

**DRAINAGE REPORT  
FOR THE**

**ROAD 29 DRAIN**

**IN THE  
FORMER TOWNSHIP OF GOSFIELD NORTH  
TOWN OF KINGSVILLE**



**FINAL REPORT  
15 NOVEMBER 2024  
OLIVER E. T. MOIR, P. ENG.  
FILE No. 21-3142**

File No. 21-3142

Members of Council  
Town of Kingsville  
2021 Division Road North  
Kingsville, Ontario  
N9Y 2Y9

**Drainage Report for the  
ROAD 29 DRAIN  
In the Former Township of Gosfield North  
Now in the Town of Kingsville**

Mayor and Members of Council:

**Instructions**

The Municipality received a petition on 23 June 2023 from the Ministry of Transportation Ontario (MTO) for a new municipal drain to provide legal outlet for the future roadworks being undertaken by the Ministry. The said roadworks involving a realignment of County Road No. 29 connecting to Highway No. 3 and easterly extension of Unnamed Road to Inman Sideroad.

The petition for drainage being in accordance with Section 4 of the Drainage Act. Pursuant to Section 8(1) of the Drainage Act, the Town of Kingsville appointed Dillon Consulting Limited on 14 August 2023 to prepare a report.

**Area Requiring Drainage / Sufficiency of Petition**

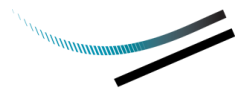
The area requiring drainage encompasses lands within the future County Road No. 29 road allowance and on private lands (Roll No. 560-00300). A new municipal drain will provide legal outlet for these lands. In terms of sufficiency of the petition, we have determined the petition to be valid in accordance with Section 4(1)(c) of the Drainage Act, where the drainage works is required for a road and the petition has been signed by a person having jurisdiction over such road. We hereby recommend the new drainage works be hereafter known as the Road 29 Drain.

**Watershed Description**

The Road 29 Drain consists of a culvert across the future County Road No. 29 and a culvert immediately downstream which outlets into the No. 5 Drain. The recommended culverts minimize impacts to existing private lands while still maintaining access for construction and future maintenance. The drain is located just east of the Schiller Branch Drain outlet into the No. 5 Drain and is a separate drainage system. The present watershed area for the Road 29 Drain is approximately 2.75 hectares (approximately 6.8 acres). The surficial soils are predominately Brookston Clay which is defined as having poor natural drainage.



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### **Landowner Meeting**

A landowner meeting was held on August 20, 2024 to discuss the proposed improvements to the Road 29 Drain. A summary of the landowner meeting is provided within Schedule 'A' herein.

### **Survey**

Our survey and examination of the Road 29 Drain was carried out in July 2023. The survey comprised the recording of topographic data and examining the channel for available depth necessary to provide sufficient drainage.

### **Design Considerations**

For the new culverts denoted herein as Culverts No. 1 and 2, we have recommended a 1200 mm diameter concrete pipe size. As per previous discussions with landowners (Roll No. 560-00300 & Roll No. 560-05405) having property that is fronting the future County Road No. 29 extension, there was consideration given to oversizing the culverts to ensure sufficient capacity was available for a future relocation of the Tully Award Drain in order to utilize this new Road 29 Drain and prevent disruption to the new future road. Without this future provision, the culvert sizes would reduce in size to 900 mm diameter and constitute an approximate 20% lower cost. The culverts have been sized to convey the 1 in 25-year storm event for the upstream watershed flows such that there is no overtopping of flows within the drainage swales to be constructed alongside the new roadway.

There exists a private storm drain pipe (400 mm diameter) that runs southerly across the future County Road No. 29 alignment that outlets into the No. 5 Drain. The said private storm drain shall require relocation with its new outlet into the Road 29 Drain. The portion of pipe downstream of the relocated section shall require removal. These works are separate from the municipal drainage works and form part of the roadworks.

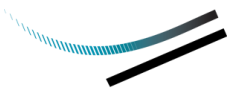
### **Allowances**

In accordance with Sections 29 we have determined that the landowner (Roll No. 560-05405) shall be compensated to establish a new 6.0 m wide corridor centred over Culvert No. 1. Schedule 'B' for Allowances has been included herein in the total amount of \$400.00.

### **Recommendations and Cost Estimate**

Based on our review of the history, the information obtained from our examination of the drain, we recommend the following works to construct the new Road 29 Drain, as described below:

<b>Item</b>	<b>Description</b>	<b>Amount</b>
	<b><u>ROAD 29 DRAIN</u></b>	
1.	Culvert No. 1 - Station 0+000 to Station 0+030 - Supply and installation of 30 metres of new 1200 mm diameter reinforced concrete pipe (CSA A257.2) complete with clearstone or Granular 'A' pipe bedding (150 mm thickness), Granular 'A' (crushed limestone) backfill up to pipe springline compacted (approximately 30 tonnes) and native material above	\$74,000.00



Item	Description	Amount
	(approximately 110 m <sup>3</sup> ), R-50 rip rap end treatment at inlet end of pipe (approximately 20 m <sup>2</sup> ). Work to include 100 mm layer of topsoil placement, fine grading, seeding and restoration of all disturbed grassed areas.	
2.	<u>Culvert No. 2 - Station 0+033 to Station 0+057</u> - Supply and installation of 24 metres of new 1200 mm diameter reinforced concrete pipe (CSA A257.2) complete with clearstone or Granular 'A' pipe bedding (150 mm thickness), full Granular 'A' (crushed limestone) backfill compacted (approximately 250 tonnes), R-50 riprap end treatment at the inlet and outlet ends of pipe (approximately 60 m <sup>2</sup> ).	\$74,000.00
3.	Temporary silt control measures during construction.	\$2,000.00
	<b>SUB-TOTAL</b>	<b>\$150,000.00</b>
5.	Allowances under Section 29 of Drainage Act.	\$400.00
6.	Report, Assessments and Final Inspection.	\$21,500.00
7.	Expenses and Incidentals.	\$1,000.00
8.	ERCA review and permit fee	<u>\$800.00</u>
	<b>TOTAL ESTIMATE – ROAD 29 DRAIN (excl. Net HST)</b>	<b>\$173,700.00</b>

The estimate provided in this report was prepared according to current materials and installation prices as of the date of this report. In the event of delays from the time of filing of the report by the Engineer to the time of tendering the work, it is understood that the estimate of cost is subject to inflation. The rate of inflation shall be calculated using the Consumer Price Index applied to the cost of construction from the date of the report to the date of tendering.

#### **Assessment of Costs**

The individual assessments are comprised of three (3) assessment components:

- i. Benefit (*advantages relating to the betterment of lands, roads, buildings, or other structures resulting from the improvement to the drain*).
- ii. Outlet Liability (*part of cost required to provide outlet for lands and roads*).
- iii. Special Benefit (*additional work or feature that may not affect function of the drain*).

We have assessed the estimated costs for the Road 29 Drain against the affected lands and roads as listed in Schedule 'C' under "Special Benefit". Details of the Special Benefit assessment listed are provided in Schedule 'D' herein.

## **Assessment Rationale**

Special Benefit assessments shown in Schedule 'C' were derived as follows:

1. We have assessed 80% of the costs for Culverts No. 1 & No. 2 plus engineering cost apportionment to the Ministry of Transportation Ontario.
2. We have assessed 16.67% of the costs for Culverts No. 1 & No. 2 plus engineering cost apportionment to property Roll No. 560-00300 as part of culvert oversizing costs.
3. We have assessed 3.33% of the costs for Culverts No. 1 & No. 2 plus engineering cost apportionment to property Roll No. 560-05405 as part of culvert oversizing costs.
4. The ERCA review and permit fee, as well as the allowances under Section 29 are assessed 100% to the Ministry of Transportation Ontario.

### **Future Maintenance (Culvert No. 1)**

Culvert No. 1 shall be maintained by the Town of Kingsville. The future repair and maintenance costs shall be assessed to the lands and the roads for Outlet assessments in the same relative proportions as listed in Schedule 'E' herein, subject of course to any variations that may be made under the authority of the Drainage Act. The assessment schedule is based on an arbitrary \$10,000.00 of future maintenance costs for which actual costs would be prorated.

### **Future Maintenance (Culvert No. 2 – County Road No. 29)**

Culvert No. 1 shall be maintained by the County of Essex Roads Department for 100% of the costs, subject of course, to any variations that may be made under the authority of the Drainage Act.

### **Drawings and Specifications**

Attached to this report is Schedule 'F', which are Specifications setting out the details of the recommended works and Schedule 'G' which represent the drawings that are attached to this report.

**Page 1 of 3 – Overall Plan**

**Page 2 of 3 – Detail Plan & Profile**

**Page 3 of 3 – Culvert Details**

### **Construction Drawings and Specifications**

The work included in this report will be performed under the provincial contract for the Widening of King's Highway No. 3 starting from 0.8 km west of Cameron Sideroad and continuing easterly to 1.8 km west of County Road No. 31. Bridge drawings have been prepared for the construction complete with associated specifications which shall adhere to the elevations, alignment, sizes, materials, and location and be generally in compliance with this report.

**Approvals**

The construction and/or improvement to a drainage works, including repair and maintenance activities, and all operations connected therewith are subject to the approval, inspection, by-laws and regulations of all Municipal, Provincial, Federal and other authorities having jurisdiction in respect to any matters embraced by the proposed works. Prior to any construction or maintenance works, the Municipality or proponent designated on the Municipality's behalf shall obtain all required approvals/permits and confirm any construction limitations including timing windows, mitigation/off-setting measures, standard practices or any other limitations related to in-stream works.

Respectfully submitted,

**DILLON CONSULTING LIMITED**

Oliver E. T. Moir, P.Eng.

OEM:wlb:lld



**SCHEDULE ‘A’**  
**SUMMARY OF LANDOWNER MEETING**

**August 20, 2024 @ 3:00 p.m.**

**Peralta Engineering Boardroom**

**Present:**

Reiner Neuman	Landowner (Roll No. 560-05405)
Lu-Ann Marentette	Town of Kingsville
Heide Mikelsen	Peralta Engineering (representing landowner of property Roll No. 560-00300)
Chad Sinkevitch	Peralta Engineering (representing landowner of property Roll No. 560-00300)
Tim Oliver	Dillon Consulting Limited

**Tim Oliver** provided an overview of the proposed future roadwork being undertaken by the Ministry of Transportation Ontario (MTO) to extend the County Road No. 29 further east where it would cross over the Tully Award Drain. The roadworks would require a culvert for the new road to get built across the drain as well as a second culvert for the relocation of the southeast corner of the existing pond. The new roadway would not require the Tully Award Drain for drainage as the roadside drainage swales are designed to cross over the proposed culvert.

Given that the roadway drainage is designed to be directed westerly towards the proposed relocated Schiller Branch Drain outlet and this presented a concern echoed by residents being opposed to the expanded drainage area to include drainage from new roadworks into the said drain, we have proposed a separate drain crossing (Road 29 Drain) to cross the new County Road 29 extension and it would run parallel to and east of the new Schiller Branch Drain crossing of the said road.

Consideration would be given to oversizing the new culvert pipe for the Road 29 Drain such that it be adequate to provide sufficient outlet for a future relocation of the downstream portion of the Tully Award Drain to use it as an outlet to the No. 5 Drain. Similarly, a downstream new culvert from the County Road No. 29 culvert would be considered to traverse across the corner of the property of Roll No. 560-05405 so as to minimize property required for a municipal drain crossing. The MTO would be assessed the costs of the culverts to secure a drainage outlet for the new roadworks as they petitioned for under Section 4 of the Drainage Act. However, since there are oversizing costs for providing larger size culverts for the special benefit to the adjacent landowners interested in the relocation of the lower portion of the Tully Award Drain, there would be some cost sharing with a portion of the costs for these two culverts being referred to.

*Meeting summary prepared by Tim Oliver, P. Eng*

**"SCHEDULE B"**  
**SCHEDULE OF ALLOWANCES**  
**ROAD 29 DRAIN**  
**TOWN OF KINGSVILLE**

Roll No.	Con.	Description	Owner	Section 30 Damages	Section 29 Land	Total Allowances
560-05405	STR	Pt. Lot 265	Neumar Corp. & 1118524 Ontario Inc.	\$0.00	\$400.00	\$400.00
<b>TOTAL ALLOWANCES</b>				<b>\$0.00</b>	<b>\$400.00</b>	<b>\$400.00</b>



**"SCHEDULE C"**  
**SCHEDULE OF ASSESSMENT**  
**ROAD 29 DRAIN**  
**TOWN OF KINGSVILLE**

**ONTARIO LANDS:**

Roll No.	Lot	Conc.	Area Affected (Acres) (Ha.)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
King's Highway No. 3			2.47	1.00	Ministry of Transportation	\$139,236.00	\$0.00	\$0.00	\$139,236.00
Total on Ontario Lands.....						\$139,236.00	\$0.00	\$0.00	\$139,236.00

**NON AGRICULTURAL LANDS**

Roll No.	Lot	Conc.	Area Affected (Acres) (Ha.)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
560-05405	265	STR	0.74	0.30	Neumar Corp. & 1118524 Ontario Inc.	\$5,744.00	\$0.00	\$0.00	\$5,744.00
Total on Non Agricultural Lands .....						\$5,744.00	\$0.00	\$0.00	\$5,744.00

**AGRICULTURAL LANDS**

Roll No.	Lot	Conc.	Area Affected (Acres) (Ha.)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
560-00300	265	STR	3.58	1.45	Domric Enterprises Inc.	\$28,720.00	\$0.00	\$0.00	\$28,720.00
Total on Agricultural Lands.....						\$28,720.00	\$0.00	\$0.00	\$28,720.00

<b>TOTAL ASSESSMENT .....</b>						<b>\$173,700.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$173,700.00</b>	
			(Acres)	(Ha.)						
			<b>Total A</b>	<b>6.79</b>	<b>2.75</b>					

**"SCHEDULE D"**  
**DETAILS OF SPECIAL BENEFIT**  
**ROAD 29 DRAIN**  
**TOWN OF KINGSVILLE**

**SPECIAL BENEFIT ASSESSMENT**  
**(ONTARIO LANDS)**

Roll No.	Owner	Item Description	Estimated Cost	Cost of Report	Special Benefit
	Ministry of Transportation Ontario	Culverts No. 1 & 2 (80%)	\$120,000.00	\$17,857.00	\$137,857.00
		ERCA review and permit fee (100%)	\$800.00	\$119.00	\$919.00
		Allowances (100%)	\$400.00	\$60.00	\$460.00
<b>Total Special Benefit Assessment (Ontario Lands).....</b>			<b>\$121,200.00</b>	<b>\$18,036.00</b>	<b>\$139,236.00</b>

**SPECIAL BENEFIT ASSESSMENT**  
**(NON - AGRICULTURAL LANDS)**

Roll No.	Owner	Item Description	Estimated Cost	Cost of Report	Special Benefit
560-05405	Neumar Corp. & 1118524 Ontario Inc.	Culverts No. 1 & 2 (3.33%)	\$5,000.00	\$744.00	\$5,744.00
<b>Total Special Benefit Assessment (Non - Agricultural Lands).....</b>			<b>\$5,000.00</b>	<b>\$744.00</b>	<b>\$5,744.00</b>

**SPECIAL BENEFIT ASSESSMENT**  
**(AGRICULTURAL LANDS)**

Roll No.	Owner	Item Description	Estimated Cost	Cost of Report	Special Benefit
560-00300	Domric Enterprises Inc.	Culverts No. 1 & 2 (16.67%)	\$25,000.00	\$3,720.00	\$28,720.00
<b>Total Special Benefit Assessment (Agricultural Lands Grantable).....</b>			<b>\$25,000.00</b>	<b>\$3,720.00</b>	<b>\$28,720.00</b>

**OVERALL TOTAL SPECIAL BENEFIT ASSESSMENT . . . . . \$173,700.00**

**SCHEDULE 'E'**  
**SCHEDULE OF ASSESSMENT FOR FUTURE MAINTENANCE**  
**ROAD 29 DRAIN (CULVERT No. 2)**  
**TOWN OF KINGSVILLE**

**MUNICIPAL LANDS:**

Description	Area Affected		Owner	Special Benefit	Benefit	Outlet	Total Assessment
	(Acres)	(Ha.)					
County Road No. 29	2.94	1.19	County of Essex	\$0.00	\$0.00	\$7,805.00	\$7,805.00
Total on Municipal Lands.....				\$0.00	\$0.00	\$7,805.00	\$7,805.00

**PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:**

Roll No.	Con.	Description	Area Affected		Owner	Special Benefit	Benefit	Outlet	Total Assessment
			(Acres)	(Ha.)					
560-05405	265	STR	0.74	0.30	Neumar Corp. & 1118524 Ontario Inc.	\$0.00	\$0.00	\$376.00	\$376.00
Total on Privately-Owned - Non-Agricultural Lands.....						\$0.00	\$0.00	\$376.00	\$376.00

**PRIVATELY-OWNED - AGRICULTURAL LANDS:**

Roll No.	Con.	Description	Area Affected		Owner	Special Benefit	Benefit	Outlet	Total Assessment
			(Acres)	(Ha.)					
560-00300	265	STR	3.58	1.45	Domric Enterprises Inc.	\$0.00	\$0.00	\$1,819.00	\$1,819.00
Total on Privately-Owned - Non-Agricultural Lands.....						\$0.00	\$0.00	\$1,819.00	\$1,819.00

<b>TOTAL ASSESSMENT .....</b>						<b>\$0.00</b>	<b>\$0.00</b>	<b>\$10,000.00</b>	<b>\$10,000.00</b>
			(Acres)	(Ha.)					
<b>Total Area:</b>			<b>7.26</b>	<b>2.94</b>					

“SCHEDULE F”  
DRAINAGE REPORT FOR THE  
**ROAD 29 DRAIN**  
TOWN OF KINGSVILLE  
**SPECIAL PROVISIONS - GENERAL**

**1.0 GENERAL SPECIFICATIONS**

The General Specifications attached hereto is part of “Schedule F.” It also forms part of this specification and is to be read with it, but where there is a difference between the requirements of the General Specifications and those of the Special Provisions which follow, the Special Provisions will take precedence.

**2.0 DESCRIPTION OF WORK**

The work to be carried out under this Contract includes, but is not limited to, the supply of all **labour, equipment and materials** to complete the following items:

- Culvert No. 1 - Station 0+000 to Station 0+030 - Supply and installation of 30 metres of new 1200 mm diameter reinforced concrete pipe (CSA A257.2) complete with clearstone or Granular ‘A’ pipe bedding (150 mm thickness), Granular ‘A’ (crushed limestone) backfill up to pipe springline compacted (approximately 30 tonnes) and native material above (approximately 110 m<sup>3</sup>), R-50 rip rap end treatment at inlet end of pipe (approximately 20 m<sup>2</sup>). Work to include 100 mm layer of topsoil placement, fine grading, seeding and restoration of all disturbed grassed areas.
- Culvert No. 2 - Station 0+033 to Station 0+057 - Supply and installation of 24 metres of new 1200 mm diameter reinforced concrete pipe (CSA A257.2) complete with clearstone or Granular ‘A’ pipe bedding (150 mm thickness), full Granular ‘A’ (crushed limestone) backfill compacted (approximately 250 tonnes), R-50 riprap end treatment at the inlet and outlet ends of pipe (approximately 60 m<sup>2</sup>).
- Temporary silt control measures during construction.

**3.0 ACCESS TO THE WORK**

Access to the drain shall be from the future County Road No. 29 right-of-way and the working corridor for Culvert No. 1 being represented by a 6 m wide corridor centered along the length of the culvert. The Contractor shall make his/her own arrangements for any additional access for his/her convenience. All grass areas disturbed shall be restored to original conditions at the Contractor’s expense.

**4.0 WORKING AREA**

The working area for both construction and future maintenance purposes shall be restricted to the road right-of-way and working corridor. **Any damages to lands and/or roads from the Contractor’s work within the working areas for the new drain realignment work shall be rectified to pre-existing conditions at his/her expense.**

## 5.0 STONE EROSION PROTECTION

Erosion protection, within the drain channel, shall be constructed of quarry stone rip-rap (R50) as shown on the drawings and as specified herein. The size of the rip-rap shall mostly vary between 150 mm and 250 diameter. The rip-rap shall be sloped 1 vertical to 1.5 horizontal, with filter fabric underlay spanning across the entire width of the drain. The minimum thickness requirement of the erosion stone layer is 350 mm with no portion of the filter fabric to be exposed

## 6.0 CULVERT CONSTRUCTION

### 6.1 Location

The culverts shall be located and installed as shown on the drawings attached hereto.

### 6.2 Materials

Materials shall be as follows:

<i>Culvert No. 1</i>	<i>New 30.0 m long, 1200 mm diameter reinforced precast concrete pipe as per CSA A257.2 Class 100-D.</i>
<i>Culvert No. 2</i>	<i>New 24.0 m long, 1200 mm diameter reinforced precast concrete pipe as per CSA A257.2 Class 100-D.</i>
<i>Culvert Bedding</i>	<i>19 mm clearstone or Granular 'A' (crushed limestone) conforming to OPSS Division 10.</i>
<i>Culvert Backfill</i>	<i>Granular 'A' (crushed limestone) conforming to OPSS Division 10.</i>
<i>Backfill Above Pipe Springline up to Surface Materials</i>	<i>Dry native material free of topsoil, organic matter, broken concrete, steel, wood and deleterious substances. Alternatively, Granular 'A' or 'B' conforming to OPSS Division 10.</i>
<i>Erosion Stone</i>	<i>All stone to be used for erosion protection shall be R-50 clear quarried rock per OPSS 1004, minimum 350 mm thickness.</i>
<i>Filter Fabric</i>	<i>"Non-Woven" geotextile filter fabric with a minimum strength equal or greater than Terrafix 270R, Amoco 4546, Mirafi 140NC, or approved equivalent.</i>

### 6.3 Culvert Installation

Suitable dykes shall be constructed in the drain so that the installation of the culvert can be accomplished in the dry. The drain bottom shall be cleaned, prepared, shaped and compacted to suit the new culvert configuration, as shown on the drawings. Granular materials shall be compacted to 100% of their maximum dry density; imported clean native materials shall be supplied, placed and compacted to 95% of their maximum dry density.

### 6.4 Lateral Tile Drains

The Contractor shall re-route any outlet tile drains, in consultation with the Drainage Superintendent, as required to accommodate the new culverts. Tile drain outlets through the wall of the new culvert will not be permitted. All costs associated with re-routing lateral tile drains (if any) shall be at the Contractor's expense.

## **6.5 Site Cleanup and Restoration**

As part of the work and upon completion, the Contractor shall remove and dispose of, off-site any loose timber, logs, stumps, large stones, rubber tires, cinder blocks or other debris from the drain bottom and from the side slopes. Where the construction works cross a lawn, the Contractor shall take extreme care to avoid damaging the lawn, shrubs and trees encountered. Upon completion of the work, the Contractor shall completely restore the area by the placement and fine grading of topsoil and seeding or sodding the area as specified by the Engineer or Drainage Superintendent.

# GENERAL SPECIFICATIONS

## 1.0 AGREEMENT AND GENERAL CONDITIONS

The part of the Specifications headed "Special Provisions" which is attached hereto forms part of this Specification and is to be read with it. Where there is any difference between the requirements of this General Specification and those of the Special Provisions, the Special Provisions shall govern.

Where the word "Drainage Superintendent" is used in this specification, it shall mean the person, or persons appointed by the Council of the Municipality having jurisdiction to superintend the work.

Tenders will be received, and contracts awarded only in the form of a lump sum contract for the completion of the whole work or of specified sections thereof. The Tenderer agrees to enter into a formal contract with the Municipality upon acceptance of the tender. The General Conditions of the contract and Form of Agreement shall be those of the Stipulated Price Contract CCDC2-Engineers, 1994 or the most recent revision of this document.

## 2.0 EXAMINATION OF SITE, PLANS AND SPECIFICATIONS

Each tenderer must visit the site and review the plans and specifications before submitting his/her tender and must satisfy himself/herself as to the extent of the work and local conditions to be met during the construction. Claims made at any time after submission of his/her tender that there was any misunderstanding of the terms and conditions of the contract relating to site conditions, will not be allowed. The Contractor will be at liberty, before bidding to examine any data in the possession of the Municipality or of the Engineer.

The quantities shown or indicated on the drawings or in the report are estimates only and are for the sole purpose of indicating to the tenderers the general magnitude of the work. The tenderer is responsible for checking the quantities for accuracy prior to submitting his/her tender.

## 3.0 MAINTENANCE PERIOD

The successful Tenderer shall guarantee the work for a period of one (1) year from the date of acceptance thereof from deficiencies that, in the opinion of the Engineer, were caused by faulty workmanship or materials. The successful Tenderer shall, at his/her own expense, make good and repair deficiencies and every part thereof, all to the satisfaction of the Engineer. Should the successful Tenderer for any cause, fail to do so, then the Municipality may do so and employ such other person or persons as the Engineer may deem proper to make such repairs or do such work, and the whole costs, charges, and expense so incurred may be deducted from any amount due to the Tenderer or may be collected otherwise by the Municipality from the Tenderer.

## 4.0 GENERAL CO-ORDINATION

The Contractor shall be responsible for the coordination between the working forces of other organizations and utility companies in connection with this work. The Contractor shall have no cause of action against the Municipality or the Engineer for delays based on the allegation that the site of the work was not made available to him by the Municipality or the Engineer by reason of the acts, omissions, misfeasance or non-feasance of other organizations or utility companies engaged in other work.

## **5.0 RESPONSIBILITY FOR DAMAGES TO UTILITIES**

The Contractor shall note that overhead and underground utilities such as hydro, gas, telephone and water are not necessarily shown on the drawings. It is the Contractor's responsibility to contact utility companies for information regarding utilities, to exercise the necessary care in construction operations and to take other precautions to safeguard the utilities from damage.

All work on or adjacent to any utility, pipeline, railway, etc., is to be carried out in accordance with the requirements of the utility, pipeline, railway, or other, as the case may be, and its specifications for such work are to be followed as if they were part of this specification. The Contractor will be liable for any damage to utilities.

## **6.0 CONTRACTOR'S LIABILITY**

The Contractor, his/her agents and all workmen or persons under his/her control including sub-contractors, shall use due care that no person or property is injured and that no rights are infringed in the prosecution of the work. The Contractor shall be solely responsible for all damages, by whomsoever claimable, in respect to any injury to persons or property of whatever description and in respect of any infringement of any right, privilege or easement whatever, occasioned in the carrying on of the work, or by any neglect on the Contractor's part.

The Contractor shall indemnify and hold harmless the Municipality and the Engineer, their agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of or attributable to the Contractor's performance of the contract.

## **7.0 PROPERTY BARS AND SURVEY MONUMENTS**

The Contractor shall be responsible for marking and protecting all property bars and survey monuments during construction. All missing, disturbed, or damaged property bars and survey monuments shall be replaced at the Contractor's expense, by an Ontario Land Surveyor.

## **8.0 MAINTENANCE OF FLOW**

The Contractor shall, at his/her own cost and expense, permanently provide for and maintain the flow of all drains, ditches and water courses that may be encountered during the progress of the work.

## **9.0 ONTARIO PROVINCIAL STANDARDS**

Ontario Provincial Standard Specifications (OPSS) and Ontario Provincial Standard Drawings (OPSD) shall apply and govern at all times unless otherwise amended or extended in these Specifications or on the Drawing. Access to the electronic version of the Ontario Provincial Standards is available online through the MTO website, free of charge to all users. To access the electronic standards on the Web go to <http://www.mto.gov.on.ca/english/transrd/>. Under the title Technical Manuals is a link to the Ontario Provincial Standards. Users require Adobe Acrobat to view all pdf files.

## **10.0 APPROVALS, PERMITS AND NOTICES**

The construction of the works and all operations connected therewith are subject to the approval, inspection, by-laws and regulations of all Municipal, Provincial, Federal and other authorities having jurisdiction in respect to any matters embraced in this Contract. The Contractor shall obtain all approvals and permits and notify the affected authorities when carrying out work in the vicinity of any public utility, power, underground cables, railways, etc.



### **11.0 SUBLETTING**

The Contractor shall keep the work under his/her personal control, and shall not assign, transfer, or sublet any portion without first obtaining the written consent of the Municipality.

### **12.0 TIME OF COMPLETION**

The Contractor shall complete all work on or before the date fixed at the time of tendering. The Contractor will be held liable for any damages or expenses occasioned by his/her failure to complete the work on time and for any expenses of inspection, superintending, re-tendering or re-surveying, due to their neglect or failure to carry out the work in a timely manner.

### **13.0 TRAFFIC CONTROL**

The Contractor will be required to always control vehicular and pedestrian traffic along roads and shall, at his/her own expense, provide for placing and maintaining such barricades, signs, flags, lights, and flag persons as may be required to ensure public safety. The Contractor will be solely responsible for controlling traffic and shall appoint a representative to maintain the signs and warning lights at night, on weekends and holidays and at all other times that work is not in progress.

All traffic control during construction shall be strictly in accordance with the **Occupational Health and Safety Act** and the current version of the **Ontario Traffic Manuals**. Access to the electronic version of the **Ontario Traffic Manual** is available online through the MTO website, free of charge to all users. To access the electronic standards on the Web, go to <http://www.mto.gov.on.ca/english/transrd/>, click on "Library Catalogue," under the "Title," enter "Ontario Traffic Manual" as the search. Open the applicable "Manual(s)" by choosing the "Access Key," once open look for the "Attachment," click the pdf file. Users require Adobe Acrobat to view all pdf files.

**Contractors are reminded of the requirements of the Occupational Health and Safety Act pertaining to Traffic Protection Plans for workers and Traffic Control Plan for Public Safety.**

### **14.0 SITE CLEANUP AND RESTORATION**

As part of the work and upon completion, the Contractor shall remove and dispose of, off-site any loose timber, logs, stumps, large stones, rubber tires, cinder blocks or other debris from the drain bottom and from the side slopes. Where the construction works cross a lawn, the Contractor shall take extreme care to avoid damaging the lawn, shrubs and trees encountered. Upon completion of the work, the Contractor shall completely restore the area by the placement and fine grading of topsoil and seeding or sodding the area as specified by the Engineer or Drainage Superintendent.

### **15.0 UTILITY RELOCATION WORKS**

In accordance with Section 26 of the Drainage Act, if utilities are encountered during the installation of the drainage works that conflict with the placement of the new culvert, the operating utility company shall relocate the utility at their own costs. The Contractor however will be responsible to co-ordinate these required relocations (if any) and their co-ordination work shall be considered incidental to the drainage works.

## **16.0 FINAL INSPECTION**

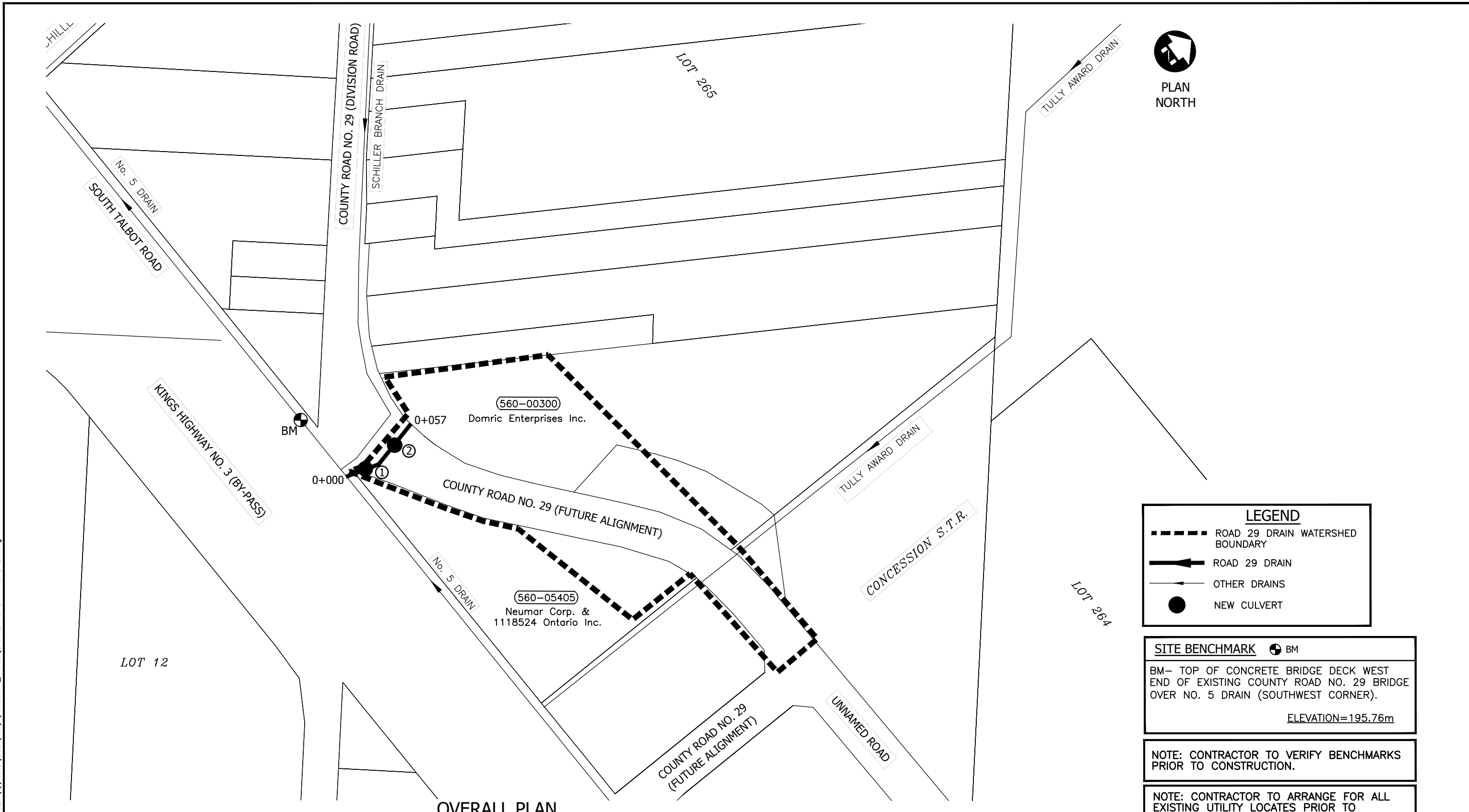
All work shall be carried out to the satisfaction of the Drainage Superintendent for the Municipality, in compliance with the specifications, drawings and the Drainage Act. Upon completion of the project, the work will be inspected by the Engineer and the Drainage Superintendent. Any deficiencies noted during the final inspection shall be immediately rectified by the Contractor.

Final inspection will be made by the Engineer within 20 days after the Drainage Superintendent has received notice in writing from the Contractor that the work is completed, or as soon thereafter as weather conditions permit.

## **17.0 FISHERIES CONCERNS**

Standard practices to be followed to minimize disruption to fish habitat include embedment of the culvert a minimum 10% below grade, constructing the work 'in the dry' and cutting only trees necessary to do the work (no clear-cutting). No in-water work is to occur during the timing window unless otherwise approved by the appropriate authorities.

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**LEGEND**

- ROAD 29 DRAIN WATERSHED BOUNDARY
- ROAD 29 DRAIN
- OTHER DRAINS
- NEW CULVERT

**SITE BENCHMARK** BM

BM- TOP OF CONCRETE BRIDGE DECK WEST END OF EXISTING COUNTY ROAD NO. 29 BRIDGE OVER NO. 5 DRAIN (SOUTHWEST CORNER).

ELEVATION=195.76m

**NOTE: CONTRACTOR TO VERIFY BENCHMARKS PRIOR TO CONSTRUCTION.**

**NOTE: CONTRACTOR TO ARRANGE FOR ALL EXISTING UTILITY LOCATES PRIOR TO EXCAVATION**

**OVERALL PLAN**  
SCALE=1:2,500



**Conditions of Use**

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Do not scale dimensions from drawing.

Do not modify drawing, re-use it, or use it for purposes other than those intended at the time of its preparation without prior written permission from Dillon Consulting Limited.

No.	ISSUED FOR	DATE	BY
2	FINAL REPORT SUBMISSION	15 NOV 24	OEM
1	CLIENT REVIEW	7 NOV 24	OEM

DESIGN	TRO	REVIEWED BY	CBC
DRAWN	WLB	CHECKED BY	OEM
DATE	November 15, 2024		
SCALE	AS SHOWN		

PROJECT NO. 21-3142

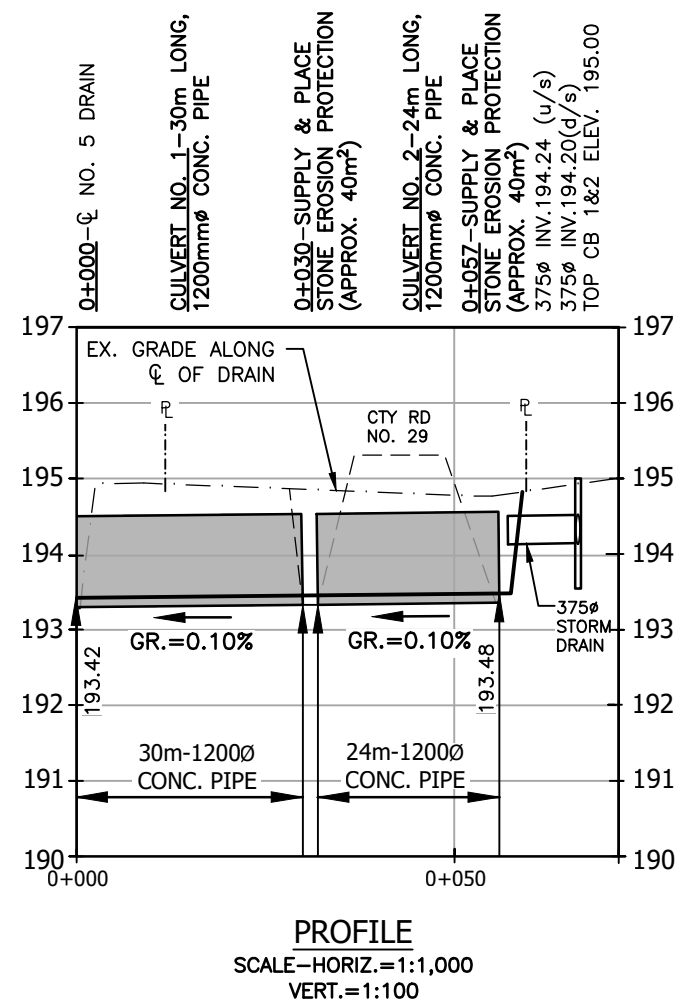
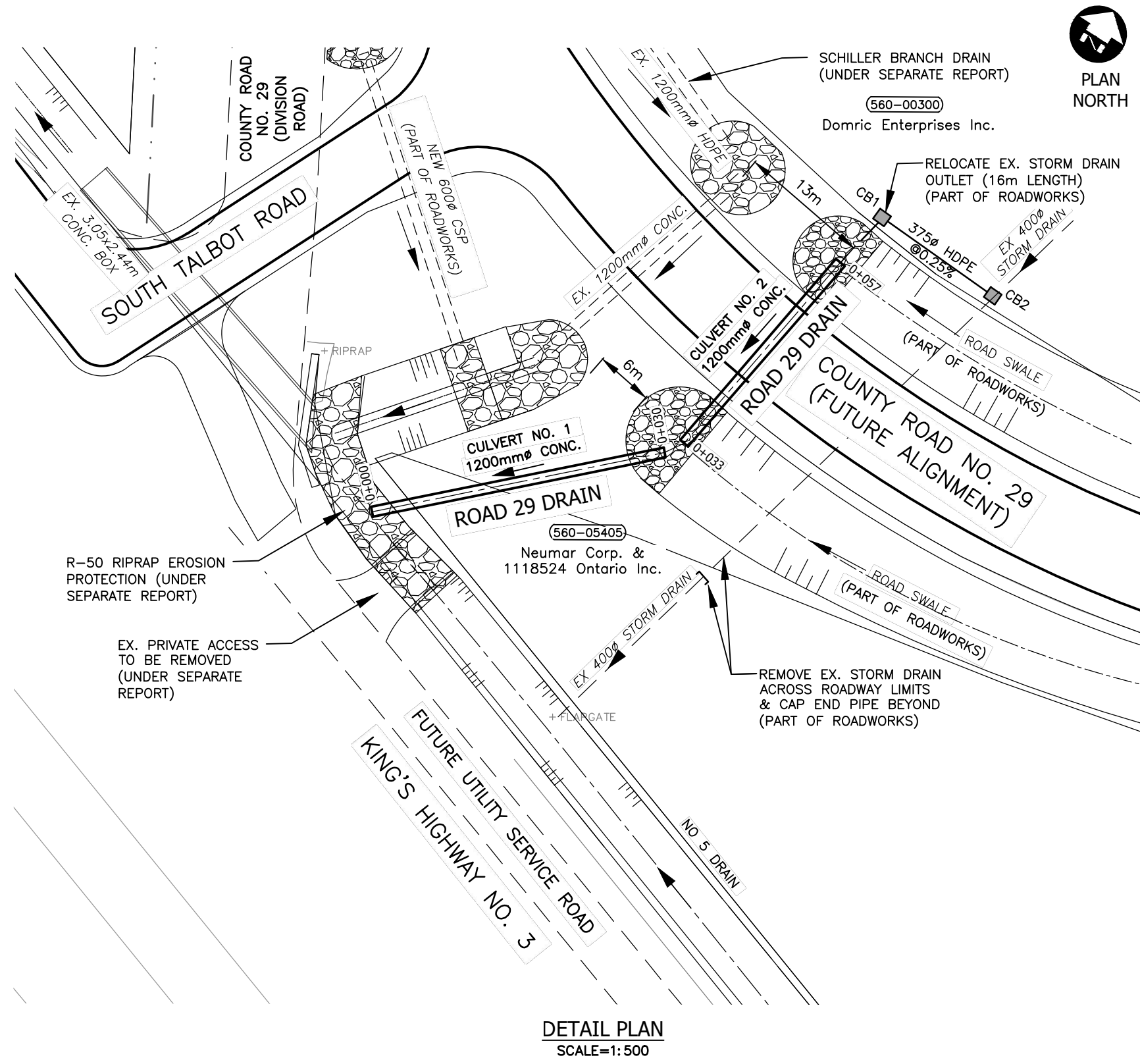
DRAWING SCALES BASED ON A 11" X 17" SHEET

**'SCHEDULE G'**

Drainage Report for the  
**ROAD 29 DRAIN**  
Town of Kingsville

SHEET TITLE  
**OVERALL PLAN**

PAGE NO.  
1 of 3



DESCRIPTION	CULVERT NO. 1	CULVERT NO. 2
CULVERT INVERT ELEV. U/S SIDE(m)	193.33	193.36
CULVERT INVERT ELEV. D/S SIDE(m)	193.30	193.33
DRAIN BOTTOM (m) (DESIGN) (AT CENTRELINE OF CULVERT)	193.435	193.465
MIN. TOP WIDTH OF ROADWAY (m)	-	9.0
MIN. CULVERT GRADE (%)	0.10%	0.10%
CULVERT TYPE	100-D	100-D
CULVERT MATERIAL	CONCRETE	CONCRETE
CULVERT LENGTH (m)	30	24
CULVERT SIZE (mm)	1200	1200
CULVERT ENDWALL TYPE	SLOPING STONE	SLOPING STONE

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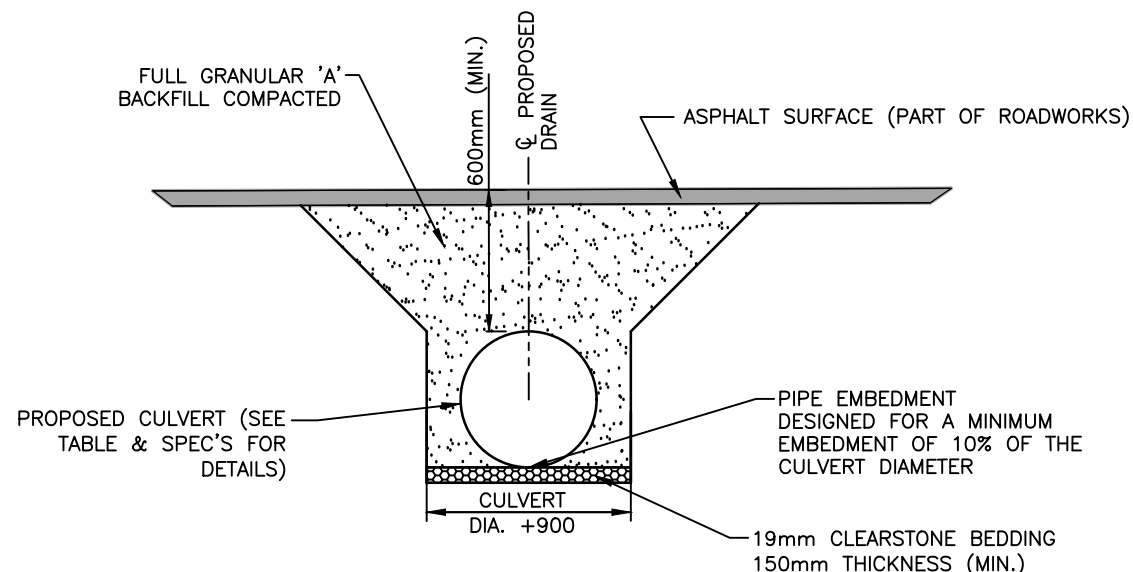
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**'SCHEDULE G'**  
 Drainage Report for the  
**ROAD 29 DRAIN**  
 Town of Kingsville

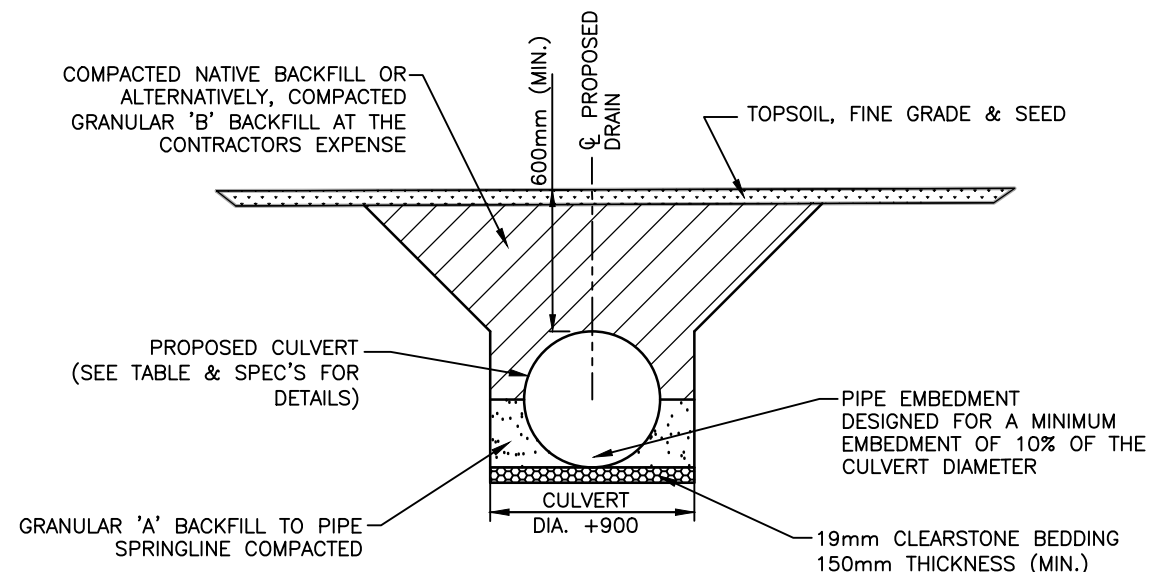
SHEET TITLE  
**DETAIL PLAN & PROFILE**

PAGE NO.  
 2 of 3

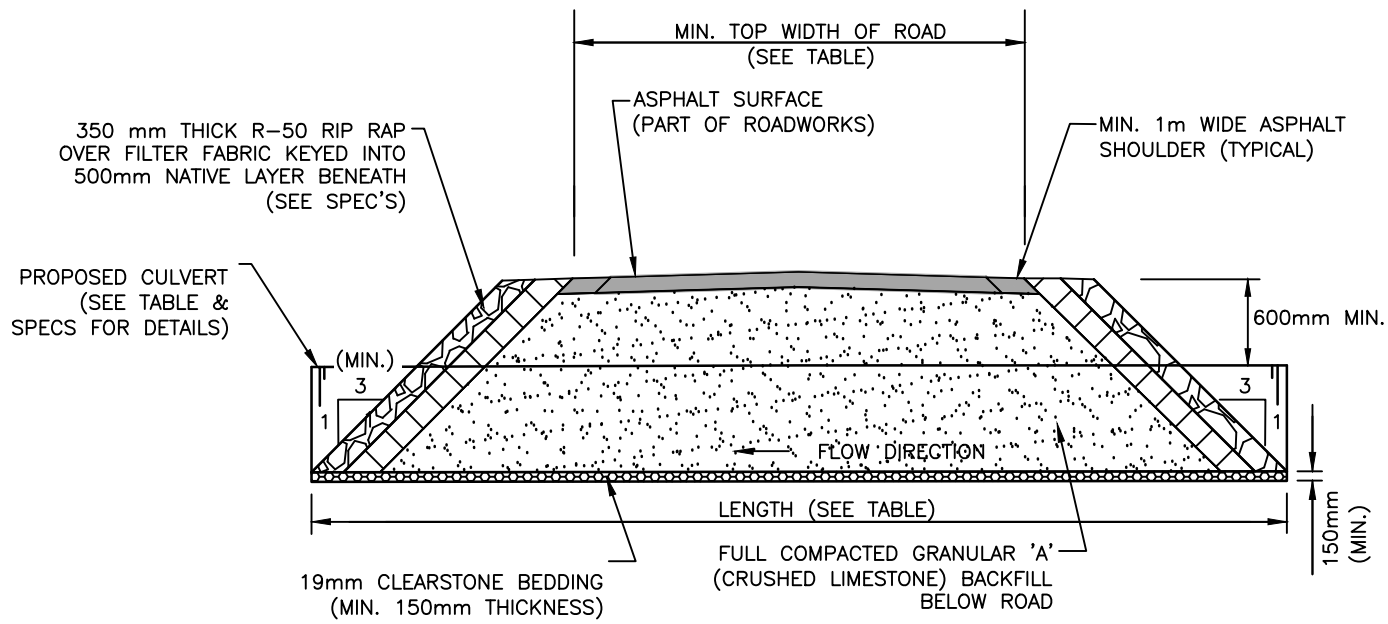
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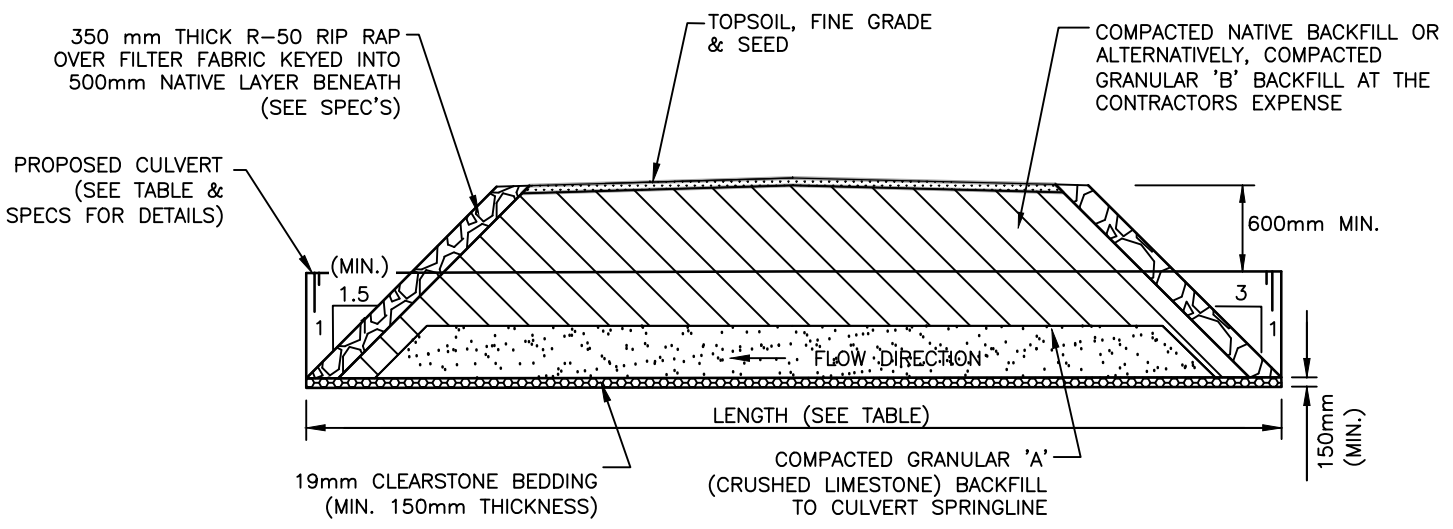
**TYPICAL CROSS SECTION (BELOW ROAD)**  
N.T.S.



**TYPICAL CROSS SECTION (BEYOND ROAD)**  
N.T.S.



**TYPICAL CROSS SECTION (BELOW ROAD)**  
N.T.S.



**TYPICAL CROSS SECTION (BEYOND ROAD)**  
N.T.S.



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<b>'SCHEDULE G'</b>	
Drainage Report for the <b>ROAD 29 DRAIN</b> Town of Kingsville	
SHEET TITLE <b>CULVERT DETAILS</b>	
PAGE NO. 3 of 3	