TOWNSHIP OF BLANDFORD-BLENHEIM
COUNCIL MEETING AGENDA

Wednesday, June 17, 2020
via teleconference and online
Youtube Channel for listening in: Blandford-Blenheim Township
https://youtube.com/channel/UCdKRV0GAEuFaGbwHRPzoEXA
4:00 p.m.

1. **Welcome**

2. **Call to Order**

3. **Approval of the Agenda**

   Recommendation:

   That the agenda for the June 17, 2020 Regular Meeting of Council be adopted.

4. **Disclosure of Pecuniary Interest**

5. **Adoption of Minutes**

   a. June 3, 2020 Minutes of Council

      Recommendation:

      That the minutes of the June 3, 2020 Meeting of Council be adopted, as printed and circulated.

6. **Business Arising from the Minutes**

7. **Delegations / Presentations**

   a. Kenn Smart, K. Smarts Associates Ltd. Re: Consideration of Engineer Report for Scott Drain 2020

      Recommendation:

      That the Engineer's Report for the Scott Drain 2020 be received as information.

   b. Christene Scrimgeour, Scrimgeour & Associates Re: 2019 Financial Statements

      Recommendation:

That the Draft 2019 Financial Statements as presented by Christene Scrimgeour of Scrimgeour & Associates be adopted as printed and circulated.

8. Correspondence

a. General

None.

b. Specific

None.

9. Staff Reports

a. Rick Richardson – Director of Protective Services

i. FC-20-13– May Monthly Report

Recommendation:

That Report FC-20-13 be received as information.

b. Jim Harmer – Consideration of Engineer Report for Scott Drain

i. DS-20-08 – Consideration of Report Section 4 Scott Drain 2020

Recommendation:

That report DS 20-08 be received as information;

And further that council gives consideration to By-Law No. 2194-2020 for the Scott Drain 2020 and give first and second reading (provisional by-laws);

And further that the Court of Revision be set for Wednesday July 15, 2020 at 4:00 p.m.

Lastly It is also recommended that the Engineer be directed to invite tenders for the Scott Drain 2020 with tender closing Tuesday July 14th, 2020 at noon.

c. Denise Krug – Director of Finance

i. TR-20-09 – COVID-19 June Financial Impact Report

Recommendation:

That Report TR-20-09 be received as information.

d. John Scherer – Chief Building Official

i. CBO-20-07 – Monthly Report

Recommendation:

That Report CBO-20-07 *be received as information.*

ii. CBO-20-08 – Monthly Report

Recommendation:

That Report CBO-20-08 *be received as information.*

e. Rodger Mordue – CAO/Clerk

i. CAO-20-07 – Minor Variance Application Fee

Recommendation:

That Report CAO-20-07 be received; and,

That Council agree to waive application fee for Minor Variance applications related to the pending housekeeping amendment to the Township's comprehensive zoning by-law; and,

That the application fee be reinstated fully once the housekeeping amendment is considered by Council.

10. Reports from Council Members

11. Unfinished Business

12. Motions and Notices of Motion

13. New Business

14. Closed Session

15. By-laws

a. 2194-2020, Being a By-law to provide for drainage works in the Township of Blandford-Blenheim in the Restructured County of Oxford (Scott Drain 2020).

b. 2195-2020, Being a by-law to provide for the adoption of budgetary estimates and tax rates for 2020.

c. 2196-2020, Being a By-law to confirm the proceedings of Council.

Recommendation:

That first and second reading be given to the following by-laws:

- *2194-2020, Being a By-law to provide for drainage wrks in the Township of Blandford-Blenheim in the Restructired County of Oxford (Scott Drain 2020).*

- *2195-2020, Being a by-law to provide for the adoption of budgetary estimates and tax rates for 2020.*

- *2196-2020, Being a By-law to confirm the proceedings of Council.*

Recommendation:

That third and final reading be given to the following by-laws:

- *2195-2020, Being a by-law to provide for the adoption of budgetary estimates and tax rates for 2020.*

- *2196-2020, Being a By-law to confirm the proceedings of Council.*

16. Other

None.

17. Adjournment and Next Meeting

Thursday, July 2, 2020 at 4:00 pm.

Recommendation:

Mover: Demarest
Seconder: Balzer

That Whereas business before Council has been completed at _____ pm;

That Council adjourn to meet again on Thursday July 2, 2020 at 4:00 pm.

Wednesday, June 3, 2020
via teleconference and online
Youtube Channel for listening in: Blandford-Blenheim Township
https://youtube.com/channel/UCdKRV0GAEuFaGbwHRPzoEXA
4:00 p.m.

MINUTES

Council met at 4:00 p.m via teleconference and online.

Present: Mayor Peterson, Councillors Balzer, Banbury, Demarest

Staff: Baer, Borton, Krug, Harmer, Matheson, Mordue and Richardson.

Mayor Peterson in the Chair.

1. Welcome

2. Call to Order

3. Approval of the Agenda

RESOLUTION #1

Moved by – Councillor Balzer
Seconded by – Councillor Banbury

That the agenda for the June 3, 2020 Regular Meeting of Council be adopted with the addition of item 16. a.

.Carried

4. Disclosure of Pecuniary Interest

None.

5. Adoption of Minutes

RESOLUTION #2

Moved by – Councillor Balzer
Seconded by – Councillor Banbury

That the minutes of the May 20, 2020 Meeting of Council be adopted, as printed and circulated.

.Carried

6. Business Arising from the Minutes

None.

7. Delegations/Presentations

None.

8. Correspondence

a. General

i. Oxford County – Report PW-2020-19, Regulatory Changes in Automated Speed Enforcement

RESOLUTION #3

Moved by – Councillor Balzer
Seconded by – Councillor Banbury

That the general correspondence be received as information.

.Carried

b. Specific

i. Oxford County – County Council Composition and Election of Head of Council (Warden) Review

RESOLUTION #4

Moved by – Councillor Balzer
Seconded by – Councillor Banbury

That Report CS 2020-11 from the County of Oxford be received; and,

That the County of Oxford be advised that the Council of the Township of Blandford-Blenheim requests that the status quo be maintained in both the composition of Oxford County Council and the term and method by which the Oxford County Warden is selected.

.Carried

9. Staff Reports

a. Rick Richardson – Director of Protective Services

i. FC-20-12 – Automatic Aid Agreement Renewal

RESOLUTION #5

Moved by – Councillor Banbury
Seconded by – Councillor Demarest

That Report FC-20-12 be received as information; and,

That Council approves the Automatic Aid Fire Agreement Renewal between the Township of Blandford-Blenheim and the Township of Wilmot and authorize the Mayor and CAO/Clerk to sign the agreement

.Carried

b. Jim Borton – Director of Public Works

i. PW-20-09 – Monthly Report

RESOLUTION #6

Moved by – Councillor Banbury
Seconded by – Councillor Demarest

That Report PW-20-09 be received for information.

.Carried

c. Jim Harmer – Drainage Superintendent

i. DS-20-07 – Monthly Report

RESOLUTION #7

Moved by – Councillor Banbury
Seconded by – Councillor Demarest

That report DS-20-07 be received as information.

.Carried

d. Trevor Baer – Manager of Community Services

i. CS-20-06 – Monthly Report

RESOLUTION #8

Moved by - Councillor Banbury
Seconded by - Councillor Demarest

That Report CS-20-06 be received as Information

.Carried

e. Rodger Mordue – CAO/Clerk

i. CAO-20-06 – Joint Service Delivery Review

RESOLUTION #9

Moved by - Councillor Demarest
Seconded by - Councillor Balzer

That Report CAO-20-06 be received as information

.Carried

10. Reports from Council Members

- Councillor Balzer requested that a letter from Township Council be sent to Provincial Leader Ford's office regarding the need for a regional approach to reopening given Blandford-Blenheim's historically low number of COVDID-19. Councillors Banbury and Demarest agreed to pushing for a regional approach to re-opening.
- Mayor Peterson asked staff to consider an in person meeting for the upcoming meetings, giving thought to how it might work logistically.

11. Unfinished Business

None.

12. Motions and Notices of Motion

None.

13. New Business

None.

14. Closed Session

None.

15. By-laws

RESOLUTION #8

Moved by – Councillor Demarest
Seconded by – Councillor Balzer

Be it hereby resolved that first and second reading be given to the following By-laws:

- 2191-2020, Being a By-law to authorize the execution of an agreement (Wilmot fire protection);
- 2192-2020, Being a by-law to provide for the adoption of budgetary estimates and tax rates for 2020;
- 2193-2020, Being a By-law to confirm the proceedings of Council.

.Carried

RESOLUTION #9

Moved by – Councillor Demarest
Seconded by – Councillor Balzer

Be it hereby resolved that third and final reading be given to the following By-laws:

- 2191-2020, Being a By-law to authorize the execution of an agreement (Wilmot fire protection);
- 2192-2020, Being a by-law to provide for the adoption of budgetary estimates and tax rates for 2020;
- 2193-2020, Being a By-law to confirm the proceedings of Council.

.Carried

16. Other Business

17. Adjournment and Next Meeting

RESOLUTION #10

Moved by – Councillor Demarest
Seconded by – Councillor Balzer

Whereas business before Council has been completed at 5:12 p.m.;

Be it hereby resolved that Council does now adjourn to meet again on Wednesday, July 2, 2020 at 4:00 p.m through electronic means.

.Carried

_____
Mark Peterson, Mayor
Township of Blandford-Blenheim

_____
Rodger Mordue CAO / Clerk
Township of Blandford-Blenheim

ENGINEERING REPORT

SCOTT DRAIN 2020

TOWNSHIP OF BLANDFORD-BLENHEIM

(Geographic Township of Blenheim)

County of Oxford

May 1, 2020

File No. 19-168

K. SMART ASSOCIATES LIMITED
Kitchener Sudbury

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STANDARD SPECIFICATIONS
- Section 200 – General Conditions
- Section 300 – Special Provisions (see Drawings 9 to 12)
- Section 400 – Standard Specifications for Construction of Drains
- Section 410 – Standard Specifications for Open Drains
- Section 420 – Standard Specifications for Tile Drains

DRAWINGS 1 TO 12

Definitions:

"Act" means The Drainage Act RSO 1990
"CSP" means corrugated steel pipe
"Drain" means Scott Drain
"Grant" means grant paid under the Agricultural Drainage Infrastructure Program
"GRCA" means Grand River Conservation Authority
"HDPE" means high-density polyethylene
"Municipality" means Township of Blandford-Blenheim
"OMAFRA" means the Ontario Ministry of Agriculture, Food and Rural Affairs
"Tribunal" or "Drainage Tribunal" means Agriculture, Food and Rural Affairs Appeal Tribunal
"Twp" means Township

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May 1, 2020 File No. 19-168

SCOTT DRAIN 2020

TOWNSHIP OF BLANDFORD-BLENHEIM

To Mayor and Council
Township of Blandford-Blenheim

1.0 SUMMARY

This is a drainage report that is prepared pursuant to Section 4 of the Drainage Act, RSO 1990. The primary purpose of this report is to provide for a reconstructed Scott Drain. The Scott Drain as it exists does not have sufficient capacity, and is not in sufficient repair as substantial erosion has occurred along its route.

Works are required to provide a drain that is both more capable of protecting traversed lands and more able of providing the required capacity for served drainage.

The work will primarily involve reconstructing the Scott Drain along its existing route with one new branch and with some additional features to provide limited storm water management.

This objective will be achieved by starting at the Bremner Creek with a 400mm diameter drain and continuing this drain up to near the first road crossing of Township Road 4, and then constructing a 350mm drain from there to the top end including the two required road crossings. Catchbasins will be constructed on the drain on both sides of the road crossings and then also at its top end. A new Branch Drain (Branch 1) will be constructed on the Scott property in a northwest/southeast direction to provide an outlet for the Pynenburg property to the north of the McMillan farm and to better address surface waters in its sub-watershed. An offset catchbasin is proposed at a further road crossing to address surface waters in another sub-watershed from the Stuart farm. Some temporary storm water management will be provided by constructing small berms at the top end catchbasins on both the Main Drain and also the Branch Drain. Additional temporary storm water management will be provided on the south side of the road between the two road crossings by constructing a catchbasin at the new surface water culvert.

The work undertaken with the preparation of this report has followed the normal procedures of the Drainage Act which have involved an on-site meeting, review of the site, survey and design work, and the preparation of a report to include plan and profile drawings, cost estimates, specifications, and miscellaneous paragraphs regarding the project description, etc.

The proposed new drain will be known as the Scott Drain 2020. A summary of the proposed drain is:

- Main Drain
  - 40m ditch cleanout on Bremner Creek
  - Twinning surface water culvert on laneway beside outlet
  - 100m² of riprap at new tile outlet and at the laneway culverts near the outlet
  - 594m of closed (tile) drain with sizing varying from 400mm at the outlet to 350mm at the top end
  - 409m of restoration/regrading of the existing swale on the Scott farm where required
  - 1 – 600 x 600mm junction box, three 600 x 600mm DICB's, two 600 x 600mm standard CB's and one 900 x 1200mm standard CB
  - 60m of new berm work at top end of drain
- Branch 1
  - 224m of 300mm dia. plastic tubing
  - 1 - 600 x 600mm DICB
  - 35m of new berm work
- Township Road 4 Work (Not part of Drain for Future Maintenance)
  - Remove 9m of 375mm CSP surface water road culvert and replace with 12m of 375mm HDPE pipe (easterly road crossing)
  - Add 600 x 600mm catchbasin at the new easterly crossing to create temporary storm water management
  - Clean/deepen south road ditch (between the Main Drain road crossings) and remove/destroy/fill in old tile in this length
  - Remove existing 9m of 300mm CSP surface water road culvert and replace with 12m of 375mm HDPE pipe (westerly crossing)

- The total drainage area affected is 52.9 hectares (130.7 acres).
- The total estimated cost of the work is $192,000.

Schedule A shows the assessment of the total estimated cost to the affected lands and roads.
Schedule B will be used for prorating future maintenance costs, when incurred, on the Scott Drain 2020. These schedules are on pages 29 and 30.
Appendix A illustrates the calculation of the assessments outlined in Schedule A.
Appendix B illustrates the calculation of the assessments outlined in Schedule B.
Appendices A and B are on pages 31 to 34.

Appendix C (separate attachment) has data that summarizes all estimated gross and net assessments. It is not an official schedule. It is of assistance when preparing the final/actual cost bylaw and grant form. It shows the estimated net costs to all parties if all grants are received and if the allowances are deducted from the assessments.

2.0 BACKGROUND

In the early part of 2019, the Drainage Superintendent met with various landowners, upon their request, to discuss the condition of the Scott Drain. This led to the submission of a Section 4 petition by the landowners to have the Scott Drain improved pursuant to the Drainage Act. The petition was submitted on April 10, 2019 to the Municipality and on June 6, 2019, in accordance with Section 8 of the Drainage Act, the Municipality appointed K.

Smart Associates Limited (KSAL) to act as the Engineer to prepare a report for improvements of the Scott Drain. KSAL subsequently advised that K. A. Smart, P.Eng. would be the Engineer in charge.

3.0 SCOTT DRAIN HISTORY

The Scott Drain was constructed in accordance with a report of F. G. Ure dated April 24, 1915. In accordance with that report, 1,475' (450m±) of 8" (200mm) diameter drain was constructed from the Bremner Creek across the farmlands now owned by Scott, to the south side of the road allowance and from that point upstream along the south side of the road and then crossing the road, 395' (120.4m) of 6" (150mm) diameter drain was constructed to a head just west of the line between the current MacMillan and Pynenburg properties and just to the north of the road allowance.

In accordance with the 1915 report, 3 catchbasins were constructed: one catchbasin was constructed on the north side of the road near the east limits of the MacMillan property, one on the south side of the first road crossing, and one on the north side of the top end road crossing.

It is noted that the only catchbasin that exists, or could be found, now is located on the south side of the road.

4.0 INITIAL INVESTIGATION

4.1 On-Site Meeting

Attendees:

Frances Campbell (Roll No. 020-14200)	Jim Harmer (Township of Blandford-Blenheim)
Bob MacMillan (Roll No. 030-01100)	Jim Borton (Township of Blandford-Blenheim)
Jeff Campbell (Roll No. 020-14200)	Kenn Smart. P. Eng. (KSAL)
Dan Stuart (Roll No. 020-14000)	Curtis MacIntyre, P.Eng. (KSAL)
Robert Scott (Roll No. 030-01000)	
John Pynenburg (Roll No. 030-01200/030-01300)	

On July 23, 2019, the on-site meeting for the Section 4 appointment was held at the farm of Robert Scott (747401 Township Road 4) and those in attendance are listed above. The Engineer welcomed everyone and explained that though he will be responsible for the report, much of the work will be completed by his assistant, Curtis MacIntyre. He further explained that the current meeting was a required first stage in the Drainage Act process and gave a brief overview of the existing Scott Drain and indicated it was originally constructed in 1915. Each attendee was then given the opportunity to provide their comments/concerns regarding drainage on their property. The subsequent comments and discussions are described below.

Robert Scott (Roll No. 030-01000) (Petitioner)

Explained that his main concern was the surface water that rushes through his farm along the route of the drain from the road down to the Bremner Creek Drain (open ditch). This has

caused a large amount of topsoil build up in the Bremner Creek from his field. He stated he has also fixed numerous blowouts on the old 1915 tile drain, including approximately thirteen this year. Robert stated that he had tried grass swales in the past without much luck. He agreed with the engineer that it would be good to catch the water with a berm and a catchbasin before it rushes overland through his field. He also stated that he believed a 15" (375mm) plastic pipe plowed in should be a reasonable and cost effective solution to the problem. He felt that anything substantially larger would be an unnecessary cost to the neighbours. Finally, he asked the engineer if the outlet for the drain could be moved more to the south to outlet water in the direction of the channel.

Bob MacMillan (Roll No. 030-01100) (Petitioner)
Discussed how he has bermed up his westerly property line to stop surface water from rushing through his barnyard/manure pile area. He was asked if he had ever seen a catchbasin at the top end of the drain (near his west property line) since the original report shows there should have been. He had not recalled ever seeing one there. Bob felt that the upper watershed now generates more water. He also provided photos from the previous week (July 18, 2019) showing the ponding at the front of his property and downstream. He stated that their area experienced a 4-1/2" rainfall prior to the photos being taken. (*K. Smart did not clarify if this was from a single or multiple events over a series of days.)*

John Pynenburg (Roll No. 030-01200/030-01300) (Petitioner)
Has recently purchased the property with Roll No. 010-01200 and has had Howard Cook surveying the land to systematically tile. He thinks that the survey had taken place approx. 3-4 weeks ago. Cook's also had a backhoe out digging along his easterly property line (top end of the Scott Drain) looking for the tile/catchbasin, but did not find anything. He feels a new drain to a 1-1/2" D.C. may be desirable.
He commented that surface water ponds to a shallow depth on an area of land, west of the old buildings on the farm with Roll No. 030-01200.
He said the Engineer could review this area to see if it could serve as a small storm water management site and report back with his findings.
John stated that the farm with Roll No. 030-01300 was tiled to the west and out of the watershed but was not sure how surface waters drain.
(A discussion with Howard Cook later after the meeting advised that this area on this latter farm was/would be tiled into the McCrow Award Drain that comes to the road beside the Campbell lot.)

Dan Stuart (Roll No. 020-14000)
He had no concerns at this time regarding drainage on his farm relating to the Scott Drain. Stated he only had random tile and knew that there was a small diameter culvert (300mm) across Township Road 4 to the Robert Scott side. He doesn't believe the watershed was as large as shown by previous report.

The engineer asked Dan Stuart and Robert Scott if they believed a branch of the drain should be run up to this location. Robert Scott felt it would be a good idea. The engineer said it could be looked into and an estimate could be given at the next meeting.

On the same note, the option to take the water from the Dan Stuart farm westerly through the Derek Pynenburg farm (Roll No. 020-14100) was brought up. Examination of the area

by the engineer, the drainage superintendent, and the director of public works following the meeting was not conclusive as determining if water from the Stuart farm could be ditched westerly along the township road to a new catchbasin on the Pynenburg farm/Township Road 4. (Survey elevations taken later indicated ditch work to the west would not be realistic but a subsurface drain could go to the west.)

Frances Campbell (Roll No. 020-14200) (Petitioner)
Believed there was a 4" tile from their farm to the east and into the old pond on Pynenburg property. Her drainage concerns mostly involved issues around a branch of the McCrow Award Drain.

Grand River Conservation Authority (GRCA)
In lieu of attending the meeting, a letter was sent by Fred Natolochny stating they understood the proposed works involved construction of a new tile drain and that they had no concerns with the project, trusting that adequate controls would be in place during construction to minimize erosion and sedimentation in the Bremner Creek Drain. He advised to contact Jenn Simons for any further inquiries.

Jim Harmer (Drainage Superintendent, Township of Blandford-Blenheim)
Believed that a catchbasin and a berm located at the top end of the existing Scott Drain, upstream of MacMillan farm would be a good idea.

Jim Borton (Director of Public Works, Township of Blandford-Blenheim)
Stated that the road experiences erosion problems and that they once had to perform maintenance on the road three times in one week.

Miscellaneous

- One or more owners mentioned that the low ponding area on the Derek Pynenburg property (south of the road) wasn't a depressional low area previously. Only recently has it been a ponding area. It is believed there may be tile through it. (Tile plans received from Howard Cook indicated that 4" laterals were laid in the low area with a 10" (250mm) header tile northeasterly to the Scott Drain.)

- Designated areas for stormwater retention were discussed at various points of the meeting. The following locations for stormwater management/retention were mentioned:
    - Southwest corner of Robert Scott farm, just downstream of Township Road 4
    - Northeast corner of Derek Pynenburg farm in the area where the existing Scott Drain runs in an east/west direction before crossing northerly back over Township Road 4
    - Southeast corner of the John Pynenburg farm (Roll No. 030-01200), just upstream of Bob MacMillan property line (top end of existing Scott Drain)
    - Northwest of yard lane at John Pynenburg (Roll No. 030-01200) before surface water crosses laneway, to continue downstream through a pasture field and towards the Bob MacMillan property
- A discussion involving Robert Scott and John Pynenburg suggested the surface water run starting at the Pynenburg property just north of the MacMillan farm that

proceeds southeasterly across the Scott property should be examined to see if a catchbasin at the line between Scott and Pynenburg would be desirable.

- The Engineer should consider re-directing the new outlet of the drain so that water discharges a bit further downstream and better with the flows of the Bremner Creek Drain
- The Engineer should contact Howard Cook to see if they will need a branch to the north for tiled drainage from the Pynenburg farm through the Scott farm (in the area of the run discussed above).
- The Engineer should look into a South branch/offset catchbasin to the Stuart farm or to regrade the Township road ditch to the west.

4.2 Site Examination & Survey

At the conclusion of the on-site meeting, the Engineer reviewed the watershed along with Township staff.

Following the on-site meeting the drain was viewed along Township Road 4 and also a potential SWM area at the laneway/building site on the John Pynenburg property on Lot 8, Concession 4 was examined.

It was evident that there was erosion downstream in the field of Scott at the road. Only one catchbasin was found and it was on the south side of the road at the downstream road crossing.

It was evident that there could be tree damage to the drain where it runs along the south side of the road. No evidence of the drain on the north side of the road at the upper most crossing was found. It was noted that a small berm now exists on the line between the MacMillan and Pynenburg properties to try to reduce the impacts of downstream runoff. It was noted by the survey that the surface culverts across the road at both road crossings are for all intents inoperative. The upstream crossing has damaged ends and is filled. The downstream crossing also appears ¾ full with sediment.

The examination at the John Pynenburg lane/buildings area upstream (Parcel 030-01200) indicated that some limited storm water management could be possible using the lane as a berm. The survey indicated that it may also be necessary to also construct a “workable” berm going west from the lane to act with the lane to create a storage area. However an outlet for any ponding at that location could be an issue.

The survey also indicated that it would be possible to do some minor storm water management at the top end of a new branch drain if taken to the line between Pynenburg and Scott, and that it would be possible to increase the storm water management along the line between Pynenburg and MacMillan by increasing and extending the berm there.

5.0 AUTHORITY FOR REPORT

The Scott Drain petition was signed/submitted by 6 of the 8 owners, representing 51.9 of the 52.9 ha within the watershed of the Scott Drain. The owners that signed the petition therefore constitute 75% of the owners and 98% of the area requiring drainage of the Scott Drain

watershed. The petition is therefore sufficient in accordance with Sections 4(1)(a) and 4(1)(b) of the Drainage Act.

6.0 WATERSHED

The Scott Drain watershed consists of approximately 52.9 hectares (130.7 acres) of surface drainage. Of this, approximately 6.0 hectares (14.8 acres) are proposed to be drained out of the surface water watershed. This would leave a watershed of 46.9 hectares (115.9 acres) that could be tiled to the Scott Drain. As well, it is noted that the surface watershed between the Branch Drain considered and the Main Drain would not be the watershed for tile drainage. Approximately 2.6 ha (6.4 acres) of the surface watershed of the Branch Drain would be tiled drained into the Main Drain.

Of the 52.9 hectares (130.7 acres) of land, the majority are cleared agricultural lands. There are two severed lots comprising 4.1 ha (10.1 acres) in the watershed, but both are worked and designated as agricultural lands. There are 1.4 ha (3.5 acres) of roads within the watershed.

7.0 ITEMS CONSIDERED IN DESIGN STAGE

The following are various matters that were considered in arriving at the recommendations in this report:

7.1 Environmental Considerations

After contact was made with the Grand River Conservation Authority (GRCA), a letter dated July 12, 2019 was received wherein GRCA indicated they have no objections or concerns with the proposed tile drain construction outletting into the Bremner Creek Drain on the basis that adequate control be in place during construction to minimize erosion and sedimentation within the Bremner Creek Drain.

The prime environmental consideration would be thus to ensure that the work does not transport significant sediments into the downstream Bremner Creek Drain, and that the works are not a source of erosion at the Bremner Creek Drain.

Since the work of the Scott Drain is primarily closed drain work, minimal land disturbance with resulting potential surface erosion, will occur. Also, since three small storm water management areas will be constructed as part of the closed drain work, such can also assist to retain any eroded materials during drain construction. The movement of sediments downstream because of drainage construction is thus expected to be minimal. There exists a grassed swale on the Scott farm adjacent to the existing Scott Drain. This swale however is in poor repair currently primarily because of excess surface waters. The landowner Scott has indicated that he hopes the drain proposed will sufficiently reduce top water flow that he can better maintain the swale in a grassed condition in the future. If the grass swale can be re-established by the landowner, then it would be much more able to serve the high but infrequent flow overflows that do occur.

Nonetheless, the work does call for straw bale dams within Bremner Creek during construction to provide for the trapping and collection of any sediments that should come downstream.

With respect to potential erosion at the outlet into the Bremner Creek Drain, the work is to be done such that the outlet of the new drain is done at a location different than where surface waters enter the Bremner Creek from the Scott Drain watershed. Even at this new location, riprap is to be placed to stabilize the banks where the new tile outlet will be.

To also assist in past erosion at the junction of the Scott and Bremner Creek Drains, riprap is called for at the existing discharge of surface waters from the Scott Drain watershed into Bremner Creek.

GRCA will receive a copy of this report for their review.

7.2 Sizing Considerations

Two design bases for the closed drain were initially considered using the Drainage Coefficient Method. The first sizing basis was for the 1" (25mm) Drainage Coefficient and the second was for the 1.5" (38mm) Drainage Coefficient. (The Drainage Coefficient is a measure of the amount (depth) of runoff from a served watershed, if admitted to the drain, that can be carried away from the served watershed in a 24 hour period.)

It was found that the size differences between usage of the 25mm and 38mm coefficients were minimal (one tile size) and also the cost difference between the two sizings was minimal (15% cost difference versus 50% size different).

Accordingly, it is this Engineer's recommendation that the larger coefficient be used since there are high gradients in the watershed, and as a result surface flows can have greater velocity and with greater impacts. Any reduction in the quantity of surface flows would be desirable. By adopting the 1.5" (38mm) Coefficient, approximately 50% more capacity in the drain is provided and it is thus felt that it would be desirable to have the additional capacity for the watershed, recognizing the small increase in costs.

7.3 Outlet Considerations (Sufficiency of Outlet)

The work of the Scott Drain 2020 will discharge into the Bremner Creek Drain. The Bremner Creek Drain is a Municipal Drain and appears sized in accordance with guidelines for construction of drainage works. It also appears in a satisfactorily maintained condition. It is therefore deemed to offer a sufficient outlet for the work proposed.

Also, the Scott Drain 2020 outlet can discharge approximately 100mm above the normal water levels of the Bremner Creek Drain.

7.4 Soils Considerations

A review of the Oxford County soils map indicates that almost the entire watershed of the Scott Drain is mapped as being Huron silt loams. This soils group is noted to have good internal drainage, to have moderately sloping grades and to be smooth to slightly stony. (Landowner comments confirm this by describing the soils as silty clays.) This soil is not

expected to create construction problems but is the type of soil that can be associated with surface drainage issues and that can be more productive with improved subsurface drainage provided the outlets for such are available.

Several test holes were dug along the Main Drain route in April, 2020. The test holes indicated that the soils were silty clays with no stones. Moisture was only found in the test hold at the outlet. The results of the test digs are shown on the drawings.

7.5 Utilities

Utilities are not expected to be a problem on this project. It is noted that there are overhead hydro lines along the south side of Township Road 4. There is also an underground Bell line on the south side of Road 4. The new work is expected to cross it in two locations.

The contract (tender) documents will require that the Contractor have locates done of all underground utilities on roadways and private lands where such may exist.

The Contractor is to also contact all landowners along the proposed drain route to determine the existence of any underground or overhead utilities on private properties.

7.6 Proposed Subsurface Drainage Plans of the Pynenburg Properties

The Pynenburg properties in Lots 8 & 9, Concession 4 provided proposed subsurface drainage plans from their tiling contractor. These plans showed that:

- The Branch Drain discussed as a possible location for an offset catchbasin on the line with Scott just north of MacMillan would be needed as a tile outlet also.
- Showed areas of lands to be drained into and out of the Branch 1 watershed.
- Showed areas of lands to be drained into and out of the Main Drain watershed.

8.0 SECOND MEETING

On February 11, 2020, a landowner information meeting (the second meeting) for the Section 4 appointment was held at the Township of Blandford-Blenheim Municipal office and those in attendance are listed below.

Attendees:

- Curtis MacIntyre, P.Eng. (KSAL) (Assistant to K. Smart, P.Eng.)
- Robert Scott
- Robert (Bob) MacMillan
- Derek Pynenburg
- John Pynenburg
- Dan Stuart
- Jim Borton (Director of Public Works, Township of Blandford-Blenheim)
- Jim Harmer (Drainage Superintendent, Township of Blandford-Blenheim)
- Arrived Later: Frances and Jeff Campbell

Curtis MacIntyre, welcomed everyone and explained that unfortunately Kenn Smart wouldn't be able to make it today, but that Kenn had prepared most of the work and had discussed all his thoughts on the proposed design and share of assessments with Curtis. Curtis explained the proposed design of the Main Drain, the recommended Branch Drain design, and the areas of proposed berming to temporarily pond some waters and also described the three additional options evaluated.

The additional options that had been looked into were temporary ponding of water over approximately 0.2 hectares (0.5 acres) on the D. Pynenburg farm, temporary ponding of water for approximately 0.1 hectares (1/3 acre) on the J. Pynenburg farm, and an additional Branch Drain across the road to the D. Stuart farm, or at least a lead with a catchbasin to collect water at the road from the Stuart watershed.

After discussions regarding details of the design, copies of Schedule A and Schedule C showing possible assessments were passed out for review. The subsequent comments and discussions regarding the proposed design and assessments are described below.

Robert Scott (Roll No. 030-01000) (Petitioner)

- Explained that he has a water line (and power line) that crosses the proposed drain near the outlet into the Bremner Creek and that he would not want it hit and broken. He said that he could dig it up and expose it himself for K. Smart staff/surveyors. All agreed that we would not want to expose it in the winter and leave it susceptible to freezing. It was left that it could be exposed and identified for the contractor prior to construction. There would likely be enough slack in the lines to avoid a conflict with the drain.
- Stated that he still had some concerns regarding surface water erosion of his field and asked if the proposal would fully address that. Jim Harmer stated from his experience that the size of the proposed drain (1-1/2" D.C.) would drastically reduce the amount of water flow on the surface. Curtis also later stated that the proposed increase in the number of catchbasins from the current situation will significantly improve water being able to get into the drain.
- In regards to the possible South Branch to Stuart or an offset catchbasin at the road cross culvert that outlets water into his field, he would like to see the water put directly to a new road crossing on the south side of the road.

Bob MacMillan (Roll No. 030-01100) (Petitioner)

- Stated he was unsure that the proposed drain would sufficiently address surface water erosion.
- Wanted to ensure that the well in his front yard would not be contaminated with flows from the surface water culvert under the road that was proposed to be left in place. He asked if the surface water culvert could be removed or plugged. Curtis said he and Kenn could discuss further the possible temporary ponding of some water on the south side of the road at this culvert with outlet into the closed drain, but that we could not recommend the removal of this surface culvert since such removal would negatively impact farm lands on the south side of the road during large storms.

- Stated he would like to see improved ditching on the south side of the road opposite his property - at least between the proposed south side catchbasins at the crossings and he felt more could be done further east in front of the Stuart farm to take the water along the south side of the road to the east. Curtis said that we could improve the ditch on the south side of the road between the proposed catchbasins, but that there is a highpoint in the ditch adjacent to the Stuart farm that would prohibit practical construction of a road ditch to let the water go to the east. (The high point in the ditch on the south side of the road referred to is 1m higher than the ditch at the northwest corner of the Stuart property.)
- Stated that presently water does not cross the road from the north to the south at the west edge of his property (which would be at the existing upstream road crossing), but actually goes through a culvert under his entrance lane and continues east on the north side of the road ditch in front of his property. Curtis reviewed the inverts of the culverts and agreed that water would go that way before it would rise up and go across the road. Curtis said that the Township is contemplating replacing both cross road culverts during construction and that we could lower the one across the road at the upstream crossing so that water goes to the south side of the road as intended.
- Curtis also assured Mr. MacMillan that the berm to be constructed/expanded between the MacMillan and Pynenburg properties near the upstream road crossing would be designed so that, when overtopped, water goes around the berm on the side adjacent to the road and not on the side along his barnyard.

John Pynenburg (Roll No. 030-01200/030-01300) (Petitioner)

- Wondered if the 300mm plastic tubing for the proposed Branch drain could be put in with a plow. Curtis stated it could, but the choice of materials would depend on what the contractor wished to do since the rest of the project is concrete tile. (Later Robert Scott advised he too would like this branch to be a tubing drain, so the Report is written to require such.)
- Stated no other concerns.
- The option for some storm water management (SWM) at the upstream lane/building area on his farm was presented for consideration.
- John was later contacted re SWM at this site and he advised such would no longer be practical due to proposed building removal, etc.

Derek Pynenburg (Roll No. 020-14100)

- Stated no concerns.
- The option for increased storm water management on the north part of his farm adjacent to the road was presented at the meeting and Derek asked that we contact him later re this. Derek was indeed later contacted and agreed that storm water management here could proceed.

Dan Stuart (Roll No. 020-14000)

- Was contemplating the option to construct the branch across the road and serve the northwest corner of his property and wished to be re-contacted.
- He later advised he did not wish to proceed with the branch at this time.

Jim Borton (Township of Blandford-Blenheim, Director of Public Works)

- Stated no concerns

9.0 RECOMMENDED WORK

As a result of the survey, the design, the discussions at the meetings, and the follow up work after the meetings, the following is the recommended work for the Scott Drain 2020. The Main Drain and Branch 1 will be the Scott Drain 2020.

a) Main Drain

R. & C. Scott (Roll No. 030-01000)
Station -0+040 to 0+409

- Construction of a new outlet for the proposed drain into the Bremner Creek Drain and approximately 6m downstream of the existing outlet.
- The cleanout of 40m of the Bremner Creek Drain at the new tile outlet.
- The outlet work will involve 15m of 525mm dia. HDPE pipe with a rodent gate, the installation of 100m² of riprap at the existing and new surface water and tile outlets where erosion exists, and the installation of a silt/sediment collection area comprised of straw bale dams in the Bremner Creek Drain channel. Also where the surface water flow crosses a lane near the new tile outlet, a second 600mm dia. surface water culvert under the lane is to be constructed.
- The work upstream of the outlet will then first involve the installation of 242m of 400mm diameter tile upstream to a junction box (where the Branch drain would join), and then the installation of 152m of 350mm diameter tile to the MacMillan line.
- The installation of an offset 600 x 600mm ditch inlet catchbasin with a 30m length of 200mm tubing at the road culvert serving water from a small area on the south side of the road.
- Regrading/restoration of eroded sections of the existing swale in the field as necessary.
- The old drain is to be broken up/destroyed upon installation of the new drain.

R. & P. MacMillan (Roll No. 030-01100)
Station 0+409 to 0+433

- Install 24m of 350mm diameter concrete tile.
- Removal and disposal of one small tree at the Scott property line
- Restore the work area with topsoil and seed
- Existing drain in this corner will either be broken up or sealed at each end.

Township Road 4 Road Allowance (excluding the surface culverts and ditch work – see next page for these)
Station 0+433 to 0+455

- Construct 600 x 600mm ditch inlet catchbasin on the north limits of the road adjacent to the MacMillan property. (The high wall of this catchbasin is to be at ground level and low wall is to be approximately 300mm lower.)
- Undertake shallow ditch work to the west of this catchbasin to provide some storage of waters adjacent to the MacMillan property.
- Install 22m of 375mm dia. HDPE[1] (or 400mm dia. aluminized CSP piping) across the road as the closed drain's road crossing.
- Remove/destroy or concrete fill existing crossing
- Construct a 900 x 1200mm standard catchbasin on the south side of the road at field elevation adjacent to the Pynenburg property line.
- Construct a 150mm dia. offset hickenbottom from this catchbasin into the road ditch

A. & V. Pynenburg (Roll No. 020-14100)
Station 0+455 to 0+558

- Install 103m of 350mm diameter concrete drain tile along road portion, but approximately 5m south of the road allowance.

Township Road 4 Road Allowance
Station 0+558 to 0+579

- Construct a 600 x 600mm standard catchbasin on the south limits of the road at field level
- Install 21m of 375mm dia. HDPE (or 400mm dia. CSP aluminized) adjacent to the Pynenburg line across the road as the closed drain's road crossing.
- Remove/destroy or concrete fill existing crossing
- Construct a 600 x 600mm standard catchbasin on the north limits of the road.

G., J., S. & L. Pynenburg (Roll No. 030-01200)
Station 0+579 to 0+594

- Install 15m of 350mm diameter concrete drain tile
- Construct 20m of new berming along the south limits of the property adjacent to the road right of way.
- Construct 40m of new berming adjacent to MacMillan fence (much of this will be adjacent to existing berming on MacMillan side of fence).
- Construct a new 600 x 600mm ditch inlet catchbasin in this berm.

[1] HDPE is High Density Polyethylene Plastic piping. CSP is Corrugated Steel Pipe.

- Locate and connect existing upstream drain to this catchbasin

R. & P. MacMillan (Roll No. 030-01100)
Station 0+579 to 0+594

- No work is proposed.
- Existing drain in this corner will be videotaped.
- If it has no connections, it will be sealed upstream and downstream of this corner.
- If it has lateral tiles joined to it, it will be joined to the new road crossing in the road allowance and will be sealed at its upstream end on the Pyneneburg farm.

b) Branch 1
R. & C. Scott (Roll No. 030-01000) / G., J., S. & L. Pynenburg (Roll No. 030-01200)
Station 0+000 to 0+224

- Install 224m of 300mm dia. plastic tubing drain from junction box on Main Drain
- Construct 20m of berm along the north/south fence and construct 13m of berm along east/west fence. (All berm work to be on Pynenburg side of fence.)
- Construct a 600 x 600mm ditch inlet catchbasin along the berm with 200mm dia. stub for future connection
- Place 5m² of riprap apron at the catchbasin

c) Township Road 4 Work (Not Part of Drain for Future Maintenance)
Township Road 4 (Township of Blandford-Blenheim)

- Remove and dispose of, or concrete fill, existing 375mm dia. CSP easterly surface water road culvert (on west side of downstream Main Drain crossing)
- Install 12m of 375mm dia. HDPE pipe (new surface water culvert) across road with a new 600 x 600mm CB on its inlet (south side) to create temporary ponding.
- New crossing to be 12m± east of existing crossing and at the same approximate elevation.
- Clean/deepen 105m of south road ditch (between the new hickenbottom and the new westerly surface water crossing of road) and haul spoil. Taper lengths required in addition to the 105m of work.
- Remove and dispose of, or concrete fill, existing 300mm CSP road culvert (just west of the upstream Main Drain crossing) and replace with 12m of 300mm dia. HDPE pipe at a lower (300mm± lower) elevation but at the same approximate location.
- Existing Scott Drain in this interval to be broken up/removed or concrete filled.

10.0 PRIVACY OF LANDS

Although a municipal drain is situated on the property of various landowners, one landowner may not enter another landowner's property via the Drain. Persons authorized to enter private lands to carry out duties authorized under the Act include Engineers (or their assistants), Contractors (or their assistants) and the appointed Drainage Superintendents (or their assistants).

11.0 DRAWINGS AND SPECIFICATIONS

11.1 Drawings

a) Plan

The location of the proposed Scott Drain 2020 and the affected properties are shown on Drawing 1 included with this report. The heavy solid line indicates the location of the proposed drain work. The numbers adjacent to the lines are station numbers which indicate in meters the distance along the drain. The heavy broken (dashed) lines indicate the approximate perimeter watershed boundaries for the drain(s). The plan also shows other drains, property boundaries, Township assessment roll numbers, property owners' names, hectares owned and hectares affected for each parcel within the Drain watershed.

Drawing 1 also shows by cross hatching where subsurface drainage directions are, or will be, different than surface drainage direction. Areas involved are also shown.

b) Profiles and Other Drawings

The profiles for the construction work proposed as the Scott Drain 2020 are on Drawings 2 & 3 with the road ditch work profile on Drawing 6. Each profile shows the proposed depth and grade of the new tile. The upper solid thin line represents the existing ground level. The lower solid line (the grade line) indicates the proposed tile invert.

Drawings 3 to 6 contain the typical trench details and enlargements at various locations.

Drawings 7 and 8 show the location of test holes (soils) and soil information.

Drawings 9 to 12 contain the specific and general notes related to construction (Special Provisions).

11.2 Specifications

This report includes the General Conditions, Standard Specifications and Special Provisions as listed in the Table of Contents and which are to govern the construction and maintenance of the Drain.

12.0 COST ESTIMATE

The cost estimate on this project consists of the fixed allowances required to be made to the owners having work on their properties, the construction cost estimate including contingency items, the engineering cost estimate, the estimate of the construction

supervision by the Engineer and eligible administration costs (which include financing, applications and miscellaneous costs and includes the Net HST (1.76%)). The Total Estimated Cost Summary is then shown.

The cost estimate for the proposed Scott Drain 2020 is outlined in detail in the following sections:

12.1 Allowances

Sections 29 to 33 of the Drainage Act provides for allowances (compensation) to be made to owners affected by proposed drain construction. On this project, there are only allowances for Section 29 (R-O-W) and Section 30 (Damages).

i) Section 29 (Right of Way)

Section 29 on this project provides for payment of an allowance to landowners for the right of way required for construction and maintenance of the new drain and for access routes to the drain as necessary. Generally the width of the R-O-W is the width needed to construct and/or maintain the drain. The width along the drain for construction is normally assumed to be 25m wide and for maintenance at a 10m width. The width along access routes to the drain is normally 5 to 6 metres. Section 29 allowances for Right-of-Way and Access are based on values to be provided now that will compensate the owners for future land damages at the time of future maintenance.

The calculation of allowances for land used as R-O-W during maintenance is based on the determination of the principal (allowance) that should be given now, that if invested will generate a sufficient interest annually that if and when accumulated will compensate for the damages when the R-O-W is used. A frequency of maintenance of 25 years is assumed and an interest rate of 4% was used in the calculation on this project. The value of the damage per unit of area is equal to the Section 30 damage rate.

Section 29 allowances on this project also provide for the estimated crop damage that could be expected each year in areas of storm water management. Again the calculation is made to determine the principal/allowance that should be provided now to compensate for the annual crop loss that can be expected. Parameters as used for right-of-way allowances are used except that crop damages are reduced by 75% to recognize full crop loss would not occur over the occasionally ponded areas since drainage outlets are provided.

Note: There is a minimum amount of $100 for right-of-way allowances.

ii) Section 30 (Damages)

Section 30 of the Drainage Act provides for the payment of allowances to landowners for damages to lands during construction of the drain as described to be done by this Report. The Section 30 allowances compensate the owner for damages caused by the construction equipment moving within the R-O-W and by the placement of any excavated spoil within or beyond the working area width needed for construction. Section 30 allowances are also provided for damages along access routes where separate from right-of-way routes.

Section 30 (Damages) allowances are provided in accordance with the rates as shown in the table below.

Land Use	**Land Damages**
Cultivated Farm Lands (Corn, Beans, etc.)	$ 1,750/ha ($700/ac)

Note: There is a minimum amount of $100 for damage allowances.

iii) General

In accordance with Section 62(3) of the Drainage Act RSO 1990, the allowances shown may be deducted from the final assessment levied. Payment to the owner would only be made when the allowance is greater than the final assessment. The allowances are a fixed amount and are not adjusted at the conclusion of construction. Allowances can only be changed if the report is modified prior to adoption of the report by bylaw or in accordance with the paragraph in this report that deals with changing the scope of work after the bylaw is passed.

iv) Summary of Allowances

The allowances payable to the owners entitled thereto on this project are therefore to be as per the following table:

Table 12-1 – Summary of Allowances

Roll No. (32-45-020)	**Owner**	**Right of Way (Sec. 29) $**		**Damages (Sec. 30) $**	**Total $**
		Drain & Access	SWM*	Drain & Access	
Main Drain					
020-14100	A. & V. Pynenburg	500	2,000	650	3,150
030-01000	R. & C. Scott	1100	--	2,250	3,350
030-01100	R. & P. MacMillan	100	--	300	400
030-01200	G., J., S. & L. Pynenburg	100	1,000	100	1,200
	Sub Total:	1,800	3,000	3,300	8,100
Branch 1					
030-01000	R. & C. Scott	500	--	1,050	1,550
030-01200	G., J., S. & L. Pynenburg	100	1,000	100	1,200
	Sub Total:	600	1,000	1,150	2,750
	TOTAL:	2,400	4,000	4,450	**10,850**

* SWM is Storm Water Management.

12.2 Construction Cost Estimate

The estimated cost of Labour, Equipment and Materials to construct the proposed Drain is outlined in detail in Table 12-2 - Estimated Costs Summary. The construction cost estimate is based on recent costs for comparable work. A contingency amount is included to cover additional work that may be required due to field conditions or minor alterations to the project.

The contract for construction of the Drain will be awarded by public tender. If the contract price could be more than 33% over the Engineer's estimate, Section 59 of the Act requires a Council meeting with the petitioners to determine if the project should proceed.

12.3 Engineering Cost Estimate (Report Preparation Phase and Construction Phase)

Engineering costs for the Report Preparation Phase includes attending the Council meetings to consider report and to conduct the Court of Revision

The Construction Phase Services may include: preparing tender documents and tender call, review of tenders, attending pre-construction meeting, periodic construction inspection, payments, final inspection, post-construction follow-up, assistance to the Municipality on processing the project, final cost analysis and preparation of the grant application.

The estimated cost for report preparation as shown is usually not altered at the conclusion of a project unless the report is referred back or the report is appealed to the Drainage Tribunal, either of which would result in additional costs. The amount shown for meetings is an estimate. The final cost will be based on the actual time required for meetings.

The estimate shown for construction phase services is based on past experience and assumes good construction conditions and a Contractor who efficiently completes the construction. The final cost for the construction phase services will vary as per the actual time spent during and following drain construction.

Engineering costs are also summarized in Table 12-2 – Estimated Cost Summary.

12.4 Estimate of Section 73 Administration (Other) Costs

Section 73(1) of the Drainage Act outlines that the following costs incurred by a municipality can be included in the cost of the drain: "cost of any application, reference or appeal and the cost of temporary financing." However, Sections 73(2) and 73(3) of the Act state that the cost of services provided by municipal staff and Council to carry out the Act process can not form part of the final cost of the drain.

An estimate of Administration Costs is included to cover the above referenced items from Section 73(1) and primarily provides for interest charges on financing the project until it is completed.

This administration cost estimate may not be adequate to cover legal or engineering costs incurred by or assessed to the municipality should the project be appealed beyond the Court of Revision though such costs normally form part of the final drain cost.

The policy for Provincial Grant purposes indicates that municipal costs for photo-copying and mailing required to carry out the required procedures under the Act can be included in the drain cost estimate.

Section 73 costs are also summarized in Table 12-2 – Estimated Cost Summary.

12.5 Harmonized Sales Tax

The Harmonized Sales Tax (HST) will apply to most costs on this project. The Municipality is eligible for a significant refund on HST paid. The approximate resulting net 1.76% HST is also included in Table 12-2 – Estimated Cost Summary.

12.6 Estimated Cost Summary

Table 12-2 – Estimated Cost Summary

Description							Total Cost
Item	Stations	Description	Unit	Quantity	Unit Price	Cost	
ALLOWANCES (From Table 12.1-1) (Note: These are "fixed" allowances and therefore are not "estimates"):							**$10,850**
CONSTRUCTION COST ESTIMATE							
i) Main Drain							
1	-0+040	Temporary straw bale dam sediment trap	each	1	750	750	
2	-0+040 to 0+000	40m of ditch cleanout (Bremner Creek) (material to be levelled on site)	m	40	50	2,000	
3	0+000	9m of 600mm HDPE or aluminized CSP to twin existing surface water crossing	each	1	2,700	2,700	
4	0+000	100m² riprap on filter cloth at outlet and at culverts	m²	100	80	5,000	
5	0+000 to 0+015	525mm (21") dia. HDPE outlet pipe and rodent gate including old tile breakup and including locating and protecting existing water and hydro lines	m	15	200	3,000	
6	0+015 to 0+0257	400mm (16") dia. concrete tile with joint wrap including old tile breakup	m	242	55	13,310	
7	0+000 to 0+257	Regrading/repair of swale as required	m	257	10	2,570	
8	0+0257	600 x 600mm JB including connections	each	1	2,000	2,000	
9	0+0257 to 0+433	350mm (14") dia. concrete tile with joint wrap including old tile breakup as applicable	m	176	45	7,920	
10	0+305	Offset 600 x 600mm DICB and 30m of 200mm tubing lead with 3m² riprap	L.S.	1	3,000	3,000	
11	0+257 to 0+409	Regrading/repair of swale as required	m	152	10	1,520	
12	0+409 to 0+433	Removal and disposal of one tree and restoration of lawn area with topsoil and seeding	each	1	1,000	1,000	
13	0+433	600 x 600mm concrete DICB with birdcage grate and riprap and including connections and road ditching	each	1	2,300	2,300	
14	0+433 to 0+455	22m of 375mm (15") dia. HDPE or 400mm (16") aluminized CSP pipe across Twp Rd 4	L.S.	1	8,500	8,500	

	Description						**Total Cost**
Item	Stations	Description	Unit	Quantity	Unit Price	Cost	
		by open cut including restoration of road with full granular backfill, and removal or concrete filling of old crossing					
15	0+455	900 x 1200mm concrete CB with birdcage grate and with riprap apron and including connections, offset 150mm hickenbottom, and rerouting of 15m of 250mm tubing from the south to it.	each	1	3,000	3,000	
16	0+436 to 0+448	Install 12m of 375mm HDPE surface water culvert to east of Main Drain crossing by open cut including removal and disposal, or concrete filling, of existing 375mm CSP surface water road culvert and with 3m² riprap at each end.	L.S.	1	3,500	3,500	
17	0+448	600 x 600mm concrete CB with birdcage grate including connections on surface water culvert inlet on new 375mm pipe	each	1	2,200	2,200	
18	0+455 to 0+558	350mm (14") dia. concrete tile with joint wrap	m	103	45	4,635	
19	0+558	600 x 600mm concrete CB with birdcage grate and riprap apron and including connections.	each	1	2,300	2,300	
20	0+455± to 0+564	Excavation of road ditch between hickenbottom and culvert and hauling material across road to use for berm work between Sta. 0+579 to Sta. 0+594 including taper lengths and including break up of old drain[2].	m	105	25	2,625	
21	0+558 to 0+579	21m of 375mm (15") dia. HDPE or 400mm dia. aluminized CSP pipe across Twp Road 4 by open cut including restoration of road with full granular backfill and removal and disposal, or concrete filling, of old crossing.	L.S.	1	8,000	8,000	
22	0+579	600 x 600mm concrete CB with birdcage grate and riprap apron and including connections.	each	1	2,000	2,000	
23	0+562± to 0+574±	12m of 375mm HDPE surface water culvert by open cut including removal and disposal, or concrete filling, of existing 300mm CSP road culvert and including 3m² of riprap at each end	L.S.	1	3,500	3,500	
24	0+579 to 0+594	60m of new berm work	each	1	3,000	3,000	
25	0+579 to 0+594	15m of 350mm (14") concrete tile with joint wrap including sealing of old tile downstream where intercepted.	m	15	45	675	
26	0+594	600 x 600mm concrete DICB with birdcage grate and riprap apron and including connections	each	1	2,400	2,400	

[2] If old drain has to be concrete sealed, the contingency will apply.

Description							Total Cost
Item	Stations	Description	Unit	Quantity	Unit Price	Cost	
		Sub Total Part i):				**93,405**	
ii) Branch 1							
27	0+000 to 0+224	300mm (12”) perforated plastic tubing with sock	m	224	40	8,960	
28	0+224	600 x 600mm concrete DICB with birdcage grate and riprap apron and including connections	each	1	2,400	2,400	
29	0+224	40m of new berm work	each	1	2,000	2,000	
		Sub Total Part ii)				**13,360**	
iii) Contingencies							
30		Contingency amount per meter to concrete fill existing drains, if directed, at locations other than at road crossings and as per special provision	m	100	20	2,000	
31		Lump sum contingency allowance	L.S.	1	8,700	8,700	
		Sub Total Part iii)				**10,700**	
TOTAL CONSTRUCTION COST ESTIMATE:							**117,465**
ENGINEERING COST ESTIMATE:							
		Report Preparation				30,000	
		Consideration of Report				1,000	
		Court of Revision				1,000	
		Construction Phase Services				21,500	
TOTAL ENGINEERING COST ESTIMATE:							**53,500**
SECTION 73 (OTHER/ADMINISTRATION) COSTS ESTIMATE:							
		Printing of reports				200	
		Printing of tender documents				200	
		Backhoe for test holes				250	
		Agency Fees (GRCA)				500	
		Interest estimate				3,680	
		Unforeseen costs				2,475	
TOTAL SECTION 73 (OTHER) COSTS ESTIMATE:							**7,055**
NET HST ESTIMATE:							
		Net HST Estimate				3,130	
TOTAL NET HST ESTIMATE:							**3,130**
						TOTAL PROJECT ESTIMATED COST:	**$192,000**

13.0 ASSESSMENT OF THE PROJECT COST

The Drainage Act requires that the total project cost (initially the estimated costs, ultimately the actual costs) be assessed to the affected lands and roads under the categories of Benefit (Section 22), Outlet Liability (Section 23), Injuring Liability (Section 23), Special Benefit (Section 24) and/or Increased Cost (Special) (Section 26). On this project assessments for Benefit, Increased Cost (Special) Assessments and Outlet Liability are involved and are described below.

On this project, initial assessments were made on an interval by interval basis and were then accumulated into the Schedule of Assessments (Schedule A).

The Schedule A included herein is therefore based on estimated costs. The final project cost will be assessed out based on final costs and using this schedule.

13.1 Benefit Assessments

The first step in the assessment calculation is to determine the benefit assessment to the parcels that derive benefit from the drain. The definition of benefit in the Drainage Act is as follows:

> *"the advantages to any lands, roads, buildings or other structures from the construction, improvement, repair or maintenance of a drainage works such as will result in a higher market value or increased crop production or improved appearance or better control of surface or subsurface water, or any other advantages related to the betterment of lands, roads, buildings or other structures."*

Benefit assessments are initially estimated as a percentage of the total project cost but are finally evaluated on the basis of better use of the land through improved surface drainage and/or improved subsurface drainage, marginal increases in market value and/or ability to connect other drainage directly to the new drain.

13.2 Special Assessments

In accordance with Section 26 of the Drainage Act, the Township of Blandford-Blenheim is to be assessed the increased costs associated with the Township Road 4 crossings and ditch work. These assessments are pursuant to Section 26 and are called Special Assessments for purposes of this report. Each final special assessment will be determined from the final contract payment for construction and will thus be for the actual/as-constructed cost. The estimates of such are as described below. Any additional costs at time of construction as identified by the Engineer will be added to the special assessment where appropriate. The construction cost estimate in this special assessment includes the road crossing cost and a cost for any catchbasin or ditch work. The equivalent drain costs are the length of pipe multiplied by the equivalent tile unit price plus $1,000 for a catchbasin or in one case the tile removal cost. For the surface water culverts, no equivalent drain cost is applicable.

The following table illustrates the calculation of the Estimated Special Assessments:

Table 13-1 – Estimated Special Assessments

Sta. to Sta.	Road Crossing	Const. Costs (Est.)		Less Equiv. Drain Costs (Est.)	Plus Increased Eng. Costs (Est.)	Plus Net HST (1.76%)	Special Assess.
0+431 to 0+457	Twp Road 4	12,650	a)	1,990	4,800	275	15,735
0+436 to +0448	Twp Road 4	6,270	b)	0	2,800	160	9,230
0+455 to 0+562	Twp Road 4	2,890	c)	580	1,040	60	3,410
0+566 to 0+587	Twp Road 4	11,000	d)	1,945	4,075	235	13,365
0+562± to 0+574±	Twp Road 4	3,850	e)	0	1,735	100	5,685
TOTAL:		36,660		4,515	14,450	830	47,425

Notes:
a) Items 14 & 15 from construction cost estimate plus $1,150 contingency.
b) Items 16 & 17 from construction cost estimate plus $570 contingency.
c) Item 20 from construction cost estimate plus $265 contingency.
d) Items 21 & 22 from construction cost estimate plus $1,000 contingency.
e) Item 23 from construction cost estimate plus $350 contingency.

If the Township elects to construct any works across or along their road subject to a Special Assessment (this option is available in accordance with the Drainage Act) the applicable special assessment shall be calculated with zero for “Construction Costs”. Any equivalent drain cost is to be based on tendered amounts.

Each special assessment will not apply for future maintenance.

If there are increased costs to the drain project due to a utility, a new Special Assessment may be necessary and will be based on the actual costs incurred.

13.4 Outlet Liability Assessments

After deducting the total benefit and special assessments from the interval cost, the balance of the cost is then assessed as outlet liability on a per hectare basis to all lands and roads in the watershed. Section 23(1) of the Drainage Act states:

> *“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 liability.”*

As noted in the assessment schedule, the hectares affected are adjusted prior to calculating the outlet liability. The basis for this adjustment is 1 hectare of cleared agricultural land contributing both surface and subsurface water to the drain. Areas which generate greater runoff such as roads are increased by a factor (1.5 for gravel roads and

2.0 for paved roads) and areas which generate lesser runoff such as woodlots (bush) and areas that are tiled elsewhere are decreased by a factor of 0.5. Areas that are not readily served by the new drain may also be assessed at a lower rate.

13.5 Schedule A – The Assessment Schedule for Project Cost

The estimated (and final) cost of the drainage works in this report is to be assessed as shown by Schedule A, the Schedule of Assessments. In Schedule A each affected parcel of land assessed has been identified by the municipal assessment roll number at the time of the preparation of this report. For convenience only, each parcel is also identified by the owner name(s) from the last revised assessment roll.

Roll numbers are per the Municipality's last revised assessment roll, and names are included for convenience. The amounts in Schedule A are derived from the interval cost assessments/distribution shown in Appendix A.

After construction is complete and final costs are known, the assessments for the final costs will be prorata to the assessments for estimated costs as shown on Schedule A with the exception that final Special Assessments will be for the final applicable costs as described in Section 13.2.

13.6 Appendix to Show Interval by Interval Assessment Calculations

The method of arriving at the assessments in Schedule A for this drain is illustrated in Appendix A which has been included with this report. Appendix A divides the drain into six intervals. The estimated cost for each of these intervals is first determined. The next step in the assessment calculation is to show benefit and any special assessments, if applicable, to the affected lands and roads in each of the drain intervals. The benefit assessments calculated and used on this project provide for a ratio of assessments between various landowners that is judged fair and appropriate for this project and are as shown on this appendix sheets.

After deducting the total benefit and special assessments from the interval cost, the balance of the cost is then assessed as outlet liability on a per hectare basis to all lands and roads in the interval watershed.

As noted, the hectares affected are adjusted prior to calculating the outlet liability.

13.7 Appendix C – Estimated Net Assessments/Assessments of Final/Actual Project Costs

After the construction of the drain is certified complete by the Engineer, the municipality will determine the total of incurred costs which will be the final/actual cost of the drain. Final/actual assessments will be determined by prorating/assessing the actual cost of the drain using Schedule A. Appendix C is included to show how the assessments in Schedule A will be prorated/applied. It illustrates the estimated net assessments after deducting allowances and provincial grants, if any, from the total proratable assessments shown in Schedule A. It will then be of assistance when preparing the final/actual cost bylaw and

grant form. Actual assessments as calculated pursuant to Appendix C will be levied to the owner of the identified parcel at the time the Actual Cost Bylaw is passed. Roll numbers are per the Municipality's last revised assessment roll, names included for convenience. Appendix C is a separate attachment and is included for information purposes only.

14.0 GRANT

In accordance with the provisions of Section 85 of the Drainage Act and OMAFRA's ADIP policies, a provincial grant not exceeding 1/3 (33-1/3%) may be available on the total of the assessments against privately owned parcels of land which are used for agricultural purposes and are eligible for the Farm Property Class Tax Rate (F.P.C.T.R.). Section 88 of the Drainage Act directs the Township to make application for this possible grant upon certification of completion of the drain provided for in this report. The Township will then apply the grant prorata to the eligible assessments prior to collecting the final assessments.

If an assessed owner not shown as having the Farm Property Class Tax Rate feels that their property should be eligible for this grant calculation, and they can provide proof to the Municipality of this eligibility as noted prior to the final cost levy then the property could have the one-third (33-1/3%) grant applied in the final cost levy against their property. Please be advised that OMAFRA retains the final right to determine eligibility under the grant program, regardless of designation herein.

In accordance with Section 85 of the Drainage Act, a grant not exceeding one third (33-1/3%) may also be available in the future on the assessments against privately owned parcels of land used for agriculture (again as per OMAFRA's ADIP policies), for maintenance and repair, if done on the recommendation and supervision of an approved Drainage Superintendent and using the same eligibility requirements as outlined above.

15.0 MAINTENANCE

15.1 General

Section 74 of the Act requires the Drain, as outlined in this report, to be maintained by the Municipality, and the cost of maintenance to be assessed to the upstream lands and roads pro rata with the assessments in Schedule B – the Schedule of Assessments for Future Maintenance.

Schedule B is divided into columns to reflect the different drain intervals where maintenance work may be undertaken. These column intervals assist in identifying upstream lands and roads to be assessed for future maintenance. The percentages shown in Schedule B determine the share of future maintenance to be levied on a property or road. For example, a $1,000 tile repair will result in a $50 assessment to a property with a 5% maintenance assessment.

Percentages and/or amounts (values) shown for maintenance are not payable at this time; they are provided to determine the share of future maintenance cost. It will also be necessary to determine grant eligibility at the time of maintenance cost levy.

The drain for future maintenance purposes shall consist of all components listed in the cost estimate for the Main Drain (except for the road ditch work and new surface culverts crossing the road) and Branch 1.

The Bremner Creek Drain will continue to be maintained only in accordance with the Report applicable to it.

15.2 Calculating the Percentages in Schedule B

The amounts found in Schedule B for assessing future repair and maintenance costs are derived from the detailed table included as Appendix B. In Appendix B, like in Appendix A, the Scott Drain 2020 is broken down into 6 intervals (5 on the Main Drain and 1 for Branch 1). Either historical or modified/distributed/assumed cost estimates amounts were used to determine the value/cost of each interval. These amounts were then distributed against the lands and roads within each particular interval. A determined proportion of the estimated costs are applied as benefit assessments applicable to the affected lands and roads in each of the intervals. Benefit assessments are based on historical amounts and/or on judged amounts against all lands and roads directly abutting the drain or that benefit from improved drainage. These benefit assessments are related to improved drainage and increased property values resulting from the presence of the drain.

After deducting the benefit assessments from the assumed interval cost in Appendix B, the balance of the cost is then assessed as outlet liability on a per hectare basis to all upstream lands and roads.

The evident percentages from Appendix B were then transferred to Schedule B.

15.3 Duties of Landowners re Future Maintenance

All parties affected by the Scott Drain 2020 are encouraged to periodically inspect the Drain and report any visible or suspected problems to Municipality.

A right-of-way along the drain and access routes to the Drain exists for the Municipality to maintain the drain. The right-of-way for the drain as described in the Allowances section of this report shall remain free of obstructions. The cost for removing obstructions is the responsibility of the owner.

Any landowner making a new connection to the Drain shall notify the Drainage Superintendent before making the connection. If the Drainage Superintendent is not notified, the cost to remedy new connections that obstruct or otherwise damage the Drain will be the responsibility of the owner.

The discharge of anything but clean, unpolluted water into a drain is regulated by other provincial legislation. Any non-compliance can be reported to the appropriate environmental agency.

15.4 Updating Maintenance Schedules for Future Parcel and Land use Changes

To ensure maintenance assessments remain equitable, the assessments provided in this report should be reapportioned under Section 65 if and when future severances or amalgamations occur, or if and when new lands are connected to the Drain or if and when a land-use change occurs that can be accommodated by the existing Drain. If a future land-use change will cause the drain capacity to be exceeded, a report under Section 4 or 78 may be required to provide increased capacity.

16.0 DRAINS TO BE ABANDONED

The following drain is hereby abandoned of status under the Drainage Act:

- The Scott Drain as per the 1915 report.

Most of the 1915 Scott Drain will be broken up, removed or filled in as part of this Report's work. If any part should remain it will be up to the landowner involved to maintain or remove it.

17.0 ALIGNMENT OF NEW DRAINS

All drains shall be constructed and maintained generally to the alignment, as noted on the plans and specified by the Special Provisions. In the absence of survey bars, existing fences and similar boundary features are assumed to represent property lines.

Should landowners desire a more precise location for the drains in relation to their property line or if there is a dispute about the location of any property line, landowners may obtain a legal survey at their own cost before construction.

18.0 BYLAW

This report including schedules, appendices, drawings and specifications, when adopted by bylaw in accordance with the Drainage Act, RSO 1990, will provide the basis for construction and maintenance of the Drain.

19.0 CHANGES TO DRAIN AFTER BYLAW IS PASSED AND BEFORE COST IS LEVIED

Should changes, deletions or extensions to the drain work proposed in this report be requested or required after the bylaw is passed and the contract is awarded, there may be some difficulty in attending to such. Since this drain work is to be constructed in accordance with a Bylaw of the Township of Blandford-Blenheim, changes to the drain work cannot be undertaken without a change to the bylaw. An exception would be very minor changes which are approved by the Engineer and the Township in accordance with the General Conditions in the report.

If it is desired to make a substantial addition or deletion to the drain work proposed in this report, it will be necessary that a revised report be prepared and processed through the

Drainage Act, or in some cases, an application to the Ontario Drainage Tribunal may be made under the Drainage Act to obtain approval for a necessary change.

If any individual or group of owners require additional work related to the proposed drain work and are prepared to pay for such, they may make their own arrangements with the contractor to have such work constructed. The Engineer must pre-approve such additions to verify there is no impact on the function or maintenance of the drain and drain work as proposed. Even so, the work added would not form part of the drain for the purpose of future maintenance.

All of which is respectfully submitted,

K. SMART ASSOCIATES LTD.

K. A. Smart, P. Eng.

mw

SCHEDULE A - SCHEDULE OF ASSESSMENTS
SCOTT DRAIN 2020
TOWNSHIP OF BLANDFORD-BLENHEIM

	Con	Lot	Roll No.	Owner	MAIN DRAIN Affected Area (ha)	MAIN DRAIN Benefit ($)	MAIN DRAIN Outlet ($)	MAIN DRAIN Total ($)	BRANCH 1 Affected Area (ha)	BRANCH 1 Benefit ($)	BRANCH 1 Outlet ($)	BRANCH 1 Total ($)	Gross Total Assessment ($)
			(32-45-020-)										
F	3	Pt N½ 7	020-14000	D. Stuart & J. Savory	1.00	-	945	945	0.00	-	-	-	945
F	3	Pt N½ 8	020-14100	A. & V. Pynenburg	10.50	8,900	16,253	25,153	0.00	-	-	-	25,153
F	3	Pt N½ 8	020-14200	F. Campbell	1.30	-	1,505	1,505	0.00	-	-	-	1,505
F	4	S½ 7	030-01000	R. & C. Scott	8.10	21,050	3,457	24,507	3.40	4,250	907	5,157	29,664
F	4	Pt S½ 8	030-01100	R. & P. MacMillan	2.80	3,500	2,964	6,464	1.20	950	320	1,270	7,734
F	4	Pt S½ 8	030-01200	G., J., S. & L. Pynenburg	23.80	12,000	28,621	40,621	13.50	12,750	6,133	18,883	59,504
F	4	Pt S½ 8 & 9	030-01300	G., J. & S. Pynenburg	4.00	-	3,804	3,804	0.00	-	-	-	3,804
				Sub-total (Lands):	51.50	45,450	57,549	102,999	18.10	17,950	7,360	25,310	128,309
		Township Road 4		Twp of Blandford-Blenheim	1.35	13,500	2,766	16,266	0.00	-	-	-	16,266
		Special Assessment to Twp Road 4			--	47,425	-	47,425	--	-	-	-	47,425
				Sub-total (Roads):	1.35	60,925	2,766	63,691	0.00	0	0	-	63,691
				TOTAL ASSESSMENT SCOTT DRAIN 2020:	52.85	106,375	60,315	166,690	18.10	17,950	7,360	25,310	192,000

Notes:

1. Section 21 of the Drainage Act, RSO 1990 requires that assessments be shown opposite each parcel of land and road affected.
   The affected parcels of land have been identified using the roll number from the last revised assessment roll for the Township.
   For convenience only, the owners' names as shown by the last revised assessment roll, has also been included.
2. All lands shown above are in the geographic Township of Blenheim.
3. The above lands marked "F" are currently classified as agricultural according to the OMAFRA and are therefore entitled to a 1/3 grant .
   Eligibility for the 1/3 grant will be confirmed at the time the final cost is levied.

SCHEDULE B - SCHEDULE OF ASSESSMENTS
FOR FUTURE MAINTENANCE
SCOTT DRAIN 2020
TOWNSHIP OF BLANDFORD-BLENHEIM

				MAIN DRAIN												BRANCH 1	
				Interval 1 Sta. -0+008 to 0+257		Interval 2 Sta. 0+257 to 0+433		Interval 3 Sta. 0+433 to 0+455		Interval 4 Sta. 0+455 to 0+558		Interval 5 Sta. 0+558 to 0+594		Total Main Drain		Interval 6 Sta. 0+237 MD=0+000 to 0+224	
Con	**Lot**	**Roll No.**	**Owner**	$	%	$	%	$	%	$	%	$	%	$	%	$	%
		(32-45-020-)															
3	Pt N½ 7	020-14000	D. Stuart & J. Savory	41	1.03	46	1.53	0	0.00	0	0.00	0	0.00	87	0.94	0	0.00
3	Pt N½ 8	020-14100	A. & V. Pynenburg	569	14.23	644	21.47	93	18.60	687	54.96	0	0.00	1,993	21.55	0	0.00
3	Pt N½ 8	020-14200	F. Campbell	52	1.30	58	1.93	10	2.00	19	1.52	0	0.00	139	1.50	0	0.00
4	S½ 7	030-01000	R. & C. Scott	1,220	30.50	534	17.80	0	0.00	0	0.00	0	0.00	1,754	18.96	542	21.68
4	Pt S½ 8	030-01100	R. & P. MacMillan	152	3.80	298	9.93	0	0.00	0	0.00	0	0.00	450	4.86	83	3.32
4	Pt S½ 8	030-01200	G., J., S. & L. Pynenburg	1,236	30.90	693	23.10	113	22.60	228	18.24	202	40.40	2,472	26.72	1,875	75.00
4	Pt S½ 8 & 9	030-01300	G., J. & S. Pynenburg	119	2.98	135	4.50	22	4.40	44	3.52	39	7.80	359	3.88	0	0.00
			Sub-total (Lands):	3,389	84.74	2,408	80.26	238	47.60	978	78.24	241	48.20	7,254	78.41	2,500	100.00
	Township Road 4		Twp of Blandford-Blenheim	611	15.26	592	19.74	262	52.40	272	21.76	259	51.80	1,996	21.59	0	0.00
			Sub-total (Roads):	611	15.26	592	19.74	262	52.40	272	21.76	259	51.80	1,996	21.59	0	0.00
			TOTAL ASSESSMENT SCOTT DRAIN 2020:	4,000	100.00	3,000	100.00	500	100.00	1,250	100.00	500	100.00	9,250	100.00	2,500	100.00

Notes:

1. Section 21 of the Drainage Act, RSO 1990 requires that assessments be shown opposite each parcel of land and road affected. The affected parcels of land have been identified using the roll number from the last revised assessment roll for the Township. For convenience only, the owners' names as shown by the last revised assessment roll, has also been included.
2. All lands shown above are in the geographic Township of Blenheim.
3. See Drawing 1 for location of stations.
4. The dollar amounts shown are not amounts to be paid at this time. These amounts were used to create the percentages or portion that each parcel (property) and road will pay for any future maintenance repair or maintenance costs.

APPENDIX A - CALCULATION OF ASSESSMENTS FOR SCHEDULE A
SCOTT DRAIN 2020
TOWNSHIP OF BLANDFORD-BLENHEIM

						Interval 1 Sta. -0+008 to 0+257			Interval 2 Sta. 0+257 to 0+433			Interval 3 Sta. 0+433 to 0+455			Interval 4 Sta. 0+455 to 0+558		
		COST ESTIMATE															
		Allowances					2,150			1,500			2,000			1,150	
		Construction					34,460			17,310			18,950			10,520	
		Engineering					16,170			7,800			8,530			4,700	
		Administration					2,250			1,000			1,100			610	
		Net HST					920			460			510			280	
		TOTAL COST ESTIMATE					55,950			28,070			31,090			17,260	
Con.	**Lot**	**Roll No.**	**Owner**	**Total Ha Affected**	**Total ha Adjusted**	**Benefit**	**Ha Adjusted**	**Outlet**	**Benefit**	**Ha Adjusted**	**Outlet**	**Benefit**	**Ha Adjusted**	**Outlet**	**Benefit**	**Ha Adjusted**	**Outlet**
		(32-45-020-)															
3	Pt N½ 7	020-14000	D. Stuart & J. Savory	1.00	0.75		0.75	592	-	0.75	353		-	-		-	-
3	Pt N½ 8	020-14100	A. & V. Pynenburg	10.50	10.50		10.50	8,291		10.50	4,944		9.30	1,349	7,900	9.30	1,669
3	Pt N½ 8	020-14200	F. Campbell	1.30	0.95		0.95	750		0.95	447		0.95	138		0.95	170
4	S½ 7	030-01000	R. & C. Scott	8.10	4.05	12,800	4.05	3,198	6,000	0.55	259	1,250	-	-		-	-
4	Pt S½ 8	030-01100	R. & P. MacMillan	2.80	2.80	750	2.80	2,211	2,250	1.60	753	250	-	-		-	-
4	Pt S½ 8	030-01200	G., J., S. & L. Pynenburg	23.80	22.80	2,000	22.80	18,003	-	11.30	5,321	-	11.30	1,639		11.30	2,028
4	Pt S½ 8 & 9	030-01300	G., J. & S. Pynenburg	4.00	2.20		2.20	1,737		2.20	1,036		2.20	319		2.20	395
			Sub-total (Lands):	51.50	44.05	15,550	44.05	34,782	8,250	27.85	13,113	1,500	23.75	3,445	7,900	23.75	4,262
	Township Road 4		Twp of Blandford-Blenheim	1.35	2.05	4,000	2.05	1,618	6,000	1.50	707	1,000	1.25	180	1,500	1.05	188
	Special Assessment to Twp Road 4											24,965			3,410		
			Sub-total (Roads):	1.35	2.05	4,000	2.05	1,618	6,000	1.50	707	25,965	1.25	180	4,910	1.05	188
			TOTAL ASSESSMENT SCOTT DRAIN 2020:	52.85	46.10	19,550	46.10	36,400	14,250	29.35	13,820	27,465	25.00	3,625	12,810	24.80	4,450

Ha's Adjusted as Follows:

- Gravel roads x 1.5 for increased runoff.
- Bush and/or low areas and/or areas tiled elsewhere x 0.5 for decreased runoff

APPENDIX A - CALCULATION OF ASSESSMENTS FOR SCHEDULE A
SCOTT DRAIN 2020
TOWNSHIP OF BLANDFORD-BLENHEIM

				Interval 5 Sta. 0+558 to 0+594			Main Drain Total			Branch 1 Sta. 0+237 MD=0+000 to 0+224			Gross Total		
		COST ESTIMATE													
		Allowances			1,300			8,100			2,750			10,850	
		Construction			21,525			102,765			14,700			117,465	
		Engineering			9,680			46,880			6,620			53,500	
		Administration			1,245			6,205			850			7,055	
		Net HST			570			2,740			390			3,130	
		TOTAL COST ESTIMATE			34,320			166,690			25,310			192,000	
Con.	**Lot**	**Roll No.**	**Owner**	**Benefit**	**Ha Adjusted**	**Outlet**	**Total Benefit**	**Total Outlet**	**Total**	**Benefit**	**Ha Adjusted**	**Outlet**	**Total Benefit**	**Total Outlet**	**Total**
		(32-45-020-)													
3	Pt N½ 7	020-14000	D. Stuart & J. Savory		-	-	-	945	945		-	-	-	945	945
3	Pt N½ 8	020-14100	A. & V. Pynenburg	1,000	-	-	8,900	16,253	25,153		-	-	8,900	16,253	25,153
3	Pt N½ 8	020-14200	F. Campbell		-	-	-	1,505	1,505		-	-	-	1,505	1,505
4	S½ 7	030-01000	R. & C. Scott	1,000	-	-	21,050	3,457	24,507	4,250	1.70	907	25,300	4,364	29,664
4	Pt S½ 8	030-01100	R. & P. MacMillan	250	-	-	3,500	2,964	6,464	950	0.60	320	4,450	3,284	7,734
4	Pt S½ 8	030-01200	G., J., S. & L. Pynenburg	10,000	11.30	1,630	12,000	28,621	40,621	12,750	11.50	6,133	24,750	34,754	59,504
4	Pt S½ 8 & 9	030-01300	G., J. & S. Pynenburg		2.20	317	-	3,804	3,804		-	-	-	3,804	3,804
			Sub-total (Lands):	12,250	13.50	1,947	45,450	57,549	102,999	17,950	13.80	7,360	63,400	64,909	128,309
	Township Road 4		Twp of Blandford-Blenheim	1,000	0.50	73	13,500	2,766	16,266		-	-	13,500	2,766	16,266
	Special Assessment to Twp Road 4			19,050			47,425	0	47,425				47,425	0	47,425
			Sub-total (Roads):	20,050	0.50	73	60,925	2,766	63,691	-	-	-	60,925	2,766	63,691
			TOTAL ASSESSMENT SCOTT DRAIN 2020:	32,300	14.00	2,020	106,375	60,315	166,690	17,950	13.80	7,360	124,325	67,675	192,000

Ha's Adjusted as Follows:
- Gravel roads x 1.5 for increased runoff.
- Bush and/or low areas and/or areas tiled elsewhere x 0.5 fo

APPENDIX B - CALCULATION OF ASSESSMENTS FOR FUTURE MAINTENANCE
SCOTT DRAIN 2020
TOWNSHIP OF BLANDFORD-BLENHEIM

						MAIN DRAIN													
						Interval 1 Sta. -0+008 to 0+257				Interval 2 Sta. 0+257 to 0+433				Interval 3 Sta. 0+433 to 0+455				Interval 4 Sta. 0+455 to 0+558			
COST ESTIMATE						**$4,000**				**$3,000**				**$500**				**$1,250**			
Con.	**Lot**	**Roll No.**	**Owner**	**Total Ha Affected**	**Total ha Adjusted**	**Benefit**	**Ha Adjusted**	**Outlet**	**%**	**Benefit**	**Ha Adjusted**	**Outlet**	**%**	**Benefit**	**Ha Adjusted**	**Outlet**	**%**	**Benefit**	**Ha Adjusted**	**Outlet**	**%**
		(32-45-020-)																			
3	Pt N½ 7	020-14000	D. Stuart & J. Savory	1.00	0.75		0.75	41	1.03		0.75	46	1.53		-	-	-		-	-	-
3	Pt N½ 8	020-14100	A. & V. Pynenburg	10.50	10.50		10.50	569	14.23		10.50	644	21.47		9.30	93	18.60	500	9.30	187	54.96
3	Pt N½ 8	020-14200	F. Campbell	1.30	0.95		0.95	52	1.30		0.95	58	1.93		0.95	10	2.00		0.95	19	1.52
4	S½ 7	030-01000	R. & C. Scott	8.10	4.05	1,000	4.05	220	30.50	500	0.55	34	17.80		-	-	-		-	-	-
4	Pt S½ 8	030-01100	R. & P. MacMillan	2.80	2.80		2.80	152	3.80	200	1.60	98	9.93		-	-	-		-	-	-
4	Pt S½ 8	030-01200	G., J., S. & L. Pynenburg	23.80	22.80		22.80	1,236	30.90		11.30	693	23.10		11.30	113	22.60		11.30	228	18.24
4	Pt S½ 8 & 9	030-01300	G., J. & S. Pynenburg	4.00	2.20		2.20	119	2.98		2.20	135	4.50		2.20	22	4.40		2.20	44	3.52
			Sub-total (Lands):	51.50	44.05	1,000	44.05	2,389	84.74	700	27.85	1,708	80.26	-	23.75	238	47.60	500	23.75	478	78.24
	Township Road 4		Twp of Blandford-Blenheim	1.39	2.05	500	2.05	111	15.26	500	1.50	92	19.74	250	1.25	12	52.40	250	1.05	22	21.76
			Sub-total (Roads):	1.39	2.05	500	2.05	111	15.26	500	1.50	92	19.74	250	1.25	12	52.40	250	1.05	22	21.76
			TOTAL ASSESSMENT SCOTT DRAIN 2020:	52.89	46.10	1,500	46.10	2,500	100.00	1,200	29.35	1,800	100.00	250	25.00	250	100.00	750	24.80	500	100.00

Ha's Adjusted as Follows:

- Gravel roads x 1.5 for increased runoff.
- Bush and/or low areas and/or areas tiled elsewhere x 0.50 for decreased runoff

APPENDIX B - CALCULATION OF ASSESSMENTS FOR FUTURE MAINTENANCE
SCOTT DRAIN 2020
TOWNSHIP OF BLANDFORD-BLENHEIM

											BRANCH 1							
				Interval 5 Sta. 0+558 to 0+594				Main Drain Total			Interval 6 Sta. 0+237 MD=0+000 to 0+224				TOTAL		
COST ESTIMATE				**$500**				**$9,250**			**$2,500**				**$11,750**		
Con.	**Lot**	**Roll No.**	**Owner**	**Benefit**	**Ha Adjusted**	**Outlet**	**%**	**Total Benefit**	**Total Outlet**	**% Total**	**Benefit**	**Ha Adjusted**	**Outlet**	**%**	**Total Benefit**	**Total Outlet**	**% Total**
		(32-45-020-)															
3	Pt N½ 7	020-14000	D. Stuart & J. Savory		-	-	-	-	87	0.94		-	-	-	-	87	0.74
3	Pt N½ 8	020-14100	A. & V. Pynenburg		-	-	-	500	1,493	21.55		-	-	-	500	1,493	16.96
3	Pt N½ 8	020-14200	F. Campbell		-	-	-	-	139	1.50		-	-	-	-	139	1.18
4	S½ 7	030-01000	R. & C. Scott		-	-	-	1,500	254	18.96	450	1.70	92	21.68	1,950	346	19.54
4	Pt S½ 8	030-01100	R. & P. MacMillan		-	-	-	200	250	4.86	50	0.60	33	3.32	250	283	4.54
4	Pt S½ 8	030-01200	G., J., S. & L. Pynenburg		11.30	202	40.40	-	2,472	26.72	1,250	11.50	625	75.00	1,250	3,097	37.00
4	Pt S½ 8 & 9	030-01300	G., J. & S. Pynenburg		2.20	39	7.80	-	359	3.88		-	-	-	-	359	3.06
			Sub-total (Lands):	-	13.50	241	48.20	2,200	5054	78.41	1,750	13.80	750	100.00	3950	5,804	83.02
	Township Road 4		Twp of Blandford-Blenheim	250	0.50	9	51.80	1,750	246	21.59		-	-	-	1,750	246	16.99
			Sub-total (Roads):	250	0.50	9	51.80	1,750	246	21.59	-	-	-	-	1750	246	16.99
			TOTAL ASSESSMENT SCOTT DRAIN 2020:	250	14.00	250	100.00	3,950	5,300	100.00	1,750	13.80	750	100.00	5,700	6,050	100.01

Ha's Adjusted as Follows:

- Gravel roads x 1.5 for increased runoff.
- Bush and/or low areas and/or areas tiled elsewhere x 0.50

200 **GENERAL CONDITIONS**

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200 GENERAL CONDITIONS

200.1 SCOPE

The work to be done under this contract consists of supplying all labour, equipment and materials to construct the drainage work as outlined in the Instructions to Tenderers, the Form of Tender and Agreement, the Schedule of Tender Prices, the Drawings, the General Conditions, Special Provisions and the Standard Specifications.

200.2 ORDER OF PRECEDENCE

In case of any inconsistency or conflict between the drawings and specifications, the following order of precedence shall apply: Addenda, Form of Tender and Agreement, Schedule of Tender Prices, Special Provisions, Contract Drawings, Standard Specifications, General Conditions.

200.3 MUNICIPALITY

Municipality refers to a municipal corporation in the Province of Ontario. Where reference to Township, County, Region, Town, City or Owner appears it shall be deemed to be the same as the word Municipality. Where reference to owner appears in the specifications it is usually in reference to the owner of the property on which the drain is being constructed.

200.4 TENDERS

Tenders are to be submitted on a lump sum basis for the complete works or a portion thereof, as instructed by the Municipality. The Schedule of Tender Prices must be completed and submitted with the Form of Tender and Agreement even though the Contract will be a lump sum. As outlined in the Instructions to Tenders a deposit in the form of a certified cheque, bank draft, bonding or irrevocable letter of credit must accompany each tender as a guarantee of good faith. The deposit shall name the Municipality as the payee. All deposits, except that of the Tenderer to whom the work is awarded, will be returned within 10 days of the time the contract is awarded. The certified cheque of the Tenderer awarded the work will be retained as Contract Security and returned with the Completion Certificate for the work. A Performance Bond may also be required to ensure maintenance of the work for a period of one year after the date of the Completion Certificate.

200.5 EXAMINATION OF SITE, PLANS AND SPECIFICATIONS

Prior to the submission of the Tender, the Tenderer must examine the premises and site to compare them with the Drawings and Specifications in order to be satisfied with the existing conditions and the extent of the work to be done. The Tenderer must ensure that the meaning and intent of the drawings, estimated quantities and specifications is clearly understood before submission of the Tender. No allowances shall be made on behalf of the Contractor by reason of any error made in the preparation of the tender submission.

Any estimates of quantities shown or indicated on the drawings or elsewhere in the tender document are provided for the convenience of the Tenderer. The Tenderer should check the estimate of quantities for accuracy. Any use made of the estimated quantities by the Tenderer in calculating the tendered amounts is done at the Tenderers risk.

200.6 COMMENCEMENT AND COMPLETION OF WORK

The work must commence immediately after the Tenderer is notified of the contract award or at a later date, if set out as a condition in the Form of Tender and Agreement. If weather and ground conditions are unsuitable, work may be started at a later date from either of the above two dates if such delay is approved by the Engineer. The Contractor shall provide a minimum of 48 hours advance notice to the Engineer and the Municipality before commencement of any work. The work must proceed in such manner as to ensure its completion at the earliest possible date consistent with first class workmanship and within the time limit set out in the tender/contract document. Failure to commence or complete the work as set out in the tender/contract document may result in a forfeiture of all or part of the Contract Security if the Engineer deems that damages have been sustained to the Municipality or to any landowner because of the non-commencement or non-completion of the contract as awarded and that the failure to meet the specified dates has been the fault of the Contractor.

200.7 NOTICES RE COMMENCEMENT OF WORK

If the Contractor leaves the job site for a period of time after initiation of work, a minimum of 48 hours advance notice shall be given to the Engineer and the Municipality before commencement of any further work. If any work is commenced without the advance notice the Contractor shall be fully responsible for all such work undertaken prior to such notification and shall make good any works or materials judged to be inadequate or constructed in any manner that may have been subject to alteration if made known to the Engineer prior to commencement of construction.

200.8 PERMITS, NOTICES, LAWS AND RULES

The Contractor shall apply and pay for all necessary permits or licenses required for the execution of the work. This shall not include the obtaining of permanent easements or rights or servitude. The Contractor shall give all necessary notices and pay all fees required by the law and comply with all laws, ordinances, rules and regulations relating to the work and to the preservation of the public's health and safety and if the specifications and drawings are at variance therewith, any resulting additional expense incurred by the Contractor shall constitute an addition to the contract price.

200.9 HEALTH AND SAFETY

Contractor must comply with the Occupational Health and Safety Act (OHSA) and the associated Regulations for Construction Projects. Contractor will also follow any site-specific safety and training requirements of the Municipality, agencies, utility companies or other authorities.

Communication about site-specific hazards and safety requirements shall occur at the pre-construction meeting. If no pre-construction meeting is conducted, Contractor will communicate site-specific hazards and safety requirements before beginning work.

Contractor shall immediately report any workplace incidents, near misses, injuries and occupational illnesses to the Engineer.

200.10 LIMITATIONS OF OPERATIONS

Except for such work as may be required by the Engineer to maintain the works in a safe and satisfactory condition, the Contractor shall not carry out operations under the contract on Sundays or Statutory Holidays without permission in writing from the Engineer. The Engineer may direct in writing to the Contractor to cease or limit operations under the contract on any day or days if the operations are of such a nature, or if the work is so located, or if the traffic is of such a volume, that the Engineer deems it necessary or expedient to do so.

200.11 SUPERVISION

The Contractor shall provide constant supervision of the construction work and shall keep a competent foreman in charge at the site.

200.12 CHARACTER AND EMPLOYMENT OF WORKERS

The Contractor shall employ only orderly, competent and skillful workers to do the work and shall give preference to available qualified residents in the area of the contract. Whenever the Engineer informs the Contractor in writing that any workers are, in the opinion of the Engineer, disorderly, incompetent, or breaking the law, such workers shall be discharged from the job site and shall not again be employed on the job site without the written consent of the Engineer.

200.13 SUB-CONTRACTORS

If the Municipality so directs, the Contractor shall not sublet the whole or any part of this contract without the approval of the Engineer.

200.14 PAYMENT

Progress payments in cash equal to about 90% of the value of the work done and materials incorporated in the work will be made to the Contractor monthly. If directed by the Engineer the Contractor may be required to provide a written request for the progress payment amount. An additional 7% will be paid 45 days after the date of the Completion Certificate by the Engineer and 3% of the contract price may be reserved by the Municipality as a maintenance holdback for one year from the date of the Completion Certificate.

The holdbacks noted above may be increased by the Municipality if, in the written opinion of the Engineer, particular conditions of the contract require such greater holdback.

After the completion of the work any part of maintenance holdback may be used to correct defects from faulty construction and/or materials provided that notice shall first be given by the Engineer in writing to the Contractor stating that the Contractor has seven (7) days in which to remedy the defect in construction and/or materials.

200.15 TERMINATION OF CONTRACT BY THE MUNICIPALITY

Termination of the contract by the Municipality may be considered if the Contractor:

1. should be adjudged bankrupt or make a general assignment for the benefit of creditors or if a receiver should be appointed on account of insolvency;
2. should refuse or fail to supply enough properly skilled workmen or proper materials after having received seven (7) days' notice in writing from the Engineer to supply such additional workmen or materials in order to commence or complete the works;
3. should fail to make prompt payment to sub-contractors or for materials or labour;
4. should persistently disregard laws, ordinances, or instructions from the Engineer, or otherwise be guilty of a substantial violation of the provisions of the contract;

then the Municipality, upon Certificate of the Engineer that sufficient cause exists to justify such action, may without prejudice to any other right or remedy, give written notice to the Contractor to terminate the employment of the Contractor and take possession of the premises, and of all materials, tools and appliances thereon, and may finish the work by whatever method the Municipality may deem expedient, but without undue delay or expense. In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price will exceed the expense of finishing the work including compensation to the Engineer for additional

services and including other damages of every name and nature, such excess shall be paid to the Contractor. If such expense will exceed such unpaid balance including the Contract Security, the Contractor shall pay the difference to the Municipality. The expense incurred by the Municipality, as herein provided, shall be certified by the Engineer. If the contract is terminated by the Municipality due to the Contractor's failure to properly commence the works, the Contractor shall forfeit the Contract Security and furthermore shall pay to the Municipality an amount to cover the increased costs, if any, associated with a new tender for the contract being terminated.

If any unpaid balance and the Contract Security do not equal the monies owed by the Contractor upon the termination of the contract, the Municipality may also charge such expenses against any money which is or may thereafter be due to the Contractor from the Municipality.

200.16 LIQUIDATED DAMAGES

It is agreed by the parties to the Contract that in case all the work called for under the Contract is not finished or complete within the period of time as set forth in the Tender/Contract Document, damage will be sustained by the Municipality. It is understood by the parties that it will be impracticable and extremely difficult to ascertain and determine the actual damage which the Municipality will sustain in the event of and by reason of such delay. The parties hereto agree that the Contractor will pay to the Municipality a sum as set out in the Form of Tender and Agreement for liquidated damages for each and every calendar day delay, including Saturdays, Sundays and Statutory Holidays, in finishing the work in excess of the number of working days prescribed. It is agreed that the liquidated damages amount is an estimate of the actual damage to the Municipality which will accrue during the period in excess of the prescribed number of working days.

The Municipality may deduct any amount due under this section from any monies that may be due or payable to the Contractor on any account whatsoever. The liquidated damages payable under this section are in addition to and without prejudice to any other remedy, action or other alternative that may be available to the Municipality.

The Contractor shall not be assessed with liquidated damages for any delay caused by acts of nature, or of the Public Enemy, Acts of the Province or of any Foreign State, Fire, Flood, Epidemics, Quarantine Restrictions, Embargoes or any delays of Sub-Contractors due to such causes.

If the time available for the completion of the work is increased or decreased by reason of alterations or changes made under the provisions of the Contract, the number of working days shall be increased or decreased as determined by the Engineer.

If the Form of Tender and Agreement does not show an amount for Liquidated Damages then Liquidated Damages do not apply for this contract.

200.17 CONTRACTOR'S LIABILITY

The Contractor and all workers, agents or any party under the Contractor's control, including Sub-Contractors, shall use due care that no person or property is injured and that no rights are infringed during the construction work outlined in the contract. The Contractor shall be solely responsible for all damages by whomsoever claimable in respect of any injury to persons or to lands, buildings, structures, fences, livestock, trees, crops, roadways, ditches, drains and watercourses, whether natural or artificial, or property of whatever description and in respect of any infringement of any right, privilege or easement wherever occasioned in the carrying on of the work or any part thereof, or by any neglect, misfeasance or non-feasance on the Contractor's part or on the part of any workers, agents or parties under the Contractor's control including Sub-Contractors, and shall bear the full cost thereof. The Contractor shall be fully responsible to make such temporary provisions as may be necessary to ensure the avoidance of any such damage, injury or infringement and to prevent the interruption of or danger or menace to the traffic in any railway or any public or private road entrance or sidewalk and to secure to all persons and corporations the uninterrupted enjoyment of all their

rights, in and during the performance of the work. The Contractor shall indemnify and save harmless the Municipality and the Engineer from and against all claims, demands, losses, costs, damages, actions, suits or other proceedings by whomsoever made, brought or prosecuted in any manner based upon, occasioned by, or attributed to any such damage, injury or infringement.

Wherever any work is of such an extent and nature that it must necessarily be confined to particular areas of a roadway, a working area, or private property, the Contractor shall use reasonable care not to damage or deface the remaining portions of the property, and if any damage is occasioned as a result of the Contractor's operations, it shall be rectified by and at the expense of the Contractor, to the satisfaction of the Engineer. Notwithstanding the indemnity provisions contained in this section, where in the opinion of the Engineer the Contractor has failed to rectify any damage, injury or infringement or has failed to adequately compensate any person for any damage, injury or infringement for which the Contractor is responsible under the contract, the Engineer, following notice in writing to the Contractor of an intention so to do, may withhold payment of any monies due the Contractor under this or any other contract until the Contractor has rectified such damage, injury or infringement or has paid adequate compensation for such damage, injury or infringement, provided however, that the Municipality will not withhold such monies where in the opinion of the Engineer there are reasonable grounds upon which the Contractor denies liability for such damage, injury or infringement and the Contractor has given the claimant a reasonable time in which to establish the validity of the claim, and provided further that the amount withheld under this section shall not exceed the amount of such claims against the Contractor.

Where the Contractor uses privately owned lands for pits or waste disposal areas, the Contractor shall comply with applicable laws and provide the Engineer with a release signed by or on behalf of the owner of each pit or waste disposal area used by the Contractor. If the said release is not obtained, then sufficient monies will be withheld from the Contractor except, however, where the owner's signature is withheld solely on the basis of damage, injury, or infringement it will be dealt with as provided elsewhere in this subsection.

Nothing herein contained shall be construed as in any way restricting or limiting the liability of the Contractor under the laws of the country, province or locality in which the work is being done. Neither the Completion Certificate nor final payment thereunder, nor any provision in the Contract Document shall relieve the Contractor from this liability.

200.18 LIABILITY INSURANCE

The Contractor shall take out and keep in force until the date of acceptance of the entire work by the Engineer, a comprehensive policy of public liability and property damage insurance providing insurance coverage of at least $3,000,000 for each and every accident, exclusive of interest and cost, against loss or damage resulting from bodily injury to or death of one or more persons and loss of or damage to property and such policy shall where, and as requested by the Municipality, name the Municipality and the Engineer as an additional insured thereunder and shall protect the Municipality against all claims for all damage or injury including death to any person or persons and for damage to any property of the Municipality or any other public or private property resulting from or arising out of any act or omission on part of the Contractor or any of his servants or agents during the execution of the Contract.

200.19 LOSSES DUE TO ACTS OF NATURE, ETC.

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

400 STANDARD SPECIFICATIONS FOR CONSTRUCTION OF DRAINS

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400 STANDARD SPECIFICATIONS FOR CONSTRUCTION OF DRAINS

400.1 ABBREVIATIONS

i) M.T.O. means the Ministry of Transportation of Ontario.
ii) A.S.T.M. means the American Society for Testing Materials.
iii) C.S.A. means the Canadian Standard Association.
iv) O.P.S.D. means Ontario Provincial Standard Drawings
v) O.P.S.S. means Ontario Provincial Standard Specifications
vi) DFO means Fisheries and Oceans Canada
vii) MNRF means Ministry of Natural Resources and Forestry
viii) MECP means Ministry of Environment, Conservation and Parks

400.2 PRE CONSTRUCTION MEETING

The Contractor should arrange a pre-construction meeting with the Engineer, Municipality, affected landowners prior to commencement of construction.

If there is no pre-construction meeting or if a landowner is not present at the pre-construction meeting, the following shall apply. The drain is to be walked by the Contractor and each landowner prior to construction to ensure that both agree on the work to be done. Any difference of opinion shall be referred to the Engineer for decision. If the landowner is not contacted for such review, they are to advise the Engineer and/or Municipality.

400.3 COLD WEATHER

When working in cold weather is approved by the Engineer, the Contractor shall provide suitable means for heating, protection, and snow and ice removal. All work completed in cold weather conditions shall be to the satisfaction of the Engineer and any additional cost to remedy unsatisfactory work, or protect the work shall be borne by the Contactor. All backfilling operations shall be done as soon as possible to avoid backfilling with ground containing frozen particles. The Contractor will assume all responsibility for damages to any tile drains and for settlements or bank slippages that may result from work in cold weather.

400.4 WORKING AREA

Where any part of the drain is on a road allowance, the road allowance shall be the working area. For a closed drain the working area shall be a 10 metre width on either side of the trench or any combination not exceeding 20 metres. A 10m x 10m working area shall exist around any catchbasin, junction box or access point. For an open drain the working area shall be 17 metres on the side for leveling and 3 metres on the opposite side. A 10m working area shall exist for any overflow swale or grassed waterway. If any part of the drain is close to a property line then the fence line shall be one of the limits of the work area. Reduced or increased working areas will be described in detail on the Drawings.

400.5 ACCESS

The Contractor shall have access to the drain by entering the working area directly from road allowances or along access routes shown on the Drawings. All specifications governing fences, livestock and crops during drain construction apply to access routes. No other access routes shall be used unless first approved by the Engineer and the affected landowner. The Contractor shall contact each landowner prior to using the designated access routes. Contractor shall make good any damages caused by using the designated access routes.

400.6 ACCESS TO PROPERTIES ADJOINING THE WORK

The Contractor shall provide at all times and at no additional cost, adequate pedestrian access to private homes and commercial establishments unless otherwise authorized by the Engineer. Where interruptions to access have been authorized by the Engineer, reasonable notice shall be given by the Contractor to the affected landowners and such interruptions shall be arranged to minimize interference to those affected.

400.7 DRAINAGE SUPERINTENDENT

Where a Drainage Superintendent (Superintendent) is appointed by the Municipality, the Engineer may designate the Superintendent to act as the Engineer's representative. If so designated, the Superintendent will have the power to inspect and direct the execution of the work.

Any instructions given by the Superintendent which change the proposed work or with which the Contractor does not agree shall be referred to the Engineer for final decision.

400.8 ALTERATIONS TO WORK

The Engineer shall have the power to make alterations, additions and/or deletions in the work as shown or described in the Drawings or Specifications and the Contractor shall proceed to implement such changes without delay. Alterations ordered by the Engineer shall in no way render the contract void.

If a landowner desires deviations from the work described on the Drawings, the landowner shall submit a written request to the Engineer, at least 48 hours in advance of the work in question.

In every such case, the contract amount shall be increased or decreased as required according to a fair evaluation of the work completed. Where such changes involve additional work similar to items in the contract, the price for additional work shall be determined after consideration is given to the tendered price for similar items.

In no case shall the Contractor commence work considered to be extra work without the Engineer's approval. Payment for extra work is contingent on receipt of documentation to the satisfaction of the Engineer. Refer to the Extra Work Summary included in the Special Provisions.

400.9 ERRORS AND UNUSUAL CONDITIONS

The Contractor shall notify the Engineer immediately of any error or unusual conditions which may be found. Any attempt by the Contractor to correct the error without notice shall be done at the Contractor's risk. Any additional cost incurred by the Contractor to remedy an error or unusual condition without notice shall be borne by the Contractor. The Engineer shall direct the alteration necessary to correct errors or unusual conditions. The contract amount shall be adjusted in accordance with a fair evaluation of documentation for the work added, deleted or adjusted.

400.10 TESTS

The Engineer reserves the right to subject any materials to a competent testing laboratory for compliance with the standard. If any materials supplied by the Contractor are determined to be inadequate to meet the applicable standards, the Contractor shall bear full responsibility to remove and/or replace all such inadequate materials with materials capable of meeting the standards.

The cost of testing the materials supplied by the Contractor shall be borne by the Contractor.

400.11 BENCHMARKS AND STAKES

Prior to construction, the Engineer will confirm the benchmarks. The Contractor shall be held liable for the cost of replacing any benchmarks destroyed during construction.

If the Engineer provides layout stakes, the Contractor shall be held liable for the cost of replacing any layout stakes destroyed during construction.

Where property bars are shown on the Drawings, they are to be protected and if damaged by the Contractor, they will be reinstated by an Ontario Land Surveyor at the expense of the Contractor. Where property bars not shown on the Drawings are damaged, they will be reinstated by an Ontario Land Surveyor at the expense of the project.

400.12 OPENING UP OF FINISHED WORK

If ordered by the Engineer, the Contractor shall make such openings in the work as are needed to re-examine the work, and shall forthwith make the work good again. Should the Engineer find the work so opened up to be faulty in any respect, the whole of the expense of opening, inspecting and making the work good shall be borne by the Contractor. Should the Engineer find the work opened up to be in an acceptable condition the Contractor shall be paid for the expense of opening and making the work good, unless the Contractor has been obligated by any specification or by the direction of the Engineer to the leave the work open for the Engineer's inspection.

400.13 FINAL INSPECTION

Final inspection by the Engineer will be made within twenty (20) days after receiving notice in writing from the Contractor that work is complete, or as soon thereafter as weather conditions permit. All the work included in the contract must at the time of final inspection have the full dimensions and cross-sections.

Prior to commencing the final inspection an on-site meeting may be held by the Engineer and landowners directly affected by the construction of the drain. The Contractor will attend this meeting upon notice by the Engineer.

If there is no on-site meeting with the Engineer and landowners, the Contractor shall obtain from each landowner a written statement indicating that the work has been performed to the owner's satisfaction. If the Contractor is unable to obtain a written statement from the landowner, the Engineer will determine if further work is required prior to issuing the Completion Certificate.

400.14 WARRANTY

There shall be a one-year warranty period on all completed work. The warranty period will commence on the date of the Completion Certificate.

When directed by the Engineer, the Contractor shall repair and make good any deficiencies in the work that may appear during the warranty period.

Before the work shall be finally accepted by the Municipality, the Contractor shall complete all work as directed by the Engineer and remove all debris and surplus materials and leave the work neat and presentable.

400.15 MATERIALS

400.15.1 Concrete Drain Tile

Concrete drain tile shall conform to the requirements of the most recent ASTM C412 specifications for heavy duty extra quality, unless a stronger concrete tile is required by the Special Provisions or Drawings. All tile furnished shall be subject to the approval of the Engineer.

The minimum nominal lengths of the tile shall be 750mm for 150 to 350mm diameter tile and 1200mm for 400 to 900mm diameter tile.

All tile should be of good quality, free from distortions and cracks and shall meet the standards specified. The ends should be smooth and free from cracks or checks. All rejected tile are to be immediately removed from the site.

Granular backfill, where required, shall consist of approved sand or gravel having no particles retained on a screen having 50mm square openings.

Earth backfill shall consist of approved material having no large lumps or boulders.

400.15.2 Corrugated Plastic Tubing

Corrugated plastic tubing shall conform to the *Land Improvement Contractors of Ontario Standard Specification for Corrugated Plastic Drainage Tubing, 2006*. Type of material (solid or perforated) and need for filter sock will be specified on the Drawings or in the description of the work in the Special Provisions. Filter sock where specified shall be a standard synthetic filter material as provided by a recognized plastic tubing manufacturer unless noted differently on the contract drawings or elsewhere in the contract document. Protect coils of plastic tubing from damage and deformation.

400.15.3 Corrugated Steel Pipe

Corrugated Steel Pipe (CSP) shall be according to OPSS 1801 (CSA G401). Unless stated otherwise in the Special Provisions the pipe shall be:

- galvanized
- helical corrugation with lock seam and re-rolled annular ends
- 68mm x 13mm corrugation profile for diameters up to 1200mm
- 125mm x 25mm corrugation profile for diameters 1200mm and larger
- minimum wall thickness of 1.6mm for diameters up to 500mm
- minimum wall thickness of 2.0mm for diameters 600mm and larger
- joined using standard couplers matching the pipe diameter and material

Other coatings that may be specified include aluminized Type 2 or polymer. Polymer coating shall be a 254mm polymer film laminated to both sides of the pipe.

400.15.4 Plastic Pipe

Plastic Pipe shall be a high density polyethylene (HDPE) double wall corrugated pipe with smooth inner wall, solid with no perforations in accordance with OPSS 1840.

A minimum stiffness of 320 KPa at 5% deflection

The pipe shall be joined with snap-on or split couplers.

400.15.5 Concrete Sewer Pipe

Concrete sewer pipe shall be in accordance with OPSS 1820.

Non-reinforced concrete sewer pipe shall be used for pipe 375mm in diameter and smaller and reinforced concrete sewer pipe shall be used for pipe over 375mm.

Classes shall be as shown on the Contract Drawings or as described in the Form of Tender.

All new concrete sewer pipe shall have rubber-type gasket joints.

Where concrete sewer pipe “seconds” are specified, the pipe should exhibit no damage or cracks on the barrel section and shall be capable of satisfying the crushing strength requirements of OPSS 1820. The pipe may contain cracks or chips in the bell or spigot which prevent the use of rubber gaskets but the joints must be protected with filter cloth.

400.16 RIPRAP

All riprap is to be placed on a geotextile underlay (Terrafix 360R or equal) unless directed otherwise in the specific construction notes. The riprap is to be graded heavy angular stone (quarry stone is recommended) with particles averaging in size from 225mm to 300mm and is to be placed at 300mm thickness. Fine particles may be included to fill voids. Along upstream edges of riprap, where surface water will enter, underlay is to extend a minimum of 300mm upstream from riprap and then be keyed down a minimum of 300mm. Wherever riprap is placed, the area is to be over-dug so that finished top of riprap is at design cross-section, at design elevation or flush with existing ground.

400.17 GEOTEXTILE

To be non-woven fabric that is rot proof, non-biodegradable, chemically resistant to acidic or alkaline soils and is dimensionally stable under different hydraulic conditions. The filter fabric is to be a material whose primary function is to act as a highly permeable, non-clogging soil separator for fine soils (Terrafix 360R or equal). Contractor is to avail himself of manufacturer's recommendations for cutting, installation and precautions necessary to avoid damage to fabric. Other approved equals will be considered by the Engineer prior to construction.

400.18 DISPOSAL OF MATERIALS

The Contractor shall remove all surplus materials from the job site at the end of the project. The Contractor shall locate the disposal site for all materials to be disposed of. Disposal of materials shall comply with applicable regulations.

400.19 NOTIFICATION OF RAILROADS, ROAD AUTHORITIES AND UTILITIES

Contractor will notify any Railroad, Road Authority or Utility at least 48 hours in advance regarding work to be performed on their property or affecting their infrastructure. The notice will be in writing and is exclusive of Saturdays, Sundays and Holidays.

A utility includes any entity supplying the general public with necessaries or conveniences.

400.20 WORKING IN ROAD ALLOWANCES

400.20.1 General

Work within public road allowances shall be done in accordance with the Ontario Traffic Manual Book 7, latest edition.

400.20.2 Road Crossings

If no specific detail is provided for road crossings on the drawings or in the specifications the following shall apply:

- A Road Authority will supply no labour, equipment or materials for the construction of the road crossing.
- Contractor will not commence road crossing work until any required permits have been obtained. The Engineer may apply for any required permits prior to construction.
- Contractor will notify the Road Authority at least 72 hours in advance of any construction in the road allowance.
- Road crossings may be made with an open cut unless otherwise noted.
- Exact location of crossing shall be verified with the Road Authority and the Engineer.
- Pipe shall be placed on a minimum 150mm depth of Granular A shaped for the pipe.
- Pipe backfill shall be compacted Granular A and extend 300mm above the top of the pipe.
- Trench shall be backfilled with acceptable native material for the base width of the road bed.
- The material shall be placed in lifts not exceeding 300mm in depth and shall be thoroughly compacted with an approved mechanical vibrating compactor.
- Top 600mm of the road bed backfill shall consist of 450mm Granular B and 150mm of Granular A placed in lifts and fully compacted.
- Any surplus excavated material within the road allowance may be spread on the right-of-way with consent of the Road Superintendent otherwise the surplus material shall be hauled away.
- Existing asphalt or concrete pavement or surface treatment shall be replaced by the Contractor to the satisfaction of the Engineer and Road Authority.
- Contractor shall be responsible for correcting any backfill settlement during construction and during the warranty period. Upon approval of the road authority, surplus gravel shall be stockpiled near gravel road crossings to provide backfill for future trench settlement.
- All road crossings shall meet the approval of the Road Authority.
- If any road crossing is not left in a safe manner at the end of the working day barricades and warning signs shall be erected to guarantee the safety of the travelling public.
- If the Engineer deems a road to surface to have been damaged by the construction of a drain, either across or along the road, the Engineer may direct the Contractor to restore the road surface to existing or better condition at no additional cost.

400.20.3 Maintenance of Traffic

Unless directed otherwise on the drawings or in the specifications the Contractor shall keep the road open to traffic at all times. The Contractor shall provide suitable warning signs and/or flagging to the satisfaction of the Road Authority to notify of the construction work.

If a detour is required, the Contractor shall submit a proposal as to the details of the detour for approval by the Road Authority. If necessary to close the road to through traffic, the Contractor shall provide for and adequately sign the detour route. Contractor shall undertake all notifications required for a road closure in consultation with the Municipality.

400.21 LOCATIONS OF EXISTING UTILITIES

The position of pole lines, conduits, watermains, sewers and other underground and overhead utilities are not necessarily shown on the Contract Drawings, and, where shown, the accuracy of the position of such utilities and structures is not guaranteed. Before starting work, the Contractor shall have all utilities located in accordance with the Ontario Underground Infrastructure Notification System Act.

All utilities shall be exposed to the satisfaction of the utility company to verify that the construction proposed will not conflict with the utility structure. Additional payment will be allowed for relocation of utilities if conflicts should occur.

The Contractor is responsible for protecting all located and exposed utilities from damage during construction. The Contractor shall assume liability for damage caused to all properly located utilities.

400.22 LANEWAYS

If no specific detail is provided for laneway crossings on the Drawings or in the Specifications the following shall apply:

- Pipe backfill shall be acceptable native material that can be compacted in place.
- Top 450mm of laneway backfill shall consist of 300mm Granular B and 150mm of Granular A placed in lifts and fully compacted.
- Minimum cover on laneway culverts shall be 300mm.
- Existing asphalt or concrete pavement or surface treatment shall be replaced by the Contractor.
- The width of surface restoration shall match the existing laneway.
- Contractor shall be responsible for correcting any backfill settlement during construction and during the warranty period.

The timing of laneway closures will be coordinated by the Contractor to the satisfaction of the landowner.

400.23 EXISTING CROSSING CLEANOUT

Where the Special Provisions require an existing crossing to be cleaned, the Contractor shall provide a bottom width and depth that provides capacity equivalent to the capacity of the channel on either side. Excavated materials shall be hauled away unless adjacent landowners give permission for leveling. Care shall be taken to ensure that existing abutments or any portion of the structure are not damaged or undercut. The method of removing the material is to be pre-approved by the Engineer.

400.24 FENCES

If the Contractor is responsible to remove and install fences, the following shall apply:

- All fences removed by a Contractor are to be re-erected in as good a condition as existing materials permit.
- All fences shall be properly stretched and fastened. Where directed by the Engineer, additional steel posts shall be placed to adequately support a fence upon re-erection.
- Where practical and where required by the landowner, the Contractor shall take down an existing fence at the nearest anchor post and roll the fence back rather than cutting the fence and attempting to patch it.
- Where fence materials are in such poor condition that re-erection is not possible, the Contractor shall replace the fence using equivalent materials. Such fence material shall be approved by the Engineer and the landowner. Where the Engineer approves new fence material, additional payment will be provided.

Any fences paralleling an open drain, that are not line fences, that hinder the proper working of the excavating machinery for drain construction or maintenance shall be removed and rebuilt by the landowner at their own expense. If such parallel fences are line fences they shall be removed and reinstalled by the Contractor.

No excavated or cleared material shall be placed against fences.

The installation of all fences shall be done to the satisfaction of the Engineer and the landowner.

400.25 LIVESTOCK

If any construction will be within a fenced field containing livestock that are evident or have been made known to the Contractor, the Contractor shall notify the owner of the livestock 48 hours in advance of access into the field. Thereafter, the owner shall be responsible for the protection of the livestock in the field during construction and shall also be liable for any damage to or by the livestock.

Where the owner so directs or where the Contractor has failed to reach the owner, the Contractor shall adequately re-erect all fences at the end of each working day. No field containing livestock shall have a trench left open at the end of the working day, unless the trench has been adequately backfilled or protected. Failure of the Contractor to comply with this paragraph shall render the Contractor liable for any damage to or by the livestock.

Where livestock may be encountered on any property the Contractor shall notify the Engineer to arrange for inspection of the work prior to backfilling.

400.26 STANDING CROPS

The Contractor shall not be held responsible for damages to standing crops within the working area for the drain. However, the Contractor shall notify the owner of the crops 48 hours prior to commencement of construction so as to allow the owner an opportunity to harvest or salvage the crop within the drain working area. If this advance notice is not given the Contractor may be liable for the loss of the standing crops.

400.27 CLEARING VEGETATION

400.27.1 General
The area for clearing, if not defined elsewhere, shall be 15m on each side of the drain.

400.27.2 Trees to Remain
Where it is feasible to work around existing trees that do not impede the function of the drainage works, the Contractor shall not remove any deciduous tree larger than 300mm and any coniferous tree larger than 200mm, unless authorized by the Engineer.

400.27.3 Incidental Clearing
Incidental clearing includes removal of trees, brush or other vegetation with an excavator during construction activities, and the cost is to be included in the price for the related construction activity.

400.27.4 Power Brushing
Power brushing includes removal of above-ground vegetation with a rotary brush cutter or other mechanical means. Stump and root removal is not required. Power brushed vegetation in a channel cross-section shall be removed and leveled in the working area. Excavated material may be placed and leveled on power brushed vegetation.

400.27.5 Close-Cut Clearing
Close-cut clearing includes removal of above-ground vegetation cut flush with the ground. Stump and root removal is not required.

400.27.6 Clearing And Grubbing
Clearing and grubbing includes removal of vegetation, including stumps and roots. Removal of earth from the grubbed area into the windrows or piles is to be minimized.

400.27.7 Disposal of Cleared Vegetation

400.27.7.1 *In Bush Areas*

Cleared vegetation is to be pushed into windrows or piles at the edge of the cleared area. Stumps and roots are to be piled first at the edge of the cleared area, followed by other vegetation (trunks, branches, etc.). Provisions for lateral drainage are required through all windrows. Windrows are not to block any laneways or trails. After removing cleared vegetation, the working area shall be leveled to the satisfaction of the Engineer.

400.27.7.2 *In Field Areas*

Cleared vegetation resulting from incidental clearing or power brushing may be hauled away, mulched in place or reduced to a size that permits cultivation using conventional equipment without causing undue hardship on farm machinery.

Cleared vegetation resulting from close-cut clearing or clearing and grubbing is to be hauled away to an approved location. Disposal sites may be in bush areas or other approved locations on the same farm. No excavated material shall be levelled over any logs, brush or rubbish of any kind.

400.27.8 Landowner Requested Salvage

A landowner may request that wood be separated from the windrows for the landowner's future use. This additional work would be eligible for extra payment, subject to the approval of the Engineer. The cost of the additional work would be assessed to the landowner.

400.27.9 Clearing by Landowner

Wherever the Special Provisions indicate that clearing may be undertaken by the landowner, work by the landowner shall be in accordance with the Clearing Vegetation requirements of this specification and must be completed so as not to cause delay for the Contractor. If the landowner does not complete clearing in accordance with these requirements, the Contractor will undertake the clearing at a price approved by the Engineer.

400.28 ROCK REMOVAL

400.28.1 General

Rock shall be defined as bedrock and boulders that are greater than one-half cubic metre in size and that require blasting or hoe-ram removal. Bedrock or boulders that can be removed with a standard excavator bucket are not considered rock removal.

400.28.2 Blasting Requirements

All blasting shall be performed by a competent, qualified blaster in accordance with OPSS 120. Blasting mats are required. A pre-blast survey meeting the requirements of OPSS 120 must be completed for any structure within 200m of any blasting. The cost for pre-blast survey shall be included in the tender price for rock removal.

400.28.3 Typical Sections and Pay Limits

For tile drains and road culverts, rock shall be removed to 150mm below the proposed grade shown on the profile so that pipes are not in direct contact with rock. The width of rock removal shall be 1m minimum or the diameter of the pipe plus 600mm.

For open drains, rock removal shall match the proposed grade and bottom width shown on the Drawings. Side slopes shall be vertical or sloped outward. Side slopes shall be free of loose rock when excavation is completed.

Payment for the quantity of rock removed will be based on the typical sections described in these specifications and confirmed by field measurements. There will be no payment for overbreak.

400.28.4 Disposal of Rock
Excavated rock shall be piled at the edge of the working area at locations designated by the landowner. The cost to pile excavated rock shall be included in the tender price for rock removal. If the Special Provisions or the landowner require excavated rock to be hauled away, additional payment will be considered.

Where approved by the Engineer, excavated rock may be used in place of imported riprap.

400.29 SEEDING

400.29.1 General
Contractor responsible for re-seeding as necessary for uniform catch during warranty period.
Areas that remain grassed after construction may not need to be seeded unless directed otherwise by the Engineer.

400.29.2 Drainage Works and Road Allowances
All disturbed ditch banks, berms and road allowances are to be seeded at the end of the day.

The following seed mixture shall be applied at 60kg/ha using a mechanical (cyclone) spreader:

- 35% Creeping Red Fescue
- 25% Birdsfoot Trefoil
- 25% Kentucky Bluegrass
- 10% Cover Crop (Oats, Rye, Barley, Wheat)
- 5% White Clover

Provide temporary cover for late fall planting by adding an additional 10 kg/ha of rye or winter wheat.

400.29.3 Hydroseeding
Where hydroseeding is specified, disturbed areas will be restored by the uniform application of a standard roadside mix, fertilizer, mulch and water at a rate of 2,000 kg/ha and be in accordance with OPSS 804.

400.29.4 Seeding Lawns
Unless specified otherwise, lawn areas shall be seeded with Canada No. 1 lawn grass mixture applied at 300 kg/ha using a mechanical (cyclone) spreader on 100mm of topsoil. Fertilizer shall be 5:20:20 or 10:10:10 applied at 300 kg/ha. Seed and fertilizer shall be applied together. Contractor shall arrange for watering with landowners.

400.29.5 Sod
Where sod is specified, sod is to be commercial grade turfgrass nursery sod, Kentucky Bluegrass placed on 50mm of topsoil. Fertilizer shall be 5-20-20 applied at 10kg/ha. Place sod in accordance with supplier instructions. Contractor is responsible for saturating the sod with water on the day of sod placement. Subsequent watering is the responsibility of the landowner.

400.30 EROSION CONTROL BLANKETS

Erosion Control Blankets (ECB) shall be biodegradable and made of straw/coconut (Terrafix SC200, Nilex SC32 or equal) or coconut (Terrafix C200, Nilex C32 or equal) with photodegradable, double net construction. The blanket and the staples shall be supplied and installed as per OPSS 804.

Erosion control blanket shall be placed and stapled into position as per the manufacturer's installation instructions on slopes as directed by the Engineer. Blankets shall be installed in direct contact with the ground surface to form a uniform, cohesive mat over the seeded earth area. The blankets are to be single course with 150mm overlap between blankets and joints are to be staggered. The Contractor shall ensure that the ECB is anchored to the soil and that tenting of the ECB does not occur.

On slopes, when the ECB cannot be extended 1m beyond the crest of the slope, the uppermost edge of the ECB shall be anchored in a 150mm wide by 150mm deep trench. The trench shall be backfilled with earth and compacted.

400.31 SEDIMENT CONTROL

400.31.1 General

Contractor shall install sediment control features at the downstream limits of the project and at other locations as shown on the drawings or directed by the Engineer.

Sediment control features shall be installed prior to any excavation taking place upstream of that location. The Contractor shall maintain all sediment control features throughout construction and the warranty period.

Sediment that accumulates during construction shall be removed and levelled as required.

400.31.2 Flow Check Dams

400.31.2.1 *Temporary Straw Bale Flow Check Dam*

The straw bale flow check dam shall consist of a minimum of 3 bales. Each bale is to be embedded at least 150mm into the channel bottom and shall be anchored in place with 2 T-bar fence posts or 1.2m wooden stakes driven through the bale.

Straw bales shall be hauled away at the end of the warranty period. Accumulated sediments shall be excavated and levelled when the temporary straw bale flow check dam is removed.

400.31.2.2 *Temporary Rock Flow Check Dam*

The temporary rock flow check dam shall extend to the top of the banks so that dam overtopping does not cause bank erosion. Rock shall be embedded a minimum of 150mm into the ditch bottom and banks. No geotextile is required for temporary rock flow check dams.

Accumulated sediments shall be excavated and levelled when the temporary rock flow check dam is removed at the conclusion of the warranty period.

400.31.2.3 *Permanent Rock Flow Check Dam*

The requirements of temporary rock flow check dams shall apply except rock shall be placed on geotextile and the dam shall remain in place permanently.

400.31.3 Sediment Traps

400.31.3.1 *General*
The channel bottom shall be deepened in accordance with the dimensions provided in the Drawings or Special Provisions. If dimensions are not specified on the Drawings, the sediment trap shall be excavated within the channel cross-section at least 0.3m below the design grade.

The Contractor will monitor the sediment trap during construction and cleanout accumulated sediments as required to maintain the function of the sediment trap.

If specified to be temporary, no sediment trap maintenance is required after construction is complete.

If specified to be permanent, the contractor will clean out the sediment trap at the conclusion of the warranty period, unless directed otherwise by the Engineer.

400.31.3.2 *Sediment Trap with Flow Check Dam*
A permanent rock sediment trap shall include a permanent sediment trap and a rock flow check dam.

A temporary rock/straw sediment trap shall include a temporary sediment trap and a rock/straw flow check dam.

400.31.4 Turbidity Curtains
A turbidity curtain is required when there is permanent water level/flow and a sediment trap is not feasible.

Turbidity curtains shall be in accordance with OPSS 805 and installed per manufacturer's instructions.

Turbidity curtains shall be sized and anchored to ensure the bottom edge of the curtain is continuously in contact with the waterbody bed so that sediment passage from the enclosed area is prevented. The curtain must be free of tears and capable of passing the base flow from the drainage works. Turbidity curtain locations may be approved by the Engineer.

Turbidity curtains are to remain functional until work in the enclosed area is completed. Prior to relocating or removing turbidity curtains, accumulated sediment is to be removed from the drain and levelled.

Where a turbidity curtain remains in place for more than two weeks it shall be inspected for damage or clogging and replaced, repaired or cleaned as required.

400.31.5 Silt Fence
Silt fence shall be in accordance with OPSS 805.07.02.02 and OPSD 219.110 (light-duty).

400.32 GRASSED WATERWAYS AND OVERFLOW SWALES

Grassed waterways and overflow swales typically follow low ground along the historic flow route. The cross-section shall be saucer shaped with a nominal 1m bottom width, 8:1 side slopes and 300mm depth unless stated otherwise in the Special Provisions.

All grassed waterways are to be permanently vegetated. Grassed waterways shall be seeded with the following permanent seed mixture: 50% red fescue, 45% perennial ryegrass and 5% white clover, broadcast at 80 kg/ha. Fertilizer to be 7-7-7 applied at 80 kg/ha.
Provide temporary cover for late fall planting by adding an additional 10 kg/ha of rye or winter wheat.

Overflow swales may be cropped using conventional farming practice.

400.33 BUFFER STRIPS

Open drains shall include minimum 3m wide, permanently vegetated buffer strips on each side of the drain. Catchbasins shall include a minimum 1m radius, vegetated buffer strip around the catchbasin.

Cultivation of buffer strips using conventional farming practice may be undertaken, provided sediment transport into the drain is minimized.

400.34 MAINTENANCE CORRIDOR

The maintenance corridor along the route of the drain, as established in the report, shall be kept free of obstructions, ornamental vegetation and structures. When future maintenance is undertaken, the cost of removing such items from the corridor shall be assessed to the landowner.

400.35 POLLUTION

The Contractor shall keep their equipment in good repair. The Contractor or any landowner shall not spill or cause to flow any polluted material into the drain that is not acceptable to the MECP. The local MECP office and the Engineer shall be contacted if a polluted material enters the drain. The Contractor shall refill or repair equipment away from open water. If the Contractor causes a spill, the Contractor is responsible to clean-up the spill in accordance with MECP clean-up protocols.

400.36 SPECIES AT RISK

If a Contractor encounters a known Species At Risk designated by the MECP, MNRF or DFO, the Contractor shall notify the Engineer immediately and follow the Ministry's guidelines for work around the species.

410 STANDARD SPECIFICATIONS

FOR

OPEN DRAINS

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410.1 DESCRIPTION

Work under this item shall include the supply of labour, equipment and materials required for: channel excavation to the cross-section specified, leveling or disposal of all excavated material (spoil) as directed, reconstruction of all intercepted drains as required and any other items related to open drain construction as required by the Schedule of Tender Prices, Special Provisions or the Drawings.

410.2 MATERIALS

Refer to Section 400, Standard Specifications for Drain Construction for any materials required for open drain construction.

410.3 CONSTRUCTION

410.3.1 Excavation

The bottom width and the side slopes of the ditch shall be as shown on the profile drawing. If the channel cross-section is not specified in the Special Provisions it shall be a 1m bottom width with 1.5m horizontal to 1m vertical (1.5:1) bank slope. At locations along the drain where the specified side slopes change there shall be a transitional length of not less than 5m between the varying side slopes. At locations along the drain where the specified bottom width changes there shall be a transitional length of not less than 5m. In all cases there shall be a smooth transition between changes in any part of the channel cross-section. Where the bottom width of the existing ditch matches the specified bottom width, ditch excavation shall be completed without disturbing existing banks.

410.3.2 Low Flow Channels

Unless specified otherwise in the Special Provisions, all intermittent open drains with a bottom width greater than 1.8m and a grade less than 0.07%, shall have a low flow channel. The bottom of the low flow channel shall be the grade shown on the profiles.

The low flow channel shall have a U-shaped cross-section with an average top width of 0.5m and a minimum depth of 0.3m. The low flow channel will not be seeded and may meander along the main channel bottom provided it remains at least .3m from the toe of main channel bank slope.

410.3.3 Line

The drain shall be constructed according to the alignment shown on the drawings or shall follow the course of the existing ditch. All bends shall have a minimum inside radius of 2m. There shall be a smooth transition between changes in the channel alignment. The Contractor shall contact the Engineer before removing any bends or irregularities in an existing ditch.

410.3.4 Grade Control

The profile shows the grade line for the bottom of the ditch. Cuts may be shown on the profile from the existing top of bank and/or from the existing ditch bottom to the new ditch bottom. These cuts are shown for the convenience of the Contractor and are not recommended for quantity estimate or grade control. Accurate grade control must be maintained by the Contractor during ditch excavation. The ditch bottom elevation should be checked every 50 metres and compared to the elevation on the profile.

Benchmarks are identified on the Contract Drawings. The Engineer will confirm all benchmark elevations prior to construction.

410.3.5 Variation from Design Grade

A variation of greater than 25mm above the design grade line may require re-excavation. Excavation below design grade up to 150mm is recommended so that sediment accumulation during or following excavation will not place the ditch bottom above the design grade at completion. Under some circumstances the Engineer may direct that over excavation greater than 200mm will have to be backfilled. No additional payment will be made if backfilling is required to remedy over excavation.

410.3.6 Excavated Material

Excavated material (spoil) shall be deposited on either or both sides of the drain within the specified working area as directed in the Special Provisions. The Contractor shall verify the location for the spoil with each landowner before commencing work on their property. If not specified, spoil shall be placed on the low side of the ditch or opposite trees and fences. The spoil shall be placed a minimum 1m from the top of the bank. No excavated material shall be placed in tributary drains, depressions, or low areas such that water is trapped behind the spoil bank. Swales shall be provided through the leveled or piled spoil at approximately 60m intervals to prevent trapping water behind the spoil bank.

The excavated material shall be placed and leveled to a maximum depth of 250mm; unless otherwise instructed. If excavating more than 450mm topsoil shall be stripped, stockpiled separately and replaced over the leveled spoil, unless stated otherwise in the Special Provisions. The edge of the spoil bank furthest from the ditch shall be feathered down to existing ground. The edge of the spoil bank nearest the ditch shall have a maximum slope of 2:1. The material shall be leveled such that it may be cultivated with conventional equipment without causing undue hardship on farm machinery.

Wherever clearing is necessary prior to leveling, the Contractor shall remove all stumps and roots from the working area. No excavated material shall cover any logs, brush or rubbish of any kind. Large stones in the leveled spoil that are greater than 300mm in diameter shall be moved to the edge of the spoil bank nearest to the ditch but in general no closer than 1m to the top of bank.

Lateral channels that outlet into the drain shall be tapered over a distance of 10m to match the grade of drain excavation. No additional payment will be made for this work.

Where the elevation difference between the lateral channel and the drain is greater than 450mm, a rock chute or similar bank protection approved by the Engineer shall be provided. Additional payment may be allowed for this work.

Where it is specified to straighten any bends or irregularities in the alignment of the ditch or to relocate any portion of an existing ditch, the excavation from the new cut shall be used for backfilling the original ditch. Regardless of the distance between the new ditch and old ditch, no additional payment will be allowed for backfilling the existing ditch.

The Contractor shall contact the Engineer if a landowner indicates in writing that spoil on the owner's property does not need to be leveled. The Engineer may release the Contractor from the obligation to level the spoil and the Engineer shall determine the credit to be applied to the Contractor's payment. No additional compensation is provided to the owner if the spoil is not leveled.

The Engineer may require the Contractor to obtain written statements from any or all of the landowners affected by the leveling of the spoil. Final determination on whether or not the leveling of spoil meets the specification shall be made by the Engineer.

410.3.7 Excavation at Existing Bridge and Culvert Sites

The Contractor shall excavate the drain to the specified depth under all bridges and to the full width of the structure unless specified otherwise in the Special Provisions. All necessary care and precautions shall be taken to protect permanent structures. Temporary bridges may be removed and left on the bank of the drain. In cases where the design grade line falls below the top of footings, the Contractor shall take care to not over-excavate below the grade line. The Contractor shall notify the Engineer if excavation of the channel exposes the footings of the bridge or culvert, so the Engineer can make an evaluation.

The Contractor shall clean through all pipe culverts to the grade line and width specified on the profile. The Contractor shall immediately contact the Engineer after a culvert cleanout if it is found that the culvert bottom is above the grade line or where the structural integrity of the culvert is questionable.

Material resulting from cleanout through bridges or culverts shall be levelled on the adjacent private lands or hauled offsite at the expense of the bridge/culvert owner.

410.3.8 Bridges and Culverts

The size and material for any new ditch crossings shall be as outlined in the Special Provisions.

For culvert installation instructions, refer to the General Specifications for Drain Construction and the Drawings.

Any crossings assembled on-site shall be assembled in accordance with the manufacturer's specifications.

If directed on the drawings that the existing crossing is to be salvaged for the owner, the Contractor shall carefully remove the existing crossing and place it beside the ditch or haul to a location as specified by the owner. If the existing crossing is not to be saved then the Contractor shall remove and dispose of the existing crossing. Disposal by burying on-site must be approved by the Engineer and the owner.

All new pipe crossings shall be installed at the invert elevations as specified on the Drawings, usually a minimum of 50mm below design grade. If the ditch is over excavated greater than 200mm below design grade the Contractor shall confirm with the Engineer the elevations for installation of the new pipe crossing.

For backfill and surface restoration, refer to the General Specifications for Drain Construction and the Drawings.

Installation of private crossings during construction must be approved by the Engineer.

410.3.9 Obstructions

All trees, brush, fallen timber and debris shall be removed from the ditch cross-section and as required for spreading of the spoil. The roots shall be left in the banks if no bank excavation is required as part of the new channel excavation. In wooded or heavily overgrown areas all cleared material may be pushed into piles or rows along the edge of the cleared path and away from leveled spoil. All dead trees along either side of the drain that may impede the performance of the drain if allowed to remain and fall into the ditch, shall be removed and put in piles, unless directed otherwise by the Engineer.

410.3.10 Tile Outlets

The location of all existing tile outlets may not be shown on the profile for the drain. The Contractor shall contact each owner and ensure that all tile outlets are marked prior to commencing excavation on the owner's property. If a marked tile outlet or the tile upstream is damaged due to construction, it shall be replaced at the Contractor's expense. Additional payment will be allowed for the repair or replacement of any unmarked tile outlets encountered during excavation. In all cases, if an existing tile outlet requires replacement the Contractor shall confirm the replacement tile outlet with the Engineer. Where riprap protection exists at any existing tile outlet such protection shall be removed and replaced as necessary to protect the outlet after reconstruction of the channel.

If any tile outlet becomes plugged as a result of construction, the Contractor shall remove the obstruction.

410.3.11 Completion

At the time of final inspection, all work in the contract shall have the full dimensions and cross-sections specified.

420 **STANDARD SPECIFICATIONS**

FOR

TILE DRAINS

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420 STANDARD SPECIFICATIONS FOR TILE DRAINS

420.1 DESCRIPTION

Work under this specification will consist of supplying, hauling, laying and backfilling subsurface drainage conduit with the conduit materials as described on the Drawings and in the location, depth and invert grade as shown on the Drawings. In this specification the word "tile" will apply to all described conduit materials. Lengths are in millimeters (mm) and meters (m).

The work shall include the supplying of all labour, tools, equipment and extra materials required for the installation of the tile; the excavation and backfilling of the trenches; the hauling, handling, placing and compaction of the excavated material for backfill, the loading, hauling, handling and disposal of surplus excavation material; the removal and replacing of topsoil and sod where required by the Engineer.

All existing laterals crossed by the new line shall be reconnected in an approved manner. Either special manufactured connections shall be used or another method of sealing connections as approved by the Engineer. The Contractor shall also construct catchbasins, junction boxes and other structures where directed by the Engineer.

Except where complete removal of an existing pipe is required by new construction, existing pipes to be abandoned shall be sealed with a concrete or mortar plug with a minimum length of 300mm to the satisfaction of the Engineer.

Sections 6 and 7 of the current version of the *Drainage Guide for Ontario*, OMAFRA Publication 29 shall provide a general guide to all methods and materials to be used in the construction of tile drains except where superseded by this Contract.

The licensing requirements of the *Agricultural Tile Drainage Installation Act, 1990* will not be applicable to this Contract unless specified otherwise by this Contract.

420.2 MATERIALS

Refer to Section 400, Standard Specifications for Drain Construction for any materials required for tile drain construction.

420.3 CONSTRUCTION

420.3.1 Outlet

A tile drain outlet into a ditch or creek shall be protected using a 6m length of rigid pipe with a hinged grate for rodent protection. Maximum spacing between bars on the rodent grate shall be 50mm. Material for rigid pipe will be specified in the Special Provisions, plastic pipe is preferred. The joint between the rigid pipe and the tile drain shall be wrapped with filter fabric. All outlets will be protected with rock riprap to protect the bank cut and as a splash apron. In some locations riprap may also be required on the bank opposite the outlet. The quantity of riprap required will be specified in the Special Provisions. A marker stake as approved by the Engineer shall be placed at each tile outlet.

420.3.2 Line

The Engineer will designate the general location of the new drain. A landowner may indicate a revised location for the drain which must be approved by the Engineer. Where a change in alignment is required that is not accommodated in a catchbasin, junction box or similar structure the alignment change shall run on a curve with a radius not less than the minimum installation radius specified for the tile material.

The Contractor shall exercise care to not disturb any existing tile drains which parallel the course of the new drain, particularly where the new and existing tile act together to provide the necessary capacity. Where an existing tile is disturbed or damaged the Contractor shall perform the necessary correction or repair with no additional compensation.

NOTE: It is the Contractor's responsibility to ascertain the location of, and to contact the owners of all utility lines, pipes and cables in the vicinity of drain excavations. The Contractor shall be completely responsible for all damages incurred.

420.3.3 Grade Control

Tile is to be installed to the elevation and grade shown on the profiles. Accurate grade control must be maintained by the Contractor at all times during tile installation. The tile invert elevation should be checked every 50m and compared to the elevation on the profile.

Benchmarks are identified on the Contract Drawings. The Engineer will confirm all benchmark elevations prior to construction.

420.3.4 Variation from Design Grade

No reverse grade will be allowed. A small variation in grade can be tolerated where the actual capacity of the drain exceeds the required capacity. The constructed grade should be such that the drain will provide the capacity required for the drainage area. Constructed grade should not deviate from design grade by more than 10% of the internal diameter for more than 25m. Grade corrections shall be made gradually over a distance not less than 10m.

420.3.5 Installation

At each work stoppage, the exposed end of the tile shall be covered by a tight fitting board or metal plate. No installed tile shall be left exposed overnight. Any tile damaged or plugged during construction shall be replaced or repaired at the Contractor's expense.

Topsoil over the trench shall be stripped, stockpiled separately and replaced after the trench is backfilled. Where installation is across a residential lawn, existing sod over the trench shall be cut, lifted and replaced in a workmanlike manner or new sod laid to match pre-construction conditions.

420.3.5.1 Installation of Concrete Tile

Concrete tile shall be installed by a wheel trencher unless an alternate method of construction is noted on the Drawings.

Digging of the trench shall start at the outlet end and proceed upstream. The location and grade shall be as shown on Drawings but shall be liable to adjustment or change by the Engineer on site with no additional payment allowed except where the change involves increased depth of cut beyond the limitation of the wheel trencher in use at the time of the change. The trench width measured at the top of the tile should be at least 150mm greater than the tile diameter.

The bottom of the trench is to be cut accurately to grade and shaped so that the tile will be embedded in undisturbed soil or in a compacted bed at least for 10% of its overall height. Where hard shale, boulders or other unsuitable bedding material is encountered, the trench shall be excavated to 75mm below grade and backfilled with granular material compacted to a shaped, firm foundation. If the trench is overcut below the proposed grade, it is to be backfilled with granular material to the correct grade and compacted to a shaped, firm foundation.

Where the depth for the tile installation exceeds the depth capacity of the wheel trencher the Contractor shall excavate a trench of sufficient depth so that the wheel trencher can install the tile at the correct depth

and grade. The tender price shall include the cost of the additional excavation and backfilling and stripping and replacing topsoil over the trench.

The inside of the tile is to be kept clean during installation. All soil and debris should be removed before the next tile is laid. Maximum spacing at joints between tiles should be about 3mm. Directional changes can be made without fittings or structures provided the centre-line radius of the bend is not less than 15m radius. The tiles are to be beveled, if necessary, to ensure close joints on all bends.

All tile joints and connections with other pipe materials are to be fully and tightly wrapped with a minimum 300mm width of geotextile drain wrap. A 150mm overlap on top is required. No additional payment will be made for joint wrapping.

420.3.5.2 Installation of Corrugated Plastic Tubing

Corrugated plastic tubing shall be installed by a drainage plow or wheel trencher unless an alternate method of construction is specified on the Drawings. For other installation methods, proper bedding and backfill is required to maintain the structural integrity of the plastic tubing so that surface and earth loads do not deflect the tubing by more than 20% of its nominal diameter.

For all installation methods:

- the plastic tubing should not be stretched by more than 7% of its normal length
- protect tubing from floating off grade when installing in saturated soil conditions
- directional changes can be made without fittings provided the centre-line radius of the bend is not less than five times the tubing diameter

Drainage plow equipment should construct a smooth bottomed opening in the soil and maintain the opening until the tubing is properly installed. The size of the opening in the soil should conform closely to the outside diameter of the tubing.

420.3.5.3 Installation of Concrete Sewer Pipe or Plastic Pipe

The Contractor may install pipe using a wheel trencher. For concrete sewer pipe, the bells must be recessed.

The Contractor may install pipe using an excavator by shaping the bottom of the trench to receive and support the pipe over 10% of its diameter if the trench is backfilled with native material. Shaping the trench bottom is not required where 150mm of granular bedding is placed to the satisfaction of the engineer.

420.3.6 Backfilling

All tile should be blinded by the end of the day's work to protect and hold them in place against disturbances. After tile is inspected, it shall initially be backfilled with a minimum cover of 300mm.

For blinding and initial backfilling use clean native soil with no organic matter. Initial backfill shall be tamped around the pipe by backhoe bucket or similar if directed by the Engineer.

The tile shall be backfilled with native material such that there is a minimum cover of 600mm. In addition, a sufficient mound must be placed over the trench to ensure that no depression occurs after settling along the trench.

420.3.7 Tile Connections

All lateral drains encountered along the route of the new tile drain are to be connected to the new drain if the intercepted tile are clean and do not contain polluted water. Lateral drains that are full of sediments or contain polluted waters will be addressed by the Engineer at the time of construction. All lateral drains are to be connected to the new tile using a pipe material and size that will provide the same flow capacity as the existing lateral drain unless a different connection is described in the Special Provisions. Corrugated plastic tubing can be used for all tile connections. Tubing can be solid or perforated, filter sock is not required.

Contractor is responsible for installation and backfilling in a manner than maintains the structural integrity of the connection. Manufactured fittings should be used to ensure tight connections. Where an opening must be made in the new tile drain for a connection, the opening shall be field cut or cored. After the opening is cut in the new tile any gaps or voids around the connection shall be sealed with mortar, low-expanding spray foam or geotextile. Lateral tubing shall not protrude more than 25mm beyond the inside wall of the new tile drain. The Contractor shall ensure than any material used to seal the connection does not protrude beyond the inside wall of the new tile drain.

All connections that are described in the Special Provisions are considered to be part of the original Contract price. For all other connections the Contractor will be paid in accordance with the price established in the Schedule of Tender Prices. The Contractor must list all connections on the Lateral Connection Summary sheet, if included in the Special Provisions, in order to qualify for payment. The Lateral Connection Summary sheet describes all tile encountered based on location (station), side of trench, size and type of tile and approximate length and type of material used for the connection.

420.3.8 Stones and Rock

The Contractor shall immediately contact the Engineer if bedrock or stones of sufficient size and number are encountered such that installation by wheel trencher cannot continue. The Engineer may direct the Contractor to use some other method of excavation to install the tile. The basis of payment for such extra work shall be determined by the Engineer. Stones greater than 300mm in diameter that are removed during excavation shall be disposed of by the Contractor at an offsite location. No additional payment for excavating or hauling these stones will be provided.

420.3.9 Brush, Trees and Debris

Unless stated otherwise in the Special Provisions, the following requirements shall apply for installation of a tile drain in a wooded area. The Contractor will clear and grub a minimum corridor width of 30m centered on the tile drain alignment. The resulting debris shall be placed in a windrow along the edge of the working area. No additional payment will be made for such work.

420.3.10 Subsoil Instability

If poor subsoil conditions are encountered during tile installation by wheel trencher an attempt shall be made to install the tile with a continuous geotextile underlay in the trench bottom. The cost of the underlay, if approved by the Engineer, will be paid as an extra. If the continuous geotextile underlay is not sufficient then the tile will be installed by backhoe or excavator on a bedding of 19mm clear crushed stone (300mm depth) to achieve trench bottom stability for the new tile. If approved, the above work will be paid based on the unit price provided on the Form of Tender. The unit price shall include the cost to supply and place the stone. If more than 300mm depth of stone is required for bottom stability, additional payment will be allowed for the additional depth of stone. The additional quantity of stone shall be supported by weigh tickets and the suppliers invoice.

If poor subsoil conditions are encountered during tile installation by backhoe or excavator, the tile shall be installed on stone bedding as noted above. For this installation only the material cost of the stone will be paid as an extra. Supply of stone and cost to be supported by weigh tickets and supplier's invoice.

If the subsoil is a fine grained soil it may necessary to place the stone on a geotextile with the geotextile wrapped over the stone before laying the tile. Additional payment will be allowed to supply and install the geotextile.

420.3.11 Broken or Damaged Tile

The Contractor shall dispose of all damaged or broken tile and broken tile pieces off-site.

420.3.12 Excess Tile

All excess tile shall be removed from the job site.

420.3.13 Catchbasins

420.3.13.1 General

All catchbasins shall have minimum inside dimensions matching the dimensions shown on the Drawings. Contractor is responsible for ordering catchbasins to match the inlet and outlet connections and top elevations required by the Special Provisions and the Drawings.

420.3.13.2 Materials

Requirements in this section apply to catchbasins in non-travelled locations. Where catchbasins are proposed for travelled locations, refer to the Special Provisions and the Drawings for applicable OPSD information.

Precast concrete catchbasins shall be manufactured by as Coldstream Concrete or approved equal. Minimum wall thickness for catchbasins without reinforcement is 150mm and with reinforcement 100mm. The joints between precast catchbasin sections shall be protected with geotextile to prevent soil material from entering into the catchbasin. Joint protection using mortar or water tight barrier is also acceptable. Grates are to be birdcage grates as manufactured by Coldstream Concrete or approved equal unless specified otherwise on the Drawings. All grates to be secured with corrosion resistant hardware.

HDPE catchbasins shall be as fabricated by ADS, Armtec, Hancor or approved equal. Steel catchbasins shall be the Heavy Duty Steel Catch Basin as manufactured by AgriDrain or approved equal. PVC catchbasins shall be Nyloplast as manufactured by ADS or approved equal. HDPE, steel and PVC catchbasins shall be supplied with integral stubouts fabricated by the manufacturer and sized according to the pipe connections shown on the Drawings. Grates for HDPE, steel or PVC catchbasins shall be in accordance with the Special Provisions and manufacturer recommendations.

Marker stakes as supplied by Coldstream Concrete or equal are to be placed beside each catchbasin unless specified otherwise on the Drawings.

420.3.13.3 Installation

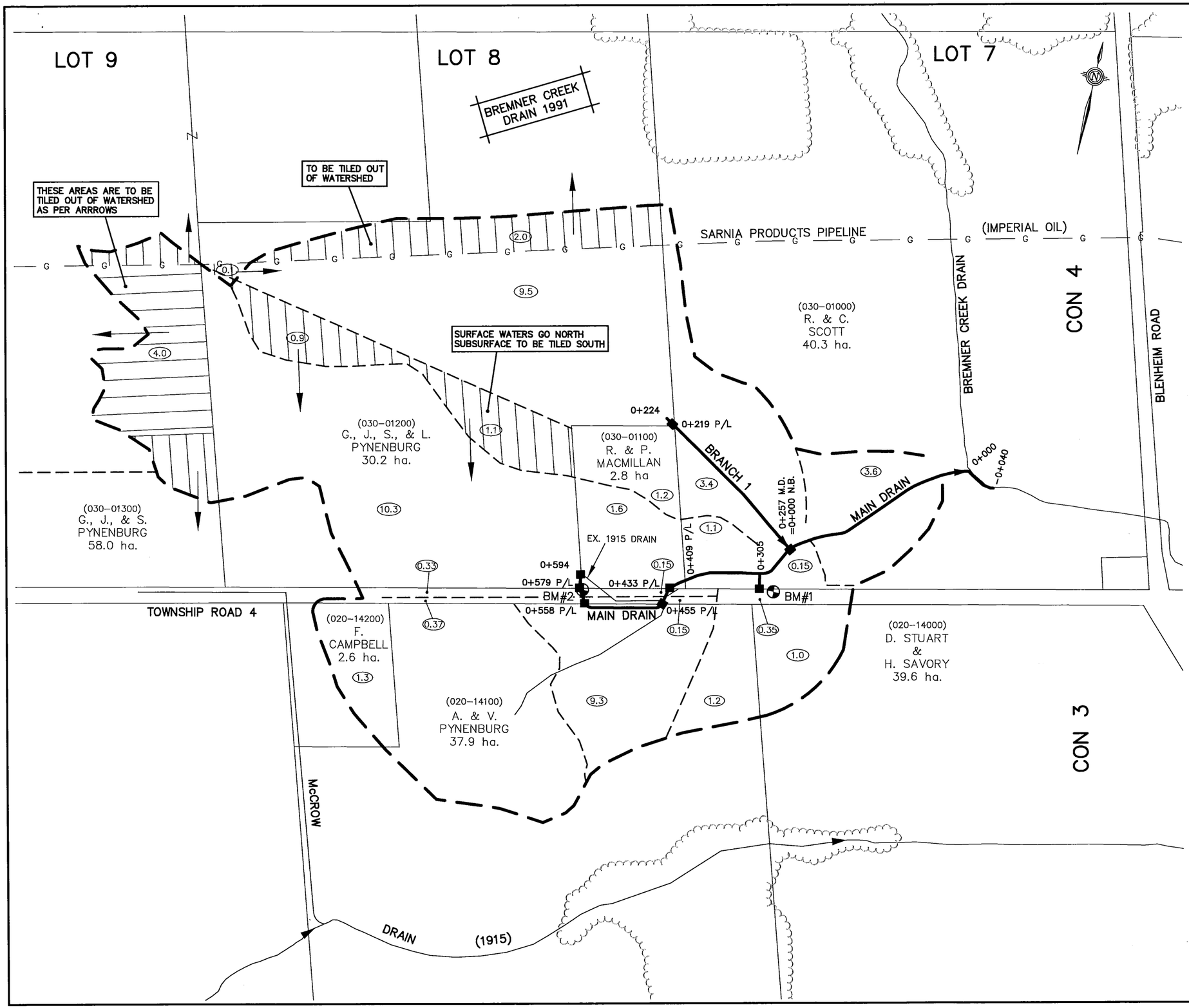
All tile or pipe connected to concrete catchbasins shall be mortared or secured in place so that no gaps remain at the connection. Mortar is to be applied on both the inside and outside wall surfaces.

Backfill around all new catchbasins is recommended to be 19mm clear crushed stone to avoid future settlements. The Contractor shall be responsible backfilling all settlement areas around catchbasins during the contract warranty period. No additional payment will be provided for adding backfill to settlement areas around catchbasins.

All catchbasin sumps to be fully cleaned by the Contractor after completion of drain installation and backfilling.

420.3.14 Junction Boxes

Junction boxes shall be precast concrete to the same specification as above for catchbasins except that the junction box shall have a solid lid. The lid shall be a minimum of 125mm thick with wire mesh reinforcement and 2 lifting handles. The top of the junction box should have a minimum ground cover of 450mm.



THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL BE INFORMED OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM

BENCHMARKS

BM#1
NAIL IN SW FACE OF HP #CD7GRK
NORTH SIDE TOWNSHIP ROAD 4
26m EAST OF 12"ø (300mm) ROAD CULVERT
ELEV. 280.406m

BM#2
NAIL IN SOUTH FACE OF CORNER FENCE POST
AT SW CORNER MacMILLAN FARM
NORTH SIDE OF ROAD AT JOG IN FENCE
ELEV. 283.230m

PLAN LEGEND

- — MAJOR WATERSHED
- — INTERMEDIATE WATERSHED
- — PROPOSED WORK
- Z — DENOTES PROPERTY OWNERSHIP ON BOTH SIDES OF LOT LINE
- (2.9) — APPROXIMATE HECTARES IN WATERSHED
- 5.2 ha. — HECTARES OWNED
- (020-14000) — ASSESSMENT ROLL NUMBER
- BM#1 — BENCHMARK LOCATION AND NUMBER
- — AREA TILED OR TO BE TILED IN THIS DIRECTION WHICH DIFFERS FROM SURFACE FLOW DIRECTION

GEOGRAPHIC TOWNSHIP OF BLENHEIM

DESIGNED BY:	C.J.M.
CHECKED BY:	K.A.S.
DRAWN BY:	N.M.B.
CHECKED BY:	K.A.S.

LICENSED PROFESSIONAL ENGINEER — K.A. SMART — 42394012 — PROVINCE OF ONTARIO

SCALE
0 50 100m
(1:5,000 ON 11"x17")

SCOTT DRAIN 2020

COUNTY OF OXFORD — TOWNSHIP OF BLANDFORD-BLENHEIM

WATERSHED PLAN — MAY 1, 2020

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER — SUDBURY

REVISED:
JOB NUMBER: 19-168
DRAWING 1 OF 12

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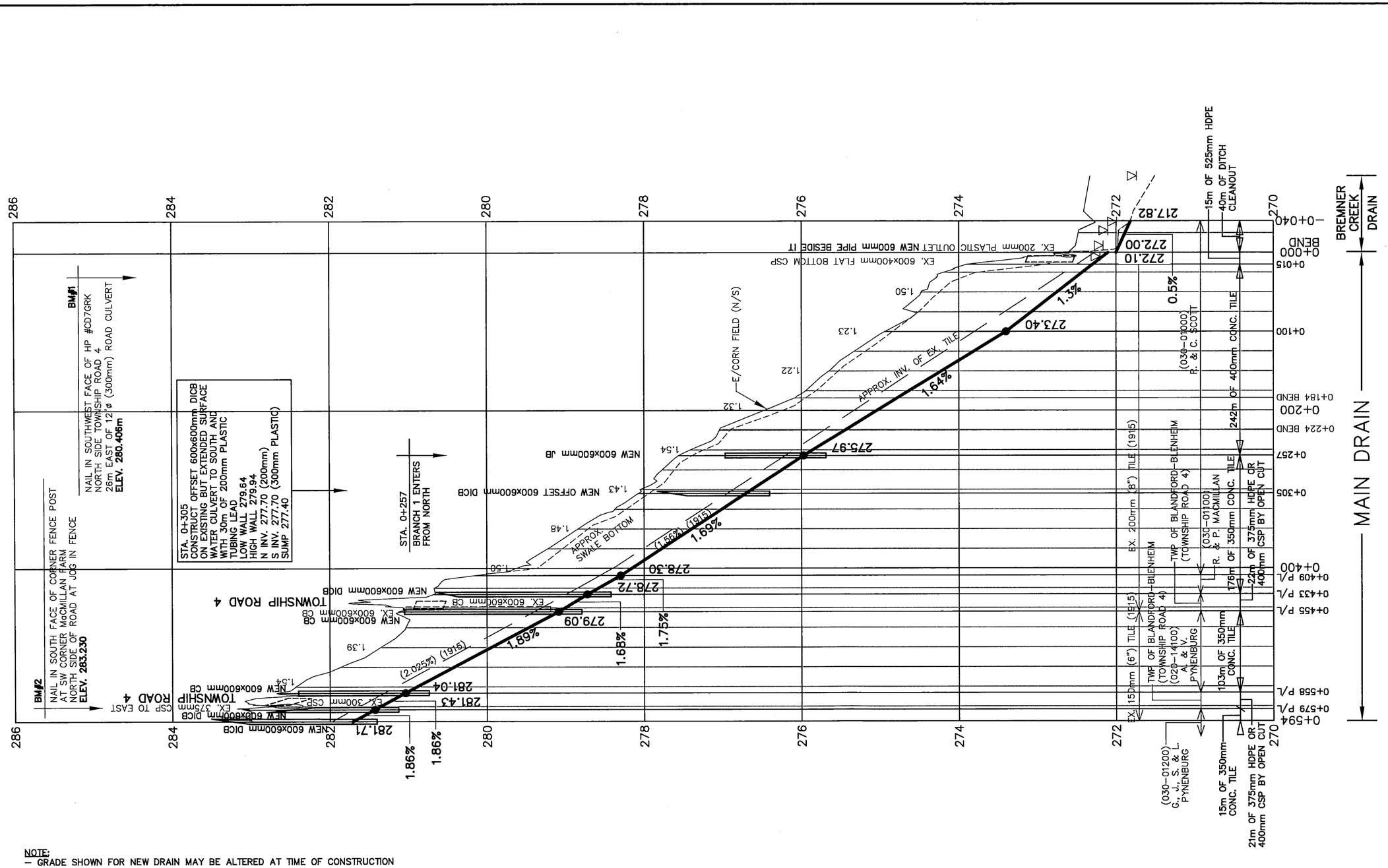


NOTE:
- GRADE SHOWN FOR NEW DRAIN MAY BE ALTERED AT TIME OF CONSTRUCTION TO ENSURE A MINIMUM OF 750mm OF COVER IS PROVIDED
- ANY GRADE CHANGE HAS TO MAINTAIN A 1% MINIMUM GRADE AND HAS TO BE 300mm MINIMUM LOWER THAN OLD DRAIN.

SCOTT DRAIN 2020

COUNTY OF OXFORD — TOWNSHIP OF BLANDFORD-BLENHEIM

MAIN DRAIN PROFILE

MAY 1, 2020

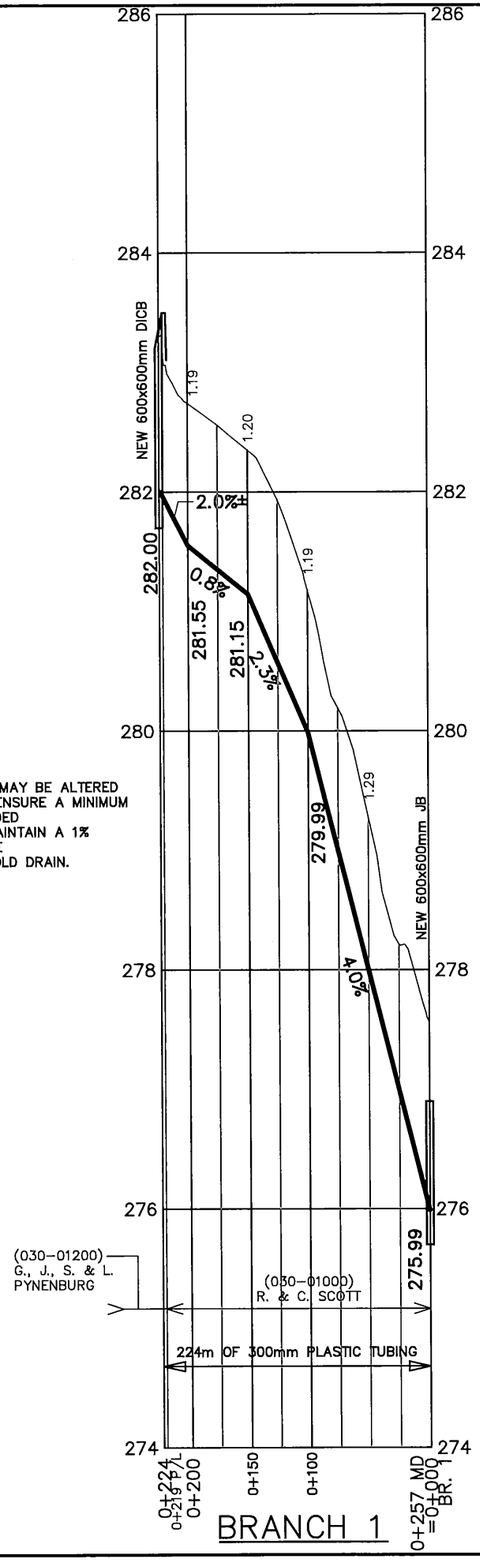
DESIGNED BY:	C.J.M.
CHECKED BY:	K.A.S.
DRAWN BY:	N.M.B.
CHECKED BY:	K.A.S.

LICENSED PROFESSIONAL ENGINEER — K.A. SMART — 22914012 — PROVINCE OF ONTARIO

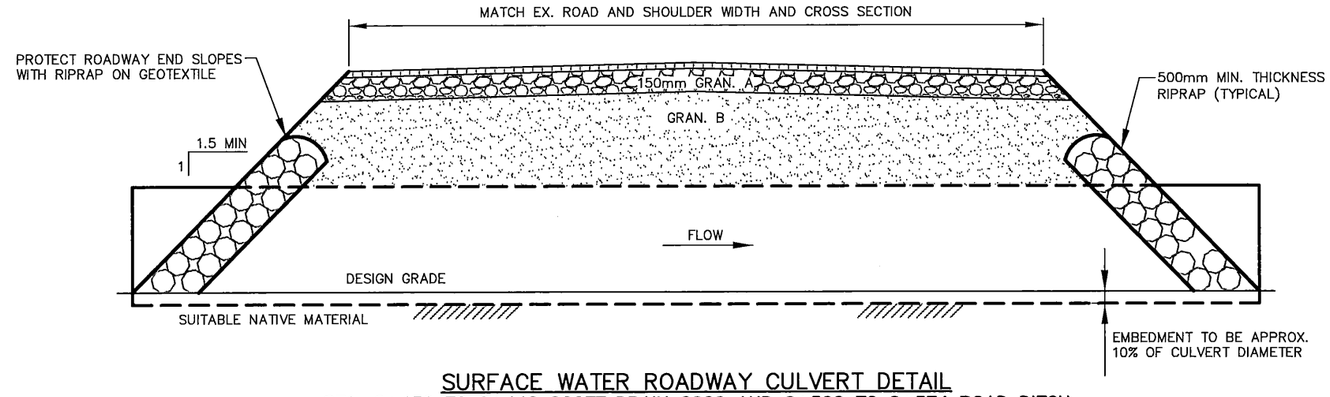
SCALE
0 50 100m
(SCALE 1 : 5000)
HORZ.
0 0.5 1m
(SCALE 1 : 50)
VERT.
(ON 11"x17")

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

REVISED:
JOB NUMBER: 19-168
DRAWING 2 OF 12

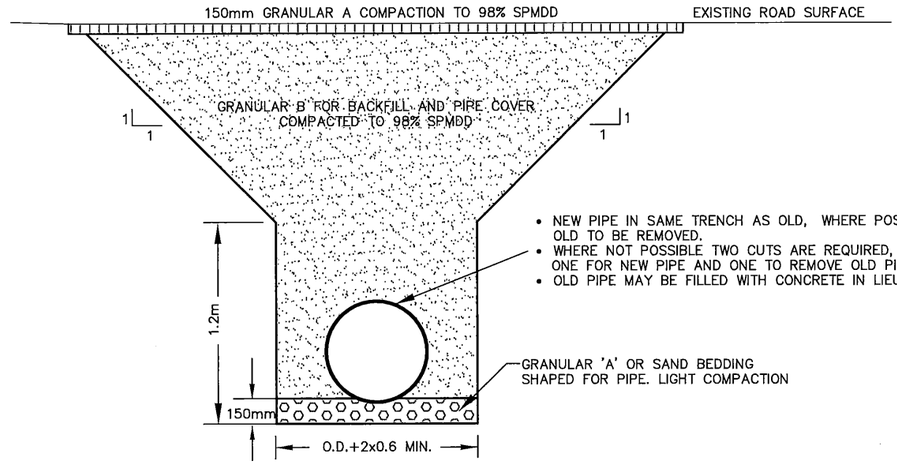


NOTE:
- GRADE SHOWN FOR NEW DRAIN MAY BE ALTERED AT TIME OF CONSTRUCTION TO ENSURE A MINIMUM OF 750mm OF COVER IS PROVIDED
- ANY GRADE CHANGE HAS TO MAINTAIN A 1% MINIMUM GRADE AND HAS TO BE 300mm MINIMUM LOWER THAN OLD DRAIN.



SURFACE WATER ROADWAY CULVERT DETAIL
STA. 0+436 TO 0+448 SCOTT DRAIN 2020 AND 0+502 TO 0+574 ROAD DITCH
N.T.S.

NOTE:
- GRANULAR MATERIAL TO BE COMPACTED TO 98% SPMDD WITH A MECHANICAL VIBRATORY COMPACTOR.
- END SLOPE GEOTEXTILE TO BE FITTED AROUND THE FULL CIRCUMFERENCE OF PIPE.
- NO ROCKS GREATER THAN 100mm DIAMETER SHALL BE USED FOR BACKFILL.
- THIS DETAIL APPLIES TO PIPE REMOVAL LOCATIONS ALSO EXCEPT NO RIPRAP REQUIRED



TRENCH DETAIL FOR ROAD CROSSING BY OPEN CUT (GRAVEL SURFACE)
N.T.S.

NOTES:
- ALL WORK TO BE IN ACCORDANCE WITH OPSS AND OPSD EXCEPT IF MODIFIED HEREIN
- NEW FROST TAPER NOT REQUIRED UNLESS REQUESTED AT TIME OF CONSTRUCTION. BLEND INTO ANY EXISTING TAPERS
- NEW FROST TAPERS IF REQUIRED ARE TO BE IN ACCORDANCE WITH OPSD 803.03 AND ADDITIONAL PAYMENT WILL BE ALLOWED
- ALL SURPLUS EXCAVATED MATERIAL TO BE HAULED AWAY
- OPEN CUT INSTALLATION METHOD WILL RESULT IN TEMPORARY ONE LANE ROAD CLOSURES. TRAFFIC CONTROL REQUIRED TO TOWNSHIP'S SATISFACTION.
- ALL UTILITIES MUST BE LOCATED BY THE CONTRACTOR
- REFER TO GENERAL AND/OR SPECIFIC CONSTRUCTION NOTES FOR CONFIRMATION OF PIPE TYPE, SIZE AND LENGTH
- TOPSOILS TO BE STRIPPED, SAVED AND REPLACED
- GRADING TO MATCH ADJACENT TO BE DONE
- ALL GREEN AREAS TO BE SEEDED
- THIS DETAIL TO BE USED ALSO FOR TRENCHES WHERE OLD PIPES ARE REMOVED

SCOTT DRAIN 2020

COUNTY OF OXFORD — TOWNSHIP OF BLANDFORD-BLENHEIM

DESIGNED BY: C.J.M.	
CHECKED BY: K.A.S.	
DRAWN BY: R.A.M.	
CHECKED BY: K.A.S.	

LICENSED PROFESSIONAL ENGINEER — K.A. SMART 42994012 — PROVINCE OF ONTARIO

SCALE
0 50 100m
(SCALE 1 : 5000)
HORZ.
0 0.5 1m
(SCALE 1 : 50)
VERT.
(ON 11"x17")

BRANCH 1 PROFILE & ROAD CROSSING DETAIL

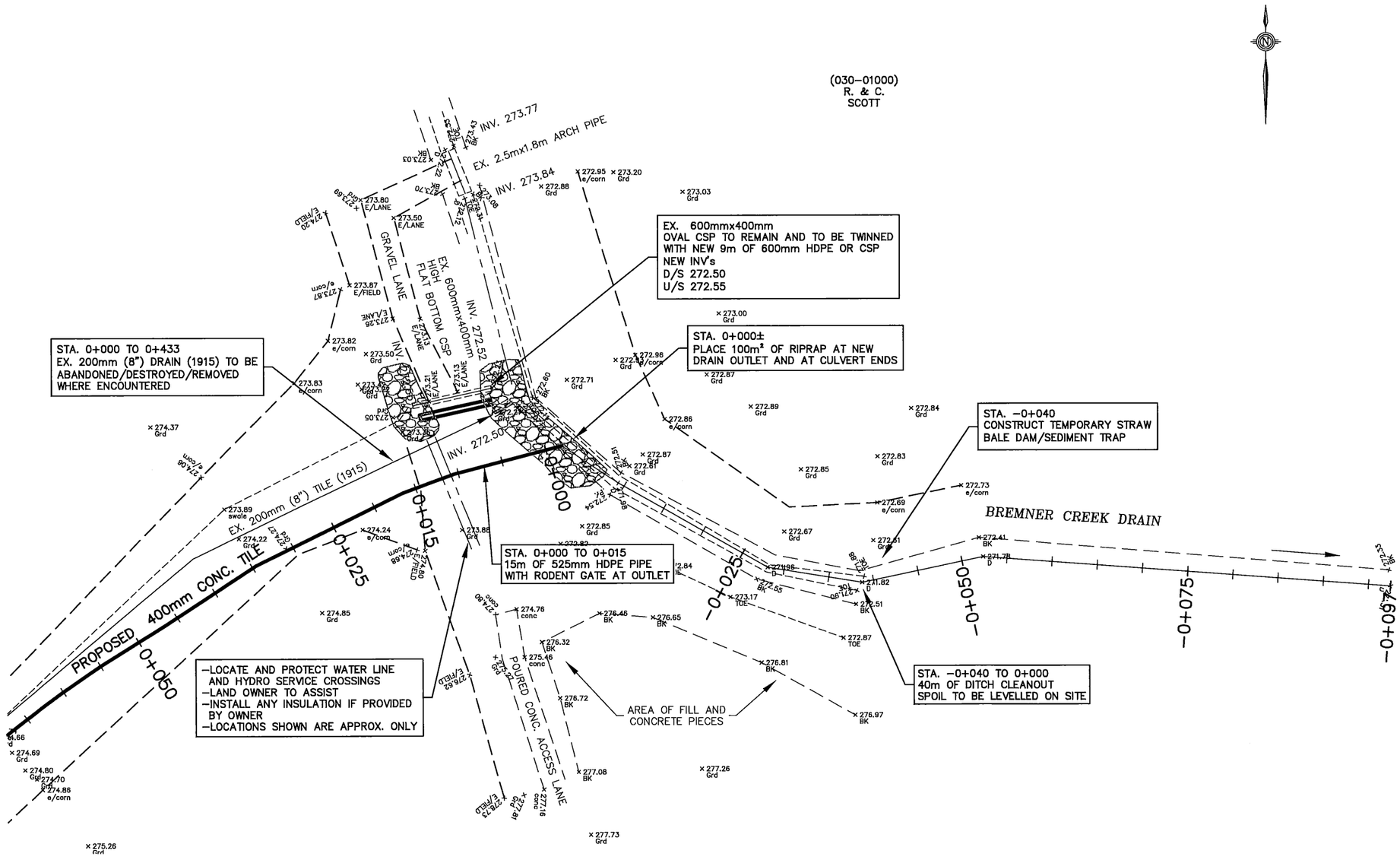
MAY 1, 2020

REVISED:

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER — SUDBURY

JOB NUMBER: 19-168

DRAWING 3 OF 12



DESIGNED BY:	C.J.M.
CHECKED BY:	K.A.S.
DRAWN BY:	N.M.B.
CHECKED BY:	K.A.S.

LICENSED PROFESSIONAL ENGINEER
K.A. SMART
42994012
PROVINCE OF ONTARIO

SCALE
0 5 10m
1:500
(ON 11"x17")

SCOTT DRAIN 2020

COUNTY OF OXFORD — TOWNSHIP OF BLANDFORD-BLENHEIM

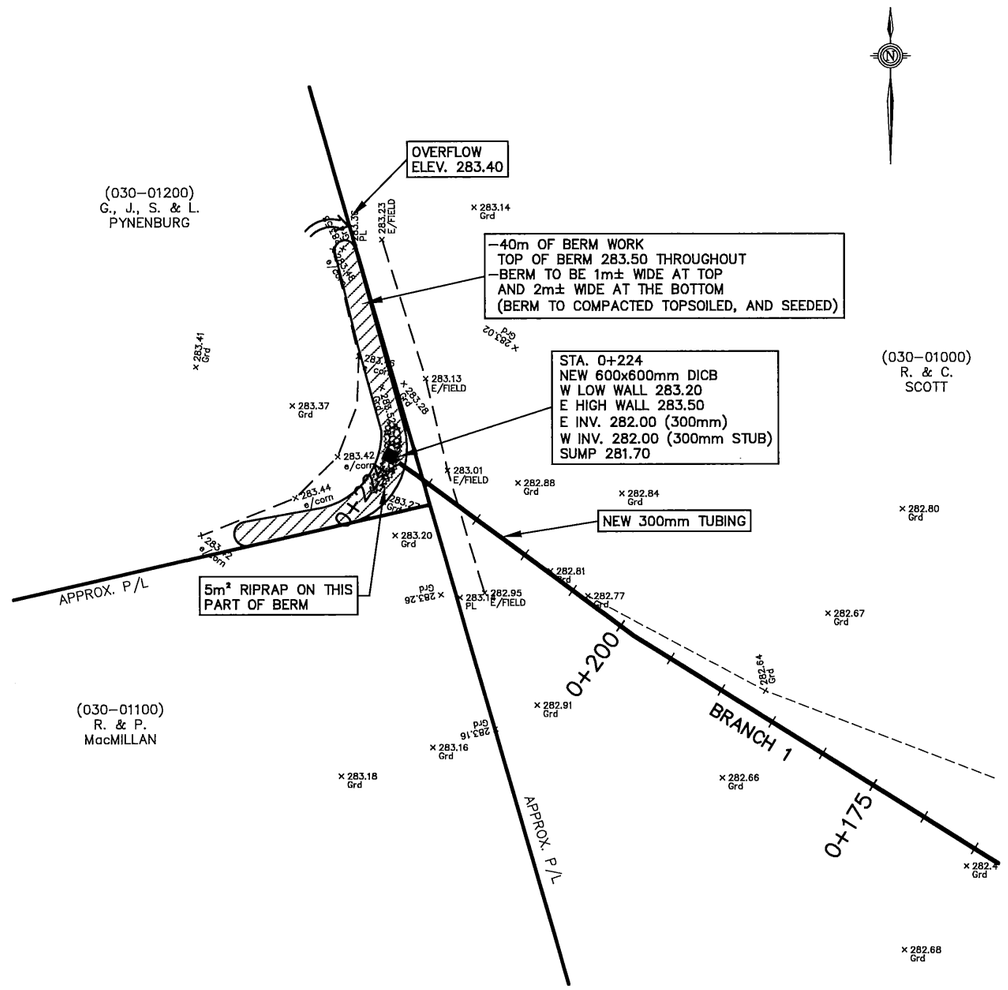
DETAIL MAIN DRAIN OUTLET

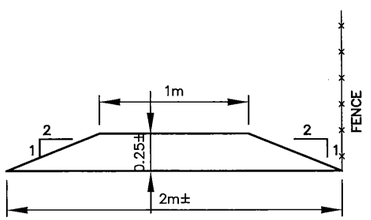
MAY 1, 2020

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER — SUDBURY

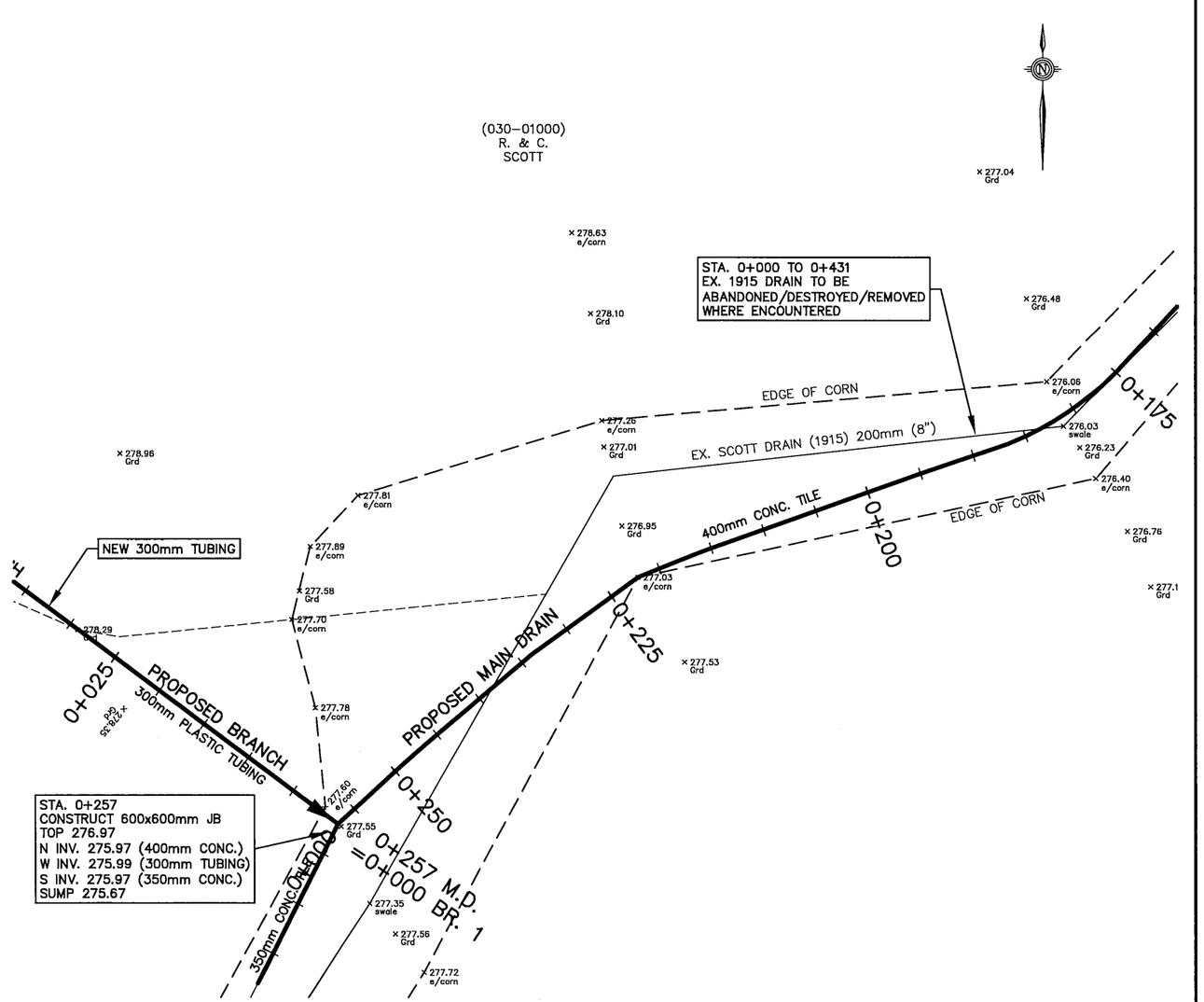
REVISED:
JOB NUMBER: 19-168
DRAWING
4 OF 12

\\server\ksdata\Data\2019\19-168\Drafting\PROFILES 19-168.dwg DETAIL MAIN DRAIN OUTLET 1-May-20 11:07:49 AM





TYPICAL BERM SECTION
SCALE 1:40



DESIGNED BY: C.J.M.	LICENSED PROFESSIONAL ENGINEER K.A. SMART 42994012 PROVINCE OF ONTARIO	SCALE 0 5 10m 1:500 (ON 11"x17")	**SCOTT DRAIN 2020** COUNTY OF OXFORD TOWNSHIP OF BLANDFORD–BLENHEIM
CHECKED BY: K.A.S.			**BRANCH 1 DETAILS** — MAY 1, 2020
DRAWN BY: N.M.B.			REVISED:
CHECKED BY: K.A.S.			JOB NUMBER: **19–168**
			DRAWING 5 OF 12

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

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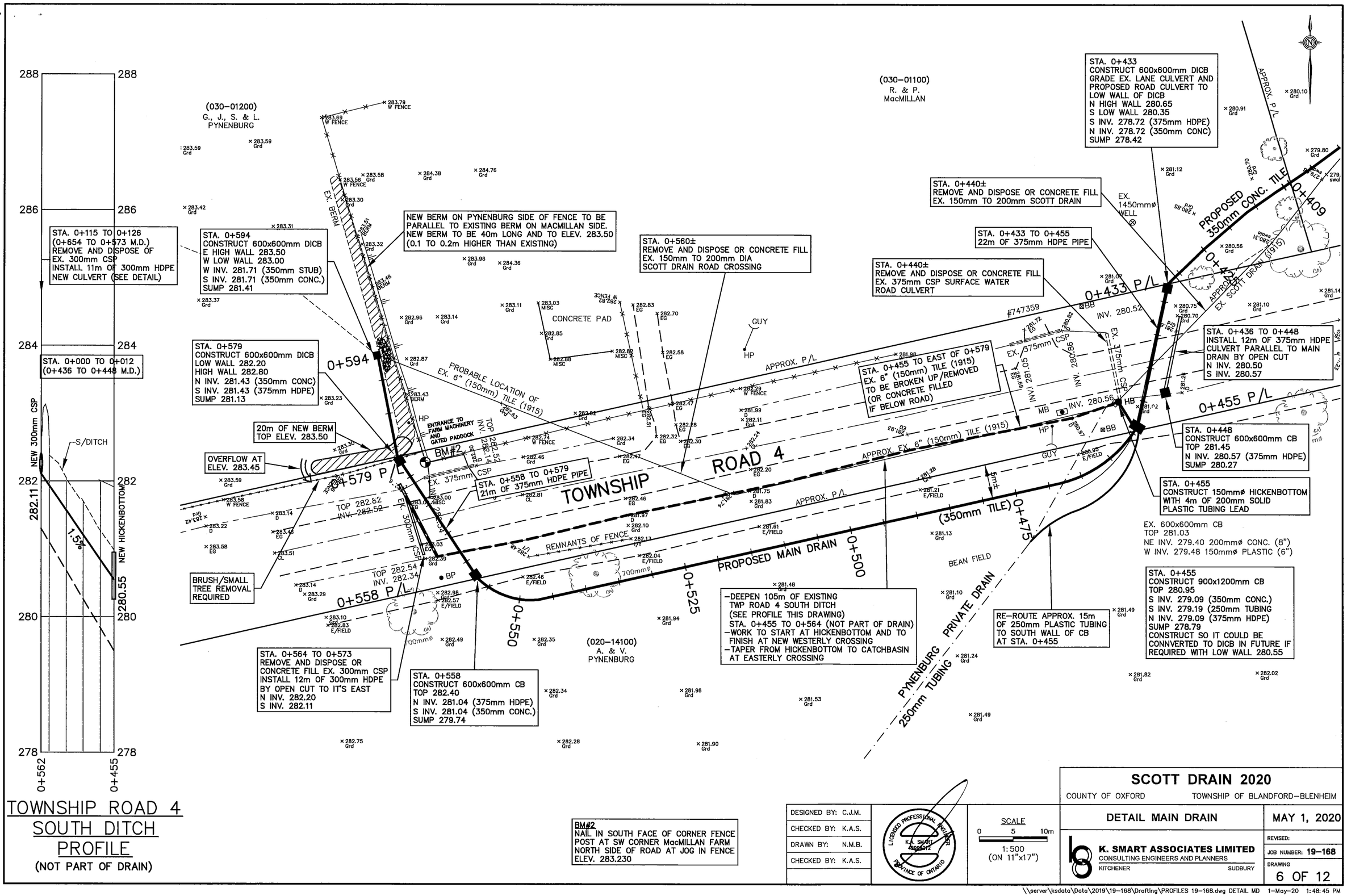

TOWNSHIP ROAD 4
SOUTH DITCH
PROFILE
(NOT PART OF DRAIN)

DESIGNED BY:	C.J.M.
CHECKED BY:	K.A.S.
DRAWN BY:	N.M.B.
CHECKED BY:	K.A.S.

LICENSED PROFESSIONAL ENGINEER
K.A. SMART
100012
PROVINCE OF ONTARIO

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(ON 11"x17")

SCOTT DRAIN 2020

COUNTY OF OXFORD — TOWNSHIP OF BLANDFORD-BLENHEIM

DETAIL MAIN DRAIN — MAY 1, 2020

REVISED:

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER — SUDBURY

JOB NUMBER: 19-168

DRAWING
6 OF 12

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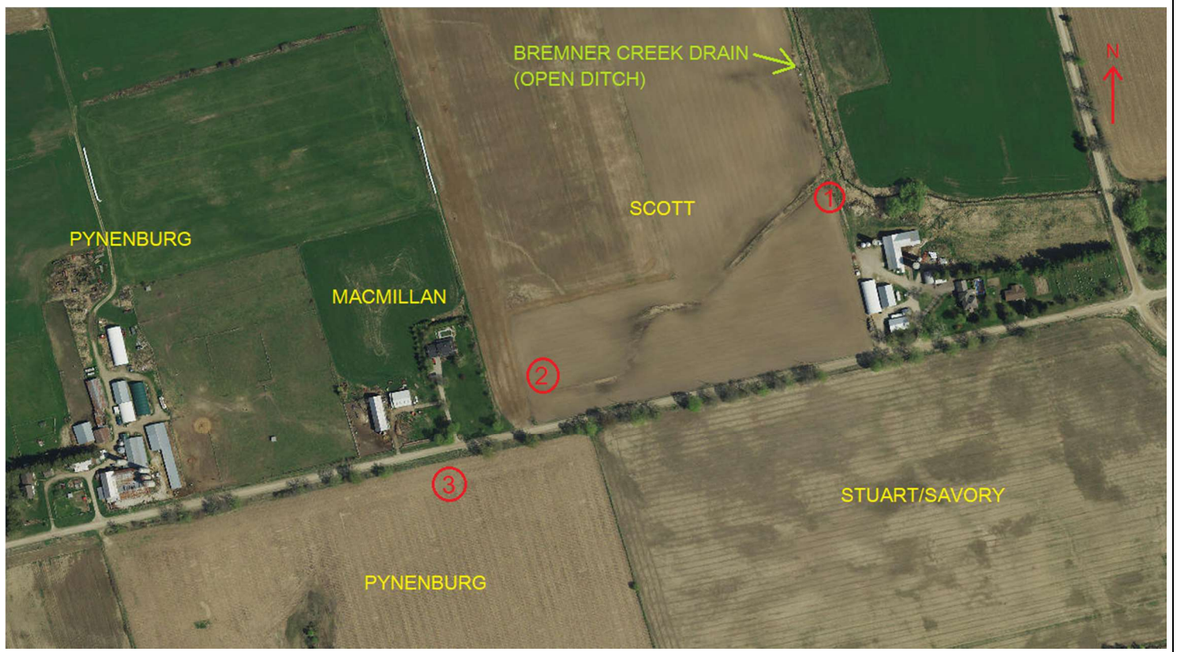
SCOTT DRAIN - TEST HOLE REPORT
TOWNSHIP OF BLANDFORD-BLENHEIM

LEGEND



TEST HOLE 1 – SCOTT FARM – PROPOSED TILE DRAIN OUTLET (STA. 0+025)

- No stones
- 0 – 1.4m: clay material
- 1.4 – 1.7m: saturated granular/gravel material (current ground water table)
- 1.7m+ : clay material

SCOTT DRAIN 2020
County of Oxford Township of Blandford-Blenheim
File No. 19-168 May 1, 2020
Drawing 7 of 12

TEST HOLE 2 – SCOTT FARM – (~STA. 0+375)

- No stones
- 0 – 1.5m: hard clay material
- 1.5m +: grey clay
- No water

TEST HOLE 3 – PYNENBURG FARM – (~STA. 0+500)

- Very few small stones
- 0 – 1.7m: sandy clay material
- No water

SCOTT DRAIN 2020

County of Oxford Township of Blandford-Blenheim

File No. 19-168 May 1, 2020

300) CONSTRUCTION NOTES (SPECIAL PROVISIONS)

300.1) SPECIFIC NOTES

TYPICAL NOTES FOR EACH NEW TILE LENGTH

i) Maintain all existing headers. Locate as part of old drain location work.
ii) Locate and destroy/break up old Scott Drain (1915) tile once paralleled by new drain (unless otherwise noted)
iii) Ensure any connections to the old drain are connected/outletted to the new drain.
iv) On straight runs, ensure tile joints are parallel (maximum 12mm (½") gap), and tile wrap is flat, covers joint evenly and has overlap.
v) On curved runs, ensure tile joints are touching on one side with maximum gap of 12mm (½") on opposite side. Bevel cut tile or use elbow sections where curves are greater. Tile wrap to be flat, cover joints evenly and have overlap.
vi) Notes re Pre-locates:
- Cross trenches to be dug along entire length of new drain route at 100 to 200m intervals prior to ordering tile and CB's so location of all tile (Municipal and headers) are known.
- One deep hole to be dug at each trench so probability of hitting stone or poor soil is further checked out. Strip and replace topsoils separately. Repair existing tile if damaged.

vii) Test holes done during design indicate very few stones will be encountered and that trench bottom conditions should be good throughout. As a result, tender prices for new tile are to be submitted for installation by tiling machine.
viii) If stones however are found after doing the tile locate work and/or at the time of installation, of such size and or at such depths, or if soft or unstable soils are found at invert grade, that make backhoe methods necessary vs tiling machine usage, the contingency rates (either with or without stone bedding) will be applied.
ix) There is also to be a contingency rate for "liftouts" of the tiling machine due to stones.
x) All connections to CB's to be mortared/parged.
xi) All intercepted lateral tile are to be flagged so the Engineer can GPS.

i) MAIN DRAIN

R. & C. Scott (Roll No. 030-01000)

-0+040 to 0+050 - See Detail on Drawing 4.

-0+040 - Construct temporary straw bale dam sediment trap in Bremner Creek. See cross-section. Bales to be double row and to be 3.5m± in width to span full ditch bottom width.

-0+040 to 0+000 - 40m of ditch cleanout (Bremner Creek Drain) (material to be levelled on site as directed).

-0+000 - Place 100m² of riprap on bank of Bremner Creek at new drain outlet and at laneway culvert location.

0+000 (the outlet) - Place 15m of 525mm (21") dia. HDPE pipe with rodent gate at new tile outlet.
- Also place new 9m of 600mm HDPE or aluminized CSP pipe beside existing lane culvert with lane restoration.

0+015± - Existing waterline and hydro line to be pre-located prior to construction. (Landowner will assist.) Protect both lines when installing tile. Insulation to be placed if provided by owner.

0+015 to 0+257 - 242m of 400mm (16") dia. concrete tile with joint wrap
- Remove/destroy old tile.
- Avoid placing new tile in very bottom of existing swale over most of length.

0+000 to 0+257 - Restore/regrade 257m of swale where required.

0+257 - Construct 600 x 600mm JB including connections.
- See Detail on Drawing 5

R. & C. Scott (Roll No. 030-01000) / R. & P. MacMillan (Roll No. 030-01100)

0+257 to 0+433 - 176m of 350mm (14") dia. concrete tile with joint wrap
- Remove/destroy old tile.
- The old tile on the MacMillan property may remain and be sealed at each end, if its location would require a separate trench to be dug on the lawn area.
- Avoid placing new tile in very bottom of existing swale over most of length.
- One small tree at MacMillan/Scott fence line to be removed off site
- Carefully restore lawn area on the MacMillan property by replacing and raking topsoils and then by hand seeding with residential seed.

0+257 to 0+409 - Restore/regrade 152m of swale where required.

0+305 - Construct offset 600 x 600mm DICB with birdcage grate on extended surface water culvert and with 3m² riprap protection. Use 350 x 200 x 350mm tee and 30m of 200mm solid tubing lead.
- Extend existing 300mm dia. surface water culvert by 1m± to new catchbasin.
- Use 300mm plastic tubing to drop culvert to catchbasin
- Regrade/fill existing road slope as necessary to blend
- Ensure a swale exists for overflow from catchbasin.

Township Road 4 (Township of Blandford-Blenheim)
(See Drawing 11 for other work here)

0+433 - Construct 600 x 600mm concrete DICB with birdcage grate and 3m² of riprap on filter cloth and including connections and including 20m± of road ditching (see detail).
- New catchbasin to be square to drain route.

0+433 to 0+455 - 22m of 375mm (15") dia. HDPE or 400mm (16") aluminized CSP pipe across Twp Rd 4 by open cut. Restore road with full granular backfill.
- Remove or concrete fill old crossing.*
- See Detail on Drawing 6.

0+455 - Construct 900 x 1200mm concrete CB with birdcage grate and 4m² of riprap apron on filter cloth and including connections and also construct offset 150mm hickenbottom and 4m of 200mm solid tubing lead.
- Also reroute 15m of existing 250mm tubing from the south to this CB (either existing or new materials may be used).
- Remove old CB and haul off site.
- New CB to be square to drain route.
- This new catchbasin is to be constructed so upper lift can be removed if necessary and a sloped top lift added to it with a low wall elevation of 280.55 and a high wall of 281.00

A. & V. Pynenburg (Roll No. 020-14100)

0+455 to 0+558 - 103m of 350mm (14") dia. concrete tile with joint wrap.
- Stay south of trees.
- See Detail on Drawing 6.

Township Road 4 (Township of Blandford-Blenheim)
(See Drawing 11 for other work here)

0+558 - Construct 600 x 600mm concrete CB with birdcage grate and 3m² of riprap on filter cloth and including connections
- New CB to be square to drain route.

0+558 to 0+579 - 21m of 375mm (15") dia. HDPE or 400mm (16") aluminized CSP pipe across Twp Road 4 by open cut. Restore road with full granular backfill.
- Remove or concrete fill old crossing.*
- See Detail on Drawing 6.

0+579 - Construct 600 x 600mm concrete DICB with birdcage grate and 3m² of riprap on filter cloth and including connections.
- New CB to be square to drain route.

G., J., S. & L. Pynenburg (Roll No. 030-01200) / R. & P. MacMillan (Roll No. 030-01100)

0+579 to 0+594± - 60m of new berm work (see Detail on Drawing 6) (40m± beside existing berm and 20m beside road fence). Brush/small tree removal required.
- All new berm work to be on Pynenburg side of fence.
- Existing berm on MacMillan side of fence to remain.
- See Detail on Drawing 6.

0+579 to 0+594± - 15m of 350mm (14") concrete tile with joint wrap.
- Old downstream tile in this length that would pass through the MacMillan property to be concrete sealed at fence line.
- Connect portion that comes in from upstream to new catchbasin.

0+594± - Construct 600 x 600mm concrete DICB with birdcage grate, 5m² of riprap on filter cloth, 350mm stub on west wall and including connections.
- The existing drain on the MacMillan property is to be videoed by the Township at the time of construction. If there are no drains joined to it, it is to be sealed at the road fence as well as at the Pynenburg fence. If there is any lateral joined to it, then there is to be a connection made to the new road crossing at additional payment.

Notes:

* *1. At these asterisked locations (see also next page), the Contractor may, if he wishes, excavate one wide area of road to remove both existing crossings and to install the two new crossings. All provisions re bedding and backfill will apply to the larger excavation (and at no additional payment).*
2. Also the Contractor may, if he wishes, fill one or both existing crossings with concrete provided such does not interfere with new crossing work (and at no additional cost).
3. Of course, the option exists to excavate separate trenches for all culvert work as per these specifications.

** *The location of the old drain in this interval is not known for sure (see next page). It has to be pre-located. If it is in a location that facilitates its breakup, the Engineer may direct such to be done as part of the contract. If however, it is in a location, e.g. below the road, that it should be concrete filled, then concrete filling as per these specifications is to be done with payment at the contingency rate.*

ii) TOWNSHIP ROAD 4 WORK
(Not Part of Drain for Future Maintenance) (See Detail and Profile on Drawing 6)
Township Road 4 (Township of Blandford-Blenheim)

0+436 to 0+448	- Remove and dispose of existing 9m of 375mm CSP road culvert.*
0+436 to 0+448	- Install 12m of 375mm dia. HDPE surface water pipe across road by open cut with 3m² riprap at each end and road restoration.* - See Detail on Drawing 6 for location.
0+448	- Construct 600 x 600mm concrete CB with birdcage grate on end of new road crossing.
0+455 to 0+564	- Clean/deepen bottom of 105m of south road ditch between hickenbottom and culvert and haul spoil to be used as berm material. - Reseed when done. - The existing 1915 drain is to be removed in this interval.**
0+564 to 0+573	- Install 12m of 375mm dia. HDPE surface water pipe across road by open cut with 3m² riprap at each end and road restoration. - Remove or concrete fill old crossing. - See Detail on Drawing 6 for location.

iii) BRANCH 1
R. & C. Scott (Roll No. 030-01000) / G., J., S. & L. Pynenburg (Roll No. 030-01200)

0+000 to 0+224	- 224m of 300mm (12") plastic tubing (slotted with sock) - Restore/regrade swale where required.
0+175 to 0+224	- See Detail on Drawing 5.
0+224	- Construct 600 x 600mm concrete DICB with 2:1 sloped top, birdcage grate and 5m² of riprap on filter cloth and including connections and one stub.
0+224	- 40m of berm work required on Pynenburg property

300.2) GENERAL NOTES

Working Area
- For work to install new tile drains, the average working area width is to be 25m.
- A 30m radius turn-around area for equipment is to be provided at each end.
- A 10m x 10m area is required at catchbasin locations.
- At berms, working width will be berm width plus 20m± average

Refer to Standard Specification for Construction of Drains, Section 400.4 for exceptions.

Access (Standard Specification for Construction of Drains, Section 400.5)
The Contractor shall have access to the drain along the routes shown on the plan. The access routes shall be along existing laneways or paths or where none exist, along a 6m wide (maximum) width. All specifications governing fences, livestock and crops during drain construction shall apply to access routes except where superseded by notes on the drawings. No other access routes shall be used unless first approved by the Engineer and affected landowner. The Contractor shall also contact each owner prior to using designated accesses.

Telephone numbers for contact are:
(32-45-020-)

020-14100	A. & V. Pynenburg	TO BE PROVIDED
030-01000	R. & C. Scott	AT TIME OF
030-01100	R. & P. MacMillan	CONSTRUCTION
030-01200	G., J., S. & L. Pynenburg	

Twp of Blandford-Blenheim (Jim Harmer, Drainage Supt) 519-463-5347

Engineer (K. Smart, P. Eng. (Ext 224), Naf Kulafofski (Ext 245) or Curtis MacIntyre (Ext 252) 519-748-1199

One Call Centre 1-800-400-2055

Tile Drain Work
Refer to Specific Notes and 420 – Standard Specifications for Tile Drains.

Concrete Tile Installation
New tile to be installed by tiling (wheel) machine. New tile to be heavy duty with strengths equal to average heavy duty tile strength required (ASTM C412, Table 3, Column 4).
Topsoils to be separately stripped and replaced to width of machine and width of spoil pile (see note below).
If backhoe methods are approved by engineer, the following shall be attended to: additional topsoils to be stripped and replaced, a shaped bottom to be provided and careful tamping around the tile is necessary. Final excavation to grade to be by hand and a shaped bottom to be provided. The Engineer may require a thin lift of stone bedding also as part of usage of backhoe. Laser grade control required.
Compaction of trench backfill is to be provided by bulldozers but with a minimum cover of 900mm prior to passage of dozer. To provide for future settlement the backfill is to (may) be left mounded over the trench. All mounds are to be smoothly graded at completion.
High density polyethylene tubing (HDPE pipe) (Big O Boss 2000, Series 210 or equal) may be substituted for main runs, but a written request for change must be submitted and be approved beforehand with conditions by the Engineer and Township. Unless soil or depth conditions require usage of HDPE pipe, no additional payment will be allowed.
Where approved and if installed by backhoe, the same provisions for HDPE pipe apply as for installing concrete tile by backhoe.
Bidders are to provide on the tender form, where indicated, the maximum shoe size and maximum trenching depth capabilities of the wheel machine proposed to be used on this project.

Joint Wrapping
The Contractor shall use a 400mm width of filter fabric (Mirafi 100 X or equal is suggested) to fully and tightly wrap all joints of all tile and of all pipe and tile junctions. A 150mm overlap on top is required. Filter is to be spread flat on the tile. No additional payment will be allowed for this joint wrapping. This width is also required on connections to existing drains.

Stripping Topsoil
Wherever tile are installed in a trench wider than 0.45m, topsoils are to be separately stripped, saved and replaced as part of the project over a 5m minimum width. If any of the spoil from the wheel trencher or backhoe would be discharged on existing topsoil outside of the 5m width, a greater width of topsoil is to be stripped so that no spoil materials are placed, even temporarily, on topsoils.
Also wherever excavated materials from any ditch cleanout are leveled on topsoiled and worked field areas, the topsoils are to be stripped in advance and then be leveled over the spoil once it is leveled.
To provide for some future consolidation, the backfilling may be left slightly mounded over the pipe prior to the placement of topsoil. All mounds are to be smoothly graded at completion.

High Density Polyethylene Pipe (HDPE) (Where Required)
HDPE pipe to be solid, Big O Boss 2000 (Series 320 below roads and in deep cuts, and Series 210 elsewhere) or equivalent except where noted. Joints are to be gasketed bell and spigot. Joints with concrete or steel pipe to be tight and to be wrapped with filter fabric. A shaped earth bedding will be sufficient except at road crossings. Topsoils are to be separately stripped and replaced if done by backhoe (similar to the 5m width for tile drain installation). To provide for some future consolidation, the backfilling may be left slightly mounded over the pipe prior to the placement of topsoil. All mounds are to be smoothly graded at completion.

Corrugated Steel Pipe
Corrugated Steel Pipe (CSP) shall be fabricated from steel coils with a hot-dipped aluminum coating for extended lifespan – Aluminized Steel Type 2 (Note: Polymer Coated finish may be required if specified). The pipe shall be helically corrugated for improved hydraulics, fabricated with a lock-seam and shall be supplied with re-rolled annular ends. If required, any individual pipe sections shall be coupled with aluminized 2 piece, similar wall thickness, annular corrugated standard bolt and angle couplers.

Aluminized CSP shall comply with the following standards/specifications: CSA G401 – 93 Corrugated Steel Pipe Products, ASTM A929 and A760, AASHTO Specification M274 and M36 and shall be to the diameters/length(s) indicated on the drawings. Unless otherwise specified, the CSP shall be supplied with a 68mm x 13mm corrugation profile for diameters up to 1000mm and a 125mm x 25mm corrugation profile for diameters 1200mm and larger. Unless otherwise specified, the CSP shall be supplied with a minimum wall thickness of 1.6mm for diameters up to 500mm and 2.0mm for diameters 600mm to 900mm and 2.8mm for diameters 1000mm and greater.

Polymer Coated CSP shall comply with ASTM A 762/762M and AASHTO M-246. The Polymer coating shall be laminated to the galvanized pipe, chemical resistant, acid resistant, more than 10mm thick. The contractor shall apply a supplier recommended compound over all ends and around any scratches made during installation and transport. The compound shall be applied 300mm around any places that the metal is exposed.

Tile Connections
The Contractor is to verify with each owner prior to starting, any systematic drainage scheme existing on each property and is to make provisions for connecting all headers and laterals.
All subsurface drainage tile encountered along the route of the proposed closed drain are to be connected up to the new drain if the intercepted tile are clean and do not contain polluted water. Tile which are full of sediments or which contain polluted waters are not to be connected. Any connections which are described in these notes (primarily at catchbasins) are to be included as part of the new tile work. Any connections not described will be paid at connection prices set out in tender. If additional material is required to make the connection, plastic tubing equal in diameter to the drain to be connected (if tubing) may be used. If the drain to be joined is smooth wall material one size larger tubing is required. Where it is evident that a new header drain would be less expensive and/or less disruptive, the Engineer may authorize a header rather than individual connections into the larger tile. This decision will be made on site once the extent of laterals to be intercepted is known. Headers will be paid at time and materials or at the amount evident if individual connections are made.
All tile connections are to be flagged by the Contractor so the Engineer can GPS the location for future reference. The payment for connections is to be as set out in the tender form.

Existing Drains

On this project wherever a new closed drain is proposed, an existing municipal drain may be in the same general location. The existing drain including any private header drains is (are) to be pre-exposed at the very start of the project and as per the following general note entitled "Pre-locating Existing Tile". The pre-exposing may be done by the Township in which case the payment prices will reflect such.

Where the existing drain is to remain as part of the Municipal drain system, the extent of work and profile drawings will so indicate.

Elsewhere, the existing drain where paralleled is to be removed/destroyed throughout once paralleled by the new drain.

Any existing private drains joined to an existing drain that is removed/destroyed are to be joined to the new drains. The Contractor is to flag all connections (formerly to the old drain) where they are connected to the new tile so the Engineer can GPS such. In order to ensure that all connections to a removed/destroyed drain are found, the old drain is to be exposed so connections to it are found. Desirably the new drain should be on the side where most connections to the existing are anticipated.

Where an old drain is being destroyed and/or removed but some sections are too far away from the new drain, the decision may be made to allow portions to remain. Where any part of an old drain is not removed/destroyed and is only cut off, it is to be joined on downstream side and capped on upstream side, as part of the work with connections paid at connections rate.

The connections and caps of the old drain where this work is done are also to be flagged so the Engineer can GPS.

Outlet Pipe

The outlet pipes specified in this report shall have rodent gates secured to them. The rodent gate shall be free moving and as supplied by Coldstream Concrete Products Ltd. or equal. The outlet pipe shall protrude no more than 1.0 metre from the bank and filter fabric and riprap shall be placed around and below the outlet pipe and into the channel bottom, with such riprap being set to be flush with the bank on either side. The discharge from the outlet pipe shall land on the riprap. Outlet pipes are to be a minimum of 6m in length and are to be desirably HDPE plastic pipe Series 210 with equal or larger diameter than the concrete tile. Corrugated steel pipe (2.0mm wall, 68x13mm corrugations) will also be accepted with minimum length of 6m and with sizes sufficient to envelope the tile. Lengths of HDPE or CSP to be supplied and used as necessary at tendered cost.

Catchbasins

All catchbasins are to be concrete and as supplied by Coldstream Concrete or equal. Backfill around all new catchbasins is recommended to be compacted 19mm clear crushed stone to avoid future settlements and Contractor obligations to repair such and to ensure connected tile has granular backfill.

All catchbasin sumps to be fully cleaned by the Contractor after completion of drain installation and backfilling.

Grates are to be birdcage grates as manufactured by Coldstream Concrete or approved equal. Grates are to be the full opening size of the catchbasin regardless of size. All grates to be secured with non-corrosive fasteners. Marker stakes as supplied by Coldstream Concrete or equal are to be placed beside each catchbasin.

Final locations of catchbasins to be set in field by or confirmed with Engineer prior to ordering or materials so required lift heights are obtained. Stubs to be provided in each catchbasin as per specific construction notes.

Once details of existing tile are known, and the Engineer is aware, the Engineer will provide elevations for catchbasin fabrication or will review the supplier's shop drawings. If the Contractor assumes responsibility of the location of existing tiles, the Engineer can provide these elevations prior to field investigations, but some alterations at construction may be necessary by the Contractor. Catchbasin details are included but as noted Contractor should confirm existing tile locations and elevations before using these details for catchbasin fabrication. Shop drawings for new CB's to be pre-approved by the Engineer.

All ditch inlet catchbasins are to have a small berm constructed at them.

If any catchbasins are cast-in-place, shop drawings of catchbasins and grates are also required. Shop drawings will have to show concrete reinforcement and full opening grate equal to or better than that of precast work by Coldstream or equal and that satisfies all OPSS specifications.

Where pre-locates are undertaken by the Township or Contractor, revised data for CB fabrication will be supplied by or checked by the Engineer as appropriate.

Hickenbottoms

Hickenbottoms shall be as supplied by Maaskant Bros. (Clinton) or equal. The diameters are to be as specified. The unit is to include an above ground pipe with 25mm dia. holes, a below ground pipe, a tee and a lateral connection pipe. The hickenbottom shall be given an outlet in the new drain. Hickenbottoms shall be staked in place using iron fence posts. The location of the hickenbottom shall be approved by the engineer. Installation shall be as per the supplier's directions. Grading to be done to direct surface waters to the inlet.

Junction Boxes

Junction boxes are to be as supplied by Coldstream Concrete Products Ltd. or equal. Backfill around all new junction boxes is recommended to be 19mm clear crushed stone to avoid future settlements and Contractor obligations to repair such. All junction box sumps to be fully cleaned by the Contractor after completion of drain installation and backfilling. Lids are to be concrete and as manufactured by Coldstream Concrete or approved equal. All connections are to be carefully and fully grouted. Lid edges are to be wrapped with filter fabric to prevent soil entry into the box.

Where it is determined at the time of construction that it will not be possible to obtain 600mm of cover over a concrete lid of a junction box, a decision may be made to use steel tread plate of thickness capable to withstand live and dead loads. A shop drawing for such steel tread plate will be necessary and is to be pre-approved by the Engineer. If additional costs result, such will be authorized for payment.

Removal of Existing Catchbasins

Where existing catchbasins are to be removed, they shall be carefully excavated and then hauled away for disposal at a site to be determined by the Contractor, regardless if the words "and disposal" are used when "removed" is specified. New tile or pipe or salvaged existing tile in good condition, if available from an adjacent excavation, shall be supplied to make the drain continuous where a new catchbasin is not to be installed or to join the existing tile to the new catchbasin. Crushed stone bedding from native ground to the invert shall be used. All joints shall be wrapped. Grade shall be continuous.

Fences

All existing fences are to be both removed and re-erected by Contractor to existing conditions or better unless described otherwise by notes on the drawings.

Refer to Standard Specifications for Construction of Drains, Section 400.24.

Any new fence shall be 9 strand page wire type at a height of 48" with 5" dia. (8' long) wood posts (cedar or pressure treated) and 1¼" (8' long) steel T-posts. Post spacing shall be 12' at a ratio of 2 steel posts / 1 wood post. Provide for barbed wire top strand (unless agreed otherwise).

Fencing to be as per Canada Plan Service leaflet 8365 on page wire fencing.

Livestock

Refer to Standard Specifications for Construction of Drains, Section 400.25 re livestock and fences.

Geotextile Fabric

To be non-woven fabric, rot proof, non-biodegradable, chemically resistant to acidic or alkaline soils, dimensionally stable under different hydraulic conditions and is to be a material whose primary function is a high permeable non-clogging soil separator for fine soils and is to be suitable for its intended use as joint wrap and/or catchbasin grate filter and/or underlay for riprap. Contractor is to avail himself of manufacturer's recommendations for installation, cutting and precautions necessary to avoid damage to fabric.

Filter fabric is available from:

Coldstream Concrete Ltd.
Ilderton, Ontario (519) 666-0604

Other approved equals will also be considered by the Engineer. Approval must be obtained prior to construction.

Riprap

All riprap is to be placed on a filter fabric underlay (Allied NW6 or Terrafix NW6 360R or equal is suggested) unless directed otherwise on drawings.

Along upstream edges of riprap, where surface water will enter, underlay is to extend a minimum of 300mm upstream from riprap and then be keyed down a minimum of 500mm (except where modified by specific notes). The riprap is to be graded angular heavy stone (quarry stone is required) with particles averaging in size from 225mm to 300mm and is to be placed to a 500mm thickness. All slopes for riprap are to be no steeper than 3:1 even if drawings indicate different.

Sufficient fine particles are to be included in riprap to fill voids. Wherever riprap is used, the area is to be overdug so that finished top of riprap is at design cross-section, at design elevation or flush with existing ground.

Where riprap is to convey upstream top waters to the ditch, it shall be placed as a saucer shaped rock chute with an extra 2 metre length at the top of the chute and a 3 metre splash pad at the bottom of the chute. The shape of the chute is to be approved by the engineer prior to completion.

Utilities

The Contractor shall arrange with all local utility companies (telephone, gas, hydro) to verify the location of all utilities within road allowances and on private lands. All utilities shall be exposed to the satisfaction of the utility company to verify that their elevations will not conflict with the construction of the drain at the specified elevations. Provisions for protection and relocation of utilities that conflict with the drain as designed will be determined at the time of construction.

Seeding of Non-Lawn Areas

For seeding use mechanical (cyclone) spreader (or approved equal) and the following shall apply:

Seed mixture to be applied at 60kg/ha and to be as follows:

i) Ditch banks
- 35% Creeping Red Fescue
- 25% Birdsfoot Trefoil
- 25% Kentucky Bluegrass
- 10% Cover Crop (Oats, Rye, Barley, Wheat)
- 5% White Clover

ii) Berms, Waterways (If Required)

Seed mixture shall be an approved mixture (Canada No. 1) suitable for waterway construction. Preapproval by the Engineer is required. Contractor shall arrange for watering new seed with owners. Contractor responsible for re-seeding as necessary for uniform catch during warranty period. Also to be in accordance with OPSD 572 (seeding and mulching).

Fertilizer to be 5:20:20 or 10:10:10 applied at 300 kg/ha.

Seed and fertilizer to be applied as soon as possible after excavation (the end of the day).

To provide temporary cover for late fall planting add as additional 10 kg/ha of rye or winter wheat.

Areas that remain grassed after excavation may not need to be seeded as directed by the Engineer.
Contractor responsible for additional seeding to provide uniform catch during one year maintenance period.

Seeding of Disturbed Green/Lawn Areas (Where Required – Including Road Right of Ways)
Seed mixture shall be an approved residential lawn mixture (Canada No. 1).
Contractor shall arrange for watering new seed with owners. Contractor responsible for re-seeding as necessary for uniform catch during warranty period. Also to be in accordance with OPSD 572 (seeding and mulching).
Topsoils shall be used and shall be a minimum of 100mm thickness clean with no lumps, be raked and then be seeded.

Open Cut Road Crossings (Township Roads)
The Road Authority is to be given 48 hours' notice of construction within their right-of-way. Proper detour signing in accordance with MTO signing manual to be used where roads are closed or restricted. If at all possible, one lane of traffic is to be maintained and traffic control with 2 flagmen will be necessary. Contractor is responsible to repair any settlement which occurs within warranty period. The location of the road crossing shall be confirmed with the Engineer and Road Authority prior to excavation. Invert elevations are evident on the drawings. The Trench Detail on the drawings and the special construction notes shall also apply. If the Road Authority requires granular rather than native material backfill where native is allowed on the Trench Detail, additional payment will be allowed. Where granular is shown to be required, such is to be included as part of the tender. All surplus materials are to be hauled away. In the boulevards, topsoils shall be separately stripped and replaced. Seeding is required. All backfill to be compacted to 98% S.P.D. Pipe materials are to be as noted in the specific construction notes. All catchbasins in road allowances are to be kept near outside edges of road allowance, except where it is evident from the drawings that the catchbasins should be in ditch areas.
All old crossings are to be located, removed and disposed of. If so noted, some may remain but are to be fully sealed with pumped concrete as part of the tender.

The following additional specifications apply for Road crossings:
1. Signing to be erected, if required, on the roadway at each crossing advising of construction work ahead. Signs can only be avoided if Road Authority agrees. Signs and layout pattern to be approved by the road authority. Speed zone signs are not necessary.
2. Payment is by lump sum.
3. Underground Bell (telephone) lines, gas lines, and/or Ontario Hydro will have to be located and protected, to be backfilled, compacted and restored to owner's satisfaction.
4. There are to be no overnight road closures.

Temporary Straw Bale Dam/Sediment Trap
Temporary straw bale dams/sediment traps shall be installed in any ditch prior to any excavation taking place upstream of that location. The trap may be straw bales unless rock is specified. The straw bale dam is to consist of a minimum of 2 rows of 3 bales each with 2 iron fence posts or 1.2m long wood stakes per bale are to be used. The straw bales are to be embedded 150mm.
The Contractor shall maintain the temporary straw bale dam/sediment trap during the course of construction and for up to one year after completion of the work. The sediment traps shall be temporary (one year) and shall stay in place over one winter (or for less time if the Engineer directs) and are to be removed and disposed of. Accumulated sediments shall be removed and leveled as well. As well, prior to leaving the project site, at the end of the construction year, any accumulated sediments shall be removed and leveled. The Contractor can choose to use rock for temporary sediment trap. If so, the note below applies.
The drawings or specifications may indicate the minimum width of each straw bale row.

Berm Construction (Where Required)
Berms shall be constructed or repaired as required. The work shall involve stripping of topsoils where required, placement of excavated materials from the job site, compaction of such in 300mm lifts, grading such to the section required by the specifications or drawings and then topsoils shall be placed or replaced on such and shall be graded and then shall be seeded.
Other provisions that apply with respect to clearing and grubbing and attendance to landscaping features shall be attended to for berm construction.
On this project, berm work is noted on the detail drawings and specifications.

Pre-Locate Existing Tile
Prior to stringing tile, making repairs or placing catchbasins, all existing drains must be pre-located as required. Also, the Contractor is to review any systematic tile plans that are available (contact the Engineer, landowner or Township Drainage Superintendent). As well, the Contractor shall review the proposed alignment with the Engineer and landowner after above reviews are completed. In areas of pre-location, topsoils shall be separately stripped and replaced. The frequency of pre-locating will depend on the alignment of the existing drains. More pre-locates will be necessary in a meandering route than in a route that is consistently straight. Generally locates (cross trenches) to be dug at 100 to 200m intervals are necessary. One pre-locate minimum per property is to extend to just below new tile grade to further check for stoniness and soft soils. As noted above, if the Township does the pre-locates, contractors will be advised at time of tendering.

Concrete Filling Old Drains
Where the Contractor chooses to concrete fill an old road crossing rather than to remove it by excavation and with granular backfill (and at no additional compensation) or where the Engineer directs an old drain (at locations other than at road crossings) to be filled with concrete (here with additional compensation as per the contingency rate), the work is to be done as follows:

1. Work is to be done by a concrete pumper truck and using a 30 MPa cementitious grout (1:1 cement sand mixture) or approved equivalent.
2. The downstream end of any drain to be filled is to be sealed/plugged first.
3. Then the hose from the pumper truck is to be fed into the old drain from the upper end of the drain to be filled down to the lower end.
4. Then the concrete is to be pumped into the old drain as the hose is withdrawn.
5. After the hose is removed, the upper end of the old drain is to be sealed.
6. It will be the Contractor's decision whether to fill the full length at one time or whether to do the filling in sub-lengths, but the full length specified is to be filled.
7. Where the length to be filled is not a road crossing but is a length directed to be filled by the Engineer, payment will be made at the contingency rate in the contract.
8. The Contractor may suggest an alternate method for the Engineer's review and possible approval for filling with concrete.

Soil Instability
The test holes on this project dug by the Township during design did not identify any areas of unstable soils. (Some moisture was encountered in the hole near the outlet.) Further test holes may be dug during the tendering period to confirm such. If unstable soil conditions, such as wet saturated sands, are still encountered, an attempt shall be made to install the drain with a continuous filter underlay in the trench (in addition to the joint wrapping). The cost of the underlay will be paid at the unit price evident from the form of tender or as negotiated. If the continuous underlay is not sufficient, use of a clear crushed stone bedding may be necessary. If approved, the work will be paid at the contingency unit price evident from the form of tender. The unit price shall include the costs of any additional topsoil stripping and replacing, and supply and placement of stone if a trenching machine is being used when unstable bottom conditions are encountered. The contingency price is for the increased costs and is based on supplying and installing stone to a 300mm maximum thickness and to a 900 to 1200mm maximum width (depending on tile size) plus wrapping the stone with filter where directed plus the extra digging and backfilling costs. If a backhoe is in use, then only the material cost of the stone will be paid as an extra (all stone costs to be supported by weigh tickets and supplier's invoice). Stone depths and widths may be reduced if soil conditions permit such in the Engineer's opinion. If the decision is made to wrap the stone bedding in filter, the costs of the filter plus 100% more for labour will be paid. Invoices to justify the cost of filter will be necessary.
This contingency price is also to apply for work in muck soils if encountered. If HDPE is required in lieu of concrete tile in muck soils, additional payment will be made for the difference in material costs as per supplier's invoices. Also if less stone is required, a reduction will be made based on difference of material costs.
The drawings indicate where test holes were done. Also photos of the soils encountered are shown on Drawings 7 and 8.

Review of Drain with Landowners and Township Prior to Start-up
The drain is to be walked by the Contractor, Township and Engineer (or his assistant) and each landowner prior to construction. It is expected that different portions will be examined at different times. The Contractor shall give the Engineer, Township and landowners at least one week notice of the time that the review may be undertaken. Should the Engineer or Township wish to be present they may so attend. Any difference of opinion as to the work to be done shall be referred to the Engineer for decision. If the landowner is not contacted for such review, he is to advise the Engineer and/or Township.

Sign-Off Letters at End of Construction
The Contractor shall, at the end of construction, obtain from each landowner a statement indicating that the work has been performed to the landowner's satisfaction. If the Contractor is unable to get such letter from the landowner, the Engineer will determine if further work is required prior to releasing the Contractor from the work without the landowner's letter.

As an alternate, at the Engineer's discretion, if the landowner attends a post-construction meeting and/or speaks to the Engineer prior to the post-construction meeting, the written sign-off requirement may be waived.

Pre and Post Construction Meetings
The Contractor is required to attend a pre- and post- construction site meeting with the Engineer, landowners and Township before starting and after finishing the work.

APPENDIX C - ESTIMATED NET ASSESSMENTS
SCOTT DRAIN 2020
TOWNSHIP OF BLANDFORD-BLENHEIM

	Con	Lot	Roll No.	Owner	Ha. Affected	Gross Assessment ($)	1/3 Grant ($)	Allowance ($)	Net Assessment ($)
			(32-45-020-)						
F	3	Pt N½ 7	020-14000	D. Stuart & J. Savory	1.00	945	315	-	630
F	3	Pt N½ 8	020-14100	A. & V. Pynenburg	10.50	25,153	8,384	3,150	13,619
F	3	Pt N½ 8	020-14200	F. Campbell	1.30	1,505	502	-	1,003
F	4	S½ 7	030-01000	R. & C. Scott	8.10	29,664	9,888	4,900	14,876
F	4	Pt S½ 8	030-01100	R. & P. MacMillan	2.80	7,734	2,578	400	4,756
F	4	Pt S½ 8	030-01200	G., J., S. & L. Pynenburg	23.80	59,504	19,835	2,400	37,269
F	4	Pt S½ 8 & 9	030-01300	G., J. & S. Pynenburg	4.00	3,804	1,268	-	2,536
				Sub-total (Lands):		128,309	42,770	10,850	74,689
		Township Road 4		Twp of Blandford-Blenheim		16,266	-	-	16,266
		Special Assessment to Twp Road 4				47,425	-	-	47,425
				Sub-total (Roads):		63,691	-	-	63,691
				TOTAL ASSESSMENT SCOTT DRAIN 2020:		192,000	42,770	10,850	138,380

Notes:

1. The above lands marked "F" are currently classified as agricultural according to the OMAFRA and are therefore entitled to a 1/3 grant . Eligibility for the 1/3 grant will be confirmed at the time the final cost is levied.
2. Section 21 of the Drainage Act, RSO 1990 requires that assessments be shown opposite each parcel of land and road affected. The affected parcels of land have been identified using the roll number from the last revised assessment roll for the Township. For convenience only, the owners' names as shown by the last revised assessment roll, has also been included.
3. All lands shown above are in the geographic Township of Blenheim.
4. Actual assessment is levied to the owner of the parcel at the time the final cost is levied.

TOWNSHIP OF BLANDFORD-BLENHEIM

FINANCIAL STATEMENTS

FOR THE YEAR ENDED DECEMBER 31, 2019

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TOWNSHIP OF BLANDFORD-BLENHEIM
FINANCIAL STATEMENTS
FOR THE YEAR ENDED DECEMBER 31, 2019

-1-	Independent Auditor's Report
-3-	Statement of Financial Position
-4-	Statement of Operations and Accumulated Surplus
-5-	Statement of Cash Flows
-6-	Statement of Change in Net Financial Assets
-7- to -13-	Notes to the Financial Statements
-14-	Schedule 1 - Schedule of Tangible Capital Assets
-15-	Schedule 2 - Schedule of Segmented Information

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INDEPENDENT AUDITOR'S REPORT

To the Members of Council, Inhabitants and Ratepayers of the Township of Blandford-Blenheim

Opinion

We have audited the accompanying financial statements of Township of Blandford Blenheim (the "Township"), which comprise the Statement of Financial Position as at December 31, 2019, and Statements of Operations and Accumulated Surplus, Cash Flows and Change in Net Financial Assets for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of Township of Blandford Blenheim as at December 31, 2019 and its financial performance and its cash flows and change in net financial assets for the year then ended in accordance with Canadian public sector accounting standards.

Basis of Opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Township in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian public sector accounting standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Township's ability to continue as a going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting unless management either intends to liquidate the Township or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Township's financial reporting process.

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Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit.

We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Township's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Township's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Township to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

June 17, 2020
London, Canada **LICENSED PUBLIC ACCOUNTANT**

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TOWNSHIP OF BLANDFORD-BLENHEIM
STATEMENT OF FINANCIAL POSITION
AS AT DECEMBER 31, 2019

	2019	2018
FINANCIAL ASSETS		
Cash (note 3)	**$ 5,370,452**	$ 6,318,423
Taxes receivable	**903,314**	1,683,917
Accounts receivable	**1,203,224**	797,609
	7,476,990	8,799,949
LIABILITIES		
Accounts payable and accrued liabilities	**1,654,825**	3,196,410
Deferred revenue (notes 1.g and 6)	**1,342,344**	2,277,201
Net long-term liabilities (note 7)	**950,503**	1,210,408
	3,947,672	6,684,019
NET FINANCIAL ASSETS	**3,529,318**	2,115,930
NON-FINANCIAL ASSETS (note 1.d)		
Tangible capital assets (note 1.e) (Schedule 1)	**37,922,538**	35,693,084
Capital work in progress	**444,968**	201,693
Prepaid expenditures	**38,987**	59,583
	38,406,493	35,954,360
ACCUMULATED SURPLUS (note 8)	**$ 41,935,811**	$ 38,070,290

The accompanying notes are an integral part of these financial statements.

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TOWNSHIP OF BLANDFORD-BLENHEIM
STATEMENT OF OPERATIONS AND ACCUMULATED SURPLUS
FOR THE YEAR ENDED DECEMBER 31, 2019

	Budget 2019	Actual 2019	Actual 2018
REVENUE			
Taxation revenue	**$ 5,363,773**	**$ 5,314,479**	$ 5,111,997
User charges	**759,844**	**860,270**	744,055
Government grants	**2,078,109**	**2,764,644**	2,339,490
Investment income	**71,378**	**122,266**	94,217
Penalty and interest on taxes	**130,000**	**156,651**	167,895
Other	**50,000**	**49,464**	192,625
	8,453,104	**9,267,774**	8,650,279
EXPENDITURES			
General government	**888,845**	**883,393**	1,013,074
Protection to persons and property	**2,370,700**	**2,337,527**	2,271,815
Transportation services	**7,274,186**	**3,500,329**	3,372,645
Health	**102,947**	**135,361**	78,838
Recreation and cultural development	**784,112**	**1,041,533**	988,528
Planning and development	**67,557**	**75,132**	71,486
	11,488,347	**7,973,275**	7,796,386
(Excess operating expenditure over revenue) before other revenue (expenditures)	**(3,035,243)**	**1,294,499**	853,893
OTHER REVENUE (EXPENDITURES)			
Government transfers related to capital	**2,000,000**	**2,054,825**	176,400
Developer and other contributions related to capital	**230,970**	**627,209**	441,355
Gain (loss) on disposal of capital assets	**35,000**	**(111,012)**	402,126
	2,265,970	**2,571,022**	1,019,881
Excess revenue over expenditures for the year	**(769,273)**	**3,865,521**	1,873,774
ACCUMULATED SURPLUS, BEGINNING OF YEAR	**38,070,290**	**38,070,290**	36,196,516
ACCUMULATED SURPLUS, END OF YEAR (note 8)	**$ 37,301,017**	**$ 41,935,811**	$ 38,070,290

The accompanying notes are an integral part of these financial statements.

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TOWNSHIP OF BLANDFORD-BLENHEIM
STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED DECEMBER 31, 2019

	2019	2018
OPERATIONS		
Excess revenue over expenditures (page 4)	**$ 3,865,521**	$ 1,873,774
Non-cash changes to operations		
Amortization of tangible capital assets	**1,753,514**	1,665,025
Loss (gain) on disposal of capital assets	**114,363**	4,620
Changes in non-cash operating balances (A)	**(2,101,454)**	2,632,016
Net change in cash from operating activities	**3,631,944**	6,175,435
CAPITAL		
Acquisition of tangible capital assets	**(4,097,331)**	(4,169,709)
Decrease (increase) in work in progress	**(243,275)**	311,334
Decrease (increase) in prepaid expenditure	**20,596**	(26,678)
Net change in cash from capital activities	**(4,320,010)**	(3,885,053)
FINANCING		
Net change in long-term debt	**(259,905)**	(259,319)
Net change in cash position during the year	**(947,971)**	2,031,063
CASH, BEGINNING OF YEAR	**6,318,423**	4,287,360
CASH, END OF YEAR	**$ 5,370,452**	$ 6,318,423

(A) Net change in non-cash operating balances includes the net change in taxes receivable, accounts receivable, accounts payable and accrued liabilities and deferred revenue.

The accompanying notes are an integral part of these financial statements.

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TOWNSHIP OF BLANDFORD-BLENHEIM
STATEMENT OF CHANGE IN NET FINANCIAL ASSETS
FOR THE YEAR ENDED DECEMBER 31, 2019

	2019	2018
Excess of revenue over expenditures (page 4)	$ **3,865,521**	$ 1,873,774
Amortization of tangible capital assets	**1,753,514**	1,665,025
Acquisition of tangible capital assets	**(4,097,331)**	(4,169,709)
(Gain) loss on sale of tangible capital assets	**114,363**	4,620
Increase in work in progress	**(243,275)**	311,334
Increase in prepaid expenditures	**20,596**	(26,678)
Increase (decrease) in net financial assets	**1,413,388**	(341,634)
NET FINANCIAL ASSETS, BEGINNING OF YEAR	**2,115,930**	2,457,564
NET FINANCIAL ASSETS, END OF YEAR	$ **3,529,318**	$ 2,115,930

The accompanying notes are an integral part of these financial statements.

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TOWNSHIP OF BLANDFORD-BLENHEIM
NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED DECEMBER 31, 2019

The Corporation of the Township of Blandford-Blenheim (the Township) is a lower-tier Township in the Province of Ontario, Canada. It conducts its operations guided by the provisions of provincial statutes such as the Municipal Act, Municipal Affairs Act and related legislation.

1. Significant accounting policies

The financial statements of the Township are the representation of management prepared in accordance with Canadian public sector accounting standards.

The focus of these financial statements is on the financial position of the Township and changes thereto. The Statement of Financial Position reports financial assets and liabilities. Financial assets are available to provide resources to discharge existing liabilities or finance future operations. Net financial assets represents the financial position of the Township and is the difference between financial assets and liabilities. This information explains the Township's overall future revenue requirements and its ability to finance activities and meet its obligations.

a. Reporting entity

These statements reflect the financial assets, liabilities, operating revenue and expenditures and accumulated surpluses and changes in investment in tangible capital assets of the Township and all committees of Council.

b. Trust funds

Trust funds and their related operations administered by the Township are not consolidated, but are reported separately on the Trust Funds Financial Statements.

c. Accrual accounting

The accrual basis of accounting recognizes revenue as they become available and measurable; expenditures are recognized as they are incurred and measurable as a result of receipt of goods or services and the creation of a legal obligation to pay.

d. Non-financial assets

Non-financial assets are not available to discharge existing liabilities and are held for use in the provision of services. They have useful lives extending beyond the current year and are not intended for sale in the ordinary course of operations. The change in non-financial assets during the year, together with the excess of revenue over expense, provides the Change in Net Financial Assets for the year.

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1. Significant accounting policies continued

e. Tangible capital assets

Tangible capital assets are recorded at cost which includes all amounts that are directly attributable to acquisition, construction, development or betterment of the asset. The costs, less residual value, of the tangible capital assets are amortized on a straight-line basis over their estimated useful lives as follows:

Buildings and structures	15-40 years
Fleet	8-30 years
Machinery, equipment, furniture and fixtures	5-25 years
Infrastructure - transportation	15-50 years
Infrastructure - drainage	80 years
Bridges and other structures	30-80 years
Streetlights	25 years

Amortization is charged for a half year in the year of acquisition and in the year of disposal.

The Township has a capitalization threshold of $5,000 so that individual assets of lesser value are expensed unless they are pooled because collectively they have a significant value.

i. Leases

Leases are classified as capital or operating leases. Leases which transfer substantially all of the benefits and risks incidental to ownership of property are accounted for as capital leases. All other leases are accounted for as operating leases and the related lease payments are charged to expense as incurred.

ii. Contributions of tangible capital assets

Tangible capital assets received as contributions are recorded at their fair value at the date of receipt. The fair value is also recorded as contributed revenue.

f. Short-term investments

Short-term investments are recorded at cost. Market value approximates cost.

g. Deferred revenue

Grants, contributions and other amounts are received from third parties pursuant to legislation, regulation or agreement and may only be used in the conduct of certain programs, in the completion of specific work, or for the purchase of tangible capital assets. In addition, certain user charges and fees are collected for which the related services have yet to be performed. Revenue is recognized in the period when the related expenditures are incurred, services performed, or the tangible capital assets are acquired.

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1. Significant accounting policies continued

h. Financial instruments

Financial instruments of the Township consist mainly of cash, accounts and taxes receivable. The carrying values of these financial assets approximate their fair values unless otherwise disclosed.

i. Revenue recognition

Government grants and transfers are recognized in the financial statements as revenue in the period in which events giving rise to the transfer occur, providing the transfers are authorized, any eligibility criteria have been met, and reasonable estimates of the amounts can be made.

j. Use of estimates

The preparation of financial statements in conformity with Canadian public sector accounting standards requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenue and expenditures during the period. Actual results could differ from these estimates.

k. Budget

The Township's Council completes separate budget reviews for its operating and capital budget each year. The approved operating budget for 2019 is reflected on the Statement of Operations and Accumulated Surplus. For capital spending, budgets are set for individual projects and funding for these activities is determined annually and made by transfers from surplus funds and by application of applicable grants or other funds available to apply to capital projects.

2. Trust funds

Trust funds administered by the Township amounting to $198,493 (2018 - $198,493) have not been included in the Statement of Financial Position nor have their operations been included in the Statement of Operations and Accumulated Surplus.

3. Investments

The Township does not own any short-term investments.

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4. Pension agreements

The Township makes contributions to the Ontario Municipal Employees Retirement Fund (OMERS), which is a multi-employer plan, on behalf of members of its staff. The plan is a defined benefit plan which specifies the amount of the retirement benefit to be received by the employees based on the length of services and rates of pay. The amount contributed to OMERS for 2019 was $146,192 (2018 - $138,063) for current service and is included as an expenditure on the Statement of Operations. The Township had no obligation, as at December 31, 2019, under the past service provisions. The OMERS funding ratio for 2019 is 97.0% (2018 - 96.0%), with the goal of being fully funded by 2025.

5. Operations of School Boards and the Township of Blandford-Blenheim

The Township is required to bill, collect and remit taxation revenue on behalf of the School Boards and the County of Oxford pursuant to provincial legislation. The Township has no jurisdiction or control over the operations of these entities or the setting of their tax rates. Therefore, the taxation, other revenue, expenditures, assets and liabilities with respect to the operations of the School Boards and the County are not reflected in these financial statements. Taxation revenue billed and requisitions paid on behalf of the School Boards and County of Oxford are not reflected in the Statement of Operations and are comprised of the following:

	School Boards	**County**
Taxation	**$ 3,571,072**	**$ 5,286,021**
Requisitions	**$ 3,571,072**	**$ 5,286,021**

6. Deferred revenue

The deferred revenue balance is comprised of the following:

	2019	2018
Development charges	**$ 109,265**	$ 201,890
Federal gas tax	**1,173,905**	985,421
OCIF	**59,174**	1,089,890
	$ 1,342,344	$ 2,277,201

DRAFT

7. Net long-term liabilities

a. The balance of long-term liabilities reported on the Statement of Financial Position is made up of the following:

	2019	2018
Total long-term liabilities, incurred by the Township and outstanding at the end of the year, amount to:	**$ 1,002,161**	$ 1,267,627
Of the long-term liabilities above, the responsibility for payment of principal and interest charges for tile drain loans assumed by individuals. At the end of the year, the outstanding principal amount of this liability is:	**(51,658)**	(57,219)
Net long-term liabilities at the end of the year:	**$ 950,503**	$ 1,210,408

b. Of the net long-term liabilities reported in a. of this note; the minimum principal repayments required are estimated as follows:

	Recoverable from ratepayers	Recoverable from tax rate
2020	$ 30,503	$ 230,000
2021	$	$ 230,000
2022	$ -	$ 230,000
2023	$ -	$ 230,000

c. The long-term liabilities in a. issued in the name of the Township have received approval of the Ontario Municipal Board for those approved on or before December 31, 1992. Those approved on or after January 1, 1993 have been approved by by-law. The annual principal and interest payments required to service these liabilities are within the annual debt repayment limit prescribed by the Ministry of Municipal Affairs.

d. The Township is contingently liable for long-term liabilities with respect to tile drainage loans. The total amount outstanding as at December 31, 2019 is $51,658 (2018 - $57,219) and is not recorded on the Statement of Financial Position.

e. The Township paid interest on its long-term liabilities of $36,136 (2018 - $44,078).

DRAFT

8. Accumulated surplus

The accumulated surplus is comprised of the following:

	2019	2018
Surplus		
Operations	**$ 163,821**	$ 381,232
Invested in tangible capital assets	**37,169,247**	34,704,345
Reserves	**4,602,743**	2,984,713
	$ 41,935,811	$ 38,070,290

9. Tax revenue

Property tax billings are prepared by the Township based on an assessment roll prepared by the Municipal Property Assessment Corporation. All assessed property values in the Township were reviewed and new values established based on a common valuation date which was used by the Township in computing the 2019 property tax bills. Property tax revenue and tax receivables are subject to appeals which may not have been heard yet. Any supplementary billing adjustments made necessary by the determination of such appeals will be recognized in the fiscal year they are determined and the effect shared with the Township of Blandford-Blenheim and the appropriate school boards.

10. Commitment

The Township entered into a policing contract that expires on December 31, 2019 with the Ontario Provincial Police. The contracted amount paid for 2019 was $961,020 (2018 - $941,256.

11. Public sector salary disclosure

There are two employees paid a salary, as defined in the Public Sector Disclosure Act, 1996 of $100,000 or more by the Township.

12. Contaminated sites

The Township has reviewed their land inventory in accordance with PSAB 3260 for possible contamination. The Township has not recognized a liability for contaminated sites as the Township does not expect that future economic benefits will be given up for remediation of any properties.

DRAFT

13. Segmented information

Segmented information is presented on Schedule 2. The Township is a diversified Township and provides a wide range of services to its citizens including police, through contracted services, fire, transportation and community services, including recreation and planning. The general government segment includes such functions as finance, council and administrative offices.

14. Annexation

On August 17, 2005 the Minister of Municipal Affairs and Housing issued a restructuring order to allow an area of approximately 2,900 acres to be annexed into the Corporation of the City of Woodstock from the Township. The effective date of the annexation was September 1, 2005. The Township and the City of Woodstock also entered into a compensation agreement whereby the City will effectively pay the Township a base amount for the loss of current tax revenue and a percentage of future tax revenue. The future tax revenue will depend on the level of development of the annexed lands. This compensation is included in Government Grant revenue on the Statement of Operations and Accumulated Surplus.

15. Subsequent event

In March 2020, the Province of Ontario declared a state of emergency in response to the COVID-19 virus. The Township has followed the Provincial directions regarding essential services and as a result has had to close some of its services. It is unclear the total financial impact the COVID-19 virus will have on the Township. Council and staff continue to monitor the situation.

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TOWNSHIP OF BLANDFORD-BLENHEIM
SCHEDULE OF TANGIBLE CAPITAL ASSETS
FOR THE YEAR ENDED DECEMBER 31, 2019

	Land and Land Improvements	Buildings	Fleet	Machinery and Equipment	Furniture and Fixtures	Bridges and Roads	2019 Total	2018 Total
COST								
Balance, beginning of year	$ 5,374,525	$ 8,645,701	$ 4,570,556	$ 3,020,557	$ 1,158,271	$ 41,602,303	$ 64,371,913	$ 60,731,677
Add:								
Additions during the year	144,787	182,501	200,565	18,951	8,751	3,541,776	4,097,331	4,169,709
Less:								
Disposals during the year	-	-	(21,026)	-	-	(847,897)	(868,923)	(529,473)
Balance, end of year	5,519,312	8,828,202	4,750,095	3,039,508	1,167,022	44,296,182	67,600,321	64,371,913
ACCUMULATED AMORTIZATION								
Balance, beginning of year	601,510	3,077,588	2,393,850	1,134,144	535,400	20,936,337	28,678,829	27,538,657
Add:								
Amortization during the year	63,838	276,995	292,165	201,744	60,773	857,999	1,753,514	1,665,025
Less:								
Disposals during the year	-	-	(21,026)	-	-	(733,534)	(754,560)	(524,853)
Balance, end of year	665,348	3,354,583	2,664,989	1,335,888	596,173	21,060,802	29,677,783	28,678,829
NET BOOK VALUE OF TANGIBLE CAPITAL ASSETS	$ 4,853,964	$ 5,473,619	$ 2,085,106	$ 1,703,620	$ 570,849	$ 23,235,380	$ 37,922,538	$ 35,693,084

This schedule is provided for information purposes only.

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TOWNSHIP OF BLANDFORD-BLENHEIM
SCHEDULE OF SEGMENTED INFORMATION
FOR THE YEAR ENDED DECEMBER 31, 2019

	General Government	Protective Services	Transportation	Health	Recreation and Culture	Planning and Development	Total
REVENUE							
Taxation	$ 5,314,479	$ -	$ -	$ -	$ -	$ -	$ 5,314,479
User fees	46,274	428,324	46,117	65,373	242,373	31,809	860,270
Government grants	2,450,393	89,738	191,364	-	-	33,149	2,764,644
Investment income	117,133	-	-	4,774	-	359	122,266
Penalty and interest on taxes	156,651	-	-	-	-	-	156,651
Other	-	30,237	-	-	19,227	-	49,464
Capital revenue	(111,012)	73,317	2,495,862	-	112,855	-	2,571,022
	7,973,918	621,616	2,733,343	70,147	374,455	65,317	11,838,796
EXPENDITURES							
Salaries and benefits	574,904	538,046	838,043	52,497	374,332	57,930	2,435,752
Materials, goods and services	271,143	1,582,325	1,470,240	82,788	368,481	9,032	3,784,009
Amortization	37,346	217,156	1,192,046	76	298,720	8,170	1,753,514
	883,393	2,337,527	3,500,329	135,361	1,041,533	75,132	7,973,275
EXCESS OF REVENUE OVER EXPENDITURES	$ 7,090,525	$ (1,715,911)	$ (766,986)	$ (65,214)	$ (667,078)	$ (9,815)	$ 3,865,521

This schedule is provided for information purposes only.

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TOWNSHIP OF BLANDFORD-BLENHEIM

Agenda Item

To:	Members of Council	**From:**	Rick Richardson – Director of Protective Services
Reviewed By:	Rodger Mordue	**Date:**	June 4th, 2020
Subject:	May Monthly Report	**Council Meeting Date:**	June 17th 2020
Report #:	FC-20-13		

Recommendation:

That Report FC-20-13 is received as information

Background:

To provide Council with an update regarding the activities of the Protective Services Department, for the month of May 2020

Analysis/Discussion:

Fire:

- (37) burn permits were issued in May (after May 11 when burn ban was lifted)
- May 2020 monthly fire calls (attached)

Meetings, Courses and Training Attended:

- Staff participated in conference calls with Southwest Public Health 3 days a week for approximately one hour to discuss COVID-19 pandemic concerns or issues
- Staff participated in 1 conference call with the County of Oxford EMS and Oxford County Fire Chiefs to deal with any COVID-19 issues within the County
- Staff participated in conference calls with the Provincial Emergency Operations Centre once a week to monitor and discuss any situations developing out of COVID-19
- May 6th staff participated in WEBEX Council meeting
- May 5th,6th, 7th staff participated in a WEBEX pertaining to City Wide /Asset Management training for staff
- May 7th staff participated in WEBEX Department Head meeting to discuss reopening of the Township office
- May 12th staff participated in all Township staff meeting to discuss reopening of the Township office
- May 14th staff participated in WEBEX meeting to discuss the introduction of the new 511 Municipal system for Oxford County and how it works

- May 19th staff suggested to all stations that we could start having some firefighter training with small groups of up to (5) firefighters and still keep their social distancing and that each participant wear a surgical mask during this training.
- May 20th staff participated in WEBEX Council meeting
- May 22nd staff sent an email to Oxford County EMS Chief Ben Addley requesting some answers to the following questions that were requested during our May 20th, 2020 Council meeting
    1. What is the plan to begin our "exit strategy" for COVID-19 pertaining to the Township Fire Department?
    2. With the current low number of COVID-19 cases in Blandford Blenheim why is our Fire Department not attending more tiered response calls?
    3. What COVID-19 stats or data qualify returning things to "businesses as usual" for the Fire Department tiered response program
- May 25th Chief Addley stated that he would provide his position in writing (attached)

By-Law Enforcement – May 2020

In Progress-2019

- 19-16 - Dirt Dumping – assigned to MEU/lawyer (transferred from 18-24)

In Progress-2020

- 20-01 – Noise & Dogs at Large
- 20-02 – Dogs at Large
- 20-03 – Noise
- 20-04 – Dogs at Large
- 20-05 – Dumping Complaint
- 20-06 – Dog Excrement
- 20-07 – Chickens
- 20-08 – Dogs at Large
- 20-09 – Dogs At Large
- 20-10 – Dogs At Large
- 20-11 – Noise
- 20-12 – Dogs At Large
- 20-13 – Dogs At Large
- 20-14 – Dogs/Fence

May 2020 Fire Call Report

Bright

11	31-May Blandford Rd	Medical Call

Drumbo

25	12-May Hwy 401 Km 247	MVC
26	25-May Twp Rd 6	Hydro Line on Fire
27	29-May CP Tracks/Ox. 22	MVC

Plattsville

19	05-May River Rd	Unauthorized Burn
20	09-May Fennel St	Unauthorized Burn
21	11-May Glennbriar	Medical Call
22	28-May English Cres	Smoke Alarm
23	31-May Blandford Rd	Medical Assist

Princeton

19	03-May Muir Rd	Fire Alarm
20	04-May Middle Townline & 3rd Conc	MVC
21	10-May Middle Townline & 2nd Conc	MVC
22	23-May 3rd Conc. Rd	Medical Call
23	26-May Blenheim Rd	Fire Alarm - cancelled
24	31-May Twp Rd 3	Medical Call

EZT

4 calls to date

North Dumfries

1	05-May Twp Rd 10	Unauthorized Burn

Wilmot

1 call to date

CEMC- May 2020

- COVID-19
  - 3 times a week conference calls with Southwestern Public Health
  - weekly webinars with PEOC
  - Continuously updating, sharing, posting information on social media
  - Multiple weekly surveys to submit to province
- Calls concerning COVID-19
  - Wastewater Bio-Solids
  - Garden Centres
  - Outdoor weddings
  - Horseback riding lessons
  - Private flying clubs
- Municipal 511 training

Respectfully submitted by:

Rick Richardson
Director of Protective Services

June 11, 2020

Re: Medical Tiered Response COVID-19 Pandemic Strategy

Chief Richardson,

I want to commend the residents of Blandford-Blenheim for staying safe during the early months of the COVID-19 pandemic and their efforts to prevent the spread of the virus. The fact that there is limited spread in the community shows the practices to prevent the spread of the virus are working effectively. These practices include the restrictions put in place for tiered medical responses, which are in line with current best-practices for acute care settings. Appropriate and consistent use of best practice precautions for the prevention of transmission of acute respiratory infection reduces the incidence of cross-infection of patients, especially the most vulnerable, and the incidences of infection transmission to co-workers, family members and the public. (Emergency Health Regulatory and Accountability Branch, 2020)

As per our recent discussion, this report is in response to your request for an overview of the impact of the current COVID-19 Pandemic Medical Tiered Response criteria as well as plans for future "normalizing" of the tiered response criteria.

The current COVID-19 Pandemic Medical Tiered Response criteria respects the needs of the residents and visitors to Oxford County. This means having the best possible response to medical emergencies when response time has a contributing factor to patient outcomes. These call-types are situations where seconds count, like unconscious, choking, and cardiac arrest, continue to be tiered to BBFD without delay. Other call types where BBFD has a potential response role, such as motor vehicle collisions, and industrial/farm accidents, have remained unaltered during the COVID-19 pandemic. In short, there has not been a reduction in service to residents or visitors to Blandford-Blenheim, who are experiencing a life-threatening medical emergency.

We have reviewed our response data for the last six months to Blandford Blenheim, and I would like to share the relevant highlights with you:

1. BBFD responded to 47% of "Code 4" (lights and sirens) medical calls from Dec. 2019 to Feb. 2020 and 16% of Code 4 medical calls from Mar. 2020 to May 2020.

2. Oxford County Paramedic Services has seen a 27% reduction in total call volume.

3. A review of interventions administered by Paramedics that BBFD would have responded to without the COVID-19 response criteria showed no interventions that fall within the Firefighter scope of practice were delivered.

4. Paramedic Services response times to Blandford-Blenheim have not been affected by the COVID-19 pandemic.

The current Ministry of Health Guidance for Essential Workplaces recommends physical distancing wherever possible to protect both the worker and public. (Ministry of Health, 2020) In keeping with

this best-practice during the pandemic, the tiered medical response criteria will continue to notify BBFD for life-threatening emergencies for immediate response. The medical evidence does not support returning to pre-COVID-19 response criteria for non-life-threatening medical emergencies at this time.

To limit the number of responders on a scene, medical calls where response time does not contribute to the patient outcome will continue to have a Paramedic-only response. This strategy will help us maintain our efforts to limit the transmission of COVID-19 to both our first responders and the public. We will continue to monitor the recommendations by the Ontario Ministry of Health and Public Health Ontario, including the provincial declared state of emergency and Public Health declared provincial pandemic. We will continue to review response data with our medical tiered response partners to make recommendations for the medical tiered response program based on our patients' medical needs. In the future "post pandemic" tiered response, we will ensure we develop protocols for safe reduction and resumption of call criteria if faced with a returning or new disease outbreak.

If you should have any further questions please feel free to reach out and we can set up another discussion.

Respectfully,

Ben Addley
Director and Chief of Paramedic Services

References

Emergency Health Regulatory and Accountability Branch. (2020). *Training Bulletin – Novel Coronavirus.* Toronto: Queens Printer.

Ministry of Health. (2020). *COVID-19 Guidance: Essential Workplaces.* Toronto: Queens Printer.

TOWNSHIP OF BLANDFORD-BLENHEIM

Agenda Item

To:	Members of Council	**From:**	Jim Harmer Drainage Superintendent
Reviewed By:	Rodger Mordue	**Date:**	June 3, 2020
Subject:	Consideration of Report Section 4 Scott Drain 2020	**Council Meeting Date:**	June 17, 2020
Report #:	DS 20-08		

Recommendation:

That report DS 20-08 be received as information;

And further that council gives consideration to By-Law No. 2194-2020 for the Scott Drain 2020 and give first and second reading (provisional by-laws);

And further that the Court of Revision be set for Wednesday July 15, 2020 at 4:00 p.m.

Lastly It is also recommended that the Engineer be directed to invite tenders for the Scott Drain 2020 with tender closing Tuesday July 14th, 2020 at noon

Background:

On June 5th, 2019 Kenn Smart P.ENG. was appointed Engineer, to file a reports on the Scott Drain 2020 under Section 4 and 8 of the Drainage Act for drainage in the area of Lots 7,8,9 Concession 4 and Lots 7,8 Con 3 from Robert and Carol Scott and other property owner in the affected area for the improvement of the Scott Drain. This drain was originally construction in 1915.

On May 1st ,2020 the Report for the Scott Drain 2020 was filed by Kenn Smart P.Eng. with the Township Clerk

Analysis/Discussion:

The report has been mailed to the assessed owners and effected agencies in accordance with Section 41 of the Drainage Act. The report will be considered on July 17th, 2020 at 4:00 p.m. in accordance with Section 42 of the Drainage Act. (by video and Conference call) All owner and agencies have been invited and the Engineer will be in attendance to present the reports (by WebEx) and answer any questions.

Provide no major concern are expressed, the By-Law's (copy's attached) can be provisionally adopted and Court of Revision date set

Financial Considerations:

Cost of report is assessed to effected ratepayer as per the Schedule of Assessment in the drain report

Attachments:

Draft By-Law's # 2194-2020 attached to agenda

Copy of Reports attached to agenda as Scott Drain 2020

Respectfully submitted by:

_____
Jim Harmer
Drainage Superintendent

TOWNSHIP OF BLANDFORD-BLENHEIM

Agenda Item

To:	Members of Council	**From:**	Denise Krug Director of Finance
Reviewed By:	Rodger Mordue	**Date:**	June 10, 2020
Subject:	COVID-19 June Financial Impact Report	**Council Meeting Date:**	June 17, 2020
Report #:	TR-20-09		

Recommendation:

That Report TR-20-09 be received as information;

Background:

The purpose of this report is to provide some follow up information in regards to the potential financial impacts of the COVID-19 outbreak on the Township of Blandford-Blenheim.

The Province of Ontario has now extended the State of Emergency until the end of June, 2020 to help contain the spread of COVID-19 and protect the public. The Province has begun to allow the reopening of some things such as stores with street entrances, and recreational facilities such as parks, sports fields, tennis courts, golf courses and boat launches. The Province has begun to follow a regional approach and allowed more openings such as splash pads, beaches, campgrounds, shopping malls and restaurants with patios, in regions with fewer cases.

At this point, it is unclear, how long the emergency will last, and exactly what financial impact it will have on the Township. Staff have reviewed their current financials and have estimated the current impact as well as the potential impact if the Township continues to be affected by the pandemic until the end of the year.

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Analysis/Discussion:

The following charts show revenue losses and increased expenditures due to the pandemic. Rental revenues are down due to facilities being closed. Investment income is down due to the prime rate being lowered and fire response calls are down due to low traffic volumes and changes to the dispatching of volunteer fire fighters.

Revenue Item	**Current Impact**	**Potential Impact to Dec 2020**
Arena Ice Time Rentals	15,000	100,000
Community Hall Rentals	3,000	11,000
Sports Fields Rentals	4,000	10,000
Bank Interest (reduction in rate)	18,000	30,000
Penalty on late 2020 tax payments (June)	7,000	7,000
MTO/Brant Cty fire response– calls down due to less traffic	20,000	50,000
Total Revenue Losses	67,000	208,000

Expenses have increased due to the need for cleaning supplies and PPE and modifications to ensure safety of staff and the public.

Expense Item	**Current Impact**	**Potential Impact to Dec 2020**
VFF – Extra Cleaning of Fire Stations	2,600	10,000
Cleaning Supplies, Safety Modifications & PPE	15,000	30,000
Mileage – Personal vehicle used to enable 1 person/vehicle – maintain physical distancing	1200	4,000
Total Increased Expenditures	18,800	44,000
Total Impact	85,800	252,000

Due to the pandemic, the Township has also seen direct and indirect savings in many areas. These are reflected in the chart below:

Wages and benefits for part time are down at the arena and Community halls as they were closed and decreased significantly for volunteer fire fighters with the changes to dispatch due to COVID-19. Training and conferences have been cancelled due to physical distancing restrictions. We have seen savings due to the low price of fuel and hydro savings with the closure of the arena. Due to the office being closed and physical distancing restrictions, we delayed the hiring of the Customer Service/Finance Clerk.

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Direct/Indirect Savings	**Current Impact**	**Potential Impact to Dec 2020**
Bank Interest (deferral of Education remittances)	(3000)	(3,000)
Arena PT Wages & Benefits	(2,000)	(13,000)
Community Halls PT Wages & Benefits	(800)	(6,500)
Volunteer Fire Fighters (VFF) Wages & Benefits	(25,000)	(45,000)
Conferences & Training	(13,000)	(26,000)
Fuel – reduction in price	(15,000)	(25,000)
Hydro – Reduction due to closed facilities	(5,800)	(30,000)
Crossing Guard – Wages & Benefits	(950)	(2,400)
Group Benefits (April – dental & health prem)	(2,500)	(7,500)
Delay in replacing staff – Customer Service/Finance	(12,000)	(12,000)
	(80,050)	(170,400)

Financial Considerations:

The Township is currently estimating loss in revenue of $67,000 to date, increased expenditures of $18,800, for a total impact of $85,800. With the direct and indirect savings of $80,050 experienced, the Township is currently experiencing a deficit of $5,750 due to the pandemic.

If the Township continues to be affected by the pandemic and is unable to rent facilities such as the arena, halls and sports fields, there will be a greater impact. These numbers are estimates and will be continually monitored and reported through the Quarterly Variance Reports to Council.

The impact identified in the report may be offset by other positive variances that occur throughout the year. Otherwise, funding could be provided through the tax stabilization reserve. (We had a 2019 surplus of $163,821.48 so this account can be topped up.)

Staff will continue to explore all opportunities for financial assistance from senior levels of government and will provide updates to Council on any actions being undertaken by Provincial and Federal governments as they are announced.

Attachments:

None

Respectfully submitted by:

Denise Krug
Director of Finance/Treasurer

TOWNSHIP OF BLANDFORD-BLENHEIM

Agenda Item

To:	Members of Council	**From:**	John Scherer, CBO/ Manager of Building Services
Reviewed By:	Rodger Mordue, CAO/Clerk	**Date:**	May 7, 2020
Subject:	Monthly Report to Council	**Council Meeting Date:**	May 20, 2020
Report #:	CBO-20-07		

Recommendation:

That Report CBO – 20 - 07 be received as information.

Background:

To provide Council with an update, regarding the monthly Building activities for the period ending April 30, 2020.

Building Updates:

1. Various other day to day responsibilities regarding Building Services, Property Standards & Zoning.
2. Supplementary sheet added to permit packages explaining what can be constructed during the Provincial Emergency Order.
3. No Inspections are being completed on occupied dwellings.

Legislative Updates:

1. O.Reg 82/20 has been updated to allow certain agricultural construction projects to start.

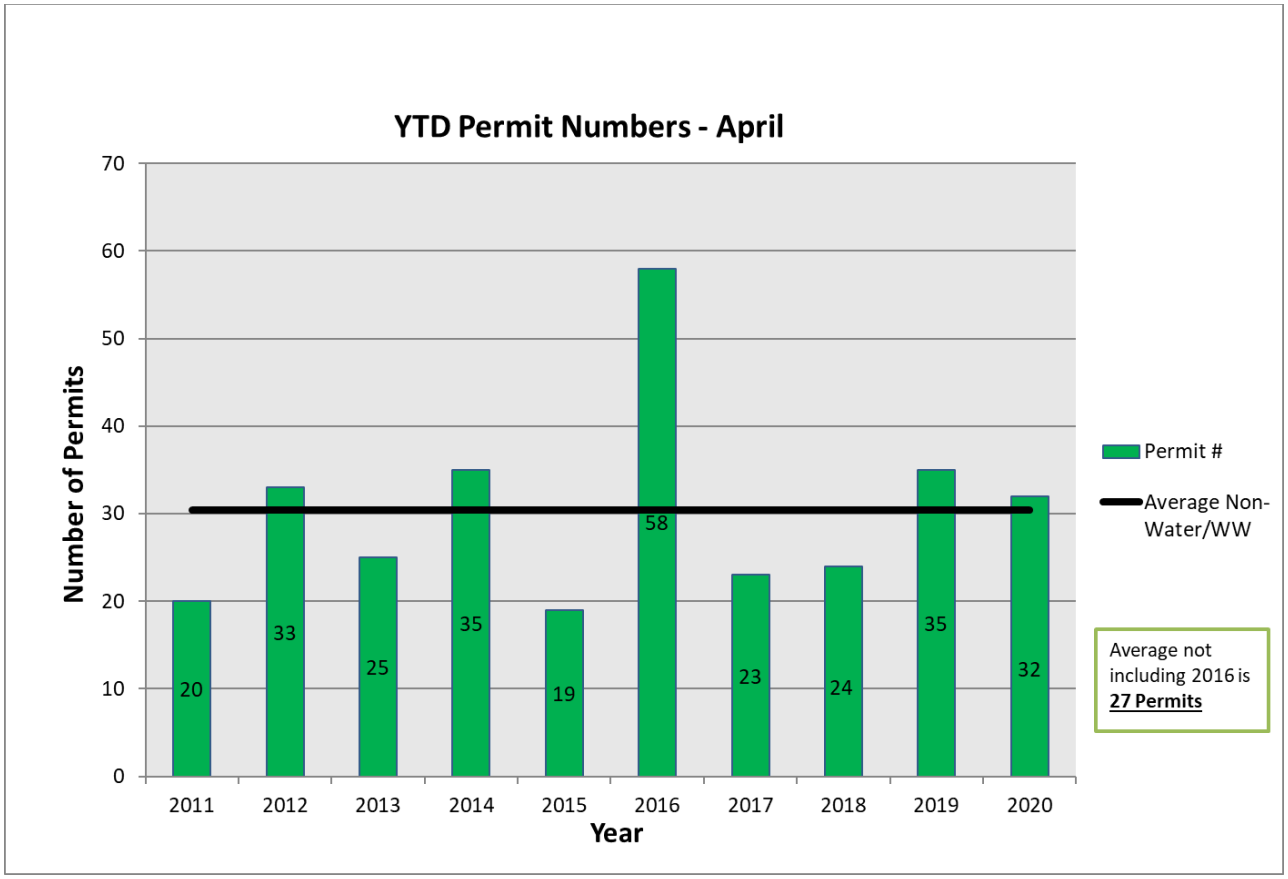
Property Standards/By-Law Updates:

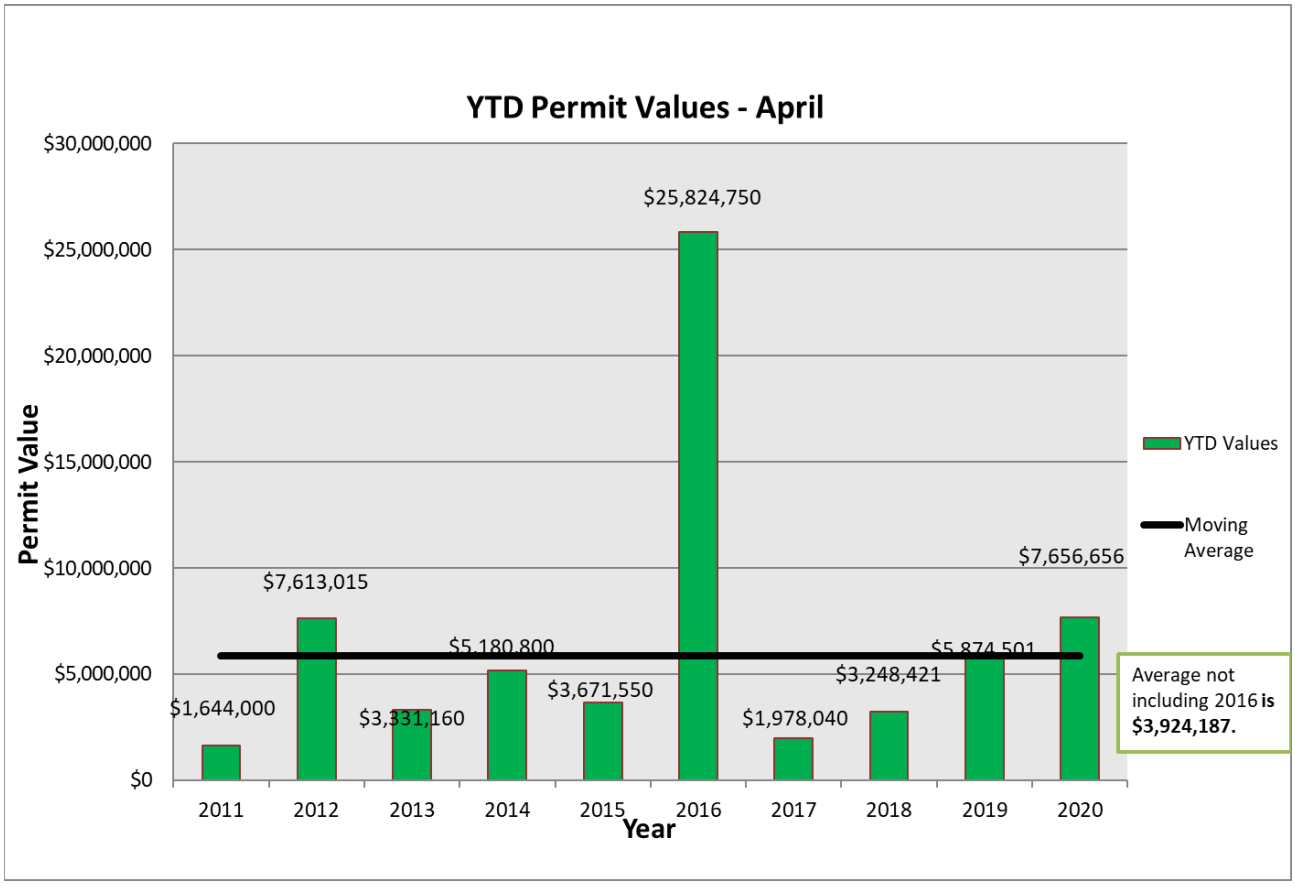
OPEN PROPERTY STANDARDS ISSUES			
Ref Number	**Area**	**Type**	**Notes**
January 2020			
PS2020-01	Plattsville	Property Standards	Order issued (site progress noted)
PS2020-02	Princeton	Clean Yard/Fence	Site Visit completed. Order Issued
February 2020			
PS2020-03	Drumbo	Clean Yard	Sent to MEU
March 2020			
PS2020-07	Princeton	Property Standards	File Received.
April 2020			
PS2020-08	Rural	Fence	File Received.

Monthly Permit Activity

	# Permits	Const. Value	Permit Fees
April 2020	7	$3,453,059.62	$40,937.10
Year to Date - April 30, 2020	32	$7,656,655.62	$73,648.94

Building Description	Permit Value	Permit Fee
Demo - SDD	$5,000.00	$100.00
New Industrial Building	$2,500,000.00	$28,925.00
Free Stall Dairy Barn	$550,000.00	$5,564.60
Manure Tank	$120,000.00	$750.00
Septic System	$20,500.00	$550.00
Detached Garage	$57,559.62	$520.00
New SDD	$200,000.00	$4,527.50
	$3,453,059.62	**$40,937.10**





Respectfully submitted by:

John Scherer
Manager Building Services/CBO

TOWNSHIP OF BLANDFORD-BLENHEIM

Agenda Item

To:	Members of Council	**From:**	John Scherer, CBO/ Manager of Building Services
Reviewed By:	Rodger Mordue, CAO/Clerk	**Date:**	June 4, 2020
Subject:	Monthly Report to Council	**Council Meeting Date:**	June 17, 2020
Report #:	CBO-20-08		

Recommendation:

That Report CBO – 20 - 08 be received as information.

Background:

To provide Council with an update, regarding the monthly Building activities for the period ending May 31, 2020.

Building Updates:

1. Various other day to day responsibilities regarding Building Services, Property Standards & Zoning.
2. Permits and inspections have started to return to normal with some extra precautions regarding occupied dwellings.

Legislative Updates:

1. None

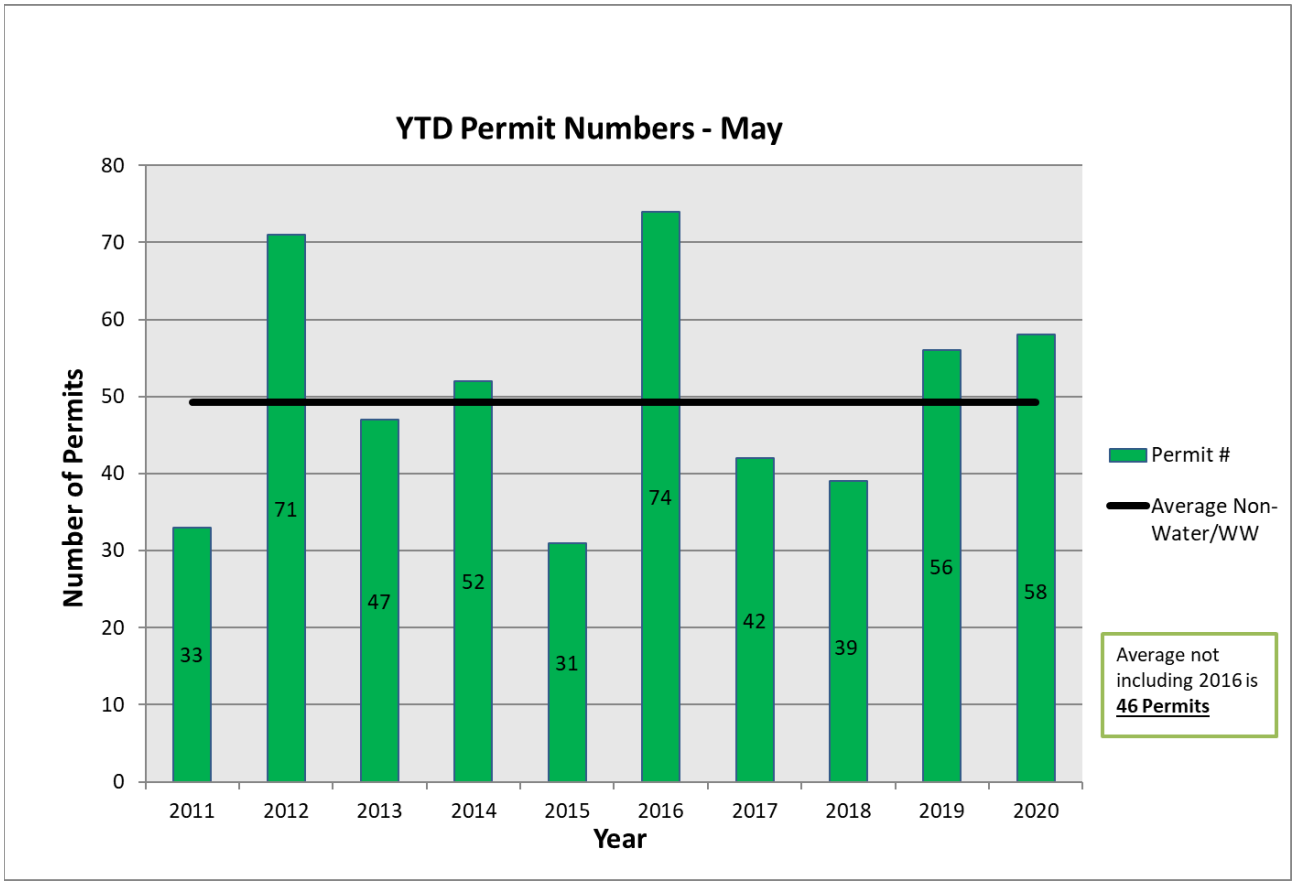
Property Standards/By-Law Updates:

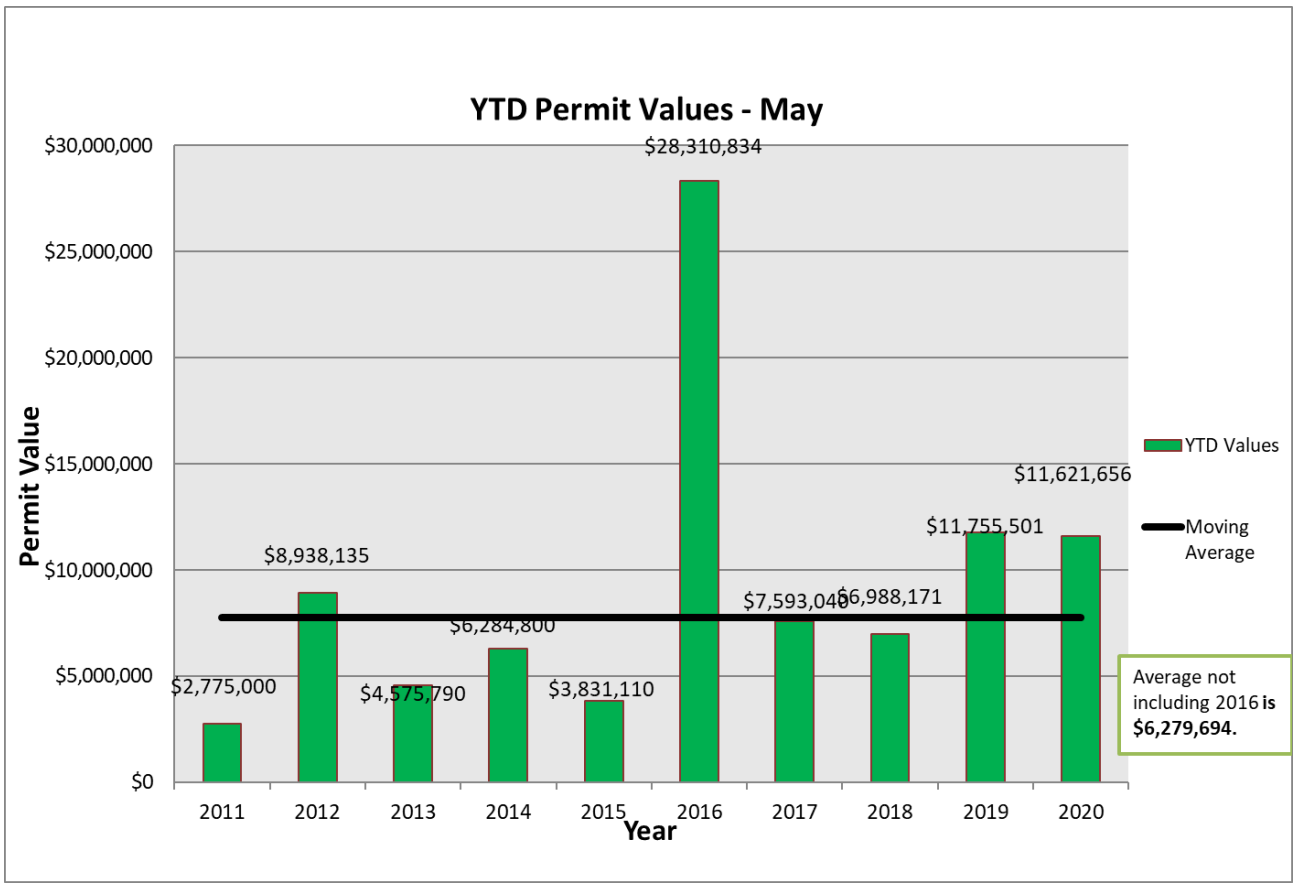
OPEN PROPERTY STANDARDS ISSUES			
Ref Number	**Area**	**Type**	**Notes**
January 2020			
PS2020-01	Plattsville	Property Standards	Order issued (site progress noted)
PS2020-02	Princeton	Clean Yard/Fence	Site Visit completed. Order Issued
February 2020			
PS2020-03	Drumbo	Clean Yard	Sent to MEU
March 2020			
PS2020-07	Princeton	Property Standards	File Received.
April 2020			
PS2020-08	Rural	Fence	File Received.
May 2020			
None			

Monthly Permit Activity

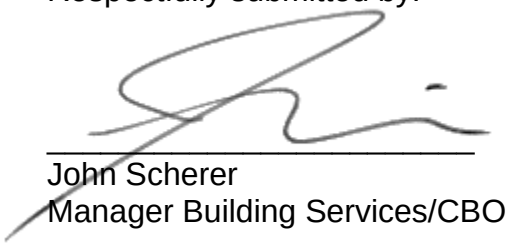
	# Permits	Const. Value	Permit Fees
May 2020	26	$3,965,000.00	$37,667.00
Year to Date - May 31, 2020	58	$11,621,655.62	$111,315.94

Building Description	Permit Value	Permit Fee
SDD Reno and Addition	$ 175,000.00	$ 1,200.00
Addition to barn	$ 175,000.00	$ 1,972.50
New SDD	$ 1,000,000.00	$ 5,843.75
Septic System	$ 12,500.00	$ 550.00
Commercial Kitchen/Meeting Space	$ 75,000.00	$ 1,500.00
Garage Addition	$ 40,000.00	$ 625.00
Storage Building	$ 145,000.00	$ 2,268.25
2 new grain bins	$ 200,000.00	$ 1,100.00
Bunker Silo	$ 25,000.00	$ 600.00
New SDD	$ 500,000.00	$ 6,035.00
Septic Tank Replacement	$ 6,000.00	$ 200.00
Demolition	$ 2,000.00	$ 100.00
Septic system	$ 6,000.00	$ 550.00
New SDD	$ 400,000.00	$ 2,007.50
New SDD	$ 450,000.00	$ 4,052.50
New SDD	$ 450,000.00	$ 3,207.50
Septic system	$ 12,000.00	$ 550.00
Above ground pool	$ 10,000.00	$ 150.00
Demolition	$ 2,000.00	$ 100.00
Shed	$ 4,000.00	$ 775.00
Deck	$ 2,500.00	$ 200.00
Garage and shop addition	$ 150,000.00	$ 1,875.00
Second floor addition	$ 40,000.00	$ 1,355.00
Above ground pool	$ 60,000.00	$ 150.00
Septic System	$ 20,000.00	$ 550.00
Above ground pool	$ 3,000.00	$ 150.00
	$ 3,965,000.00	$37,667.00


YTD Permit Numbers - May
Number of Permits
Year
0
10
20
30
40
50
60
70
80
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
33
71
47
52
31
74
42
39
56
58
Permit #
Average Non-Water/WW
Average not including 2016 is 46 Permits


YTD Permit Values - May
Permit Value
Year
$0
$5,000,000
$10,000,000
$15,000,000
$20,000,000
$25,000,000
$30,000,000
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
$2,775,000
$8,938,135
$4,575,790
$6,284,800
$3,831,110
$28,310,834
$7,593,048
$6,988,171
$11,755,501
$11,621,656
YTD Values
Moving Average
Average not including 2016 is $6,279,694.

Respectfully submitted by:



John Scherer
Manager Building Services/CBO

TOWNSHIP OF BLANDFORD-BLENHEIM

Agenda Item

To:	Members of Council	**From:**	Rodger Mordue, CAO/Clerk
Reviewed By:	N/A	**Date:**	June 1, 2020
Subject:	Minor Variance Application fee	**Council Meeting Date:**	June 17, 2020
Report #:	CAO-20-07		

Recommendation:

That Report CAO-20-07 be received; and,

That Council agree to waive application fee for Minor Variance applications related to the pending housekeeping amendment to the Township's comprehensive zoning by-law; and,

That the application fee be reinstated fully once the housekeeping amendment is considered by Council.

Background:

The Township's zoning by-law is scheduled to receive a comprehensive housekeeping amendment. That amendment will update the by-law and change regulations that affect many properties in the Township. The amendment is ready to be considered but has been delayed due to the COVID-19 restrictions in place that limit our ability to host large public gatherings.

Normally an application to the Township's Committee of Adjustment is required when a property owner wishes to develop their property in a way that does not conform to the Township's zoning by-law. The Township currently charges a $500 fee for these applications.

Analysis/Discussion:

Some property owners have development plans that exceed what is allowed under the current zoning by-law. They have been told that some limits are proposed to be increased when the by-law is updated so they have been waiting to proceed until the comprehensive housekeeping by-law comes into effect. With the COVID-19 restrictions on public gatherings now in place it is hard to say when this amendment might be presented to Council.

These projects exceed what is allowed under the current by-law but fall within the limits of the proposed amended by-law. In order to speed up the approval process staff are suggesting that these be put through the minor variance process as they would have in the past. We are suggesting that the normal application fee for these be waived. Since the development conforms to the new proposed by-law the applications could be expedited and presented to the Committee of Adjustment for approval relatively quickly.

Financial Considerations:

The normal application fee for a minor variance is $500.

Attachments:

- N/A

Respectfully submitted by:

Rodger Mordue
CAO/Clerk

THE CORPORATION OF THE

TOWNSHIP OF BLANDFORD-BLENHEIM

BY-LAW NUMBER **2194-2020**

Scott Drain 2020

A By-law to provide for drainage works in the Township of Blandford-Blenheim in the Restructured County of Oxford.

WHEREAS the Council of the Township of Blandford-Blenheim in the County of Oxford appointed Curtis MacIntyre, P. Eng., of K. Smart Associates Limited, of Kitchener, Ontario, and the Section 4, 8 and 76 report is attached hereto and forms part of this By-law.

AND WHEREAS the estimated total cost of this report consisting of the engineering, construction costs and administration is $192,000.

THEREFORE the Council of The Corporation of the Township of Blandford-Blenheim pursuant to the Drainage Act, R.S.O. 1990, and amendments thereto, enacts as follows:

1. The report dated May 1, 2020 and attached hereto, is hereby adopted and the Drainage Works as therein indicated and set forth is hereby authorized, and shall be completed in accordance therewith.

2. The Corporation may borrow on the credit of the Corporation the amount of **$192,000,** being the necessary amount for construction of the Drainage Works.

3 The Corporation may arrange for the issue of debentures on its behalf for the amount borrowed, less the total amount of,

(a) grants received under Section 85 of the Act;

(b) commuted payments made in respect of lands and roads assessed within the municipality;

(c) moneys paid under subsection 61(3) of the Act; and

such debentures shall be made payable within Five (5) years from the date of the debenture and shall bear interest at a rate to be established at the date of the sale of such debentures.

The County of Oxford shall handle the sale of such debentures, with interest at the prevailing rates at the time of debenture sale. The Municipality of the Township of Blandford-Blenheim shall make annual payments without coupons payable to the County of Oxford.

4. A special equal annual rate sufficient to redeem the principal and interest on the debentures shall be levied upon the lands and roads as set forth in the Schedule to be collected in the same manner and at the same time as other taxes are collected in each year for Five (5) years, the year following the due date of the final invoice that calculates the actual costs of the Drainage Works in accordance with the Schedule contained in this By-law.

5. This by-law comes into force on the passing thereof and may be cited as **Scott Drain 2020.**

Read a First and Second Time this 17th day of June, 2020.

_____ _____
Rodger Mordue, CAO/Clerk Mark Peterson, Mayor

Read a Third Time and Finally Passed this _____of _____, 2020

_____ _____
Rodger Mordue, CAO/Clerk Mark Peterson, Mayor

THE CORPORATION OF THE

TOWNSHIP OF BLANDFORD-BLENHEIM

BY-LAW NUMBER 2195-2020

Being a by-law to provide for the adoption of budgetary estimates and tax rates for 2020, and to further provide for penalty and interest in default of payment.

WHEREAS, Section 290 of the Municipal Act, 2001, S.O. 2001 c.25, as amended, provides that the Council of a local municipality shall prepare and adopt estimates of all sums required during the year for the purposes of the municipality,

AND WHEREAS, Section 312 of the said Act provides that the Council of a local municipality shall, after the adoption of estimates for the year, pass a by-law to levy a separate tax rate on the assessment in each property class, and

AND WHEREAS, Section 307 and 308 of the said Act require tax rates to be established in the same proportion to tax ratios; and

AND WHEREAS regulations require reductions in certain tax rates for certain classes or subclasses of property; and

AND WHEREAS the Assessment Roll prepared December 10, 2019 and upon which the taxes for 2020 are to be levied, was certified by the Assessment Commissioner, and the whole of assessment for real property, according to the last Assessment Roll, and further modified to reflect changes of the Assessment Review Board, Severances and Section 442 Tax Write-Offs.

NOW THEREFORE the Council of The Corporation of the Township of Blandford-Blenheim enacts as follows:

1) That the budget estimates setting out the revenues and expenditures as detailed in the Budget Estimates for the year 2020, and endorsed by by-law 2176-2020, February 5, 2020 raising the following amounts from realty taxation be adopted (Schedule “A” - Revised):

    (a) For general municipal purposes the net levy of $5,472,561.17;
    (b) For county purposes the net levy of $5,481,430.63;
    (c) For school purposes the net levy of $3,543,107.55

2) That the tax rates hereby adopted for each class for the year 2020, excluding special charges or local improvements collected as taxes, shall be the tax rates as listed on Schedule “B” – Revised, attached hereto and forming part of this by-law and the tax rate for each class shall be applied against the whole of the assessment for real property for that particular class and purpose.

3) That in accordance with the Municipal Act, 2001 S.O. 2001 and the Assessment Act, the Treasurer may strike from the roll, taxes that by reasons of a decision under Section 357, 358 or 359 or of a decision of a judge of any court are uncollectible and/or refund any overpayment received.

4) That every owner shall be taxed according to the tax rates in this by-law. The taxes for a particular property shall be calculated by applying the Current Value Assessment against the tax rates set out and further adjusted as required by the provisions of the Municipal Act, 2001, S.O. 2001. Such taxes shall become due and payable in two installments as follows:

   ALL PROPERTY CLASSES:

   FIRST INSTALMENT Monday, August 31st, 2020

   SECOND INSTALMENT Friday, October 30th, 2020

   Notice of such taxes due shall be sent by first class mail to those persons shown as liable for the payment of taxes.

5) That the taxes shall be levied and collected such other rates and/or Special Area Rates, pursuant to the Municipal Act, 2001, S.O. 2001 and/or the Drainage Act.

6) That a charge as a penalty of 1 and ¼ per cent on the amount of any outstanding taxes levied in 2020 shall be made on the first day of default and on the first day of each calendar month thereafter in which default continues until December 31st, 2020, **with the exception of penalty applied on June 1, 2020 (relief due to COVID – 19)** and any such additional amounts shall be levied and collected in the same manner as if they had been originally imposed with and formed part of the taxes levied under this by-law. The penalty charges indicated in this section shall be waived for those taxpayers participating in the Monthly Preauthorized Payment Plan provided the payments are made as agreed and without default.

7) That interest of 1 and ¼ percent on the amount of any taxes due and unpaid after December 31st, 2020, shall be charged on the first day of each calendar month thereafter in which default continues.

8) That By-law 2192-2020 be repealed.

This by-law shall come into effect **retroactively to June 1st, 2020**, on the date of the final passing thereof.

By-law **READ** a **FIRST** and **SECOND** time this 17th day of June, 2020.

By-Law **READ** a **THIRD** time and **ENACTED** in Open Council this 17th day of June, 2020.

_____
Mark Peterson, Mayor

(SEAL)

_____
Rodger Mordue, CAO/Clerk

Township of Blandford-Blenheim
2020 Combined Taxation Levy

"Schedule A" - Revised

Tax Classes	Assessments	Township Tax Rate	Township Levy by class	County Tax Rates	County Levy by class	Education Tax Rate	Education Levy by class	Total Tax Rate
Residential	883,657,100.00	**0.00405892**	$ 3,586,693.48	**0.00406550**	$ 3,592,507.94	**0.00153000**	$ 1,351,995.36	**0.00965442**
Residential Farmland awaiting Development	-	**0.00182651**	$ -	**0.00182948**	$ -	**0.00068850**	$ -	**0.00434449**
Multi Residential	4,059,500.00	**0.00811784**	$ 32,954.37	**0.00813100**	$ 33,007.79	**0.00153000**	$ 6,211.04	**0.01777884**
Commercial -Full	63,998,700.00	**0.00771925**	$ 494,021.96	**0.00773177**	$ 494,823.23	**0.01250000**	$ 799,983.75	**0.02795102**
Vacant unit/excess land	589,500.00	**0.00540348**	$ 3,185.35	**0.00541224**	$ 3,190.52	**0.01250000**	$ 7,368.75	**0.02331572**
Vacant land	2,189,400.00	**0.00540348**	$ 11,830.38	**0.00541224**	$ 11,849.56	**0.01250000**	$ 27,367.50	**0.02331572**
Small Scale On Farm Business	16,600.00	**0.00771925**	$ 128.14	**0.00773177**	$ 128.35	**0.00245000**	$ 40.67	**0.01790102**
Industrial - full	4,945,200.00	**0.01067496**	$ 52,789.81	**0.01069227**	$ 52,875.41	**0.01250000**	$ 61,815.00	**0.03386723**
Industrial - New Construction	1,824,200.00	**0.01067496**	$ 19,473.26	**0.01069227**	$ 19,504.84	**0.00980000**	$ 17,877.16	**0.03116723**
Vacant unit/excess land	22,900.00	**0.00693872**	$ 158.90	**0.00694997**	$ 159.15	**0.01250000**	$ 286.25	**0.02638869**
Vacant land	170,500.00	**0.00693872**	$ 1,183.05	**0.00694997**	$ 1,184.97	**0.01250000**	$ 2,131.25	**0.02638869**
Large Industrial	2,460,100.00	**0.01067496**	$ 26,261.47	**0.01069227**	$ 26,304.05	**0.01250000**	$ 30,751.25	**0.03386723**
Pipeline	90,198,000.00	**0.00511140**	$ 461,038.06	**0.00511968**	$ 461,784.90	**0.00980000**	$ 883,940.40	**0.02003108**
Farmland	861,878,500.00	**0.00088363**	$ 761,581.70	**0.00088506**	$ 762,814.19	**0.00038250**	$ 329,668.53	**0.00215119**
Managed Forest	2,657,300.00	**0.00101473**	$ 2,696.44	**0.00101638**	$ 2,700.83	**0.00003825**	$ 101.64	**0.00206936**
New Construction Commercial: Full	2,405,000.00	**0.00771925**	$ 18,564.80	**0.00773177**	$ 18,594.91	**0.00980000**	$ 23,569.00	**0.02525102**
	1,921,072,500.00		**$ 5,472,561.17**		**$ 5,481,430.63**		**$ 3,543,107.55**	

The Township of Blandford-Blenheim **Schedule "B" - Revised**
2020 Summary of Tax Rates

Tax Class	Township Tax Rate	County Tax Rates	Education Tax Rates	Totals
Residential	0.00405892	0.00406550	0.00153000	**0.00965442**
Residential Farmland Awaiting Development	0.00182651	0.00182948	0.00068850	**0.00434449**
Farmland	0.00088363	0.00088506	0.00038250	**0.00215119**
Multi Residential	0.00811784	0.00813100	0.00153000	**0.01777884**
Commercial -Full	0.00771925	0.00773177	0.01250000	**0.02795102**
Vacant unit/excess land	0.00540348	0.00541224	0.01250000	**0.02331572**
Vacant land	0.00540348	0.00541224	0.01250000	**0.02331572**
Small Scale On Farm Business	0.00771925	0.00773177	0.00245000	**0.01790102**
Industrial - full	0.01067496	0.01069227	0.01250000	**0.03386723**
Industrial - New Construction	0.01067496	0.01069227	0.00980000	**0.03116723**
Vacant unit/excess land	0.00693872	0.00694997	0.01250000	**0.02638869**
Vacant land	0.00693872	0.00694997	0.01250000	**0.02638869**
Small Scale On Farm Business	0.01067496	0.01069227	0.00245000	**0.02381723**
Large Industrial	0.01067496	0.01069227	0.01250000	**0.03386723**
Pipeline	0.00511140	0.00511968	0.00980000	**0.02003108**
Managed Forest	0.00101473	0.00101638	0.00003825	**0.00206936**
New Construction Commercial - Full	0.00771925	0.00773177	0.00980000	**0.02525102**

THE CORPORATION OF THE

TOWNSHIP OF BLANDFORD-BLENHEIM

BY-LAW NUMBER **2196-2020**

Being a By-law to confirm the proceedings of Council.

WHEREAS by Section 5 of the *Municipal Act* 2001, S.O. 2001, c.25, the powers of a municipal corporation are to be exercised by its Council.

AND WHEREAS by Section 11 of the *Municipal Act* 2001, S.O. 2001, c.25, the powers of every Council are to be exercised by by-law;

AND WHEREAS it is deemed expedient that the proceedings of the Council of the Corporation of the Township of Blandford-Blenheim at this meeting be confirmed and adopted by by-law;

NOW THEREFORE the Council of the Corporation of the Township of Blandford-Blenheim hereby enacts as follows:

1. That the actions of the Council of the Corporation of the Township of Blandford-Blenheim in respect of each recommendation contained in the reports of the Committees and each motion and resolution passed and other action taken by the Council of the Corporation of the Township of Blandford-Blenheim, at this meeting held on June 17, 2020 is hereby adopted and confirmed as if all such proceedings were expressly embodied in this by-law.

2. That the Mayor and proper officials of the Corporation of the Township of Blandford-Blenheim are hereby authorized and directed to do all things necessary to give effect to the actions of the Council referred to in the proceeding section hereof.

3. That the Mayor and the CAO / Clerk be authorized and directed to execute all documents in that behalf and to affix thereto the seal of the Corporation of the Township of Blandford-Blenheim.

By-law read a first and second time this 17th day of June, 2020.

By-law read a third time and finally passed this 17th day of June, 2020.

MAYOR
MARK PETERSON

CAO / CLERK
RODGER MORDUE