

August 22, 2023

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

Gentlemen and Mesdames:

**Re: Falconer-Ramsey Drain and Lower Aberarder Creek**

In accordance with your instructions, R. Dobbin Engineering has undertaken an examination with regards to improving the Falconer-Ramsey Drain and Lower Aberarder Creek 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 as per a request of an affected Landowner.

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 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.

Background

Lower Aberarder Creek outlets into Stewart Creek on the west side of Oil Heritage Road, approximately 600m south of Douglas Line. It then continues generally southeasterly for approximately 5,500m to the W ½ of Lot 20, Concession 10. At this point the channel is

renamed the Falconer-Ramsey Drain. The Falconer-Ramsey Drain continues southeasterly for 5,080m and terminates in Lot 25, Concession 8.

Under an Engineer's Report dated March 3, 1954 Lower Aberarder Creek was cleaned out from just west of Oil Heritage Road to near the center of the E ½ of Lot 16, Concession 12.

Under an Engineer's Report dated June 27, 1978 Lower Aberarder Creek was cleaned out from the east side of Oil Heritage Road to just south of Aberarder Line in the N ½ of Lot 19, Concession 10.

Under an Engineer's Report dated June 28, 1989 Lower Aberarder Creek was cleaned out and rip rap was installed in order to reduce erosion in the E ½ of Lot 18 and part of Lot 19, Concession 11.

Under an Engineer's Report dated December 30, 1981 the Falconer-Ramsey Drain was improved with a cleanout and erosion protection from the west limit of Lot 21, Concession 10 to the center of the E ½ of Lot 23, Concession 10. A new farm crossing was also installed in the W ½ of Lot 23, Concession 9.

#### Drain Classification

Lower Aberarder Creek is currently classified as a class "C" drain from Oil Heritage Road to a point in the E ½ of Lot 17, Concession 11. From there to Fisher Line, Lower Aberarder Creek and the Falconer-Ramsey Drain are both classified as a class "E" drains. Upstream of Fisher Line the Falconer-Ramsey Drain is classified as a class "C" drain.

These classifications are the Department of Fisheries and Oceans (DFO) classification as presented by the Ontario Ministry of Agriculture, Food and Rural Affairs Agricultural Information Atlas.

#### Site Meeting

A site meeting for this drain was held on September 9<sup>th</sup>, 2021. The following were present:

- Josh Warner (R. Dobbin Engineering)
- Gary Atkinson (Council Representative, Town of Plympton Wyoming)
- Elizabeth Cummings (Drainage and Engineering Co-ordinator, Town of Plympton Wyoming)

- Jessica Wilson (Executive Assistant – Park / Drainage Clerk, Town of Plympton Wyoming)
- Greg Kerrigan (Landowner)
- Bill McKinlay (Landowner)
- Sue Smith (Landowner)
- Gary DeBorger (Landowner)
- Matt Delorne (Landowner)

The following is a brief summary of the meeting:

- General discussion of the Drainage Act and Landowners rights under the Drainage Act.
- Landowners were made aware that there has been a request for improvements on the Falconer-Ramsey Drain and Lower Aberarder Creek.
- Landowners expressed concerns with flooding, erosion, bank stability, and brush. They felt that the entire drain may need to be cleaned out.
- It was discussed that possible grants may be available from the SCRCA. R. Dobbin Engineering would look into these as the report progressed.

#### Discussion

Following the site meeting, Landowners downstream of the W ½ of Lot 18, Concession 11 were contacted, as they were not invited to the site meeting. The owner of the property with Roll Number 030-232, Ken Philpott, was contacted on October 5, 2021. He mentioned that there is some sticks and logs but he had no major concerns. The owner of the properties with Roll Numbers 030-231 and 030-233, Bill Douglas, was contacted on October 4, 2021. He did not have any concerns with the drain and would prefer no work in order to protect the trees, specifically the maples, on his property. The owner of the property with Roll Number 030-190, John Schoonjans, was contacted on October 5, 2021. He expressed concerns with erosion on the north side of the drain, west of the laneway. While surveying the drain, the Landowner of the property with Roll Number 030-191 expressed concerns with erosion on the drain.

Following the draft report meetings outlined below, the Landowner of the property with Roll Number 030-162 requested an access culvert on their property.

Existing Conditions

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

<b>Culvert Number (Number in Brackets Represents Town/County's Numbering)</b>	<b>Location</b>	<b>Existing Culvert Size</b>	<b>Condition</b>
1 (30-3-084)	Oil Heritage Road	Concrete Bridge	Good
2	Roll Number 030-190	5600mm Span Concrete Bridge	Okay
3	Roll Number 030-191	4 x 400mm dia. CSP (Low Level Crossing)	Under Water, Appears Okay
4	Roll Number 030-192	Multiple 300mm dia. CSP (Low Level Crossing)	Under Water, Appears Okay
5 (43)	Hillsboro Road	10,100mm Span Concrete Bridge	Good
6	Roll Number 030-198	Existing Bridge	Okay
7 (11-3-063)	Aberarder Line	12,190mm Span Concrete Bridge	Good
8	Not Applicable. Proposed New Culvert		
9 (35)	Blue Heron Road	8,200mm Span Concrete Bridge	Good
10	Roll Number 030-127-01	3 x 500mm dia. CSP (Low Level Crossing)	Under Water, Appears Okay but some Rust
11	Roll Number 030-128	3890x2690mm CSPA	Good
12 (76)	Fisher Line	9,200mm Span Concrete Box	Good
13 (18)	Uttoxeter Road	3800mmx2000mm CSPA	Okay

Design

The proposed agricultural culverts shall be designed to provide outlet for a 1 in 2-year storm event. The proposed road culverts across the roads shall be designed to provide outlet for a 1 in 25-year storm event.

Draft Report dated March 15, 2023

A draft report, dated March 15, 2023, was sent to the benefitting Landowners. With the draft report it was requested that the Landowners reach out to the Town and set up a meeting with Town staff and R. Dobbin Engineering to review the report and address any questions or concerns they have regarding the work on their property. Town staff also reached out directly to Landowners to set up meetings and R. Dobbin Engineering called Landowners who were unable to attend. Meetings were held in Town council chambers on May 30<sup>th</sup> and 31<sup>st</sup>, 2023. Below is a summary of the meetings:

- The Landowners of the properties with Roll Number 030-231, 030-233 and 030-232 expressed concerns with the brush removal. Josh Warner met with the Landowners on site and reviewed the working area as well as the intent of the work on their property. Josh outlined that it was mostly brush removal within the channel and along the banks. The Landowner of the property with Roll Number 030-233 requested that erosion control be placed on two sections near the field. The Landowners mentioned that there is a location with turtles that should be left and a grouping of trees that should be left. Josh stated that these can be brought up at the construction stage to ensure they are adhered to.
- The Landowner of the property with Roll Number 030-190 requested that a portion of the drain be straightened.
- The Landowner of the property with Roll Number 030-191 requested that additional rip rap be placed in a location.
- The Landowner of the property with Roll Number 030-192 requested that the low-level crossing on the property be replaced with a culvert sufficient to handle a 1 in 2-year storm event.
- The Landowners of the property with Roll Number 030-160 requested that a portion of the drain be straightened. They did not want any work to take place. Josh stated that in order to improve the drain for upstream lands their property would need to be improved. The Landowners requested that the work on their property be kept to a minimum. This revised report reduces the amount of resloping on the north side of the channel.
- The Landowner of the property with Roll Number 030-127-01 requested that the low-level crossing on the property be replaced with a culvert sufficient to handle a 1 in 2-year storm event. The Landowner requested that wicking the drain take place prior to the work under this report.
- The Landowners of the properties with Roll Numbers 030-097, 030-098 and 030-101 requested that no work take place on their properties. As there has no been requests from upstream lands this was removed from the report. The Landowners were informed that a future request may necessitate the work on their properties.

Draft Report dated June 12, 2023

A draft report, dated June 12, 2023, was sent to the entire watershed. A meeting was held on August 3, 2023. The following were present:

- Josh Warner (R. Dobbin Engineering)
- John VanKlaveren (Council Representative, Town of Plympton Wyoming)
- Elizabeth Cummings (Drainage and Engineering Co-ordinator, Town of Plympton Wyoming)
- Andrew Maver (Virtual) (Public Works Manager and Drainage Superintendent, Township of Warwick)
- Bill and Carol MacKinlay (Landowner)
- Dan Simpson (Virtual) (Landowner)
- Gary DeBorger (Landowner)
- Jeff Bullick (Landowner)

The following is a brief summary of the meeting:

- General discussion of the Drainage Act and Landowners rights under the Drainage Act.
- Bill and Carol MacKinlay expressed concerns, specifically regarding the trees being planted on their property. Josh Warner explained that these are a requirements of the DFO in order to offset the destruction of fish habitat. Josh reached out to the DFO to obtain their sampling information and provided that information to the Landowners.

Approvals

The general plan and the DFO's Request for Review Form were submitted on March 16, 2022 to ensure compliance. Following the submittal, meetings with the DFO, R. Dobbin Engineering and the Town were held on July 14, 2022 and August 11, 2022. As a result of these meeting and numerous phone conversations, revised drawings were sent to the DFO on June 21, 2022 and August 31, 2022. On February 3, 2023 the DFO responded that a Fisheries Act Authorization will be required as they determined that the activities will cause harmful alteration of fish habitat. Virtual meetings were held with R. Dobbin Engineering, the Town and the DFO on February 2, 2023 and February 24, 2023 to establish the requirements to meet the authorization. It resulted in incorporating measures into the drain to act as offsetting and mitigation measures to compensate for the harmful alteration of fish habitat. These features include the following:

- Incorporation of Existing Riffles (Station 0+155, 0+590, 0+668, 0+775, 1+745 & 1+844)
- Incorporation of Existing Oxbow (Station 0+907)
- Incorporation and Maintenance of Pools (Station 2+870, 3+504 & 6+170)
- Re-Instating Gravel Substrate in Sections (Station 2+160 to 2+610 & 6+910 to 7+830)
- Leaving the Drain Bottom Untouched in Sections (Station 2+662 to 3+060, 3+510 to 3+580 & 6+689 to 6+760)
- Excavation and Levelling to Construct a Two-Stage Channel (Station 4+055 to 4+320) c/w Sod Matting (Station 4+055 to 4+105)
- Supply and Installation of riffle-pools (Station 5+100, 7+770 & 9+010), temporary rock flow check dams (Station 1+920, 3+970, 5+910 & 8+310), and woody-debris erosion protection (Station 2+990)
- Re-Installation of Riffle and Pool utilizing existing materials (Station 3+630)
- Tree Plantings (Station 4+970 to 5+527)
- Cobblestone Substrate (Station 3+370 to 3+400)
- Meandering Low Flow Channel (Station 6+000 to 6+060 and 6+760 to 6+900)
- Sediment Traps (Station 1+920, 2+470, 3+970, 4+470, 5+410, 5+910, 6+910, 7+410, 8+310)
- Replacement of Culvert No. 4 and No. 10

As a result of the Fisheries Act Authorization, a Letter of Credit is required by the DFO to provide security that the above measures are implemented. The Town will be providing the Letter of Credit and a portion of that interest will be applied as a cost to the drainage works. Monitoring of the environmental features will be required immediately after construction, 1 year after construction and for a period of 2 years. The monitoring will be completed by R. Dobbin Engineering.

The St. Clair Regional Conservation Authority (SCRCA) was contacted to inform them of the project. The SCRCA confirmed that an environmental appraisal will not be required on this project.

A permit will be required from the SCRCA prior to proceeding to construction.

### Recommendations

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

1. The Falconer-Ramsey Drain and Lower Aberarder Creek shall be improved along its length. In order to reduce the disruption at the lower end of the drain, spot

cleanouts and brush removal shall occur between Station 0+000 and 1+920. From Station 1+920 to 9+068 an open channel cleanout shall take place with bank re-sloping, erosion protection and environmental features as specified. Sections of the bottom of the channel shall be left in order to maintain vegetated habitat for fish and the environmental features (oxbows, pools, cobblestone substrate, riffles, riffles-pools, etc.) identified on the detailed plans and profiles shall be incorporated as apart of the drainage works. The sediment traps and rock flow check dams shall be temporary measures for construction only. The drain between Station 9+068 and 10+350 shall be left and future maintenance provisions shall be developed.

2. Culvert No. 4 and No. 10 shall be replaced and a new culvert, Culvert No. 8, shall be installed to handle the 1 in 2-year storm event. Future specifications shall be developed for the replacement of the remainder of the culverts along the length of the drainage works. If, at the time of construction, the low-level crossings that were under water, are determined to require replacement by the Engineer or Drainage Superintendent they shall be replaced under the maintenance provisions of this report.
3. A Schedule of Maintenance shall be developed for the entire open channel of the Falconer-Ramsey Drain and Lower Aberarder Creek.

#### 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 \$1,235,594.00, including engineering 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. The cost of engineering and replacement for access culverts has been assessed with 35% of the cost applied as a benefit assessment to the abutting property and the remainder of the cost assessed as an outlet assessment to upstream lands and roads based on equivalent hectares. The cost of engineering for the future replacement of road culverts has been assessed with 100% of the cost applied as a benefit assessment to the owner of the road.
2. The works required to satisfy the DFO (the cobblestone substrate, two staged channel, riffles, riffle-pools, tree plantings, etc.) and interest incurred as a result of the Letter of Credit has been assessed with 100% of the costs applied as an outlet assessment to the entire watershed.

3. The relocation of the drain has been assessed with 50% of the equivalent cost of a cleanout being assessed as an outlet assessment to upstream lands and roads based on equivalent hectares. The remaining costs of this work has been assessed to the property as a benefit assessment.
4. The remaining costs of the drainage work has generally been assessed with 40% of the cost applied as a benefit assessment to the abutting property and the remainder of the cost assessed as an outlet assessment to upstream lands and roads based on equivalent hectares.

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.

#### 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 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 \$30,000.00 per hectare (\$12,140.00 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

Accesses and working areas shall be as outlined below and as shown on the detailed plans. If discrepancies exist the Contractor shall notify the Engineer before proceeding.

Station 0+000 to 1+780: Access for construction shall be from Oil Heritage Road, along the length of the drainage works and as determined by the Drainage Superintendent or Engineer in consultation with the Landowners. The access width shall be restricted to a width of 4m and shall generally be along existing trails on the south/east side of the

channel and as agreed upon with the Landowners. Access for the installation of rip rap on the east bank shall be from Oil Heritage Road and along the north/east limit of the bush as agreed upon by the Landowners. This access shall be restricted to a width of 6m. The working area for the construction within the channel shall be restricted to a width of 6m from the top of bank. The working area shall extend in order to allow for trucks and equipment to turn around. The working area for future maintenance of the channel shall be restricted to a width of 12m from the south/west top of bank.

Station 1+780 to 3+889: Access for construction shall be from Aberarder Line through the property with Roll Number 030-190 and from Hillsboro Road along the length of the drainage works. The access width shall be restricted to a width of 6m. The working area for the construction and future maintenance of the channel shall be restricted to a width of 12m from the north/east top of bank. If access cannot be gained immediately north of the drain off of Hillsboro Road access shall be gained through a break in the trees to the north.

Station 3+889 to 4+045: Access for construction shall be from Aberarder Line and Blue Heron Road and along the length of the drainage works. The working area for the construction and future maintenance of the channel shall be restricted to a width of 12m from the west top of bank.

Station 4+045 to 4+320: Access for construction shall be from Aberarder Line and Blue Heron Road and along the length of the drainage works. The working area for the construction and future maintenance of the channel shall be restricted to a width of 15m past both banks.

Station 4+320 to 4+970: Access for construction shall be from Aberarder Line and Blue Heron Road and along the length of the drainage works. The working area for the construction and future maintenance of the channel shall be restricted to a width of 12m from the north/east top of bank.

Station 4+970 to 5+527: Access for construction shall be from Aberarder Line and Blue Heron Road and along the length of the drainage works. The working area for the construction and future maintenance of the channel shall be restricted to a width of 15m past both banks. The drain may be crossed to gain access to the opposite side of the channel at the discretion of the Engineer or Drainage Superintendent. This shall be done in one location and is intended to be at the location of the existing rock crossing in the property with Roll Number 030-160.

Station 5+527 to 6+689: Access for construction shall be from Aberarder Line and Blue Heron Road and along the length of the drainage works. The working area for the

construction and future maintenance of the channel shall be restricted to a width of 12m from the south top of bank.

Station 6+689 to 9+068: Access for construction shall be from Blue Heron Road and Fisher Line and along the length of the drainage works. The working area for the construction and future maintenance of the channel shall be restricted to a width of 12m from the north/east top of bank.

Station 9+068 to 10+350: Access for future maintenance shall be from Fisher Line and Uttoxeter Road and along the length of the drainage works. The working area for future maintenance of the channel shall be restricted to a width of 12m from the south/west top of bank.

All access, unless otherwise stated, shall be restricted to a width of 6m. Access for culvert maintenance and channel repair on a single property shall be from 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. If, at the discretion of the Drainage Superintendent or Engineer, 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.

### 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

Lower Aberarder Creek and the Falconer-Ramsey Drain shall be maintained and repaired with the specifications and drawings enclosed in this report and in in the same relative

portions as contained in the Schedule of Maintenance contained in this report, unless otherwise noted or altered under the provisions of the Drainage Act.

All the access culverts shall be maintained and repaired with a culvert length required to have an 8m top width (as shown on the profile with concrete block end walls) assessed in the following manner:

Culvert Number	Benefiting Land	Road Authority	Upstream Based on Equivalent Hectares as Contained in the SofM
2, 3, 4, 6, 8, 10, 11	35%		65%
5, 7, 9, 12, 13		100%	

Culvert No. 1 has been left out as it is a bridge and has not been designed as part of this project.

If an 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 and shall include any headwalls.

Each property is allowed one access culvert for each municipal drain with any second culvert on the property maintained and repaired 100% by the owner.

The below environmental features shall be maintained at the expense of the entire watershed based on equivalent hectares contained in the Schedule of Maintenance. All other features shall be maintained as per the Schedule of Maintenance:

- Riffles (Station 0+155, 0+590, 0+668, 0+775, 1+745 & 1+844)
- Oxbow (Station 0+907)
- Pools (Station 2+870, 3+504 & 6+170)
- Gravel Substrate (Station 2+160 to 2+610 & 6+910 to 7+830)
- Two-Stage Channel (Station 4+055 to 4+320) c/w Sod Matting (Station 4+055 to 4+105)
- Riffle-pools (Station 3+630, 5+100, 7+770 & 9+010)
- Woody-debris erosion protection (Station 2+990)
- Tree Plantings (Station 4+970 to 5+527)
- Cobblestone Substrate (Station 3+370 to 3+400)

Yours truly,

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



Falconer-Ramsey Drain and Lower Aberarder Creek  
Town of Plympton-Wyoming  
August 22, 2023

**ALLOWANCES**

Allowances have been made as per Sections 29 and 30 of the Drainage Act for right of way, damages to lands and crops and existing drainage infrastructure.

Conc.	Lot or part	Roll No.	Owner	Section 29 (\$)	Section 30 (\$)	Total (\$)
8	W 1/2 Lot 24	030-097	A. & H. Degroot	430	-	430
	E 1/2 Lot 24	030-098	C. Leystra	1,740	-	1,740
9	S Pt. Lot 25	030-101	Leystra Farms Ltd.	2,010	-	2,010
	E 1/2 Lot 22 & W 1/4 Lot 23	030-127	Deborger Farms Ltd.	2,510	2,510	5,020
	E 1/4 W 1/2 Lot 23	030-127-01	Deborger Farms Ltd.	460	520	980
	E 1/2 Lot 23 & NW 1/4 Lot 24	030-128	A. Mcfarlane	120	1,940	2,060
	Pt. SW 1/4 Lot 24	030-129	A. & P. Hebert	770	770	1,540
10	N 1/2 Lot 19	030-159	DST Farms Inc.	2,390	2,750	5,140
	W 1/2 Lot 20	030-160	W. & C. Mackinlay	3,700	3,700	7,400
	E 1/2 Lot 20	030-161	D. Simpson	1,120	1,120	2,240
	W 1/2 Lot 21	030-162	A. Bell	1,720	1,080	2,800
	E 1/2 Lot 21	030-163	A. Bell	1,060	1,260	2,320
	W 1/2 & SE 1/4 Lot 22	030-164	Weber Zoca Farms Ltd.	1,340	1,340	2,680
	E 1/2 Lot 16	030-189	J. & F. Ploeg	-	1,200	1,200
11	W 1/2 Lot 17	030-190	Lake Breeze Farms Inc.	360	990	1,350
	E 1/2 Lot 17	030-191	T. & J. Soepboer	1,850	1,850	3,700
	W 1/2 Lot 18 & NE 1/4 Lot 18	030-192	M. Sutton	570	1,370	1,940
	E 1/2 Lot 18	030-193	G. & B. Kerrigan	870	870	1,740
12	Pt. W 1/2 Lot 19	030-197	M. Delorme & A. Kuenzig	860	860	1,720
	W 1/2 Lot 19	030-198	S. & N. Smith Est Trustee	-	540	540
	NW 1/4 Lot 16	030-231	W. Douglas	-	600	600
	SW 1/4 Lot 16	030-232	K. Philpott	-	430	430
	E 1/2 Lot 16	030-233	W. & M. Douglas	100	1,700	1,800
	TOTAL ALLOWANCES				\$23,980	\$27,400

**Estimate of Cost**

<u>Item Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
Pre-Construction Meeting	1	LS	1,000	1,000
Brushing, Tree Removal and Spot Cleanouts between Stations 0+018 and 1+920 along west/south side	160	hours	300	48,000
Brushing and Tree Removal from 0+775 to 0+790 and 1+040 to 1+060 for rip rap placement on east side of the Channel	1	LS	5,000	5,000
Brushing and Tree Removal between Stations 1+920 and 9+068	1	LS	90,000	90,000
Bottom Cleanout Only complete with Levelling (Station 1+920 to 2+100, 3+060 to 3+194, 3+889 to 4+035, 6+100 to 6+170, 6+241 to 6+326, 8+135 to 8+490, 8+530 to 8+803)	1,273	m	12	15,276
Bottom Cleanout and One Bank Re-Sloping to 2:1 complete with Levelling (Station 2+100 to 2+662, 3+194 to 3+504, 3+578 to 3+584, 3+604 to 3+889, 4+32 to 4+970 less toe pulls, 4+970 to 6+000, 6+900 to 8+135, 8+490 to 8+530, 8+803 to 9+058 less road crossings)	4,716	m	18	84,888
One Bank Re-Sloping to 2:1 complete with Levelling (No Bottom Cleanout) (Station 2+662 to 2+836, 2+944 to 3+034, 3+510 to 3+580, 4+970 to 5+527 as required, 6+000 to 6+100, 6+326 to 6+679, 6+699 to 6+760, 8+020 to 8+080)	955	m	14	13,370
Excavation and Levelling to Construct Two-Stage Channel (Station 4+055 to 4+320) c/w Sod Matting (Station 4+055 to 4+105)	265	LS	40	10,600
Excavation to Pull East Toe and Bank Re-Sloping to 2:1 complete with Levelling (Station 4+580 to 4+600 and 4+675 to 4+725)	70	m	20	1,400
Reslope and to construct 6:1 slope on North and South Bank and Remove and Re-Install Stone near Station 5+070 to allow for occasional access	8	m	60	480
Drain Re-Routing from Station 1+950 to 1+990				
Excavation to Construct New Channel	40	m	40	1,600
Fill in Open Channel with Excavated Material	70	m	8	560
Drain Re-Routing from Station 4+970 to 5+030				
Excavation to Construct New Channel	60	m	40	2,400
Fill in Open Channel with Excavated Material	120	m	8	960
Supply and Installation of Rip Rap for bank stability, riffle-pools, temporary rock flow check dams, woody-debris, culvert endwalls and tile outlets (Approx. 640 tonne specified, remainder provisional)	840	tonne	130	109,200
Supply and Installation of Rip Rap for bank stability from 0+775 to 0+790 and 1+040 to 1+060 on east side of the Channel	160	tonne	150	24,000
Fence Removals and Re-Installation	1	LS	4,000	4,000



**SCHEDULE OF ASSESSMENT**

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)
<b><u>Town of Plympton-Wyoming</u></b>							
<b>Municipal Lands</b>							
	Forest Road (Highway 21)	4.80		County of Lambton MTO	-	3,591	3,591
	Aberarder Line	7.28		County of Lambton	1,800	2,650	4,450
	Oil Heritage Road	0.00		County of Lambton	-	-	-
	Hillsboro Road	4.62		Town of Plympton-Wyoming	1,800	1,076	2,876
	Blue Heron Road	5.69		Town of Plympton-Wyoming	1,800	1,941	3,741
	Uttoxeter Road	8.09		Town of Plympton-Wyoming	1,800	4,014	5,814
	Brush Road Road	8.50		Town of Plympton-Wyoming	-	4,240	4,240
	Egremont Road	8.50		Town of Plympton-Wyoming	-	6,365	6,365
	Michigan Line	3.64		Town of Plympton-Wyoming	-	2,724	2,724
	Fisher Line	11.06		Town of Plympton-Wyoming	1,800	8,215	10,015
	Total Municipal Lands				9,000	34,816	43,816
<b>Non-Agricultural Lands</b>							
6	NE PT W 1/4 Lot 26	0.40	030-025-03	J. & J. Scott	-	116	116

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)
7	E Pt. Lot 26	20.40	030-066	J. Genovy	-	5,936	5,936
	N Pt. Lot 26	0.99	030-068-01	R. Best	-	288	288
8	Pt. E 1/4 Lot 22	3.20	030-092	L. Mitchell & Z. Klingsiek	-	924	924
	NW 1/4 Lot 23	4.03	030-094	J. & M. Ellenor	-	831	831
	Pt. Lot 27	0.81	030-104-05	G. & W. Cassidy	-	236	236
	Pt. Lot 28	2.14	030-106-01	C. Verville & N. Ashmore	-	623	623
	Pt. Lot 29	1.21	030-112-01	C. & N. Holbrook	-	350	350
	Pt. Lot 30	0.96	030-113-01	R. & T. Sharp	-	278	278
	Pt Lot 30	0.30	030-115	J. Eccles	-	87	87
9	Pt. Lot 22	0.57	030-127-02	D. & A. Brooks	-	155	155
	Pt. SW 1/4 Lot 24	1.85	030-128-05	B. & A. Dhillon	2,118	473	2,591
	Pt. SW 1/4 Lot 24	18.32	030-129	A. & P. Hebert	6,355	3,249	9,604
	Pt. Lot 24	0.50	030-131	R. Bullick Trustee & J. Magee Trustee	-	144	144
	Pt. Lot 25	0.22	030-134	B. Coulter	-	64	64
	Pt. Lot 25	1.32	030-135	W. Bullick	-	381	381
	Pt. Lot 25	0.75	030-136	M. & J. Wilkinson	-	217	217
	Pt. Lot 25	1.22	030-138-05	R. & T. Koostra	-	353	353
	Pt. Lot 26	1.04	030-142	V. & E. Kozak	-	301	301
	Pt. Lot 28	0.44	030-145-01	W. & C. Brush	-	127	127
	Pt. Lot 30	0.45	030-148-01	N. Eves & C. Kennedy	-	130	130
	Pt. Lot 30	0.56	030-149-05	C. & R. Avery	-	162	162

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)
10	Pt. Lot 18	0.13	030-156	D. Gingerich & M. Foisy	-	18	18
	Pt. Lot 20	0.99	030-161-03	W. & E. Annett	-	140	140
	Pt. Lot 24	0.91	030-169	F. & K. Hachey	-	189	189
	Pt Lot 25	11.79	030-171	K. Ayers	-	2,101	2,101
	Pt. Lot 25	4.43	030-173	P. Norman & M. Lorraine	-	627	627
	Pt. Lot 26	0.26	030-175	K. & A. Dobroski	-	37	37
11	Pt. W 1/2 Lot 18	0.21	030-194	R. & K. Bryce	-	28	28
	Pt. E 1/2 Lot 18	3.26	030-195	Lambton Kent District School Board	-	430	430
	Pt. E 1/2 Lot 18	0.39	030-195-01	C. & M. Hayes	-	51	51
	Pt. E 1/2 Lot 18	0.49	030-196	M. Shannon & D. Herron	-	65	65
	Pt. E 1/2 Lot 18	0.25	030-715-50	Town of Plympton-Wyoming	-	33	33
	Pt. W 1/2 Lot 19	2.24	030-197	M. Delorme & A. Kuenzig	8,608	304	8,912
	Pt. E 1/2 Lot 19	0.06	030-200	Persona Communications Inc.	-	8	8
	Pt. W 1/3 Lot 21	2.21	030-203-02	J. McGill & M. Anderson	-	309	309
Total Non-Agricultural Lands					17,081	19,765	36,846

**Agricultural Lands (Eligible for Available Grants)**

6	E 3/4 Lot 26	0.40	030-026	Fergusons' Scatter Acres	-	116	116
	E 1/2 Lot 28	12.10	030-030	D. Watson	-	3,502	3,502
	W 1/2 Lot 29	19.00	030-031	G. Magee	-	5,499	5,499
	E 1/2 Lot 29	19.00	030-032	A. & M. Brouwer	-	5,499	5,499
	W 1/4 Lot 30	8.10	030-033	D. Steven	-	2,344	2,344
	Pt. C 1/3 Lot 30	14.20	030-034	D. & C. Ferguson	-	4,132	4,132
	E 1/4 Lot 30	6.90	030-035	S. & C. Steven	-	1,997	1,997

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)	
7	E 1/4 Lot 25	9.31	030-064	S. Brouwer	-	2,709	2,709	
	N Pt. Lot 26	18.00	030-068	W. Ferguson	-	5,238	5,238	
	SW Pt. Lot 26	41.45	030-069	E. Brouwer	-	11,027	11,027	
	W 1/2 Lot 27	39.68	030-070	E. & T. & S. Brouwer	-	11,216	11,216	
	E 1/2 Lot 27	38.46	030-071	J. & B. Brush	-	11,191	11,191	
	N Pt. Lot 28	54.29	30-074	S. & C. Steven	-	15,346	15,346	
	S Pt. Lot 28 & Lot 29	23.89	30-074-04	2504642 Ontario Inc.	-	6,951	6,951	
	W Pt. Lot 29	34.93	30-074-02	2504642 Ontario Inc.	-	9,293	9,293	
	E Pt. Lot 29	36.90	030-074-03	M. Ferguson	-	9,817	9,817	
	W 1/3 Lot 30	30.68	030-075	D. & J. Ferguson	-	8,904	8,904	
	C Pt. Lot 30	21.08	30-076	C. Steven	-	5,943	5,943	
	E Pt. Lot 30	31.68	30-077	C. Steven	-	8,907	8,907	
8	Pt. Lot 22	5.34	030-091	J. & B. Brush	-	1,543	1,543	
	NE 1/4 Lot 23	6.53	030-095	D. & C. Kearns	-	1,887	1,887	
	W 1/2 Lot 24	30.76 18.62	030-097	A. & H. Degroot	189	5,378	5,567	\$8884 \$9,073
	E 1/2 Lot 24	36.01 21.85	030-098	C. Leystra	766	6,314	7,080	\$9533 \$10,299
	S Pt. Lot 25	63.79	030-101	Leystra Farms Ltd.	884	18,463	19,347	
	N Pt. Lot 25 & N Pt. Lot 26	40.88	030-102	R. & B. Beintema	-	11,895	11,895	
	S Pt. Lot 26	41.56	030-103	W. Ferguson	-	12,093	12,093	
	N Pt. Lot 26 & W 1/2 Lot 27	61.26	030-104	H. & R. Leystra	-	17,825	17,825	
	E 1/2 Lot 27	41.30	030-105	E. Burgin	-	11,301	11,301	
	S 1/2 Lot 28	37.81	030-106	F. Weber	-	11,002	11,002	
	N 1/2 Lot 28	41.76	030-107	D. & P. Shea	-	12,119	12,119	
	W 1/2 Lot 29	43.36	030-110	F. Weber	-	12,224	12,224	
	W 1/4 E 1/2 Lot 29	21.45	030-111	Weber Zoca Farms Ltd.	-	6,047	6,047	
	E 1/4 Lot 29 & Pt. Lot 30	30.85	030-112	F. Weber	-	8,953	8,953	
	Pt. W 1/2 Lot 30	31.56	030-113	S. & R. Gowan Darms Ltd.	-	8,897	8,897	
	E 1/2 Lot 30	42.04	030-114	Kingma Dairy Ltd.	-	11,820	11,820	

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)
9	N 1/2 Lot 20 & W 1/4 Lot 21	12.19	030-124	J. & B. Wright	-	2,114	2,114
	E 3/4 Lot 21	30.97	030-125	Weber Zoca Farms Ltd.	-	5,371	5,371
	W 1/2 Lot 22	41.04	030-126	H. & R. Leystra	-	8,490	8,490
	E 1/2 Lot 22 & W 1/4 Lot 23	61.27	030-127	Deborger Farms Ltd.	27,795	14,804	42,599
	E 1/4 W 1/2 Lot 23	20.62	030-127-01	Deborger Farms Ltd.	48,077	5,117	53,194
	E 1/2 Lot 23 & NW 1/4 Lot 24	20.60	030-128	A. Mcfarlane	13,984	4,244	18,228
	E 1/2 Lot 24	41.80	030-130	R. Bullick Estate	-	9,047	9,047
	Pt. Lot 24	0.09	030-132	N. Bullick	-	26	26
	S 1/4 Lot 25	19.30	030-133	D. Addison	-	5,586	5,586
	N 1/4 S 1/2 Lot 25	19.45	030-137	N. Bullick	-	5,630	5,630
	S 1/4 N 1/2 Lot 25	20.69	030-138	J. Bullick	-	5,988	5,988
	N 1/4 Lot 25 & Pt. Lot 26 & SW 1/4 Lot 26	49.38	030-139	H. & A. Wouters Farms Ltd.	-	-	12,450
	Conc. 10				-	12,450	
	Pt. Lot 26	20.49	030-140	R. Bullick Estate	-	5,931	5,931
	E 1/2 Lot 26	50.39	030-141	D. & P. Shea	-	14,585	14,585
	S 1/2 Lot 27	41.65	030-143	D. Wassink & J. Winter-Wassink	-	11,022	11,022
	N 1/2 Lot 27	40.40	030-144	H. & A. Wouters	-	11,025	11,025
	Pt. W 1/2 Lot 28	36.22	030-145	W. Brush	-	10,184	10,184
	NPt. W 1/2 Lot 28	3.94	030-146	D. Wassink & J. Winter-Wassink	-	1,140	1,140
	E 1/2 Lot 28	41.47	030-144-01	W. Brush	-	11,660	11,660
	W 1/2 Lot 29	43.13	030-147	S. & A. Delorme	-	11,770	11,770
	E 1/2 Lot 29 & W 1/3 Lot 30	70.51	030-148	Deborger Farms Ltd.	-	20,408	20,408
	C 1/3 Lot 30	28.14	030-149	E. & S. Burgin	-	8,145	8,145
	E 1/3 Lot 30	28.58	030-150	E. & S. Burgin	-	8,272	8,272

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)
10	W 1/2 Lot 18 & NE 1/4 Lot 18	42.47	030-154	D. Sutton	-	4,288	4,288
	SE 1/4 Lot 18	10.22	030-155	E. Van Moorsel	-	1,032	1,032
	S 1/2 Lot 19	29.63	030-157	L. Stones	-	4,424	4,424
	N 1/2 Lot 19	40.38	030-159	DST Farms Inc.	23,650	5,715	29,365
	W 1/2 Lot 20	40.77	030-160	W. & C. Mackinlay	31,625	6,087	37,712
	E 1/2 Lot 20	39.50	030-161	D. Simpson	12,388	6,629	19,017
	W 1/2 Lot 21	41.45	030-162	A. Bell	48,250	7,189	55,439
	E 1/2 Lot 21	40.92	030-163	A. Bell	13,014	8,507	21,521
	W 1/2 & SE 1/4 Lot 22	61.15	030-164	Weber Zoca Farms Ltd.	11,714	11,975	23,689
	NE 1/4 Lot 22 & W 1/2 Lot 23	62.49	030-165	F. & D. Sutton Farms	-	12,237	12,237
	E 1/2 Lot 23	84.09	030-166	F. Sutton	-	17,496	17,496
	N Pt. Lot 24	38.08	030-167	H. Wouters	-	8,156	8,156
	S. Pt Lot 24	45.00	030-168	H. & A. Wouters	-	9,638	9,638
	Pt. W 1/2 Lot 25	28.89	030-170	H. Wouters	-	4,724	4,724
	Pt. E 1/2 Lot 25	36.80	030-172	M. & K. Alton	-	6,795	6,795
	NW 1/4 Lot 26	13.33	030-174	R. Arnhold	-	2,303	2,303
	E 1/2 Lot 26	24.98	030-177	1600692 Ontario Ltd.	-	4,316	4,316
	W 1/2 Lot 27	24.51	030-178	2354876 Ontario Ltd.	-	4,114	4,114
	NE 1/4 Lot 27	0.62	030-179	B. Jameson & J. Jameson-Mathews	-	94	94
	SE 1/4 Lot 27	13.98	030-180	M. & L. Jennings	-	2,416	2,416
	S 1/2 Lot 28	8.53	030-181	D. Wassink & J. Winter-Wassink	-	1,474	1,474
11	W 1/2 Lot 16	2.50	030-188	K. & C. Wilson	-	148	148
	E 1/2 Lot 16	15.95	030-189	J. & F. Ploeg	11,196	947	12,143
	W 1/2 Lot 17	24.93	030-190	Lake Breeze Farms Inc.	9,153	2,137	11,290
	E 1/2 Lot 17	34.74	030-191	T. & J. Soepboer	19,043	3,211	22,254
	W 1/2 Lot 18 & NE 1/4 I	41.62	030-192	M. Sutton	51,007	4,755	55,762
	E 1/2 Lot 18	36.65	030-193	G. & B. Kerrigan	8,377	4,832	13,209
	W 1/2 Lot 19	15.78	030-198	S. & N. Smith Est Trustee	3,222	2,207	5,429
	E 1/2 Lot 19	12.55	030-199	S. & N. Smith Est Trustee	-	1,771	1,771

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)
11	W 1/2 Lot 20	15.38	030-201	L. Wouters	-	2,177	2,177
	E 1/2 Lot 20	20.64	030-202	S. & N. Smith Est Trustee	-	2,921	2,921
	Pt. W 1/3 Lot 21	2.11	030-203	Lake Breeze Farms Inc.	-	299	299
	W 1/3 Lot 21	8.90	030-204	Lake Breeze Farms Inc.	-	1,260	1,260
	C 1/3 Lot 21	6.48	030-205	L. & H. Wouters	-	917	917
	E 1/3 Lot 21	2.02	030-206	Leo Wouters Farms Ltd.	-	286	286
12	NW 1/4 Lot 16	8.00	030-231	W. Douglas	3,689	481	4,170
	SW 1/4 Lot 16	12.47	030-232	K. Philpott	6,420	792	7,212
	E 1/2 Lot 16	23.00	030-233	W. & M. Douglas	19,694	1,566	21,260
	W 1/2 Lot 17	15.50	030-235	W. & M. Douglas	-	1,141	1,141
	E 1/2 Lot 17	15.50	030-236	W. Douglas	-	1,214	1,214
	Lot 18	31.00	030-237	Lake Breeze Farms Inc. c/o J. Schoonjans	-	2,208	2,208
Total Agricultural Lands					364,137	645,280	1,009,417
Total Municipal Lands					43,816		
Total Non-Agricultural Lands					36,846		
Total Agricultural Lands					<u>1,009,417</u>		
Total Assessment (Plympton-Wyoming)					\$1,090,079		

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)
<b><u>Town of Warwick</u></b>							
<b>Municipal Lands</b>							
	Egermont Road	2.02		Township of Warwick	-	1,511	1,511
	Brick Yard Line	0.40		Township of Warwick	-	198	198
	Highway 21 (Forest Road)	4.80		County of Lambton MTO	-	3,591	3,591
Total Municipal Lands					-	5,300	5,300
<b>Non-Agricultural Lands</b>							
1 NER	Pt. Lot 2	6.75	03-199	???	-	1,954	1,954
	Pt. Lot 3	0.70	03-201	G. & D. Lowrie	-	203	203
	Pt. Lot 3	0.43	03-200-01	G. & J. Wilson	-	124	124
3 NER	Pt. Lot 2	0.81	04-023	G. & M. Bork	-	234	234
Total Non-Agricultural Lands					-	2,515	2,515
<b>Agricultural Lands (Eligible for Available Grants)</b>							
1 SER	W 1/2 Lot 2	8.10	03-099	D. & P. Steven	-	2,344	2,344
	E 1/2 Lot 2 & W 1/2 Lot 3	17.00	03-101	Fergusons' Scattered Acres Farms Ltd.	-	4,920	4,920
	E 1/2 Lot 3	3.20	03-102	R. & P. Turnbull	-	926	926
1 NER	Pt Lot 2	22.78	03-198	S. & C. Steven	-	6,593	6,593
	W 1/2 Lot 3	40.68	03-200	Geo Paul Farms Inc.	-	11,774	11,774
	E 1/2 Lot 3	40.94	03-202	D. Ferguson	-	11,511	11,511
	W 1/2 Lot 4	36.90	03-203	1075180 Ontario Inc.	-	10,375	10,375
	E 1/2 Lot 4	29.60	03-204	G. Ferguson	-	8,323	8,323
	W 1/2 Lot 5	18.60	03-205	Ferguson's Scattered Acres Farms Ltd.	-	5,230	5,230

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)
1 NER	W 1/4 E 1/2 Lot 5	3.24	03-206	Eusi Farms Ltd.	-	857	857
	E 1/4 Lot 5	3.60	03-207	S. & C. Steven	-	744	744
	W 1/2 Lot 6	2.80	03-208	S. & C. Steven	-	579	579
2 NER	Lot 2	24.01	04-001	De Borger Farms Ltd.	-	6,751	6,751
	W 1/2 Lot 3	37.68	04-002	G. De Borger	-	10,906	10,906
	E 1/2 Lot 3	35.18	04-003	De Borger Farms Ltd.	-	10,182	10,182
	W 1/2 Lot 4	36.18	04-004	De Borger Farms Ltd.	-	9,574	9,574
	E 1/2 Lot 4	31.97	04-005	De Borger Farms Ltd.	-	8,989	8,989
	W 1/2 Lot 5	29.22	04-007	De Borger Farms Ltd.	-	8,457	8,457
	E 1/2 Lot 5	26.89	04-008	R. Smith	-	7,116	7,116
	W 1/2 Lot 6	4.86	04-010	De Borger Farms Ltd.	-	1,246	1,246
3 NER	Lot 2	17.00	04-023-01	W. & J. Mackenzie	-	4,920	4,920
	NW 1/4 Lot 3	8.50	04-024	W. & J. Mackenzie	-	2,460	2,460
	SW 1/4 Lot 3	10.10	04-025	W. & J. Mackenzie	-	2,923	2,923
Total Agricultural Lands					-	137,700	137,700
Total Municipal Lands					5,300		
Total Non-Agricultural Lands					2,515		
Total Agricultural Lands					<u>137,700</u>		
Total Assessment (Warwick)					145,515		
Total Assessment (Plympton-Wyoming)					<u>1,090,079</u>		
Total Assessment					\$1,235,594	\$1,242,319.00	

**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 Grant (\$)	Allowances (\$)	Estimated Net Assessment (\$)
<b><u>Town of Plympton-Wyoming</u></b>								
<b>Municipal Lands</b>								
	Forest Road (Highway 21)	4.80		County of Lambton	3,591			3,591
	Aberarder Line	7.28		County of Lambton	4,450			4,450
	Oil Heritage Road	0.00		County of Lambton	-			-
	Hillsboro Road	4.62		Town of Plympton-Wyoming	2,876			2,876
	Blue Heron Road	5.69		Town of Plympton-Wyoming	3,741			3,741
	Uttoxeter Road	8.09		Town of Plympton-Wyoming	5,814			5,814
	Brush Road Road	8.50		Town of Plympton-Wyoming	4,240			4,240
	Egremont Road	8.50		Town of Plympton-Wyoming	6,365			6,365
	Michigan Line	3.64		Town of Plympton-Wyoming	2,724			2,724
	Fisher Line	11.06		Town of Plympton-Wyoming	10,015			10,015
<b>Non-Agricultural Lands</b>								
6	NE PT W 1/4 Lot 26	0.40	030-025-03	J. & J. Scott	116			116
7	E Pt. Lot 26	20.40	030-066	J. Genovy	5,936			5,936
	N Pt. Lot 26	0.99	030-068-01	R. Best	288			288
8	Pt. E 1/4 Lot 22	3.20	030-092	L. Mitchell & Z. Klingsiek	924			924
	NW 1/4 Lot 23	4.03	030-094	J. & M. Ellenor	831			831
	Pt. Lot 27	0.81	030-104-05	G. & W. Cassidy	236			236
	Pt. Lot 28	2.14	030-106-01	C. Verville & N. Ashmore	623			623
	Pt. Lot 29	1.21	030-112-01	C. & N. Holbrook	350			350
	Pt. Lot 30	0.96	030-113-01	R. & T. Sharp	278			278
	Pt Lot 30	0.30	030-115	J. Eccles	87			87

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Total Assessment (\$)	Estimated Grant (\$)	Allowances (\$)	Estimated Net Assessment (\$)
9	Pt. Lot 22	0.57	030-127-02	D. & A. Brooks	155			155
	Pt. SW 1/4 Lot 24	1.85	030-128-05	B. & A. Dhillon	2,591			2,591
	Pt. SW 1/4 Lot 24	18.32	030-129	A. & P. Hebert	9,604		1,540	8,064
	Pt. Lot 24	0.50	030-131	R. Bullick Trustee & J. Magee Trustee	144			144
	Pt. Lot 25	0.22	030-134	B. Coulter	64			64
	Pt. Lot 25	1.32	030-135	W. Bullick	381			381
	Pt. Lot 25	0.75	030-136	M. & J. Wilkinson	217			217
	Pt. Lot 25	1.22	030-138-05	R. & T. Koostra	353			353
	Pt. Lot 26	1.04	030-142	V. & E. Kozak	301			301
	Pt. Lot 28	0.44	030-145-01	W. & C. Brush	127			127
	Pt. Lot 30	0.45	030-148-01	N. Eves & C. Kennedy	130			130
	Pt. Lot 30	0.56	030-149-05	C. & R. Avery	162			162
10	Pt. Lot 18	0.13	030-156	D. Gingerich & M. Foisy	18			18
	Pt. Lot 20	0.99	030-161-03	W. & E. Annett	140			140
	Pt. Lot 24	0.91	030-169	F. & K. Hachey	189			189
	Pt Lot 25	11.79	030-171	K. Ayers	2,101			2,101
	Pt. Lot 25	4.43	030-173	P. Norman & M. Lorraine	627			627
	Pt. Lot 26	0.26	030-175	K. & A. Dobroski	37			37
11	Pt. W 1/2 Lot 18	0.21	030-194	R. & K. Bryce	28			28
	Pt. E 1/2 Lot 18	3.26	030-195	Lambton Kent District School Board	430			430
	Pt. E 1/2 Lot 18	0.39	030-195-01	C. & M. Hayes	51			51
	Pt. E 1/2 Lot 18	0.49	030-196	M. Shannon & D. Herron	65			65
	Pt. E 1/2 Lot 18	0.25	030-715-50	Town of Plympton-Wyoming	33			33
	Pt. W 1/2 Lot 19	2.24	030-197	M. Delorme & A. Kuenzig	8,912		1,720	7,192
	Pt. E 1/2 Lot 19	0.06	030-200	Persona Communications Inc.	8			8
	Pt. W 1/3 Lot 21	2.21	030-203-02	J. McGill & M. Anderson	309			309

#### Agricultural Lands (Eligible for Available Grants)

6	E 3/4 Lot 26	0.40	030-026	Fergusons' Scatter Acres	116	39		77
	E 1/2 Lot 28	12.10	030-030	D. Watson	3,502	1,167		2,335
	W 1/2 Lot 29	19.00	030-031	G. Magee	5,499	1,833		3,666
	E 1/2 Lot 29	19.00	030-032	A. & M. Brouwer	5,499	1,833		3,666
	W 1/4 Lot 30	8.10	030-033	D. Steven	2,344	781		1,563
	Pt. C 1/3 Lot 30	14.20	030-034	D. & C. Ferguson	4,132	1,377		2,755
	E 1/4 Lot 30	6.90	030-035	S. & C. Steven	1,997	666		1,331

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Total Assessment (\$)	Estimated Grant (\$)	Allowances (\$)	Estimated Net Assessment (\$)
7	E 1/4 Lot 25	9.31	030-064	S. Brouwer	2,709	903		1,806
	N Pt. Lot 26	18.00	030-068	W. Ferguson	5,238	1,746		3,492
	SW Pt. Lot 26	41.45	030-069	E. Brouwer	11,027	3,676		7,351
	W 1/2 Lot 27	39.68	030-070	E. & T. & S. Brouwer	11,216	3,739		7,477
	E 1/2 Lot 27	38.46	030-071	J. & B. Brush	11,191	3,730		7,461
	N Pt. Lot 28	54.29	30-074	S. & C. Steven	15,346	5,115		10,231
	S Pt. Lot 28 & Lot 29	23.89	30-074-04	2504642 Ontario Inc.	6,951	2,317		4,634
	W Pt. Lot 29	34.93	30-074-02	2504642 Ontario Inc.	9,293	3,098		6,195
	E Pt. Lot 29	36.90	030-074-03	M. Ferguson	9,817	3,272		6,545
	W 1/3 Lot 30	30.68	030-075	D. & J. Ferguson	8,904	2,968		5,936
	C Pt. Lot 30	21.08	30-076	C. Steven	5,943	1,981		3,962
	E Pt. Lot 30	31.68	30-077	C. Steven	8,907	2,969		5,938
8	Pt. Lot 22	5.34	030-091	J. & B. Brush	1,543	514		1,029
	NE 1/4 Lot 23	6.53	030-095	D. & C. Kearns	1,887	629		1,258
	W 1/2 Lot 24	18.62	030-097	A. & H. Degroot	5,567	1,856	430	3,281
	E 1/2 Lot 24	21.85	030-098	C. Leystra	7,080	2,360	1,740	2,980
	S Pt. Lot 25	63.79	030-101	Leystra Farms Ltd.	19,347	6,449	2,010	10,888
	N Pt. Lot 25 & N Pt. Lot 26	40.88	030-102	R. & B. Beintema	11,895	3,965		7,930
	S Pt. Lot 26	41.56	030-103	W. Ferguson	12,093	4,031		8,062
	N Pt. Lot 26 & W 1/2 Lot 27	61.26	030-104	H. & R. Leystra	17,825	5,942		11,883
	E 1/2 Lot 27	41.30	030-105	E. Burgin	11,301	3,767		7,534
	S 1/2 Lot 28	37.81	030-106	F. Weber	11,002	3,667		7,335
	N 1/2 Lot 28	41.76	030-107	D. & P. Shea	12,119	4,040		8,079
	W 1/2 Lot 29	43.36	030-110	F. Weber	12,224	4,075		8,149
	W 1/4 E 1/2 Lot 29	21.45	030-111	Weber Zoca Farms Ltd.	6,047	2,016		4,031
	E 1/4 Lot 29 & Pt. Lot 30	30.85	030-112	F. Weber	8,953	2,984		5,969
	Pt. W 1/2 Lot 30	31.56	030-113	S. & R. Gowan Darms Ltd.	8,897	2,966		5,931
	E 1/2 Lot 30	42.04	030-114	Kingma Dairy Ltd.	11,820	3,940		7,880

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Total Assessment (\$)	Estimated Grant (\$)	Allowances (\$)	Estimated Net Assessment (\$)
9	N 1/2 Lot 20 & W 1/4 Lot 21	12.19	030-124	J. & B. Wright	2,114	705		1,409
	E 3/4 Lot 21	30.97	030-125	Weber Zoca Farms Ltd.	5,371	1,790		3,581
	W 1/2 Lot 22	41.04	030-126	H. & R. Leystra	8,490	2,830		5,660
	E 1/2 Lot 22 & W 1/4 Lot 23	61.27	030-127	Deborger Farms Ltd.	42,599	14,200	5,020	23,379
	E 1/4 W 1/2 Lot 23	20.62	030-127-01	Deborger Farms Ltd.	53,194	17,731	980	34,483
	E 1/2 Lot 23 & NW 1/4 Lot 24	20.60	030-128	A. Mcfarlane	18,228	6,076	2,060	10,092
	E 1/2 Lot 24	41.80	030-130	R. Bullick Estate	9,047	3,016		6,031
	Pt. Lot 24	0.09	030-132	N. Bullick	26	9		17
	S 1/4 Lot 25	19.30	030-133	D. Addison	5,586	1,862		3,724
	N 1/4 S 1/2 Lot 25	19.45	030-137	N. Bullick	5,630	1,877		3,753
	S 1/4 N 1/2 Lot 25	20.69	030-138	J. Bullick	5,988	1,996		3,992
	N 1/4 Lot 25 & Pt. Lot 26 & SW 1/4 Lot 26	49.38	030-139	H. & A. Wouters Farms Ltd.	12,450	4,150		8,300
	Conc. 10							
	Pt. Lot 26	20.49	030-140	R. Bullick Estate	5,931	1,977		3,954
	E 1/2 Lot 26	50.39	030-141	D. & P. Shea	14,585	4,862		9,723
	S 1/2 Lot 27	41.65	030-143	D. Wassink & J. Winter-Wassink	11,022	3,674		7,348
	N 1/2 Lot 27	40.40	030-144	H. & A. Wouters	11,025	3,675		7,350
	Pt. W 1/2 Lot 28	36.22	030-145	W. Brush	10,184	3,395		6,789
	NPt. W 1/2 Lot 28	3.94	030-146	D. Wassink & J. Winter-Wassink	1,140	380		760
	E 1/2 Lot 28	41.47	030-144-01	W. Brush	11,660	3,887		7,773
	W 1/2 Lot 29	43.13	030-147	S. & A. Delorme	11,770	3,923		7,847
	E 1/2 Lot 29 & W 1/3 Lot 30	70.51	030-148	Deborger Farms Ltd.	20,408	6,803		13,605
	C 1/3 Lot 30	28.14	030-149	E. & S. Burgin	8,145	2,715		5,430
	E 1/3 Lot 30	28.58	030-150	E. & S. Burgin	8,272	2,757		5,515

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Total Assessment (\$)	Estimated Grant (\$)	Allowances (\$)	Estimated Net Assessment (\$)
10	W 1/2 Lot 18 & NE 1/4 Lot 18	42.47	030-154	D. Sutton	4,288	1,429		2,859
	SE 1/4 Lot 18	10.22	030-155	E. Van Moorsel	1,032	344		688
	S 1/2 Lot 19	29.63	030-157	L. Stones	4,424	1,475		2,949
	N 1/2 Lot 19	40.38	030-159	DST Farms Inc.	29,365	9,788	5,140	14,437
	W 1/2 Lot 20	40.77	030-160	W. & C. Mackinlay	37,712	12,571	7,400	17,741
	E 1/2 Lot 20	39.50	030-161	D. Simpson	19,017	6,339	2,240	10,438
	W 1/2 Lot 21	41.45	030-162	A. Bell	55,439	18,480	2,800	34,159
	E 1/2 Lot 21	40.92	030-163	A. Bell	21,521	7,174	2,320	12,027
	W 1/2 & SE 1/4 Lot 22	61.15	030-164	Weber Zoca Farms Ltd.	23,689	7,896	2,680	13,113
	NE 1/4 Lot 22 & W 1/2 Lot 23	62.49	030-165	F. & D. Sutton Farms	12,237	4,079		8,158
	E 1/2 Lot 23	84.09	030-166	F. Sutton	17,496	5,832		11,664
	N Pt. Lot 24	38.08	030-167	H. Wouters	8,156	2,719		5,437
	S. Pt Lot 24	45.00	030-168	H. & A. Wouters	9,638	3,213		6,425
	Pt. W 1/2 Lot 25	28.89	030-170	H. Wouters	4,724	1,575		3,149
	Pt. E 1/2 Lot 25	36.80	030-172	M. & K. Alton	6,795	2,265		4,530
	NW 1/4 Lot 26	13.33	030-174	R. Arnhold	2,303	768		1,535
	E 1/2 Lot 26	24.98	030-177	1600692 Ontario Ltd.	4,316	1,439		2,877
	W 1/2 Lot 27	24.51	030-178	2354876 Ontario Ltd.	4,114	1,371		2,743
	NE 1/4 Lot 27	0.62	030-179	B. Jameson & J. Jameson-Mathews	94	31		63
	SE 1/4 Lot 27	13.98	030-180	M. & L. Jennings	2,416	805		1,611
	S 1/2 Lot 28	8.53	030-181	D. Wassink & J. Winter-Wassink	1,474	491		983
11	W 1/2 Lot 16	2.50	030-188	K. & C. Wilson	148	49		99
	E 1/2 Lot 16	15.95	030-189	J. & F. Ploeg	12,143	4,048	1,200	6,895
	W 1/2 Lot 17	24.93	030-190	Lake Breeze Farms Inc.	11,290	3,763	1,350	6,177
	E 1/2 Lot 17	34.74	030-191	T. & J. Soepboer	22,254	7,418	3,700	11,136
	W 1/2 Lot 18 & NE 1/4 Lot 18	41.62	030-192	M. Sutton	55,762	18,587	1,940	35,235
	E 1/2 Lot 18	36.65	030-193	G. & B. Kerrigan	13,209	4,403	1,740	7,066
	W 1/2 Lot 19	15.78	030-198	S. & N. Smith Est Trustee	5,429	1,810	540	3,079
	E 1/2 Lot 19	12.55	030-199	S. & N. Smith Est Trustee	1,771	590		1,181
	W 1/2 Lot 20	15.38	030-201	L. Wouters	2,177	726		1,451

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Total Assessment (\$)	Estimated Grant (\$)	Allowances (\$)	Estimated Net Assessment (\$)
11	E 1/2 Lot 20	20.64	030-202	S. & N. Smith Est Trustee	2,921	974		1,947
	Pt. W 1/3 Lot 21	2.11	030-203	Lake Breeze Farms Inc.	299	100		199
	W 1/3 Lot 21	8.90	030-204	Lake Breeze Farms Inc.	1,260	420		840
	C 1/3 Lot 21	6.48	030-205	L. & H. Wouters	917	306		611
	E 1/3 Lot 21	2.02	030-206	Leo Wouters Farms Ltd.	286	95		191
12	NW 1/4 Lot 16	8.00	030-231	W. Douglas	4,170	1,390	600	2,180
	SW 1/4 Lot 16	12.47	030-232	K. Philpott	7,212	2,404	430	4,378
	E 1/2 Lot 16	23.00	030-233	W. & M. Douglas	21,260	7,087	1,800	12,373
	W 1/2 Lot 17	15.50	030-235	W. & M. Douglas	1,141	380		761
	E 1/2 Lot 17	15.50	030-236	W. Douglas	1,214	405		809
	Lot 18	31.00	030-237	Lake Breeze Farms Inc. c/o J. Schoonjans	2,208	736		1,472

**Town of Warwick**

**Municipal Lands**

Egermont Road	2.02		Township of Warwick	1,511			1,511
Brick Yard Line	0.40		Township of Warwick	198			198
Highway 21 (Forest Road)	4.80		County of Lambton	3,591			3,591

**Non-Agricultural Lands**

1 NER Pt. Lot 2	6.75	03-199	???	1,954			1,954
Pt. Lot 3	0.70	03-201	G. & D. Lowrie	203			203
Pt. Lot 3	0.43	03-200-01	G. & J. Wilson	124			124
3 NER Pt. Lot 2	0.81	04-023	G. & M. Bork	234			234

**Agricultural Lands (Eligible for Available Grants)**

1 SER W 1/2 Lot 2	8.10	03-099	D. & P. Steven	2,344	781		1,563
E 1/2 Lot 2 & W 1/2 Lot 3	17.00	03-101	Fergusons' Scattered Acres Farms Ltd.	4,920	1,640		3,280
E 1/2 Lot 3	3.20	03-102	R. & P. Turnbull	926	309		617

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Total Assessment (\$)	Estimated Grant (\$)	Allowances (\$)	Estimated Net Assessment (\$)
1 NER	Pt Lot 2	22.78	03-198	S. & C. Steven	6,593	2,198		4,395
	W 1/2 Lot 3	40.68	03-200	Geo Paul Farms Inc.	11,774	3,925		7,849
	E 1/2 Lot 3	40.94	03-202	D. Ferguson	11,511	3,837		7,674
	W 1/2 Lot 4	36.90	03-203	1075180 Ontario Inc.	10,375	3,458		6,917
	E 1/2 Lot 4	29.60	03-204	G. Ferguson	8,323	2,774		5,549
	W 1/2 Lot 5	18.60	03-205	Ferguson's Scattered Acres Farms Ltd.	5,230	1,743		3,487
	W 1/4 E 1/2 Lot 5	3.24	03-206	Eusi Farms Ltd.	857	286		571
	E 1/4 Lot 5	3.60	03-207	S. & C. Steven	744	248		496
	W 1/2 Lot 6	2.80	03-208	S. & C. Steven	579	193		386
2 NER	Lot 2	24.01	04-001	De Borger Farms Ltd.	6,751	2,250		4,501
	W 1/2 Lot 3	37.68	04-002	G. De Borger	10,906	3,635		7,271
	E 1/2 Lot 3	35.18	04-003	De Borger Farms Ltd.	10,182	3,394		6,788
	W 1/2 Lot 4	36.18	04-004	De Borger Farms Ltd.	9,574	3,191		6,383
	E 1/2 Lot 4	31.97	04-005	De Borger Farms Ltd.	8,989	2,996		5,993
	W 1/2 Lot 5	29.22	04-007	De Borger Farms Ltd.	8,457	2,819		5,638
	E 1/2 Lot 5	26.89	04-008	R. Smith	7,116	2,372		4,744
	W 1/2 Lot 6	4.86	04-010	De Borger Farms Ltd.	1,246	415		831
3 NER	Lot 2	17.00	04-023-01	W. & J. Mackenzie	4,920	1,640		3,280
	NW 1/4 Lot 3	8.50	04-024	W. & J. Mackenzie	2,460	820		1,640
	SW 1/4 Lot 3	10.10	04-025	W. & J. Mackenzie	2,923	974		1,949
Total					1,235,594	382,374	51,380	801,840

**SCHEDULE OF MAINTENANCE**

To maintain the Falconer-Ramsey Drain and Lower Aberarder Creek (Station 0+000 to 10+350)

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)	Equivalent Hectares
<b><u>Town of Plympton-Wyoming</u></b>								
<b>Municipal Lands</b>								
	Forest Road (Highway 21)	4.80		County of Lambton MTO	-	689	689	4.32
	Aberarder Line	7.28		County of Lambton	-	282	282	6.55
	Oil Heritage Road	0.00		County of Lambton	-	-	-	-
	Hillsboro Road	4.62		Town of Plympton-Wyoming	-	106	106	2.77
	Blue Heron Road	5.69		Town of Plympton-Wyoming	-	262	262	3.41
	Uttoxeter Road	8.09		Town of Plympton-Wyoming	-	619	619	4.85
	Brush Road Road	8.50		Town of Plympton-Wyoming	-	816	816	5.10
	Egremont Road	8.50		Town of Plympton-Wyoming	-	1,224	1,224	7.65
	Michigan Line	3.64		Town of Plympton-Wyoming	-	524	524	3.28
	Fisher Line	11.06		Town of Plympton-Wyoming	-	1,145	1,145	9.95
				Total Municipal Lands	-	5,667	5,667	
<b>Non-Agricultural Lands</b>								
6	NE PT W 1/4 Lot 26	0.40	030-025-03	J. & J. Scott	-	22	22	0.14

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)	Equivalent Hectares
7	E Pt. Lot 26	20.40	030-066	J. Genovy	-	1,142	1,142	7.14
	N Pt. Lot 26	0.99	030-068-01	R. Best	-	55	55	0.35
8	Pt. E 1/4 Lot 22	3.20	030-092	L. Mitchell & Z. Klingsiek	-	129	129	1.12
	NW 1/4 Lot 23	4.03	030-094	J. & M. Ellenor	-	116	116	1.01
	Pt. Lot 27	0.81	030-104-05	G. & W. Cassidy	-	45	45	0.28
	Pt. Lot 28	2.14	030-106-01	C. Verville & N. Ashmore	-	120	120	0.75
	Pt. Lot 29	1.21	030-112-01	C. & N. Holbrook	-	54	54	0.42
	Pt. Lot 30	0.96	030-113-01	R. & T. Sharp	-	43	43	0.34
	Pt Lot 30	0.30	030-115	J. Eccles	-	13	13	0.11
9	Pt. Lot 22	0.57	030-127-02	D. & A. Brooks	-	19	19	0.20
	Pt. SW 1/4 Lot 24	1.85	030-128-05	B. & A. Dhillon	-	104	104	0.65
	Pt. SW 1/4 Lot 24	18.32	030-129	A. & P. Hebert	1,706	507	2,213	4.58
	Pt. Lot 24	0.50	030-131	R. Bullick Trustee & J. Magee Trustee	-	20	20	0.18
	Pt. Lot 25	0.22	030-134	B. Coulter	-	9	9	0.08
	Pt. Lot 25	1.32	030-135	W. Bullick	-	54	54	0.46
	Pt. Lot 25	0.75	030-136	M. & J. Wilkinson	-	31	31	0.26
	Pt. Lot 25	1.22	030-138-05	R. & T. Koostra	-	50	50	0.43
	Pt. Lot 26	1.04	030-142	V. & E. Kozak	-	43	43	0.36
	Pt. Lot 28	0.44	030-145-01	W. & C. Brush	-	18	18	0.15
	Pt. Lot 30	0.45	030-148-01	N. Eves & C. Kennedy	-	18	18	0.16
	Pt. Lot 30	0.56	030-149-05	C. & R. Avery	-	23	23	0.20

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)	Equivalent Hectares
10	Pt. Lot 18	0.13	030-156	D. Gingerich & M. Foisy	-	2	2	0.05
	Pt. Lot 20	0.99	030-161-03	W. & E. Annett	-	15	15	0.35
	Pt. Lot 24	0.91	030-169	F. & K. Hachey	-	23	23	0.32
	Pt Lot 25	11.79	030-171	K. Ayers	-	252	252	3.54
	Pt. Lot 25	4.43	030-173	P. Norman & M. Lorraine	-	67	67	1.55
	Pt. Lot 26	0.26	030-175	K. & A. Dobroski	-	4	4	0.09
11	Pt. W 1/2 Lot 18	0.21	030-194	R. & K. Bryce	-	3	3	0.07
	Pt. E 1/2 Lot 18	3.26	030-195	Lambton Kent District School Board	-	40	40	1.14
	Pt. E 1/2 Lot 18	0.39	030-195-01	C. & M. Hayes	-	5	5	0.14
	Pt. E 1/2 Lot 18	0.49	030-196	M. Shannon & D. Herron	-	6	6	0.17
	Pt. E 1/2 Lot 18	0.25	030-715-50	Town of Plympton-Wyoming	-	3	3	0.09
	Pt. W 1/2 Lot 19	2.24	030-197	M. Delorme & A. Kuenzig	1,907	30	1,937	0.78
	Pt. E 1/2 Lot 19	0.06	030-200	Persona Communications Inc.	-	1	1	0.02
	Pt. W 1/3 Lot 21	2.21	030-203-02	J. McGill & M. Anderson	-	32	32	0.77
Total Non-Agricultural Lands					3,613	3,118	6,731	

**Agricultural Lands (Eligible for Available Grants)**

6	E 3/4 Lot 26	0.40	030-026	Fergusons' Scatter Acres	-	22	22	0.14
	E 1/2 Lot 28	12.10	030-030	D. Watson	-	540	540	4.24
	W 1/2 Lot 29	19.00	030-031	G. Magee	-	848	848	6.65
	E 1/2 Lot 29	19.00	030-032	A. & M. Brouwer	-	848	848	6.65
	W 1/4 Lot 30	8.10	030-033	D. Steven	-	361	361	2.84
	Pt. C 1/3 Lot 30	14.20	030-034	D. & C. Ferguson	-	795	795	4.97
	E 1/4 Lot 30	6.90	030-035	S. & C. Steven	-	308	308	2.42

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)	Equivalent Hectares	
7	E 1/4 Lot 25	9.31	030-064	S. Brouwer	-	521	521	3.26	
	N Pt. Lot 26	18.00	030-068	W. Ferguson	-	1,008	1,008	6.30	
	SW Pt. Lot 26	41.45	030-069	E. Brouwer	-	2,122	2,122	13.26	
	W 1/2 Lot 27	39.68	030-070	E. & T. & S. Brouwer	-	2,158	2,158	13.49	
	E 1/2 Lot 27	38.46	030-071	J. & B. Brush	-	2,153	2,153	13.46	
	N Pt. Lot 28	54.29	30-074	S. & C. Steven	-	2,953	2,953	18.46	
	S Pt. Lot 28 & Lot 29	23.89	30-074-04	2504642 Ontario Inc.	-	1,338	1,338	8.36	
	W Pt. Lot 29	34.93	30-074-02	2504642 Ontario Inc.	-	1,788	1,788	11.18	
	E Pt. Lot 29	36.90	030-074-03	M. Ferguson	-	1,889	1,889	11.81	
	W 1/3 Lot 30	30.68	030-075	D. & J. Ferguson	-	1,543	1,543	10.74	
	C Pt. Lot 30	21.08	30-076	C. Steven	-	1,030	1,030	7.17	
	E Pt. Lot 30	31.68	30-077	C. Steven	-	1,373	1,373	10.77	
8	Pt. Lot 22	5.34	030-091	J. & B. Brush	-	220	220	1.87	
	NE 1/4 Lot 23	6.53	030-095	D. & C. Kearns	-	268	268	2.29	
	W 1/2 Lot 24	30.76 18.62	030-097	A. & H. Degroot	963	749	\$1237 1,712	\$2200.00 6.52	10.77
	E 1/2 Lot 24 (6.07 sub-surface only)	21.85 36.01	030-098	C. Leystra	3,874	898	\$1480 4,772	\$5354 7.65	11.55
	S Pt. Lot 25	63.79	030-101	Leystra Farms Ltd.	4,476	2,846	7,322	22.33	
	N Pt. Lot 25 & N Pt. Lot 26	40.88	030-102	R. & B. Beintema	-	2,289	2,289	14.31	
	S Pt. Lot 26	41.56	030-103	W. Ferguson	-	2,327	2,327	14.55	
	N Pt. Lot 26 & W 1/2 Lot 27	61.26	030-104	H. & R. Leystra	-	3,430	3,430	21.44	
	E 1/2 Lot 27	41.30	030-105	E. Burgin	-	1,959	1,959	13.63	
	S 1/2 Lot 28	37.81	030-106	F. Weber	-	2,117	2,117	13.23	
	N 1/2 Lot 28	41.76	030-107	D. & P. Shea	-	2,101	2,101	14.62	
	W 1/2 Lot 29	43.36	030-110	F. Weber	-	2,119	2,119	14.74	
	W 1/4 E 1/2 Lot 29	21.45	030-111	Weber Zoca Farms Ltd.	-	1,048	1,048	7.29	
	E 1/4 Lot 29 & Pt. Lot 30	30.85	030-112	F. Weber	-	1,552	1,552	10.80	
	Pt. W 1/2 Lot 30	31.56	030-113	S. & R. Gowan Darms Ltd.	-	1,542	1,542	10.73	
	E 1/2 Lot 30	42.04	030-114	Kingma Dairy Ltd.	-	1,822	1,822	14.29	

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)	Equivalent Hectares
9	N 1/2 Lot 20 & W 1/4 Lot 21	12.19	030-124	J. & B. Wright	-	284	284	4.27
	E 3/4 Lot 21	30.97	030-125	Weber Zoca Farms Ltd.	-	721	721	10.84
	W 1/2 Lot 22	41.04	030-126	H. & R. Leystra	-	1,025	1,025	13.95
	E 1/2 Lot 22 & W 1/4 Lot 23	61.27	030-127	Deborger Farms Ltd.	5,600	1,798	7,398	21.44
	E 1/4 W 1/2 Lot 23	20.62	030-127-01	Deborger Farms Ltd.	1,158	1,122	2,280	7.01
	E 1/2 Lot 23 & NW 1/4 Lot 24	20.60	030-128	A. Mcfarlane	4,336	619	4,955	6.18
	E 1/2 Lot 24	41.80	030-130	R. Bullick Estate	-	1,301	1,301	13.38
	Pt. Lot 24	0.09	030-132	N. Bullick	-	4	4	0.03
	S 1/4 Lot 25	19.30	030-133	D. Addison	-	861	861	6.76
	N 1/4 S 1/2 Lot 25	19.45	030-137	N. Bullick	-	868	868	6.81
	S 1/4 N 1/2 Lot 25	20.69	030-138	J. Bullick	-	923	923	7.24
	N 1/4 Lot 25 & Pt. Lot 26 & SW 1/4 Lot 26 Conc.	49.38	030-139	H. & A. Wouters Farms Ltd.	-	1,879	1,879	17.28
10	Pt. Lot 26	20.49	030-140	R. Bullick Estate	-	914	914	7.17
	E 1/2 Lot 26	50.39	030-141	D. & P. Shea	-	2,248	2,248	17.64
	S 1/2 Lot 27	41.65	030-143	D. Wassink & J. Winter-Wassink	-	1,699	1,699	13.33
	N 1/2 Lot 27	40.40	030-144	H. & A. Wouters	-	1,700	1,700	13.33
	Pt. W 1/2 Lot 28	36.22	030-145	W. Brush	-	1,570	1,570	12.31
	NPt. W 1/2 Lot 28	3.94	030-146	D. Wassink & J. Winter-Wassink	-	176	176	1.38
	E 1/2 Lot 28	41.47	030-144-01	W. Brush	-	1,797	1,797	14.10
	W 1/2 Lot 29	43.13	030-147	S. & A. Delorme	-	1,814	1,814	14.23
	E 1/2 Lot 29 & W 1/3 Lot 30	70.51	030-148	Deborger Farms Ltd.	-	3,146	3,146	24.68
	C 1/3 Lot 30	28.14	030-149	E. & S. Burgin	-	1,256	1,256	9.85
	E 1/3 Lot 30	28.58	030-150	E. & S. Burgin	-	1,275	1,275	10.00

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)	Equivalent Hectares
10	W 1/2 Lot 18 & NE 1/4 Lot 18	42.47	030-154	D. Sutton	-	444	444	14.86
	SE 1/4 Lot 18	10.22	030-155	E. Van Moorsel	-	107	107	3.58
	S 1/2 Lot 19	29.63	030-157	L. Stones	-	545	545	10.07
	N 1/2 Lot 19	40.38	030-159	DST Farms Inc.	6,122	608	6,730	14.13
	W 1/2 Lot 20	40.77	030-160	W. & C. Mackinlay	4,128	751	4,879	13.86
	E 1/2 Lot 20	39.50	030-161	D. Simpson	2,496	855	3,351	13.83
	W 1/2 Lot 21	41.45	030-162	A. Bell	2,409	965	3,374	14.51
	E 1/2 Lot 21	40.92	030-163	A. Bell	2,804	1,020	3,824	14.32
	W 1/2 & SE 1/4 Lot 22	61.15	030-164	Weber Zoca Farms Ltd.	2,984	1,504	4,488	19.57
	NE 1/4 Lot 22 & W 1/2 Lot 23	62.49	030-165	F. & D. Sutton Farms	-	1,537	1,537	20.00
	E 1/2 Lot 23	84.09	030-166	F. Sutton	-	2,198	2,198	28.59
	N Pt. Lot 24	38.08	030-167	H. Wouters	-	1,025	1,025	13.33
	S. Pt Lot 24	45.00	030-168	H. & A. Wouters	-	1,211	1,211	15.75
	Pt. W 1/2 Lot 25	28.89	030-170	H. Wouters	-	435	435	10.11
	Pt. E 1/2 Lot 25	36.80	030-172	M. & K. Alton	-	772	772	12.88
	NW 1/4 Lot 26	13.33	030-174	R. Arnhold	-	280	280	4.67
	E 1/2 Lot 26	24.98	030-177	1600692 Ontario Ltd.	-	524	524	8.74
	W 1/2 Lot 27	24.51	030-178	2354876 Ontario Ltd.	-	500	500	8.33
	NE 1/4 Lot 27	0.62	030-179	B. Jameson & J. Jameson-Mathews	-	9	9	0.22
	SE 1/4 Lot 27	13.98	030-180	M. & L. Jennings	-	293	293	4.89
	S 1/2 Lot 28	8.53	030-181	D. Wassink & J. Winter-Wassink	-	179	179	2.99
11	W 1/2 Lot 16	2.50	030-188	K. & C. Wilson	-	8	8	0.63
	E 1/2 Lot 16	15.95	030-189	J. & F. Ploeg	4,470	51	4,521	3.99
	W 1/2 Lot 17	24.93	030-190	Lake Breeze Farms Inc.	2,215	167	2,382	8.48
	E 1/2 Lot 17	34.74	030-191	T. & J. Soepboer	4,115	283	4,398	12.16
	W 1/2 Lot 18 & NE 1/4 Lo	41.62	030-192	M. Sutton	3,064	435	3,499	14.57
	E 1/2 Lot 18	36.65	030-193	G. & B. Kerrigan	1,940	448	2,388	12.83
	W 1/2 Lot 19	15.78	030-198	S. & N. Smith Est Trustee	977	229	1,206	5.52
	E 1/2 Lot 19	12.55	030-199	S. & N. Smith Est Trustee	-	189	189	4.39
	W 1/2 Lot 20	15.38	030-201	L. Wouters	-	232	232	5.38
	E 1/2 Lot 20	20.64	030-202	S. & N. Smith Est Trustee	-	311	311	7.22
11	Pt. W 1/3 Lot 21	2.11	030-203	Lake Breeze Farms Inc.	-	32	32	0.74

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)	Equivalent Hectares
	W 1/3 Lot 21	8.90	030-204	Lake Breeze Farms Inc.	-	134	134	3.12
	C 1/3 Lot 21	6.48	030-205	L. & H. Wouters	-	98	98	2.27
	E 1/3 Lot 21	2.02	030-206	Leo Wouters Farms Ltd.	-	30	30	0.71
12	NW 1/4 Lot 16	8.00	030-231	W. Douglas	1,439	-	1,439	2.40
	SW 1/4 Lot 16	12.47	030-232	K. Philpott	1,934	9	1,943	3.87
	E 1/2 Lot 16	23.00	030-233	W. & M. Douglas	4,884	38	4,922	7.36
	W 1/2 Lot 17	15.50	030-235	W. & M. Douglas	-	61	61	4.81
	E 1/2 Lot 17	15.50	030-236	W. Douglas	-	65	65	5.12
	Lot 18	31.00	030-237	Lake Breeze Farms Inc. c/o J. Schoonjans	-	118	118	9.30
Total Agricultural Lands					66,388	98,585	164,973	
Total Municipal Lands					5,667			
Total Non-Agricultural Lands					6,731			
Total Agricultural Lands					<u>164,973</u>			
Total Assessment (Plympton-Wyoming)					\$177,371			

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)	Equivalent Hectares
<b><u>Town of Warwick</u></b>								
<b>Municipal Lands</b>								
	Egermont Road	2.02		Township of Warwick	-	291	291	1.82
	Brick Yard Line	0.40		Township of Warwick	-	31	31	0.24
	Highway 21 (Forest Road)	4.80		County of Lambton MTO	-	691	691	4.32
				Total Municipal Lands	-	1,013	1,013	
<b>Non-Agricultural Lands</b>								
1 NER	Pt. Lot 2	6.75	03-199	???	-	301	301	2.36
	Pt. Lot 3	0.70	03-201	G. & D. Lowrie	-	31	31	0.25
	Pt. Lot 3	0.43	03-200-01	G. & J. Wilson	-	19	19	0.15
3 NER	Pt. Lot 2	0.81	04-023	G. & M. Bork	-	36	36	0.28
				Total Non-Agricultural Lands	-	387	387	
<b>Agricultural Lands (Eligible for Available Grants)</b>								
1 SER	W 1/2 Lot 2	8.10	03-099	D. & P. Steven	-	361	361	2.84
	E 1/2 Lot 2 & W 1/2 Lot 3	17.00	03-101	Fergusons' Scattered Acres Farms Ltd.	-	759	759	5.95
	E 1/2 Lot 3	3.20	03-102	R. & P. Turnbull	-	143	143	1.12
1 NER	Pt Lot 2	22.78	03-198	S. & C. Steven	-	1,016	1,016	7.97
	W 1/2 Lot 3	40.68	03-200	Geo Paul Farms Inc.	-	1,815	1,815	14.24
	E 1/2 Lot 3	40.94	03-202	D. Ferguson	-	1,775	1,775	13.92
	W 1/2 Lot 4	36.90	03-203	1075180 Ontario Inc.	-	1,599	1,599	12.55
	E 1/2 Lot 4	29.60	03-204	G. Ferguson	-	1,283	1,283	10.06
	W 1/2 Lot 5	18.60	03-205	Ferguson's Scattered Acres Farms Ltd.	-	806	806	6.32
	W 1/4 E 1/2 Lot 5	3.24	03-206	Eusi Farms Ltd.	-	132	132	1.04
	E 1/4 Lot 5	3.60	03-207	S. & C. Steven	-	115	115	0.90
	W 1/2 Lot 6	2.80	03-208	S. & C. Steven	-	89	89	0.70

Conc.	Lot or Part	Affected Hecatares	Roll No.	Owner	Benefit (\$)	Outlet (\$)	Total (\$)	Equivalent Hectares
2 NER	Lot 2	24.01	04-001	De Borger Farms Ltd.	-	1,041	1,041	8.16
	W 1/2 Lot 3	37.68	04-002	G. De Borger	-	1,681	1,681	13.19
	E 1/2 Lot 3	35.18	04-003	De Borger Farms Ltd.	-	1,570	1,570	12.31
	W 1/2 Lot 4	36.18	04-004	De Borger Farms Ltd.	-	1,476	1,476	11.58
	E 1/2 Lot 4	31.97	04-005	De Borger Farms Ltd.	-	1,386	1,386	10.87
	W 1/2 Lot 5	29.22	04-007	De Borger Farms Ltd.	-	1,304	1,304	10.23
	E 1/2 Lot 5	26.89	04-008	R. Smith	-	1,097	1,097	8.60
	W 1/2 Lot 6	4.86	04-010	De Borger Farms Ltd.	-	192	192	1.51
3 NER	Lot 2	17.00	04-023-01	W. & J. Mackenzie	-	759	759	5.95
	NW 1/4 Lot 3	8.50	04-024	W. & J. Mackenzie	-	379	379	2.98
	SW 1/4 Lot 3	10.10	04-025	W. & J. Mackenzie	-	451	451	3.54
Total Agricultural Lands					-	21,229	21,229	
Total Municipal Lands					1,013			
Total Non-Agricultural Lands					387			
Total Agricultural Lands					<u>21,229</u>			
Total Assessment (Warwick)					22,629			
Total Assessment (Plympton-Wyoming)					<u>177,371</u>			
Total Assessment					\$200,000			

Falconer-Ramsey Drain and Lower Aberarder Creek  
Town of Plympton-Wyoming  
August 22, 2023

## **SPECIFICATION OF WORK**

### **1. Location**

The location of the proposed and future work outlined in this specification is along the length of the Falconer-Ramsey Drain and Lower Aberarder Creek in the Town of Plympton-Wyoming.

### **2. Scope of Work**

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

- Proposed Works
  - Open Channel Improvements, which includes:
    - Bottom Cleanout and Bank Re-sloping
    - Channel Realignment
    - Rip Rap
    - Brushing
    - Rock Riffles and Pool Structures
    - Two Stage Channel
    - Cobblestone Substrate
    - Meandering Low Flow Channel
    - Woody Debris Erosion Protection
    - Temporary Rock Flow Check Dams and Sediment Traps
    - 3 Culvert Replacements
- Future Works
  - Future Channel Works
  - Culvert Replacements

### **3. General**

**A 2-year maintenance period from the date of substantial completion will be required for this project in order to address any potential deficiencies that are observed during the monitoring as part of the Fisheries Act Authorization. The Contractor shall be responsible for any repairs to the environmental features, as contained in the approvals section of the report, during this period.**

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.

#### **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.

When applicable the Contractor shall be responsible for traffic control as per the Ontario Traffic Manual Book 7 – Temporary Conditions (latest revision).

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 non-compliance 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.

The Contractor 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 shown on the Detailed Plan and Profile drawings. Where these elevations are on existing structures to be replaced, they shall be transferred by the Contractor prior to the removal.

R. Dobbin Engineering will perform a bench mark check and establish temporary benchmarks every 500m prior to construction taking place.

## **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 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**

Accesses and working areas shall be as outlined below and as shown on the detailed plans. If discrepancies exist the Contractor shall notify the Engineer before proceeding.

Station 0+000 to 1+780: Access for construction shall be from Oil Heritage Road, along the length of the drainage works and as determined by the Drainage Superintendent or Engineer in consultation with the Landowners. The access width shall be restricted to a width of 4m and shall generally be along existing trails on the south/east side of the channel and as agreed upon with the Landowners. Access for the installation of rip rap on the east bank shall be from Oil Heritage Road and may be along the north/east limit of the bush as agreed upon by the Landowners. This access shall be restricted to a width of

6m. The working area for the construction within the channel shall be restricted to a width of 6m from the top of bank. The working area shall extend in order to allow for trucks and equipment to turn around. The working area for future maintenance of the channel shall be restricted to a width of 12m from the south/west top of bank.

Station 1+780 to 3+889: Access for construction shall be from Aberarder Line through the property with Roll Number 030-190 and from Hillsboro Road along the length of the drainage works. The access width shall be restricted to a width of 6m. The working area for the construction and future maintenance of the channel shall be restricted to a width of 12m from the north/east top of bank. If access cannot be gained immediately north of the drain off of Hillsboro Road access shall be gained through a break in the trees to the north.

Station 3+889 to 4+045: Access for construction shall be from Aberarder Line and Blue Heron Road and along the length of the drainage works. The working area for the construction and future maintenance of the channel shall be restricted to a width of 12m from the west top of bank.

Station 4+045 to 4+320: Access for construction shall be from Aberarder Line and Blue Heron Road and along the length of the drainage works. The working area for the construction and future maintenance of the channel shall be restricted to a width of 15m past both banks.

Station 4+320 to 4+970: Access for construction shall be from Aberarder Line and Blue Heron Road and along the length of the drainage works. The working area for the construction and future maintenance of the channel shall be restricted to a width of 12m from the north/east top of bank.

Station 4+970 to 5+527: Access for construction shall be from Aberarder Line and Blue Heron Road and along the length of the drainage works. The working area for the construction and future maintenance of the channel shall be restricted to a width of 15m past both banks. The drain may be crossed to gain access to the opposite side of the channel at the discretion of the Engineer or Drainage Superintendent. This shall be done in one location and is intended to be at the location of the existing rock crossing in the property with Roll Number 030-160.

Station 5+527 to 6+689: Access for construction shall be from Aberarder Line and Blue Heron Road and along the length of the drainage works. The working area for the construction and future maintenance of the channel shall be restricted to a width of 12m from the south top of bank.

Station 6+689 to 9+068: Access for construction shall be from Blue Heron Road and Fisher Line and along the length of the drainage works. The working area for the construction and future maintenance of the channel shall be restricted to a width of 12m from the north/east top of bank.

Station 9+068 to 10+350: Access for future maintenance shall be from Fisher Line and Uttoxeter Road and along the length of the drainage works. The working area for future maintenance of the channel shall be restricted to a width of 12m from the south/west top of bank.

All access, unless otherwise stated, shall be restricted to a width of 6m. Access for culvert maintenance and channel repair on a single property shall be from 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. If, at the discretion of the Drainage Superintendent or Engineer, 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.

## **11. Removals**

The culverts, when required, shall be removed in their entirety including all excavated material. The culvert, excavated material and the concrete rubble shall be disposed offsite at the expense of the Contractor. Excavated material may be re-used in order to build up the surrounding lands to blend in with the required cover over the pipe. 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.

## **12. Brushing, Tree Removal, and Spot Cleanouts between Stations 0+018 and 1+920 (Construction Only)**

For construction under this report all brush, stumps, trees, woody vegetation, etc. required to be removed to facilitate construction, within the drain bottom and along the

drain bank where they will impede the flow of the drain now or in the future, as determined by the Drainage Superintendent or Engineer, shall be removed.

It is recommended that a mechanical grinder attached to a small excavator be used for the removal of brush and trees as the tree removal is intended to be minimized in this section. Any brush and trees too large to grind shall be close cut. The Contractor shall stockpile the trees in the adjacent bush ensuring no length is left longer than 6m.

The channel shall be excavated in the locations shown on the detailed drawings and as determined by the Drainage Superintendent or Engineer at the time of construction in order to eliminate blockages in the drain. The excavated material shall be placed in the bush adjacent the excavation and shall be levelled to a maximum depth of 300mm. The excavated material shall not be placed in low runs or in areas that would impede drainage.

This item shall be priced based on an hourly rate and shall include a small excavator, an operator and one labourer.

The bank along the east side of the channel is approximately 20-25 feet deep at the locations of the specified rip rap. The item for brush and tree removal from Station 0+775 to 0+790 and 1+040 and 1+060 has been separated from the remainder due to the depth of the channel. The brush removal in this section shall include the removal of all brush, trees, stumps, woody vegetation, etc. in order to facilitate the placement of the rip rap at the discretion of the Drainage Superintendent or Engineer. This shall include any brush and tree removal required to gain access to the site. It is anticipated that access shall be from the east side of the channel for the placement of the rip rap in this section.

### **13. Brushing and Tree Removal (Construction from Station 1+920 to 9+068 and future maintenance of entire channel)**

For construction between Station 1+920 and 9+068 and future maintenance of the entire drain 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 were impeding the flow of the drain, as determined by the Drainage Superintendent or Engineer, 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.

#### **14. Excavation, Levelling and Filling of the Open Channel**

For construction between Station 1+920 and 9+068 and future maintenance of the entire drain 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.

The excavated material shall generally be cast on the side it is being excavated from, except across finished lawns where the excavated material shall be trucked. 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 than 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.

The material on the property with Roll Number 030-160 shall be levelled within the pasture portion of the property only.

Where identified on the detailed plans and as determined by the Drainage Superintendent or Engineer, the banks are unstable the banks shall be re-sloped to 2:1. The Contractor shall ensure that resloping of the banks does not undermine any existing infrastructure, including fences. If a 2:1 slope will undermine existing infrastructure the slope shall be reduced and other erosion protection measures shall be put in place at the discretion of the Engineer or Drainage Superintendent.

For future maintenance and repair, the excavated material where the cobblestone substrate is to be established, between Station 3+370 and 3+400, shall be trucked off site at the expense of the drainage works.

In the future, the pools, that are not apart of a riffle-pool structure, shall be maintained to a depth of 0.15m and shall be 15m long extending upstream from the downstream chainage identified on the drawings. The pools at Stations 2+870, 3+504 and 6+170 shall be maintained every 3 years under maintenance.

For construction under this the report any gravel/stone substrate between Station 2+160 to 2+610, 6+910 to 7+830 and at the existing access at approximately Station 5+070 shall be re-installed with the existing materials. The gravel/stone shall be removed and stockpiled in a separate pile for re-installation once the channel has been dug to just below the final grade line. The access at Station 5+070 shall be reinstated to allow for occasional access. The side slopes shall be dug to allow for vehicle access and shall not exceed 6:1.

Excavated material shall be used to fill in the re-routed portions of the channel. First, the excavated material from the new alignment shall be used. Any additional material required, as determined by the Engineer or Drainage Superintendent, shall be used from the channel cleanout/re-sloping in the vicinity.

### **15. Two Stage Channel Sod Matting**

For construction under this report, the two-stage channel shall be vegetated with “sod mats” from Station 4+055 to 4+105. The “sod mats” and the first 150-300mm of bank material from the drain shall be salvaged from the working bank and placed on the flat section of the overflow portion of the channel. The sod mats shall extend 300mm onto the ledge of the overflow channel and down the low flow channel. This is utilized in order to improve the naturalization of the channel and reduce the potential for erosion on newly disturbed soil.

### **16. 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, for the temporary rock check dams, and to create the rock riffles.

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 300mm 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.

The bank along the east side of the channel is approximately 20-25 feet deep at the locations of the specified rip rap from Station 0+775 to 0+790 and 1+040 and 1+060. The rip rap in this section has been separated from the remainder due to the depth of the channel and the requirement to access the site from the east side of the channel.

### **17. Rock Riffles and Pools**

The rock riffle shall have rip rap in accordance with the rip rap specification and cobblestone in accordance with the cobblestone specification. The rock riffles and pools shall be installed as per the drawings and in consultation with the Drainage Superintendent or Engineer on-site at the time of construction. The crest shall be 0.15m high and shall have a 2:1 slope on the upstream side and 20:1 on the downstream side of the crest. The quarry stone shall be placed with the larger pieces placed near the riffle crest and the downstream slope of the riffle. The large rocks on the downstream face shall be 200 to 300mm apart to dissipate energy and create low flow fish passage. Smaller pieces shall be placed in the gaps and voids to give it a uniform appearance and on the surface of the riffle to allow for breaks in the flow that can be followed up by migrating fish. The existing riffle at Station 3+630 shall utilize the existing rock on site with any additional rip rap as per above and at the unit price determined in the tender. Future replacements shall be to this same specification. If the grade line cannot be maintained with the incorporated riffles the riffles shall be reinstated at the proposed grade line with the rock on site.

### **18. Cobblestone**

A cobblestone substrate shall be installed along the channel bottom between Stations 3+370 and 3+400 to provide fish habitat. This cobblestone specification shall also apply to those utilized in the riffle-pools. The cobblestone shall consist of 75mm to 300mm oversized round stone or approved equivalent. The area to receive the cobblestone shall be graded to a depth of 300mm below finished grade. Filter fabric (Terrafix 250R or approved equal) shall then be placed with any joints overlapped a minimum 600mm. The cobblestone shall then be placed for the width of the channel bottom to the proposed grade line. Smaller pieces shall be placed in the gaps and voids to give it a uniform appearance.

## **19. Oxbow (FUTURE)**

The existing oxbows identified on the detailed plans shall be incorporated as part of the drainage works. The oxbow has maintained channel characteristics and does not require improvement under this report. It shall be maintained with the removal of any sediment and brush as needed at the discretion of the Drainage Superintendent. Rip rap may be placed at the outlet or inlet of the oxbow as required.

## **20. Installation of Culverts**

The Contractor is required to notify the Landowner twenty-four (24) 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 3.5mm in all cases. Roads culverts may be polymer laminated at the discretion of the Road Authority. All corrugation profiles shall be of helical lock seam manufacture using 125 x 25mm corrugations.

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. It is the Contractors responsibility to ensure that the minimum cover is achieved when backfilling the culverts.

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. The culvert lengths specified in this report are based on concrete block end walls.

Any tile outlets extended as a result of a culvert shall be extended at the landowner's expense. 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. The pipe shall be bedded with ¾" clear stone. 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. For concrete box culverts the clear stone shall extend from the bottom of the culvert to 200mm below. 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 compacted 100% crushed 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 compacted 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:**

The bottom of the excavation shall be excavated to a minimum of 100mm below the proposed invert. The pipe shall be bedded with ¾" clear stone. 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. 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 Granular "B" type II.

Asphalt Road: The sub-base shall consist of a minimum of 300mm of OPS 100% crushed Granular "A". The sub-base material shall not be native material. The asphalt shall be HL4 and HL3 at depths to match the existing thickness.

Gravel Road: The sub-base shall consist of a minimum of 300mm of OPS Granular "A". The sub-base material shall not be native material. 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. 2400mm wide blocks will be paid at a rate of two blocks. 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. The culverts, specifically the low-level crossings that are under water shall be

examined during construction and replaced under maintenance at the discretion of the Drainage Superintendent.

<b>Culvert Number (Number in Brackets Represents Town/County's Numbering)</b>	<b>Location</b>	<b>Existing Culvert Size</b>	<b>Replacement Culvert Size</b>
1 (30-3-084)	Oil Heritage Road	Concrete Bridge	Not Specified
2	Roll Number 030-190	5600mm Span Concrete Bridge	4500x2000mm Concrete Box Culvert
3	Roll Number 030-191	4 x 400mm dia. CSP (Low Level Crossing)	5000x1800mm Concrete Box Culvert
4	<b>Roll Number 030-192</b>	<b>Multiple 300mm dia. CSP (Low Level Crossing)</b>	<b>5000x1800mm Concrete Box Culvert</b>
5 (43)	Hillsboro Road	10,100mm Span Concrete Bridge	6600x3000mm Concrete Box Culvert
6	Roll Number 030-198	Existing Bridge	4500x2000mm Concrete Box Culvert
7 (11-3-063)	Aberarder Line	12,190mm Span Concrete Bridge	6600x3000mm Concrete Box Culvert
8	<b>Roll Number 030-162</b>	<b>None</b>	<b>4500x1800mm Concrete Box Culvert</b>
9 (35)	Blue Heron Road	8,200mm Span Concrete Bridge	6000x2300mm Concrete Box Culvert
10	<b>Roll Number 030-127-01</b>	<b>3 x 500mm dia. CSP (Low Level Crossing)</b>	<b>4200x1800mm Concrete Box Culvert</b>
11	Roll Number 030-128	3890x2690mm CSPA	3890x2690mm CSPA
12 (76)	Fisher Line	9,200mm Span Concrete Box	5000x3000mm Concrete Box Culvert
13 (18)	Uttoxeter Road	3800mmx2000mm CSPA	3650x2280mm CSPA

It is the Contractors responsibility to ensure that adequate cover is obtained prior to crossing the culvert in accordance with the manufacturer's recommendations.

## **21. Culvert Maintenance**

The Contractor shall be responsible for maintenance of the access culverts for a **period of two years** after their installation. This will include repairing any settlement areas on the travel surface with granular “A” and/or asphalt.

## **22. Woody Debris Erosion Protection**

For construction, trees and debris removed from the drain and drain banks shall be utilized to construct a woody debris erosion protection structure at Station 2+990. The wood shall be of suitable quality, as determined by the Drainage Superintendent or Engineer, and shall be placed as per OPSD 222.020 in order to provide overhead fish cover and to reduce erosion. The woody debris area shall have rip rap in accordance with the rip rap specification.

## **23. 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 outlet to the channel bottom. The erosion protection shall be 1.0m wide.

## **24. Seeding/Restoration**

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.

All other areas disturbed by construction shall be restored to their pre-construction condition with seed.

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 shall be placed on the disturbed areas and hydroseeded in accordance with the seed mixture, fertilizer and application rate as shown below. This shall be paid on a time and material basis.

Seed mixture, fertilizer and application rates are as follows:

- Hydraulic mulch (2,999 kg/ha.) type “B” and water (52,700 litres/ha.) in accordance with OPSS 572 (hydroseed).

The above seed mixture shall apply unless otherwise approved by the Drainage Superintendent or Engineer.

## **25. Temporary Rock Flow Check Dams and Sediment Traps**

The rock flow check dams shall have rip rap in accordance with the rip rap specification. Temporary sediment traps and rock flow check dams shall be installed at the approximate locations as shown on the detailed plans and profiles. The sediment traps and rock flow check dams are temporary erosion protection measures and shall only be included as apart of construction under this project. The rock flow check dam shall be installed 1m downstream of the sediment traps. The rock flow check dam and sediment traps shall be installed before any work upstream of their location takes place. The rock flow check dams shall be removed upon completion of construction and the rip rap shall be utilized for erosion protection in the vicinity of check dams.

The sediment traps shall be as per OPSD 219.220 and shall be 0.30m deep and 5m long. The rock flow check dams shall be as per OPSD 219.211 and shall utilize rip rap and geotextile as detailed in the rip rap specification.

## **26. Tree Planting**

Twelve (12) trees shall be planted on the property with Roll Number 030-160 between Stations 4+970 and 5+527. The trees shall be placed in locations determined by the Engineer or Drainage Superintendent and shall generally be placed at equal intervals and shall be approximately 2m south of the south top of bank. The trees shall be one of the following and may be purchased from the conservation authority at the below link:

<https://shop.scrca.on.ca/order-trees/large-stock-trees/>

- Oak, red and white

- Maple, hard, red and silver

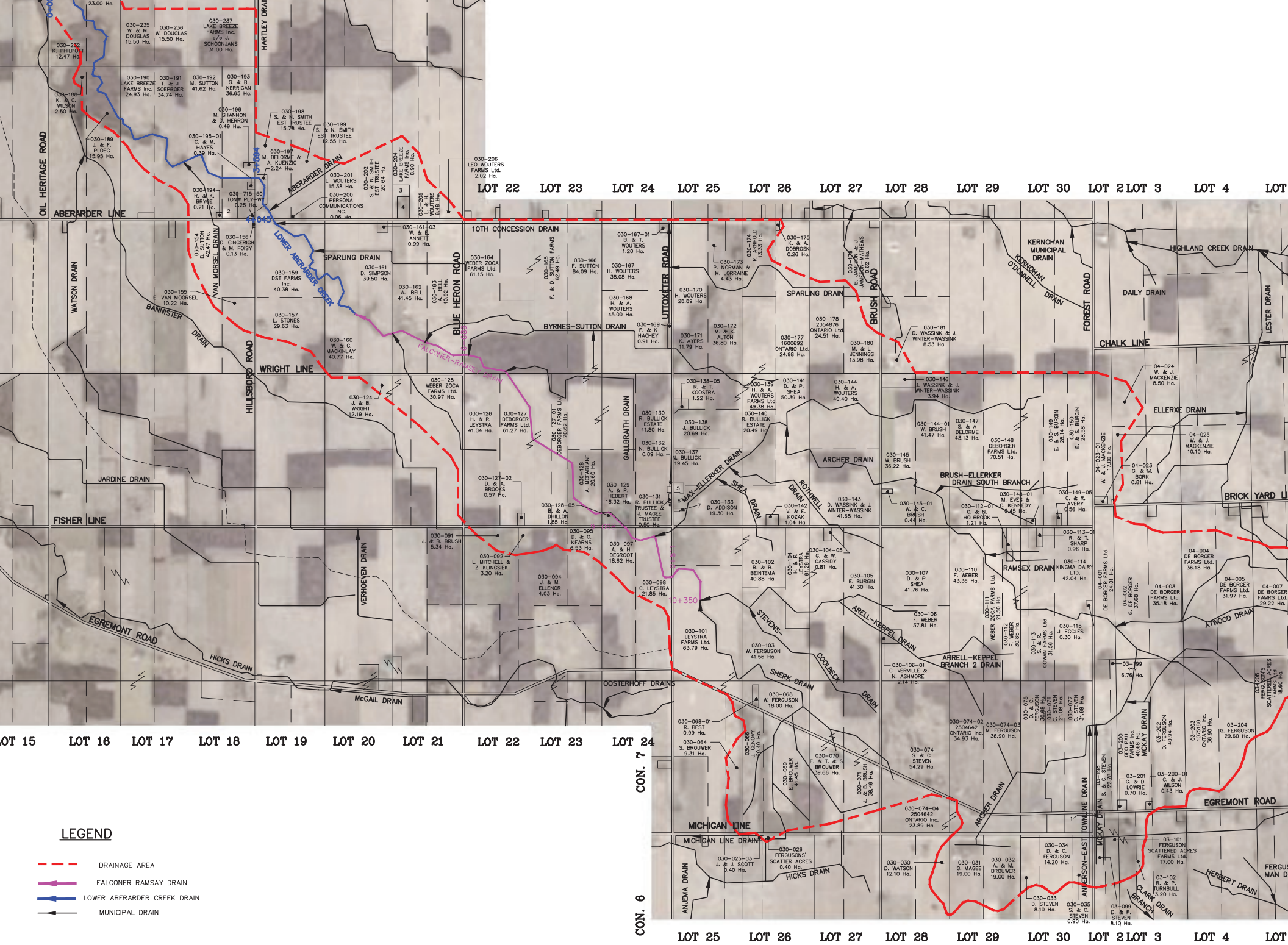
The trees shall have 6 foot high wire fence around them. The fence shall be secured to steel T posts or by an alternative method approved by the Engineer.

## **27. 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.

The Contractor shall notify the DFO 10 days before starting the project by emailing the DFO 10 Day Notification mailbox: [DFO.OP.10DayNotification-Notification10Jours.OP.MPO@dfo-mpo.gc.ca](mailto:DFO.OP.10DayNotification-Notification10Jours.OP.MPO@dfo-mpo.gc.ca)

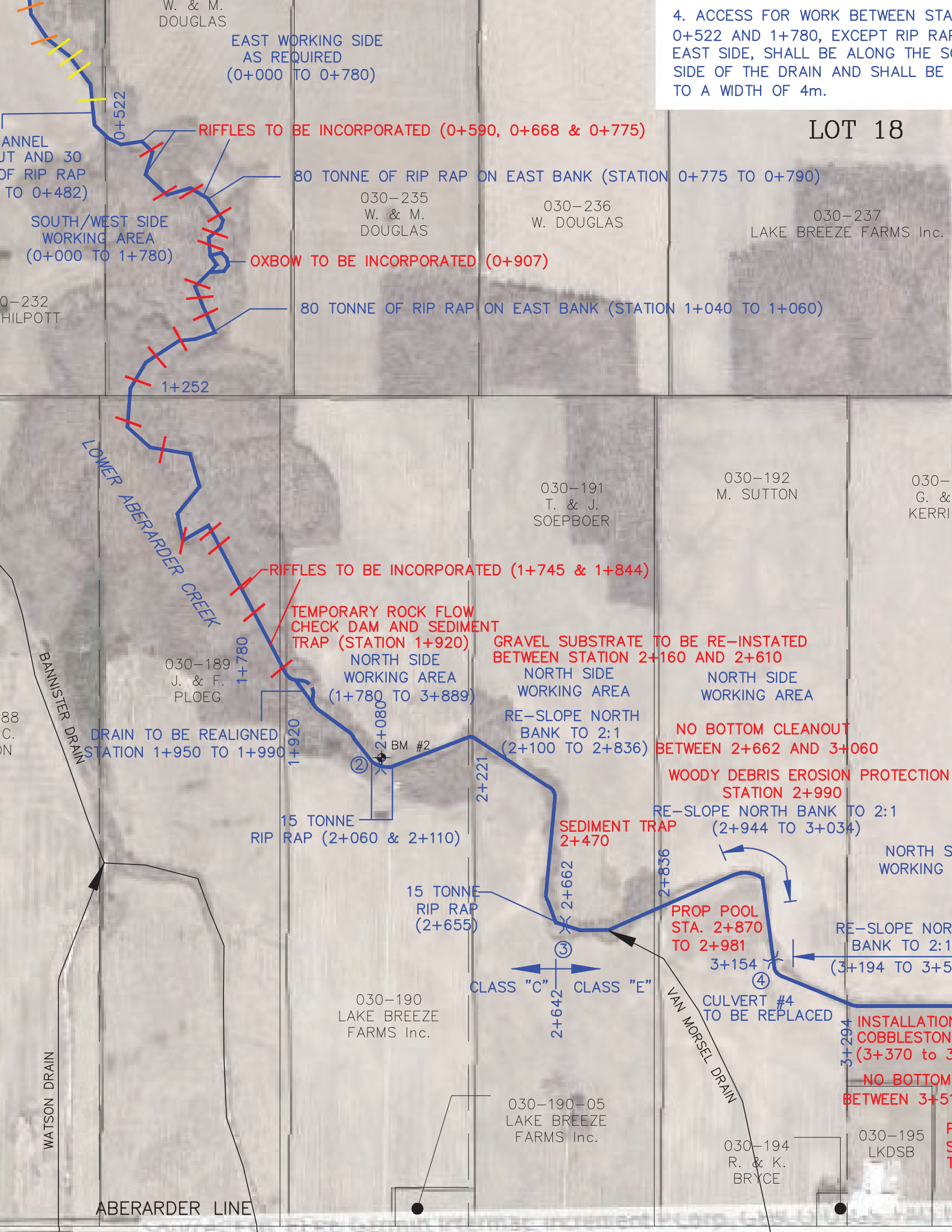


**LEGEND**

- DRAINAGE AREA
- FALCONER RAMSAY DRAIN
- LOWER ABERARDER CREEK DRAIN
- MUNICIPAL DRAIN

CON. 6  
CON. 7

LOT 25    LOT 26    LOT 27    LOT 28    LOT 29    LOT 30    LOT 2    LOT 3    LOT 4    LOT



4. ACCESS FOR WORK BETWEEN STA 0+522 AND 1+780, EXCEPT RIP RAP EAST SIDE, SHALL BE ALONG THE SOUTH SIDE OF THE DRAIN AND SHALL BE TO A WIDTH OF 4m.

LOT 18

EAST WORKING SIDE AS REQUIRED (0+000 TO 0+780)

RIFFLES TO BE INCORPORATED (0+590, 0+668 & 0+775)

80 TONNE OF RIP RAP ON EAST BANK (STATION 0+775 TO 0+790)

030-235 W. & M. DOUGLAS

030-236 W. DOUGLAS

030-237 LAKE BREEZE FARMS Inc.

OXBOW TO BE INCORPORATED (0+907)

80 TONNE OF RIP RAP ON EAST BANK (STATION 1+040 TO 1+060)

ANNEL JT AND 30 OF RIP RAP TO 0+482)

SOUTH/WEST SIDE WORKING AREA (0+000 TO 1+780)

0-232 HILPOTT

0+522

1+252

LOWER ABERARDER CREEK

BANNISTER DRAIN

030-191 T. & J. SOEPBOER

030-192 M. SUTTON

030- G. & KERRI

RIFFLES TO BE INCORPORATED (1+745 & 1+844)

TEMPORARY ROCK FLOW CHECK DAM AND SEDIMENT TRAP (STATION 1+920)

NORTH SIDE WORKING AREA (1+780 TO 3+889)

GRAVEL SUBSTRATE TO BE RE-INSTATED BETWEEN STATION 2+160 AND 2+610

NORTH SIDE WORKING AREA

NORTH SIDE WORKING AREA

030-189 J. & F. PLOEG

DRAIN TO BE REALIGNED (STATION 1+950 TO 1+990)

RE-SLOPE NORTH BANK TO 2:1 (2+100 TO 2+836)

NO BOTTOM CLEANOUT BETWEEN 2+662 AND 3+060

WOODY DEBRIS EROSION PROTECTION STATION 2+990

15 TONNE RIP RAP (2+060 & 2+110)

RE-SLOPE NORTH BANK TO 2:1 (2+944 TO 3+034)

NORTH SIDE WORKING

15 TONNE RIP RAP (2+655)

SEDIMENT TRAP 2+470

PROP POOL STA. 2+870 TO 2+981

RE-SLOPE NORTH BANK TO 2:1 (3+194 TO 3+500)

030-190 LAKE BREEZE FARMS Inc.

CLASS "C" CLASS "E"

CULVERT #4 TO BE REPLACED

INSTALLATION COBBLESTON (3+370 to 3+500)

NO BOTTOM CLEANOUT BETWEEN 3+500 AND 3+550

030-190-05 LAKE BREEZE FARMS Inc.

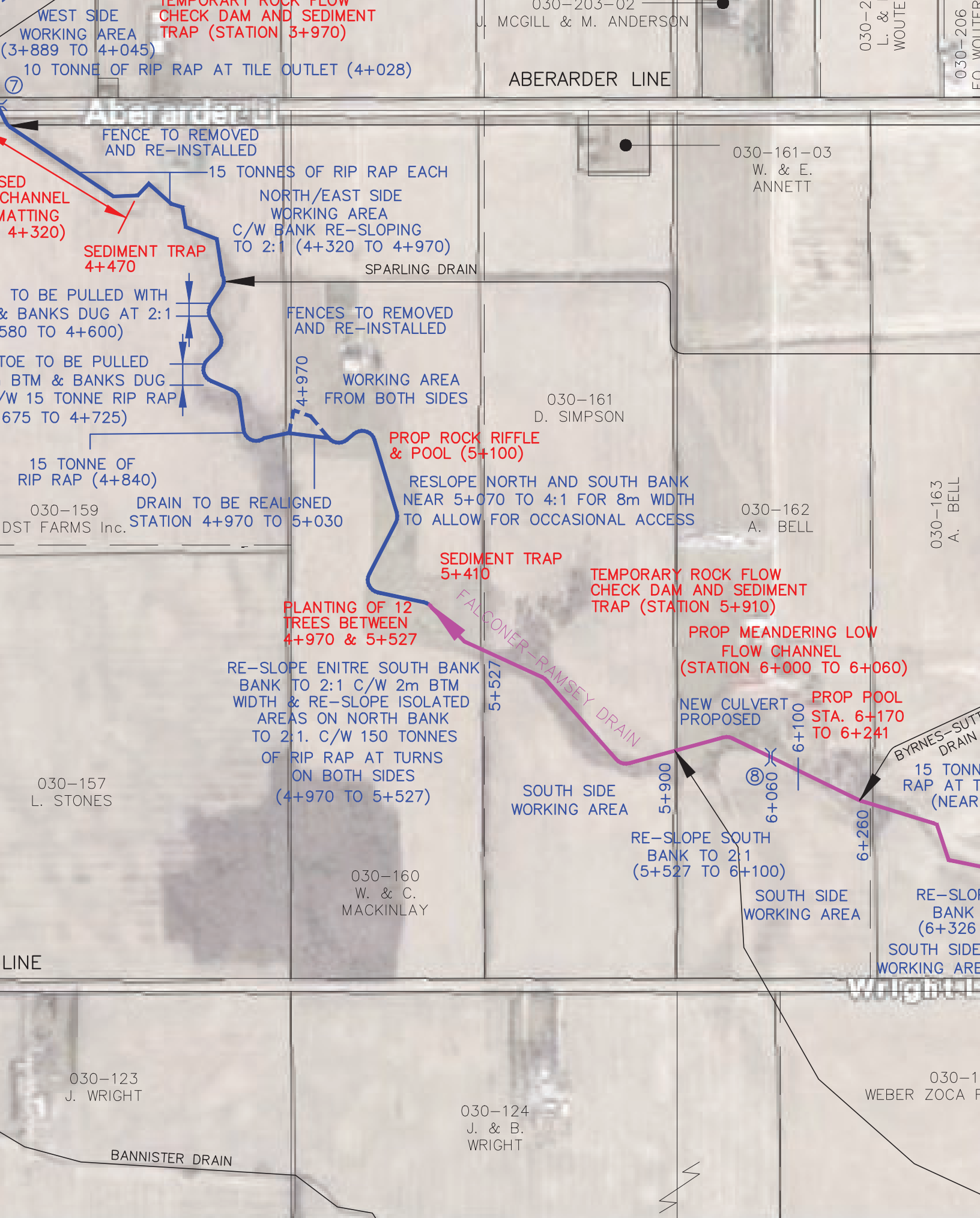
030-194 R. & K. BRYCE

030-195 LKDSB

WATSON DRAIN

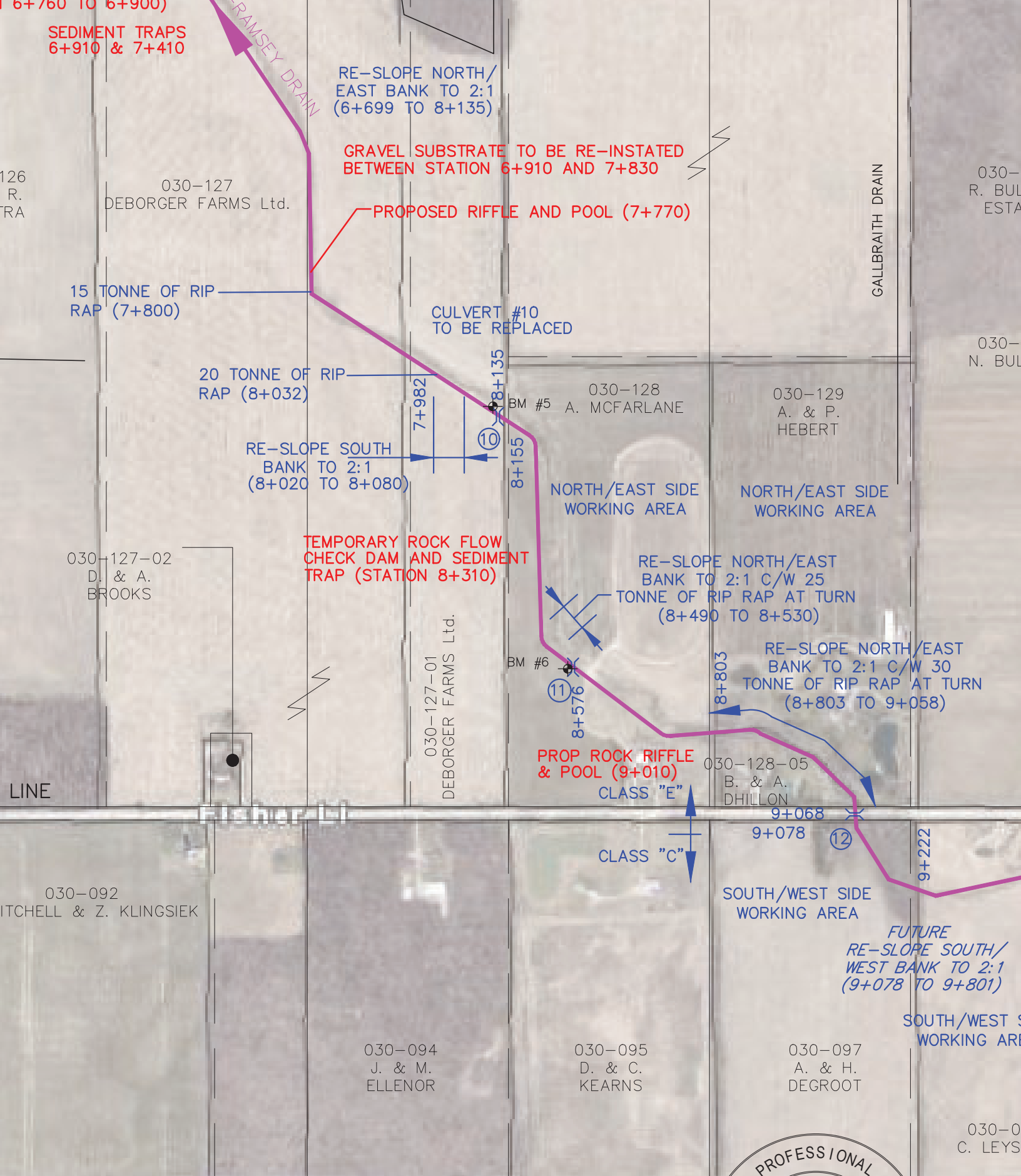
VAN MORSEL DRAIN

ABERARDER LINE



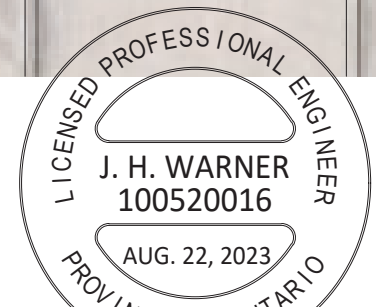
**NOTES**

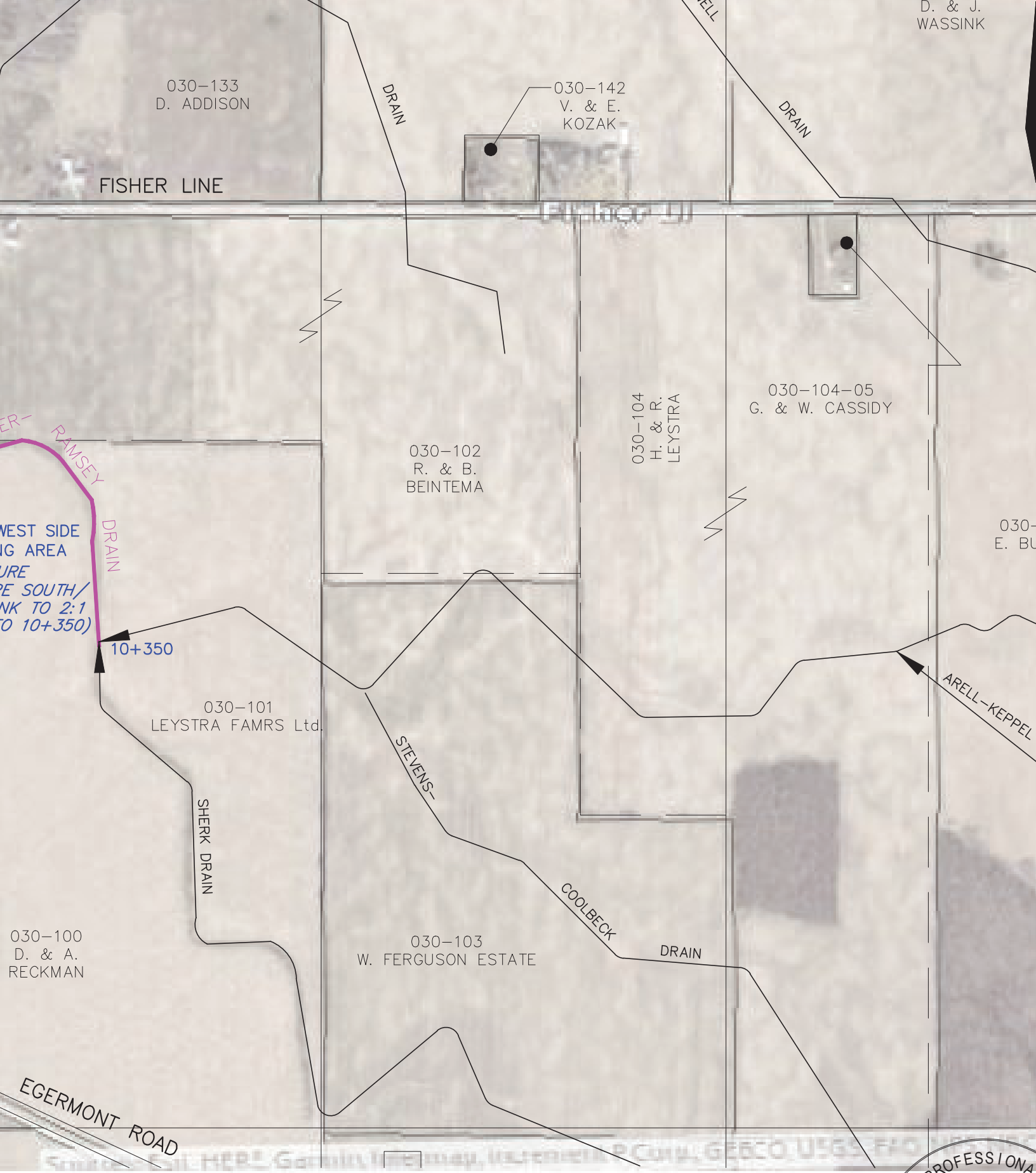
TO THE PROPOSED 2. ALL RE-SLOPED BANKS



NOTES

- 1. TO THE PROPOSED SHOWN ON THE PLANS, A
- 2. ALL RE-SLOPED BANKS SHALL BE RESTORED WITH DOUBLE

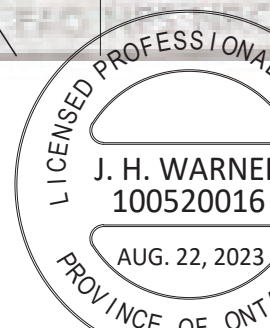




NOTES

1. ALL RE-SLOPED BANKS SHOWN ON THE PLANS, A CLEANOUT IS PROPOSED FROM 1+030 TO 0+058 EXCEPT

2. ALL RE-SLOPED BANKS SHALL BE RESTORED WITH DOUBLE STRAW MATTING AND SEED.

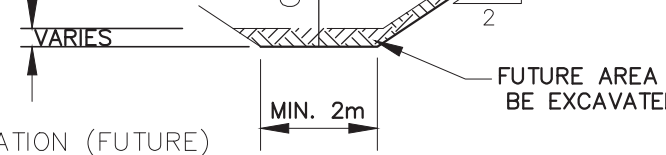


GE ROAD.

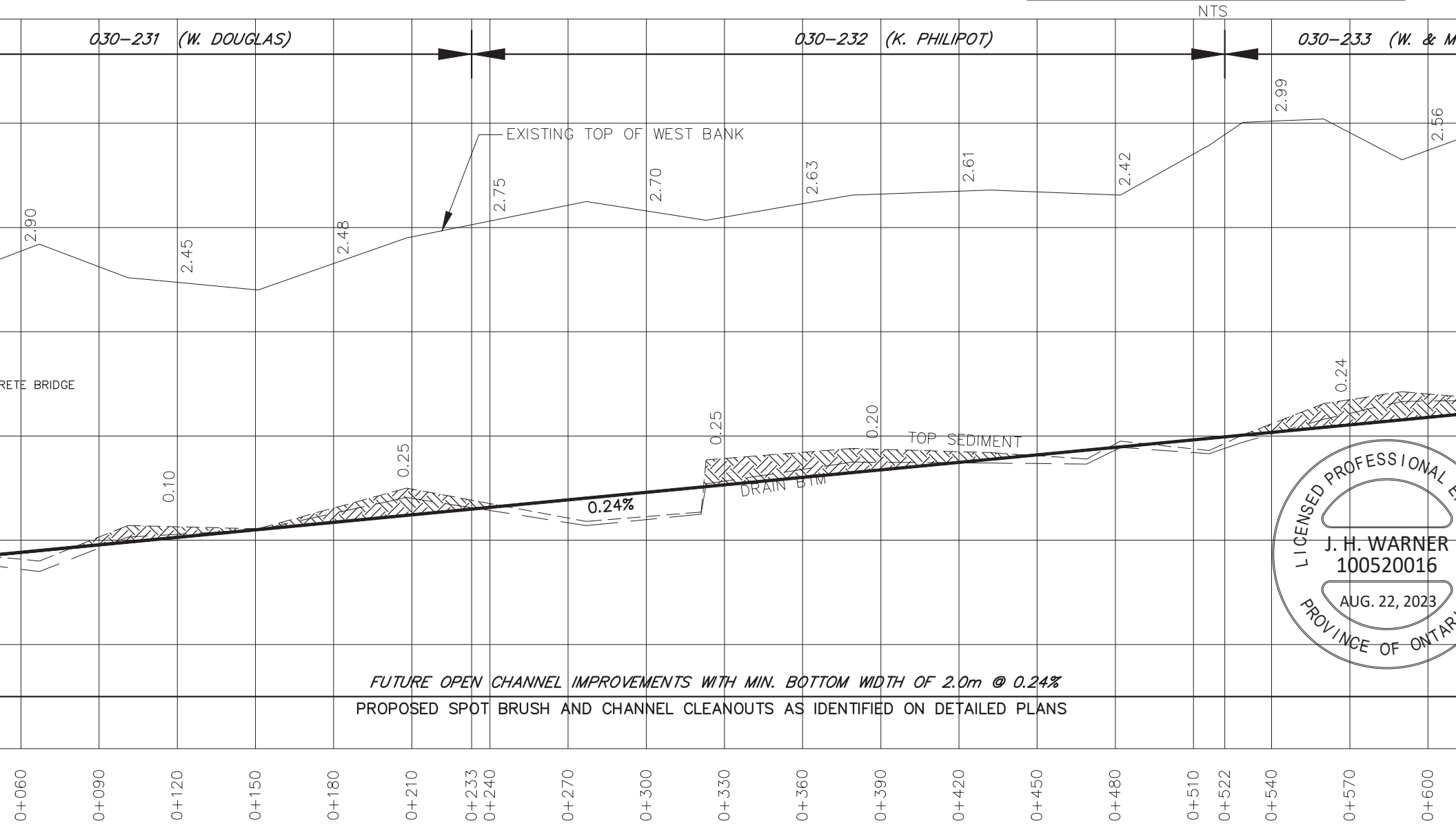
3. LOWER NUMBERS ARE DEPTH OF PROPOSED/  
FUTURE CHANNEL EXCAVATION.



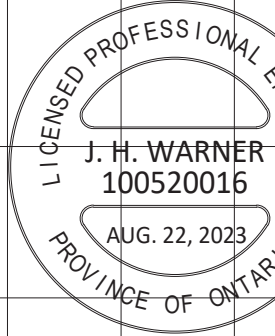
DRAIN EXCAVATION (FUTURE)



TYPICAL DRAIN CROSS SECTION  
STATION 0+000 TO 1+920



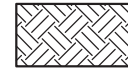
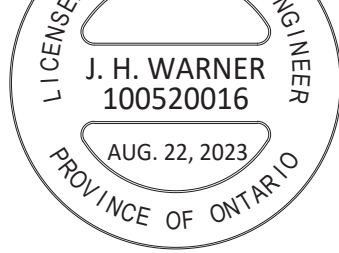
FUTURE OPEN CHANNEL IMPROVEMENTS WITH MIN. BOTTOM WIDTH OF 2.0m @ 0.24%  
PROPOSED SPOT BRUSH AND CHANNEL CLEANOUTS AS IDENTIFIED ON DETAILED PLANS



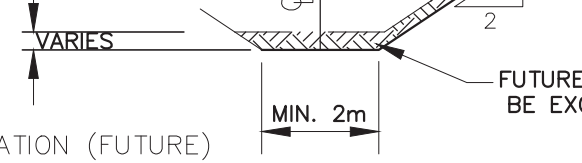
APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				

TOWN of PLYMPTON-WYOMING

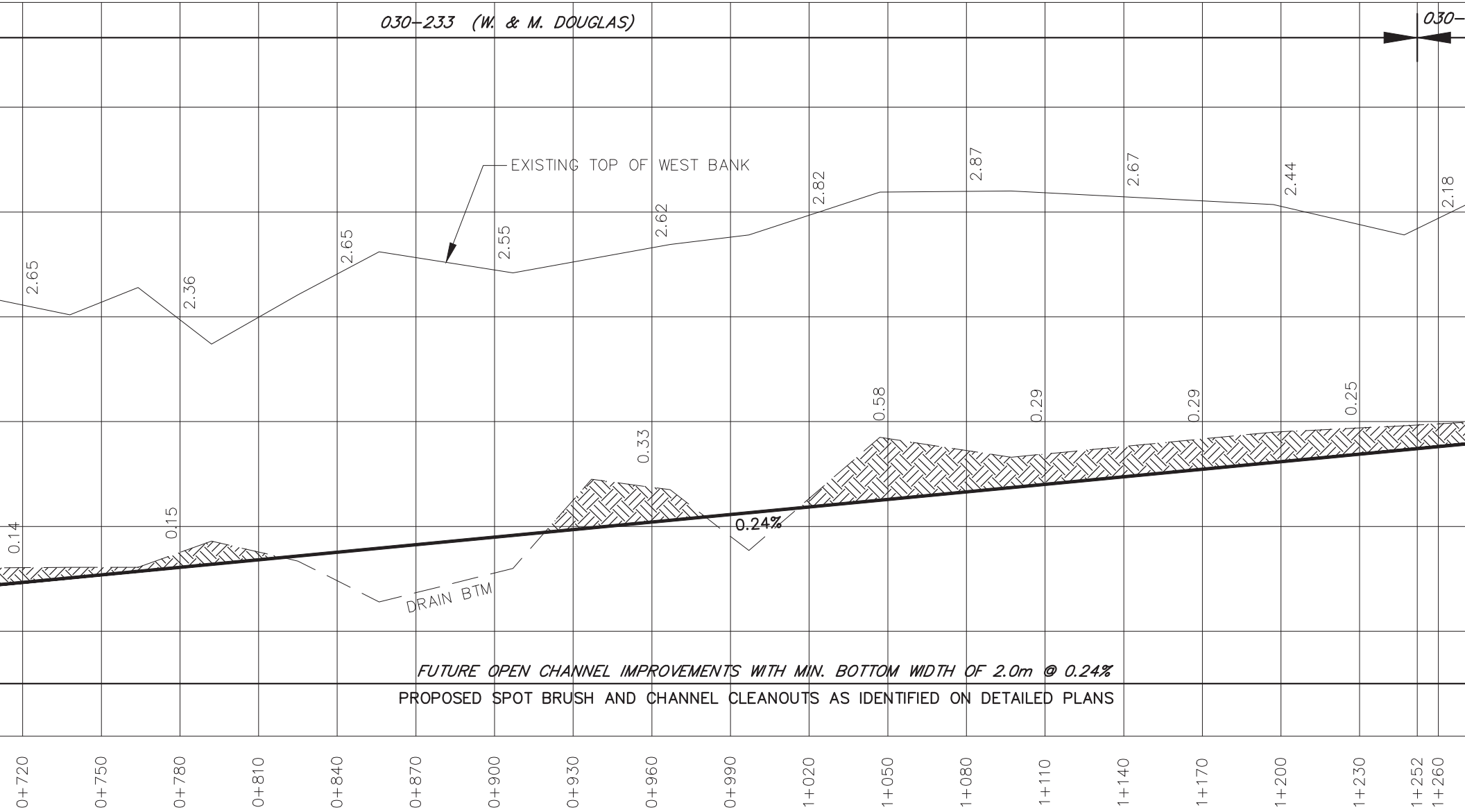
AGE ROAD.  
 PT FROM TOP OF  
 URE CHANNEL BOTTOM.  
 PT OF PROPOSED/  
 ATION.



DRAIN EXCAVATION (FUTURE)



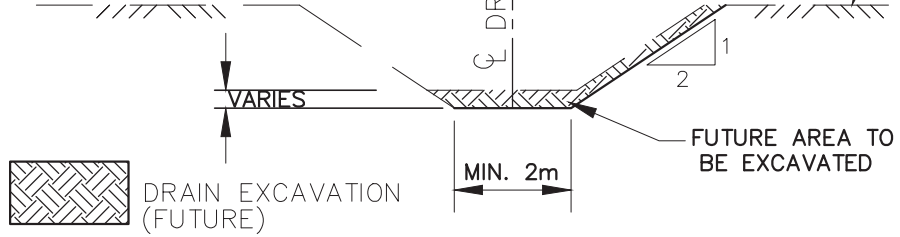
TYPICAL DRAIN CROSS SECTION  
 STATION 0+000 TO 1+920  
 NTS



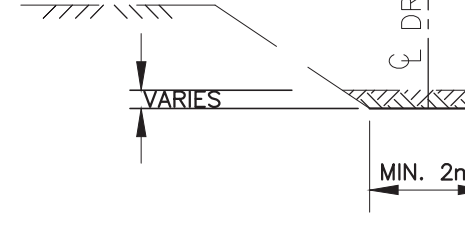
FUTURE OPEN CHANNEL IMPROVEMENTS WITH MIN. BOTTOM WIDTH OF 2.0m @ 0.24%  
 PROPOSED SPOT BRUSH AND CHANNEL CLEANOUTS AS IDENTIFIED ON DETAILED PLANS

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				

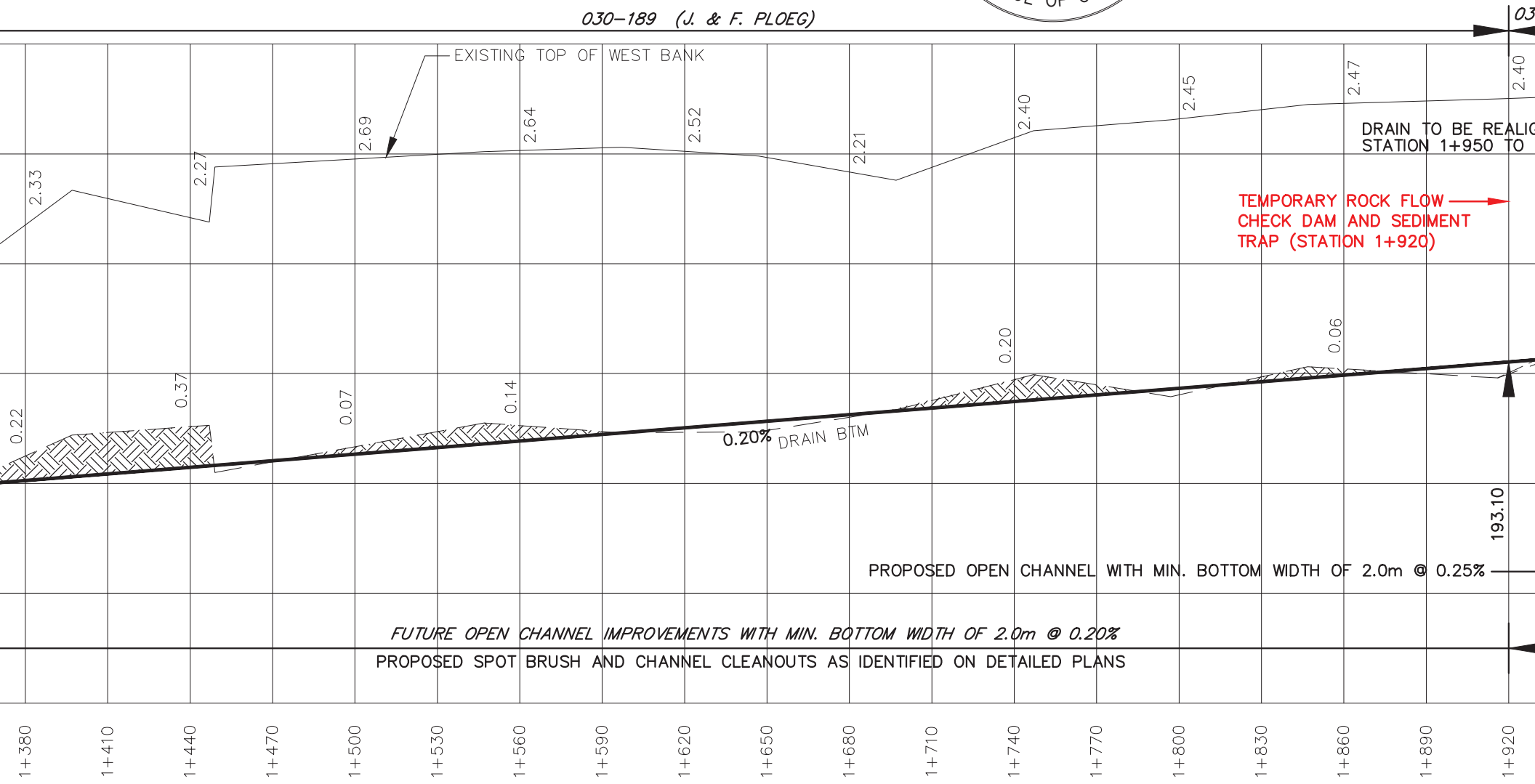
DEPTH FROM TOP OF  
 CHANNEL BOTTOM.  
 DEPTH OF PROPOSED/  
 VARIATION.



**TYPICAL DRAIN CROSS SECTION**  
**STATION 0+000 TO 1+920**  
 NTS  
 030-189 (J. & F. PLOEG)



**TYPICAL DRAIN CROSS SECTION**  
**STATION 1+920 TO 1+950**  
 NTS

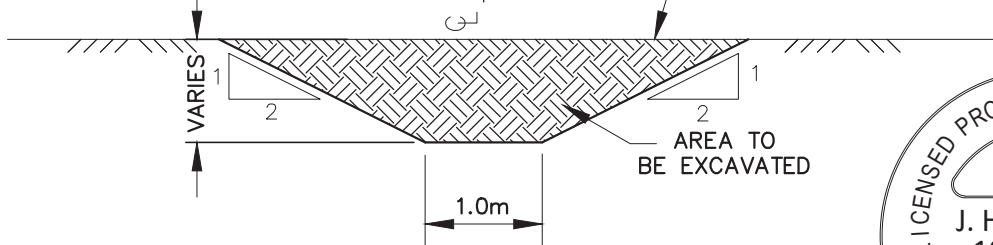


*FUTURE OPEN CHANNEL IMPROVEMENTS WITH MIN. BOTTOM WIDTH OF 2.0m @ 0.20%*  
 PROPOSED SPOT BRUSH AND CHANNEL CLEANOUTS AS IDENTIFIED ON DETAILED PLANS

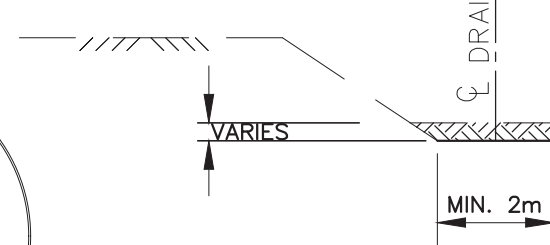
APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				

**TOWN of PLYMPTON-WYOMING**

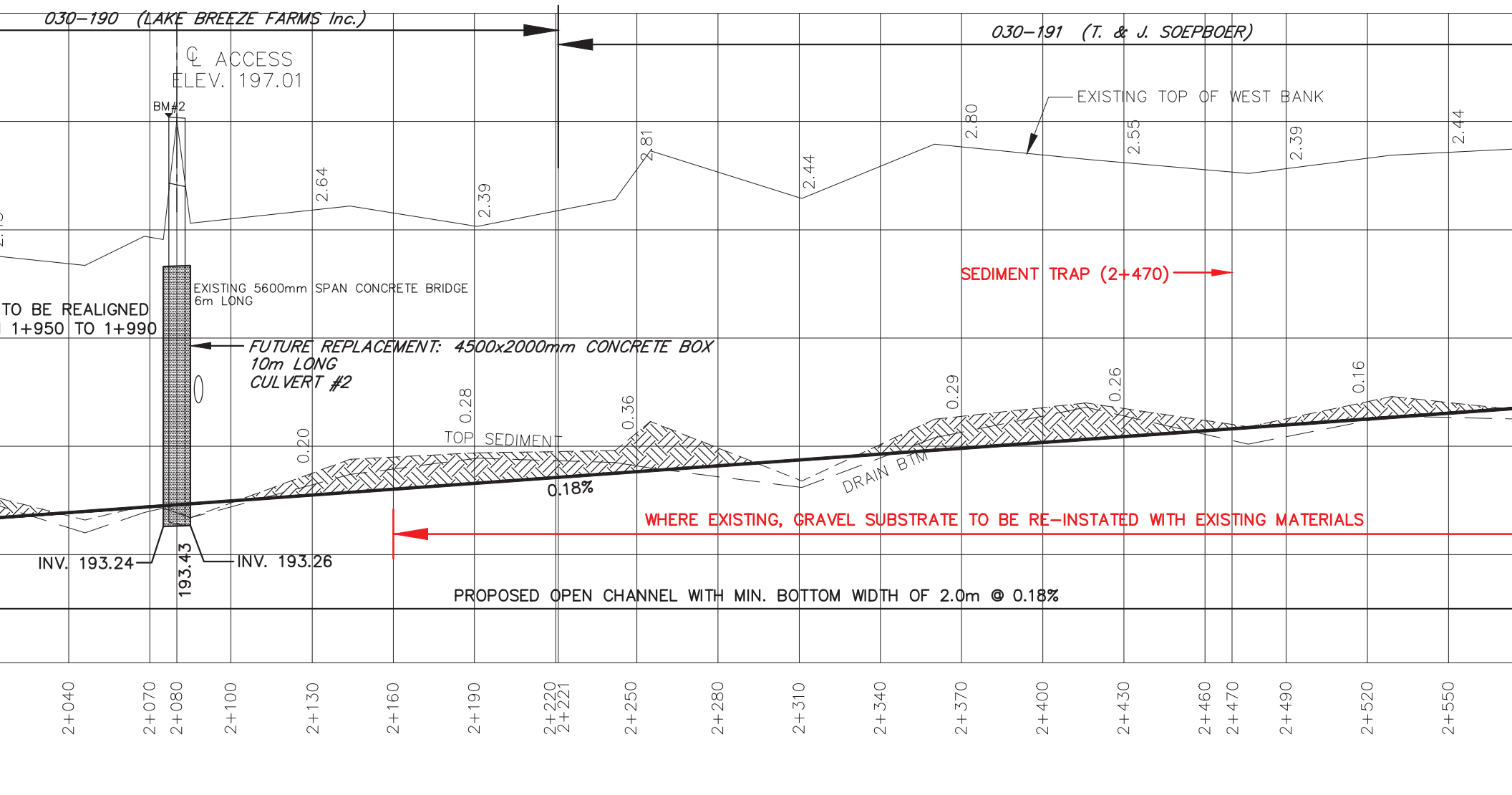
2+080.  
 DEPTH FROM TOP OF  
 FUTURE CHANNEL BOTTOM.  
 DEPTH OF PROPOSED/  
 VARIATION.



**TYPICAL DRAIN CROSS SECTION**  
**STATION 1+950 TO 1+990**  
 NTS

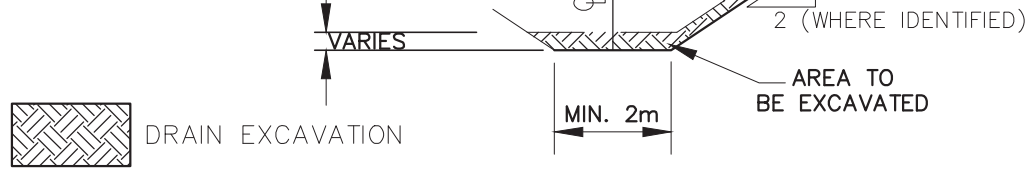


**TYPICAL DRAIN CR**  
**STATION 1+920**  
 NTS

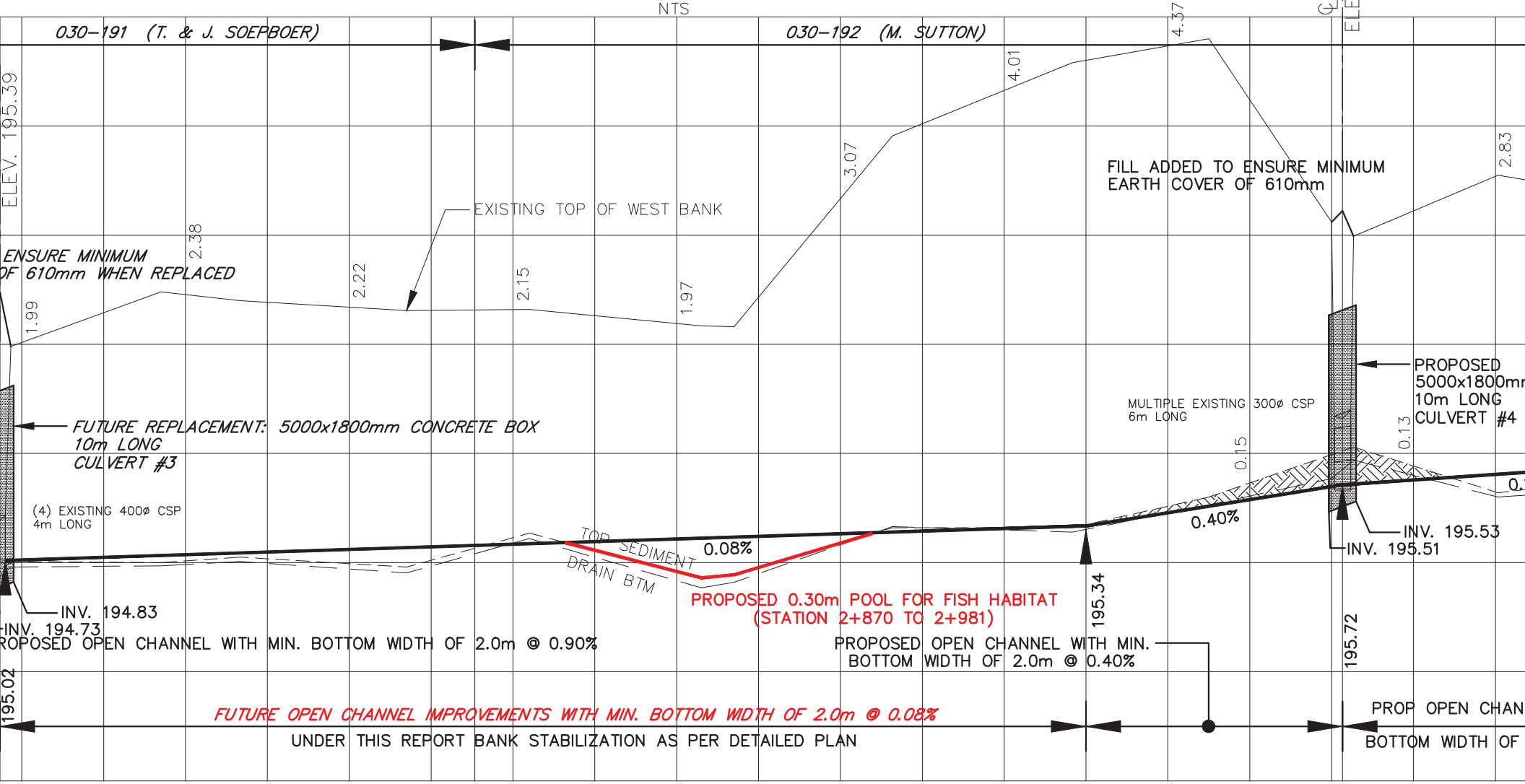


APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				

2+080.  
 PTH FROM TOP OF  
 FUTURE CHANNEL BOTTOM.  
 PTH OF PROPOSED/  
 ATION.



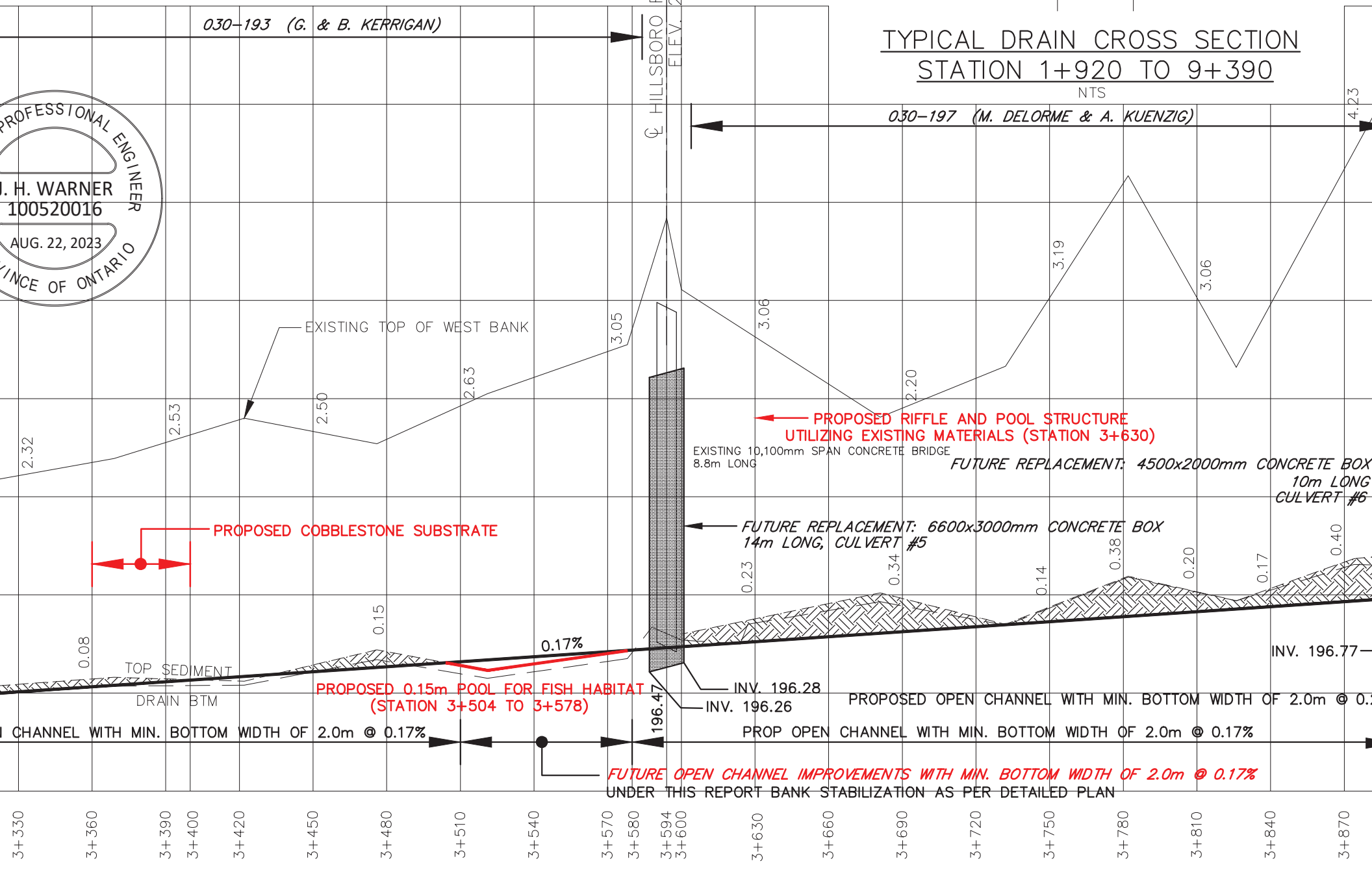
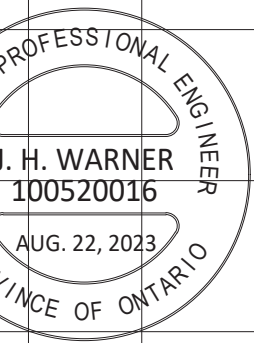
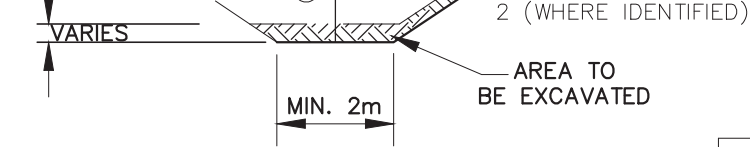
**TYPICAL DRAIN CROSS SECTION**  
**STATION 1+920 TO 9+390**



2+670	2+700	2+730	2+760	2+790	2+820	2+836	2+850	2+880	2+910	2+940	2+970	3+000	3+030	3+060	3+090	3+120	3+150	3+154	3+180	3+210
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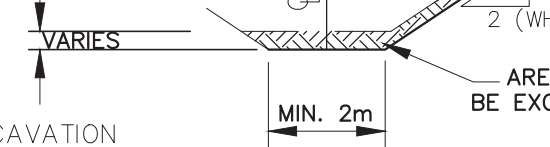
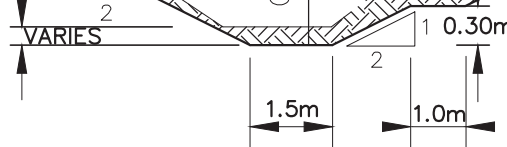
APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				

3. LOWER NUMBERS ARE DEPTH OF PROPOSED/FUTURE CHANNEL EXCAVATION.



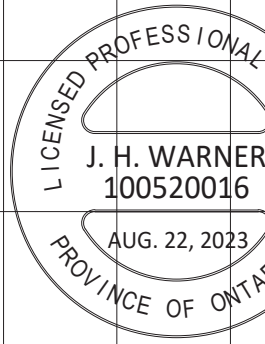
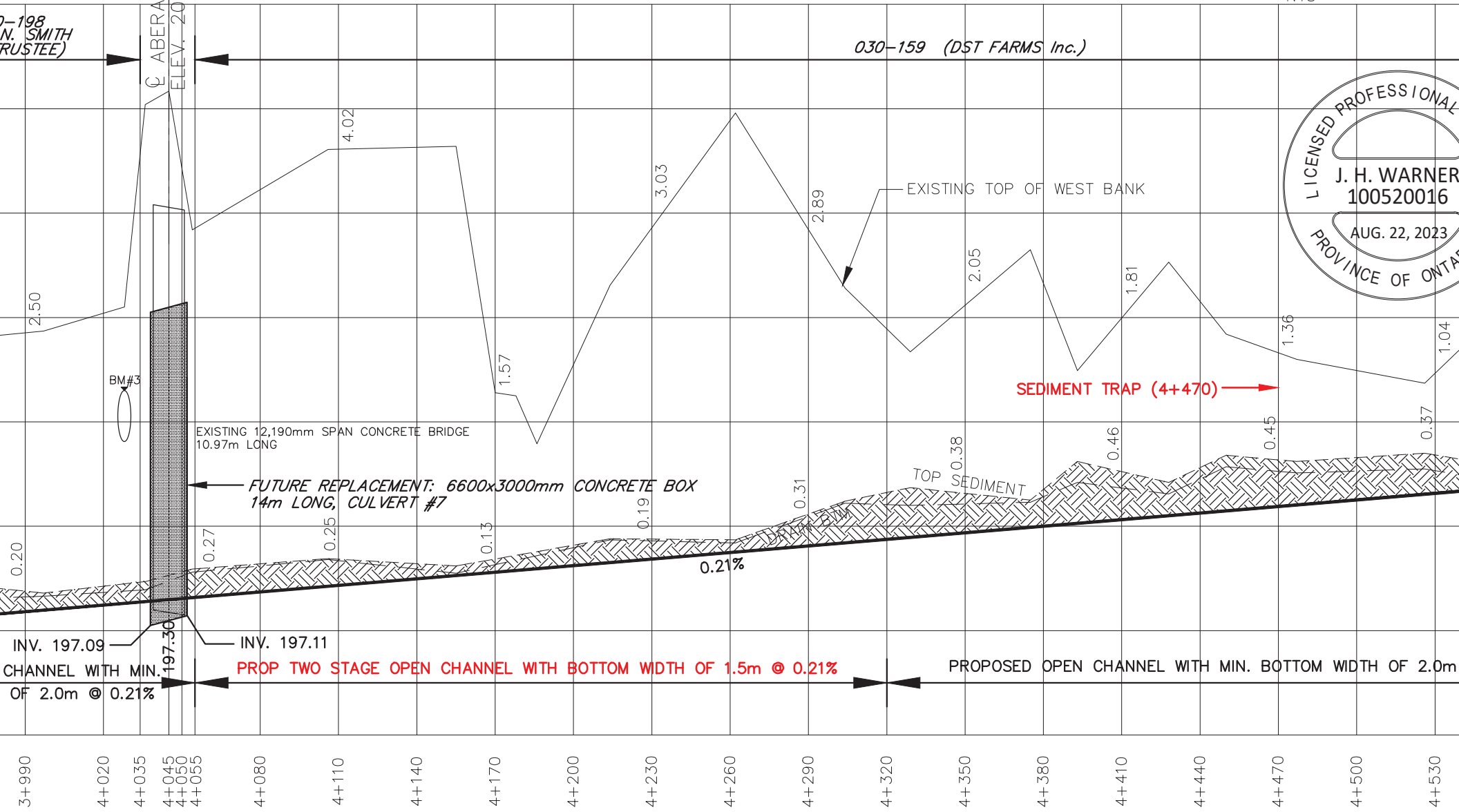
APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				

DEPTH FROM TOP OF  
 FUTURE CHANNEL BOTTOM.  
 DEPTH OF PROPOSED/  
 VARIATION.



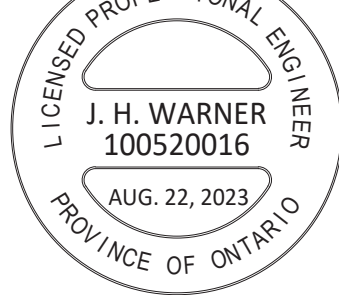
**CROSS SECTION (TWO STAGE CHANNEL)  
 STATION 4+055 TO 4+320**

**TYPICAL DRAIN CROSS SECTION  
 STATION 1+920 TO 9+320**

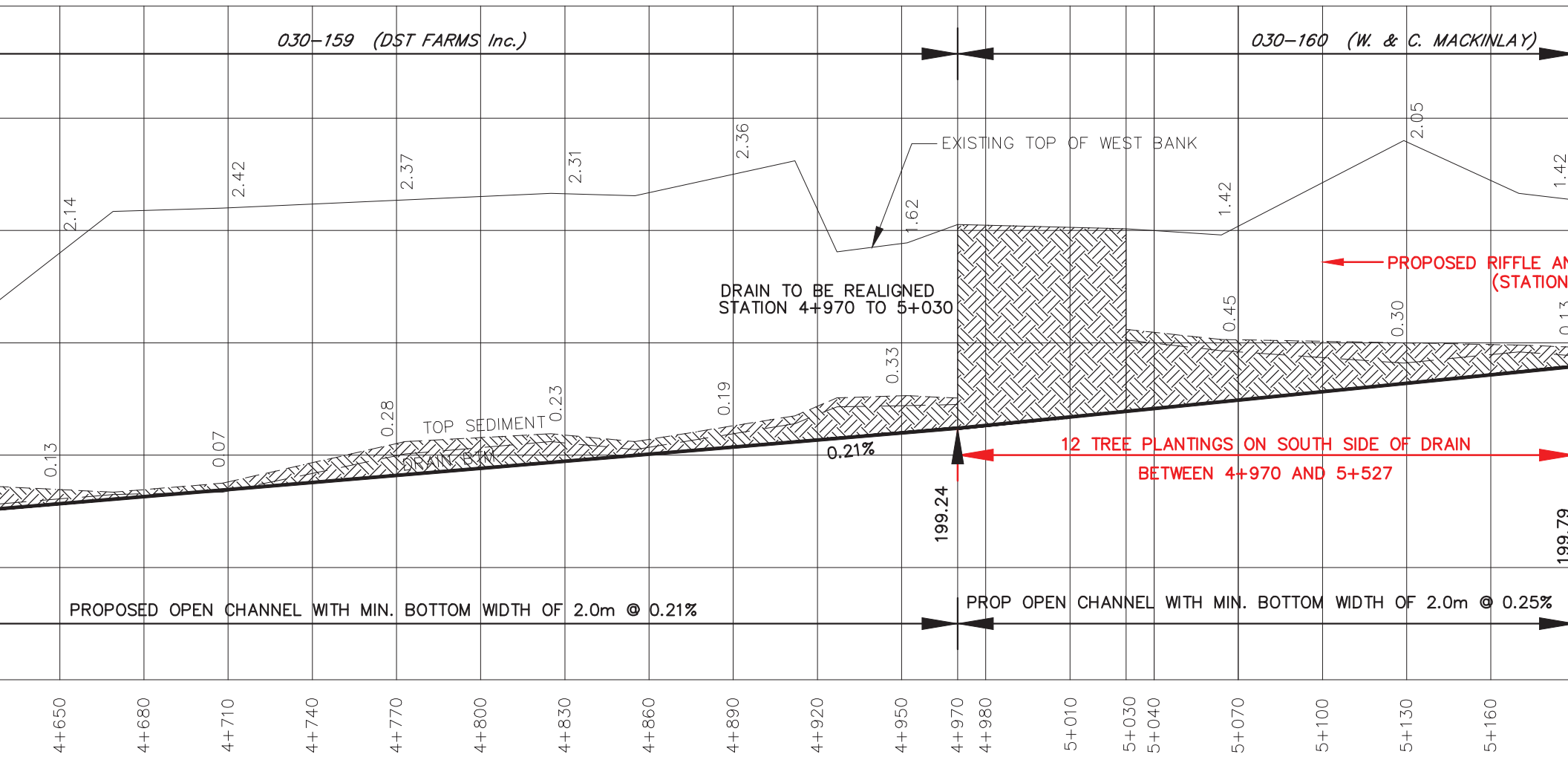
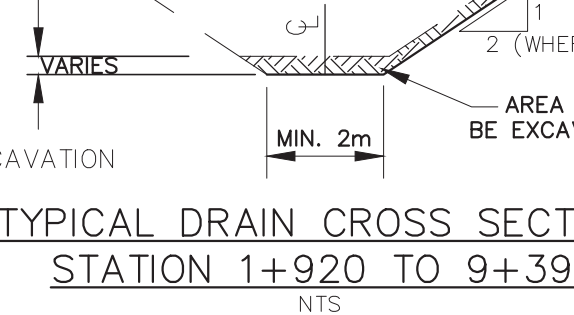


APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				

DEPTH FROM TOP OF  
 CHANNEL BOTTOM.  
 DEPTH OF PROPOSED/  
 EXISTING CHANNEL.



DRAIN EXCAVATION

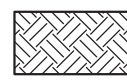
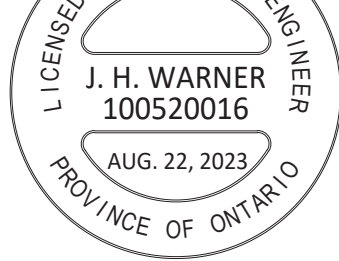


APPROVED  
 J. WARNER

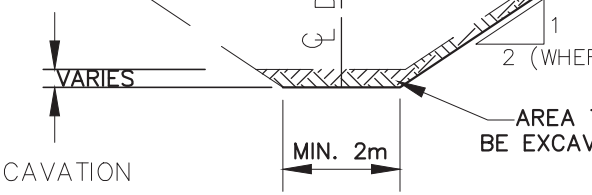
NO.	REVISIONS	DATE	BY

TOWN of PLYMPTON-WYOMING

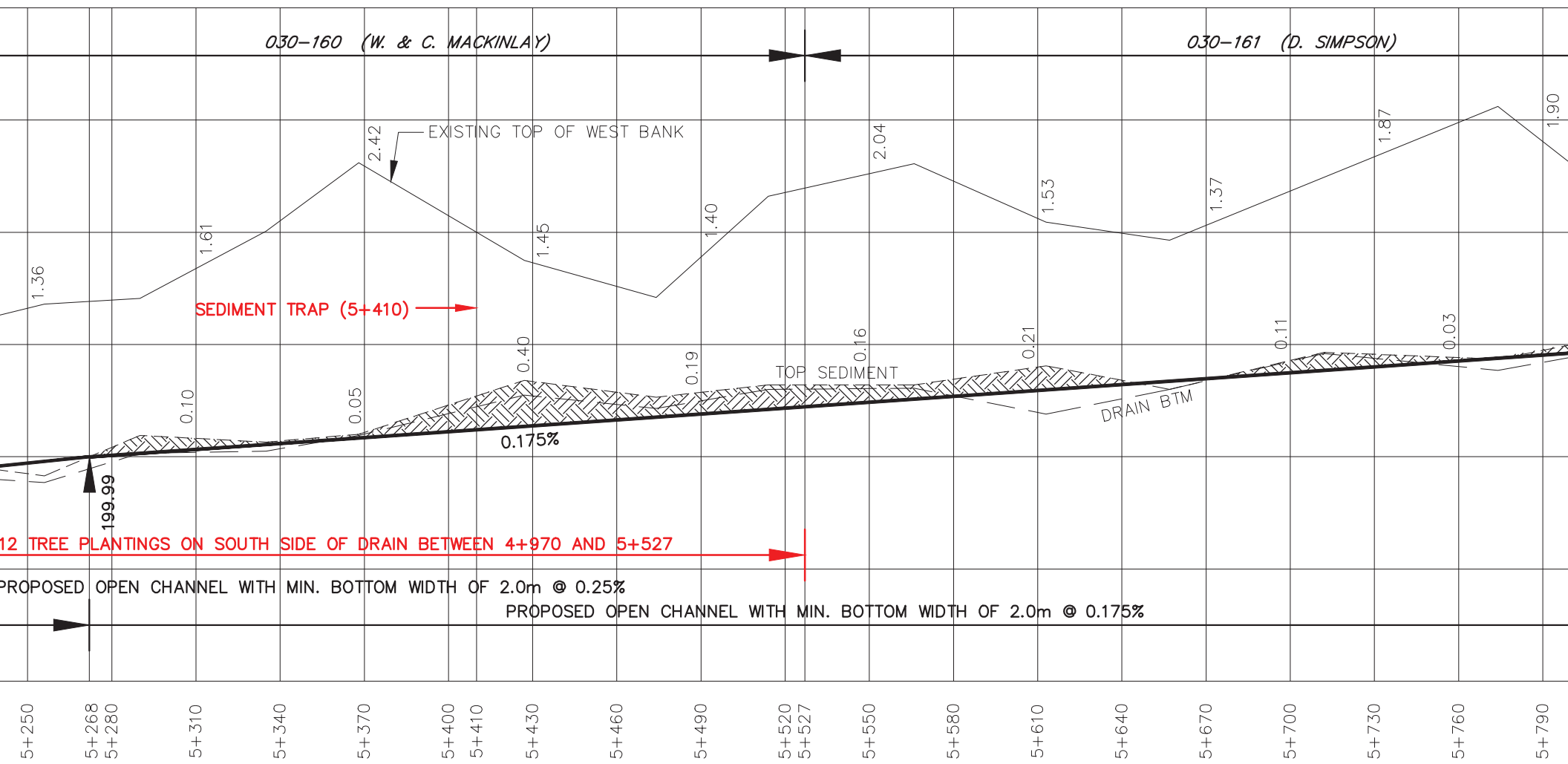
DEPTH FROM TOP OF  
 FUTURE CHANNEL BOTTOM.  
 DEPTH OF PROPOSED/  
 VARIATION.



DRAIN EXCAVATION



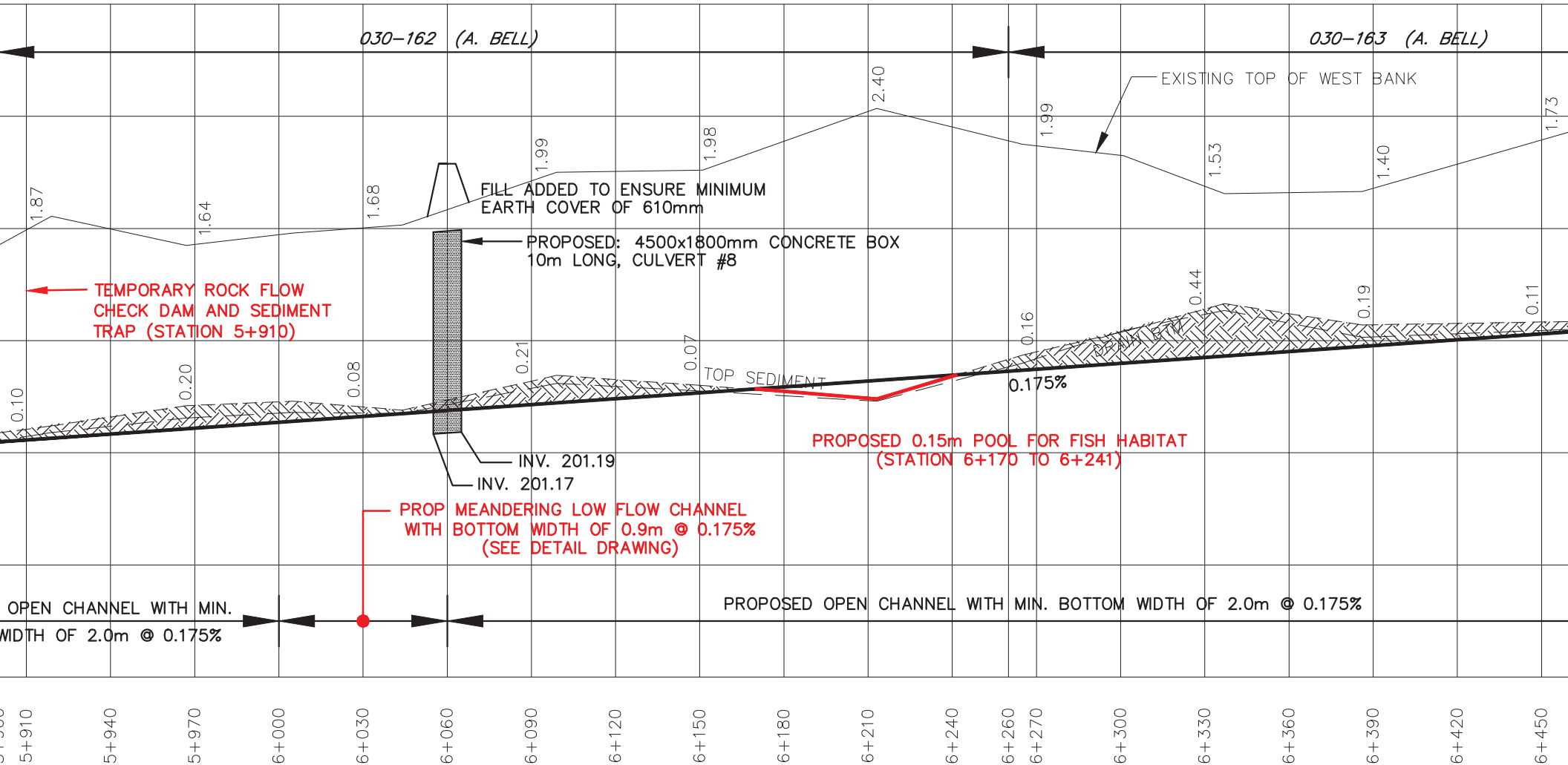
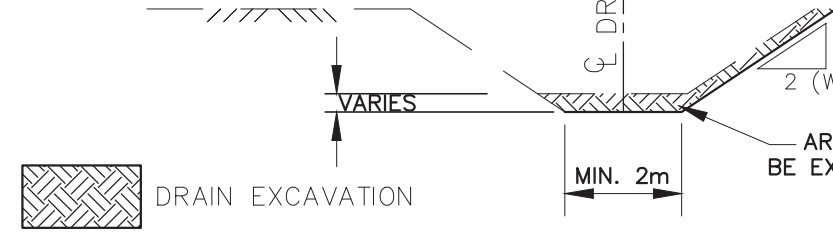
TYPICAL DRAIN CROSS SECTION  
 STATION 1+920 TO 9+39  
 NTS



APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				

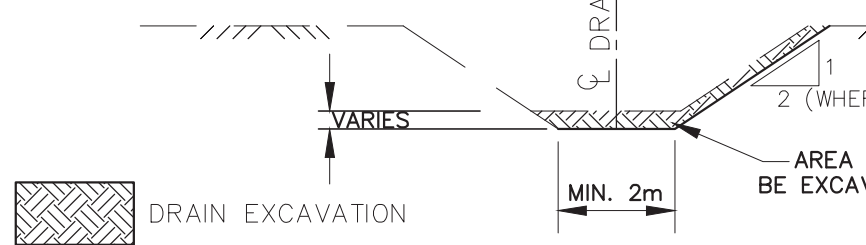
TOWN of PLYMPTON-WYOMING

ROAD (STA. 4+757)  
 DEPTH FROM TOP OF  
 EXISTING CHANNEL BOTTOM.  
 DEPTH OF PROPOSED/  
 VARIATION.

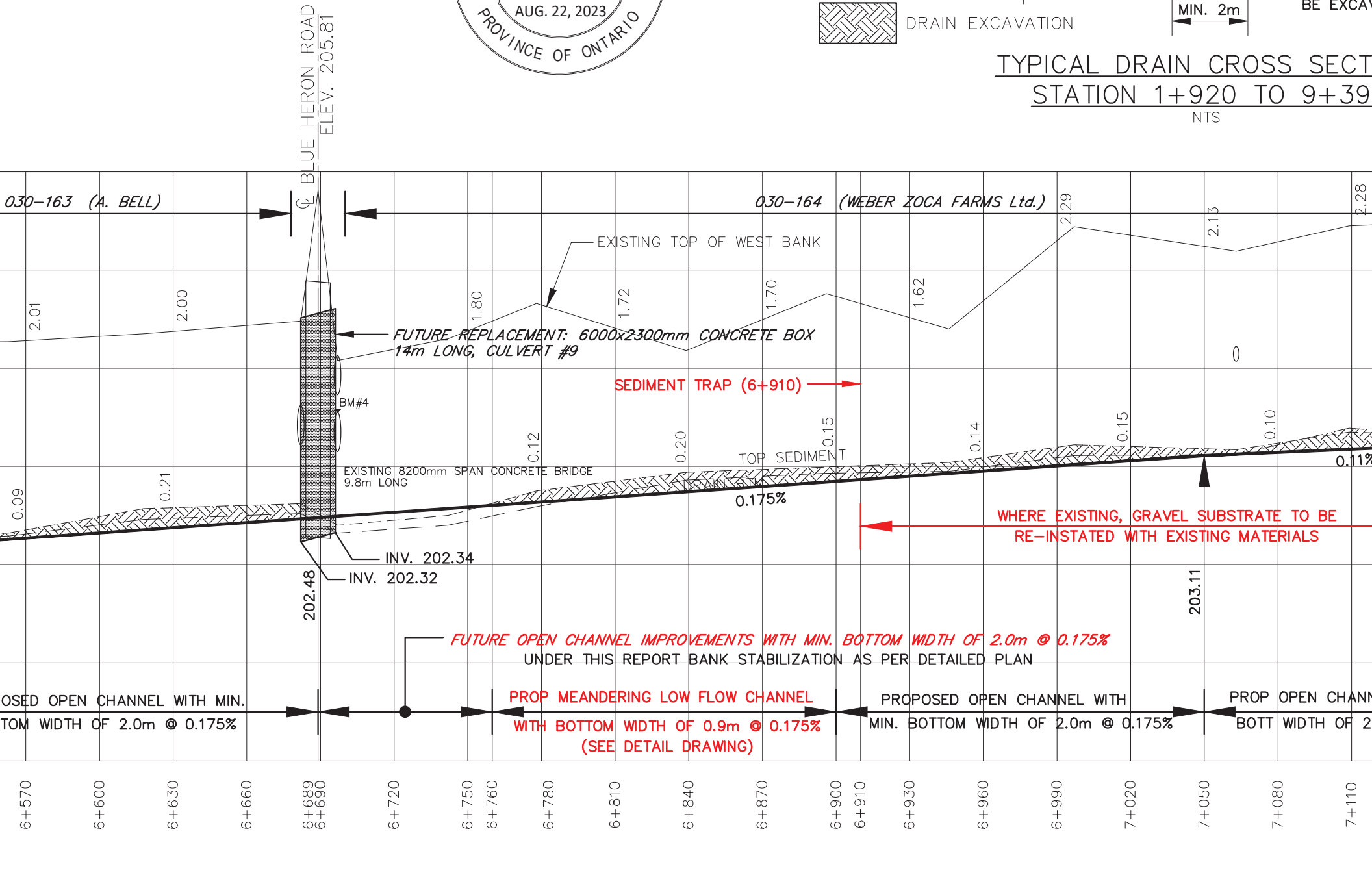


APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				

ROAD (STA. 6+695)  
 DEPTH FROM TOP OF  
 FUTURE CHANNEL BOTTOM.  
 DEPTH OF PROPOSED/  
 VATION.

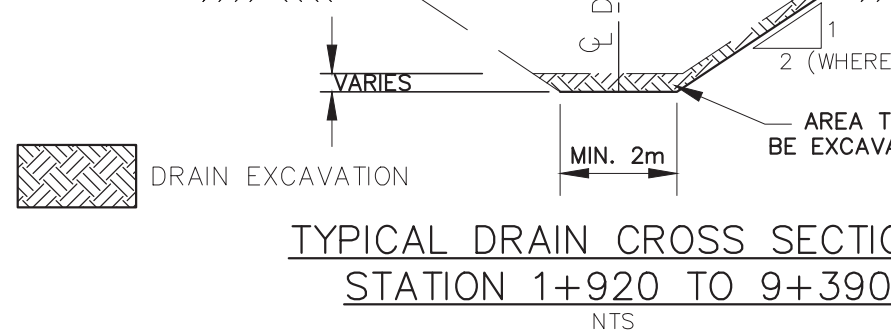
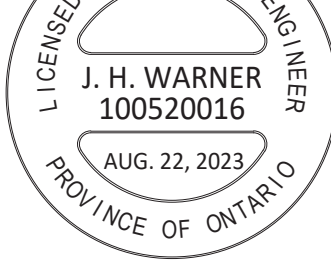


TYPICAL DRAIN CROSS SECTION  
 STATION 1+920 TO 9+39  
 NTS

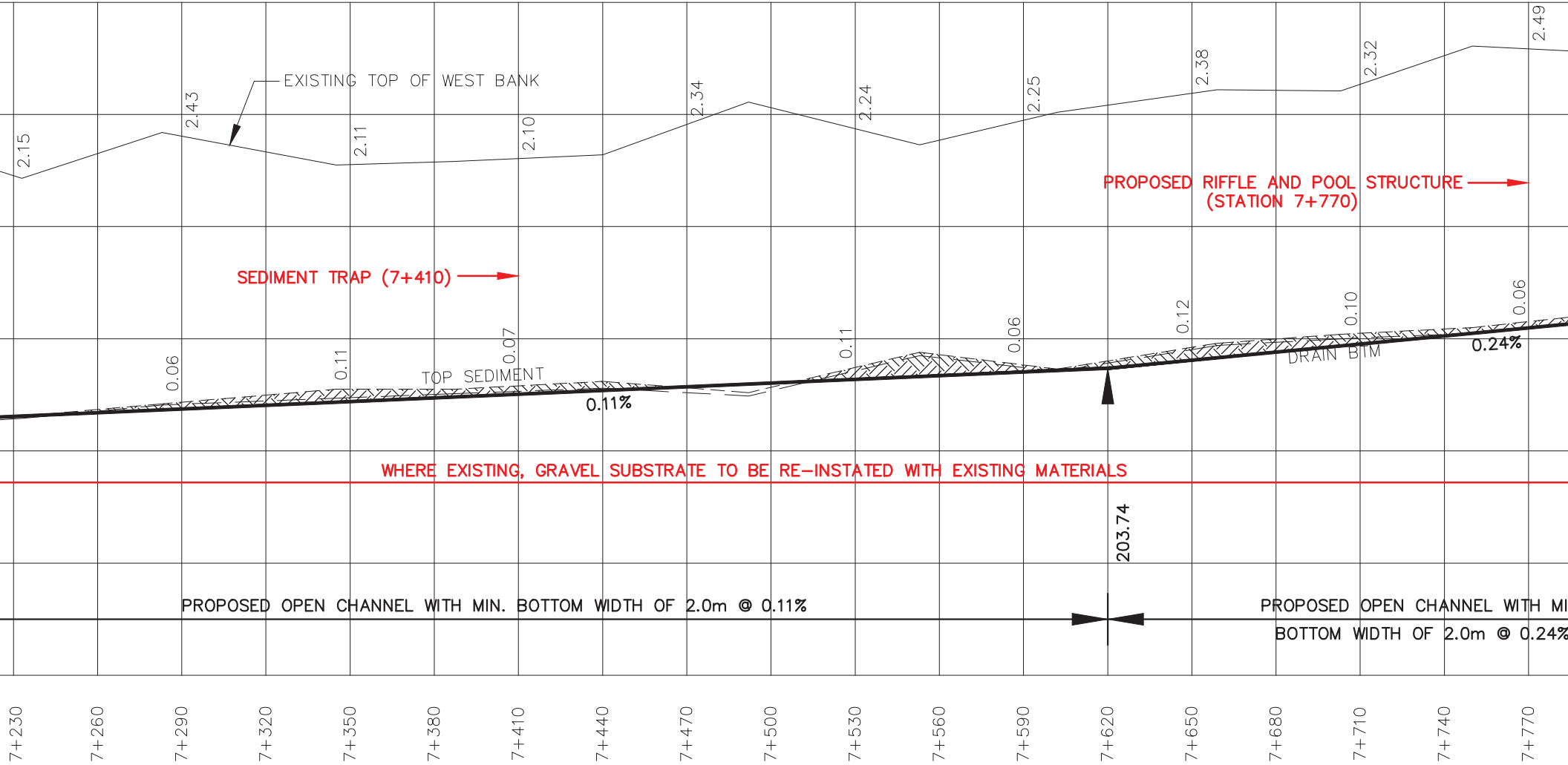


APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				

8+135  
 PATH FROM TOP OF  
 CHANNEL BOTTOM.  
 PATH OF PROPOSED/  
 ATION.



030-127 (DEBORGER FARMS Ltd.)

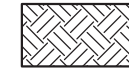
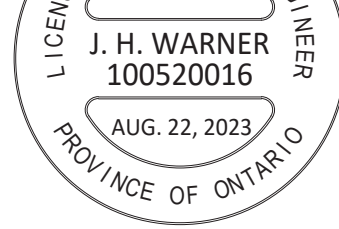


APPROVED  
 J. WARNER

NO.	REVISIONS	DATE	BY

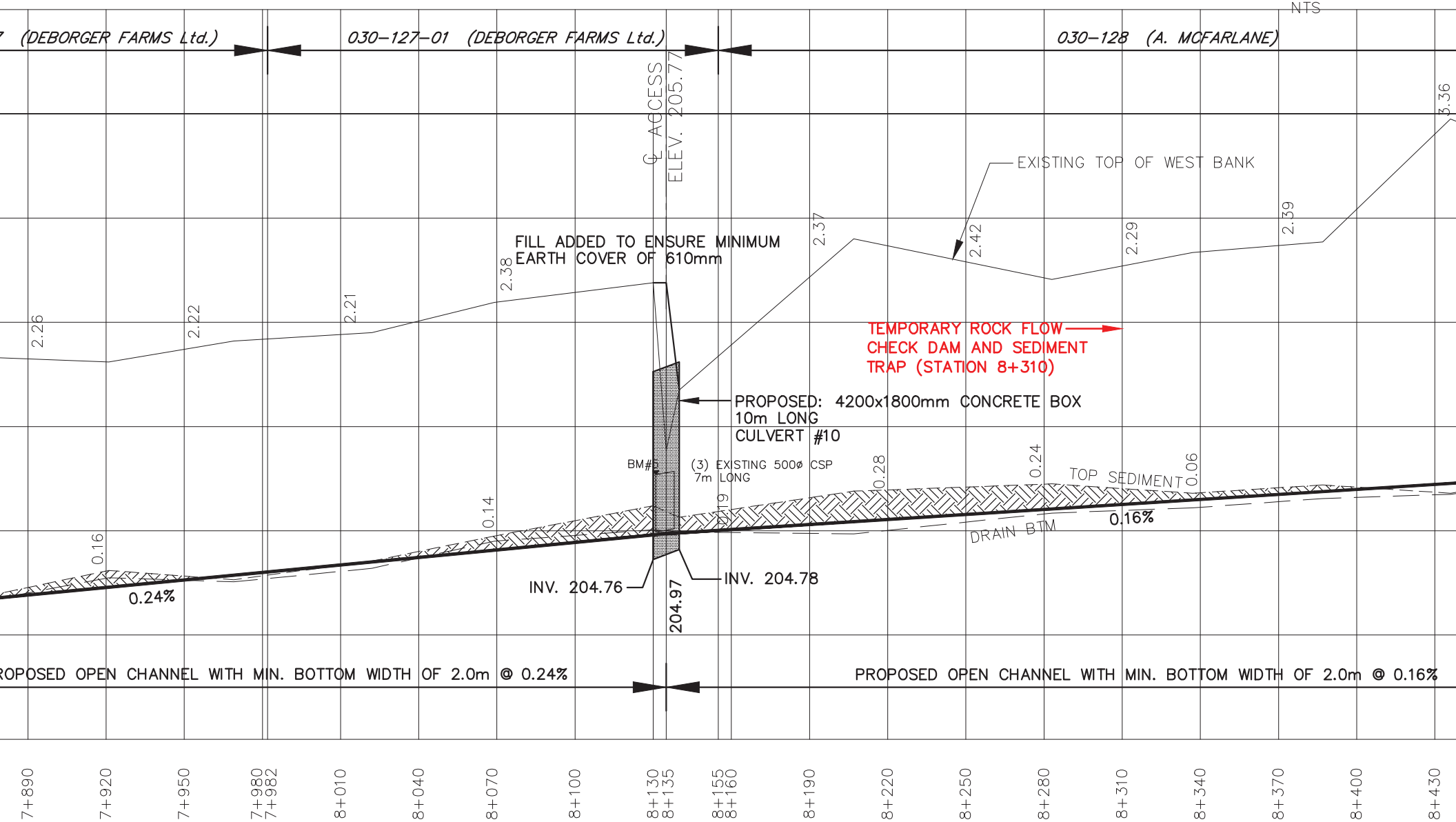
TOWN of PLYMPTON-WYOMING

DEPTH FROM TOP OF  
 TURE CHANNEL BOTTOM.  
 DEPTH OF PROPOSED/  
 VATION.



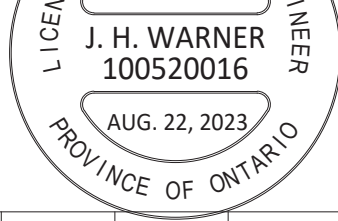
DRAIN EXCAVATION

TYPICAL DRAIN CROSS SECTION  
 STATION 1+920 TO 9+300

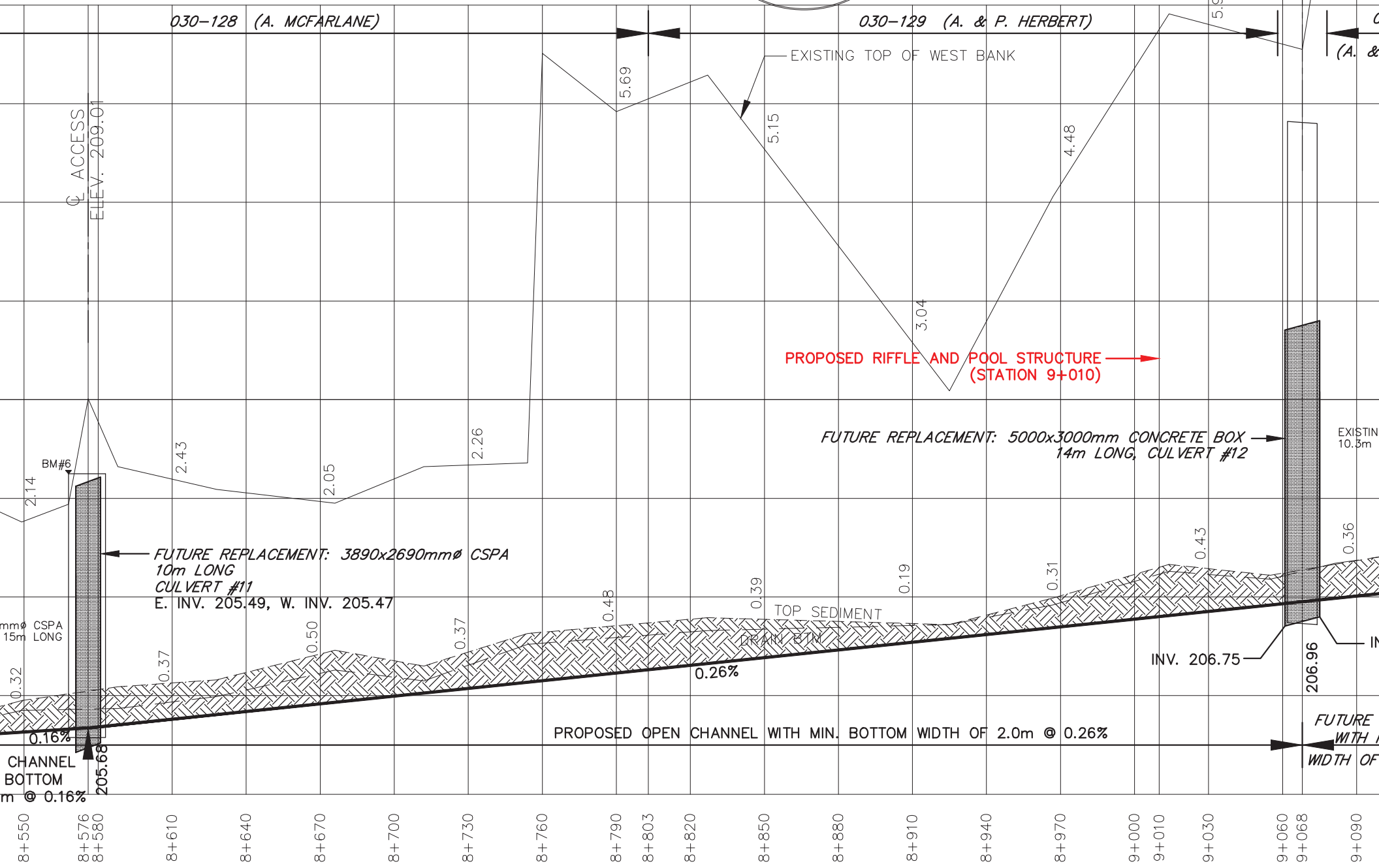


APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				

DEPTH FROM TOP OF  
 FUTURE CHANNEL BOTTOM.  
 DEPTH OF PROPOSED/  
 VARIATION.



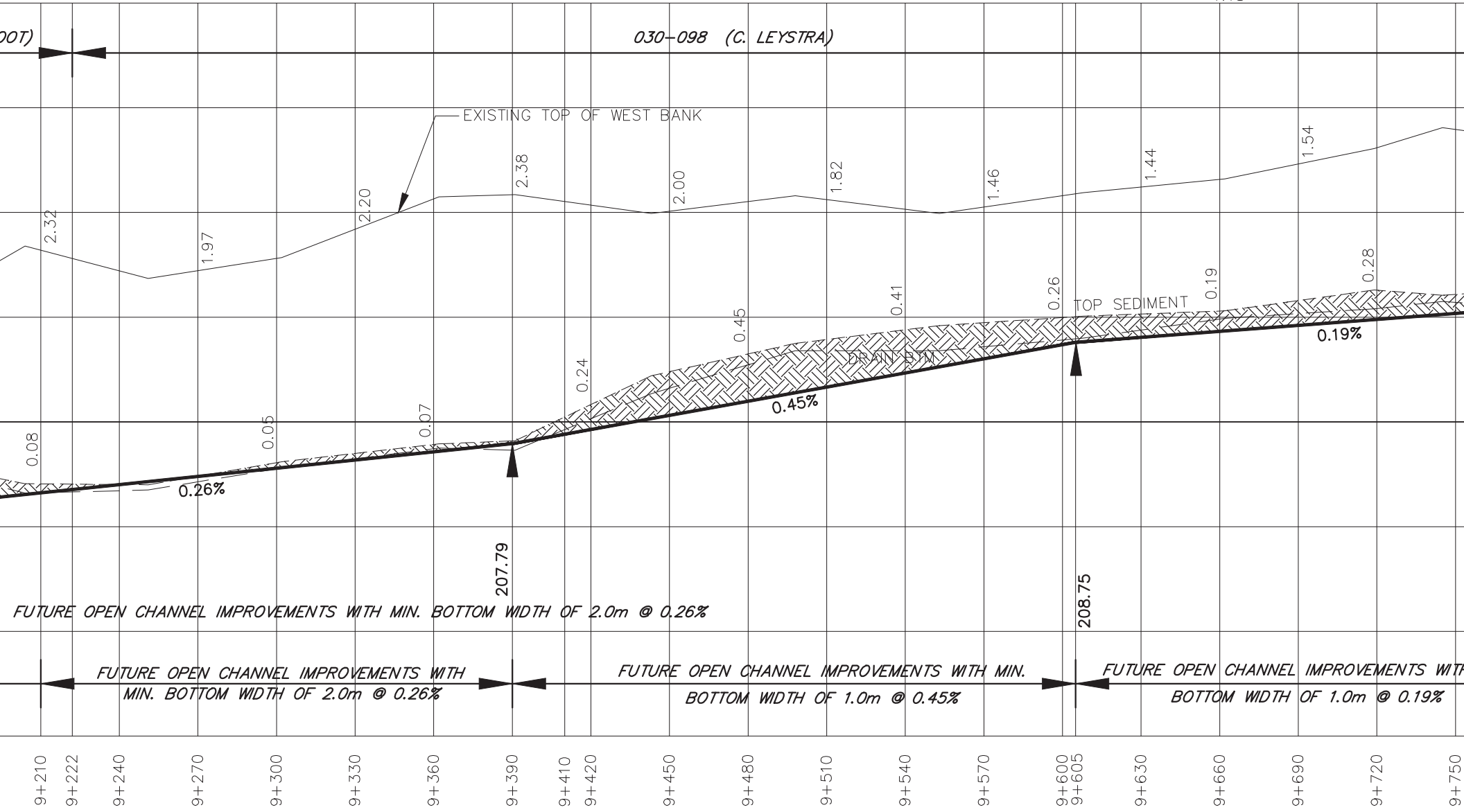
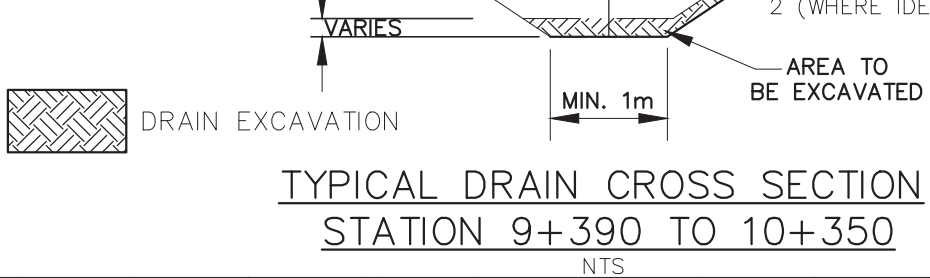
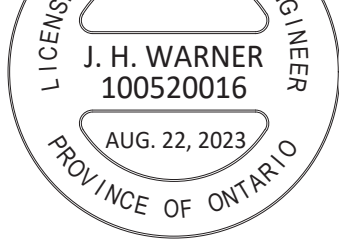
214.00



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J. WARNER				

TOWN of PLYMPTON-WYOMING

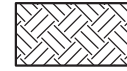
CSF (STA. 8+376)  
 DEPTH FROM TOP OF  
 FUTURE CHANNEL BOTTOM.  
 DEPTH OF PROPOSED/  
 AVATION.



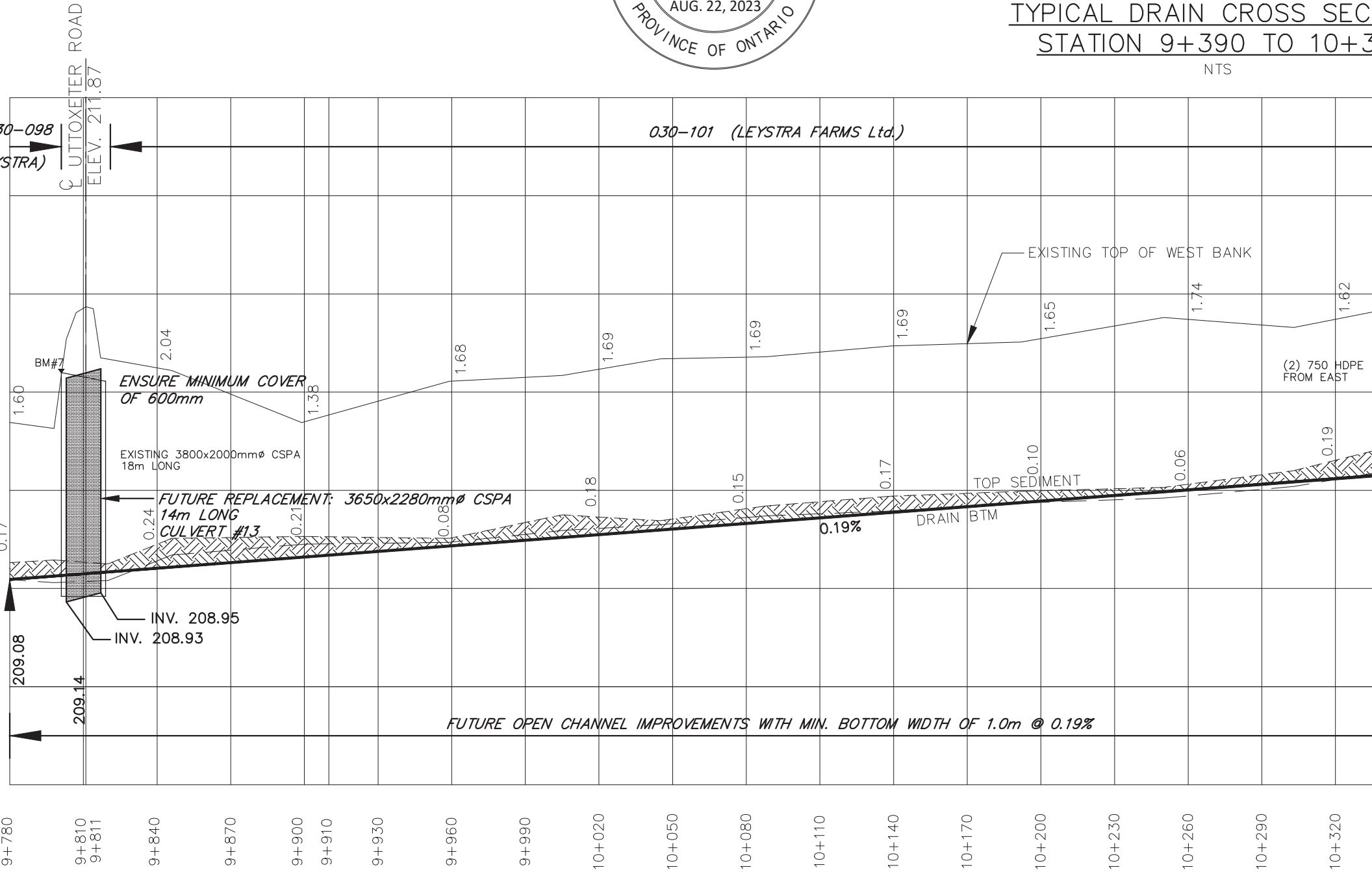
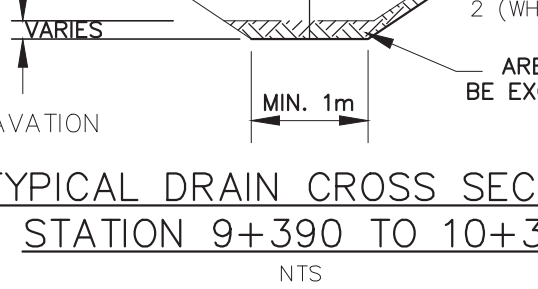
APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				

**TOWN of PLYMPTON-WYOMING**

3. LOWER NUMBERS ARE DEPTH OF PROPOSED/  
FUTURE CHANNEL EXCAVATION.

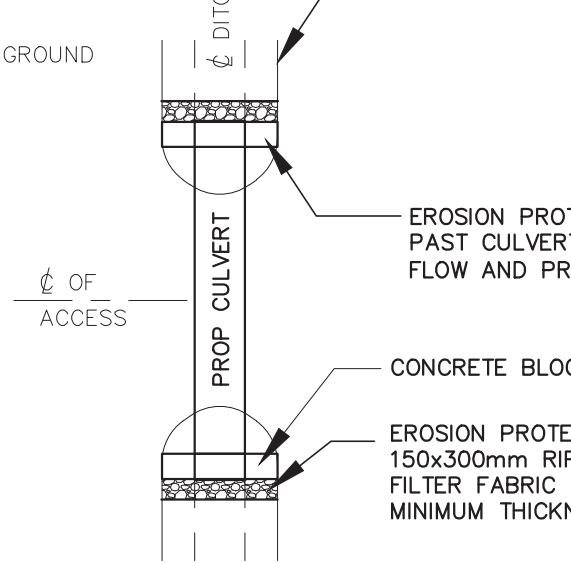
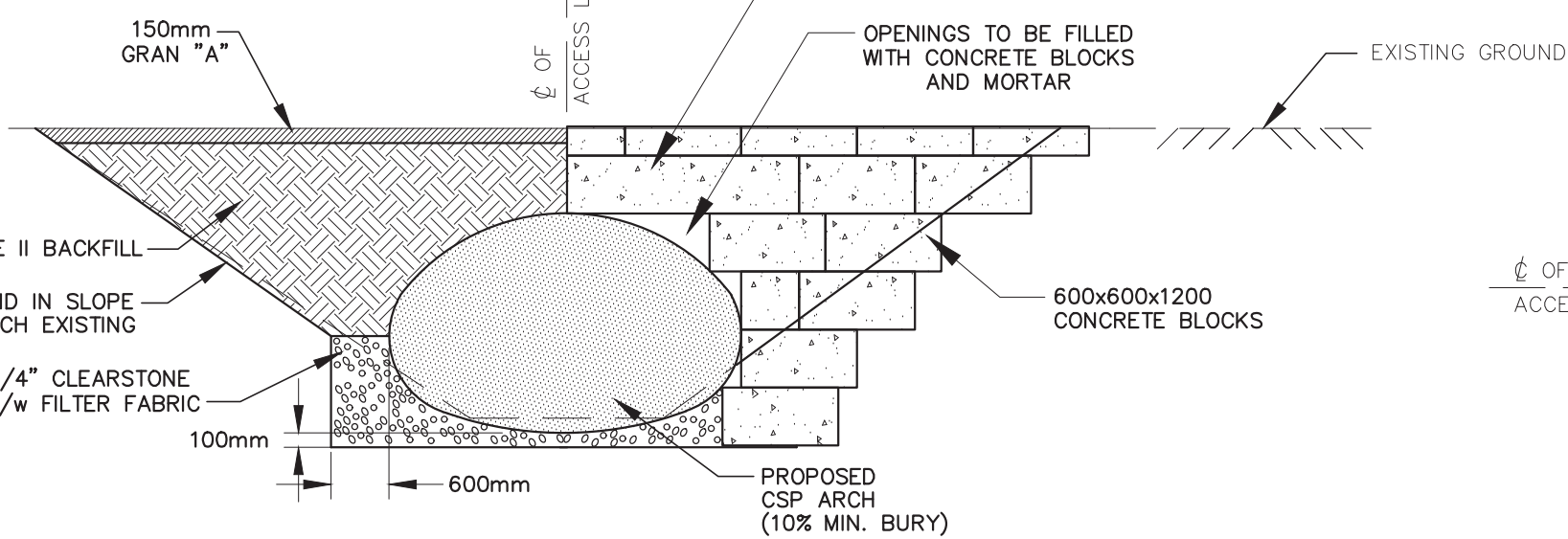


DRAIN EXCAVATION

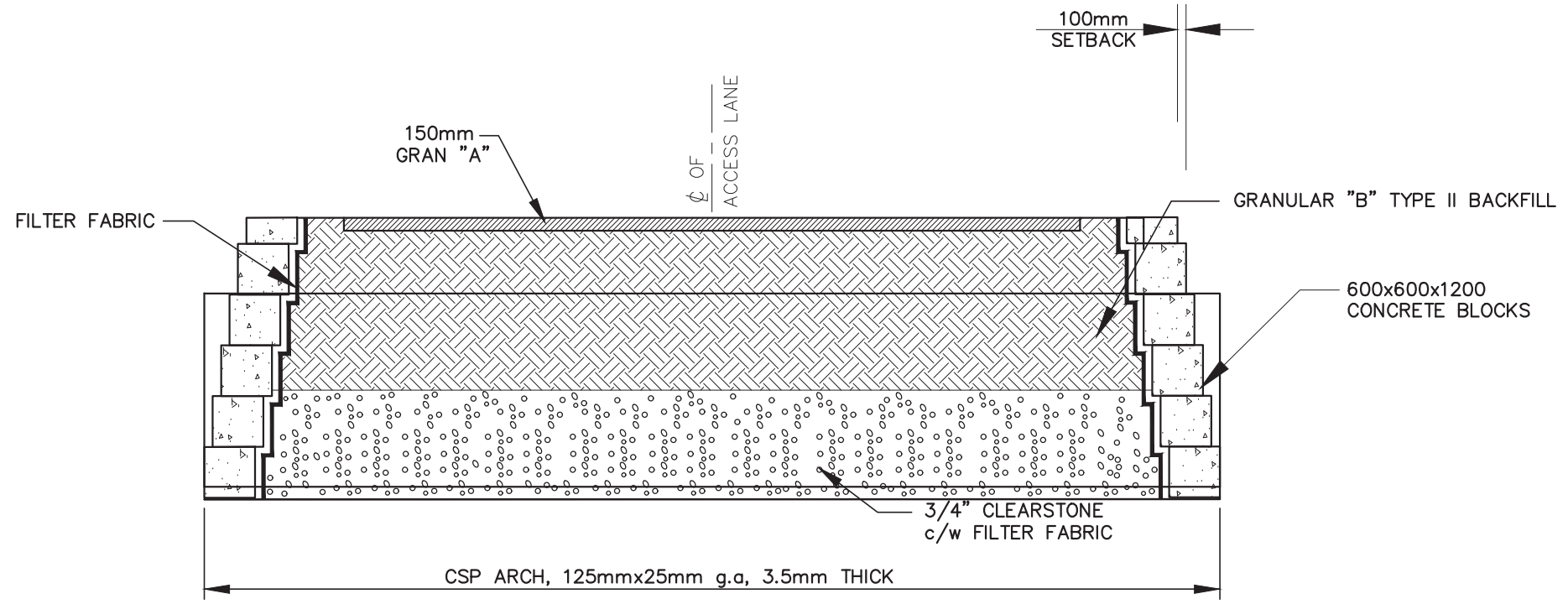


APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				

TOWN of PLYMPTON-WYOMING



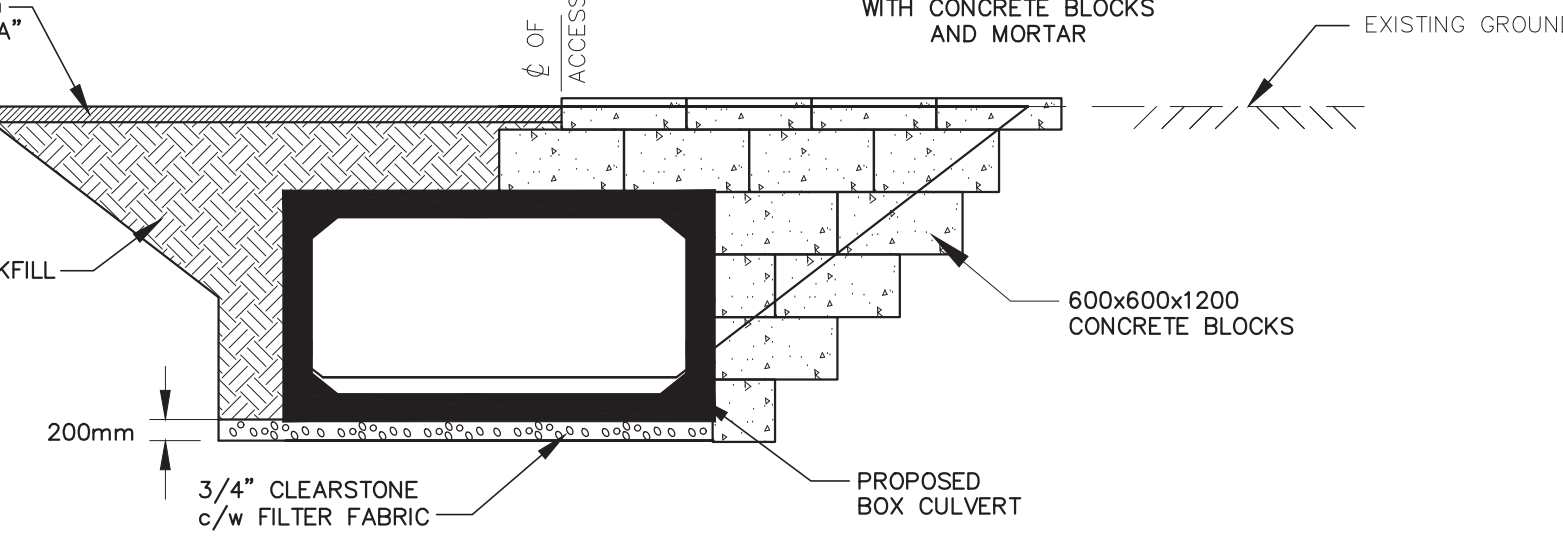
NTS



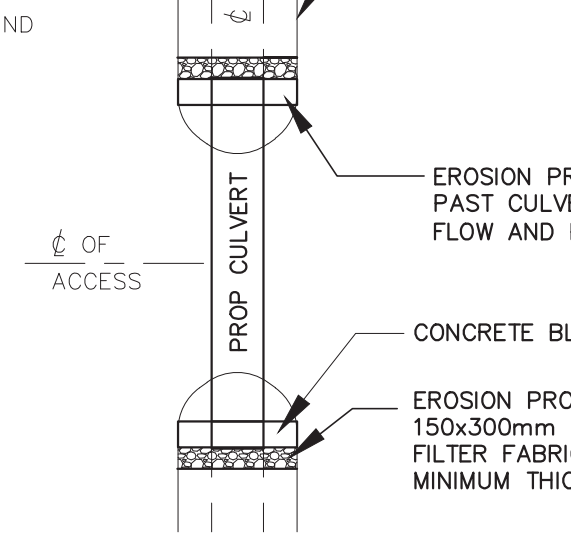
R DENSITY

APPROVED	NO.	REVISIONS	DATE	BY
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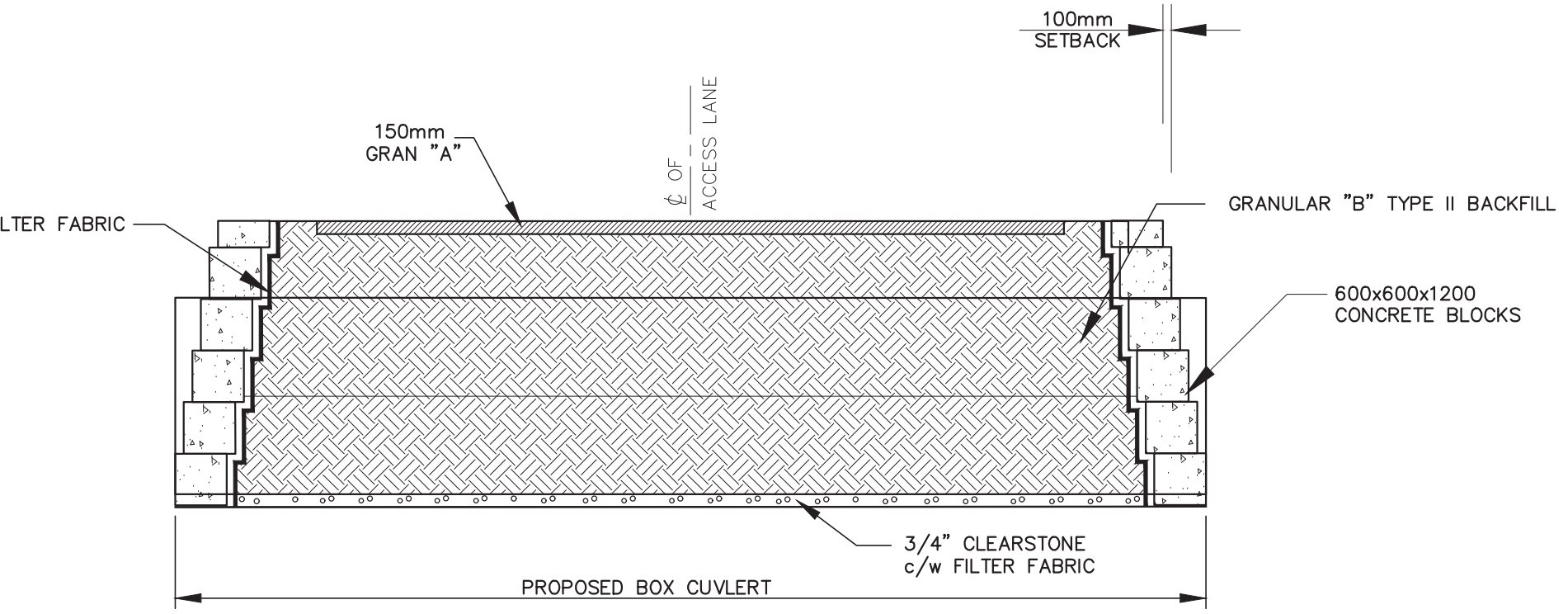


PROPOSED END SECTION



TYPICAL CULVERT PLAN

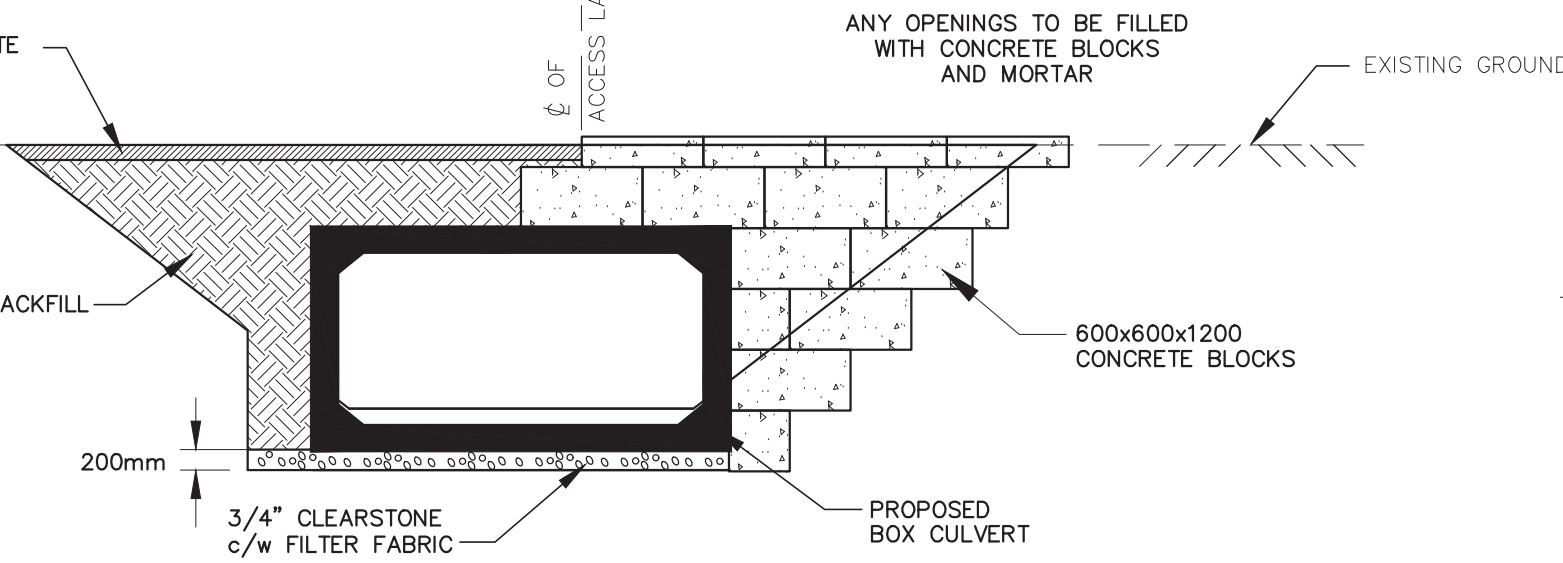
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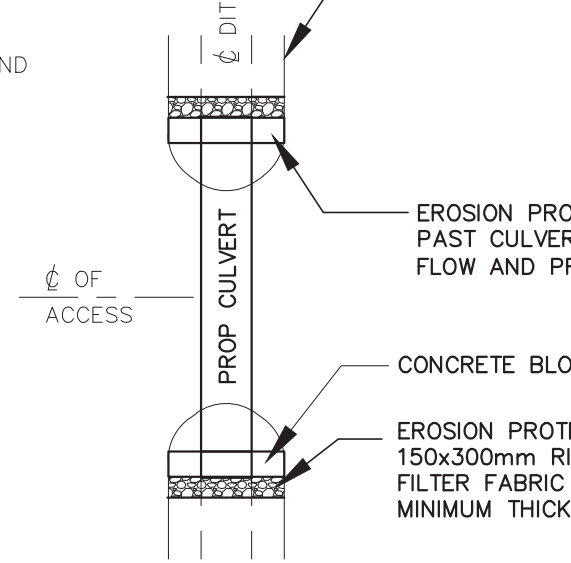
PROPOSED CROSS-SECTION

DENSITY



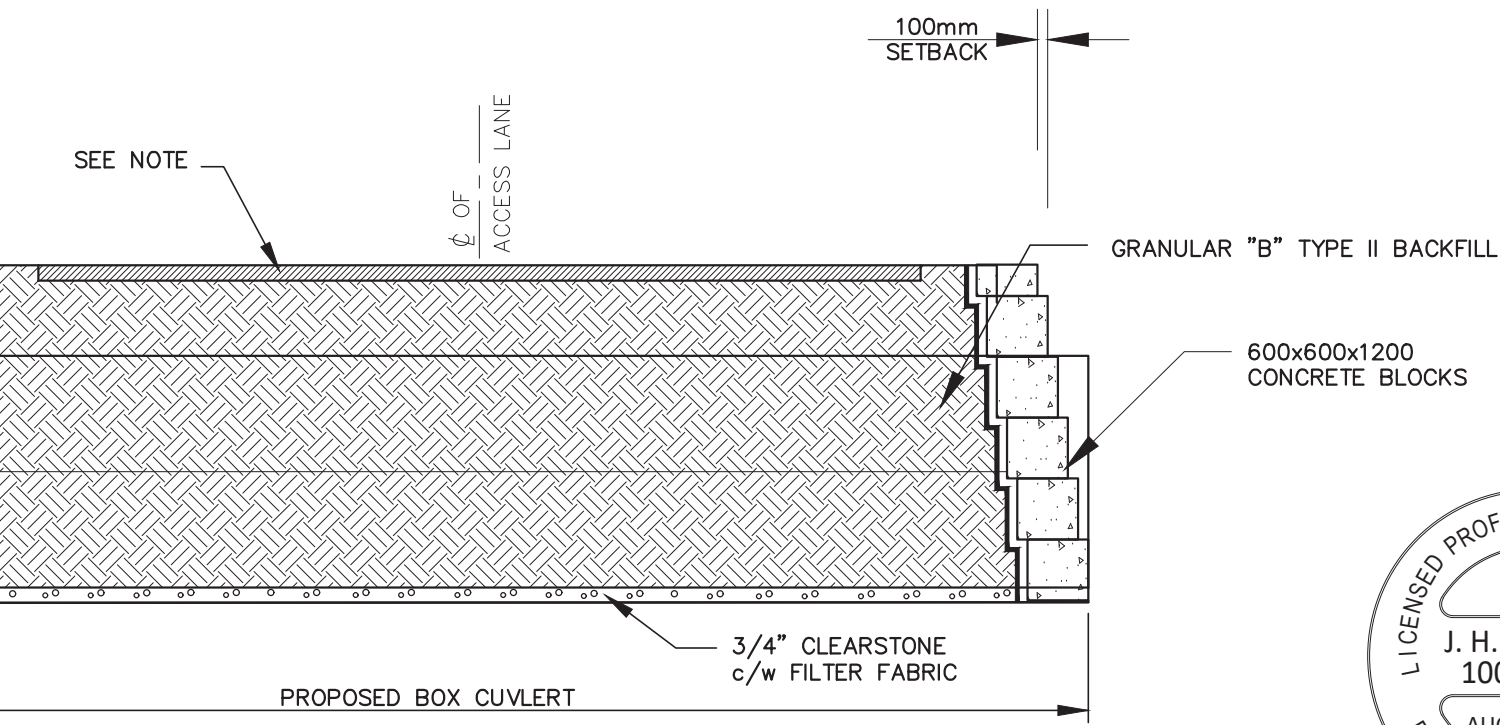


PROPOSED END SECTION



TYPICAL CULVERT PLAN

NTS



PROPOSED CROSS-SECTION

**NOTE:**

ALL BACKFILL COMPACTED TO 95% MODIFIED PROCTOR

ASPHALT ROAD

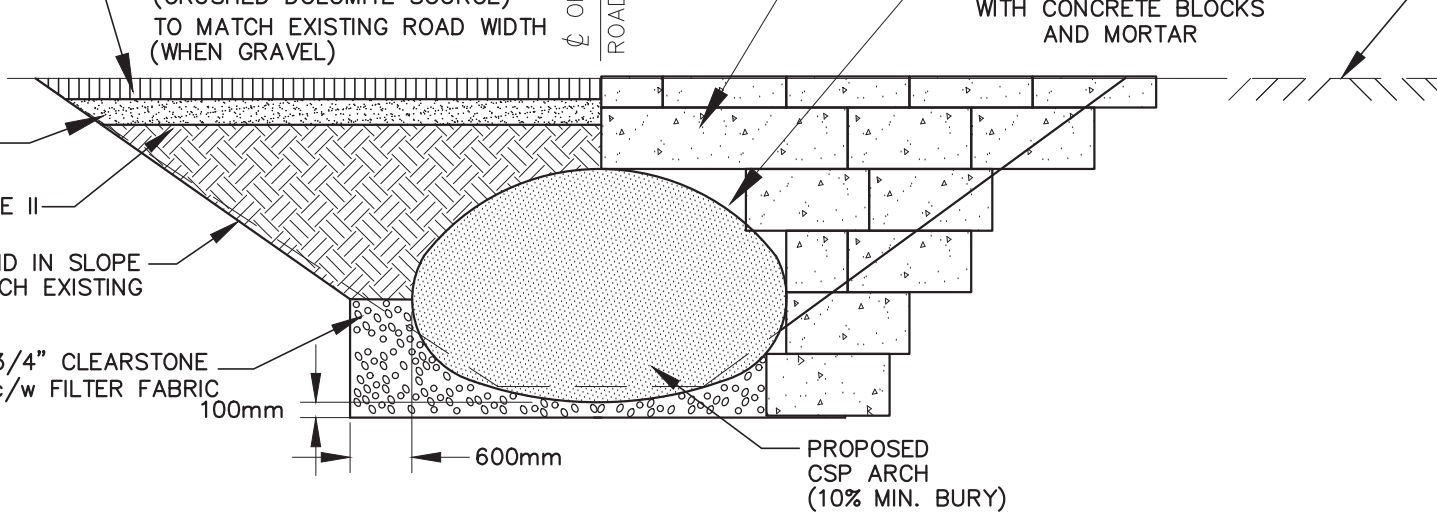
-HL3 AND HL4 TO MATCH EXISTING  
-300mm OF 100% CRUSHED DOLOMITE

GRAVEL ROAD

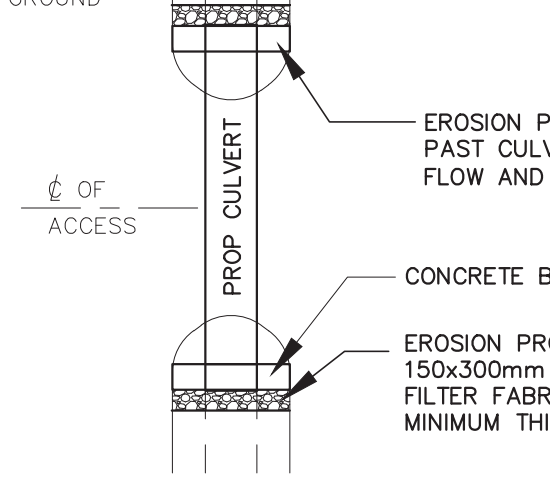
-200mm OF OPS GRAVEL (CRUSHED DOLOMITE)  
TO MATCH EXISTING  
-300mm OF OPS GRAVEL



APPROVED	NO.	REVISIONS	DATE	BY

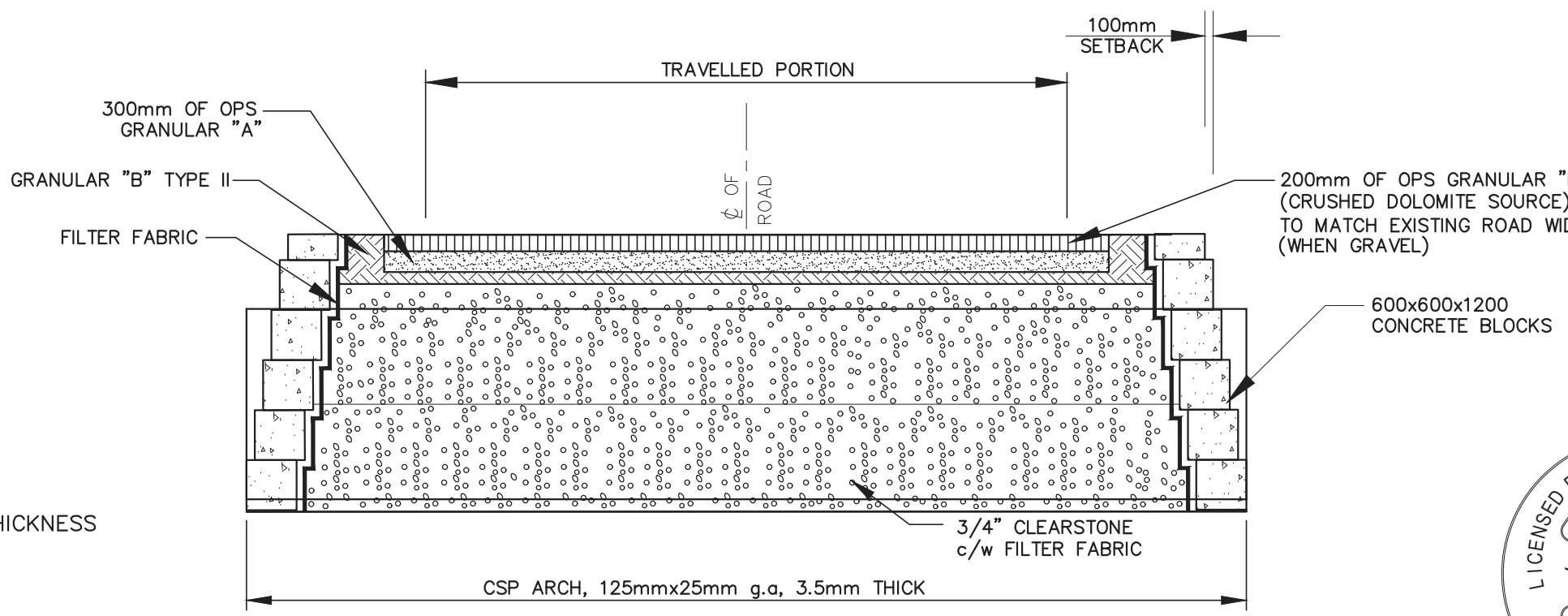


PROPOSED PIPE END SECTION



TYPICAL CULVERT PLAN

NTS

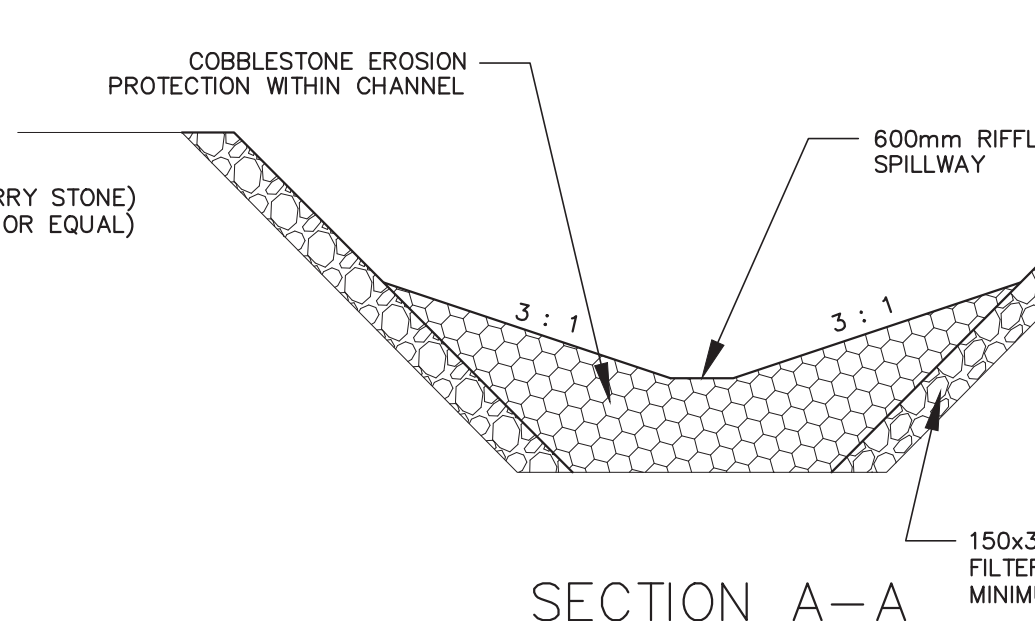
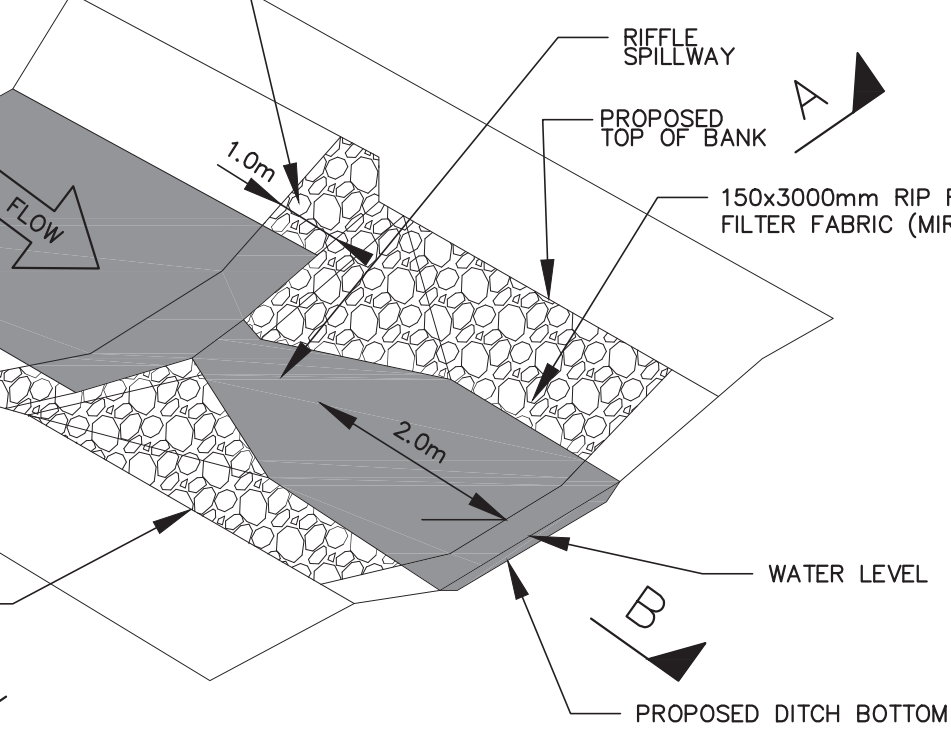


PROPOSED CROSS-SECTION

D  
OR DENSITY  
  
EXISTING THICKNESS  
ED GRAN "A"  
  
(N)  
AR "M"  
URCE)  
D WIDTH  
AR "A"

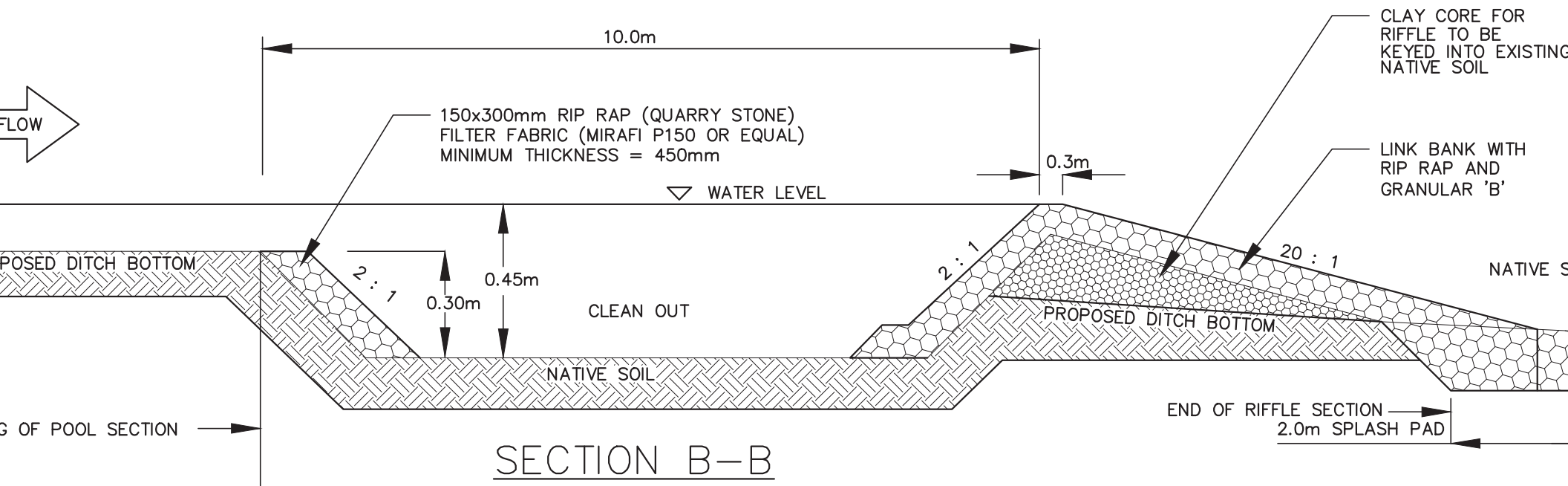


APPROVED	NO	REVISIONS	DATE	BY
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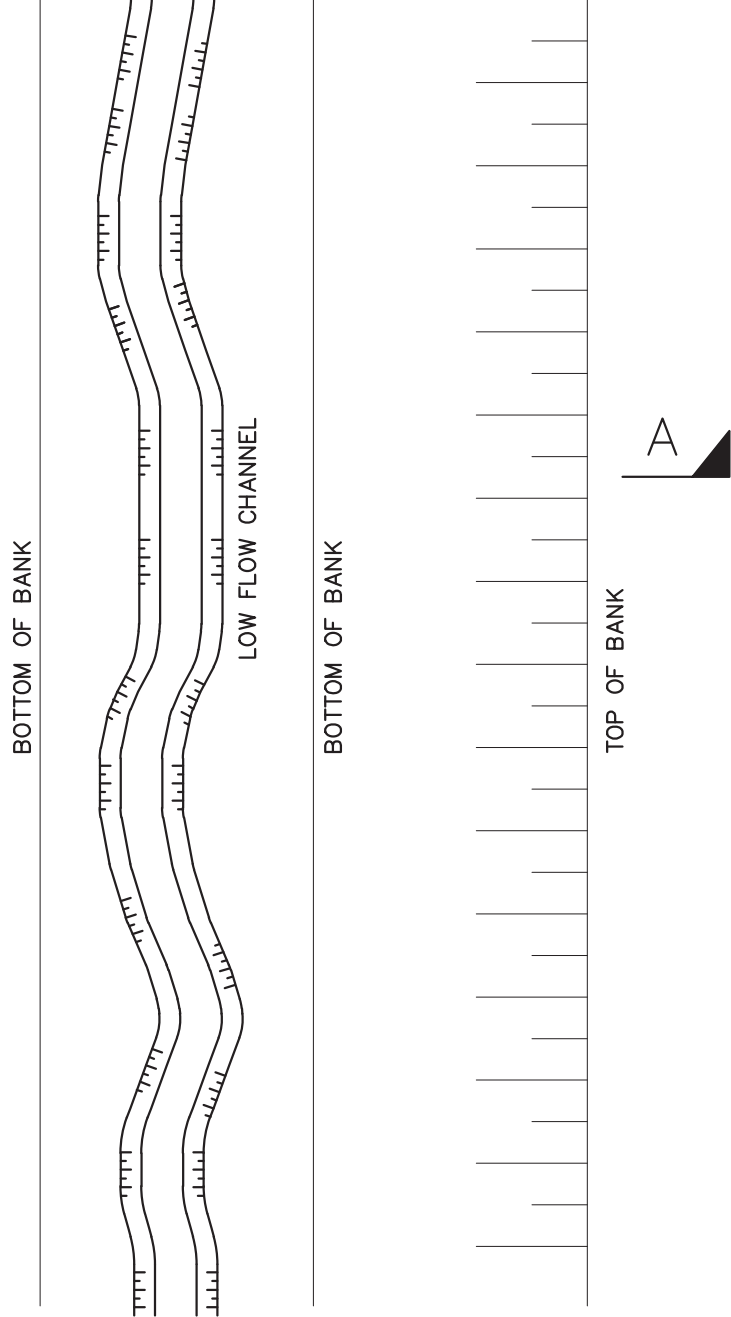
SECTION A-A

RIFFLE AND POOL STRUCTURE  
 ISOMETRIC VIEW

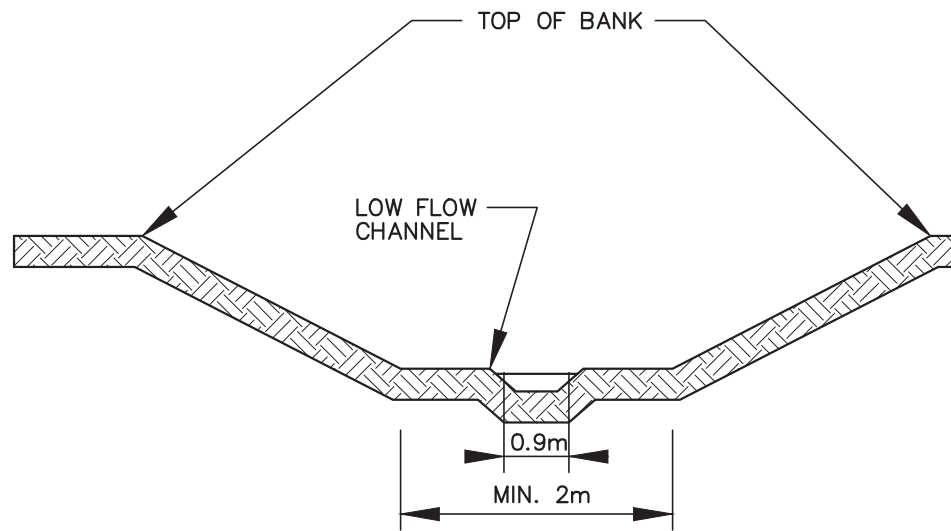


SECTION B-B

APPROVED	NO.	REVISIONS	DATE	BY

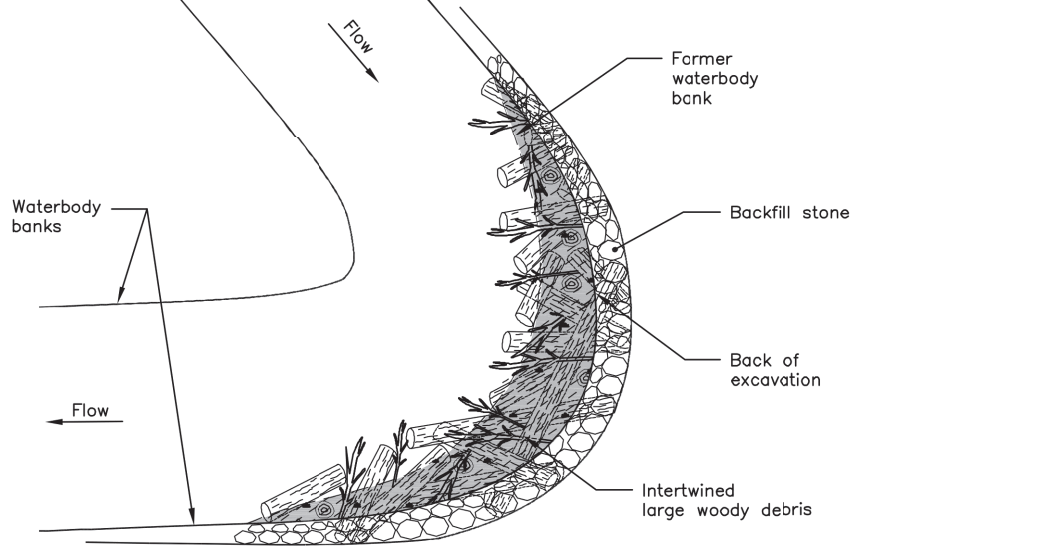


DRAINAGE CHANNEL WITH  
MEANDERING LOW FLOW CHANNEL  
PLAN

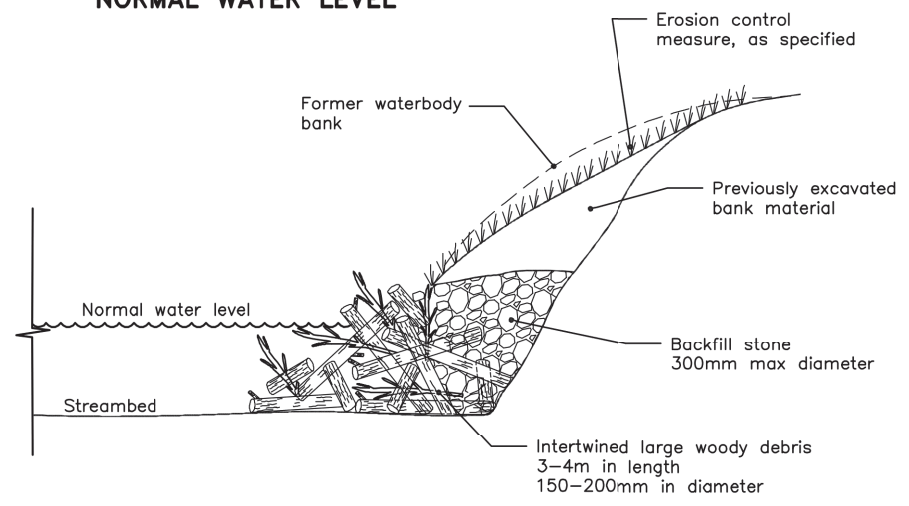


LINEAR DRAINAGE CHANNEL WITH  
MEANDERING LOW FLOW CHANNEL  
SECTION A-A





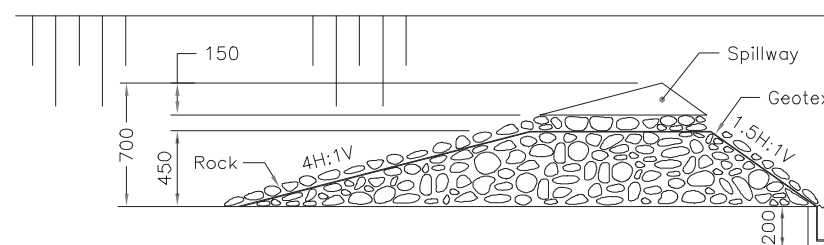
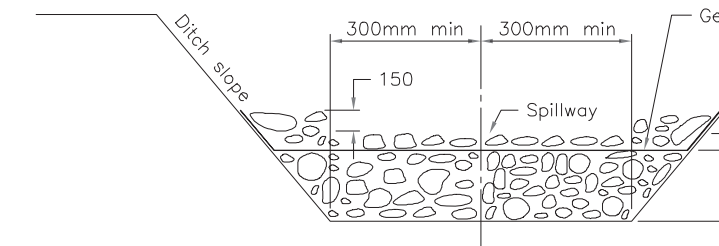
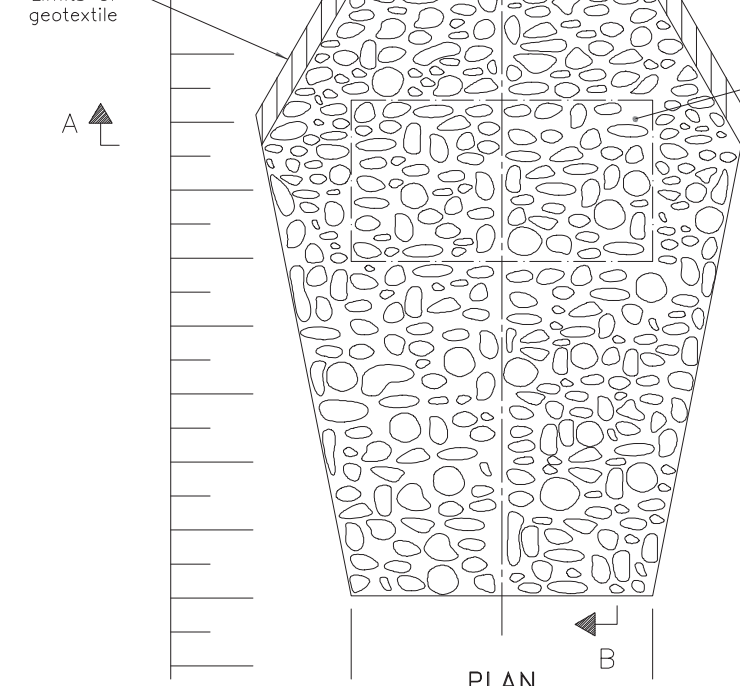
**PLAN  
NORMAL WATER LEVEL**



**SECTION**

**NOTE:**  
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2013	Rev 0	
<b>LARGE WOODY DEBRIS FOR WATERBODY BANKS</b>	-----	-----	
<b>OPSD 222.020</b>			



**NOTE:**  
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	No
<b>TEMPORARY ROCK FLOW CHECK DAM FLAT BOTTOM DITCH</b>	---