



## **Arbuckle & Congram Municipal Drains**

June 4, 2025

Prepared for:



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Kitchener, Ontario  
June 4, 2025

To the Mayor and Members of Council:

**Re: Arbuckle & Congram Municipal Drains**  
**Municipality of Morris-Turnberry**  
**Our Reference No. MT-005**

Headway Engineering is pleased to provide its report for the **Arbuckle and Congram Municipal Drains** in the Municipality of Morris-Turnberry.

The preparation of this report was authorized by resolutions of the Council of the Municipality of Morris-Turnberry on April 2, 2024, per Section 78 of the Drainage Act.

The primary objective of this report is to improve the Arbuckle and Congram Municipal Drains by providing additional depth for tile drainage and the replacement of one crossing.

A summary of the assessments for this project are as follows:

Municipal Lands	\$11,893
Privately Owned Non-Agricultural	\$4,345
Privately Owned Agricultural – Grantable	\$127,262
<b>Total Estimated Assessments</b>	<b>\$143,500</b>

Yours truly,

Stephen Brickman, P.Eng.  
Project Engineer and Manager



Adam Hall  
Project Coordinator  
**HEADWAY ENGINEERING**  
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## SPECIFICATIONS FOR THE CONSTRUCTION OF MUNICIPAL DRAINAGE WORKS

## **1.0 INTRODUCTION AND LOCATION**

The Council of the Municipality of Morris-Turnberry has appointed Headway Engineering to investigate a request for improvements under Section 78 of the Drainage Act. The project services parts of Lots 1 to 4, Concession 1, and parts of Lots 1 to 3, Concession 2 in the former Township of Morris, Municipality of Morris-Turnberry and parts of Lots 40 to 42 in the former Township of Wawanosh, Township of North Huron.

The Drainage Area comprises of approximately 239 hectares, and land uses within the watershed include agriculture, bush lands, and roads.

The attached Plans, Profiles and Details; Drawing Numbers 1 to 3, show and describe in detail the location and extent of the work to be completed and the lands which are affected.

## **2.0 PROJECT AUTHORIZATION**

Authority to prepare this report was obtained by resolutions of the Council of the Municipality of Morris-Turnberry at its April 2, 2024 meeting to appoint Headway Engineering to prepare an Engineer's Report under Section 78 of the Drainage Act.

## **3.0 DRAINAGE HISTORY**

### **3.1 Arbuckle Drain (1963)**

The Arbuckle Drain was originally constructed under the authority of a report prepared by James A. Howes O.L.S. dated January 11, 1963. Construction works included deepening the existing ditch commencing from the Maitland River in Lot 3, Concession 2, Municipality of Morris-Turnberry (Morris Ward) and extending upstream to the lot line between Lot 41 and Lot 42, Concession 13, Township of North Huron (former Township of Wawanosh).

### **3.2 Congram Drain (1969)**

A report for the Congram Drain was prepared by E. W. Hayes Limited., dated October 15, 1969. This report provided for the construction of two open drains and the installation of a new road culvert.

## **4.0 PUBLIC MEETINGS AND ENGAGEMENTS**

### **4.1 On-Site Meeting**

Per Section 9(1) of the Drainage Act, an on-site meeting was held on June 11, 2024, to address the request for improvement. Persons in attendance were:

Stephen Brickman, P.Eng.	Headway Engineering
Adam Hall	Headway Engineering
Kirk Livingston	Morris Turnberry Drainage Superintendent



Landowners included:

Dave Golley

Bill Versteeg

A preliminary plan showing the watershed was distributed in advance. The information supplied was based on data made available to the public by the Province of Ontario.

#### 4.2 Public Information Meeting

A Public Information Meeting was held on March 5, 2025. Persons in attendance were:

Stephen Brickman, P.Eng.

Headway Engineering

Adam Hall

Headway Engineering

Kirk Livingston

Morris-Turnberry Drainage Superintendent

Trevor Hallam

Morris-Turnberry Clerk

Mike Alcock

Morris-Turnberry Roads Manager

Landowners included:

Kelsa Clark

John Curran

Bill Haines

Dave Golley

The information supplied included details of the proposed improvements to the open ditch system including the deepening of the Arbuckle and Congram Drains to provide for additional farm tile outlet and the replacement of one farm crossing.

This meeting provided a review of the design of the proposed works, the estimated costs of the project, and the proposed assessments.

## 5.0 FINDINGS

Based on the information collected during field investigations, surveys, public engagements, and review of documentation, the following summarizes Headway Engineering's findings:

### 5.1 Watershed Condition (Hydrology):

- The watershed was established through the analysis of tile drainage maps, previous engineers' reports for surrounding systems, field investigations, surveys, and data analysis of LIDAR derived digital data (2022). The drainage area comprises of approximately 238.97 hectares.
- Land uses within the watershed are as follows:
  - Agricultural: 199.77 hectares (84%)
  - Bush, Wetland, or Ponds: 27.5 hectares (12%)
  - Roads: 11.7 hectares (4%)
- The Ontario Ministry of Agriculture, Food and Agribusiness's Agricultural Information Atlas describes the soil types within the watershed and along the routes of the drains as loam.

### 5.2 Existing Drainage System:

- The existing Arbuckle Drain consists of approximately 1,633m of open ditch commencing from the Maitland River Lot 3, Concession 2, Municipality of Morris-Turnberry (Morris Ward) and extending upstream to Lot 42, Concession 13, Township of North Huron (former Township of Wawanosh).



- The Congram Drain is a tributary of the Arbuckle drainage system and consists of a main drain and a branch drain.
  - The Main Drain is comprised of approximately 727m of open ditch commencing from its outlet into the Arbuckle Drain in Lot 1, Concession 2, Municipality of Morris-Turnberry (Morris Ward) and extending upstream to Lot 42, Concession 13, Township of North Huron (former Township of Wawanosh).

### 5.3 Outlet:

- The outlet for the Arbuckle Municipal Drain is the Middle Maitland River in Lot 3, Concession 2 (Morris Ward).
- No construction works are proposed in the Maitland River.

### 5.4 Other noted observations:

- Many of the lands within the watershed, and nearby the municipal drain are tile drained.
- In approximately 2020, the portion of the Congram Drain downstream of Jamestown Road was cleaned out.
- The Congram Drain downstream of Jamestown Road is very flat, with the existing streambed elevation in the Arbuckle Drain approximately equal to the Jamestown Road culvert invert elevation.
- In approximately 2023, maintenance activities were carried out on a portion of the of the existing Arbuckle Drain upstream of Sta. 0+591.
- During the winter of 2023/2024, the Jamestown Road culvert on the Congram Drain was maintained by auguring and removing sediment material.
- The farm tiling on the David Golley property (Roll No. 2-035-00) does not have a sufficient outlet at today's standards of drainage as the existing drain is not of adequate depth.
- The Congram Drain outlets into the Arbuckle Drain in an upstream direction, opposing the natural flow direction of the Arbuckle Drain.
- Sufficient grade is available as the Arbuckle Drain flows toward the Maitland River.
- The existing farm crossing on the Haines Beef Ltd. & Hazel Haines property (Roll No. 2-002-00) is not of adequate size or depth for today's standards of drainage.

### 5.5 Environmental Requirements:

- The DFO classification of the existing Arbuckle and Congram Drains is a Class 'D' drain, according to the Ontario Ministry of Agriculture, Food and Agribusiness's (OMAFRA's) Information Atlas. Class 'D' drains contain fish species that are sensitive to construction activities.
- The Maitland Valley Conservation Authority (MVCA) has indicated that a permit to alter a watercourse is required.



## **6.0 DESIGN CONSIDERATIONS**

Open ditch works have been designed to provide depth for sufficient outlet and improved tile drainage for workable areas adjacent to, and upstream of the municipal drain.

Provisions have been made in the proposed works to allow for the repair of areas of ditch that have experienced erosion or slumping.

The farm culvert on the Haines Beef Farms Ltd. property (Roll No. 2-002-00) is designed using a minimum event standard of a 1:5-year rainfall event.

## **7.0 ENVIRONMENTAL CONSIDERATIONS AND PERMITTING**

### **7.1 Department of Fisheries and Oceans (DFO)**

The DFO has reviewed the Request for Review package sent to them on November 7, 2024, and also considered information presented during discussions and meetings that were held between Headway Engineering staff and DFO personnel, including a site inspection.

### **7.2 Ministry of the Environment, Conservation and Parks (MECP)**

Headway Engineering completed a review of the Natural Heritage Information Centre mapping for Species at Risk in Ontario. Provincial Species at Risk requiring special consideration were not found in the working area.

### **7.3 Maitland Valley Conservation Authority (MVCA)**

The MVCA has been included on the circulation list for this report and has been notified of all public engagements. A design submission was filed with the MVCA on June 3, 2025 which included design drawings and a discussion of the proposal. The MVCA has stated that a Permit to Alter a Watercourse is required.

## **8.0 RECOMMENDATIONS**

Headway Engineering recommends the following:

- **Arbuckle Drain:**
  - The cleanout of approximately 625m of open ditch to provide for sufficient outlet for farm tiling systems within the watershed.
  - The installation of one farm crossing.
- **Congram Drain:**
  - The cleanout of approximately 241m of open ditch to provide for sufficient outlet for farm tiling systems within the watershed.
  - The realignment of approximately 41m of open ditch to better outlet into the Arbuckle Drain.
- This drainage system shall be known as the **Arbuckle and Congram Municipal Drains**.
- Headway Engineering also recommends that the watersheds of the surrounding municipal drains be updated when those drainage systems are revisited in the future.



## 9.0 SUMMARY OF PROPOSED WORKS

The proposed work consists of:

1. The cleanout and/or deepening of approximately 866m of open ditch,
2. The replacement of one existing farm culvert,
3. The realignment of approximately 41m of open ditch.

## 10.0 WORKING AREA AND ACCESS

Access to the working area shall be as shown on the attached set of plans, or by the Landowner where an access route is not defined.

The working area shall be an average width of 12 metres along the working side of the drain for constructions purposes, and an average width of 10 metres for maintenance purposes.

## 11.0 SCHEDULES

Four schedules are attached and form part of this report.

### 11.1 Schedule A – Schedule of Allowances

Following Sections 29, 30 and 33 of the Drainage Act, allowances are provided to Landowners for Right-of-Way and Damages to Lands and Crops, respectively. Schedule A contains a table of the applicable allowances to Landowners.

### 11.2 Schedule B – Schedule of Estimated Construction Costs

An itemized cost estimate of the proposed construction work is included in detail in Schedule B.

### 11.3 Schedule C – Schedule of Assessment for Construction

Schedule C provides details of the distribution of the total estimated costs of the construction of the municipal drainage system.

### 11.4 Schedule D – Schedule of Assessment for Maintenance

Schedule D provides details of the distribution of future maintenance costs for the municipal drainage system. Maintenance assessments are expressed as a percentage of the total maintenance.

Lands located upstream of the maintenance shall be determined by the Drainage Superintendent and assessed according to this schedule.

## 12.0 ALLOWANCES

Per Sections 29, 30 and 33 of the Drainage Act, Allowances payable to Landowners are described below.

### 12.1 Allowances for Right-of-Way (Section 29)

The Right-of-Way allowance compensates the lands for the right to enter onto the land at various times for the purpose of inspecting the drainage system and conducting maintenance activities.





Right-of-Way allowances were not provided to Landowners in any of the previous reports for the working side of the drain.

The values used for calculating allowances for Right-of-Way are as follows:

Land Use and Description	Land Value	Adjustment Factor for Drainage Act Right-of-Way Allowance	Adjusted Land Value for Drainage Act Right-of-Way Allowance
Agricultural Working Side of Ditch	\$60,000/Ha	25%	\$15,000/Ha
Agricultural Congram Drain Outlet Realignment	\$60,000/Ha	100%	\$60,000/Ha

## 12.2 Allowances for Damages to Lands and Crops (Section 30)

Allowances for Damages to Lands and Crops under Section 30 of the Drainage Act, are primarily calculated to compensate Landowners for crop losses, and land damages due to the construction and operation of the drain, including access to the working area.

Area values used for calculating allowances for agricultural Damages are \$6,000/Ha.

## 12.3 Allowance for Loss of Access (Section 33)

An allowance may be provided to a Landowner if the establishment of a municipal drain causes the loss of access to a portion of the property. A loss of Access allowance is calculated as the lesser of the following calculations:

- The cost of constructing a suitable bridge or crossing
- The value of the land which is severed from the rest of the property by the establishment of a municipal drain.

One Loss of Access allowance is provided in this report which resulted with the value of the land severed as the lesser of the above calculations.

Allowances payable to Landowners are shown in Schedule A.

**Total Allowances, under Sections 29, 30 and 33 of the Drainage Act are \$23,840.**

Allowances will be deducted from the total assessments in accordance with Section 62(3) of the Drainage Act.

## 13.0 ESTIMATED CONSTRUCTION COSTS

Headway Engineering has made an estimate of the cost of the proposed construction work. A detailed description of the estimated construction costs can be found in Schedule B of this report.

Part A – Arbuckle Drain	\$ 48,800
Part B – Congram Drain	\$ 18,500
Part C – Provisional Items	\$ 7,000
<b>Total Estimated Construction Costs</b>	<b>\$ 74,300</b>



## 14.0 SUMMARY OF ESTIMATED PROJECT COSTS

The total estimated project costs are as follows:

Allowances under Sections 29 and 30 of the Drainage Act (Refer to Schedule A)	\$ 23,840
Total Estimated Construction Costs (Refer to Schedule B)	\$ 74,300
Public engagements, survey, design and drafting, preparation of preliminary cost estimates and assessments, preparation of final drainage report, consideration of report	\$ 26,000
Environmental Agency Consultations and Approvals	\$ 3,000
Tendering support, supervision, and inspection of construction, contract administration, as-recorded drawing preparation, final cost calculations and grant application preparation.	\$ 8,000
Contingencies, Interest and net H.S.T.	\$ 8,360
<b>TOTAL ESTIMATED PROJECT COSTS</b> <b>ARBUCKLE &amp; CONGRAM MUNICIPAL DRAINS</b>	<b>\$ 143,500</b>

The estimated cost of the work in the Municipality of Morris-Turnberry is \$143,500.

The above costs are estimates only. The final costs of construction, engineering and administration cannot be determined until the project is completed.

The above cost estimate does not include costs associated with defending the drainage report should appeals be filed with the Court of Revision, Drainage Tribunal and/or Drainage Referee. Should additional costs be incurred, unless otherwise directed, the additional costs would be distributed in a pro-rata fashion over the assessments contained in Schedule C and as may be varied under the Drainage Act.

## 15.0 ASSESSMENT

Headway Engineering assesses the cost of this work against the Lands and Roads as shown in Schedule C - Assessment for Construction.

Assessments were determined using the principles included in the 'Drainage Assessment Revisited' paper prepared by E.P. Dries and H.H. Todgham. These principles of assessment are recognized to be fair and equitable for determining cost distributions among those affected.

### 15.1 Benefit (Section 22)

Benefit assessment is applied to those properties receiving a benefit as defined in Section 1 of the Drainage Act which is extracted below:

*Benefit means the advantages to any lands, roads, buildings or other structures from the construction, improvement, repair, or maintenance of a drainage works such as will result in a higher market value or increased crop production or improved appearance or better control of surface or sub-surface water, or any*



*other advantages relating to the betterment of lands, roads, buildings or other structures.*

Typically, properties which have direct, or near direct access to the proposed drain receive Benefit as defined above.

#### 15.2 Outlet Liability (Section 23)

Outlet Liability is distributed to all properties within the watershed area on an adjusted area basis. The areas are adjusted to accurately reflect equivalent run-off rates relative to other lands and roads within the watershed. Due to development, roads have been assessed higher Outlet Liability rates relative to agricultural lands.

#### 15.3 Special Benefit (Section 24)

The Special Benefit instrument of assessment was used to separate the benefit portion of the new farm crossing from the remaining costs of the drainage works.

### 16.0 GRANT ELIGIBILITY

The Province provides grants towards assessment to eligible properties for drainage improvements which meet the specified criteria. The provision of these grants for activities under the Drainage Act is called the *Agricultural Drainage Infrastructure Program* (ADIP).

A grant may be available for assessments to privately owned parcels of land which are used for agricultural purposes and eligible for the Farm Property Class Tax rate. Section 88 of the Drainage Act directs the Municipality to make an application for this grant upon certification of completion. The Municipality will then deduct the grant from the assessments.

#### 16.1 Allowance for Loss of Access

Following policy number 2.4 e) of the ADIP policies, no grant will be paid on an allowance for Loss of Access except when the cost of providing a crossing exceeds the value of the land losing access. As noted under heading 12.3 of this report, the Loss of Access allowance is based on the value of the land losing access. The Loss of Access allowance qualifies for ADIP grants.

### 17.0 MAINTENANCE

Upon completion, the Arbutle and Congram Municipal Drains shall be maintained by the Municipality of Morris-Turnberry and the Township of North Huron, with each municipality responsible for the portions of the system within its jurisdiction. Maintenance costs shall be borne by all assessed lands and roads, in accordance with Schedule D – Assessment for Maintenance, and in the same relative proportions unless altered under the Drainage Act. Portions of the drainage works located within municipal road allowances shall be maintained at the expense of the road authority having jurisdiction.



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## **Schedule A**

### **Allowances**

## Schedule of Allowances

### Arbuckle & Congram Municipal Drains

Arbuckle Drain	Property Details				Drainage Act Allowances			
	Part			Roll	Right of Way	Damages	Loss of Access	
	Lot	Concession	Landowner	Number	(Sec. 29)	(Sec. 30)	(Sec. 33)	Total Allowances
	1	2	David Golley	2-035	\$ 3,510.00	\$ 1,680.00	\$ -	\$ 5,190.00
	2,3	2	Haines Beef Farms Ltd. & H	2-002	\$ 5,870.00	\$ 4,130.00	\$ -	\$ 10,000.00
	<b>Total Allowances</b>							
	<b>Arbuckle Drain</b>				\$ 9,380.00	\$ 5,810.00	\$ -	\$ 15,190.00

Congram Drain	Property Details				Drainage Act Allowances			
	Part			Roll	Right of Way	Damages	Loss of Access	
	Lot	Concession	Landowner	Number	(Sec. 29)	(Sec. 30)	(Sec. 33)	Total Allowances
	1	2	David Golley	2-035	\$ -	\$ 500.00	\$ -	\$ 500.00
	2,3	2	Haines Beef Farms Ltd. & H	2-002	\$ 5,670.00	\$ 1,880.00	\$ 600.00	\$ 8,150.00
	<b>Total Allowances</b>							
	<b>Congram Drain</b>				\$ 5,670.00	\$ 2,380.00	\$ 600.00	\$ 8,650.00

Drainage Act Allowances				
	Right of Way	Damages	Loss of Access	
	(Sec. 29)	(Sec. 30)	(Sec. 33)	Total Allowances
<b>Total Allowances</b>	\$ 15,050.00	\$ 8,190.00	\$ 600.00	\$ 23,840.00



## **Schedule B**

### **Estimated Construction Costs**

## Schedule of Estimated Construction Costs

An estimate of the cost of the proposed work has been completed, which is outlined in detail as follows.

### Part A - Arbuckle Drain

Description	Estimated Quantity	\$ / Unit		Total
1) Clearing, brushing and mulching	I.s.		\$	5,000.00
2) Open ditch excavation (Sta. 0+200 to Sta. 0+825)	625 m	\$ 20.00	\$	12,500.00
3) Levelling of excavated material	625 m	\$ 8.00	\$	5,000.00
4) Hydroseeding of disturbed side slopes	1100 m <sup>2</sup>	\$ 5.00	\$	5,500.00
5) Supply 1600mm diameter CSP with 125mm x 25mm corrugations, 2.8mm thickness, type II aluminized coating	12 m	\$ 900.00	\$	10,800.00
Installation of 1600mm diameter CSP pipe complete with quarry stone rip-rap protection and geotextile filter material (25m <sup>2</sup> ) and including the removal and offsite disposal of existing concrete box culvert (Sta. 1+889)	I.s.		\$	10,000.00
<b>Sub-Total - Work on Lands</b>			\$	<b>48,800.00</b>
<b>Total Estimated Construction Costs</b>				
<b>Part A - Arbuckle Drain</b>			\$	<b>48,800.00</b>

## Part B - Congram Drain

Description	Estimated Quantity	\$/Unit		Total
1) Clearing, brushing and mulching	I.s.		\$	3,962.00
2) Open ditch excavation (Sta. 0+041 to Sta 0+282)	241 m	\$ 20.00	\$	4,820.00
3) Levelling of excavated material	241 m	\$ 8.00	\$	1,928.00
4) Open ditch excavation including stripping and stockpiling top soil (41m) (Outlet Realignment)	180 m3	\$ 8.00	\$	1,440.00
5) Fill existing ditch with excavated material from the proposed ditch including stripping topsoil and spreading topsoil over backfilled ditch	180 m3	\$ 10.00	\$	1,800.00
6) Hydroseeding of disturbed side slopes	310 m2	\$ 5.00	\$	1,550.00
7) Supply and placement of 150 to 300mm diameter quarry stone rock rip-rap and geotextile filter material	30 t	\$ 100.00	\$	3,000.00
<b>Sub-Total - Work on Lands</b>				<b>\$ 18,500.00</b>

## Total Estimated Construction Costs

**Part B - Congram Drain** **\$ 18,500.00**

## Part C - Provisional Items

A Provisional Item is an item that may or may not be required as a part of the Contract. The decision as to whether a Provisional Item will form part of the Contract will be at the discretion of the engineer at time of construction. Payment for Provisional Items will only be made for work authorized in writing by the Engineer. Payment for work performed under a Provisional Item shall be based on the Unit Price bid in the Scope of Work below.

Description	Estimated Quantity	\$/Unit		Total
1) Quarry stone rip-rap	70 t	\$ 100.00	\$	7,000.00

## Total Estimated Construction Costs

**Part C - Provisional Items** **\$ 7,000.00**



# Summary of Estimated Construction Costs

Part A - Arbuckle Drain	\$	48,800.00
Part B - Congram Drain	\$	18,500.00
Part C - Provisional Items	\$	7,000.00

<b>Total Estimated Construction Costs</b>	<b>\$</b>	<b>74,300.00</b>
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Total Estimated Materials	\$	10,800.00
Total Estimated Labour and Equipment	\$	63,500.00

<b>Total Estimated Construction Costs</b>		
<b>Arbuckle &amp; Congram Municipal Drains</b>	<b>\$</b>	<b>74,300.00</b>



## **Schedule C**

### **Estimated Assessment for Construction**

Schedule of Estimated Assessment for Construction  
Arbuckle & Congram Municipal Drains

Arbuckle Drain	Property Details					Drainage Act Instruments of Assessment				For Information		
	Part Lot	Concession	Landowner	Roll Number	Approx. Ha. Affected	Benefit (Sec. 22)	Outlet Liability (Sec. 23)	Special Benefit (Sec. 24)	Total Assessment	Less Gov't Grant	Less Allowances	Net Estimated Expense
	Municipality of Morris-Turnberry											
	1	1	Pamela Hagen & Robert Szasz	1-054	1.50	\$ -	\$ 144		\$ 144	*	\$ -	\$ 144
	1,2	1	Robert & Kelsa Clark	1-055	15.00	\$ -	\$ 1,263		\$ 1,263	\$ 421	\$ -	\$ 842
	3,4	1	Haines Beef Farms Ltd.	1-056	5.20	\$ -	\$ 520		\$ 520	\$ 173	\$ -	\$ 347
	3	1	Haines Beef Farms Ltd.	1-057	0.54	\$ -	\$ 154		\$ 154	\$ 51	\$ -	\$ 103
	1	2	David Golley	2-035	38.40	\$ 22,369	\$ 4,783		\$ 27,152	\$ 9,051	\$ 5,190	\$ 12,911
	2,3	2	Haines Beef Farms Ltd. & Hazel Haines	2-002	25.90	\$ 31,371	\$ 2,177	\$ 15,840	\$ 49,388	\$ 16,463	\$ 10,000	\$ 22,925
	Total Assessments on Lands (Municipality of Morris-Turnberry)					\$ 53,740	\$ 9,041	\$ 15,840	\$ 78,621	\$ 26,159	\$ 15,190	\$ 37,272
	Jamestown Road		Municipality of Morris-Turnberry		1.80	\$ -	\$ 453		\$ 453			\$ 453
	County Road 4		Huron County		6.40	\$ -	\$ 3,401		\$ 3,401			\$ 3,401
	Total Assessments on Roads (Municipality of Morris-Turnberry)					\$ -	\$ 3,854	\$ -	\$ 3,854			\$ 3,854
	Total Assessments Arbuckle (Municipality of Morris-Turnberry)					\$ 53,740	\$ 12,895	\$ 15,840	\$ 82,475	\$ 26,159	\$ 15,190	\$ 41,126
	Township of North Huron											
	41	12	Haines Beef Farms Ltd.	12-030	3.80	\$ -	\$ 524		\$ 524	\$ 175	\$ -	\$ 349
	41	12	Robert Chettleburgh	12-031	16.40	\$ -	\$ 2,452		\$ 2,452	\$ 817	\$ -	\$ 1,635
	42	12	P D Schlegel Ltd.	12-032	4.90	\$ -	\$ 1,173		\$ 1,173	\$ 391	\$ -	\$ 782
	42	12	William Haines	12-033	40.20	\$ -	\$ 4,827		\$ 4,827	\$ 1,609	\$ -	\$ 3,218
	40	13	Wawanosh Veal Inc.	13-026	2.60	\$ -	\$ 358		\$ 358	\$ 119	\$ -	\$ 239
41	13	Jeremy Hessels	13-027	3.60	\$ -	\$ 497		\$ 497	\$ 166	\$ -	\$ 331	
41	13	William Versteeg	13-028	18.20	\$ -	\$ 2,509		\$ 2,509	\$ 836	\$ -	\$ 1,673	
42	13	Wayne Hopper	13-029	44.90	\$ -	\$ 4,320		\$ 4,320	\$ 1,440	\$ -	\$ 2,880	
42	13	Kevin Dejong	13-029-01	1.70	\$ -	\$ 621		\$ 621	*	\$ -	\$ 621	
42	13	Debora Hopper	13-029-03	1.10	\$ -	\$ 154		\$ 154	*	\$ -	\$ 154	
42	13	Huron County	13-031	3.10	\$ -	\$ 1,861		\$ 1,861	*	\$ -	\$ 1,861	
42	13	Debra Appleby	13-033	0.23	\$ -	\$ 23		\$ 23	*	\$ -	\$ 23	
Total Assessments on Lands (Township of North Huron)					\$ -	\$ 19,319	\$ -	\$ 19,319	\$ 5,553	\$ -	\$ 13,766	
Reid Road		Township of North Huron		3.50	\$ -	\$ 1,206		\$ 1,206			\$ 1,206	
Total Assessments on Roads (Township of North Huron)					\$ -	\$ 1,206	\$ -	\$ 1,206			\$ 1,206	
Total Assessments Arbuckle (Township of North Huron)					\$ -	\$ 20,525	\$ -	\$ 20,525	\$ 5,553	\$ -	\$ 14,972	
Total Assessments Arbuckle					\$ 53,740	\$ 33,420	\$ 15,840	\$ 103,000	\$ 31,712	\$ 15,190	\$ 56,098	

Schedule of Estimated Assessment for Construction  
Arbuckle & Congram Municipal Drains

Congram Drain	Property Details					Drainage Act Instruments of Assessment				For Information		
	Part Lot	Concession	Landowner	Roll Number	Approx. Ha. Affected	Benefit (Sec. 22)	Outlet Liability (Sec. 23)	Special Benefit (Sec. 24)	Total Assessment	Less Gov't Grant	Less Allowances	Net Estimated Expense
	Municipality of Morris-Turnberry											
	1	1	Pamela Hagen & Robert Szasz	1-054	1.50	\$ -	\$ 676		\$ 676	*	\$ -	\$ 676
	1,2	1	Robert & Kelsa Clark	1-055	15.00	\$ -	\$ 7,030		\$ 7,030	\$ 2,343	\$ -	\$ 4,687
	3,4	1	Haines Beef Farms Ltd.	1-056	5.20	\$ -	\$ 3,109		\$ 3,109	\$ 1,036	\$ -	\$ 2,073
	3	1	Haines Beef Farms Ltd.	1-057	0.54	\$ -	\$ 922		\$ 922	\$ 307	\$ -	\$ 615
	1	2	David Golley	2-035	3.50	\$ 1,495	\$ 58		\$ 1,553	\$ 518	\$ 500	\$ 535
	2,3	2	Haines Beef Farms Ltd. & Hazel Haines	2-002	3.60	\$ 15,984	\$ 1,196		\$ 17,180	\$ 5,727	\$ 8,150	\$ 3,303
	Total Assessments on Lands (Municipality of Morris-Turnberry)					\$ 17,479	\$ 12,991	\$ -	\$ 30,470	\$ 9,931	\$ 8,650	\$ 11,889
Jamestown Road		Municipality of Morris-Turnberry			1.80	\$ 5,111	\$ 980		\$ 6,091		\$ 6,091	
County Road 4		Huron County			0.85	\$ -	\$ 742		\$ 742		\$ 742	
Total Assessments on Roads (Municipality of Morris-Turnberry)					\$ 5,111	\$ 1,722	\$ -	\$ 6,833	\$ -	\$ -	\$ 6,833	
Total Assessments Congram (Municipality of Morris-Turnberry)					\$ 22,590	\$ 14,713	\$ -	\$ 37,303	\$ 9,931	\$ 8,650	\$ 18,722	
Township of North Huron												
42	13	Wayne Hopper	13-029	3.90	\$ -	\$ 2,331		\$ 2,331	\$ 777	\$ -	\$ 1,554	
42	13	Debora Hopper	13-029-03	0.90	\$ -	\$ 729		\$ 729	*	\$ -	\$ 729	
42	13	Debra Appleby	13-033	0.23	\$ -	\$ 137		\$ 137	*	\$ -	\$ 137	
Total Assessments on Lands (Township of North Huron)					\$ -	\$ 3,197	\$ -	\$ 3,197	\$ 777	\$ -	\$ 2,420	
Total Assessments Congram Drain					\$ 22,590	\$ 17,910	\$ -	\$ 40,500	\$ 10,708	\$ 8,650	\$ 21,142	

- Notes:
- 1 '\*' Denotes Lands not eligible for ADIP Grants.
  - 2 The Special Benefit Assessment (Sec. 24) has been used to separate the benefit portion of the farm crossing from the normal benefit assessment.
  - 3 The Net Estimated Expense is the Total Assessment less gov't grants and allowances (if applicable).

**Schedule of Estimated Assessment for Construction  
Arbuckle & Congram Municipal Drains**

Arbuckle & Congram Municipal Drains	Property Details					Summary of Assessment			For Information		
	Part Lot	Concession	Landowner	Roll Number	Approx. Ha. Affected	Arbuckle Drain	Congram Drain	Total Assessment	Less Gov't Grant	Less Allowances	Net Estimated Expense
	Municipality of Morris-Turnberry										
	1	1	Pamela Hagen & Robert Szasz	1-054	1.50	\$ 144	\$ 676	\$ 820	*	\$ -	\$ 820
	1,2	1	Robert & Kelsa Clark	1-055	15.00	\$ 1,263	\$ 7,030	\$ 8,293	\$ 2,764	\$ -	\$ 5,529
	3,4	1	Haines Beef Farms Ltd.	1-056	5.20	\$ 520	\$ 3,109	\$ 3,629	\$ 1,210	\$ -	\$ 2,419
	3	1	Haines Beef Farms Ltd.	1-057	0.54	\$ 154	\$ 922	\$ 1,076	\$ 359	\$ -	\$ 717
	1	2	David Golley	2-035	38.40	\$ 27,152	\$ 1,553	\$ 28,705	\$ 9,568	\$ 5,690	\$ 13,447
	2,3	2	Haines Beef Farms Ltd. & Hazel Haines	2-002	25.90	\$ 49,388	\$ 17,180	\$ 66,568	\$ 22,189	\$ 18,150	\$ 26,229
	<b>Total Assessments on Lands (Municipality of Morris-Turnberry)</b>					<b>\$ 78,621</b>	<b>\$ 30,470</b>	<b>\$ 109,091</b>	<b>\$ 36,090</b>	<b>\$ 23,840</b>	<b>\$ 49,161</b>
Jamestown Road Municipality of Morris-Turnberry					1.80	\$ 453	\$ 6,091	\$ 6,544			\$ 6,544
County Road 4 Huron County					6.40	\$ 3,401	\$ 742	\$ 4,143			\$ 4,143
<b>Total Assessments on Roads (Municipality of Morris-Turnberry)</b>						<b>\$ 3,854</b>	<b>\$ 6,833</b>	<b>\$ 10,687</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 10,687</b>
<b>Total Assessments (Municipality of Morris-Turnberry)</b>						<b>\$ 82,475</b>	<b>\$ 37,303</b>	<b>\$ 119,778</b>	<b>\$ 36,090</b>	<b>\$ 23,840</b>	<b>\$ 59,848</b>
Township of North Huron											
	41	12	Haines Beef Farms Ltd.	12-030	3.80	\$ 524	\$ -	\$ 524	\$ 175	\$ -	\$ 349
	41	12	Robert Chettleburgh	12-031	16.40	\$ 2,452	\$ -	\$ 2,452	\$ 817	\$ -	\$ 1,635
	42	12	P D Schlegel Ltd.	12-032	4.90	\$ 1,173	\$ -	\$ 1,173	\$ 391	\$ -	\$ 782
	42	12	William Haines	12-033	40.20	\$ 4,827	\$ -	\$ 4,827	\$ 1,609	\$ -	\$ 3,218
	40	13	Wawanosh Veal Inc.	13-026	2.60	\$ 358	\$ -	\$ 358	\$ 119	\$ -	\$ 239
	41	13	Jeremy Hessels	13-027	3.60	\$ 497	\$ -	\$ 497	\$ 166	\$ -	\$ 331
	41	13	William Versteeg	13-028	18.20	\$ 2,509	\$ -	\$ 2,509	\$ 836	\$ -	\$ 1,673
	42	13	Wayne Hopper	13-029	44.90	\$ 4,320	\$ 2,331	\$ 6,651	\$ 2,217	\$ -	\$ 4,434
	42	13	Kevin Dejong	13-029-01	1.70	\$ 621	\$ -	\$ 621	*	\$ -	\$ 621
	42	13	Debora Hopper	13-029-03	1.10	\$ 154	\$ 729	\$ 883	*	\$ -	\$ 883
<b>Total Assessments on Lands (Township of North Huron)</b>						<b>\$ 19,319</b>	<b>\$ 3,197</b>	<b>\$ 22,516</b>	<b>\$ 6,330</b>	<b>\$ -</b>	<b>\$ 16,186</b>
Reid Road Township of North Huron					3.50	\$ 1,206	\$ -	\$ 1,206			\$ 1,206
<b>Total Assessments on Roads (Township of North Huron)</b>						<b>\$ 1,206</b>	<b>\$ -</b>	<b>\$ 1,206</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,206</b>
<b>Total Assessments (Township of North Huron)</b>						<b>\$ 20,525</b>	<b>\$ 3,197</b>	<b>\$ 23,722</b>	<b>\$ 6,330</b>	<b>\$ -</b>	<b>\$ 17,392</b>
<b>Total Assessments</b>											
<b>Arbuckle &amp; Congram Municipal Drains</b>						<b>\$ 103,000</b>	<b>\$ 40,500</b>	<b>\$ 143,500</b>	<b>\$ 42,420</b>	<b>\$ 23,840</b>	<b>\$ 77,240</b>

Notes: 1 '\*\*' Denotes Lands not eligible for ADIP Grants.  
2 The Net Estimated Expense is the Total Assessment less gov't grants and allowances (if applicable).



## **Schedule D**

### **Assessment for Future Maintenance**

**Schedule of Assessment for Future Maintenance  
Arbuckle & Congram Municipal Drains**

Arbuckle & Congram Municipal Drains	Property Details					Proportion of Maintenance Assessment			
	Part Lot	Concession	Landowner	Roll Number	Approx. Ha. Affected	Arbuckle Drain Sta. 0+000 to Sta. 0+994	Arbuckle Drain Sta. 0+382 Culvert	Congram Drain Sta. 0+000 to Sta. 0+282	
	Municipality of Morris-Turnberry								
	1	1	Pamela Hagen & Robert Szasz	*	1-054	1.50	0.29%	0.30%	3.77%
	1,2	1	Robert & Kelsa Clark		1-055	15.00	3.03%	2.25%	39.25%
	3,4	1	Haines Beef Farms Ltd.		1-056	5.20	1.34%	0.86%	17.36%
	3	1	Haines Beef Farms Ltd.		1-057	0.54	0.40%	0.25%	5.14%
	1	2	David Golley		2-035	38.40	15.17%	5.90%	0.32%
	2,3	2	Haines Beef Farms Ltd. & Hazel Haines		2-002	25.90	4.70%	58.76%	6.68%
	Total Assessments on Lands (Municipality of Morris-Turnberry)						24.94%	68.32%	72.53%
	Jamestown Road			Municipality of Morris-Turnberry		1.80	1.16%	0.75%	5.48%
	County Road 4			Huron County		6.40	10.73%	4.24%	4.14%
	Total Assessments on Roads (Municipality of Morris-Turnberry)						11.89%	4.99%	9.63%
	Total Maintenance Assessments (Municipality of Morris-Turnberry)						36.83%	73.31%	82.15%
	Township of North Huron								
	41	12	Haines Beef Farms Ltd.		12-030	3.80	1.69%	0.63%	
	41	12	Robert Chettleburgh		12-031	16.40	7.70%	3.08%	
	42	12	P D Schlegel Ltd.		12-032	4.90	3.77%	1.41%	
	42	12	William Haines		12-033	40.20	14.52%	6.51%	
	40	13	Wawanosh Veal Inc.		13-026	2.60	1.15%	0.43%	
41	13	Jeremy Hessels		13-027	3.60	1.60%	0.60%	13.01%	
41	13	William Versteeg		13-028	18.20	8.08%	3.01%		
42	13	Wayne Hopper		13-029	44.90	12.33%	6.30%		
42	13	Kevin Dejong	*	13-029-01	1.70	2.00%	0.75%	4.07%	
42	13	Debora Hopper	*	13-029-03	1.10	0.40%	0.25%		
42	13	Huron County	*	13-031	3.10	5.99%	2.24%		
42	13	Debra Appleby	*	13-033	0.23	0.06%	0.04%	0.76%	
Total Assessments on Lands (Township of North Huron)						59.29%	25.24%	17.85%	
Reid Road			Township of North Huron		3.50	3.88%	1.45%		
Total Assessments on Roads (Township of North Huron)						3.88%	1.45%		
Total Maintenance Assessments (Township of North Huron)						63.17%	26.69%	17.85%	
Total Maintenance Assessments Arbuckle and Congram Drains						100.00%	100.00%	100.00%	

- Notes:
- 1 '\*' Denotes Lands not eligible for ADIP Grants.
  - 2 Lands located upstream of the maintenance shall be determined by the Drainage Superintendent.



## **Specifications for the Construction of Municipal Drainage Works**

DIVISION A – General Conditions

DIVISION B – Specifications for Open Drains

DIVISION H – Special Provisions





**DIVISION A**

**General Conditions**





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**DIVISION A**  
**General Conditions**

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## **DIVISION A – GENERAL CONDITIONS**

### **A.1. Scope**

The work to be done under this contract consists of supplying all labour, equipment and materials to construct the drainage work as outlined in the Scope of Work, Drawings, General Conditions and other Specifications.

### **A.2. Tenders**

Tenders are to be submitted on a lump sum basis for the complete works or a portion thereof, as instructed by the Municipality. The Scope of Work must be completed and submitted with the Form of Tender and Agreement. A certified cheque is required as Tender Security, payable to the Treasurer of the Municipality.

All certified cheques, except that of the bidder to whom the work is awarded will be returned within ten (10) days after the tender closing. The certified cheque of the bidder to whom the work is awarded will be retained as Contract Security and returned when the Municipality receives a Completion Certificate for the work.

A certified cheque is not required if the Contractor provides an alternate form of Contract Security such as a Performance Bond for 100% of the amount of the Tender or other satisfactory security, if required/permitted by the Municipality. A Performance Bond may also be required to insure maintenance of the work for a period of one (1) year after the date of the Completion Certificate.

### **A.3. Examinations of Site, Drawings, and Specifications**

The Tenderer must examine the premises and site to compare them with the Drawings and Specifications in order to satisfy himself of the existing conditions and extent of the work to be done before submission of his Tender. No allowance shall subsequently be made on behalf of the Contractor by reason of any error on his part. Any estimates of quantities shown or indicated on the Drawings, or elsewhere are provided for the convenience of the Tenderer. Any use made of these quantities by the Tenderer in calculating his Tender shall be done at his own risk. The Tenderer for his own protection should check these quantities for accuracy.

The standard specifications (Divisions B through G) shall be considered complementary and where a project is controlled under one of the Divisions, the remaining Divisions will apply for miscellaneous works.

In case of any inconsistency or conflict between the Drawings and Specifications, the following order of precedence shall apply:

- Direction of the Engineer
- Special Provisions (Division H)
- Scope of Work
- Contract Drawings
- Standard Specifications (Divisions B through G)
- General Conditions (Division A)



#### **A.4. Payment**

Progress payments equal to 87±% of the value of work completed and materials incorporated in the work will be made to the Contractor monthly. An additional ten per cent (10±%) will be paid 60 days after the final acceptance by the Engineer, and three per cent (3±%) of the Contract price may be reserved by the Municipality as a maintenance holdback for a one (1) year period from the date of the Completion Certificate. A greater percentage of the Contract price may be reserved by the Municipality for the same one (1) year period if in the opinion of the Engineer, particular conditions of the Contract requires such greater holdback.

After the completion of the work, any part of this reserve may be used to correct defects developed within that time from faulty workmanship and materials, provided that notice shall first be given to the Contractor and that he may promptly make good such defects.

#### **A.5. Contractor's Liability Insurance**

Prior to commencement of any work, the Contractor shall file with the Municipality evidence of compliance with all Municipality insurance requirements (Liability Insurance, WSIB, etc.) for no less than the minimum amounts as stated in the Purchasing Procedures of the Municipality. All insurance coverage shall remain in force for the entire contract period including the warranty period which expires one year after the date of the Completion Certificate.

The following are to be named as co-insured:

- Successful Contractor
- Sub-Contractor
- Municipality
- Headway Engineering

#### **A.6. Losses Due to Acts of Nature, Etc.**

All damage, loss, expense and delay incurred or experienced by the Contractor in the performance of the work, by reason of unanticipated difficulties, bad weather, strikes, acts of nature, or other mischances shall be borne by the Contractor and shall not be the subject of a claim for additional compensation.

#### **A.7. Commencement and Completion of Work**

The work must commence as specified in the Form of Tender and Agreement. If conditions are unsuitable due to poor weather, the Contractor may be required, at the discretion of the Engineer to postpone or halt work until conditions become acceptable and shall not be subject of a claim for additional compensation.

The Contractor shall give the Engineer a minimum of 48 hours notice before commencement of work. The Contractor shall then arrange a meeting to be held on the site with Contractor, Engineer, and affected Landowners to review in detail the construction scheduling and other details of the work.

If the Contractor leaves the job site for a period of time after initiation of work, he shall give the Engineer and the Municipality a minimum of 24 hours notice prior to returning to the project. If any work is commenced without notice to the Engineer, the Contractor shall be fully responsible for all such work undertaken prior to such notification.



The work must proceed in such a manner as to ensure its completion at the earliest possible date and within the time limit set out in the Form of Tender and Agreement.

### **A.8. Working Area and Access**

Where any part of the drain is on a road allowance, the road allowance shall be the working area. For all other areas, the working area available to the Contractor to construct the drain is specified in the Special Provisions (Division H).

Should the specified widths become inadequate due to unusual conditions, the Contractor shall notify the Engineer immediately. Where the Contractor exceeds the specified working widths without authorization, he shall be held responsible for the costs of all additional damages.

If access off an adjacent road allowance is not possible, each Landowner on whose property the drainage works is to be constructed, shall designate access to and from the working area. The Contractor shall not enter any other lands without permission of the Landowner and he shall compensate the Landowner for damage caused by such entry.

### **A.9. Sub-Contractors**

The Contractor shall not sublet the whole or part of this Contract without the approval of the Engineer.

### **A.10. Permits, Notices, Laws and Rules**

The Contractor shall obtain and pay for all necessary permits or licenses required for the execution of the work (but this shall not include MTO encroachment permits, County Road permits permanent easement or rights of servitude). The Contractor shall give all necessary notices and pay for all fees required by law and comply with all laws, ordinances, rules and regulations relating to the work and to the preservation of the public's health and safety.

### **A.11. Railways, Highways, and Utilities**

A minimum of 72 hours' notice to the Railway or Highways, exclusive of Saturdays, Sundays, and Statutory Holidays, is required by the Contractor prior to any work activities on or affecting the applicable property. In the case of affected Utilities, a minimum of 48 hours' notice to the utility owner is required.

### **A.12. Errors and Unusual Conditions**

The Contractor shall notify the Engineer immediately of any error or unusual conditions which may be found. Any attempt by the Contractor to correct the error on his own shall be done at his own risk. Any additional cost incurred by the Contractor to remedy the wrong decision on his part shall be borne by the Contractor. The Engineer shall make the alterations necessary to correct errors or to adjust for unusual conditions during which time it will be the Contractor's responsibility to keep his men and equipment gainfully employed elsewhere on the project.

The Contract amount shall be adjusted in accordance with a fair evaluation of the work added or deleted.

### **A.13. Alterations and Additions**

The Engineer shall have the power to make alterations in the work shown or described in the Drawings and Specifications and the Contractor shall proceed to make such changes without causing delay. In



every such case, the price agreed to be paid for the work under the Contract shall be increased or decreased as the case may require according to a fair and reasonable evaluation of the work added or deleted. The valuation shall be determined as a result of negotiations between the Contractor and the Engineer, but in all cases the Engineer shall maintain the final responsibility for the decision. Such alterations and variations shall in no way render the Contract void. No claims for a variation or alteration in the increased or decreased price shall be valid unless done in pursuance of an order from the Engineer and notice of such claims made in writing before commencement of such work. In no such case shall the Contractor commence work which he considers to be extra before receiving the Engineer's approval.

#### **A.14. Supervision**

The Contractor shall give the work his constant supervision and shall keep a competent foreman in charge at the site.

#### **A.15. Field Meetings**

At the discretion of the Engineer, a field meeting with the Contractor or his representative, the Engineer and with those others that the Engineer deems to be affected, shall be held at the location and time specified by the Engineer.

#### **A.16. Periodic and Final Inspections**

Periodic inspections by the Engineer will be made during the performance of the work. If ordered by the Engineer, the Contractor shall expose the drain as needed to facilitate inspection by the Engineer.

Final inspection by the Engineer will be made within twenty (20) days after he has received notice from the Contractor that the work is complete.

#### **A.17. Acceptance By the Municipality**

Before any work shall be accepted by the Municipality, the Contractor shall correct all deficiencies identified by the Engineer and the Contractor shall leave the site neat and presentable.

#### **A.18. Warranty**

The Contractor shall repair and make good any damages or faults in the drain that may appear within one (1) year after its completion (as dated on the Completion Certificate) as the result of the imperfect or defective work done or materials furnished if certified by the Engineer as being due to one or both of these causes; but nothing herein contained shall be construed as in any way restricting or limiting the liability of the Contractor under the laws of the Country, Province or Locality in which the work is being done. Neither the Completion Certificate nor any payment there under, nor any provision in the Contract Documents shall relieve the Contractor from his responsibility.

#### **A.19. Termination of Contract By The Municipality**

If the Contractor should be adjudged bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should refuse or fail to supply enough properly skilled workmen or proper materials after having received seven (7) days notice in writing from the Engineer to supply additional workmen or materials to commence or complete the works, or if he should fail to make prompt payment to Sub-Contractors, or for material, or labour, or persistently disregards laws, ordinances, or the instruction of the Engineer,





or otherwise be guilty of a substantial violation of the provisions of the Contract, then the Municipality, upon the certificate of the Engineer that sufficient cause exists to justify such action, may without prejudice to any other right or remedy, by giving the Contractor written notice, terminate the employment of the Contractor and take possession of the premises, and of all materials, tools and appliances thereon, and may finish the work by whatever method the Engineer may deem expedient but without delay or expense. In such a case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract price will exceed the expense of finishing the work including compensation to the Engineer for his additional services and including the other damages of every name and nature, such excess shall be paid by the Contractor. If such expense will exceed such unpaid balance, the Contractor shall pay the difference to the Municipality. The expense incurred by the Municipality, as herein provided, shall be certified by the Engineer.

If the Contract is terminated by the Municipality due to the Contractor's failure to properly commence the works, the Contractor shall forfeit the certified cheque bid deposit and furthermore shall pay to the Municipality an amount to cover the increased costs, if any, associated with a new Tender for the Contract being terminated.

If any unpaid balance and the certified cheque do not match the monies owed by the Contractor upon termination of the Contract, the Municipality may also charge such expense against any money which may thereafter be due to the Contractor from the Municipality.

## **A.20. Tests**

The cost for the testing of materials supplied to the job by the Contractor shall be borne by the Contractor. The Engineer reserves the right to subject any lengths of any tile or pipe to a competent testing laboratory to ensure the adequacy of the tile or pipe. If any tile supplied by the Contractor is determined to be inadequate to meet the applicable A.S.T.M. standards, the Contractor shall bear full responsibility to remove and/or replace all such inadequate tile in the Contract with tile capable of meeting the A.S.T.M. Standards.

## **A.21. Pollution**

The Contractor shall keep their equipment in good repair. The Contractor shall refuel or repair equipment away from open water.

If polluted material from construction materials or equipment is caused to flow into the drain, the Contractor shall immediately notify the Ministry of the Environment, and proceed with the Ministry's protocols in place to address the situation.

## **A.22. Species and Risk**

If a Contractor encounters a known Species at Risk as designated by the MNR or DFO, the Contractor shall notify the Engineer immediately and follow the Ministry's guidelines to deal with the species.

## **A.23. Road Crossings**

This specification applies to all road crossings (Municipality, County, Regional, or Highway) where no specific detail is provided on the drawings or in the standard specifications. This specification in no way limits the Road Authority's regulations governing the construction of drains on their Road Allowance.

### **A.23.1. Road Occupancy Permit**



Where applicable, the Contractor must submit an application for a road occupancy permit to the Road Authority and allow a minimum of five (5) working days for its review and issuance.

### **A.23.2. Road Closure Request and Construction Notification**

The Contractor shall submit written notification of construction and request for road closure (if applicable) to the Road Authority and the Engineer for review and approval a minimum of five (5) working days prior to proceeding with any work on the road allowance. The Contractor shall be responsible for notifying all applicable emergency services, schools, etc. of the road closure or construction taking place.

### **A.23.3. Traffic Control**

The Contractor shall supply flagmen, and warning signs and ensure that detour routes are adequately signed in accordance with no less than the minimum standards as set out in the Ontario Traffic Manual's Book 7.

### **A.23.4. Weather**

No construction shall take place during inclement weather or periods of poor visibility.

### **A.23.5. Equipment**

No construction material and/or equipment is to be left within three (3) metres of the travelled portion of the road overnight or during periods of inclement weather.

If not stated on the drawings, the road crossing shall be constructed by open cut method. Backfill from the top of the cover material over the subsurface pipe or culvert to the under side of the road base shall be Granular "B". The backfill shall be placed in lifts not exceeding 300mm in thickness and each lift shall be thoroughly compacted to 98% Standard Proctor. Granular "B" road base for County Roads and Highways shall be placed to a 450mm thickness and Granular "A" shall be placed to a thickness of 200mm. Granular road base materials shall be thoroughly compacted to 100% Standard Proctor.

Where the road surface is paved, the Contractor shall be responsible for placing HL-8 Hot Mix Asphalt patch at a thickness of 50mm or of the same thickness as the existing pavement structure. The asphalt patch shall be flush with the existing roadway on each side and without overlap.

Excavated material from the trench beyond 1.25 metres from the travelled portion or beyond the outside edge of the gravel shoulder may be used as backfill in the trench in the case of covered drains. The material shall be compacted in lifts not exceeding 300mm.

## **A.24. Laneways**

All pipes crossing laneways shall be backfilled with material that is clean, free of foreign material or frozen particles and readily tamped or compacted in place unless otherwise specified. Laneway culverts on open ditch projects shall be backfilled with material that is not easily erodible. All backfill material shall be thoroughly compacted as directed by the Engineer.

Culverts shall be bedded with a minimum of 300mm of granular material. Granular material shall be placed simultaneously on each side of the culvert in lifts not exceeding 150mm in thickness and compacted to 95% Standard Proctor Density. Culverts shall be installed a minimum of 10% of the



culvert diameter below design grade with a minimum of 450mm of cover over the pipe unless otherwise noted on the Drawings.

The backfill over culverts and subsurface pipes at all existing laneways that have granular surfaces on open ditch and closed drainage projects shall be surfaced with a minimum of 300mm of Granular “B” material and 150mm of Granular “A” material. All backfill shall be thoroughly compacted as directed by the Engineer. All granular material shall be placed to the full width of the travelled portion.

Any settling of backfilled material shall be repaired by or at the expense of the Contractor during the warranty period of the project and as soon as required.

### **A.25. Fences**

No earth is to be placed against fences and all fences removed by the Contractor shall be replaced by him in as good a condition as found. Where practical the Contractor shall take down existing fences in good condition at the nearest anchor post and roll it back rather than cutting the fence and attempting to patch it. The replacement of the fences shall be done to the satisfaction of the Engineer. Any fences found in such poor condition where the fence is not salvageable, shall be noted and verified with the Engineer prior to commencement of work.

Fences damaged beyond repair by the Contractor’s negligence shall be replaced with new materials, similar to those materials of the existing fence, at the Contractor’s expense. The replacement of the fences shall be done to the satisfaction of the Landowner and the Engineer.

Any fences paralleling an open ditch that are not line fences that hinder the proper working of the excavating machinery, shall be removed and rebuilt by the Landowner at his own expense.

The Contractor shall not leave fences open when he is not at work in the immediate vicinity.

### **A.26. Livestock**

The Contractor shall provide each landowner with 48 hours notice prior to removing any fences along fields which could possibly contain livestock. Thereafter, the Landowner shall be responsible to keep all livestock clear of the construction areas until further notified. The Contractor shall be held responsible for loss or injury to livestock or damage caused by livestock where the Contractor failed to notify the Landowner, or through negligence or carelessness on the part of the Contractor.

### **A.27. Standing Crops**

The Contractor shall be responsible for damages to standing crops which are ready to be harvested or salvaged along the course of the drain and access routes if the Contractor has failed to notify the Landowners 48 hours prior to commencement of the work on that portion of the drain.

### **A.28. Surplus Gravel**

If as a result of any work, gravel or crushed stone is required and not all the gravel or crushed stone is used, the Contractor shall haul away such surplus material.

### **A.29. Iron Bars**

The Contractor is responsible for the cost of an Ontario Land Surveyor to replace any iron bars that are altered or destroyed during the course of the construction.

### **A.30. Rip-Rap**



Rip-rap shall be quarry stone rip-rap material and shall be the sizes specified in the Special Provisions. Broken concrete shall not be used as rip-rap unless otherwise specified.

### **A.31. Clearing, Grubbing and Brushing**

This specification applies to all brushing where no specific detail is provided on the drawings or in the Special Provisions.

The Contractor shall clear, brush and stump trees from within the working area that interfere with the installation of the drainage system.

All trees, limbs and brush less than 150mm in diameter shall be mulched. Trees greater than 150mm in diameter shall be cut and neatly stacked in piles designated by the Landowners.

### **A.32. Restoration of Lawns**

This specification applies to all lawn restoration where no specific detail is provided on the drawings or in the Special Provisions and no allowance for damages has been provided under Section 30 of the Drainage Act RSO 1990 to the affected property.

The Contractor shall supply “high quality grass seed” and the seed shall be broadcast by means of an approved mechanical spreader. All areas on which seed is to be placed shall be loose at the time of broadcast to a depth of 25mm. Seed and fertilizer shall be spread in accordance with the supplier’s recommendations unless otherwise directed by the Engineer. Thereafter it will be the responsibility of the Landowner to maintain the area in a manner so as to promote growth

**END OF DIVISION**



**DIVISION B**

**Specifications for Open Drains**





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## **DIVISION B – SPECIFICATIONS FOR OPEN DRAINS**

### **B.1. Alignment**

The drain shall be constructed in a straight line and shall follow the course of the present drain or water run unless noted on the drawings. Where there are unnecessary bends or irregularities on the existing course of the drain, the Contractor shall contact the Engineer before commencing work to verify the manner in which such irregularities or bends may be removed from the drain. All curves shall be made with a minimum radius of fifteen (15) metres from the centre line of the drain.

### **B.2. Profile**

The Profile Drawing shows the depth of cuts from the top of the bank to the final invert of the ditch in metres and decimals of a metre, and also the approximate depth of excavated material from the bottom of the existing ditch to the final invert of the ditch. These cuts are established for the convenience of the Contractor; however, bench marks (established along the course of the drain) will govern the final elevation of the drain. The location and elevation of the bench marks are given on the Profile Drawing. Accurate grade control must be maintained by the Contractor during ditch excavation.

### **B.3. Excavation**

The bottom width and the side slopes of the ditch shall be those shown on the drawings. If the channel cross-section is not specified it shall be a one metre bottom width with 1.5(h):1(v) side slopes. At locations along the drain where the cross section dimensions change, there shall be a transitional length of not less than 10:1 (five metre length to 0.5 metre width differential). Where the width of the bottom of the existing ditch is sufficient to construct the design width, then construction shall proceed without disturbing the existing banks.

Where existing side slopes become unstable, the Contractor shall immediately notify the Engineer. Alternative methods of construction and/or methods of protection will then be determined prior to continuing work.

Where an existing drain is being relocated or where a new drain is being constructed, the Contractor shall strip the topsoil for the full width of the drain, including the location of the spoil pile. Upon completion of levelling, the topsoil shall be spread to an even depth across the full width of the spoil.

An approved hydraulic excavator shall be used to carry out the excavation of the open ditch unless otherwise directed by the Engineer.

### **B.4. Excavated Material**

Excavated material shall be placed on the low side of the drain or opposite trees and fences. The Contractor shall contact all Landowners before proceeding with the work to verify the location to place and level the excavated material.

No excavated material shall be placed in tributary drains, depressions, or low areas which direct water behind the spoil bank. The excavated material shall be placed and levelled to a maximum depth of 200 mm, unless instructed otherwise and commence a minimum of one (1) metre from the top of the bank. The edge of the spoil bank away from the ditch shall be feathered down to the existing ground; the edge of the spoil bank nearest the ditch shall have a maximum slope of 2(h):1(v). The material shall be levelled such that it may be cultivated with ordinary farm equipment without causing undue



hardship to the farm machinery and farm personnel. No excavated material shall cover any logs, brush, etc. of any kind.

Any stones or boulders which exceed 300mm in diameter shall be removed and disposed of in a location specified by the Landowner.

Where it is necessary to straighten any unnecessary bends or irregularities in the alignment of the ditch or to relocate any portion or all of an existing ditch, the excavated material from the new cut shall be used for backfilling the original ditch. Regardless of the distance between the new ditch and the old ditch, no extra compensation will be allowed for this work and must be included in the Contractor's lump sum price for the open work.

### **B.5. Excavation at Existing Bridge and Culvert Sites**

The Contractor shall excavate the drain to the full specified depth under all bridges and to the full width of the structure. Temporary bridges may be carefully removed and left on the bank of the drain but shall be replaced by the Contractor when the excavation is complete. Permanent bridges must, if at all possible, be left intact. All necessary care and precautions shall be taken to protect the structure. The Contractor shall notify the Landowner if excavation will expose the footings or otherwise compromise the structural integrity of the structure.

The Contractor shall clean through all pipe culverts to the grade and width specified on the profile.

### **B.6. Pipe Culverts**

All pipe culverts shall be installed in accordance with the standard detail drawings. If couplers are required, five corrugation couplers shall be used for up to and including 1200mm diameter pipes and 10 corrugation couplers for greater than 1200mm diameter pipes.

When an existing crossing is being replaced, the Contractor may backfill the new culvert with the existing native material that is free of large rocks and stones. The Contractor is responsible for any damage to a culvert pipe that is a result of rocks or stones in the backfill.

### **B.7. Rip-Rap Protection For Culverts**

Quarry stone rip-rap shall be used as end treatment for new culverts and placed on geotextile filter material (Mirafi 160N or approved equal). The rip-rap shall be adequately keyed in along the bottom of the slope, and shall extend to the top of the pipe or as directed on the drawings. The maximum slope for rip-rap shall be 1(h):1(v) or as directed by the Engineer.

The Contractor shall be responsible for any defects or damages that may develop in the rip-rap or the earth behind the rip-rap that the Engineer deems to have been fully or partially caused by faulty workmanship or materials.

### **B.8. Clearing, Grubbing and Mulching**

Prior to excavation, all trees, scrub, fallen timber and debris shall be removed from the side slopes of the ditch and for such a distance on the working side so as to eliminate any interference with the construction of the drain or the spreading of the spoil. The side slopes shall be neatly cut and cleared flush with the slope whether or not they are affected directly by the excavation. With the exception of large stumps causing damage to the drain, the side slopes shall not be grubbed. All other cleared areas shall be grubbed and the stumps put into piles for disposal by the Landowner.



All trees or limbs 150mm or larger, that is necessary to remove, shall be cut, trimmed and neatly stacked in the working width for the use or disposal by the Landowner. Brush and limbs less than 150mm in diameter shall be mulched. Clearing, grubbing and mulching shall be carried out as a separate operation from the excavation of the ditch, and shall not be completed simultaneously at the same location.

### **B.9. Tributary Tile Outlets**

All tile outlets in existing ditches shall be marked by the Landowner prior to excavation. The Contractor shall guard against damaging the outlets of tributary drains. Any tile drain outlets that were marked or noted on the drawings and are subsequently damaged by the Contractor shall be repaired by the Contractor at his expense. The Landowner shall be responsible for repairs to damaged tile outlets that were not marked.

### **B.10. Seeding**

The side slopes where disturbed shall be seeded using an approved grass seed mixture. The grass seed shall be applied the same day as the excavation of the open ditch.

Grass seed shall be fresh, clean and new crop seed, meeting the requirements of the MTO and composed of the following varieties mixed in the proportion by weight as follows:

- 55% Creeping Red Fescue
- 40% Perennial Rye Grass
- 5% White Clover

Grass seed shall be applied at the rate of 100 kg/ha.

### **B.11. Hydro Seeding**

The areas specified in the contract document shall be hydro seeded and mulched upon completion of construction in accordance with O.P.S.S. 572.

### **B.12. Hand Seeding**

Placement of the seed shall be of means of an approved mechanical spreader.

### **B.13. Completion**

At the time of completion and final inspection, all work in the Contract shall have the full dimensions and cross-sections specified without any allowance for caving of banks or sediment in the ditch bottom.

**END OF DIVISION**





## **SPECIAL PROVISIONS**

### **Arbuckle & Congram Municipal Drains**





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Special Provisions means special directions containing requirements particular to the work not adequately provided for by the standard or supplemental specifications. Special provisions shall take precedence and govern over any standard or supplemental specification.

## **1.0 GENERAL**

The Contractor shall notify the Landowner, the Drainage Superintendent, and the Engineer 48 hours prior to construction.

The Contractor shall arrange a pre-construction meeting and shall invite the Landowners on whose property work will take place, and the Engineer, and the Drainage Superintendent.

The Contractor shall verify the location of the new drainage system with the Engineer and Landowner prior to construction.

The Contractor shall check and verify all dimensions and elevations and report any discrepancies to the Engineer prior to proceeding with the work.

The Contractor shall be responsible for settlement within the warranty period.

## **2.0 UTILITIES**

All utilities shall be located and uncovered in the affected areas by the Contractor prior to construction.

The locations and elevations of all utilities shown on the drawings are approximate locations. Actual locations and elevations of all utilities must be verified by the Contractor prior to construction.

The Contractor shall arrange to have a representative of the utility owner on site during construction if it is a requirement by the utility owner.

## **3.0 WORKING AREA AND ACCESS**

Access to the working area shall be as shown on the attached set of plans, or by the Landowner where an access route is not defined.

The working area shall be an average width of 12 metres along the working side of the drain.

## **4.0 CLEARING BRUSHING AND MULCHING**

The Contractor shall clear, brush and mulch trees from within the working area that interfere with the construction of the drainage system. The Contractor shall not clear all trees within the working area unless the full working width in a specific section is required for the installation of the drain and the Engineer has authorized the full clearing of the trees.

All trees, limbs, and brush less than 150mm in diameter shall be mulched/chipped. Clearing and brushing shall be done prior to the construction of the drain. Trees and branches greater than 150mm in diameter shall be cut into lengths no greater than four metres and placed in nearby stacks designated by the Landowner. Trees removed from road right-of-ways shall be mulched or disposed of offsite by the Contractor.



## **5.0 OPEN DITCH EXCAVATION**

An approved hydraulic excavator shall be used to carry out the excavation of the open ditch. The open ditch shall have a 900mm bottom width and shall be parabolic in shape. The side slopes shall be a 1.5H:1V or flatter.

### **5.1 Congram Drain Outlet Realignment**

Prior to construction of the new channel, the footprint of the proposed realignment of the Congram Drain outlet shall be stripped of topsoil, which shall be stockpiled for later use. The new channel shall have a parabolic cross-section with a 900 mm bottom width and side slopes of 1.5H:1V or flatter.

The Contractor shall place topsoil on the side slopes to a minimum depth of 100 mm and shall apply hydroseeding as soon as practicable following excavation.

The Contractor shall dispose of excess excavated material within the existing Congram Drain outlet, which is to be abandoned and filled. Following placement, topsoil shall be spread over the filled area.

The Contractor shall place quarry stone rock rip-rap over geotextile filter fabric at the upstream end of the existing Congram Drain outlet, which is to be freshly filled.

## **6.0 EXCAVATED MATERIAL**

Excess material shall be spread on the working side to a maximum depth of 200mm in accordance with the typical open ditch cleanout detail included in the drawing set.

## **7.0 HYDROSEEDING**

The Contractor shall supply and spread an approved seed mixture (OPS 803 – Lowland Mix) over the disturbed areas by means of hydroseed and mulch (bonded fibre matrix) using the seed manufacturer's application recommendations. The Contractor shall apply the hydroseed as soon as possible.

## **8.0 CULVERT INSTALLATION**

The Contractor shall install the culverts in accordance with the attached details.

## **9.0 BANK REPAIR**

In areas where high levels of erosion have occurred, the Contractor shall reshape the banks to match typical bank side slopes. The Contractor shall then place geo-textile filter material and stone riprap for long term bank stabilization.

## **10.0 RIP-RAP**

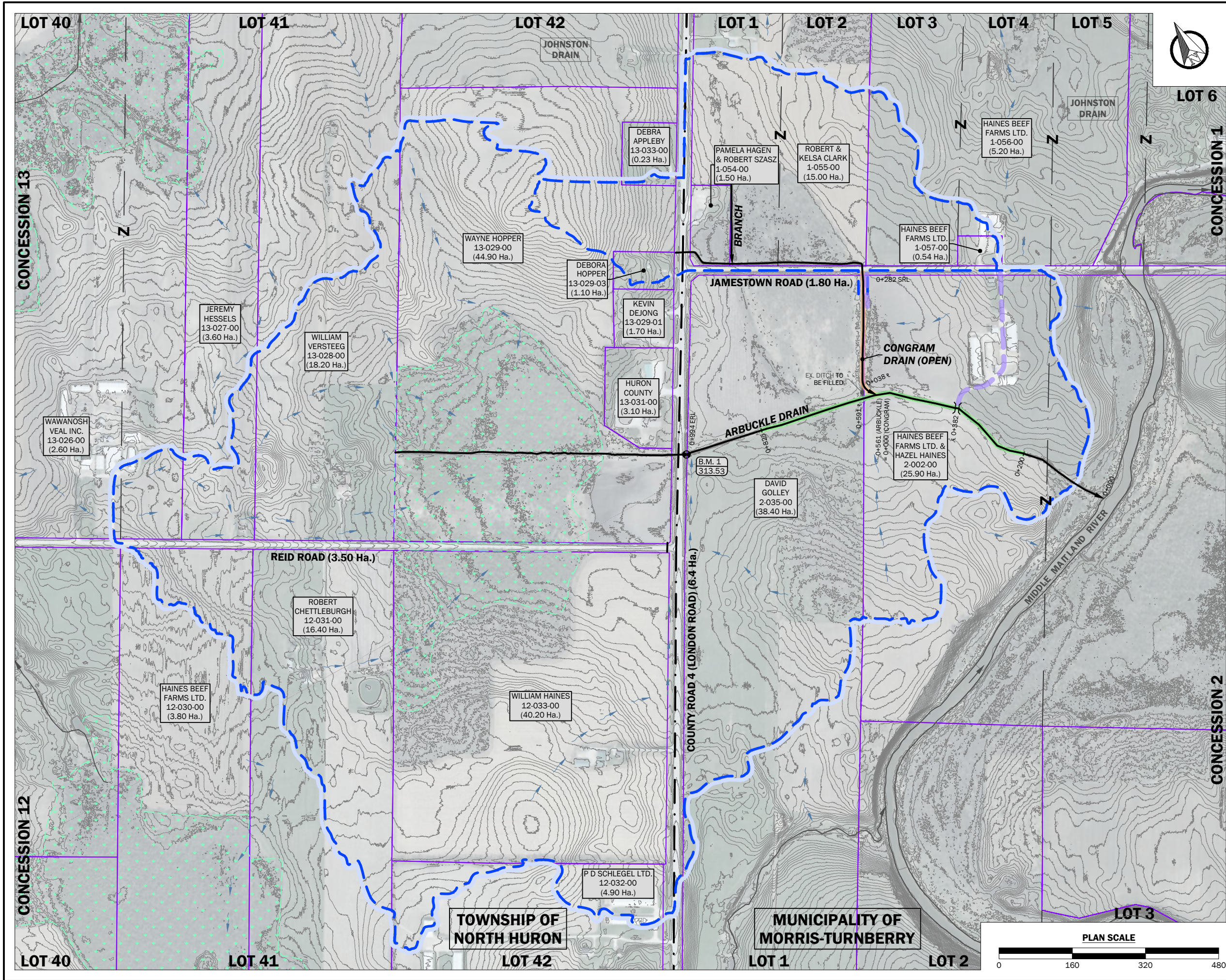
All stone rip-rap material shall be quarry stone 150mm to 300mm diameter and placed to a depth of 300mm, unless otherwise noted. All rip-rap material shall be placed on geo-textile filter material.



## **11.0 EROSION AND SEDIMENT CONTROL**

The Contractor shall provide adequate erosion and sediment control for the duration of construction including monitoring and maintenance of the control measures put in place. The Contractor shall inspect the erosion and sediment control measures regularly, and specifically before predicted rainfall events, and after rainfall events.





MUNICIPALITY OF  
MORRIS-TURNBERRY

MORRIS WARD

ARBUCKLE & CONGRAM  
MUNICIPAL DRAINS

WATERSHED PLAN

**NOTES:**

1. THIS MAP WAS CREATED USING COUNTY OF HURON GEOGRAPHIC INFORMATION SYSTEM DIGITAL DATA. THIS MAP IS A SECONDARY PRODUCT WHICH HAS NOT BEEN VERIFIED BY THE COUNTY OF HURON.

2. THE CONTOURS WERE CREATED USING LIDAR DERIVED DIGITAL DATA (2022) FROM LAND INFORMATION ONTARIO.

**BENCHMARK DESCRIPTIONS**

**BENCHMARK No. 1** **ELEV.=313.53**

TOP DOWNSTREAM END OF 1400mm CSP CULVERT (COUNTY ROAD 4) AT STA. 0+997 (ARBUCKLE DRAIN)

**LEGEND**

—

LOT/CONCESSION LINE

—

PROPERTY LINE

—

TOWNSHIP BOUNDARY

—

MAJOR WATERSHED BOUNDARY

—

MINOR WATERSHED BOUNDARY

—

WETLAND LIMIT

—

CONSTRUCTION/MAINTENANCE ACCESS

BENCHMARK LOCATION

B.M. 1

123.45

BENCHMARK No.

BENCHMARK ELEVATION

JOHN & JANE SMITH

12-345

(12.3 Ha.)

LANDOWNER NAME(S)

ASSESSMENT ROLL No. (ABBREVIATED)

AREA WITHIN WATERSHED

EXISTING FEATURES:

—

**DRAIN NAME**

OPEN DRAIN WITH CROSSING AND FLOW DIRECTION

OVERLAND FLOW PATH

PROPOSED FEATURES:

—

**DRAIN NAME**

OPEN DRAIN WITH CROSSING AND FLOW DIRECTION

3	REPORT SUBMISSION	25-06-04
2	PUBLIC INFORMATION MEETING	25-03-05
1	ON-SITE MEETING	24-06-11
No.	REVISION	DATE (YY-MM-DD)

DRAWN BY: Z.M.	DESIGNED BY: Z.M.	CHECKED BY: S.B.
DATE: 2025-06-04	REFERENCE No. MT-005	DRAWING No. 1 OF 3





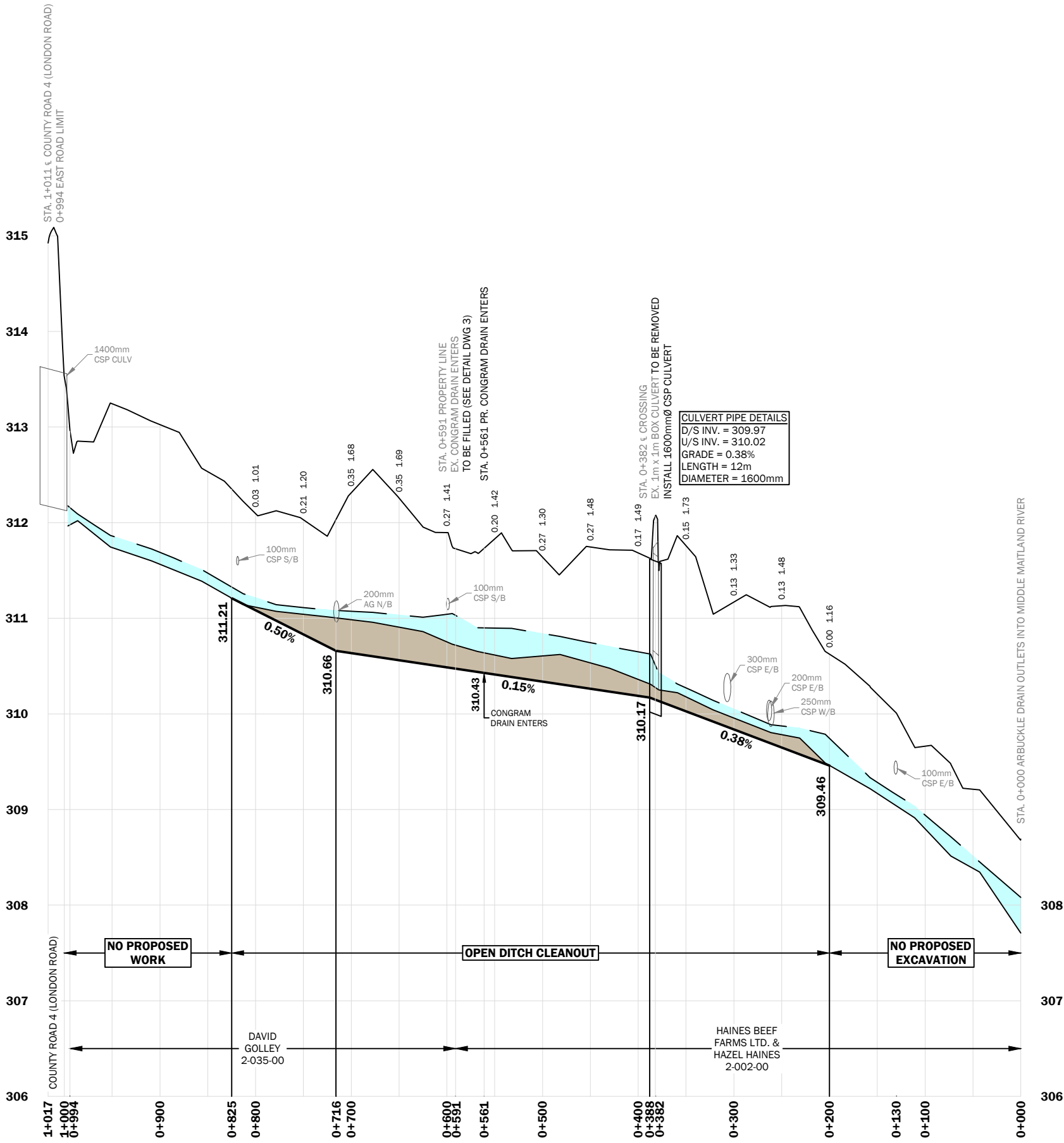
BENCHMARK DESCRIPTIONS

**BENCHMARK No. 1** **ELEV.=313.53**  
TOP DOWNSTREAM END OF 1400mm CSP CULVERT (COUNTY ROAD 4) AT STA. 0+997 (ARBUCKLE DRAIN)

	3	REPORT SUBMISSION	25-06-04
	2	PUBLIC INFORMATION MEETING	25-03-05
	1	ON-SITE MEETING	24-06-11
No.	REVISION		DATE (YY-MM-DD)

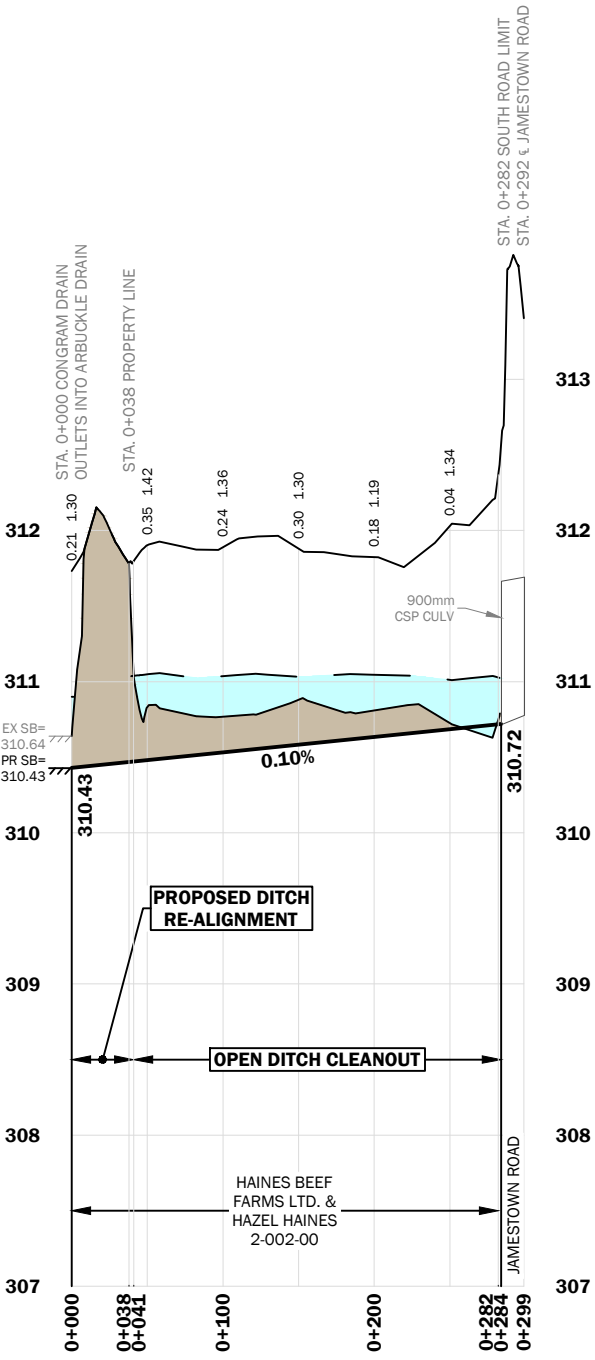
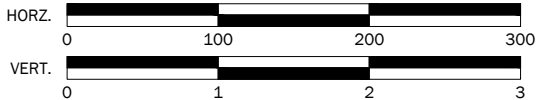


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DATE: 2025-06-04	REFERENCE No. MT-005	DRAWING No. 2 OF 3



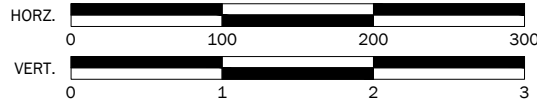
ARBUCKLE DRAIN PROFILE

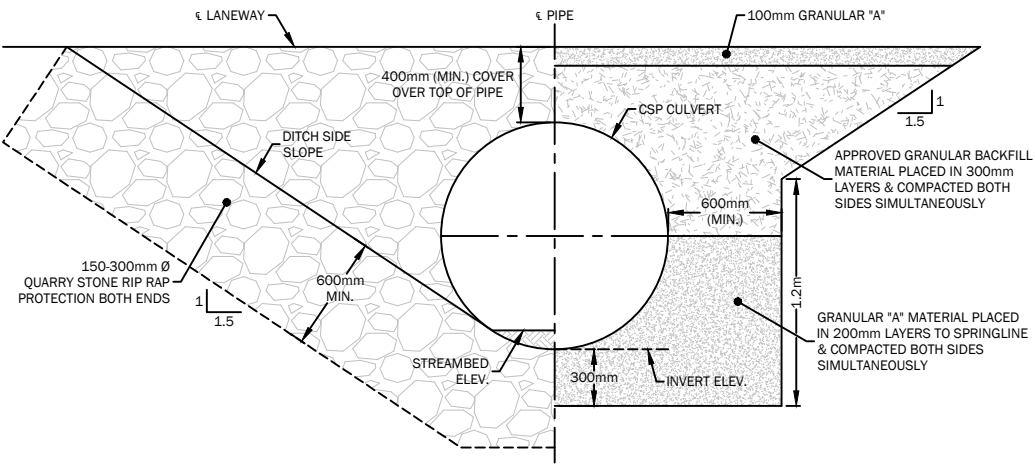
PROFILE SCALES



CONGRAM DRAIN PROFILE

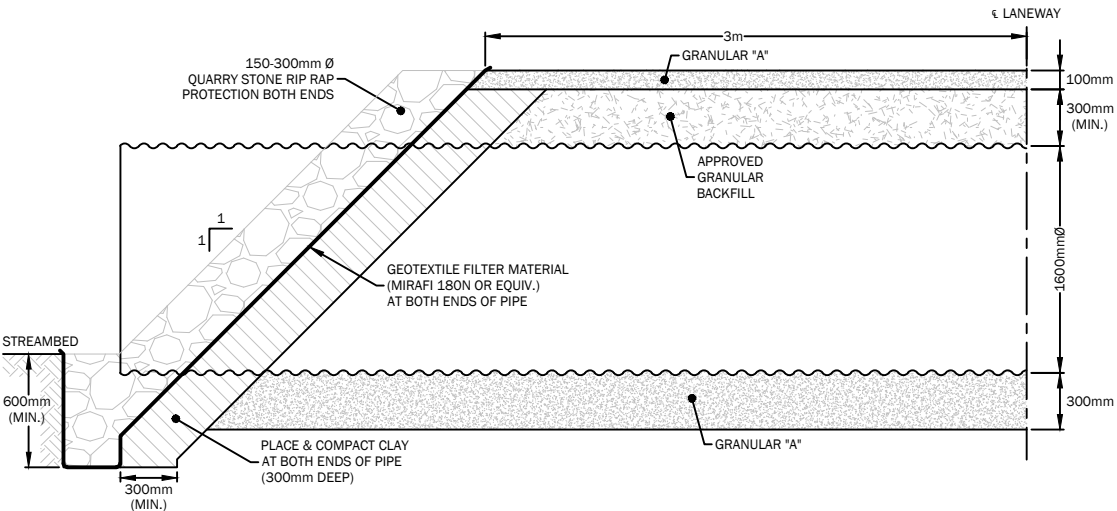
PROFILE SCALES





HALF ELEVATION

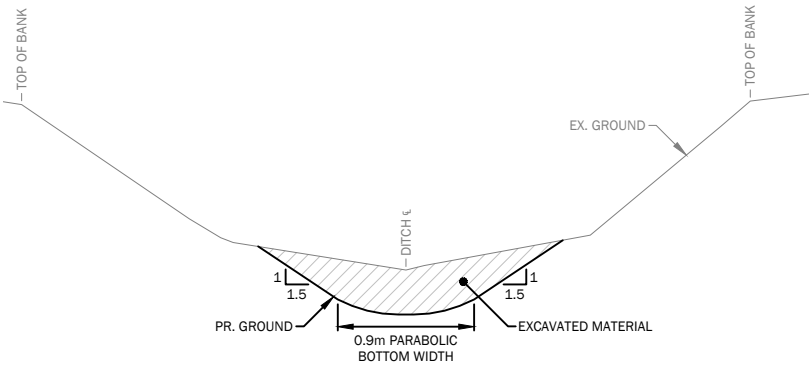
HALF SECTION



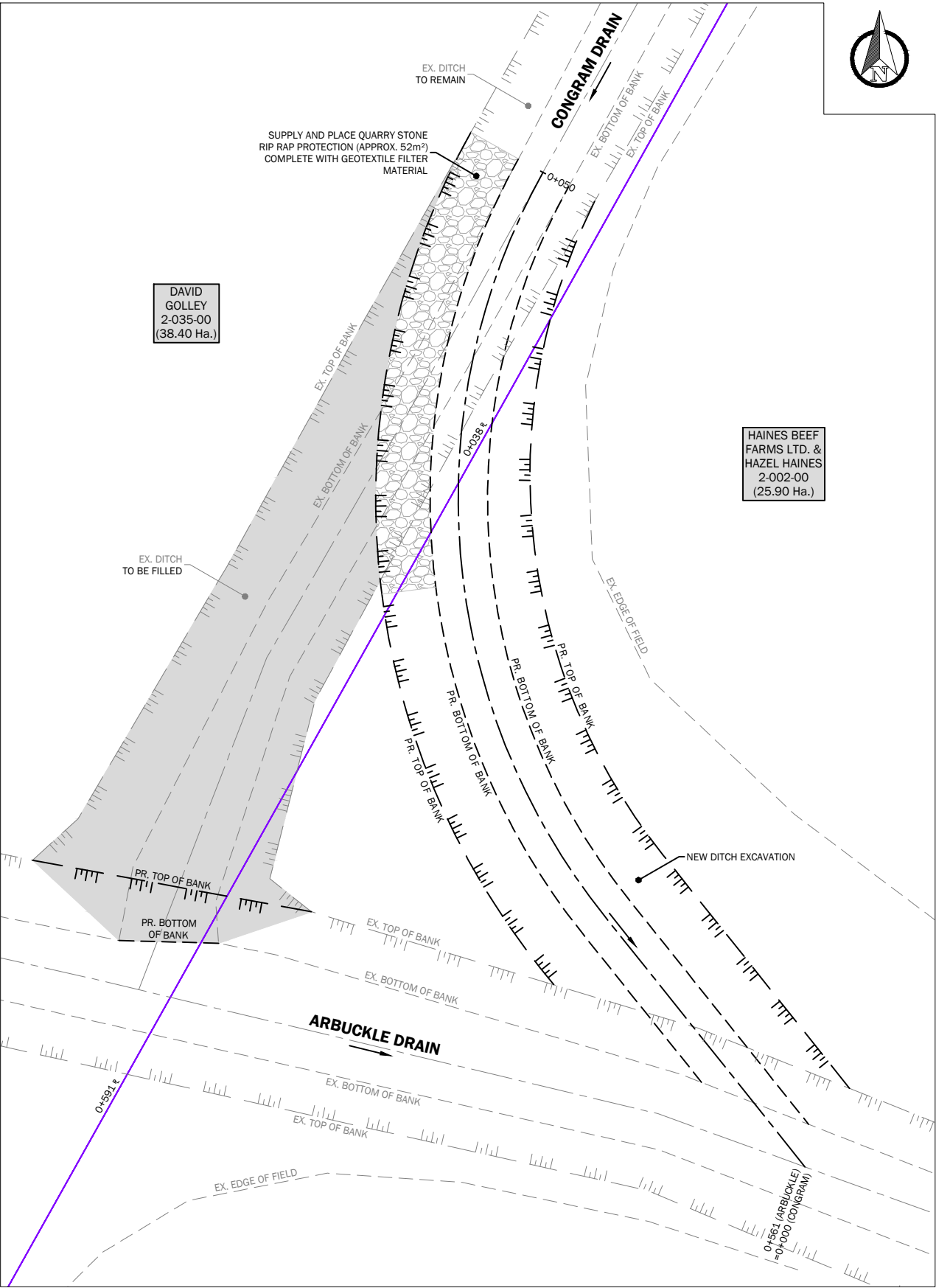
HALF LONGITUDINAL SECTION

STATION	DIAMETER	LENGTH	INVERT	STREAMBED	CORRUGATIONS	THICKNESS
0+382	1600mm	12m	DS. = 309.97 US. = 310.02	DS. = 310.12 US. = 310.17	125mm X 25mm	2.80mm

TYPICAL CULVERT DETAIL  
N.T.S.



TYPICAL DITCH CROSS SECTION  
N.T.S.



CONGRAM DRAIN OUTLET DETAIL  
DETAIL SCALE



MUNICIPALITY OF  
MORRIS-TURNBERRY

MORRIS WARD

## ARBUCKLE & CONGRAM MUNICIPAL DRAINS

### DETAILS

#### NOTES:

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#### BENCHMARK DESCRIPTIONS

**BENCHMARK No. 1** **ELEV.=313.53**  
TOP DOWNSTREAM END OF 1400mm CSP CULVERT (COUNTY ROAD 4) AT STA. 0+997 (ARBUCKLE DRAIN)

#### LEGEND

PROPERTY LINE	
JOHN & JANE SMITH 12-345 (12.3 Ha.)	LANDOWNER NAME(S) ASSESSMENT ROLL No. (ABBREVIATED) AREA WITHIN WATERSHED



No.	REVISION	DATE (YY-MM-DD)
3	REPORT SUBMISSION	25-06-04
2	PUBLIC INFORMATION MEETING	25-03-05
1	ON-SITE MEETING	24-06-11



DRAWN BY: Z.M.	DESIGNED BY: Z.M.	CHECKED BY: S.B.
DATE: 2025-06-04	REFERENCE No. MT-005	DRAWING No. 3 OF 3