arbitrator shall be shared equally by the Owner and the Contractor.
- iii The arbitration hearing shall be held in a place mutually agreed upon by both parties or in the event the parties do not agree, a site shall be chosen by the arbitrator. The cost of obtaining appropriate facilities shall be shared equally by the Owner and the Contractor.
- iv The arbitrator may, in his or her discretion, award reasonable costs, related to the arbitration.

GC 3.21.08.05 The Decision

- i The reasoned decision shall be made in writing within 90 Days of the conclusion of the hearing. An extension of time to make a decision may be granted with consent of both parties. Payment of any award shall be made in accordance with clause GC 3.21.06, Payment.

GC 3.22 NOTICES

- i. Any notice permitted or required to be given to the Engineer or the Superintendent in respect of the Work shall be deemed to have been given to and received by the addressee on the date of delivery if delivered by hand or by facsimile transmission and on the fifth day after the date of mailing if sent by mail.
- ii. The Contractor shall provide the mailing addresses, telephone numbers, e-mail addresses, after working hours telephone numbers, and facsimile terminal numbers for the Superintendent at the commencement of the Work.
- iii. In the event of an emergency situation or other urgent matter the Engineer or the Superintendent may give a verbal notice, provided that such notice is confirmed in writing.
- iv. Any notice permitted or required to be given to the Corporation or the Contractor shall be given in accordance with the notice provision of the Agreement.

GC 3.23 NOTICE OF COMPLETION OF WORKS

- i. As soon as in the opinion of the Engineer the Works shall have been "Substantially Performed" or "Deemed Completed" as defined under the Construction Lien Act, have passed any test that may be prescribed by the Contract, and have been accepted in writing by the Engineer as completed and to his satisfaction; the Engineer shall, on receiving an undertaking by the Contractor to finish any outstanding work during the Period of Maintenance, issue the appropriate certificate as provided for under the Construction Lien Act in respect of the Works, and the Period of Maintenance of the Works shall commence from the date of such certificate. Provided that the Engineer may give such a certificate with respect to any part of the Works before the completion of the whole of the Works; subject to such part of the Works having been accepted in writing by the Engineer as completed and to his satisfaction. When any such certificate is given in respect of a part of the Works, such part shall be considered as completed; and the Period of Maintenance of such part shall commence from the date of such Notice.
- ii. Following the issuance of the appropriate certificate as provided for under the Construction Lien Act, the Engineer will provide the Contractor with a Letter of Acceptance for Maintenance for the Works confirming the Period of Maintenance and any special conditions related thereto.

GC 3.24 END OF MAINTENANCE PERIOD

- i. Only written notice shall be deemed to constitute approval of any work, or other matter in respect of which it is issued, or shall be taken as an admission of the due performance of the Contract, or any part thereof, or of the accuracy of any claim or demand made by the Contractor, or of additional or varied work having been ordered by the Engineer, and no other certificate conclude or prejudice any of the powers of the Engineer.
- ii. The Contract shall not be considered as completed, until a Letter Assuming the works shall have been signed by the Engineer stating that the Works have been completed and maintained to the satisfaction of the Engineer. The Letter Assuming the Works shall be given by the Engineer upon the expiration of the Period of Maintenance, or as soon thereafter as any works ordered during such period, pursuant to Clauses 4.21 and 4.01.xvii hereof, shall have been completed to the satisfaction of the Engineer and full effect shall be given to the Clause, notwithstanding any previous entry on the Works, or the taking possession working or using thereof, or any part thereof, by the Corporation.

GC 3.25 ASSUMPTION OF WORKS

- i. The Corporation shall not be liable to the Contractor for any matter or thing arising out of, or in connection with the Contract or the execution of the Works, unless the Contractor shall have made a claim in writing in respect thereof, before the giving of the Letter Assuming the Works under this Clause.
- ii. Notwithstanding the issue of the Letter Assuming the Works, the Contractor shall remain liable for the fulfillment of any obligation incurred under the provisions of the Contract prior to the issue of the Letter Assuming the Works, which remains unperformed at the time such letter is issued; and for the purposes of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in force between the parties hereto.

GC 3.26 SITE MEETINGS

Site meetings shall be held at regular intervals as directed by the Engineer. The Contractor shall provide a responsible representative for such meetings.

GC 3.27 DEFAULT BY CONTRACTOR

- i. If the Contractor becomes bankrupt or has a receiving order made against him, or presents his petition in bankruptcy, or makes an arrangement with,

or assignment in favour of his creditors, or agrees to carry out the contract under a committee of inspection of his creditors, or (being a corporation), goes into liquidation (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), or if the Contractor assigns the contract without the consent in writing of the Corporation first obtained, or has an execution levied on his goods, then the Corporation may, without prejudice to any other right or remedy it may have, by giving the Contractor or Receiver or Trustee in bankruptcy five (5) day written notice terminate this contract.

- ii. If the Contractor:
 - a. has abandoned the contract, or
 - b. has without reasonable excuse has failed to commence the works, or has suspended the progress of the works for 14 days after receiving from the Engineer written notice to proceed, or
 - c. has failed to proceed with due diligence, or
 - d. has failed to remove materials from the site, or to pull down and replace work for 14 days after receiving from the Engineer written notice that the said materials or work have been condemned, and rejected by the Engineer under these conditions, or
 - e. is not executing the works in accordance with the contract, or is persistently or flagrantly neglecting to carry out his obligations under the contract, or
 - f. has to the detriment of good workmanship, or in defiance of the Engineer's instructions to the contrary, sub-let any part of the contract.

then the Corporation may notify the Contractor in writing that he is in default of his contractual obligations and instruct him to correct the default within five (5) working days of receiving the notice.

- iii.
 - 1. The Contractor shall have the right within the given five (5) full working days following the receipt of a notice of default to correct the default and provide the owner with satisfactory proof that appropriate corrective measures have been taken.
 - 2. If the correction of the default cannot be completed within the five (5) full working days following receipt of the notice, the Contractor shall not be in default if the Contractor:
 - a. commences the correction of the default within the five (5) full working days following receipt of the notice;
 - b. provides the Corporation with an acceptable schedule for the progress of such correction; and
 - c. completes the correction in accordance with such schedule.

-
- iv. If the Contractor is in default of the contract and the contractor has provided a Performance Bond, the provisions of this section shall be exercised in accordance with the conditions of the Performance Bond.
 - v. If the contractor fails to comply with the provisions of 3(1) or 3(2) the Corporation may without prejudice to any other right or remedy it may have:
 - a. correct such default and deduct the cost thereof from the payment then or thereafter due the contractor; or
 - b. terminate the Contractor's rights to continue with the work in whole or in part or terminate the contact.
 - vi. If the Corporation terminates the Contractor's right to continue with the work in whole or in part, the Corporation will be entitled to:
 - a. take possession of the working area or that portion of the working area devoted to that part of the work terminated;
 - b. utilize the Contractor's equipment and any material within the working area which is intended to be incorporated into the work, the whole subject to the right of third parties;
 - c. withhold further payments to the Contractor with respect to the work or the portion of the work withdrawn from the contractor until the work or portion thereof withdrawn is completed;
 - d. charge the Contractor the additional cost over the contract price of completing the work or portion thereof withdrawn from the Contractor, as certified by the Engineer and any additional compensation paid to the Corporation for such additional service arising from the correction of the default;
 - e. charge the Contractor a reasonable allowance, as determined by the Engineer, to cover correction to the work performed by the Contractor that may be required;
 - f. charge the Contractor for any damages the Corporation may have sustained as a result of the default; and
 - g. charge the Contractor the amount by which the cost of corrections to the work exceeds the allowance provided for such corrections.
 - vii. If the Corporation's cost to correct and complete the work in whole or in part is less than the amount withheld from the Contractor the Corporation will pay the balance to the Contractor as soon as the final accounting for the contract is complete.
 - viii. The Contractor's obligation under the contract as to quality, correction and warranty of the work performed prior to the time of termination of the

contract or termination of the Contractor's right to continue with the work in whole or in part shall continue to be in force after such termination.

GC 4 CONTRACTOR'S RESPONSIBILITIES AND CONTROL OF THE WORK

GC 4.01 GENERAL

- i. The Contractor shall have complete control of the work and shall effectively direct and supervise the work, to the satisfaction of the Engineer, so as to ensure conformity with the contract documents. The Contractor shall be responsible for construction means, methods, techniques, sequences and procedures and for coordinating various parts of the work.
- ii. The Contractor shall comply with and adhere strictly to, the Engineer's instructions and directions on any matter (whether mentioned in the contract or not). The Contractor shall take instructions and directions from the Engineer.
- iii. The Contractor shall have the sole responsibility for the design, erection, operation, maintenance and removal of temporary structures and other temporary facilities and the design and execution of construction methods required in their use.
- iv. Notwithstanding paragraph iii of subsection 4.01, where the Contract Documents include designs for temporary structures and other temporary facilities or specify a method of construction in whole or part, such facilities and methods shall be considered to be part of the design or the specified method of construction. The Contractor shall, however, be responsible for the execution of such design or specified method of construction in the same manner that the Contractor is responsible for the execution of the Work.
- v. The Contractor shall be responsible for construction health and safety within the working areas and for compliance with the current Occupational Health and Safety Act and Regulations and the current Workers Compensation Act. So as to avoid any misunderstanding as to the extent of the Contractor's responsibility, the Contractor, by executing the Contract unequivocally acknowledges that the Contractor is the Constructor within the meaning of the Act.
- vi. The Contractor shall be required to submit a progress schedule to the Engineer for approval prior to commencement of the work. Such

schedule shall be in a form acceptable to the Engineer, and shall indicate clearly the allowance for the various phases of the work, in sufficient detail to show weekly progress.

- vii. The Contractor shall submit to the Engineer an updated construction schedule each month immediately following the cut-off date and before preparation of the Monthly Payment Certificate. Failure to comply with this Clause may delay the issuing of the Monthly Payment Certificate.
- viii. The approval of the progress schedule by the Engineer shall not cast any responsibility upon the Engineer or the Corporation in seeing to it that the progress schedule is adhered to since timely execution of the work is the entire responsibility of the Contractor. The Engineer may, in his discretion, vary the progress schedule in whole or in part without relieving the Contractor from any of his responsibility to execute the contract in a timely way, nor shall such variation cast any responsibility whatsoever, upon either the Engineer or the Corporation.
- ix. The Contractor shall note that upon the commencement of any construction item within any designated local area which is construed to be a portion of the general area, it shall be agreed to by the parties to the contract, that any period of more than six (6) consecutive "working days" shall not be allowed to pass without further progress toward the completion of any and all other tender items such as grading of the boulevards, placement of topsoil, sodding, driveway and leadwalk reconstruction.
- x. The Contractor shall cooperate at all times with all utility companies and other contractors either working for a utility or the Corporation, while the said utilities or contractors are maintaining, altering or installing new plant. The Contractor shall coordinate the reconstruction work to allow a reasonable length of time for the utility to carry out its work and shall allow free access at all times. The Contractor shall not be entitled to any extra remuneration nor any extension in the time of completion for such cooperation. The Engineer will be the sole judge in the case of all disputes in this regard. In addition, the Contractor shall notify Utility companies for the purpose of adjusting all shut offs and other parts of their plant.
- xi. The Contractor shall keep on the work site during its progress a competent supervisor satisfactory to the Engineer for the duration of the contract. The Contractor shall inform the Engineer in writing of the name of such supervisor prior to the commencement of the Contract and if at any time the Engineer shall require such supervisor to be replaced, then the Contractor is to arrange for him to vacate his position and be removed from the site within forty-eight (48) hours after receiving formal notice in

writing to replace him with another supervisor. The Engineer shall not be required to give any reason for such removal of supervisor or other worker he may from time to time require.

- xii. The supervisor shall not be changed except with the consent of the Engineer unless the supervisor proves to be unsatisfactory to the Contractor and ceases to be in his employ. The supervisor shall represent the Contractor in his absence and directions on matters given to him shall be held to be given to the Contractor. The Contractor shall give efficient supervision to the work using his best skill and attention at all times.
- xiii. During the construction of work which the Engineer considers it necessary, the Contractor shall employ on the work a responsible experienced Professional Engineer to generally supervise any supervisor or worker.
- xiv. The Contractor shall, at no additional cost to the Corporation, furnish all reasonable aid, facilities and assistance required by the Engineer for the proper inspection and examination of the Work or the taking of measurements for the purpose of payment.
- xv. Where the Contractor finds any errors, inconsistency or omission relating to the Contract, the Contractor shall promptly report it to the Engineer and shall not proceed with the activity affected until receiving direction from the Engineer.
- xvi. The Contractor shall promptly notify the Engineer in writing, if the subsurface conditions observed in the Working Area differ materially from those indicated in the Contract Documents.
- xvii. The Contractor shall, if required by the Engineer in writing, search for the cause of any defect, imperfection, or fault under the directions of the Engineer, and the cost of the work carried out in searching as aforesaid shall be borne by the Contractor, and he shall repair, rectify, and make good such defects, imperfections, or defaults at his own expense.
- xviii. The Contractor shall arrange with the appropriate utility authorities for the stake out of all underground utilities and service connections which may be affected by the Work. The Contractor shall be responsible for any damage done to the underground utilities by the Contractor's forces during construction. The Contractor shall be responsible for any damage done to the private service connections.

GC 4.02 LAYOUT

- i. Prior to commencement of construction, the Engineer and the Contractor will locate on site those property bars, baselines and benchmarks which are necessary to delineate the Working Area and to lay out the Work, all as shown on the Contract Drawings.
- ii. The Contractor shall be responsible for the preservation of all property bars while the Work is in progress, except those property bars which must be removed to facilitate the Work. Any property bars disturbed, damaged or removed by the Contractor's operations shall be replaced under the supervision of an Ontario Land Surveyor, at no extra cost to the Corporation.
- iii. The Contractor shall provide qualified personnel to lay out and establish all lines and grades necessary for construction. The Contractor shall notify the Engineer of any layout work carried out, so that the same may be checked by the Engineer.
- iv. The Contractor shall install and maintain substantial alignment markers and secondary benchmarks as may be required for the proper execution of the Work. The Contractor shall supply one copy of alignment and grade sheets to the Engineer.
- v. The Contractor shall assume full responsibility for alignment, elevations and dimensions of each of all parts of the Work, regardless of whether the Contractor's layout work has been checked by the Engineer.
- vi. All stakes, marks and reference points provided by the Engineer shall be carefully preserved by the Contractor. In the case of their destruction or removal, such stakes, marks and reference points will be replaced by the Contractor at no extra cost to the Corporation.

GC 4.03 TRAFFIC CONTROL REQUIREMENTS

- i. The Contractor shall provide a minimum of two lanes of traffic at all times and shall not close the highway unless permitted by the Engineer. With approval of the Engineer, the Contractor will be permitted to reduce the two lanes to a single 14 foot lane in isolated areas or will be allowed total closure of the highway. When single lane traffic is allowed, the Contractor shall provide competent flagmen at each limit of the restriction. When total closure and detouring is permitted the Contractor shall advise the Traffic Engineering, Fire and Police Departments of the City of Windsor as to the character, duration, etc. of the said detour and comply with their requirements.

-
- ii. The Contractor shall at his own expense, provide, erect, maintain adequate traffic protection signs, barricades, lights, delineators, trench plating, flag persons, etc. in accordance with the requirements of the City of Windsor, to ensure safety to the public and the smooth flow of traffic. He shall designate an employee to be responsible for the traffic, the maintenance of traffic protection devices at night, Sundays and holidays. All barricades on obstructions shall be illuminated at night and all lights shall be kept illuminated from sunset to sunrise. The Contractor shall be responsible for all accidents or expense arising by reason of neglect or failure to comply with this clause.
 - iii. Traffic Control shall be in conformity with the procedure outlined in the current "Occupational Health and Safety Act, and Regulations for Construction Projects" and the current "Traffic Control Manual for Roadway Work Operations", Ministry of Transportation and Communications, and as amended. Twenty-four (24) hours prior to commencing work, the proposed traffic control will be discussed and reviewed by the Engineer's representative.
 - iv. Should the Contractor fail to provide the above mentioned precautions, the Engineer may direct that the work be suspended forthwith and such suspension shall remain in effect until the Contractor has taken proper remedies. Suspension of the work on this account shall not entitle the Contractor to any extension of time of completion, nor any additional remuneration.

GC 4.04 MAINTAINING ROADWAYS AND DETOURS

- i. The Contractor shall not be required to maintain a road through the working area until such time as the Contractor has commenced operations or on any part of the Contract that has been accepted by the Corporation.
- ii. Where the Contract Document provides for or the Engineer requires detours at specific locations, payment for the construction of the detours, and if required, for the subsequent removal of the detours, will be made at the Contract prices appropriate to such work.
- iii. Where the Contractor constructs a detour which is not specifically provided for in the Contract Document, or required by the Engineer, the construction of the detour and, if required, the subsequent removal shall be performed at the Contractor's expense. The detour shall be constructed and maintained to structural and geometric standard approved by the Engineer. Removal shall be performed as directed by the Engineer.

-
- iv. Compliance with the foregoing provisions shall in no way relieve the Contractor of obligations under subsection 6.01, Protection of Work, Persons and Property, dealing with the Contractor's responsibility for damage claims, except for claims arising on sections of Highway within the Working Area that are being maintained by others.

GC 4.05 ACCESS TO PROPERTIES ADJOINING THE WORK AND INTERRUPTION OF UTILITY SERVICES

- i. The Contractor shall provide at all times and at no extra cost to the Corporation:
 - a. adequate pedestrian and vehicular access including such items as temporary board walks, gravelled or asphalted steps or ramps, temporary bus stops;
 - b. continuity of utility services to properties adjoining the working area; and
 - c. access to fire hydrants, and water and gas valves located in the working area.
- ii. Where any interruptions in the supply of utility services are required and are authorized by the Engineer, the Contractor shall give notice to the affected property owners.

GC 4.06 APPROVALS AND PERMITS

- i. The Contractor shall give all notices and pay all fees, required to be given, or paid, by any and all competent and constitutional legislation or any regulation or by-law of any local or other authority in relation to the execution of the Works, or any Temporary Works; and by the rules and regulations of all public bodies and companies whose property or, rights, are, or may be affected in any way by the Works or Temporary Works. The Contractor shall conform in all respects with the provisions of any and all competent and constitutional legislation, and the regulations or by-laws of any local or other authority, which may be applicable to the Works, or any Temporary Works and with such rules and regulations of public bodies and companies as aforesaid, and shall keep the Corporation indemnified against all penalties and liabilities of every kind for breach of any such legislation, regulation, By-law or the Common law as applicable to the Contractor's Works and duties under this contract.
- ii. The Contractor shall pay and arrange for all necessary plumbing and building permits and subsequent inspections.

GC 4.07 EXCESS MATERIALS AND DISPOSAL

- i. The Contractor shall remove from the worksite all excess materials including earth and rock excavation, broken concrete, rubble, broken asphalt, tree stumps, etc.
- ii. All materials such as metal, wood, asphalt, etc. which are not considered to be "inert fill" as defined in section 18 of regulation 309 under the Environmental Protection Act must be disposed of at waste disposal sites certified by the Ministry of Environment to accept and dispose of these wastes or to sites certified to recycle the waste in question.

GC 4.08 TRAFFIC AND PARKING SIGNS

Prior to commencing work on any street the Contractor shall, with the Engineer and a representative of the Traffic Engineering Department, inspect all signs and ascertain which are to be removed or relocated so as not to interfere with his operations. The Contractor shall then remove or otherwise relocate these signs as directed by the Traffic Engineering Department. Twenty-four (24) hours prior to the completion of any operation to a point that additional or permanent signs are required for the general safety of pedestrians and/or the motoring public, the Contractor shall notify the Traffic Engineering Department. Also, at any time during or subsequent to construction, the Contractor shall immediately notify the Corporation's Site Representative of any signs removed or damaged due to his operations, so that these signs may be repaired, replaced and erected immediately. The cost of repair or replacement of any signs, etc. damaged or removed by the Contractor shall be at the expense of the Contractor. Any and all stop signs removed must be reinstalled by the Contractor at the end of each working day should the road be opened for evening traffic.

GC 4.09 SIDE CASTING

The Contractor shall not side cast excavated material unless specifically authorized by the Engineer prior to construction. Excavated material shall be removed from the site immediately or stockpiled at a site/location approved by the Engineer.

GC 4.10 NOTICE TO OWNERS

The Contractor may be required to contact, in writing, the owners of property abutting the area where the work is to be constructed. Notices shall be delivered one week prior to the construction starting date in that area. This notice shall include notification of any necessary removal of rocks, trees, shrubs, etc. and the expected starting and completion date.

GC 4.11 ARTIFACTS

All fossils, artifacts and articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the Site, shall as between the Corporation and the Contractor, be deemed to be the absolute property of the Corporation; and the Contractor shall take reasonable precautions to prevent his workers, or any other persons, from removing or damaging any such article or thing, and shall immediately upon discovery thereof, and before removal, acquaint the Engineer of such discovery, and carry out at the expense of the Corporation, the Engineer's orders as to the disposal of the same.

GC 4.12 PATENT RIGHTS AND ROYALTIES

The Contractor shall save harmless and indemnify the Corporation from and against all claims and proceedings for, or on account of, infringements of any patent right, design, trade-mark or name or material used for, or in connection with, the Works or Temporary proceedings, damages, costs, charges and expenses whatsoever in respect thereof, or in relation thereto.

GC 4.13 FACILITIES FOR OTHER CONTRACTORS

The Contractor shall in accordance with the requirements of the Engineer, afford all reasonable facilities for any other contractors employed by the Corporation and their workers; and the workers of the Corporation and of any other properly authorized authorities or statutory bodies who may be employed in the execution, on or near the Site, of any work not included in the Contract; or of any Contract which the Corporation may enter into connection with, or ancillary to, the Works.

GC 4.14 PRESERVATION OF TREES

The Contractor shall exercise the utmost caution to ensure that living trees, not to be removed, are not damaged by his operations on this Contract.

GC 4.15 SHRUBBERY

The property owners will be given the opportunity to remove shrubbery in the contract area prior to commencement of the contract, but remaining shrubbery will be removed by the Contractor. Payment for this work shall be included in the price bid per cubic yard of excavation. No additional payment shall be made for the removal of tree stumps unless an item is provided in the Tender.

GC 4.16 LABOUR CLASSIFICATION AND RATES

The Contractor shall, if required by the Engineer, deliver to the Engineer, or at his office; a schedule showing in detail the classification and rates of labour employed by the Contractor on the site.

GC 4.17 DUST CONTROL

The Contractor will be solely responsible for controlling dust nuisance resulting from his operations, both within the right-of-way and elsewhere.

GC 4.18 EMPLOYMENT

The Contractor and any sub-contractor of the Contractor will,

- a. employ only persons legally entitled to work in Canada.
- b. in employing persons, refrain from discriminating against any person by reason of their race, religious views, political affiliations, or sex.

GC 4.19 LIMITATIONS OF OPERATIONS

Except for such work as may be required by the Engineer to maintain the Work in a safe and satisfactory condition, the Contractor shall not carry on operations under the Contract on Sundays or holidays without permission in writing from the Engineer.

GC 4.20 CLEARANCE OF SITE ON COMPLETION

- i. The Contractor shall remove surplus materials, tools, debris, construction machinery and equipment not required for the performance of the remaining Work.
- ii. The Work shall not be deemed to have reached Completion until the Contractor has removed surplus materials, tools, construction machinery, equipment and debris.

GC 4.21 PERIOD OF MAINTENANCE

- i. In these conditions, the expression "Period of Maintenance", shall mean the period of maintenance named in the Tender, calculated from the date of the Notice of Completion of the Works issued by the Engineer in accordance with Clause 3.24 hereof, or in the event of more than one Notice having been issued by the Engineer under the said Clause, from the respective dates so notified; and in relation to the Period of Maintenance the expression "the Works" shall be construed accordingly. Unless otherwise specified, the Period of Maintenance shall be one year.

- ii. To the intent that the Works shall, at or as soon as practicable after the expiration of the Period of Maintenance, be delivered up to the Corporation in as good and perfect condition, (fair wear and tear excepted) to the satisfaction of the Engineer, as that in which they were at the commencement of the Period of Maintenance, the Contractor shall execute all such work of repair, amendment, reconstruction, rectification and making good of defects, imperfections, shrinkages or other faults, as may be required of the Contractor in writing by the Engineer during the Period of Maintenance, or within fourteen (14) days after its expiration, as a result of an inspection made by, or on behalf of, the Engineer, prior to its expiration.
- iii. All such work shall be carried out by the Contractor at his own expense if the necessity thereof shall, in the opinion of the Engineer, be due to the use of materials or workmanship not in accordance with the Contract, or to neglect or failure on the part of the Contractor to comply with any obligations, expressed or implied on the Contractor's part under the Contract.
- iv. If the Contractor shall fail to commence and proceed diligently to execute any such work as aforesaid required by the Engineer within three (3) days of receipt of notice to do so from the Engineer or the Corporation, the Corporation shall be entitled to carry out such work by its own workers, or by other Contractors, and if such work is work which the Contractor should have carried out at the Contractor's own cost, shall be entitled to recover from the Contractor the cost thereof, or may deduct the same from any monies due, or that may become due to the Contractor.

GC 5 MATERIAL

GC 5.01 SUPPLY OF MATERIAL

All material necessary for the proper completion of the Work, except that listed as being supplied by the Corporation, shall be supplied by the Contractor. The contract prices for the appropriate tender items shall be deemed to include full compensation for the supply of such Material.

GC 5.02 QUALITY OF MATERIAL

- i. All Material provided by the Contractor shall be new.
- ii. Material supplied by the Contractor shall conform to the requirements of the Contract.

- iii. As specified or as requested by the Engineer, the Contractor shall make available for inspection or testing a sample of any Material to be provided by the Contractor.
- iv. The Contractor shall obtain for the Engineer the right to enter upon the premises of the Material manufacturer or supplier to carry out such inspection, sampling and testing as specified or as requested by the Engineer.
- v. The Contractor shall notify the Engineer of the sources of supply sufficiently in advance of the Material shipping dates to enable the Engineer to perform the required inspection, sampling and testing.
- vi. The Corporation will not be responsible for any delays to the Contractor's operations where the Contractor fails to give sufficient advance notice to the Engineer to enable the Engineer to carry out the required inspection, sampling and testing before the scheduled shipping dates.
- vii. The Contractor shall not change the sources of supply of any Material without the written authorization of the Engineer.
- viii. Material which is not specified shall be of a quality best suited to the purpose required and the use of such Material shall be subject to the approval of the Engineer.

GC 5.03 REJECTED MATERIAL

Rejected Material shall be removed from the work site expeditiously after the notification to that effect from the Engineer. Where the Contractor fails to comply with such notice the Engineer may cause the rejected Material to be removed from the site and disposed of in what the Engineer considers to be the most appropriate manner and the Contractor shall pay the costs of disposal and the appropriate overhead charges.

GC 6 INSURANCE, PROTECTION AND DAMAGE

GC 6.01 PROTECTION OF WORK, PERSONS AND PROPERTY

- i. The Contractor, the Contractor's agents and all workers employed by or under the control of the Contractor, including sub-contractors shall protect the work, structures, utilities, persons and property from damage or injury. The Contractor shall indemnify, and keep indemnified, the Corporation

against all claims for injuries or damages to any such person, property, structure, utilities, etc.; which may arise out of, or in consequence of, the construction and maintenance of the Works, and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever, in respect of, or in relation thereto.

- ii. From the commencement to the completion of the Works, the Contractor shall take full responsibility for the care thereof, and in case any damage, loss or injury shall happen to the Works, or to any part thereof, from any cause whatsoever, shall at his own cost, repair and make good the same, so that at completion, the Works shall be in good order and condition, and in conformity in every respect with the requirements of the Contract and the Engineer's instructions. The Contractor shall also be liable for any damage to the work occasioned by him in the course of any operations carried out by him for the purpose of complying with his obligations under Clause 4.21 hereof.
- iii. The Contractor shall assume full responsibility for crossing or making use of private property. Before the Contractor or any of his sub-contractors shall make use of any private property for any purpose, he shall first submit to the Engineer a copy of a written agreement granting permission by the owner.
- iv. The Contractor shall immediately inform the Engineer of all damage and injuries which occur during the term of the Contract.
- v. The Contractor shall not be responsible for loss and damage that occurs as a result of:
 - a. war
 - b. blockades and civil commotions
 - c. errors in the Contract Documents
 - d. acts or omissions of the Corporation, the Engineer, their agents and employees, or others not under the control of the Contractor, but within the Working area with the Engineer's permission.
- vi. The Contractor and his Surety or Sureties will not be released from any term or provision of any responsibility, obligation or liability under the Contract or waive or impair any of the rights of the Corporation except by a release duly executed by the Corporation.

GC 6.02 LIABILITY INSURANCE

- i. As stated in the General Information to Tenders and prior to any work being commenced in accordance with the Contract, the Contractor shall deliver to the Corporation proof that an insurance policy has been issued

by an insurance company satisfactory to the Corporation to insure the Contract against any claims arising out of the construction or installation of the Works or any operations of the Contractor in connection therewith until the termination of the Contractor's obligation respecting guarantee and maintenance.

- ii. Such insurance shall carry limits of Liability in the amount not less than as shown in the Form of Tender, for public liability and property damage. The policy shall have no exclusion for blasting and must contain a "Completed Operations" clause. The Contractor shall prove to the satisfaction of the Corporation from time to time as the Engineer may require, that all premiums on such policy or policies, of insurance have been paid, and that the insurance is in full provisions of the Worker's Compensation Act.

GC 7 MEASUREMENT AND PAYMENT

GC 7.01 QUANTITIES

- i. The quantities set out in the Schedule of Unit Prices are the estimated quantities of the Works, and they are not to be taken as the actual and correct quantities of the Works to be executed by the Contractor in fulfillment of his obligations under the Contract.
- ii. The Engineer shall, except as otherwise stated or agreed, determine by measurement the value of the Work done all in accordance with the Contract. He shall, when he requires any part or parts of the Works to be measured, give notice to the Contractor who shall forthwith attend, or send a qualified agent, to assist the Engineer in making such measurements; and shall furnish all particulars. Should the Contractor not attend, or neglect or omit to send such agent, then the measurement made by the Engineer, or approved by him, shall be taken to be the correct measurement of the work.

GC 7.02 WEIGHING GRANULAR MATERIALS

The scale location shall be as approved by the Engineer and the material shall be hauled directly from the scale to the point of application. The scale may be located at the source. Except that where there is a waste or loss of material, the hauling operation shall terminate until the Contractor shall provide, at his expense, scales licensed in accordance with the Weights and Measurements Act.

GC 7.03 VALUATION OF VARIATIONS

- i. The Engineer shall determine the amount (if any), to be added to, or deducted from, the sum named in the Tender in respect of any extra or additional work done, or work omitted by his order. All such work shall be valued at the rates set out in the Contract, if in the opinion of the Engineer, the same shall be applicable. If the Contract shall not contain any rates applicable to the extra or additional work, then reasonable prices shall be fixed by the Engineer.
 - a. Provided that if the nature or amount of any omission, or addition relative to the nature or amount of the whole of the contract work or to any part thereof, shall be such, that in the opinion of the Engineer, the rate or price contained in the Contract for any item of the Works is, by reason of such omission or addition, rendered unreasonable, or inapplicable, the Engineer shall fix such other rate or price as under the circumstances, he shall think reasonable and proper.
- ii. Provided also that no increase of the Contract Price or variation of rate or price, shall be made, unless as soon after the date of the order as is practicable, and in the case of extra or additional work, before the commencement of the work, or as soon thereafter as is practicable, notice shall have been given in writing:
 - a. by the Contractor to the Engineer of his intention to claim extra payment, or a varied rate or,
 - b. by the Engineer to the Contractor of his intention to vary a rate or price,as the case may be,
- iii. The Engineer may, if in his opinion it is necessary or desirable, order in writing that any additional substituted work shall be paid for by one or more of the following ways:
 - a. By estimate and acceptance in a lump sum
 - b. By unit prices agreed upon
 - c. By cost and percentage or by cost and a fixed fee
- iv. Where extra or additional work is to be paid for by method ©, the value shall be determined by the actual cost of:
 - a. Labour, including Workers' Compensation and insurance. The labour rates shall not exceed those paid by the Contractor on the contracted part of the work.

- b. Materials, which shall not exceed the costs paid by the Corporation for similar materials.

To which labour and/or materials cost, shall be added fifteen per centum (15%) to cover general expenses, superintendence, use of tools and profit.

- v. In the event that the Engineer directs that additional work is to be done, in a location other than that which is shown in the contract drawings, the Contractor shall be requested to submit a quotation for this work. Payment shall then be made in the form of a Change Order.

GC 7.04 VARIATIONS IN TENDER QUANTITIES

- i. Where it appears that the quantity of work to be done and/or material to be supplied by the Contractor under a unit price tender item will exceed or be less than the tender quantity, the Contractor shall proceed to do the work and/or supply the material required to complete the tender item and payment will be made for the actual amount of work done and/or materials supplied at the unit prices stated in the tender except as provided below:
 - a. in the case of a major item where the amount of work performed and/or material supplied by the Contractor exceeds the tender quantity by more than 15%, either party to the Contract may make a written request to the other party to negotiate a revised unit price for that portion of the Work performed and/or material supplied which exceeds 115% of the tender quantity. The negotiation shall be carried out as soon as reasonably possible. Any revision of the unit price shall be based on the actual cost of doing the work and/or supplying the material under the tender item plus a reasonable allowance for profit and applicable overhead.
 - b. In the case of a major item where the quantity of work performed and/or materials supplied by the Contractor is less than 85% of the tender quantity, either party to the Contract may make a written request to the other party to negotiate a revised unit price for that portion of the work performed and/or material supplied. The negotiation shall be carried out as soon as reasonably possible. Any revision of the unit price shall be based on the actual cost of performing the work and/or supplying the material under the tender item plus a reasonable allowance for profit and applicable overhead. Alternatively, where both parties agree, an allowance equal to 10% of the unit price on the amount of the underrun which is less than 85% of the tender quantity will be paid.

GC 7.05 USE OF CONTINGENCY ITEMS

All sums set out in the Schedule of Prices which shall be stated to be used for contingencies, shall be used only at the direction and discretion of the Engineer; and if not used, either wholly or in part, shall as to the amount not used, be deducted from the Contract Price.

GC 7.06 CLAIMS

- i. The Contractor's attention is brought to the following provisions in the General Conditions:
 - a. Clause 2.01, Accuracy of Drawings as to Locations of Structures and Utilities.
 - b. Clause 2.02, Soundings, Boring and Inspection of Site.
 - c. Clause 3.18, Variations.
 - d. Clause 7.03, Valuations of Variations.
- ii. When the Contractor considers that he has a claim for compensation for costs which he has incurred or for loss he has suffered during the performance of the contract, he should immediately advise the Engineer of Intent to Claim on any specific portion of the Contract.
- iii. The Engineer shall record the circumstances of the claim in his "Daily Work Records" and this shall not be construed as acceptance of the claim.
- iv. The Contractor shall further notify the Engineer in writing as soon as possible of his intent to Claim but no later than seven (7) calendar days of the commencement of work for which the claim is being made. Upon receipt of such a written notice of claim, the Engineer shall immediately arrange a meeting with the Contractor or arbitrate the claim in accordance with subsection GC 3.21, Claims, Negotiations, Mediation, Arbitration.

GC 7.07 SUPPLY OF PLANT AND MATERIAL

Except where otherwise specified, the Contractor shall at his own expense, supply and provide all the Plant, Temporary Works, materials both for the temporary and for the permanent Works, equipment, labour, (including the supervision thereof) transport to or from the site, and in and about the Works; and other things of every kind required for the construction, completion and maintenance of the Works.

The term "labour" and "equipment" shall include hand tools, supplies and other incidentals.

GC 7.08 CERTIFICATES AND PAYMENTS

- i. A certificate will be given by the Engineer once a month certifying as to the amount of work done and material furnished and of the value thereof according to the terms of the Contract.
- ii. The first certificate shall be of the amount, quantity and value of the work done since the Contractor commenced the performance of this Contract, and every subsequent certificate, except the final one, shall be the amount quantity and value of the work done since the last preceding certificate was given. The Corporation will hold back 10% of the amount shown on the payment certificate in accordance with the Construction Lien Act provided always that the Contractor complies with the requirements of the Construction Lien Act.
- iii. The Engineer may, by any certificate, make any correction or modification in any previous certificate which shall have been issued by him and shall have power to withhold any certificate if the Works or any part thereof are not being carried out to his satisfaction.

GC 7.09 EXTRA WORK

“Extra Work” means work not provided for in the Contract as awarded but considered by the Engineer essential to the satisfactory completion of the Contract within its intended scope.

“Additional Work” means work not provided for in the Contract and not considered by the Engineer to be essential to the satisfactory completion of the Contract within its intended scope.

- i. No work shall be regarded as extra work unless it is approved in writing by the Engineer, and with the agreed price and method of payment for it specified in the said approval, provided the said price is not otherwise determined by this contract.
- ii. All notifications of claims for extra work shall be submitted to the Engineer before the extra work is started.

GC 7.10 PAYMENT FOR EXTRA WORK

- i. Notwithstanding anything contained in the General Conditions when it is necessary to perform work which is additional to the Tender items, unit prices to cover the cost of the work shall be negotiated whenever possible.

- ii. Where it is impracticable, due to the nature of the work, to negotiate unit prices for extra work not included in the Tender, the cost of this work may be paid for by a force account, and authorized by an order issued prior to carrying out the work, and for which payment is based on hourly rates for labour and equipment and on material invoices.

a. Supervision and Control

1. Force account work will be generally overseen by the Engineer who will keep a daily record of all work on the City's standard "Daily Work Record" Form. These records must be reconciled with the Contractor's representative EACH day. The Contractor, while working on force account work, will remain the "Constructor" within the meaning of the O.H.S.A.

b. Method of Billing by Contractor

1. In the case of extra work which has received prior approval with unit prices, all information must be clearly described on the "Change Order Form" complete with final monetary value.
2. In the case of extra work which is to be paid by actual labour, material and equipment, the "Daily Work Record" must be summarized per work item and this information reported in total on a "Change Order Form". This information from the daily force accounts summarized on the Change Order Form will become the basis for payment on the progress draw.
3. Contractors will not submit invoices for extra or additional work on projects. This will be paid for by progress draw as states in Item (7.08) and the submission of invoices will only service to delay the progress payment.
4. All change orders will be numerically numbered per contract.
5. No payment for extra work will be made until the change order has been mutually approved by the Engineer and the contractor.

c. Labour

The charge for labour and supervision thereof shall be based on the hourly recorded time of the labourers, mechanics and operators actively and of necessity engaged on the extra work. The contractor's designated representative shall be included and he must be actively involved on a continuous basis in the operation unless otherwise agreed to by the Engineer. In no case shall the time of any employee of the contractor or other person be charged for on a lump sum, percentage or estimated basis, and in no case shall any charge be made for administration or management whether the time

therefore had or had not been recorded as having been spent on the extra work. To the amount of labour and supervision agreed on may be added to the proper percentages of the amount paid for Workmen's Compensation, Vacation Pay, Unemployment Insurance and the Firm's Contribution to Pension Plan. Payment will be made on such itemized bills of cost to the contractor plus 15% of that bill.

d. Materials

The charge for materials will be based on itemized invoices of costs of materials purchased by the Contractor for the extra work, plus 15%, or for the cost of material from the Contractor's stock based on the current price of the materials, plus 15% to cover administration, overhead and profit. Material so charged becomes the property of the Corporation.

e. Equipment

- i. The charges for equipment used by the Contractor shall be based on the O.P.S.S. 127 Rates. Rental rates include depreciation, interest, taxes, insurance, repairs, maintenance, supplies, fuel, lubricants, supervision, overhead and profit. No charge is to be made for office expense, office supplies or stationery, bookkeeping, financing, or any other overhead accounts. Rental rates other than O.P.S.S. rates must be approved by the Engineer.
- ii. The charges for equipment used by the Contractor will be made on the actual number of hours on which the equipment is actively engaged in the extra work. If a unit of equipment is not performing its normal function for a period of time exceeding one hour, it will be on standby time from the time it ceased performing its normal function, provided that the unit of equipment is fully operable and cannot practically be used on other work but must remain on the site in order to continue with its assigned task. This time, together with actual working time will only be paid up to the period of time which constitutes one working day. Payment, if any, for additional gaps must be negotiated and approved by the Engineer. The City will pay the operator or operating crew on an hourly rate for the length of standby, plus 25% of the scheduled equipment rental rate for the machine while standing by.
- iii. Equipment rented by the Contractor will be paid at the invoice rate plus 15% unless the invoice rate exceeds the O.P.S.S. rate or when the invoice rate includes an operator exceeds the O.P.S.S. rate when the established rate of the operator is deducted. Equipment exceeding the

O.P.S.S. rate will be paid at the invoice rate only, provided approval from the engineer was given prior to commencement of work.

- iv. Floating charges will only be paid when the equipment is being transported within the limits of the contract on and off the site of the force account work and is not moving under its own power. When equipment is moved under its own power, the full rental rate will be paid. Payment for transporting equipment from sources outside the limits of the contract must be negotiated through the Engineer.
- v. When the Contractor wishes to use oversize equipment, he may do so upon written notice of the Engineer who will determine the rate to be paid.
- vi. When force account work is carried out by a sub-contractor, the allowance to the prime contractor will be 5% of the invoice submitted by the sub-contractor exclusive of the sub-contractor's 15% allowance.
- vii. No payment will be made for or in respect to any tools, hand or otherwise which are considered part of the trade.
- viii. No payment shall be made for any vehicle (pick up truck, etc.) unless it is actively necessary for the work being carried out. (i.e. the force account work is being carried out at more than one location, or the force account work is for one day or less and workers and small tools, supplies, etc. must be transported to or from another site).
- ix. At the start of the force account work the Contractor shall provide the applicable labour and equipment rates not already submitted to the Engineer. Any subsequent invoices for rental equipment and material will be submitted for the "daily work record". (NOTE: The conditions for rental equipment invoices.)

APPENDIX "REI-A"

STANDARD E.R.C.A. AND D.F.O.
MITIGATION REQUIREMENTS

As part of its work, the Contractor will implement the following measures that will ensure that any potential adverse effects on fish and fish habitat will be mitigated:

1. As per standard requirements, work will not be conducted at times when flows in the drain are elevated due to local rain events, storms, or seasonal floods. Work will be done in the dry.
2. All disturbed soils on the drain banks and within the channel, including spoil, must be stabilized immediately upon completion of work. The restoration of the site must be completed to a like or better condition to what existed prior to the works. The spoil material must be hauled away and disposed of at a suitable site, or spread an appropriate distance from the top of the drain bank to ensure that it is not washed back into the drain.
3. To prevent sediment entry into the drain in the event of an unexpected rainfall, silt barriers and/or traps must be placed in the channel during the works and until the site has been stabilized. All sediment and erosion control measures are to be in accordance with the related Ontario Provincial Standards. It is incumbent on the proponent and Contractors to ensure that sediment and erosion control measures are functioning properly and maintained/upgraded as required.
4. Silt or sand accumulated in the barrier traps must be removed and stabilized on land once the site is stabilized.
5. All activities including maintenance procedures should be controlled to prevent the entry of petroleum products, debris, rubble, concrete, or other deleterious substances into the water. Vehicular refuelling and maintenance should be conducted away from the water.
6. Any drain banks trimmed outside of the July 1st to September 15th timing window will require erosion control blankets to be installed to promote re-vegetation and to protect the slope from erosion in the interim.

Measures to Avoid Causing Harm to Fish and Fish Habitat

If you are conducting a project near water, it is your responsibility to ensure you avoid causing [serious harm to fish](#) in compliance with the *Fisheries Act*. The following advice will help you avoid causing harm and comply with the *Act*.

PLEASE NOTE: This advice applies to all project types and replaces all “Operational Statements” previously produced by DFO for different project types in all regions.

Measures

- Time work in water to respect [timing windows](#) to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed.
- Minimize duration of in-water work.
- Conduct instream work during periods of low flow, or at low tide, to further reduce the risk to fish and their habitat or to allow work in water to be isolated from flows.
- Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation.

- Design and plan activities and works in waterbody such that loss or disturbance to aquatic habitat is minimized and sensitive spawning habitats are avoided.
- Design and construct approaches to the waterbody such that they are perpendicular to the watercourse to minimize loss or disturbance to riparian vegetation.
- Avoid building structures on meander bends, braided streams, alluvial fans, active floodplains or any other area that is inherently unstable and may result in erosion and scouring of the stream bed or the built structures.
- Undertake all instream activities in isolation of open or flowing water to maintain the natural flow of water downstream and avoid introducing sediment into the watercourse.

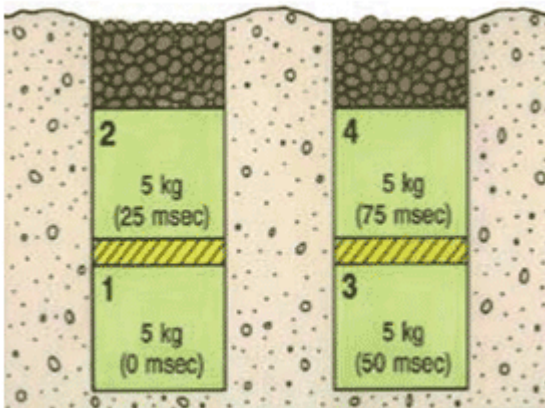
- Plan activities near water such that materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals do not enter the watercourse.
- Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance and keep an emergency spill kit on site.
- Ensure that building material used in a watercourse has been handled and treated in a manner to prevent the release or leaching of substances into the water that may be deleterious to fish.

- Develop and implement an Erosion and Sediment Control Plan for the site that minimizes risk of sedimentation of the waterbody during all phases of the project. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized, suspended sediment has resettled to the bed of the waterbody or settling basin and runoff water is clear. The plan should, where applicable, include:
 - Installation of effective erosion and sediment control measures before starting work to prevent sediment from entering the water body.
 - Measures for managing water flowing onto the site, as well as water being pumped/diverted from the site such that sediment is filtered out prior to the water entering a waterbody. For example, pumping/diversion of water to a vegetated area, construction of a settling basin or other filtration system.
 - Site isolation measures (e.g., silt boom or silt curtain) for containing suspended sediment where in-water work is required (e.g., dredging, underwater cable installation).
 - Measures for containing and stabilizing waste material (e.g., dredging spoils, construction waste and materials, commercial logging waste, uprooted or cut aquatic plants, accumulated debris) above the high water mark of nearby waterbodies to prevent re-entry.
 - Regular inspection and maintenance of erosion and sediment control measures and structures during the course of construction.
 - Repairs to erosion and sediment control measures and structures if damage occurs.
 - Removal of non-biodegradable erosion and sediment control materials once site is stabilized.
- Clearing of riparian vegetation should be kept to a minimum: use existing trails, roads or cut lines wherever possible to avoid disturbance to the riparian vegetation and prevent soil compaction. When practicable, prune or top the vegetation instead of grubbing/uprooting.
- Minimize the removal of natural woody debris, rocks, sand or other materials from the banks, the shoreline or the bed of the waterbody below the ordinary high water mark. If material is removed from the waterbody, set it aside and return it to the original location once construction activities are completed.
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.
- Restore bed and banks of the waterbody to their original contour and gradient; if the original gradient cannot be restored due to instability, a stable gradient that does not obstruct fish passage should be restored.
- If replacement rock reinforcement/armouring is required to stabilize eroding or exposed areas, then ensure that appropriately-sized, clean rock is used; and that rock is installed at a similar slope to maintain a uniform bank/shoreline and natural stream/shoreline alignment.
- Remove all construction materials from site upon project completion.

- Ensure that all in-water activities, or associated in-water structures, do not interfere with fish passage, constrict the channel width, or reduce flows.
- Retain a qualified environmental professional to ensure applicable permits for relocating fish are obtained and to capture any fish trapped within an isolated/enclosed area at the work site and safely relocate them to an appropriate location in the same waters. Fish may need to be relocated again, should flooding occur on the site.
- Screen any water intakes or outlet pipes to prevent entrainment or impingement of fish. Entrainment occurs when a fish is drawn into a water intake and cannot escape. Impingement occurs when an entrapped fish is held in contact with the intake screen and is unable to free itself.
 - In freshwater, follow these measures for design and installation of intake end of pipe fish screens to protect fish where water is extracted from fish-bearing waters:
 - Screens should be located in areas and depths of water with low concentrations of fish throughout the year.
 - Screens should be located away from natural or artificial structures that may attract fish that are migrating, spawning, or in rearing habitat.
 - The screen face should be oriented in the same direction as the flow.
 - Ensure openings in the guides and seals are less than the opening criteria to make “fish tight”.
 - Screens should be located a minimum of 300 mm (12 in.) above the bottom of the watercourse to prevent entrainment of sediment and aquatic organisms associated with the bottom area.
 - Structural support should be provided to the screen panels to prevent sagging and collapse of the screen.
 - Large cylindrical and box-type screens should have a manifold installed in them to ensure even water velocity distribution across the screen surface. The ends of the structure should be made out of solid materials and the end of the manifold capped.
 - Heavier cages or trash racks can be fabricated out of bar or grating to protect the finer fish screen, especially where there is debris loading (woody material, leaves, algae mats, etc.). A 150 mm (6 in.) spacing between bars is typical.
 - Provision should be made for the removal, inspection, and cleaning of screens.
 - Ensure regular maintenance and repair of cleaning apparatus, seals, and screens is carried out to prevent debris-fouling and impingement of fish.
 - Pumps should be shut down when fish screens are removed for inspection and cleaning.
- Avoid using explosives in or near water. Use of explosives in or near water produces shock waves that can damage a fish swim bladder and rupture internal organs. Blasting vibrations may also kill or damage fish eggs or larvae.
 - If explosives are required as part of a project (e.g., removal of structures such as piers, pilings, footings; removal of obstructions such as beaver dams; or preparation of a river or lake bottom for installation of a structure such as a dam or water intake), the potential for impacts to fish and fish habitat should be minimized by implementing the following measures:

- Time in-water work requiring the use of explosives to prevent disruption of vulnerable fish life stages, including eggs and larvae, by adhering to appropriate fisheries [timing windows](#).
- Isolate the work site to exclude fish from within the blast area by using bubble/air curtains (i.e., a column of bubbled water extending from the substrate to the water surface as generated by forcing large volumes of air through a perforated pipe/hose), cofferdams or aquadams.
- Remove any fish trapped within the isolated area and release unharmed beyond the blast area prior to initiating blasting
- Minimize blast charge weights used and subdivide each charge into a series of smaller charges in blast holes (i.e., decking) with a minimum 25 millisecond (1/1000 seconds) delay between charge detonations (see Figure 1).
- Back-fill blast holes (stemmed) with sand or gravel to grade or to streambed/water interface to confine the blast.
- Place blasting mats over top of holes to minimize scattering of blast debris around the area.
- Do not use ammonium nitrate based explosives in or near water due to the production of toxic by-products.
- Remove all blasting debris and other associated equipment/products from the blast area.

Figure 1: Sample Blasting Arrangement



Per Fig. 1: 20 kg total weight of charge; 25 msecs delay between charges and blast holes; and decking of charges within holes.

- Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds.

- Whenever possible, operate machinery on land above the high water mark, on ice, or from a floating barge in a manner that minimizes disturbance to the banks and bed of the waterbody.
- Limit machinery fording of the watercourse to a one-time event (i.e., over and back), and only if no alternative crossing method is available. If repeated crossings of the watercourse are required, construct a temporary crossing structure.
- Use temporary crossing structures or other practices to cross streams or waterbodies with steep and highly erodible (e.g., dominated by organic materials and silts) banks and beds. For fording equipment without a temporary crossing structure, use stream bank and bed protection methods (e.g., swamp mats, pads) if minor rutting is likely to occur during fording.
- Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water.

Date modified:
2013-11-25

SECTION II
SPECIFICATIONS
FOR FISH SALVAGE

GENERAL
SECTION 201

The Work shall include the capture, salvage and release of fish that are trapped or stranded as the result of the Contractor's operations, at locations identified in the Fish Salvage Plan, and in co-operation with the Essex Region Conservation Authority (E.R.C.A.).

Fish capture shall be performed prior to dewatering, and in such manner that will minimize the injury to the fish.

MATERIALS
SECTION 202

All materials required for fish capture, salvage and release shall be supplied by the Contractor.

CONSTRUCTION
SECTION 203

The Contractor shall not commence any fish capture, salvage and release work until the Fish Salvage Plan has been accepted by the Consultant and the Conservation Authority. All work shall be performed in accordance with the Fish Salvage Plan unless otherwise determined by the Consultant or the Conservation Authority.

The Contractor shall ensure an ice-free pool is maintained throughout all fish capture and release operations.

All fish shall be captured within the area specified, and released at an acceptable location in the downstream water body. Fish shall be captured by electro fishing, netting, seining, trapping, or other method acceptable to the Consultant and/or the Conservation Authority.

MEASUREMENT AND PAYMENT
SECTION 204

Payment for this Work will be made at the lump sum price bid for "Fish Capture and Release". The lump sum price will be considered full compensation for all labour, materials, equipment, tools and incidentals necessary to complete the Work to the satisfaction of the Consultant.

STANDARD D.F.O. REQUIRMENTS FOR BRIDGES

In order to comply with the *Fisheries Act*, it is recommended that you incorporate the following measures into your project proposal:

Culverts

- Ensure that fish migration through the culvert is maintained such that the structure will not create a velocity barrier to migrating fish or destabilize the channel downstream
- Embed water crossings as appropriate to ensure fish passage and channel crossing stability

Timing

- If you are conducting in stream work during periods of low flow to further reduce the risk to fish and their habitat no in-stream work or construction activity should occur from March 15th to June 30th
- If the drain is dry, work can proceed at any time of the year

Erosion and Sediment Control

- Install effective erosion and sediment control measures before starting work to prevent sediment from entering the water body
- Conduct regular inspections and maintain erosion and sediment control measures and structures during the course of construction
- Repair erosion and sediment control measures and structures if damage occurs
- Remove non-biodegradable erosion and sediment control materials once site is stabilized

Shoreline Re-vegetation and Stabilization

- Clearing of riparian vegetation should be kept to a minimum
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site
- If replacement rock reinforcement/armouring is required to stabilize eroding or exposed areas, ensure that appropriately-sized, clean rock is used; and that rock is installed at a similar slope to maintain a uniform bank/shoreline and natural stream/shoreline alignment
- Remove all construction materials from site upon project completion

Operation of Machinery

- Operate machinery in a manner that minimizes disturbance to the banks of the watercourse

APPENDIX "REI-B"

SCHEDULE C
MITIGATION PLAN

The Municipality shall undertake measures to minimize adverse effects on species at risk in accordance with the general conditions described in Part B and taxa-specific conditions described in Part C, and the monitoring and reporting requirements described in Part D of this Mitigation Plan.

PART A. DEFINITIONS

1. Definitions:

1.1. In this Schedule, the following words shall have the following meanings:

"DFO" means Fisheries and Oceans Canada;

"MNR" means the Aylmer District Office of the Ministry of Natural Resources;

"Contact" means to contact the MNR in accordance with the notification/contact schedule provided to the Municipality by the MNR Designated Representative from time to time;

"Holding Tub" means a large, light-coloured container fitted with a non-airtight latching lid approved by the MNR for the temporary storage of captured snakes, turtles, amphibians, birds or eggs;

"Interagency Notification Form" means the form issued by DFO, available at www.dfo-mpo.gc.ca, which is required to be completed when a drain is being maintained or constructed;

"Monitoring and Reporting Form" means the document that must be completed by the Municipality in accordance with Part D to this Schedule and will be provided to the Municipality;

"Ontario Operational Statement" means one of the documents issued by DFO, available at www.dfo-mpo.gc.ca, that sets out the conditions and measures to be incorporated into a project in order to avoid negative impacts to fish and fish habitat in Ontario, as modified from time to time;

"Process Charts" means the charts attached as Part E to this Schedule which describe the steps set out in this Mitigation Plan;

"Seasonal Timing Windows Chart" means the chart attached as Part G to this schedule which describes the Sensitive Periods applicable to each Taxonomic Group;

"Sensitive Area" means a geographic area in the Municipality where additional mitigation measures are required to be undertaken for one or more Taxonomic Groups;

"Sensitive Areas Map" means any one of the maps attached as Part F to this schedule which sets out the applicable Sensitive Areas;

"Sensitive Period" means a time of year set out in the Seasonal Timing Windows Chart during which taxa-specific mitigation measures are required to be undertaken for a Taxonomic Group because of ambient air/water temperatures, water-levels or important life-history stages;

"Taxonomic Group" means the distinct group comprising one or more Species based on their taxonomic relationship and common approaches to mitigating adverse effects (i.e., fish, mussels, turtles, snakes, amphibians, birds or plants); and

"Work Zone" means the geographic area in the Municipality where an Activity in respect of one of the Drainage Works is being conducted.

- 1.2. For greater certainty, any defined terms that are not defined in section 1.1 have the same meanings as in the Agreement.

PART B. GENERAL MEASURES TO MINIMIZE ADVERSE EFFECTS

2. Process Charts

- 2.1. The general steps set out in this Part B are visually described in the Process Charts (Part E).

3. Review of Documentation

- 3.1. Prior to conducting any Activities in respect of the Drainage Works the Municipality shall determine if conditions apply to the place, time or manner in which the Municipality wishes to pursue them by reviewing:
 - (a) the Sensitive Areas Maps (Part F) to determine if the Work Zone for the proposed Activities will occur within a Sensitive Area;
 - (b) the DFO Reference Guide for Fish and Mussel Species at Risk Distribution Maps: A Referral Review Tool for Projects Affecting Aquatic Species at Risk;
 - (c) the Seasonal Timing Windows Chart (Part G) to determine if the proposed Activities will occur during a Sensitive Period for one or more of the Taxonomic Groups; and
 - (d) the Process Charts to determine if prior notification is required;
 - (e) the mitigation measures for each applicable Taxonomic Group in Part C to determine what additional site-specific mitigation measures, if any, are required.
- 3.2. The Municipality shall document the results of the review undertaken in accordance with section 3.1 using the Monitoring and Reporting Form.

4. Sensitive Areas Maps

- 4.1. The Sensitive Areas Maps contain sensitive information about the distribution of species at risk, are provided for the sole purpose of informing this Agreement and are not to be copied or distributed for any other purposes or to any other party without the prior written authorization of the MNR Designated Representative.

5. Prior Notification to Seek Direction

- 5.1. If, after completing the review of documents described in section 3.1, the Municipality determines that the proposed Activities will be undertaken:
 - (a) in a place;
 - (b) at a time; or
 - (c) in a manner,

that requires prior notification in accordance with the Process Charts, the Municipality shall provide prior notification to the MNR in order for the MNR to determine if the Municipality must undertake additional site-specific or Species-specific mitigation

measures to minimize adverse effects on the Species and, if applicable, to identify such measures.

- 5.2. The prior notification under section 5.1 shall include a completed Interagency Notification Form:
 - (a) in respect of maintenance/repair where the proposed Activities are being undertaken pursuant to subsection 3(18) or section 74 of the *Drainage Act*, or
 - (b) in respect of construction/improvement where the proposed Activities are being undertaken pursuant to section 77 or 78 of the *Drainage Act*.
- 5.3. Where an Activity is undertaken in accordance with section 124 of the *Drainage Act* and would otherwise have required prior notification under section 5.1, the Municipality shall Contact the MNR by email prior to the commencement of the Activity, and complete and submit the applicable Interagency Notification Form within one week of the Activity's completion, unless otherwise directed in writing by the MNR Designated Representative.

6. General Mitigation Measures

- 6.1. Notwithstanding that prior notification or additional mitigation measures may be required in accordance with this schedule, in undertaking any Activity at any time in respect of the Drainage Works the Municipality shall:
 - (a) undertake the mitigation measures for sediment control and for erosion control and bank stabilization set out in The Drain Primer (Cliff Evanitski 2008) published by DFO (ISBN 978-0-662-48027-3), unless otherwise authorized in writing by the MNR Designated Representative;
 - (b) use net free, 100% biodegradable erosion control blanket for all erosion control or bank stabilization done in conjunction with their Activities or, if authorized in writing by the MNR Designated Representative, alternative erosion control blankets that provide equal or greater protection to individual Species; and
 - (c) where applicable, follow the guidelines set out in the following Ontario Operational Statements:
 - (i) Beaver Dam Removal;
 - (ii) Bridge Maintenance;
 - (iii) Culvert Maintenance;
 - (iv) Isolated Pond Construction;
 - (v) Maintenance of Riparian Vegetation in Existing Right of Ways; and
 - (vi) Temporary Stream Crossing.

PART C. TAXA-SPECIFIC MEASURES TO MINIMIZE ADVERSE EFFECTS

ADDITIONAL MITIGATION MEASURES FOR FISH SPECIES

7. Activities undertaken in Sensitive Areas for Fish

- 7.1. Subject to section 7.2, where a proposed Activity will occur in a Sensitive Area for a fish Species, the Municipality shall Contact the MNR to seek further direction.
- 7.2. Section 7.1 does not apply where the applicable Drainage Works are:
 - (a) in a naturally dry condition;
 - (b) classified as a Class F drain under DFO's *Class Authorization System for the Maintenance of Agricultural Municipal Drains in Ontario* (ISBN 0-662-72748-7); or
 - (c) a closed drain.

ADDITIONAL MITIGATION MEASURES FOR MUSSEL SPECIES

8. Activities undertaken in Sensitive Areas for Mussels

- 8.1. Subject to section 8.2, where a proposed Activity will occur in a Sensitive Area for a mussel Species, the Municipality shall Contact the MNR to seek further direction.
- 8.2. Section 8.1 does not apply where the applicable Drainage Works are:
 - (a) in a naturally dry condition;
 - (b) classified as a Class F drain in DFO's *Class Authorization System for the Maintenance of Agricultural Municipal Drains in Ontario* (ISBN 0-662-72748-7); or
 - (c) a closed drain.

ADDITIONAL MITIGATION MEASURES FOR TURTLE SPECIES

9. Training and Required On Site Materials for Turtles

- 9.1. The Municipality will ensure any person:
 - (a) involved in the capture, temporary holding, transfer and release of any turtle Species has received training in proper turtle handling procedures; and
 - (b) who undertakes an Activity has a minimum of two Holding Tubs and cotton sacks on site at all times.

10. Activities undertaken in Sensitive Areas and Sensitive Periods for Turtles

- 10.1. Subject to section 10.2, where a proposed Activity will occur in a Sensitive Area for any turtle Species and during a Sensitive Period for that Species, the Municipality shall:
 - (a) not undertake any Activities that include the excavation of sediment or disturbance to banks during the applicable Sensitive Period unless otherwise authorized;
 - (b) undertake Activities in accordance with any additional site-specific measures provided in writing by the MNR Designated Representative;
 - (c) avoid draw-down and de-watering of the Sensitive Area during the applicable Sensitive Period; and

- (d) if authorized by the MNR Designated Representative under (a) above to undertake Activities that include excavation of sediment or disturbance of banks, in addition to any other measures required under (b) above, ensure any person undertaking an Activity has at least two Holding Tubs on site at all times.

10.2. Section 10.1 does not apply where the applicable Drainage Works are:

- (a) in a naturally dry condition;
- (b) classified as a Class F drain in DFO's *Class Authorization System for the Maintenance of Agricultural Municipal Drains in Ontario* (ISBN 0-662-72748-7); or
- (c) a closed drain.

11. Measures for Encounters with Turtles During a Sensitive Period

- 11.1. Where one or more individuals belonging to a turtle Species is encountered in the undertaking of an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) during a Sensitive Period for that Species, the Municipality shall:
- (a) capture and transfer all uninjured individuals of that Species into a Holding Tub;
 - (b) capture and transfer all individuals injured as a result of the Activities into a Holding Tub separate from any Holding Tub containing uninjured individuals;
 - (c) ensure that the Holding Tubs with the captured individuals are stored at a cool temperature to prevent freezing until the individuals can be transferred; and
 - (d) immediately Contact the MNR to seek direction and to arrange for the transfer of the individual turtles.

12. Measures for Encounters with Turtles Laying Eggs or Nest Sites

- 12.1. Where one or more individuals belonging to a turtle Species laying eggs, or an active nest site of any turtle Species, is encountered in undertaking an Activity in a Work Zone, the Municipality shall:
- (a) not disturb a turtle encountered laying eggs and not conduct any Activities within 20 metres of the turtle while it is laying eggs;
 - (b) collect any displaced or damaged eggs and capture any injured dispersing juveniles and transfer them to a Holding Tub;
 - (c) store all captured injured individuals and collected eggs out of direct sunlight;
 - (d) immediately Contact the MNR to seek direction and to arrange for the transfer of any injured individuals and eggs;
 - (e) immediately stop any disturbance to the nest site and recover exposed portions with soil or organic material to protect the integrity of the remaining individuals;
 - (f) not drive any equipment over the nest site or conduct any Activities within 5 metres of the nest site;
 - (g) not place any dredged materials removed from the Drainage Works on top of the nest site;
 - (h) mark out the physical location of the nest site for the duration of the project but not by any means that might increase the susceptibility of the nest to predation or poaching; and
 - (i) where there are no collected eggs or captured individuals, record relevant information and Contact the MNR within 72 hours to provide information on the location of the nest site.

13. Measures for Encounters with Turtles Outside of a Sensitive Period

- 13.1. Where one or more individuals belonging to a turtle Species is encountered while undertaking an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) but outside of any Sensitive Period for that Species, the Municipality shall:
- (a) briefly stop the Activity for a reasonable period of time to allow any uninjured individual turtles of that Species to leave the Work Zone;
 - (b) where individuals do not leave the Work Zone after the Activity is briefly stopped in accordance with (a) above, capture all uninjured individuals and release them in accordance with section 14.1;
 - (c) where circumstances do not allow for their immediate release, transfer captured uninjured individuals for a maximum of 24 hours into a Holding Tub which shall be stored out of direct sunlight and then release them in accordance with section 14.1;
 - (d) capture and transfer any individuals that have been injured into a Holding Tub separate from any Holding Tub containing uninjured individuals; and
 - (e) store all captured injured individuals out of direct sunlight and immediately Contact the MNR to seek direction and to arrange for their transfer.

14. Release of Captured Individuals Outside of a Sensitive Period

- 14.1. Where uninjured individuals are captured under section 13.1, they shall be released:
- (a) within 24 hours of capture;
 - (b) in an area immediately adjacent to the Drainage Works;
 - (c) in an area that will not be further impacted by the undertaking of any Activity; and
 - (d) not more than 250 metres from the capture site.
- 14.2. Following a release under section 14.1, the Municipality shall Contact the MNR within 72 hours of the release to provide information on the name of the Drainage Works, the location of the encounter and the location of the release site.

15. Measures for Dead Turtles

- 15.1. Where one or more individuals of a turtle Species is killed as a result of an Activity in a Work Zone, or if a person undertaking an Activity finds a deceased individual of a turtle Species within the Work Zone, the Municipality shall:
- (a) place any dead turtles in a Holding Tub outside of direct sunlight; and
 - (b) Contact the MNR within 72 hours to seek direction and to arrange for the transfer of the dead individuals.

ADDITIONAL MITIGATION MEASURES FOR SNAKE SPECIES

16. Training and Required On Site Materials for Snakes

- 16.1. The Municipality will ensure any person:
- (a) involved in the capture, temporary holding, transfer and release of any snake Species has received training in proper snake handling procedures; and
 - (b) who undertakes an Activity has a minimum of two Holding Tubs and cotton sacks on site at all times.

17. Activities undertaken in Sensitive Areas and Sensitive Periods for Snakes

- 17.1. Where a proposed Activity involves physical infrastructure (e.g., culverts, pump houses, etc.) and will occur in a Sensitive Area for any snake Species and during a *Sensitive Period – Hibernation* for that Species, the Municipality shall undertake the Activity outside of the Sensitive Period, unless otherwise authorized by and in accordance with any site-specific measures provided in writing by the MNR Designated Representative.
- 17.2. Where a proposed Activity will occur at or adjacent to a known hibernacula (as identified by the MNR) for any snake Species and during a *Sensitive Period – Staging* for that Species, the Municipality shall:
 - (a) erect effective temporary snake barriers approved by the MNR that will not pose a risk of entanglement for snakes and that shall be secured so that individual snakes may not pass over or under the barrier or between any openings to enter or re-enter the Work Zone;
 - (b) inspect the temporary snake barriers daily during periods when snakes are active, capture any individuals incidentally encountered within the area bounded by the snake barrier and release the captured individuals in accordance with section 21.1; and
 - (c) remove the temporary snake barriers immediately upon completion of the Activity.
- 17.3. Where a proposed Activity that does not involve physical infrastructure will occur in a Sensitive Area for any snake Species and during a *Sensitive Period – Staging* for that Species, the Municipality shall undertake the Activity outside of the Sensitive Period, unless otherwise authorized by and in accordance with any site-specific measures provided in writing by the MNR Designated Representative.

18. Measures for Encounters with Snakes During a Sensitive Period

- 18.1. Where one or more individuals belonging to a snake Species is encountered, or should an active hibernacula be uncovered, while conducting an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) during a Sensitive Period for that Species, the Municipality shall:
 - (a) capture and transfer all injured and uninjured individual snakes of that Species into individual light-coloured, drawstring cotton sacks;
 - (b) place all cotton sacks filled with the captured individuals into a Holding Tub;
 - (c) ensure that the Holding Tub with the captured individuals is stored at a cool temperature to protect the snakes from freezing until the individuals can be retrieved or transferred;
 - (d) if an active hibernacula is uncovered, cease all Activities at the hibernacula site; and
 - (e) immediately Contact the MNR to seek direction and to arrange for the transfer and/or retrieval.

19. Measures for Encounters with Snake Nests

- 19.1. Where an active nest of any of the snake Species is encountered and disturbed while undertaking an Activity in any part of a Work Zone, the Municipality shall:
 - (a) collect any displaced or damaged eggs and transfer them to a Holding Tub;
 - (b) capture and transfer all injured dispersing juveniles of that Species into a light-coloured drawstring cotton sack;
 - (c) place all cotton sacks with the captured injured individuals into a Holding Tub;

- (d) ensure that the Holding Tub with the captured injured individuals is stored out of direct sunlight;
- (e) immediately Contact the MNR to seek direction and to arrange for the transfer of the injured individuals;
- (f) immediately stop any disturbance to the nest site and loosely cover exposed portions with soil or organic material to protect the integrity of the remaining individuals;
- (g) not drive any equipment over the nest site or conduct any Activities within 5 metres of the nest site;
- (h) not place any dredged materials removed from the Drainage Works on top of the nest site;
- (i) mark out the physical location of the nest site but not by any means that might increase the susceptibility of the nest to predation or poaching; and
- (j) where there are no collected eggs or captured individuals, Contact the MNR within 72 hours to provide information on the location of the nest site.

20. Measures for Encounters with Snakes Outside of a Sensitive Period

- 20.1. Where one or more individuals belonging to a snake Species is encountered while undertaking an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) but outside of any Sensitive Period for that Species, the Municipality shall:
- (a) follow the requirements in section 16;
 - (b) briefly stop the Activity for a reasonable period of time to allow any uninjured individual snakes of that Species to leave the Work Zone;
 - (c) if the individuals do not leave the Work Zone after the Activity is briefly stopped in accordance with (b) above, capture all uninjured individuals and release them in accordance with section 21.1;
 - (d) where circumstances do not allow for the immediate release of captured uninjured individuals, they may be transferred into individual, light-coloured, drawstring cotton sacks before placing them in a Holding Tub which shall be stored out of direct sunlight for a maximum of 24 hours before releasing them in accordance with section 21.1;
 - (e) capture and transfer any individuals injured as a result of conducting the Activities into a Holding Tub separate from any Holding Tub containing uninjured individuals; and
 - (f) store all captured injured individuals out of direct sunlight and immediately Contact the MNR to seek direction and to arrange for their transfer.

21. Release of Captured Individuals Outside of a Sensitive Period

- 21.1. Where uninjured individuals are captured under section 20.1, they shall be released:
- (a) within 24 hours of capture;
 - (b) in an area immediately adjacent to the Drainage Works where there is natural vegetation cover;
 - (c) in an area that will not be further impacted by the undertaking of any Activity; and
 - (d) not more than 250 metres from the capture site.

- 21.2. Following a release under section 21.1, the Municipality shall Contact the MNR within 72 hours of the release to provide information on the name of the Drainage Works, the location of the encounter and the location of the release site.

22. Measures for Dead Snakes

- 22.1. Where one or more individuals belonging to a snake Species is killed as a result of an Activity in a Work Zone, or if a person undertaking an Activity finds a deceased individual of a snake Species within the Work Zone, the Municipality shall:
- (a) collect and transfer any dead individuals into a Holding Tub outside of direct sunlight; and
 - (b) Contact the MNR within 72 hours to seek direction and to arrange for the transfer of the carcasses of the dead individuals.

ADDITIONAL MITIGATION MEASURES FOR HERBACEOUS PLANTS

23. Activities Undertaken in Sensitive Areas for Herbaceous Plants

- 23.1. Where a proposed Activity will occur that involves physical disturbance to vegetated banks or the killing and/or removal of vegetation through chemical or mechanical means in a Sensitive Area for any herbaceous plant Species, the Municipality shall:
- (a) undertake the Activity outside of the Sensitive Period, unless otherwise authorized;
 - (b) limit equipment access and operations to the side of the Drainage Works that will minimize disturbances where any of the plant Species occur;
 - (c) locate temporary storage sites for excavated sediments or bank materials on areas of open soil away from where any of the plant Species are likely to occur;
 - (d) not use any broad spectrum herbicides in Sensitive Areas; and
 - (e) undertake Activities in accordance with any additional site-specific measures provided in writing by the MNR Designated Representative.

ADDITIONAL MITIGATION MEASURES FOR TREE SPECIES

24. Additional Measures for Butternut

- 24.1. Where Butternuts may exist in a Work Zone and may be affected by an Activity, the Municipality shall:
- (a) identify and mark as retainable trees all individual Butternut trees within the Work Zone during work planning site visits unless the individual Butternut has been assessed as a non-retainable tree due to infection by Butternut canker by a person designated by the Minister as a Butternut Health Assessor;
 - (b) retain and avoid disturbance to all individuals identified under (a) above that have been identified as retainable trees or that have not been assessed, unless otherwise authorized in writing by the MNR Designated Representative;
 - (c) conduct Activities by:
 - (i) limiting equipment access and operations to the side of the Drainage Works that will minimize disturbance to where any of the individual Butternut trees occur,
 - (ii) working around trees,

Seasonal Timing Windows Chart

Date Codes		Monthly Intervals: E=Early(days 1-10); M=Middle(days 11-20); L=Late(days 21-31)																									
Dates		Jan	Feb	Mar			Apr			May			Jun			Jul			Aug			Sept			Oct	Nov	Dec
				E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L			
Taxa/Common Name																											
Aquatic Species																											
Fish		IF in a Sensitive Area Identified on Maps THEN Prior Notification to the MNR is required (regardless of time of year)																									
Mussels		IF in a Sensitive Area Identified on Maps THEN Prior Notification to the MNR is required (regardless of time of year)																									
Turtles																											
Fowler's Toad																											
Jefferson Salamander																											
Terrestrial Species																											
Snakes - Hibernation																											
Snakes - Staging																											
Butler's Gartersnake - Hibernation																											
Butler's Gartersnake - Staging																											
Herbaceous Plants																											
Birds																											
NOT a Sensitive Time		IF NO Sensitive Areas Identified on Maps THEN NO Prior Notification to the MNR is required																									
Sensitive Time		IF in a Sensitive Area Identified on Maps THEN Prior Notification to the MNR is required																									
On-site Consultation		IF in a Highly Sensitive Area (e.g., a known hibernacula) THEN On-site consultation with the MNR is required																									

Staging refers to the time just after emergence from hibernation in the spring and the aggregation of individuals in the fall just prior to entering into hibernation sites.

APPENDIX "REI-C"

STANDARD SPECIFICATIONS FOR ACCESS BRIDGE CONSTRUCTION

1. PRECAST CONCRETE BLOCK & CONCRETE FILLED JUTE BAG HEADWALLS

After the Contractor has set the endwall foundations and the new pipe in place, it shall completely backfill same and install new precast concrete blocks or concrete filled jute bag headwalls at the locations and parameters indicated on the drawing. All concrete used for headwalls shall be a minimum of 30 mPa at 28 days and include 6% +/- 1% air entrainment.

Precast concrete blocks shall be interlocking and have a minimum size of 600mmX600mmX1200mm. Half blocks shall be used to offset vertical joints. Cap blocks shall be a minimum of 300mm thick. A foundation comprising minimum 300mm thick poured concrete or precast blocks the depth of the wall and the full bottom width of the drain plus 450mm embedment into each drain bank shall be provided and placed on a firm foundation as noted below. The Contractor shall provide a levelling course comprising a minimum thickness of 150mm Granular "A" compacted to 100% Standard Proctor Density or 20mm clear stone, or a lean concrete as the base for the foundation. The base shall be constructed level and flat to improve the speed of installation. Equipment shall be provided as required and recommended by the block supplier for placing the blocks such as a swift lift device for the blocks and a 75mm eye bolt to place the concrete caps,. The headwall shall extend a minimum of 150mm below the invert of the access bridge culvert with the top of the headwall set to match the finished driveway grade, unless a 150mm high curb is specified at the edge of the driveway. To achieve the required top elevation, the bottom course of blocks and footing may require additional embedment into the drain bottom. The Contractor shall provide shop drawings of the proposed wall for approval by the Drainage Superintendent or Engineer prior to construction.

Blocks shall be placed so that all vertical joints are staggered. Excavation voids on the ends of each block course shall be backfilled with 20mm clear stone to support the next course of blocks above. Walls that are more than 3 courses in height shall be battered a minimum of 1 unit horizontal for every 5 units of vertical height. The batter shall be achieved by careful grading of the footing and foundation base, or use of pre-battered base course blocks. Filter cloth as specified below shall be placed behind the blocks to prevent the migration of any fill material through the joints. Backfill material shall be granular as specified below. Where the wall height exceeds 1.8 metres in height, a uni-axial geogrid SG350 or equivalent shall be used to tie back the walls and be installed in accordance with the manufacturer's recommendations. The wall face shall not extend beyond the end of the access bridge pipe. Non-shrink grout shall be used to fill any gaps between the blocks and the access bridge pipe for the full depth of the wall. The grout face shall be finished to match the precast concrete block walls as closely as possible.

When constructing the concrete filled jute bag headwalls, the Contractor shall place the bags so that the completed headwall will have a slope inward from the bottom of the pipe to the top of the finished headwall. The slope of the headwall shall be one unit horizontal to five units vertical. The Contractor shall completely backfill behind the new concrete filled jute bag headwalls with Granular "B" and Granular "A" material as per O.P.S.S. Form 1010 and the granular material shall be compacted in place to a Standard Proctor Density of 100%. The placing of the jute bag headwalls and the backfilling shall be performed in lifts simultaneously. The granular backfill shall be placed and compacted in lifts not to exceed 305mm (12") in thickness.

The concrete filled jute bag headwalls shall be constructed by filling jute bags with concrete. All concrete used to fill the jute bags shall have a minimum compressive strength of 25 MPa in 28 days and shall be provided and placed only as a wet mix. Under no circumstance shall the concrete to be used for filling the jute bags be placed as a dry mix. The jute bags, before being filled with concrete, shall have a dimension of 460mm (18") x 660mm (26"). The jute bags shall be filled with concrete so that when they are laid flat, they will be approximately 100mm (4") thick, 305mm (12") to 380mm (15") wide and 460mm (18") long.

The concrete jute bag headwall to be provided at the end of the bridge pipe shall be a single or double bag wall construction as set out in the specifications. The concrete filled bags shall be laid so that the 460mm (18") dimension is parallel with the length of the new pipe. The concrete filled jute bags shall be laid on a footing of plain concrete being 460mm (18") wide, and extending for the full length of the wall, and 305mm (12") thick extending below the bottom of the culvert pipe.

All concrete used for the footing, cap and bags shall have a minimum compressive strength of 30 mPa at 28 days and shall include 6% ± 1% air entrainment.

Upon completion of the jute bag headwall the Contractor shall cap the top row of concrete filled bags with a layer of plain concrete, minimum 100mm (4") thick, and hand trowelled to obtain a pleasing appearance. If the cap is made more than 100mm thick, the Contractor shall provide two (2) continuous 15M reinforcing bars set at mid-depth and equally spaced in

the cap. The Contractor shall fill all voids between the concrete filled jute bags and the corrugated steel pipe with concrete, particular care being taken underneath the pipe haunches to fill all voids.

The completed jute bag headwalls shall be securely embedded into the drain bank a minimum of 450mm (18") measured perpendicular to the sideslopes of the drain.

As an alternate to constructing a concrete filled jute bag headwall, the Contractor may construct a grouted concrete rip rap headwall. The specifications for the installation of a concrete filled jute bag headwall shall be followed with the exception that broken pieces of concrete may be substituted for the jute bags. The concrete rip rap shall be approximately 460mm (18") square and 100mm (4") thick and shall have two (2) flat parallel sides. The concrete rip rap shall be fully mortared in place using a mixture composed of three (3) parts of clean sharp sand and one (1) part of Portland cement.

The complete placement and backfilling of the headwalls shall be performed to the full satisfaction of the Drainage Superintendent and the Engineer.

2. QUARRIED LIMESTONE ENDWALLS

The backfill over the ends of the corrugated steel pipe shall be set on a slope of 1-½ units horizontal to 1 unit vertical from the bottom of the corrugated steel pipe to the top of each end slope and between the drain banks. The top 305mm (12") in thickness of the backfill over the ends of the corrugated steel pipe shall be quarried limestone. The quarried limestone shall also be placed on a slope of 1-½ units horizontal to 1 unit vertical from the bottom of the corrugated steel pipe to the top of each bank of the drain adjacent each end slope. The quarried limestone shall have a minimum dimension of 100mm (4") and a maximum dimension of 250mm (10"). The end slope protection shall be placed with the quarried limestone pieces carefully tamped into place with the use of a shovel bucket so that, when complete, the end protection shall be consistent, uniform, and tightly laid in place.

Prior to placing the quarried limestone end protection over the granular backfill and on the drain banks, the Contractor shall lay non-woven geotextile filter fabric "GMN160" conforming to O.P.S.S. 1860 Class I or approved equal. The geotextile filter fabric shall extend from the bottom of the corrugated steel pipe to the top of each end slope of the bridge and along both banks of the drain to a point opposite the ends of the pipe.

The Contractor shall take extreme care not to damage the geotextile filter fabric when placing the quarried limestone on top of the filter fabric.

3. BRIDGE BACKFILL

After the corrugated steel pipe has been set in place, the Contractor shall backfill the pipe with Granular "B" material, O.P.S.S. Form 1010 with the exception of the top 305mm (12") of the backfill. The top 305mm (12") of the backfill for the full width of the excavated area (between each bank of the drain) and for the top width of the driveway, shall be Granular "A" material, O.P.S.S. Form 1010. The granular backfill shall be compacted in place to a Standard Proctor Density of 100% by means of mechanical compactors. All of the backfill material, equipment used, and method of compacting the backfill material shall be inspected and approved and meet with the full satisfaction of the Drainage Superintendent and Engineer.

4. GENERAL

Prior to the work commencing, the Drainage Superintendent and Engineer must be notified, and under no circumstances shall work begin without one of them being at the site. Furthermore, the grade setting of the pipe must be checked, confirmed, and approved by the Drainage Superintendent or Engineer prior to continuing on with the bridge installation.

The alignment of the new bridge culvert pipe shall be in the centreline of the existing drain, and the placing of same must be performed totally in the dry.

Prior to the installation of the new access bridge culvert, the existing sediment build-up in the drain bottom must be excavated and completely removed. This must be done not only along the drain where the bridge culvert pipe is to be installed, but also for a distance of 3.05 metres (10 ft.) both upstream and downstream of said new access bridge culvert. When setting the new bridge culvert pipe in place it must be founded on a good undisturbed base. If unsound soil is encountered, it must be totally removed and replaced with 20mm (3/4") clear stone, satisfactorily compacted in place.

When doing the excavation work or any other portion of the work relative to the bridge installation, care should be taken not to interfere with, plug up, or damage any existing surface drains, swales, and lateral or main tile ends. Where damage is encountered, repairs to correct same must be performed immediately as part of the work.

The Contractor and/or landowner performing the bridge installation shall satisfy themselves as to the exact location, nature and extent of any existing structure, utility or other object that they may encounter during the course of the work. The Contractor shall indemnify and save harmless the Town, or the Municipality, the Engineer, and their staff from any damages which it may cause or sustain during the progress of the work. It shall not hold them liable for any legal action arising out of any claims brought about by such damage caused by it.

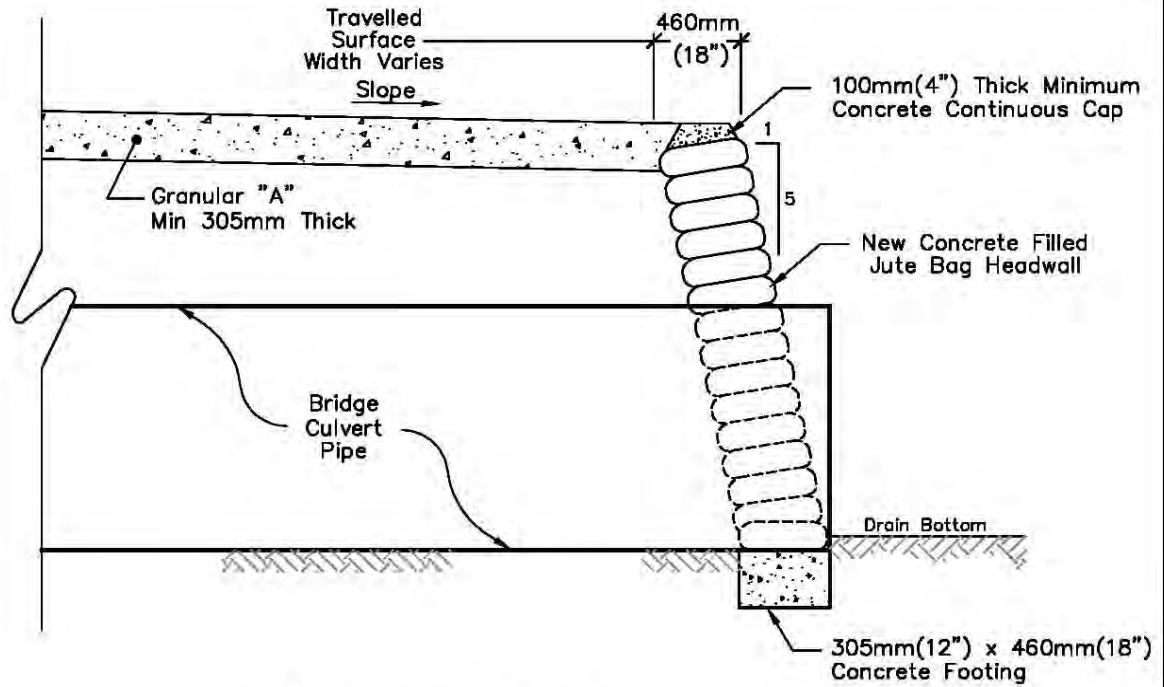
Where applicable, the Contractor and/or landowner constructing the new bridge shall be responsible for any damage caused by them to any portion of the Town road right-of-way. They shall take whatever precautions are necessary to cause a minimum of damage to same and must restore the roadway to its original condition upon completion of the works.

When working along a municipal roadway, the Contractor shall provide all necessary lights, signs, barricades and flagpersons as required to protect the public. All work shall be carried out in accordance with the requirements of the Occupational Health and Safety Act, and latest amendments thereto. If traffic control is required on this project, it is to comply with the M.T.O. Traffic Control Manual for Roadway Work Operations and Ontario Traffic Manual Book 7.

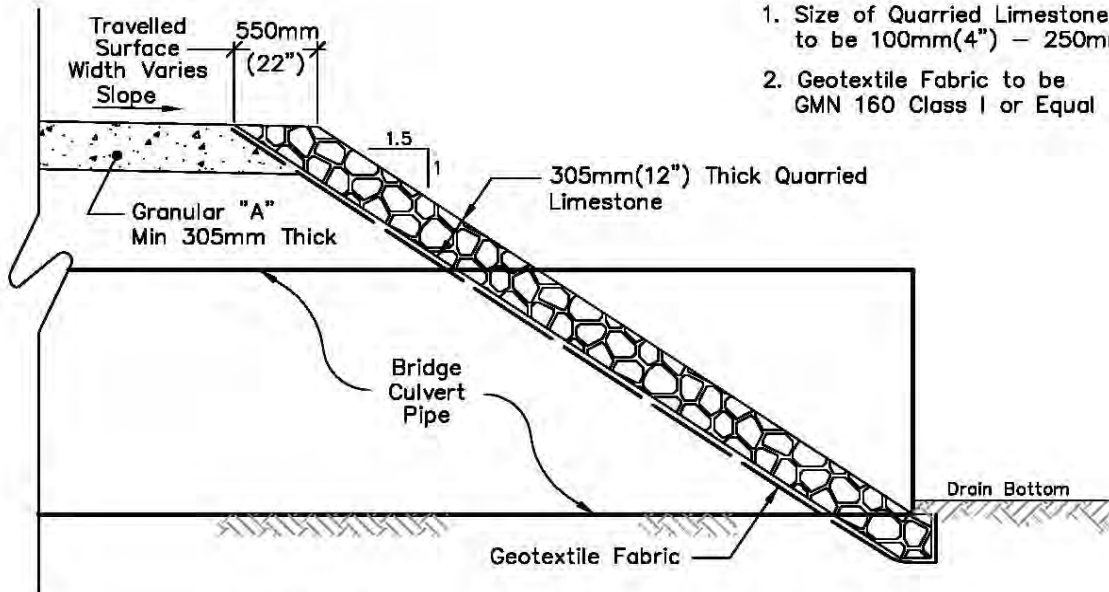
Once the bridge installation has been completed, the drain sideslopes directly adjacent the new headwalls and/or endwalls are to be completely restored including revegetation, where necessary.

All of the work required towards the installation of the bridge shall be performed in a neat and workmanlike manner. The general site shall be restored to its' original condition, and the general area shall be cleaned of all debris and junk, etc. caused by the work

All of the excavation, installation procedures, and parameters as above mentioned are to be carried out and performed to the full satisfaction of the Drainage Superintendent and Engineer.



Typical Jute Bag Headwall

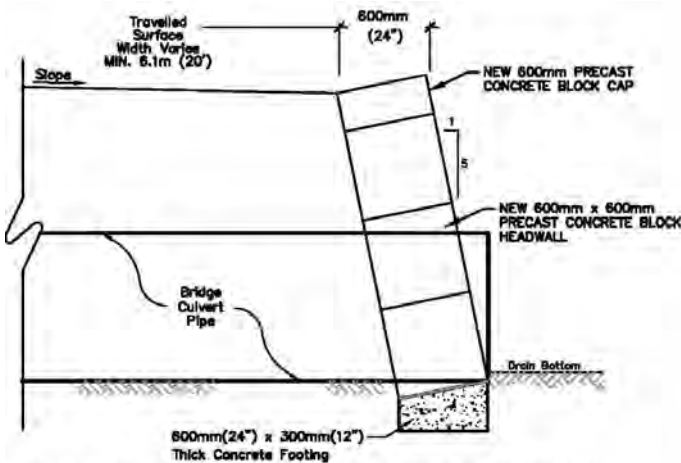
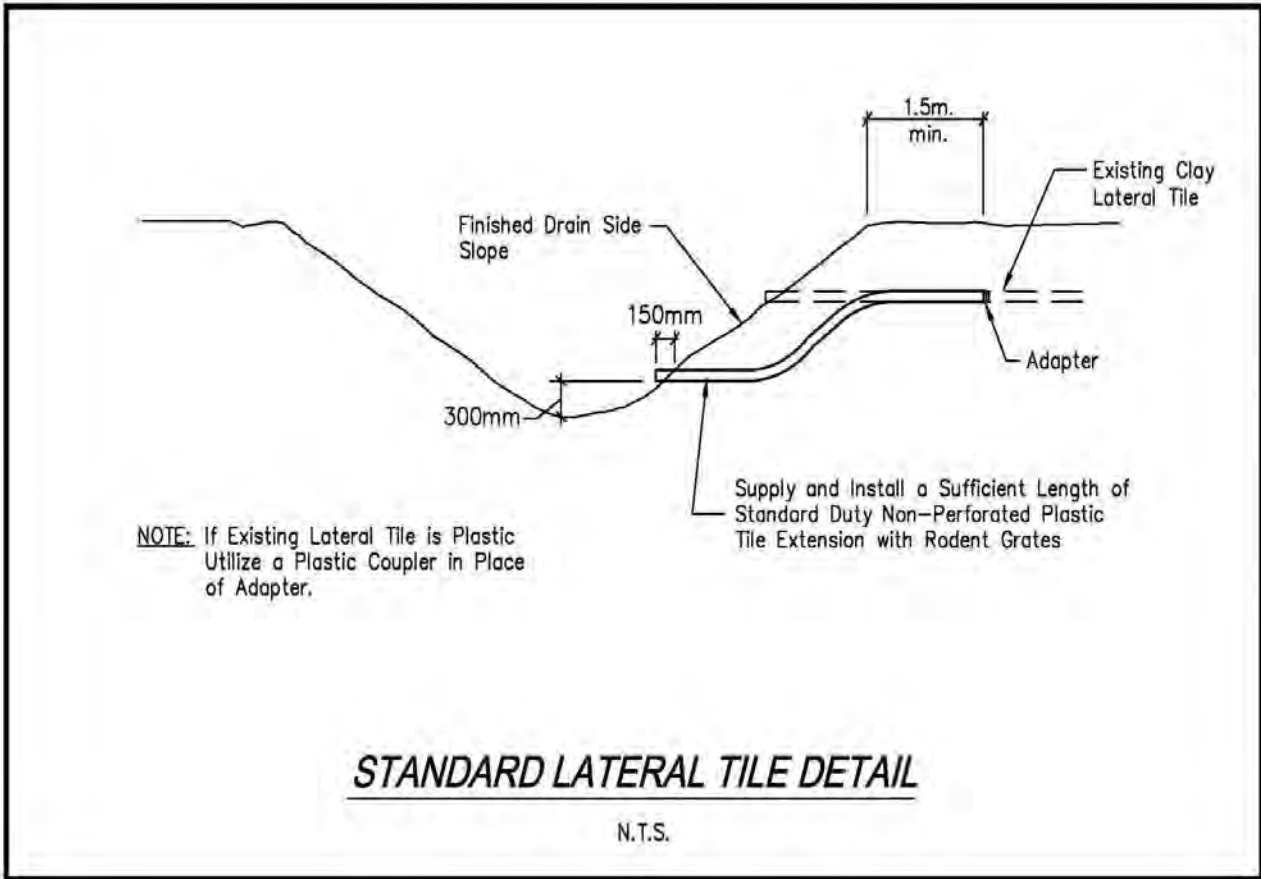


NOTE:

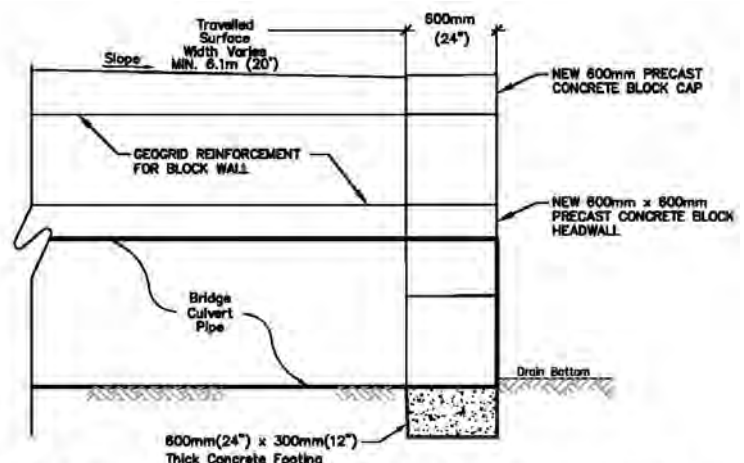
1. Size of Quarried Limestone to be 100mm(4") – 250mm(10")
2. Geotextile Fabric to be GMN 160 Class I or Equal

Typical Quarried Limestone End Protection

Rood Engineering Inc.
Consulting Engineers
 9 Nelson Street
 Leamington, Ontario N8H 1G6
 519-322-1621



TYPICAL PRECAST CONCRETE BLOCK END PROTECTION
Scale = N.T.S.



TYPICAL VERTICAL PRECAST CONCRETE BLOCK END PROTECTION
Scale = N.T.S.

APPENDIX "REI-D"

Open Air Burning

Windsor Fire and Rescue Services would like to remind residents that *open-air burning* is not permitted within the City of Windsor.

Use of devices such as chimineas, outdoor fireplaces, fire pits, bonfires etc. are considered open air burning and are therefore not permitted. Failure to comply with open air burning regulations is an offense for which a person may be prosecuted under the Ontario Fire Code and subject to a fine of up to \$50,000.

“The purpose of this requirement is to protect people, property and the environment.” stated Fire Chief Bruce Montone. “Unauthorized open air burning concerns include fire exposure hazards from sparks and embers, property damage and the potential for a grass fire as well as environmental concerns from smoke.”

The use of appliances designed for outdoor cooking such as a gas fired, propane, or charcoal barbecues is allowed. Residents are reminded to remain near their barbecue when cooking and to keep barbecues a safe distance away from homes and other combustible materials.

Some appliances, approved by TSSA and CSA that are propane or natural gas only and are not being used for cooking purposes are considered to be approved for use. Attached are photos of approved and non approved appliances.

For further information residents can contact our Fire Prevention Division at 519-253-6573.

APPENDIX "REI-E"

CAHILL DRAIN - UPPER PORTION

(Geographic Township of Sandwich West)

CITY OF WINDSOR

COUNTY OF ESSEX • ONTARIO

Strand Road
GERARD ROOD, P.ENG.

**ROOD
ENGINEERING
INC.**

CONSULTING ENGINEERS
Leamington, Ontario
519-322-1621



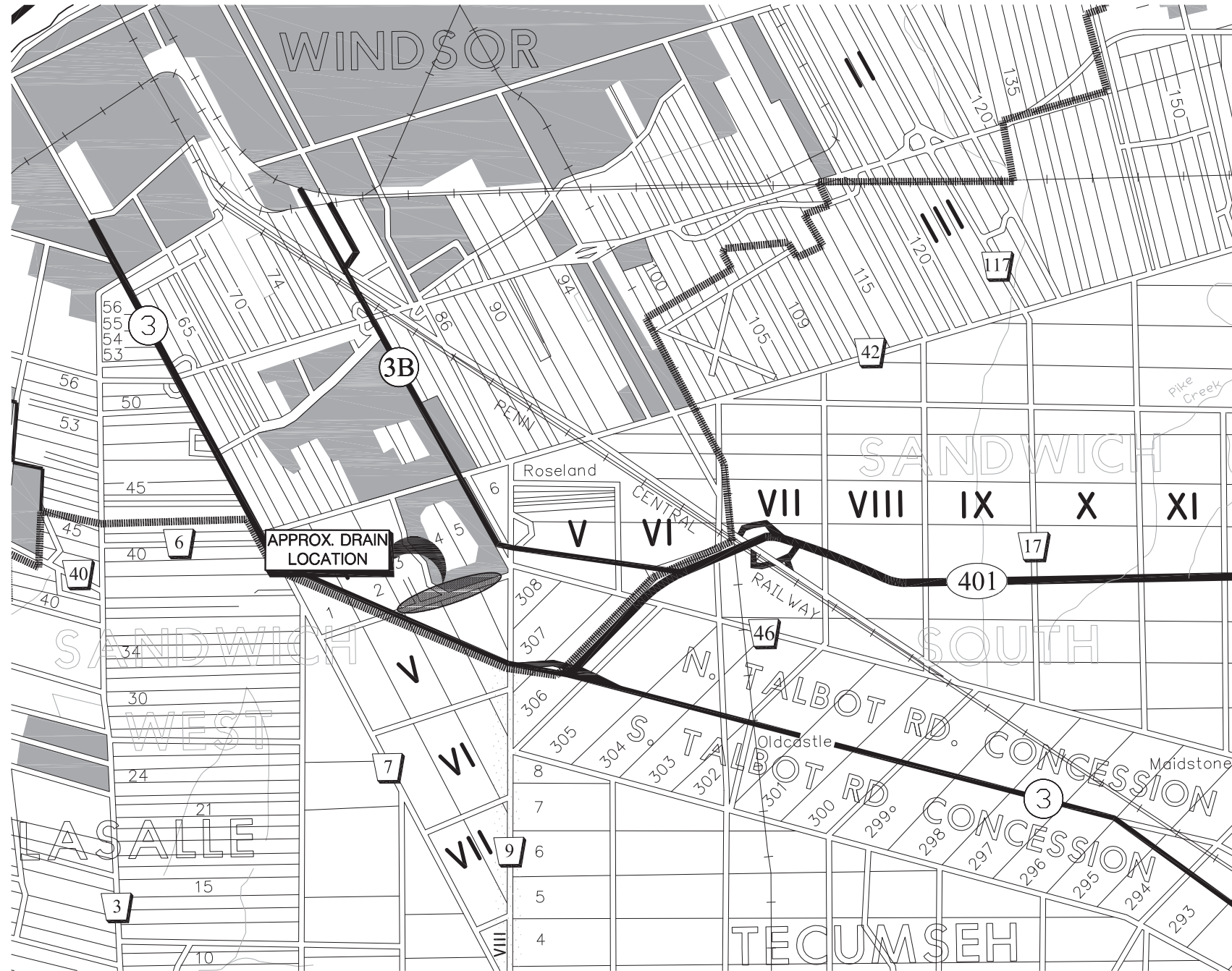
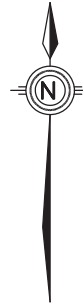
DATE: September 10th, 2019

CITY OF WINDSOR

MAYOR: DREW DILKENS
CLERK: VALERIE CRITCHLEY
DRAINAGE SUPERINTENDENT: FAHD MIKHAEL, P.ENG.

BENCHMARKS:

- TOP NUT OF FIRE HYDRANT LOCATED ON THE WEST SIDE OF BRIDGE NO. 2 FRONTING MN 1400
ELEV. = 185.414m
- TOP NUT OF FIRE HYDRANT LOCATED ON THE NORTHWEST CORNER OF MOUNT ROYAL DR. & COUSINEAU RD. INTERSECTION
ELEV. = 185.719m
- TOP NUT OF FIRE HYDRANT LOCATED ON THE NORTHEAST CORNER OF CASGRAIN DR. & COUSINEAU RD INTERSECTION
ELEV. = 186.130m
- TOP NUT OF FIRE HYDRANT LOCATED ON THE SOUTH SIDE OF COUSINEAU RD APPROX. 26.6m FROM THE PROPERTY LINE OF MN 1095 & MN 4395
ELEV. = 186.458m
- TOP NUT OF FIRE HYDRANT LOCATED ON THE NORTH SIDE OF COUSINEAU RD IN THE APPROX. CENTRE OF MN 740
ELEV. = 187.437m
- TOP OF GEODETIC PLATE LOCATED AT MN 4289 SUTHERLAND AVENUE ON THE SOUTH WALL OF THE GARAGE, 0.1m FROM THE EAST WALL & 0.5m ABOVE GRADE
ELEV. = 187.137m
- TOP NUT OF FIRE HYDRANT LOCATED ON THE SOUTH SIDE OF COUSINEAU RD IN THE APPROX. CENTRE OF MN 570
ELEV. = 188.223m
- TOP NUT OF FIRE HYDRANT LOCATED ON THE NORTH SIDE OF COUSINEAU RD APPROX. 38.5m EAST OF BRIDGE NO. 25
ELEV. = 188.280m



KEY PLAN

Scale = 1:10,000



THE CITY OF WINDSOR

350 City Hall Square West
Windsor, Ontario
N9A 6S1
519-255-2489

SHEET INDEX	
SHEET	DESCRIPTION
1	COVER & KEY PLAN
PLANS	
2	WATERSHED PLAN
PLANS & PROFILE	
3	PLAN & PROFILE STA. 0+000.0 TO 0+400.0
4	PLAN & PROFILE STA. 0+400.0 TO 0+800.0
5	PLAN & PROFILE STA. 0+800.0 TO 1+200.0
6	PLAN & PROFILE STA. 1+200.0 TO 1+472.1
CROSS SECTIONS	
7	CROSS SECTIONS STA. 0+000.0 TO 0+302.9
8	CROSS SECTIONS STA. 0+367.5 TO 0+654.9
9	CROSS SECTIONS STA. 0+744.6 TO 0+904.2
10	CROSS SECTIONS STA. 0+943.7 TO 0+999.7
11	CROSS SECTIONS STA. 1+008.3 TO 1+073.5
12	CROSS SECTIONS STA. 1+108.8 TO 1+204.7
13	CROSS SECTIONS STA. 1+240.3 TO 1+323.0
14	CROSS SECTIONS STA. 1+337.6 TO 1+403.2
15	CROSS SECTIONS STA. 1+415.5 TO 1+451.1
BRIDGE PLANS	
16	BRIDGES #1-10
17	BRIDGES #11-22
18	BRIDGES #23-26
DETAILS	
18	OPSD & PRECAST CONCRETE CULVERT DETAILS

LEGEND		
DESCRIPTION	EXISTING	PROPOSED
SEWER MANHOLE	○ MH	
SEWER CLEANOUT	○ C.O.	
CATCH BASIN	■ CB	○ CB
FIRE HYDRANT	○ FH	
GAS VALVE	○ GV	
WATER VALVE MAIN	○ WM	
WATER METER	○ WM	
BELL PEDESTAL	■ BP	
HYDRO POLE	○ HP	
GUY WIRE	— GUY	
ROAD SIGN	! S	
FENCE	— F	
PROPERTY BAR	□ P.B.	□ S.P.B.
GAS METER	○ GM	
GUARD RAIL	○ GR	

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

**ROOD
ENGINEERING
INC.**
CONSULTING ENGINEERS
Leamington, Ontario
519-322-1621

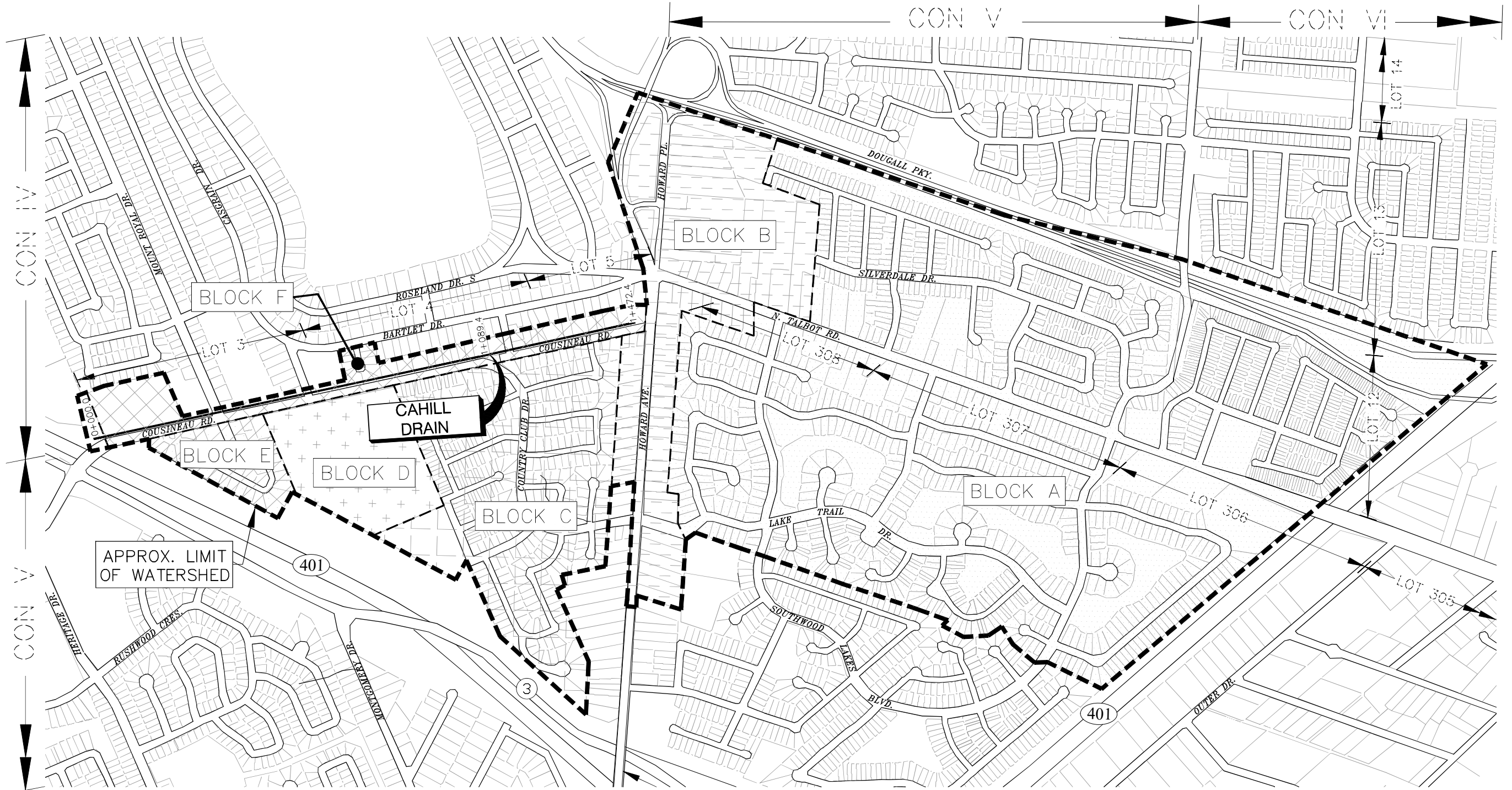
The City of
WINDSOR - ONTARIO

City Council Agenda - November 23, 2020

DESIGN:	S.M. & K.S.
DRAWN:	S.M.
CHECKED:	G.R.
REVIEW	2019-05-28
ISSUED FOR:	DATE: BY: 2019-09-10

CAHILL DRAIN
**TITLE PAGE &
KEY PLAN**

PROJECT No.:
REI2017D012
SCALE:
AS SHOWN
SHEET No.:
1 OF 18

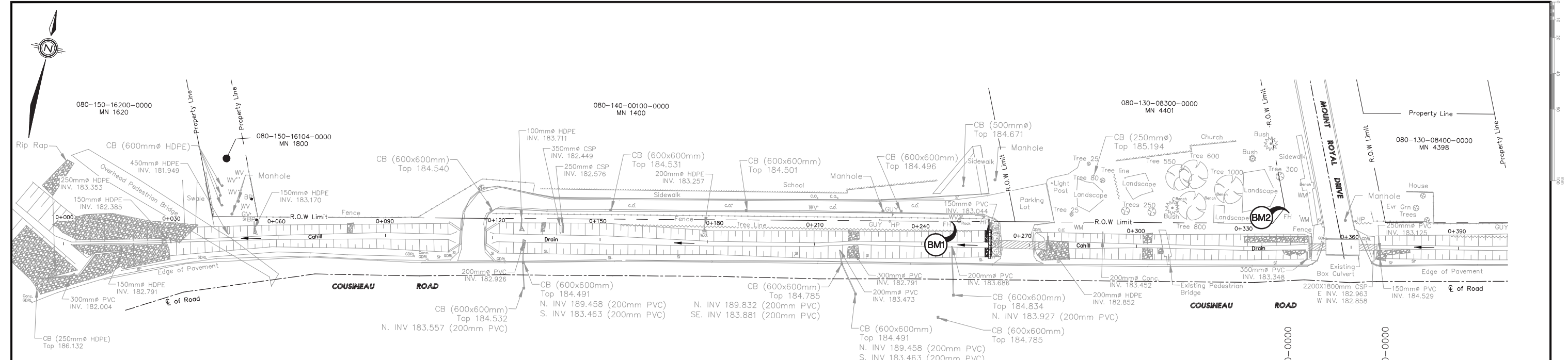


WATERSHED PLAN
Scale = 1:5,000

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

\\SERVER-2019\NET_Data_Server\DRAINING\PROJECTS\Projects_2017\RE2017D012 - Cahill Drain\Map\RE2017D012.dwg, 2019-09-04

ROOD ENGINEERING INC. <small>CONSULTING ENGINEERS Leamington, Ontario 519-322-1621</small>	The City of WINDSOR - ONTARIO <small>(Geographic Township of Sandwich West)</small>	DESIGN: S.M. & K.S.	CAHILL DRAIN WATERSHED PLAN	PROJECT No.: REI2017D012
		DRAWN: S.M.		SCALE: AS SHOWN
		CHECKED: Q.R.	2 OF 18	SHEET No.:
1 REVIEW 2019-05-28 G.R. DATE: 2019-09-10		ISSUED FOR: DATE: BY:		



PLAN
Scale = 1:500

0+042.3 Parcels 080-150-16200-0000 & 080-150-16104-0000

0+055.0 Parcels 080-150-16104-0000 & 080-140-00100-0000

0+114.6 Box Culvert 4.0m span x 1.9m Rise

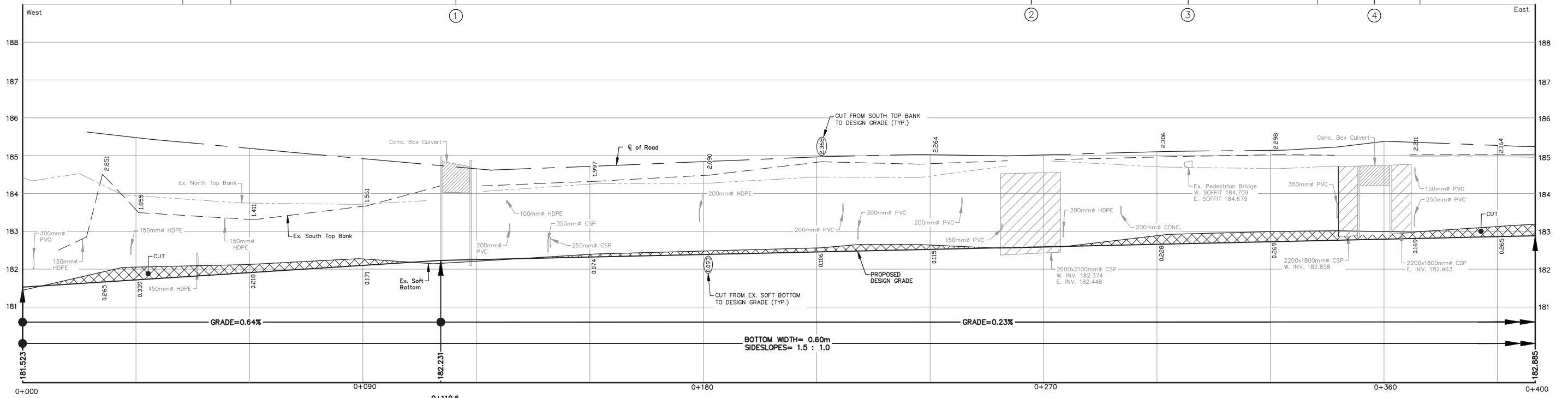
0+266.5 NEW PEDESTRIAN BRIDGE EXTENSION
2600x2100mm ϕ CSP
Parcels 080-140-00100-0000 & 080-130-08300-0000

0+308.3 BRIDGE NO. 3 TO BE REMOVED
Existing Pedestrian Bridge

0+342.4 R.O.W limit for Parcel 080-130-08300-0000

0+357.5 Conc. Box Culvert

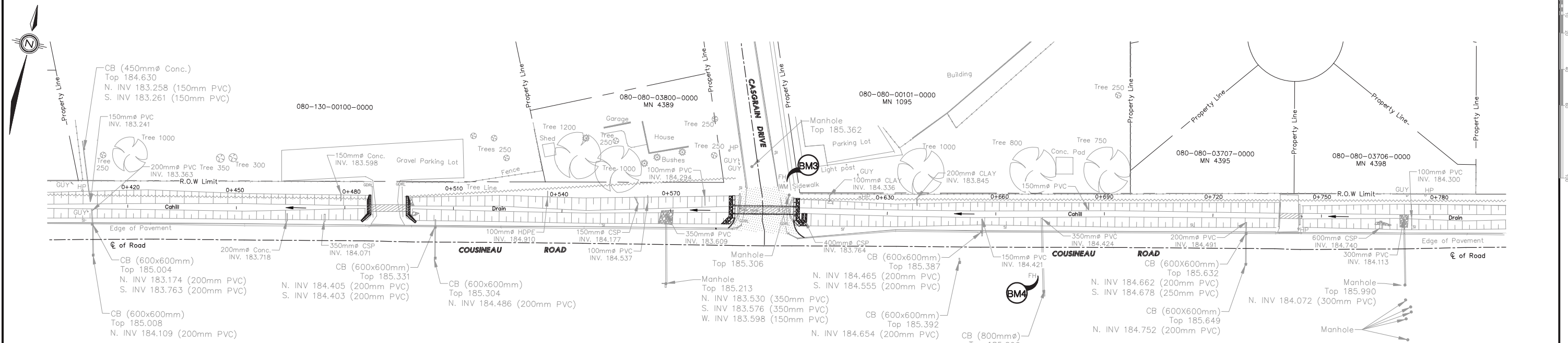
0+369.6 R.O.W limit for Parcel 080-130-08400-0000



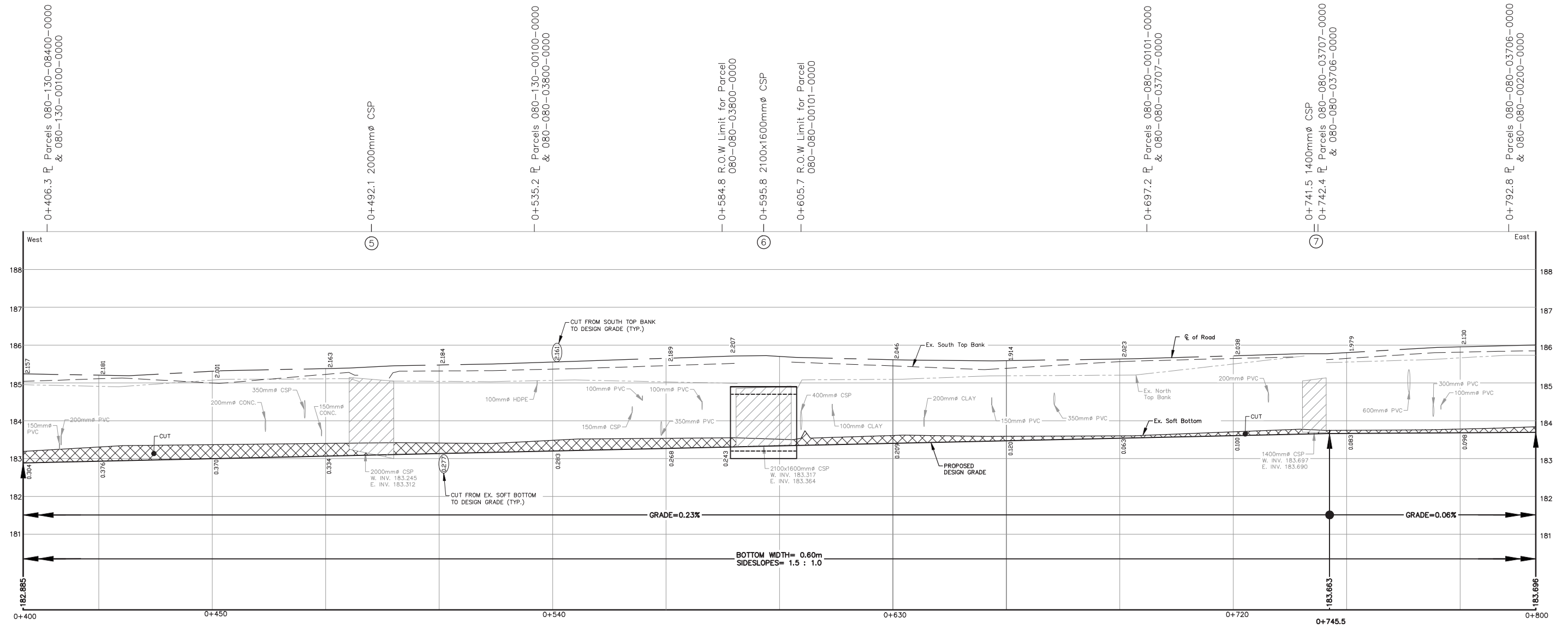
PROFILE - CAHILL DRAIN
Scale = 1:500 Hor.
City Council Agenda - November 23, 2020
Page 193 of 274

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

DRAWN BY: S.M.
PLOT CODE: 1:1
COMPUTER FILE: REI2017D012.DWG
FILE No.: SHEET No.:
2017D012 3 OF 18



PLAN
Scale = 1:500



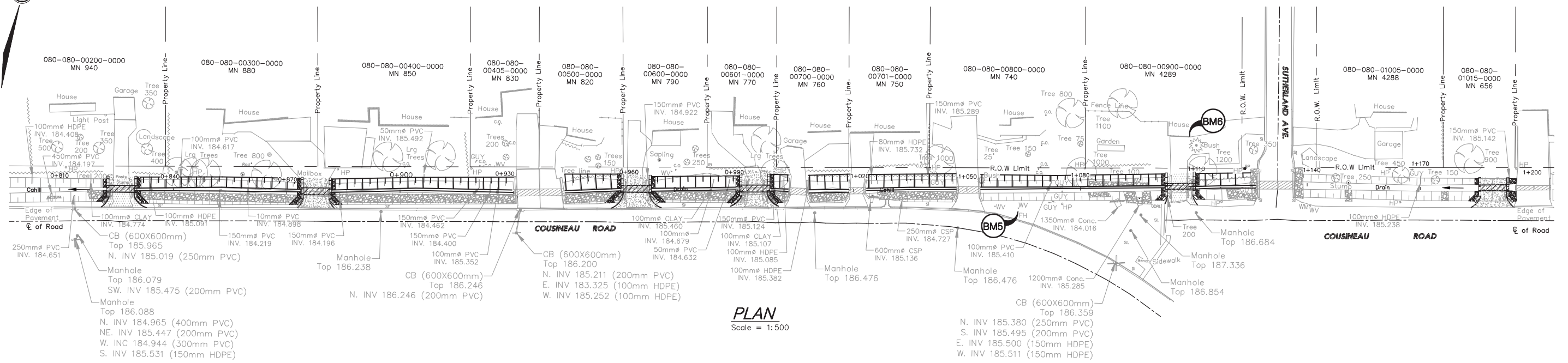
PROFILE - CAHILL DRAIN

Scale = 1:500 Hor.
1:50 Vert.
City Council Agenda - November 23, 2020
Page 184 of 274

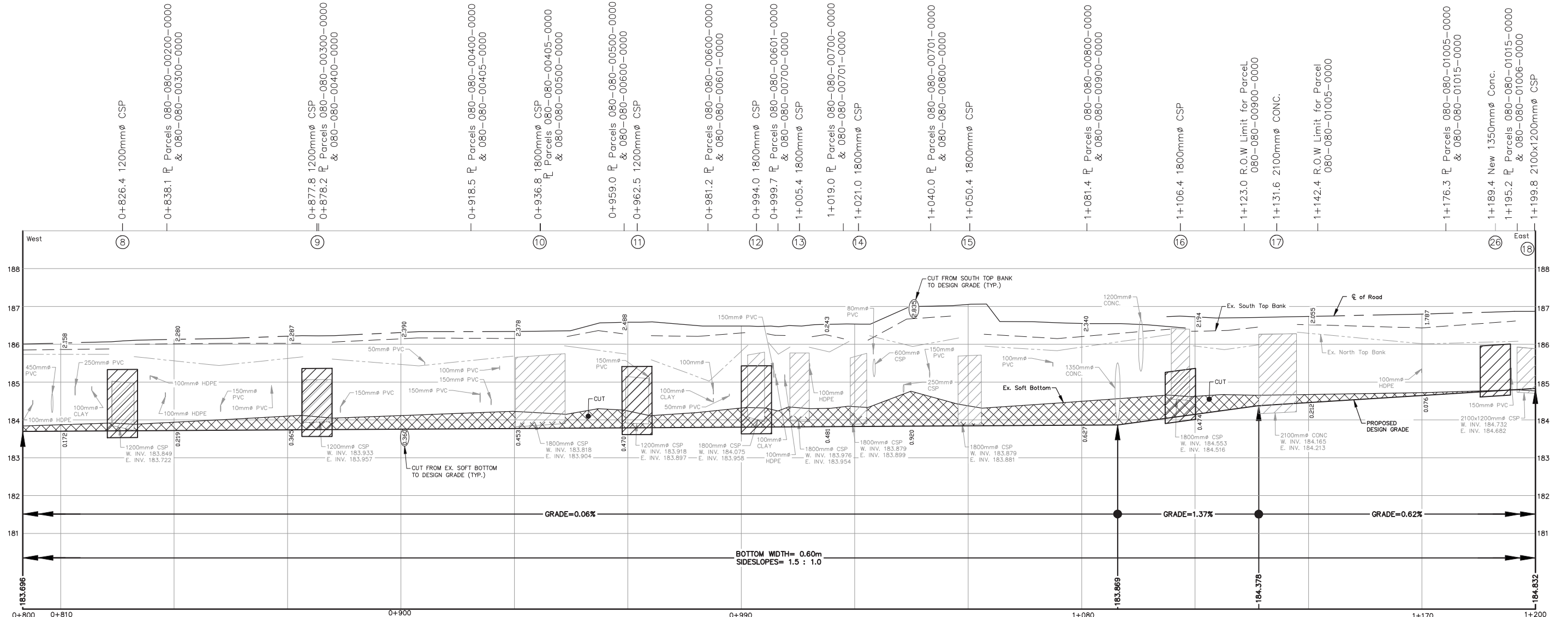
THESE PLANS HAVE BEEN REDUCED
AND THE SCALE THEREFORE VARIES.
FULL SCALE PLANS MAY BE VIEWED
AT THE MUNICIPAL OFFICE.

DRAWN BY: S.M.
PLOT CODE: 1:1
COMPUTER FILE: REI2017D012.DWG
FILE No.: SHEET No.:
2017D012 4 OF 18

\\SERVER-2017\NET\Draws\Bentley\BIM\Projects\2017\REI2017D012.dwg - Cahill Drain\Drawings\REI2017D012.dwg 2018-08-29



PLAN
Scale = 1:500

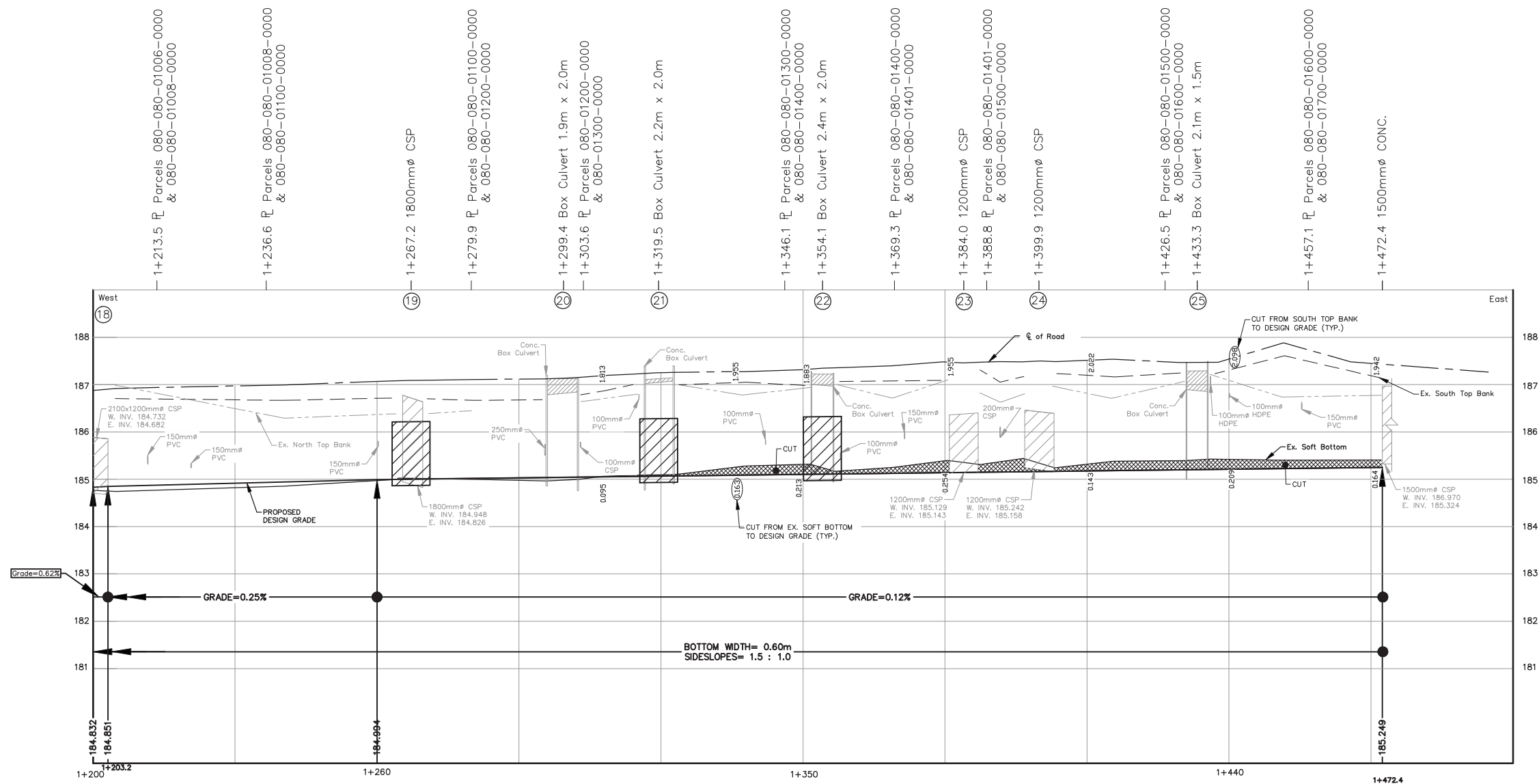
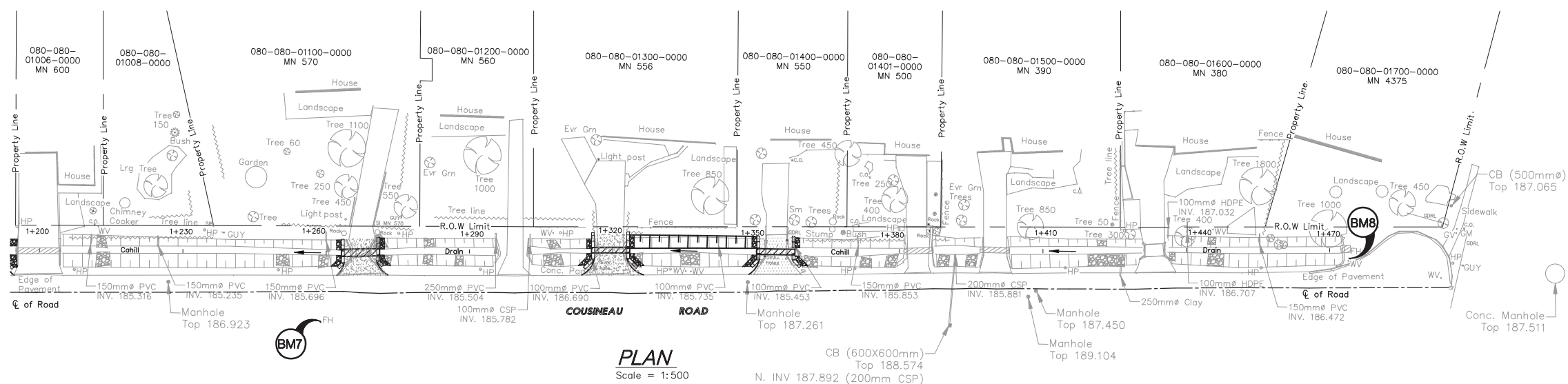


PROFILE - CAHILL DRAIN

Scale = 1:500 Hor.
1:50 Vert.
City Council Agenda - November 23, 2020
Page 185 of 274

THESE PLANS HAVE BEEN REDUCED
AND THE SCALE THEREFORE VARIES.
FULL SCALE PLANS MAY BE VIEWED
AT THE MUNICIPAL OFFICE.

DRAWN BY: S.M.
PLOT CODE: 1:1
COMPUTER FILE: REI2017D012.DWG
FILE No.: SHEET No.:
2017D012 5 OF 18

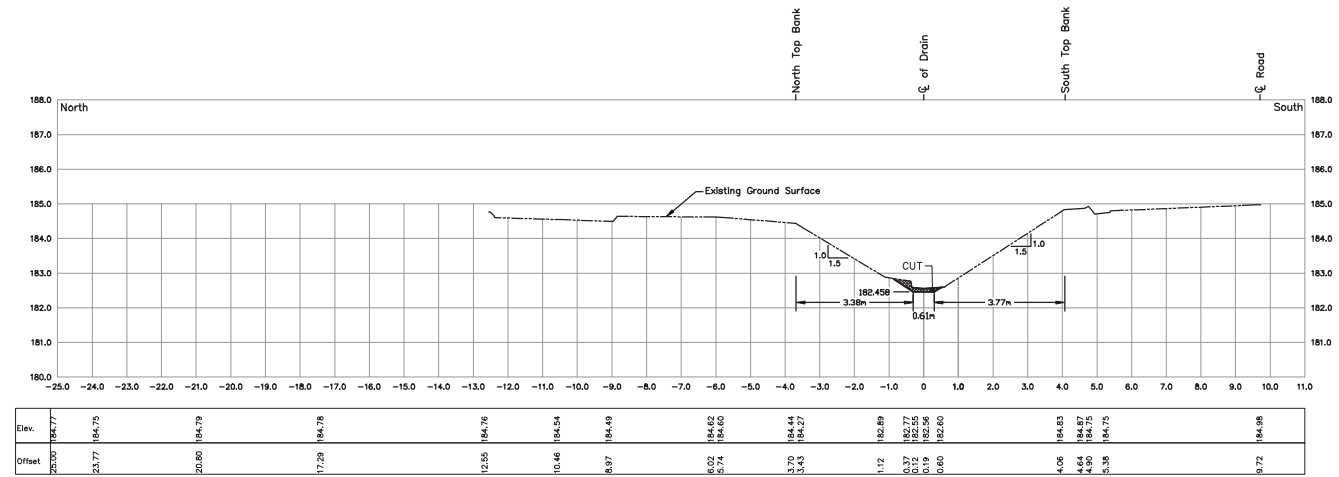


PROFILE - CAHILL DRAIN
City Council Agenda - November 23, 2020
Page 106 of 274

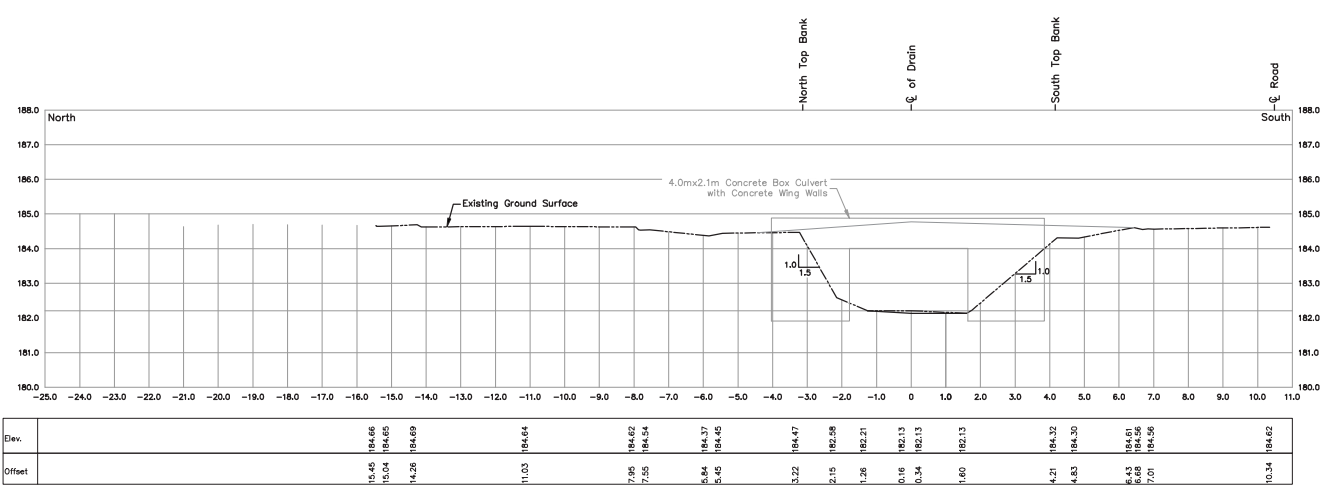
THESE PLANS HAVE BEEN REDUCED
AND THE SCALE THEREFORE VARIES.
FULL SCALE PLANS MAY BE VIEWED
AT THE MUNICIPAL OFFICE.

DRAWN BY: S.M.
PLOT CODE: 1:1
COMPUTER FILE: REI2017D012.DWG
FILE No.: SHEET No.:
2017D012 6 OF 18

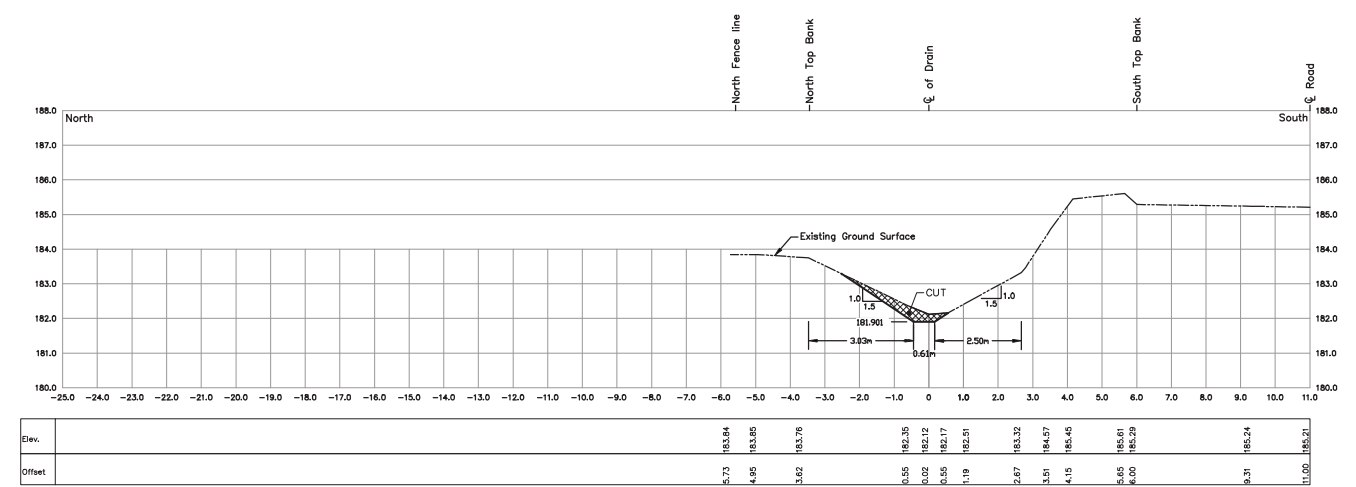
\\SERVER-2019\NET_Docs_Servant\GIMATING\PROJECTS\2017\RE2017D012 - Cahill Drain\Plan\RE2017D012.dwg 2019-08-29



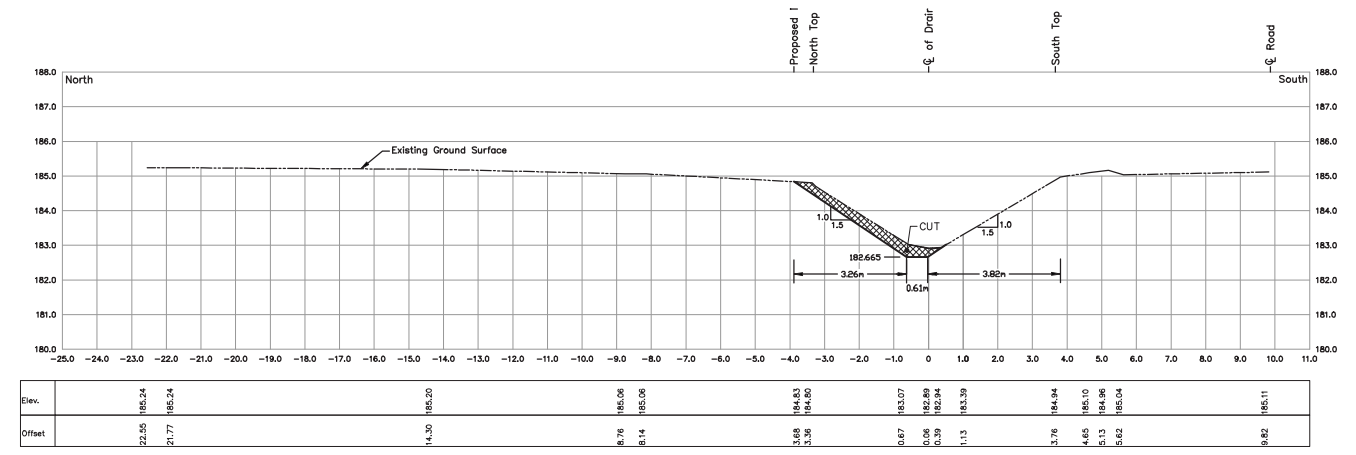
STA. 0+211.1
SCALE = 1:100



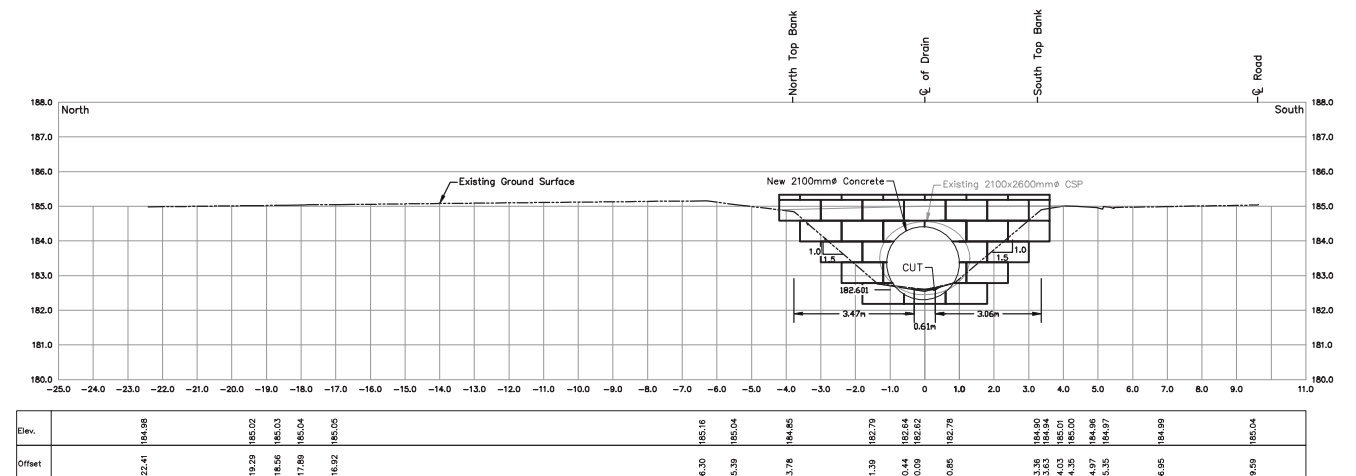
STA. 0+118.3
SCALE = 1:100



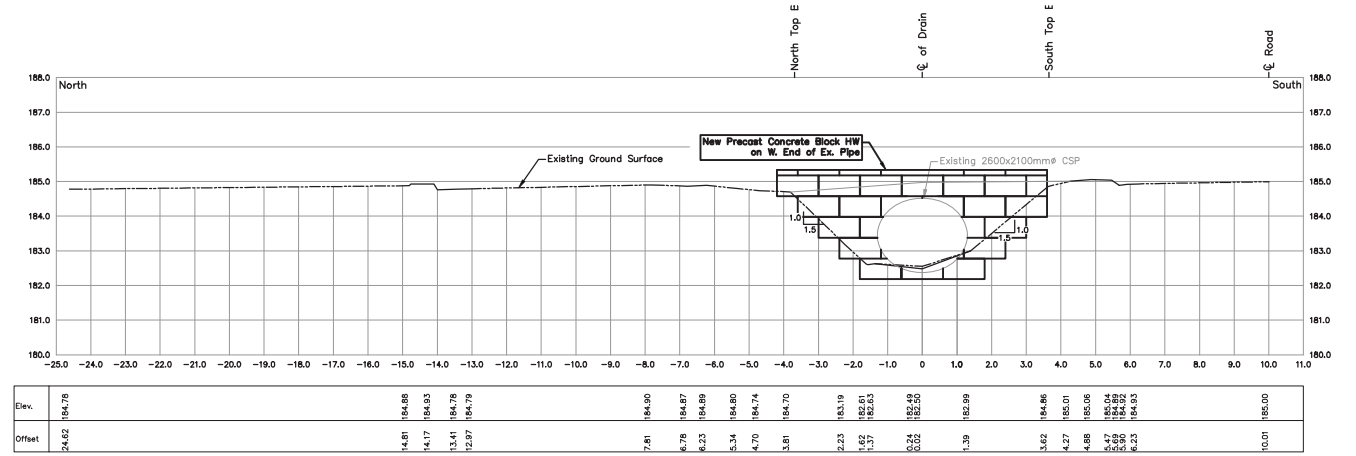
STA. 0+059.0
SCALE = 1:100



STA. 0+302.9
SCALE = 1:100



STA. 0+275.0
SCALE = 1:100

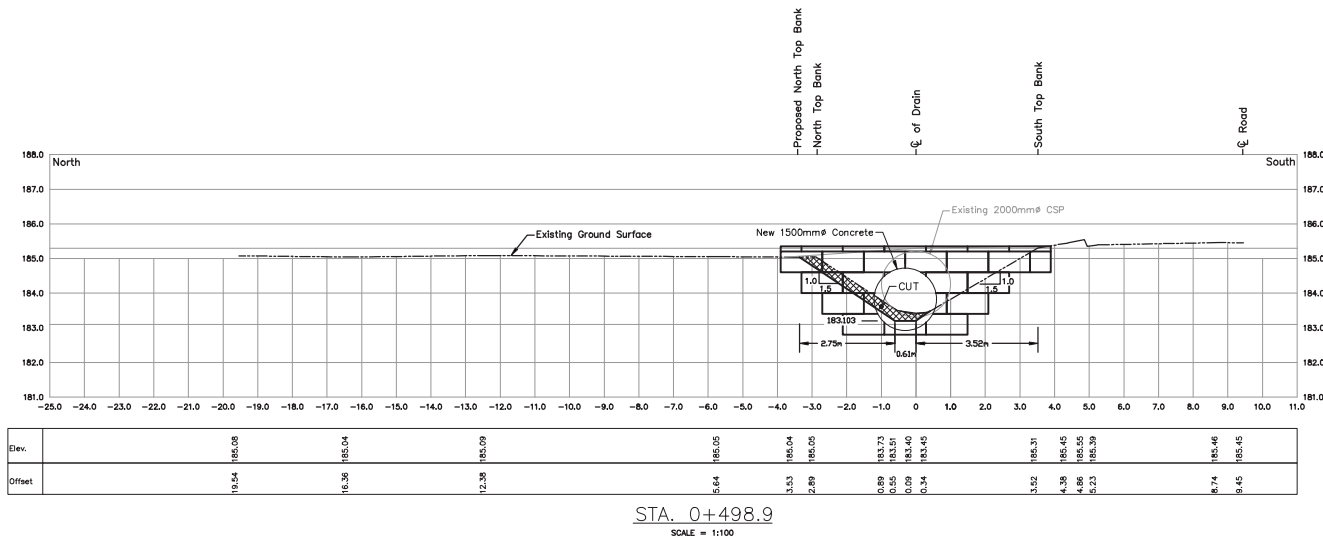


STA. 0+258.1
SCALE = 1:100

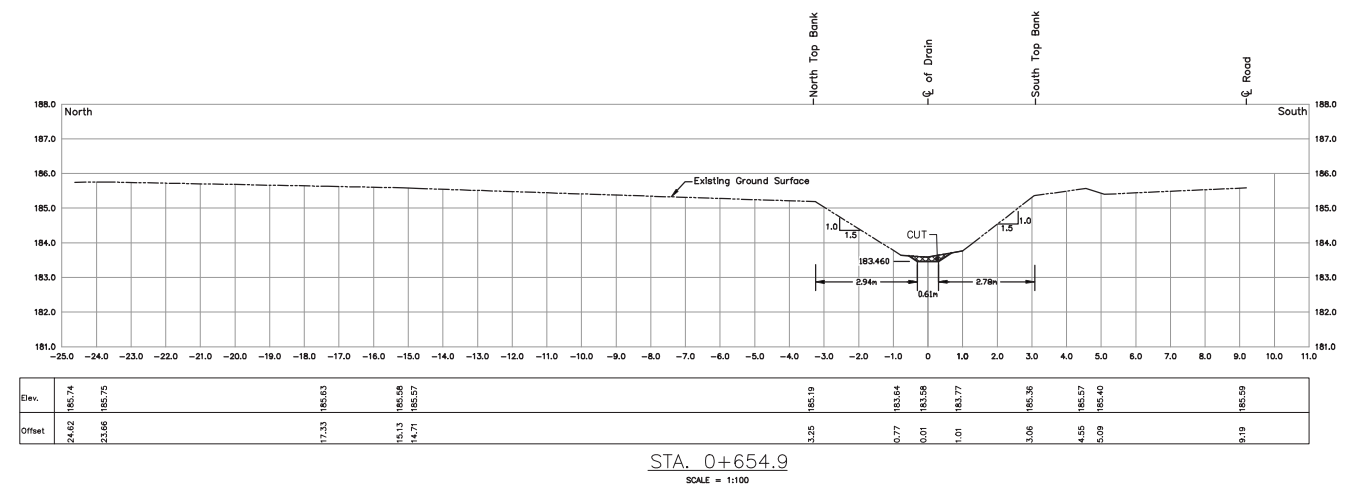
THESE PLANS HAVE BEEN REDUCED
 AND THE SCALE THEREFORE VARIES.
 FULL SCALE PLANS MAY BE VIEWED
 AT THE MUNICIPAL OFFICE.

DRAWN BY: S.M.
 PLOT CODE: 1:1
 COMPUTER FILE: REI2017D012.DWG
 FILE No.: SHEET No.:
2017D012 7 OF 18

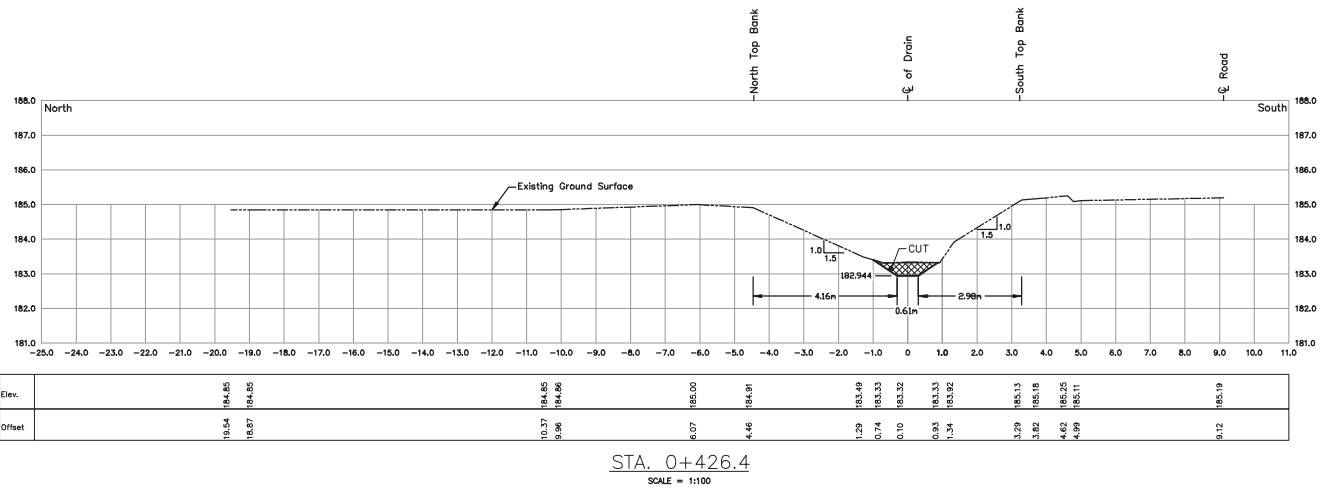
\\SERVER-2019\NET_Docs\Server\QM\PROJECTS\2017\REI20170012 - Catch Drain\Drawings\REI2017D012.dwg 2019-05-29



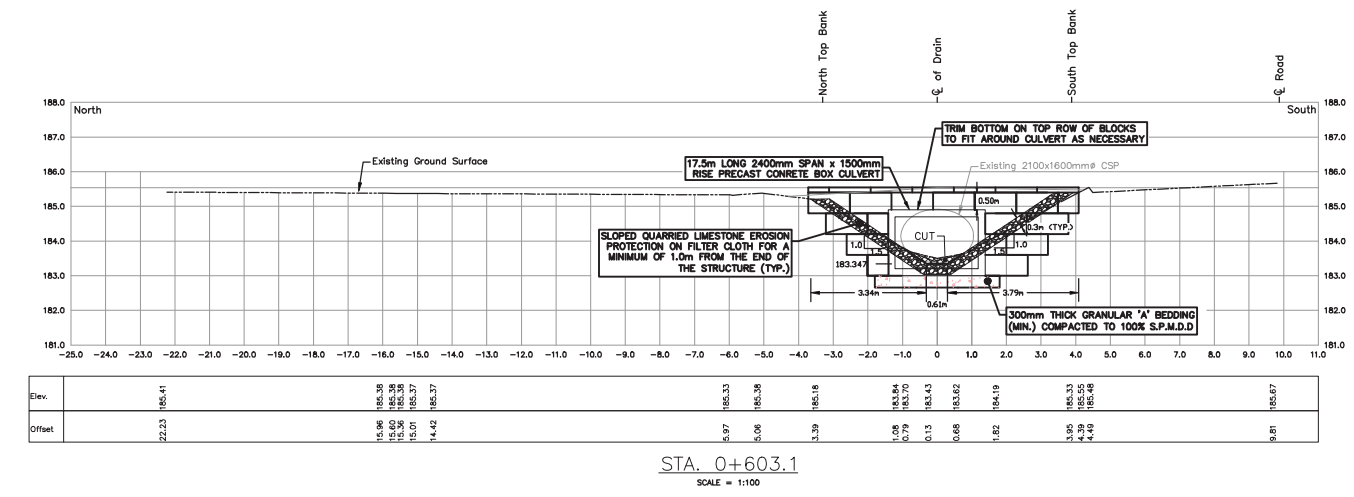
STA. 0+498.9
SCALE = 1:100



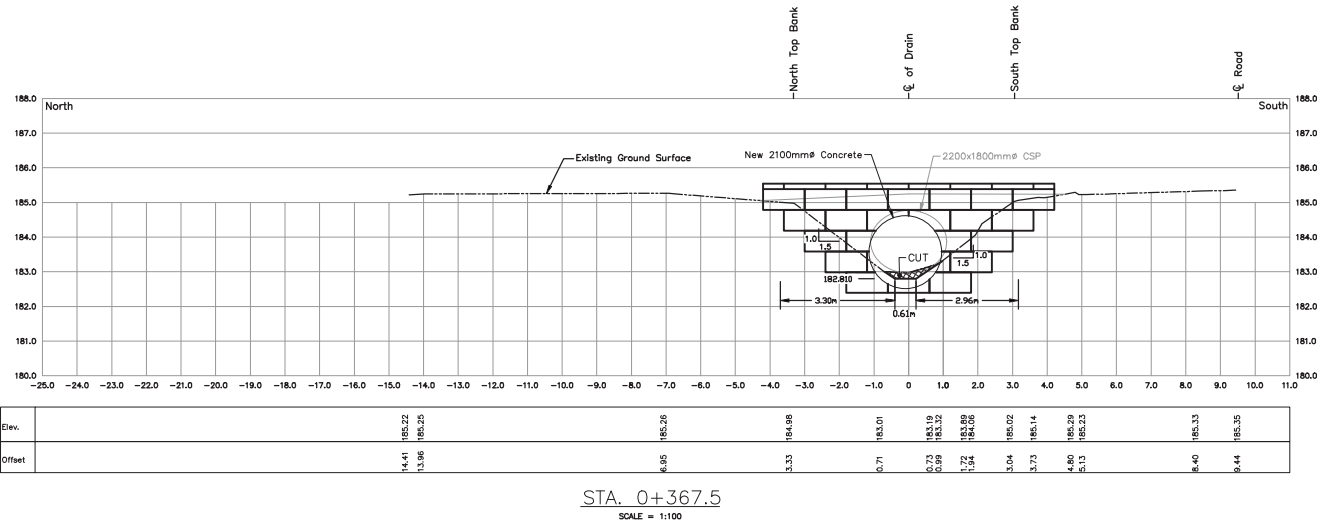
STA. 0+654.9
SCALE = 1:100



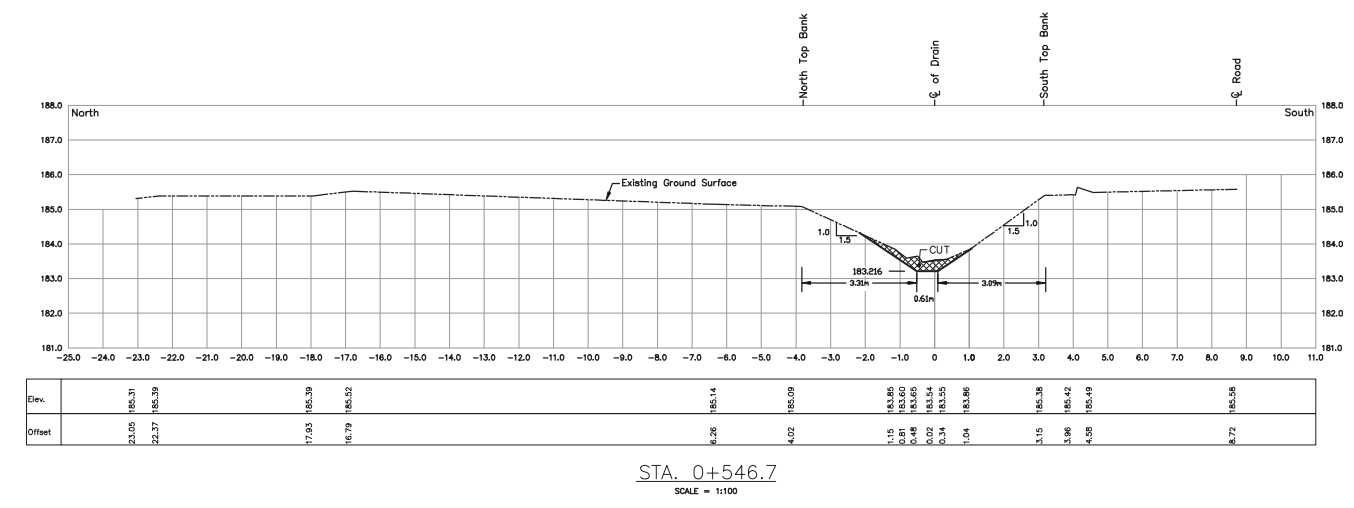
STA. 0+426.4
SCALE = 1:100



STA. 0+603.1
SCALE = 1:100



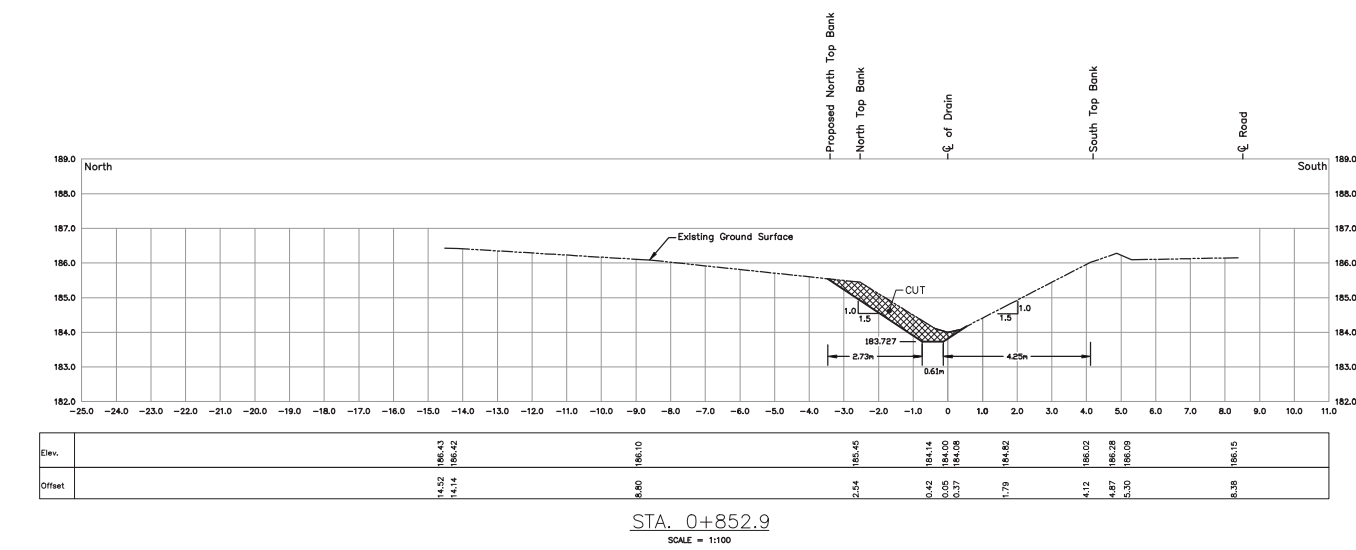
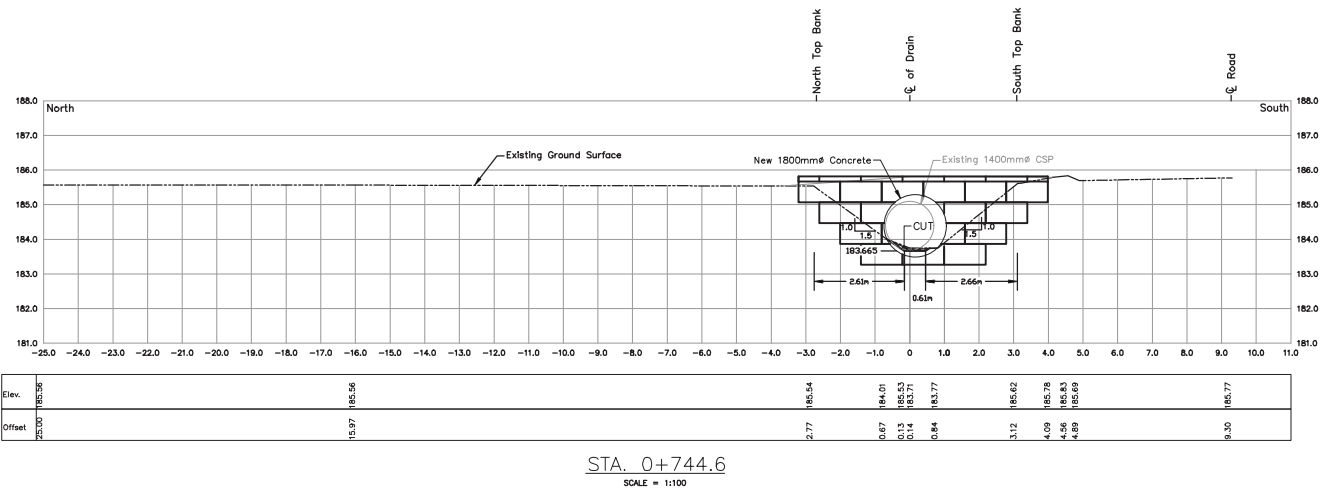
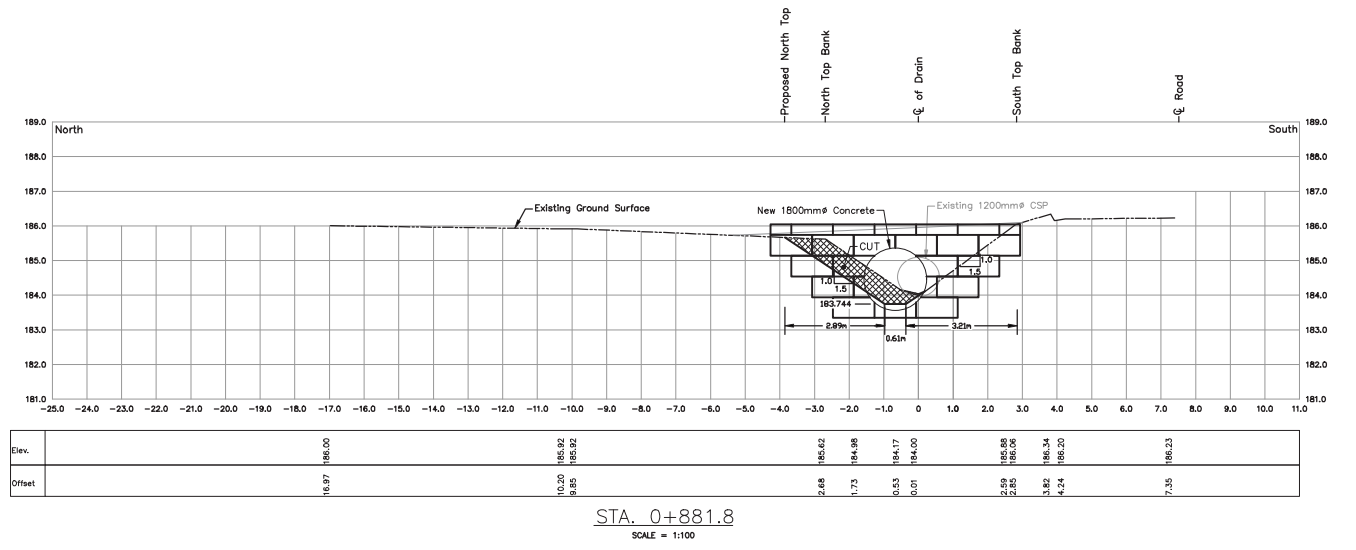
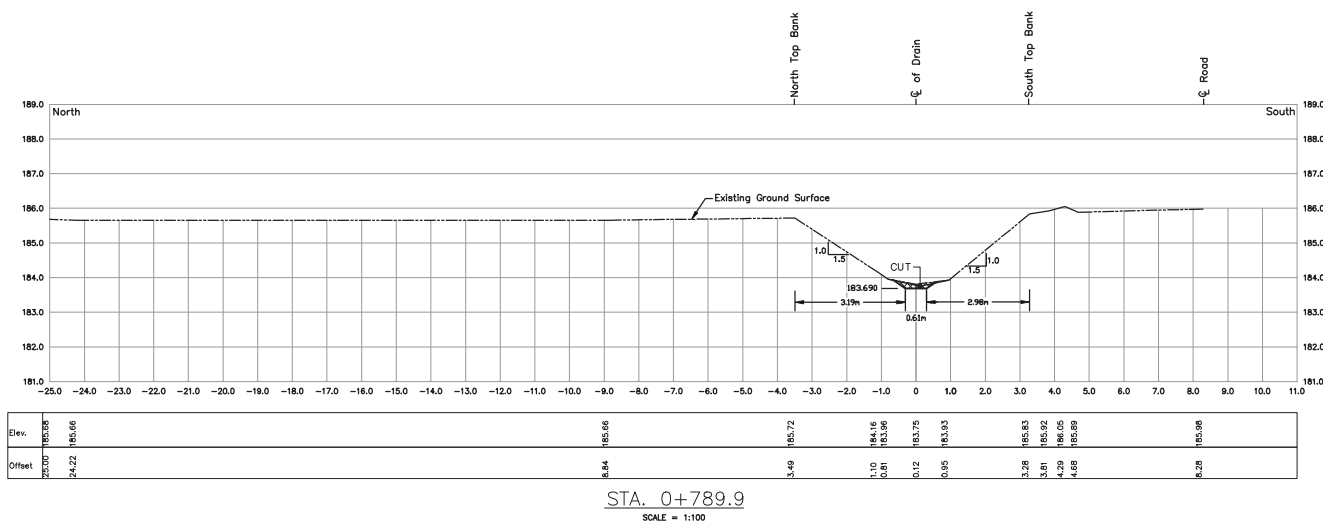
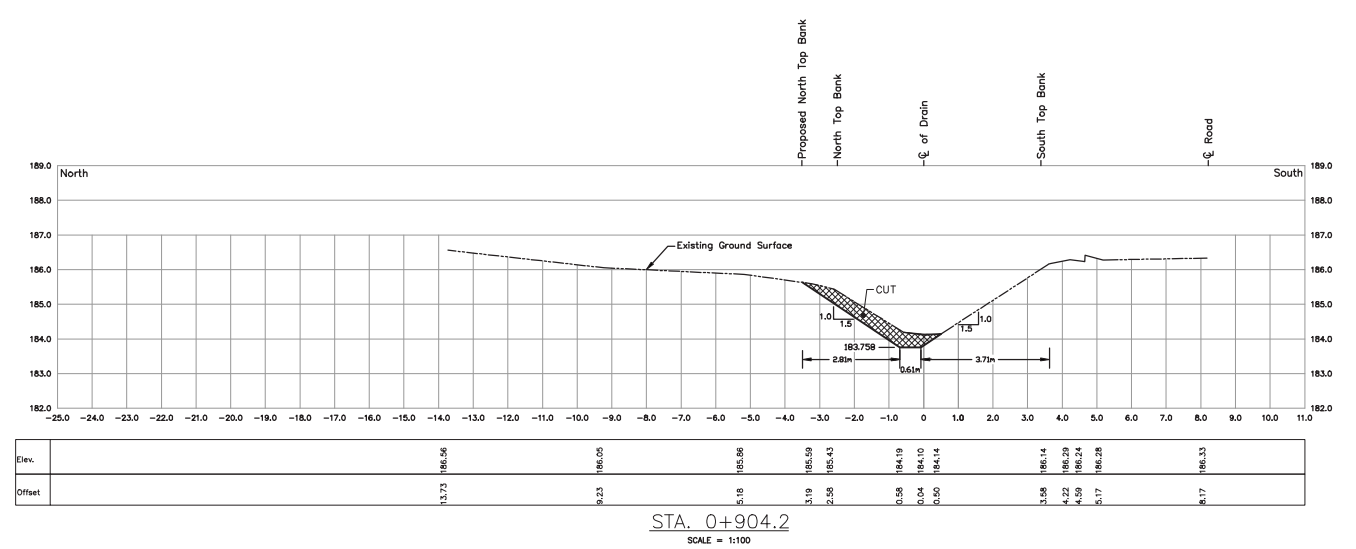
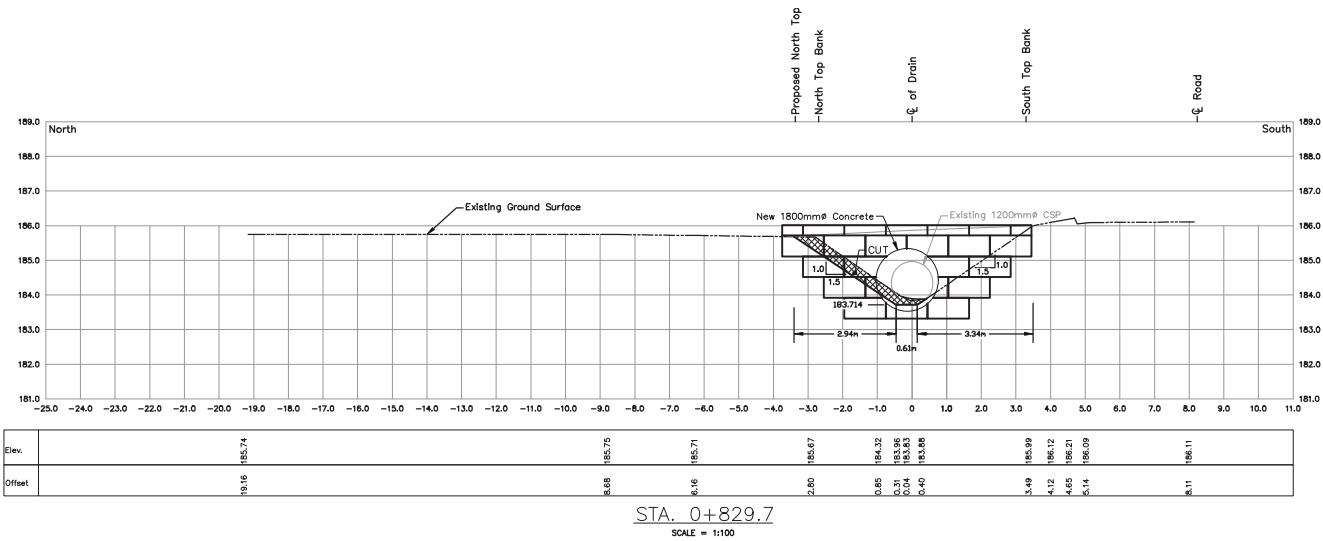
STA. 0+367.5
SCALE = 1:100



STA. 0+546.7
SCALE = 1:100

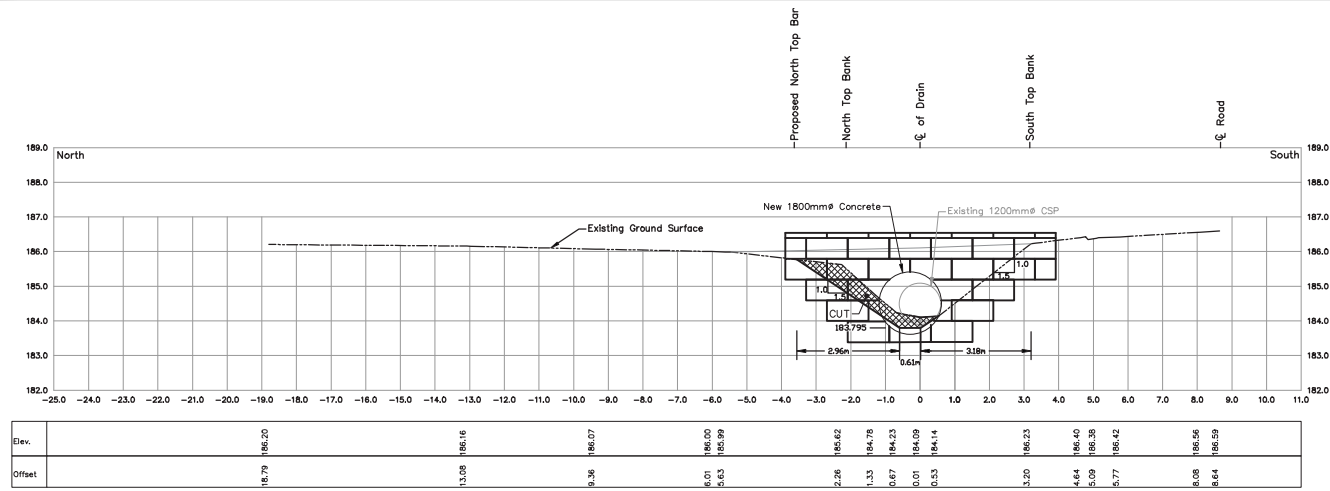
THESE PLANS HAVE BEEN REDUCED
 AND THE SCALE THEREFORE VARIES.
 FULL SCALE PLANS MAY BE VIEWED
 AT THE MUNICIPAL OFFICE.

DRAWN BY: S.M.
 PLOT CODE: 1:1
 COMPUTER FILE: REI2017D012.DWG
 FILE No.: SHEET No.:
2017D012 8 OF 18

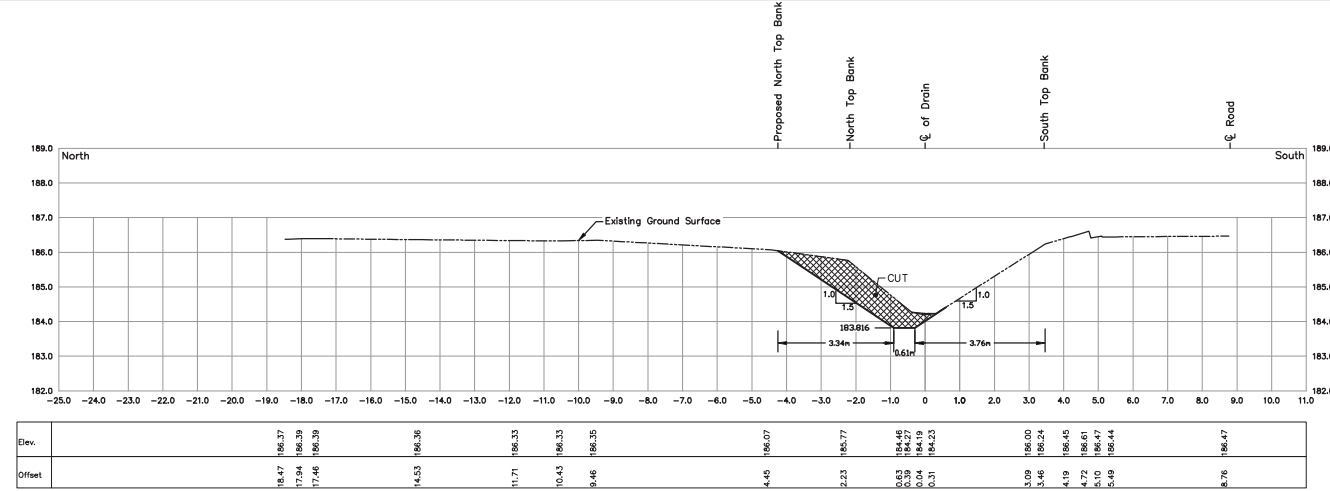


THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

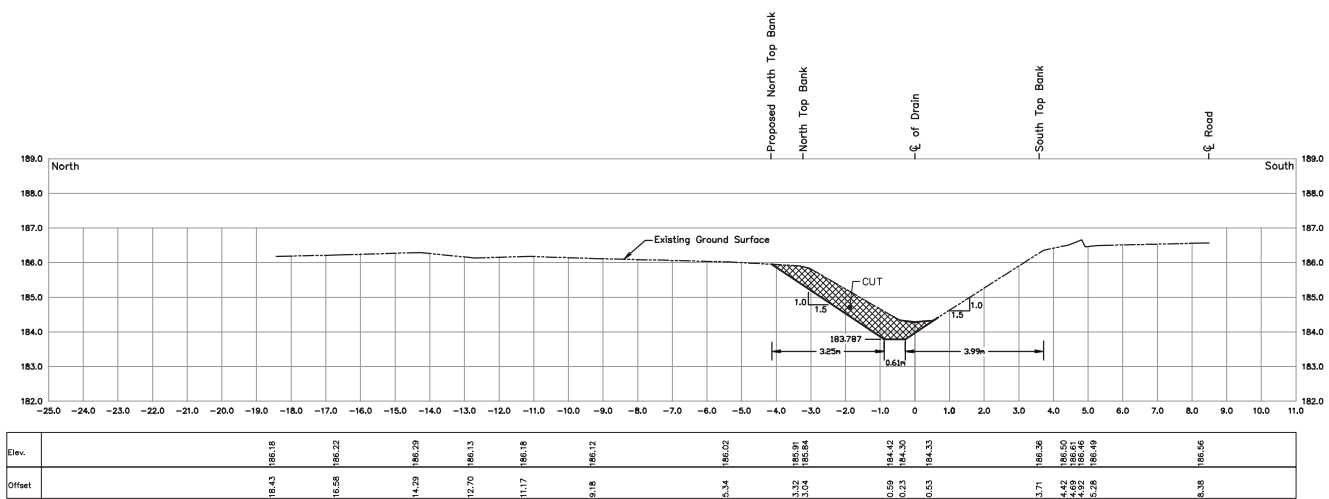
DRAWN BY: S.M.
PLOT CODE: 1:1
COMPUTER FILE: REI2017D012.DWG
FILE No.: SHEET No.:
2017D012 9 OF 18



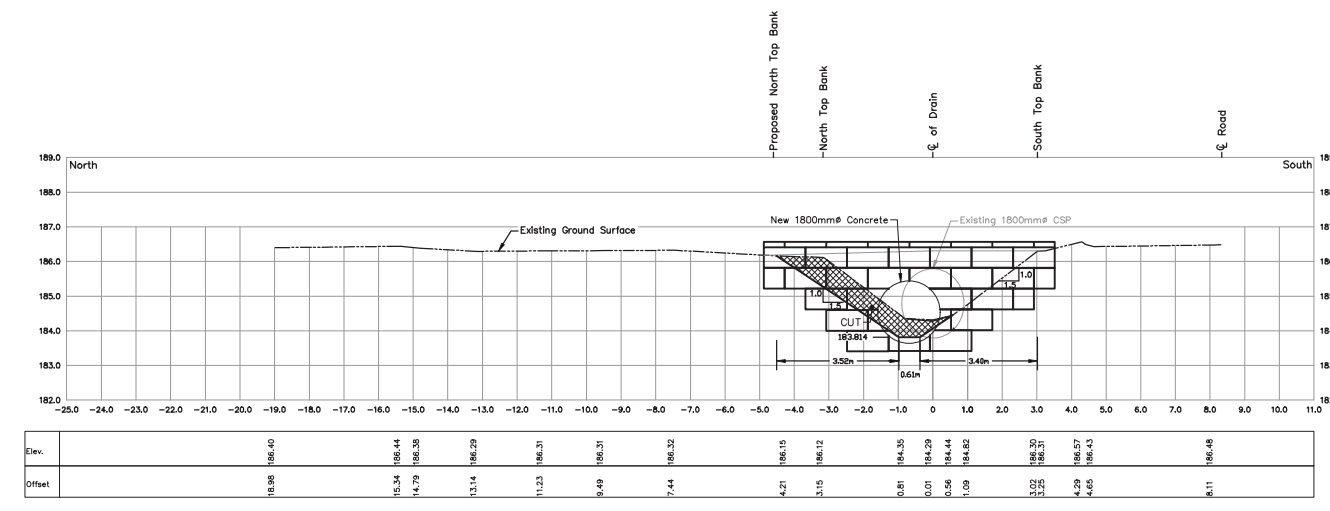
STA. 0+965.9
SCALE = 1:100



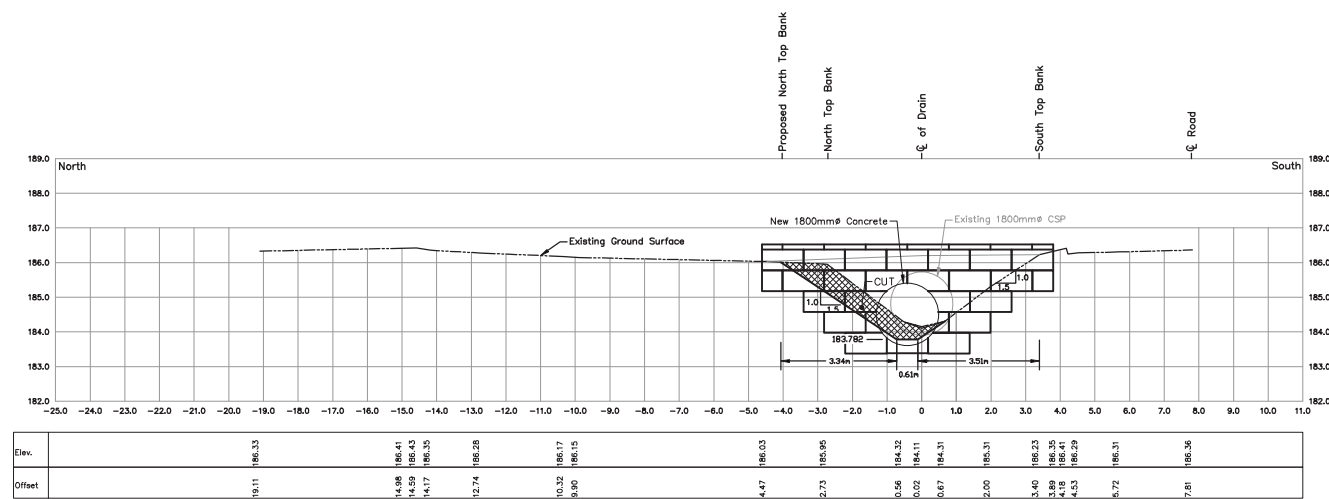
STA. 0+999.7
SCALE = 1:100



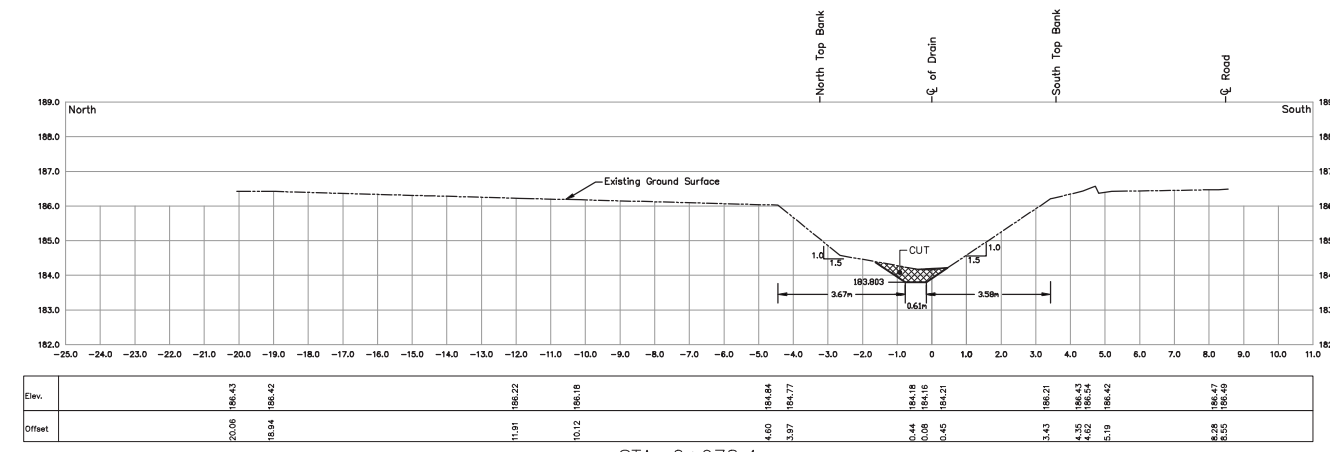
STA. 0+952.2
SCALE = 1:100



STA. 0+996.4
SCALE = 1:100



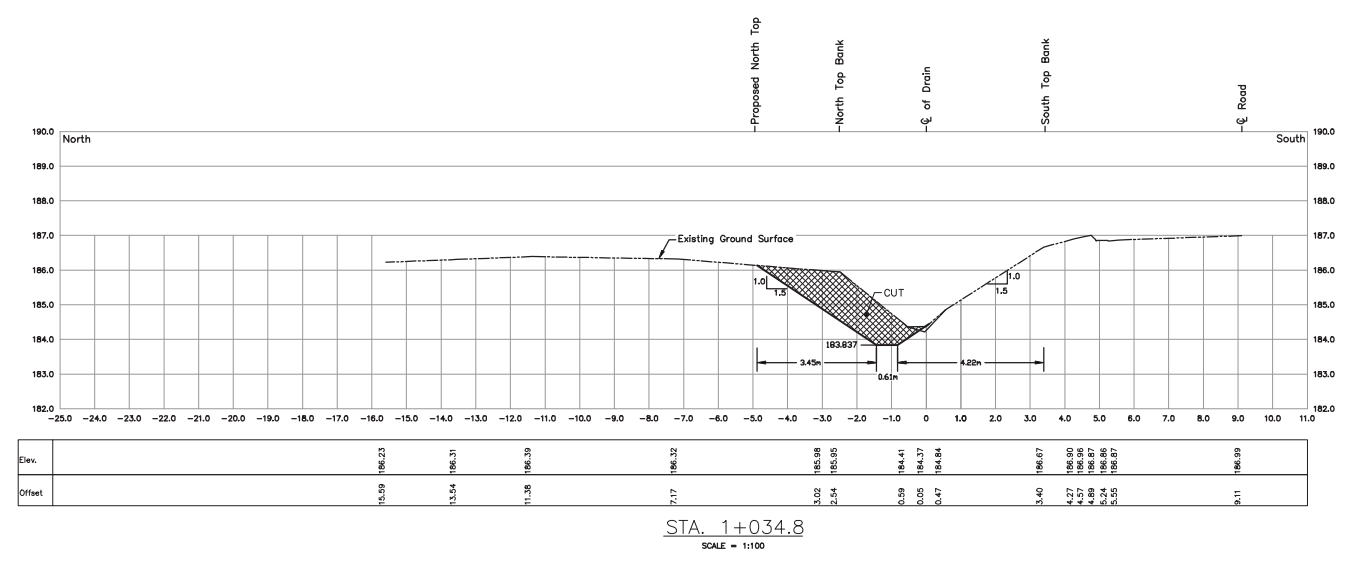
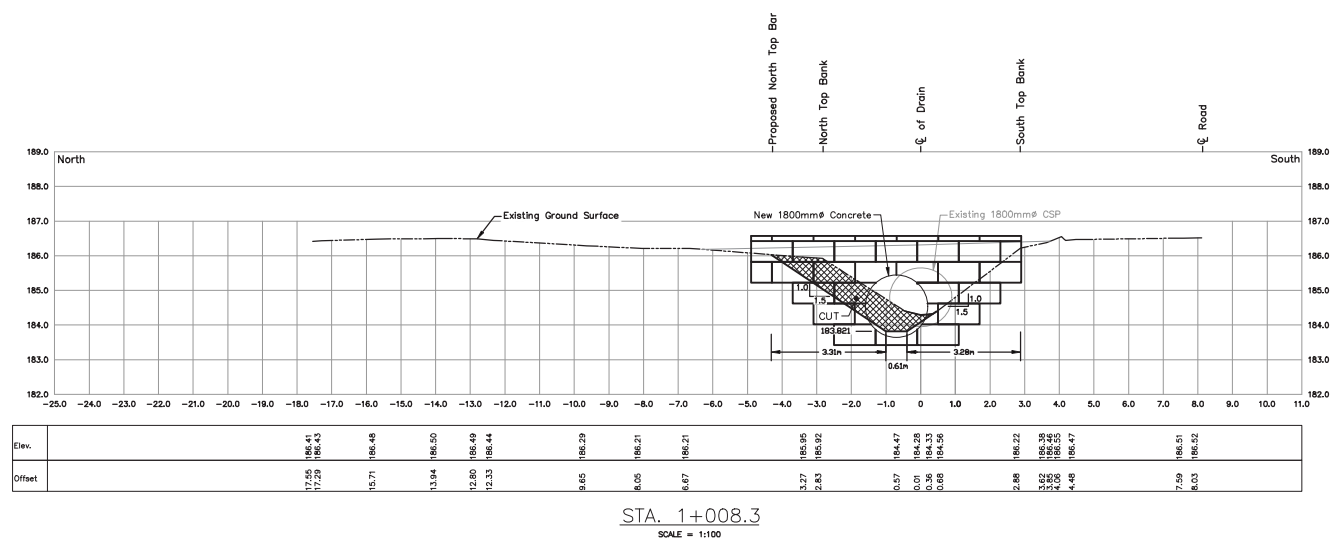
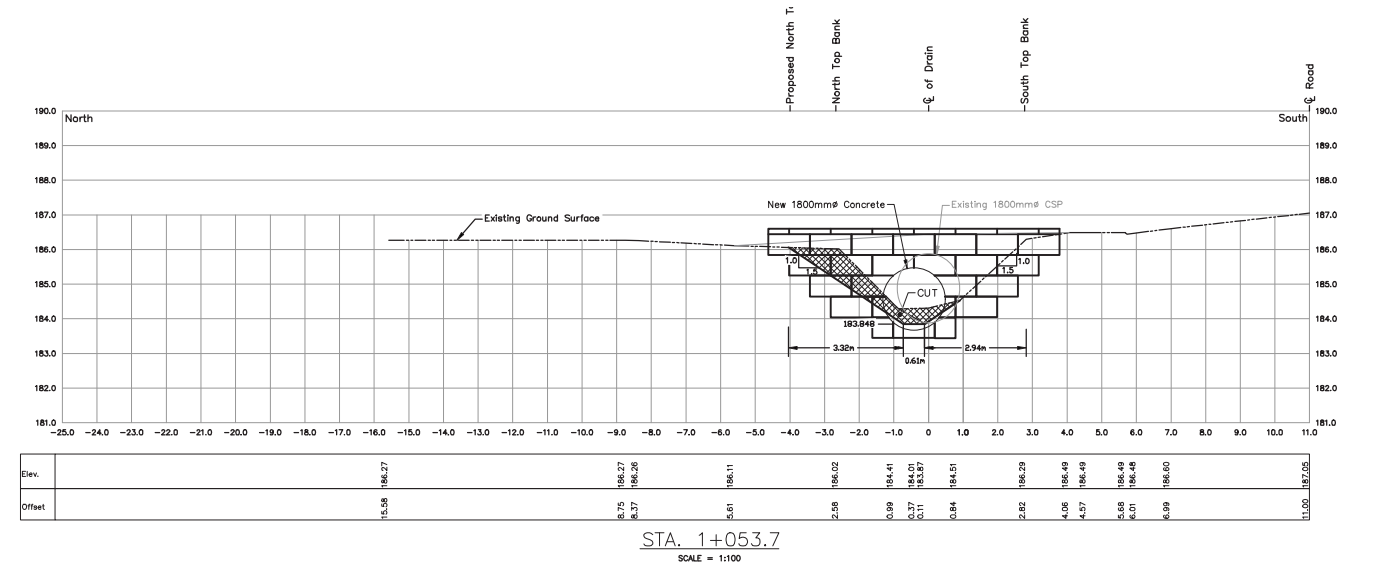
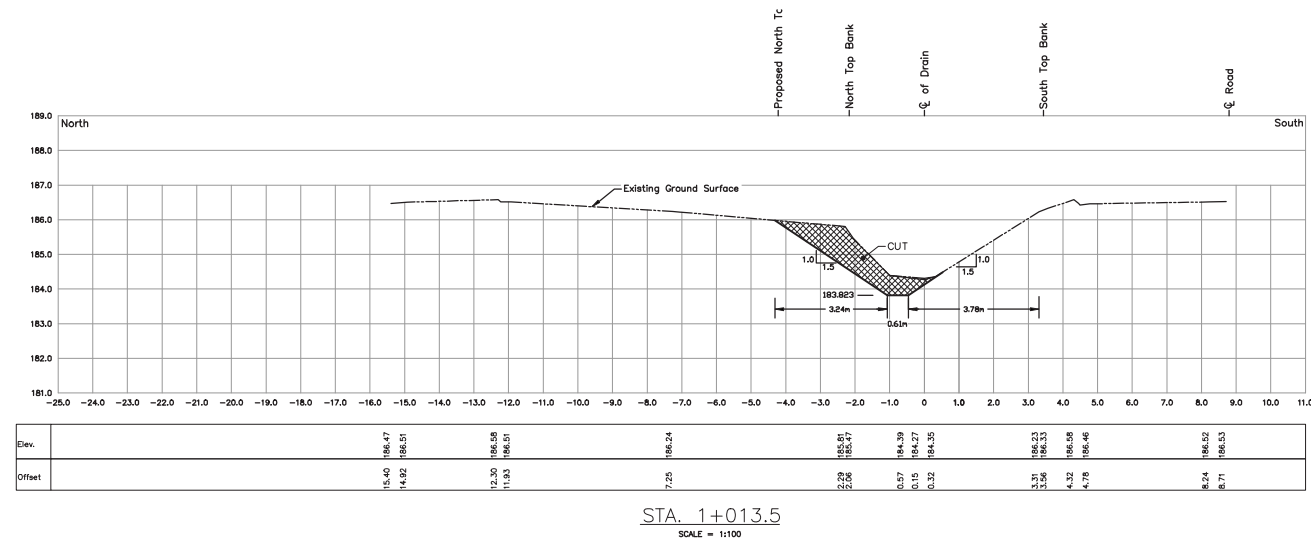
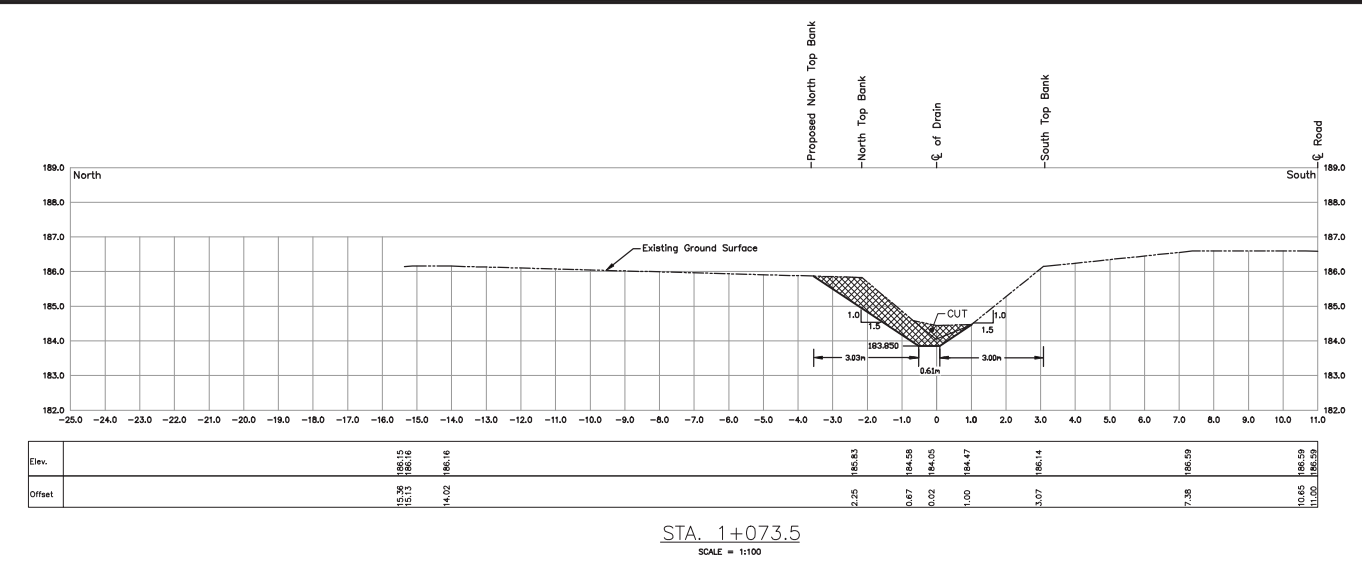
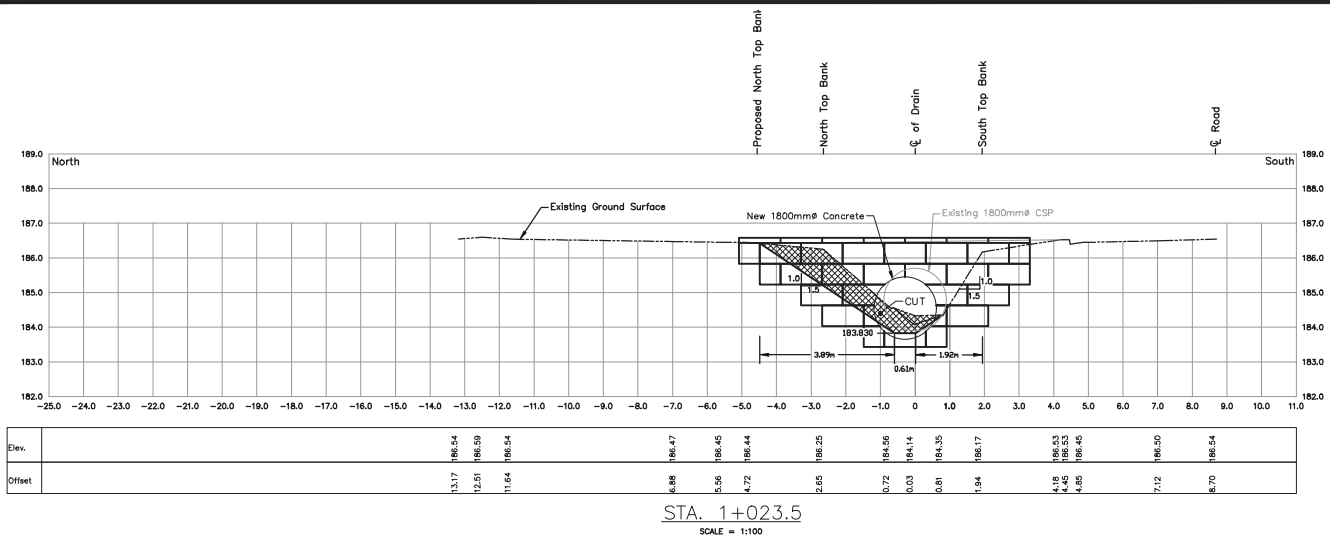
STA. 0+943.7
SCALE = 1:100



STA. 0+978.4
SCALE = 1:100

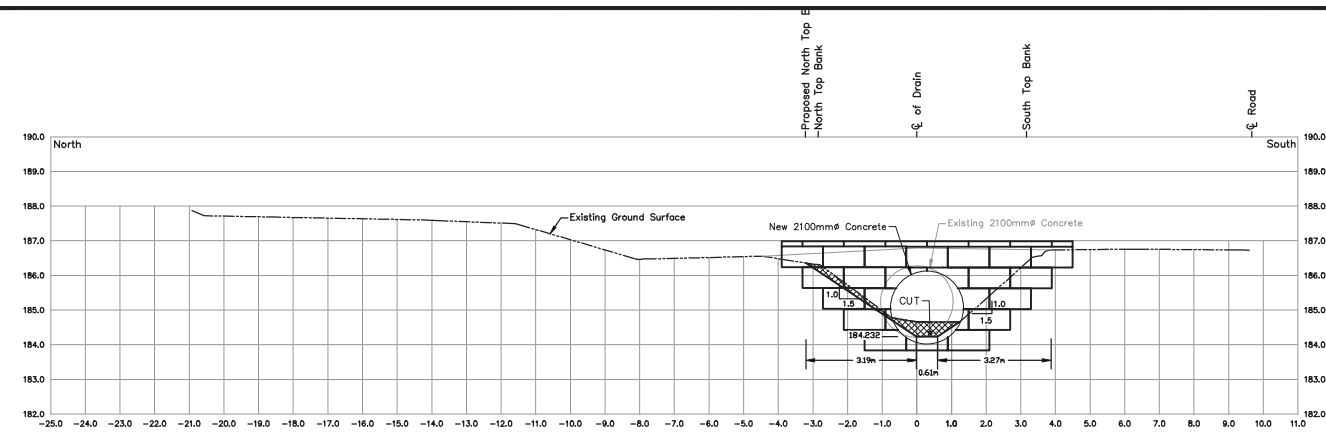
THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

DRAWN BY: S.M.
PLOT CODE: 1:1
COMPUTER FILE: REI2017D012.DWG
FILE No.: SHEET No.:
2017D012 10 OF 18



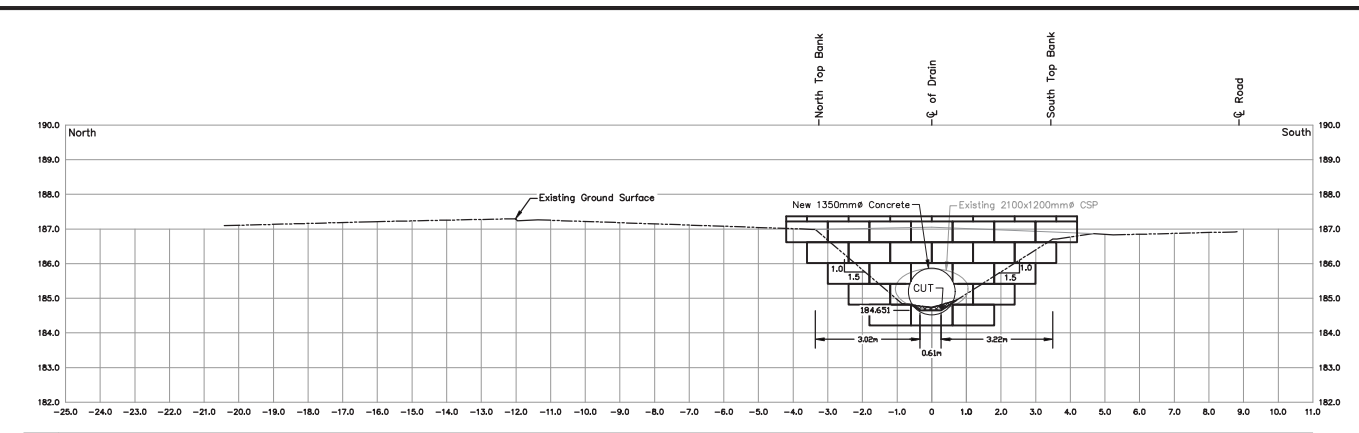
THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

DRAWN BY: S.M.
PLOT CODE: 1:1
COMPUTER FILE: REI2017D012.DWG
FILE No.: SHEET No.:
2017D012 11 OF 18



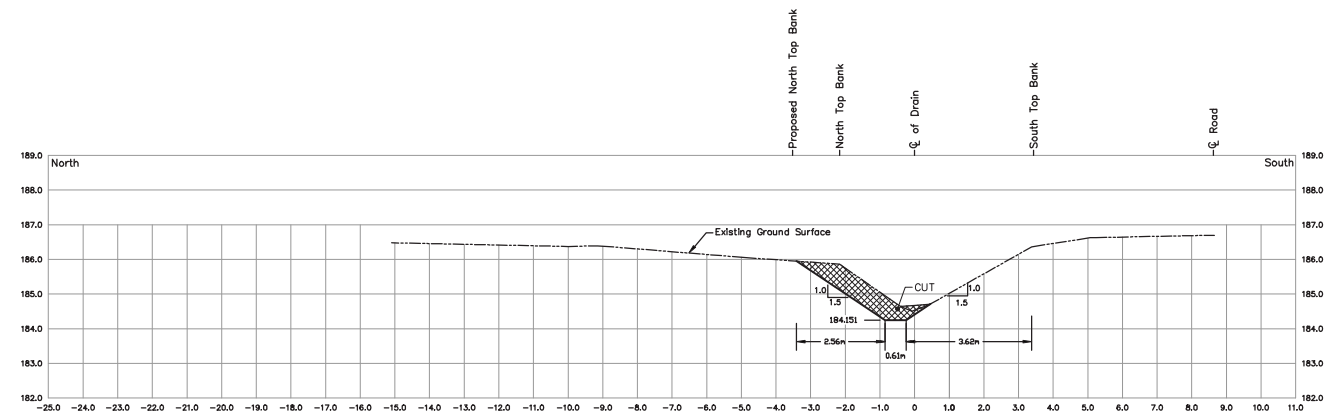
Elev.		187.92	187.72		187.65		187.60		187.49		186.46	186.17		186.56		186.32		184.79	184.65	184.64	184.69		185.38		186.51	186.57	186.73		186.76		186.73	186.73
Offset		24.03	25.07		18.53		14.12		11.58		8.07	7.76		4.46		2.97		0.72	0.00	0.47	1.23		2.06		3.24	3.60	3.87		6.24		8.33	8.29

STA. 1+137.0
SCALE = 1:100



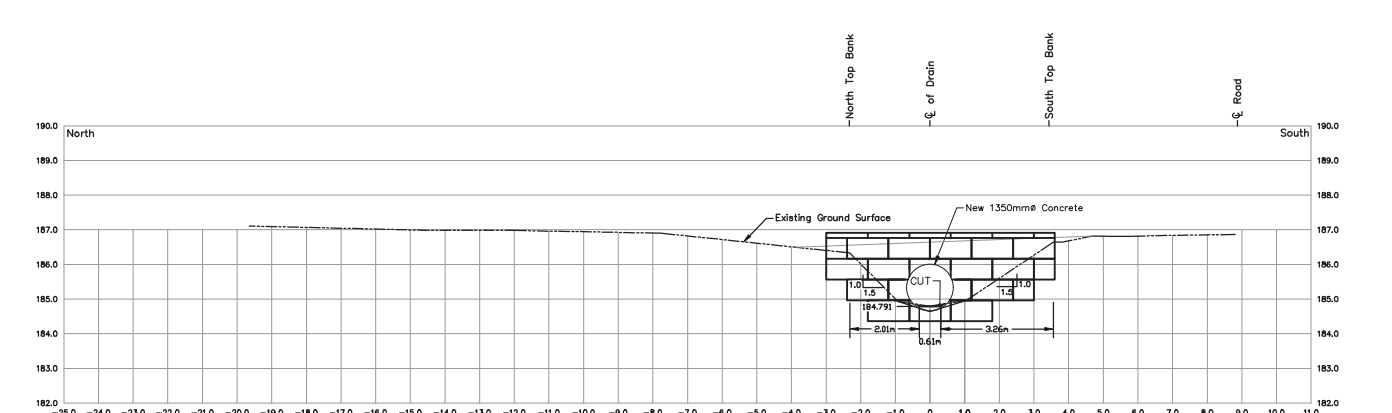
Elev.		187.10		187.21		187.20		187.26		186.99		184.85	184.88	184.79	184.93		186.71		186.06		186.83		186.76		186.92		186.92		186.92		186.92
Offset		20.42		16.08		12.02		11.36		3.45		0.86	0.08	0.24	0.66		3.49		4.46		5.24		6.24		8.33		8.33		8.33		8.33

STA. 1+204.7
SCALE = 1:100



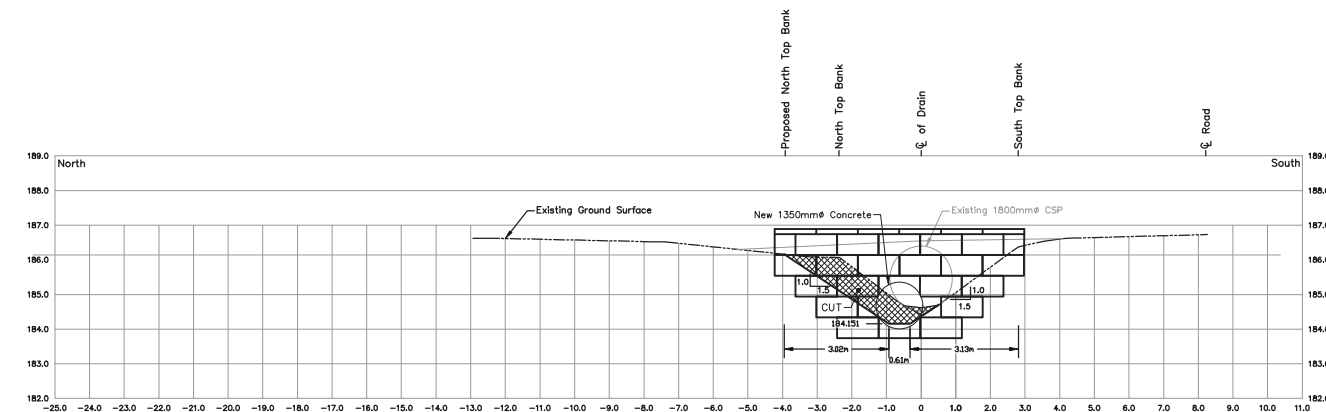
Elev.		186.48		186.37		186.05		185.86		184.81	184.80	184.80		186.38		186.62		186.70		186.70		186.70		186.70		186.70		186.70		186.70		186.70
Offset		15.09		10.00		9.14		4.80		2.16	0.85	0.46		3.38		5.07		8.65		8.65		8.65		8.65		8.65		8.65		8.65		8.65

STA. 1+117.2
SCALE = 1:100



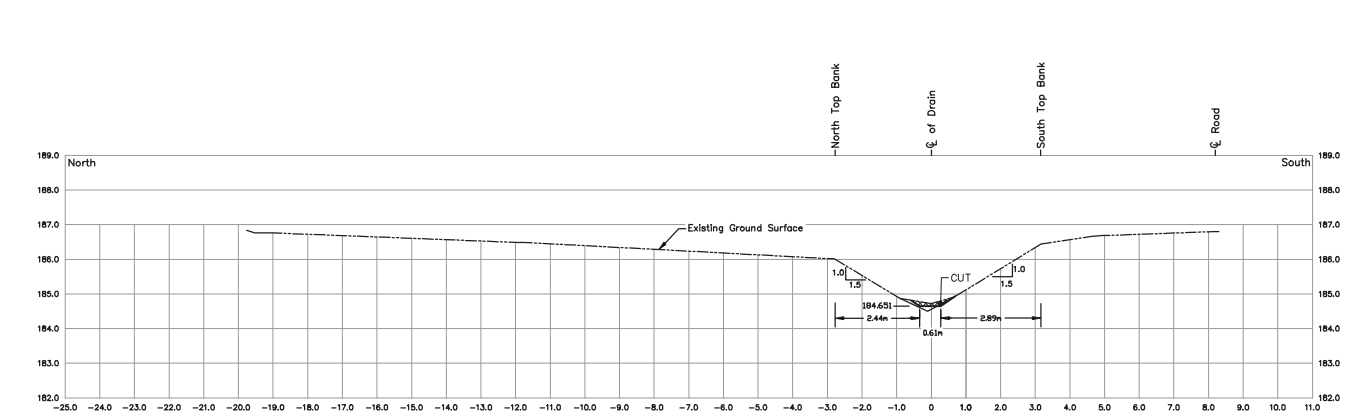
Elev.		187.11		186.99		186.88		186.90		186.10		184.85	184.85	184.94	184.94		186.82		186.81		186.81		186.81		186.81		186.81		186.81		186.81
Offset		19.65		14.63		12.09		7.77		3.03		2.31	0.96	1.00	3.32		4.69		5.24		5.79		6.65		8.65		8.65		8.65		8.65

STA. 1+193.4
SCALE = 1:100



Elev.		186.52		186.52		186.09		186.07		184.86	184.87	184.89		186.38		186.54		186.61		186.63		186.63		186.63		186.73		186.73		186.73		186.73
Offset		13.94	12.43		7.41		3.21		2.35	0.76	0.48	0.04		2.81		3.56		4.08		4.43		5.00		5.00		6.28		6.28		6.28		6.28

STA. 1+108.8
SCALE = 1:100

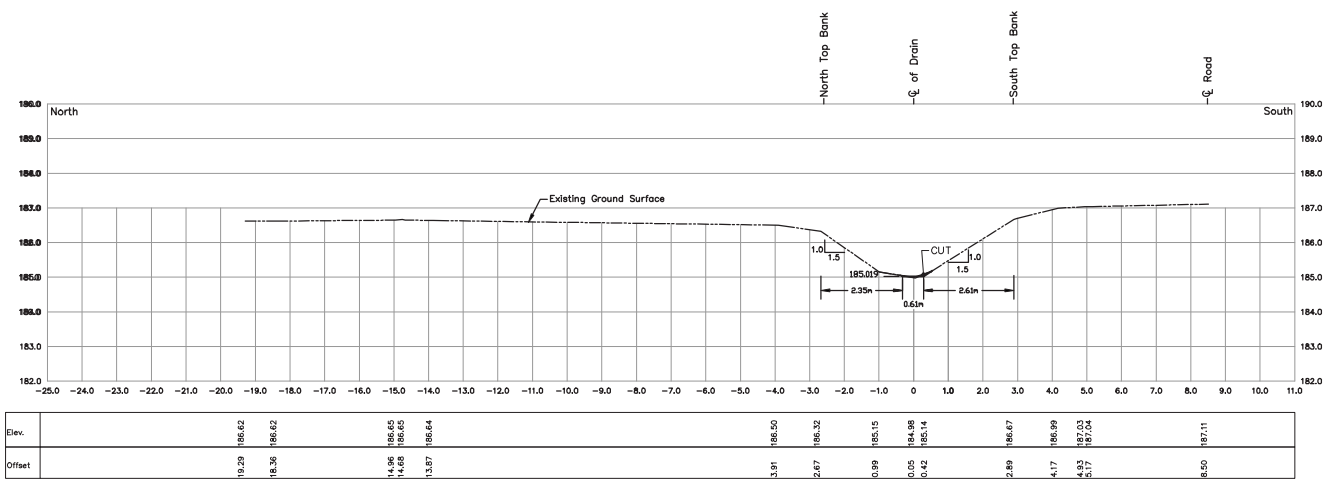


Elev.		186.76		186.76		186.25		186.21		184.87	184.90	184.90		186.25		186.44		186.66		186.68		186.68		186.68		186.80		186.80		186.80		186.80
Offset		19.24	19.24		10.00		7.86		2.84	0.80	0.11	0.05		3.17		4.62		4.97		5.14		5.14		5.14		6.14		6.14		6.14		6.14

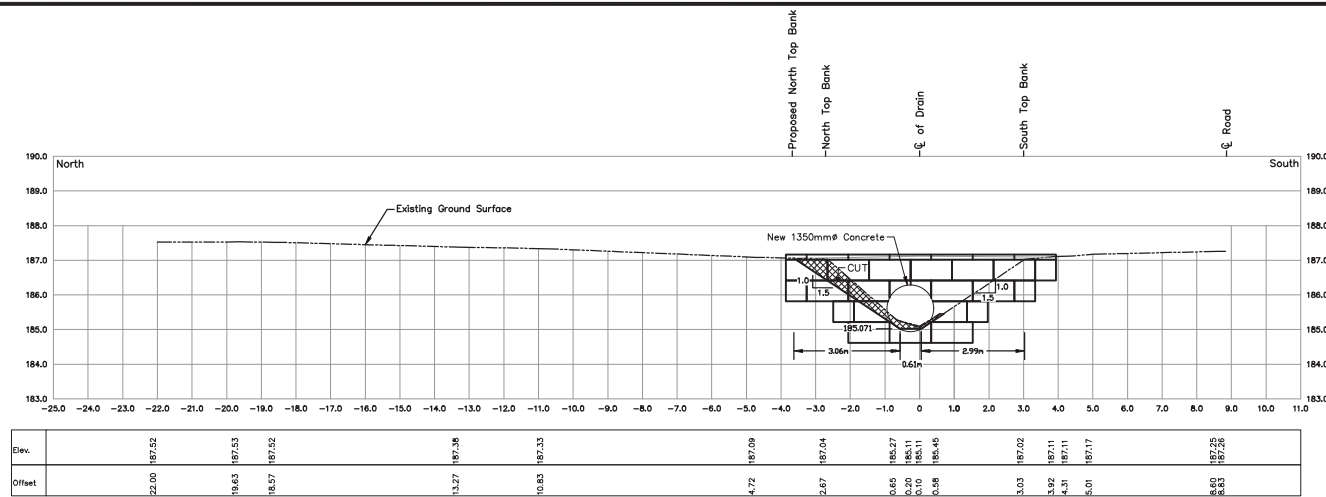
STA. 1+170.6
SCALE = 1:100

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

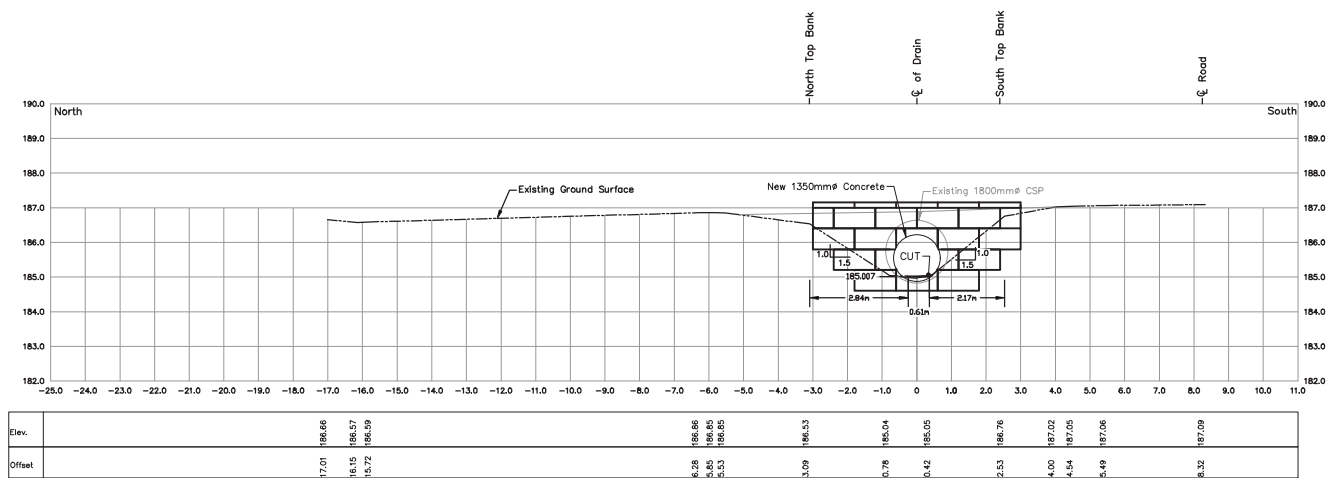
DRAWN BY: S.M.
PLOT CODE: 1:1
COMPUTER FILE: REI2017D012.DWG
FILE No.: SHEET No.:
2017D012 12 OF 18



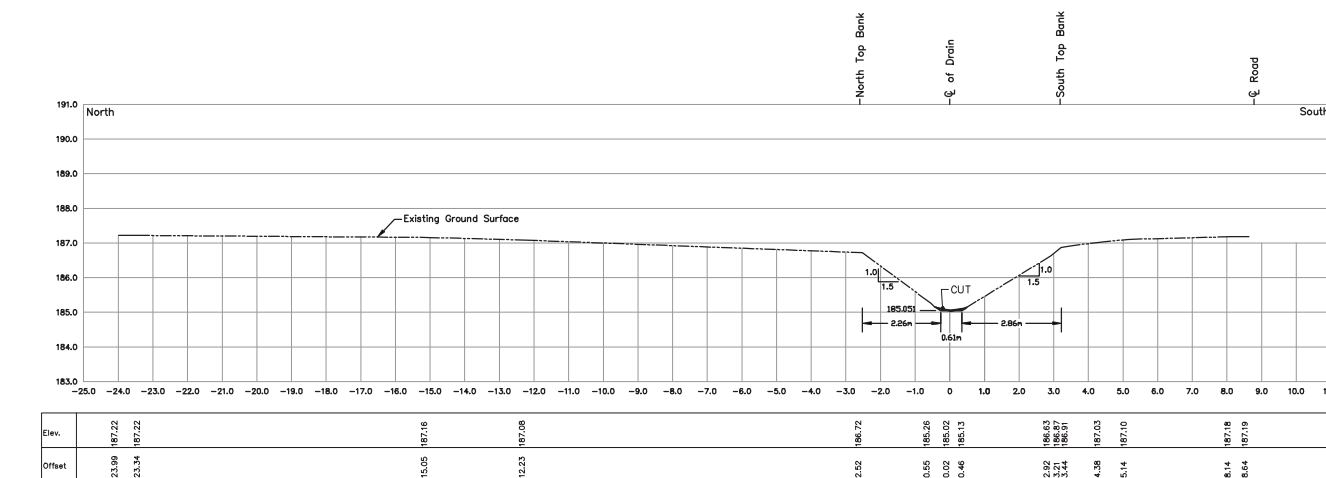
STA. 1+281.3
SCALE = 1:100



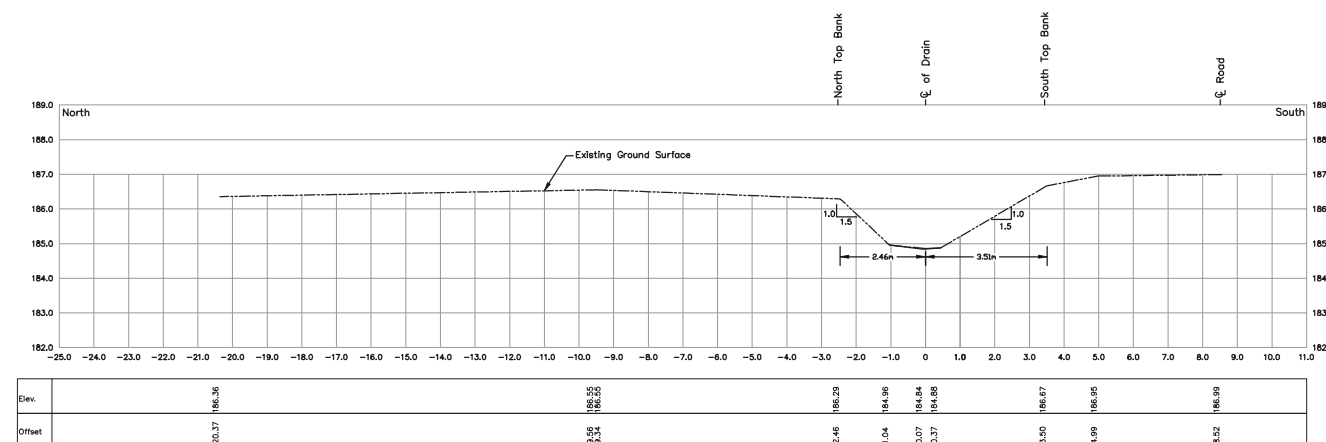
STA. 1+323.0
SCALE = 1:100



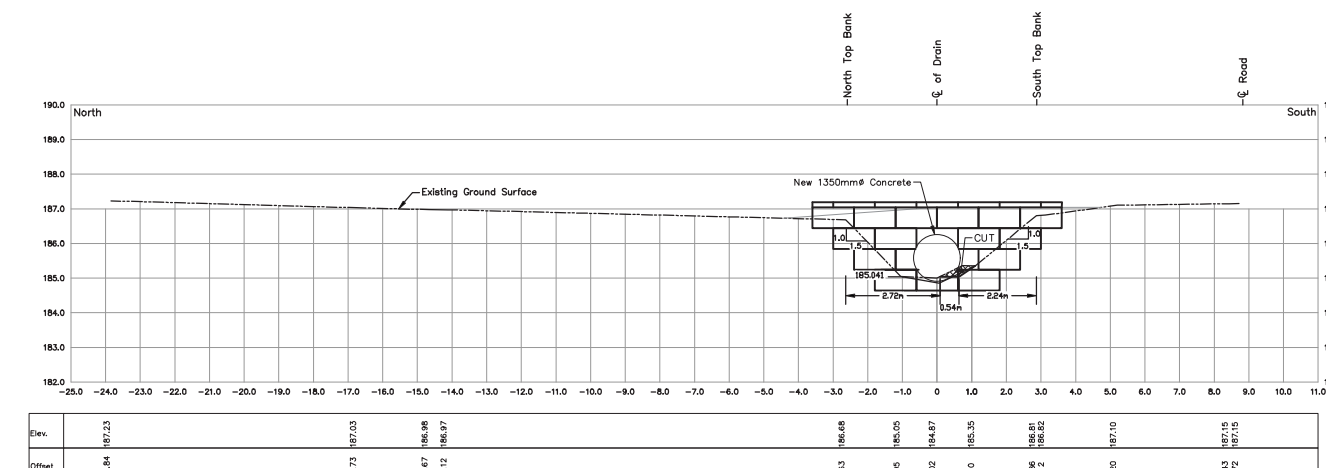
STA. 1+269.7
SCALE = 1:100



STA. 1+307.6
SCALE = 1:100



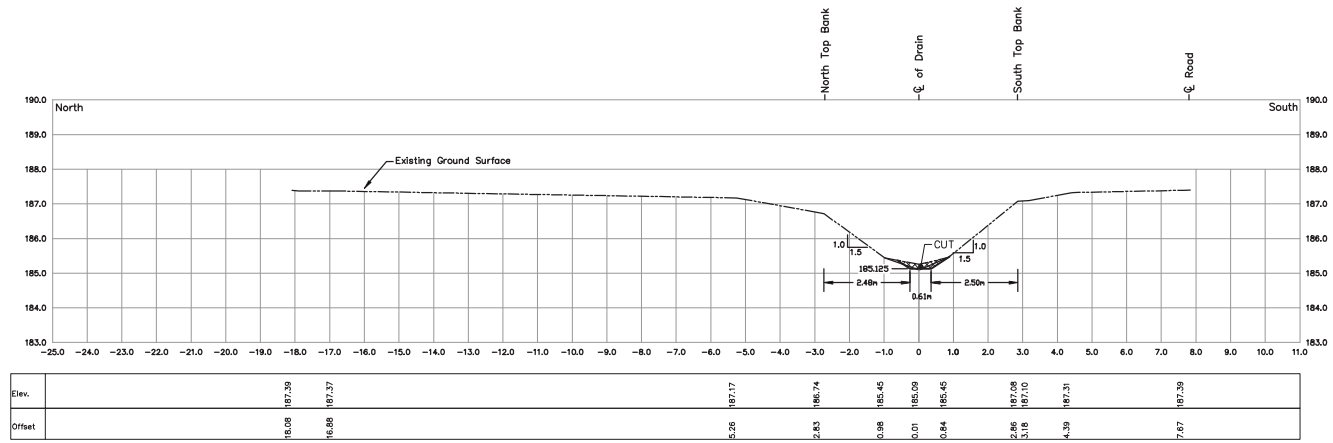
STA. 1+240.3
SCALE = 1:100



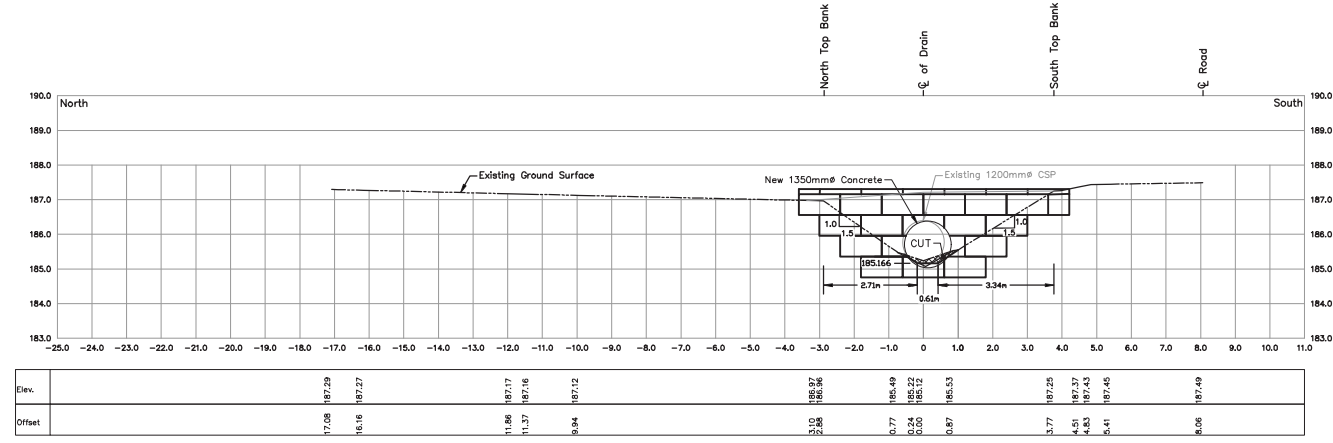
STA. 1+302.7
SCALE = 1:100

THESE PLANS HAVE BEEN REDUCED
AND THE SCALE THEREFORE VARIES.
FULL SCALE PLANS MAY BE VIEWED
AT THE MUNICIPAL OFFICE.

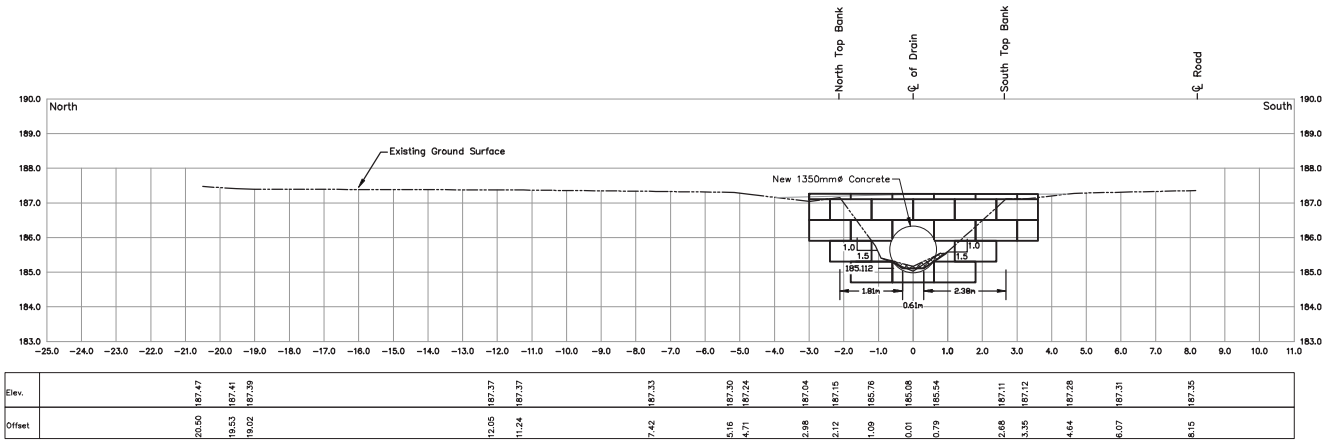
DRAWN BY: S.M.
PLOT CODE: 1:1
COMPUTER FILE: REI2017D012.DWG
FILE No.: SHEET No.:
2017D012 13 OF 18



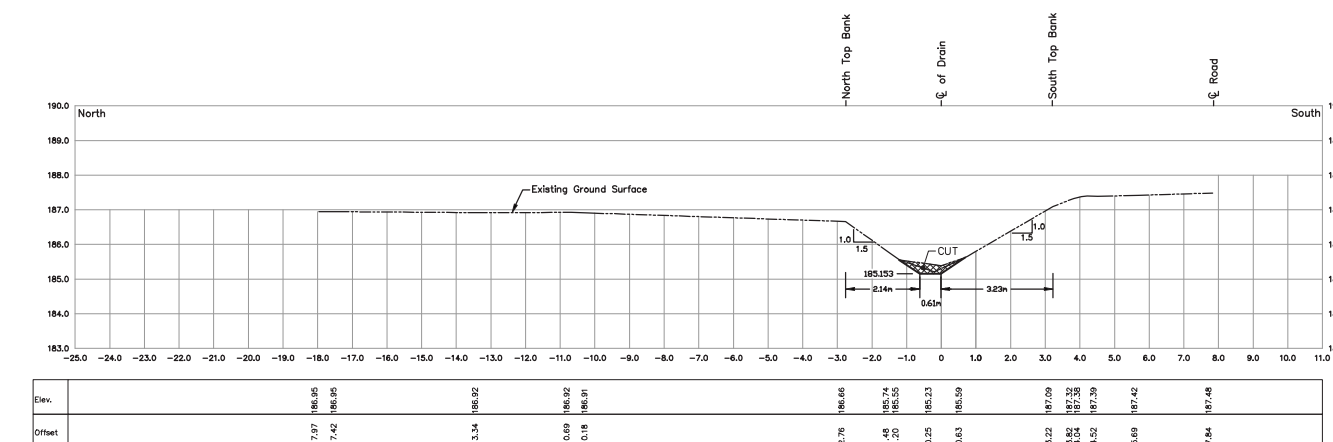
STA. 1+369.1
SCALE = 1:100



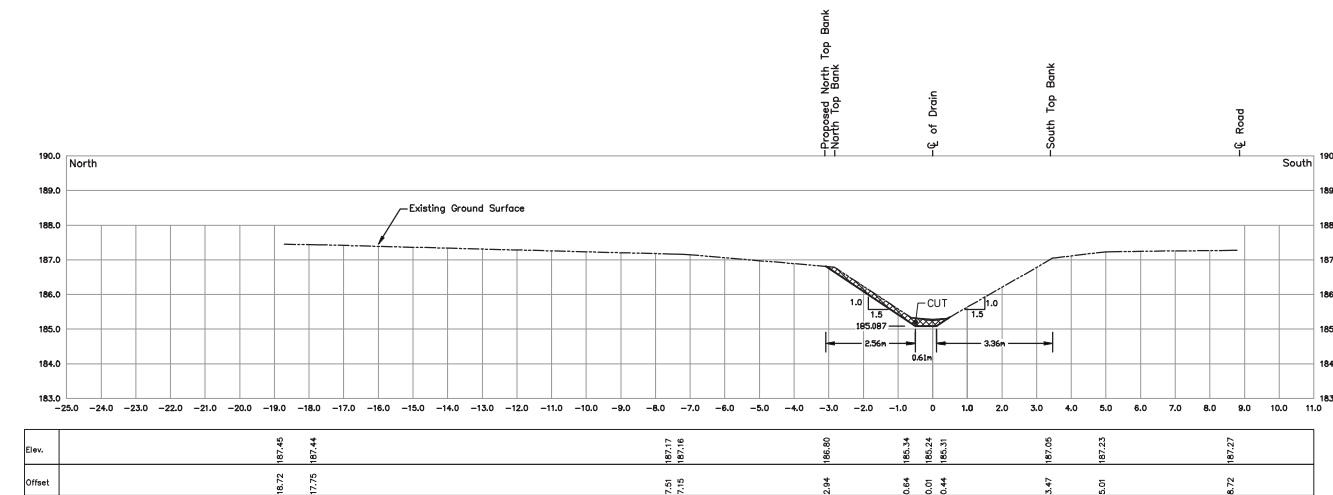
STA. 1+403.2
SCALE = 1:100



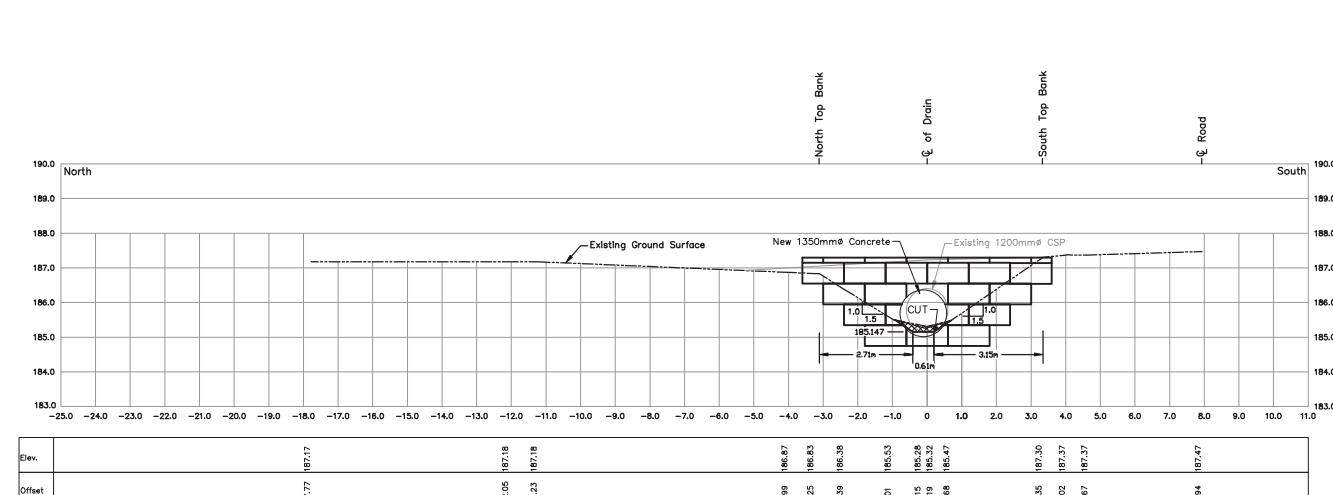
STA. 1+356.7
SCALE = 1:100



STA. 1+393.0
SCALE = 1:100



STA. 1+337.6
SCALE = 1:100

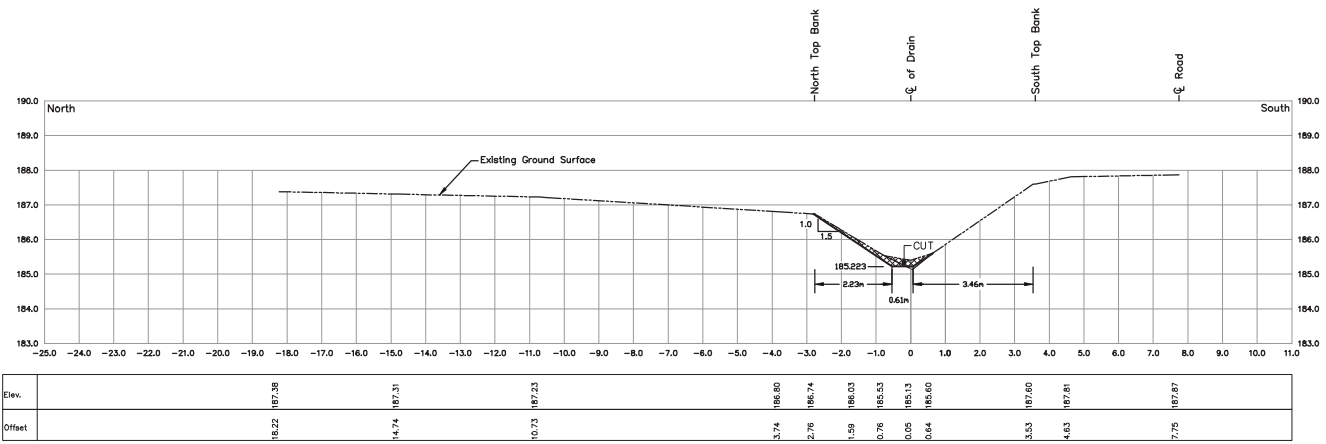


STA. 1+387.4
SCALE = 1:100

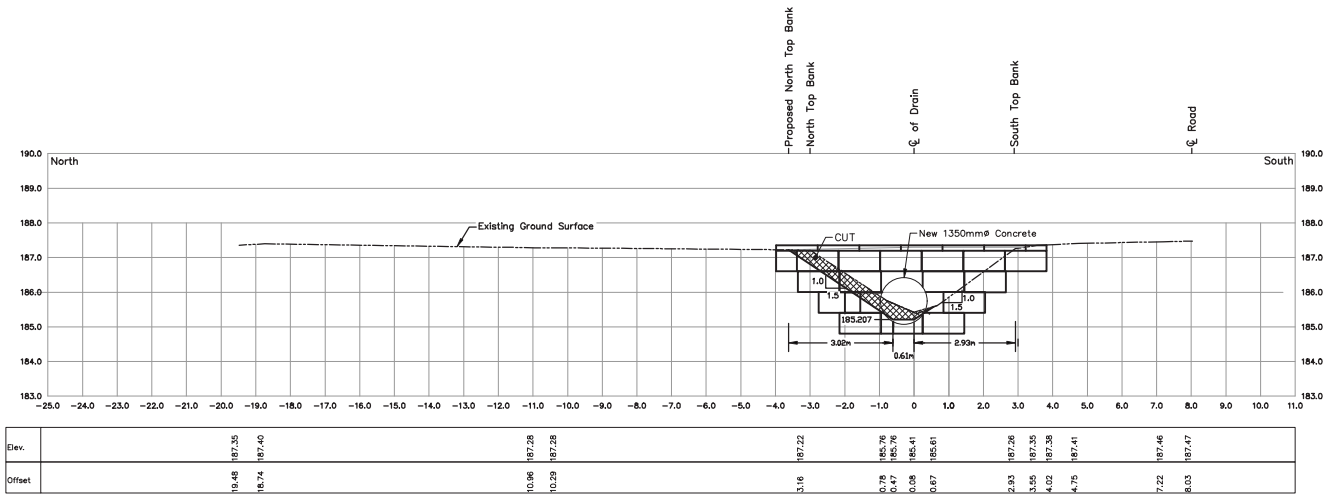
\\server-2019\del_data_server\user\m\projects\2017\2017012\2017012.dwg - Civil - 10/23/2017 10:12:28 AM - 2017-08-29

THESE PLANS HAVE BEEN REDUCED
AND THE SCALE THEREFORE VARIES.
FULL SCALE PLANS MAY BE VIEWED
AT THE MUNICIPAL OFFICE.

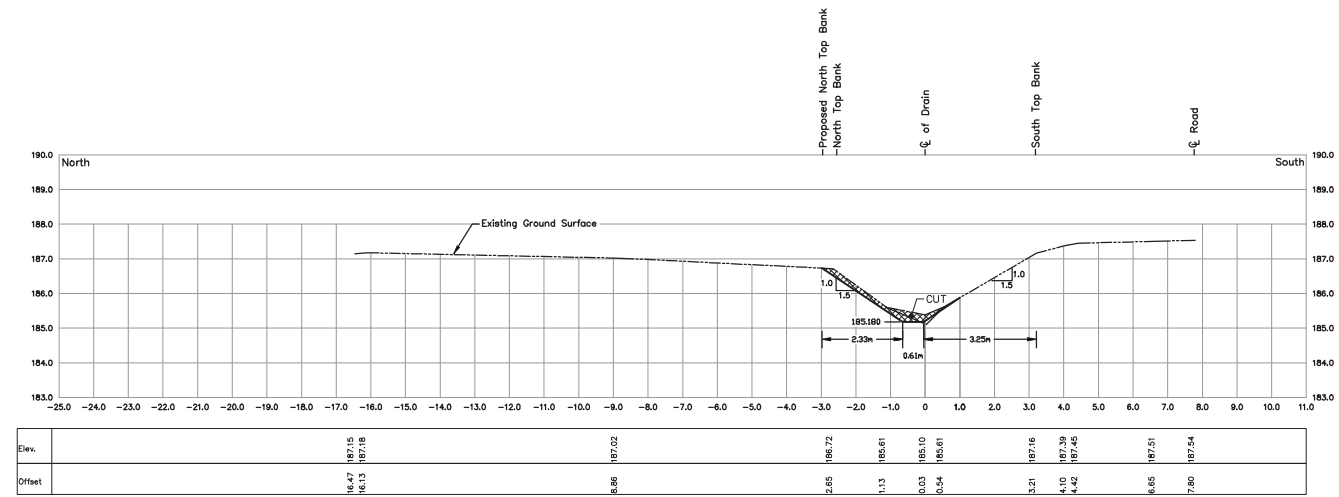
DRAWN BY: S.M.
PLOT CODE: 1:1
COMPUTER FILE: REI2017D012.DWG
FILE No.: SHEET No.:
2017D012 14 OF 18



STA. 1+451.1
SCALE = 1:100



STA. 1+435.9
SCALE = 1:100

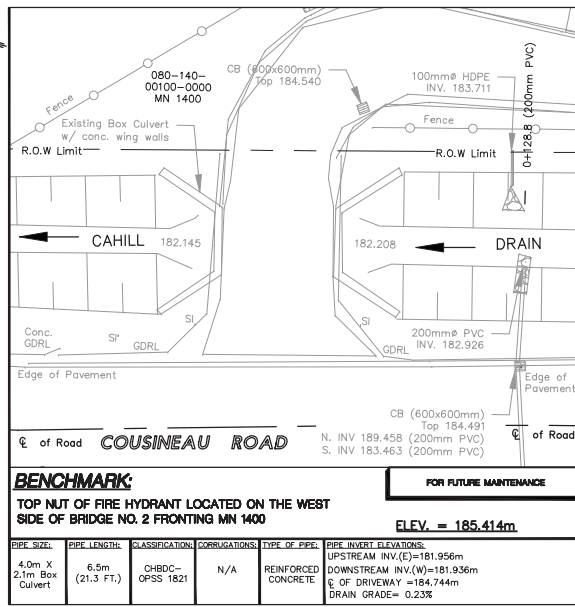


STA. 1+415.5
SCALE = 1:100

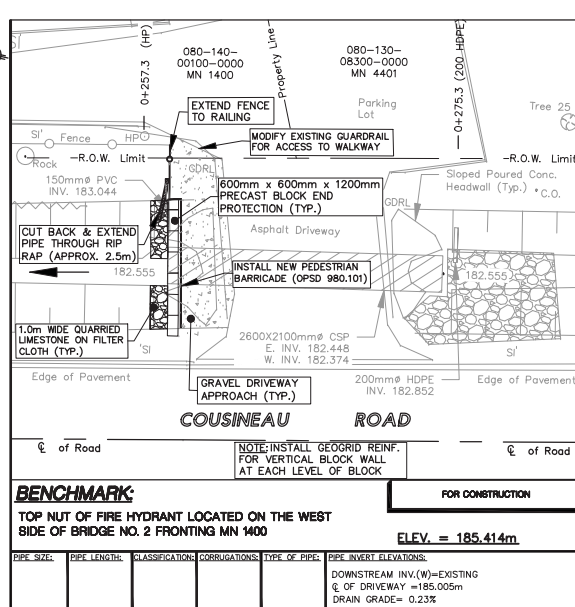
\\SERVER-2010\NET - Docs - Server\GIS\MAPPING\PROJECTS\2017\REZ\17012 - Ceditl Draw\Draw\REZ\17012.dwg 2019-05-29

THESE PLANS HAVE BEEN REDUCED
AND THE SCALE THEREFORE VARIES.
FULL SCALE PLANS MAY BE VIEWED
AT THE MUNICIPAL OFFICE.

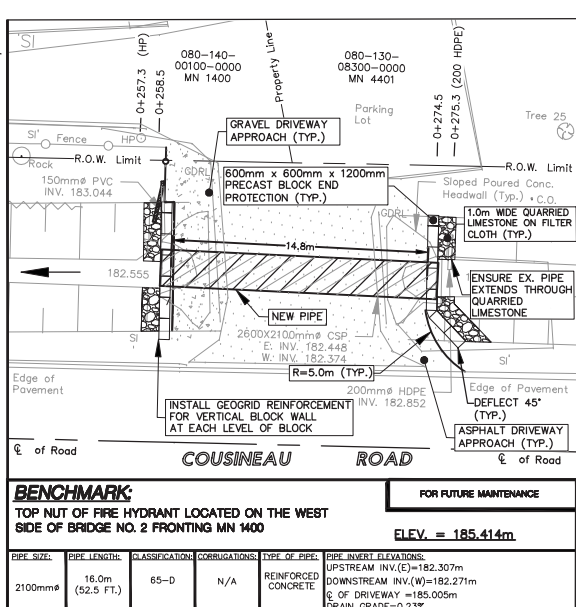
DRAWN BY: S.M.
PLOT CODE: 1:1
COMPUTER FILE: REI2017D012.DWG
FILE No.: SHEET No.:
2017D012 15 OF 18



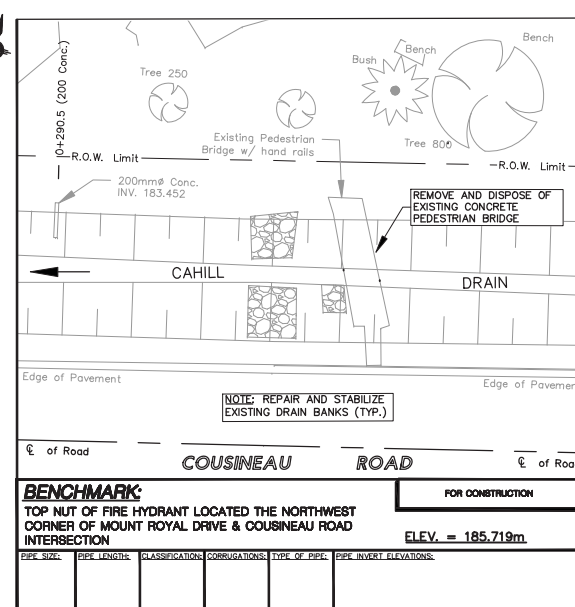
BRIDGE #1 PLAN
SCALE = 1:200



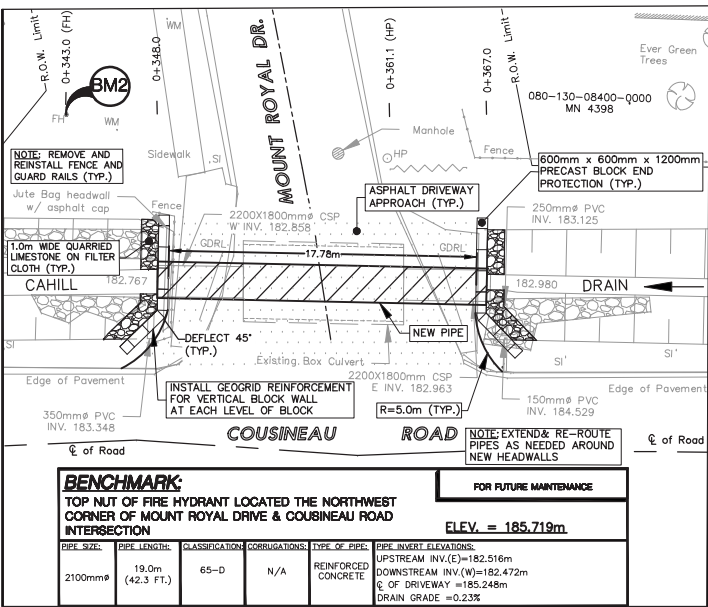
BRIDGE #2 PLAN
SCALE = 1:200



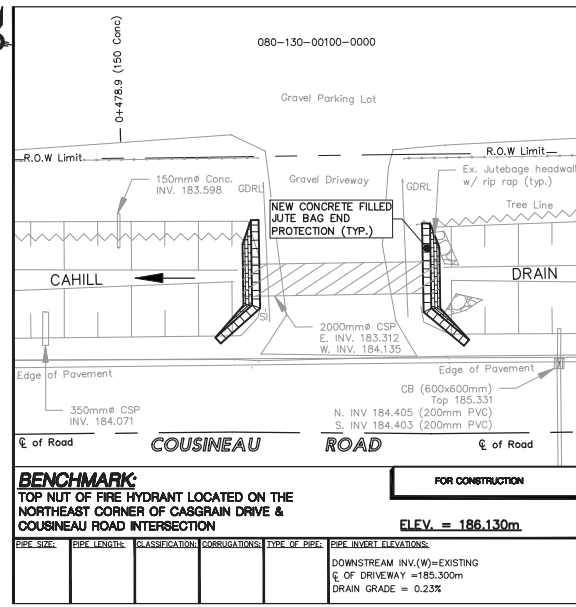
BRIDGE #2 PLAN
SCALE = 1:200



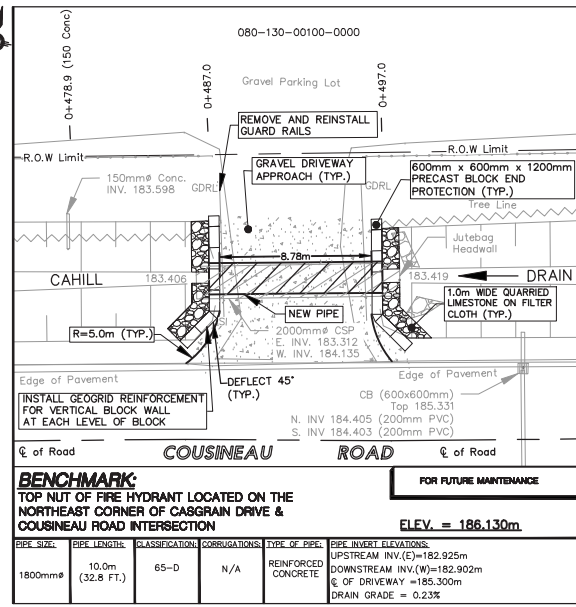
BRIDGE #3 PLAN
SCALE = 1:200



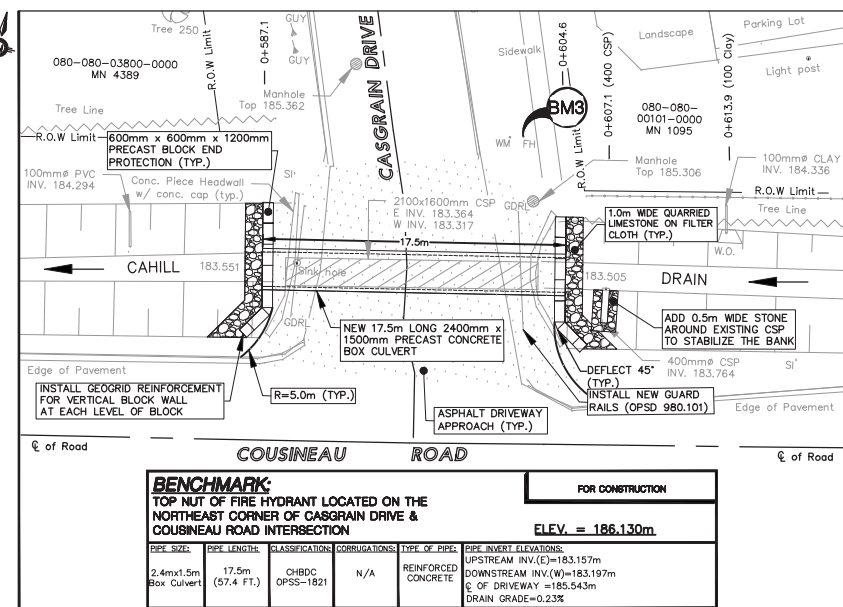
BRIDGE #4 PLAN
SCALE = 1:200



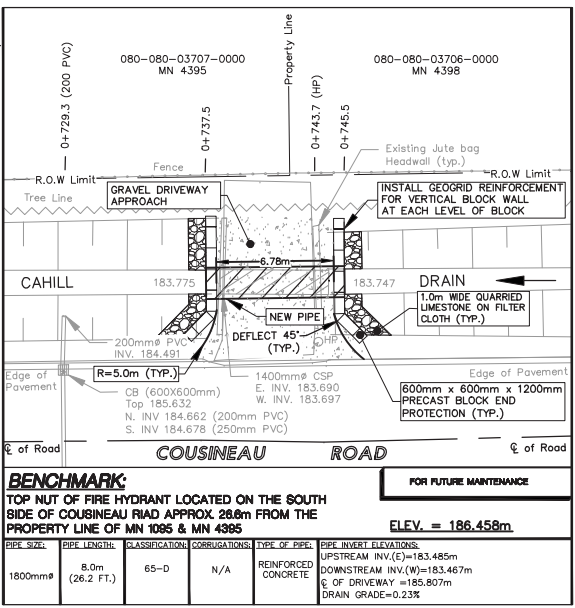
BRIDGE #5 PLAN
SCALE = 1:200



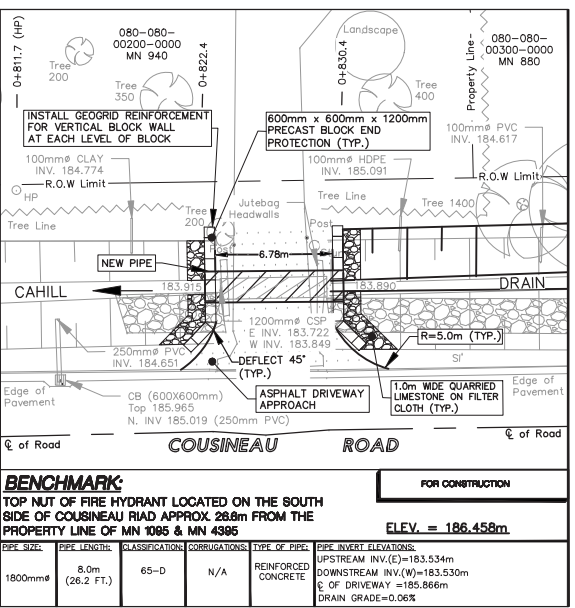
BRIDGE #5 PLAN
SCALE = 1:200



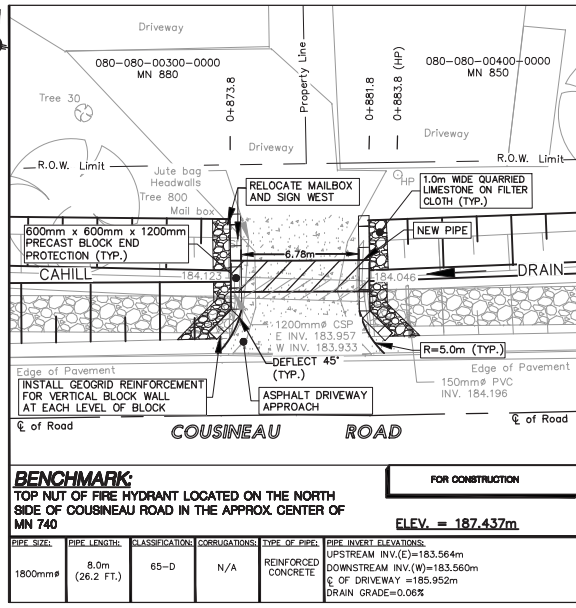
BRIDGE #6 PLAN
SCALE = 1:200



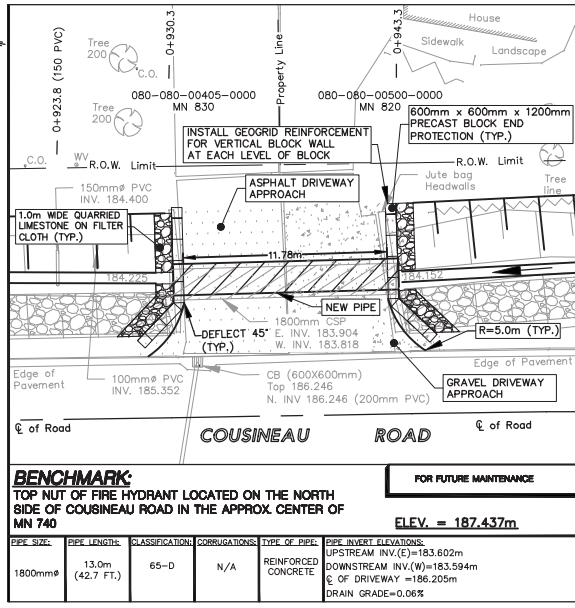
BRIDGE #7 PLAN
SCALE = 1:200



BRIDGE #8 PLAN
SCALE = 1:200



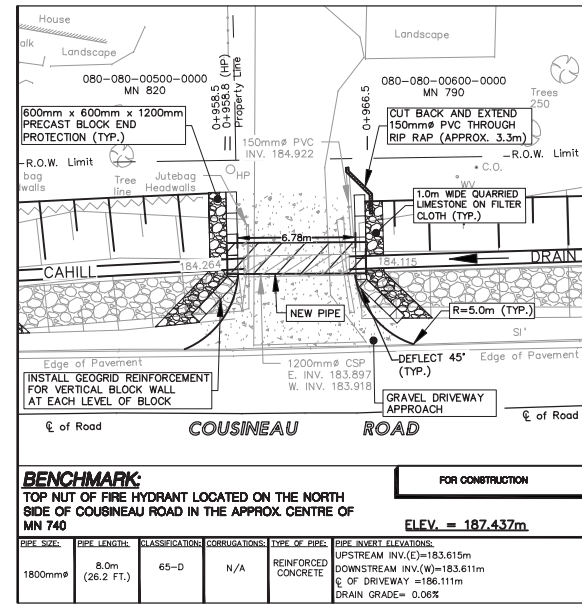
BRIDGE #9 PLAN
SCALE = 1:200



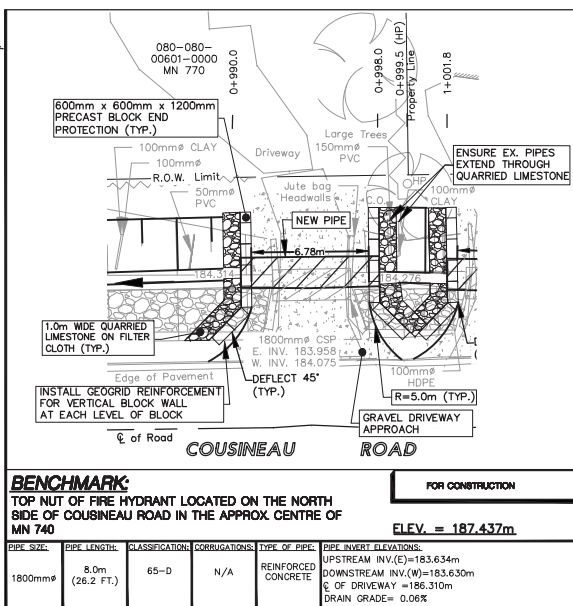
BRIDGE #10 PLAN
SCALE = 1:200

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

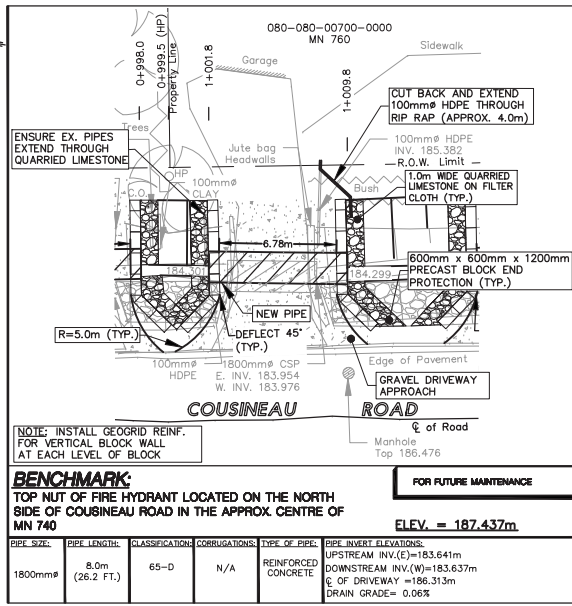
DRAWN BY: S.M.
PLOT CODE: 11
COMPUTER FILE: REI2017D012.DWG
FILE No.: SHEET No.:
2017D012 16 OF 18



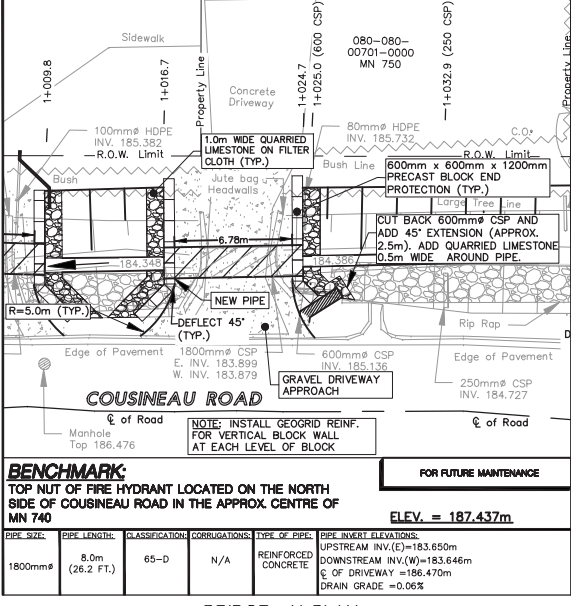
BRIDGE #11 PLAN
SCALE = 1:200



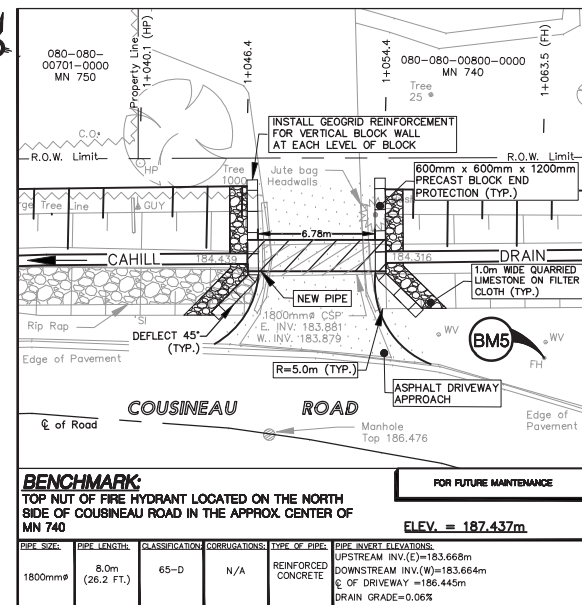
BRIDGE #12 PLAN
SCALE = 1:200



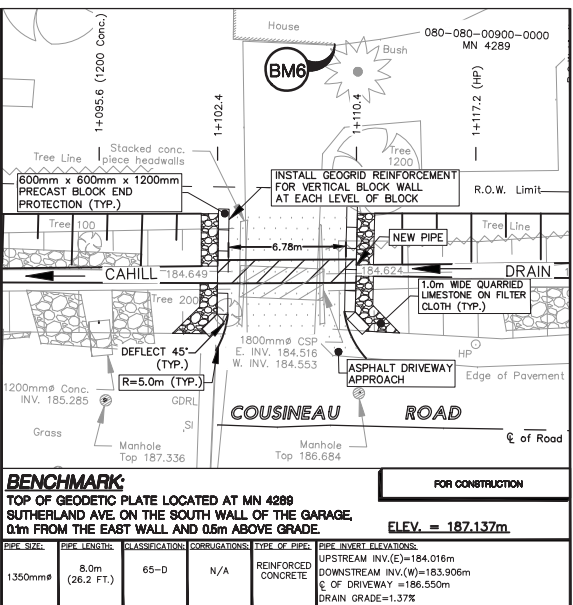
BRIDGE #13 PLAN
SCALE = 1:200



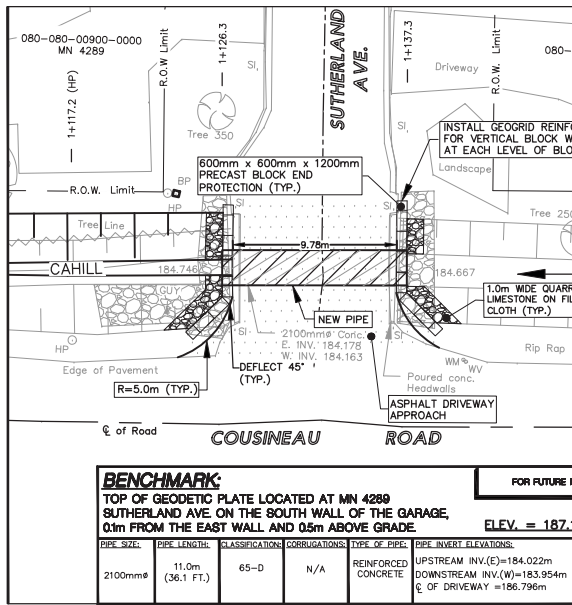
BRIDGE #14 PLAN
SCALE = 1:200



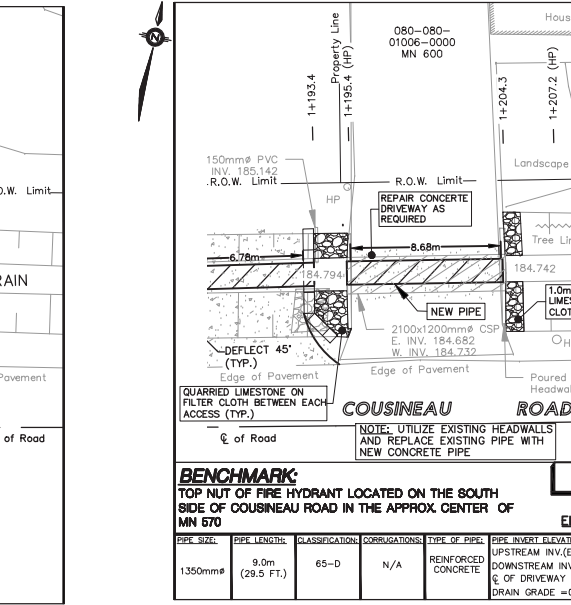
BRIDGE #15 PLAN
SCALE = 1:200



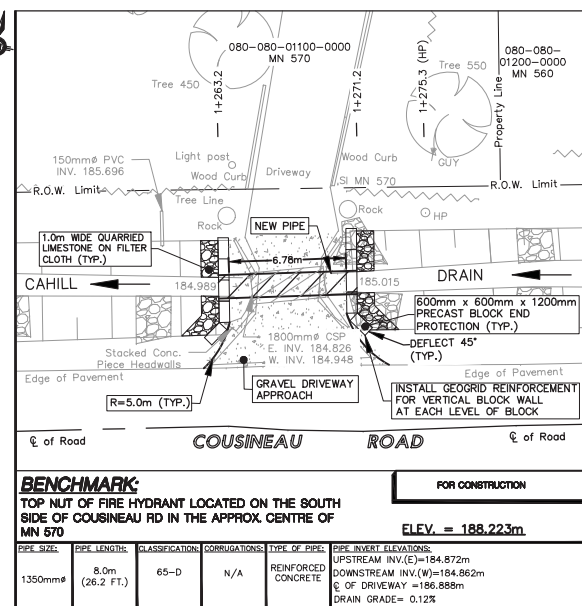
BRIDGE #16 PLAN
SCALE = 1:200



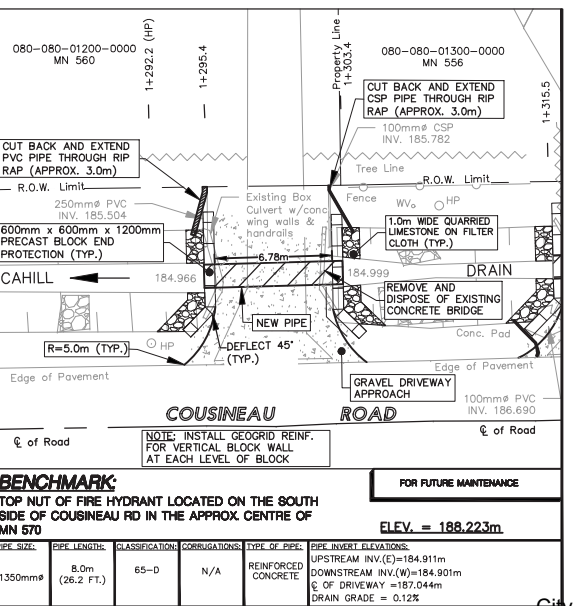
BRIDGE #17 PLAN
SCALE = 1:200



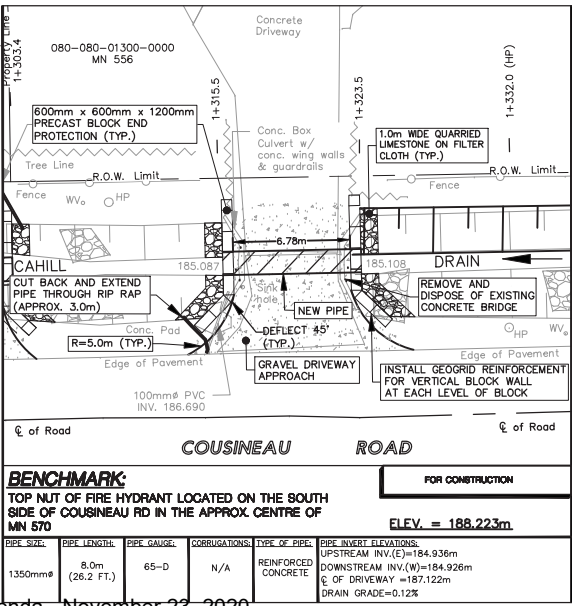
BRIDGE #18 PLAN
SCALE = 1:200



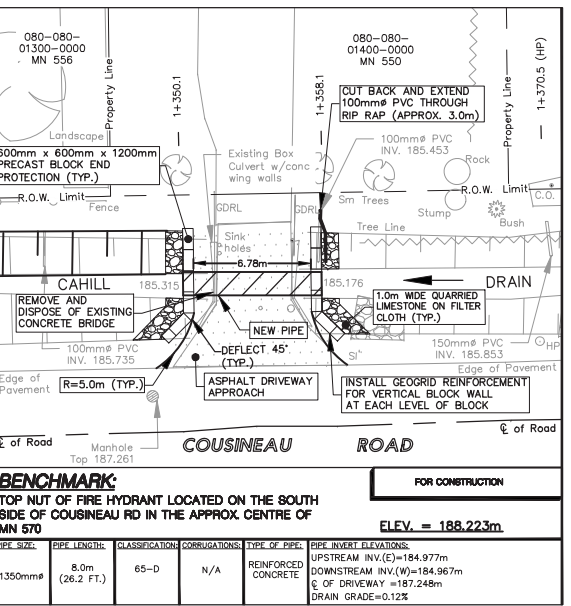
BRIDGE #19 PLAN
SCALE = 1:200



BRIDGE #20 PLAN
SCALE = 1:200



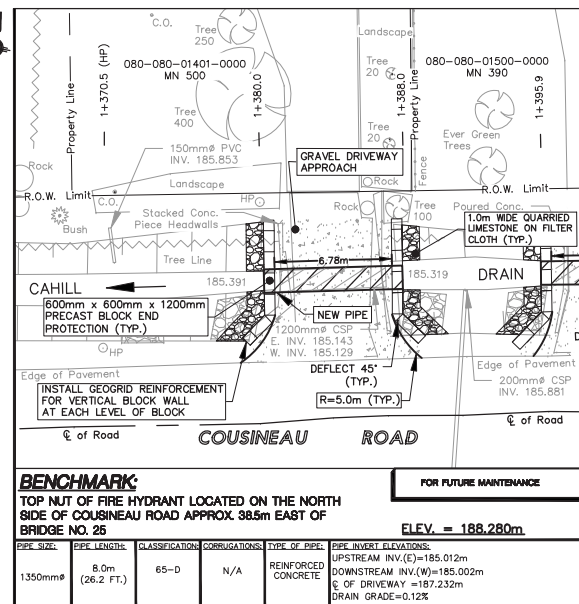
BRIDGE #21 PLAN
SCALE = 1:200



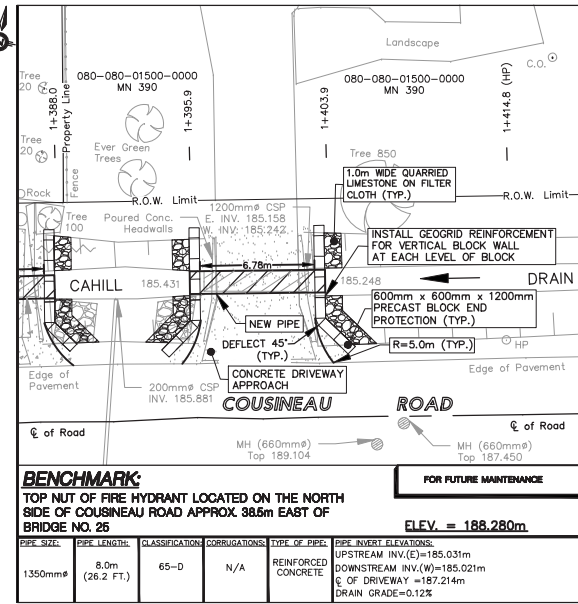
BRIDGE #22 PLAN
SCALE = 1:200

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

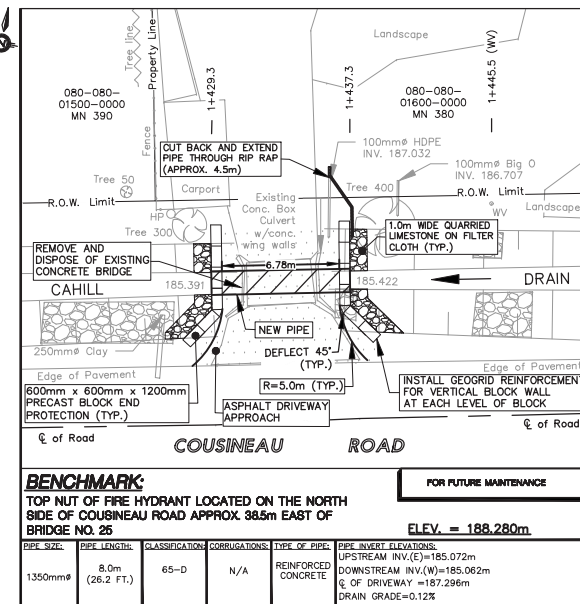
DRAWN BY: S.M.
PLOT CODE: 14
COMPUTER FILE: REI2017D012.DWG
FILE No.: SHEET No.:
2017D012 17 OF 18



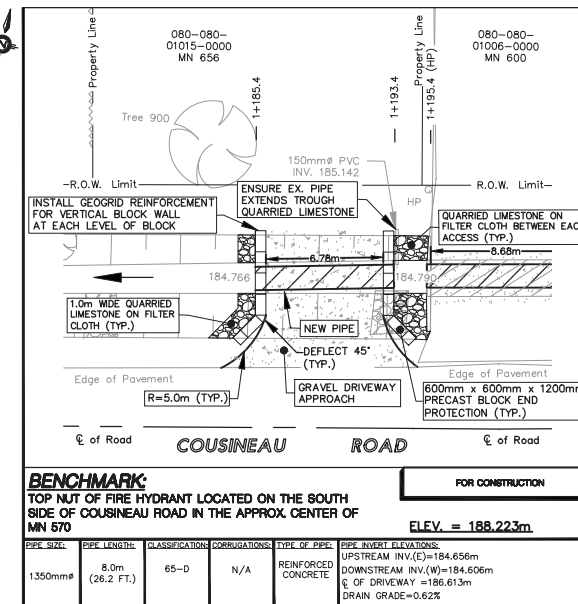
BRIDGE #23 PLAN
SCALE = 1:200



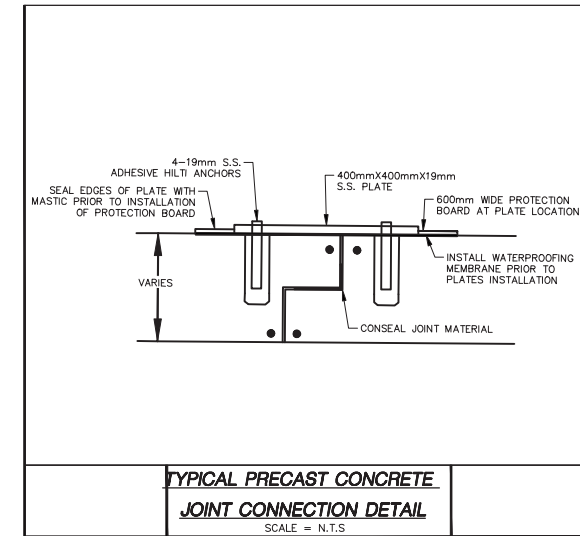
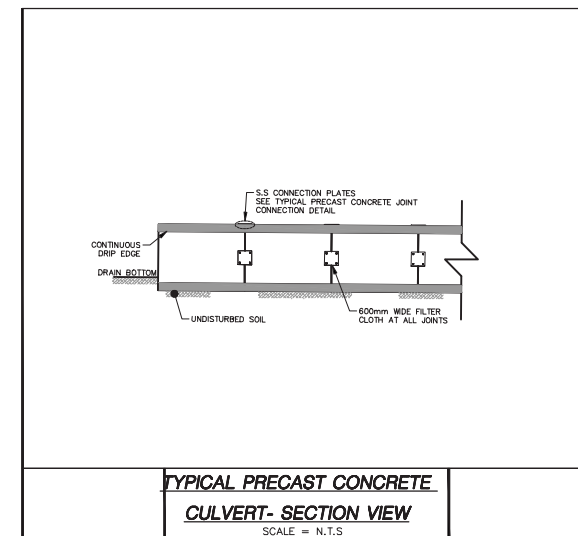
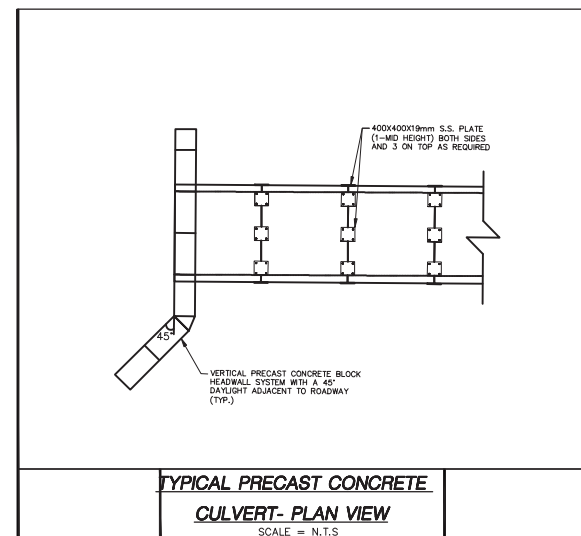
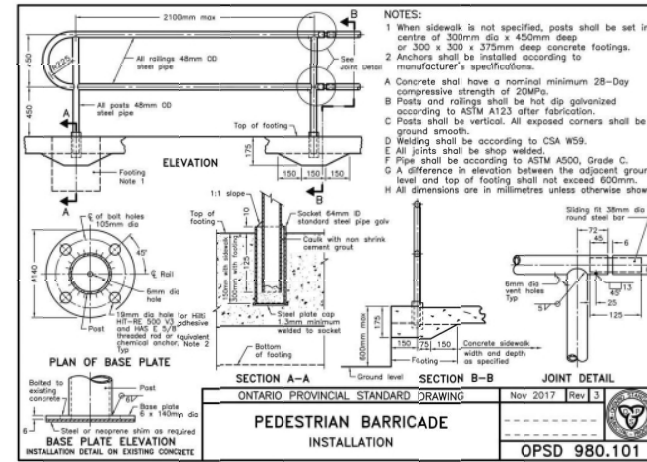
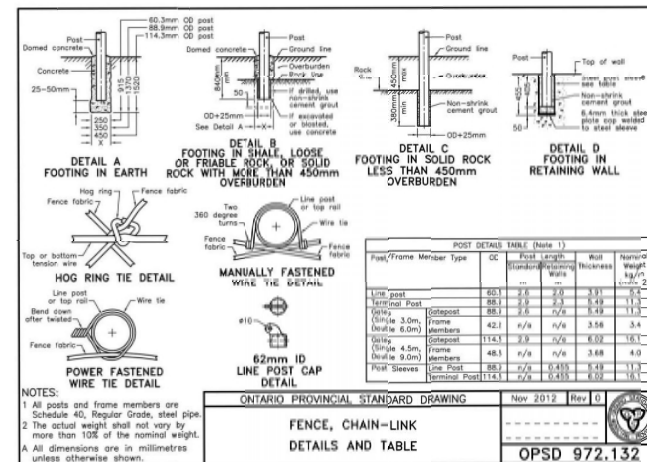
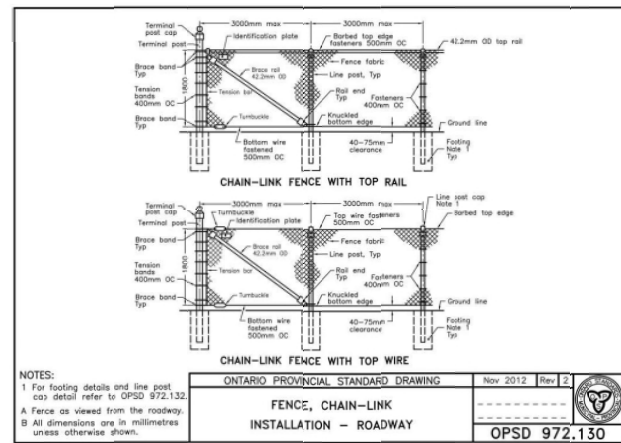
BRIDGE #24 PLAN
SCALE = 1:200



BRIDGE #25 PLAN
SCALE = 1:200



BRIDGE #26 PLAN
SCALE = 1:200



THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

DRAWN BY: S.M.
PLOT CODE: 1:1
COMPUTER FILE: REI2017D012.DWG
FILE No.: SHEET No.:
2017D012 18 OF 18



Subject: Amendment to the Purchase Order PO5961 - Preventative Maintenance for Ruston Diesel Engines - City Wide

Reference:

Date to Council: November 23, 2020
Author: Chandana Walgama
Pollution Control Project Engineer
519-253-7111 ext. 3274
cwalgama@citywindsor.ca
Pollution Control
Report Date: November 4, 2020
Clerk's File #: SW/13967

To: Mayor and Members of City Council

Recommendation:

THAT the following amendment to the existing City of Windsor Contract ID #5961 be **ACCEPTED**:

CONTRACTOR	MAN Energy Solutions - Canada 710 Dorval Drive, Suite 600 Oakville, ON. L6K 3V7. P: +1 604 235 2261 F: +1 604 684 1132
CONTRACT ID:	5961
REVISED TOTAL PRICE:	\$121,178.88, excluding HST
ACCOUNT CHARGED:	001-2980-5432-02942-0174124

and,

THAT the Chief Administrative Officer and City Clerk **EXECUTE** an amendment to the existing City of Windsor Contract ID#5961 with MAN Energy Solutions Canada Ltd. satisfactory in form to the City Solicitor, in technical content to the City Engineer, and financial content to the Chief Financial Officer & City Treasurer; and,

THAT \$123,400 be transferred from Fund 208 – Pollution Control Reserve to Dept. ID 0174124 – Pump Station Operations to cover the amount of the contract.

Executive Summary:

N/A

Background:

The previous annual diesel engine maintenance contract for the St. Paul and Pontiac Pumping Stations' diesel engines expired by the end of the year 2019. A new RFQ (Request for Quotation) was issued in April 2020 inviting qualified bidders to provide a *three year preventative maintenance program* for the diesel generators at the St. Paul and Pontiac Pumping Stations. There were **no submissions received** by the Purchasing Department for this RFQ and the Pollution Control Department was advised to **proceed with a sole source** acquisition.

Discussion:

Pollution Control invited MAN Energy Solutions Canada Ltd. (MAN) to submit a quotation to provide three year preventative maintenance services for the Ruston Diesel engines at the St Paul and Pontiac Pumping Stations. This company previously provided the services at these locations. The Contract ID #5961 was released to MAN with a total contract amount of \$87,507.56, plus applicable taxes. The MAN quotation was based on the assumption that Pollution Control would provide temporary diesel generators on site during the duration of maintenance.

Pollution Control reviewed the quotations for temporary diesel generators from local suppliers and the possibility of connecting temporary diesel generators at the St Paul and Pontiac Pumping Stations. During this review, Pollution Control decided not to proceed with connecting temporary diesel generators to the pumping stations.

Pollution Control requested MAN Energy Solutions Canada Ltd. to revise their original quotation to minimize the period of maintenance to avoid using temporary diesel generators on-site. The revised quotation from MAN included brand new fuel injectors for both engines instead of servicing them in order to reduce the duration time of maintenance. The attached revised quotation (\$78,938.48) replaces the original quoted price (\$45,267.56) of the line item 1 in the existing Contract ID #5961, for a total contract value of \$121,178.88, plus HST.

Risk Analysis:

There is a low risk if the onsite generator fails before executing the Revised Contract ID #5961.

Risk Description	Impacted Objective(s)	Risk Level	Mitigating Strategy / Status	Responsibility
Failure of the generator	Operations of the Pumping Station	Low	Repair the generator	SM-Pollution Control

Climate Change Risks

Climate Change Mitigation:

N/A

Climate Change Adaptation:

The consequences due to an unintended climate condition was considered in the Risk Analysis section.

Financial Matters:

Pollution Control has an annual maintenance services budget of \$1,307,642 funded through Sewer Surcharge. Due to a number of unanticipated repairs and inflationary pressures in 2020, the division is expecting to end the year with a deficit of approximately (\$1,112,000) in these maintenance accounts to cover the funding required for the contract noted above. As this non-discretionary work is critical to the operation of Pollution Control, Administration is recommending a transfer of \$123,400 from the Pollution Control Reserve (Fund 208) to Dept. ID 0174124 - Pump Stations Operations in order to fund this work. The unencumbered and available balance in the Pollution Control Reserve at September 30, 2020 is \$2,401,114. Administration will undertake a review of the annual maintenance budget requirements for the upcoming 2021 budget and bring forth recommendations for any adjustments to the based funding required.

Consultations:

N/A

Conclusion:

That Council authorize the CAO and City Clerk to amend the existing City of Windsor Contract ID 5961 with MAN Energy Solutions Canada Ltd. To carry out the Annual Diesel Engine Maintenance program for the St. Paul and Pontiac Pumping Stations and approve the required additional funding of \$123,400 from the Pollution Control Reserve (Fund 208).

Planning Act Matters:

N/A

Approvals:

Name	Title
Ed Valdez	Manager, Process Engineering & Maintenance
Jake Renaud	Senior Manager, Pollution Control & Deputy City Engineer
Alex Vucinic	Purchasing Manager
Joe Mancina	Chief Financial Officer & City Treasurer
Valerie Critchley	City Clerk
Shelby Askin Hager	City Solicitor
Onorio Colucci	Chief Administrative Officer

Notifications:

Name	Address	Email
MAN Energy Solutions Canada Ltd.	710 Dorval Drive, Ste. 600 Oakville, ON L6K 3V7	Andrei.dirgilev@man-es.com

Appendices:

- 1 Contract ID 5961

Contract ID 5961	Page 1
Contract Dates 17-Sep-2020 to 31-Dec-2022	Currency CAD
Req.# 20541	

Vendor: 0000015378
MAN ENERGY SOLUTIONS CANADA LTD
710 DORVAL DRIVE, SUITE 600
OAKVILLE ON L6K 3V7
Canada

Ship To: LOU ROMANO WATER RECLAMATION
PUBLIC WORKS DEPARTMENT
4155 OJIBWAY PARKWAY
WINDSOR ON N9C 4A5
Canada

Legal Name:

Line #	Qty	UOM	Item Desc	Unit Price	Extended Amt
1	1.00	SVC	2020 ANNUAL MAINTENANCE SERVICES OF ST. PAUL PUMP STATION AND PONTIAC PUMP STATION DIESEL GENERATORS (excluding the load bank tests)	45,267.56	45,267.56
2	1.00	SVC	2021 ANNUAL MAINTENANCE SERVICES OF ST. PAUL PUMP STATION AND PONTIAC PUMP STATION DIESEL GENERATORS	21,120.00	21,120.00
3	1.00	SVC	2022 ANNUAL MAINTENANCE SERVICES OF ST. PAUL PUMP STATION AND PONTIAC PUMP STATION DIESEL GENERATORS	21,120.00	21,120.00
Contract Total:					87,507.56

ALL INVOICES MUST REFERENCE THIS CONTRACT ORDER NUMBER AND BE MAILED DIRECTLY TO THE "SHIP TO" LOCATION FOR PAYMENTS. APPLICABLE TAXES EXTRA.

CITY OF WINDSOR CONTACT: CHANDANA WALGAMA @ cwalgama@citywindsor.ca

CONTRACT IS VALID FOR A THREE (3) YEAR TERM, INCLUDES LABOUR AND MILEAGE FOR EACH VISIT. CONTRACTOR SHOULD SCHEDULE THE VISITS IN CONSULTATION WITH POLLUTION CONTROL STAFF. THE CITY HAS THE RIGHT TO POSTPONE OR CANCEL ANY OF THE AFOREMENTIONED SCHEDULED MAINTENANCES. ANY ADDITIONAL REPAIR, MATERIAL OR SERVICES REQUIRED SHOULD BE QUOTED SEPARATELY AND WILL BE CHARGED ONLY UPON CITY OF WINDSOR APPROVAL.

FORWARD INSURANCE AND W.S.I.B. CLEARANCE CERTIFICATE TO PURCHASING AND RISK MANAGEMENT DIVISION TO coi@citywindsor.ca. FAX COVER PAGE MUST REFERENCE THIS ORDER NUMBER, AND BE SENT TO THE BUYER NAMED BELOW. APPROVAL BY RISK MANAGEMENT IS REQUIRED PRIOR TO COMMENCING ANY WORK. POLICIES MAY BE REQUESTED. INSURANCE MUST BE SUBMITTED ANNUALLY THEREAFTER SHOULD THE CONTRACT TERM EXCEED THE TERM OF THE INSURANCE COVERAGE. THE INSURED NAME ON THE POLICY MUST BE THE SAME NAME THAT WAS SUBMITTED IN TENDER OR PROPOSAL. DIRECT ALL INSURANCE QUESTIONS TO coi@citywindsor.ca. PLEASE REFERENCE P.O. # ON CERTIFICATE OF INSURANCE.

CONTRACTOR MUST PROVIDE A WORKPLACE SAFETY AND INSURANCE BOARD (W.S.I.B.) CLEARANCE CERTIFICATE, AND, AN INSURANCE CERTIFICATE SHOWING PROOF OF COMMERCIAL GENERAL LIABILITY INSURANCE, INCLUDING BUT NOT LIMITED TO BODILY INJURY INCLUDING DEATH, PERSONAL INJURY, PROPERTY DAMAGE, TENANTS LEGAL LIABILITY, AND CROSS-LIABILITY/SEVERABILITY OF INTEREST PROVISIONS, IN THE AMOUNT OF TWO MILLION DOLLARS (\$2,000,000.00) "PER OCCURRENCE", WITH THE CORPORATION OF THE CITY OF WINDSOR NAMED IN WRITING ON THE POLICY AS AN ADDITIONAL INSURED, AND SHALL CONTAIN AN ENDORSEMENT TO PROVIDE THE CITY WITH (30) DAYS PRIOR WRITTEN NOTICE OF CANCELLATION OR MATERIAL CHANGE IN POLICY. PROOF OF INSURANCE COVERAGE SHALL BE IN FORM SATISFACTORY TO THE RISK MANAGEMENT SUPERVISOR

AS PER YOUR OFFER NO'S 11003276/11003542/11003543
DATED SEPTEMBER 3, 2020
ATTN: ANDREI DIRGILEV
EMAIL CO > Andrei.dirgilev@man-es.com

CITY OF WINDSOR MANDATORY CONTRACT TERMS ACCEPTED PER EMAIL DATED SEPTEMBER 16, 2020

Terms and Conditions:

The Contractor accepts this purchase order/contract fully knowledgeable of all terms and conditions of the Occupational Health & Safety Act including regulations applying to an employer, deemed or otherwise, of a sub-contractor. The Contractor shall strictly comply with all aspects of the Occupational Health & Safety Act and regulations thereunder. The Contractor shall and agrees hereby to indemnify and hold harmless The Corporation of the City of Windsor and its employees for all matters and claims pertaining or relating to the work to be performed by the Contractor and/or its subcontractors. The Contractor assumes responsibility for any and all breaches of health and safety requirements, including the cost of defence of charges on a solicitor and own client basis should the City or any of its employees be charged with violating said Act or Regulations. And, in the event that the City and/or any employee thereof be convicted and fined for any such offence as having been a deemed employer or otherwise vicariously or definitively liable, the Contractor shall forthwith pay any such fine on behalf of such defendant.

Buyer: Musson, Jennifer 519 255 6100 ext 6146

Authorized Signature

Elaine Castellan



Subject: Parking Bylaw 9023 – Recommended Amendments on Sandwich Street-Ward 2

Reference:

Date to Council: November 23, 2020
Author: Joseph Dattilo
Project Administrator
519-255-6100 ext 6825
jdattilo@citywindsor.ca
Engineering – Corporate Projects

Projects & Right-of-Way
Report Date: November 4, 2020
Clerk's File #: ST2020

To: Mayor and Members of City Council

Recommendation:

That the Parking Bylaw 9023 **BE AMENDED** as listed and as attached in Appendix "A" at the time of the project; and,

That the City Solicitor **BE DIRECTED** to prepare the necessary documents to amend the bylaw.

Executive Summary:

N/A

Background:

Windsor-Detroit Bridge Authority (or WDBA) is a not-for-profit Crown corporation, which reports to Parliament through the Minister of Infrastructure and Communities. As such, WDBA is wholly owned by the Government of Canada and the powers necessary to carry out the Crown Corporation's mandate are vested in the board that directs it.

WDBA is responsible for the delivery of the Gordie Howe International Bridge between Windsor, Ontario and Detroit, Michigan, through a public-private partnership (P3). It is also responsible for project oversight of the construction and the operation of the new crossing. Bridging North America or BNA is WDBA's private-sector partner and is responsible to design, build, finance, operate and maintain the Canadian and US Ports

of Entry and the bridge, and to design, build and finance the Michigan Interchange under a public-private partnership agreement (P3).

Recognizing Sandwich's role as a gateway community to Canada and in response to public consultation, the Windsor Detroit Bridge Authority (WDBA) is investing in improvements to Sandwich Street as part of the Gordie Howe International Bridge project.

Walk Wheel Windsor, the City of Windsor's Active Transportation Master Plan, identifies Sandwich Street from Rosedale Ave. to Chappell Ave as a "connector" in the cycling network.

Ontario traffic Manual guidance Recommends PAINTED BIKE LANES on Sandwich Street as per the following key factors:

- Traffic volumes and speeds
- Available right-of-way and pavement width
- The function of Sandwich Street in the cycling network

Approximately 3 km of Sandwich Street from the intersection of Sandwich Street and Ojibway Parkway to the Rosedale Avenue roundabout will see improvements to the current infrastructure, including new curbs, sidewalks, trails, new pavement, bike lanes and streetscaping features. The scope of work is largely considered surface works, matching the existing road cross section.

Discussion:

High-level concept plans created by the City for the WDBA were presented as part of an online PIC webinar on September 3, 2020 between 4pm and 6pm.

Notices were sent by mail to all residents and property owners adjacent to the scope of works for the Sandwich Street Rehabilitation project including through social media and the media.

Generally, the plans include painted bike lanes on both sides of Sandwich Street from Chewett Street to Chappell Avenue. Between Brock Street and Chappell, the cross section of the road is not wide enough to accommodate the proposed bike lanes and parking on both sides of Sandwich Street. The current parking in this section is on both sides of the street but on alternating months, As per the proposed design, the parking on the northwest side of Sandwich Street would be removed and the southeast side would become no restrictions with alternating months would be removed.

The PIC material can be found at the City of Windsor's website <http://www.windsoreas.ca/> under "Schedule A+ Projects"

Overall, within the Sandwich BIA, approximately (5) parking spaces would be removed in order to accommodate the new bike lanes. The BIA has been consulted and has expressed support for the overall design. Outside of the BIA between 3329 Sandwich Street and Chappell Ave, a total of 89 parking spaces would be removed however the

net loss is approximately 0 due to the fact that there is currently alternate side parking. The southeast side would become parking year round.

The online PIC gathered feedback and comments from the community for information and to make Recommendations to the Environment Transportation & Public Safety Committee for Consideration and to Council for Decision.

A summary of the comments and applicable responses are attached in Appendix "B".

Community input was in favour of the project with many questions regarding detailed design and scope of work. The project is in the early stages of information gathering by BNA at this time before detailed design and coordination with the City can take place.

Most of the comments focused on the bike lanes, safety and amenities.

The lane configuration of the roadway will not change, therefore there no anticipated impacts to traffic.

Risk Analysis:

The Sandwich Street rehabilitation project by WDBA/BNA including the addition of bike lanes is contingent upon the parking elimination being proposed. Not eliminating as noted parking, may delay the project and risks the project being modified to a smaller scope.

Financial Matters:

None of the parking spaces are revenue generating nor would this change require additional infrastructure to be installed, therefore there is no financial implication to this change.

The proposed improvements are fully funded by WDBA.

Consultations:

Jeff Hagan - Transp. Planning Sr Engineer
Shari Gabriele - Transportation Technologist I
Shawna Boakes – Senior Manager, Traffic Operations & Parking
Sandwich BIA

Conclusion:

Administration recommends the removal of the specified on-street parking spaces on the Northwest side of Sandwich Street between Brock Street and Chappell Avenue to accommodate proposed bike lanes.

Planning Act Matters:

N/A

Approvals:

Name	Title
France Isabelle-Tunks	Senior Manager, Engineering / Deputy City Engineer
Mark Winterton	City Engineer and Corporate Leader Environmental Protection and Transportation
Valerie Critchley	City Clerk/License Commissioner and Corporate Leader Public Engagement and Human Services
Shelby Askin Hager	City Solicitor and Corporate Leader Economic Development and Public Safety
Joseph Mancina	Chief Financial Officer/City Treasurer and Corporate Leader Finance and Technology
Onorio Colucci	Chief Administrative Officer

Notifications:

Name	Address	Email

Appendices:

- 1 Appendix A - Amendments to Parking By-law 9023
- 2 Appendix B - PIC Comments Summary

Appendix “A”

<i>AMENDMENTS TO PARKING BY-LAW 9023</i>								
ITEM	REGULATION	STREET	SIDE	FROM	TO	ADDITIONAL RESTRICTIONS	ADDITIONAL INFO	REASON
1	Schedule “C” No Parking DELETE	Sandwich Street	Both	Chippawa Street	John B Avenue	4:00 AM to 6:00 AM		Sandwich Street Bicycle Lanes
2	Schedule “C” No Parking ADD	Sandwich Street	East side	Chippawa Street	Chappell	4:00 AM to 6:00AM		Sandwich Street Bicycle Lanes
3	Schedule “H” Accessible On-street Parking ADD	Sandwich Street	East side	36 metres north of Brock Street	42 metres north of Brock Street			Sandwich Street Bicycle Lanes
4	Schedule “D” Alternate Side Parking DELETE	Sandwich Street	West Side	Brock Street	Chippawa Street	4:00 AM to 6:00 AM	February, April, June, August, October, December	Sandwich Street Bicycle Lanes
5	Schedule “D” Alternate Side Parking DELETE	Sandwich Street	East side	Brock Street	Chippawa Street	4:00 AM to 6:00 AM	January, March, May, July, September, November	Sandwich Street Bicycle Lanes
6	Schedule “A” Limited Parking DELETE	Sandwich Street	West Side	A point 24 metres South of Brock Street	A point 57 metres south of Brock Street	2 Hour Limit – 8:00 AM to 6:00 PM- Monday to Saturday		Sandwich Street Bicycle Lanes

Appendix “A”

7	Schedule “C” No Parking DELETE	Sandwich Street	East side	Prince Road	Hill Avenue			Sandwich Street Bicycle Lanes
8	Schedule “K” Taxi Cab Stands DELETE	Sandwich Street	East side	Chappell Avenue	John B Avenue		Number of Cabs :6	Sandwich Street Bicycle Lanes
9	Schedule “F” No Stopping or Parking DELETE	Sandwich Street	East side	A point 28.5 metres north of Chappell Avenue	A point 198 Metres south of John B Avenue			Sandwich Street Bicycle Lanes
10	Schedule “F” No Stopping or Parking ADD	Sandwich Street	East side	Chappell Avenue	A point 198 Metres south of John B Avenue			Sandwich Street Bicycle Lanes

Appendix "B"
PUBLIC INFORMATION CENTRE Summary of Comments

Sandwich Street Reconstruction - Gordie Howe International Bridge project

The online Public Information Centre was scheduled Sept 3rd, 2020 between 4pm and 6pm

PIC to introduce at a high conceptual level the planned Sandwich Street Reconstruction project by WDBA/BNA. Also, Sandwich St from Brock St to Chappell St currently has parking on both sides. In order to accommodate bike lanes within the existing pavement width, parking will need to be eliminated on one side of Sandwich St in these blocks.

From	Comments Received:	Response/Comment
By Email Aug 31: Darren.Winger@ontario.ca	More advanced facilities to become a "Silver" Bike Friendly Community	The City of Windsor is working to improve its Bike Friendly Community rating through implementing <i>Walk Wheel Windsor</i> , the City's Active Transportation Master Plan. This project is an important part of - and aligned with - that plan.
	Painted intersections along Sandwich are lacking in the plan to create a clear definition of space for pedestrians, cyclists and cars.	Standard pavement markings at intersections will be provided.
	Bike parking corral	Not part of this scope at this time. however city is working on a bike parking policy city wide which include bike corrals.
	Clearly marked cycling lane at crossroads along Sandwich: at South, Chippawa, Watkins, Prince Rd, Hill & Chappell	There are existing cycling facilities on two cross streets (Prince & Brock). The connection to these facilities will be taken into account in the design for this project. Both streets are planned to be upgraded to AAA ("all ages and abilities") facilities in future. The Active Transportation Master Plan does not call for bicycle lanes on any other cross streets in the project area.
	Multi use trail: proper paint marking and signage	On the multi-use trail, "shared pathway" signs will be provided. Normal City of Windsor practice is not to provide pavement markings on multi-use trails; this is compliant with the Ontario Traffic Manual.
By Email Sept 2nd. Neil Mens, 1011 Coventry Ct, Windsor, ON N8S 2W6, neilmens@gmail.com	Need bike lanes on both sides of Sandwich Street Omitted bike lanes from Riverside through Rosedale roundabout to sandwich	Plan shows bike lanes on both sides of the road the area is classified as a very high archeological potential which complicates any reconstruction efforts. In addition the ROW is very narrow. There is a current plan in the works to include for bikes lanes. however will take more time to conduct due diligence to avoid excess project costs or delays.
By Email Sept 2nd: Lorraine Steele, lorraine.steelework@gmail.com	Require visible, safe bicycle parking, that bike lanes are absolutely needed on Sandwich Street and the loss of some on street parking is warranted.	Noted Noted
By Email Sept 3rd: Andrea Lucier, lioneslucier@gmail.com	As an avid cyclist, I am elated with the current proposed changes/additions. I am excited for the upgrades that have been proposed and they will be more than welcomed by the community and people who use alternate forms of transportation. Proposal stops the Multi-use Trail at Sandwich and Ojibway Pkwy, just pass Prospect Ave. Proposal #1: I would like to see the Multi-Use Trail be extended down Sandwich Street to Broadway Blvd. Down Broadway Blvd to connect to the Multi-Use Trail currently on Ojibway Pkwy. Proposal #2: Would be to continue along Ojibway Pkwy to Broadway Blvd to connect to the Multi-Use Trail at Ojibway Pkwy and Broadway Blvd.	Noted The new Multi Use Trail (MUT) on Sandwich will continue past the Sandwich Ojibway intersection along Sandwich Street heading south to connect into the newly built Perimeter Access Road (PAR). The PAR includes a trail that connects to Broadway and Ojibway already. There are plans in the works by WDBA and the City to include for another MUT from Broadway/Ojibway to Matchette Rd which will head north to Carmichael at Mic Mac.
By Email Sept 3rd: Marcia Gragg, marciang22@gmail.com	Although I live in Walkerville, I work and have friends in Sandwich. As an almost senior, I will feel much safer riding my bike in the proposed bike lanes. So many more people have taken up riding bikes again in recent months. Thank you,	Noted
By Email Sept 3rd: Melinda Munro, melinda@munrostrategy.com	I wish to add my support to the submissions from Bike Windsor Essex. We should never again consider a road project (from simple mill and pave to major reconstruction) that does not include a facility for active transportation. It supports the Active Transportation Master Plan and the Climate Adaption Plan to encourage less driving and more walking and riding. Sandwich Town is one of Windsor's gems as a walkable and interesting neighbourhood. Rebuilding it with the support of the Gordie Howe Bridge should enhance and grow its attractiveness to businesses, residents and visitors. Safe cycling lanes throughout, safe bicycle parking and attractive infrastructure are the bare minimum that we should expect. As Bike Windsor Essex also noted, the fact that the GH Bridge is being designed to permit cycling mandates, in my view, that we enhance all possible ways to attract tourism over the Bridge to Sandwich Town as well as encourage tourism in Delray by making it easy for cyclists from Canada to get to Detroit. In fact, having a connection from the Riverfront and Great Lakes Trail system to the GH Bridge would encourage international cycling tourism for those attracted by the amazing lakeside cycling from the Quebec Border, around the Bruce Peninsula and along both Lake Erie and Lake St Clair.	Noted
By Email Sept 3rd: Gary J. Williams, P. Eng. (retired), 4115 Betts Avenue, LaSalle (Windsor), ON N9H 2N7, 519-980-9164, g_j_w_@hotmail.com	Requirement for a new City Marina. The best place for a new marina is right in Sandwich whether near the boat launch on the west side of the Ambassador Bridge or more likely down near the Mill Street area	Noted and will pass along to Counsellor.
By Email Sept 3rd: Shauna Huffaker, Program Chair, Bachelor of Interdisciplinary Arts and Sciences, Department of History, Associate Professor, University of Windsor, Windsor, Ontario, Canada N9B 3P4, 519.253.3000 ext. 2320, huffaker@uwindsor.ca	I would regularly use these bike lanes were they to be built.	Noted
By Email Sept 3rd: Darren Winger, Regional Development Advisor, Regional Services & Corporate Support Branch, Ministry of Heritage, Sport, Tourism and Culture Industries, Ministry for Seniors and Accessibility, 221 Mill Street, Windsor, ON N9C 2R1, Cell phone: (519) 965-5369, Darren.winger@ontario.ca	Brought forward an opportunity for BIA to explore off street parking alternatives 1. NCCCE parking lot (Old Shoppers Drug Mart) for after business hours access. They operate Mon-Fri 8:30-4:30 pm 2. Conversation of Dollarama lot converted to a public lot for all BIA usage and bar access after-hours. It could become a pay & display lot, concept similar to the lot at Windsor Squash & Fitness on McDougall. I work in Sandwich Towne and there could be alternatives to the BIA concern about losing on-street spots. Both of these lots are empty in evening hours and could assist BIA businesses who operate evening hours.	Noted. Issue for BNA. Only one parking stall was identified for removal within the BIA due to revising the bus stop.

By Email Sept 3rd: Jennifer Escott Bike Windsor Essex	When I saw the design drawings and the right-of-way width, I advised Bike Windsor Essex that this was a good design and we could not expect more. To be clear, Bike Windsor Essex is not interested in adding bollards or separators on Sandwich Street. We will send in a detailed comment supporting these designs and parking removal. Later, I will also write a post explaining to cyclists why it is unreasonable to expect bollards or separations, especially in the BIA.	Noted
By Comment form through email Sept 4th: Josef and Anna Rutinger. 456 Detroit Street	Excellent idea to promote biking. Please consider crosswalks.	Noted. Sidewalks (according to AODA), ramps with tactile surface indicators, crosswalks (At controlled crossings) and traffic striping will all be new.
By Email Sept 4th: Tom, tbauer@gmail.com	If it is money well spent please focus on bike lanes from Chappell street South? People can ride on Russell from the bridge to Chappell with an excellent river view, so if the bike lanes can go there instead of on busy Sandwich St?? It would also create less construction congestion on Sandwich Street if the bike lanes are put in on Russell. What do you think?	Noted as not part of this scope of work, however feedback will be taken back for future consideration.
By Email Sept 4th: Philippa von Ziegenweid, 6396 Riverside Drive East, Windsor	Although I don't live in Sandwich, I have often cycled to the area. With the gentrification of the neighbourhood that started a couple of years ago, I can see reasons to visit the restaurants on Sandwich Street more often by bike, but safety is an important consideration. very glad to see that bike lanes being planned. The more bike infrastructure that is provided, the more people will be encouraged to use bicycles instead of cars to get around, thereby reducing the need for on-street parking. It seems to me that not all of the planned bike lanes have buffers. It is critically important to encourage people of all ages and cycling abilities to feel safe. I support buffers between the bike lanes and the rest of the road where completely separated trails are not possible. Green paint for the bike lanes would add a visual cue to motorists to be careful - thereby providing another layer of safety.	The existing narrow ROW including existing infrastructure such as hydro poles does not allow for widening of Sandwich Street and thus the reason for eliminating parking on one side of the street. However, every effort will be made to maximize the bike lane widths and buffers.
By Email Sept 7th: Mary Ann Cuderman, Past Chair, Sandwich Business Improvement Area, Business Owner and Resident, 3118 Sandwich St., Windsor, ON N9C 1A6, 519-258-0361, macuderman@hotmail.com	Pros: • Only 1 parking spot is lost in the business section. • Bike corrals can be accommodated in the business section. • Corner of Prince Rd. and Sandwich is identified as a problem with trucks turning. • Sandwich St. is recognized as a connector. (Also a con) Cons: • The bike lanes stop at the roundabout at Rosedale Ave. The Sandwich business community is depending on bike tourism. There is a need to complete asap the lanes to connect with Riverside Dr. Downtown, Walkerville. A dead end bike lane is of limited use to Sandwich for marketing purposes. The bike lanes need to connect. • Russell St. is a designated AAA bike route which needs more discussion. Russell Street is a designated truck route from Detroit St. going south in order to accommodate the aggregate yard at the foot of Detroit St. Ninety percent of its length is industrial to accommodate the Port of Windsor. It is dusty, noisy and isolated. It is not a route that is appealing to travel. • More signage needed to identify designated truck routes.	A multi-use trail is planned on the north side of Riverside Drive/Sandwich Street from McKee Park (near Chewett Street) to the Riverfront Trail (near Huron Church Road). Construction of this trail is planned to proceed once archaeological issues are resolved. The Active Transportation Master Plan recommends a bike corral program; details of where and how bike corrals are placed will be addressed in the upcoming Bicycle Parking Policy. Russell Street was identified as the AAA ("all ages and abilities") route through this area primarily because: - providing protected bicycle facilities on Sandwich Street would be impossible without removing on-street parking. - AAA infrastructure is already provided on a significant length of Russell Street (Brock Street to Chewett Street). - the location of Russell Street lends itself to continuous AAA connections to the east and west. Truck traffic on the western part of Russell Street will be taken into account in that project. Truck Routes: The City does not sign truck routes and typically only sign 'no truck' where there is a physical impediment or is directly off a truck route.
By Email Sept 8th: Jennifer Escott, Vice Chair, Bike Windsor Essex	SPEED LIMIT REDUCTION - Sandwich Street is a class II arterial road and a bus route. We recommend that the speed limit from the roundabout to Brock Street be reduced to a maximum of 40km/h. This will provide a measure of safety for motorists, cyclists and pedestrians. Although jaywalking is not legal, shoppers and pedestrians WILL dash across the street between intersections and slower speeds will decrease the number and severity of potential collisions between vehicles entering and exiting parking spaces and driveways.	Speed limit changes, in and of themselves, do not tend to reduce operating speeds. The design incorporates speed reduction features that are appropriate for an arterial road, such as reduced lane widths and bump-outs. Crossing between intersections is generally legal in Ontario, provided the pedestrian waits for a gap.
	BIKE LANE PROTECTION - Bike Windsor Essex recommends protection for cyclists wherever possible, however, after a careful review of the right-of-way (ROW) issues between Detroit and Brock Street, we see that the installation of bollards, planters or other protections will not be feasible on this segment unless trees are removed and utilities are relocated. Considering a 20m ROW width, an average distance between utilities of less than 15m, parking issues and number of driveways - we conclude that protection with bollards is not possible if reasonable bike lane and traffic lane widths are to be maintained.	Noted
	BIKE LANE STRIPES - We would like to see a stripe delineating BOTH sides of the bike lane, not just a single white line on the left side. Preferred would be 2 white stripes with a green paint fill. A single white line simply appears to be an extra wide parking spot. The added stripe (and fill) will clearly define the bike lane and alert drivers parking between the curb and the bike lane to watch for cyclists before opening their doors into the bike lane.	The request is not a typical installation. Every effort will be made to maximize the bike lane widths including for buffers. Design to follow City and Provincial standards.
	OPPORTUNITIES FOR NARROWING BUMP-OUTS - We understand this is the early design stage but it was mentioned in the PIC that all the curbs will stay as they are, that there were no plans to widen or narrow the street from the present profile. We have noticed there are a number of bump-outs within the BIA segment that could be narrowed slightly without the loss of trees or movement of utilities: • Bump-out on the west side of Sandwich St, just south of Mill Street could be reduced by at least a foot • Bump-out in front of the Dollarama mid block • Bump-out on the east side just north of MacKenzie Hall The PIC documents indicate that a new curb will be extended running south from the bump-out just north of Mackenzie Hall to the Brock Street intersection, yet parking and a bus stop is also indicated in that same location. Both the new curb and the parking/bus stop cannot be accommodated.	Noted. The review and adjustment of all bump-outs vs bike lanes will be considered during detailed design
	BICYCLE PARKING - Add at least 1 on-street bike corral located in the street area adjacent to the curb within the BIA. Any bike parking infrastructure must have the ability to lock both bicycle wheels. Bike corrals can sometimes make use of on-street areas that are unsuitable for auto parking. When replacing a single auto parking space, a corral can generally fit 8 to 12 bicycles. Consider locations for added free standing post and ring or inverted U racks to space out bicycle parking options. Below are some examples of good individual bicycle parking options.	Not part of this scope at this time, however city is working on a bike parking policy city wide which include bike corrals.
	SHADE PROTECTION - Limit any tree removal (and increase plantings) as the shade they provide is vital to cyclists and pedestrians.	At this time the scope appears to salvage existing trees as much as possible. Additional trees are not included in the scope at this time.
	CHAPPELL STREET INTERSECTION - We are pleased to see what may be Windsor's first cross rides included in this intersection but it is unclear how a cyclist should navigate from the bike lanes to the multiuse trail that begins/ends on the south-west corner.	Intersection to be a possible Signalized pedestrian crossover PXO and not a cross ride. If it is to be a PXO, then bikes will need to dismount and walk.
	PRINCE ROAD INTERSECTION - Sandwich St. and Prince Rd. will become an intersection between 2 bike lanes. Located near Mic Mac Park, the Gordie Howe Bridge, the Herb Grey Trail and the Sandwich business district, it can be assumed that it may be a fairly high volume cycling corridor. At present, this is a dangerous intersection for cyclists. The bike lane striping ends well before the intersection and there is a continual issue with vehicles executing right turns on to Sandwich Street without being alert to cyclists on their right. The drawings provided at the September 3 PIC do not indicate how cyclists will be able to navigate from the north-east corner of Prince and Sandwich to the bike lanes on the west side of Sandwich Street. We recommend some directional paint on the pavement to illustrate to cyclists and vehicles where they should be as they make a turn. The new Gordie Howe Bridge will include bike lanes, and we must provide a route for tourists and residents to access the shops, restaurants and services Sandwich has to offer. Bike lanes along Sandwich street will provide transportation choices and help to build a more people-centred neighborhood. Re-routing cyclists away from the commercial area will have a negative economic impact on an already struggling sector.	Bike lanes on Prince Road will be considered for extension to Sandwich Street as part of this project. Cyclists turning from Prince Road to Sandwich Street will wait for gaps in traffic (as they do currently) to make a normal turn. The Active Transportation Master Plan calls for Prince Road to be upgraded to a AAA ("all ages and abilities") cycling route in future; as part of that project, the intersection will be reviewed to determine what upgrades are needed for it to suit all ages and abilities.
	We conclude that bike lanes are absolutely needed on Sandwich Street and the loss of some on street parking is warranted.	Noted
	A couple of notes about the comment sheet.	Noted. Encouraged to email or call with any comments.

<p>By Email Sept 10th: Paul drouillard, roadkilling@live.com</p>	<p>very long-time residents of Sandwich. The residents of Sandwich desperately need parking on both sides of the street, to suggest only one side would only create division in our neighborhood as it pits the south side of Sandwich against the north side of Sandwich. I am a cyclist myself and quite often I find myself perplexed by the need for "bike lanes". My belief is that they are a waste of paint, time and labour. Suggest if bike lanes are required then widen the road to accommodate them and allow parking on both sides as it has always been. . If that is not feasible, I would suggest omitting the bike lanes altogether. suggest that if we are forced to adjust our lives accordingly for cyclists that a cyclist traffic study be performed reflecting similar traffic studies regarding passenger and commercial vehicles. When you take into consideration the volume of transient cyclist traffic in our town does it really make sense to make the residents sacrifice our necessities</p>	<p>The addition of painted bike lanes on Sandwich is supported by the Ontario Traffic Manual, City ATMP and its recommendations by Walk Wheel Windsor. Bike lanes will improve the connection between Sandwich residents and shopping and services in the area. In addition will provide a connection to the new Gordie Howe International Bridge for cycling tourists and connection for commuters from Sandwich and West Windsor to the employment areas along Ojibway Parkway. The narrow ROW and existing infrastructure does not allow for widening of Sandwich Street in order to preserve all existing parking stalls.</p>
<p>By Email Sept 22th: Jerry Gervais, im_aj_2002@cogeco.ca</p>	<p>Sandwich St at Prince Rd. I think the traffic at this intersection warrants a street light. I have been cut off at that intersection from cars turning East onto Prince Rd from Sandwich St. I sat in the parking lot across from this intersection & counted how many cars cut that corner to turn left onto Prince Rd off Sandwich St. and it was 7 out of 10 cars cutting that corner. So I would like to see a painted line so cars will realize that they are cutting the corner. I would also like to see painted lines & a sign saying STOP HERE on Prince Rd before that blind corner. Sidewalks in the Business Area. - I would like to see Coloured Stamped Concrete for a decorative sidewalk. - I would like to see the Stamped Concrete included in front of the Historic Dominion House Tavern and in front of the Historic McGregor – Cowan House Bicycle Racks or Posts: I would like to see Bicycle Posts In front of 3117 Sandwich the Pharmacy and In front of 3118 Sandwich St. the McGregor- Cowan House Trash Cans: I would like to see a trash can at 3117 Sandwich St the Pharmacy. Trolley Tracks at Sandwich & Mill: I hope the Trolley Tracks at Mill & Sandwich North Crosswalk & South Crosswalk I've seen for 70 years will stay.</p>	<p>Sandwich & Prince intersection: a signal warrant review was last carried out in 2018. At that time, the intersection did not warrant a signal. We will continue to review the intersection periodically. Sidewalks: Will be considered as part of design through with coordination between BIA and planning Dept. Bicycle Racks/Parking: Not part of this scope at this time. however city is working on a bike parking policy city wide which include bike corrals. Trash Cans: Not part of this scope, however may be included in WDBA additional community benefits program Trolley Tracks: The preservation of the existing trolley tracks would be at the Brock, Detroit and Mill intersections, within the new cross walk and same as what is there today at Mill and Sandwich.</p>
<p>By Email Sept 24th: jkiping@wechu.org, JESSICA KIPPING-LABUTE</p>	<p>Support a mixed-use neighbourhoods design, with street and sidewalk connectivity to residential, commercial, parks, and recreational spaces. Include appropriate lighting, mature tree canopy, and pedestrian-friendly amenities (such as benches).</p> <p>Walkability: An "age-friendly" assessment should be done in order to provide infrastructure for all ages and mobility groups. This is especially important as the City of Windsor was designated an Age Friendly Community by the World Health Organization. Please refer to the Age-Friendly 2017 final draft report for specific recommendations on creating an age-friendly community. However, it is important to ensure that there are available parking spots for individuals with disabilities, so they have room to park, as well as having extra space to unload wheelchairs and walkers onto the sidewalks. Currently, there does not appear to be many of these spaces on the plans where parking is available. Bike-friendly streetscape characteristics, including designated bike racks and bike parking areas should be included along the 3 km plan. The proposed off-road trail link, to and from where the Gordie Howe International Bridge will be built, provides a safe and accessible route. It is suggested to have an off-road trail link up with Sandwich St. that continues along Chappell Avenue West, to Russell St. This off-road trail can then link up to the remaining trail section on Russell St. and provide a safe and quick alternative for those who do not wish to cycle on the higher traffic areas of Sandwich St. In the current plans, it is unclear how Sandwich St. will link up with the roundabout by the Ambassador Bridge and then connect with the Riverside Drive Park bike trail. It would be beneficial to complete that small section as well. For pedestrian safety, it is suggested to include painted cross-walks at a few more intersections along Sandwich St. In addition to these cross-walks, it would be beneficial to include signage and an overhead flashing pedestrian light to warn oncoming traffic in both directions that pedestrians are crossing at these intersections. Suggestions: 1) South St. Intersection. There is a convenience store at this corner which the residents access. It would be beneficial to have high visible painted crosswalks here when people are crossing. 2) Chippewa St. Intersection. With businesses for people to access, and bus stops at each side, a visible crosswalk would increase public safety. 3) Detroit St. Intersection. Although there will be a "bump-out" for pedestrians, a painted crosswalk would also be beneficial. Due to a potential blind spot as people round the corner when coming North on Sandwich St., signage or a flashing-light crosswalk would help increase pedestrian safety.</p> <p>Active Transportation: Provide separated painted bike lanes along Sandwich St. to allow cyclists to be able to access commercial areas along the way. While making these modifications to encourage more active transportation is positive, for the safety of cyclists and pedestrians, Sandwich St. should have a speed reduction (please see below under Road Safety for the recommendation), especially in the residential and commercial sections of the street. The "bump-outs" at various intersections along the way and the removal of some parking spaces will help provide greater visibility for pedestrians crossing. However, it is important to ensure that there are available parking spots for individuals with disabilities, so they have room to park, as well as having extra space to unload wheelchairs and walkers onto the sidewalks. Currently, there does not appear to be many of these spaces on the plans where parking is available. Bike-friendly streetscape characteristics, including designated bike racks and bike parking areas should be included along the 3 km plan. The proposed off-road trail link, to and from where the Gordie Howe International Bridge will be built, provides a safe and accessible route. It is suggested to have an off-road trail link up with Sandwich St. that continues along Chappell Avenue West, to Russell St. This off-road trail can then link up to the remaining trail section on Russell St. and provide a safe and quick alternative for those who do not wish to cycle on the higher traffic areas of Sandwich St. In the current plans, it is unclear how Sandwich St. will link up with the roundabout by the Ambassador Bridge and then connect with the Riverside Drive Park bike trail. It would be beneficial to complete that small section as well. For pedestrian safety, it is suggested to include painted cross-walks at a few more intersections along Sandwich St. In addition to these cross-walks, it would be beneficial to include signage and an overhead flashing pedestrian light to warn oncoming traffic in both directions that pedestrians are crossing at these intersections. Suggestions: 1) South St. Intersection. There is a convenience store at this corner which the residents access. It would be beneficial to have high visible painted crosswalks here when people are crossing. 2) Chippewa St. Intersection. With businesses for people to access, and bus stops at each side, a visible crosswalk would increase public safety. 3) Detroit St. Intersection. Although there will be a "bump-out" for pedestrians, a painted crosswalk would also be beneficial. Due to a potential blind spot as people round the corner when coming North on Sandwich St., signage or a flashing-light crosswalk would help increase pedestrian safety.</p> <p>Road Safety Street design that prioritizes and balances a variety of users and creates safer and more efficient connections for pedestrians, cyclists, and motorists. This includes new signalized crossings (priority, traffic calming measures, and buffering between vehicular traffic and pedestrians). The complete street concept is designed to accommodate the mobility needs of all ages, abilities, and modes of travel. Use a Vision Zero-based approach to reduce fatalities and serious injuries. Mandating a 30 km/hr speed limit in urban areas is a way to prevent serious injuries and death to vulnerable road users when human error occurs. Use existing traffic –related injuries and fatalities from this area to drive infrastructure changes, enhanced regulation and enforcement, and raise public awareness and commitment to road safety. Other traffic calming measures may be necessary to reduce the speed that vehicles are accustomed to traveling. Enforcement and educational campaigns supporting new road safety measures in this area will increase the likelihood of the change being successful in reducing injuries. Work with the Windsor-Essex County Health Unit and schools in the area to pilot-test safe routes to school initiatives. These initiatives can help to encourage residents to have their children walk and bike to school more instead of depending on personal motor vehicles to drop and pick up their families. This could help to alleviate and reduce high traffic volumes in residential areas during peak times when schools are operating. Consider using tools and processes in the Elementary Road Safety Program offered by Parachute to engage the school community. Consider using red light cameras and automated speed enforcement as a way to increase road safety.</p>	<p>Changes or new lighting, new trees and amenities are not included in this scope. Streetscaping may be included as a separate community benefit by WDBA. The City of Windsor is working to improve its Bike Friendly Community rating through implementing Walk Wheel Windsor, the City's Active Transportation Master Plan. This project is an important part of and aligned with that plan.</p> <p>All sidewalks will be replaced as new according to current standards</p> <p>Bike lanes will be painted seperation only. Speed reduction: the design incorporates speed reduction features that are appropriate for an arterial road, such as reduced lane widths and bump-outs. Accessible parking: typically they are not installed on the road unless they are for specific requests from a resident who meets the need for one and are typically provided in lots. Traffic to review whether or not it is possible in the absence of a City owned lot. Bike Racks: Not part of this scope at this time. however city is working on a bike parking policy city wide which include bike corrals. Rosedale Roundabout: the area is classified as a very high archeological potential which complicates any reconstruction efforts. In addition the ROW is very narrow. There is a current plan in the works to include for bikes lanes, however will take more time to conduct due diligence to avoid excess project costs or delays. Crosswalks will be painted as per City Standard. The intersection of Chippewa and Sandwich meets warrants for a PXO requiring bump outs to reduce crossing widths. It will need to be determined if this is would be part of this WDBA/BNA scope or by City afterwards. Sandwich/South St. and Sandwich/Detroit have not been reviewed for PXOs at this time and are scheduled for review tentatively next year on whether they are warranted.</p>
<p>Access to Transit: Ensure convenient and safe access to public transit. This encourages the use of public transit, increases opportunities for physical activity, and provides an affordable and environmentally friendly travel option.</p> <p>Parks and Green Space: Provide mature tree canopy along Sandwich St. Work with local partners to promote the networks of trails, parks, and open spaces.</p>	<p>Speed limit changes, in and of themselves, do not tend to reduce operating speeds. The design incorporates speed reduction features that are appropriate for an arterial road, such as reduced lane widths and bump-outs.</p> <p>Collisions in this area were reviewed as part of the City's regular network screening. No collision "hot spots" were identified in the study area with the exception of the Sandwich/Roseland/Riverside/University intersection, which has been addressed with the construction of the roundabout.</p> <p>The City is currently proceeding with a red light camera program and an automated speed enforcement program. Locations for these devices will be chosen based on a city-wide review separate from this project.</p> <p>The City's School Neighbourhood Policy is due for review in 2021. The current policy, adopted in 2016, was developed prior to WECHU's change in emphasis in its school health program from active transportation to vaccinations; as part of the 2021 review, we will consider approaches to deal with the resulting gap in responsibility for encouraging school active transportation. This work will proceed separate from this project.</p>	<p>All existing bus stops will remain with new sidewalks.</p> <p>New trees are not a part of the scope.</p> <p>Various City departments, the Windsor Bicycling Committee, TWEPI, and other groups currently promote the City's trail network and its parks through various communication channels and outreach methods. This work will continue, with periodic adjustments as necessary, separate from this project.</p>
<p>Access to Transit: Ensure convenient and safe access to public transit. This encourages the use of public transit, increases opportunities for physical activity, and provides an affordable and environmentally friendly travel option.</p> <p>Parks and Green Space: Provide mature tree canopy along Sandwich St. Work with local partners to promote the networks of trails, parks, and open spaces.</p>	<p>Speed limit changes, in and of themselves, do not tend to reduce operating speeds. The design incorporates speed reduction features that are appropriate for an arterial road, such as reduced lane widths and bump-outs.</p> <p>Collisions in this area were reviewed as part of the City's regular network screening. No collision "hot spots" were identified in the study area with the exception of the Sandwich/Roseland/Riverside/University intersection, which has been addressed with the construction of the roundabout.</p> <p>The City is currently proceeding with a red light camera program and an automated speed enforcement program. Locations for these devices will be chosen based on a city-wide review separate from this project.</p> <p>The City's School Neighbourhood Policy is due for review in 2021. The current policy, adopted in 2016, was developed prior to WECHU's change in emphasis in its school health program from active transportation to vaccinations; as part of the 2021 review, we will consider approaches to deal with the resulting gap in responsibility for encouraging school active transportation. This work will proceed separate from this project.</p>	<p>All existing bus stops will remain with new sidewalks.</p> <p>New trees are not a part of the scope.</p> <p>Various City departments, the Windsor Bicycling Committee, TWEPI, and other groups currently promote the City's trail network and its parks through various communication channels and outreach methods. This work will continue, with periodic adjustments as necessary, separate from this project.</p>

	Extreme Heat Mitigation: Integrate shade and sun protection design features and landscapes. Include rest areas with benches in shaded areas consistent with the AAA concept.	New amenities are not a part of this scope of work. Streetscaping may be included as a separate community benefit by WDBA. More info to come. No Green Infrastructure anticipated.
PIC Webinar Question: davidhanna 04:10 PM	Resurface or rebuild road? This question has been answered live	Rebuild road section.
PIC Webinar Question: United Way Windsor-Essex 04:11 PM	How many trees will have to be removed as a part of this project. There are a number of mature trees next to Sandwich St. in some cases between the sidewalk and the road. Given the City's Tree Coverage study and the current tree count, will these mature trees be protected and preserved. If not will they be replaced with new tree plantings along this reconstruction area? This question has been answered live	Every effort to preserve ext trees. May be opportunity to add new trees.
PIC Webinar Question: davidhanna 04:12 PM	New Sewer resize or just reline? This question has been answered live	Relining Ex Sewers
PIC Webinar Question: Gord Bacon AM800 04:13 PM	This work along Sandwich that's set to begin, how will it effect pedestrians/ motorists and what kind of timeline are you looking at. When available to answer? This question has been answered live	Project to provide new road, curb, sidewalks/crosswalks (following ADA), multiuse trails, bike lanes all as benefit to pedestrian and motorists. Construction is anticipated sometime in the fall of next year however currently in the very early stages of design which could impact schedule.
PIC Webinar Question: davidhanna 04:15 PM	No street scape pedestrian improvements / landscaping or Green Infrastructure techniques? This question has been answered live	Streetscaping may be included as a separate community benefit by WDBA. More info to come. No Green Infrastructure anticipated.
PIC Webinar Question: Gord Bacon AM800 04:15 PM	Basically, will their be road and sidewalk closures and if so, how long? This question has been answered live	Yes. Every effort will be made to minimize disruptions through coordination with all parties. Emergency access and trash/recycle services will be encouraged to be maintained. Public Transportation impacts will need to be coordinated
PIC Webinar Question: Tamara Murray 04:17 PM	Many residents and Business owners are grateful for the improvements and road/sidewalk improvements but are concerned about parking. Bike lanes are welcomed but, parking for the businesses need to be addressed. Many in the small business community would like more dialogue on this, is this possible? This question has been answered live	Only one parking stall was identified for removal within the BIA due to revising the bus stop. All other parking stalls required to be removed are between Brock and Chappell.
PIC Webinar Question: carolinetaylor 04:19 PM	Will there be any mitigation measures to calm the smell penetrating from the Lou Romano Water Reclamation plant such as planting foliage around the plant etc.? This question has been answered live	Noted. feedback will be taken back for information.
PIC Webinar Question: davidhanna 04:19 PM	Same street lights and hydro pole or some u/g? GI is not bollards? This question has been answered live	No plan for Green Infrastructure nor upgrades to street lights. Any existing decorative street lights will be preserved. Also, no planned changes to ex. Hydro poles.
PIC Webinar Question: davidhanna 04:21 PM	Green Infrastructure is not bollards and garbage cans. GI mitigates and can treat stormwater This question has been answered live	Noted. No Green Infrastructure being considered at this time.
PIC Webinar Question: Anonymous Attendee 04:23 PM	Parking - BIA could engage NCCCE about off hours access and Dollarama about lot becoming BIA usage This question has been answered live	Noted. Only one parking stall was identified for removal within the BIA due to revising the bus stop. Recommendation for BIA.
PIC Webinar Question: Tamara Murray 04:24 PM	Follow up on parking, will the municipal parking at Brock and College SW and SE corners, the angled parking spaces be maintained? (Beside MacKenzie Hall). This question has been answered live	This is outside the scope of work. That cross street parking will not be impacted.
PIC Webinar Question: Mike Cardinal 04:26 PM	Given the opportunity to rebuild as new, why are old-thinking unprotected bike lanes used? Protected bike lanes are know to be far more safe and known to attract 80% of bikers (versus 5 to 10% who will accept the risk of using unprotected bike lanes). For example, within the same footprint, other cities design for the parked cars to provide a barrier between the bike lanes and car traffic. And, within the same overall width, other cities use barrier separated two-way (multi-use) bike lanes. Thanks for the painted bike lanes but their design is already outdated. This question has been answered live	The existing narrow ROW including existing infrastructure such as hydro poles do not allow for widening of Sandwich Street and this the reason for eliminating paring on one side of the street. However, every effort will be made to maximize the bike lane widths including for buffers. Design to follow City standards and Book 18. It is important to accommodate all ages and abilities. Also ATMP calls for two parallel routes. Sandwich to provide more direct travel to commuters, shopping and BIA and the other all ages and abilities on Russell Street (future plan). Book 18 would recommended unprotected bikes lanes for Sandwich Street.
PIC Webinar Question: Veronica Samek 04:27 PM	How will bike lane connect from Sandwich Street through the roundabout - sorry if this was already asked or answered! This question has been answered live	the area is classified as a very high archeological potential which complicates any reconstruction efforts. In addition the ROW is very narrow. There is a current plan in the works to include for bikes lanes. however will take more time to conduct due diligence to avoid excess project costs or delays.
PIC Webinar Question: davidhanna 04:29 PM	Wyandotte St in Walkerville Redo several years ago retained parking despite some community objection. Now even the Walkerville BIA fills in parking spaces with patio and wood walk byes'. Not let street parking overrule good street design with more trees? This question has been answered live	Parking is important the businesses for the BIA and this design does preserve existing parking within the BIA. In walkerville, now that fees have been dropped, business have applied for patios in the ROW overtop parking. It would still be an option for business's to pursue through the city should they wish.
PIC Webinar Question: davidhanna 04:41 PM	Will west portion trail area have new landscape features, new Tree canopy where missing etc. This question has been answered live	Noted. New trees will be considered for inclusion into the project.
PIC Webinar Question: davidhanna 04:42 PM	Consider roundabout at Ojibway Parkway juncture with Sandwich St. or better bike linkage? This question has been answered live	It was considered as part of the preliminary design, however was not included in this scope of work. There is a Bike linkage from
PIC Webinar Question: davidhanna 04:44 PM	Trail on drawings stops before reaching special Pedestrian / Cyclist Customs plaza? This question has been answered live	Sandwich MUT will connect to the northern portion to the recently built Perimeter Access Road that includes for a MUT.
PIC Webinar Question: davidhanna 04:51 PM	Russell St. AAA and Sandwich Town area subsidiary bikeway? This question has been answered live	Noted as correct.
PIC Webinar Question: davidhanna 04:53 PM	What improvements on Russell st? This question has been answered live	Russell St. is outside the scope of work at this time, however is still an important component to the ATMP.
PIC Webinar Question: Krizanovic, Tom 05:02 PM	Will these bike lanes be "protected bike lanes"? There is a lot of concern from cyclists like myself about being doored or over-taken from vehicles, and having planters or curbs that separate the bike lanes from the road. This question has been answered live	The existing narrow ROW including existing infrastructure such as hydro poles does not allow for widening of Sandwich Street and this the reason for eliminating paring on one side of the street. However, every effort will be made to maximize the painted bike lane widths including for buffers.
PIC Webinar Question: davidhanna 05:05 PM	Existing sidewalk planter improvements with less square edges? This question has been answered live	Not included in scope. However info will be taken back for consideration should new planters be considered.
PIC Webinar Question: Krizanovic, Tom 05:05 PM	Thank you re: protected bike lanes. Even pylons or plastic barriers that separate the road from the bike lanes would be appreciated if they can be considered as part of community consultation, similar to those installed on the new section of the Herb Gray Parkway that currently close off one of the lanes. This question has been answered live	The existing narrow ROW including existing infrastructure such as hydro poles does not allow for widening of Sandwich Street and this the reason for eliminating paring on one side of the street. However, every effort will be made to maximize the painted bike lane widths including for buffers.
PIC Webinar Question: MHSTC-Darren Winger 05:06 PM	the addition of a bike corral between Mill and Brock would be beneficial...and a 1st for Windsor This question has been answered live	Not part of this scope at this time. however city is working on a bike parking policy city wide which which include bike corrals.
PIC Webinar Question: davidhanna 05:11 PM	Enhance new heritage signs to heritage features off site from Sandwich St? This question has been answered live	May be included in additional WDBA Community Benefits efforts.
PIC Webinar Question: davidhanna 05:14 PM	"Armadillo" recycled material, rounded, intermittent bike lane protective signifiers? This question has been answered live	Scope included painted bike lanes and not protected due to the overall road width available.

PIC Webinar Question: carolinetaylor 05:15 PM	a bike coral should be situated in a highly visual area to decrease chance of bike thefts. This question has been answered live	Noted. ATMP identified corner clearance for bike corrals however require further review for each case.
PIC Webinar Question: davidhanna 05:17 PM	Detroit uses special cleaning equipment on bike lanes This question has been answered live	Protected bike lanes would require a significant increase to the overall bike lane width of which we do not have under the current conditions and scope of work. Separated lanes would require a min 2m clear width in order for snow plowing efforts.
PIC Webinar Question: Krizanovic, Tom 05:24 PM	For the lane of Sandwich that maintains both a bike lane and parking, could you alternate the parking and bike lane, so the parked cars can serve as a protector from driving traffic for the bike lane? Similar to the parking and bike lane setup on Michigan Ave in Corktown in Detroit? This question has been answered live	This would require more overall road width of which we don't have
PIC Webinar Question: Mike Cardinal 05:30 PM	Jeff Hagan: please look at how often PROTECTED BIKE LANES have been called for in the WDBA listening sessions and in these details. Please use your abundant skill to find solutions. For example: like in Montreal, Detroit, Toronto, and throughout Europe, we see two-way bike lanes, 2 meters or so wide, on one side of the roadway, protected by parked cars and a curb to keep the parked cars off the wider bike lane. Don't gaslight us. We see this for ourselves in successful cities. Build this for the future, not the minimums of the past! This question has been answered live	Not aware of WDBA listening sessions. Protected Bike lanes are not possible due to narrow ROW and other infrastructure in the way.
PIC Webinar Question: davidhanna 05:31 PM	WDBA promised info on H Gray Parkway Bike connection - still waiting 1 year later? This question has been answered live	The current cycling network within the ATMP do have many connections to the Herb Grey parkway including those that are being worked on currently (Sandwich, PAR and MUT to Mic Mac).
PIC Webinar Question: carolinetaylor 05:32 PM	Will you be installing planters along the sidewalk in the business area? They tend to be hazardous, they collect litter, and the plants in them need to be maintained and they never are. We could do without them. This question has been answered live	New planters are not included in this scope of work. At this time it includes protecting those that are existing.
PIC Webinar Question: Mary Ann Cuderman 05:33 PM	Russell St. is a truck route from Detroit St. west. How does this reconcile with Russell St. being designated AAA This question has been answered live	There are many examples of truck routes that are AAA facilities which are typically using a multiuse trail.
PIC Webinar Question: Mary Ann Cuderman 05:34 PM	Will the fountain at Mill and Sandwich be affected? This question has been answered live	The existing fountain is not to be affected as per the current plans.
PIC Webinar Question: davidhanna 05:42 PM	WDBA community Office reopening soon? This question has been answered live	Due to COVID all offices currently closed and employees working remotely except for contractors. In review for future re-opening. Available by Email info@wdbbridge.com or WDBA's 800 number.
PIC Webinar Question: davidhanna 05:45 PM	Great Project! Just like to have near future feedback considered seriously. This question has been answered live	Noted
PIC Webinar Question: davidhanna 05:52 PM	City doing new u/g RTB feature at Sandwich / Ojibway Parkway. Not directly WDBA scope but important that it could be new City landscape or structural Gateway feature	Noted. Info passed along to WDBA/BNA for design coordination.
PIC Webinar Question: davidhanna 05:54 PM	Battle of Detroit Plaque kind of hidden on other side of street there - improve This question has been answered live	Noted. Not included in this scope of work. May be considered as part of future WDBA streetscaping community benefit efforts.
PIC Webinar Question: davidhanna 05:55 PM	Stone pylon, covers in bushes - update? This question has been answered live	Noted
PIC Webinar Question: davidhanna 05:56 PM	Will any of industrial property owners assist in landscaping? This question has been answered live	Not in scope and typically not done during city rehab projects. However will be considered.
PIC Webinar Question: davidhanna 05:57 PM	Public Art potential can help City and their business identity This question has been answered live	Not included in scope. However may be included in other WDBA Community Benefits efforts.



Subject: Contracting Out Caretaking Services – Phase II- City Wide

Reference:

Date to Council: November 23, 2020

Author: Tom Graziano
Senior Manager, Facilities
519-253-2300 (2741)
tgraziano@citywindsor.ca
Facilities

Report Date: November 6, 2020

Clerk's File #: AS/12461

To: Mayor and Members of City Council

Recommendation:

THAT, in adherence with CR129/2016 regarding Contracting Out of Caretaking Services, this report from the Senior Manager of Facilities **BE RECEIVED**; and further,

THAT Council **PROVIDE DIRECTION** regarding Phase II of contracting out of caretaking as described in this report.

Should Council wish to proceed with Phase II of contracting out caretaking, the following recommendations are proposed:

*THAT Council **AUTHORIZE** Administration to enter into an agreement with GDI Services (Canada) LP for Caretaking (Janitorial) Services in the amount of \$ 534,139.84 per year plus non-recoverable HST, for a term of three years, with two one-year renewals; and,*

*THAT the Chief Administrative Officer and the City Clerk **BE AUTHORIZED** to sign the agreement, satisfactory in form to the City Solicitor, in technical content to the Commissioner of Parks, Recreation, Culture & Corporate Facilities, and in financial content to the City Treasurer; and,*

*THAT Council **APPROVE** the elimination of seven (7) Regular Full Time Caretaker positions (Job Code 543085); and,*

*THAT Council **APPROVE** one-time transitional funding from the Budget Stabilization Reserve estimated at approximately \$141,700 (subject to the actual attrition rate) to maintain one (1) Regular Full Time Caretaker (Job Code 543085) over complement positions to facilitate the continued employment of the Regular Full Time employee affected by the elimination of positions at City Hall campus, by redeploying the employee to perform caretaking duties in other buildings within the Facilities Division portfolio.*

Executive Summary:

N/A

Background:

In an attempt to reduce costs for taxpayers while maintaining service levels, on March 7, 2016, a report to council provided information regarding a process that could be implemented for contracting out of caretaking services currently being performed by City staff. This process was based on a phased approach that would avoid job losses for any Regular Full Time (RFT) Caretaker. The Council Resolution in this matter, CR129/2016, reads:

*“That administration **BE DIRECTED** to pursue Option A as contained in the report of the City Engineer dated February 24, 2016 to outsource caretaking without job loss for any regular full time employees; and,*

*That administration **EXCLUDE** the CUPE Local 82 caretakers and to report back at a later date should attrition accelerate and should the outsourcing be recommended; and,*

*That administration **BE AUTHORIZED** to notify the CUPE Local 543 Union that administration is exploring the contracting out of caretaking services without job loss for any regular full time employees; and,*

*That administration **BE AUTHORIZED** to prepare and issue a Request for Proposal in accordance with the city’s purchasing by-law for the contracting out of caretaking services; and,*

*That the recommendations of administration on whether and to whom to award the contracts **BE REPORTED** to City Council for tentative approval prior to entering into the union discussions; and,*

*That the collective agreement outsourcing steps including notice and provision of information to the respective Union **BE FOLLOWED** by administration with a confirmatory report to City Council.”*

The first phase laid out in Option A was the contracting out of caretaking services at Huron Lodge. Council approved the contracting out of caretaking services at Huron Lodge on January 6, 2017 (CR50/2017), resulting in an annual savings of approximately \$605,000. The contracted caretaking services at Huron Lodge began in June 2017 and has proven to be successful.

In order to outsource caretaking without job loss for any regular full-time (RFT) employees in phase one, a transition plan was implemented to enable impacted employees to move into other available regular full-time positions. The transition plan was estimated to take up to four years at a cost of up to \$1.9 million. The transition plan was completed earlier than anticipated, and as a result, the \$1.9 million originally set aside was not spent, and there was no cost to the Corporation for the transition.

Discussion:

Through attrition, six (6) Regular Full-Time (RFT) Caretaker positions have become vacant, presenting the opportunity to proceed to Phase II. As identified in the March 7, 2016 Council report, Phase II proposed outsourcing caretaking services at 13 locations that typically have one caretaker working at them on a full or part time basis. The caretakers that currently work at those locations would be reassigned to other locations.

In compliance with the Purchasing Bylaw 93-2012, RFP NO. 133-19 CARETAKING (JANITORIAL) SERVICES was written and advertised on Wednesday, October 2, 2019. The RFP included caretaking services, supervision, equipment and supplies for various City owned locations. The RFP closed on November 1, 2019 with two submissions being received.

The price of the proposal with the highest combined technical and financial score for RFP NO. 133-19 CARETAKING (JANITORIAL) SERVICES was higher than the cost of performing the services in-house with City staff, and the procurement process was cancelled. Following informal discussions with vendors, this may have been due to the thirteen (13) facilities included being in multiple locations, and many requiring less than 4 hours/day of cleaning per location.

The report to council of March 7, 2016, titled "*Response to City Council Inquiry – Caretaking*", proposed the next phase may include the City Hall campus (350 & 400 City Hall), and the Aquatic Centre campus (WIATC, Transit, Francois Baby House and Museum/Art Gallery), although not necessarily at the same time. Administration proceeded to issue a RFP to obtain prices for caretaking services at the City Hall campus only, providing vendors with a consolidated single location, with approximately 275,000 square feet of space.

Again, in compliance with the Purchasing Bylaw 93-2012, RFP 131-20 was written and advertised on Friday, October 2, 2020. A mandatory site meeting was held on Saturday, October 17, 2020 with five potential proponents in attendance. The RFP closed on October 26, 2020 with five submissions being received. The evaluation team scored the technical submissions from all five proponents. Two of the five proponents passed the technical scoring. The two remaining submissions were then scored based upon their financial submission. The highest combined technical and financial score was achieved by the proposal from GDI Services (Canada) LP.

The cost proposal submitted by GDI Services is less costly than the current operating budget for the same services performed by City employees. A financial analysis is included in the Financial Matters section of this report.

In recognition of the ongoing COVID-19 pandemic, the RFP included the requirement for daily disinfection of high-touch surfaces a minimum of three times per shift for the first year of the contract, and a minimum of one time per day in the following years. An hourly rate is included, should any additional work be required over and above the base contract duties.

Subject to Council approval, and in accordance with Council's direction, the outsourcing of caretaking services at City Hall would be implemented with no job losses for any regular full time employees. If the RFT Caretaker positions at City Hall were contracted

out, the current RFT and RPT Caretakers would be reassigned from City Hall to other locations. Caretakers at other locations can be assigned to City Hall if necessary for circumstances such as supporting special events that may not be part of the contracted services.

The City Hall campus currently has seven (7) Regular Full-Time caretakers and seven (7) Regular Part-Time caretakers assigned to it. Five (5) RFT caretaker positions, assigned to various locations, are currently vacant, and one employee has elected to retire on November 30, 2020, for a total of six (6) vacant RFT caretaker positions. Based on retirement eligibility there is a potential that another RFT caretaker may retire within the next two years. Similar to the contracting out of caretaking at Huron Lodge, a transition plan would include funding for one (1) RFT caretaker position until they retire, or leave through other forms of attrition.

Risk Analysis:

Should Council decide to proceed with awarding the contract to the successful proponent, there is risk in outsourcing as future tender prices may come back higher once the contract expires.

Should Council decide not to proceed with the award of contract, the current vacancies will need to be filled in order to continue to provide the service. This will delay the implementation of Phase II and further phases of contracting out of caretaking services.

Climate Change Risks

Climate Change Mitigation:

N/A

Climate Change Adaptation:

N/A

Financial Matters:

The following is a comparison of the price submitted by the successful proponent to the current annual operating costs using City employees.

2020 City Annual Operating Budget Dollars for Caretaking Services at City Hall Campus	
RFT (Regular Full-Time) Salaries	\$372,883.00
RFT Fringe Benefits (33%)	\$123,051.39
RPT (Regular Part-Time) Salaries	\$215,217.00
RPT Fringe Benefits (18%)	\$38,739.06
Supplies & Equipment	\$80,000
Overtime, Service Pay, Meal & Clothing Allowance	\$16,000
Total Budgeted City Expenditures	\$845,890.45
Proposed Annual Contracted Service from RPP 131-20	
RFP Cost Submission	\$ 534,139.84
Non-recoverable HST	\$9,400.86
Total RFP Expenses	\$543,540.70
Annual Operating Budget Saving	\$302,349.75

The difference between the RFP submission and the budgeted caretaking costs at the City Hall campus would result in an annual savings of \$302,349.75. The estimated savings over the duration of the three year contract would be a minimum of approximately \$907,000, with potentially a greater amount in savings should both parties agree to execute options to extend the agreement to a maximum of five years.”

The caretaking positions that would be eliminated all report to the Site Manager/Facilitator for City Hall Campus. The Site Manager would continue to be responsible for the facility maintenance and security at the City Hall campus, totalling approximately 275,000 square feet, as well as the management of the caretaking services. As a result, the Site Manager/Facilitator, along with other related costs to support the area and manage the remaining staff would be maintained and has not been included in this analysis.

The contract would be for 3 years at the bid price, with two 1-year renewal options. Should there be increases beyond the end of the contract term, Council will be notified and the amount will be reflected in future operating budgets.

Post-Retirement Benefits

These savings have been calculated on the basis of the seven (7) RFT positions being eliminated if caretaking is contracted out in Phase II. Should the positions to be replaced internally, the replaced positions would be eligible for post retirement benefits up to the age of 65. Based on past actuarial calculations, the present value savings for each position is approximately \$13,000. With seven (7) regular full-time positions not being replaced, this would result in an additional approximate savings of \$91,000 that has not been included in the table above.

For the purpose of simplicity, only the first generation of these job replacements have are included in this calculation. However, these savings are recurring for each generation of employees following the previous group's retirement.

Consultations:

Adrian Busa, Manager, Facility Operations

John Lechicky, Manager, Employee Relations

Mark Spizzirri, Manager, Operating Budget Control & Financial Administration

Tracey Ou, Financial Planning Administrator, Facilities

Alex Vucinic, Manager, Purchasing

Conclusion:

Council directed administration to proceed with the phasing of contracting out caretaking services. The RFP for Phase II of contracting out caretaking services at City hall results in a substantial annual savings to the City. Depending on the attrition rate, the retention of the one staff member could result in "one time" incremental costs to the city, as in prior outsourcing efforts. Administration continues to act at the direction of City Council on this matter.

Should Council elect not to approve award of the contract, a recruitment will need to take place immediately to fill the current vacancies in order to continue providing an adequate level of service for cleaning and maintaining the facilities.

Planning Act Matters:

N/A

Approvals:

Name	Title
Jan Wilson	Commissioner, Parks, Recreation, Culture and Corporate Facilities
Vincenza Mihalo	Executive Director of Human Resources
Valerie Critchley	City Clerk
Shelby Askin-Hager	City Solicitor
Joe Mancina	City Treasurer
Onorio Colucci	Chief Administrative Officer

Notifications:

Name	Address	Email

Appendices:



Subject: Corporate Security Plan and Risk Assessment-City Wide

Reference:

Date to Council: November 23, 2020

Author: Tom Graziano
Senior Manager, Facilities
519-253-2300 Ext.2741
tgraziano@citywindsor.ca
Facilities

Report Date: November 6, 2020
Clerk's File #: AS2020

To: Mayor and Members of City Council

Recommendation:

THAT the report from the Senior Manager of Facilities on the Corporate Security Plan and Risk Assessment **BE RECEIVED**; and further,

THAT the concept of a centralized Security Division within City Administration to be implemented in a phased approach **BE APPROVED**; and further,

THAT the implementation of the initial phase of a centralized Security Division **BE REFERRED** to the 2021 Budget deliberations.

Executive Summary:

In November 2018, following an RFP process, the City of Windsor hired a consultant to conduct physical security threat, vulnerability and risk assessments (TRVAs) at five downtown facilities, and review existing security policies, procedures and security delivery model. The project also included the creation of a Security Master Plan. The draft Security Master Plan deals with governance level issues and includes recommendations for an implementation plan and proposed security procedures that affect multiple departments. The proposed Security Master Plan is still in draft form pending review from internal stakeholders.

Subsequently, in 2019, Pricewaterhouse Coopers (PwC) initiated an audit to review the City's Security Programs & Safety Incident Management functions. The review considered the City's current security resources, policies, procedures, training, and awareness of staff.

There is federal and provincial legislation that requires measures be put in place to ensure employees are afforded a safe and secure place of work. In reviewing other

cities throughout Ontario, many have started moving to a centralized framework to focus on physical security.

While both the TRVA reports and the Security Master Plan offer recommendations for some physical security improvements, the overarching recommendation is to establish a centralized corporate security division. Currently security is decentralized and managed at a department level. A centralized security structure would provide a holistic approach that considers corporate needs, and provides consistency and standardization across all departments.

This report outlines options for implementing a Corporate Security Division using a phased approach, and seeks Council's direction.

Background:

As a valued corporate function, physical security has emerged as an important component of a municipality's overall risk mitigation.

The City of Windsor embarked on a project to study how to better protect its people and property. This means ensuring the physical safety and security of all its employees, elected officials, visitors to City facilities, and ensuring that valuable corporate assets are protected.

In October of 2018, a Request for Proposal (RFP No 139-18) was issued for a consultant to conduct a security assessment and master plan, which was awarded in November 2018. The scope of work included:

- Comprehensive security threat, vulnerability and risk assessments (TRVAs) of five (5) facilities in the downtown area, including 350 City Hall, 400 City Hall, the Windsor International Aquatic and Training Centre, the Windsor Museum/Art Gallery and the Windsor International Transit Terminal;
- Review of existing security policies and procedures, and recommend new ones as required.
- Create an overarching Security Master Plan; and
- Evaluate the existing security delivery model and assess the need for a dedicated internal security division, and if needed, provide recommendations for organizational structure, management, staffing size, positional responsibilities, and cost.

As part of the TRVAs, select city staff responsible for, associated with, or affected by the security at the five facilities were interviewed. City departments that participated in the interviews include representatives from Facilities, Recreation & Culture, Transit Windsor, Human Resources (Health & Safety), Social Services, Council Services, Licensing, Information Technology, the Corporate Leadership Team, the CAO and the Mayor's Office.

The consultant also conducted site visits of the five facilities to assess features such as the physical layout, the security systems, lighting, the site locations relative to surrounding neighbourhoods, and activities at each site.

In the Fall of 2019, PricewaterhouseCoopers (PwC) initiated an audit to review the City's Security Programs & Safety Incident Management functions. The review considered:

- Adequacy and sufficiency of security resources;
- Adequacy of policies and procedures in place and contingent plans in case of possible service failure; and
- Training and awareness of staff.

Most aspects of a physical security plan can be achieved by applying the six D's: Deter, Detect, Deny, Delay, Defend and Document. When taken in a broad context, these principles will aid in developing a security strategy. The table below gives examples of controls that aid with each principle.

Principle	Objective	Examples of Controls
Deter	Deter the criminal from attempting a breach	Fencing, lighting, signage, visible security cameras and security guards
Detect	Detect possible unauthorized intrusion in time to respond appropriately	Video surveillance cameras, intrusion alarms, duress alarms, motion lighting and security guards
Deny	Deny entry to unauthorized persons, while allowing authorized persons to enter	Access control system, locks, security guards and policies/procedures
Delay	Delay or slow down an active intrusion enough to force the intruder to give up, or allow the security team to respond	Fences, locked gates/doors and security guards
Defend	Defend through security personnel or police response that attempts to stop or apprehend the intruder	Security guards and communication devices (phones, radios)
Document	Documents to establish when and how controls are implemented, standards, roles, rights, authorities and responsibilities. Also includes incident reports to retain a record and details of every security incident, to aid in risk management and trending.	Policies, procedures, training manuals, incident reporting software, inspection logs.

Current Conditions

The City does not have a centralized corporate security department. That said there are positions that include varying degrees of responsibility for security as part of their duties in their service areas.

The following is a summary of the status of the City's physical security controls.

Oversight and Supervision

Oversight and supervision of security is managed at the department or facility level.

At the City Hall campus for example, the Facilities Department plays a lead role in overall security; however, some departments have added responsibility for the security of their suites, employees and clients. For example, Social Services independently contracts a security guard dedicated to their suites on the first floor of 400 City Hall Sq.

Other departments that have responsibility for managing some or all of the security of their facilities include Recreation, Huron Lodge, Social Services, Traffic Operations, Windsor Public Library, Transit Windsor, and Legal.

Security Guards

The current approach is decentralized, although most departments utilize third party security guards through a corporate contract.

The Facilities department has managed the procurement and administration of a corporate security guard contract. Facilities then works with departments that require guard services to provide contact information, and answer any questions they may have. Departments that use security guards have their own budgets for security, provide the guard's post orders (assignments) and schedules, and receive and pay invoices.

Regular users of security guard services include Facilities, Recreation, Huron Lodge, Social Services, Public Works, Traffic Operations, Windsor Public Library and Transit Windsor. There are nine (9) locations with contracted on-site guards on regular daily schedules. Others use the service on an ad hoc or occasional basis to provide security at events or respond to alarms.

The current security guard contract is valid until September 30, 2022, with an option to extend for two (2) additional one (1) year terms, upon mutual agreement of the parties.

In addition to contract security guards, an off-duty uniformed police officer is present at all City Council meetings and special meetings of Council, as a proactive measure to enhance the protection to the Mayor, Council, Administration and the public. Likewise, an officer is stationed in front of provincial offences court during court times.

Security Infrastructure

Security infrastructure includes electronic systems built into facilities intended to monitor and protect assets, as well as control access. Systems include video surveillance, card access, intrusion alarms and duress/panic alarms.

Security infrastructure also includes exterior physical barriers such as fencing, gates, walls, bollards, and landscaping, or building architecture such as lighting, doors and turnstiles.

Again, responsibility and budget for security infrastructure is decentralized. Facilities is responsible for managing a large percentage, but there are exceptions. For example, Public Works (Environmental Services, Maintenance, Traffic Operations, and Pollution Control), Transit Windsor, and Windsor Public Library all fund and manage their own systems.

Policies and Procedures

Policies and procedures guiding the consistent installation and use of security infrastructure is lacking, however there are some corporate standards. With most of the systems requiring connection to the network, and computer hardware and software, the IT Department plays a significant role in supporting the installation and management of security systems. Human Resources is currently responsible for programming access cards, initiating them for new employees, making changes to access as required, and terminating access when employees leave the corporation.

A few examples of existing security related corporate policies and procedures include:

- The City Hall Emergency Response Manual
- Corporate Security Systems Standards And Recommendations
- Facility Access and Identification Badge Policy and Procedures
- Notice of Trespass Policy

Discussion:

The purpose of this report is to seek Council's direction on the creation of a corporate security division, and approval for capital and operating funding required to do so.

Legal Requirements

There is legislation that supports the need for a greater focus on security as it relates to preventing harm and keeping persons safe.

The Occupational Health and Safety Act (OHSA) requires employers to provide their employees with working conditions that are free of known or potential dangers, and to take every precaution reasonable in the circumstances for the protection of a worker. Bill 168 came into effect in 2010 and amended the OHSA to include violence and harassment in the workplace. Implementing security measures is one way to protect workers from harassment and the potential of physical force in a workplace that causes or could cause physical injury, as well as protect members of the public that visit City facilities.

Bill C-45 was federal legislation that amended the Canadian Criminal Code and established new legal duties for workplace health and safety, and imposed serious

penalties for violations that result in injuries or death. The Bill provided new rules for attributing criminal liability to organizations, including corporations, their representatives and those who direct the work of others. Amendments added Section 217.1 to the Criminal Code which reads: *“Every one who undertakes, or has the authority, to direct how another person does work or performs a task is under a legal duty to take reasonable steps to prevent bodily harm to that person, or any other person, arising from that work or task.”*

The other relevant legislation is the Occupiers Liability Act which states that an *“occupier of premises owes a duty to take such care as in all the circumstances of the case is reasonable to see that persons entering on the premises, and the property brought on the premises by those persons are reasonably safe while on the premises.”* The Corporation is the occupier of its properties, having *“possession of the premises”*, and *“responsibility for and control over the condition of premises”*.

Our Peers

Many municipalities in Ontario have embarked on establishing a centralized security framework and division, including cities such as Toronto, Ottawa, Mississauga, Brampton, Guelph, Kitchener, Sudbury and London. Hamilton and Pickering established security divisions in the last two years.

The reporting structure varies with most reporting under Facilities or Corporate Services. A small survey of municipalities in Ontario shows that a number of municipal security division budgets are typically over \$1 million, and some in the Greater Toronto Area are in excess of \$7 million.

Results of Studies and Audits

In 2018, City Council approved funding to conduct security assessments of select facilities and develop a Security Master Plan. The Security Master Plan and recommended procedures are still in draft form pending a review with internal stakeholders. The plan deals with governance level issues and includes recommendations for a Security Implementation Plan and proposed security procedures that affect multiple departments. Security procedures can be confidential information and will require administrative review and updates on a regular basis.

Although some physical improvements are recommended, the overarching recommendation of the TRVA reports and the Security Master Plan is to establish a centralized corporate security division.

The PwC “Security Incident Prevention and Mitigation” audit of April 2020 produced the following four findings, and highlighted throughout the report the challenges of a decentralized responsibility for security.

1. Establish protocols for joint ownership of security policies and monitoring controls
2. Establish and define responsibilities to monitor contractual requirements
3. Enhance additional preventative or mitigation security protocols, measures or devices.

4. Enhance protocols for managing and documenting dynamic security plans

As previously noted, part of the security consultant's scope was to assess the need for a dedicated internal security division, with recommendations for an organizational structure. The consultant does recommend that the City establish a centralized corporate security division, and recommended a number of positions.

Administration reviewed the recommendations, and although they may form the ideal vision for a corporate security structure, they were evaluated considering the fiscal reality that the City faces. The recommendations were amended to provide a more viable phased approach for Council's consideration.

Proposed Security Division Structure

The consultant's report recommends that a centralized corporate security division include the following responsibilities, which are currently performed ad hoc, by various departments, or not at all.

- Establish and maintain security policies, procedures and guidelines;
- Manage access control which could include access cards and keys;
- Manage and maintain security infrastructure such as access control, alarm systems, duress alarms and video surveillance systems;
- Administer security related contracts such as alarm monitoring and security guard services;
- Manage guard services, including contracted guard services, and in-house security guards (if any);
- Maintain a centralized security incident database, and conduct analysis to assess trends and corporate needs;
- Provide security planning and prepare operating and capital budgets;
- Conduct and manage security investigations, audits and assessments;
- Coordinate and deliver security related training.

In order to deliver the above services, it is recommended to create a security control office at the City Hall campus, which would house dedicated security staff members and the required resources and equipment. Capital funds would be required to locate and fit-up such a control office.

The key position of a corporate security division is a Corporate Security Manager. The consultant's security report recommends, *"that a Corporate Security Manager be identified and hired to ensure that this individual is in the position of building the Corporate Security Department from the ground up during its phased roll out..."*

With the required staff and budget, the Corporate Security Manager would provide managerial oversight to a security division including:

- The development, execution and monitoring of security policies, procedures, and standards

- The division's operating and capital budgets,
- Staff resources, training, development and performance issues.
- The maintenance of the City's security systems including intrusion, CCTV and access controls.
- Incident trending and analysis.
- Assist in the investigation and resolution of any internal or third party claims related to security.
- Coordinate security assessments of facilities and other assets
- Maintain knowledge of regulatory and legislative requirements, collective agreements, best practices and emerging industry trends and make recommendations with respect to enhancements and implications.

To assist the Manager in daily duties, two positions are recommended. A Supervisor of Security Operations and a Supervisor of Security Systems & Standards.

The Supervisor, Security Operations would be responsible to supervise security guard staff and/or contracted services, issue post orders, respond to daily security issues, coordinate control and issuance of keys, monitor security video, maintain incident reporting, schedule and train security guards and coordinate security for council meetings and City events. With the support of security guards, this position would also provide close protective security for the Mayor, Councillors and senior administration if and when required. Ideally, there would be three (3) Supervisor, Security Operations positions to provide supervision and guidance to security guards, and attend after-hours meetings and events on the afternoon and night shifts and weekends.

The Supervisor, Security Systems and Standards would be responsible to develop, maintain and monitor security policies, procedures and standards, corporate security training, coordinate and manage installation and maintenance of security systems such as CCTV, access control, intrusion, and duress systems, as well as other physical security infrastructure such as fencing, gates, locks, doors, etc. and administer security contracts including security guard and alarm monitoring.

The consultant's security report also recommends hiring in-house security guards employed by the City. The report suggests that creating in-house security guard positions provides the benefit of greater consistency, quality and reliability of staff, with knowledge of City policies, protocols, and organizational structure, as well as greater control of training and performance.

Under s.2(4) of the *Private Security and Investigative Services Act, 2005*, a Security Guard is defined as "a person who performs work, for remuneration, that consists primarily of guarding or patrolling for the purpose of protecting persons or property." and must be licensed to act as a security guard.

Council should refer to the related Private and Confidential memo for additional information.

Security guards play a role in all of the six D's: Deter, Detect, Deny, Delay, Defend and Document. Duties may include:

- Patrolling and monitoring activities on City premises regularly to:
 - Prevent and detect unauthorized intrusion;
 - Ensure security of doors, windows, and gates;
 - Prevent and discourage criminal activity and ensure the environment is safe and secure;
- Enforce the laws, rules and policies of the site they are assigned to;
- De-escalate volatile situations;
- Evicting trespassers and violators and detaining perpetrators while following legal protocols before police arrive to take over;
- Controlling the entrance and departure of employees, visitors, vendors and vehicles according to protocols of a given site;
- Monitoring surveillance cameras to watch for any disruptions or unlawful activities;
- Respond to intrusion and duress alarms;
- Call police, fire or ambulance departments in cases of emergency
- Providing detailed reports on daily activities and any incidents that may have occurred;
- Arming, monitoring and testing of security systems.

While there are varying combinations of contracted vs in-house security guard combinations, it is recommended to have a core team of in-house security guards, and contract out the rest. Should Council choose to approve a limited number of guards, the priority location for in-house guards would be at the City Hall campus. Guards at the City Hall campus are present at each of the two building around the clock, seven days a week. To staff only the City Hall campus 24/7/365 year round would require at least eight Regular Full Time Security Guards, plus an additional two Regular Part Time Security Guards to cover sick and vacation time. The minimum would be three guards to cover the day shift on weekdays when the most activity is experienced.

If all regular guard posts were filled with in-house staff, at least 20 more RFT Security Guards and 8 RPT Security Guards would need to be hired in addition to the guards required at City Hall campus.

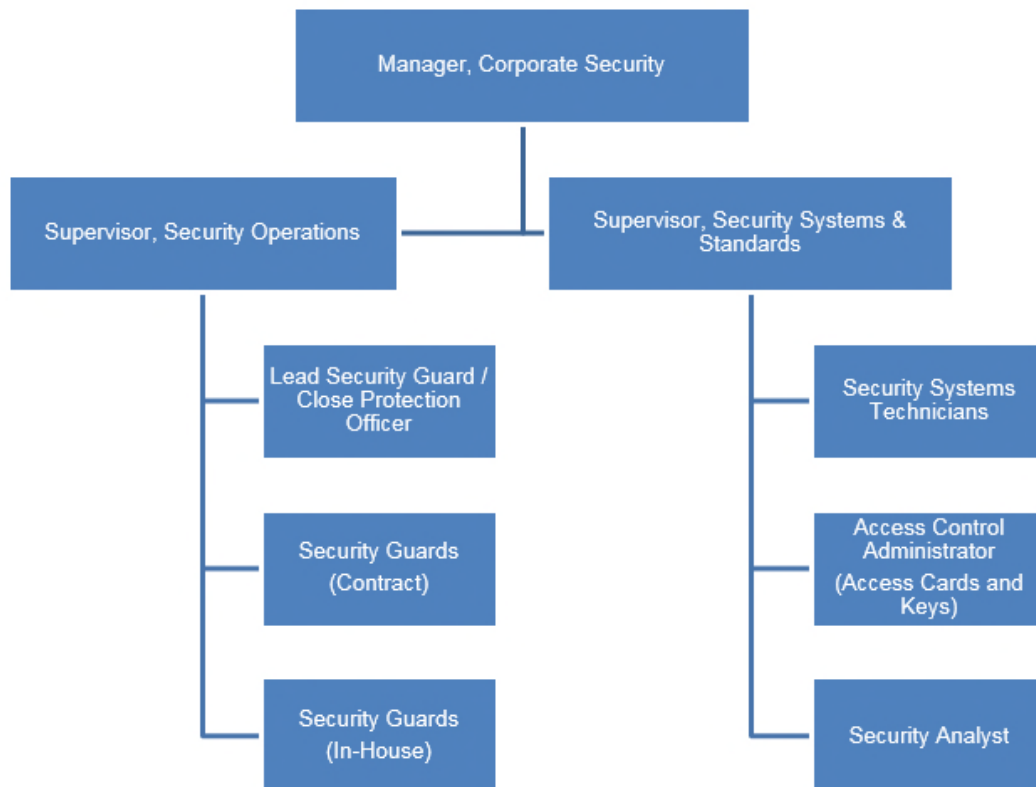
It should be noted that the rate for in-house security guards will be more costly than contract security guards, and will cost a premium of over \$30,000 per guard per year based on a 40 hour/week schedule at current contract rates.

Phasing

Recognizing that the operating budget required to implement a fully staffed security division would be overwhelming all at one time, a phased approach can be used, allowing council to increase the scope and size over a number of years. Below is an option for phasing in a corporate security division.

Many security related functions are currently performed by various departments. A centralized security division would continue to rely on, and work with other departments such as HR, Health & Safety, IT, Legal, Police and others to provide comprehensive security services. The implementation phasing plan will determine the amount of responsibilities that can be consolidated under a new division.

Below is a possible physical security organizational structure and one alternative for phasing in a corporate security division.



Phase 1

Starting with one position is more fiscally tolerable, but will provide limited resources to achieve results. Ideally all staff would be hired at the inception, but introducing the Corporate Security Manager, the Supervisor, Security Operations and the Supervisor, Security Systems & Standards positions would provide a practical foundation.

With these three positions in place, the following initiatives can begin:

- Centralize responsibility for existing and new security related policies, procedures, standards and guidelines;

- Centralize responsibility for security infrastructure corporately, including access control, alarm systems, duress alarms and video surveillance systems (may require that security budgets across the corporation be consolidated);
- Centralize responsibility for security related contracts such as alarm monitoring and security guard services;
- Establish and maintain a centralized security incident report database;
- Provide centralized resource for security planning;
- Conduct and manage security investigations, audits and assessments;
- Coordinate and deliver security related corporate training.

Phase 2

Three (3) in-house Security Guard positions for the weekday day shifts at City Hall.

Phase 3

Add in-house Security Guards as the budget allows.

Risk Analysis:

The recommendations in this report are meant to reduce risk. Failing to implement the recommendations leaves the Corporation more vulnerable to security breaches, thereby risking the health and safety of employees and the security of City infrastructure.

Continuing to operate without a centralized security structure will continue to result in inconsistencies in, or absence of, the application of security measures, data, policies and procedures. Any gaps in providing a centralized security structure could place people and assets at risk, and may be viewed as a negligence in duty to protect workers in the workplace.

Climate Change Risks

Climate Change Mitigation:

N/A

Climate Change Adaptation:

N/A

Financial Matters:

Financial commitments required to implement a centralized corporate security division include both operational and capital costs.

Annual Operational Costs

If Council wishes to establish a Security division, dedicated positions would be required. The table below provides annual costs for positions that may form part of a security structure. The titles and salaries are assumptions based on current organizational structures and similar positions, and may change following the job evaluation process.

Position Title	Annual Salary	Total with Fringe
Manager, Corporate Security	\$132,203	\$175,830
Supervisor, Security Operations	\$103,537	\$137,704
Supervisor, Security Systems and Standards	\$103,537	\$137,704
Security Guards	\$51,917	\$69,049
Administrative and Technical Support	\$86,351	\$114,846

If Phase 1 as described in the discussion section is implemented in 2021, the total annual salary budget for the 3 positions would be \$451,237 including fringe benefits. Additional budget would be required for vehicles, computers, uniforms, equipment, licensing, training, etc.

The various departments that currently use security guard services have operating budgets that could be used to offset part of the cost of in-house security guards.

In addition to annual operating costs, one-time capital costs would likely be required to create a Security Control Centre including expenditures for items such as furniture, lockers, computer equipment, and building renovations.

A follow-up report will be forthcoming with a detailed financial analysis should Council approve the creation of a security division.

Consultations:

Norm Synnott, Executive Director, Information Technology
Vincenza Mihalo, Executive Director, Human Resources
Julie Ryckman, Manager, Occupational Health & Safety & Wellness
Dana Paladino, Deputy City Solicitor - Purchasing, Risk Management, and Provincial Offences
Alina Sirbu, Executive Director/Administrator Huron Lodge
Andrew Daher, Executive Director, Employment and Social Services
Dwayne Dawson, Executive Director, Operations/Deputy City Engineer
Ray Mensour, Executive Director, Recreation and Culture

Pat Delmore, Executive Director, Transit Windsor
 Kitty Pope, Chief Executive Officer, Windsor Public Library
 Mark Spizzirri, Manager, Operating Budget Control & Financial Administration
 Tracy Ou, Financial Planning Administrator, Facilities

Conclusion:

This report is submitted to Council for information following a project to assess the physical security risks at five facilities, review of the current security model, and an audit by PwC that reviewed the City’s Security Programs & Safety Incident Management functions. The consultants for these projects concur there is a need for a centralized division responsible for physical security.

Currently security is decentralized and managed at a department level. A centralized security structure would provide an overarching holistic approach that considers corporate needs, and provides consistency and standardization across all departments.

Planning Act Matters:

N/A

Approvals:

Name	Title
Tom Graziano	Senior Manager Facilities
Jan Wilson	Commissioner of Parks, Recreation, Culture and Corporate Facilities
Shelby Askin Hager	City Solicitor
Valerie Critchley	City Clerk
Joe Mancina	City Treasurer
Onorio Colucci	Chief Administrative Officer

Notifications:

Name	Address	Email

Appendices:



Subject: Declaration of the Property Municipally Known as 680 Goyeau Street Surplus and Authority to Offer for Sale - Ward 3

Reference:

Date to Council: November 23, 2020
Author: Chris Carpenter
Lease Administrator
519-255-6100 ext 6420
ccarpenter@citywindsor.ca
Legal Services, Real Estate & Risk Management
Report Date: November 4, 2020
Clerk's File #: APM2020

To: Mayor and Members of City Council

Recommendation:

- I. THAT the following City of Windsor (the “City”) property **BE DECLARED** surplus:
 - Municipal address: **680 Goyeau Street** – situate on the northeast corner of the Tuscarora Street and Goyeau Street intersection
 - Legal Description: Part Lots 127 and 130 on Registered Plan 1303 and more particularly designated as Part 1 on Reference Plan 12R-27678
 - Lot size: 67.6 feet x 121 feet x 40.9 feet x 109.7 feet x 22.7 feet (20.6 m x 36.88m x 12.47m x 33.43m x 6.91m)
 - Lot area: 7,590.7 sq ft (705.2 m²) (herein the “**Subject Parcel**”); and,
- II. THAT the Manager of Real Estate Services **BE AUTHORIZED** to offer the property identified in Recommendation I for sale on the Multiple Listing Service (“**MLS**”) at a price to be determined by the Manager of Real Estate Services commensurate with an independent appraisal; and,
- III. THAT the City Solicitor **BE DIRECTED** to prepare and register a by-law to dedicate Part 2 on Reference Plan 12R-27678 as part of Tuscarora Street.

Executive Summary:

N/A

Background:

The City owns a paved 7,590.7 sq ft (705.2 m²) irregular shaped parcel of land improved with an approximate 200-sqft building and a billboard as shown on the aerial

diagram attached as Appendix A. It is legally described as Part Lots 127 and 130 on Registered Plan 1303 designated as Part 1 on Plan 12R-27678.

At its meeting of February 5, 2018, through CR52/2018, Council approved the vesting of the Subject Parcel following an unsuccessful public sale for tax arrears.

By-Law 52-2014 establishes a policy for the disposal of Land. Section 5.1.2 of Schedule "A" attached to By-Law 52-2014 requires that City-owned lands be declared surplus and that Administration seek authority to sell the lands:

5.1.2 Notification of the intention to declare Land surplus and the authority to offer the Surplus Land for sale will be printed in the "Civic Corner" of the Windsor Star.

Discussion:

The Subject Parcel was circulated to determine whether there is a municipal use for same. A municipal use has not been identified for Part 1 on Plan 12R-27678. Public Works has identified the need for a 6.1m X 6.1m X 6.91m corner cut off at the intersection of Goyeau Street and Tuscarora Street identified as Part 2 on Plan 12R-27678. Part 2 on Plan 12R-27678 will be retained by the City for consolidation into the Tuscarora Street right-of-way.

Outfront Media owns the billboard on the Subject Parcel. It has entered into a land lease agreement with the City (approved by CAO 88-2019). The sale of the Subject Parcel will include the buyer assuming the lease from the City.

Should the recommendations above be approved, Real Estate staff will list the property for sale on the MLS at a price to be determined by the Manager of Real Estate Services commensurate with an independent appraisal.

In the event Administration is successful in negotiating an acceptable offer, a report will be brought to Council or under Delegation of Authority, as appropriate, seeking authority to sell the Subject Parcel.

Risk Analysis:

There are potential liability issues should someone be injured on the land. Additionally, maintenance of the land drains scarce municipal resources. Selling the Subject Parcel will remove any associated liability issues and maintenance costs for the City.

Climate Change Risks

Climate Change Mitigation:

Declaring this property surplus does not pose a climate change risk.

Climate Change Adaptation:

Redevelopment of properties will include climate change considerations during re-zoning or site plan review.

Financial Matters:

As at December 31, 2019, there was a total of \$213,284 in expenses, primarily related to prior outstanding property taxes (\$200,000), which have been deferred to the vested capital project (7171059).

Any real estate and legal expenses related to the selling of the Subject Parcel, including the independent appraisal, will be charged to the vesting properties project 007-2950-9998-10533-7171059. Sale proceeds will be deposited to 007-6940-9900-10533-7171059.

The sale of the Subject Parcel will include the buyer assuming the lease from the City. If the sale occurs, annual lease revenues, amounting to \$4,292 in 2020, will no longer be credited to project 7171059.

Should sale proceeds be sufficient to cover the accumulated expenses, the remaining surplus funds will be retained within the vested capital project. Should sale proceeds be less than accumulated expenses, the resulting net loss will be funded through accumulated gains or from other identified funding sources. The actual results will be reported to City Council in conjunction with the approval of any offers of sale.

Consultations:

- Fire Department: John Lee
- Windsor Police Services: Barry Horrobin
- Public Works: responses consolidated by Juan Paramo
- Parks: Mike Clement
- Facilities: Tom Graziano
- Planning Department: Kevin Alexander
- Housing and Children Services: Tina Moore
- Janice Guthrie, Deputy Treasurer, Taxation & Financial Projects

Conclusion:

Declaring the Subject Parcel identified in Recommendation I surplus, and authorizing the Manager of Real Estate Services to offer it for sale on the MLS, will allow for the orderly sale of the Subject Parcel as it is not required for any municipal purpose.

Approvals:

Name	Title
Chris Carpenter	Lease Administrator (A)
Frank Scarfone	Manager of Real Estate Services
Shelby Askin Hager	City Solicitor, Corporate Leader, Economic Development and Public Safety
Joe Mancina	Chief Financial Officer/City Treasurer and Corporate Leader Finance and Technology
Onorio Colucci	Chief Administrative Officer

Notifications:

Name	Address	Email
James Scott, Manager of Parks Operations		jascott@citywindsor.ca
Mark Friel, Financial Planning Administrator		mfriel@citywindsor.ca

Appendices:

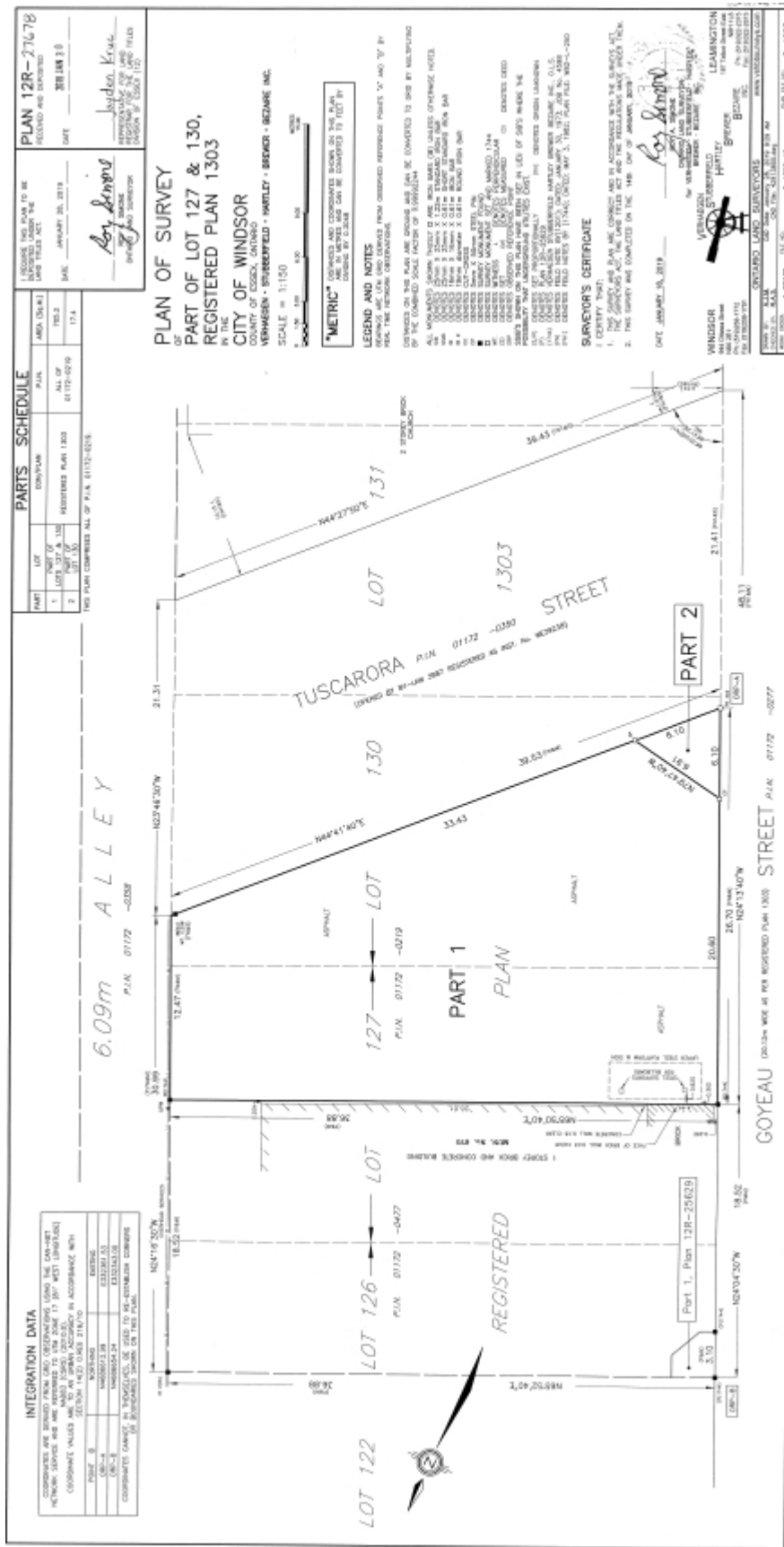
- 1 Appendix A - Aerial view of 680 Goyeau Street
- 2 Appendix B - Copy of Plan 12R-27678

Appendix A



Appendix B

Plan 12R-27678





Subject: Declaration of Improved Property Municipally Known as 1253-1257 Wyandotte Street East Surplus and Authority to Offer for Sale - Ward 4

Reference:

Date to Council: November 23, 2020
Author: Chris Carpenter
Lease Administrator (A)
519-255-6100 ext 6420
ccarpenter@citywindsor.ca
Legal Services, Real Estate & Risk Management
Report Date: November 4, 2020
Clerk's File #: APM2020

To: Mayor and Members of City Council

Recommendation:

- I. THAT the following City of Windsor (the "**City**") improved property **BE DECLARED** surplus:
 - Municipal address: **1253-1257 Wyandotte Street East** – improved property situate on the south side of Wyandotte Street East, west of Hall Avenue
 - Legal Description: Lots 403 and 404, Registered Plan 579
 - Approximate Lot size: 47 feet (14.3 m) x 118 feet (36 m)
 - Approximate Lot area: 5,565 sq ft (517 m²)
 - Improvements: Mixed Use Commercial Building (herein the "**Subject Property**"); and,

THAT the Manager of Real Estate Services **BE AUTHORIZED** to offer the improved property identified in Recommendation I for sale on the Multiple Listing Service ("**MLS**") at a price to be determined by the Manager of Real Estate Services commensurate with an independent appraisal.

Executive Summary:

N/A

Background:

The City owns an improved two storey combined use property located on the south side of Wyandotte Street East, west of Hall Avenue, legally described as Lots 403 and 404, Registered Plan 579, as shown on the aerial diagram attached as Appendix A.

The Subject Property was vested through CR378/2018 following an unsuccessful public sale for tax arrears.

By-Law 52-2014 establishes a policy for the disposal of Land. Section 5.1.2 of Schedule "A" attached to By-Law 52-2014 requires that City-owned lands be declared surplus and that Administration seek authority to sell the lands:

5.1.2 Notification of the intention to declare Land surplus and the authority to offer the Surplus Land for sale will be printed in the "Civic Corner" of the Windsor Star.

Discussion:

The Subject Property was circulated to determine whether there is a municipal use for same. A municipal use has not been identified. Due to the significant deterioration of the building Administration retained a structural engineer to inspect the property to ensure, the building is structurally sound and safe for interested parties to view the interior. The issues identified in the report were not structural in nature and do not require immediate repairs to be undertaken. However, there is extensive debris inside the building. In order to make it safe for interested parties to view the interior and to maximize the amount that the City will receive on the sale Administration will have the building cleaned out prior to listing the property for sale.

Should the Recommendations above be approved, the Real Estate staff will list the property for sale on MLS at a price determined by the Manager of Real Estate Services, commensurate with an independent appraisal. Should Administration successfully negotiate an acceptable Offer, a report will be brought to Council or under Delegation of Authority, as appropriate, seeking authority to sell the Subject Property.

Risk Analysis:

As a City-owned property, there are potential liability issues should someone be injured on the Subject Property. Additionally, maintenance of the property drains scarce municipal resources.

Climate Change Risks

Climate Change Mitigation:

Declaring this property surplus does not pose a climate change risk.

Climate Change Adaptation:

Redevelopment of properties will include climate change considerations during re-zoning or site plan review.

Financial Matters:

As of December 31, 2019, there was a total of \$217,987 in expenses, primarily related to prior outstanding property taxes (\$212,000), which have been deferred to the capital project (7171059).

Any real estate and legal expenses related to the selling of the Subject Property, including the independent appraisal, will be charged to the vesting properties project 007-2950-9998-10548-7171059. Sale proceeds will be deposited to 007-6940-9900-10548-7171059.

Should sale proceeds be sufficient to cover the accumulated expenses, the remaining surplus funds will be retained within the vested capital project. Should sale proceeds be less than accumulated expenses, the resulting net loss will be funded through accumulated gains or from other identified funding sources. The actual results will be reported to City Council in conjunction with the approval of any offers of sale.

Consultations:

- Fire Department: John Lee
- Windsor Police Services: Barry Horrobin
- Public Works: responses consolidated by Juan Paramo
- Parks: Mike Clement (now retired)
- Facilities: Tom Graziano
- Planning Department: Laura Diotte
- Housing and Children Services: Tina Moore
- Janice Guthrie, Deputy Treasurer, Taxation & Financial Projects
- Finance: Mark DiPasquale

Conclusion:

Declaring the improved property identified in Recommendation I surplus, and authorizing the Manager of Real Estate Services to offer the property for sale on MLS will allow for the orderly sale of the improved property that is not required for any municipal purpose.

Approvals:

Name	Title
Chris Carpenter	Lease Administrator (A)
Frank Scarfone	Manager of Real Estate Services
Shelby Askin Hager	City Solicitor, Corporate Leader, Economic Development and Public Safety
Mark Winterton	City Engineer
Joe Mancina	Chief Financial Officer/City Treasurer and Corporate Leader Finance and Technology
Onorio Colucci	Chief Administrative Officer

Notifications:

Name	Address	Email
James Scott, Manager of Parks Operations		jascott@citywindsor.ca
Mark Friel, Financial Planning Administrator		mfriel@citywindsor.ca

Appendices:

- 1 Appendix A - Aerial Image of Subject Property

Appendix A



1253-1257
Wyandotte Street
East



Council Report: C 221/2020

**Subject: Response to CQ 25-2020 – August 28, 2020 Flood Event ----
Ward 1 and 9**

Reference:

Date to Council: November 23, 2020
Author: Mark Winterton, P. Eng
City Engineer
519-255-6247 ext 6356
mwinterton@citywindsor.ca
City Engineer
Report Date: November 6, 2020
Clerk's File #: SW2020

To: Mayor and Members of City Council

Recommendation:

That Council **ENDORSE** the establishment of a Mandatory Downspout Disconnection Zone for the area bounded by Norfolk St. to the North, Dougall Ave/Howard Avenue to the East and the Herb Grey Parkway to the West and South; and,

That a Mandatory Downspout Disconnection Pilot Project, the boundaries to be determined by the City Engineer, **BE UNDERTAKEN** within the Mandatory Downspout Disconnection Zone with an upset limit of \$250,000 funded by Project ID#7199004 – Sewer Master Plan Implementation Project; and,

That the results of the Mandatory Downspout Disconnection Pilot Project **BE COMMUNICATED** to Council once sufficient data is available; and,

That Administration **BE DIRECTED** to review the Sewer and Coastal Master Plan and undertake measures that can be completed in the short-term including adjusting the pumping station operational elevation in Lake Como, with an upset limit of \$35,000 funded by Project ID# 7102003 – Southwood Lakes Shore Restoration; and,

That the City Engineer **BE DIRECTED** to bring forward a dedicated inflow and infiltration funding program to address inflow and infiltration measures; and,

That Council **APPROVE** the ditch survey and inspection of private culverts on residential streets in Ward 9 impacted by the flooding of the August 28, 2020 storm event to an upset limit of \$100,000 funded by ProjectID#7199004 – Sewer Master Plan Implementation.

Executive Summary: N/A

Background:

On August 28, 2020, over 100 mm of rain fell in some areas of the City over a short period of time causing substantial instances of basement flooding.

At the September 14th meeting of Council, Councillor Francis asked the following council question:

CQ 25-2020

As a result of heavy rainfall that occurred on Friday, August 28, 2020, many homes in South Windsor experienced significant basement flooding. In addition, to sustaining property damage, residents also incurred substantial loss of personal property. In many cases, the losses experienced will be far greater than what their insurance will cover. While other areas of the City received significant amounts of rain and experienced some basement flooding, the greatest concentration of basement flooding occurred in Ward 1. As a result, I request that Administration provide a full analysis of why and how flooding occurred in Ward 1 on August 28, 2020. Please include within your analysis all contributing factors from outside jurisdictions and further, please identify any immediate improvements necessary to mitigate future risks of basement flooding. Please also identify any elements of the Sewer Master Plan that, once in place, will reduce future instances of basement flooding within this area.

As part of the response to CQ 25-2020, information regarding the concentrated area of flooding which also occurred in Ward 9 will also be provided for Council's information.

Discussion:

The City of Windsor experienced a significant rainstorm event on August 28th, 2020. The City's rain gauges recorded amounts ranging between a low of **64 mm** on the City's east side (East Banwell Pumping Station) and **122 mm** recorded on the City's west side (Lou Romano Water Reclamation Plant). Rain gauges located in the west and south areas of the City recorded significantly more rain than the rain gauges located on the east side of the City. (See **Appendix A** for Rain Gauge Data).

While the rain event led to flooding in areas throughout the entire City (calls regarding basement flooding were received from each of the City's 10 Wards), significant, concentrated flooding occurred in the Roseland West neighbourhood and accounted for 241 of the City's **413** calls received by 311 reporting flooded basements. (See **Appendix B** for August 28, 2020 Storm Event Flooding Map).

Another smaller area of concentrated flooding (22 reports of basement flooding) also occurred in the southeastern corner of the Devonshire Heights neighbourhood.

The two areas of localized flooding were investigated as to why and how the flooding occurred and to determine if there were any identifiable issues that caused or contributed to flooding in these areas.

The cause of flooding was different in the two areas. Flooding in Ward 1 was determined to be largely as a result of stormwater entering the sanitary system while flooding in Ward 9 was largely related to overland stormwater flooding. Administration investigated the status of the City's stormwater infrastructure during the August 28th storm event. A summary is provided below:

Storm sewers

The City's storm sewers were inspected and no blockages were found. However, there were indications of surcharge (in both Ward 1 and Ward 9). The indication is that the storm sewers were overwhelmed due to the significant amount of rainfall received.

Ditches

Ditches were also observed to be full due to the significant amount of rainfall received. The high Detroit River water level backed up Turkey Creek, which is the outlet for various drains in the area including the Lennon Drain. As a result of the high Detroit River water level, the ditches aren't able to flow as quickly and don't discharge as well as when the river is at a lower level.

Roadways

In certain areas of the City, some roadways were also observed to be overwhelmed. Please see **Appendix C** for various pictures taken during the storm as well as corresponding pictures taken afterwards.

Catch basins

The sump of catch basins are on a four-year cleaning cycle. More frequent cleaning of catch basin sumps would not help as only the heavy material sinks. The flow of the drain is not impeded by material located in the sump.

Pollution Control Plants

During the August 28th, 2020 storm event both Wastewater treatment plants operated as designed with no major issues. All systems functioned to capacity as designed.

The primary treatment capacity of the Lou Romano Water Reclamation Plant (LRWRP) is 545,000 m³/d and the secondary treatment capacity is 436,000 m³/d. During the August 28th, 2020 storm event the LRWRP exceeded the primary and secondary treatment capacities and was overflowing. The primary overflow started at 2:48 a.m. and continued for 32 hours and received primary treatment and disinfection prior to leaving the facility. In addition, the LRWRP experienced a raw overflow starting at 5:20 a.m. and continued for 24 hours. The raw overflows received coarse screening, grit removal and disinfection.

The Little River Pollution Control Plant (LRPCP) has a rated capacity of 72,800 m³/d, during the rain event the plant was treating 2.0 times Dry Weather Flow as designed (115 m³/d). Similar to the LRWRP the LRPCP exceeded the Plant 1 & 2 treatment capacity and was overflowing an additional 90 m³/d raw influent to Little River. The

overflow started at 5:43 a.m. and continued for 37 hours. The Emergency Plant Bypass was opened at 7:35 a.m. and effectively bypassed any excess flow to Pontiac Pump Station.

Pumping stations

All Pumping Stations operated without loss of service.

Retention Treatment Basin (RTB)

The Retention Treatment Basin operated as per design with no operational issues.

Contributing Factors

Contributing factors to the flooding which occurred include:

Detroit River – High Water Level

With record Detroit River levels as well as high levels in Turkey Creek and other drainage outlets to the river, the amount of storm relief that existed in the past is no longer available. River gates are unable to open as early as they have in the past. More combined sewage needed to be treated by the plant. The August 28th event saw significant overland flooding on the City's West side. Overland flooding can further exacerbate the volume of flow directed to the plant as stormwater enters the sanitary system through manhole cover openings.

Herb Gray Parkway – Observed Blockage

While investigating the stormwater infrastructure within the City, it was discovered that a drain on the Herb Gray Parkway was partially obstructed. See **Appendix C** for a picture taken during the storm event showing the obstruction as well as a picture taken afterwards. While a blockage was observed, it is not currently known if or to what extent the blockage contributed to the flooding that occurred in Ward 1. Administration will be making the Parkway aware of this observation.

Climate Change

As a result of global climate change, extreme events including extreme precipitation and flooding have been occurring more frequently. These extreme events are expected to continue into the future.

Recommendations to Mitigate Future Risks of Basement Flooding:

Mandatory Downspout Disconnection

In order to reduce the amount of storm water entering the system in this neighbourhood, it is recommended that Council endorse the mandatory disconnection of downspouts within the area of the City hardest hit by flooding on August 28, 2020. The recommended area is that bounded by Norfolk Street to the North, Dougall Ave/Howard Avenue to the East and the Herb Gray Parkway to the West and South.

The City currently has an existing downspout disconnection program and began its city-wide Downspout Disconnection Program in January 2012. The program is currently free of charge, voluntary, and open to all residential homes interested in disconnecting their downspout(s). Participation is very low. To date approximately only 4% of homes have taken advantage of the program.

Disconnecting downspouts is a simple and inexpensive method of reducing the amount of storm water entering the sewer system during a rainstorm. The direct benefit to residents of downspout disconnection is realized by the delay of entry by runoff from roofs and impervious surfaces into the sewer during the most intense periods of the storm. This eases pressures on the system at critical times and directly reduces the potential of basement flooding. A further benefit to the community is realized by reduction in the frequency and severity of sewer surcharging due to stormwater infiltration.

In addition to the direct benefit of reducing the load on the sewer system and a proportionate reduction in the risk of basement flooding, indirect benefits include reduced water to the sewage treatment plants and reduction in treatment costs.

Under *By-Law 26-2008*, parts of the City may require mandatory disconnection. A mandatory disconnection program is a high priority recommendation within the Sewer Master Plan. While mandatory downspout disconnection was first adopted by City Council in 2008 and adopted for various neighbourhoods, implementation has been challenging to enact. The public good inherent in removing inflow to the sewer system is cited as compromising adherence to the Property Standards By-law and building drainage requirements. A report will be forthcoming from the Engineering Department at a later date that speaks to the history of the mandatory program and proposal to implement and address these issues.

Ward 1 - Mandatory Downspout Disconnection Pilot Program

On July 27, 2020, Council approved \$1,500,000 to proceed with immediate short term projects/programs which are to be charged to Sewer Master Plan Implementation Project. The projects/programs include:

- i. Mandatory downspout disconnection pilot program and monitoring
- ii. Contract to seal maintenance hole covers in low lying areas
- iii. Develop an educational program to outline measures that can be implemented on private property to reduce the risk of flooding

Work on these three items is underway. With respect to the Mandatory Downspout Disconnection Pilot Program, Administration is currently putting together the program which will:

- Identify the pilot area(s);
- Conduct pre-disconnection flow monitoring;
- Amend the Downspout Disconnection By-law (if necessary);
- Notify residents of the program through a mailing;
- Survey to determine existing conditions;

- Disconnect downspouts;
- Determine enforcement and consequences;
- Conduct post-disconnection flow monitoring;
- Pre and post flow monitoring to evaluate.

One of the pilot areas is proposed to be located within the Mandatory Downspout Disconnection zone bounded by Norfolk St. to the North, Dougall Ave/Howard Avenue to the East and the Herb Gray Parkway to the West and South. It is anticipated that the program will be ready to begin in the Spring of 2021.

While mandatory downspout disconnection has many benefits, some of the negatives include:

- Possible increase in surface flooding complaints (311, Building Department impacts)
- Possible flooding of adjacent properties
- Resident resistance to entering onto private property
- Additional staffing requirement to administer program
- Additional cost to administer the program

Once there are sufficient results to indicate the effectiveness of the Mandatory Downspout Disconnection Pilot program, the results will be communicated to Council.

Ward 9 - Ditch Survey and Inspection of Private Culverts

Ward 9 flooding was largely related to surface rain water flooding. The area hit hardest in Ward 9 is an area, which has ditches and privately owned and privately installed culverts.

With respect to the culverts, it is up to the homeowner to inspect and maintain them. It appears that some of the private culverts have collapsed or are collapsing and require maintenance. In addition, it appears that culverts differ in elevations. Since 1991, the City of Windsor has required permits related to the installation of driveways with culverts. Many culverts in this area pre-date 1991.

Administration proposes conducting a ditch survey and inspection of private culverts on residential streets in Ward 9 impacted by the flooding as a result of the August 28, 2020 to identify problem areas.

Inflow and Infiltration Reduction Program

When a large rainfall occurs, such as the August 28th event, rainfall can enter the City's sanitary sewer in a number of ways including direct sewer connections, infiltration, through manhole covers, etc. This rainfall can cause the sewer system to surcharge and back up into homes, resulting in basement flooding.

The City of Windsor has undertaken a number of efforts to address inflow and infiltration measures in recent years. These efforts have included downspout disconnection, catch

basin / inlet restrictor installation, fog and dye testing for cross-connections and sewer deficiencies, closed circuit camera work and data analysis.

A report regarding the establishment of a dedicated inflow and infiltration funding program to address inflow and infiltration measures will be brought before Council in early 2021.

Sewer and Coastal Flood Protection Master Plan

The total estimated cost of the recommended solutions identified in the Sewer and Coastal Flood Protection Master Plan is **\$4.9 billion**. The recommended solutions are not intended to be completed overnight but rather to be undertaken over many years. The recommendations provide a roadmap to follow over the next 50 years or more.

There are no major capital projects in the immediate vicinity of the area in Ward 1 that had the highest concentration of reported flooding from the August 28, 2020 event. That area is identified as being currently at risk under the 1:25 year storm (65mm).

However, flood Reduction Solutions contained in the Sewer and Coastal Flood Protection Master Plan are addressed by three strategies: 1) Source control, 2) Increased conveyance and storage capacity and 3) Increased downstream capacity. Elements of the Sewer Master Plan that, once in place, will reduce future instances of basement flooding within this area include:

1. Source control – reducing the amount of stormwater getting into the sanitary sewer system:

- Mandatory foundation drain disconnections for homes built before 1980
- Mandatory downspout disconnection
- Sanitary rain catchers (south of Dougall Parkway and east of Howard Ave) (immediate) and maintenance hole sealing (ongoing program)

2. Increased conveyance and storage capacity:

- Sub-trunk sanitary sewer storage on Dominion and Woodland, from West Grand to Roselawn Dr (medium priority; 20-29 years)
- Increase storage volume in Southwood Lakes (medium priority)

3. Increased downstream capacity:

- Construction of RTB at LRWRP (immediate priority – timing to be determined pending funding)

With respect to increasing storage volume in Southwood Lakes, one immediate step that can be taken to increase capacity in the short-term is adjusting the pumping station operational elevation in Lake Como. The Southwood Lakes area is identified by the modelling as an area where the depth of surface flooding on the road exceeds the target level of service (max. 300mm depth of surface flooding for 100-year storm, or on critical collector/arterial routes under the climate change storm). Adjusting the pumping station operational float in Lake Como will create additional storage meaning that additional capacity for stormwater in the pond instead of on the roads will be created. Decreasing the depth of stormwater storage on the roads will make them passable. The estimated cost for this is \$35,000.

It should be noted that this is an interim measure and that the medium term plan (20-29 years) is to create 25,000 cubic meters of additional storage by digging 3 of the ponds deeper, lowering the normal water levels, lowering sewer segments between Lake Grande to Lake Como and between Lake Laguna to Lake Grande, and lowering (replacing) the outlet structure at Lake Como. The estimated total for this work is \$12.3M.

General Measures Homeowners Can Undertake to Address Causes of Flooding

Homeowners are encouraged to address potential causes of flooding on their property. To assist homeowners, council approved a Basement Flooding Protection Subsidy Program (BFPSP) in 2011. To date, over 7,000 subsidy payments totalling over \$15.7 million have been issued. The program remains highly successful.

Subsidies for eligible work are subject to available funding and provided on a first-come, first-served basis. The Maximum Eligible Subsidy Limit is \$2,800 per Home/Unit. The program covers the:

- Installation of backwater valve(s). (Up to 100 percent of cost, \$1,000 maximum)
- Installation of a sump pump with sump pump overflow and disconnect floor drains – (Up to 100 percent of cost, \$1,750 maximum)
- Installation of only a sump pump overflow to discharge outside to surface. (Up to 100 percent of cost, \$300 maximum)
- Installation of a backwater valve and sump pump with sump pump overflow. (Up to 100 percent of cost, \$2,800 maximum)
- Disconnection of foundation drains from the floor drain and/or dye testing and camera work as required. (Up to 100 percent of cost, \$400 maximum)

Some other measures that residents can undertake to mitigate future risks of basement flooding include disconnecting downspouts, checking their lot grading and/or installing a rain garden.

Risk Analysis:

Climate Change Adaptation:

Significant rain events are likely to occur again and could lead to further instances of flooding in the City. While there will always be the risk of flooding, the risk can be mitigated by taking steps to reduce the amount of stormwater entering into the sewer system.

The short-term and long-term solutions contained in the \$4.9 billion Sewer and Coastal Master Plan identify actions that the City and homeowners can undertake to incrementally reduce the risk of future instances of basement flooding.

Undertaking more investigations into the causes of flooding within the City of Windsor can assist in the process of stopping infiltration into our sanitary sewer system which can reduce the instances of basement flooding. It also reduces the costs of excess storm water entering and being treated at our water reclamation plants.

Timing Risk:

Mandatory downspout disconnection, ditch survey and inspections, adjusting the pumping station operational elevation in Lake Como and inflow and infiltration measures will take time to implement. There is a risk that another significant rain event occurs which causes flooding in these areas (or other areas of the City).

Financial Matters:

Council approved \$1.5M to proceed with immediate short term projects/programs under the Sewer Master Plan Implementation Project (Project ID#7199004). One of the Mandatory Downspout Disconnection Pilot projects is recommended to be in the pilot area bounded by Norfolk St. to the North, Dougall Ave/Howard Avenue to the East and the Herb Gray Parkway to the West and South. This is estimated to cost \$250,000.

Adjusting the pumping station operational elevation in Lake Como is estimated to cost not more than \$35,000. This work is proposed to be funded from the Southwood Lakes Shore Restoration Project (Project ID#7102003).

The ditch survey and inspection of private culverts on residential streets in Ward 9 impacted by the August 28th, 2020 flooding event is estimated to cost \$100,000 and is proposed to be funded by the Sewer Master Plan Implementation Project (Project ID#7199004). This amount will permit the survey and inspection of approximately 20 blocks (both sides of the street).

The Sewer Master Plan Implementation Project (ID#7199004) and Southwood Lakes Shore Restoration Project (ID#7102003) each have sufficient funds to cover the costs outlined above.

Consultations:

Jake Renaud, Senior Manager, Pollution Control / Deputy City Engineer
Melissa Osborne, Senior Manager of Asset Planning
Phong Nguy, Manager, Contracts, Field Services & Maintenance
Dan Lunardi, Manager Inspections / Deputy Chief Building Official
Fahd Mikhael, Manager, Design & Development
Anna Godo, Engineer III
Andrew Dowie, Engineer III
Ian Wilson, Engineer II
Amy Olsen, Technologist II
Eric Bailey, Coordinator IMS
Dana Paladino - Deputy City Solicitor – Purchasing, Risk Management & Provincial Offences
Adnan Nabi, 311 Mapping Support Analyst

Conclusion:

The significant rainfall event that occurred on August 28th, 2020 resulted in substantial flooding in areas of Ward 1 and Ward 9. Administration conducted an investigation as

to how and why concentrated flooding occurred in these areas of the City. It was determined that the flooding in Ward 1 flooding was largely as a result of stormwater entering the sanitary system while the flooding in Ward 9 was largely related to overland stormwater flooding.

After investigating the conditions of the City's storm sewers, ditches, wastewater treatment plants, pumping stations and retention treatment basin it was determined that the City's infrastructure operated to capacity as designed.

The report contains some short-term recommendations for Council's consideration that, once implemented, will assist with alleviating future instances of significant basement flooding.

Planning Act Matters:

N/A

Approvals:

Name	Title
Mark Winterton	City Engineer
Dwayne Dawson	Executive Director, Operations
France Isabelle-Tunks	Senior Manager, Engineering / Deputy City Engineer
Natasha Couvillon	Manager, Performance Management and Financial Administration
Joe Mancina	City Treasurer
Onorio Colucci	Chief Administrative Officer

Notifications:

Name	Address	Email

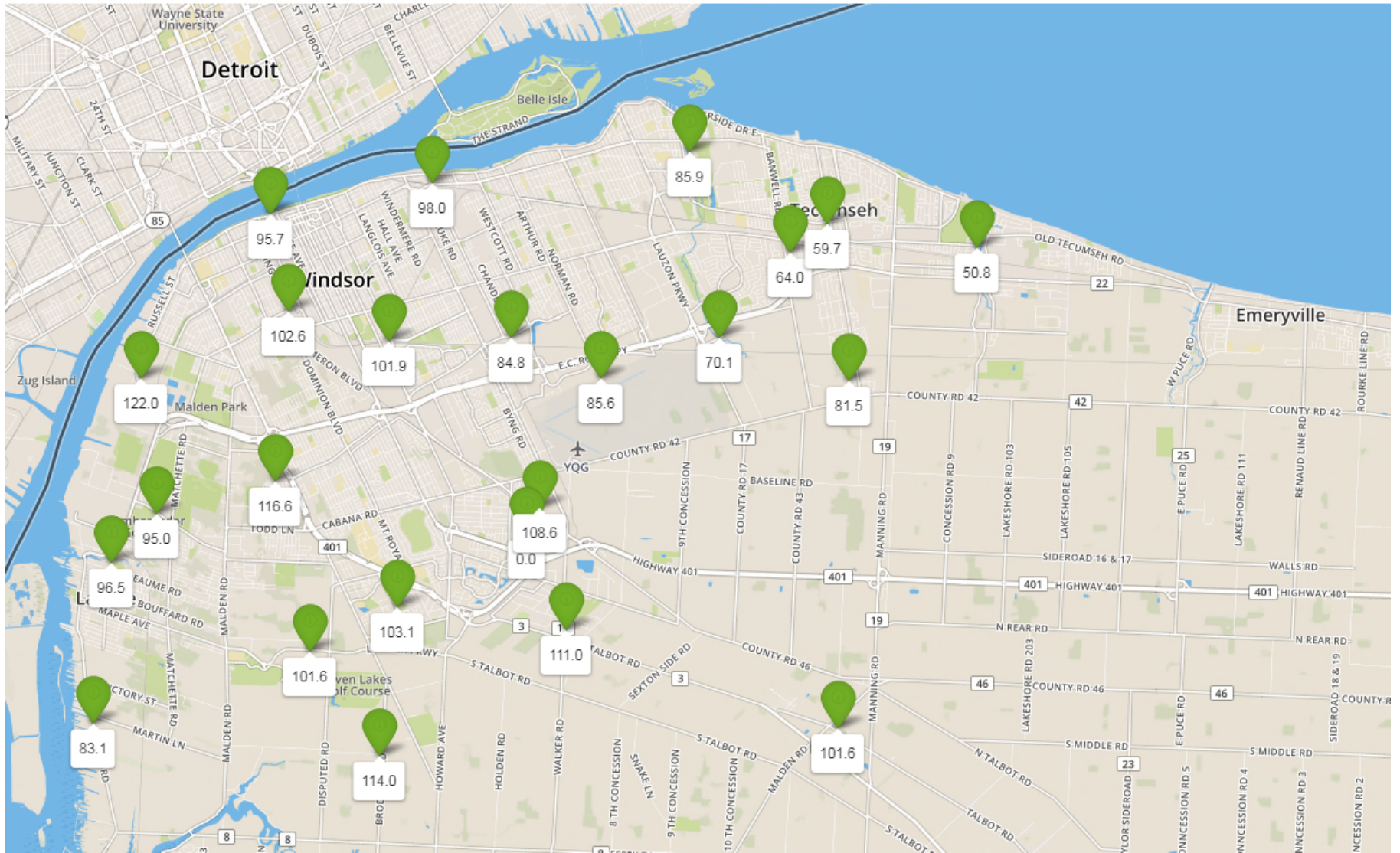
Appendices:

Appendix A – Rain Gauge Data (12:30 a.m. August 28 until 11:00 p.m. August 28)

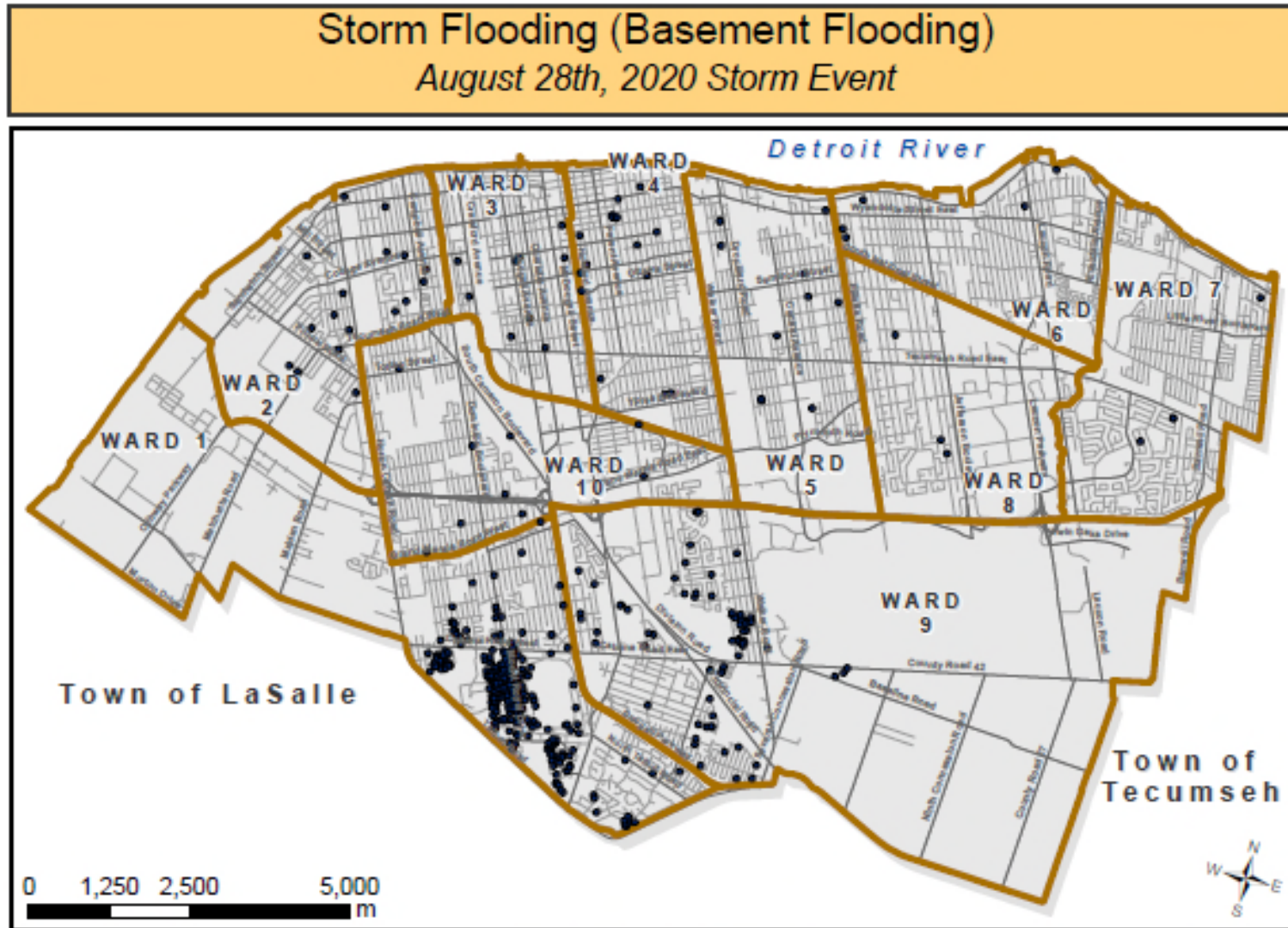
Appendix B – Storm Flooding (Basement Flooding) Map - August 28th, 2020 Storm Event

Appendix C – Pictures taken during and after August 28th, 2020 storm event

Appendix A – Rain Gauge Data (12:30 a.m. August 28 until 11:00 p.m. August 28)



Appendix B – Storm Flooding (Basement Flooding) Map - August 28th, 2020 Storm Event



Created by the 211/311 Call Centre



November 03, 2020

Appendix C – Pictures taken during and after August 28th, 2020 storm event

Grand Marais Drain



Street Flooding



Street Flooding



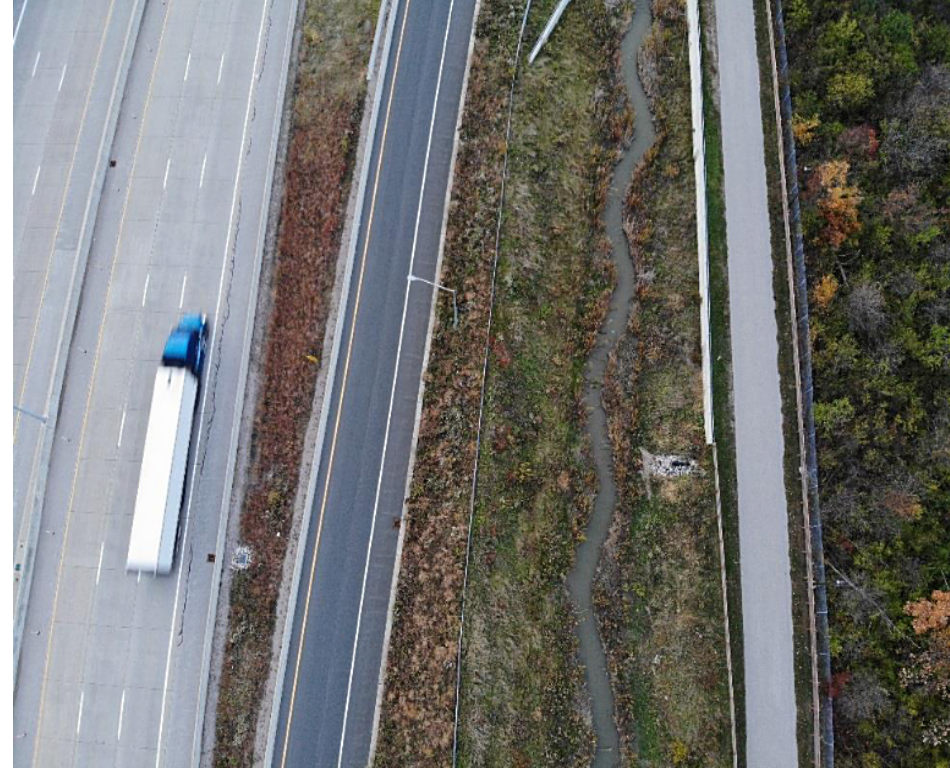
Lennon Drain



Sixth Concession Drain



Cahill Drain – Herb Gray Parkway



Cahill Drain – Herb Gray Parkway

