

THE CORPORATION OF THE TOWN OF AMHERSTBURG

BY-LAW NO. 2020 – 062

**By-law to provide for the John Parks Drain No. 2 Improvements based on the
Drainage Report by R. Dobbin Engineering Inc.**

WHEREAS a request for improvement of the John Parks Drain No. 2 was received under Section 78 of the Drainage Act;

WHEREAS Council of the Corporation of the Town of Amherstburg appointed an engineer for the purpose of preparation of an engineer's report for the John Parks Drain No. 2 Improvements under Section 78 of the Drainage Act;

WHEREAS Council of the Corporation of the Town of Amherstburg has authorized Josh Warner, P. Eng., to prepare a report and said engineer's report dated September 30, 2020, can be referenced as Schedule A, as attached hereto;

WHEREAS \$195,182.00 is the estimated cost of repairing and improving the drainage works;

WHEREAS the report was considered by the Amherstburg Drainage Board at the meeting held on November 3, 2020;

AND WHEREAS the schedule of assessment as presented by R. Dobbin Engineering Inc. was further revised for the Court of Revision held on January 5, 2021, and can be referenced as Schedule B, as attached hereto;

NOW THEREFORE the Council of the Corporation of the Town of Amherstburg hereby enacts as follows:

1. AUTHORIZATION

The attached report is adopted and the drainage works is authorized and shall be completed as specified in the report

2. BORROWING

The Corporation of the Town of Amherstburg may borrow on the credit of the Corporation the amount of \$195,182.00 being the amount necessary for the improvements of the drainage works.

3. DEBENTURE(S)

The Corporation may issue debenture(s) for the amount borrowed less the total amount of:

- (a) Grants received under section 85 of the Drainage Act;
- (b) Monies paid as allowances;
- (c) Commuted payments made in respect of lands and roads assessed with the municipality;
- (d) Money paid under subsection 61(3) of the Drainage Act; and
- (e) Money assessed in and payable by another municipality.

4. PAYMENT

Such debenture(s) shall be made payable within 5 years from the date of the debenture(s) and shall bear interest at a rate not higher than 1% more than the municipal lending rates as posted by The Town of Amherstburg's Bank's Prime Lending Rate on the date of sale of such debenture(s).

- (1) A special equal annual rate sufficient to redeem the principal and interest on

the debenture(s) shall be levied upon the lands and roads and shall be collected in the same manner and at the same as other taxes are collected in each year for 5 years after the passing of this by-law.

- (2) All assessments of \$1000.00 or less are payable in the first year in which the assessments are imposed.

Read a first and second time and provisionally adopted this 9th day of November, 2020.

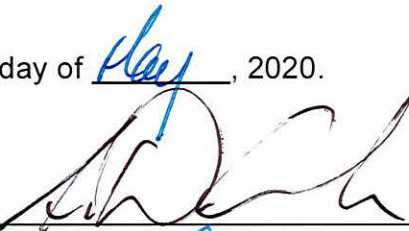


MAYOR – ALDO DICARLO



CLERK – PAULA PARKER

Read a third time and finally passed this 10 day of May, 2020.



MAYOR – ALDO DICARLO



CLERK – PAULA PARKER

September 30, 2020

The Mayor and Council
Town of Amherstburg
271 Sandwich Street South
Amherstburg, Ontario
N9V 2A5

Gentlemen and Mesdames:

Re: John Parks Drain No. 2 Improvements

As instructed, R. Dobbin Engineering Inc. has undertaken an examination of the John Parks Drain No. 2 in Lot 14, Concession 1 with regards to replacing a collapsed culvert east of Front Road South (County Road 20) and investigating the replacement of the culvert under and west of Front Road South (County Road 20) in the Town of Amherstburg (former Geographic Township of Malden).

Authorization under the Drainage Act

This Engineers Report has been prepared under Section 78 of the Drainage Act as per the request of an affected Landowner.

Section 78 of the Drainage Act states that, where, for the better use, maintenance or repair of any drainage works constructed under a bylaw passed under this Act, or of lands or roads, it is considered expedient to change the course of the drainage works, or to make a new outlet for the whole or any part of the drainage works, or to construct a tile drain under the bed of the whole or any part of the drainage works as ancillary thereto, or to construct, reconstruct or extend embankments, walls, dykes, dams, reservoirs, bridges, pumping stations, or other protective works as ancillary to the drainage works, or to otherwise improve, extend to an outlet or alter the drainage works or to cover the whole or any part of it, or to consolidate two or more drainage works, the Council whose duty it is to maintain and repair the drainage works or any part thereof may, without a petition required under Section 4 but on the report of an Engineer appointed by it, undertake and complete the drainage works as set forth in such report.

Existing Drainage

The existing John Parks Drain No. 2 outlets into the Detroit River via a 900mm diameter CSP in Lot 14, Concession 1 and continues easterly for approximately 24m. It continues

as a concrete box culvert to the east side of Front Road South. A concrete pipe connects to the east end of the concrete box culvert and heads easterly to the junction box at Station 0+061. From the junction box a 900mm diameter CSP continues easterly to Station 0+090. An open channel then continues north-easterly to the center of Lot 13, Concession 1. The John Parks Drain No. 2 then continues generally northerly as a tile drain to the center of Lot 9, Concession 1.

Under an Engineer's Report prepared by A. Baird, P.Eng. dated August 11, 1913 the drain was established under the provisions of the Ditches and Watercourse Act.

Under an Engineer's Report prepared by C. G. R. Armstrong, P. Eng. dated April 30th, 1948 the existing tile drain was replaced and extended downstream, the open channel was improved and the culvert across County Road 20 was cleaned.

Under an Engineer's Report prepared by C. G. R. Armstrong, P. Eng. dated October 27, 1951 the enclosure pipe at the outlet was extended. This report notes that the culvert beneath County Road 20 is a concrete box structure, joining to an existing 36" (900mm) diameter corrugated steel pipe (CSP) to the west of the roadway. The CSP was further extended by a distance of 46 feet to the River under this report. The pipe at the outlet was supported by a concrete slab and white oak planking.

Under an Engineer's Report dated November 14, 1957 prepared by C. G. R. Armstrong, P. Eng. the open portion of the drain was cleaned.

Under an Engineer's Report dated September 15, 1969 prepared by W. J. Settingington, P. Eng. the tile drain was improved and extended downstream and the open channel was improved with a cleanout and decreased side slopes.

Under an Engineer's Report dated September 9, 1991 prepared by N.J. Peralta, P. Eng. the culvert east of County Road 20 was replaced, a steel flap gate was installed at the outlet to the Detroit River and other improvements to the open channel and tile drain were made upstream. The allowance for the easement along the culvert east of County Road 20 was based on a 7.32m width.

Drain Classification

The John Parks Drain No. 2 is currently a "Not Rated" drain along its length according to the Department of Fisheries and Oceans (DFO) classification as presented by the Ontario Ministry of Agriculture, Food and Rural Affairs' Agricultural Information Atlas.

This report and the DFO's Request for Review Form were submitted on May 13, 2020 to ensure compliance. A letter of advice was issued from the DFO on July 13, 2020 and is included in Appendix B of this report.

The Essex Region Conservation Authority (ERCA) received a draft of this report on June 9, 2020. Email correspondence from ERCA was received on June 26, 2020 stating that the draft proposal satisfies the office's concerns with respect to Section 28 of the Conservation Authorities Act. The Town of Amherstburg will be required to submit a permit application and the final report.

Onsite Meeting

An onsite meeting was held on October 17th, 2019. The following were present:

- Josh Warner (Engineer, R. Dobbin Engineering)
- Shane McVitty (Drainage Superintendent, Town of Amherstburg)
- George Vandenbrink (Landowner)
- Landowner of #1247 Front Road South
- Peter Crump (Landowner)
- Lynwood Martin (Landowner)
- Bill Ladell (Landowner)
- Maureen Flanagan (Landowner)
- Dave Maxwell (Landowner)
- Chris Hadrian (Landowner)
- Steve Gyori (Landowner)
- Val Danese (Landowner)
- Leon Bleszk (Landowner)

The following was discussed at the site meeting:

- General discussion of the Drainage Act and Landowners rights under the Drainage Act.
- General discussion of the request for a Section 78 report under the Drainage Act.
- The portion of pipe east of Front Road South (County Road 20) that was installed under a 1991 report has collapsed and needs to be replaced.
- The property west of Front Road South (County Road 20) has experienced some depressions and the Landowner would like them to be investigated to determine the best course of action for the enclosure on the property. The exact alignment of the pipe is unknown and may be very close to the residence.
- Due to the high-water levels in the Detroit River, R. Dobbin Engineering would not be able to organize a video of the drain to determine its condition.

- There was no current data of the existing structure under Front Road South (County Road 20). Therefore, the existing structure will need to be investigated for possible replacement.
- Landowners expressed some concerns about the upstream tile's ability to convey water. Landowners also expressed concerns with the potential costs should this portion of the drain be investigated through an engineer's report. It was discussed that the closed upper portion of the drain would be investigated through maintenance.
- R. Dobbin Engineering will organize a hydro-vac to expose the utilities and determine the alignment of the existing pipes.
- Landowners also expressed concerns with water backing up and would like to investigate different options for backwater prevention.

Discussion

On December 4, 2019, R. Dobbin Engineering surveyed the drain and located the utilities and pipe alignment. It was determined that the depression on the property west of Front Road South (County Road 20) was due to a private drain rather than the John Parks Drain No. 2. It was determined that there exists an unknown size concrete box culvert under Front Road South (County Road 20) that connects to the existing junction box on the east side of Front Road South via a concrete pipe.

The last 14m (46 feet) of the corrugated steel pipe (CSP) outletting into the Detroit River was installed under a report dated in 1951. The remainder of the CSP and concrete box culvert west of the junction box (Station 0+061) have no records of being installed under the Drainage Act and were installed prior to 1951. The CSP east of the junction box was installed under a report dated in 1991. This CSP is currently collapsing as there are large sink holes along the culvert's length. No noticeable depressions exist west of Front Road South (County Road 20) along the John Parks Drain No. 2. That being said, the Ministry of Transportation of Ontario's gravity pipe manual estimates the service life of a corrugated steel galvanized culvert in this area to be between 25 and 35 years. Armtec estimates the service life of galvanized culverts to be 50 years under ideal conditions. The Steel Drainage and Highway Construction Products handbook states a galvanized culvert should last a minimum of 50 years depending on the soils and water. It is R. Dobbin Engineering's opinion that due to the age of the pipe and the state of the current pipe east of the junction box that the entirety of the CSP west of Font Road South (County Road 20) should be replaced under this report.

The Landowners of parcel number 4 and 5 were contacted about the removal of the culvert between their properties in order to reduce costs. Both Landowners were agreeable. The County of Essex was also contacted and they did not have any issue with leaving the majority of the existing closed portion of the drain east of the junction box at

Station 0+061 open. They did request that a short piece of pipe extend east of the junction box to direct flow and minimize erosion to the side slopes. There exists a gas line east of the junction box that will benefit from an enclosure in this area as well as it will increase its cover.

The Landowner of parcel number 5 expressed concerns with his existing sump pump connection. Due to having his sump pump connected into the existing collapsed portion of the drainage works and the rising Detroit River water levels, the drain is not providing a sufficient outlet for his sump pump. R. Dobbin Engineering is proposing to improve the backwater preventor, to alleviate some of the excess water in the drain, at the outlet to the Detroit River and leave the collapsed portion of the drainage works as an open channel. However, R. Dobbin Engineering recommends discharging the sump pump to grade to minimize the effect of the river levels and to provide better quality control. This shall be done privately, outside of this report.

Recommendations

It is therefore recommended that the following work be carried out:

1. The culvert east of the junction box at Station 0+061 shall be removed and replaced with an open channel and shorter culvert with a concrete block end wall. The junction box and pipe south of the junction box shall also be replaced. The junction box shall be 1200mm x 1500mm and the pipe shall be a 525mm diameter HDPE Pipe.
2. The box culvert between Stations 0+024 and 0+054 and concrete pipe between Stations 0+054 and 0+061 shall be left in place and incorporated as part of the John Parks Drain No. 2. Provisions for future replacement shall be set out in this report.
3. The corrugated steel pipe between Stations 0+000 and 0+024 shall be replaced with 1050mm diameter HDPE pipe complete with a concrete block headwall and a backwater preventor.
4. Brushing and Cleaning of the existing open drain between Stations 0+090 and 0+118.

Design

The proposed John Parks Drain No. 2 culvert has been designed to accommodate a minimum of the 1:25 year storm event. Hydraulically, the drain is governed by the Detroit River water levels. In order to utilize the capacity of the drain during elevated water levels, a pump system would be required. This alternative was not analyzed as the Landowners at the on-site meeting expressed concern with the upfront and re-occurring costs of a pumped system.

Estimate of Cost

It is recommended that the work be carried out in accordance with the accompanying Specification of Work, Plans and Profiles, which form part of this Report. There has been prepared an Estimate of Cost in the amount of \$195,182.00, including the cost of engineering. Appearances before appeal bodies have not been included in the cost estimate. A Plan has been prepared showing the location of the work and the approximate drainage area.

Assessment

As per Section 21 of the Drainage Act, the Engineer in his report shall assess for benefit and outlet for each parcel of land and road liable for assessment.

Lands, roads, buildings, utilities, or other structures that are increased in value or are more easily maintained as a result of the construction, improvement, maintenance, or repair of a drainage works may be assessed for benefit. (Section 22)

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. The assessment for outlet shall be based on the volume and rate of flow of the water artificially caused to flow into the drainage works from the lands and roads liable for such assessments. (Section 23)

The Engineer may assess for special benefit any lands for which special benefits have been provided by the drainage works. (Section 24)

A Schedule of Assessment for lands and roads affected by the work and therefore liable for the cost thereof has been prepared as per the Drainage Act. Any affected public utility or road authority shall be assessed, as per Section 26 of the Drainage Act, any increased costs for the removal or relocation of any of its facilities and plant that may be necessitated by construction or future maintenance and repair work. The cost of any fees for permits or approvals or any extra work required by any affected utility or road authority shall be assessed to that organization requiring the permit, approval, or extra work.

The proposed work has generally been assessed in the following manner, including all estimated fees, taxes and disbursements:

1. In Accordance with Section 26 of the Drainage Act the increased cost of the drainage works caused by the existence of the public utility or road authority has been assessed to the public utility or road authority. This includes costs for engineering of future replacements, increases in construction cost as a result of the public utility or road authority and the costs to locate and survey the public utilities.
2. The cost of reconnecting sub-surface drains and the removal and reinstallation of any private gardens and fences has been assessed to the benefitting property as a special benefit assessment.
3. The turbidity curtain, dewatering, rip rap at the outlet and the increased cost to supply and install concrete pipe at the outlet has been assessed as an outlet assessment to upstream lands and roads based on equivalent hectares.
4. The remainder of the culvert, the headwall at the outlet and related work between Stations 0+000 and 0+024 has been assessed with 40% of the estimated cost assessed as a benefit assessment to parcel number 2 and the remainder assessed as an outlet assessment to upstream lands and roads based on equivalent hectares.
5. The engineering and cleaning out of the existing box culvert has been assessed with 60% of the estimated costs assessed as a benefit assessment to the owner of Front Road South (County Road 20), 10% of the estimated costs assessed as a benefit assessment to parcel number 2 and the remainder assessed as an outlet assessment to upstream lands and roads based on equivalent hectares.
6. The proposed junction box at Station 0+061 and the culvert between Stations 0+061 and 0+067 has been assessed with 66% of the estimated cost assessed as a benefit assessment to the owner of Front Road South (County Road 20) and the remainder assessed as a benefit assessment to the gas utility. The concrete block headwall at Station 0+067 and the culvert and headwall to the south of the junction box at Station 0+061 has been assessed to the owner of Front Road South (County Road 20).
7. The proposed open channel and related work between Stations 0+067 and 0+090 has been assessed with 20% of the estimated cost assessed as a benefit assessment to parcel number 4, 20% of the estimated cost assessed as a benefit assessment to parcel number 5, and the remainder assessed as an outlet assessment to upstream lands and roads based on equivalent hectares.

8. The backflow preventor at the outlet has been assessed with 10% of the estimated cost assessed as a benefit assessment to parcel number 4, 10% of the estimated cost assessed as a benefit assessment to parcel number 5, and the remainder assessed as an outlet assessment to upstream lands and roads based on equivalent hectares.

Allowances

Under Section 29 of the Drainage Act, the Engineer in their report shall estimate and allow in money to the Owner of any land that it is necessary to use for the construction or improvement of a drainage works or for the disposal of material removed from a drainage works. This shall be considered an allowance for right of way. Allowances under Section 29 of the Drainage Act for parcel number 2 have been granted under this report at a rate of \$40,000/Ha for the portion of the drainage works that has not yet been incorporated as part of the John Parks Drain No. 2. Typically, a conversion of a portion of a drainage works from a culvert or tile to an open channel would result in allowances under Section 29 of the Drainage Act due to a larger right of way. However, as an allowance to provide a 7.32m right of way was established under the 1991 John Parks Drain No. 2 report for this section R. Dobbin Engineering feels that width is sufficient. An allowance for future maintenance has been provided under Section 29 of the Drainage Act to parcel number 4.

Under Section 30 of the Drainage Act, the Engineer shall determine the amount to be paid to persons entitled thereto to damage, if any, to ornamental trees, fences, land, and crops occasioned by the disposal of material removed from a drainage works. This shall be considered an allowance for damages. Section 30 allowances shall be provided under this report to the Lands where the work is taking place for damages/removal of ornamental trees and land. Allowances under Section 30 of the Drainage Act are based on \$4,000/ Ha.

Access and Working Area

Access for construction and future maintenance of the drainage works shall be from Front Road South (County Road 20) and generally along the length of the drainage works. With co-ordination and approval from the Landowner and Drainage Superintendent or Engineer access to the Detroit River may be through the existing concrete driveway at parcel number 2. Any damage to the driveway shall be repaired at the expense of the Contractor to the pre-construction condition. Access for construction and future maintenance and repair east of Front Road South (County Road 20) shall be from the existing laneway at parcel number 4 and immediately east of the roadside ditch. This access shall be restricted to a width of 6m.

The working area for construction and future maintenance of the drain between Stations 0+000 and 0+036 (within the property limits of Parcel No. 2) shall be restricted to a width of 10m. Where buildings and sheds exist, this working area shall be reduced to account for them. The working area for construction and future maintenance between Stations 0+036 and 0+061 (within the County Road 20 right of way) shall be restricted to a width of 20m normally centred on the drainage works. The working area for construction between Stations 0+061 and 0+090 shall be restricted to a width of 20m, with 15m south of the centreline of the existing culvert and 5m north. The working area for future maintenance between Stations 0+061 and 0+067 shall be restricted to a width of 20m normally centred on the drainage works. The working area for the future maintenance of the open channel between stations 0+067 and 0+090 shall be restricted to 10m south of the south top of bank.

Restrictions

No trees and shrubs shall be planted nor shall permanent structures be erected within 5 metres of either side of the proposed drain without prior written permission of Council. There is an existing shed between parcel number 1 and 2 that is acceptable. If trees are planted that interfere with access for future maintenance of the drainage works, they shall be removed at the expense of the Landowner.

Attention is also drawn to Sections 80 and 82 of the Drainage Act that refers to the obstruction of a drainage works.

Agricultural Grant

It is recommended that application for subsidy be made for eligible agricultural properties. Any assessments against non agricultural properties are shown separately in the Schedule of Assessment. Eligibility for grant is at the discretion of Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) according to their Agricultural Drainage Infrastructure Program (ADIP) policies.

Maintenance

The costs of future works of maintenance on the drainage works shall be assessed in the proportions as follows:

	Owner of Front Road South (County Road 20)	Benefit	Outlet
Backflow Preventor		10% to parcel number 5 and 10% to parcel number 4	80%
Headwall at Outlet and Culvert from Station 0+002 to 0+024		40% to parcel number 2	60%
Culvert from Station 0+024 to 0+036	20%	20% to parcel number 2	60%
Culvert from Station 0+036 to 0+061	95%		5%
Culvert from Station 0+061 to 0+067 and JB #1	66%	34% to the owner of the Gas Utility	
Open Channel from Station 0+067 to 0+090		20% to parcel number 5 and 20% to parcel number 4	60%
Culvert to south of JB #1 and Headwall at Station 0+067	100%		

Outlet, as shown in the above table, shall be assessed to upstream lands and roads based on equivalent hectares as shown in the Schedule of Assessment

Any additional cost to work around or locate a utility shall be tracked separately and assessed to the utility causing the increased work.

Maintenance, including of the box culvert and concrete pipe not replaced under this report, shall be done in accordance with the enclosed specifications and profiles unless otherwise altered under provisions of the Drainage Act.

The drain shall be maintained as per the specifications and grades as shown on the Profile contained in this Engineer's Report.

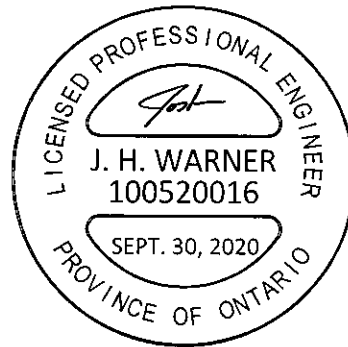
These above conditions will apply unless otherwise altered under the provisions of the Drainage Act.

All of the above is submitted for your consideration.

Yours truly,



Josh Warner, P. Eng.



John Parks Drain No. 2
 Town of Amherstburg
 September 30, 2020

ALLOWANCES

Allowances have been made as per Sections 29 and 30 of the Drainage Act.

Conc.	Lot or part	Parcel Number	Owner	Section 29	Section 30	Total
1	Pt. Lot 13 & 14	5	J. & N. Whyte	\$ -	\$ 120	\$ 120
	Pt. Lot 14	2	J. Maxwell	\$ 290	\$ 290	\$ 580
	Pt. Lot 14	1	D. Richard	\$ -	\$ 60	\$ 60
	N 1/2 Lot 14	4	P. Crump	\$ 180	\$ 480	\$ 660
TOTAL ALLOWANCES				\$470	\$950	\$1,420

Estimate of Cost

<u>Item No.</u>	<u>Item Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
1.0	Pre-Construction Meeting	1.0	LS	600	600
2.0	Locate and Expose Gas Line	1.0	LS	600	600
3.0	Traffic Control	1.0	LS	500	500
4.0	De-Watering of Site	1.0	LS	6,000	6,000
5.0	Supply and Install Triton Type 1 DOT Turbidity Curtain and complete fish exclusion and rescue prior to commencing work	1.0	LS	2,000	2,000
6.0	Locate CSP, including connection to Box Culvert (Station 0+000, 0+006, 0+012 and approximately 0+024)	4.0	ea.	225	900
7.0	Strip and Place Topsoil (Station 0+000 to 0+044)	350.0	sq.m	3	1,050
8.0	Strip and Place Topsoil (Station 0+061 to 0+090)	730.0	sq.m	3	2,190
9.0	Remove and Dispose Culvert (Station 0+000 to Approx. 0+024)	24.0	m	55	1,320
10.0	Remove and Dispose Culvert (Station 0+061 to 0+090)	1.0	LS	1,320	1,320
11.0	Remove and Dispose Culvert South of Manhole at Station 0+061	1.0	LS	440	440
12.0	Remove and Dispose Junction Box (Station 0+061)	1.0	LS	660	660
13.0	Cleanout Existing Box Culvert (Approx. Station 0+024 to 0+061)	37.0	m	48	1,760
14.0	Supply and Install new, 1050mmØ Concrete Pipe c/w Bedding (Station 0+000 to 0+005)	5.0	m	856	4,280
15.0	Supply and Install new, Concrete Block Headwall at Station 0+002	1.0	LS	10,000	10,000
16.0	Re-Use Rip Rap at Outlet c/w Filter Fabric	1.0	LS	2,400	2,400
17.0	Supply and Install new, Backwater Preventor at Outlet	1.0	LS	44,000	44,000
18.0	Supply and Install new, 1050mmØ HDPE Pipe c/w Bedding (Station 0+005 to Approx. 0+024)	17.0	m	679	11,540
19.0	Concrete Collar at Station 0+007 to join new concrete pipe to new HDPE pipe	1.0	LS	1,680	1,680
20.0	Connect 1050mmØ HDPE to Concrete Box Culvert with Concrete	1.0	LS	2,280	2,280
21.0	Locate and Repair Clay Tile from Parcel Number 2	4.0	m	210	840

<u>Item No.</u>	<u>Item Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
22.0	Supply and Install new, Junction Box #1 (1200x1500mm) at Station 0+061	1.0	LS	3,720	3,720
23.0	Connect 900mmø Concrete Pipe to Junction Box #1 at Station 0+061	1.0	LS	440	440
24.0	Connect 150mmø CSP to Junction Box #1 at Station 0+061	1.0	LS	320	320
25.0	Supply and Install new, 6m of 525mmø HDPE c/w Bedding, Rip Rap Endwall and Connection to Junction Box #1 at Station 0+061	1.0	LS	1,860	1,860
26.0	Supply and Install new, 1050mmø HDPE c/w Bedding and Connection to Junction Box #1 at Station 0+061	6.0	m	530	3,180
27.0	Supply and Install new, Concrete Block Headwall at Station 0+067 c/w Rip Rap	1.0	LS	3,000	3,000
28.0	Brushing (Station 0+000 to 0+118)	1.0	LS	2,000	2,000
29.0	Excavation of Open Channel between Stations 0+067 and 0+118	51.0	m	15	770
30.0	Level Material to add Cover between Stations 0+060 and 0+067	1.0	LS	500	500
31.0	Truck Excavated Material	1.0	LS	4,000	4,000
32.0	Work Around Overhead Hydro	1.0	LS	200	200
33.0	Restoration, Topsoil and Hydro-Seeding	1.0	LS	6,040	6,040
34.0	Provisional: Remove and Re-Install Garden Bricks	1.0	LS	880	880
35.0	Provisional: Remove and Re-Install Fence at parcel number 5	1.0	LS	880	880
36.0	Provisional: Granular 'B'	80.0	t	20	1,600
37.0	Provisional: Supply and Install Quarried Limestone Erosion Protection at drain outlet to the Detroit River	40.0	t	80	3,200

Sub Total	128,950
Contingency	16,500
Allowances	1,420
Survey, Design, Report & Meetings	32,840
Hydrovac Utilities and Pipe	3,640
Tendering (Provisional)	1,300
Inspection (Provisional)	5,600
Certification	660
Grant Submission (Provisional)	135
ERCA Fee	800
Total Estimate excluding HST	191,845
Non-Recoverable HST (1.76%)	3,337
Total Estimate	\$195,182

SCHEDULE OF ASSESSMENT

Conc.	Lot or Part	Affected Acres	Affected Hect.	Parcel Number	Owner	Special Benefit	Benefit	Outlet	Total	Equivalent Ha.
3. Municipal Lands										
	County Road 20 (Front Road S)	1.24	0.50		County of Essex		\$ 18,263	\$ 2,408	\$ 20,671	0.45
							\$ 18,263	\$ 2,408	\$ 20,671	0.45
4. Privately Owned Non-Agricultural Lands										
1	Pt. Lot 12	1.04	0.42	26	P. & E. Reaume		\$ -	\$ 765	\$ 765	0.13
	Pt. Lot 12	0.20	0.08	25	2002081 Ontario Inc.		\$ -	\$ 218	\$ 218	0.04
	Pt. Lot 12	0.32	0.13	24	D. & P. Coates		\$ -	\$ 237	\$ 237	0.04
	Pt. Lot 12	1.48	0.60	21	D. & P. Coates		\$ -	\$ 1,092	\$ 1,092	0.18
	Pt. Lot 12	1.70	0.69	19	M. Donaghue & P. Meloche		\$ -	\$ 1,256	\$ 1,256	0.21
	Pt. Lot 12	1.19	0.48	18	J. & M. Herceg		\$ -	\$ 874	\$ 874	0.14
	Pt. Lot 12	0.40	0.16	17	D. & P. Coates		\$ -	\$ 291	\$ 291	0.05
	Pt. Lot 12	1.41	0.57	16	C. Sawatzky		\$ -	\$ 1,383	\$ 1,383	0.23
	Cntr Pt. Lot 12	0.69	0.28	23	E., J. & J. Reaume		\$ -	\$ 510	\$ 510	0.08
	Pt. Lot 13	0.59	0.24	14	S. Lang		\$ -	\$ 655	\$ 655	0.11
	Pt. Lot 13	0.99	0.40	13	L. & N. Bieszk		\$ -	\$ 1,092	\$ 1,092	0.18
	Pt. Lot 13	1.14	0.46	12	M. & V. Danese		\$ -	\$ 1,256	\$ 1,256	0.21
	Pt. Lot 13	0.94	0.38	11	I. MacDonald		\$ -	\$ 1,038	\$ 1,038	0.17
	Pt. Lot 13	0.74	0.30	10	C. Hadrian & R. Gambling		\$ -	\$ 819	\$ 819	0.14
	Pt. Lot 13	1.11	0.45	9	E. Beneteau		\$ -	\$ 1,229	\$ 1,229	0.20
	Pt. Lot 13	0.89	0.36	8	W. McFarlane		\$ -	\$ 983	\$ 983	0.16
	Pt. Lot 13	0.59	0.24	7	W. Ladell		\$ -	\$ 655	\$ 655	0.11
	Pt. Lot 13	1.53	0.62	6	L. & L. Thomas		\$ -	\$ 1,693	\$ 1,693	0.28
	Pt. Lot 13 & 14	0.84	0.34	5	J. & N. Whyte	\$ 1,675	\$ 10,701	\$ 819	\$ 13,195	0.15
	Pt. Lot 14	0.30	0.12	3	D. McKim		\$ -	\$ 328	\$ 328	0.05
	Pt. Lot 14	0.12	0.05	2	J. Maxwell	\$ 2,457	\$ 21,391	\$ 120	\$ 23,968	0.02
	Pt. Lot 14			1	D. Richard		\$ -	\$ -	\$ -	
						\$ 4,132	\$ 32,092	\$ 17,313	\$ 53,537	2.87

Conc.	Lot or Part	Affected Acres	Affected Hect.	Parcel Number	Owner	Special Benefit	Benefit	Outlet	Total	Equivalent Ha.
5. Privately Owned Agricultural Lands (Eligible for Available Grants)										
I	Lot 9	12.73	5.15	30	S. Gyori & T. Rex		\$ -	\$ 9,374	\$ 9,374	1.55
	N 1/2 Lot 10	10.13	4.10	29	S. Gyori & T. Rex		\$ -	\$ 7,463	\$ 7,463	1.23
	S 1/2 Lot 10 & Pt. Lot 11	16.85	6.82	28	S. & R. Gyori		\$ -	\$ 12,414	\$ 12,414	2.05
	Pt. W 1/2 Lot 11	30.62	12.39	27	G. & R. Vandenbrink		\$ -	\$ 22,553	\$ 22,553	3.72
	Pt. W 1/2 Lot 12	28.12	11.38	22	D. & P. Coates		\$ -	\$ 20,715	\$ 20,715	3.41
	Pt. Lot 12	0.47	0.19	20	D. & P. Coates		\$ -	\$ 346	\$ 346	0.06
	Lot 13	30.00	12.14	15	G. & R. Vandenbrink		\$ -	\$ 22,098	\$ 22,098	3.64
	N 1/2 Lot 14	8.01	3.24	4	P. Crump		\$ 10,702	\$ 5,202	\$ 15,904	0.97
						-	10,702	100,165	110,867	16.62
6. Special Non-Proratable Assessments (Non-Agricultural)										
	CATV (Bell)				Bell	\$ -	\$ 1,410	\$ -	\$ 1,410	
	CATV (Cogeco)				Cogeco	\$ -	\$ 1,410	\$ -	\$ 1,410	
	Watermain				Town of Amherstburg	\$ -	\$ 1,410	\$ -	\$ 1,410	
	Gas Line				Enbridge Gas	\$ 887	\$ 4,728	\$ -	\$ 5,615	
	Overhead Hydro				Hydro One	\$ 262	\$ -	\$ -	\$ 262	
						\$ 1,149	\$ 8,958	\$ -	\$ 10,107	
Total - Special Non-Proratable Assessments (Non-Agricultural)						\$ 10,107				
Total - Municipal Lands						\$ 20,671				
Total - Privately Owned Non-Agricultural Lands						\$ 53,537				
Total - Privately Owned Agricultural Lands (Eligible for Available Grants)						\$ 110,867				
Total Assessment						\$ 195,182				

John Parks Drain No. 2
Town of Amherstburg
September 30, 2020

SPECIFICATION OF WORK

1. Scope of Work

The work to be included in this specification includes the replacement of an existing culvert, a backflow preventor, future specifications for a road culvert, the removal of a culvert, minor open channel work and related works in Lot 14, Concession 1 in the Town of Amherstburg (former Geographic Township of Malden).

These specifications apply to proposed and future works on the drain.

2. General

Each tenderer must inspect the site prior to submitting their tender and satisfy themselves by personal examination as to the local conditions that may be encountered during this project. The Contractor shall make allowance in the tender for any difficulties which they may encounter. Quantities or any information supplied by the Engineer is not guaranteed and is for reference only.

All work and materials shall be to the satisfaction of the Engineer or Drainage Superintendent who may vary these specifications as to minor details but in no way decrease the proposed capacity of the drain.

The Contractor shall be responsible for the notification of all utilities prior to the start of construction.

Measurement for Payment Clauses have not been included in these specifications and will be part of the Construction document. If the Construction document has not identified Measurement for Payment Clauses, the Contractor must notify the Town of Amherstburg or the Engineer and request clarification 2 days prior to pricing the project.

3. Plans and Specifications

These specifications shall apply and be part of the contract along with the General Specifications for Open Drains and the General Specifications for Closed Drains. This specification of work shall take precedence over all plans and general conditions pertaining to the contract. The Contractor shall provide all labour, equipment, and

supervision necessary to complete the work as shown in the plans and described in these specifications. Any work not described in these specifications shall be completed according to the Ontario Provincial Standard Specifications and Standard Drawings.

4. Health and Safety

The Contractor at all times shall be responsible for health and safety on the worksite including ensuring that all employees wear suitable personal protective equipment including safety boots and hard hats.

The Contractor shall be responsible for traffic control as per the Ontario Traffic Manual Book 7 – Temporary Conditions (latest revision) when working on public road allowances. A copy of a traffic control plan shall be submitted to the Engineer, Drainage Superintendent and County of Essex and kept on site at all times. The Contractor shall maintain suitable barricades, warning lights, and temporary traffic notices, at his expense, in their proper position to protect the public both day and night. Flagmen are the responsibility of the Contractor when working on the road allowance and when entering or exiting a worksite onto a roadway.

The Contractor shall be responsible to ensure that all procedures are followed under the Occupational Health and Safety Act to ensure that work sites are safe and that accidents are prevented. In the event of a serious or recurring problem, a notice of noncompliance will be issued. The Contractor will be responsible for reacting immediately to any deficiency and correcting any potential health and safety risk. Continuous disregard for any requirement of the Occupational Health and Safety Act could be cause for the issuance of a stop work order or even termination of the contract.

They shall also ensure that only competent workmen are employed onsite and that appropriate training and certification is supplied to all employees.

5. Workplace Safety and Insurance Board

Upon award of the contract and prior to commencement of work, the Contractor shall furnish the Town of Amherstburg with a satisfactory Certificate of Insurance (COI) containing the information below, for the period of the execution of the work:

- i. A Commercial General Liability (CGL) policy that shall be not less than 5 million dollars per occurrence.
- ii. The CGL policy shall include bodily injury including death, personal injury, property damage, tenants legal liability, non-owned automobile and contain a

cross liability/severability of interest clause. The certificate must also include acknowledgement that coverage under the policy specifically extends to the works in question. The COI shall name the Town of Amherstburg, County of Essex and R. Dobbin Engineering Inc. as additional insured to the policy.

- iii. The CGL policy shall not contain any exclusion or limitation in respect to shoring, underpinning, raising or demolition of any building or structure, pile driving, caisson work, collapse of any structure or subsidence of any property, structure or land from any cause.
- iv. The Contractor shall note that where construction works are performed within lands owned by the County of Essex or Ministry of Transportation the CGL policy shall also name the County of Essex and/or the Ministry of Transportation as additional insured to the policy.
- v. The liability insurance shall be endorsed to provide that the policy shall not be altered, cancelled or allowed to lapse without 30 days prior written notice to the Town of Amherstburg.

6. MNRF Drain Registration

The Contractor is advised that the Town of Amherstburg has conducted an "Endangered Species Act Review" and has registered it's drainage activities with the Ministry of Natural Resources and Forestry.

The Town of Amherstburg, in pursuant to the Endangered Species Act Municipal Agreement, has identified the potential presence of certain species within the project area. It is the responsibility of the Contractor to make certain that necessary provisions are undertaken to ensure the protection of all species at risk and their habitats throughout the course of construction. It is also the responsibility of the Contractor to make itself familiar with the following documents:

- 1. Town of Amherstburg – Complete Mitigation Documents
- 2. Town of Amherstburg - Additional Mitigation Measures for Snakes Species
- 3. Town of Amherstburg - Additional Mitigation Measures for Turtle Species
- 4. Snakes of Ontario Identifier Guide
- 5. Turtles of Ontario Identifier Guide

These documents will be provided to the successful bidder.

The Contractor will be responsible for providing the necessary equipment and materials required by the mitigation plans and shall contact the Town of Amherstburg Drainage Superintendent immediately if any endangered species are encountered during construction.

7. Pre-Construction Meeting

There is a requirement for a pre-construction meeting to be held prior to any construction taking place. The meeting shall be scheduled by the Contractor. The Landowners, Engineer, and the Town of Amherstburg shall be notified of the pre-construction meeting at least one week prior.

8. Access and Working Area

Access for construction and future maintenance of the drainage works shall be from Front Road South (County Road 20) and generally along the length of the drainage works. With co-ordination and approval from the Landowner and Drainage Superintendent or Engineer access to the Detroit River may be through the existing concrete driveway at parcel number 2. Any damage to the driveway shall be repaired at the expense of the Contractor to the pre-construction condition. Access for construction and future maintenance and repair east of Front Road South (County Road 20) shall be from the existing laneway at parcel number 4 and immediately east of the roadside ditch. This access shall be restricted to a width of 6m.

The working area for construction and future maintenance of the drain between Stations 0+000 and 0+036 (within the property limits of Parcel No. 2) shall be restricted to a width of 10m. Where buildings and sheds exist, this working area shall be reduced to account for them. The working area for construction and future maintenance between Stations 0+036 and 0+061 (within the County Road 20 right of way) shall be restricted to a width of 20m normally centred on the drainage works. The working area for construction between Stations 0+061 and 0+090 shall be restricted to a width of 20m, with 15m south of the centreline of the existing culvert and 5m north. The working area for future maintenance between Stations 0+061 and 0+067 shall be restricted to a width of 20m normally centred on the drainage works. The working area for the future maintenance of the open channel between stations 0+067 and 0+090 shall be restricted to 10m south of the south top of bank.

9. Traffic Control

Access and driveways to private properties shall not be obstructed longer than the minimum time necessary for the work and shall be reinstated as soon as possible all to the satisfaction of the Engineer. The Contractor shall schedule any obstruction of existing driveways with the owners at least two full working days in advance. Roads must be kept open to local traffic and all obstructions and diversions of traffic must be approved by the Engineer or Drainage Superintendent at least two (2) full working days in advance.

- a) The Contractor shall supply, erect and maintain all detour signs and special signs necessary for detours to divert traffic from the area under construction as directed by the Drainage Superintendent or Engineer. All this work shall be at the Contractor's expense.
- b) The Contractor shall be responsible for supplying, erecting and maintaining all signs, supports, barricades, flashers, cones, etc. in the construction area and at the boundaries of the work as part of the above detours, all to the satisfaction of the Engineer or Drainage Superintendent. All this work shall be done by the Contractor at their own expense.
- c) The Contractor shall not be allowed to proceed with construction activities unless proper signage and flagmen are present. Flagging procedures, signage and detours shall conform to the recommendations of Book 7, Temporary Conditions, Ontario Traffic Manual, issued by the Ministry of Transportation. Conformance shall be enforced by the Ministry of Labour Inspector.

The traffic control and signage plan shall be submitted to the Town of Amherstburg, the County of Essex and the Engineer prior to work commencing.

10. Benchmarks

The benchmark is based on geodetic elevations. Elevations are available at the locations shown on the Plan and Profile drawings. Where these elevations are on existing structures to be replaced, they shall be transferred by the Contractor prior to the removal of the culvert.

11. Stripping of Topsoil

The contractor shall strip the topsoil within the working and access areas. The topsoil shall be stockpiled at the edge of the working allowance for re-use in the disturbed areas

following construction. This includes, but is not limited to, the open channel, on top of the levelled material from the open channel excavation and the culvert installation.

12. Utilities

The Contractor is responsible for organizing locates and exposing all the utilities along the length of the drainage works. This shall include, but is not limited to, the gas main that is identified at approx. Station 0+064 on the drawings. If any utilities interfere with the proposed drainage works in a manner not shown on the accompanying Estimate of Cost or profile the Contractor shall notify the Drainage Superintendent and Engineer.

The Contractor is responsible for coordinating the replacement of utilities with the utility company if they interfere with the proposed culverts. All costs for the utility to replace their services will be outside of this report and shall be borne by the utility as per Section 26 of the Drainage Act. All additional costs to work around and organize replacement of the utilities not included in the estimate shall be tracked separately and the cost plus a portion of the engineering (25% of the cost) shall be borne by that utility.

13. Brushing and Tree Removal

All brush, trees, woody vegetation, stumps etc. shall be removed in order to facilitate construction, as determined by the Drainage Superintendent or Engineer, and disposed offsite by the Contractor in accordance with OPSS 201.

It is recommended that a mechanical grinder attached to an excavator be used for the removal of brush and trees. Any brush and trees too large to grind shall be close cut.

Certain trees may be left in place at the direction of the Drainage Superintendent or Engineer.

For future maintenance it is recommended that, if necessary, appropriate spray be applied to the brush, and after-growth for two years following construction to maintain brush control.

14. De-Watering

De-watering shall be done in order to facilitate construction. The exact methodology for de-watering is up to the Contractor.

The water control plan shall be submitted to the Engineer and Town of Amherstburg prior to work commencing.

The Contractor shall exclude, capture, relocate and monitor for fish trapped within isolated, enclosed, or dewatered areas as per the DFO requirements outlined in Appendix B.

15. Turbidity Barrier

A turbidity barrier shall be installed in the Detroit River at the John Parks Drain No. 2 outlet. The turbidity curtain shall be installed by dragging it away from the headwall to scare any fish away from the headwall. The turbidity barrier shall be Triton Type 1 DOT by GEI Works or an approved equivalent. Approved equivalents must be approved in writing by the Engineer or Drainage Superintendent prior to purchasing the turbidity barrier. The Contractor shall inspect the turbidity curtain on a daily bases to ensure it is functioning properly.

The Contractor shall exclude, capture, relocate and monitor for fish trapped within isolated, enclosed, or dewatered areas as per the DFO requirements outlined in Appendix B.

16. Removals

The required culverts, rip rap, flap gate and junction box shall be removed in their entirety and disposed offsite by the Contractor. Suitable backfill, as determined by the Drainage Superintendent or Engineer, shall be stockpiled adjacent to the site for reuse during installation of the proposed culvert. Any material not suitable for use shall be disposed offsite by the Contractor. Any fences or garden areas that must be removed to allow construction or maintenance shall be reinstalled by the Contractor using the existing materials.

17. Locate Existing Drain, Verify Alignment and Elevations

The Contractor shall locate the existing corrugated steel pipe at Stations 0+006, 0+012, 0+018 and at its connection to the existing box culvert (Approximately 0+024 based on the 1951 report drawings). The Contractor shall notify the Engineer of the alignment and the location of the connection of the CSP to the existing box culvert prior to completing any drainage works. The existing box culvert size is unknown. If necessary, the Engineer will confirm a revised grade line and lengths prior to installing the drain.

18. Excavation of Open Channel

The open channel shall be excavated and maintained to the depths and grades as per the profile and drawings as contained in this Engineers Report. The channel shall be excavated to the proper depth using a laser or similar approved device with a labourer onsite to ensure correctness of grade and to confirm location of tile ends.

The excavated material shall be trucked offsite with the exception of some material being placed over the proposed pipe section in the vicinity of Station 0+060 and 0+067 to add additional cover. Additional cover shall be added to ensure one 300mm high concrete block can be utilized above the proposed culvert as a headwall.

19. Installation of Culverts

The Contractor shall supply, install and backfill high density polyethylene (HDPE) smooth wall pipe (320 kPa) with bell and spigot joints. The Contractor shall supply, install and backfill 50-D reinforced concrete pipe with rubber gasket joints. Both shall be installed in accordance with the below specification and OPSS 410.

A concrete collar shall be installed between the concrete and HDPE pipes at Station 0+007 to ensure a water tight connection. The two ends shall be butted together, wrapped in geotextile and then concrete shall be poured over the joint to cover both ends. The connection of the 1050mm diameter HDPE pipe to the existing concrete box culvert shall be done with concrete. The size of the existing concrete box culvert is unknown.

In the future, the drain between the connection of the proposed pipe and the existing concrete box culvert at approximately Station 0+024 to Station 0+061 shall be replaced with 1050mm HDPE pipe. The inverts shall match the inverts at the connection points.

The proposed HDPE pipe drain shall generally follow the alignment shown on the plans unless otherwise specified by the Engineer or Drainage Superintendent at the time of construction.

The bottom of the excavation shall be excavated to the required depth with any over excavation backfilled with granular material or 3/4-inch clear stone. When the pipe has been installed to the proper grade and depth, the excavation shall be backfilled with granular or 3/4-inch clear stone from the bottom of the excavation to the spring line of the pipe. Care shall be taken to ensure that the backfill on either side of the culvert does not differ by more than 300mm so that the pipe is not displaced. The

drain shall be backfilled from the spring line to within 100mm of finished grade with excavated material. The top 100mm shall be backfilled with topsoil. For the future replacement under the roadway the travel portion of the road allowance plus 1 metre on both sides of the road, shall be backfilled from the top of the bedding to finished grade with granular "A". The remainder of the pipe shall be backfilled with excavated material free of organic or other deleterious material. All granular bedding and backfill material shall be mechanically compacted to 98% modified standard proctor density using appropriate compaction equipment. The asphalt shall be HL4 and shall match the existing thickness.

Note that if excavated material is found unsuitable for backfill purposes, then granular material will be required as backfill. Unit prices shall be established in any tender for the disposal of the excavated material and the import of approved granular material at the expense of the drainage works.

All backfill shall be free from deleterious material. All granular bedding material shall be mechanically compacted to 95% modified standard proctor density. All backfill material above the spring line, unless otherwise specified, shall be mechanically compacted to 95% modified proctor density using appropriate compaction equipment.

20. Headwalls

A concrete block headwall shall be utilized at the outlet and at Station 0+067 and shall be as shown on the drawings and as below:

1. A swift lift device will be required to place the blocks. A 75mm eye bolt will be required to place the caps.
2. The bottom course of blocks shall be founded on a firm solid base. The contractor shall provide a minimum levelling course of 150mm of compacted 3/4" Clear Stone, or a 100% compacted granular A, or lean concrete as a foundation base.
3. Ensure that the base is level and flat as this will greatly improve speed of installation.
4. On new culverts a minimum of 150mm of block wall will extend below the culvert to prevent scouring under the culvert.
5. The bottom course of blocks shall be embedded into the drain bottom to achieve the desired top elevation of the wall.
6. Blocks shall extend from the pipe invert across the full height and width of the drain and be imbedded a minimum of 300mm into the drain banks. Where possible the top of the block wall will match the height of the completed driveway.

7. Blocks shall be placed such that all joints are staggered.
8. Any excavation voids on the ends of block walls below subsequent block layers shall be filled with 3/4" Clear Stone.
9. Where block walls extend beyond three blocks in height, they should be battered a minimum of 1 unit horizontal for every 10 units vertical throughout the wall's full height and width. This can be achieved using pre-battered base blocks, or by careful preparation of the base.
10. Filter cloth (270R or equivalent) should be placed behind the wall to prevent the migration of fill material through the joints.
11. The walls should be backfilled with a free draining granular fill.
12. A uni-axial geogrid (5G350 or equivalent) should be used to tie back the headwalls where walls extend beyond 1.8m in height.
13. The face of the block wall shall not extend beyond the end of the pipe culvert.
14. Any gaps between the blocks and culvert shall be sealed with non-shrink grout for the full depth of the block.

The headwall at Station 0+067 shall have a minimum of a 300mm high concrete block above the culvert. Erosion protection shall be placed on the channel bottom and banks next to the end wall at Station 0+067. The erosion protection shall consist of 100mm x 250mm quarry stone over filter fabric (Terrafix 270R or approved equal). It shall extend 1m upstream from top of bank to top of bank at the end wall.

The culvert shall be backfilled in conjunction with the placement of the blocks. The gaps between the culvert and the blocks and the blocks and the retaining wall shall be filled with concrete cinder blocks/bricks and mortar to give the end wall a finished appearance.

The concrete blocks shall be Easy Block by Underground Specialties or an approved equivalent. The outlet end wall shall have a precast concrete structure surrounding the pipe. The precast structure shall allow for a lock block installation. Approved equivalents must be approved in writing by the Engineer or Drainage Superintendent prior to purchasing the blocks. A water control plan shall be submitted by the Contractor prior to removing the existing headwall at the outlet.

Shop drawings for the outlet headwall shall be provided to the Engineer prior to construction commencing and ordering of the blocks. The dimension between the steel retaining walls shall be confirmed by the Contractor prior to ordering of the outlet headwall.

The culvert to be installed south of Junction Box #1 at Station 0+061 shall have a rip rap end wall on the south side. The rip rap end wall shall consist of 100mm x 250mm

quarry stone or approved equal. The area to receive the rip rap shall be graded to a depth of 400mm below finished grade. Filter fabric (TerraFix 250R or approved equal) shall then be placed with any joints overlapped a minimum 600mm. The quarry stone shall then be placed with the smaller pieces placed in the gaps and voids to give it a uniform appearance.

21. Backwater Preventor

A backwater preventor shall be installed at the outlet to the Detroit River.

The backwater preventor shall be the Wapro-WaStop ES1040-S3-304-FL in-line check valve from Devine Flow Solutions, as per the manufacturer's recommendations, or an approved equal. Approval of any alternatives must be approved by the Engineer or Drainage Superintendent prior to ordering, manufacturing or installing the approved product. The backwater preventor shall be installed in accordance with the manufacturer's recommendations.

22. Junction Box

The junction box shall be installed to the elevations and in the locations shown on the drawings as follows:

Structure	Station	Type (mm)	Top Elev. (m)	Outlet Pipe Elev. (m)	Inlet Pipe Elev. (m)
JB #1	0+061	1200x1500	175.45	174.06 (W) 1050	174.06 (E) / 174.60 (N) / 174.50 (S) 1050 / 150 / 525

The junction box shall be square precast concrete structures as noted above.

The junction box shall be made with the top sections separate from the base sections in order to allow riser sections to be installed or removed as necessary (i.e. the base section shall not extend for more than 150mm above the top of the highest opening in the base section). The wall thickness shall be 115mm and have a 600mm sump.

The junction boxes shall be set on a layer of clear stone. The clear stone shall be extended up to the top of the inlet and outlet pipe connections

The tile at the connection to the junction boxes shall be concreted on both the inside and outside prior to backfilling. Any pipe or tile shall not protrude more than 50mm inside the wall.

The Drainage Superintendent or Engineer may change a concrete lid on a junction box to a birdcage type grate creating a catch basin at the request of a Landowner.

Shop drawings shall be provided to the Engineer prior to construction commencing and ordering of the junction box.

23. Subsurface Drainage

All existing subsurface drains encountered during construction or identified to be replaced shall be reconnected to the proposed culvert or open channel unless otherwise noted on the drawings or as directed by the Drainage Superintendent or Engineer.

The existing tile from parcel number 2 shall be repaired at the location shown on the drawings. The tile was exposed in this location and shall be repaired with PE agricultural tubing.

For 100mm and 150mm subsurface drains, the upstream end of the subsurface drain shall be connected to the tile drain at a 45 degree angle. A suitable length of equivalent sized PE agricultural tubing shall be used to connect the drains. Manufactured fittings shall connect the PE tile to the existing drain and to the concrete tile. The connections shall be carefully backfilled to ensure there is adequate support under the pipe and large clumps of clay do not displace the tile. It is recommended that clear stone be used under the connections at the tile drain.

24. Rip Rap at Outlet

The existing rip rap shall be utilized in the river bottom as per the drawings. The area to receive the rip rap shall first be graded to allow the placement of the rip rap to a depth of 400mm below finished grade. After grading, a layer of filter fabric (Mirafi P150 or approved equal) is to be placed with any joints overlapped a minimum of 600mm. Rip rap shall then be placed with the smaller pieces placed in the gaps and voids to give it a uniform appearance.

Should additional erosion protection stone be required, at the discretion of the Drainage Superintendent or Engineer, the Contractor shall supply and install 400mm nominal size quarry stone at the provisional item unit price specified in the tender. The maximum stone size shall be 600mm and 80% of the stones shall have a diameter of least 240mm.

25. Seeding/Restoration

All areas that were disturbed by construction (including the channel side slopes and levelled excavated material), shall be topped with the stripped topsoil and hydroseeded in the spring or fall following construction. The time of application shall be approved by the Drainage Superintendent or Engineer.

Hydraulic seed and mulch in accordance with OPSS 804. Seed mixture, fertilizer and application rates are as follows:

- Primary seed (85 kg/ha.) consisting of 50% red fescue, 40% perennial rye-grass and 5% white clover.
- Nurse crop consisting of Italian (annual) rye-grass at 25% of total weight.
- Fertilizer (300 kg/ha.) consisting of 8-32-16.
- Hydraulic mulch (2,999 kg/ha.) type "B" and water (52,700 litres/ha.).

The above mixture shall apply unless otherwise approved by the Drainage Superintendent or Engineer.

26. Environmental Considerations

The Contractor shall take care to adhere to the following considerations.

1. Operate machinery in a manner that minimizes disturbance to the banks of the watercourse.
2. Erosion and sediment control measures must be installed prior to construction to prevent sediment from entering the water body.
3. All granular and erosion control materials shall be stockpiled a minimum of 3.0m from the top of the bank or excavation. Material shall not be placed in surface water runs or open inlets that enter the channel.
4. All activities, including maintenance procedures, shall be controlled to prevent the entry of petroleum products, debris, rubble, concrete, or other deleterious substances into the water. Vehicle and equipment refuelling and maintenance shall be conducted away from the channel, any surface water runs, or open inlets. All waste materials shall be stockpiled well back from the top of the bank and all surface water runs and open inlets that enter the drain.

5. When possible, all construction within the open channel shall be carried out during periods of low flow or in dry conditions.
6. The Contractor shall conduct regular inspections and maintain erosion and sediment control measures and structures during the course of construction. The Contractor shall repair erosion and sediment control measures and structures if damage occurs.
7. The Contractor shall remove non-biodegradable erosion and sediment control materials once site is stabilized.
8. Remove all construction materials from site upon project completion.
9. Operate machinery in a manner that minimizes disturbance to the banks of the watercourse.
10. Erosion and sediment control measures must be installed prior to construction to prevent sediment from entering the water body.
11. A temporary dam consisting of excavated material may be constructed upstream and downstream of the work area. The temporary dams shall be covered with filter fabric or plastic that shall be anchored with rip rap material or broken concrete. Water shall be bailed and pumped from the work area to an area downstream of the temporary dam and upstream of the turbidity curtain. Water will be controlled in the area between the two temporary dams for the duration of construction using pumps, if necessary. After completion of the construction, the temporary dams and any collected sediment shall be removed. The final removal shall be the turbidity curtain. If a different method of water control is proposed by the Contractor it shall be submitted to the Engineer prior to the commencement of construction.
12. The Contractor shall take care to adhere to the following Best Management Practices prepared by the Department of Fisheries and Ocean.
 - a) Culvert Replacements in Municipal Drains (Appendix A)
13. The Contractor shall take care to familiarize them with the Town of Amherstburg's mitigation documents and species identification guidelines which will be provided to the successful bidder.
14. To avoid and mitigate the potential for prohibited effects to fish and fish habitat the measures in the DFO's Letter of Advice in Appendix B shall be adhered to.

27. Maintenance Period

The Contractor shall be responsible for maintenance of the drain for a period of one year after their installation. This will include repairing any settlement areas on the travel surface with topsoil and/or HL3 asphalt.

APPENDIX A

Best Management Practices for Culvert Replacement

Best Management Practices – Culvert Replacements in Municipal Drains

This document describes the conditions on which one may proceed with a culvert replacement in a municipal drain without DFO approval/notification. All municipal, provincial, or federal legislation that applies to the work being proposed must be respected. If the conditions/requirements below cannot be met, please complete the drain notification form and submit it to the Fisheries Protection Program form review at: FisheriesProtection@dfo-mpo.gc.ca.

Potential Impacts to Fish Habitat

- Infilling fish habitat by encroachment of the water crossing footprint or channel realignment to accommodate culvert
- Harmful substrate alteration of fish habitat (e.g. blockage of groundwater upwellings, critical SAR habitat, spawning areas)
- Removal of riparian vegetation and cover along the banks of the municipal drain
- Removal of edge habitat (e.g. undercut bank, shallower areas with lower velocity, aquatic vegetation) creation of barriers to fish movement (e.g. perched crossings, velocity barriers, alteration of the natural stream gradient)
- Alteration of channel flow velocity and/or depth (e.g. oversized culvert resulting in insufficient depth for fish passage at low flow or undersized culvert resulting in a flow velocity barrier at high flow)
- Alteration of channel morphology and sediment transport processes caused by the physical structure of the crossing resulting in upstream and downstream sediment aggradation/erosion
- Re-entry of sediment that was removed/stockpiled into the watercourse
- Erosion downstream from sudden release of water due to the failure of site isolation
- Stranding of fish in isolated ponds following de-watering of the site
- Impingement or entrainment of fish when de-watering pumps are used
- Short term or chronic transport of deleterious substances, including sediment, into fish habitat from construction or road drainage

Requirements

The following requirements must be met:

- There are no aquatic Species at Risk present in the work zone or impact zone. To confirm there are no aquatic Species at Risk present, refer to the document, [A Guide for Interpreting Fish and Mussel Species at Risk Maps in Ontario](http://www.dfo-mpo.gc.ca/Library/356763.pdf) which can be found at: <http://www.dfo-mpo.gc.ca/Library/356763.pdf>. Links for Ontario Conservation Area specific fish and mussel maps that include critical habitat extents and a list of aquatic Species at Risk found within the conservation authority boundary can be found on Page 5 of [A Guide for Interpreting Fish and Mussel Species at Risk Maps in Ontario](#).
- The culvert is embedded into the streambed and must allow for the free passage of fish.
- The work involves like-for-like replacements of existing road or private access culverts on all drain types without SAR.
- On C and F Drains only, this can also include replacements with extensions and end walls for the purposes of providing the property or road with safe access, but the project permanent footprint will not increase more than 250 m² below the high water mark.
- The project does not involve replacing a bridge or arch with one or more culverts installed in parallel or a larger-diameter culvert with more than one culvert installed in parallel.

- The project does not involve building more than one culvert installed in parallel on a single watercourse crossing site (e.g. twin culvert).
- The project does not involve temporarily narrowing the watercourse to an extent or for a duration that is likely to cause erosion, structural instability or fish passage problems.
- The municipal drain has no flow/low flow or is frozen to the bottom at the time of the replacement.
- In-water work is scheduled to respect timing windows (Tables 1 and 2) to protect fish, including their eggs, juveniles, spawning adults, and/or the organisms upon which they feed.
- The work can be conducted using the Culvert Removal Method described below and Standard Measures to Avoid Causing *Serious Harm to Fish* will be implemented when required.

Note: If your project must be conducted without delay in response to an emergency (e.g. the project is required to address an emergency that poses a risk to public health or safety or to the environment or property), you may apply for an Emergency Authorization (<http://www.dfo-mpo.gc.ca/asp/forceDownload.asp?FilePath=/pnw-ppe/reviews-revues/Emergency-Authorizations-Autorisations-Urgences-eng.pdf>).

Culvert Removal Methodology

- Plan/manage the work site in a manner that prevents sediment from entering the municipal drain by installing sediment and erosion control materials where required. Ensure that a sediment and erosion control plan is developed and modified as necessary for the site.
- Where required, install effective erosion and sediment control measures before starting work to prevent sediment from entering the municipal drain.
- Implement site isolation measures when in-water work is required.
 - Install an impervious barrier upstream of the work area (Figure 1). If possible, install a secondary barrier upstream of the work area for added protection.
 - Attempt to drive out the fish from the work area and then install the impervious barrier downstream of the work area. This may reduce or eliminate the need for a fish salvage.
 - When the drain is flowing, maintain downstream flows (e.g. bypass water around the work site using pumps or flume pipes; Figure 2). Provide temporary energy dissipation measures (e.g. rip-rap) at discharge point of the hose or temporary outlet pipe when required. Routinely inspect bypass pump and hose or pipe to ensure proper operation. Inspect discharge point for erosion and reposition hose/pipe or install additional temporary energy dissipation material as needed.
 - Dewater the isolated work area. The hose for a pump may discharge along the top of the bank into existing vegetation; however, the area should be monitored for signs of erosion. Reposition the hose or install additional temporary energy dissipation material as needed.
 - A fish screen with openings no larger than 2.54 mm (0.10 inches) should be equipped on any pump used during the operation. Note: Additional information regarding fish screens can be found in the DFO Freshwater Intake End-of-Pipe Fish Screen Guideline document (<http://www.dfo-mpo.gc.ca/Library/223669.pdf>).
 - Collect any fish present in the isolated work area and relocate them downstream.
 - Fish salvage operations must be conducted under a license issued by the Ontario Ministry of Natural Resources and Forestry (MNRF). The MNRF should be contacted well in advance of any work to obtain the required fish collection license.
- Install the culvert so that it is embedded into the streambed; ensure the culvert remains passable (e.g. does not become perched) by fish and wildlife.

- Decommission the site isolation in a manner that minimizes the introduction of sediment. The downstream isolation barrier shall gradually be removed first, to equalize water levels inside and outside of the isolated area and to allow suspended sediments to settle.
- Stabilize and remove waste from the site.
- Where required, maintain effective erosion and sediment control measures until complete re-vegetation of disturbed areas is achieved.



Figure 2. Isolation of Site

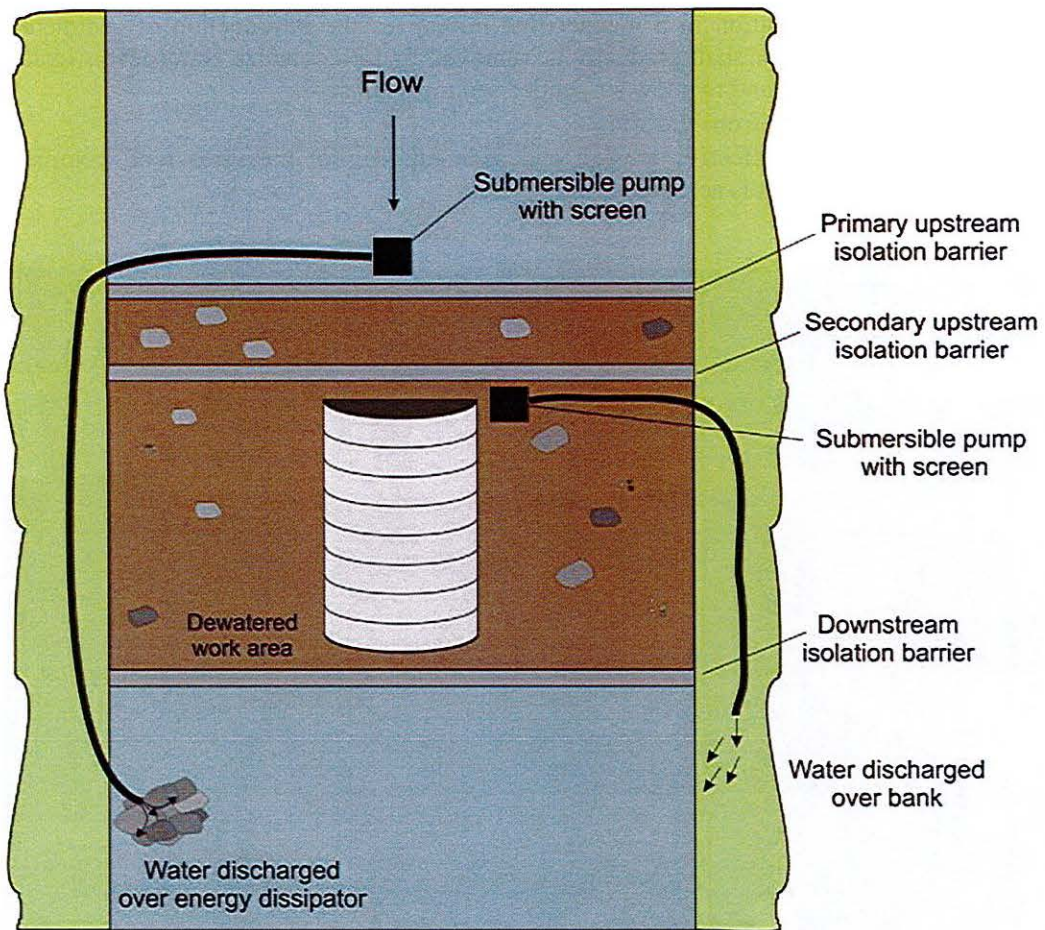


Figure 3. Isolation and Bypass Diversion when Working In-Water

Timing Windows

Figure 1 and Tables 1 and 2 can be used to determine the Restricted Activity period for the drain based on its classification. Note: Timing windows identified on Conservation Authority permits or Ministry of Natural Resources (Government of Ontario) work permits may differ and take precedence.



Figure 1. Ontario's Northern and Southern Region boundaries for determining application of restricted activity timing windows.

Table 1. Restricted Activity timing windows for the protection of spawning fish and developing eggs and fry in the Northern Region. Dates represent when work should be avoided.

DRAIN TYPE	RESTRICTED ACTIVITY PERIOD
A	SEPTEMBER 1 TO JULY 15
B	SEPTEMBER 1 TO JULY 15
C	APRIL 1 TO JULY 15
D	SEPTEMBER 1 TO JULY 15
E	APRIL 1 TO JULY 15

Table 2. Restricted Activity timing windows for the protection of spawning fish and developing eggs and fry in the Southern Region. Dates represent when work should be avoided.

DRAIN TYPE	RESTRICTED ACTIVITY PERIOD
A	SEPTEMBER 15 TO JULY 15
B	MARCH 15 TO JULY 15
C	MARCH 15 TO JULY 15
D	OCTOBER 1 TO JULY 15
E	MARCH 15 TO JULY 15

Standard Measures to Avoid Causing *Serious Harm to Fish*

When implementing a culvert removal project in a municipal drain, the *Fisheries Act* still requires an individual/company to ensure they avoid causing *serious harm to fish* during any activities in or near water. The following advice will help one avoid causing harm and comply with the *Act* (for additional information see <http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html>).

1. Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation.
2. Whenever possible, operate machinery on land above the high water mark or on ice and in a manner that minimizes disturbance to the banks and bed of the municipal drain.
 - Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks.
 - Limit machinery fording of the municipal drain to a one-time event (i.e., over and back), and only if no alternative crossing method is available. If repeated crossings of the municipal drain are required, construct a temporary crossing structure.
 - 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.
 - Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
3. Install effective sediment and erosion control measures before starting work to prevent sediment from entering the municipal drain. Inspect them regularly during the course of construction and make all necessary repairs if any damage occurs.
4. 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 municipal drain and runoff water is clear.
5. Undertake all in-water activities in isolation of open or flowing water while maintaining the natural flow of water downstream and avoid introducing sediment into the municipal drain.
6. Ensure applicable permits for relocating fish are obtained and relocate any fish that become trapped in isolated pools or stranded in newly flooded areas to the main channel of the watercourse.
7. Ensure that the water that is being pumped/diverted from the site is filtered (sediment remove) prior to being released (e.g. pumping/diversion of water to a vegetated area).
8. Implement 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.
9. 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.
10. 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.
11. Remove all construction materials from site upon project completion.

APPENDIX B

DFO Letter of Advice and ERCA Correspondence



Fisheries and Oceans
Canada

Ontario and Prairie Region
Fish and Fish Habitat Protection Program
867 Lakeshore Rd.
Burlington, ON
L7S 1A1

Pêches et Océans
Canada

Région de l'Ontario et des Prairies
Programme de protection du poisson et de son habitat
867 chemin Lakeshore
Burlington, ON
L7S 1A1

July 13, 2020

Our file *Notre référence*
PATH # 20-HCAA-00989

Shane McVitty
271 Sandwich Street South,
Amersburg, ON, N9V 2A5

**Subject: CULVERT REPLACEMENT, JOHN PARKS DRAIN NO. 2,
AMHERSTBURG (PATH # 20-HCAA-00989) – Implementation of
Measures to Avoid and Mitigate the Potential for Prohibited Effects to
Fish and Fish Habitat**

Dear Shane McVitty:

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on May 13, 2020. We understand that you propose to:

- Replace the existing 900 mm diameter CSP culvert and headwall in John Parks Drain No. 2 with a 1050 mm HDPE culvert (same length)
- Install riprap at the outlet of the culvert
- Install a backflow preventor at the outlet to the Detroit River
- Remove all brush, trees and woody vegetation that may interfere with construction
- Implement minor channel realignment
- Remove the existing culvert at Station 0+061 and replace with an open channel, shorter culvert

We understand the following aquatic species listed under the *Species at Risk Act* may use the area in the vicinity of where your proposal is to be located:

- Pugnose minnow listed as Threatened
- Channel darter listed as Endangered
- Spotted sucker listed as Special Concern
- Silver lamprey listed as Special Concern

Our review considered the following information:

- Request for Review form and associated documents submitted on May 13, 2020.

Canada

.../2

Your proposal has been reviewed to determine whether it is likely to result in:

- the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the *Fisheries Act*;
- effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*; and

The aforementioned impacts are prohibited unless authorized under their respective legislation and regulations.

To avoid and mitigate the potential for prohibited effects to fish and fish habitat (as listed above), we recommend implementing the measures listed below:

- Plan in-water works, undertakings and activities to respect timing windows to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed and migrate.
 - No in-water work between March 15th to July 15th
- Exclude, capture, relocate and monitor for fish trapped within isolated, enclosed, or dewatered areas
- Ensure work is completed in isolation and fish passage is maintained
- Conduct a fish rescue prior to the start of work
- Ensure appropriately sized end-of-pipe fish screens are installed
- Limit the duration of in-water works, undertaking and activities so that it does not diminish the ability of fish to carry out one or more of their life processes (spawning, rearing, feeding, migrating)
- Develop and implement an erosion and sediment control plan to minimize the introduction of sediment into any waterbody during all phases of the work, undertaking or activity;
 - Monitor the watercourse to observe signs of sedimentation during all phases of the work, undertaking or activity and take corrective action
- Do not deposit any deleterious substances in the water body
- Develop and implement a response plan to avoid a spill of deleterious substances

Provided that you incorporate these measures into your plans, the Program is of the view that your proposal will not require an authorization under the *Fisheries Act*, the *Aquatic Invasive Species Regulations* or the *Species at Risk Act*.

Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. Consult our website (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>) or consult with a qualified environmental consultant to determine if further review may be necessary. It remains your responsibility to remain in compliance with the *Fisheries Act*, the *Species at Risk Act* and the *Aquatic Invasive Species Regulations*.

It is also your *Duty to Notify* DFO if you have caused, or are about to cause, the death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to (<http://www.dfo-mpo.gc.ca/pnw-ppe/CONTACT-eng.html>).

We recommend that you notify this office at least 10 days before starting your project and that a copy of this letter be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your proposal.

If you have any questions with the content of this letter, please contact Samantha Ramirez by email at Samantha.Ramirez@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'SR', is positioned above the typed name.

Samantha Ramirez
Biologist, Triage and Planning
Fish and Fish Habitat Protection Program

COPY: Josh Warner, R. Dobbin Engineering

Josh

From: Ashley Gyori <AGyori@erca.org>
Sent: Friday, June 26, 2020 10:27 AM
To: Josh
Cc: Shane McVitty
Subject: RE: John Parks Drain No. 2
Attachments: Application-for-Permit-General_Fillable.pdf; ERCA Watershed Management Services 2020 Fee Schedule.pdf

Good morning Josh,

Thank you for providing a copy of the Draft Report for the proposed improvements to the John Parks Drain No. 2. We have reviewed the plans prepared by your office, Project No. 2019-1125 and dated June 9th, 2020, and have determined that the draft proposal satisfies this office's concerns with respect to Section 28 of the *Conservation Authorities Act*.

For this project to proceed, we will need a copy of the signed and sealed final drainage report and drawings and an ERCA application for permit form, completed by the municipality. Our office will invoice the Town of Amherstburg the application for permit fee of \$800.00, as per the attached Board-approved Fee Schedule, upon issuance of the approval.

It is the proponent's responsibility to ensure all issues related to and/or appropriate approvals are obtained regarding any other federal, provincial, and municipal legislation requirements. With respect to Department of Fisheries and Oceans (DFO) concerns and comments, the proposed works will need to be self-assessed by you, the proponent, through the DFO website at <http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>. Through the self-assessment process, you will be able to determine if these works require a formal authorization under the *Fisheries Act*.

If you have any questions, please do not hesitate to contact me.

Kind regards,



ASHLEY GYORI
Regulations Analyst
Essex Region Conservation Authority
360 Fairview Avenue West, Suite 311 • Essex, Ontario • N8M 1Y6
agyori@erca.org • essexregionconservation.ca

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****NOTE: As per public health guidelines, our offices are closed to the public, but staff are working remotely to provide responses to inquiries and review applications as efficiently as possible. Your patience and understanding is greatly appreciated at this time. ****

From: Josh <josh@dobbineng.com>
Sent: Tuesday, June 9, 2020 3:39 PM
To: Ashley Gyori <AGyori@erca.org>
Cc: James Bryant <JBryant@erca.org>; Shane.McVitty <smcvitty@amherstburg.ca>
Subject: John Parks Drain No. 2

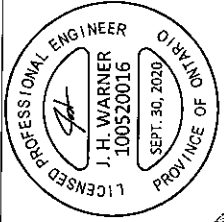
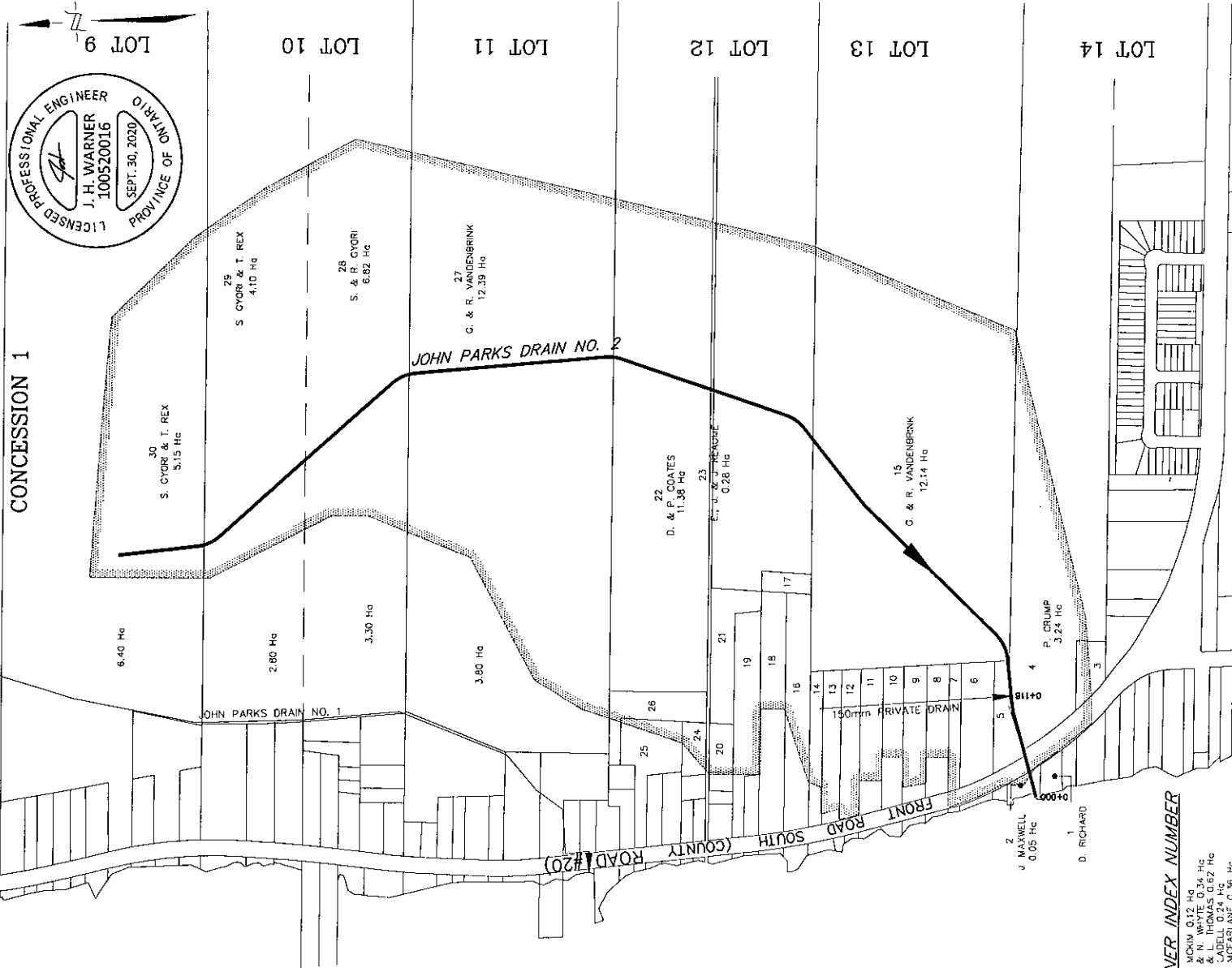
Hi Ashley,

I have attached the John Parks Drain No. 2 report for your review. It is the replacement of a culvert outletting to the Detroit River and opening of a culvert enclosure.

Feel free to contact me if you have any questions, comments, concerns or need any more information.

Thanks,

Josh Warner, P.Eng.
R. Dobbin Engineering Inc.
4218 Oil Heritage Rd.
Petrolia, ON N0N 1R0
Ph: 519-882-0032 ext. 204
E-mail: josh@dobbineng.com



- OWNER INDEX NUMBER**
- 3. C. MOKIM 0.12 Hc
 - 5. J. & N. WHITE 0.34 Hc
 - 6. L. & L. THOMAS 0.52 Hc
 - 7. W. & J. W. WILSON 0.48 Hc
 - 8. W. MCFARLANE 0.56 Hc
 - 9. E. BENETEAU 0.45 Hc
 - 10. C. HADRIAN & R. GAMBLING 0.30 Hc
 - 11. V. WADDOCK 0.39 Hc
 - 12. L. & N. BIESZK 0.40 Hc
 - 14. S. LANG 0.24 Hc
 - 15. C. SAWATZKY 0.57 Hc
 - 16. J. & J. BERG 0.48 Hc
 - 17. M. & J. BERG 0.48 Hc
 - 18. M. DONACHIE & P. MELOCHE 0.69 Hc
 - 20. D. & P. COATES 0.19 Hc
 - 21. D. & P. COATES 0.60 Hc
 - 24. D. & P. COATES 0.60 Hc
 - 25. 2007281 ONTARIO INC. 0.08 Hc
 - 26. P. & E. REALME 0.42 Hc



R. Dobbin Engineering Inc.

4218 Oil Heritage Road
 Petrolia Ontario, N0N 1R0
 Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME: John Parks Drain No. 2 Plan
 PROJECT No. 2019-1125

NO	REVISIONS	DATE	BY
1	FINAL REPORT	SEPT. 30, 2020	JW

CHECKED: B. VAN RUITENBURG
 DRAWN: J. WARNER

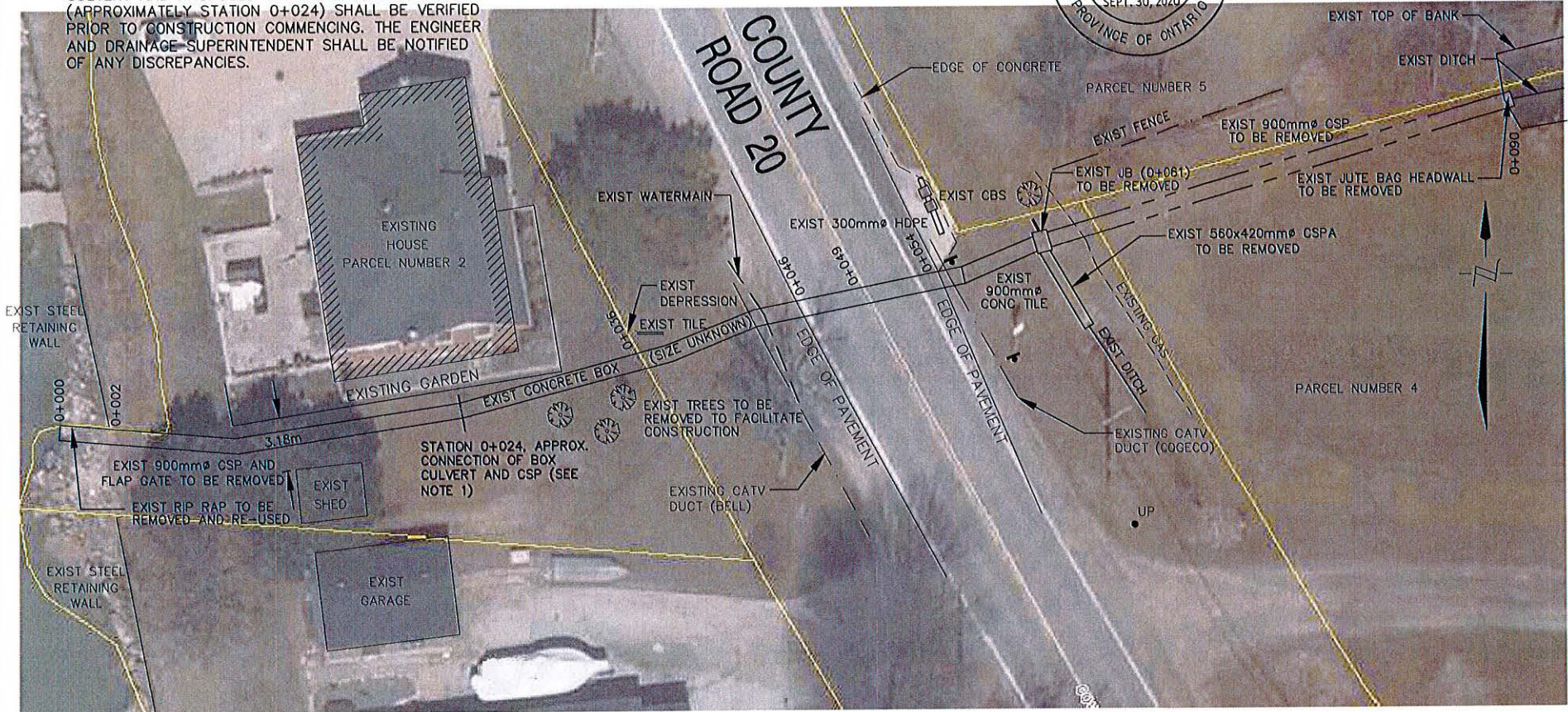
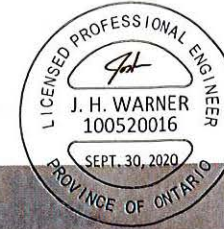
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TOWN of AMHERSTBURG
JOHN PARKS DRAIN NO. 2
PLAN

1 OF 7

GENERAL NOTES

1. LOCATIONS AND LENGTHS OF THE EXISTING JOHN PARKS DRAIN NO. 2 ARE APPROXIMATE BASED ON INFORMATION AVAILABLE FROM PREVIOUS REPORTS AND SOME LOCATES. THE LOCATION AND ELEVATION OF THE CONNECTION BETWEEN THE CONCRETE BOX CULVERT AND PROPOSED 1050mmØ HDPE PIPE (APPROXIMATELY STATION 0+024) SHALL BE VERIFIED PRIOR TO CONSTRUCTION COMMENCING. THE ENGINEER AND DRAINAGE SUPERINTENDENT SHALL BE NOTIFIED OF ANY DISCREPANCIES.
2. THE EXISTING GARDEN SHALL REMAIN IN PLACE. IF IT REQUIRES TO BE REMOVED DUE TO THE PIPE LOCATION OR TO BETTER FACILITATE CONSTRUCTION IT SHALL BE RE-INSTALLED WITH THE EXISTING MATERIALS.



4218 Oil Heritage Road
 Petrolia Ontario, N0N 1R0
 Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME:
 John Parks Drain No. 2 Existing Conditions
 and Removals Plan

PROJECT No.
 2019-1125

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	SEPT. 30, 2020	JW
B. VAN RUITENBURG				
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J. WARNER				

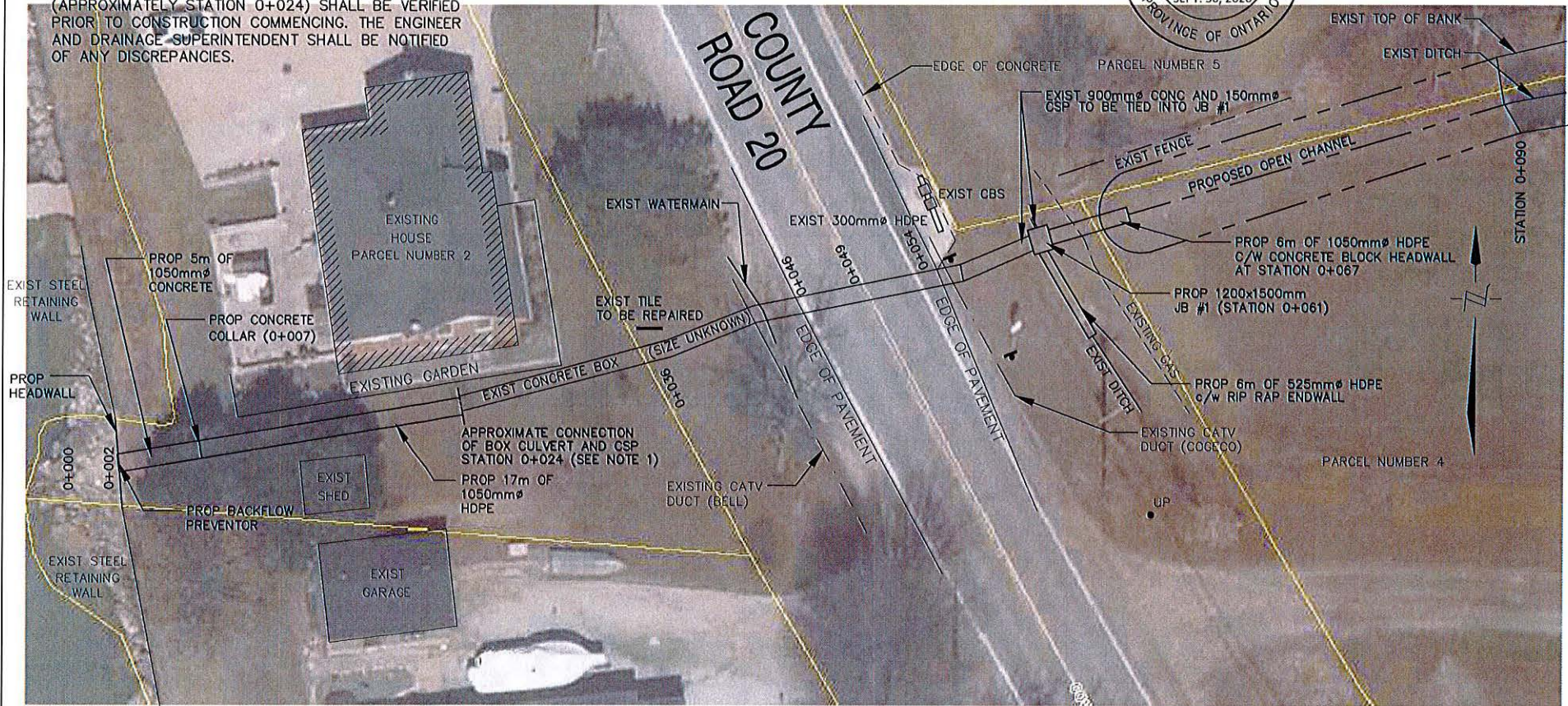
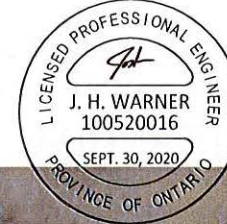
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TOWN of AMHERSTBURG
 JOHN PARKS DRAIN NO. 2
 EXISTING CONDITIONS AND REMOVALS PLAN

GENERAL NOTES

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2. BENCHMARK No.1 ELEV. 177.99
TOP SPINDLE OF FIRE HYDRANT
AT #1386 FRONT ROAD SOUTH



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Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME:
John Parks Drain No. 2 Proposed Plan

PROJECT No.
2019-1125

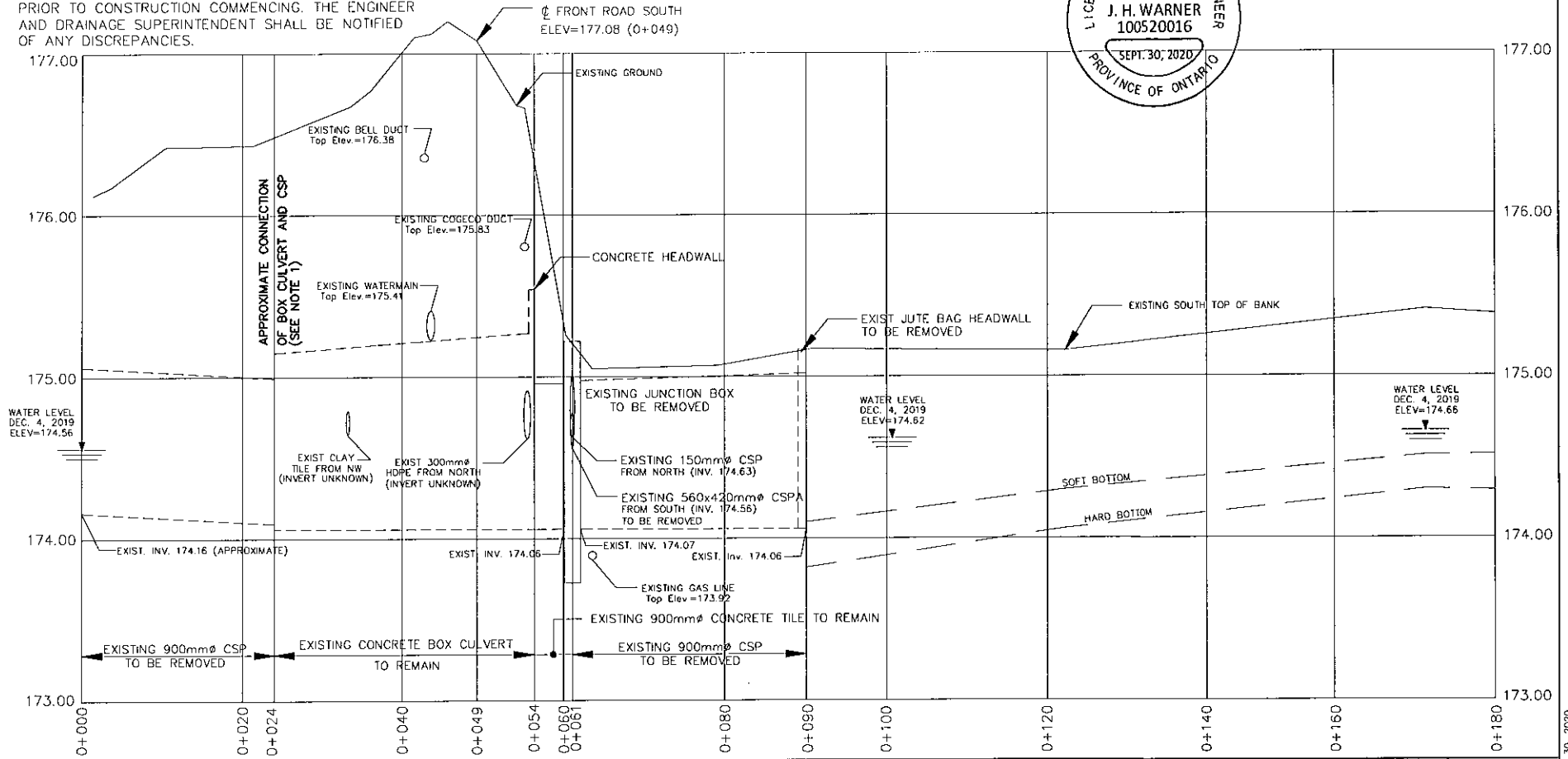
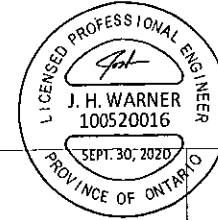
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J. WARNER				

TOWN of AMHERSTBURG
JOHN PARKS DRAIN NO. 2
PROPOSED PLAN

3
OF 7

GENERAL NOTES

- LOCATIONS AND LENGTHS OF THE EXISTING JOHN PARKS DRAIN NO. 2 ARE APPROXIMATE BASED ON INFORMATION AVAILABLE FROM PREVIOUS REPORTS AND SOME LOCATES. THE LOCATION AND ELEVATION OF THE CONNECTION BETWEEN THE CONCRETE BOX CULVERT AND PROPOSED 1050mm \varnothing HDPE PIPE (APPROXIMATELY STATION 0+024) SHALL BE VERIFIED PRIOR TO CONSTRUCTION COMMENCING. THE ENGINEER AND DRAINAGE SUPERINTENDENT SHALL BE NOTIFIED OF ANY DISCREPANCIES.
- UTILITY LOCATIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.



4218 Oil Heritage Road
 Petrolia Ontario, N0N 1R0
 Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME:
 John Parks Drain No. 2 Existing Conditions
 and Removals Profile

PROJECT No.
 2019-1125

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	SEPT. 30, 2020	JW
B. VAN RUITENBURG				
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J. WARNER				

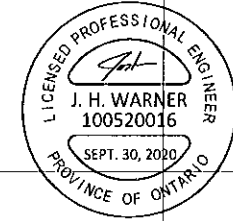
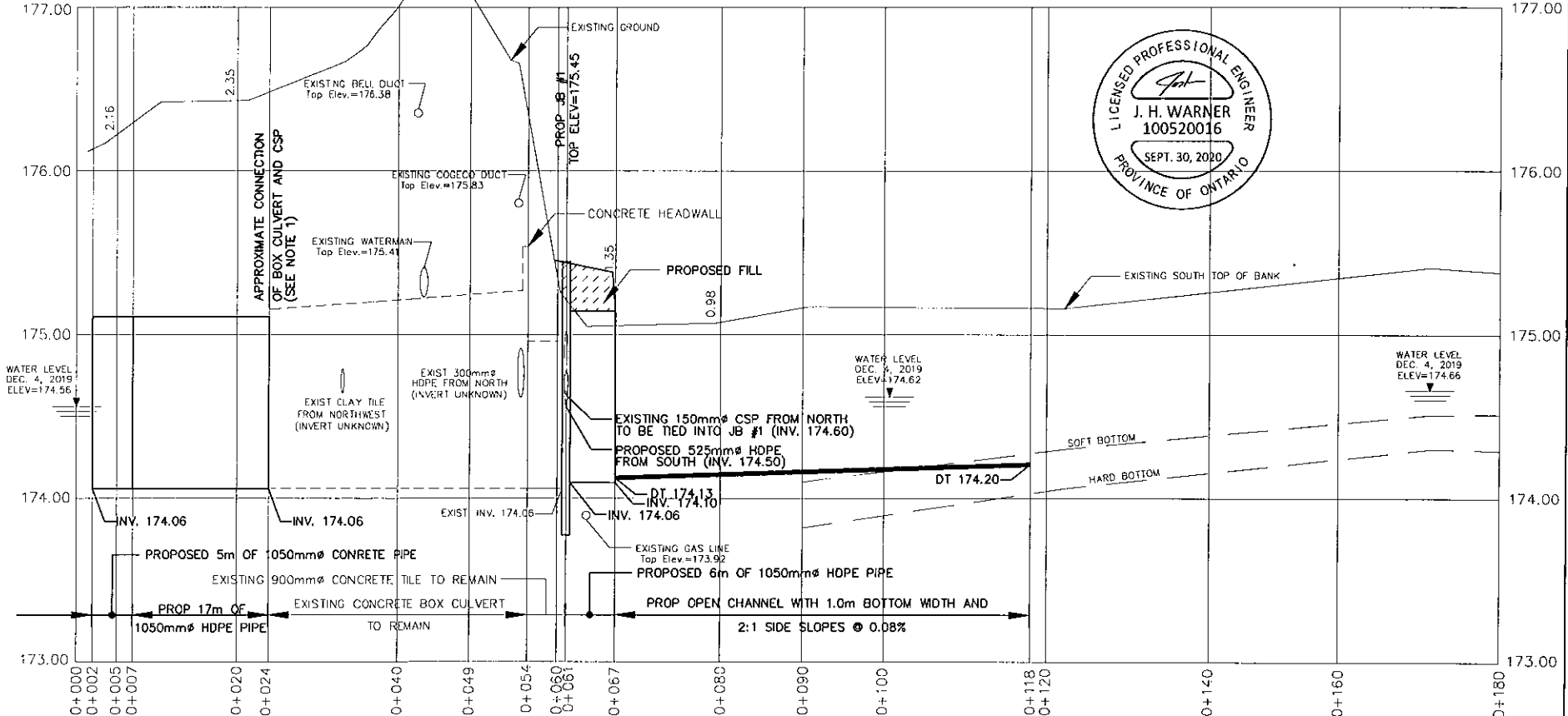
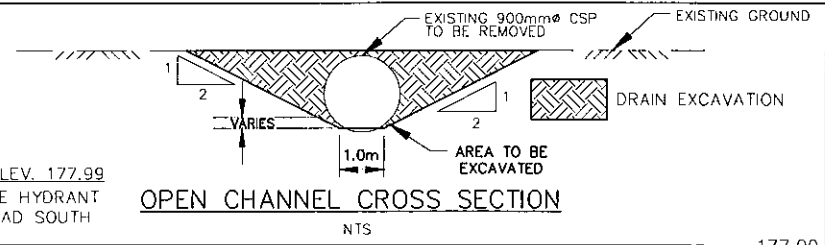
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TOWN of AMHERSTBURG
JOHN PARKS DRAIN NO.2
EXISTING CONDITIONS AND REMOVALS PROFILE

4
OF 7

GENERAL NOTES

1. LOCATIONS AND LENGTHS OF THE EXISTING JOHN PARKS DRAIN NO. 2 ARE APPROXIMATE BASED ON INFORMATION AVAILABLE FROM PREVIOUS REPORTS AND SOME LOCATES. THE LOCATION AND ELEVATION OF THE CONNECTION BETWEEN THE CONCRETE BOX CULVERT AND PROPOSED 1050mm ϕ HDPE PIPE (APPROXIMATELY STATION 0+024) SHALL BE VERIFIED PRIOR TO CONSTRUCTION COMMENCING. THE ENGINEER AND DRAINAGE SUPERINTENDENT SHALL BE NOTIFIED OF ANY DISCREPANCIES.
2. UTILITY LOCATIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
3. UPPER NUMBERS ARE DEPTH FROM EXISTING GROUND TO INVERT OF THE PROPOSED CULVERT OR DITCH BOTTOM.
4. BENCHMARK No.1 ELEV. 177.99
TOP SPINDLE OF FIRE HYDRANT
AT #1386 FRONT ROAD SOUTH



4218 Oil Heritage Road
Petrolia Ontario, N0N 1R0
Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME:
John Parks Drain No. 2 Existing Conditions
and Removals Profile

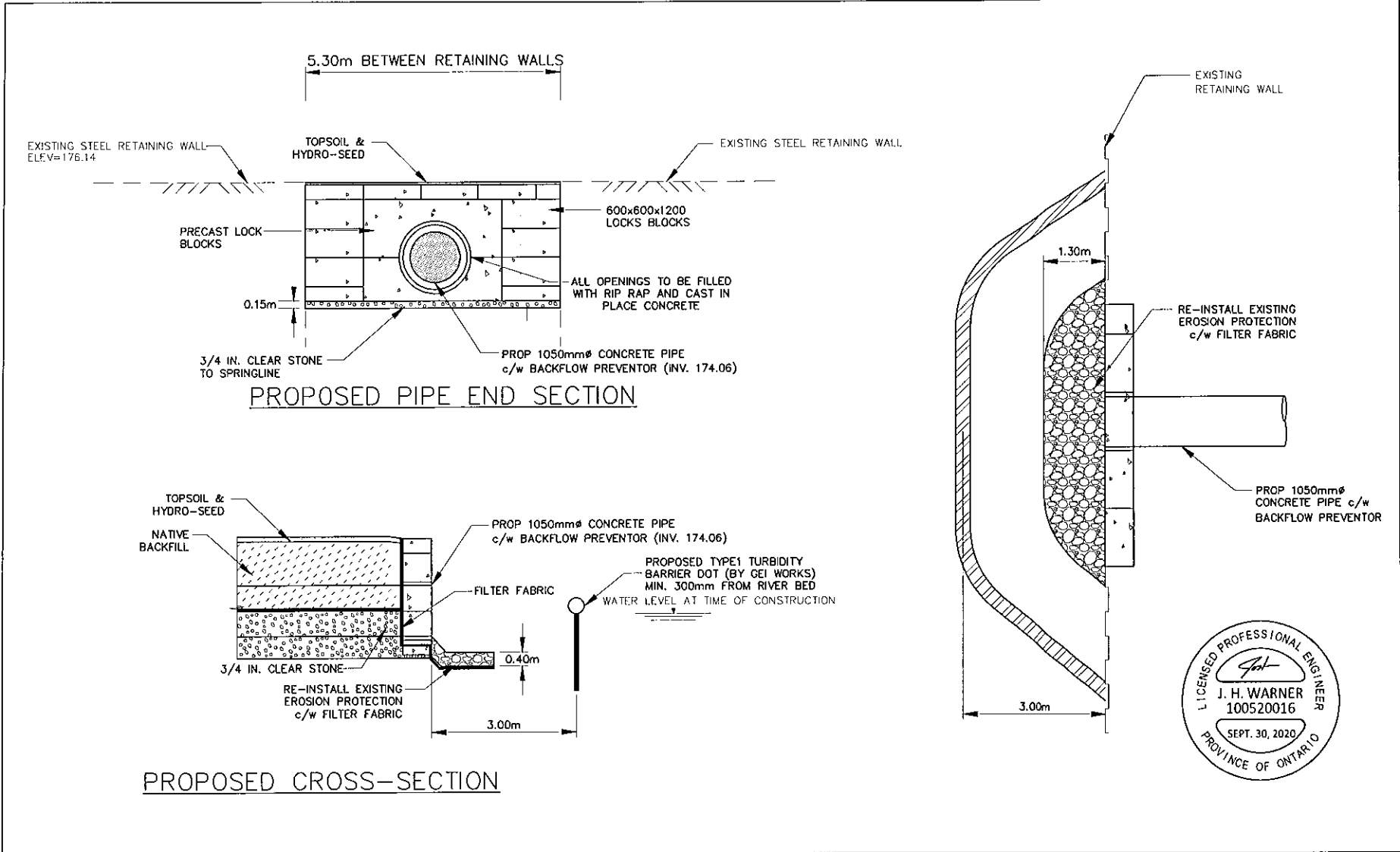
PROJECT No.
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APPROVED J. WARNER	NO.	REVISIONS	DATE	BY
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TOWN of AMHERSTBURG
JOHN PARKS DRAIN NO.2
PROPOSED PROFILE

5
OF 7

Last Updated: September 30, 2020



4218 Oil Heritage Road
 Petrolia Ontario, N0N 1R0
 Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME:
 John Parks Drain No. 2 Outlet Detail

PROJECT No.
 2019-1125

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	SEPT. 30, 2020	JW
B. VAN RUITENBURG				
DRAWN				
J. WARNER				

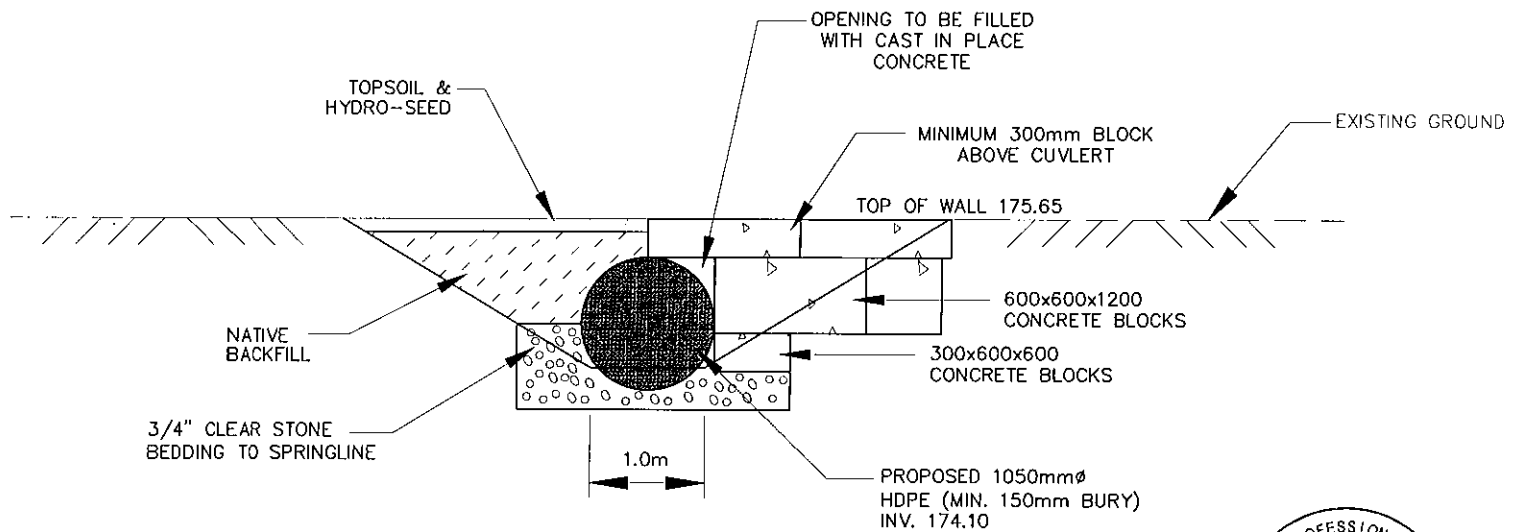
SCALE 1:75

0 2m

TOWN of AMHERSTBURG
 JOHN PARKS DRAIN NO. 2
 OUTLET DETAIL

6
 OF 7

Last Updated: September 30, 2020



HEADWALL AT STATION 0+067



R Dobbin
Engineering Inc.

4218 Oil Heritage Road
Petroia Ontario, N0N 1R0
Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME:
John Parks Drain No. 2 Headwall Detail

PROJECT No.
2019-1125

APPROVED J. WARNER	NO.	REVISIONS	DATE	BY
CHECKED B. VAN RUITENBURG	1	FINAL REPORT	SEPT. 30, 2020	JW
DRAWN J. WARNER	SCALE 1:40			

TOWN of AMHERSTBURG
JOHN PARKS DRAIN NO. 2
CUVLERT HEADWALL DETAIL

7
OF 7

**SCHEDULE OF ASSESSMENT
 Recommended for the Court of Revision (January 2021)**

Conc.	Lot or Part	Affected Acres	Affected Hect.	Parcel Number	Roll No.	Owner	Special Benefit	Benefit	Outlet	Total	Equivalent Ha.
3. Municipal Lands											
	County Road 20 (Front Road S)	1.24	0.50			County of Essex		\$ 18,262	\$ 2,419	\$ 20,681	0.45
								\$ 18,262	\$ 2,419	\$ 20,681	0.45
4. Privately Owned Non-Agricultural Lands											
1	Pt. Lot 12	1.04	0.42	26	600-08200	P. & F. Reaume		\$ -	\$ 768	\$ 768	0.13
	Pt. Lot 12	0.20	0.08	25	600-07600	2002081 Ontario Inc.		\$ -	\$ 219	\$ 219	0.04
	Pt. Lot 12	0.32	0.13	24	600-08000	D. & P. Coates		\$ -	\$ 238	\$ 238	0.04
	Pt. Lot 12	1.48	0.60	21	600-08210	D. & P. Coates		\$ -	\$ 1,097	\$ 1,097	0.18
	Pt. Lot 12	0.99	0.40	19	600-09200	M. Donaghue & P. Meloche		\$ -	\$ 731	\$ 731	0.12
	Pt. Lot 12	1.19	0.48	18	600-09400	J. & M. Herczeg		\$ -	\$ 878	\$ 878	0.14
	Pt. Lot 12	0.40	0.16	17	600-08220	D. & P. Coates		\$ -	\$ 293	\$ 293	0.05
	Pt. Lot 12	1.41	0.57	16	600-09500	C. Sawatzky		\$ -	\$ 1,390	\$ 1,390	0.23
	Cntr Pt. Lot 12	0.69	0.28	23	600-08700	E., J. & J. Reaume		\$ -	\$ 512	\$ 512	0.08
	Pt. Lot 13	0.59	0.24	14	600-09600	S. Lang		\$ -	\$ 658	\$ 658	0.11
	Pt. Lot 13	0.99	0.40	13	600-09800	L. & N. Bieszk		\$ -	\$ 1,097	\$ 1,097	0.18
	Pt. Lot 13	1.14	0.46	12	600-09900	M. & V. Danese		\$ -	\$ 1,262	\$ 1,262	0.21
	Pt. Lot 13	0.94	0.38	11	600-10000	I. MacDonald		\$ -	\$ 1,042	\$ 1,042	0.17
	Pt. Lot 13	0.74	0.30	10	600-10100	C. Hadrian & R. Gambling		\$ -	\$ 823	\$ 823	0.14
	Pt. Lot 13	1.11	0.45	9	600-10200	E. Beneteau		\$ -	\$ 1,234	\$ 1,234	0.20
	Pt. Lot 13	0.89	0.36	8	600-10300	W. McFarlane		\$ -	\$ 987	\$ 987	0.16
	Pt. Lot 13	0.59	0.24	7	600-10400	W. Ladell		\$ -	\$ 658	\$ 658	0.11
	Pt. Lot 13	1.53	0.62	6	600-10500	L. & L. Thomas		\$ -	\$ 1,700	\$ 1,700	0.28
	Pt. Lot 13 & 14	0.84	0.34	5	600-10700	J. & N. Whyte	\$ 1,675	\$ 10,701	\$ 822	\$ 13,198	0.15
	Pt. Lot 14	0.30	0.12	3	600-10900	D. McKim		\$ -	\$ 329	\$ 329	0.05
	Pt. Lot 14	0.12	0.05	2	600-12600	J. Maxwell	\$ 2,457	\$ 21,391	\$ 121	\$ 23,969	0.02
	Pt. Lot 14			1	600-12500	D. Richard		\$ -	\$ -	\$ -	
							\$ 4,132	\$ 32,092	\$ 16,859	\$ 53,083	2.79

Conc.	Lot or Part	Affected Acres	Affected Hect.	Parcel Number	Roll No.	Owner	Special Benefit	Benefit	Outlet	Total	Equivalent Ha.
5. Privately Owned Agricultural Lands (Eligible for Available Grants)											
I	Lot 9	12.73	5.15	30	600-04000	S. Gyori & T. Rex		\$ -	\$ 9,416	\$ 9,416	1.55
	N 1/2 Lot 10	10.13	4.10	29	600-04610	S. Gyori & T. Rex		\$ -	\$ 7,496	\$ 7,496	1.23
	S 1/2 Lot 10 & Pt. Lot 11	16.85	6.82	28	600-05600	S. & R. Gyori		\$ -	\$ 12,469	\$ 12,469	2.05
	Pt. W 1/2 Lot 11	30.62	12.39	27	600-06300	G. & R. Vandenbrink		\$ -	\$ 22,653	\$ 22,653	3.72
	Pt. W 1/2 Lot 12	28.12	11.38	22	600-08300	D. & P. Coates		\$ -	\$ 20,807	\$ 20,807	3.41
	Pt. Lot 12	0.47	0.19	20	600-08800	D. & P. Coates		\$ -	\$ 347	\$ 347	0.06
	Lot 13	30.00	12.14	15	600-13300	G. & R. Vandenbrink		\$ -	\$ 22,196	\$ 22,196	3.64
	N 1/2 Lot 14	8.01	3.24	4	600-10800	P. Crump		\$ 10,702	\$ 5,225	\$ 15,927	0.97
							-	10,702	100,609	111,311	16.62

6. Special Non-Proratable Assessments (Non-Agricultural)

CATV (Bell)	Bell	\$ -	\$ 1,410	\$ -	\$ 1,410
CATV (Cogeco)	Cogeco	\$ -	\$ 1,410	\$ -	\$ 1,410
Watermain	Town of Amherstburg	\$ -	\$ 1,410	\$ -	\$ 1,410
Gas Line	Enbridge Gas	\$ 887	\$ 4,728	\$ -	\$ 5,615
Overhead Hydro	Hydro One	\$ 262	\$ -	\$ -	\$ 262
		\$ 1,149	\$ 8,958	\$ -	\$ 10,107

Total - Special Non-Proratable Assessments (Non-Agricultural)	\$ 10,107
Total - Municipal Lands	\$ 20,681
Total - Privately Owned Non-Agricultural Lands	\$ 53,083
Total - Privately Owned Agricultural Lands (Eligible for Available Grants)	\$ 111,311

Total Assessment \$ 195,182