

# **RANGER MUNICIPAL DRAIN**

**S. 78 ENGINEER'S REPORT**

**THE NATION MUNICIPALITY**

**INCLUDING LANDS IN**

**NORTH GLENGARRY AND CHAMPLAIN**

**SHADE**  

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**GROUP**  
INC

**PREPARED BY**

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

**FEBRUARY 2024**

## EXECUTIVE SUMMARY

This Engineer's Report has been prepared under Section 78 of the *Drainage Act, R.S.O. 1990, c. D. 17*. The purpose of this report is to update the culvert specifications on the Ranger Drain to conform with current standards and by-laws, while also updating the assessment schedule to ensure it reflects current land use, property parcels, etc.

This report has been prepared in anticipation of pending future maintenance works as well as the replacement of failing access culverts. Reinstatement of like-for-like infrastructure is not possible as the specifications noted under the previous Engineer's Report do not comply with today's standards. All construction and maintenance will be scheduled and overseen by the Township's Drainage Superintendent. Through the update of this report, the Drainage Superintendent can undertake such maintenance, including replacement of failed culverts, and assess costs in a fair manner across landowners within the watershed.

Shade Group Inc. (SGI) was appointed as the engineer for the Ranger Municipal Drain project under by-law No. 01-2023 on January 15, 2023, with the request to undertake a Section 78 improvement to the project.

The previous adopted Engineer's Report is dated September 23, 1983 and was prepared by Desjardins/Lascalles Engineering Limited under sections 74 and 78 of the Drainage Act R.S.O. 1975, and dealt with general maintenance and major improvements to the Ranger Municipal Drain. A secondary report was provided by the Township of North Glengarry. The report was prepared in December 2012 by Lascalles Engineering Limited and refers solely to a re-alignment that took place within Lot 37, Concession 9, Geographic Township of Lochiel, now North Glengarry.

Enclosed within the Appendices of this report you will find: a location plan showing the location of the watershed and drain (**Appendix A**); a map of the watershed (**Appendix B**), and an updated assessment schedule for the distribution of costs associated with current and future maintenance (**Appendix C**).

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## 1.0 OBJECTIVE

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*). The primary purpose of this undertaking is to update the culvert specifications on the Ranger Municipal Drain to meet current standards and by-laws. Specifically, the culvert lengths adopted under the previous Engineer's Report are too short to meet the required driving platform width for current farming practices, and the specified side slopes for these culvert installations do not meet current standards and by-laws for locations located along a public road. Many of the previous installed culverts have reached end-of-life and are in need of replacement.

The 1983 Engineer's Report as previously adopted includes a design specification for the installation of culverts that does not comply with the United Counties of Prescott and Russell (UCPR) By-Law 2023-21. The former adopted Engineer's Report specified:

*"For ditch depths of 2m maximum, the sloping distance shall be 600mm; for ditch depths of 2m+, the sloping distance shall be 1m"*

### *1983 Engineer's Report – Installation of Culverts Farm Crossings*

No separate installation detail was provided to differentiate between access culverts and farm culverts.

The UCPR By-Law 2023-21 – Schedule D, specifies a maximum side slope of 2:1, which is generally consistent with industry accepted standards, including those used by the Ministry of Transportation (Highway Drainage Design Manual). The increase in side slope specifications equates to a longer culvert required to accommodate the equivalent driving platform.

The culverts impacted are specifically those located along County Road 23. The remaining culverts along the drain are to remain generally unaltered. For completeness, the culverts upstream of County Road 23 have been included in this report solely as a means of providing a full summary. Inventory of the existing culverts is that as provided by the municipality's Drainage Superintendents (North Glengarry; Champlain; The Nation).

This Section 78 undertaking is first-and-foremost intended to make updates to the culvert specifications along County Road 23 to meet current accepted standards.

For more information on the previous reports (September 1983; December 2012), refer to **Section 2** of this report; Drain History.

## 2.0 DRAIN HISTORY

Prior to undertaking this report, consultation was undertaken with the Township's Drainage Superintendents (North Glengarry; Champlain; The Nation) to acquire the most recent report for the Ranger Municipal Drain. Per the supplied information, the most recent Engineer's Report for

the entirety of the Ranger Municipal Drain is dated September 23, 1983 and was prepared by Desjardins/Lascalles Engineering Limited. The Ranger Municipal Drain is understood to have been initially constructed in 1964-1965 under a report prepared by Stidwill & Associates Limited dated March 17, 1964. Updates were made between the initial construction in the 1960s and the most recent report in 1983, including some relocation works. For more details – refer to the 1983 Engineer's Report prepared by Desjardins/Lascalles Engineering Limited available under separate cover.

The 1983 report scope of work included deepening both the Main Drain and Branch 1 along their entire lengths in addition to lowering and improving road culverts to accommodate the new ditch grade.

A secondary report was prepared for the Township of North Glengarry in December 2012 by Lascalles Engineering Limited and refers solely to a re-alignment that took place within Lot 37, Concession 9, Geographic Township of Lochiel, now North Glengarry.

The Ranger Municipal Drain serves part of lots 34 to 38, Concession 9 of the Township of Lochiel (now North Glengarry); part of lots 18 and 19 in Concession 10 of the Township of West Hawkesbury (now Champlain) and part of lots 1 to 7 in Concession 6 of the Township of Caledonia (now The Nation).

The 1983 Engineer's Report describes the Ranger Municipal Drain area drained as approximately 204 hectares and having a linear length of 4,230 metres. Branch 1 is described as having a total length of 1,000 metres and an area drained of approximately 36 hectares. **No changes to Branch 1 are proposed in this report.** For additional details pertaining to Branch 1, please refer to the 1983 Engineer's Report.

For details pertaining to the profile and ditch cross-section, refer to the respective 1983 or 2012 Engineer's Reports.

### 3.0 DRAINAGE ACT, 1990, PROCESS

#### 3.1 TO DATE

Shade Group Inc. (SGI) was initially appointed as the engineer for the Ranger Municipal Drain project under by-law No. 01-2023 in January 2023 to undertake a Section 78 improvement to the Ranger Municipal Drain.

Invitations to the on-site meeting were mailed to landowners within the watershed in March 2023, inviting them to attend a meeting at the Township Office on April 20, 2023.

In the time leading up to the meeting, the Township's Drainage Superintendents fielded various calls in relation to requests for maintenance works or general inquiries about the intentions of the on-site meeting. There were approximately 8 attendees at the on-site meeting, including representatives from the various Townships, the County, and a limited number of landowners.

No concerns were brought forth with respect to the inadequacy of the current design as it exists, nor any concerns with the capacity or performance of the existing system. As such, the improvements adopted under this report are to be limited to lengthening of the culverts along County Road 23 to meet current standards.

### **3.2 NEXT STEPS**

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

The clerk of each 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 then 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, the 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)).

Through discussions with The Nation staff, it is understood that the Township's Drainage Superintendent will oversee any permitting, tendering and oversight of maintenance/construction works, as required.

### **3.3 RESOLUTION AND BY-LAW**

Appendix D has been included in this report as a place to attach the applicable resolution and by-law associated with this Section 78 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.

### **3.4 LIMITATIONS**

The process overview provided in Section 3.2 is provided as a general summary of the next steps to completion. Should the process described herein 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.

## 4.0 DESCRIPTION OF THE WATERSHED + ALIGNMENT OF DRAIN

The following summary has been taken from the 1983 Engineer's Report regarding the Main Drain:

*"It is proposed to start the main drain at a point approximately 150 meters north-east of the dividing line between lots 35-36, concession 9, and at approximately 650 meters south-east of Highway 417, in Concession 9 of the Township of Lochiel. From this point it flows in a general north-westerly direction, crossing Highway 417 and the boundary road between the Townships of Lochiel and Caledonia. Once in the Township of Caledonia, it flows in a westerly direction along the north side of County Road No. 23 for 2,438 meters before outletting into Caledonia Creek."*

The total length of the Ranger Municipal Drain is approximately 4,230 meters and encompasses a total drainage area of approximately 204 hectares. The watershed boundary includes lands in The Nation Township, Champlain Township as well as North Glengarry Township.

The Ranger Municipal Drain watershed is comprised almost entirely of active agricultural lands. A detailed analysis of the soil composition, topography and/or terrain was not completed for this report as there were no noted concerns with the capacity of the current system.

## 5.0 CULVERTS

### 5.1 WATERSHED REVIEW

SGI undertook a high-level field review of the watershed on April 20, 2023, to review the overall drainage area characteristics as compared to available satellite imagery. Based on the review, it appears that the overall conditions as available from recent satellite imagery are confirmed to be accurate. The majority of the watershed is comprised of active agricultural lands, with the second most prominent land use being treed lands.

The watershed boundary as outlined in the 1983 adopted report was determined to be generally accurate, as confirmed by available topographic information from the province, and as further verified by the aforementioned site visit.

### 5.2 HISTORICAL PERFORMANCE

No concerns pertaining to the historical performance have been brought forth by landowners, municipal staff, or other applicable stakeholders for the Ranger Drain. With that, it is proposed that *generally* the culverts on the drain be replaced like-for-like with those as exist currently in the field, with minor exception. Corrugated steel pipes are to be replaced with High Density

Polyethylene (HDPE) (or approved equivalent); having a Manning's Roughness Coefficient of no more than 0.013.

As there have not been any concerns with flooding brought forth, it is recommended that replacement only be completed as the existing infrastructure reaches end-of-life.

### 5.3 CULVERT SIZING

While this report included a review of the existing culverts (lengths) on the Main Drain located along County Road 23. Table 1 also includes a summary of culverts located upstream of County Road 23 (Station 2+438 (1983) onward) for completeness.

Table 1: 2023 Culvert Summary (Existing Conditions) – Ranger Municipal Drain\*

Culvert ID #	Culvert Use	Approx. Station No.	Existing Material	Proposed Material	Existing Length (m) <sup>1</sup>	Min. Proposed Length (m)	Existing Diameter (mm)	Proposed Diameter (mm)
1	Local Road Crossing	0+084	CSP	HDPE	12	18	1200	1200
2	Access Culvert - Residence	0+332	CSP		50	50	1200	1200
3	Access Culvert - Residence	0+500	CSP		12	18	1300	1200
4	Access Culvert - Agriculture	0+513	HDPE		20	18	1200	1200
5	Access Culvert - Agriculture	0+628	CSP		18	18	1200	1200
6	Access Culvert - Agriculture	0+778	CSP		10	21	1200	1200
7	Access Culvert - Agriculture	0+899	CSP		8	18	1200	1200
8	Access Culvert - Agriculture	1+521	CSP		10	18	1300	1200
9	Access Culvert - Agriculture	1+956	HDPE		20	20	1200	1200
10	Local Road Crossing	2+454	HDPE		18	18	1200	1200
11	Access Culvert - Residence	2+553	CSP		12	12	1200	1200
12	Farm Crossing	2+821	CSP		9	9	1200	1200
13	Highway Crossing (MTO)	3+366	CSP	No Change				
14	Highway Crossing (MTO)	3+467	CSP	No Change				
15	Farm Crossing	3+733	CSP	HDPE	7	9	900	900
16	Farm Crossing	4+097	CSP		7	9	800	750

\*All details pertaining to existing culvert conditions, including materials, lengths and diameters have been supplied by the respective Township Drainage Superintendent.



## PROPOSED LENGTHS

Proposed lengths for culverts 1 through 5, and 7 through 9 have been calculated using the following standards:

- Ditch depths are generally >2m per measurements provided by the Township's Drainage Superintendent;
- Maximum driving platform widths of 7m (23ft);
- The length for Methot Side Road culvert is based on a 3.5m lane width at 3% crossfall and a 1.25m shoulder at 6% crossfall (multiplied by two for two lane traffic).

The property owner for Culvert 6 has requested a minimum driving platform of 9m to accommodate large transport trucks that are used as part of the operations. The additional driving platform results in a requirement for an additional 3m of pipe – requiring a 21m entrance culvert to accommodate the increased service. The additional 3m of pipe is to be assessed to the landowner – and has been reflected in the assessment schedule as a Special Benefit.

The remaining culverts (10-16) are based on existing infrastructure information, as no further requests for improvement have been made. As these culverts are not located along the County Road (and therefore not subject to UCPR By-law 2023-21), and no requests for improvement have been made – these culverts shall remain as per their previous installed specifications.

## INSTALLATION

Whenever feasible, pipes are to be installed at a minimum slope of 0.5% with a minimum embedment of 150mm below the ditch grade at both the inlet and outlet sites of the crossing. Rip-rap (or equivalent approved stone) is to be placed at the inlet and outlet sites of each crossing to assist in mitigating erosion and offering attenuation of flow. Rip-rap is to be underlain with geotextile, which shall be keyed in per the manufacturer's specifications. Rip-rap shall be installed as per OPSD 810.010. Crossings should be installed with a minimum cover of 12" (0.3m) and side slopes shall be no more than 2 (horizontal):1 (vertical).

Culverts 1 through 9 shall be HDPE – with 320 kpa for entrances and 210 kpa for front yard ditch fill-ins. Culverts shall be centred on the entrance and in the ditch line.

## 5.4 DRAIN CROSS-SECTION, PROFILE & ROAD CROSSINGS

All other specifications of the Main Drain of the Ranger Drain shall remain as per the previous adopted reports. The associated profile and specified drain cross-section shall remain as per the applicable report: December 2012 (Lascelles Engineering Limited) or September 1983 (Desjardins/Lascelles Engineering Limited)

## 6.0 ASSESSMENTS

Only minor changes were evident for the previous adopted assessment schedule, though formal updates had not been completed to account for such changes (e.g. Section 65). To ensure that future maintenance works could be completed in a fair manner, Shade Group completed a *minor* update to the previous adopted 1983 assessment schedule for the Main Drain. The updates were generally limited to re-apportioning lands that had been divided since 1983. The majority of the landowners should see their assessment apportionment generally unaltered from that as previously accepted in 1983.

The updated assessment schedules, subdivided for each municipality, have been enclosed in Appendix C.

## 7.0 FUTURE MAINTENANCE

All maintenance works are to be performed in accordance with the governing specifications:

- Drain cross-section, alignment, profile, etc. – 1983 Engineer's Report (Desjardins/Lascalles Engineering Limited);
- Realignment Lot 37, Concession 9, Geographic Township of Lochiel, now North Glengarry – 2012 Engineer's Report (Lascalles Engineering Limited);
- Culvert Replacements – 2024 Engineer's Report (Shade Group Inc).

...unless otherwise replaced by a new governing report and associated by-law.

Maintenance works associated with the cleanout of the existing drain shall be considered works as performed under Section 74 of the Drainage Act.

### 7.1 ACCESS AND FARM CULVERT REPLACEMENTS – COUNTY ROAD 23

Removal and replacement of the culverts along County Road 23 is to be done on an as-needed basis, only as infrastructure reaches end of life. As infrastructure reaches end of life and requires replacement, the replacement should be done in conformance with the specifications outlined herein.

Replacement works will be determined by the Township's Drainage Superintendent as deemed necessary, and all required permitting, tendering and oversight will be completed by the Township's Drainage Superintendent.

## 8.0 ENGINEERING COSTS

The cost associated with the preparation of this report are estimated to be \$20,890 (exclusive of taxes). This estimate does not account for any appeals to the Court of Revision, Tribunal or the Referee, but does include for the engineer's attendance at the first mandated sitting of the Court

of Revision. Fees associated with the updates to the assessment schedule were less than 25% of the total engineering fees.

All such engineering costs are to be assessed to the landowners within the watershed in the apportionments as provided in the Assessment Schedule as enclosed in **Appendix C**.

Landowners should note that the assessments provided in Appendix C are *estimates* – final costs may be slightly more or slightly less based on final billings (e.g. due to administration fees for printing reports, mailouts, etc.). As replacement works are expected to be completed on an as-needed basis, only those located upstream of the associated replacement are assessed for the respective works completed.

## 9.0 CONSTRUCTION AND MAINTENANCE COSTS

The final scope of maintenance required is at the discretion of the Drainage Superintendent, in consultation with the Drainage Superintendents from the Municipality of North Glengarry and Champlain. An approximate anticipated construction cost has been prepared based on an assumed scope of work. Estimated construction costs are based on consultation with suppliers and based on historical available data associated with labour and equipment costs. Discounts may be available for bulk purchasing of pipe – which has *not* been reflected in the current estimate.

*Table 2: Proposed Maintenance Works and Associated Costs – Ranger Municipal Drain*

Scope	Estimated Cost
1) <u>Bottom Only Cleanout (Station 0+000 to 2+438):</u> For the purposes of the estimate for this report, I have accounted for a “bottom only” cleanout from the outlet of the drain up to approximately Station 2+438 which accounts for the drain as located within the Nation Township. Cleanout works further upstream would be at the discretion of the other respective Townships and have not been accounted for in this estimate. If required, such works are recommended to be completed concurrent with the maintenance works along County Road 23 as this will reduce mobilization costs and generally represents the most economical approach.	\$21,942
2) <u>Remove and Replacement of Culvert #1</u> Remove 1200mmØ CSP x 12m Replace with 1200mm Ø HDPE x 18m	\$28,639.50 <sup>1</sup>
3) <u>Remove and Replacement of Culvert #6</u> Remove 1200mmØ CSP x 10m Replace with 1200mm Ø HDPE x 18m	\$28,639.50
4) <u>Additional Length for Culvert #6</u> 1200mm Ø HDPE x 3m	\$4,773.25 <sup>2</sup>

5) <u>Remove and Replacement of Culvert #7</u> Remove 1200mmØ CSP x 8m Replace with 1200mm Ø HDPE x 18m	\$28,639.50
6) <u>Remove and Replacement of Culvert #8</u> Remove 1200mmØ CSP x 10m Replace with 1200mm Ø HDPE x 18m	\$28,639.50
7) <u>Rip-Rap Placement – End Treatment for All New Access Culverts</u>	\$5,700
8) <u>Temporary Erosion and Sediment Control</u>	\$3,500
<b>Estimated Construction Cost</b>	<b>\$150,473.25</b>

<sup>1</sup>Per discussions with County staff in April and as confirmed via email in November, it is understood that – although this culvert is under a *Township* Road – it is located within the County right-of-way, and therefore County staff advised that they would pay for the replacement. As per Section 69, the road authority has the option of doing this work themselves, and as such, costs have not been added to the project total for the replacement of this road culvert. Regardless of whom performs the work, the cost of all labour, equipment and materials associated with the replacement of this culvert shall be borne by the road authority, as per Section 26 of the Drainage Act; which in this case, will be the County.

<sup>2</sup>The property owner at Culvert 6 has requested a wider access than the standard used for the remainder of the drain. This requires an additional 3m of pipe (for a total installed length of 21m). The additional length is to be assessed to the requesting landowner as a Special Benefit.

*Table 3: Summary Breakdown of Anticipated Construction Costs – Ranger Municipal Drain*

Owner	Est. Costs (\$ - Excl. HST)
<u>County of Prescott-Russell</u>	
- Roads	
○ Outlet	\$460.45
○ Benefit	\$4,368.87
○ Methot Side Road Culvert Replacement	\$28,639.50*
<u>Township of The Nation</u>	
- Roads	
○ Outlet	\$206.24
○ Benefit	\$1,430.76
<u>Real Property Owners – The Nation</u>	
- Outlet	\$5,299.95
- Benefit	\$44,225.16
- Special Benefit	\$4,773.25**
<u>Township of North Glengarry - Roads</u>	
○ Outlet	\$258.99
○ Benefit	\$737.42
<u>Real Property Owners – North Glengarry</u>	
- Outlet	\$21,043.87

- Benefit	\$24,712.72
<u>Township of Champlain - Roads</u>	
- Outlet	\$225.42
- Benefit	\$791.48
<u>Real Property Owners – Champlain</u>	
- Outlet	\$1,014.42
<u>Ministry of Transportation</u>	
- Outlet	\$10,820.52
- Benefit	\$1,464.23
<u>Project Subtotal</u>	<b>\$117,060.50*</b>

\*The project subtotal accounts for the total costs assessed to the entire watershed and excludes the cost of replacement of the culvert at Methot Side Road as the full cost of replacement would be borne by the road authority as per Section 26 of the Drainage Act.

\*\*The project subtotal accounts for the total costs assessed to the entire watershed and excluded the cost of the additional length of culvert requested by the owner at Culvert 6. The additional length (reflected as a Special Benefit) is to be assessed only to the subject owner. This holds true for current and future replacement.

## 10.0 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. As eligibility requires active status with OMAFRA at the time of the maintenance works, the grant has not been reflected on the current assessment schedules. If you have questions on whether or not your property is eligible for grant, please contact the Township's Drainage Superintendent to discuss.

## 11.0 CLOSING

This report is respectfully submitted to the Council of the Township of The Nation this February 23, 2024.

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

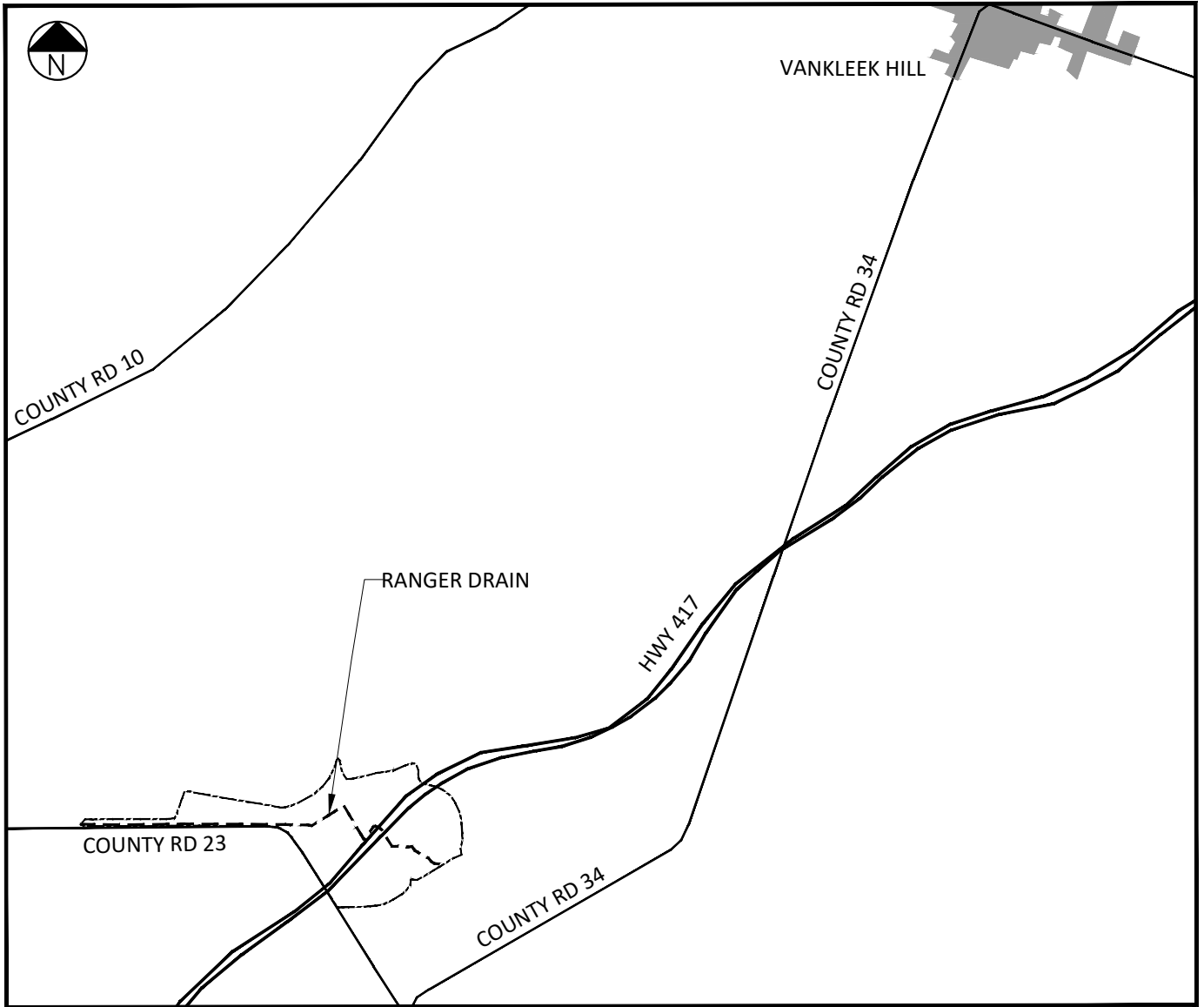


**Monica Shade, P. Eng.**  
Drainage Engineer  
**Shade Group Inc.**



**APPENDIX A**  
LOCATION PLAN





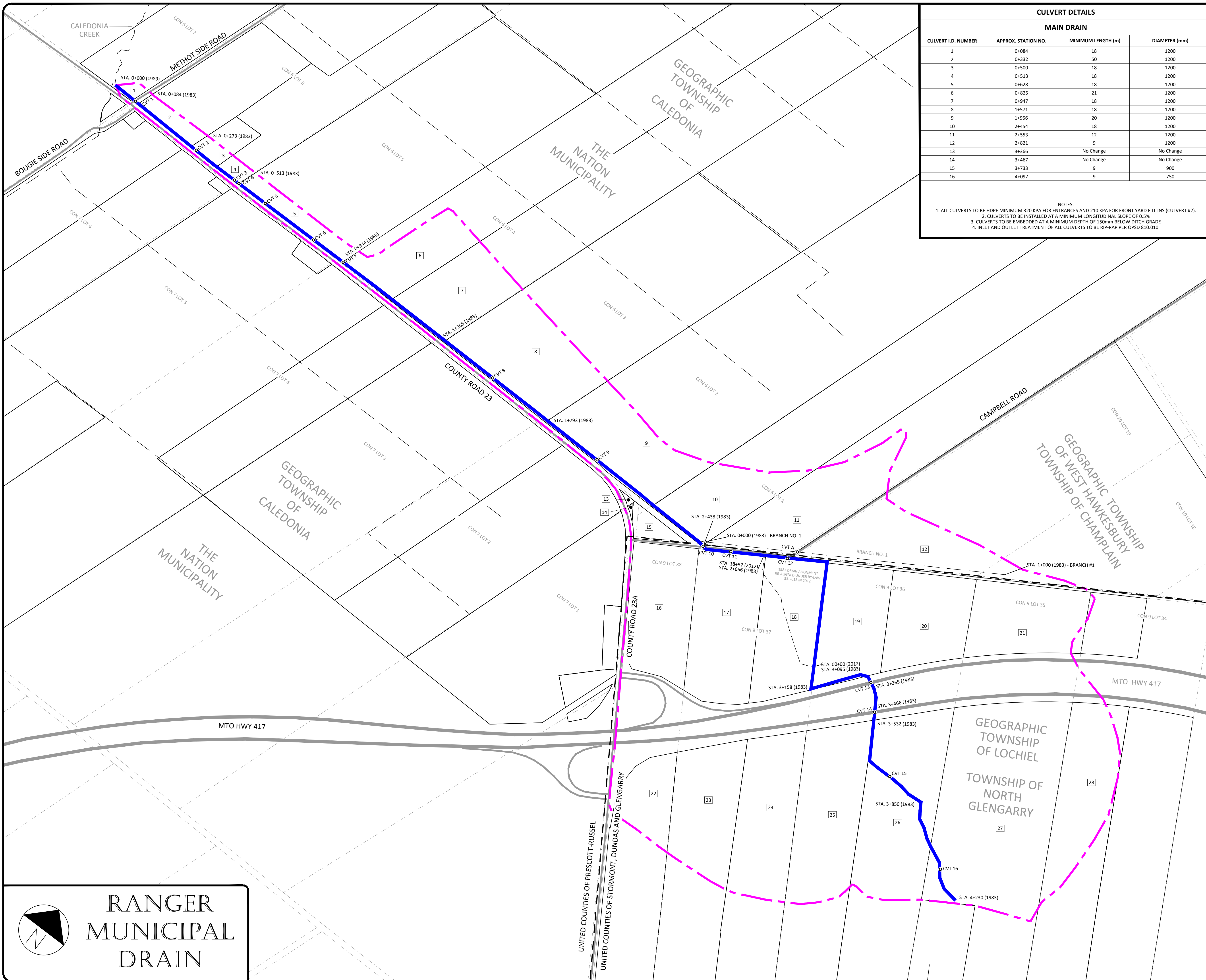
LOCATION PLAN  
N.T.S.



**APPENDIX B**  
DRAINAGE PLAN

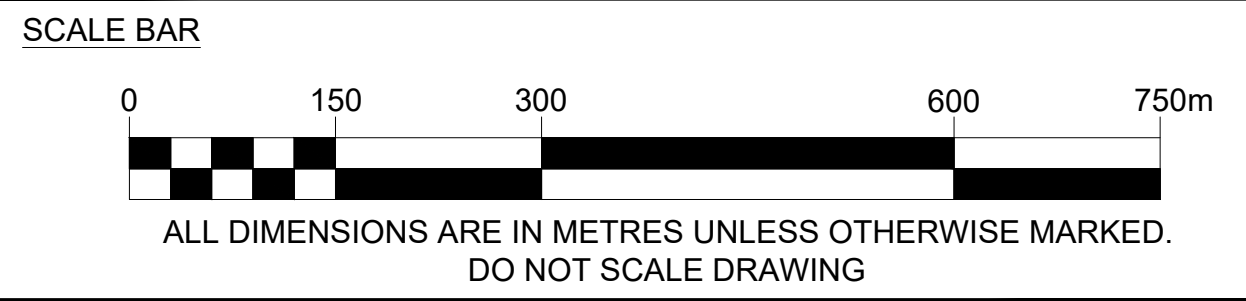
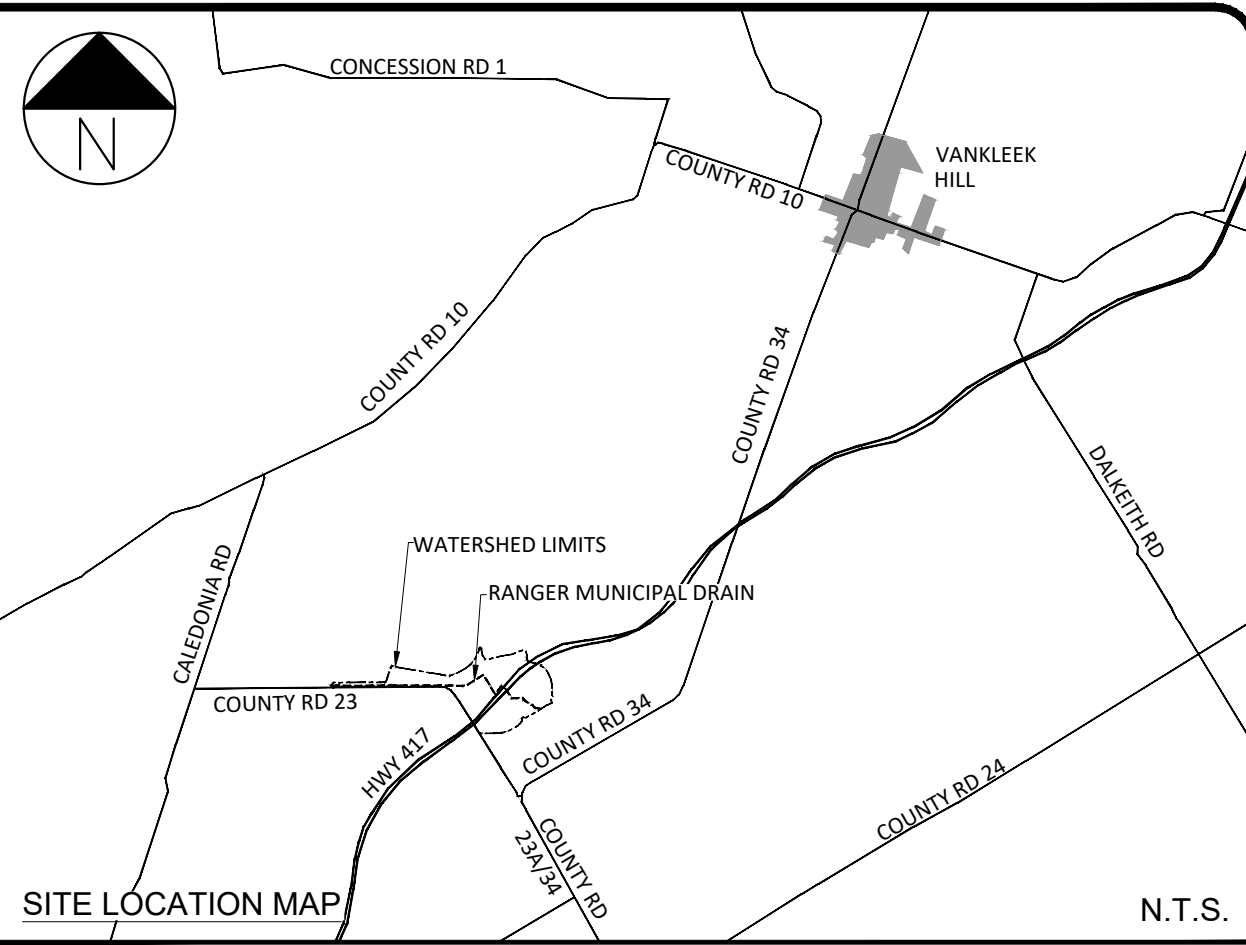






CULVERT DETAILS			
MAIN DRAIN			
CULVERT I.D. NUMBER	APPROX. STATION NO.	MINIMUM LENGTH (m)	DIAMETER (mm)
1	0+084	18	1200
2	0+332	50	1200
3	0+500	18	1200
4	0+513	18	1200
5	0+628	18	1200
6	0+825	21	1200
7	0+947	18	1200
8	1+571	18	1200
9	1+956	20	1200
10	2+454	18	1200
11	2+553	12	1200
12	2+821	9	1200
13	3+366	No Change	No Change
14	3+467	No Change	No Change
15	3+733	9	900
16	4+097	9	750

NOTES:  
 1. ALL CULVERTS TO BE HDPE MINIMUM 320 KPA FOR ENTRANCES AND 210 KPA FOR FRONT YARD FILL INS (CULVERT #2).  
 2. CULVERTS TO BE INSTALLED AT A MINIMUM LONGITUDINAL SLOPE OF 0.5%.  
 3. CULVERTS TO BE EMBEDDED AT A MINIMUM DEPTH OF 150mm BELOW DITCH GRADE.  
 4. INLET AND OUTLET TREATMENT OF ALL CULVERTS TO BE RIP-RAP PER OPSD 810.010.



PAGE SIZE 24" x 36" SCALE 1:5,500

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

LEGEND	
	2023 PROPERTY LINES (GIS DATA)
	RANGER MUNICIPAL DRAIN WATERSHED BOUNDARY
	RANGER MUNICIPAL DRAIN ALIGNMENT
	PREVIOUS ALIGNMENT OF RANGER MUNICIPAL DRAIN
	WATERCOURSES
	ROADS
	DIVIDING LINE BETWEEN COUNTIES
	LOT AND CONCESSION LINES
STA. 0+000 (1983)	APPROX. PREVIOUS STATIONS (m) PER 1983 ENGINEER'S REPORT
STA. 00+00 (2012)	APPROX. PREVIOUS STATIONS (FT) PER 2012 ENGINEER'S REPORT
1	PROPERTY ID REFERENCE
o	CVT #
	CULVERT (SEE TABLE 'CULVERT DETAILS')

NOTES

- ALL STATION LABELS ARE APPROXIMATE. THIS MAP IS FOR INFORMATION PURPOSES ONLY AND IMPLIES NO GUARANTEE OF ACCURACY. DO NOT SCALE DRAWING.
- WORKS TO UPDATE CULVERT SPECIFICATIONS SHOULD BE COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS FOUND WITHIN THE 2023 ENGINEER'S REPORT AS PREPARED BY SHADE GROUP INC.
- ALL PROPERTY LINES ARE AS SUPPLIED BY THE UNITED COUNTIES OF PRESCOTT AND RUSSELL AND THE UNITED COUNTIES OF STORMONT, DUNDAS, AND GLENGARRY, AS ACQUIRED FROM THEIR GEOGRAPHIC INFORMATION SYSTEM (GIS) FEBRUARY 2023. PROPERTY LINES ARE APPROXIMATE - NOT SURVEY ACCURATE. THIS IS NOT A LEGAL SURVEY.

REV. #	REVISION DESCRIPTION	DATE
00	ISSUED W. ENGINEER'S REPORT	FEBRUARY 2024

STAMP

PROJECT TITLE **RANGER MUNICIPAL DRAIN THE NATION MUNICIPALITY**

DRAWING TITLE **WATERSHED MAP PLAN VIEW**

DRAWING NO. **1 OF 1**

**RANGER MUNICIPAL DRAIN**

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## **APPENDIX C**

### **ASSESSMENT SCHEDULES**

Assessment Schedule - Updated 2024  
**Schedule 'A'**  
**North Glengarry**  
**Construction - For Future Maintenance**

Property ID No.	Roll No.	Lot/Con	Outlet (\$)	Benefit (\$)	Est Assess. (\$)*
16	11101601995000	CON 9 PT LOT 38	\$ 935.28	\$ 1,038.42	\$ 1,973.70
17	11101601993000	CON 9 PT LOT 37	\$ 1,542.01	\$ 5,079.88	\$ 6,621.89
18	11101601991500	CON 9 E PT LOT 37	\$ 1,544.42	\$ 5,043.08	\$ 6,587.50
19	11101601990000	CON 9 W PT LOT 36	\$ 1,402.93	\$ 2,542.87	\$ 3,945.80
20	11101601989400	CON 9 PT LOT 36	\$ 1,007.23	\$ -	\$ 1,007.23
21	11101601987500	CON 9 PT LOT 35	\$ 1,654.73	\$ -	\$ 1,654.73
22	11101601995000	CON 9 PT LOT 38	\$ 446.06	\$ -	\$ 446.06
23	11101601992000	CON 9 PT LOT 37	\$ 1,016.82	\$ -	\$ 1,016.82
24	11101601991000	CON 9 PT LOT 37	\$ 1,362.15	\$ -	\$ 1,362.15
25	11101601990000	CON 9 W PT LOT 36	\$ 1,745.86	\$ 1,702.12	\$ 3,447.98
26	11101601989050	CON 9 PT LOT 36	\$ 2,465.31	\$ 4,991.74	\$ 7,457.05
27	11101601987000	CON 9 PT LOT 35	\$ 4,733.98	\$ 4,314.61	\$ 9,048.59
28	11101601985000	CON 9 PT LOT 34	\$ 1,187.09	\$ -	\$ 1,187.09
<b>Sub-Total</b>			\$ 21,043.87	\$ 24,712.72	\$ 45,756.59

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

ID/Name	Outlet (\$)	Benefit (\$)	Est Assess. (\$)
Campbell Road	\$ 115.11	\$ 737.42	\$ 852.53
Road Allowance Between Townships of North Glengarry and Champlain	\$ 143.88	\$ -	\$ 143.88

Summary

Real Properties - North Glengarry	\$ 21,043.87	\$ 24,712.72	\$ 45,756.59
Township Roads - North Glengarry	\$ 258.99	\$ 737.42	\$ 996.41
Sub-Total (Pre-Tax/Grant)	\$ 21,302.86	\$ 25,450.14	\$ 46,753.00



Assessment Schedule - Updated 2024  
**Schedule 'B'**  
**Township of Champlain**  
**Construction - For Future Maintenance**

Property ID No.	Roll No.	Lot/Con	Outlet (\$)	Benefit (\$)	Est Assess. (\$)*
12	20900601000100	CON 10 PT LOTS 17,18,19	\$ 1,014.42	\$ -	\$ 1,014.42
<b>Sub-Total</b>			<b>\$ 1,014.42</b>	<b>\$ -</b>	<b>\$ 1,014.42</b>

\*Estimated assessment does not include Farm Tax Credit. Farm Tax Credit eligibility to be confirmed at time of construction.



Assessment Schedule - Updated 2024  
**Schedule 'B'**  
**Township of Champlain - Roads**  
**Construction - For Future Maintenance**

ID/Name	Outlet (\$)	Benefit (\$)	Est Assess. (\$)
Campbell Road	\$ 81.54	\$ -	\$ 81.54
Road Allowance Between Townships of North Glengarry and Champlain	\$ 143.88	\$ 791.48	\$ 935.36

Summary

Real Properties - Township of Champlain	\$ 1,014.42	\$ -	\$ 1,014.42
Township Roads - Township of Champlain	\$ 225.42	\$ 791.48	\$ 1,016.90
Sub-Total (Pre-Tax/Grant)	\$ 1,239.84	\$ 791.48	\$ 2,031.32

Assessment Schedule - Updated 2024  
**Schedule 'C'**  
**The Nation Municipality**  
**Construction - For Future Maintenance**

Property ID No.	Roll No.	Lot/Con	Outlet (\$)	Benefit (\$)	Special Benefit (\$)	Est Assess. (\$)*
1	21201200601400	CON 6 PT LOT 6 PT LOT 7	\$ 2.39	\$ -	\$ -	\$ 2.39
2	21201200601400	CON 6 PT LOT 6 PT LOT 7	\$ 9.59	\$ 1,486.71	\$ -	\$ 1,496.30
3	21201200601210	CON 6 PT LOT 6	\$ 11.99	\$ 2,203.24	\$ -	\$ 2,215.23
4	21201200601200	CON 6 PT LOT 6	\$ 11.99	\$ 2,203.24	\$ -	\$ 2,215.23
5	21201200600900	CON 6 S PT LOT 5	\$ 91.13	\$ 7,574.29	\$ -	\$ 7,665.42
6	21201200600700	CON 6 W PT LOT 4	\$ 342.06	\$ 4,013.78	\$ 4,773.25	\$ 9,129.09
7	21201200600600	CON 6 E PT LOT 4	\$ 406.18	\$ 4,013.78	\$ -	\$ 4,419.96
8	21201200600500	CON 6 S PT LOT 3	\$ 930.49	\$ 8,705.64	\$ -	\$ 9,636.13
9	21201200600300	CON 6 LOT 2	\$ 1,019.22	\$ 8,841.80	\$ -	\$ 9,861.02
10	21201200600200	CON 6 W PT LOT 1	\$ 777.00	\$ 4,908.89	\$ -	\$ 5,685.89
11	21201200600100	CON 6 E PT LOT 1	\$ 1,525.24	\$ 273.79	\$ -	\$ 1,799.03
13	21201200700800	CON 7 PT LOTS 1	\$ 10.51	\$ -	\$ -	\$ 10.51
14	21201200700800	CON 7 PT LOTS 2	\$ 7.03	\$ -	\$ -	\$ 7.03
15	21201200700800	CON 7 PT LOTS 1 2	\$ 155.13	\$ -	\$ -	\$ 155.13
<b>Sub-Total</b>			\$ 5,299.95	\$ 44,225.16	\$ 4,773.25	\$ 54,298.36

**Assessment Schedule - Updated 2024**  
**Schedule 'C'**  
**The Nation Municipality - Roads**  
**Construction - For Future Maintenance**

ID/Name	Outlet (\$)	Benefit (\$)	Special Benefit (\$)	Est Assess. (\$)
Methot Side Road	\$ 4.80	\$ 142.47	\$ -	\$ 147.27
Campbell Road Between Townships of The Nation and North Glengarry	\$ 115.11	\$ 737.42	\$ -	\$ 852.53
Campbell Road Between Townships of the Nation and Champlain	\$ 86.33	\$ 550.87	\$ -	\$ 637.20

**Summary**

Real Properties - The Nation	\$ 5,299.95	\$ 44,225.16	\$ 4,773.25	\$ 54,298.36
Township Roads - The Nation	\$ 206.24	\$ 1,430.76	\$ -	\$ 1,637.00
Sub-Total (Pre-Tax/Grant)	\$ 5,506.19	\$ 45,655.92	\$ -	\$ 55,935.36



Assessment Schedule - Updated 2024  
**Schedule 'D'**

**United Counties of Prescott & Russel and Ontario Ministry of Transportation - Roads  
 Construction - For Future Maintenance**

ID/Name	Owner	Outlet (\$)	Benefit (\$)	Special Benefit (\$)	Est Assess. (\$)
County Road 23	United Counties of Prescott & Russel	\$ 460.45	\$ 4,368.87	\$ 28,639.50	\$ 33,468.82
Highway 417	Ministry of Transportation of Ontario	\$ 10,820.52	\$ 1,464.23		\$ 12,284.75



Assessment Schedule - Updated 2024  
**Schedule 'E'**  
**North Glengarry**  
**Engineering - ONE TIME USE ONLY**

Property ID No.	Roll No.	Lot/Con	Est Assess. (\$)
16	11101601995000	CON 9 PT LOT 38	\$ 352.22
17	11101601993000	CON 9 PT LOT 37	\$ 1,181.71
18	11101601991500	CON 9 E PT LOT 37	\$ 1,175.57
19	11101601990000	CON 9 W PT LOT 36	\$ 704.15
20	11101601989400	CON 9 PT LOT 36	\$ 179.74
21	11101601987500	CON 9 PT LOT 35	\$ 295.30
22	11101601995000	CON 9 PT LOT 38	\$ 79.60
23	11101601992000	CON 9 PT LOT 37	\$ 181.46
24	11101601991000	CON 9 PT LOT 37	\$ 243.08
25	11101601990000	CON 9 W PT LOT 36	\$ 615.31
26	11101601989050	CON 9 PT LOT 36	\$ 1,330.75
27	11101601987000	CON 9 PT LOT 35	\$ 1,614.76
28	11101601985000	CON 9 PT LOT 34	\$ 211.84
<b>Sub-Total</b>			<b>\$ 8,165.49</b>

Assessment Schedule - Updated 2024  
**Schedule 'E'**  
**North Glengarry - Roads**  
**Engineering - ONE TIME USE ONLY**

ID/Name	Est Assess. (\$)
Campbell Road	\$ 152.14
Road Allowance Between Townships of North Glengarry and Champlain	\$ 25.68

Summary

Real Properties - North Glengarry	\$ 8,165.49
Township Roads - North Glengarry	\$ 177.82
Sub-Total (Pre-Tax)	\$ 8,343.31



Assessment Schedule - Updated 2024  
**Schedule 'F'**  
**Township of Champlain**  
**Engineering - ONE TIME USE ONLY**

Property ID No.	Roll No.	Lot/Con	Est Assess. (\$)
12	20900601000100	CON 10 PT LOTS 17,18,19	\$ 181.03
<b>Sub-Total</b>			<b>\$ 181.03</b>

Assessment Schedule - Updated 2024  
**Schedule 'F'**  
**Township of Champlain - Roads**  
**Engineering - ONE TIME USE ONLY**

ID/Name	Est Assess. (\$)
Campbell Road	\$ 14.55
Road Allowance Between Townships of North Glengarry and Champlain	\$ 166.92

Summary

Real Properties - Township of Champlain	\$ 181.03
Township Roads - Township of Champlain	\$ 181.47
Sub-Total (Pre-Tax)	\$ 362.50



Assessment Schedule - Updated 2024  
**Schedule 'G'**  
**The Nation Municipality**  
**Engineering - ONE TIME USE ONLY**

Property ID No.	Roll No.	Lot/Con	Est Assess. (\$)
1	21201200601400	CON 6 PT LOT 6 PT LOT 7	\$ 0.43
2	21201200601400	CON 6 PT LOT 6 PT LOT 7	\$ 267.02
3	21201200601210	CON 6 PT LOT 6	\$ 395.32
4	21201200601200	CON 6 PT LOT 6	\$ 395.32
5	21201200600900	CON 6 S PT LOT 5	\$ 1,367.93
6	21201200600700	CON 6 W PT LOT 4	\$ 777.32
7	21201200600600	CON 6 E PT LOT 4	\$ 788.76
8	21201200600500	CON 6 S PT LOT 3	\$ 1,719.61
9	21201200600300	CON 6 LOT 2	\$ 1,759.74
10	21201200600200	CON 6 W PT LOT 1	\$ 1,014.67
11	21201200600100	CON 6 E PT LOT 1	\$ 321.05
13	21201200700800	CON 7 PT LOTS 1	\$ 1.88
14	21201200700600	CON 7 PT LOTS 2	\$ 1.25
15	21201200700610	CON 7 PT LOTS 1 2	\$ 27.68
<b>Sub-Total</b>			<b>\$ 8,837.98</b>

Assessment Schedule - Updated 2024  
**Schedule 'G'**  
**The Nation Municipality - Roads**  
**Engineering - ONE TIME USE ONLY**

ID/Name	Est Assess. (\$)
Methot Side Road	\$ 26.28
Campbell Road Between Townships of The Nation and North Glengarry	\$ 152.14
Campbell Road Between Townships of the Nation and Champlain	\$ 113.72

Summary

Real Properties - The Nation Municipality	\$ 8,837.98
Township Roads - The Nation Municipality	\$ 292.14
Sub-Total (Pre-Tax)	\$ 9,130.12

Assessment Schedule - Updated 2024

Schedule 'H'

United Counties of Prescott & Russel and Ontario Ministry of Transportation - Roads

**Engineering - ONE TIME USE ONLY**

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ID/Name	Owner	Est Assess. (\$)	
County Road 23	United Counties of Prescott & Russel	\$	861.82
Highway 417	Ministry of Transportation of Ontario	\$	2,192.27





**APPENDIX D**  
RESOLUTION & BY-LAW



CORPORATION OF THE NATION MUNICIPALITY

BY-LAW NO. 01-2023

Being a by-law to appoint Shade Group Inc. to review the **Ranger** Municipal Drain, under Section 78(1), improvement, upon examination and report of engineer, of the Drainage Act.

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**REFERENCE:** Section 78(1) of the Drainage Act, R.S.O. 1990, c. D. 17.

**WHEREAS**, the **Ranger** Municipal Drain was last revised for major improvement construction in 1983, in accordance with By-Law No. 39-1983.

**WHEREAS**, pursuant to Section 78(1) of the Drainage Act, The Nation Municipality deems it appropriate and beneficial to amend the existing scheme, plan & profile of the culverts, and revised schedule of assessments of the **Ranger** Municipal Drain in the Engineer's report of September 23, 1983, to revise the culvert section along County road 23, or other culverts within the reports culverts listed if deemed necessary by other landowners, as maintenance cannot be performed as per the existing engineers report, as new requirements from the road authority have changed preventing the existing culvert profile of the report to be built.

**AND WHEREAS** it is necessary and appropriate for Council to appoint a Drainage Engineering firm, under Section 78(1) to amend the existing scheme, culvert profile, and assessment schedule, of the **Ranger** Municipal Drain culverts along County road 23 in the Engineer's report of September 23, 1983, being part of the new culvert replacement and future maintenance.

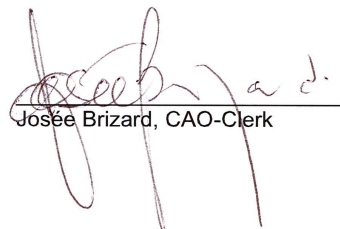
**AND WHEREAS** the actual cost of the preparation of the Engineering Report of the **Ranger** Municipal Drain is to be shared by the owners of land within the **Ranger** Municipal Drain watershed, including road authorities, and also including the upstream Townships of Champlain and North Glengarry being at the upstream area of the drain. A new report was ordered by the Minister of Agriculture, Foods, and Rural Affairs of Ontario following the designation of emergency culvert replacements for two access culverts.

**NOW THEREFORE** the Council of the Corporation of The Nation Municipality, hereby enacts as follows:

1. THAT Council appoint Shade Group Inc. to review the **Ranger** Municipal Drain existing engineer's report.
2. THAT Council appoints the firm of Shade Group Inc. to amend the existing profile of the culvert items list for proper size and length of the culverts for the **Ranger** Municipal Drain in the Engineer's report of September 23, 1983.
3. THAT the landowners, including road authorities within the **Ranger** Municipal Drain watershed as deemed proper by the engineer's cost shares, to be responsible for the costs of the revised Engineer's Report.
4. THAT by-law shall come into force as of January 16, 2023.

READ A FIRST, SECOND AND DULY PASSED UPON THE THIRD READING IN OPEN COUNCIL THIS 16<sup>th</sup> of JANUARY 2023.

  
Francis Brière, Mayor

  
Josée Brizard, CAO-Clerk