

**OUDEKIRK DRAIN
PROPOSED PARTIAL REALIGNMENT
S. 78 ENGINEER'S REPORT
TOWNSHIP OF NORTH STORMONT**



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EXECUTIVE SUMMARY

This Engineer's Report has been prepared under Section 78 of the *Drainage Act, R.S.O. 1990, c. D. 17* (henceforth referred to as *the Act*). Section 78 refer to 'major improvements', which refers in this case to the intention to relocate a portion of the existing adopted municipal drain.

The primary purpose of this report is to address a request for a realignment of a portion of the Ouderkirk Drain through the Southeast half of Lot 18, Concession 3, Geographic Township of Finch (North Stormont). The drain currently enters the lot through the eastern property line, approximately 200m north of the railway and flows west for approximately 80m, then southerly. The proposed realignment would see the drain relocated to the Township's road allowance between Lot 18 and 19, travelling southerly; then continuing westerly in the railway right of way. The proposed realignment has been designed in consultation with the Township of North Stormont and the Canadian Pacific Railway, with both parties stating they are amenable to the proposed relocation.

This report includes:

- Plan and Profile Drawings for the proposed realignment (**Appendix C**);
- An updated Schedule of Assessment for future maintenance of the system (**Appendix B**);
- Incorporation of existing crossings to be part of the system for future maintenance.

A map showing the location of the Ouderkirk Drain has been enclosed in **Appendix A**.

The Township of North Stormont was consulted about the history of the Ouderkirk Drain prior to the commencement of this report. Per the supplied information, the most recent Engineer's Report for the Ouderkirk Drain is the Maintenance & Improvement Report authored in 1967 by Stidwill & Associates Limited and adopted under by-law 10-1967. Further historical information has been detailed in **Section 2.0**.

Shade Group Inc. was appointed by resolution on September 12, 2023 (Resolution No. 281-2023) to "update the Ouderkirk Municipal drain engineer's report under Section 78(1) of the Drainage Act R.S.O. 1990". A copy of the resolution has been enclosed in **Appendix E**.

A capacity review was conducted comparing the current cross-section and the re-aligned cross-section, and the new alignment is expected to have equal or greater capacity than current conditions. Overall, the proposed realignment is not expected to have any measurable impacts on erosion or maintenance and would still be expected to perform in the same general manner as the intentions of the 1967 Engineer's Reports. Details for the analysis can be found in **Section 6.0**.

Future maintenance works shall be assessed in accordance with the assessment schedule enclosed within **Appendix B**. Current construction costs associated with the realignment will be borne solely by the requesting landowner.

CONTENTS

1.0	INTRODUCTION.....	1
2.0	DRAIN HISTORY.....	1
3.0	EXISTING CONDITIONS.....	2
3.1	DESCRIPTION OF THE WATERSHED + AREA REQUIRING DRAINAGE.....	2
3.2	ALIGNMENT OF THE DRAIN.....	2
3.3	PREVIOUS REALIGNMENTS.....	3
4.0	PROPOSED IMPROVEMENTS.....	3
5.0	DRAINAGE ACT, 1990, PROCESS.....	4
5.1	TO DATE.....	4
5.2	NEXT STEPS.....	5
5.3	RESOLUTION AND BY-LAW.....	5
5.4	LIMITATIONS.....	6
6.0	DESIGN CONSIDERATIONS.....	6
6.1	ALIGNMENT CONSIDERATION.....	6
6.2	HYDROLOGY CONSIDERATION.....	7
6.3	EROSION CONSIDERATIONS.....	9
7.0	PLAN, PROFILE & SPECIFICATIONS.....	10
8.0	EXISTING ALIGNMENT – ABANDONMENT.....	10
9.0	CROSSINGS.....	10
9.1	FUTURE MAINTENANCE AND REPLACEMENT – FARM CROSSINGS.....	11
10.0	ASSESSMENTS.....	12
10.1	ASSESSMENT SCHEDULES.....	12
11.0	REALIGNMENT CONSTRUCTION COSTS.....	13
12.0	ENGINEERING COSTS.....	14
13.0	PERMITTING & SPECIAL CONSIDERATIONS.....	14
13.1	SOUTH NATION CONSERVATION AUTHORITY.....	15
13.2	DEPARTMENT OF FISHERIES AND OCEANS.....	15
13.3	CANADIAN PACIFIC RAILWAY.....	15
13.3	OTHER CONSIDERATIONS.....	15
14.0	ADIP GRANTS.....	16
15.0	CLOSING.....	17

APPENDICES

APPENDIX A: LOCATION PLAN

APPENDIX B: ASSESSMENT SCHEDULES

APPENDIX C: PLAN AND PROFILE DRAWING

APPENDIX D: CAPACITY CALCULATIONS

APPENDIX E: CONSTRUCTION SPECIFICATIONS & STANDARD DRAWINGS

APPENDIX F: RESOLUTION & BY-LAW

APPENDIX G: AGENCY CONSULTATION & PERMITS

REVISIONS & SUBMISSIONS

Revision #	Comments	Date
00	Draft Submission to Township & Landowner	January 19, 2024
00	Draft Submission to SNCA + DFO w. Permit Applications	February 6, 2024
01	Revised Draft Submission to SNCA	March 25, 2024
02	Final Compilation – Submission to Council	June 7, 2024

1.0 INTRODUCTION

This Engineer's Report has been prepared under Section 78 of the *Drainage Act, R.S.O. 1990, c. D. 17* (henceforth referred to as *the Act*). Section 78 refer to 'major improvements', which refer in this case to the intention to relocate a portion of the existing Ouderkirk Drain. The proposed realignment did not conform with the specifications of a 'minor improvement' (Section 78(5)) as the intention is to relocate the drain from a private landowner's property into adjacent properties owned by others within the watershed.

This report includes updated Plan and Profile Drawings for the realignment. This report also includes an updated Schedule of Assessment for future maintenance of the system, which accounts for updates required to the assessment due to variances in the parcel fabric compared to the previous adopted report, and to appropriately distribute future maintenance costs associated with the realignment. As the realignment will result in a minor lengthening of the total drain length, the schedule of assessment has been revised to assess this additional maintenance length to the initiating landowner. This report also serves to adopt the existing culverts along the drain as part of the system and offers clarification on how future maintenance/replacement costs for these culverts is to be assessed.

All proceedings associated with the preparation of this report have been completed in accordance with the specifications of *the Act*.

2.0 DRAIN HISTORY

The Township of North Stormont was consulted about the history of the Ouderkirk Drain as part of the preparation of this report. Per supplied information, the most recent Engineer's Report for the Ouderkirk Drain is the Maintenance & Improvement Report authored in 1967 by Stidwill & Associates Limited and adopted under by-law 10-1967. Under the February 8, 1967 Engineer's Report the following improvements and maintenance were specified:

- Ditch cleanout from the upper most limits to the railway;
- Realignment of Station 6+63 to 19+33 to move the drain outside of the road allowance.

The 1967 report also specified a relocation of Station 78+23 to 81+88 where the drain runs parallel to the railway however this was later amended to leave the drain within the railway right-of-way (per April 13, 1967 letter from Stidwill & Associates Limited).

Prior to the 1967 Engineer's Report, it is understood that the Ouderkirk Drain was constructed in 1914 under a report authored by Colonel W. H. Magwood, C.E..

The 1967 Engineer's Report describes the outlet of the Ouderkirk Drain as the Payne River, however no maintenance was performed under the 1967 Report. Furthermore, another Engineer's Report was authored in 1978 for the Earl MacMillan Drain - a municipal drain located

just west of the Ouderkirk Drain - which also describes the outlet of the Earl MacMillan as the Payne River; and is described as flowing under the railway, under Highway 43, along the same ditch as previously described as the Ouderkirk Drain. The Earl MacMillan was adopted under by-law 32-1978.

With that, it is proposed that the section of drain between the railway and Payne River no longer be considered part of the Ouderkirk Drain, and instead be solely considered the Earl MacMillan Drain, with all maintenance to be performed and assessed in accordance with the specifications under the adopted Engineer's Report for the Earl MacMillan Drain. The outlet for the Ouderkirk Drain shall henceforth be considered the Earl MacMillan Drain. For further clarification, the outlet of the Ouderkirk Drain has been highlighted on the Plan View as enclosed in **Appendix C**. This change has also been reflected in the updated assessment schedule as enclosed in **Appendix B**, with only those upstream of the outlet being assessed into the assessment schedule for future maintenance works.

3.0 EXISTING CONDITIONS

3.1 DESCRIPTION OF THE WATERSHED + AREA REQUIRING DRAINAGE

The watershed for the Ouderkirk Drain is generally relatively narrow and elongated, with the northern limits located in Lot 21, Concession 4, Geographic Township of Finch (now North Stormont), and the southern limits being Lot 18, Concession 3, Geographic Township of Finch (now North Stormont). The watershed encompasses:

- Lot 18-21, Concession 3, Geographic Township of Finch (North Stormont), and
- Lot 19-22, Concession 4, Geographic Township of Finch (North Stormont).

The above noted lots shall be considered as the “area requiring drainage” for the Ouderkirk Drain.

The total area drained is estimated to be approximately 196 hectares.

A plan view illustrating the watershed boundary is enclosed in **Appendix C**.

3.2 ALIGNMENT OF THE DRAIN

The Ouderkirk Drain starts at the center of the west half of Lot 21, Concession 4, Geographic Township of Finch (North Stormont), approximately 2700 feet north of the centerline of the road between Concession 3 and 4. (Concession 3-4 Road). The drain then continues in a zig-zag manner, southerly and westerly, crosses under the road allowance between Concession 3 and 4 (Concession 3-4 Road), and under the road allowance of MacMillan Road, and continues southerly and westerly until it reaches its outlet, the Earl MacMillan Drain. As noted in Section 2.0, while the Payne River was described in the 1967 Report as providing sufficient outlet, the section between the railway (approximately Station 81+88) and Payne River (approximately Station 92+33) has since been adopted as the Earl MacMillan Drain. As such, the outlet of the

Ouderkirk Drain shall henceforth be considered the intersection with the Earl MacMillan Drain, approximately Station 81+88.

3.3 PREVIOUS REALIGNMENTS

A review of historical aerial imagery (Google Earth Pro, accessed January 16, 2024) and per information brought forth by a landowner during the on-site meeting, a realignment was completed sometime between 2009 and 2014 along an approximately 135m stretch of the drain that previously flowed through the North ¼ of Lot 19, Concession 3. Where the drain previously crossed MacMillan Road (~Station 32+08) and continued west to Station 35+12, then turned south; the re-aligned portion now crosses MacMillan Road and immediately turns south, running parallel to MacMillan Road for approximately 50m, then turning west back towards the existing drain alignment.

To the best of our understanding, no Engineer's Report was available in the Township's file adopting the realignment on Lot 19, Concession 3. At the Township's direction, development of new profile drawings was not required. As the realignment is generally the same length as the previous adopted length, there would not be expected to be any concerns with measurable changes to longitudinal slopes. Through discussions with landowners at the on-site meeting, no concerns with respect to capacity have been observed over the past ~10 years, nor any concerns noted with the relocation of the drain. With that, the re-aligned portion appears to be performing without any notable impacts. Maintenance of this re-aligned portion would be expected to be performed in generally fitting with the same specifications as previously adopted (1967, By-Law 10-1967), with the exception of the alignment *location* – which shall hereby be updated by way of this report. The previous alignment will be considered as abandoned. For slopes and cross-section specifications for maintenance of this section of the drain, refer to the 1967 Engineer's Report. The new alignment location is reflected on the plan view as found in **Appendix C**.

4.0 PROPOSED IMPROVEMENTS

The primary purpose of this report is to address a request for a realignment of a portion of the Ouderkirk Drain. The requested realignment is limited to a section of drain as located on the Southeast half of Lot 18, Concession 3, Geographic Township of Finch (North Stormont). Where the drain currently enters the lot through the eastern property line, approximately 200m north of the railway - and continues west for approximately 80m, then southerly; the proposed realignment would see the drain relocated to the Township's road allowance between Lot 18 and 19, travelling southerly; then continuing westerly in the railway right of way, parallel to the railway.

The proposed realignment has been designed in consultation with the Township of North Stormont and the Canadian Pacific Railway, with both parties amenable to the proposed relocation.

The realignment has been requested by the owner of lands within Lot 18, Concession 3 to provide for better use of the lands for agricultural purposes. The alignment as adopted in 1967 results in a land-locked parcel of approximately 5 acres that is more challenging to farm than lands north and west of the 1967 alignment. The lands are accessible only via a single farm crossing and the alignment of the drain results in an abnormal geometry of the remaining landlocked parcel. By relocating the drain to the outer edges of the field, the farmer will be able to join this land with the northern and western lands and facilitate more economical and practical use of the land.

For an overview of the 1967 alignment and the proposed realignment, refer to the Watershed Map - Plan View enclosed in **Appendix C**.

5.0 DRAINAGE ACT, 1990, PROCESS

5.1 TO DATE

Shade Group Inc. (SGI) was appointed by resolution on September 12, 2023 (Resolution No. 281-2023) to “*update the Ouderkirk Municipal drain engineer’s report under Section 78(1) of the Drainage Act R.S.O. 1990*”. A copy of the resolution has been enclosed in **Appendix F**.

Invitations to the on-site meeting were mailed to landowners within the watershed immediately following appointment in September 2023 inviting them to attend a meeting at the Township Council Chambers on September 27, 2023.

In the time leading up to the meeting, the Township’s Drainage Superintendent fielded calls with respect to the intentions of the on-site meeting and inquiries about the proposed project. Approximately 5 landowners attended the on-site meeting including the landowner requesting the improvement and a representative from South Nation Conservation Authority. No further correspondence has been brought forth from other landowners within the watershed following the on-site meeting, to the best of Shade Group’s knowledge.

At the on-site meeting, one landowner highlighted that the drain had been previously relocated (North ¼ Lot 19, Concession 3). Another landowner noted concerns with the proposed relocation, and noted concerns over erosion, amongst other items. The landowners also noted concerns that the proposed realignment would result in a lengthening of the drain, which would result in added future maintenance costs.

To address the above noted concerns, Shade Group has:

- Updated the plan to reflect the previous realignment and updated the report to adopt the new alignment of the drain (See **Section 3.3**);
- Provided design considerations for erosion and sediment control along the realignment (see **Section 6.3**);
- Updated the schedule of assessments (see **Appendix B**).

No additional concerns with respect to drain performance were noted at the time of the on-site meeting, and as such, no further improvements or design review have been conducted beyond those associated with the realignment on Lot 18, Concession 3, Geographic Township of Finch, (North Stormont).

Following the on-site meeting, Shade Group prepared a draft of this report and the associated drawings. The draft report was then circulated to South Nation Conservation Authority, the Department of Fisheries and Oceans, and Canadian Pacific Railway for review and comment. Further discussion about the permitting and agency consultation is enclosed in Section 13.0.

5.2 NEXT STEPS

Following the formal submission of this report to the Township, the report will be brought to a Meeting to Consider (Section 42).

The clerk of the municipality shall send a copy of the report and a notice stating the date on which the report was filed, the name or designation of the drainage works; and the date of the council meeting at which the report will be considered, to the prescribed people (Section 41).

The Meeting to Consider is held by council, and council may adopt the report by provisional by-law by giving two readings (Section 45(1)).

Following the Meeting to Consider, and assuming a provisional by-law is adopted by two readings, a notice is sent, including a copy of the provisional by-law (exclusive of the Engineer's Report) of the time and place for the first sitting of the Court of Revision. This notice is sent to each body or person as entitled under Section 41 of the Drainage Act.

Following the completion of addressing all appeals; or the time for appealing has expired, Council may pass the provisional by-law by a third reading, thereby authorizing construction (or maintenance) of the drainage works. Work may then be commenced as early as ten days after the by-law is passed, if no notice of intention to make an application to quash the by-law has been filed with the clerk of the council (Section 58(1)), assuming the limitations for construction can be met at such a time (e.g. compliance with any permitting restrictions with respect to timing windows).

Through discussions with Township staff, it is understood that the Township's Drainage Superintendent will oversee any hiring of a contractor. The Township's Drainage Superintendent is also understood to be undertaking any contract administration, construction supervision, and final walkthrough, as required. No engineering involvement is anticipated during construction at this time.

5.3 RESOLUTION AND BY-LAW

Appendix E has been included in this report as a place to attach the applicable resolution and by-law associated with this Section 78(1) undertaking. The resolution from Shade Group Inc's initial

appointment has been enclosed with this submission; and it is recommended that the Drainage Superintendent (or applicable Township Staff) attach a copy of the report adoption by-law following its third reading for ease of future reference.

5.4 LIMITATIONS

The process overview provided in **Section 5.2** is provided as a general summary of the next steps to completion. Should the process described conflict with the specifications of the Drainage Act, the Drainage Act shall govern. The process described is provided as a summary only, the Township clerk shall be responsible for ensuring that the applicable administration works are completed in accordance with the specifications of the Drainage Act.

6.0 DESIGN CONSIDERATIONS

6.1 ALIGNMENT CONSIDERATION

The north/south stretch of the realignment is to be located within lands owned by the Township of North Stormont. These lands are part of an unopened road allowance that, given the proximity to an existing travelled road (MacMillan Road), are not expected to ever be developed. Pre-consultation with the municipality was conducted by the Township's Drainage Superintendent and the initiating landowner prior to Shade Group's appointment. Through consultation with Township staff and Council, it is understood that the Township is amendable to the location of the proposed realignment.

Given the road allowance is not developed, both adjacent landowners have been conducting farming practices within the unopened road allowance. As the landowner of Lot 19, Concession 3 had expressed concerns over impacts the realignment may have on his farming practices, it was proposed that a legal survey be completed to confirm the legal limits of the road allowance; rather than relying on the property parcels from the Stormont, Dundas and Glengarry (SDG) Geographic Information System (GIS) (which are generally not considered to be survey accurate). JayMac Land Surveys Inc. (JayMac), an Ontario Land Surveying Company, was retained to complete a review of the property boundaries. As a legal survey of the entire watershed would be costly, the legal survey works were limited to those directly related to the proposed realignment.

Per the information provided by JayMac, the road allowance has a total width of approximately 20.12m. The information provided by JayMac notes that the surveyed road allowance limits are approximately 7.2m westerly offset from those that were provided from SDG's GIS. For clarification, the legal survey data as acquired from JayMac has been illustrated on the Plan View of the Plan and Profile Drawing for the realignment (**Appendix C**).

The realignment is proposed to be located approximately within the centre of the surveyed legal limits of the road allowance. The SDG GIS westerly limits were used as the western top of bank

of the proposed realignment. The top of bank is to be located approximately 7.5m from the surveyed property limits. This alignment places the Ouderkirk Drain within the Township's road allowance, and does not encroach onto the lands that are currently farmed by the landowner of Lot 19, Concession 3.

For the east-west portion of the realignment, the top of slope has been designed at the northern limits of the railway right-of-way as per the SDG GIS property limits, which generally comply with the legal surveyed limits within +/- 1m. The proposed realignment will be located within lands owned by the Canadian Pacific Railway. As part of pre-consultation works, the Township's Drainage Superintendent reached out to the railway representative and they were amenable to the proposed relocation, noting solely that the drain was to be no less than 20ft from the railbed. The proposed design complies with that specification. The proposed design has since been circulated to the Canadian Pacific Railway and is understood to be acceptable. Correspondence with the Canadian Pacific Railway has been enclosed in **Appendix G**.

It is my professional opinion that the proposed realignment allows the requesting landowner better use of his lands and offers a fair relocation that is not expected to measurably impact the adjacent landowners.

6.2 HYDROLOGY CONSIDERATION

The proposed realignment is anticipated to occur between approximately Stations 68+68 and 77+70 per the 1967 Engineer's Report stations (note the 1967 stations are in feet). The 1967 engineered specifications for the Ouderkirk Drain denote the design as follows:

Table 1: Existing Design Criteria – 1967 Profile Drawing

Design Criteria	Specification
Side Slopes	1.25 Horizontal to 1 Vertical
Grade	Stn. 68+68-70+00 - 0.20% Stn. 70+00-75+00 - 0.24% Stn 75+00 – 77+70 - 0.58% (Weighted Avg Slope = 0.34%)
Bottom Width	0.91m (3 ft)

The following design criteria have been applied to the proposed realignment:

Table 2: Proposed Design Criteria – 2024 Realignment

Design Criteria	Specification
Side Slopes	2 Horizontal to 1 Vertical
Grade	0.33%
Bottom Width	0.91m (3 ft)

The capacity of the existing alignment was reviewed based on the shallowest section of the drain (i.e. where the delta between the top of slope and ditch invert are the least), as this is where it would be expected to spill over in the event of a large storm event. The shallowest area of the existing alignment has an approximate conveyance depth of 1.1 m and is intended to have side slopes of 1.25:1, a bottom width of 3 ft (0.91m) and a longitudinal slope ranging from 0.20% to 0.58%, with a corresponding weighted average slope of 0.33% per the 1967 Engineer's Report.

The proposed realignment will have a conveyance depth of no less than 1.1m; side slopes of 2:1, a bottom width of 3 ft (0.91m) and a longitudinal slope of approximately 0.33%. Refer to the Profile View enclosed in **Appendix C**.

Capacity was calculated using Manning's Equation where:

$$Q = VA = \frac{1}{n} AR^{\frac{2}{3}} \sqrt{S}$$

Where

Q = flow rate (m³/s)

V = velocity (m/s)

A = flow area (m²)

n = Manning's Roughness coefficient

R = Hydraulic Radius (m)

S = Channel Slope (m/m)

The capacity of the existing channel was reviewed in comparison to the design presented in 1967. The capacity of the existing channel was reviewed at the upstream end of the realignment (+/- Station 70+00), at the downstream limits of the realignment (+/- Station 78+23) and downstream – past the realignment (+/- Station 81+88). The existing channel as designed in 1967 has a capacity ranging from 2.79m³/s to 0.60m³/s, and no erosion and sediment control measures installed, nor proposed within the specifications of the 1967 Engineer's Report.

The proposed realignment is to have numerous improvements which will offer permanent erosion and sediment control for the channel. These improvements include:

- a. Three sediment basins with rock check dams within the immediate vicinity of the realignment;
- b. Rip-rap lining at the two 90-degree bends and at the s-curve where the realignment transitions back to the existing channel alignment;
- c. Slope flattening: the existing channel has design side slopes of 1.25:1, the proposed realignment is to have side slopes of 2:1.

The proposed slope flattening results in a slightly larger cross-section through the realignment, which in turns translates to a greater capacity for the channel, however the realignment is not

expected to experience a measurable increase in flow rates, as the contributing surface area is expected to be comparable to existing conditions. With that, the increase in capacity would be expected to contain runoff within the banks and not present a concern from a flooding perspective; but not present such a measurable change that it presents a concern from an erosion perspective. Refer to **Appendix D** for calculations.

No concerns with respect to capacity or performance of the existing system were brought forth during the on-site meeting, nor has the Township expressed any concerns over capacity as it relates to their road crossings. Our capacity review suggests that the system would be expected to offer a similar level of service following the realignment to how it performs in its current configuration. With that, the proposed realignment is not expected to have any measurable impact on the neighbouring, upstream or downstream owners, in comparison to current conditions.

For more details on the capacity review – please refer to the calculations as enclosed in **Appendix D**.

6.3 EROSION CONSIDERATIONS

Erosion is most notably a concern in open channels where there are sudden changes in direction of flow (i.e. 90-degree turns in the channel) or where there are areas of restriction (e.g. culverts or enclosures). Side slopes at steep inclines can also be a concern for erosion. For the existing (1967) alignment, there would be two significant changes in direction (approximately 90 degrees) within the project area, and no specifications appear to be included in the 1967 Engineer's Reports for bank stabilization measures.

For the proposed realignment, the number of sudden changes in the direction of flow will remain as two. The changes in direction are proposed to be lined with rip-rap which will offer slope protection, attenuation of flows, and reduce the possibility of erosion along these bends. Rip-rap has also been proposed at the 's'-curve required to tie into the existing alignment (approximately Station 77+70). Three sediments traps have been proposed within the realignment area, which will offer additional means of flow attenuation and serve as a permanent erosion and sediment control measures. These erosion control measures are considered part of the drainage infrastructure and should be restored and maintained as part of the continued future maintenance works.

The Ouderkirk Drain specifications from 1967 specify a 1.25:1 side slope, which is considered quite steep under current design practices. Given concerns noted over erosion, and as erosion of the banks was observed within the area proposed for realignment, it is proposed that the realignment be constructed with 2:1 side slopes. This slope flattening will aid to further offer erosion protection for the system.

Overall, the proposed realignment is not anticipated to have any measurable negative impacts to erosion of the system compared to its current adopted design.

7.0 PLAN, PROFILE & SPECIFICATIONS

It is intended that the accompanying Plan, Profile and Specifications form part of this report, and that they together govern the performance of the work.

The enclosed plans (**Appendix C**) shows:

- The watershed boundary;
- The general course of proposed works (existing alignment to be abandoned + new alignment);
- Turns and intersections have been referenced;
- Property ID numbers have been assigned to each property for ease of reference to the assessment schedule. The use of Property IDs rather than names offers protection of private information and affords continuity of use as property ownership can change over time.

8.0 EXISTING ALIGNMENT – ABANDONMENT

As the intention is to re-align a portion of the existing channel, not to create a diversion or overflow channel, the existing alignment within Lot 18, Concession 3, Geographic Township of Finch (North Stormont) is to be abandoned as per the attached plan (see **Appendix C**). The new alignment is to be adopted under a new by-law and maintained as per the specifications provided herein. The former alignment between approximately Station 68+68 and 77+70 (1967 Report) is to be abandoned, filled in and will no longer be maintained by the municipality.

The same shall apply to the previous realignment conducted in Lot 19, Concession 3. The previous alignment shall be considered abandoned, and no longer maintained by the Township, while the new alignment shall be maintained in accordance with the specifications as shown in the profile drawings enclosed in the 1967 Engineer's Report.

9.0 CROSSINGS

This report also includes adopting the existing agricultural crossings as part of the system, to be maintained by the Township as part of future maintenance provisions.

The Ouderkirk Drain includes 5 crossings; 3 agricultural and 2 road crossing. A summary of the crossings has been provided in Table 3.

Table 3: Ouderkirk Drain – Culvert Inventory

Culvert ID #	Property ID Reference	Station No.	Inventory Details
1	2	61+89	1500mmø x 9m Corrugated Steel Pipe
2	4	43+79	1500mmø x 9m Corrugated Steel Pipe
3	Road (MacMillan Rd)	31+78	1500mmø x 12m Corrugated Steel Pipe
4	Road (Concession 3-4 Rd)	19+09	1500mm span x 800mm rise x 12m Corrugated Steel Pipe Arch
5	13	19+91	1200mmø x 8m Concrete Pipe

As no concerns have been raised with respect to the performance of the existing culverts, no review has been performed of the hydrology nor hydraulics associated with these crossings. No changes are proposed from what is currently on-site; and future replacement is expected to be like-for-like. Should a landowner or the municipality wish to deviate from a like-for-like replacement, such an improvement may be possible under a separate Section 78(5) (Minor Improvement) process.

9.1 FUTURE MAINTENANCE AND REPLACEMENT – FARM CROSSINGS

Future maintenance of crossings is to be completed by the Township, as per the Section 74 of *the Act*. Per *the Act*:

“Maintenance of drainage works and cost

74. Any drainage works constructed under a by-law passed under this Act or any predecessor of this Act, relating to the construction or improvement of a drainage works by local assessment, shall be maintained and repaired by each local municipality through which it passes, to the extent that such drainage works lies within the limits of such municipality, at the expense of all the upstream lands and roads in any way assessed for the construction or improvement of the drainage works and in the proportion determined by the then current by-law pertaining thereto until, in the case of each municipality, such provision for maintenance or repair is varied or otherwise determined by an engineer in a report or on appeal therefrom. R.S.O. 1990, c. D.17, s. 74.”

The maintenance and replacement of farm crossings (crossings 1, 2 and 5) are to be at the expense of the upstream landowners, in the same apportionments as distributed in the enclosed assessment schedule (**Appendix B**).

The maintenance and replacement of the road crossings (crossings 3 and 4) are to be at the expense of the road authority with ownership of the road, in fitting with Section 26 of *the Act*.

10.0 ASSESSMENTS

As only minor changes have been made to the watershed properties since 1967, only minor adjustments have been made to the assessment schedule.

The assessments as previously accepted have been revised to account for two severances that have occurred within the watershed; and costs have been redistributed to assess the increased maintenance costs associated with the minor lengthening through Lot 18, Concession 3 to the initiating landowner. Finally, the road allowance between Lots 18 and 19, Concession 3, was not shown nor assessed in the 1967 report, so acreage has been removed from the respective adjacent properties adjacent to this road allowance and costs have been assigned to the owner of the road allowance for land within the watershed. This redistribution results in a minor alteration to everyone's apportionment as a total percentage but still provides assessments that are in generally fitting with the apportionments previously adopted in 1967.

As the previous adopted report used "Maintenance" and "Improvement" assessments, rather than "Outlet" and "Benefit", and as the changes to the assessment schedule was only minor; we have continued with these terms for the sake of continuity with the previous adopted report.

10.1 ASSESSMENT SCHEDULES

Schedule 'A' – **Appendix B** is the assessment schedule to be used to assess out future maintenance costs. That includes the replacement of private crossings (**Section 9.0**). The municipality shall be responsible for the repair and/or replacement of all private crossings as adopted under this report and as summarized in **Section 9.0**, as per Section 74 of *the Act*. Costs are to be assessed to those landowners and/or roads upstream of the works being undertaken in the same apportionments as outlined in Schedule 'A'.

The realignment through Lot 18, Concession 3, including the horizontal and vertical alignment, shall be maintained in accordance with the plans enclosed herein. The remainder of the drain is to be maintained in accordance with the horizontal and vertical alignment as included in the Engineer's Report dated February 1967, prepared by Stidwill & Associated Limited, with the exception of the previous re-alignment (**Section 3.3**), for which the plan view contained herein shall dictate the drain's location; while the profile from 1967 shall dictate the cross-section and slope.

Costs for the initial construction of the realignment (Concession 3, Lot 18) are to be borne solely by the requesting landowner; while future maintenance is to be assessed in accordance with the apportionments outlined in Schedule 'A'.

Schedule 'B' – **Appendix B** – provides a breakdown of costs associated with the engineering fees as well as the initial construction of the re-alignment through Lot 18, Concession 3, and their apportionment across the watershed. The re-alignment costs (engineering and construction)

have been assigned as a one-time special benefit assessment to the initiating landowner. Schedule 'B' serves as a one-time use assessment schedule. All future maintenance shall be assessed in accordance with Schedule 'A'.

For ease of completion of the Application for a Grant for a Municipal Drain Construction or Improvement, Schedule 'C' serves as a summary of Schedule 'B' with the appropriate summaries suitable for completion of said form.

All specifications for maintenance shall be in accordance with the Engineer's Report dated February 1967, prepared by Stidwill & Associated Limited, **except for** those as they apply to the replacement of crossings as noted in **Section 9.0**, and **except for** the re-aligned portion through Lot 18, Concession 3, and the alignment of the re-aligned portion of the drain through Lot 19, Concession 3.

The Canadian Pacific Railway has *not* been assessed into either assessment schedule, as they were not assessed into the previous adopted 1967 Engineer's Report and the contributing area has not changed.

In summary, the following are understood to be the governing documents:

- Maintenance (except Lot 18, Concession 3 + Lot 19, Concession 3) - February 1967, prepared by Stidwill & Associated Limited.
- Construction and future maintenance – Lot 18, Concession 3 – this report.
- Future maintenance – Lot 19, Concession 3 – alignment: this report; profile: 1967 report.
- Assessment Schedules – this report.

11.0 REALIGNMENT CONSTRUCTION COSTS

The following has been prepared as an estimate for construction costs associated with the proposed construction works associated with that as outlined on the enclosed plans (**Appendix C**).

Table 4: Ouderkirk Drain Realignment – Estimated Construction Cost

Scope	Estimated Cost (Excl. tax)
Earth Moving Operations (Excavation + Backfill)	\$35,000
Rock for Bank Stabilization	\$5,000
Sediment Traps (incl. Rock Check Dams)	\$3,750
Seeding	\$4,250
Temporary Erosion and Sediment Control Measures	\$2,500
Permitting Fees (SNCA)	\$1,040
Total Estimated Construction Cost (Excl. tax)	\$51,540

This estimate is based on 2023/2024 costing, assumed for construction in 2024. Should there be delays in construction, the construction costs may be higher. Final construction costs may be higher or lower than those estimated herein.

Per Section 59(1) of the Drainage Act, should the contract price exceed the engineer’s estimate by more than 133%, council of the initiating municipality shall call a meeting in the manners prescribed under Section 41 to consider whether or not the project will proceed.

Construction specifications and standard drawings have been included in **Appendix E** for the proposed realignment works.

12.0 ENGINEERING COSTS

The engineering costs associated with this project are estimated to be \$27,800 plus applicable taxes. This estimate does not factor in any appeals or revisions to the report following its formal submission. Should there be appeals or requests for revisions, the total cost will be amended prior to the final adoption of this report.

The proposed breakdown of engineering fees is to be as follows:

Table 5: Ouderkirk Drain Realignment – Estimated Engineering Cost

Scope	Paid By	Estimated Cost (Excl. tax)
Legal Surveying	Initiating Landowner	\$2,500
Assessment Schedule/Culvert Related Updates	Watershed	\$1,500
Remaining Engineering Services	Initiating Landowner	\$23,800
Total Estimated Engineering Fees (Excl. tax)		\$27,800

It is understood that the initiating landowner (the applicant) will be paying for all fees associated with the realignment, including the associated engineering fees. As additional updates were made (incorporating culverts, update assessments), a breakdown of the assessment of engineering fees has been enclosed in **Appendix B – Schedule ‘B’**.

13.0 PERMITTING & SPECIAL CONSIDERATIONS

As part of the preparation of this report, the author conducted a review of AgMaps, the Geographic Information System managed by the Ministry of Agriculture, Food and Rural Affairs. AgMaps identifies the Ouderkirk Drain as a ‘Class F’ drain. Class F drains are defined as intermittent watercourses that are dry for at least 3 months of the year.

No fisheries studies were conducted as part of Shade Group’s scope.

13.1 SOUTH NATION CONSERVATION AUTHORITY

The Engineer's Report was circulated to the South Nation Conservation Authority (SNCA) for review and permit. SNCA provides permits under the Conservation Authorities Act, R.S.O. 1990, c. C 27 for the Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

A copy of the permit has been enclosed in **Appendix G**. Please note this permit is only for the initial construction of the realignment. Future maintenance may require new permitting, subject to legislative requirements at the time of future maintenance works.

13.2 DEPARTMENT OF FISHERIES AND OCEANS

Consultation with Fisheries and Oceans Canada (DFO) was completed concurrent with the preparation of this report. A "Request for Review" application was submitted along with a copy of this Engineer's Report (and associated drawings). Projects in or near water may require authorization under the Fisheries Act.

A letter of opinion was received from DFO and has been enclosed in **Appendix G**. Contingent on a number of conditions that have been outlined in the enclosed letter, Fisheries Authorization is not required. Please note that such conclusions are based on specific constraints, including the completion of works in low or no flow conditions. For more details – refer to the letter enclosed in **Appendix G**.

13.3 CANADIAN PACIFIC RAILWAY

As the proposed realignment includes works to be conducted within the railway right-of-way, this report (and associated drawings) were circulated to the Canadian Pacific Railway representative for comment. A copy of the correspondence with the representative has been enclosed in Appendix G. It has been noted that no permit is required, however the Canadian Pacific Railway representative is to be notified when work is scheduled to start.

13.3 OTHER CONSIDERATIONS

WORKING PLATFORM

Excavation of the realignment is expected to occur from the west (Stn 0+00 to 1+90) and north (Stn. 1+90 to 3+67) sides of the proposed realignment. Future maintenance of this section of the drain would be expected to occur from the west and north sides as well.

EROSION AND SEDIMENT CONTROL

Permanent erosion and sediment control measures have been shown on the enclosed engineering plans and include the installation of sediment traps, rip-rap lined banks, and slope flattening. Banks are to be seeded within 24 hours following excavation. Refer to **Appendix E**, Construction Specifications, for additional information.

Temporary erosion and sediment control measures shall include the erection of silt fencing around the base of excavated stockpiles. Connection of the realignment to the existing channel shall not occur until after the entire realignment has been excavated.

Additional erosion and sediment control measures may be required at the direction of the engineer, municipality, SNCA or DFO, as needed to address site conditions at the time of the work, referring both to the new construction and future maintenance activities. The review and implementation of erosion and sediment control measures is intended to be a living practice, where additional measures may be required depending on the conditions at the time of the work.

Erosion and sediment control notes and recommended locations have been shown on the enclosed engineered plans.

UTILITIES

The contractor shall acquire applicable utility clearance prior to excavation as per the Ontario Underground Infrastructure Notification System Act. Should utility conflicts be identified, Shade Group shall be notified.

ADDITIONAL CONSTRUCTION SPECIFICATIONS

Additional construction specifications have been included in **Appendix E**.

14.0 ADIP GRANTS

Properties that are registered with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) for the Farm Property Class Tax Rate Program may be eligible for a 1/3 grant from the Province. Current eligibility has been assumed based on AgMaps 2023/2024 mapping for eligible properties however depending on the time of works, eligibility may differ from that reflected on the enclosed assessment schedules.

15.0 CLOSING

This draft submission is respectfully submitted to the Council of the Township of North Stormont this June 7, 2024

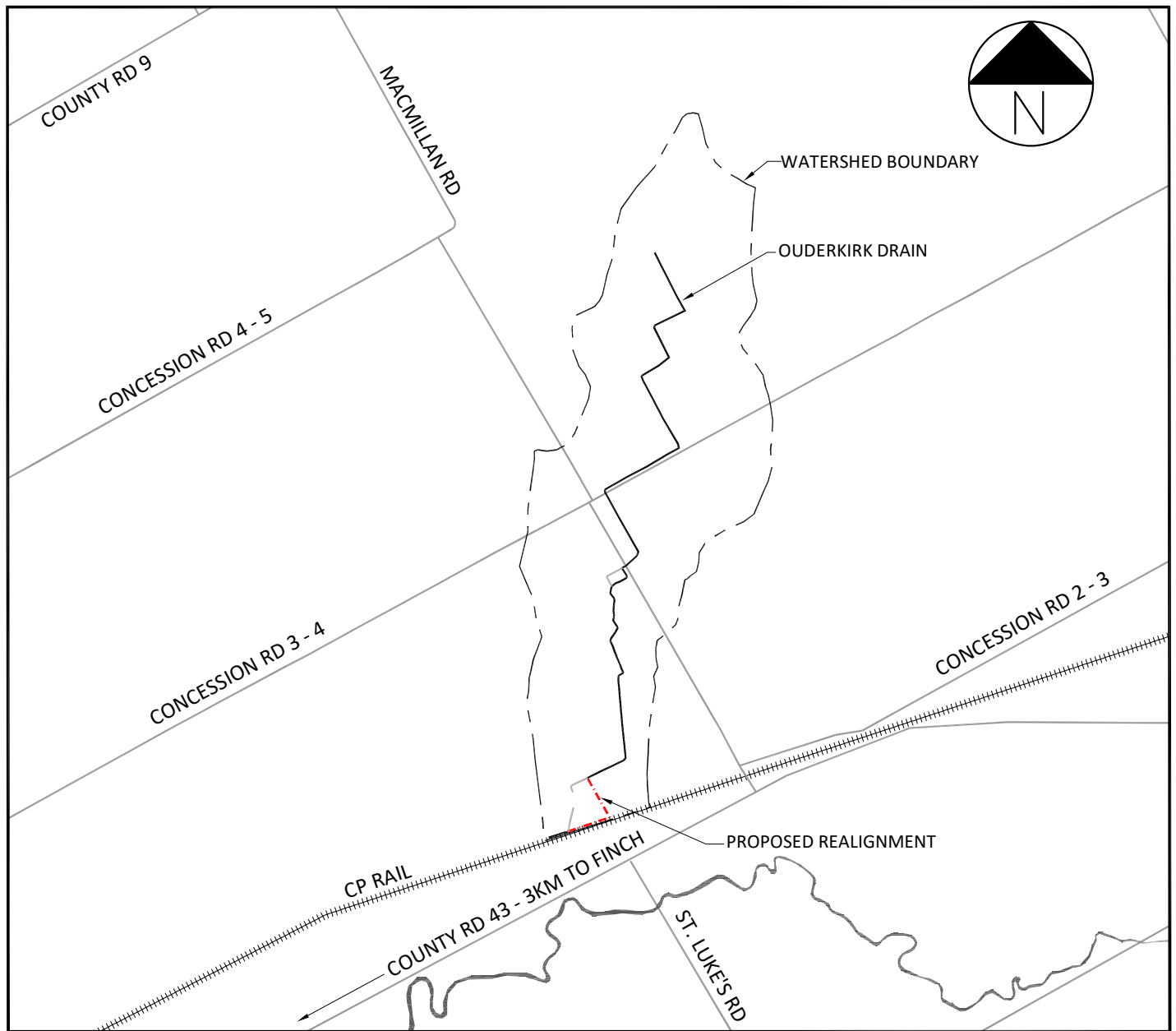
Should you have any questions or concerns, please do not hesitate to contact the undersigned.



Monica Shade, P. Eng.
Drainage Engineer
Shade Group Inc.

APPENDIX A

LOCATION PLAN



LOCATION PLAN
N.T.S.

OUDERKIRK DRAIN
TOWNSHIP OF NORTH STORMONT
2024



APPENDIX B

ASSESSMENT SCHEDULES

Assessment Schedule - Updated 2024
Schedule 'A'
Ouderkirk Drain - Real Properties
Construction - For Future Maintenance

Property ID No.	Roll No.	Lot/Concession	Area Drained (ha)	Maintenance Assessment	Farm Tax Class (Y/N)	FTC Grant (1/3)	Net HST (1.76%)	Net Assessment*
1	41100900219500	Lot 18, Con 3	9.2	\$ 273.97	Y	\$ 91.32	\$ 3.21	\$ 185.86
2	41100900221000	Lot 19, Con 3	18.1	\$ 265.19	Y	\$ 88.40	\$ 3.11	\$ 179.91
3	41100900222000	Lot 18, Con 3	0.9	\$ 5.30	Y	\$ 1.77	\$ 0.06	\$ 3.60
4	41100900222000	Lot 19, Con 3	19.5	\$ 173.76	Y	\$ 57.92	\$ 2.04	\$ 117.88
5	41100900223005	Lot 19, Con 3	0.5	\$ 4.87	N	\$ -	\$ 0.09	\$ 4.95
6	41100900223000	Lot 19, Con 3	14.0	\$ 148.86	Y	\$ 49.62	\$ 1.75	\$ 100.98
7	41100900225000	Lot 20, Con 3	28.3	\$ 1,017.22	Y	\$ 339.07	\$ 11.94	\$ 690.08
8	41100900229000	Lot 21, Con 3	7.4	\$ 148.01	Y	\$ 49.34	\$ 1.74	\$ 100.41
9	41100900296005	Lot 19, Con 4	5.7	\$ 45.12	Y	\$ 15.04	\$ 0.53	\$ 30.61
10	41100900301000	Lot 20, Con 4	31.2	\$ 1,574.56	N	\$ -	\$ 27.71	\$ 1,602.27
11	41100900300200	Lot 21, Con 4	3.3	\$ 40.30	Y	\$ 13.43	\$ 0.47	\$ 27.34
12	41100900302000	Lot 20, Con 4	0.4	\$ 11.49	N	\$ -	\$ 0.20	\$ 11.69
13	41100900303000	Lot 21, Con 4	31.4	\$ 926.27	Y	\$ 308.76	\$ 10.87	\$ 628.38
14	41100900303050	Lot 21, Con 4	22.1	\$ 321.50	N	\$ -	\$ 5.66	\$ 327.16
15	41100900304000	Lot 21, Con 4	0.8	\$ 33.84	Y	\$ 11.28	\$ 0.40	\$ 22.96
Sub-total			193.1	\$ 4,990.25		\$ 1,025.95	\$ 69.77	\$ 4,034.08

*The estimated assessment accounts for an anticipated 1/3 grant from OMAFRA for eligible farm tax classed properties. Note that the grant is at the discretion of the province and not guaranteed. Grant eligibility is also based on timing of when the work is completed. The above estimate is based on current eligibility per AgMaps 2023/2024 Farm Tax Class information.

Assessment Schedule - Updated 2024
Schedule 'A'
North Stormont - Roads
Construction - For Future Maintenance

ID/Name	Area Drained (ha)	Owner	Est Maintenance Assessment	Net HST (1.76%)	Est Maintenance Assessment
MacMillan Road	1.04	North Stormont Township	\$ 387.87	\$ 6.83	\$ 394.69
Concession Road 3 - 4	0.38		\$ 581.61	\$ 10.24	\$ 591.85
Road Allowance (Con 3 - between lots 18 & 19)	1.67		\$ 24.38	\$ 0.43	\$ 24.80

Summary

Real Properties - North Stormont	\$ 4,990.25
Township Roads - North Stormont	\$ 993.86
Estimated Grant (Based on 2023/2024 Eligibility)	\$ 1,025.95
Net HST (1.76%)	\$ 87.26
Sub-Total	\$ 5,045.43

*Total "construction" cost for the purposes of preparing this assessment schedule has been taken from the original 1967 Engineer's Report. This assessment schedule is intended for future maintenance works.

Assessment Schedule - Updated 2024

Schedule 'B'

North Stormont - Real Properties

Engineering + Realignment - ONE TIME USE ONLY

Property ID No.	Roll No.	Lot/Con	Area Drained (ha)	Est. Improvement Assessment	Special Benefit Assessment	Farm Tax Class (Y/N)	Anticipated FTC Grant (1/3)	Net HST (1.76%)	Est. Improvement Assessment*
1	41100900219500	Lot 18, Con 3	9.2	\$ 68.67	\$ 77,840.00	Y	\$ 25,969.56	\$ 914.13	\$ 52,853.24
2	41100900221000	Lot 19, Con 3	18.1	\$ 66.47	\$ -	Y	\$ 22.16	\$ 0.78	\$ 45.10
3	41100900222000	Lot 18, Con 3	0.9	\$ 1.33	\$ -	Y	\$ 0.44	\$ 0.02	\$ 0.90
4	41100900222000	Lot 19, Con 3	19.5	\$ 43.56	\$ -	Y	\$ 14.52	\$ 0.51	\$ 29.55
5	41100900223005	Lot 19, Con 3	0.5	\$ 1.22	\$ -	N	\$ -	\$ 0.02	\$ 1.24
6	41100900223000	Lot 19, Con 3	14.0	\$ 37.31	\$ -	Y	\$ 12.44	\$ 0.44	\$ 25.31
7	41100900225000	Lot 20, Con 3	28.3	\$ 254.98	\$ -	Y	\$ 84.99	\$ 2.99	\$ 172.98
8	41100900229000	Lot 21, Con 3	7.4	\$ 37.10	\$ -	Y	\$ 12.37	\$ 0.44	\$ 25.17
9	41100900296005	Lot 19, Con 4	5.7	\$ 11.31	\$ -	Y	\$ 3.77	\$ 0.13	\$ 7.67
10	41100900301000	Lot 20, Con 4	31.2	\$ 394.69	\$ -	N	\$ -	\$ 6.95	\$ 401.63
11	41100900300200	Lot 21, Con 4	3.3	\$ 10.10	\$ -	Y	\$ 3.37	\$ 0.12	\$ 6.85
12	41100900302000	Lot 20, Con 4	0.4	\$ 2.88	\$ -	N	\$ -	\$ 0.05	\$ 2.93
13	41100900303000	Lot 21, Con 4	31.4	\$ 232.18	\$ -	Y	\$ 77.39	\$ 2.72	\$ 157.51
14	41100900303050	Lot 21, Con 4	22.1	\$ 80.59	\$ -	N	\$ -	\$ 1.42	\$ 82.01
15	41100900304000	Lot 21, Con 4	0.8	\$ 8.48	\$ -	Y	\$ 2.83	\$ 0.10	\$ 5.76
Sub Total			193.1	\$ 1,250.88	\$ 77,840.00		\$ 26,203.83	\$ 930.81	\$ 53,817.85

*The estimated assessment accounts for an anticipated 1/3 grant from OMAFRA for eligible farm tax classed properties. Note that the grant is at the discretion of the province and not guaranteed. Grant eligibility is also based on timing of when the work is completed. The above estimate is based on current eligibility per AgMaps 2023/2024 Farm Tax Class information.

Assessment Schedule - Updated 2024

Schedule 'B'

North Stormont - Roads

Engineering + Realignment Construction - ONE TIME USE ONLY

ID/Name	Area Drained (ha)	Owner	Est. Improvement Assessment	Net HST (1.76%) (\$)	Est. Improvement Assessment
MacMillan Road	1.04	North Stormont Township	\$ 97.22	\$ 1.71	\$ 98.94
Concession Road 3 - 4	0.38		\$ 145.79	\$ 2.57	\$ 148.36
Road Allowance (Con 3 - between lots 18 & 19)	1.67		\$ 6.11	\$ 0.11	\$ 6.22

Summary

Privately owned Non-Agricultural - Engineering Costs	\$ 405.80
Privately owned Agricultural - Non-Grantable (ID 14) - Engineering Costs*	\$ 82.01
Privately owned Agricultural - Grantable - Engineering Costs + Construction Costs	\$ 79,995.07
Township Roads - North Stormont	\$ 253.51
Project Total	\$ 80,736.38
Estimated Grant	\$ 26,203.83

Assessment Schedule - Updated 2024

Schedule 'C'

Summary for Grant Application

Engineering + Realignment - ONE TIME USE ONLY

Total Area Assessed:	196 ha
Length of Drain:	3468 m

Estimated Cost of Works

Construction:	\$	51,540.00	
Engineering Charges:	\$	27,800.00	
Net HST:	\$	1,396.38	*Assumed 1.76%
Project Total:	\$	80,736.38	

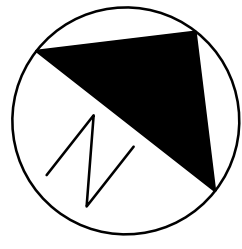
Analysis of Assessments**Estimated by Engineer**

1. Canada Owned Lands	\$	-
2. Ontario Lands	\$	-
3. Municipal Lands	\$	253.51
4. Privately-owned Non-Agricultural	\$	405.80
5. Privately owned Agricultural - Grantable	\$	79,995.07
5. Privately owned Agricultural - Non-Grantable	\$	82.01
6. Special non-proratable assessments	\$	-
7. Project total	\$	80,736.38

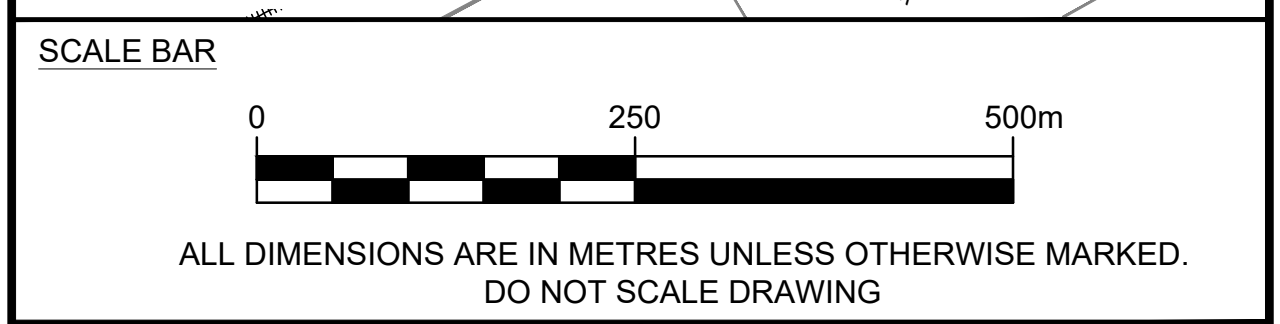
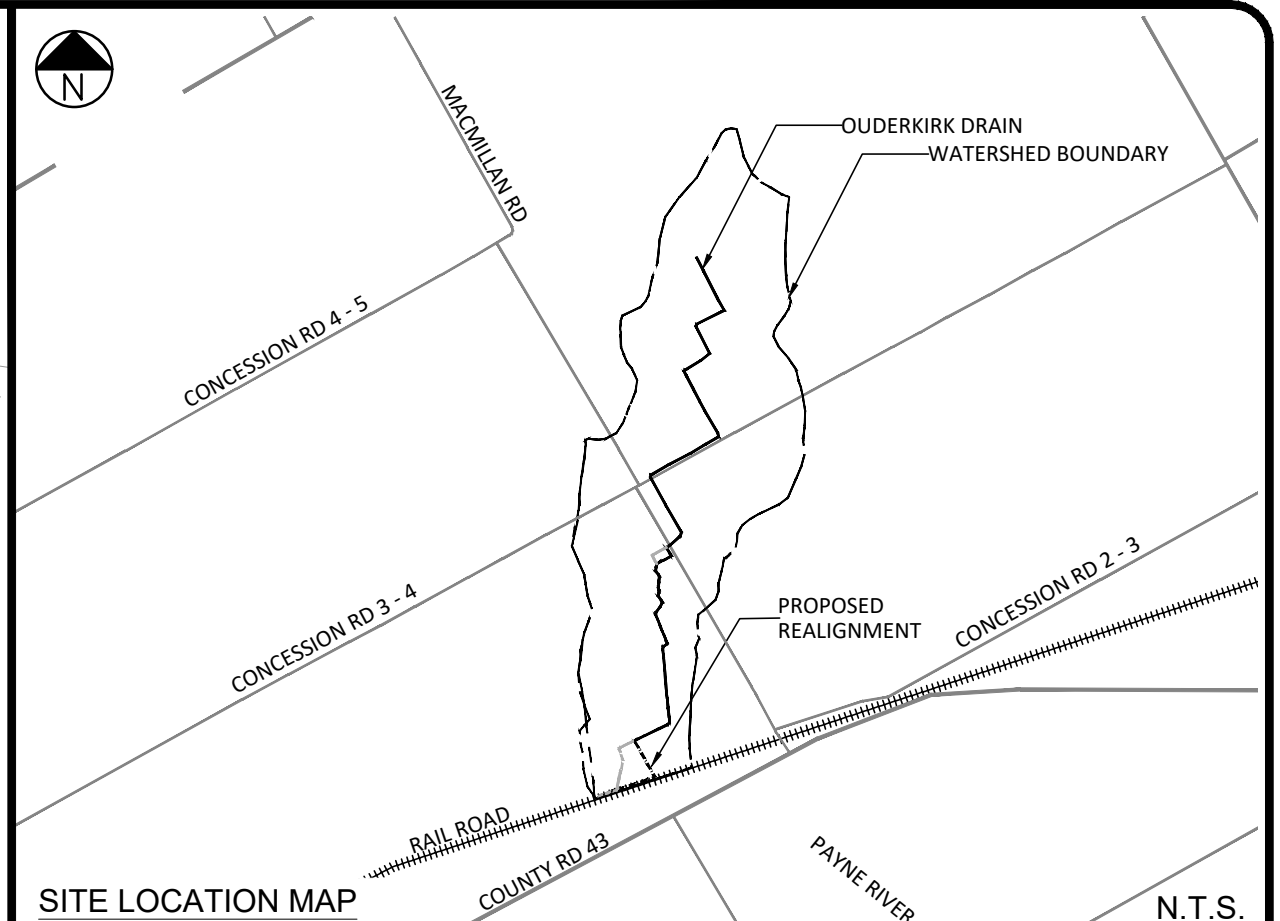
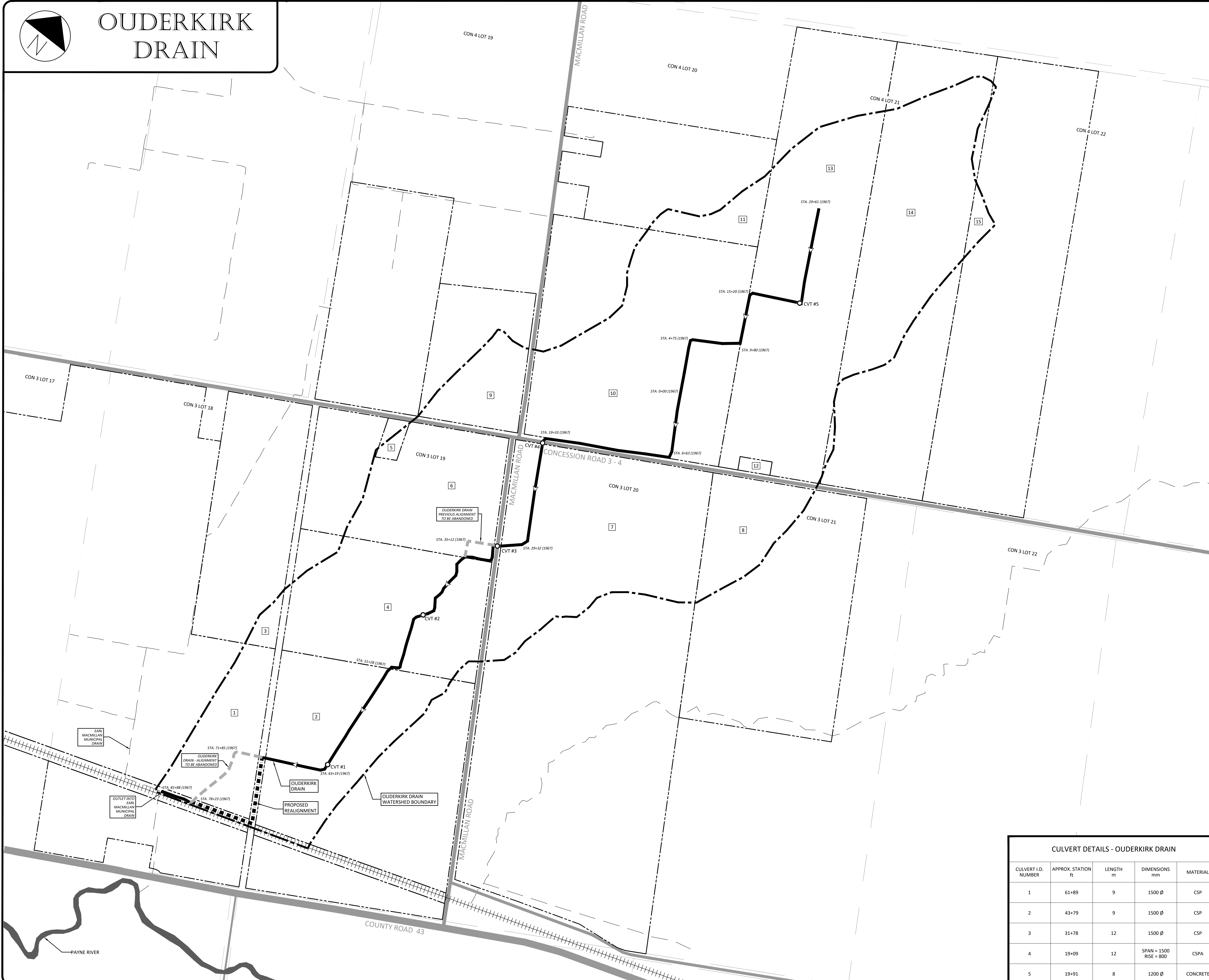
<u>Amount of Grant (Estimated)</u>	\$	26,203.83
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APPENDIX C

PLAN AND PROFILE DRAWINGS



OUDERKIRK DRAIN



PAGE SIZE 24" x 36" SCALE 1:5000

SHADE GROUP INC.
4625 MARCH RD.
ALMONTE, ON
K0A 1A0



LEGEND

- 2023 PROPERTY LINES (GIS DATA)
- OUDERKIRK DRAIN WATERSHED BOUNDARY
- OUDERKIRK DRAIN ALIGNMENT
- PROPOSED PARTIAL REALIGNMENT OF OUDERKIRK DRAIN
- ROADWAY
- LOT AND CONCESSION LINES
- RAIL ROAD
- STATIONS (FT) - PER 1967 ENGINEER'S REPORT
- WATERCOURSES
- PROPERTY ID REFERENCE
- CVT #
- FLOW DIRECTION

NOTES

1. ALL STATION LABELS ARE APPROXIMATE. THIS MAP IS FOR INFORMATION PURPOSES ONLY AND IMPLIES NO GUARANTEE OF ACCURACY. DO NOT SCALE DRAWINGS.
2. ALL PROPERTY LINES ARE AS SUPPLIED BY THE UNITED COUNTIES OF STORMONT, DUNDAS AND GLENGARRY, AS ACQUIRED FROM THEIR GEOGRAPHIC INFORMATION SYSTEM (GIS) AUGUST 2023. PROPERTY LINES ARE NOT SURVEY ACCURATE; THIS IS NOT A LEGAL SURVEY.

CULVERT DETAILS - OUDERKIRK DRAIN				
CULVERT I.D. NUMBER	APPROX. STATION ft	LENGTH m	DIMENSIONS mm	MATERIAL
1	61+89	9	1500 Ø	CSP
2	43+79	9	1500 Ø	CSP
3	31+78	12	1500 Ø	CSP
4	19+09	12	SPAN = 1500 RISE = 800	CSPA
5	19+91	8	1200 Ø	CONCRETE

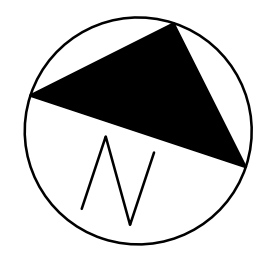
REV. #	REVISION DESCRIPTION	DATE
02	ISSUED WITH FINAL REPORT	JUNE 7, 2024
01	ADDED ESC PER SNCA COMMENTS	MAR 25, 2024
00	ISSUED TO SNCA + DFO FOR REVIEW	FEB 6, 2024

STAMP

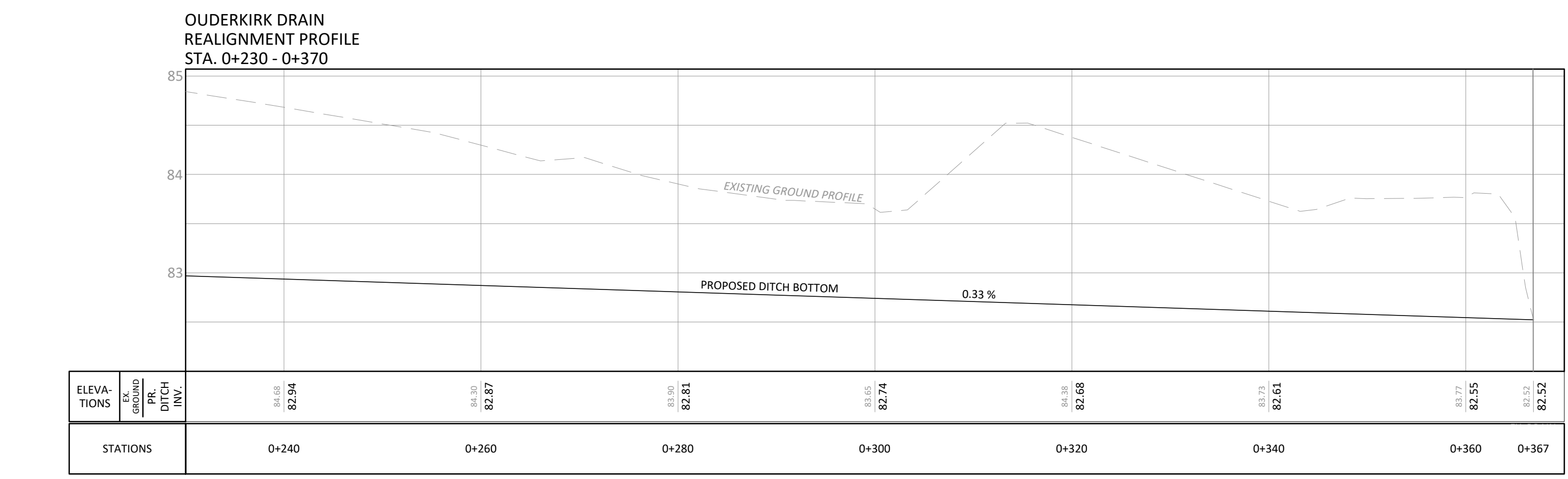
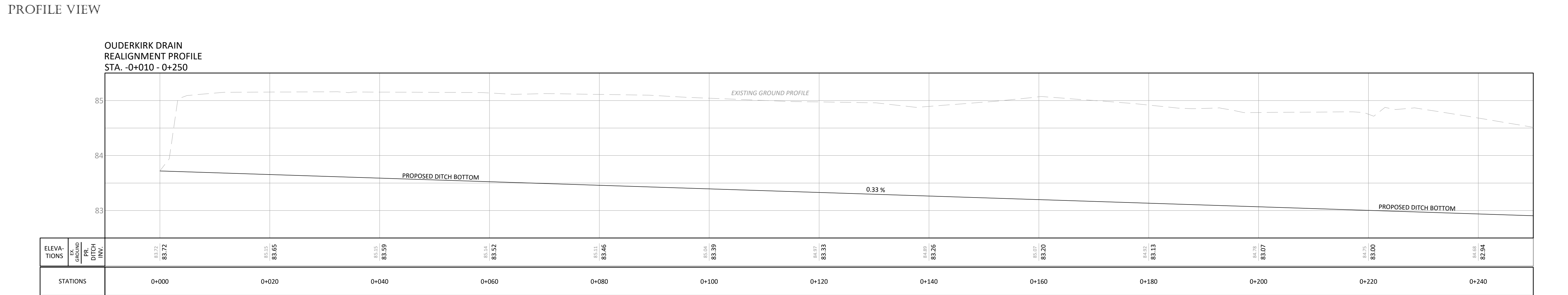
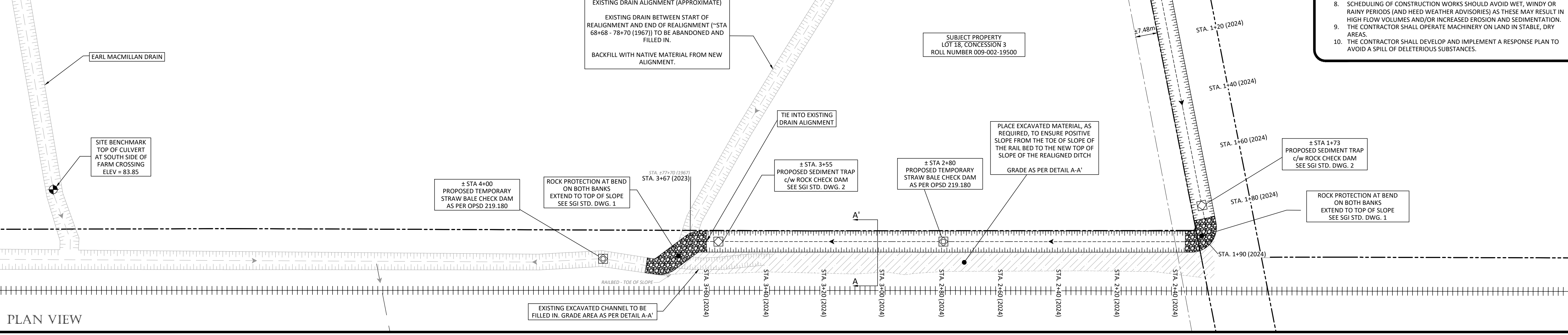
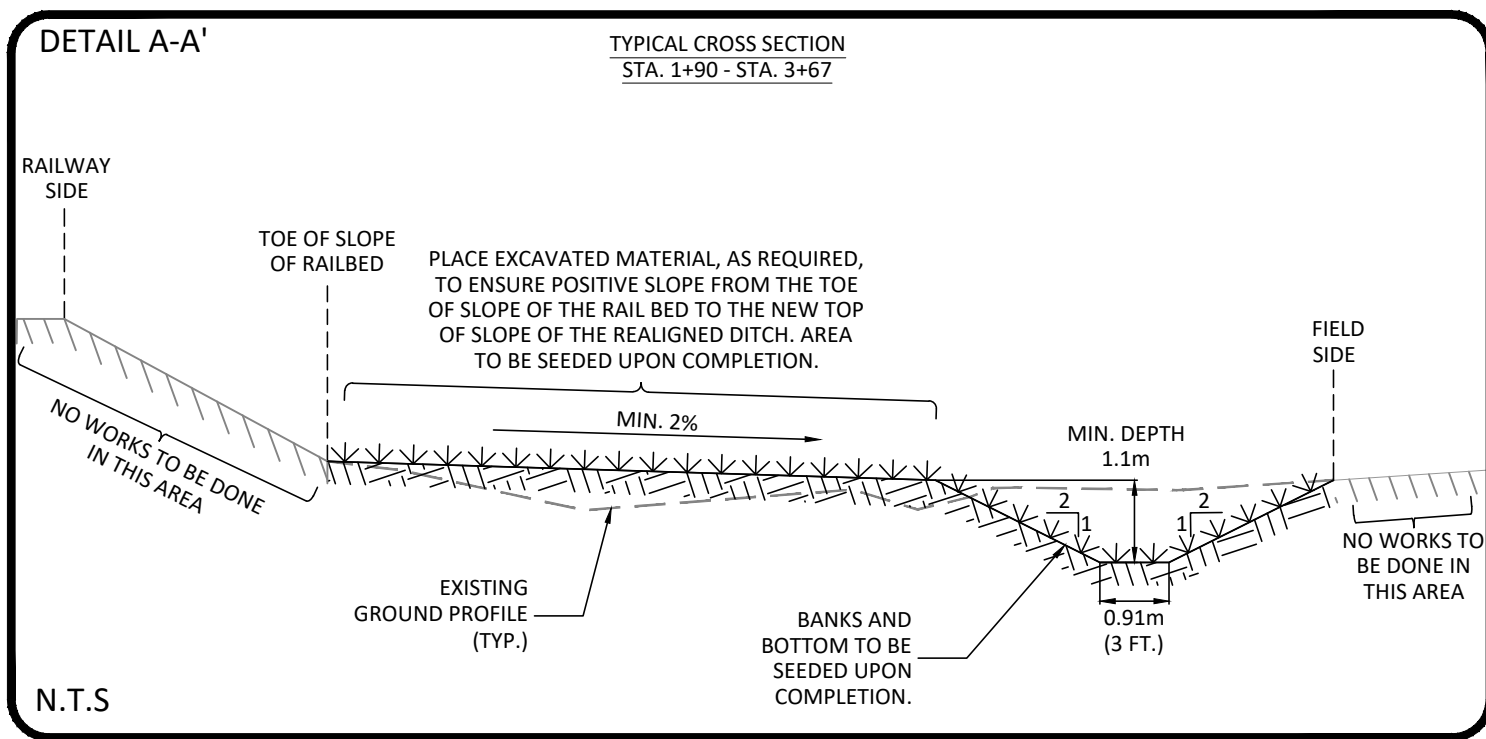
PROJECT TITLE **OUDERKIRK DRAIN NORTH STORMONT**

DRAWING TITLE **WATERSHED MAP PLAN VIEW**

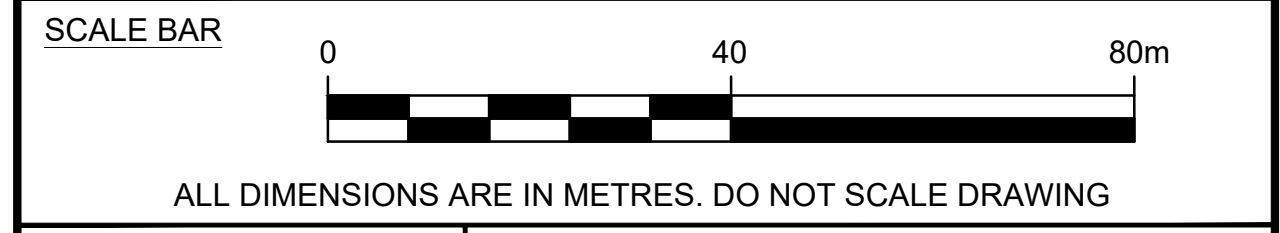
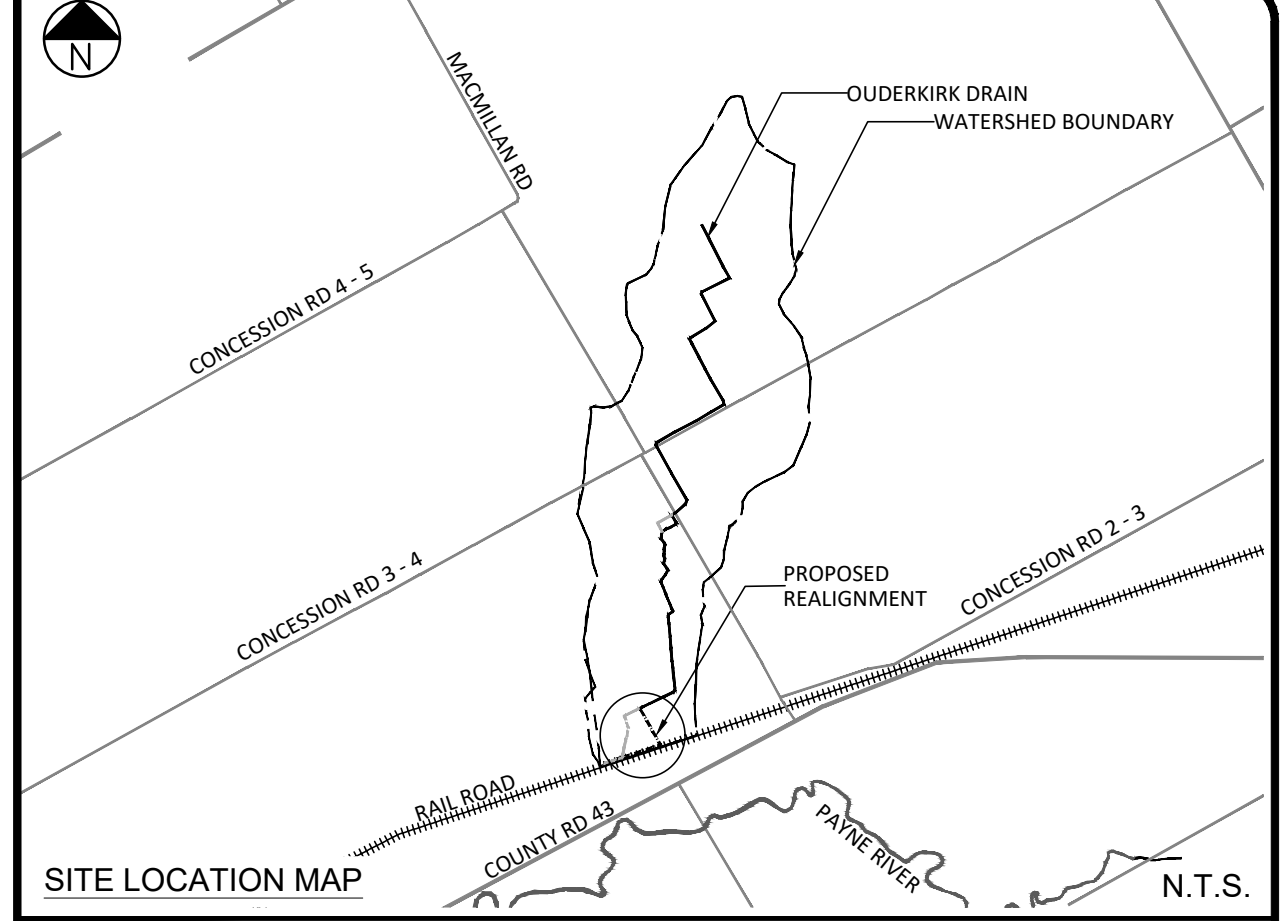
DRAWING NO. **1 OF 2**



OUDERKIRK DRAIN REALIGNMENT



- ### EROSION AND SEDIMENT CONTROL NOTES
- THIS PLAN INCLUDES PERMANENT AND TEMPORARY EROSION CONTROL MEASURES WHICH ARE TO BE APPLIED DURING THE INITIAL CONSTRUCTION AND DURING FUTURE MAINTENANCE WORKS.
 - IN ADDITION TO THOSE SPECIFICATIONS PROVIDED ON THE PLAN VIEW, THE CONTRACTOR SHALL ALSO INCLUDE FOR THE ERECTION OF SILT FENCE AROUND THE BASE OF THE EXCAVATED STOCKPILES DURING THE INITIAL CONSTRUCTION; PRIOR TO THE FILLING IN OF THE PREVIOUS ALIGNMENT.
 - DURING THE INITIAL CONSTRUCTION, THE PREVIOUS ALIGNMENT IS NOT TO BE FILLED IN UNTIL AFTER THE NEW ALIGNMENT HAS BEEN CONSTRUCTED IN FULL AND IS DEEMED ADEQUATELY STABILIZED BY THE ENGINEER, CONSERVATION AUTHORITY OR DRAINAGE SUPERINTENDENT.
 - EROSION AND SEDIMENT CONTROL PLANS ARE CONSIDERED TO BE LIVING DOCUMENTS, AND ADDITIONAL MEASURES MAY BE REQUIRED AT THE DIRECTION OF THE ENGINEER, MUNICIPALITY, SNCA OR DFO, AS NEEDED TO ADDRESS SITE CONDITIONS AT THE TIME OF CONSTRUCTION (BOTH DURING THE INITIAL CONSTRUCTION AND FUTURE MAINTENANCE).
 - MAINTENANCE OF THE TEMPORARY EROSION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR DURING AND IMMEDIATELY FOLLOWING CONSTRUCTION. THE CONTRACTOR SHOULD REVIEW AND DOCUMENT THE CONDITION OF THE TEMPORARY EROSION CONTROL MEASURES THROUGHOUT CONSTRUCTION, AT THE START OF EACH DAY OF ON-SITE WORKS AND AFTER EVERY RAINFALL EVENT (>10mm). CORRECTIVE MEASURES TO REMOVE SEDIMENT BUILD UP, RESTORE EROSION CONTROL MEASURES, ETC. SHALL BE PERFORMED WITHIN NO MORE THAN 24 HOURS FOLLOWING THE RAINFALL EVENT, FOLLOWING OBSERVATION OF THE FAILED MEASURE, OR FOLLOWING NOTIFICATION FROM THE DRAINAGE SUPERINTENDENT, ENGINEER OR CONSERVATION AUTHORITY OVER A MEASURE REQUIRING MAINTENANCE. CONTINUED MAINTENANCE OF TEMPORARY MEASURES MAY STILL BE REQUIRED IMMEDIATELY FOLLOWING FUTURE MAINTENANCE AND/OR THE INITIAL CONSTRUCTION, UP UNTIL SUCH A TIME AS THE SITE CONDITIONS ARE DEEMED TO BE ADEQUATELY STABILIZED AS PER THE ENGINEER, SNCA, DFO OR MUNICIPALITY.
 - THE ON-GOING MONITORING AND CORRECTIVE ACTION ASSOCIATED WITH THE PERMANENT EROSION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE LANDOWNERS ADJACENT TO THE DRAIN, AND THE MUNICIPALITY (DRAINAGE SUPERINTENDENT). IT IS EXPECTED THAT LANDOWNERS WOULD PROVIDE NOTIFICATION TO THE MUNICIPALITY WHEN CORRECTIVE ACTION IS REQUIRED, WHILE THE MUNICIPALITY WOULD LOOK AFTER HIRING A CONTRACTOR TO COMPLETE MAINTENANCE WORKS AS REQUIRED, IN FITTING WITH THE DIRECTIVES OF THE DRAINAGE ACT.
 - CONSTRUCTION WORKS (INITIAL + FUTURE MAINTENANCE) ARE TO BE COMPLETED IN LOW OR NO FLOW CONDITIONS, OUTSIDE OF ANY TIMING WINDOW RESTRICTIONS.
 - SCHEDULING OF CONSTRUCTION WORKS SHOULD AVOID WET, WINDY OR RAINY PERIODS (AND HEED WEATHER ADVISORIES) AS THESE MAY RESULT IN HIGH FLOW VOLUMES AND/OR INCREASED EROSION AND SEDIMENTATION.
 - THE CONTRACTOR SHALL OPERATE MACHINERY ON LAND IN STABLE, DRY AREAS.
 - THE CONTRACTOR SHALL DEVELOP AND IMPLEMENT A RESPONSE PLAN TO AVOID A SPILL OF DELETERIOUS SUBSTANCES.



PAGE SIZE 24" x 36" SCALE PLAN: 1:750 / PROFILE: H 1:200 V 1:20

SHADE GROUP INC.
4625 MARCH ROAD
ALMONTE, ONTARIO
K0A 1A0

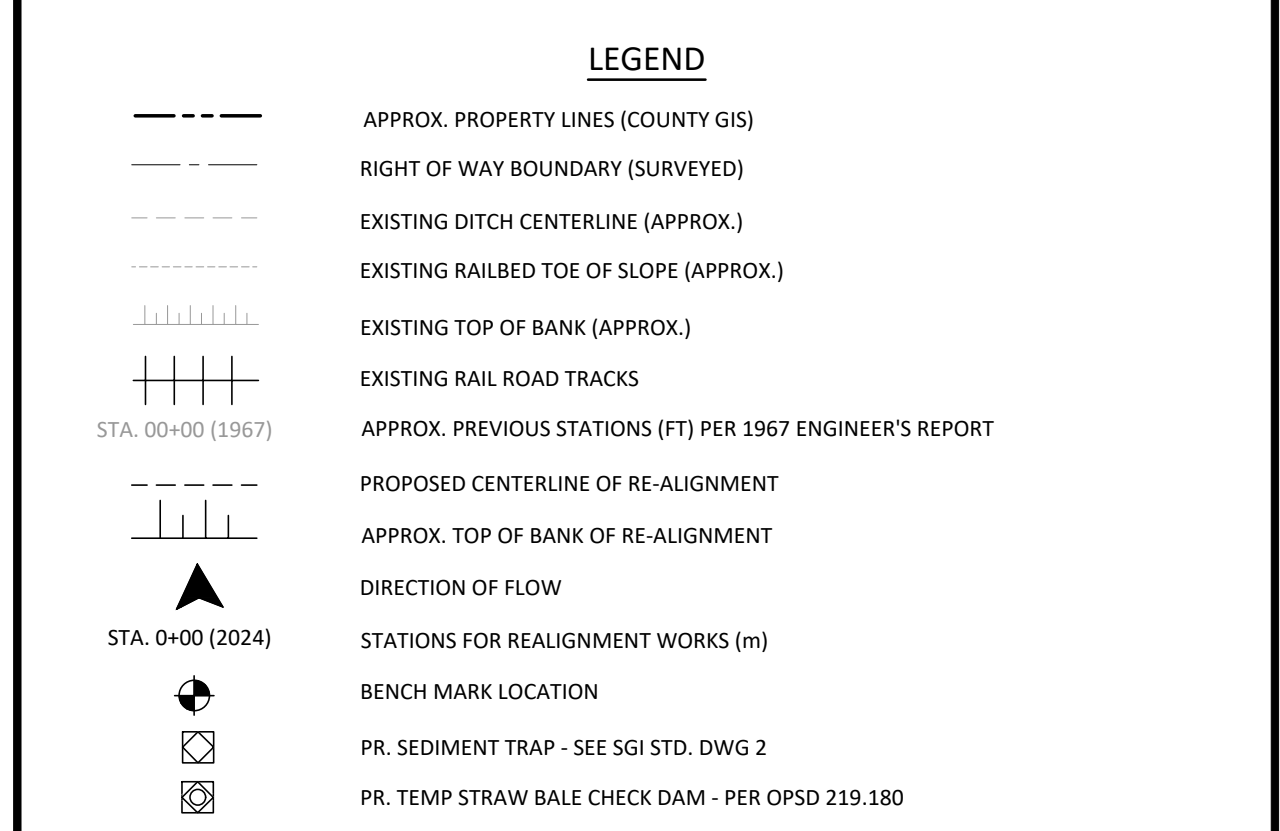
DRAIN CROSS-SECTION

SIDE SLOPES: 2 HORIZONTAL TO 1 VERTICAL
BOTTOM WIDTH: 0.91 m (3.0 ft.)

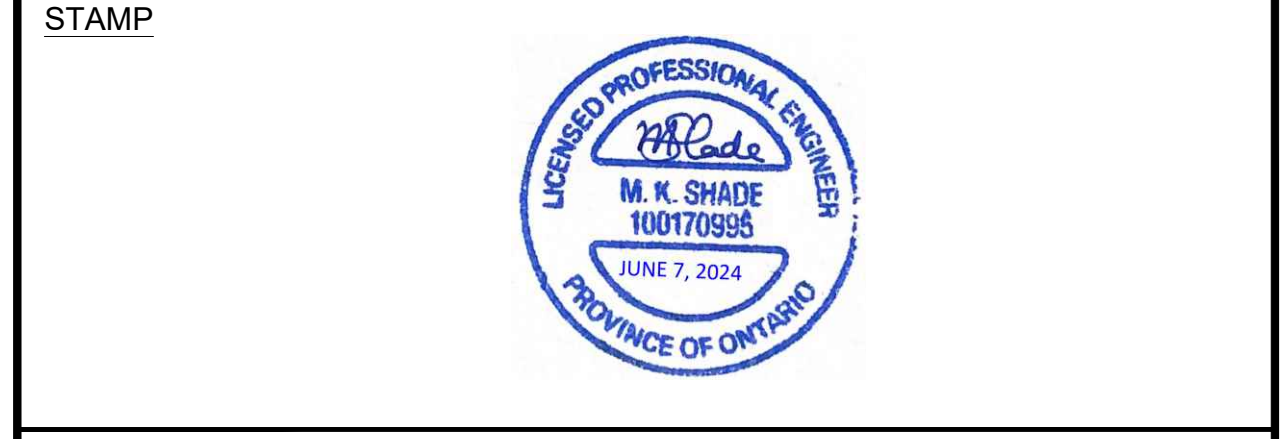
GENERAL NOTES

- ALL TOPOGRAPHY, GROUND ELEVATIONS AND SURVEY DATA ARE SHOWN FOR INFORMATION PURPOSES ONLY AND IMPLY NO GUARANTEE OF ACCURACY. ALL DIMENSIONS AND ELEVATIONS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ALL ELEVATIONS SHOWN ARE GEODETIC.
- THIS IS NOT A LEGAL SURVEY. PROPERTY LINES SHOWN ARE FOR INFORMATION SUPPLIED FROM THE STORMONT, DUNDAS AND GLENGARRY GIS SYSTEM AND IMPLY NO GUARANTEE OF ACCURACY FOR EXACT PROPERTY LINES.
- ALL DISTURBED AREAS ARE TO BE SEEDED AS SOON AS FEASIBLE.
- WORKS SHALL BE COMPLETED IN LOW OR NO FLOW CONDITIONS.
- ANY CHANGES MADE TO THIS PLAN ARE TO BE VERIFIED AND APPROVED BY SHADE GROUP INC.

- ### EROSION AND SEDIMENT CONTROL
- THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE FOR PROTECTION OF THE OUDERKIRK MUNICIPAL DRAIN AND DOWNSTREAM INFRASTRUCTURE.
 - THE CONTRACTOR SHALL IMPLEMENT TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION AND SHALL ENSURE THESE MEASURES ARE APPROPRIATELY MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. REFER TO THE ENGINEER'S REPORT FOR FURTHER DETAILS (CONSTRUCTION SPECIFICATIONS - APPENDIX E)
 - THE CONTRACTOR SHALL FOLLOW INDUSTRY STANDARD FOR ALL MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES, AS APPLICABLE.
 - ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED TO THE SATISFACTION OF APPLICABLE APPROVAL AGENCIES.



02	ISSUED WITH FINAL REPORT	JUNE 7, 2024
01	ADDED ESC PER SNCA COMMENTS	MAR 25, 2024
00	ISSUED TO SNCA + DFO FOR REVIEW	FEB 6, 2024
REV. #	REVISION DESCRIPTION	DATE



PROJECT TITLE **OUDERKIRK DRAIN REALIGNMENT NORTH STORMONT**

DRAWING TITLE **PLAN & PROFILE VIEW (INCL. EROSION AND SEDIMENT CONTROL)**

DRAWING NO. **2 OF 2**

APPENDIX D

CAPACITY CALCULATIONS

Capacity Review Ouderkirk Drain - Realignment

Current Capacity (Prior to Realignment) - Station ±70+00 (1967)

Bottom Width =	0.91	m	*Hub Line - Engineer's (1.25:1)
Depth =	1.09	m	
Side Slopes	80.00	%	

Roughness Coeff	0.03		*Engineer's Report
Channel Slope	0.24	%	
Area	2.50	m ²	
Wetted Perimeter	4.42	m	
R	0.57	m	
Q	2.79	m ³ /s	

Current Capacity (Prior to Realignment) - Station ±78+23 (1967)

Bottom Width =	0.91	m	*Hub Line - Engineer's (1.25:1)
Depth =	0.77	m	
Side Slopes	80.00	%	

Roughness Coeff	0.03		*Engineer's Report
Channel Slope	0.58	%	
Area	1.44	m ²	
Wetted Perimeter	3.37	m	
R	0.43	m	
Q	2.07	m ³ /s	

Current Capacity (Prior to Realignment) - Station ±81+88 (1967)

Bottom Width =	0.91	m	*Hub Line - Engineer's (1.25:1)
Depth =	0.64	m	
Side Slopes	80.00	%	

Roughness Coeff	0.03		*Engineer's Report
Channel Slope	0.10	%	
Area	1.11	m ²	
Wetted Perimeter	2.97	m	
R	0.37	m	
Q	0.60	m ³ /s	

Capacity Review Ouderkirk Drain - Realignment

Proposed Capacity (Realignment) - Station ±0+20 (2024)

Bottom Width =	0.91	m	
Depth =	1.5	m	
Side Slopes	50.00	%	(2:1)

Roughness Coeff	0.03	
Channel Slope	0.33	%
Area	5.87	m ²
Wetted Perimeter	7.62	m
R	0.77	m
Q*	9.43	m ³ /s

*The increase in capacity suggests that the realigned channel would be expected to have a greater ability to convey flow compared to existing, before overtopping. With that, flooding of the neighbouring properties caused by the realignment is not expected to be a concern. There is not expected to be a measurable change in surface flow entering the realigned channel compared to existing. Based on the immediate upstream culvert (1500mm diameter) - and the lack of historical flooding concerns - it is not expected that the system would reach full flow capacity.

Proposed Capacity (Realignment) - Station ±1+90 - 3+60 (2024)

Bottom Width =	0.91	m	
Depth =	1.1	m	*Min. depth
Side Slopes	50.00	%	(2:1)

Roughness Coeff	0.03	
Channel Slope	0.33	%
Area	3.42	m ²
Wetted Perimeter	5.83	m
R	0.59	m
Q*	4.59	m ³ /s

*The increase in capacity suggests that the realigned channel would be expected to have a greater ability to convey flow compared to existing, before overtopping. With that, flooding of the neighbouring properties caused by the realignment is not expected to be a concern. There is not expected to be a measurable change in surface flow entering the realigned channel compared to existing. Based on the immediate upstream culvert (1500mm diameter CSP) - and the lack of historical flooding concerns - it is not expected that the system would reach full flow capacity.

Capacity Review Ouderkirk Drain - Realignment

Proposed Capacity (Realignment) - Station ±3+67 (2024)

Ditch Invert =	82.74	m	
Top of Slope Elev =	83.65	m	
Bottom Width =	0.91	m	
Depth =	0.82	m	
Side Slopes	50.00	%	(2:1)

Roughness Coeff	0.03	
Channel Slope	0.33	%
Area	2.09	m ²
Wetted Perimeter	4.58	m
R	0.46	m
Q	2.37	m ³ /s

APPENDIX E

CONSTRUCTION SPECIFICATIONS AND STANDARD DRAWINGS

Please refer to the following construction specifications and instructions for the proposed realignment works.

Earth Moving Operations

Earth moving operations shall be considered all works associated with the excavation of the new channel, placement and grading of excavated material as required to provide positive drainage between the railbed and the re-aligned channel, and all works associated with backfill of the existing channel, as per the supplied engineered plans enclosed in Appendix C of this Engineer's Report.

Payment for this item shall be a lump sum price presented by the contractor for all labour and equipment required to complete the prescribed works. Layout is to be the responsibility of the contractor and is to be approved by the Township's Drainage Superintendent or the Drainage Engineer prior to commencement of construction.

Excavation of New Ditch

The new bottom of the ditch shall be excavated to an even grade so that no water may lie stagnant therein.

The new channel shall be excavated in conformance with the specifications outlined herein and in conformance with the engineered plans included in Appendix C of the Engineer's Report.

Design Criteria	Specification
Side Slopes	2 Horizontal to 1 Vertical
Grade	0.33%
Bottom Width	0.91m (3 ft)

The excavated material shall be used to backfill the existing channel alignment; but only after the entire length of the new channel has been constructed, so as not to block flow within the existing channel. This order of construction may be altered only through written approval from the applicable permitting agencies. Excavated material is also to be used to provide positive drainage between the railbed and the new top of slope, to avoid stagnant water lying within the offset between the channel and the railbed. This includes backfilling a portion of an existing channel that was excavated parallel to the railbed near the end of the proposed realignment.

Works shall be completed in low or no flow conditions. Works shall be completed as efficiently as possible; works should not be left partially started and unattended for long periods of time. It is expected that the duration of the contract shall be no more than 2 weeks from start-to-finish, unless otherwise authorized by the Township's Drainage Superintendent, the applicable permitting agencies or the engineer.

Works shall be completed in conformance with the permit specifications from the applicable approval agencies. Permits received have been enclosed with Appendix G and are to be read in

full by the contractor prior to commencing construction. Copies of the permits are to be kept on-site during construction.

All construction works are to be overseen by the Township's Drainage Superintendent.

Backfill of Existing Ditch

The contractor shall fill in the abandoned ditch throughout its entire length from shoulder to shoulder with the excavated material taken from the drain. In some cases, this work may entail transportation of the excavated material from one end of the field to the other by trucks or other equipment. Cut/fill balance calculations have not been performed as part of this scope (as not deemed necessary by the requesting landowner who will be paying for the construction works), so it cannot be confirmed if the excavation of the new channel will provide adequate fill for the existing channel. Where additional fill material is required, material used for fill shall be appropriate clean fill. Clean fill shall be predominantly (>85%) soil based, with consideration that the lands above the backfilled channel are expected to be used for future farming practices.

Backfill of the existing ditch shall not occur until after the realignment construction is complete so as not to cause any blockages of the existing channel.

Placement of excavated material is also to occur between the railbed and the new channel to fill in a previously excavated channel, and to fill in low depressions. Grading is to be completed to comply with the specifications shown on the enclosed engineered plans.

Rock Protection Installation

Rock protection shall be installed at those locations shown on the enclosed plans (Appendix C) to provide bank stabilization. Rip-rap shall be underlain with geotextile and shall be placed with machinery capable of controlling the drop of the rock, rather than dumped over the edge of the bank. Rip-rap shall be placed immediately following preparation of the banks. The minimum thickness of the rip-rap shall be 300mm unless otherwise specified in the engineered plans. Rip-rap rock shall be angular in nature. Rip-rap shall be installed along both the inner and outer bank, as well as along the bottom width. Rip-rap is to be embedded. A standard drawing for the rock protection for bank stabilization has been included at the end of these written construction specifications.

The rock protection is considered to be a permanent erosion control measure and shall be reinstated as needed during future maintenance practices.

Payment for this item will be per meter squared with measurements made in place. Payment will only be made for the area of rock protection as denoted on the engineered plans, or as agreed to in advance by the Drainage Engineer or Drainage Superintendent. Payment will be per the unit price tendered and shall include for all labour, equipment and material required to complete the works as prescribed.

Sediment Trap Installation

Three sediment traps have been proposed along the new alignment; at approximately Station 68+68 (1967), Station 1+73 (2024), and 3+55 (2024).

A standard drawing for the sediment traps has been included at the end of these written construction specifications. Installation of the sediment traps includes the installation of a rock check dam, as per the specifications found on the enclosed standard drawing. Standard drawings for the rock check dam are also enclosed and construction is to be completed in conformance with these specifications.

These sediment traps are considered as permanent erosion control measures and shall be reinstated during future maintenance works.

Payment for the sediment traps and their associated rock flow check dams will be on a per unit basis. Unit pricing should account for all labour, equipment and materials required to install the sediment traps and their associated check dams.

Seeding

The newly excavated channel is to be seeded as soon as possible after excavation. Seed shall also be placed along the regraded area between the railbed and new top of slope. Seed may be hand spread or hydroseeded.

Seed mix shall be in conformance with OPSS.Muni 804: Crown Vetch Mix or Lowland Mix. Should the contractor wish to deviate from the specifications, it will need to be demonstrated that the proposed seed mix is appropriate for the intended application.

Seed shall not be placed from November 1 through April 30 of any calendar year. Should excavation occur between November 1 and April 30, seeding shall be done as soon as possible after April 30, or as directed by the Township's Drainage Superintendent or the Drainage Engineer.

Payment for this item shall be by the square meter for placement within the prescribed areas. The prescribed area is limited to the banks and bottom of the excavated channel and the area between the railbed and the back of slope of the new channel. Payment will not be made for any areas seeded outside the prescribed area. The unit pricing is to account for all labour, materials and equipment required to complete the seeding.

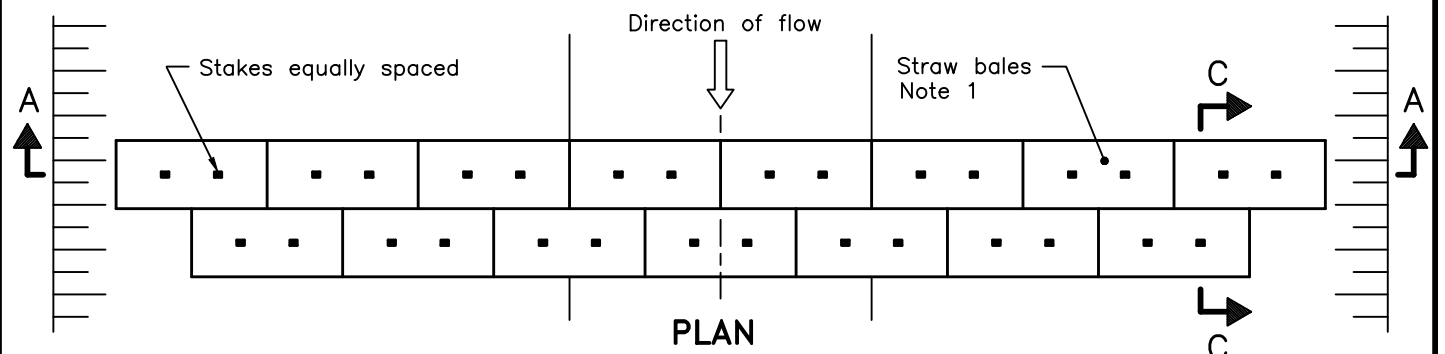
The contractor will not be paid for reinstatement of other areas disturbed by construction activities.

Temporary Erosion and Sediment Control Measures

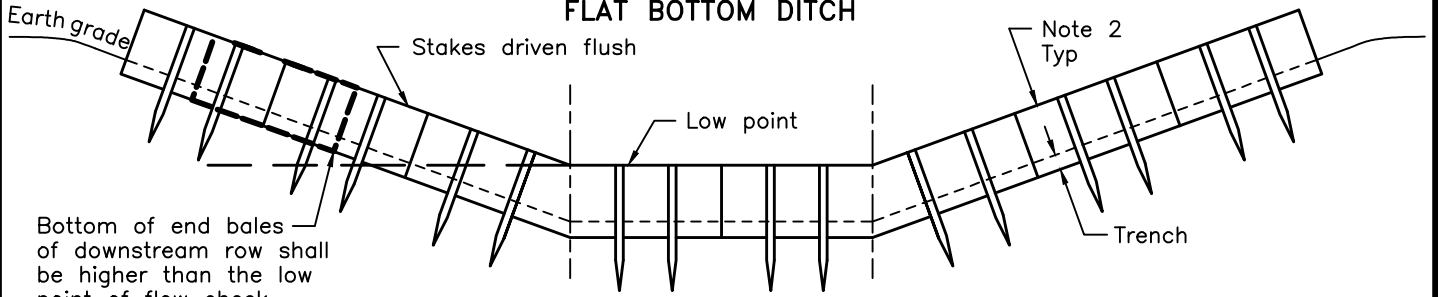
Temporary erosion and sediment control measures are anticipated to include (at a minimum) straw bale check dams installed within the new drain alignment, as works progress, to allow for temporary erosion and sediment control protection until such a time that grass or vegetation can

be established on the banks and bottom of the new alignment, the location for which has been shown on the enclosed engineered plans. Additional temporary measures may also be required to the satisfaction of the permitting agencies. It shall be the contractor's responsibility to maintain these measures after every rainfall event (>10mm) and as required throughout construction to ensure they are operating as per standard industry practice. On-going maintenance of the temporary erosion and sediment control measures is to be continued until such a time as sufficient vegetation has established to stabilize the banks and bottom of the system; to the satisfaction of the engineer, permitting agencies or Drainage Superintendent. Eventual removal and proper disposal of the erosion and sediment control measures, following site stabilization, shall be considered part of the contract.

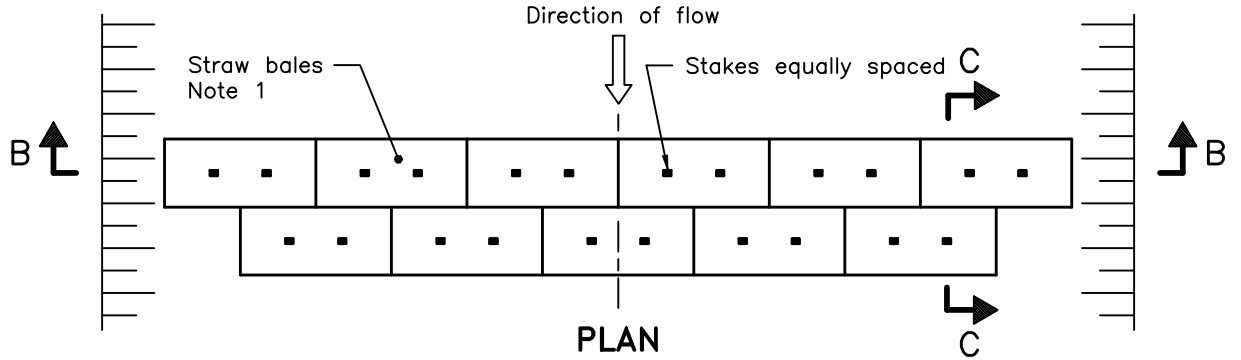
Payment for this item shall include all supply, installation, and on-going maintenance until such a time as the Drainage Engineer or Drainage Superintendent deems it appropriate to remove the erosion control measures.



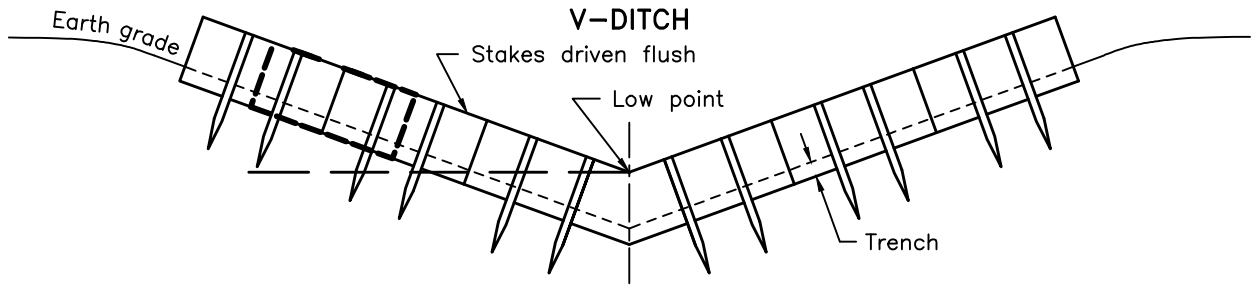
FLAT BOTTOM DITCH



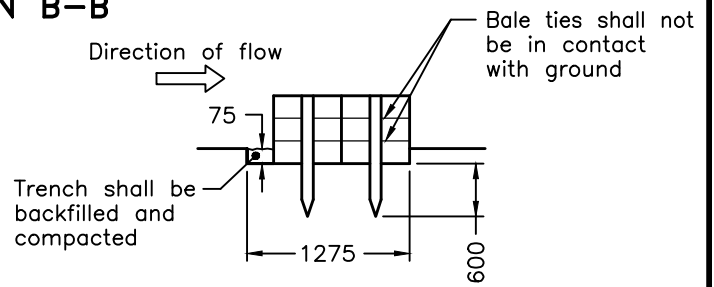
SECTION A-A



V-DITCH



SECTION B-B



SECTION C-C

NOTES:

- 1 Number of bales varies and shall suit ditch.
- 2 Straw bales shall be butted tightly against adjoining bales and shaped to conform to the sides of the ditch to prevent water flow through barrier.
- A Fill and compact gaps with loose straw.
- B All dimensions are in millimetres unless otherwise shown.

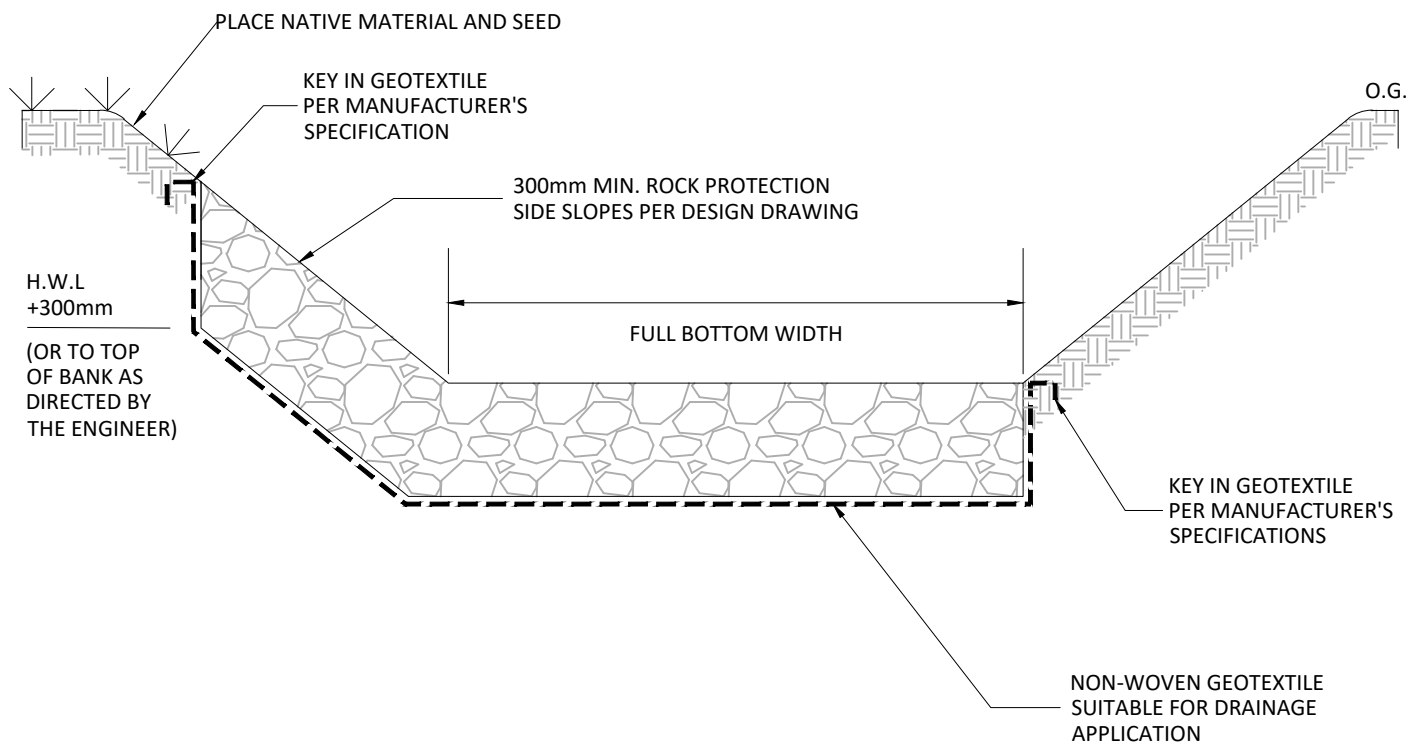
ONTARIO PROVINCIAL STANDARD DRAWING

Nov 2021 | Rev | 3

STRAW BALE FLOW CHECK DAM



OPSD 219.180

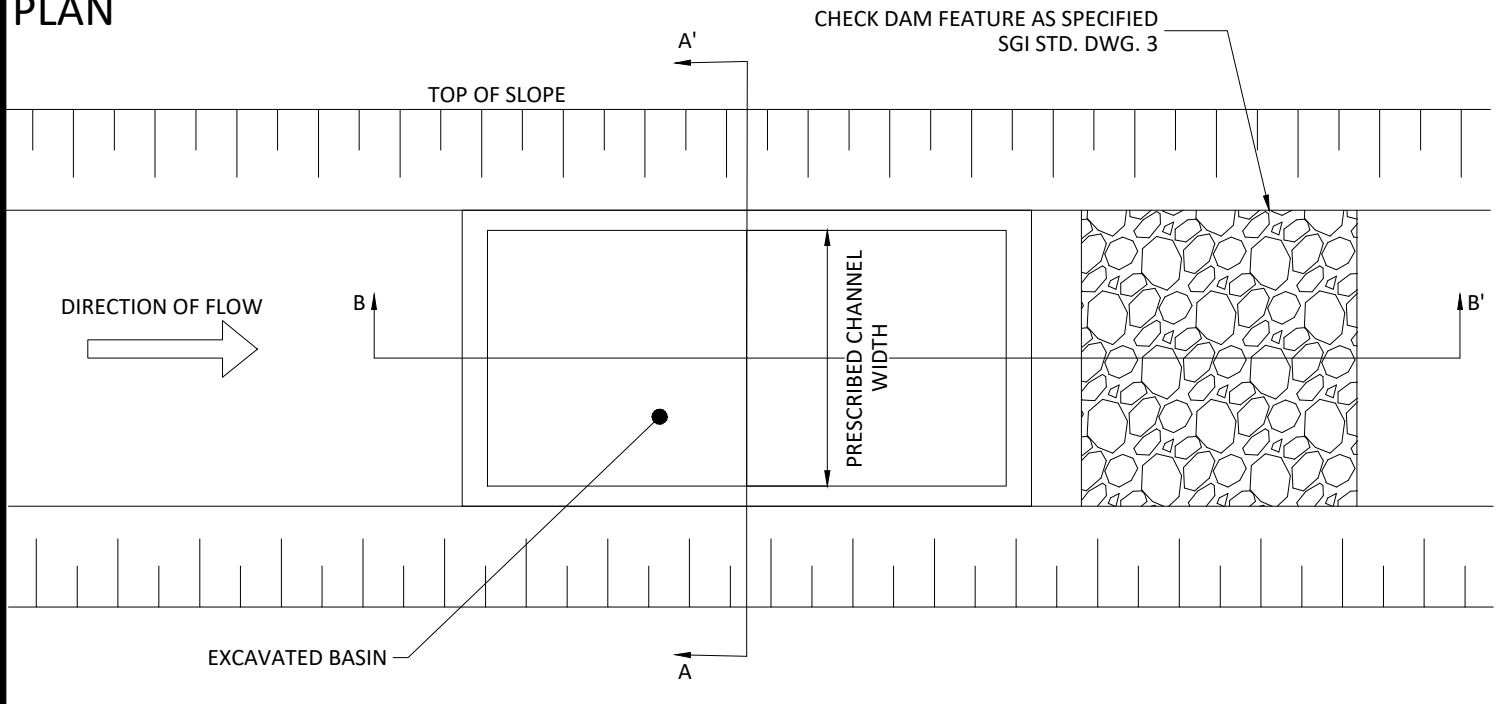


NOTE:

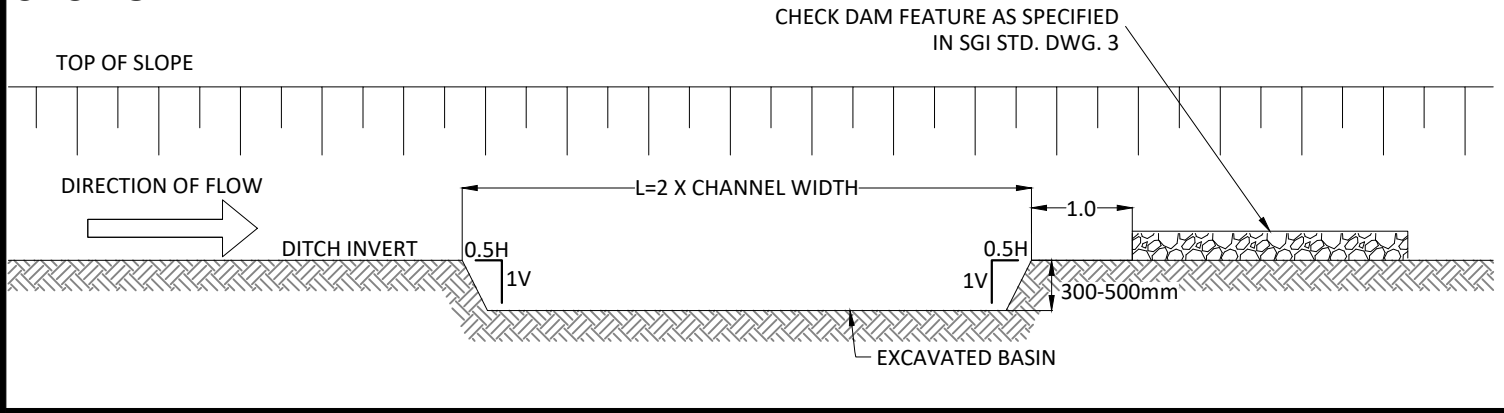
1. SURFACE OF ROCK PROTECTION TO BE FLUSH WITH THE FINISHED SURFACE OF DRAIN UPSTREAM AND DOWNSTREAM OF THE EROSION CONTROL. MIN. SIDE SLOPE AS SPECIFIED IN THE ENGINEER'S REPORT OR THE CONTRACT DRAWINGS.
2. ROCK TO BE R-50 PER OPSS 1004.05.05.02 OR PER OPSS 1004.05.05.03

PETITION DRAIN STANDARD DRAWING	DETAIL DWG.NO. SGI STD. DWG. 1		SHADE GROUP <small>INC.</small>
TYPICAL ROCK PROTECTION EROSION CONTROL	REVISION 1.0	DATE Jan/24	
	SCALE N.T.S		

PLAN



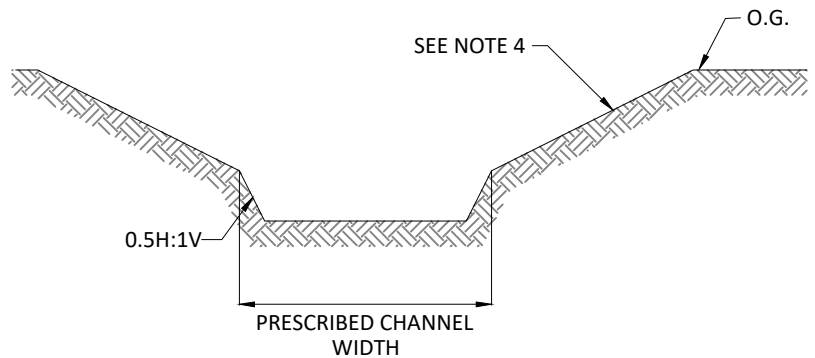
SECTION B-B'



NOTES:

1. THIS DRAWING MODIFIES OPSD 219.220
2. DITCH CROSS-SECTION UPSTREAM OR DOWNSTREAM OF SEDIMENT TRAP MAY BE FLAT BOTTOM OR V-SHAPED, FLAT BOTTOM SHOWN.
3. THIS STANDARD DRAWING SHALL BE READ IN CONJUNCTION WITH OPSD 219.180 OR 219.191 OR 219.211 FOR THE SPECIFIED CHECK DAM FEATURE.
4. MIN. SIDE SLOPES AS SPECIFIED IN ENGINEER'S REPORT OR CONTRACT DRAWINGS
5. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN.

SECTION A-A'



PETITION DRAIN STANDARD DRAWING

EXCAVATED SEDIMENT TRAP

DETAIL DWG. NO.
SGI STD. DWG. 2

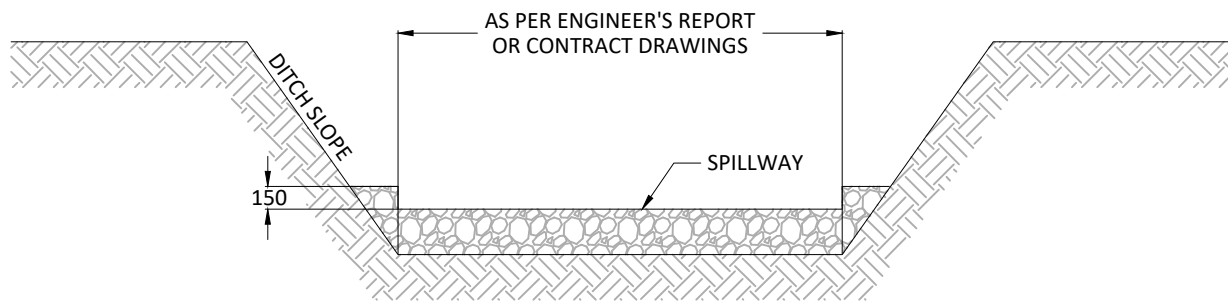
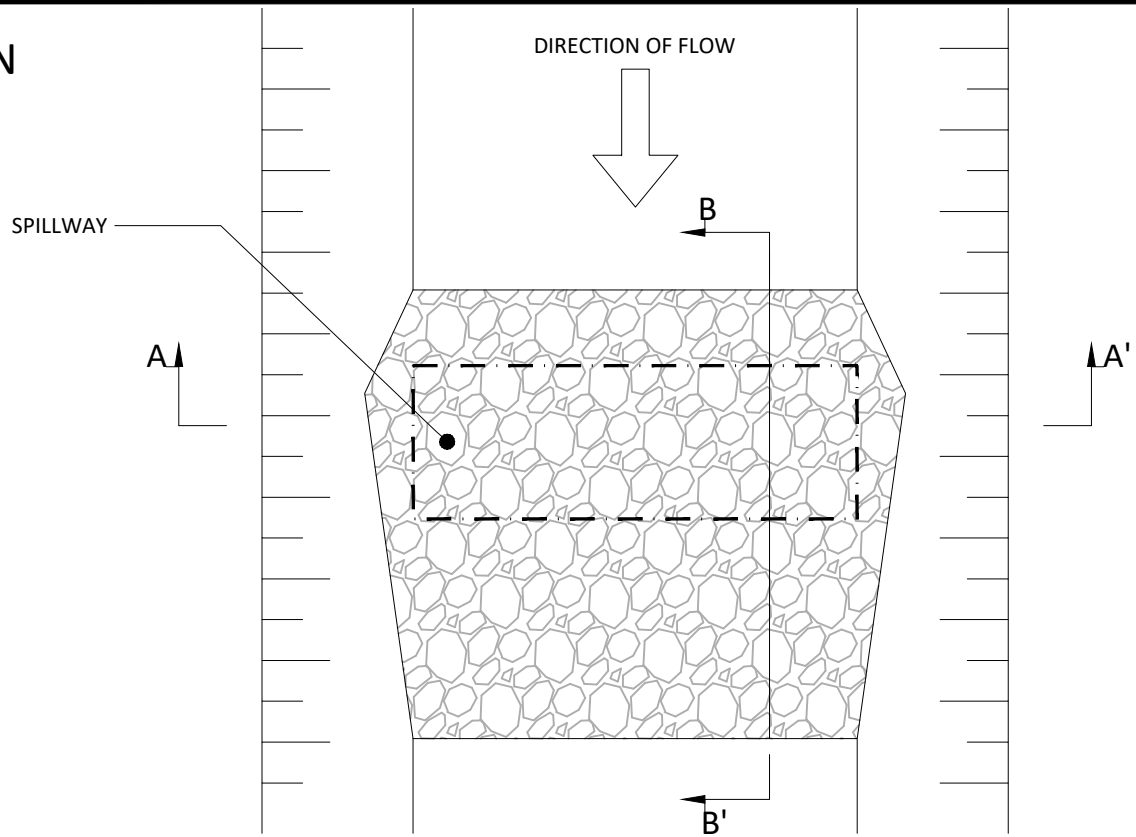
REVISION
1.0

DATE
Jan/24

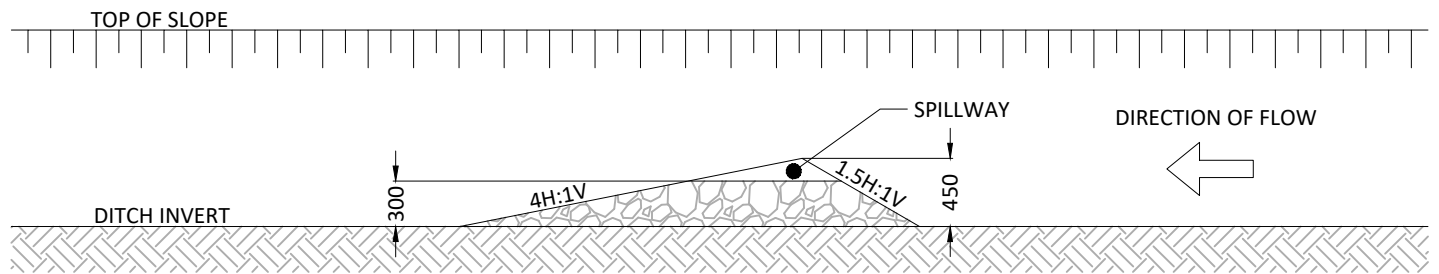
SHADE
GROUP
INC.

SCALE
N.T.S

PLAN



SECTION A-A'



SECTION B-B'

NOTE:

1. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. THIS DRAWING IS A MODIFICATION OF OPSD 219.211

PETITION DRAIN STANDARD DRAWING

ROCK FLOW CHECK DAM

DETAIL DWG. NO.
SGI STD. DWG. 3

REVISION
1.0

DATE
Jan/24

SHADE
GROUP^{INC.}

SCALE
N.T.S

APPENDIX F

RESOLUTION + BY-LAW



The Corporation of the Township of
NORTH STORMONT
RESOLUTION

Date: September 12, 2023

Resolution No. 281-2023

MOVED BY:

Mayor F. Landry _____
Deputy Mayor S. Densham _____
Councillor A. Bugelli _____
Councillor A. McDonald _____
Councillor C. Shane _____ *CS*

SECONDED BY:

Mayor F. Landry _____
Deputy Mayor S. Densham _____
Councillor A. Bugelli _____ *[Signature]*
Councillor A. McDonald _____
Councillor C. Shane _____

THAT Council appoint Shade Group Inc as the Drainage Engineer to update the Ouderkirk Municipal drain engineer's report under Section 78(1) of the Drainage Act R.S.O 1990.

CARRIED **DEFEATED** **DEFERRED**

[Signature: Landry]

Mayor

Declaration of Conflict of Interest: _____

- Disclosed His/Her/Their Interest**
- Vacated His/Her/Their Seat**

RECORDED VOTE	
Councillor C. Shane	_____
Councillor A. McDonald	_____
Councillor A. Bugelli	_____
Deputy Mayor S. Densham	_____
Mayor F. Landry	_____

APPENDIX G

AGENCY CONSULTATION & PERMITS

**RE: 24-HCAA-00251 - Request for Drain Relocation - North Stormont - Ouderkirk
Municipal Drain**

1 message

OP Habitat (DFO/MPO) <DFO.OPHabitat.MPO@dfo-mpo.gc.ca>
To: Monica Shade <monica@shadegroup.ca>
Cc: Sean MacDonald <drainsuperintendent@northstormont.ca>

Mon, Mar 18, 2024 at 2:02 PM

Fisheries and Oceans Canada

Pêches et Océans Canada

Ontario and Prairie Region

Région de l'Ontario et des Prairies

Fish and Fish Habitat Protection
ProgramProgramme de protection du poisson et de son
habitat

867 Lakeshore Rd.

867 chemin Lakeshore

Burlington, ON

Burlington, ON

L7S 1A1

L7S 1A1



Dear Monica:

Subject: [Drain Realignment, Ouderkirk Municipal Drain, Class F, North Stormont] (24-HCAA-00251) – Implementation of Measures to Avoid and Mitigate the Potential for Prohibited Effects to Fish and Fish Habitat

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on February 6, 2024. We understand that you propose to:

- Realignment of approximately 400m of a Class F drain; and,
- Work in isolation of flow or open water or under dry conditions to avoid sedimentation of the watercourse; and
- Revegetate new drain channel with native vegetation to ensure stable banks.

Our review considered the following information:

- Request for Review form and associated documents.

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 introduction of aquatic species into regions or bodies of water frequented by fish where they are not indigenous, which is prohibited under section 10 of the *Aquatic Invasive Species Regulations*.

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;
- Limit impacts on riparian vegetation to those approved for the work, undertaking or activity
 - Re-vegetate the disturbed area with native species suitable for the site
- Aquatic invasive species are introduced and spread through transporting sands and sediments and using contaminated construction equipment. To prevent the spread of aquatic invasive species during construction in aquatic environments:
 - Clean, drain and dry any equipment used in the water; and,
 - Never move organisms or water from one body of water to another;
- Replace/restore any other disturbed habitat features and remediate any areas impacted by the work, undertaking or activity
- Maintain an undisturbed vegetated riparian zone between areas of on-land activity and the High Water Mark of any water body;
- Develop and implement an erosion and sediment control plan to avoid the introduction of sediment into any waterbody during all phases of the work, undertaking or activity;
 - Conduct all in-water works, undertakings or activities in isolation of open or flowing water to reduce the introduction of sediment into the watercourse;
 - Schedule work to avoid wet, windy and rainy periods (and heed weather advisories) that may result in high flow volumes and/ or increase erosion and sedimentation;
 - Regularly monitor the watercourse for signs of sedimentation during all phases of the work, undertaking or activity and take corrective action;
 - Operate machinery on land in stable dry areas; and,
- 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*, and 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 FisheriesProtection@dfo-mpo.gc.ca or 1-855-852-8320.

Please notify this office at least 10 days before starting any in-water works. Send your notification to the assessor (contact information below) and the DFO 10 notification mailbox: DFO.OP.10DayNotification-Notification10Jours.OP.MPO@dfo-mpo.gc.ca. We recommend 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 Lucas Coletti at Lucas.Coletti@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

Lucas Coletti

Biologist | Biologiste

Fisheries and Oceans Canada | Pêches et Océans Canada

Fish and Fish Habitat Protection Program | Programme de Protection du Poisson et de Son Habitat

M: (905)-317-1541

Email/Courriel: Lucas.Coletti@dfo-mpo.gc.ca

From: Monica Shade <monica@shadegroup.ca>

Sent: Tuesday, February 6, 2024 2:02 PM

To: OP Habitat (DFO/MPO) <DFO.OPHabitat.MPO@dfo-mpo.gc.ca>

Cc: Sean MacDonald <drainsuperintendent@northstormont.ca>

Subject: 24-HCAA-00251 - Request for Drain Relocation - North Stormont - Ouderkirk Municipal Drain

You don't often get email from monica@shadegroup.ca. Learn why this is important

Hello,

Please find enclosed the following:

- 1) Request for Review form
- 2) Photos of the existing site conditions
- 3) Draft Engineer's Report outlining the proposed project, including Plan and Profile drawings for the proposed works.

The project involves a proposed relocation of an open channel (Class F Drain) from an area that currently bisects agricultural lands; and seeks to relocate the channel to the outer perimeter to facilitate more efficient farming practices.

Works are proposed to be completed in dry or low/no flow conditions - outside of any timing windows (e.g. after July 15; before March 15).

Please let me know if you have any questions or concerns.

Thank you,

Monica Shade, P. Eng.

V.P. of Engineering & Sales

Shade Group Inc.

Shade Group Inc. is also the parent company to

Nepean General Contractors



image001.jpg
3K



PERMIT FOR DEVELOPMENT ACTIVITY WITHIN A REGULATED AREA

Section 28.1 of the *Conservation Authorities Act*, R.S.O. 1990, c. C.27
& Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits



Permit Holder: Bretzler Farms Ltd.
C/o Monica Shade, P. Eng
4625 March Road
Almonte, ON
K0A 1A0

Decision: **Approved With Conditions**

Issued: May 29, 2024
Expires: May 29, 2026

Work Description: Municipal Drain Realignment — Ouderkirk Drain

Location: Lot 18, Concession 3, former Township of Finch
Township of North Stormont
Roll No. 041100900219500

The attached Schedules form part of this permit for the approved work and must be implemented in accordance with the stated conditions. A copy of this permit must be kept at the worksite.

The Permit Holder, by acceptance and in consideration of the issuance of this permit, agrees to the permit conditions.

Dated at Finch, Ontario, this 29th day of May 2024.

Sandra Mancini
Managing Director
smancini@nation.on.ca



SCHEDULE A: WORK DESCRIPTION

SNC understands the following work will be completed (the “Work”):

1. The applicant proposes to realign approximately 270m of the Ouderkirk Municipal Drain.
2. The proposed realignment will relocate the drain to the Township’s road allowance between Lot 18 and 19, travelling southernly; then continuing westerly in the railway right of way, parallel to the railway.

The details of the Work are outlined in the following documents forwarded to SNC:

1. South Nation Conservation Section 28.1 Permit Application Form – signed by Frank Bretzler, dated Jan 26/24, signed by Monica Shade, dated Feb 6, 2024.
2. Report: “Ouderkirk Drain Proposed Partial Realignment”, Rev 01 – March 2024 (Draft) prepared by Shade Group Inc.
3. Response Letter from Shade Group Inc., dated March 25, 2024.



SCHEDULE B: CONDITIONS

The Permit Holder must adhere to the following conditions for permit compliance:

1. Erosion Control

- a) The Permit Holder must ensure no erosion occurs in or near a watercourse or waterbody that is in proximity to the Work.
- b) It is understood the contractor will maintain the sediment and erosion control measures after every rainfall (>10mm) throughout the construction. It is also the responsibility of the contractor to remove and dispose of the sediment and erosion control measures following site stabilization.
- c) In the event of unexpected rainfall, any fill that is removed from the site and placed on the shore (above the high-water mark) is to be properly stabilized as required through the implementing of appropriate erosion control measures.
- d) SNC may visit the Work location anytime from application submittal through to the expiration of the permit to inspect the implementation of erosion control measures on site. SNC shall give reasonable notice of the entry to the Permit Holder or occupier of the property.
- e) Disturbed areas must be stabilized and revegetated as required upon completion of Work and restored to a pre-disturbed state or better.
- f) The applicant is aware the sediment and erosion control plan is a living document and additional measures may be required depending on the conditions at the time of work.



SCHEDULE C: ADDITIONAL COMMENTS

SNC makes the following additional comments:

1. This permit does not review, certify, or provide permission for any works that may be located outside the above noted property boundary.
2. Nothing in this permit relieves the Permit Holder(s) from obtaining, where necessary, regulatory approval from any other agency, government including the Majesty the King in Right of Ontario, municipality, landowner, or authority having legal jurisdiction regarding development at the above noted location or any adjacent lands that may be impacted by the Work. SNC makes no representation and has made no representation as to whether the Permit Holder(s) must obtain any other approval(s) regarding the Work. SNC hereby confirms that it is the Permit Holder(s)' sole and complete responsibility to ensure that it applies for and obtains all necessary regulatory approvals prior to undertaking the Work.
3. Permit review completed by L. Crites. Technical review completed by S. Zand.



SCHEDULE D: GENERAL CONDITIONS

1. Term

This permit is valid for 24 months from the date of issuance. No notice will be issued on expiration. It is the responsibility of the Permit Holder to ensure a valid permit is in effect at the time the Work is occurring. The Permit Holder may, at least 60 days before the expiry of the permit, apply to SNC and pay a fee for an extension of the permit.

2. Other Permits and Permissions

This permit does not relieve the Permit Holder of the responsibility to obtain any other documents or permits that the Work may require from the Government of Canada, the Government of Ontario, or the local municipality. It is the responsibility of third-party agents to secure property owner permission to undertake the Work.

3. Right to Hearing

A Permit Holder who disagrees with the conditions attached to their permit has the right to request a hearing before the SNC Board of Directors. Please contact our office for further details.

4. Property Entry

SNC may enter the subject property where the Work is taking place during the permit's period of validity to ensure compliance with the conditions of the permit. SNC shall give reasonable notice of the entry to the Permit Holder or occupier of the property.

5. Cancellation of Permit

SNC may cancel a permit or change the permit conditions if:

- a) false information was submitted as part of the permit application; or
- b) the Work deviates from the conditions of the permit without SNC's prior written approval.

6. Offences

It is an offence to undertake work in a regulated area without a permit or to contravene the conditions of a permit. A person who commits an offence under the *Conservation Authorities Act* is liable on conviction:

- a) in the case of an individual,
 - (i) to a fine of not more than \$50,000 or to a term of imprisonment of not more than three months, or to both, and



- (ii) to an additional fine of not more than \$10,000 for each day or part of a day on which the offence occurs or continues; and
- b) in the case of a corporation,
 - (i) to a fine of not more than \$1,000,000, and
 - (ii) to an additional fine of not more than \$200,000 for each day or part of a day on which the offence occurs or continues.

Despite the maximum fines, a court that convicts a person of an offence may increase the fine it imposes on the person by an amount equal to the amount of the monetary benefit that was acquired by the person, or that accrued to the person, as a result of the commission of the offence.

In addition to any other remedy or penalty provided by law, the court, upon convicting a person of an offence, may order the convicted person to,

- a) remove, at the convicted person's expense, any development within such reasonable time as the court orders; and
- b) take such actions as the court directs, within the time the court may specify, to repair or rehabilitate the damage that results from or is in any way connected to the commission of the offence.

7. Liability

The Permit Holder acknowledges that the sole function of this permit is to confirm the Work is consistent with Part VI of the *Conservation Authorities Act*, O. Reg. 41/24, and SNC policies. SNC makes no representations or warranties regarding any other aspect of the Work.

By accepting this permit, the Permit Holder agrees:

- a) to indemnify and save harmless, SNC and its officers, employees, and agents, from and against all damage, injury, loss, costs, claims, demands, actions, and proceedings, arising out of or resulting from any act or omission of the Permit Holder or of any of their agents, employees, or contractors relating to any of the particular terms or conditions of this permit; and
- b) that this permit shall not release the Permit Holder from any legal liability or obligation and remains in force subject to all limitations, requirements, and liabilities imposed by law.

SNC assumes no responsibility or liability for flood, erosion, or slope failure damage that may occur to the subject property, nor any activity undertaken by the Permit Holder affecting the property interests of adjacent landowners.

RE: Ouderkirk Municipal Drain Relocation

1 message

Glenn Bonneau <Glenn.Bonneau@cpkcr.com>

Fri, Apr 26, 2024 at 10:11 AM

To: Monica Shade <monica@shadegroup.ca>

Cc: Sean MacDonald <drainsuperintendent@northstormont.ca>, Douglas Allinotte <Douglas.Allinotte@cpkcr.com>

No permits required as long as you you won't be fouling the track.

Sean can reach out to myself or Doug when it comes time to start the work.

From: Monica Shade <monica@shadegroup.ca>**Sent:** Friday, April 26, 2024 10:05 AM**To:** Glenn Bonneau <Glenn_Bonneau@cpr.ca>**Cc:** Sean MacDonald <drainsuperintendent@northstormont.ca>**Subject:** Re: Ouderkirk Municipal Drain Relocation

Thank you Glenn.

Can you confirm if you'll require permitting when it's ready to go to construction - or just a simple phone call from Sean to keep you in the loop when they're ready to start work?

Monica Shade, P. Eng.

V.P. of Engineering & Sales

Shade Group Inc.

Shade Group Inc. is also the parent company to

Nepean General Contractors

On Fri, Apr 26, 2024 at 9:56 AM Glenn Bonneau <Glenn.Bonneau@cpkcr.com> wrote:

Sean,

All good on my end.

Please proceed.

Glenn

From: Sean MacDonald <drainsuperintendent@northstormont.ca>
Sent: Friday, March 22, 2024 2:53 PM
To: Monica Shade <monica@shadegroup.ca>; Glenn Bonneau <Glenn_Bonneau@cpr.ca>
Subject: Re: Ouderkirk Municipal Drain Relocation

Good afternoon Glenn,

I am touching base with you on the drain relocation project that we discussed, approx. 3km East of Finch ONT.

The draft report has been completed, and we were looking to see if you had any comments, questions or concerns with any of the design within the CP ROW?

Furthermore, could you please indicate if any permitting is required from CP Rail when it comes time for construction?

If you do not have any comments or anything to add, a simple "all good" would be great.

Thank you,

Sean MacDonald

Drainage Superintendent

(613)362-1006

From: Monica Shade <monica@shadegroup.ca>
Sent: February 6, 2024 2:18 PM
To: Glenn.Bonneau@cpkcr.com <Glenn.Bonneau@cpkcr.com>
Cc: Sean MacDonald <drainsuperintendent@northstormont.ca>
Subject: Ouderkirk Municipal Drain Relocation

Hi Glenn,

I understand that you've had some previous correspondence with Sean MacDonald, the Township Drainage Superintendent for North Stormont with respect to a request to relocate a portion of the Ouderkirk Municipal Drain into the right-of-way owned by CPR.

Further to that, please find enclosed a copy of the Engineer's Report that has been prepared, detailing the proposed design. If you flip to Appendix C, you'll see a couple plans showing the intent. The intent is to locate the east-west portion on the outer edge of the right-of-way owned by CPR. If you need us to add some more dimensions to the plan to clarify where the drain is to be located relative to the rail, please let me know. You'll note the realignment location is further away from the railbed than the existing alignment further downstream.

Once you've had a chance to review, please advise if you have any questions or concerns.

I'd also anticipate that some form of permitting will be required from CPR - can you confirm? It's anticipated that construction work will be completed in July/August (2024).

Thank you for your time.

Monica Shade, P. Eng.

V.P. of Engineering & Sales

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[Nepean General Contractors](#)

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