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August 19, 2025

The Mayor and Council
The Town of Plympton-Wyoming
546 Niagara Street
Wyoming, Ontario
N0N 1T0

Gentlemen and Mesdames:

Re: Bannister Drain (2025)

In accordance with your instructions, R. Dobbin Engineering has undertaken an examination with regards to improving the Bannister Drain in the Town of Plympton-Wyoming.

Authorization under the Drainage Act

This is an Engineer's Report that has been prepared under Section 78 of the Drainage Act. R. Dobbin Engineering Inc. was appointed by council on February 28th, 2024.

Section 78 of the Drainage Act states that, where, for the better use, maintenance or repair of any drainage works constructed under a bylaw passed under this Act, or of lands or roads, it is considered expedient to change the course of the drainage works, or to make a new outlet for the whole or any part of the drainage works, or to construct a tile drain under the bed of the whole or any part of the drainage works as ancillary thereto, or to construct, reconstruct or extend embankments, walls, dykes, dams, reservoirs, bridges, pumping stations, or other protective works as ancillary to the drainage works, or to otherwise improve, extend to an outlet or alter the drainage works or to cover the whole or any part of it, or to consolidate two or more drainage works, the Council whose duty it is to maintain and repair the drainage works or any part thereof may, without a petition required under Section 4 but on the report of an Engineer appointed by it, undertake and complete the drainage works as set forth in such report.

Existing Drainage

The Bannister Drain outlets into the Watson Drain in the E ½ of Lot 16, Concession 11. It then heads southeasterly as an open channel to the east side of Blue Heron Road. The tile portion of the Bannister Drain outlets on the west side of Blue Heron Road. It crosses Blue Heron Road and then heads southerly and then easterly to the east limit of Lot 23, Concession 8.

Under an Engineer's Report dated August 4, 1936 the upper portion of the drain was cleaned and the culvert across Blue Heron Road was replaced with a 1.5x1.5m concrete box culvert.

Under an Engineer's Report dated March 25, 1955 a branch drain was constructed along the east side of Blue Heron Road, the drain was moved off the road allowances, and culverts were replaced, including the Blue Heron Road Crossing.

Under an Engineer's Report dated March 9, 1968 the drain was enclosed in Lot 22, Concession 8 and the drain was deepened and improved along its entire length.

Under an Engineer's Report dated April 19, 1984 the drain was enclosed from Lot 22, Concession 8 to the west side of Blue Heron Road and the channel was deepened downstream to the west limit of the E ¾ of Lot 21, Concession 9.

Drain Classification

The Bannister Drain is currently classified as a class "C" drain from Blue Heron Road to Aberarder Line. The Bannister Drain is classified as a Class "E" drain from Aberarder Line to its outlet into the Watson Drain. These classifications are according to the Department of Fisheries and Oceans (DFO) classification as presented by the Ontario Ministry of Agriculture, Food and Rural Affair's Agricultural Information Atlas.

Approvals

The drain will require approval from the St. Clair Region Conservation Authority and the Department of Fisheries and Oceans. Construction cannot commence without necessary approvals.

Site Meeting

A site meeting for this drain was held on June 19, 2024. The following were present:

- Josh Warner (R. Dobbin Engineering)
- Elizabeth Cummings (Drainage Superintendent and Engineering Coordinator, Town of Plympton-Wyoming)
- Felix Weber (Landowner) (Virtual)

The following is a brief summary of the meeting:

- General discussion of the Drainage Act and Landowners rights under the Drainage Act.
- It was outlined that R. Dobbin Engineering Inc. will be investigating the culverts along the length of the drainage works and replacing them as necessary. The remaining culverts will be specified for future replacement. The culverts will be specified to provide an 8m top width as a standard access width. This standard culvert will be

assessed with a shared cost between benefit and outlet. If a Landowner requests a larger access width the additional cost will be assessed to the requesting property.

- R. Dobbin Engineering will be updating the Schedule of Maintenance for the open channel and tile portion of the drain.
- The Town requested that a catch basin be installed on the east side of Blue Heron Road approximately 160m south of the open channel portion of the Bannister Drain. A catch basin was originally installed in this location in 1984 but has since been removed.
- The Landowner of the E ¾ of Lot 21, Concession 9 requested that re-routing options be considered on their property.
- No adverse soil conditions were noted at the meeting.

Existing Conditions

Below is a summary of the condition of the existing culverts:

Culvert Number	Roll Number / Owner	Existing Culvert	Condition	Recommendation
1	030-189 (J. & F. Ploeg)	1800mm dia. CSP	Poor. Unusable access and material above the pipe has eroded.	Replace
2	Aberarder Line (County of Lambton)	5500x2150mm Concrete Box Culvert. 21.5m Long	Good. No End wall.	Leave and Specify for Future Replacement
3	030-152 (J. Westendorp)	2000mm dia. CSP. 13m Long	Good. Rip Rap End Wall.	Leave and Specify for Future Replacement
4*	030-152 (J. Westendorp)	2000x1700mm dia. CSPA. 7.9m Long	Pipe was extended. Poor Joint. Miscellaneous Concrete End Walls	Remove. Secondary Access
5	030-153 (R. Nauta)	1900mm dia. CSP. 7.8m Long	Pipe was extended. Poor Joint and distorted on newer section. Some concrete on upstream end wall.	Replace
6	030-154 (D. Sutton)	1800mm dia. CSP. 7.4m Long	Rust below spring line. Broken concrete used as end walls.	Leave and Specify for Future Replacement
7	Hillsboro Road (Town of Plympton-Wyoming)	4500x2100mm Concrete Box Culvert. 22.2m Long.	Okay Condition. Significant amount of sediment in culvert. Rip rap on upstream end wall.	Cleanout. Leave and Specify for Future Replacement
8	030-123 (J. Wright)	1500mm dia. CSP. 7.4m Long	Pipe was extended. Poor joint and pipe is distorted. Broken concrete used as end walls.	Replace

Culvert Number	Roll Number / Owner	Existing Culvert	Condition	Recommendation
9	030-124 (J. & B. Wright)	1500mm dia. CSP 7.4m Long	Pipe was extended. Poor joint. Broken concrete used as end walls. Hole on top of culvert. Pipe is perched.	Replace
10*	030-124 (J. & B. Wright)	1250mm dia. CSP 7.4m Long	Pipe was extended. Poor joint. Broken concrete used as end walls. Bottom is gone.	Replace
11	030-125 (Weber Zoca Farms Ltd.)	1250mm dia. CSP 7.5m Long.	Pipe was extended. Poor joint with material coming in. Broken concrete used as end walls.	Remove. Will be in new location due to re-routing.
12	Fisher Line (Town of Plympton-Wyoming)	1600mm dia. CSP 18m Long	Rust below spring line. Misaligned Joint. No end walls.	Leave and Specify for Future Replacement
13	0030-089 (R. Stonehouse)	1100mm dia. CSP 9.4m Long	Half full of water, but appears okay with rust below the spring line. Concrete block end walls.	Leave and Specify for Future Replacement
14	Blue Heron Road (Town of Plympton-Wyoming)	1600mm dia. CSP 14.2m Long	Rust below spring line and bottom has holes.	Replace

* denotes a secondary access culvert.

The Bannister Drain was recently cleaned.

Draft Report dated July 14, 2025

A draft report for the Bannister Drain, dated July 14th, 2025, was sent to the affected properties. A meeting was held on August 8th, 2025. The following were present:

- Josh Warner (R. Dobbin Engineering)
- Ryan Tamming (Drainage Coordinator, Town of Plympton-Wyoming)
- John VanKlaveren (Council Representative, Town of Plympton Wyoming)
- Chris Leystra (Landowner)
- Felix Weber (Landowner)
- Lucas Weber (Landowner)
- Wayne Stonehouse (Landowner)
- Barb Stonehouse (Landowner)
- Jim Ellenor (Landowner)
- Sue Ellenor (Landowner)
- Ron Nauta (Landowner)
- James Wright (Landowner)
- Kevin Wright (Landowner)

The following is a brief summary of the meeting:

- There was discussion regarding whether the basin should be proposed on the east side of Blue Heron Road. The Town was going to investigate if they would still like this proposed.
    - Following discussions with the Town they requested that the basin still be installed.
- The draft report proposed the replacement of the culvert under Fisher Line at the direction of the Town. Landowners questioned its replacement due to it being recently replaced. The Town and R. Dobbin Engineering were to investigate this further.
    - Upon investigation, it was determined that the culvert under Blue Heron Road required replacement, not under Fisher Line. Based on discussions with the Town, it was decided to also replace the tile portion of the Bannister Drain under Blue Heron Road and extend this replacement to the concrete well to the east.
- Landowners were generally concerned about the culvert replacement assessments and that the move off cost was being shared amongst the watershed. It was stated that only the benefitting property is assessed for the move off, including engineering.
- The owners of the property with Roll Number 030-125 requested some time to determine whether they would like to replace or remove Culvert #10 on their property.
    - The Landowners later decided to proceed with its replacement.

Discussion

Following the draft report meeting, the owner of the property with Roll Number 030-098 provided tile maps for the property showing all sub-surface water draining to the Falconer-Ramsey Drain. The Landowner also stated that surface water goes to the Falconer-Ramsey Drain and this was verified by R. Dobbin Engineering Inc. utilizing Light Detection and Ranging (LiDAR) information. Therefore, this report has been revised to reflect this information. Appendix A of this report includes all corresponding Section 65 reports in order to update the maintenance schedules of the Falconer-Ramsey Drain, Lower Aberarder Creek, Stewart Creek Drain, Watson Drain, Oosterhoff Drains, and Hicks Drain.

Design

The access culverts have been designed to provide outlet for a 1 in 5-year storm event.

The County road culvert has been designed to provide outlet for a 1 in 100-year storm event.

The Towns road culverts have been designed to provide outlet for a 1 in 50-year storm event.

Recommendations

It is therefore recommended that the following work be carried out:

1. Culverts #1, 5, 8, 9, 10, and 14 shall be replaced. Culvert #4 shall be removed and Culvert #11 shall be replaced with a culvert in the new re-alignment location. Future specifications shall be developed for the replacement of the remainder of the culverts along the length of the drainage works. Culvert #7 shall be cleaned of sediment.

2. The tile portion of the Bannister Drain shall be replaced from the west side of Blue Heron Road to the concrete well approximately 26m upstream (east).

3. A Schedule of Maintenance shall be developed for any future maintenance work on the open channel portion of the drain.

4. The open channel on the property with Roll Number 030-125 shall be re-routed.

5. A new basin shall be installed on the east side of Blue Heron approximately 160m south of the open channel.

6. A Schedule of Maintenance shall be developed for any future maintenance work on the tile portion of the drain.

7. Section 65 reports shall be prepared for the property with Roll Number 030-098.

Estimate of Cost

It is recommended that the work be carried out in accordance with the accompanying Specification of Work and Profile that forms part of this Report. There has been prepared an Estimate of Cost in the amount of $455,751.00, including preparation of the report, attending the Meeting to Consider the Report, attending the Court of Revision and estimates for tendering, construction inspection, permitting and contract administration. Appearances before appeal bodies have not been included in the cost estimate.

A Plan has been prepared showing the location of the work and the approximate drainage area. A Profile is included showing the depths and grades of the proposed work.

Assessment

As per Section 21 of the Drainage Act, the Engineer in his report shall assess for benefit and outlet for each parcel of land and road liable for assessment.

Lands, roads, buildings, utilities, or other structures that are increased in value or are more easily maintained as a result of the construction, improvement, maintenance, or repair of a drainage works may be assessed for benefit. (Section 22)

Lands and roads that use a drainage works as an outlet, or for which, when the drainage works is constructed or improved, an improved outlet is provided either directly or indirectly through the medium of any other drainage works or of a swale, ravine, creek, or watercourse may be assessed for outlet. The assessment for outlet shall be based on the volume and rate of flow of the water artificially caused to flow into the drainage works from the lands and roads liable for such assessments. (Section 23)

The Engineer may assess for special benefit any lands for which special benefits have been provided by the drainage works. (Section 24)

A Schedule of Assessment for the lands and roads affected by the work and therefore liable for the cost thereof will be prepared as per the Drainage Act. Also, assessments may be made against any public utility or road authority, as per Section 26 of the Drainage Act, for any increased cost for the removal or relocation of any of its facilities and plant that may be necessitated by the construction or maintenance of the drainage works. Items outside those identified in this report shall be assessed to the utility or road authority as per Section 26 of the Drainage Act plus a portion of the engineering (25% of the construction cost).

The cost of any fees for permits or approvals or any extra work required by any affected utility or road authority shall be assessed to that organization requiring the permit, approval, or extra work.

The proposed work has generally been assessed in the following manner, including all estimated fees, taxes and disbursements:

1. As per Section 26 of the Drainage Act, the roads and utilities have been assessed the increased cost of the drainage works caused by the existence of the works of the public utility or road. These items shall be tendered separately with the actual cost plus the net HST and a portion of the engineering (25% of the construction cost) being assessed to the owner of the utility or road. The special benefit assessments shall be calculated as outlined below:

Road or Utility	Prior to Construction Costs	Tendered Construction Costs (All to be Multiplied by 1.25 for Engineering and Net HST)
Hillsboro Road		Cleanout of Existing Culvert and Trucking of Excavated Material
Blue Heron Road		All costs under Culvert #14
Telecom Utility	$1600	

2. The replacement of culverts has been assessed based on the average cost to provide a culvert providing an 8m top width (standard culvert). This standard culvert has been assessed with 50% of the cost applied as benefit assessment to property, and the remainder of the cost applied as an outlet assessment on upstream lands and roads based on equivalent hectares.

3. The cost to re-route the drain on the property with Roll Number 030-125 has been assessed with 100% of the cost applied as a benefit assessment to the property.

4. The cost of removing Culvert #4 has been assessed as a special benefit assessment to the property as it is a secondary access and will not be eligible for grant. This amount shall be prorated with the remainder of the drainage works.

5. The cost of the basin and lead on the east side of Blue Heron Road has been assessed to the owner Blue Heron Road as a benefit assessment. This amount shall be prorated with the remainder of the drainage works.

6. The cost for preparation of the Section 65 Reports for the property with Roll Number 030-098 has been assessed as a special benefit assessment to the property and will not be eligible for grant. This amount shall not be prorated with the remainder of the drainage works.

7. The remaining cost has generally been assessed with approx. 60% of the estimated cost applied as a benefit assessment and the remainder assessed as an outlet assessment to the upstream lands and roads based on equivalent hectares.

Unless otherwise noted above, all final costs included in the cost estimate of this report shall be pro-rated based on the Schedule of Assessment. Any additional costs shall be assessed in a manner as determined by the Engineer.

If a Landowner intends to sell their property they shall disclose this project to any potential purchasers.

Allowances

Under Section 29 of the Drainage Act, the Engineer in his report shall estimate and allow in money to the Owner of any land that it is necessary to use for the construction or improvement of a drainage works or for the disposal of material removed from drainage works. This shall be considered an allowance for right-of-way.

Under Section 30 of the Drainage Act, the Engineer shall determine the amount to be paid to persons entitled thereto for damage, if any, to ornamental trees, lawns, fences, land and crops occasioned by the disposal of material removed from a drainage works. This shall be considered an allowance for damages.

Allowances have been made, where appropriate, as per Section 29 of the Drainage Act for right-of-way for the re-sloping and buffer strip that would increase the area occupied by the drain and as per Section 30 of the Drainage Act for damages to lands and crops. Allowances for right of way are based on a land value of $50,000.00 per hectare (approximately $20,000.00 per acre). Allowances for crop loss are based on $2,000.00 per hectare for the first year and $1,000.00 for the second year ($3,000.00 per hectare total).

Access and Working Area

Construction

Access for culvert replacements, tile replacement and the basin installation as part of this report shall be from the nearest road, within the properties in which the culvert/basin is to be replaced and shall be at a location determined by the Engineer or Drainage Superintendent. The working area at each culvert shall extend 10 metres from the bank on both sides and for 10 metres along the channel on either side of the culvert. The working area for the proposed basin and junction box shall extend for a width of 10m normally centered on the proposed drain and shall extend 5m past the connection point to the drain.

Access for the channel move off on the property with Roll Number 030-125 shall be from Fisher Line. The working area shall be 22m wide along the proposed channel route with all work taking place on the property. Between the proposed and existing channel, the working area shall be at the discretion of the Drainage Superintendent or Engineer and shall generally be along the existing drain. This working area shall extend 10m to north and east of the existing channel to allow for the drain to be filled in and the tile headers to be installed.

Future Maintenance

Access for culvert maintenance and channel repair on a single property shall be from the nearest road, within the properties in which the culvert and/or channel is being repaired or maintained and shall be at a location determined by the Drainage Superintendent. If maintenance is being done on multiple properties, access shall be gained from the nearest roadway and shall be along the length of the drainage works. The working area at each culvert shall extend 10 metres from the bank on both sides and for 10 metres along the channel on either side of the culvert.

The working side for future maintenance shall extend 15m past the bank on either side of the drain and shall be determined by the Drainage Superintendent.

If, at the discretion of the Drainage Superintendent, there is erosion or work that needs to be completed from the side opposite the working area, access may be gained along the channel and nearest culvert to maintain the bank and channel.

The working area for maintenance on the tile drain shall be restricted to a width of 20m normally centered on the tile drain

Restrictions

No trees and shrubs shall be planted nor shall permanent structures be erected within 10 metres of the proposed drain without prior written permission of Council.

Attention is also drawn to Sections 80 and 82 of the Drainage Act, which refer to the removal of obstructions in a drain and damage caused to a drain.

Agricultural Grant

If available, it is recommended that application for subsidy be made for eligible agricultural properties. Any assessments against non-agricultural properties are shown separately in the Schedule of Assessment.

Maintenance

The Bannister Drain culverts and channel upstream of the west limit of the property with Roll Number 030-125 shall be maintained and repaired with the specifications and drawings contained in this Engineer's Report. The Bannister Drain open channel and tile drain shall be maintained and repaired in same relative portions as contained in the applicable Schedule of Maintenance contained in this report. The Bannister Drain Branch shall be maintained and repaired with 50% assessed to Blue Heron Road, 25% assessed to the property with Roll Number 030-091 and 25% assessed to the property with Roll Number 030-090.

The access culverts shall be maintained and repaired with a culvert length required to provide an 8m top width. With the culverts included in the specifications, including rip rap end walls, they shall be assessed in the following manner:

Culvert Number	Benefiting Lands	Upstream Properties Based on Equivalent Hectares as Contained in Schedule of Maintenance – Open Drain
1, 3, 5, 6	45%	55%
Culvert Number	Benefiting Lands	Upstream Properties Based on Equivalent Hectares as Contained in Schedule of Maintenance – Open Drain
8, 9, 10, 11,13	55%	45%
2, 7, 12, 14	100% to Road Authority, except Utility Costs	

If any owner requests an additional length of culvert beyond that required to have an 8m top width or an asphalt travel surface the extra cost shall be borne by the Landowner making the request including the future maintenance and repair. The location of the 8m top width shall be determined by the Drainage Superintendent and shall generally be in the primary access location.

The additional costs as a result of a road or utility shall be assessed to the owner of the road or utility as per Section 26 of the Drainage Act.

A secondary access on a property shall be constructed, maintained and repaired with 100% of the cost assessed to the benefitting property.

The governing reports for the open channel and tile portions of the Bannister Drain are as follows:

- Open channel from the Watson Drain to the west limit of the property with Roll Number 030-125 (1968)
- Open channel from the west limit of the property with Roll Number 030-125 to the west side of Blue Heron Road (2025)
- Tile drain across Blue Heron Road and along the east side of Blue Heron Road (1984)
- Tile drain from Blue Heron Road to the west limit of the property with Roll Number 030-092 (1968)
- The Bannister Drain Branch (1955)

Yours truly,

Josh Warner, P. Eng.
R. Dobbin Engineering Inc.

Bannister Drain
Town of Plympton-Wyoming
August 19, 2025

ALLOWANCES

Allowances have been made as per Sections 29 & 30 of the Drainage Act for Right of Way and damages to lands and crops.

Conc.	Lot or part	Roll No.	Owner	Section 29 ($)	Section 30 ($)	Total ($)
8	Pt. Lot 22	030-091	Leystra Farms Limited		250	250
9	N 3/4 Lot 19	030-123	J. Wright		360	360
	N 1/2 Lot 20 & W 1/4 Lot 21	030-124	J. & B. Wright		1,620	1,620
	E 3/4 Lot 21	030-125	Weber Zoca Farms Ltd		9,450	9,450
10	E 1/2 Lot 16 & W 1/2 Lot 17	030-152	J. Westendorp		1,170	1,170
	E 1/2 Lot 17	030-153	R. Nauta		1,400	1,400
11	E 1/2 Lot 16	030-189	J. & F. Ploeg		250	250
			TOTAL ALLOWANCES	$0	$14,500	$14,500

Estimate of Cost

Item Description (Supply and Install New)	Quantity	Unit	Unit Cost ($)	Total ($)
Pre-Construction Meeting	1	LS	200	200
Supply and Install 600x600mm Catch Basin complete with Lead at Blue Heron Road	1	LS	3,000	3,000
Brushing and Tree Removal at Culverts	1	LS	1,000	1,000
Culvert #1 (030-189, J. & F. Ploeg)				
Removal and Disposal of Existing Structure and Excavated Material	1	LS	1,500	1,500
Supply and Install 2200mm dia. CSP c/w Bedding	17	m	1,400	23,800
Supply and Install Granular "B" Type II	130	tonne	35	4,550
Supply and Install Granular "A"	25	tonne	40	1,000
Supply and Install Rip Rap End Walls	30	tonne	110	3,300
Culvert #4 (030-152, J. Westendorp)				
Removal and Disposal of Existing Structure and Restoration of Channel	1	LS	2,500	2,500
Culvert #5 (030-153, R. Nauta)				
Removal and Disposal of Existing Structure and Excavated Material	1	LS	1,500	1,500
Supply and Install 2000mm dia. CSP c/w Bedding	16	m	1,200	19,200
Supply and Install Granular "B" Type II	120	tonne	35	4,200
Supply and Install Granular "A"	25	tonne	40	1,000
Supply and Install Rip Rap End Walls	25	tonne	110	2,750
Culvert #7 (Hillsboro Road)				
Cleanout Existing Culvert and Truck Excavated Material	22	m	100	2,200
Culvert #8 (030-123, J. Wright)				
Removal and Disposal of Existing Structure and Excavated Material	1	LS	1,500	1,500
Supply and Install 1600mm dia. CSP c/w Bedding	16	m	950	15,200
Supply and Install Granular "B" Type II	100	tonne	35	3,500
Supply and Install Granular "A"	25	tonne	40	1,000
Supply and Install Rip Rap End Walls	25	tonne	110	2,750
Culvert #9 (030-124, J. & B. Wright)				
Removal and Disposal of Existing Structure and Excavated Material	1	LS	1,500	1,500
Supply and Install 1600mm dia. CSP c/w Bedding	16	m	950	15,200
Supply and Install Granular "B" Type II	100	tonne	35	3,500
Supply and Install Granular "A"	25	tonne	40	1,000
Supply and Install Rip Rap End Walls	25	tonne	110	2,750

Item Description (Supply and Install New)	Quantity	Unit	Unit Cost ($)	Total ($)
Culvert #10 (030-124, J. & B. Wright)				
Removal and Disposal of Existing Structure and Excavated Material	1	LS	1,500	1,500
Supply and Install 1600mm dia. CSP c/w Bedding	16	m	950	15,200
Supply and Install Granular "B" Type II	100	tonne	35	3,500
Supply and Install Granular "A"	25	tonne	40	1,000
Supply and Install Rip Rap End Walls	25	tonne	110	2,750
Channel Move Off (030-125, Weber Zoca Farms Ltd.)				
Brushing and Tree Removal	1	LS	10,000	10,000
Strip and Place Topsoil for New Channel Alignment	589	m	5	2,945
Strip and Place Topsoil in Existing Channel	728	m	7	5,096
Excavation of New Open Channel	589	m	50	29,450
Fill in Existing Open Channel	728	m	20	14,560
Supply and Install Rip Rap	80	tonne	110	8,800
Seeding and Straw Matting of Side Slopes	5300	sq.m	2	10,600
Restoration/Seeding	1	LS	2,000	2,000
Connect Existing Tiles To New Channel	4	each	100	400
150mm dia. Tile Header c/w Connections	60	m	35	2,100
250mm dia. Tile Header c/w Connections	460	m	45	20,700
Culvert #11 (030-125, Weber Zoca Farms Ltd.)				
Removal and Disposal of Existing Structure	1	LS	1,500	1,500
Supply and Install 1600mm dia. CSP c/w Bedding	16	m	950	15,200
Supply and Install Granular "B" Type II	100	tonne	35	3,500
Supply and Install Granular "A"	25	tonne	40	1,000
Supply and Install Rip Rap End Walls	25	tonne	110	2,750
Culvert #14 and Tile Portion of Bannister Drain (Blue Heron Road)				
Traffic Control and 2 Project Sign Boards	1	LS	3,000	3,000
Removal and Disposal of Existing Culvert (14m), Tile (26m) and Unsuitable Excavated Material	1	LS	3,500	3,500
Remove and Dispose of Existing Concrete Well	1	LS	1,500	1,500
Supply and Install 1600mm dia. CSP c/w Bedding	14	m	1,300	18,200
Strip and Level Topsoil for Tile Placement in Field	10	m	30	300
Supply and Install 900mm dia. HDPE c/w Bedding	26	m	800	20,800
Rodent Grate on 900mm dia. HDPE Outlet Pipe	1	LS	500	500
Supply and Install 1200x900mm Junction Box	1	LS	3,500	3,500
Connect Existing 600mm dia. Tile to Junction Box	1	LS	500	500
Supply and Install OPS Granular "A"	150	tonne	45	6,750
Supply and Install Granular "M" (Crushed Dolomite Source)	40	tonne	50	2,000
Supply and Install Rip Rap End Walls	30	tonne	110	3,300
Restoration/Seeding and Ditch Grading	1	LS	1,500	1,500
Silt Fence	5	each	500	2,500
Contingency				12,670

Sub Total	354,671
Allowances	14,500
Engineering	37,970
Section 65 Reports	320
Future Culvert Design	9,000
Schedule of Maintenance Update	5,000
Daylighting of Utilities	1,600
Estimate for Tendering, Inspection and Contract Administration	24,500
SCRCA Fee	570
Total Estimate excluding HST	**448,131**
Non-Recoverable HST (1.76%)	7,620
Total Estimate	**$455,751**

SCHEDULE OF ASSESSMENT

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Special Benefit ($)	Benefit ($)	Outlet ($)	Total ($)
Utilties								
	Telecom Utility			Eastlink	1,600	-	-	1,600
						-	-	1,600
Public Lands								
	Aberader Line	1.82		County of Lambton		1,500	285	1,785
	Fisher Line	1.24		Town of Plympton-Wyoming		6,191	1,306	7,497
	Wright Line	1.31		Town of Plympton-Wyoming		-	420	420
	Hillsboro Road	1.78		Town of Plympton-Wyoming	2,799	1,501	570	4,870
	Blue Heron Road	2.35		Town of Plympton-Wyoming	81,688	6,554	2,535	90,777
					84,487	15,746	5,116	105,349
Agricultural Lands								
8	E 1/2 Lot 20	0.80	030-087	Verhoeven Poultry Farms Ltd		-	281	281
	W 1/2 Lot 21	20.23	030-087-01	J. Verhoeven		-	7,104	7,104
	SE 1/4 Lot 21	14.16	030-088	G. Campbell		-	4,982	4,982
	SW 1/4 Lot 22	16.59	030-090	G. Campbell		-	5,963	5,963
	Pt. Lot 22	35.12	030-091	Leystra Farms Limited		154	12,140	12,294
	NE 1/4 Lot 23	13.70	030-095	D. & C. Kearns		-	4,953	4,953
	W 1/2 Lot 24	12.14	030-097	A. & H. Degroot		-	3,702	3,702
	E 1/2 Lot 24	0.00	030-098	C. Leystra	320	-	-	320
9	Lot 17	16.18	030-118	D. Burnley		-	1,684	1,684
	W 1/2 & E 1/4 Lot 18	24.90	030-120	E. Van Moorsel		-	2,654	2,654

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Special Benefit ($)	Benefit ($)	Outlet ($)	Total ($)
	N 3/4 Lot 19	54.63	030-123	J. Wright		17,573	5,921	23,494
	S 1/2 Lot 20 & S 1/4 Lot 19	20.23	030-122	B. Hoekstra		46	3,865	3,911
	N 1/2 Lot 20 & W 1/4 Lot 21	48.51	030-124	J. & B. Wright		34,797	8,992	43,789
	E 3/4 Lot 21	29.73	030-125	Weber Zoca Farms Ltd		151,183	8,700	159,883
10	E 1/2 Lot 16 & W 1/2 Lot 17	67.99	030-152	J. Westendorp	4,226	1,197	3,574	8,997
	E 1/2 Lot 17	38.05	030-153	R. Nauta		17,382	3,010	20,392
	W 1/2 Lot 18 & NE 1/4 Lot 18	18.04	030-154	D. Sutton		941	1,882	2,823
	SE 1/4 Lot 18	10.01	030-155	E. Van Moorsel		191	1,065	1,256
	S 1/2 Lot 19	10.84	030-157	L. Stones		-	1,157	1,157
11	E 1/2 Lot 16	24.51	030-189	J. & F. Ploeg		17,580	1,076	18,656
	W 1/2 Lot 17	15.53	030-190	Lake Breeze Farms Inc		-	5,556	5,556
	Pt. W 1/2 Lot 17	0.80	030-190-05	Lake Breeze Farms Inc		-	286	286
	E 1/2 Lot 17	6.07	030-191	T. & J. Soepboer		-	2,171	2,171
					4,546	241,044	90,718	336,308
Non Agricultural Lands								
8	NE 1/4 Lot 21	20.23	030-089	R. Stonehouse		882	4,744	5,626
	N 1/2 E 1/4 Lot 22	8.94	030-092	L. Mitchell & Z. Klingsiek		-	2,155	2,155
	S 1/2 E 1/4 Lot 22	2.43	030-093	A. Warren		-	586	586
	NW 1/4 Lot 23	16.20	030-094	J. & M. Ellenor		-	3,904	3,904
9	Pt. Lot 18	1.00	030-120-05	E. Van Moorsel		-	160	160
10	Pt. E 1/2 Lot 17	0.80	030-153-05	J. Darisi		-	63	63
	Total Area (Ha)	556.86			-	882	11,612	12,494

Total Utilities	1,600
Total Public Lands	105,349
Total Agricultural Lands	336,308
Total Non Agricultural Lands	12,494
Total Assessment	$455,751

Estimated Net Assessment

Net assessment subject to OMAFRA ADIP Policy and actual construction costs.

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Total Assessment ($)	Estimated Non-Grantable ($)	Estimated Grant ($)	Allowances ($)	Estimated Net Assessment ($)
Utilties									
Telecom Utility				Eastlink	1,600				1,600
Public Lands									
Aberader Line		1.82		County of Lambton	1,785				1,785
Fisher Line		1.24		Town of Plympton-Wyoming	7,497				7,497
Wright Line		1.31		Town of Plympton-Wyoming	420				420
Hillsboro Road		1.78		Town of Plympton-Wyoming	4,870				4,870
Blue Heron Road		2.35		Town of Plympton-Wyoming	90,777				90,777
Agricultural Lands									
8	E 1/2 Lot 20	0.80	030-087	Verhoeven Poultry Farms Ltd	281		94		187
	W 1/2 Lot 21	20.23	030-087-01	J. Verhoeven	7,104		2,368		4,736
	SE 1/4 Lot 21	14.16	030-088	G. Campbell	4,982		1,661		3,321
	SW 1/4 Lot 22	16.59	030-090	G. Campbell	5,963		1,988		3,975
	Pt. Lot 22	35.12	030-091	Leystra Farms Limited	12,294		4,098	250	7,946
	NE 1/4 Lot 23	13.70	030-095	D. & C. Kearns	4,953		1,651		3,302
	W 1/2 Lot 24	12.14	030-097	A. & H. Degroot	3,702		1,234		2,468
	E 1/2 Lot 24	0.00	030-098	C. Leystra	320	320	-		320
9	Lot 17	16.18	030-118	D. Burnley	1,684		561		1,123
	W 1/2 & E 1/4 Lot 18	24.90	030-120	E. Van Moorsel	2,654		885		1,769
	N 3/4 Lot 19	54.63	030-123	J. Wright	23,494		7,831	360	15,303
	S 1/2 Lot 20 & S 1/4 Lot 19	20.23	030-122	B. Hoekstra	3,911		1,304		2,607
	N 1/2 Lot 20 & W 1/4 Lot 21	48.51	030-124	J. & B. Wright	43,789		14,596	1,620	27,573
	E 3/4 Lot 21	29.73	030-125	Weber Zoca Farms Ltd	159,883		53,294	9,450	97,139

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Total Assessment ($)	Estimated Non-Grantable ($)	Estimated Grant ($)	Allowances ($)	Estimated Net Assessment ($)
10	E 1/2 Lot 16 & W 1/2 Lot 17	67.99	030-152	J. Westendorp	8,997	4,226	1,590	1,170	6,237
	E 1/2 Lot 17	38.05	030-153	R. Nauta	20,392		6,797	1,400	12,195
	W 1/2 Lot 18 & NE 1/4 Lot 18	18.04	030-154	D. Sutton	2,823		941		1,882
	SE 1/4 Lot 18	10.01	030-155	E. Van Moorsel	1,256		419		837
	S 1/2 Lot 19	10.84	030-157	L. Stones	1,157		386		771
11	E 1/2 Lot 16	24.51	030-189	J. & F. Ploeg	18,656		6,219	250	12,187
	W 1/2 Lot 17	15.53	030-190	Lake Breeze Farms Inc	5,556		1,852		3,704
	Pt. W 1/2 Lot 17	0.80	030-190-05	Lake Breeze Farms Inc	286		95		191
	E 1/2 Lot 17	6.07	030-191	T. & J. Soepboer	2,171		724		1,447
Non Agricultural Lands									
8	NE 1/4 Lot 21	20.23	030-089	R. Stonehouse	5,626				5,626
	N 1/2 E 1/4 Lot 22	8.94	030-092	L. Mitchell & Z. Klingsiek	2,155				2,155
	S 1/2 E 1/4 Lot 22	2.43	030-093	A. Warren	586				586
	NW 1/4 Lot 23	16.20	030-094	J. & M. Ellenor	3,904				3,904
9	Pt. Lot 18	1.00	030-120-05	E. Van Moorsel	160				160
10	Pt. E 1/2 Lot 17	0.80	030-153-05	J. Darisi	63				63
				Totals	455,751	4,546	110,588	14,500	330,663

SCHEDULE OF MAINTENANCE - OPEN DRAIN
To Maintain the Open Channel Portion of the Bannister Drain

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Benefit ($)	Outlet ($)	Total ($)	Equivalent Hectares
Public Lands								
	Aberader Line	1.82		County of Lambton	-	6	6	1.64
	Fisher Line	1.24		Town of Plympton-Wyoming	-	49	49	1.12
	Wright Line	1.31		Town of Plympton-Wyoming	-	19	19	1.18
	Hillsboro Road	1.78		Town of Plympton-Wyoming	-	26	26	1.60
	Blue Heron Road	2.35		Town of Plympton-Wyoming	-	103	103	2.12
					-	203	203	
Agricultural Lands								
8	E 1/2 Lot 20	0.80	030-087	Verhoeven Poultry Farms Ltd	-	11	11	0.24
	W 1/2 Lot 21	20.23	030-087-01	J. Verhoeven	-	266	266	6.07
	SE 1/4 Lot 21	14.16	030-088	G. Campbell	-	206	206	4.25
	SW 1/4 Lot 22	16.59	030-090	G. Campbell	-	241	241	4.98
	Pt. Lot 22	35.12	030-091	Leystra Farms Limited	-	493	493	10.16
	NE 1/4 Lot 23	13.70	030-095	D. & C. Kearns	-	199	199	4.11
	W 1/2 Lot 24	12.14	030-097	A. & H. Degroot	-	149	149	3.07
	E 1/2 Lot 24	0.00	030-098	C. Leystra	-	-	-	0.00
9	Lot 17	16.18	030-118	D. Burnley	-	52	52	4.85
	W 1/2 & E 1/4 Lot 18	24.90	030-120	E. Van Moorsel	-	109	109	7.47
	N 3/4 Lot 19	54.63	030-123	J. Wright	840	250	1,090	15.69
	S 1/2 Lot 20 & S 1/4 Lot 19	20.23	030-122	B. Hoekstra	101	122	223	5.29
	N 1/2 Lot 20 & W 1/4 Lot 21	48.51	030-124	J. & B. Wright	910	320	1,230	13.92
	E 3/4 Lot 21	29.73	030-125	Weber Zoca Farms Ltd	759	278	1,037	8.14
10	E 1/2 Lot 16 & W 1/2 Lot 17	67.99	030-152	J. Westendorp	985	74	1,059	20.40
	E 1/2 Lot 17	38.05	030-153	R. Nauta	420	97	517	11.42

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Benefit ($)	Outlet ($)	Total ($)	Equivalent Hectares
	W 1/2 Lot 18 & NE 1/4 Lot 18	18.04	030-154	D. Sutton	420	58	478	5.41
	SE 1/4 Lot 18	10.01	030-155	E. Van Moorsel	420	40	460	3.00
	S 1/2 Lot 19	10.84	030-157	L. Stones	-	52	52	3.25
11	E 1/2 Lot 16	24.51	030-189	J. & F. Ploeg	854	-	854	7.35
	W 1/2 Lot 17	15.53	030-190	Lake Breeze Farms Inc	-	226	226	4.66
	Pt. W 1/2 Lot 17	0.80	030-190-05	Lake Breeze Farms Inc	-	12	12	0.24
	E 1/2 Lot 17	6.07	030-191	T. & J. Soepboer	-	88	88	1.82
					5,709	3,343	9,052	
Non Agricultural Lands								
8	NE 1/4 Lot 21	20.23	030-089	R. Stonehouse	290	177	467	4.05
	N 1/2 E 1/4 Lot 22	8.94	030-092	L. Mitchell & Z. Klingsiek	-	87	87	1.79
	S 1/2 E 1/4 Lot 22	2.43	030-093	A. Warren	-	24	24	0.49
	NW 1/4 Lot 23	16.20	030-094	J. & M. Ellenor	-	157	157	3.24
9	Pt. Lot 18	1.00	030-120-05	E. Van Moorsel	-	7	7	0.45
10	Pt. E 1/2 Lot 17	0.80	030-153-05	J. Darisi	-	3	3	0.36
	Total Area (Ha)	556.86			290	455	745	

Total Public Lands	203
Total Agricultural Lands	9,052
Total Non Agricultural Lands	745
Total Assessment	$10,000

SCHEDULE OF MAINTENANCE - TILE DRAIN

To Maintain the Tile Drain Channel Portion of the Bannister Drain (Excluding Branch Drain)

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Benefit ($)	Outlet ($)	Total ($)
Public Lands							
Blue Heron Road		1.18		Town of Plympton-Wyoming	156	27	183
					156	27	183
Agricultural Lands							
8	SW 1/4 Lot 22	16.59	030-090	G. Campbell	-	63	63
	Pt. Lot 22	35.12	030-091	Leystra Farms Limited	338	65	403
	NE 1/4 Lot 23	13.70	030-095	D. & C. Kearns	-	114	114
	W 1/2 Lot 24	12.14	030-097	A. & H. Degroot	-	85	85
	E 1/2 Lot 24	0.00	030-098	C. Leystra	-	-	-
					338	327	665
Non Agricultural Lands							
8	N 1/2 E 1/4 Lot 22	8.94	030-092	L. Mitchell & Z. Klingsiek	-	49	49
	S 1/2 E 1/4 Lot 22	2.43	030-093	A. Warren	-	13	13
	NW 1/4 Lot 23	16.20	030-094	J. & M. Ellenor	-	90	90
	Total Area (Ha)	106.3			-	152	152

Total Public Lands	183
Total Agricultural Lands	665
Total Non Agricultural Lands	152
Total Assessment	$1,000

Bannister Drain
Town of Plympton-Wyoming
August 19, 2025

SPECIFICATION OF WORK

1. Location

The location of the proposed and future work outlined in this specification is the open channel upstream of the west limit of the property with Roll Number 030-125 and the culverts along the length of the Bannister Drain.

2. Scope of Work

The work to be included in this specification includes, but is not limited to, the following:

- Open Channel Move Off
- Future Open Channel Cleanout
- Culverts and Tile Replacements and Removals

3. General

Each tenderer must inspect the site prior to submitting their tender and satisfy themselves by personal examination as to the local conditions that may be encountered during this project. The Contractor shall make allowance in their tender for any difficulties which they may encounter. Quantities or any information supplied by the Engineer is not guaranteed and is for reference only.

All work and materials shall be to the satisfaction of the Drainage Superintendent who may vary these specifications as to minor details but in no way decrease the proposed capacity of the drain.

The Contractor shall provide all labour, equipment, and supervision necessary to complete the work as shown in the Plans and described in these specifications. Any work not described in these specifications shall be completed according to the Ontario Provincial Standard Specifications and Standard Drawings.

The quantities are estimates only. The actual quantities shall be determined at the time of construction by the Engineer or Drainage Superintendent and shall be paid at the established unit prices.

Any equivalents shall be approved in writing by the Engineer or Drainage Superintendent prior to ordering.

4. Health and Safety

The Contractor at all times shall be responsible for health and safety on the worksite including ensuring that all employees wear suitable personal protective equipment including safety boots and hard hats.

The Contractor shall be responsible for traffic control as per the Ontario Traffic Manual Book 7 – Temporary Conditions (latest revision) when working on public road allowances. A copy of a traffic control plan shall be submitted to the Engineer, Drainage Superintendent and kept on site at all times. The Contractor shall maintain suitable barricades, warning lights, and temporary traffic notices, at his expense, in their proper position to protect the public both day and night. Flagmen are the responsibility of the Contractor when working on the road allowance and when entering or exiting a worksite onto a roadway.

The Contractor shall be responsible to ensure that all procedures are followed under the Occupational Health and Safety Act to ensure that work sites are safe and that accidents are prevented. In the event of a serious or recurring problem, a notice of noncompliance will be issued. The Contractor will be responsible for reacting immediately to any deficiency and correcting any potential health and safety risk. Continuous disregard for any requirement of the Occupational Health and Safety Act could be cause for the issuance of a stop work order or even termination of the contract.

They shall also ensure that only competent workers are employed onsite and that appropriate training and certification is supplied to all employees.

The Contractor shall submit their traffic control plan within 10 working days of notice of award. Road closures will not be permitted on this project without the approval of the Town of Plympton-Wyoming.

5. Workplace Safety and Insurance Board

The Contractor hereby certifies that all employees and officers working on the project are covered by benefits provided by the Contractor. The WSIB Clearance Certificate must be furnished prior to the execution of the Contract and updated every 90 days.

6. Utilities

The Contractor is responsible for organizing locates and exposing all the utilities along the length of the drainage works. If any utilities interfere with the proposed drainage works in a manner not shown on the accompanying Estimate of Cost or profile the Contractor shall notify the Drainage Superintendent and Engineer.

The Contractor is responsible for coordinating the replacement of additional utilities with the utility company if they interfere with the proposed drain. All costs for the utility to replace their services will be outside of this report and shall be borne by the utility as per Section 26 of the Drainage Act.

All additional costs to work around and organize replacement of the utilities not included in the estimate shall be tracked separately and the cost plus a portion of the engineering (25% of the cost) shall be borne by that utility.

7. Pre-Construction Meeting

There is a requirement for a pre-construction meeting to be held prior to any construction taking place. The meeting will be scheduled by the Contractor. Contact information will be provided to the Contractor by the Engineer. The affected Landowners, Engineer, and the Town of Plympton-Wyoming shall be invited. The Contractor shall notify all parties at least one week prior to wanting to hold a pre-construction meeting.

8. Benchmarks

The benchmarks are based on geodetic elevations. Elevations are available at the locations outlined in this report. Where these elevations are on existing structures to be replaced, they shall be transferred by the Contractor prior to the removal.

9. Traffic Control

Access and driveways to private properties shall not be obstructed longer than the minimum time necessary for the work and shall be reinstated as soon as possible all to the satisfaction of the Engineer. The Contractor shall schedule any obstruction of existing driveways and accesses with the owners at least two full working days in advance. The Traffic Plan must be approved by the Town prior to the commencement of any road closures.

a) The Contractor shall supply, erect and maintain all detour signs and special signs necessary for detours to divert traffic from the area under construction as directed by the Drainage Superintendent or Engineer. All this work shall be at the Contractor's expense.

b) The Contractor shall be responsible for supplying, erecting and maintaining all signs, supports, barricades, flashers, cones, etc. in the construction area and at the boundaries of the work as part of the above detours, all to the satisfaction of the Engineer or Drainage Superintendent. All this work shall be done by the Contractor at their own expense.

c) The Contractor shall not be allowed to proceed with construction activities unless proper signage and flagmen are present. Flagging procedures, signage and detours shall conform to the recommendations of Book 7, Temporary Conditions, Ontario Traffic Manual, issued by the Ministry of Transportation. Conformance shall be enforced by the Ministry of Labour Inspector.

10. Access and Working Area

Construction

Access for culvert replacements, tile replacement and the basin installation as part of this report shall be from the nearest road, within the properties in which the culvert/basin is to be replaced

and shall be at a location determined by the Engineer or Drainage Superintendent. The working area at each culvert shall extend 10 metres from the bank on both sides and for 10 metres along the channel on either side of the culvert. The working area for the proposed basin and junction box shall extend for a width of 10m normally centered on the proposed drain and shall extend 5m past the connection point to the drain.

Access for the channel move off on the property with Roll Number 030-125 shall be from Fisher Line. The working area shall be 22m wide along the proposed channel route with all work taking place on the property. Between the proposed and existing channel, the working area shall be at the discretion of the Drainage Superintendent or Engineer and shall generally be along the existing drain. This working area shall extend 10m to north and east of the existing channel to allow for the drain to be filled in and the tile headers to be installed.

Future Maintenance

Access for culvert maintenance and channel repair on a single property shall be from the nearest road, within the properties in which the culvert and/or channel is being repaired or maintained and shall be at a location determined by the Drainage Superintendent. If maintenance is being done on multiple properties, access shall be gained from the nearest roadway and shall be along the length of the drainage works. The working area at each culvert shall extend 10 metres from the bank on both sides and for 10 metres along the channel on either side of the culvert.

The working side for future maintenance shall extend 15m past the bank on either side of the drain and shall be determined by the Drainage Superintendent.

If, at the discretion of the Drainage Superintendent, there is erosion or work that needs to be completed from the side opposite the working area, access may be gained along the channel and nearest culvert to maintain the bank and channel.

The working area for maintenance on the tile drain shall be restricted to a width of 20m normally centered on the tile drain

11. Removals

The culverts, tile and any native backfill material, when required, shall be removed in their entirety. The culvert, backfill and the concrete rubble shall be disposed offsite at the expense of the Contractor. Any broken concrete or rip rap (concrete bags) from the existing structures shall be disposed offsite at the expense of the Contractor unless determined re-usable by the Drainage Superintendent or Engineer.

The Contractor shall work around the existing fences and signs if they are able to. If the existing fences and signs are required to be removed, they shall be removed and re-installed in the same location with the existing materials. All work in connection with fences and signs shall be carried out in a careful manner so they are replaced in as good a condition as the existing materials permit.

Where the culverts are to be removed and not replaced, the Contractor shall restore the channel in these sections with 2:1 side slopes, a 1.0m bottom and shall restore them in accordance with the restoration specification.

12. Brushing and Tree Removal

For the move-off on the property with Roll Number 030-125 the bush shall be brushed and all trees, woody vegetation and stumps removed for the entire width of the working area. The Landowner is to remove all trees within the bush prior to construction. The Contractor shall be responsible for the removal of stumps within the proposed drain location and all remaining vegetation within the working corridor. Within the bush, the brush removed by the Contractor shall be stockpiled at the edge of the working area. Stumps outside of the channel location shall be cut even with the ground. The existing open channel shall be brushed with all brush, stumps, trees, woody vegetation, etc. within 5m of the open channel and within the drain cross-section removed.

For future maintenance all brush, stumps, trees, woody vegetation, etc. within the working area, the drain bottom, along the bank where the work is taking place and on the opposite side where impeding the flow of the drain, as determined by the Drainage Superintendent, shall be removed.

It is recommended that a mechanical grinder attached to an excavator be used for the removal of brush and trees. Any brush and trees too large to grind shall be close cut. The Contractor shall stockpile the trees and brush in a single pile on the property in which they were removed or dispose of the trees and brush offsite. Where brush and trees are removed within a bush section of the drain the trees and brush shall be disposed of within the bush at the limits of the working area. The Contractor is responsible for the burning of the trees and brush not in the bush sections. The Contractor is responsible for obtaining all necessary permits for any disposal sites. Burning of the trees and brush is subject to local bylaws and guidelines of the Ministry of the Environment Conservation and Parks.

Certain trees may be left in place at the direction of the Drainage Superintendent or Engineer. Trees may be limbed and piled for firewood, instead of burned, at the request of a Landowner.

13. Strip and Place Topsoil

The topsoil shall be stripped in the existing channel and along the proposed channel route. The topsoil shall be placed at the edge of the working allowance. Once the excavated material has been placed in the existing channel the topsoil shall be placed over the backfill. This item is only to be done as part of the improvement project and not maintenance.

14. Excavation of Open Channel

For construction and future maintenance, the open channel shall be excavated and maintained to the depths and grades as per the profile and drawings as contained in this Engineers Report. The

channel shall be excavated to the proper depth using a laser or similar approved device with a labourer onsite to ensure correctness of grade and to confirm location of tile ends.

For construction under this report, the excavated material shall be placed in a maximum of 300mm lifts and shall be compacted to 95% SPD within the existing channel. The Contractor shall be responsible for maintaining a dry working area where the drain is being filled in. If there is excess material from the channel it shall be levelled within the working corridor of the bush section. If additional material is required to fill in the channel it shall be supplied at the expense of the property with Index Number 030-125.

For future maintenance, the excavated material shall generally be cast on the side it is being excavated from, except across finished lawns. In these areas the excavated material shall be trucked.

Where the excavated material is to be levelled it shall generally be cast on the side it is being excavated from. Excavated material shall be cast at least 1.5 metres clear of the bank. Excavated material shall not be placed in low runs or swales out letting surface water to the channel. The excavated material shall be levelled to a maximum depth of 150mm and left in a condition suitable for cultivation. This shall include the removal of any rocks larger then 10cm in diameter and any debris/wood that could damage or plug farm equipment. Leveling shall occur when the material is dry enough to do so as determined by the Drainage Superintendent or Engineer. All high spots above grade shall be removed. The sediment shall be removed leaving a rounded bottom with the intent not to undercut the existing side slopes. All material unfit for placing on farmlands, as determined by the Drainage Superintendent or Engineer, shall be disposed of offsite by the Contractor.

15. Cleaning Out Culverts

The culverts shall be cleaned out with a method determined by the Contractor. The Contractor shall ensure the footings are not undermined on the culverts.

The excavated material from the road culverts shall be disposed offsite.

The excavated material from the access culverts shall be levelled in the adjacent field.

16. Installation of Culverts

The Contractor is required to notify the Landowner forty-eight (48) hours prior to the removal of a culvert.

The minimum cover is not always adequate during construction and it is the Contractors responsibility to provide additional cover to avoid damage to the pipe.

It is the Contractors responsibility to ensure that the minimum covers are met at the completion of construction. Box culverts shall have a minimum earth cover of 610mm at the completion of construction. The concrete box culvert shall be precast, shall be installed as per OPSS 422 and

the contractor shall submit shop drawings to the engineer prior to ordering. In the event of a conflict between these specifications and those of the structural designer, the more stringent shall apply. The joints between precast sections shall have butyl tape and shall be wrapped with a minimum 600mm width of geotextile to prevent the migration of soil between the joints.

The Contractor shall supply, install, and backfill aluminized corrugated steel pipe with a minimum wall thickness of 2.8mm for all access culverts. Corrugated Steel Pipe Arches and Road Culverts shall have a minimum wall thickness of 3.5mm. Roads culverts shall be polymer laminated. All corrugation profiles shall be of helical lock seam manufacture using 68 x 13mm corrugations for 1600mm dia. pipe and smaller and 125 x 25mm corrugations for 1800mm dia. pipe and larger. Pipe with 125 x 25mm corrugations shall be used if 68 x 13mm corrugations are not available.

Where High Density Polyethylene Pipe is specified, the Contractor shall supply, install, and backfill the HPDE smooth wall gasketed pipe with bell and spigot joints (320 KPa) or approved equivalent.

The culverts designated to be replaced in the future under this report shall be examined after any cleanout of the open channel as to its condition. If it is found to be in disrepair (i.e. there are holes corroded in the bottom or sides) it shall be replaced as per these specifications.

The culverts shall be installed generally in the same location or as approved by the Drainage Superintendent or Engineer. The culverts shall be installed with the invert 10% (minimum 150mm) below the original channel bottom elevation unless otherwise shown in order to achieve the minimum cover.

All culverts may have concrete block or rip rap end walls. The access culverts shall be assessed, as per the report, to provide an 8m access width. If an owner requests a longer culvert than that required to achieve an 8m top width, please refer to the report. All culvert lengths are based on utilizing rip rap end walls.

The pipes that shall be extended upstream or downstream of the proposed culvert shall be done with non-perforated HDPE agricultural tubing with a manufactured coupling, elbow and rodent grate.

Access Culverts:

The bottom of the excavation shall be excavated to a minimum of 100mm below the proposed invert. When the pipe has been installed to the proper grade and depth, the excavation shall be backfilled with ¾" clear stone and wrapped in filter fabric from the bottom of the excavation to the spring line of the pipe, this shall be considered the bedding. Care shall be taken to ensure that the backfill on either side of the culvert does not differ by more than 300mm so that the pipe is not displaced. The access culverts shall be backfilled from the spring line or bottom to within 150mm of finished grade with granular "B" Type II. The top 150mm shall be backfilled with OPS granular "A" material to finished grade. If asphalt is proposed, the asphalt shall be HL4 and shall match the existing thickness. In these cases, the granular "A" shall occupy 150mm below

the proposed asphalt. Excavated material shall be utilized to build up the adjacent access laneways to blend with the required cover height. Granular "A" shall be utilized, at the discretion of the Engineer or Drainage Superintendent, in the vicinity of the proposed culverts in order to provide a suitable finished surface.

Road Culverts:

Where there is asphalt, the asphalt shall be sawcut and milled for a thickness of 45mm and 0.30m past the joint. The milled surface shall be tack coated as per OPSS.

The bottom of the excavation shall be excavated to a minimum of 100mm below the proposed invert. When the pipe has been installed to the proper grade and depth, the excavation shall be backfilled with ¾" clear stone and wrapped in filter fabric from the bottom of the excavation to the spring line of the pipe, this shall be considered the bedding. For concrete box culverts the clear stone shall extend from the bottom of the culvert to 200mm below. The bedding material shall not be native material. Care shall be taken to ensure that the backfill on either side of the culvert does not differ by more than 300mm so that the pipe is not displaced. The pipe shall be backfilled above the clear stone with OPS Granular "A". This specification shall be utilized for the tile and culvert at Blue Heron Road. For the tile placement in the field the topsoil shall be stripped and levelled for a width of 6m.

Asphalt Road: The asphalt shall be HL4 and HL3 at depths to match the existing thickness with a minimum thickness of 50mm for each.

Gravel Road: The top 200mm shall be OPS Granular "M", produced from 100% crushed dolomite, and shall be mechanically compacted to 100% modified standard proctor density.

If rip rap end walls are used, they shall consist of 150mm x 300mm quarry stone or approved equal. The area to receive the rip rap shall be graded to a depth of 400mm below finished grade. Filter fabric (Mirafi P150 or approved equal) shall then be placed with any joints overlapped a minimum 600mm. The quarry stone shall then be placed with the smaller pieces placed in the gaps and voids to give it a uniform appearance.

If concrete block end walls are used, they shall consist of concrete blocks with dimensions of approx. 600mm x 600mm x 1200mm, 600mm x 600mm x 2400mm or 300mm x 600mm x 1200mm as required. 600mm x 600mm x 2400mm concrete blocks will be paid at twice the unit price established per block, all others will be at a unit of 1. The top of the culvert shall govern block elevation. The correct block shall be set with the top of the block equal to the top of the culvert. 2400mm wide concrete blocks shall be used as the top block on arch and larger round pipes in order to span between the culvert top and the supporting block. The blocks shall be set at each end of the culvert so that each row of blocks will be offset approx. 100mm from the row below. The bottom row shall consist of one block placed parallel to the culvert. The blocks shall be imbedded a minimum of 300mm into each bank and shall extend into the drain bottom to match the pipe invert or below. Erosion protection shall be placed on the banks next to the end walls. The erosion protection shall consist of 150mm x 300mm quarry stone over filter fabric

(Terrafix 270R or approved equal). It shall extend 500mm upstream or downstream and from top of bank to top of bank at each end wall.

The blocks shall be placed over a layer of filter fabric (Terrafix 270R or approved equal). The culvert shall be backfilled in conjunction with the placement of the blocks. The gaps between the culvert and the blocks shall be filled with concrete cinder blocks/bricks and mortar to give the end wall a finished appearance.

The future culvert replacements shall be to the following sizes, at a minimum, and may be replaced with an equivalent sized arch, round pipe or box culvert at the discretion of the Drainage Superintendent. Approved equivalents must have an equal end area or greater.

Culvert Number	Roll Number / Owner	Existing Culvert	Replacement Culvert	Benchmark
1	**030-189 (J. & F. Ploeg)**	**1800mm dia. CSP**	**2200mm dia. CSP 17m Long Rip Rap End Walls 8m Top Width. N. Inv. 196.10m S. Inv. 196.35m**	**Survey Monument 72U054 at southwest corner of Concrete Box Culvert (Culvert #2) =200.08m**
2	Aberarder Line (County of Lambton)	5500x2150mm Concrete Box Culvert 21.5m Long	5500x2150mm Concrete Box Culvert 22m Long Rip Rap End Walls S. Inv. 197.05m N. Inv. 197.00m	Survey Monument 72U054 at southwest corner of Concrete Box Culvert (Culvert #2) =200.08m
3	030-152 (J. Westendorp)	2000mm dia. CSP 13m Long W. Inv. 198.77m E. Inv. 198.74m	2000mm dia. CSP 16m Long Rip Rap End Walls 8m Top Width. W. Inv. 198.60m E. Inv. 198.62m	Top East End of Existing 2000mm dia. CSP (Culvert #3) =200.76m
4*	**030-152 (J. Westendorp)**	**2000x1700mm dia. CSPA. 7.9m Long W. Inv. 199.04m E. Inv. 199.05m**	**None. To Be Removed.**	
5	**030-153 (R. Nauta)**	**1900mm dia. CSP 7.8m Long W. Inv. 199.56m E. Inv. 199.57m**	**2000mm dia. CSP 16m Long Rip Rap End Walls 8m Top Width W. Inv. 199.35m E. Inv. 199.37m**	**Top East End of Existing 1900mm dia. CSP (Culvert #5) =201.38m**
6	030-154 (D. Sutton)	1800mm dia. CSP. 7.4m Long	1800mm dia. CSP	Top East End of Existing 1800mm

		W. Inv. 200.36m E. Inv. 200.36m	16m Long Rip Rap End Walls 8m Top Width W. Inv. 200.13m E. Inv. 200.15m	dia. CSP (Culvert #6) =202.14m
7	Hillsboro Road (Town of Plympton-Wyoming)	4500x2100mm Concrete Box Culvert. 22.2m Long.	2200mm dia. CSP 23m Long Rip Rap End Walls W Inv. 201.20m N Inv. 201.25m	Top of 600mm dia. CSP from North on West side of Hillsboro Road=203.47m
8	**030-123 (J. Wright)**	**1500mm dia. CSP 7.4m Long W. Inv. 202.22m E. Inv. 202.21m**	**1600mm dia. CSP 16m Long Rip Rap End Walls 8m Top Width W. Inv. 202.00m E. Inv. 202.02m**	**BM: Top East End of Existing 1500mm dia. CSP (Culvert #8) =203.83m**
9	**030-124 (J. & B. Wright)**	**1500mm dia. CSP 7.4m Long W. Inv. 203.14m E. Inv. 203.07m**	**1600mm dia. CSP 16m Long Rip Rap End Walls 8m Top Width W. Inv. 202.83m E. Inv. 202.85m**	**Top East End of Existing 1500mm dia. CSP (Culvert #9) =204.64m**
10	**030-124 (J. & B. Wright)**	**1250mm dia. CSP 7.4m Long W. Inv. 203.94m E. Inv. 204.02m**	**1600mm dia. CSP 16m Long Rip Rap End Walls 8m Top Width W. Inv. 203.68 E. Inv. 203.70**	**Top East End of Existing 1250mm dia. CSP (Culvert #10) =205.14m**
11	**030-125 (Weber Zoca Farms Ltd.)**	**1250mm dia. CSP 7.5m Long. W. Inv. 204.48m E. Inv. 204.48m**	**1600mm dia. CSP 16m Long Rip Rap End Walls W. Inv. 204.40 E. Inv. 204.42**	**Top South End of Existing 1600mm dia. CSP (Culvert #12) =206.34m**
12	Fisher Line (Town of Plympton-Wyoming)	1600mm dia. CSP 18m Long N. Inv. 204.66m S. Inv. 204.73m	1800mm dia. CSP 18m Long Rip Rap End Walls N. Inv. 204.46 S. Inv. 204.50	Top South End of Existing 1600mm dia. CSP (Culvert #12) =206.34m
13	0030-089 (R. Stonehouse)	1100mm dia. CSP 9.4m Long W. Inv. 205.03m E. Inv. 204.99m	1400mm dia. CSP 17m Long Rip Rap End Walls 8m Top Width W. Inv. 204.65 E. Inv. 204.67	Top East End of Existing 1100mm dia. CSP (Culvert #13) =206.28m
14	**Blue Heron Road (Town**	**1600mm dia. CSP 14.2m Long**	**1600mm dia. CSP**	**Top East End of Existing 1600mm**

	of Plympton-Wyoming)	**W. Inv. 205.10m E. Inv. 205.10m**	**14m Long Rip Rap End Walls W. Inv. 204.90m E. Inv. 204.95m**	**dia. CSP (Culvert #14) =206.63m**

Bold Culverts Represents those proposed to be replaced or removed under this report

17. Culvert Maintenance

The Contractor shall be responsible for maintenance of the access culverts for a period of one year after their installation. This will include repairing any settlement areas on the travel surface with Granular "A", Granular "M" and/or asphalt, topsoil and seed.

18. Subsurface Drainage

All existing subsurface drains encountered during construction of the open channel shall be reconnected or extended to the open channel unless otherwise noted on the drawings or as directed by the Drainage Superintendent or Engineer.

A suitable length of equivalent sized PE agricultural tubing shall be used to connect the drain to the open channel. Manufactured fittings shall connect the PE tile to the existing drain. The connections shall be carefully backfilled to ensure there is adequate support under the pipe and large clumps of clay do not displace the tile.

Tile outlets larger than 150mm in diameter, or as determined by the Drainage Superintendent or Engineer at the time of construction, require erosion protection and rodent grates. The erosion protection made up of rip rap and filter fabric shall be installed on the embankment slope from 0.3m above the tile obvert to the channel bottom. The erosion protection shall be 1.0m wide.

The tiles into the existing channel shall be extended as per the drawing with 150mm and 250mm dia. PE Tubing. The elevations and locations of the tile shall be confirmed by the Contractor prior to construction.

19. Rip Rap

Erosion protection made up of rip rap and filter fabric shall be installed in the locations and with the approximate quantities outlined on the detailed plans and as determined by the Drainage Superintendent or Engineer at the time of construction. Generally, the rip rap shall be installed where the toe is eroding at bends, at tile outlets 150mm diameter or greater, and for the temporary rock check dams.

All rip rap shall consist of 150mm x 300mm quarry stone or approved equal. The area to receive the rip rap shall be graded to a depth of 400mm below finished grade. After grading, a layer of filter fabric (Mirafi P150 or approved equal) is to be placed with any joints overlapped a minimum of 600mm. Rip rap shall then be placed with the smaller pieces placed in the gaps and voids to give it a uniform appearance.

20. Catch Basin and Lead at Blue Heron Road

Structure	Type (mm)	Inlet Elev. (m)	Outlet Pipe Elev. (m)	Inlet Pipe Elev. (m)
CB	600x600	100.00 (Assumed Datum)	99.10 (E) 250	

The proposed catch basin shall be a square precast concrete structure as noted above and shall have a birdcage type grate. The catch basin shall be installed in the road right of way and in the approximate location shown on the plans with the exact location determined in the field by the Engineer.

The catch basin shall be made with the top sections separate from the base sections in order to allow riser sections to be installed or removed as necessary (i.e. the base section shall not extend for more than 150mm above the top of the highest opening in the base section). The wall thickness of all structures shall be 115mm and each shall have a 300mm sump. Birdcage grates shall be manufactured with a bar spacing no larger than 50mm.

The catch basins shall be set at the final elevations as directed by the Contract Administrator. The catch basins shall be set on a layer of clear stone. The clear stone shall be extended up to the spring line of the inlet and outlet pipe connections.

The tile at the connection to the catch basins shall be concreted on both the inside and outside prior to backfilling. Any pipe or tile shall not protrude more than 50mm inside the wall.

The catch basin shall have a 250mm polyethylene lead to the existing tile drain. The Contractor shall be responsible for locating and connecting to the existing 600mm dia. tile drain.

21. Junction Box

The junction boxes elevations outlined below are estimated based on the previous reports and shall be verified by the Contractor:

Structure	Type (mm)	Top Elev. (m)	Outlet Pipe Elev. (m)	Inlet Pipe Elev. (m)
JB	1200x900	206.55	205.34 (W) 900 HDPE	205.37 (S) 600

The junction box shall be square precast concrete structures as noted above.

The junction box shall be made with the top sections separate from the base sections in order to allow riser sections to be installed or removed as necessary (i.e. the base section shall not extend for more than 150mm above the top of the highest opening in the base section). The wall

thickness of all structures shall be 115mm and each shall have a 300mm sump. The top of junction box shall be set a minimum of 600mm below grade to accommodate farm tillage practices.

The junction box shall be set on a layer of clear stone. The clear stone shall be extended up to the top of the inlet and outlet pipe connections.

The tile at the connection to the junction box shall be concreted on both the inside and outside prior to backfilling. Any pipe or tile shall not protrude more than 50mm inside the wall.

22. Rodent Grate

The 900mm dia. HDPE outlet pipe at Blue Heron Road shall have a manufactured rodent rotating grate. It shall be installed at the outlet to the open channel.

23. Seeding/Restoration and Buffer Strip

All side slopes disturbed by construction shall be restored with double straw matting and seed. The double straw matting shall be installed according to the manufacturer's specifications. The straw matting and seed shall be installed no longer then 2 days after the disturbance of the side slope in that area. The working areas within the bush shall be restored with seed.

All other areas disturbed by construction shall be restored to their pre-construction condition, which may include topsoil and seed. 100mm of screened topsoil and seed shall be installed at all disturbed areas within the road allowances.

If the seed has not germinated, at the discretion of the Engineer or Drainage Superintendent, prior to the one-year maintenance period, 100mm of topsoil and seed shall be placed on the disturbed areas. This shall be paid on a time and material basis.

24. Environmental Considerations

The Contractor shall take care to adhere to the following considerations.

- Operate machinery in a manner that minimizes disturbance to the banks of the watercourse.
- Erosion and sediment control measures must be installed prior to construction to prevent sediment from entering the water body.
- Material shall not be placed in areas regulated by the Conservation Authority or Ministry of Natural Resources.
- All granular and erosion control materials shall be stockpiled a minimum of 3.0m from the top of the bank or excavation. Material shall not be placed in surface water runs or open inlets that enter the channel.
- All activities, including maintenance procedures, shall be controlled to prevent the entry of petroleum products, debris, rubble, concrete, or other deleterious substances into the water. Vehicle and equipment refuelling and maintenance shall be conducted away from the

channel, any surface water runs, or open inlets. All waste materials shall be stockpiled well back from the top of the bank and all surface water runs and open inlets that enter the drain.

- When possible, all construction within the open channel shall be carried out during periods of low flow or in dry conditions.
- The Contractor shall conduct regular inspections and maintain erosion and sediment control measures and structures during the course of construction.
- The Contractor shall repair erosion and sediment control measures and structures if damage occurs.
- The Contractor shall remove non-biodegradable erosion and sediment control materials once site is stabilized.
- Remove all construction materials from site upon project completion.

Light duty silt fences shall be installed down-gradient of the work for the duration of construction.

The light duty silt fencing shall be supplied and installed in accordance with OPSS 577 and OPSD 219.110. The light duty silt fencing shall be removed once construction is complete.

APPENDIX A

SECTION 65 REPORTS FOR 030-098

As a result of the alteration of Drainage on the Property with Roll Number 030-098 a Section 65 Report is Required. The Bannister Drain change has been included in this report and below outlines the alterations to the schedules on the Falconer-Ramsey Drain, Lower Aberarder Creek, Stewart Creek Drain, Watson Drain, Oosterhoff Drains, and Hicks Drain

Falconer-Ramsey Drain and Lower Aberarder Creek dated August 22, 2023

As per Section 65 of the Drainage Act, I recommend that the Schedule of Assessment be apportioned as follows:

Conc.	Lot or Part Affected		Affected Hectares	Roll No.	Owner	Benefit ($)	Outlet ($)	Total ($)
Existing Assessment								
8	E 1/2 Lot 24		21.85	030-098	C. Leystra	766	6314	7080
Proposed Assessment								
8	E 1/2 Lot 24	36.01	(6.07 Sub-Surface Only)	030-098	C. Leystra	766	9533	10299

Revised Total for Schedule of Assessment: $ 1,238,813

As per Section 65 of the Drainage Act, I recommend that the Schedule of Maintenance be apportioned as follows:

Conc.	Lot or Part Affected		Affected Hectares	Roll No.	Owner	Benefit ($)	Outlet ($)	Total ($)	Equivalent Hectares
Existing Assessment									
8	E 1/2 Lot 24		21.85	030-098	C. Leystra	3874	898	4772	7.65
Proposed Assessment									
8	E 1/2 Lot 24	36.01	(6.07 Sub-Surface Only)	030-098	C. Leystra	3874	1480	5354	11.55

Revised Total for Schedule of Maintenance: $ 200,582

Stewart Creek Drain dated April 27, 2021

As per Section 65 of the Drainage Act, I recommend that the Schedule of Assessment be apportioned as follows:

Conc.	Lot or Part Affected		Affected Hectares	Roll No.	Owner	Benefit ($)	Outlet ($)	Total ($)
Existing Assessment								
8	Pt. E 1/2 Lot 24		29.95	030-098	C. Leystra		296	296
Proposed Assessment								
8	Pt. E 1/2 Lot 24	36.01	(6.07 Sub-Surface Only)	030-098	C. Leystra		447	447

Revised Total for Schedule of Assessment: $ 123,845

Watson Drain dated July 27, 1972

As per Section 65 of the Drainage Act, I recommend that the Schedule of Assessment be apportioned as follows:

Conc.	Lot or Part Affected	Affected Acres	Roll No.	Owner	Benefit ($)	Outlet ($)	Total ($)
Existing Assessment							
8	E 1/2 Lot 24	24.00	030-098	R. Falconer		16	16
Proposed Assessment							
8	E 1/2 Lot 24	0.00	030-098	C. Leystra		0	0
	Revised Total for Schedule of Assessment:		**$ 26,554**				

Oosterhoff Drain dated May 9, 1969

As per Section 65 of the Drainage Act, I recommend that the Schedule of Assessment (North Branch and Main) be apportioned as follows:

Conc.	Lot or Part Affected	Affected Acres	Roll No.	Owner	Benefit ($)	Outlet ($)	Total ($)
Existing Assessment							
8	Pt. E 1/2 Lot 24	15.00	030-098	R. Falconer	0	232	232
Proposed Assessment							
8	Pt. E 1/2 Lot 24	(15.00 Surface Only)	030-098	C. Leystra	0	116	116
	Revised Total for Schedule of Assessment:		**$ 5,272**				

Hicks Drain dated December 2, 2022

As per Section 65 of the Drainage Act, I recommend that the Schedule of Maintenance be apportioned as follows:

Conc.	Lot or Part Affected	Affected Hectares	Roll No.	Owner	Benefit ($)	Outlet ($)	Total ($)	Equivalent Hectares
Existing Assessment								
8	N Pt. E 1/2 Lot 24	6.07	030-098	C. Leystra	0	19	19	2.12
Proposed Assessment								
8	N Pt. E 1/2 Lot 24	(6.07 Surface Only)	030-098	C. Leystra	0	9.5	9.5	1.06
	Revised Total for Schedule of Assessment:		**$ 9,990.50**					

APPENDIX B

DFO LETTER OF ADVICE

Fisheries and Oceans Canada
Pêches et Océans Canada

Ontario and Prairie Region
Fish and Fish Habitat Protection Program
867 Lakeshore Rd.
Burlington, ON
L7S 1A1

Région de l'Ontario et des Prairies
Programme de protection du poisson et de son habitat
867 chemin Lakeshore
Burlington, ON
L7S 1A1

June 27, 2025

Our file *Notre référence*
25-HCAA-00944

Elizabeth Cummings
Town of Plympton-Wyoming
546 Niagara Street
Wyoming, ON N0N 1T0

Subject: Drain Improvements, Bannister Drain, County of Lambton (25-HCAA-00944) – Implementation of Measures to Avoid and Mitigate the Potential for Prohibited Effects to Fish and Fish Habitat

Dear Elizabeth Cummings:

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on May 14, 2025. We understand that you propose to:

- Replace six (6) existing culverts, and embed culverts to allow fish passage in low flow conditions (total increase in footprint below the ordinary high water mark = approximately 95m^2):

Culvert Number	Existing Culvert	Proposed Culvert
1	1.8m x 7.4m CSP	2.2m x 17m CSP
5	1.9m x 7.8m CSP	2.0m x 16m CSP
8	1.5m x 7.4m CSP	1.6m x 16m CSP
9	1.5m x 7.4m CSP	1.6m x 16m CSP
10	1.25m x 7.4m CSP	1.6m x 16m CSP
12	1.6m x 18m CSP	1.8m x 18m CSP

- Remove one existing culvert and conduct cleanout of one existing culvert;
- Realign 778 linear metres of drain to a new 589m drain channel and infill existing channel (2184m^2 footprint below ordinary high water mark);
- Stabilize and revegetate all disturbed area; and,
- Work in isolation of flow or open water to avoid sedimentation of the watercourse.

Our review considered the following information:

- Request for Review form and associated documents submitted on May 14, 2025.

Your proposal has been reviewed to determine whether it is likely to result in:

- the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the *Fisheries Act*; and,
- effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*.

The aforementioned impacts are prohibited unless authorized under their respective legislation and regulations.

To avoid and mitigate the potential for prohibited effects to fish and fish habitat (as listed above), we recommend implementing the measures listed below:

- Carry out the project in accordance with timing windows;
    - No in-water work between March 15 and July 15 of any year;
- Limit the duration of in-water works, undertakings and activities;
- Capture fish trapped within an isolated or enclosed area and relocate them to the same watercourse or water body;
    - Dewater gradually to reduce the potential for stranding fish;
    - Capture and relocate any fish as per applicable permits;
- Screen intake pipes during all phases of the project;
    - Use interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater;
- Maintain a functioning vegetated riparian zone between the project site and the ordinary high water mark;
    - Limit vegetation removal, pruning and grubbing to the area required for accessing the project site;
    - Reinstate stream banks and slopes of the affected riparian zone;
    - Re-vegetate the affected riparian zone with native species suitable for the project site;
- Limit operation of vehicles and machinery to the area required to carry out the project;
- Maintain base flow and seasonal flow of water during all phases of the project;
- Restore the bed and banks, gradient and contour affected by the project;
- Develop and implement an erosion and sediment control plan for all phases of the project;
    - Conduct all operations in isolation of open or flowing water;
        - Follow Interim in-water site isolation;
        - Install cofferdams, diversion channels, flumes and elevated pipes or pump arounds to work in the dry;

    - Regularly observe the watercourse or water body for signs of suspended sediment during all phases of the project and take corrective action when and where required;
    - Dispose of, and stabilize, all excavated material above the ordinary high water mark or top of bank of nearby watercourses or water bodies;
    - Keep the erosion and sediment controls in place until all disturbed ground has been stabilized and suspended sediments have settled;
    - Operate machinery on land, from barges or on ice during all phases of the project;
- Develop a plan to prevent deleterious substances from entering a watercourse or water body;
    - Maintain all machinery on site in a clean condition and free of fluid leaks;
    - Wash, refuel and service machinery in such a way as to prevent any deleterious substances from entering a watercourse or water body;
    - Store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering a watercourse or water body;
    - Implement a response plan immediately in the event of a spill of a deleterious substance (including sediment);
    - Stop all works, undertakings and activities;
    - Report spill immediately when a deleterious substance enters a watercourse or water body;
    - Use an emergency spill kit;
- Aquatic invasive species are introduced and spread through transporting water, sands and sediments and using contaminated construction equipment. To prevent the spread of aquatic invasive species during construction in aquatic environments:
    - Ensure all equipment arrives on site clean and free of invasive species;
    - Clean, drain and dry any equipment used in the water; and,
    - Never move organisms or water from one body of water to another.

Provided that you incorporate these measures into your plans, the Program is of the view that your proposal is not likely to result in the contravention of the above mentioned prohibitions and requirements.

Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. Consult our website (Projects near water (dfo-mpo.gc.ca)) or consult with a qualified environmental consultant to determine if further review may be necessary. It remains your responsibility to remain in compliance with the *Fisheries Act* and the *Species at Risk Act.*

It is also your *Duty to Notify* DFO if you have caused, or are about to cause, the death of fish by means other than fishing and/or the harmful alteration, disruption or destruction

of fish habitat. Such notifications should be directed to DFO.OPHabitat.MPO@dfo-mpo.gc.ca or 1-855-852-8320.

We recommend that you notify this office at least 10 days before starting your project and that a copy of this letter be kept on site while the work is in progress. Send your notification to the DFO 10 day notification mailbox: DFO.OP.10DayNotification-Notification10Jours.OP.MPO@dfo-mpo.gc.ca. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your proposal.

If you have any questions with the content of this letter, please contact Deborah Silver at Deborah.Silver@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

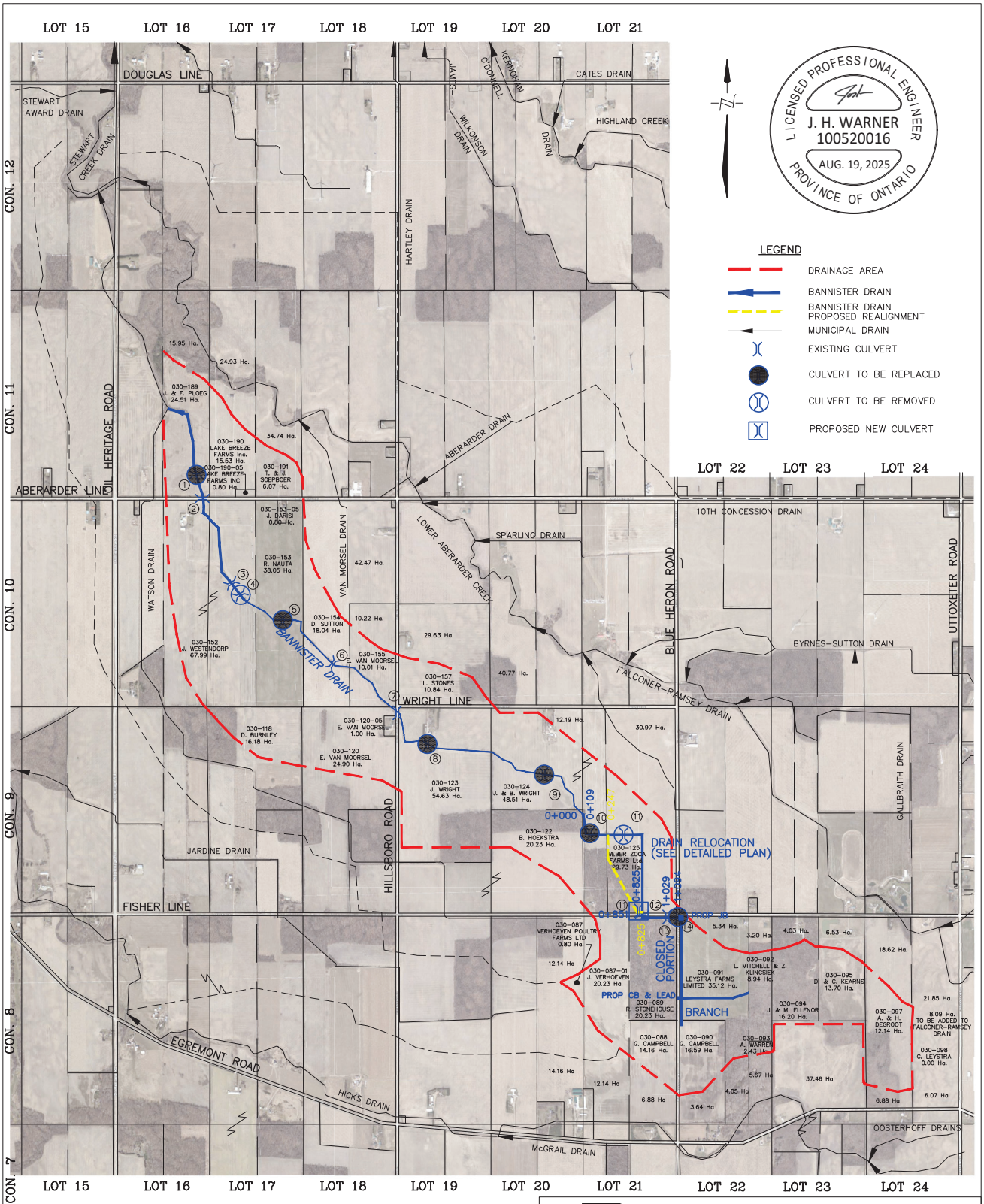
Yours sincerely,

Deborah Silver
Biologist, Triage and Planning
Fish and Fish Habitat Protection Program

COPY LIST:
Josh Warner, R. Dobbin Engineering Inc., josh@dobbineng.com

APPENDIX C

DRAWINGS



LICENSED PROFESSIONAL ENGINEER
J. H. WARNER
100520016
AUG. 19, 2025
PROVINCE OF ONTARIO

Dobbin Engineering Inc.
4218 Oil Heritage Road
Petrolia Ontario, N0N 1R0
Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME: Bannister Drain Plan

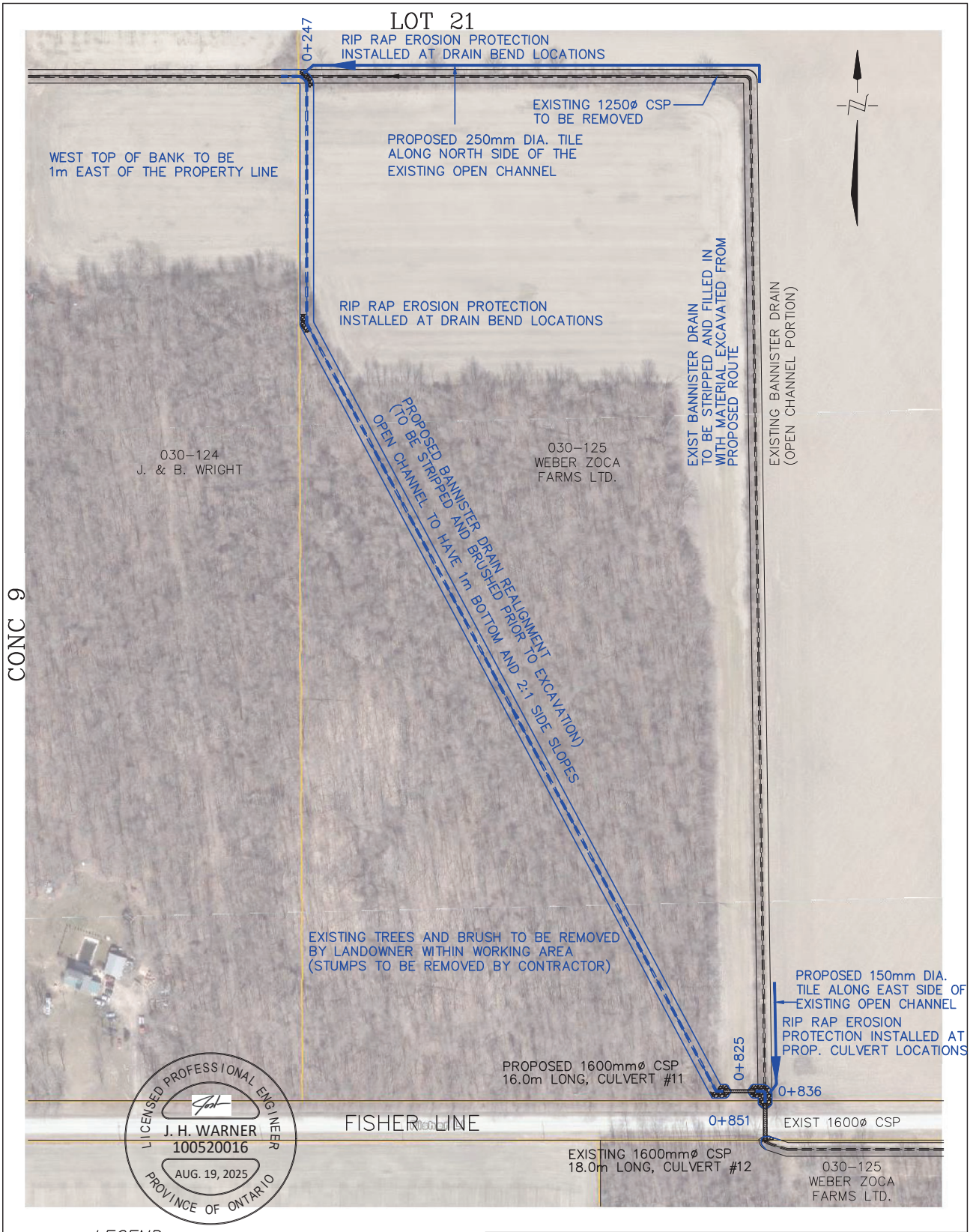
PROJECT No. 2024-1606

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	AUG. 19, 2025	CS
B. VAN RUITENBURG				
DRAWN		SCALE: 1:25,000		
C. SAUNDERS		0 250 500 750m		

TOWN of PLYMPTON-WYOMING

BANNISTER DRAIN PLAN

Last Updated: August 19, 2025



LEGEND

PROPOSED BANNISTER DRAIN RE–ROUTE

EXISTING BANNISTER DRAIN

Dobbin Engineering Inc.

4218 Oil Heritage Road
Petrolia Ontario, N0N 1R0
Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME: Bannister Drain Detail Plan

PROJECT No. 2024–1606

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	AUG. 19, 2025	CS
B. VAN RUITENBURG				
DRAWN				
C. SAUNDERS				

SCALE 1:2000

0 10 20 30 40m

TOWN of PLYMPTON - WYOMING

BANNISTER DRAIN DETAIL PLAN

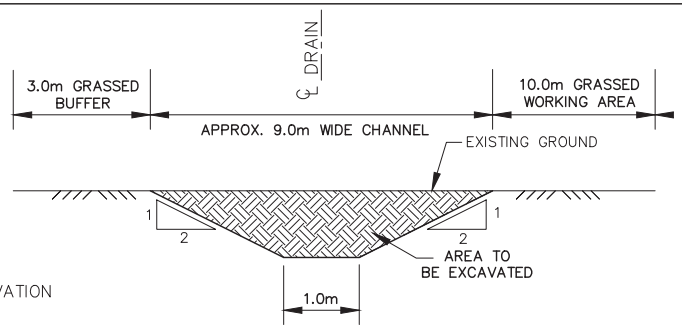
2 OF 6

Last Updated: August 19, 2025

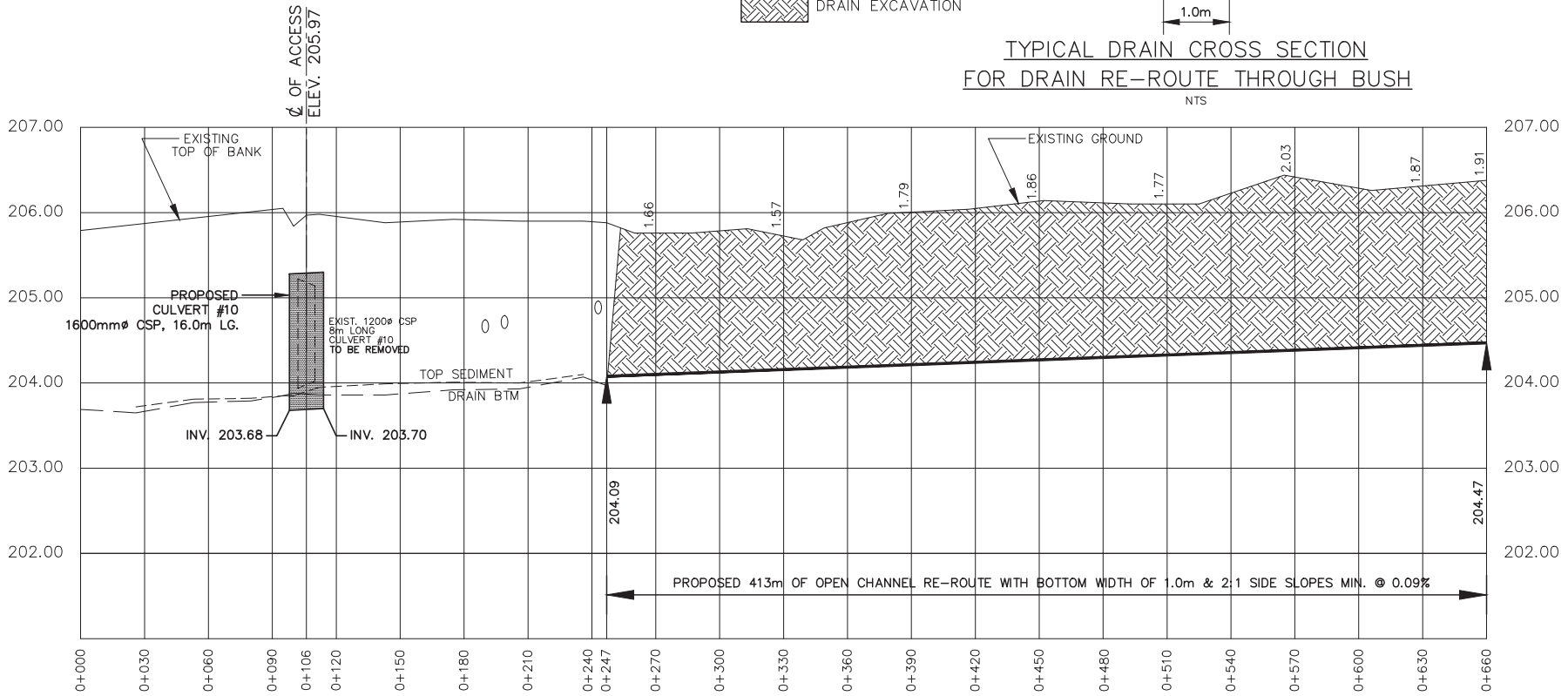
GENERAL NOTES

1. BENCHMARK ELEV. 205.14
   TOP OF EAST END EXISTING
   1250ø CSP CROSSING ACCESS
   AT ST. 0+106
2. UPPER NUMBERS ARE DEPTH FROM
   GROUND TO BOTTOM OF PROPOSED DRAIN REALIGNMENT.

LICENSED PROFESSIONAL ENGINEER
J. H. WARNER
100520016
AUG. 19, 2025
PROVINCE OF ONTARIO



TYPICAL DRAIN CROSS SECTION
FOR DRAIN RE-ROUTE THROUGH BUSH
NTS



Dobbin Engineering Inc.
4218 Oil Heritage Road
Petrolia Ontario, N0N 1R0
Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME: Bannister Drain Profile 1
PROJECT No. 2024-1606

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	AUG. 19, 2025	CS
B. VAN RUITENBURG				
DRAWN				
C. SAUNDERS				

SCALE: 1:2,000
0 20 40 60m

TOWNSHIP of PLYMPTON-WYOMING

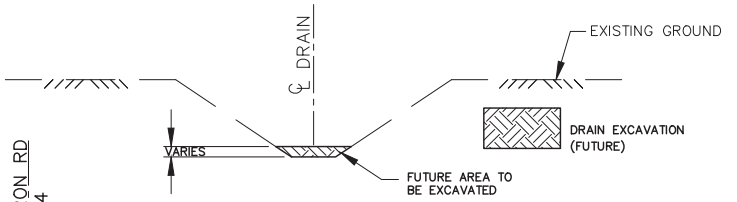
BANNISTER DRAIN
PROFILE

Last Updated: August 19, 2025

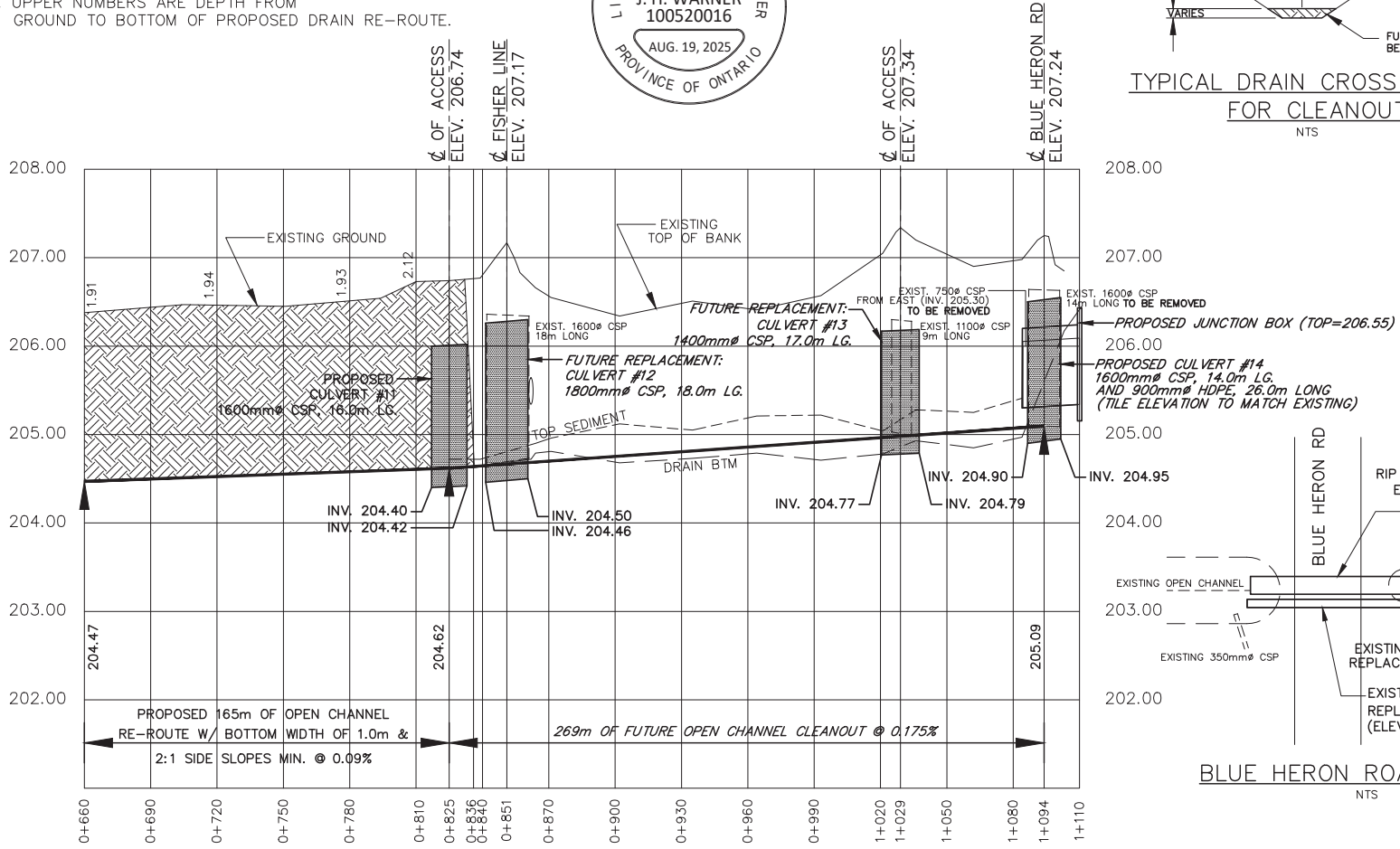
GENERAL NOTES

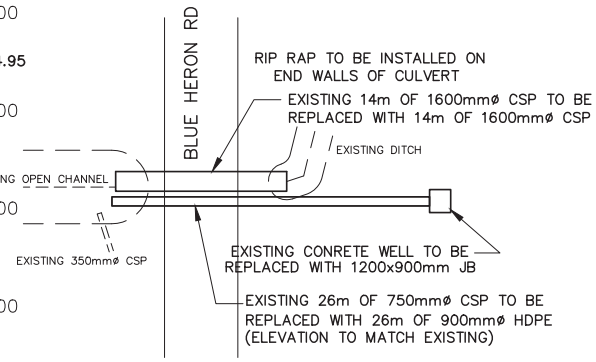
1. BENCHMARK ELEV. 206.34
   TOP OF SOUTH END EXISTING
   1600ø CSP CROSSING FISHER LINE
   AT ST. 0+851
2. UPPER NUMBERS ARE DEPTH FROM
   GROUND TO BOTTOM OF PROPOSED DRAIN RE-ROUTE.

LICENSED PROFESSIONAL ENGINEER
J. H. WARNER
100520016
AUG. 19, 2025
PROVINCE OF ONTARIO



TYPICAL DRAIN CROSS SECTION FOR CLEANOUT
NTS





BLUE HERON ROAD CROSSING
NTS

Dobbin Engineering Inc.
4218 Oil Heritage Road
Petrolia Ontario, N0N 1R0
Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME: Bannister Drain Profile 2
PROJECT No. 2024-1606

APPROVED J. WARNER
CHECKED B. VAN RUITENBURG
DRAWN C. SAUNDERS

NO.	REVISIONS	DATE	BY
1	FINAL REPORT	AUG. 19, 2025	CS

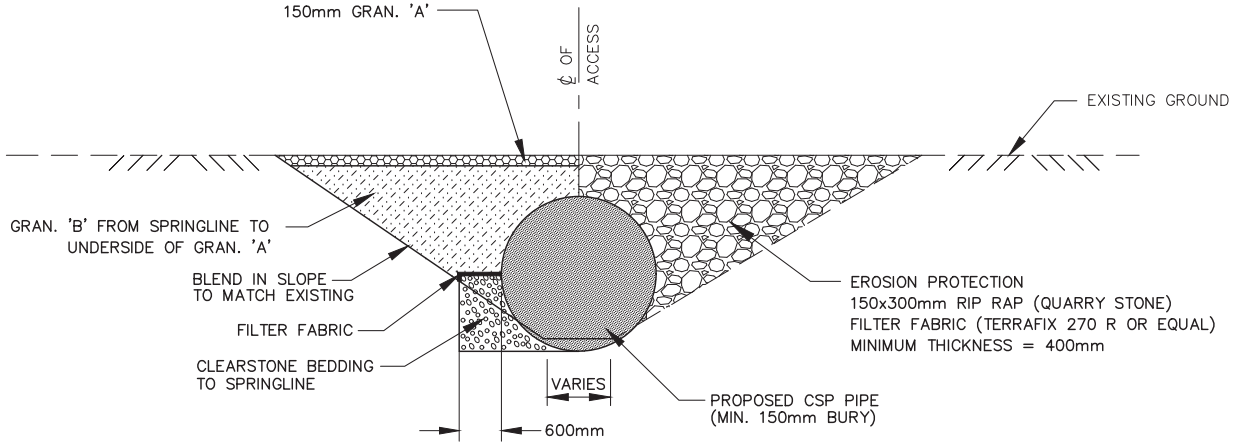
SCALE: 1:2,000
0 20 40 60m

TOWNSHIP of PLYMPTON-WYOMING

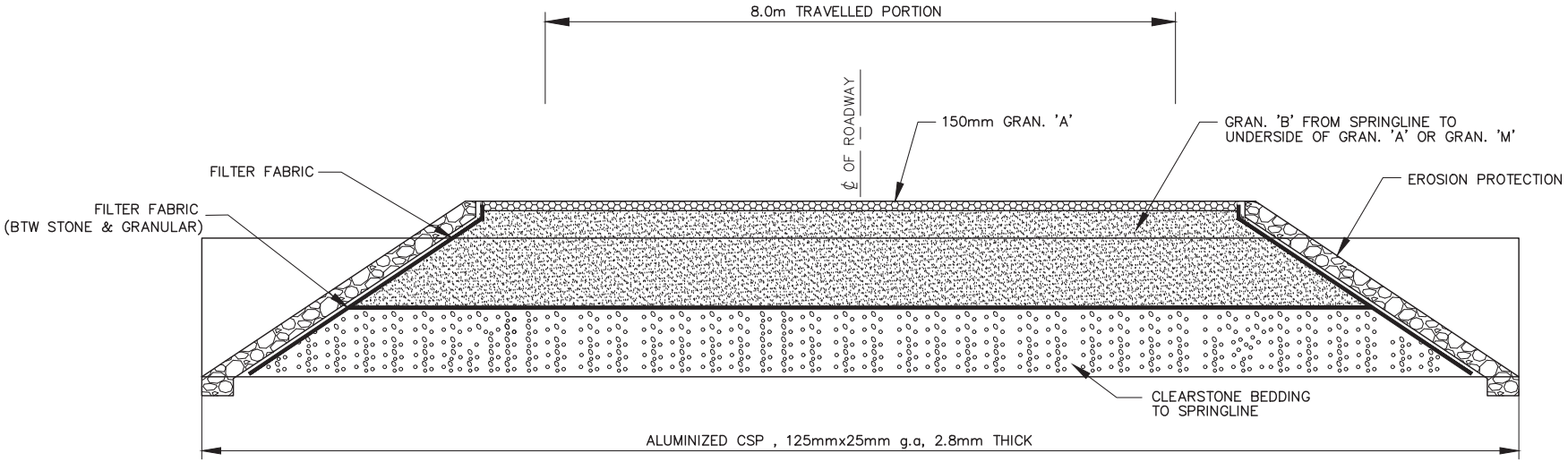
BANNISTER DRAIN
PROFILE

4
OF 6

Last Updated: August 19, 2025



PROPOSED PIPE END SECTION



PROPOSED CROSS–SECTION

L ICENSED PROFESSIONAL ENGINEER
J. H. WARNER
100520016
AUG. 19, 2025
PROVINCE OF ONTARIO

Dobbin Engineering Inc.
4218 Oil Heritage Road
Petrolia Ontario, N0N 1R0
Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME: Bannister Drain Typical Access Culvert Detail

PROJECT No. 2024–1606

APPROVED J. WARNER

CHECKED B. VAN RUITENBURG

DRAWN C. SAUNDERS

NO.	REVISIONS	DATE	BY
1	FINAL REPORT	AUG. 19, 2025	CS

SCALE 1:75

0 2m

TOWN of PLYMPTON-WYOMING

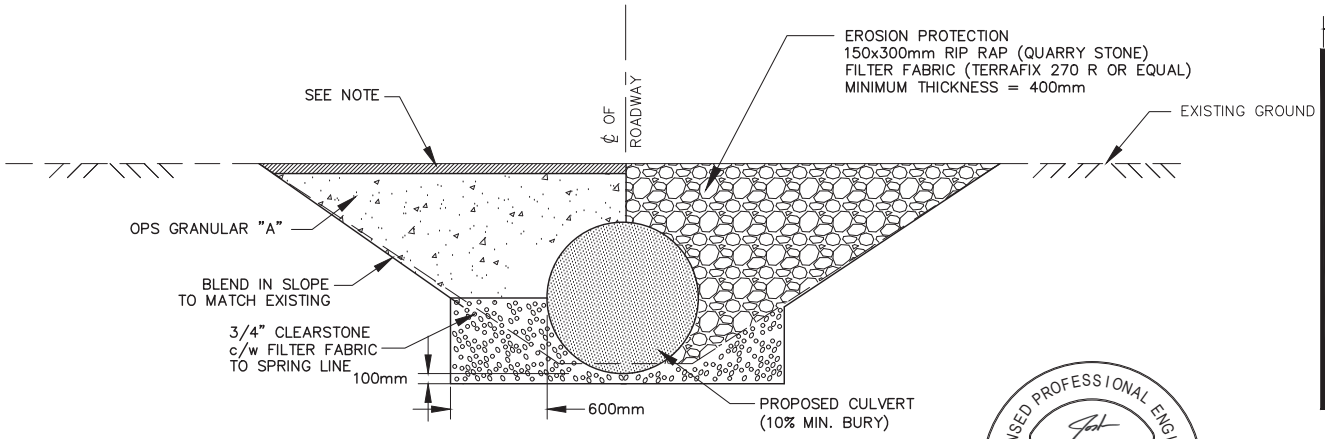
BANNISTER DRAIN

TYPICAL ACCESS CULVERT DETAIL

5

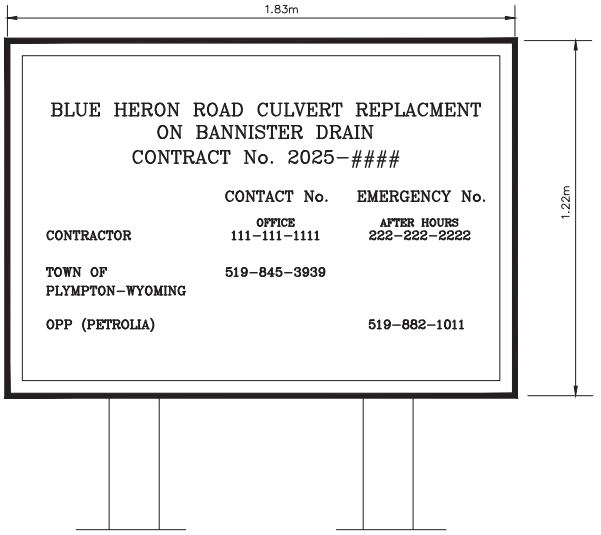
OF 6

Last Updated: August 19, 2025



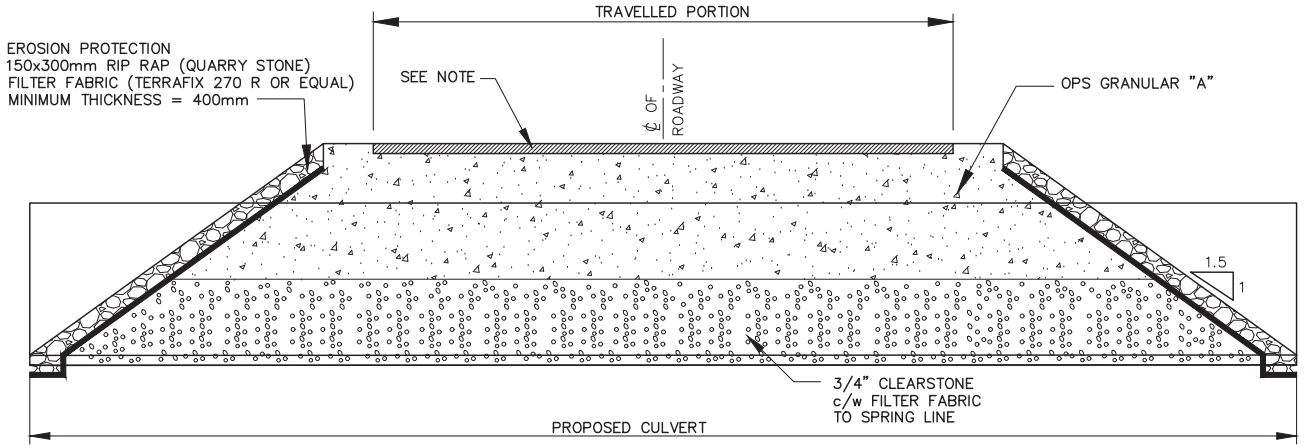
PROPOSED PIPE END SECTION

LICENSED PROFESSIONAL ENGINEER
J. H. WARNER
100520016
AUG. 19, 2025
PROVINCE OF ONTARIO



NOTE:

THE CONTACTOR SHALL SUPPLY AND ERECT SIGNBOARDS AT LOCATIONS DESIGNATED BY THE ENGINEER. THE SIGNBOARD SHALL BE 1.22m HIGH x 1.83m WIDE. A SUITABLE FRAMEWORK SHALL BE SUPPLIED AND ERECTED BY THE CONTRACTOR TO SUPPORT THE FRAME.
LETTERING SHALL BE GREEN ON A WHITE BACKGROUND.
THE SIGNBOARD SHALL BE ERECTED IN POSITION, AND MOVED WITH THE PROGRESS OF THE WORK, AS DIRECTED BT THE ENGINEER.



PROPOSED CROSS-SECTION

NOTES:

ALL BACKFILL COMPACTED TO 98% SPMDD

ASPHALT ROAD

-HL3 AND HL4 TO MATCH EXISTING THICKNESS (MINIMUM 50mm)

GRAVEL ROAD

-200mm OF OPS GRANULAR "M" (CRUSHED DOLOMITE SOURCE) TO MATCH EXISTING ROAD WIDTH

Dobbin Engineering Inc.
4218 Oil Heritage Road
Petrolia Ontario, N0N 1R0
Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME: Bannister Drain Road Culvert Detail for Round Pipes
PROJECT No. 2024-1606

APPROVED J. WARNER
CHECKED D. MOORES
DRAWN J. WARNER

NO.	REVISIONS	DATE	BY
1	FINAL REPORT	AUG. 19, 2025	JW

SCALE 1:75
0 2m

TOWN of PLYMPTON - WYOMING
BANNISTER DRAIN
TYPICAL ROAD CULVERT DETAIL - ROUND PIPES

Last Updated: August 19, 2025