### DRAINAGE REPORT FOR THE

# UPSTREAM RELOCATION OF THE EAST 3<sup>RD</sup> CONCESSION DRAIN

FORMER TOWNSHIP OF GOSFIELD SOUTH
TOWN OF KINGSVILLE



FINAL REPORT 8 NOVEMBER 2023 TIM R. OLIVER, 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** UPSTREAM RELOCATION OF THE EAST 3<sup>RD</sup> CONCESSION DRAIN **Former Township of Gosfield South** Now In the Town of Kingsville

Mayor and Members of Council:

#### **Instructions**

The Municipality received a request on 10 July 2023 from the Ministry of Transportation Ontario, for the realignment of the East 3<sup>rd</sup> Concession Drain. The proposed drainage works are required to facilitate the King's Highway No. 3 widening. Council accepted the request under Section 78(5) of the Drainage Act for minor improvements to a drainage works and on 14 August, 2023 appointed Dillon Consulting Limited to prepare a report.

#### Ontario Regulation 500/21

We have assessed the applicability of Section 78(5) of the Drainage Act and find the proposed works satisfy the requirements for minor improvement work as described in Subsection 7 of O.Reg 500/21 Part II.

#### **Watershed Description**

The East 3<sup>rd</sup> Concession Drain consists of a tile drain commencing at the southerly limit of King's Highway No. 3 at County Road No. 34 intersection. The drain flows south along the east limit of County Road No. 34 for approximately 460 metres then crosses to the west side flows west across Lot 9, Concession 3 before turning south and then west again along the north limit of Road 3 East to its outlet into the Lane Drain. The existing highway drainage from the road swales will be collected by catch basins and swales and rerouted north across King's Highway No. 3 into the Melvin Bruner Drain Extension. There is no portion of the highway requiring an outlet into the East 3<sup>rd</sup> Concession Drain. The surficial soils are predominately Brookston Clay which is defined as having poor natural drainage. **Drain** History

The recent history of Engineers' reports for the East 3<sup>rd</sup> Concession Drain follows:

9 October 1998 by Lou Zarlenga, P.Eng.: The report recommended the repair and improvement of the drain west of County Road No. 34 (Union Avenue) through Lot 9, Concession 3. Work on the east side of County Road No. 34 included the enlargement and rerouting of the drain west of County Road No. 34 to Road 3 East. The report also recommended the future drain reconstruction details for the downstream section of the drain along the east side of County Road No. 34



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downstream of King's Highway No. 3 and the abandonment of the upstream section of the drain across the highway corridor. This serves as the current report for the East 3<sup>rd</sup> Concession Drain and is governed under by-law.

• 9 July 1961 by C.G.R. Armstrong, P.Eng.: The report recommended the construction of a piped drain along the east side of County Road No. 34 starting at County Road No. 18 south to and across King's Highway No. 3. The size of tile varying from 250 mm diameter to 400 mm diameter.

#### **Survey**

Our survey and examination of the East 3<sup>rd</sup> Concession Drain was carried out in June 2023. The survey comprised the recording of topographic data and examining the channel for available depth necessary to provide sufficient drainage.

#### **Design Considerations**

The East 3<sup>rd</sup> Concession Drain presently does not provide a drainage outlet for King's Highway No. 3. With the future widening of the highway and new construction within the southerly part of the highway corridor, the new upstream limit of the drain will terminate at the south limit of the highway lands. Future drainage of the King's Highway No. 3 east of County Road No. 34 for the entire corridor will continue to be directed and outlet into the Melville Bruner Drain Extension on the north side of the highway.

#### **Allowances**

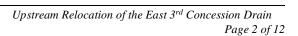
In accordance with Sections 29 and 30 of the Drainage Act, we do not anticipate any agricultural lands being damaged or used as a result of the proposed drainage works. Any damage to the roadway or existing grassed areas shall be restored to original conditions as part of the work. Therefore, 'Schedule B' for Allowances has not been included in this report.

#### **Recommendations and Cost Estimate**

We recommend the existing catch basin and approximately 48 metres of 350 mm diameter concrete tile within the King's Highway No. 3 right-of-way be removed and a new catch basin be installed just north of the southerly limit of the highway. This will serve as the new relocated upper limit of the East 3<sup>rd</sup> Concession Drain. The new catch basin will serve as a maintenance access only.

Based on our review of the history, the information obtained from our examination and analysis of the survey data, we recommend the Upstream Relocation of the East 3<sup>rd</sup> Concession Drain as described below:

Item	Description	Amount
	<u>DRAIN WORKS</u>	
1.	Catch basin work, as follows:	



Item	Description	Amount
	a) Removal and disposal off-site of existing catch basin and approximately 48 metres of 350 mm diameter concrete tile within the King's Highway No. 3 right-of-way. Supply and installation of a new 600 mm x 600 mm concrete catch basin complete with cast iron maintenance hole frame and grate (OPSD 401.01) located immediately north of the southerly property limit of the highway. The new catch basin shall be connected to the existing drain tile, complete with minimum 600 mm deep sump, compacted Granular 'B' Type II bedding (min. 150mm thickness), compacted full Granular 'B' Type II backfill. Work to include fine grading, seeding and restoration of all disturbed areas.	\$15,000.00
	SUB-TOTAL	
2.	Report, Assessments and Final Inspection.	\$9,500.00
3.	Expenses and Incidentals.	\$500.00
	TOTAL ESTIMATE – UPSTREAM RELOCATION OF THE EAST 3 <sup>RD</sup> CONCESSION DRAIN (excluding Net HST)	\$25,000.00

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 Realignment of the East 3<sup>rd</sup> Concession Drain against the affected roads as listed in Schedule 'C' under "Special Benefit." Details of the Special Benefit assessment listed are provided in the Assessment Rationale below.

#### **Assessment Rationale**

Special Benefit assessment shown in Schedule 'C' was derived as follows:

1. As the realignment works are only required for the proposed highway widening, we have assessed 100% of the costs to the Ministry of Transportation Ontario in accordance with Section 26 of the Drainage Act as a non-proratable assessment. Since there are no special benefit assessments to other landowners, Schedule 'D' for the purposes of Special Benefit details has been omitted from this report.

#### **Future Maintenance**

After completion, the road bridge shall be maintained by the Ministry of Transportation Ontario for 100% of the costs, subject of course, to any variations that may be made under the authority of the Drainage Act. Since there is no assessment of costs to the other landowners on the drain, Schedule 'E' for the purposes of future maintenance has been omitted from this report.

#### **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.

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#### **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 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.

#### **Agency Reviews**

The Essex Region Conservation Authority (ERCA) has been previously notified and provided the opportunity to review the proposed drainage works outlined within a draft report dated October 30, 2023. An application for permit and associated fee payment is not required for provincial undertakings. The Town of Kingsville will subsequently give notice to ERCA and other prescribed persons of an upcoming meeting of Council that will consider and adopt the final report, at which time this meeting is an opportunity to provide input.

In 2021, a Fish and Fish Habitat Impact assessment was undertaken to identify the impacts of the approved improvements to fish and fish habitat within the Highway 3 Study Area. The assessment was completed in accordance with the requirements of the Interim 2020 MTO/DFO/NDMNRF Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings, Version 4 (Fisheries Protocol) and the guidance provided in MTO's (2020) Interim Environmental Guide for Fish and Fish Habitat (Fish Guide).

As per the direction received from Mr. Chris Evans, Environmental Planner MTO, all documentation (i.e., forms and templates) has been prepared so as to be in compliance with the Interim Fish Guide (April 2020). The Fish and Fish Habitat Existing Conditions and

*Impact Assessment Report, Highway 3 Widening and Safety Enhancement Study* (GHD, July 2021) provides the impact analysis.

The East 3<sup>rd</sup> Concession Drain was identified to support direct fish habitat and the covered pipe drain removal and new maintenance access catch basin are not likely to result in the death of fish or harmful alteration, disruption or destruction (HADD) of fish habitat.

Respectfully submitted,

**DILLON CONSULTING LIMITED** 

Tim R. Oliver, P.Eng. TRO:wlb



## "SCHEDULE C" SCHEDULE OF ASSESSMENT UPSTREAM RELOCATION OF THE EAST 3RD CONCESSION DRAIN KING'S HIGHWAY NO. 3 TOWN OF KINGSVILLE

#### SECTION 26 INCREASED COSTS - NON PRO-RATABLE

Description	Owner	Special Benefit	Benefit	Outlet	Total Assessment
King's Highway No. 3	Ministry of Transportation Ontario	\$25,000.00	\$0.00	\$0.00	\$25,000.00
Total Section 26 Increased Costs (Non Pro-ratable)		\$25,000.00	\$0.00	\$0.00	\$25,000.00
TOTAL ASSESSMENT		\$25,000.00	\$0.00	\$0.00	\$25,000.00

#### "SCHEDULE F"

#### DRAINAGE REPORT FOR THE

#### REALIGNMENT OF THE EAST 3<sup>RD</sup> CONCESSION 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:

#### **DRAIN WORKS**

#### Catch basin work, as follows:

Removal and disposal off-site of existing catch basin and approximately 48 metres of 350 mm diameter concrete tile within the King's Highway No. 3 right-of-way. Supply and installation of a new 600 mm x 600 mm concrete catch basin complete with cast iron maintenance hole frame and grate (OPSD 401.01) located immediately north of the southerly property limit of the highway. The new catch basin shall be connected to the existing drain tile, complete with minimum 600 mm deep sump, compacted Granular 'B' Type II bedding (min. 150mm thickness), compacted full Granular 'B' Type II bedding (min. 150mm thickness), seeding and restoration of all disturbed areas.

> Temporary silt control measures during construction.

#### 3.0 ACCESS TO THE WORK

Access to the drain shall be from the King's Highway No. 3 right-of-way. 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. Any damages to lands and/or roads from the Contractor's work within the working areas for the new bridge site shall be rectified to pre-existing conditions at his/her expense.

#### 5.0 CATCH BASIN CONSTRUCTION

#### 5.1 Location

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

#### 5.2 Materials

Materials shall be as follows:

Catch Basin Conforming to OPSD 705.010.

Maintenance Hole Conforming to OPSD 401.01.

Frame & Grate

Bedding Granular 'B' conforming to OPSS Division 10.

Backfill Granular 'B' conforming to OPSS Division 10.

#### 5.3 New Catch Basin (CB)

The Contractor shall arrange for the supply and installation of the new precast concrete catch basin at the location and elevations shown on the drawings.

The Contractor shall install all precast structures plumb and true to line and grade. Precast bases shall be set to the specific grade, shall be level, and shall have uniform overall contact with the underlying soil.

Precast concrete catch basins shall conform to the requirements of OPSS 407. The floor elevation shall be at least 600 mm below the invert of the outlet pipe in the wall of the catch basin.

Pipe placed in the wall for outlet connection shall extend through the wall a sufficient distance to allow of connections. The pipe shall be trimmed flush with the inside wall and shall be securely sealed into place using grout.

The catch basin shall be supplied with 1-150 mm riser section installed on top of the structure so that future adjustments can be made. The catch basin shall be equipped with a cast iron maintenance hole frame and grate (OPSD 401.01).

#### 5.4 Seeding

All existing grassed areas disturbed by construction shall be seeded as specified herein. The existing ground surface to be seeded shall be loosened to a depth of 25 mm and shall be rendered uniformly loose for that 25 mm depth. The surface shall be predominantly fine and free from weeds and other unwanted vegetation. All other loose surface litter shall be removed and disposed of. If mulching is required, it shall be carried out by the contractor as part of the item's tendered price.

Grass seed shall be Canada No. 1 grass seed mixture meeting the requirements of a Waterway Slough Mixture as supplied by Growmark or approved equal, as follows:

Creeping Red Fescue	20%
Meadow Fescue	30%
Tall Fescue	30%
Timothy	10%
White Clover	10%

Bags shall bear the label of the supplier indicating the content by species, grade and mass. Seed shall be applied at a rate of 200 kg per 10,000 m<sup>2</sup>.

Fertilizer shall be 8-32-16 applied at 350 kg per 10,000 m<sup>2</sup>. It shall be in granular form, dry, free from lumps and in bags bearing the label of the manufacturer, indicating mass and analysis.

The seeding shall be deemed "Completed by the Contractor" when the seed has established in all areas to the satisfaction of the Engineer. Re-seeding and/or other methods required to establish the grass will be given consideration to achieve the end result and the costs shall be incidental to the works.

#### 5.5 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 <a href="http://www.mto.gov.on.ca/english/transrd/">http://www.mto.gov.on.ca/english/transrd/</a>. 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.

#### 11.0TRAFFIC CONTROL

The Contractor will be required to control vehicular and pedestrian traffic along roads at all times 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 <a href="http://www.mto.gov.on.ca/english/transrd/">http://www.mto.gov.on.ca/english/transrd/</a>, 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.

#### 12.0 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.

#### 13.0 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.

#### 14.0 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.

#### 15.0 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.

