
Bamberg Creek Bridge
Designed by
Ted Derry
Constructed & Funded by
Friends and Members of
the Avon Trail
Completed in August 2020


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This is **EXHIBIT "R"** referred to in the Affidavit of Stephen Brickman sworn before me on this day, June 20, 2024

A Commissioner for taking affidavits

Jananna Municipal Drain

Township of Wilmot – Public Information Meeting

September 29, 2022

Authority

- Headway was appointed under Section 4(1) of the Drainage Act on July 12, 2021 (about 14 months)

On-site Meeting

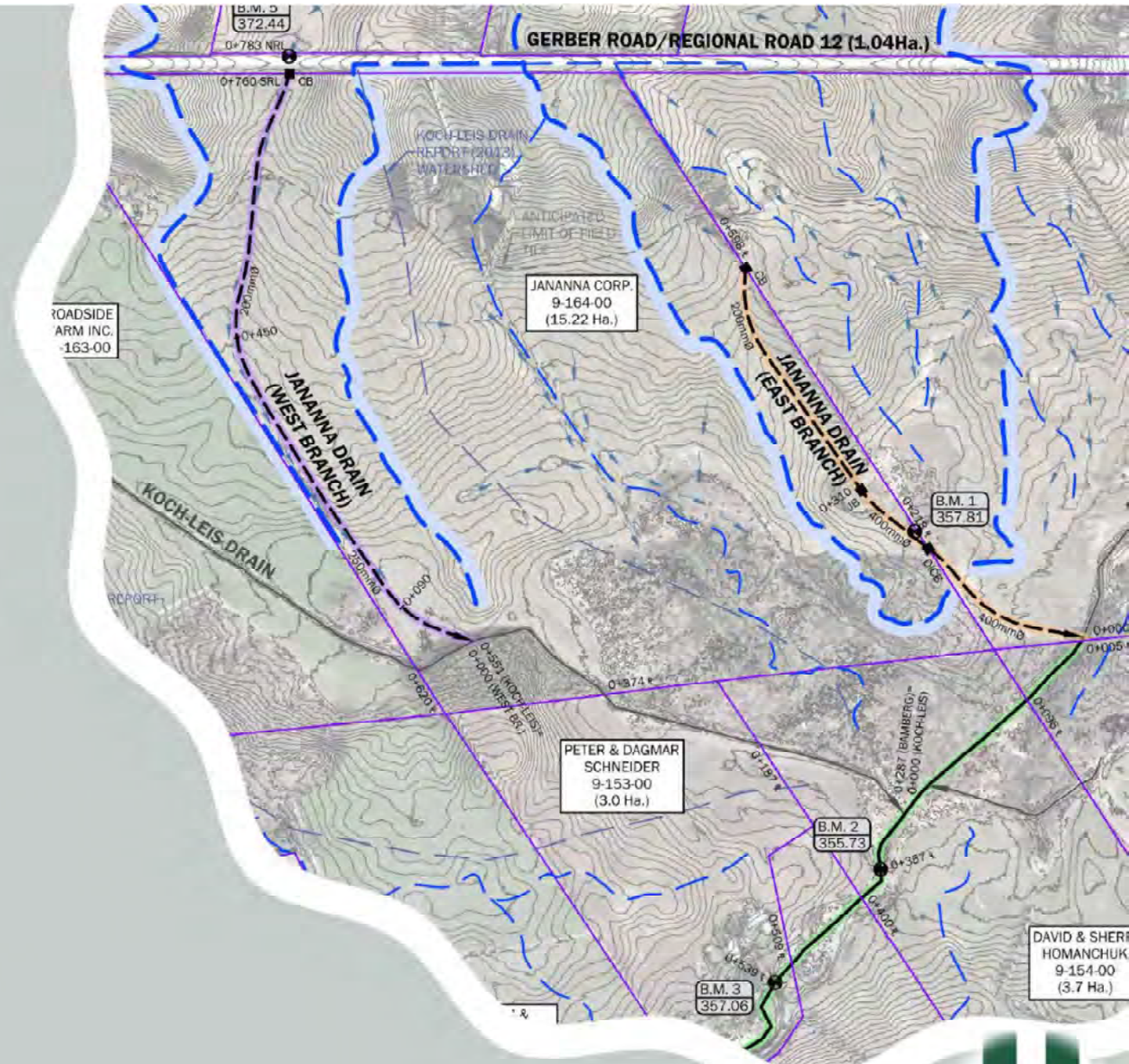
An On-site meeting was held on September 22, 2021

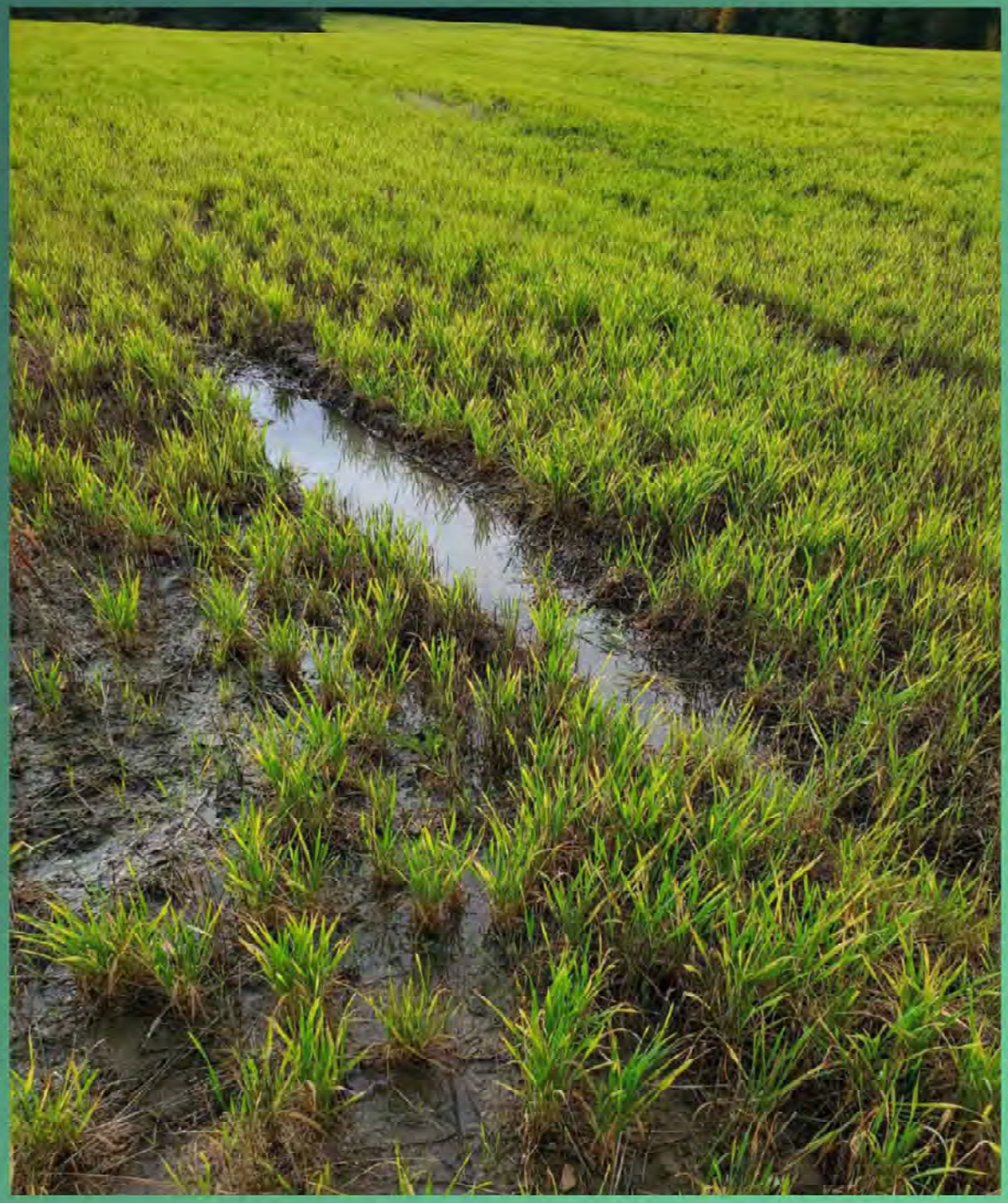
Findings & Recommendations

- Surface water flow paths are causing frequent erosion and crop damage.
- Bamberg Creek is not of sufficient depth to drain nearby low-lying lands.
- Lands north of Gerber Road, and just south of Gerber Road are unlikely to be tiled due to topographical conditions.
- Small parts of the Borissova, Homanchuk and Wurtele properties would lose access by converting Bamburg Creek into a Municipal Drain.
- Portions of the wooded area near Bamburg Creek is a wetland.
- The watershed area of the tile drains is approximately 63 Ha. (155 ac.).

We Recommend:

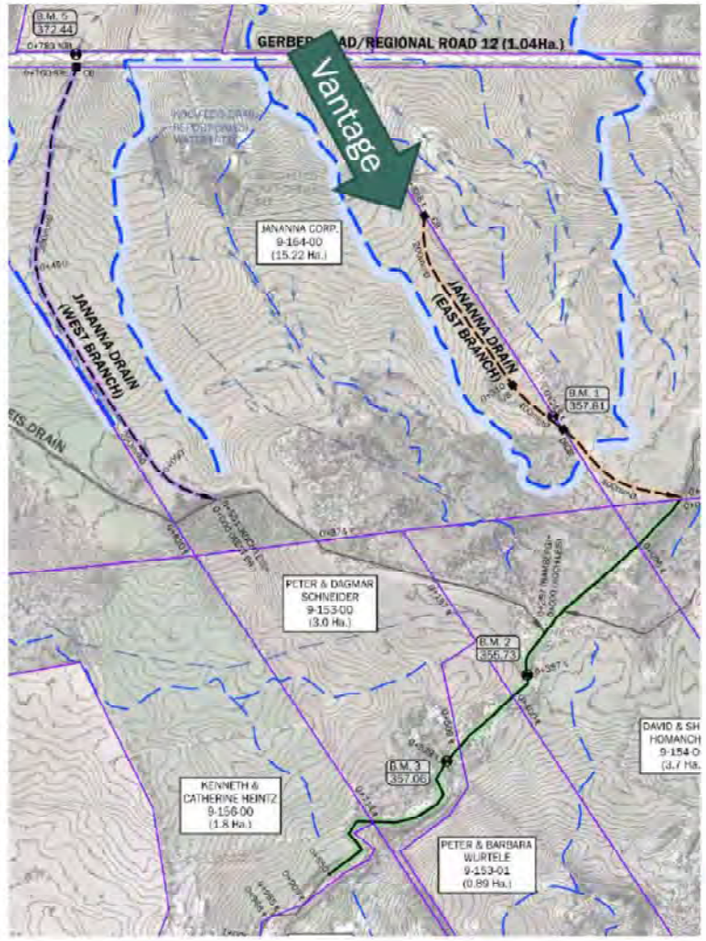
- The construction of a new municipal drainage system designed to today's standards of drainage (25 mm / 24 Hrs).
  - Pipe Systems on the Jananna and Kittle properties (East and West Branches)
- Improvements to Bamburg Creek.





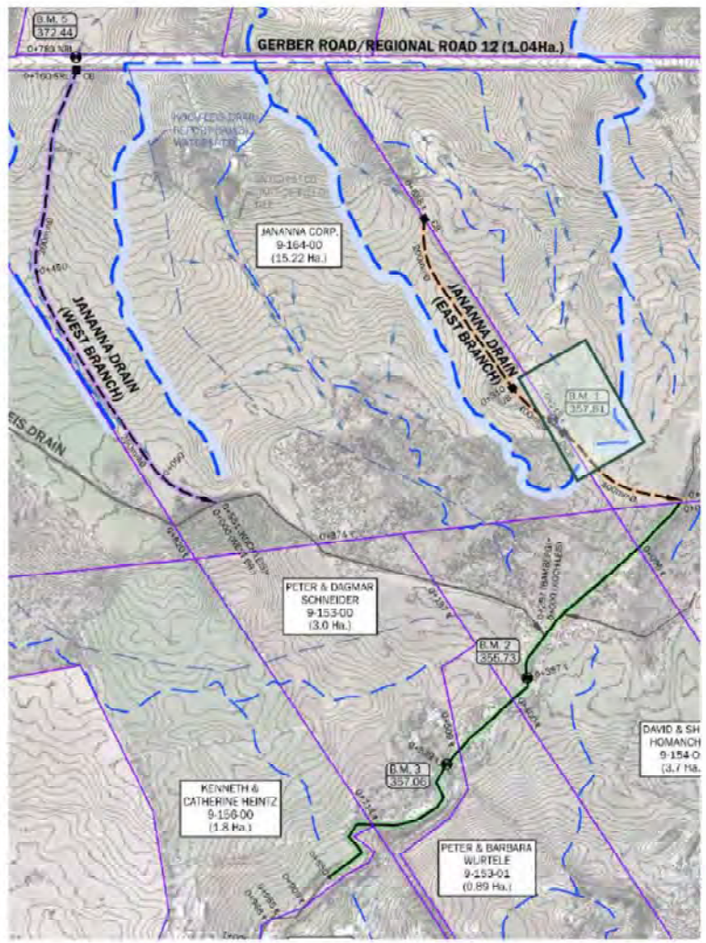
October 12, 2021

Findings – Surface Water



October 12, 2021

Findings – Surface Water



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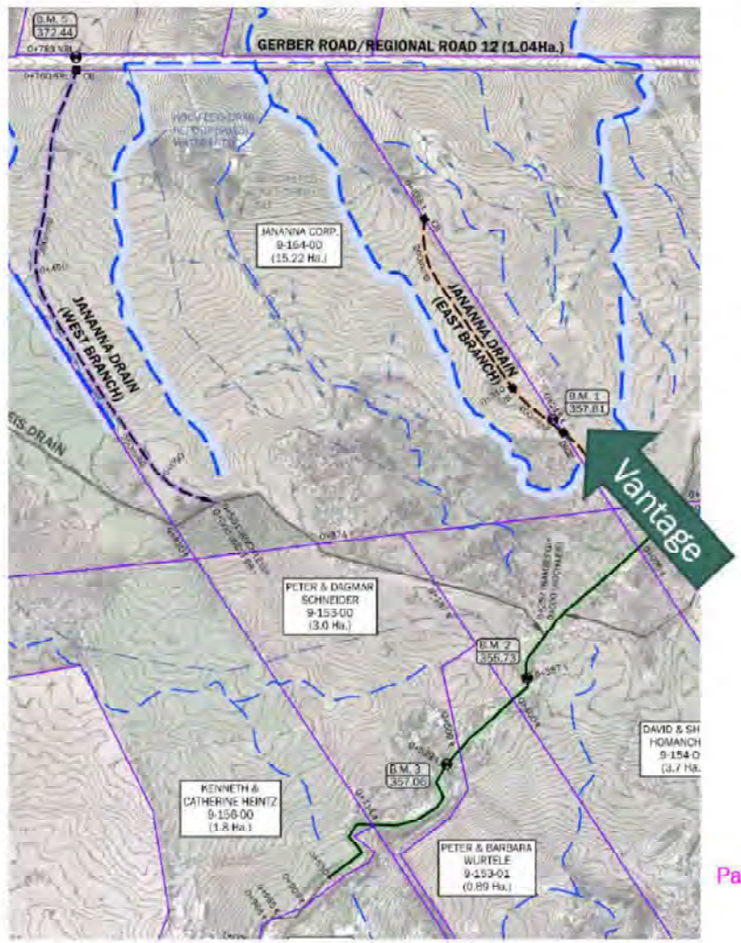
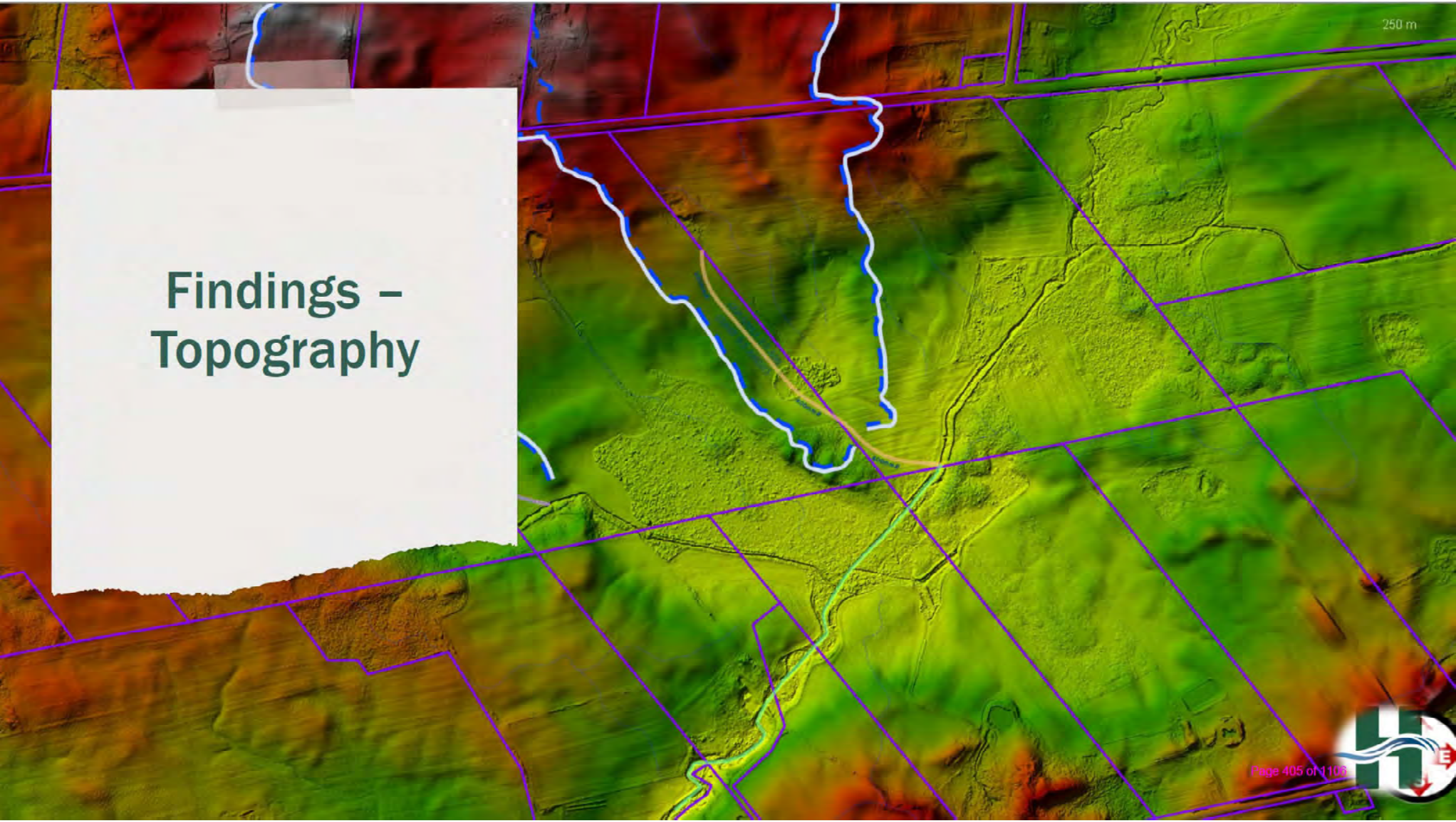
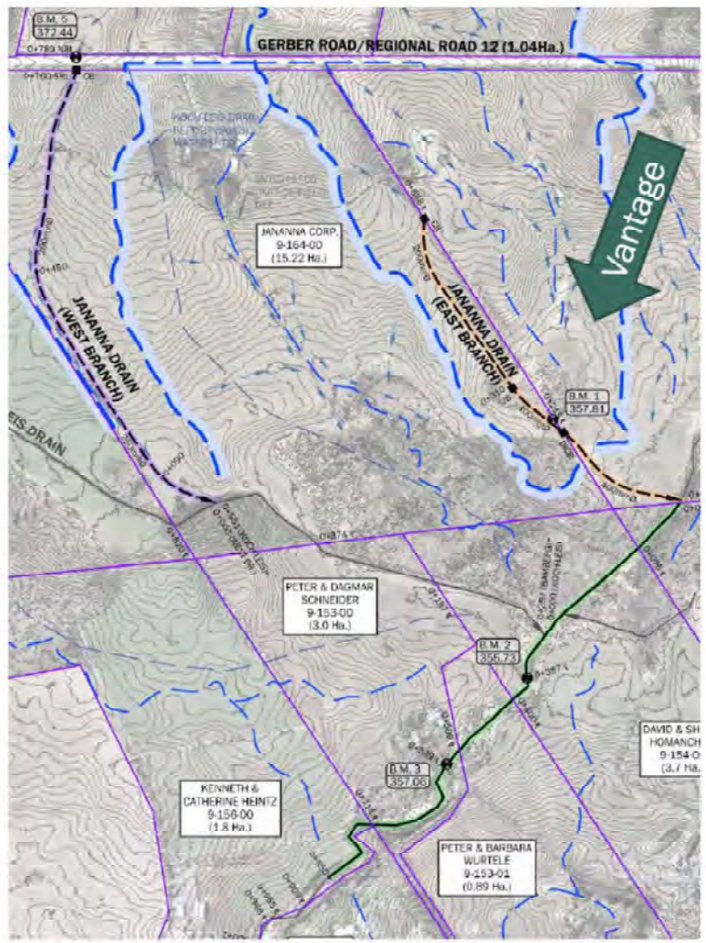


November 24, 2021

Findings – Topography



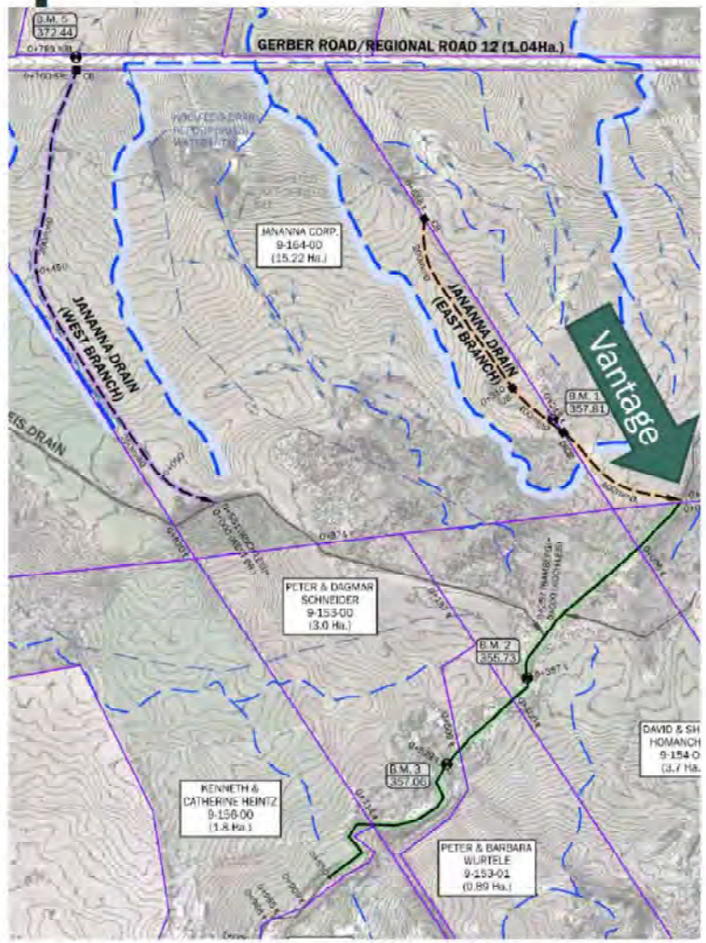
Findings – Surface Water



September 23, 2022

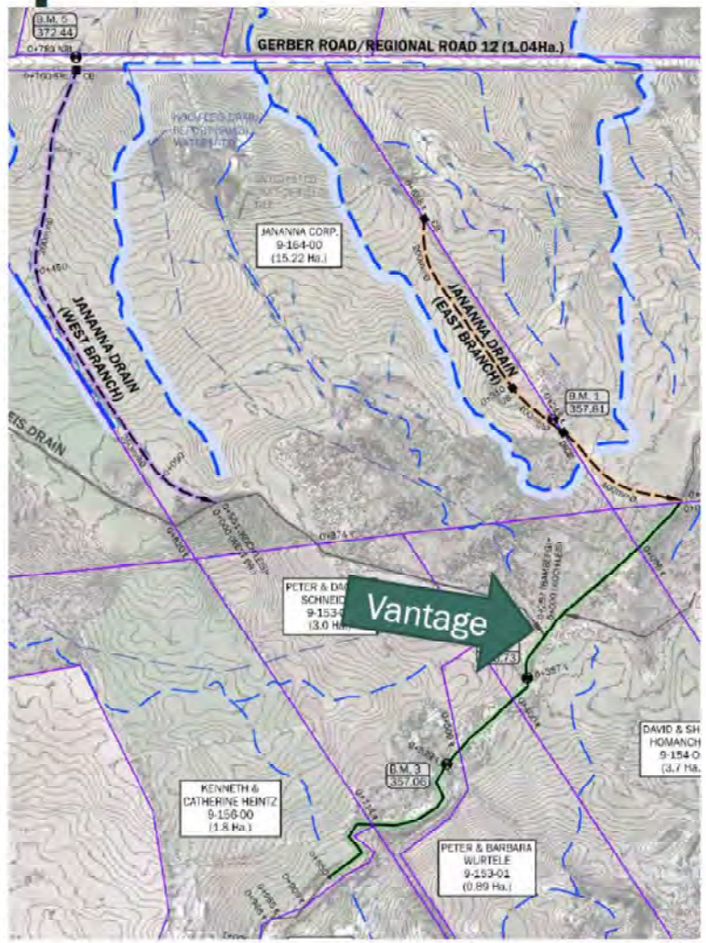
November 24, 2021

Findings – Bamberg Creek Depth



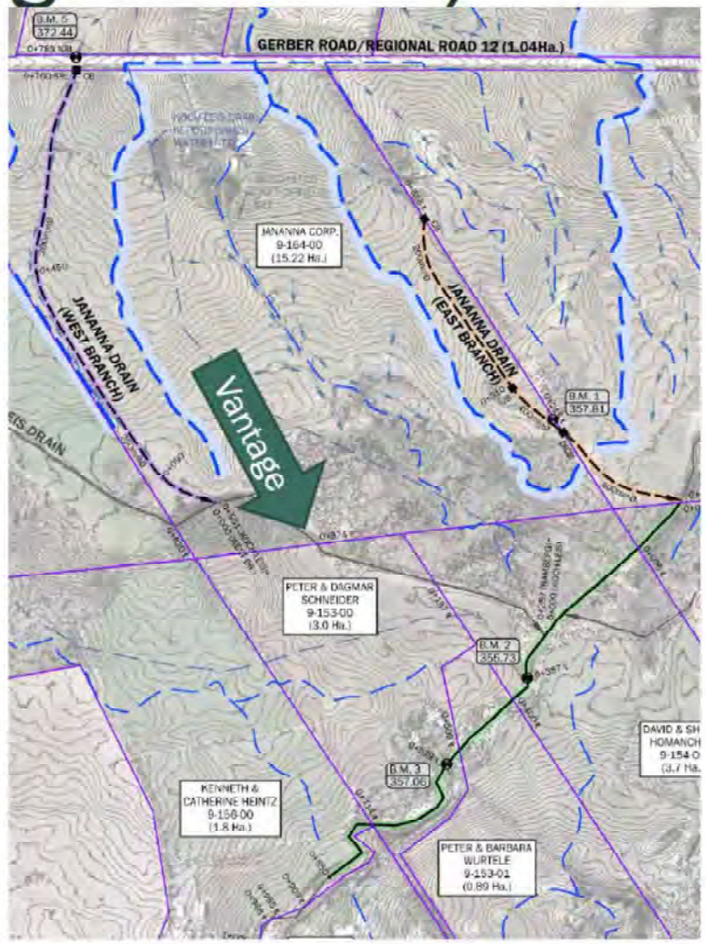
November 24, 2021

Findings – Bamberg Creek Depth



November 24, 2021

Findings – Koch-Leis Drain Outlet (example of good outlet)



November 24, 2021

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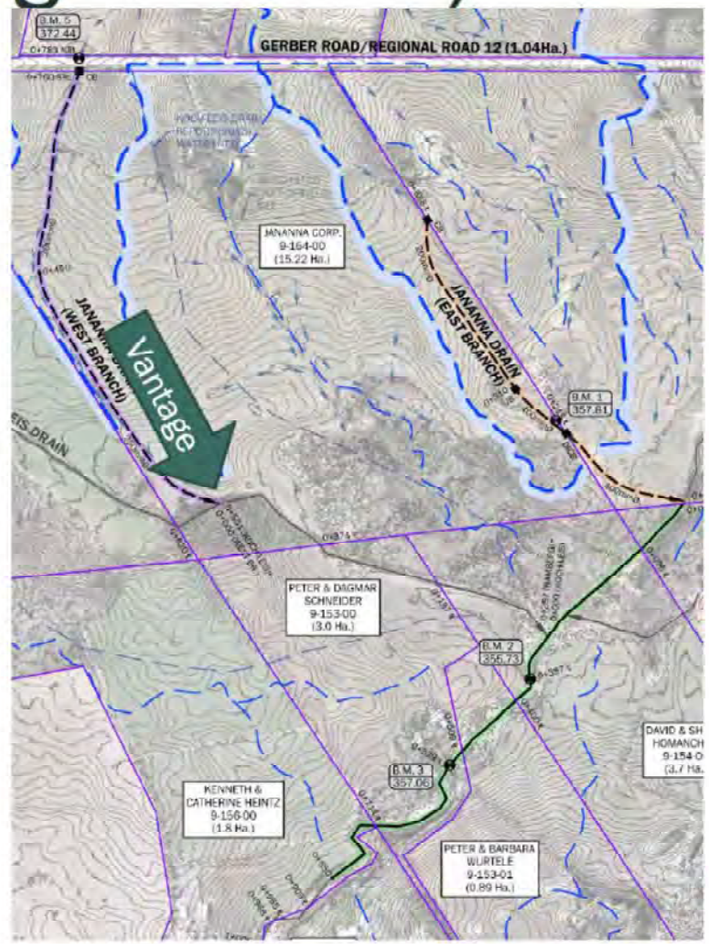
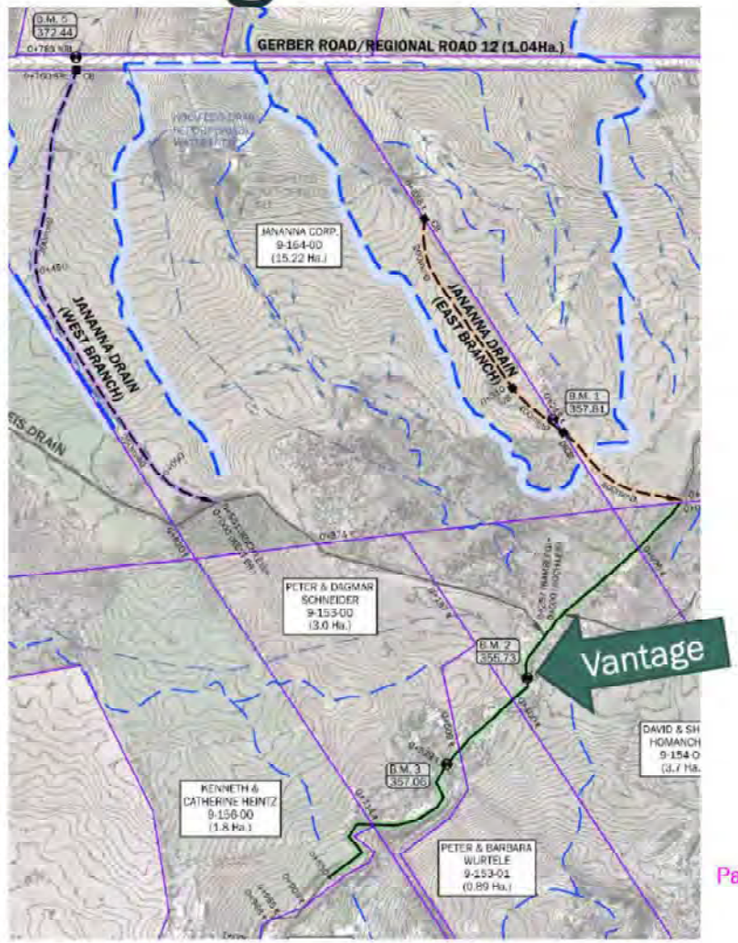


Findings – Crossings



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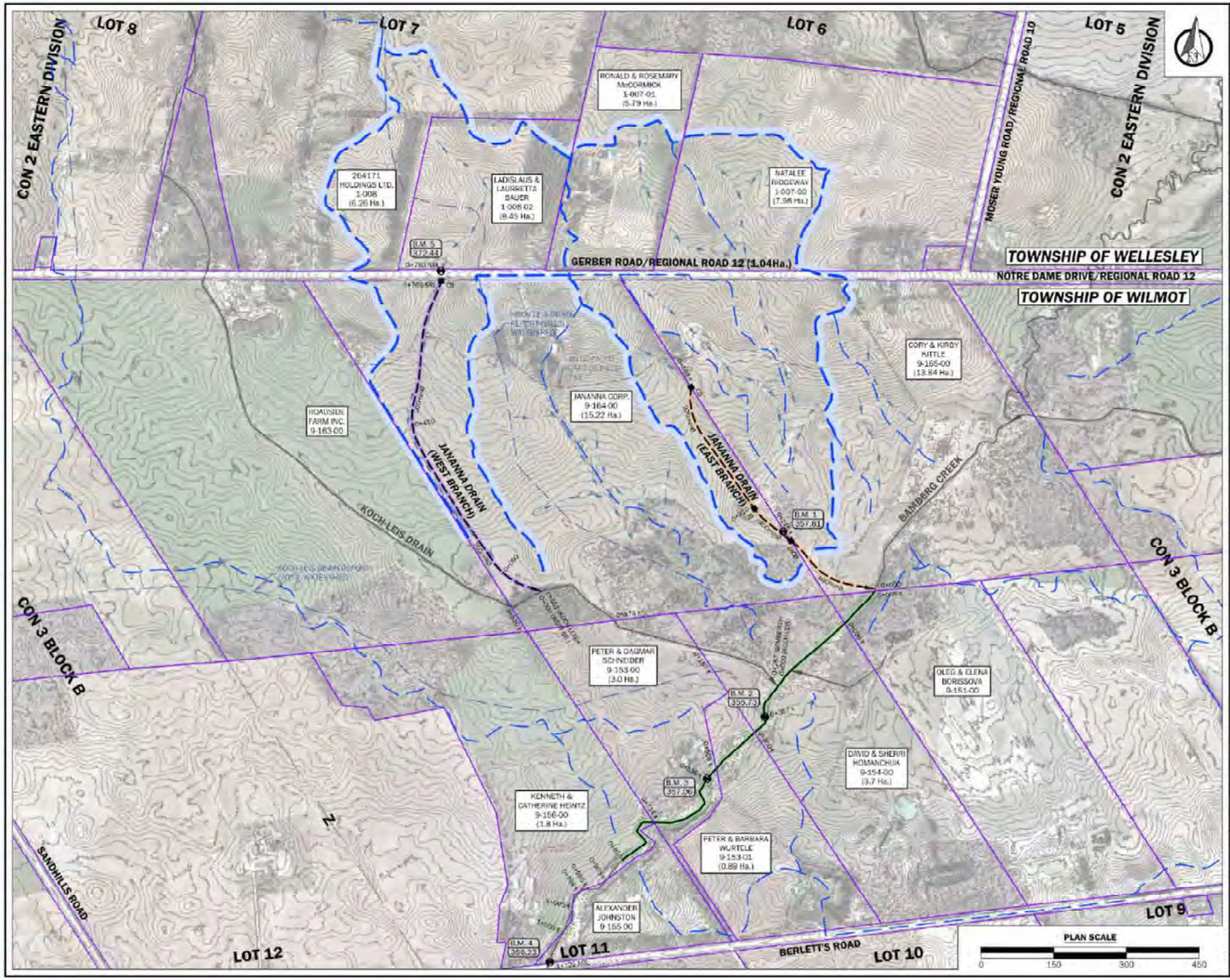


Township of Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Watershed Plan

NOTES:

1. AERIAL PHOTOGRAPHY PROVIDED BY WILMOT TOWNSHIP.
2. CONTOURS GENERATED USING 2018 LIDAR DERIVED DATASET REPRESENTING BARE-EARTH TERRAIN FROM LAND INFORMATION ONTARIO.

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 **ELEV.=357.81**
NAIL IN NORTH FACE OF FENCE POST 5m EAST OF STA. 0+234 (JANANNA)

BENCHMARK No. 2 **ELEV.=355.73**
TOP CENTRE DOWNSTREAM END OF 900mmØ CONCRETE CULVERT AT STA. 0+358 (BAMBERG)

BENCHMARK No. 3 **ELEV.=357.06**
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. 0+537 (BAMBERG)

BENCHMARK No. 4 **ELEV.=356.23**
TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. 1+125 (BAMBERG)

BENCHMARK No. 5 **ELEV.=372.44**
TOP CENTRE UPSTREAM END OF 460mmØ H.D.P.E. SURFACE CULVERT AT STA. 0+760 (WEST BR.)

LEGEND

- LOT/CONCESSION LINE
- PROPERTY LINE
- URBAN BOUNDARY
- MAJOR WATERSHED BOUNDARY
- MINOR WATERSHED BOUNDARY
- BENCHMARK LOCATION
- B.M. 1 / 123.45 — BENCHMARK No. / BENCHMARK ELEVATION
- JOHN & JANE SMITH / 12-345 / (12.3 Ha.) — LANDOWNER NAME(S) / ASSESSMENT ROLL No. (ABBREVIATED) / AREA WITHIN WATERSHED

EXISTING FEATURES:
- DRAIN NAME — OPEN DRAIN WITH CROSSING AND FLOW DIRECTION
- DRAIN NAME — CLOSED DRAIN WITH CATCH BASIN, MANHOLE AND FLOW DIRECTION
- OVERLAND FLOW PATH

PROPOSED FEATURES:
- DRAIN NAME — OPEN DRAIN WITH CROSSING AND FLOW DIRECTION
- DRAIN NAME — CLOSED DRAIN WITH CATCH BASIN, MANHOLE AND FLOW DIRECTION

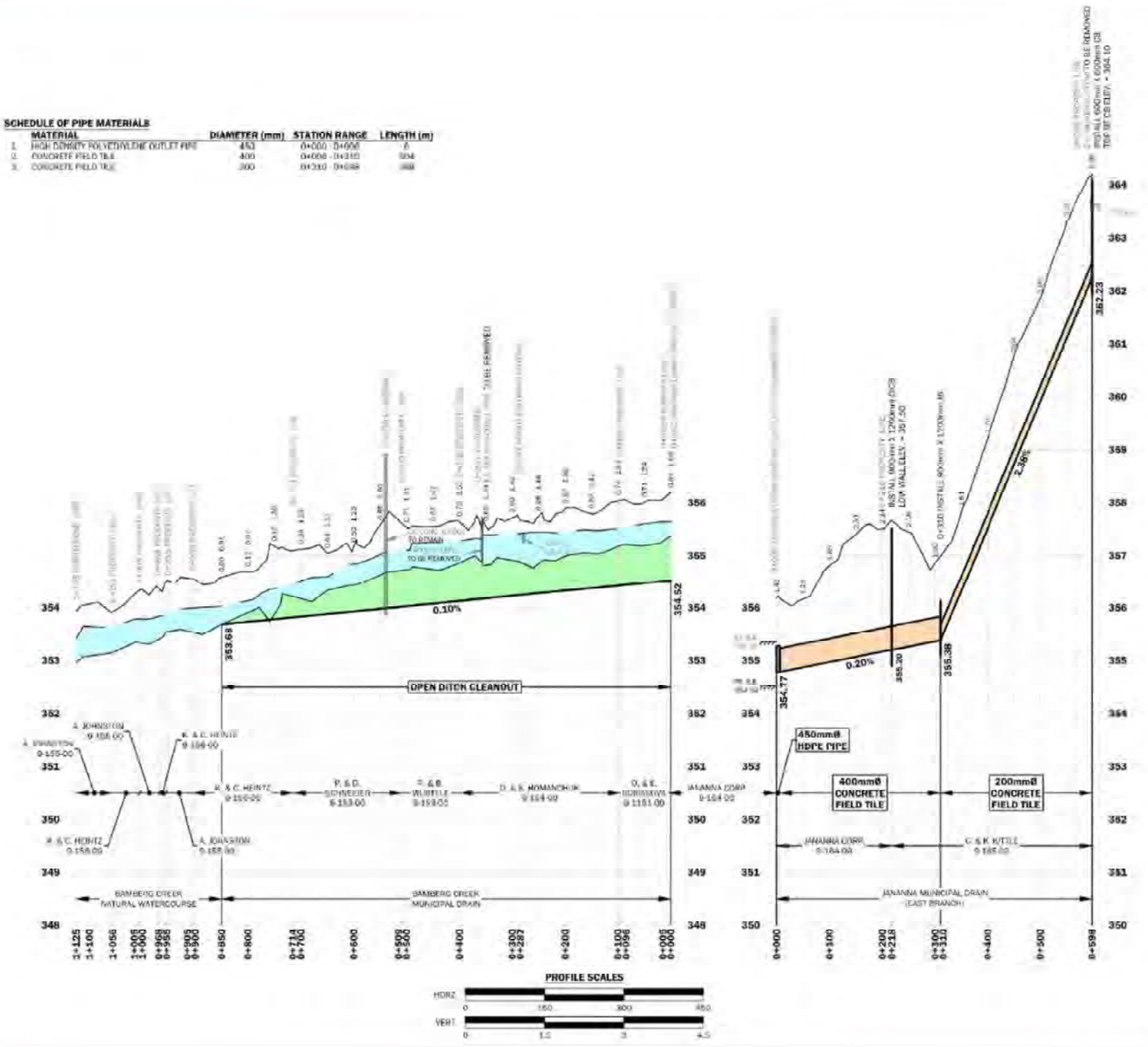
No.	REVISION	DATE (YY-MM-DD)
3	INFORMATION MEETING	22-09-29
2	PETITIONER MEETING	22-09-13
1	ON-SITE MEETING	21-09-22

Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
A.H.	A.H.	S.B.
DATE: 2022-09-29	REFERENCE No.: WLM1-002	DRAWING No.: 1 OF 5

SCHEDULE OF PIPE MATERIALS

	MATERIAL	DIAMETER (mm)	STATION RANGE	LENGTH (m)
1.	HIGH DENSITY POLYETHYLENE OUTLET PIPE	450	0+000 - 0+006	6
2.	CONCRETE FIELD TILE	400	0+006 - 0+310	304
3.	CONCRETE FIELD TILE	200	0+310 - 0+498	188



TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Jananna Drain (East Branch) Profile

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 **ELEV.=367.81**
NAIL IN NORTH FACE OF FENCE POST 6m EAST OF STA. 0+234 (JANANNA)

BENCHMARK No. 2 **ELEV.=355.73**
TOP CENTRE DOWNSTREAM END OF 900mmØ CONCRETE CULVERT AT STA. 0+258 (BAMBERG)

BENCHMARK No. 3 **ELEV.=357.06**
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. 0+037 (BAMBERG)

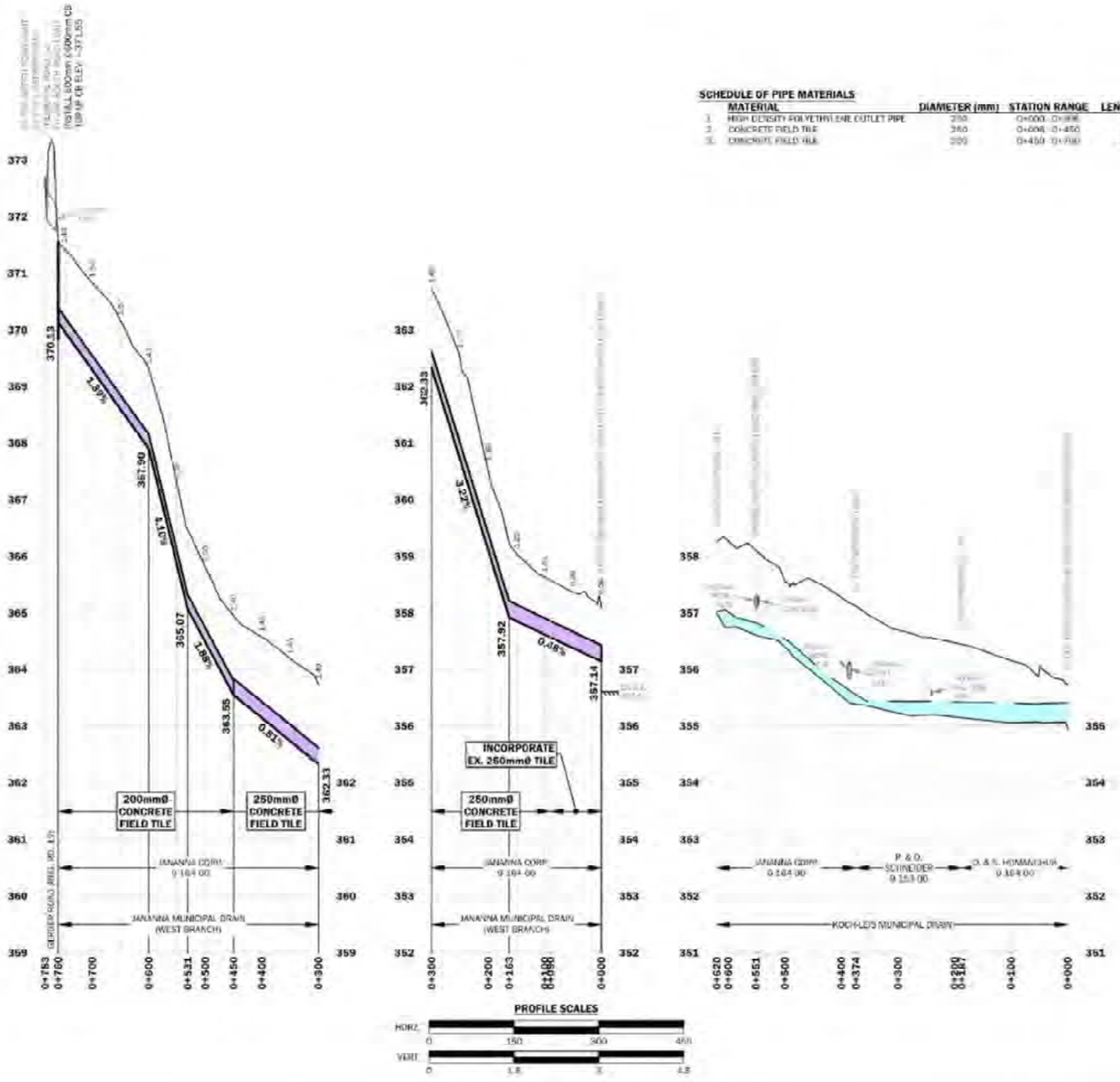
BENCHMARK No. 4 **ELEV.=356.23**
TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. 1+125 (BAMBERG)

BENCHMARK No. 5 **ELEV.=372.44**
TOP CENTRE UPSTREAM END OF 450mmØ H.D.P.E. SURFACE C.I.I. VENT AT STA. 0+780 (+)

No.	REVISION	DATE
3	INFORMATION MEETING	22-09-29
2	PETITIONER MEETING	22-09-13
1	ON-SITE MEETING	22-09-22

Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
A.H.	A.H.	S.E.
DATE:	SUPERVISOR No.:	DRAWING No.:
2022-09-29	WLMT-002	2 OF 5



Township of Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Jananna Drain (West Branch) Profile

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 **ELEV.=367.81**
NAIL IN NORTH FACE OF FENCE POST 0.4 EAST OF STA. 0+234 (JANANNA)

BENCHMARK No. 2 **ELEV.=365.73**
TOP CENTRE DOWNSTREAM END OF 900mmØ CONCRETE CULVERT AT STA. 0+358 (BAMBERG)

BENCHMARK No. 3 **ELEV.=357.06**
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. 0+637 (BAMBERG)

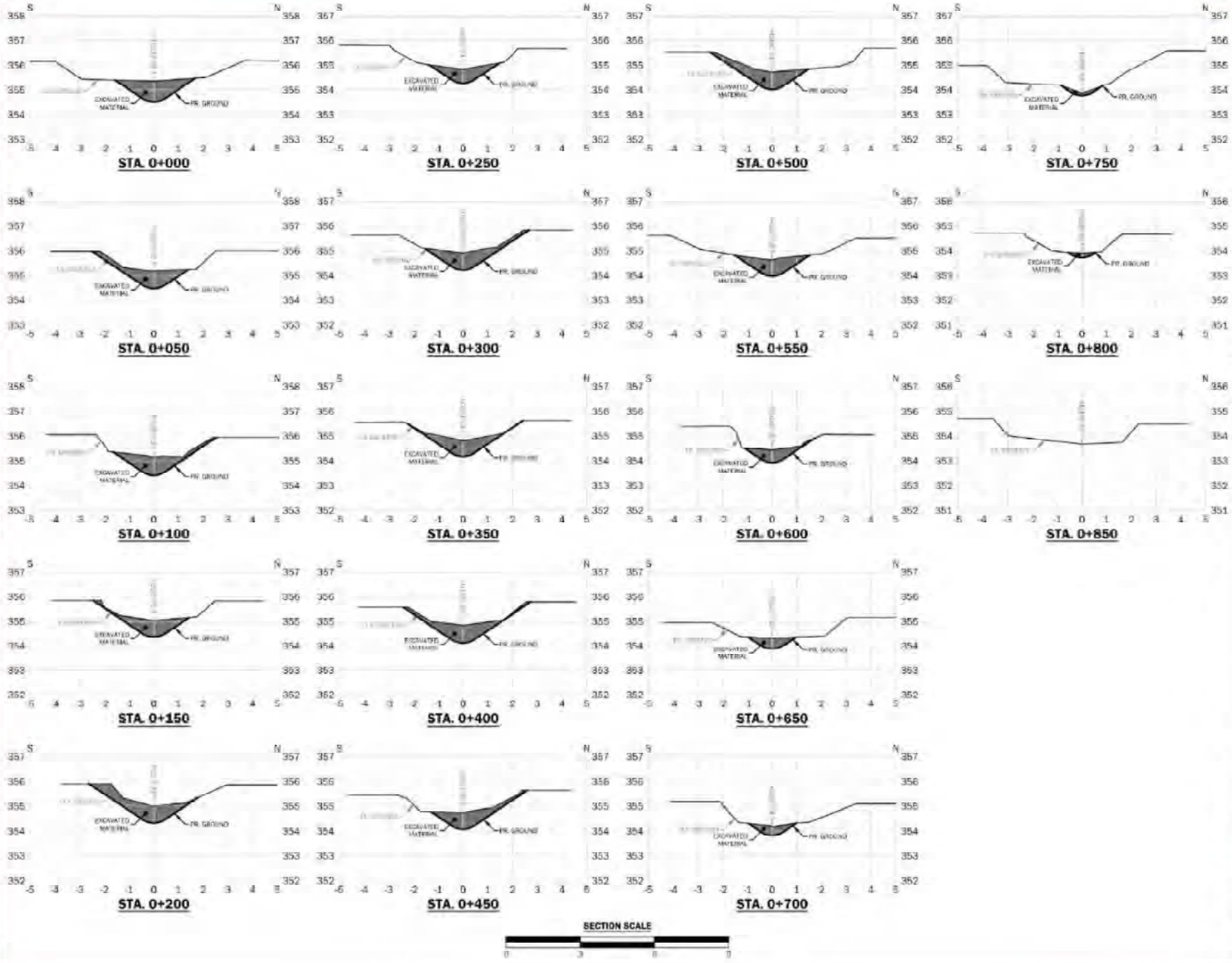
BENCHMARK No. 4 **ELEV.=356.23**
TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. 3+125 (BAMBERG)

BENCHMARK No. 5 **ELEV.=372.44**
TOP CENTRE UPSTREAM END OF 450mmØ H.D.P.E. SURFACE CULVERT AT STA. 0+750 (T)

No.	REVISION	DATE
3	INFORMATION MEETING	22-09-29
2	PETITIONER MEETING	22 09 13
1	ON-SITE MEETING	21 09 22

Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
A.K.	A.K.	S.B.
DATE:	REFERENCE No.	DRAWING No.
2022-09-29	WLMT-2002	3 OF 5



Township of Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Bamburg Creek Sections

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 **ELEV.=357.81**
NAIL IN NORTH FACE OF FENCE POST 5m EAST OF STA. 0+234 (JANANNA)

BENCHMARK No. 2 **ELEV.=355.73**
TOP CENTRE DOWNSTREAM END OF 900mmØ CONCRETE CULVERT AT STA. 0+398 (BAMBERG)

BENCHMARK No. 3 **ELEV.=357.06**
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. 0+537 (BAMBERG)

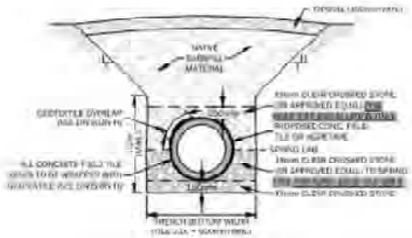
BENCHMARK No. 4 **ELEV.=356.23**
TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. 1+125 (BAMBERG)

BENCHMARK No. 5 **ELEV.=373.44**
TOP CENTRE UPSTREAM END OF 450mm Ø H.D.P.E. SURFACE CULVERT AT STA. 0+780 (R)

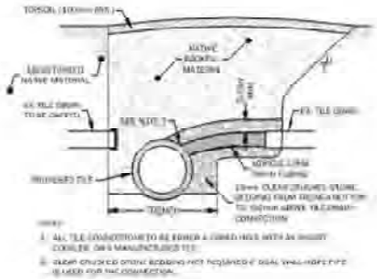
No.	REVISION	DATE (YY-MM-DD)
3	INFORMATION MEETING	22-09-29
2	PETITIONER MEETING	22-09-13
1	ON SITE MEETING	21-09-22

Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
A.H.	A.H.	S.B.
DATE:	REFERENCE No.	DRAWING No.
2022-09-29	WLMT-002	4 OF 5



TYPICAL PIPE INSTALLATION ON STONE BEDDING DETAIL
N.T.S.



TYPICAL TILE CONNECTION DETAIL
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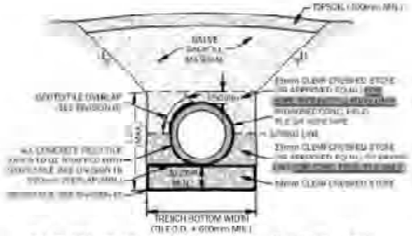
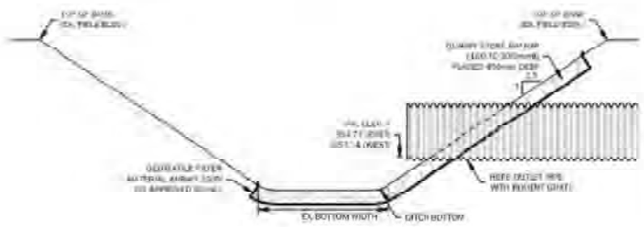
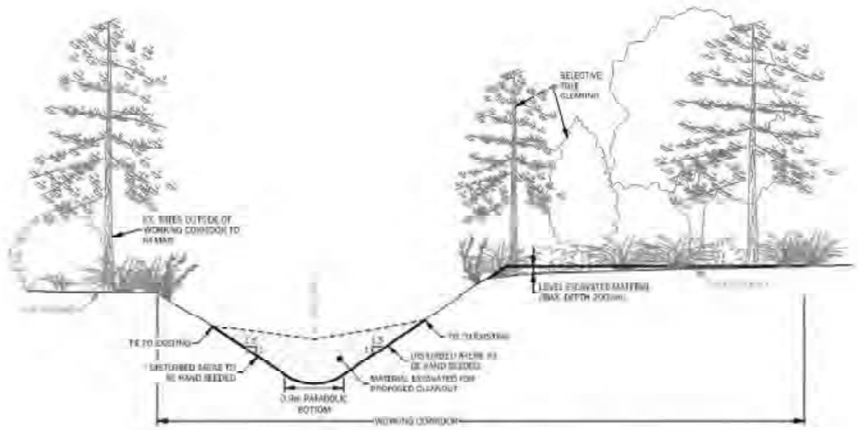


TYPICAL PIPE INSTALLATION ON WRAPPED STONE BEDDING DETAIL (PROVISIONAL ITEM)
N.T.S.



TYPICAL OUTLET DETAIL
N.T.S.



TYPICAL OPEN DITCH CLEANOUT DETAIL
N.T.S.

Township of Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Details

BENCHMARK DESCRIPTIONS

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NAIL (N) NORTH FACE OF FENCE POST 5m EAST OF STA. 0+234 (JANANNA)

BENCHMARK No. 2 **ELEV.=355.73**
TOP CENTRE DOWNSTREAM END OF 1000mm CONCRETE CULVERT AT STA. 0+256 (BAMBERG)

BENCHMARK No. 3 **ELEV.=357.66**
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. 0+617 (BAMBERG)

BENCHMARK No. 4 **ELEV.=356.23**
TOP CENTRE UPSTREAM END OF CONCRETE REINFORCED CULVERT AT STA. 1+235 (BAMBERG)

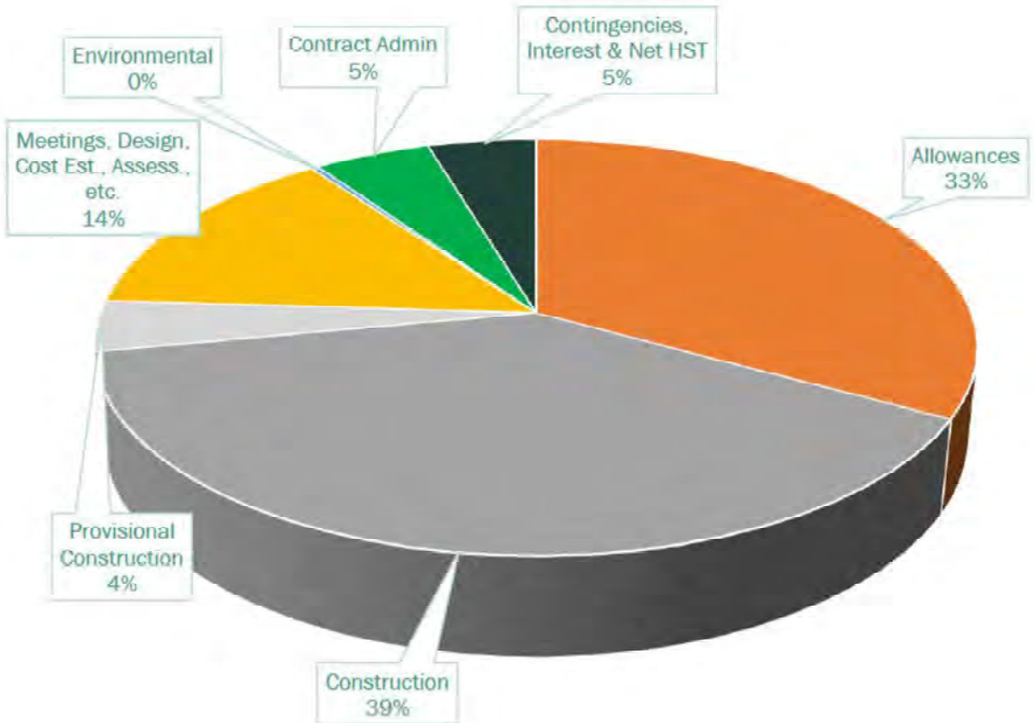
BENCHMARK No. 5 **ELEV.=372.44**
TOP CENTRE UPSTREAM END OF 450mmø H.D.P.E. SURFACE DRAIN AT STA. 0+750 (S)

3	INFORMATION MEETING	22-09-29
2	PETITIONER MEETING	22-09-13
1	ON-SITE MEETING	21-09-22
NO.	REVISION	DATE (YY-MM-DD)

Headway Engineering

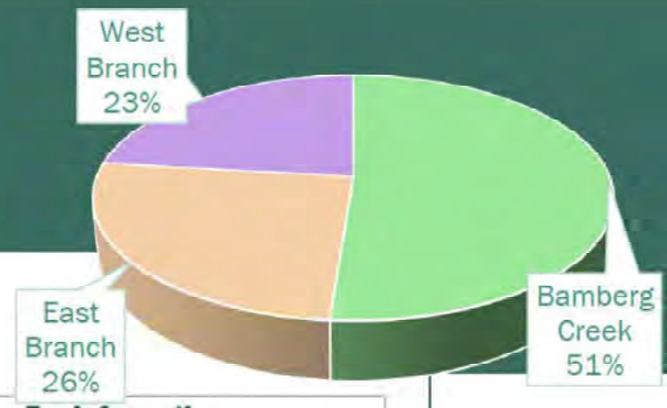
DRAWN BY: AH	DESIGNED BY: AH	CHECKED:
DATE: 2023-06-23	REFERENCE No.: WLM1-002	DRAWING No.: SLOF-5

Estimated Project Costs



- Allowances
- Construction Costs (including Contingencies)
- Meetings/Correspondence, Design Review, Cost Estimates, Reporting, etc.
- Environmental Consultations
- Contract Documents, Administration, Supervision & Inspection
- Interest & NET HST
- **Total Estimated Costs: $409,000**

Assessment of Costs



Schedule of Assessment for Construction
Jananna Municipal Drain 2022

Jananna Municipal Drain 2022

Property Details				Assessment Summary				For Information		
Part Lot	Concession	Landowner	Roll Number	Bamberg Creek Drain	East Branch	West Branch	Total Assessment	Less Gov't Grant	Less Allowances	Net Estimated Expense
Township of Wilmot										
9	3 Block B	Oleg & Elena Borissova	9-151	$ 12,497.00	$ -	$ -	$ 12,497.00	$ 4,166.00	$ 3,040.00	$ 5,291.00
9	3 Block B	Cory & Kirby Kittle	9-165	$ 39,307.00	$ 26,756.00	$ -	$ 66,063.00	$ 22,021.00	$ 7,580.00	$ 36,462.00
10	3 Block B	Peter & Dagmar Schneider	9-153	$ 12,054.00	$ -	$ -	$ 12,054.00	$ 4,018.00	$ 4,030.00	$ 4,006.00
10	3 Block B	Peter & Barbara Wurtele	9-153-01	$ 44,642.00	$ -	$ -	$ 44,642.00	$ 14,881.00	$ 37,110.00	-$ (7,349.00)
10	3 Block B	David & Sherri Homanchuk	9-154	$ 64,186.00	$ -	$ -	$ 64,186.00	$ 21,395.00	$ 46,210.00	-$ (3,419.00)
10	3 Block B	Jananna Corp.	9-164	$ 16,242.00	$ 61,299.00	$ 57,500.00	$ 135,041.00	$ 45,014.00	$ 34,300.00	$ 55,727.00
11	3 Block B	Alexander Johnston	9-155	$ 49.00	$ -	$ -	$ 49.00	*	$ -	$ 49.00
11	3 Block B	Kenneth & Catherine Heintz	9-156	$ 5,718.00	$ -	$ -	$ 5,718.00	$ 1,906.00	$ 2,840.00	$ 972.00
Total Assessments on Lands				$ 194,695.00	$ 88,055.00	$ 57,500.00	$ 340,250.00	$ 113,401.00	$ 135,110.00	$ 91,739.00
Gerber Road		Region of Waterloo		$ 6,327.00	$ 7,205.00	$ 20,255.00	$ 33,787.00			$ 33,787.00
Total Assessments on Roads				$ 6,327.00	$ 7,205.00	$ 20,255.00	$ 33,787.00			$ 33,787.00
Total Assessments Main Open Township of Wilmot				$ 201,022.00	$ 95,260.00	$ 77,755.00	$ 374,037.00	$ 113,401.00	$ 135,110.00	$ 125,526.00
Township of Wellesley										
6	2 East	Natalee Ridgeway	1-007-00	$ 4,855.00	$ 5,529.00	$ -	$ 10,384.00	$ 3,461.00		$ 6,923.00
6	2 East	Ronald & Rosemary McCormick	1-007-01	$ 3,523.00	$ 4,011.00	$ -	$ 7,534.00	$ 2,511.00		$ 5,023.00
7	2 East	Ladislaus & Laurretta Bauer	1-008-02	$ -		$ 9,395.00	$ 9,395.00	$ 3,132.00		$ 6,263.00
7	2 East	264171 Holdings Ltd.	1-008	$ -		$ 7,650.00	$ 7,650.00	$ 2,550.00		$ 5,100.00
Total Assessments on Lands				$ 8,378.00	$ 9,540.00	$ 17,045.00	$ 34,963.00	$ 11,654.00	$ -	$ 23,309.00
Total Assessments Township of Wellesley				$ 8,378.00	$ 9,540.00	$ 17,045.00	$ 34,963.00	$ 11,654.00	$ -	$ 23,309.00
Total Assessments Jananna Municipal Drain 2022				$ 209,400.00	$ 104,800.00	$ 94,800.00	$ 409,000.00	$ 125,055.00	$ 135,110.00	$ 148,835.00

Process

- Appointment of an Engineer – Complete
- Onsite Meeting – Complete
- Survey – Complete
- Drafting – Complete
- Design and Cost Estimating – Complete
- **Public Engagements (Today) – Complete**
- Environmental Consultations – Ongoing
- Prepare final Report
- **Processing the Report** – Next Slide
- Tendering
- Construction
- Recover Costs

Processing the Report

Engineer files the report with the Township

Township schedules Meeting to Consider the Report

Township mails a copy of the report, and a Notice of the Meeting to Consider the Report to everybody affected

Meeting to Consider

Township forwards a copy of the provisional by-law to Landowners, along with a notice of the Court of Revision

Appeals Process

Court of Revision – Assessment Based Appeals

Tribunal and Referee (if necessary)

Third Reading of the By-Law

Process

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- Survey – Complete
- Drafting – Complete
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TOWNSHIP OF Wilmot

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JANANNA MUNICIPAL DRAIN

Watershed Plan

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LEGEND

- LOT/CONCESSION LINE
- PROPERTY LINE
- URBAN BOUNDARY
- MAJOR WATERSHED BOUNDARY
- MINOR WATERSHED BOUNDARY
- WETLAND LIMIT
- BENCHMARK LOCATION
  - B.M. 1 / 123.45 — BENCHMARK No. / BENCHMARK ELEVATION
  - JOHN & JANE SMITH / 12-345 / (12.3 Ha.) — LANDOWNER NAME(S) / ASSESSMENT ROLL No. (ABBREVIATED) / AREA WITHIN WATERSHED
- EXISTING FEATURES:
  - DRAIN NAME — OPEN DRAIN WITH CROSSING AND FLOW DIRECTION
  - DRAIN NAME (CB / MH) — CLOSED DRAIN WITH CATCH BASIN, MANHOLE AND FLOW DIRECTION
  - OVERLAND FLOW PATH
- PROPOSED FEATURES:
  - DRAIN NAME — OPEN DRAIN WITH CROSSING AND FLOW DIRECTION
  - DRAIN NAME (CB / MH) — CLOSED DRAIN WITH CATCH BASIN, MANHOLE AND FLOW DIRECTION

No.	REVISION	DATE (YY-MM-DD)
2	INFORMATION MEETING	22-09-29
1	ON-SITE MEETING	21-09-22

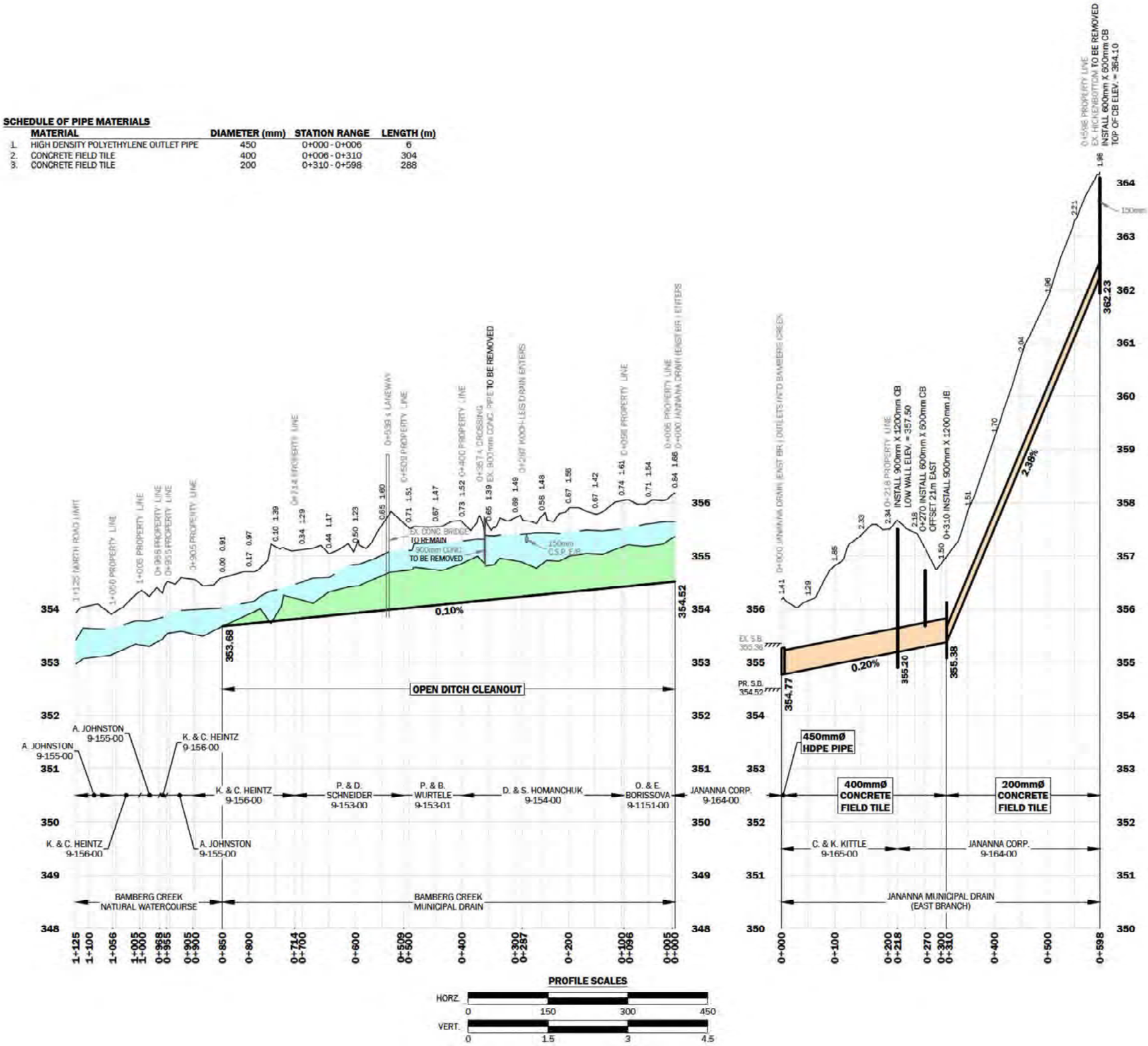
Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
A.H.	A.H.	S.B.
DATE: 2022-09-29	REFERENCE No. WLMT-002	DRAWING No. 1 OF 5

PLAN SCALE
0 150 300 450

SCHEDULE OF PIPE MATERIALS

	MATERIAL	DIAMETER (mm)	STATION RANGE	LENGTH (m)
1.	HIGH DENSITY POLYETHYLENE OUTLET PIPE	450	0+000 - 0+006	6
2.	CONCRETE FIELD TILE	400	0+006 - 0+310	304
3.	CONCRETE FIELD TILE	200	0+310 - 0+598	288



TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Jananna Drain (East Branch) Profile

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 **ELEV.=357.81**
NAIL IN NORTH FACE OF FENCE POST 5m EAST OF STA. 0+234 (JANANNA)

BENCHMARK No. 2 **ELEV.=355.73**
TOP CENTRE DOWNSTREAM END OF 900mmØ CONCRETE CULVERT AT STA. 0+358 (BAMBERG)

BENCHMARK No. 3 **ELEV.=357.06**
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. 0+537 (BAMBERG)

BENCHMARK No. 4 **ELEV.=356.23**
TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. 1+125 (BAMBERG)

BENCHMARK No. 5 **ELEV.=372.44**
TOP CENTRE UPSTREAM END OF 450mmØ H.D.P.E. SURFACE CULVERT AT STA. 0+780 (?)

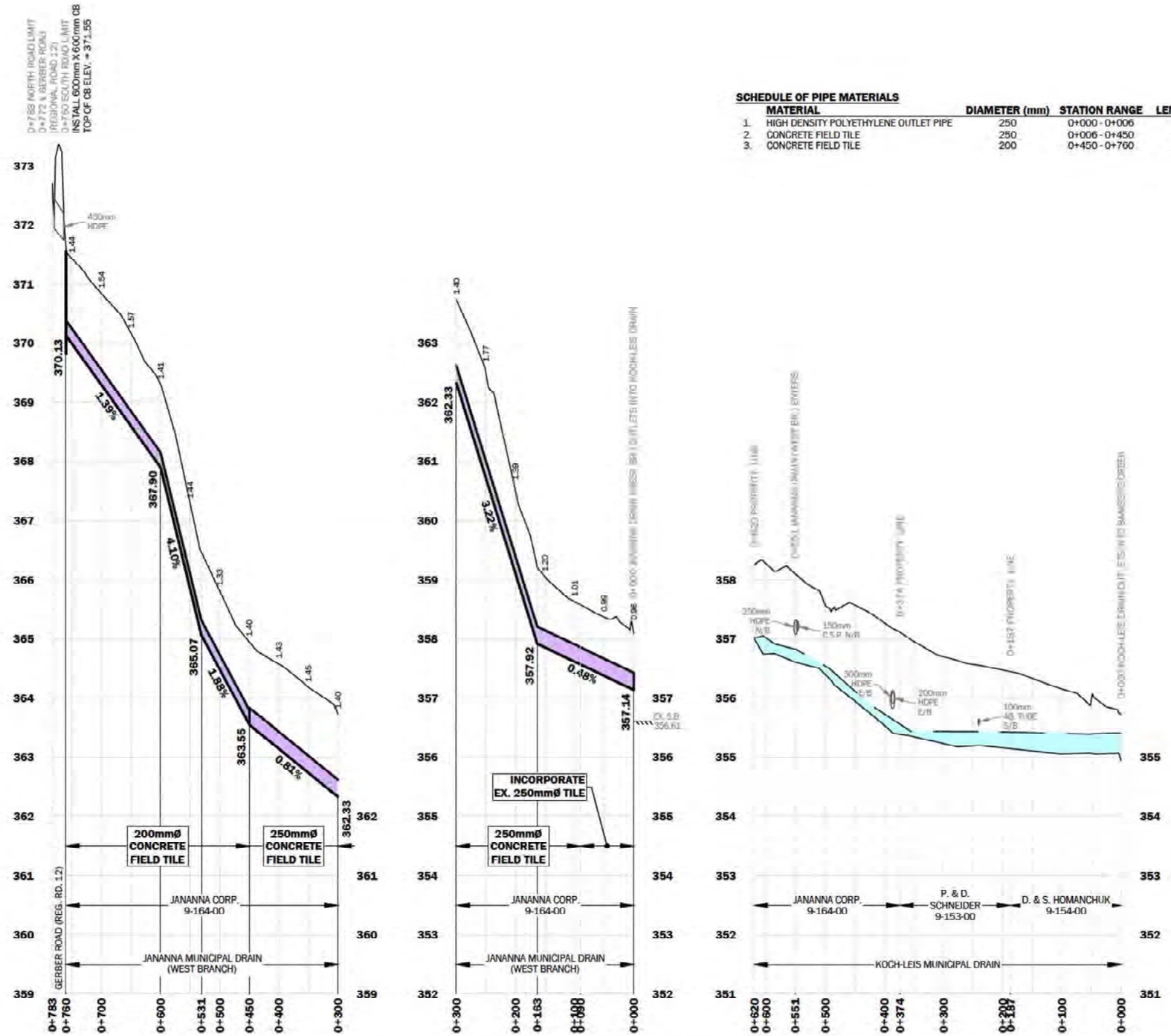
No.	REVISION	DATE (YY-MM-DD)
2	INFORMATION MEETING	22-09-29
1	ON-SITE MEETING	21-09-22

Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
A.H.	A.H.	S.B.
DATE: 2022-09-29	REFERENCE No. WLMT-002	DRAWING No. 2 OF 5

SCHEDULE OF PIPE MATERIALS

	MATERIAL	DIAMETER (mm)	STATION RANGE	LENGTH (m)
1.	HIGH DENSITY POLYETHYLENE OUTLET PIPE	250	0+000 - 0+006	6
2.	CONCRETE FIELD TILE	250	0+006 - 0+450	444
3.	CONCRETE FIELD TILE	200	0+450 - 0+760	310



PROFILE SCALES

HORZ. 0 150 300 450

VERT. 0 1.5 3 4.5

TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Jananna Drain (West Branch) Profile

BENCHMARK DESCRIPTIONS

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Headway Engineering

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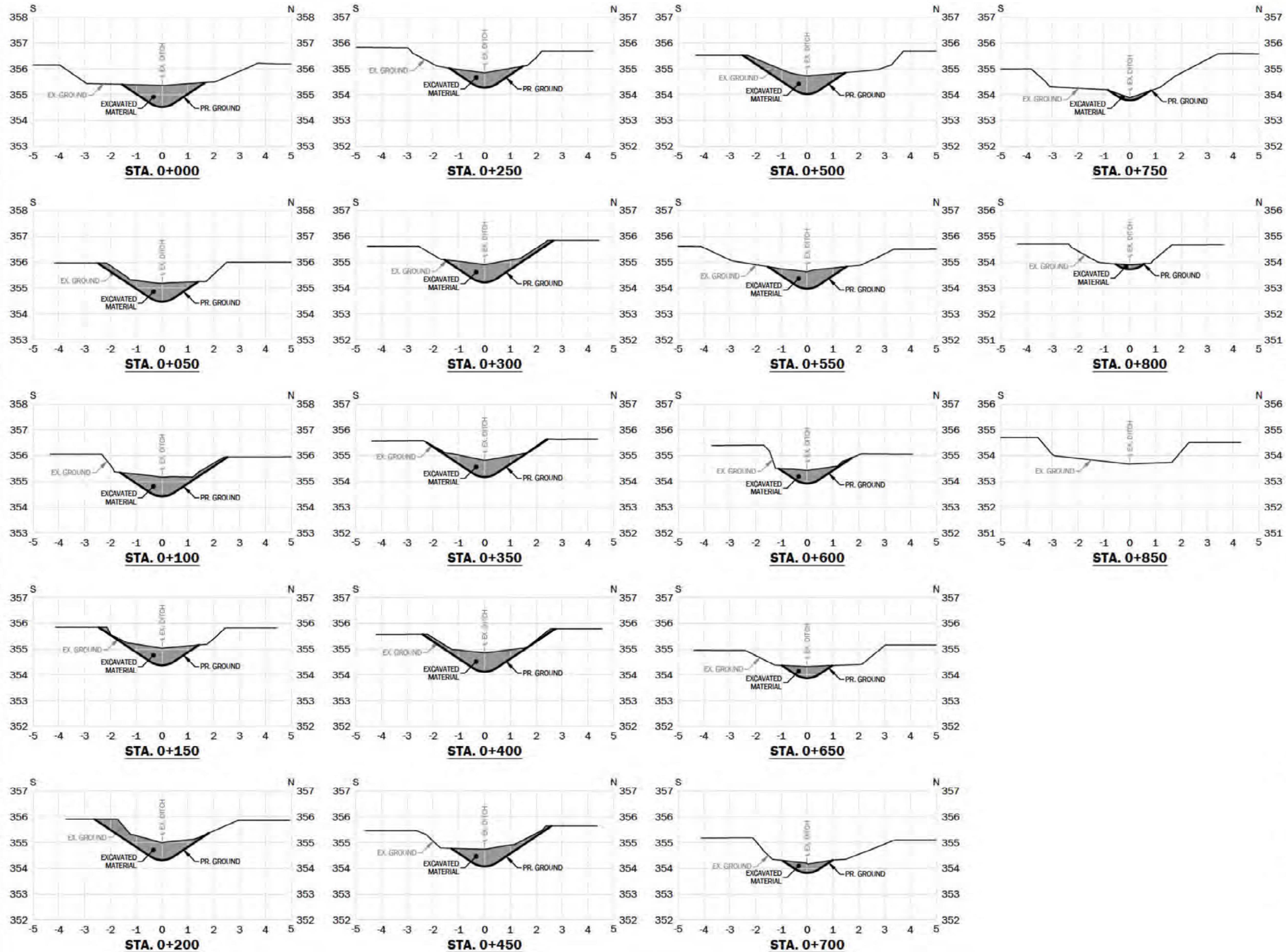
A.H.	A.H.	S.B.
DATE:	REFERENCE No.	DRAWING No.
2022-09-29	WLMT-002	3 OF 5



SECTION SCALE

0 3 6 9

TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Bamburg Creek Sections

BENCHMARK DESCRIPTIONS

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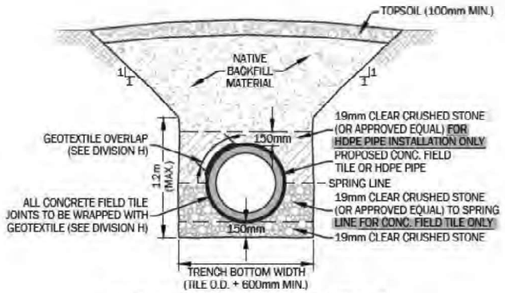
2	INFORMATION MEETING	22-09-29
1	ON-SITE MEETING	21-09-22

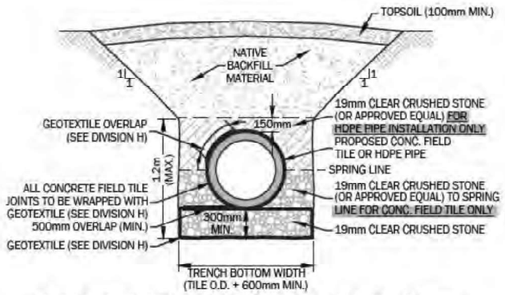
Headway Engineering

DRAWN BY: A.H.	DESIGNED BY: A.H.	CHECKED BY: S.B.
DATE: 2022-09-29	REFERENCE No. WLMT-002	DRAWING No. 4 OF 5



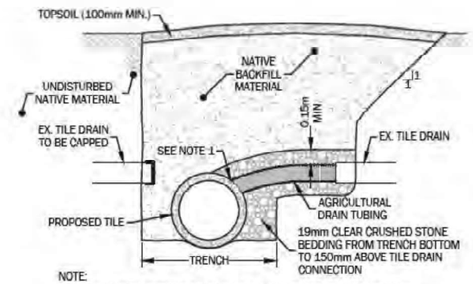
TYPICAL PIPE INSTALLATION ON STONE BEDDING DETAIL

N.T.S.



TYPICAL PIPE INSTALLATION ON WRAPPED STONE BEDDING DETAIL (PROVISIONAL ITEM)

N.T.S.

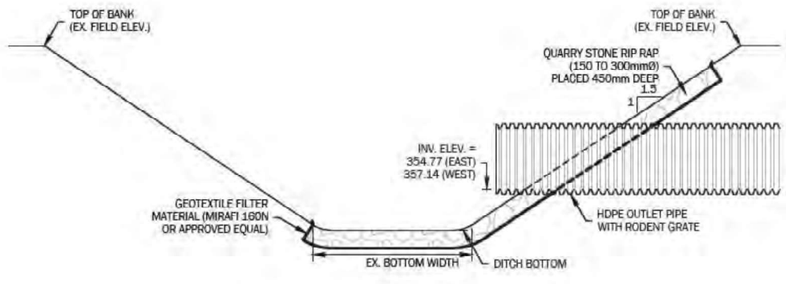


NOTE:

1. ALL TILE CONNECTIONS TO BE EITHER A CORED HOLE WITH AN INSERT COUPLER, OR A MANUFACTURED TEE.
2. CLEAR CRUSHED STONE BEDDING NOT REQUIRED IF DUAL WALL HDPE PIPE IS USED FOR THE CONNECTION.

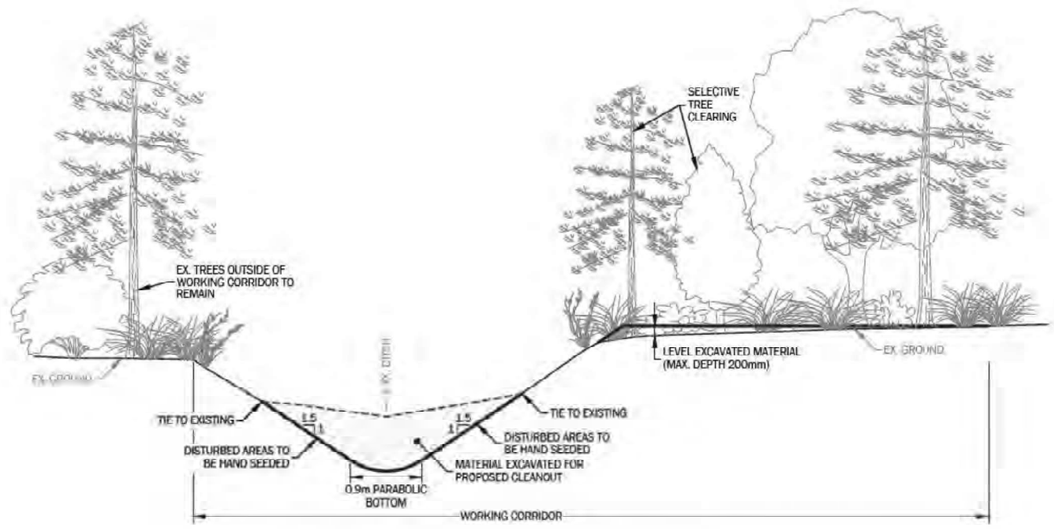
TYPICAL TILE CONNECTION DETAIL

N.T.S.



TYPICAL OUTLET DETAIL

N.T.S.



TYPICAL OPEN DITCH CLEANOUT DETAIL

N.T.S.

TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Details

BENCHMARK DESCRIPTIONS

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No	REVISION	DATE (YY-MM-DD)
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Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
A.H.	A.H.	S.B.
DATE:	REFERENCE No.	DRAWING No.
2022-09-29	WLMT-002	5 OF 5

Schedule of Assessment for Construction
Jananna Municipal Drain 2022

Jananna Municipal Drain 2022

Property Details				Assessment Summary				For Information		
Part Lot	Concession	Landowner	Roll Number	Bamberg Creek Drain	East Branch	West Branch	Total Assessment	Less Gov't Grant	Less Allowances	Net Estimated Expense
Township of Wilmot										
9	3 Block B	Oleg & Elena Borissova	9-151	$ 12,497.00	$ -	$ -	$ 12,497.00	$ 4,166.00	$ 3,040.00	$ 5,291.00
9	3 Block B	Cory & Kirby Kittle	9-165	$ 39,307.00	$ 26,756.00	-	$ 66,063.00	$ 22,021.00	$ 7,580.00	$ 36,462.00
10	3 Block B	Peter & Dagmar Schneider	9-153	$ 12,054.00	$ -	$ -	$ 12,054.00	$ 4,018.00	$ 4,030.00	$ 4,006.00
10	3 Block B	Peter & Barbara Wurtele	9-153-01	$ 44,642.00	$ -	$ -	$ 44,642.00	$ 14,881.00	$ 37,110.00	-$ (7,349.00)
10	3 Block B	David & Sherri Homanchuk	9-154	$ 64,186.00	$ -	$ -	$ 64,186.00	$ 21,395.00	$ 46,210.00	-$ (3,419.00)
10	3 Block B	Jananna Corp.	9-164	$ 16,242.00	$ 1,299.00	$ 57,500.00	$ 135,041.00	$ 45,014.00	$ 34,300.00	$ 55,727.00
11	3 Block B	Alexander Johnston	9-155	$ 49.00	$ -	$ -	$ 49.00	*	$ -	$ 49.00
11	3 Block B	Kenneth & Catherine Heintz	9-156	$ 5,718.00	$ -	-	$ 5,718.00	$ 1,906.00	$ 2,840.00	$ 972.00
Total Assessments on Lands				$ 194,695.00	$ 8,055.00	$ 57,500.00	$ 340,250.00	$ 113,401.00	$ 135,110.00	$ 91,739.00
Gerber Road		Region of Waterloo		$ 6,327.00	$ 205.00	$ 20,255.00	$ 33,787.00			$ 33,787.00
Total Assessments on Roads				$ 327.00	$ 7,205.00	$ 20,255.00	$ 33,787.00			$ 33,787.00
Total Assessments Main Open Township of Wilmot				$ 2 , 0	$ 95,260.00	$ 77,755.00	$ 374,037.00	$ 113,401.00	$ 135,110.00	$ 125,526.00
Township of Wellesley										
6	2 East	Natalee Ridgeway	1-007-00	$ 4,855.00	$ 5,529.00	$ -	$ 10,384.00	$ 3,461.00		$ 6,923.00
6	2 East	Ronald & Rosemary McCormick	1-007-01	$ 3,523.00	$ 4,011.00	$ -	$ 7,534.00	$ 2,511.00		$ 5,023.00
7	2 East	Ladislaus & Laurretta Bau	008-02	$ -		$ 9,395.00	$ 9,395.00	$ 3,132.00		$ 6,263.00
7	2 East	264171 Holdings Ltd	1 008	$ -		$ 7,650.00	$ 7,650.00	$ 2,550.00		$ 5,100.00
Total Assessments on Lands				$ 8,378.00	$ 9,540.00	$ 17,045.00	$ 34,963.00	$ 11,654.00	$ -	$ 23,309.00
Total Assessments Township of Wellesley				$ 8,378.00	$ 9,540.00	$ 17,045.00	$ 34,963.00	$ 11,654.00	$ -	$ 23,309.00
Total Assessments Jananna Municipal Drain 2022				$ 209,400.00	$ 104,800.00	$ 94,800.00	$ 409,000.00	$ 125,055.00	$ 135,110.00	$ 148,835.00

Headway Engineering	Project: **Jananna Drain**	Reference No. **WLMT-002**
	By: a.h.	Date: September 29, 2022
	Checked By:	Page: 1 of 2

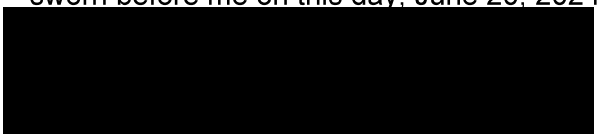
Subject: ~~**Onsite Meeting**~~ – **Sign-in Sheet**

Information Meeting

Name	Organization or Property	Phone Number	Email Address
Stephen Brickman	Headway Engineering	226 243 6614	Stephen.brickman@headwayeng.ca
Adam Hall	Headway Engineering	226 243 6614	adam.hall@headwayeng.ca
John Kuntze	Wilmot & Wellesley Drain Super		
Irene Dachnowicz			
Wayne Schneider			
Walter Kuepfer			
Cory Kittel	N/A		
Lucy Jaeger	one of the owners of Jananna Farm		
Ken & Kathy Heintz	Bambrook Farm		
JUSTIN MILLER	RIDGEWAY ACRES		
CHRIS & KEITH TURNER			
RON MCCORMICK			

[redacted]

This is **EXHIBIT "S"** referred to in the Affidavit of Stephen Brickman sworn before me on this day, June 20, 2024



A Commissioner for taking affidavits

Koch-Leis Municipal Drain

Township of Wilmot – Public Information Meeting

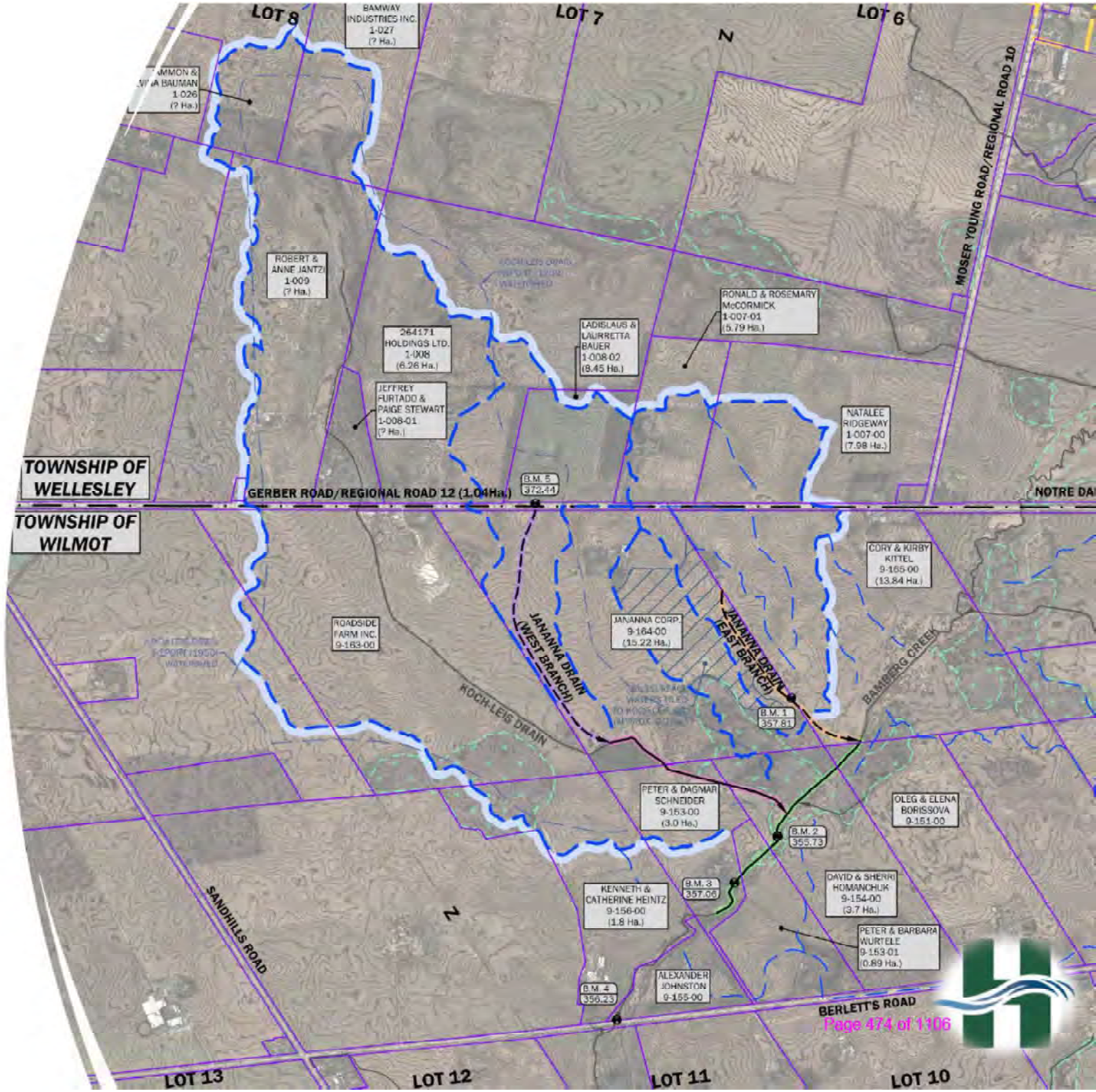
November 24, 2022

Authority

- Headway was appointed under Section 4(1) of the Drainage Act on July 12, 2021 (about 16 months)

Purpose of this Meeting

- To notify Landowners in the Koch-Leis Drain watershed of possible improvements.
- To provide background information and details on the possible improvements.
- To receive input.
- To learn if other improvements are needed at other locations along the Koch-Leis Drain.



Project Timeline

12 Jul. 2021

- Headway Engineering Appointed to investigate a petition for drainage.

22 Sep. 2021

- Onsite Meeting (Jananna Drain)

29 Sep. 2022

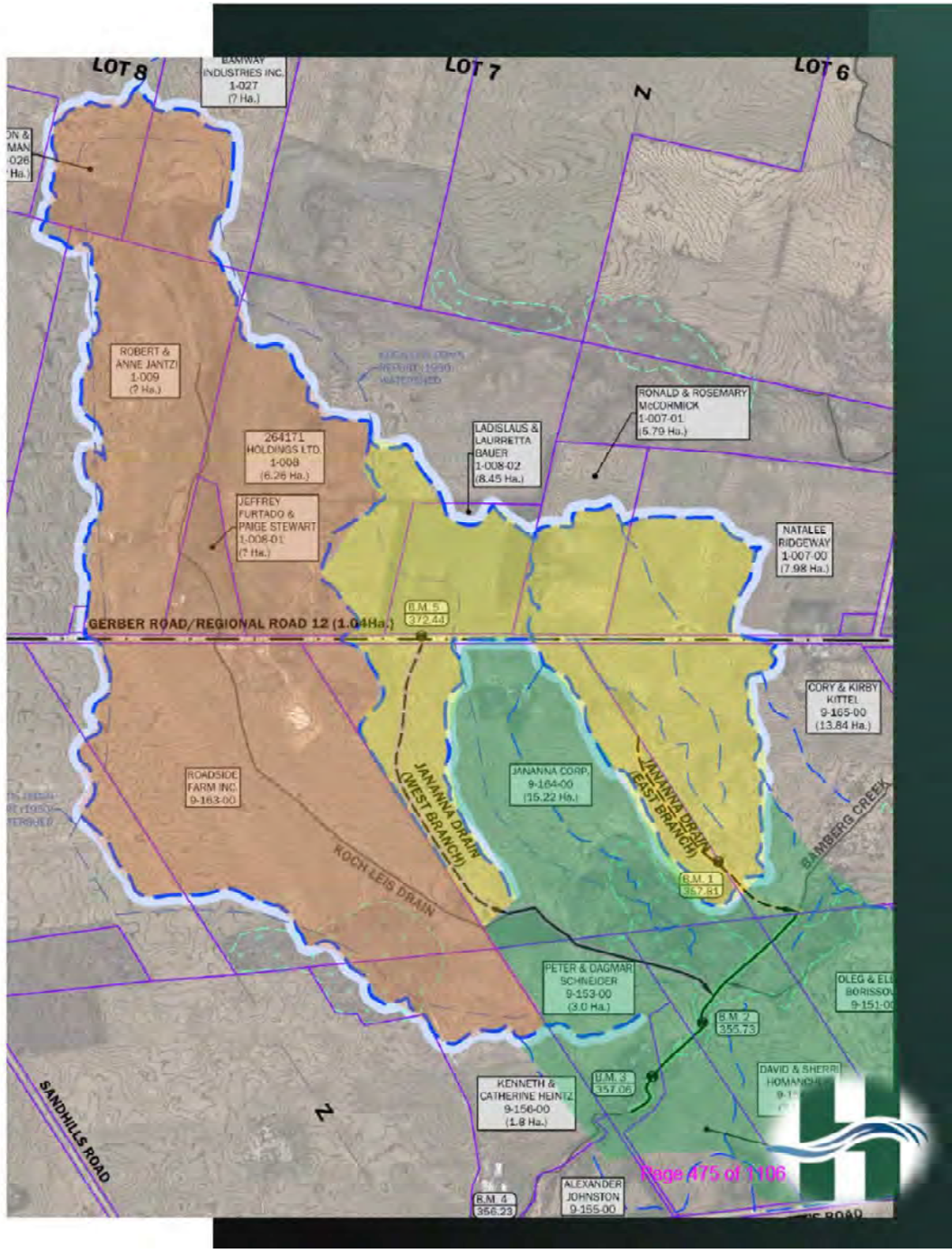
- Public Information Meeting (Jananna Drain)

30 Sep. 2022

- Request for Koch-Leis Drain Improvements

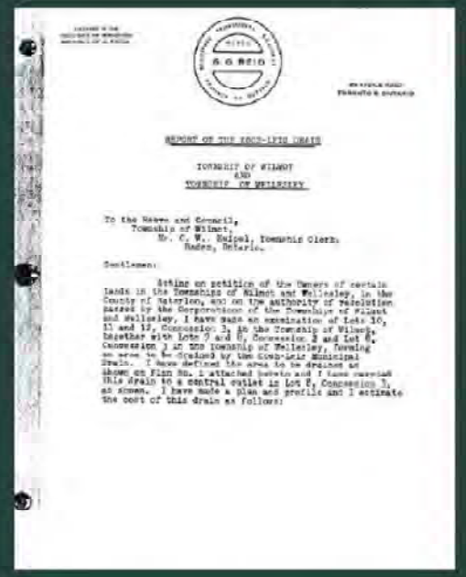
24 Nov. 2022 (Today)

- Public Information Meeting (Koch-Leis Drain)



Koch-Leis Drain History

- Originally constructed under the authority of a report prepared by Graham Reid & Associates, dated November 15, 1950 (72 years ago).
  - Adjustments were made to the alignment of the drain in Wellesley Township during construction.
- There haven't been any new reports since.



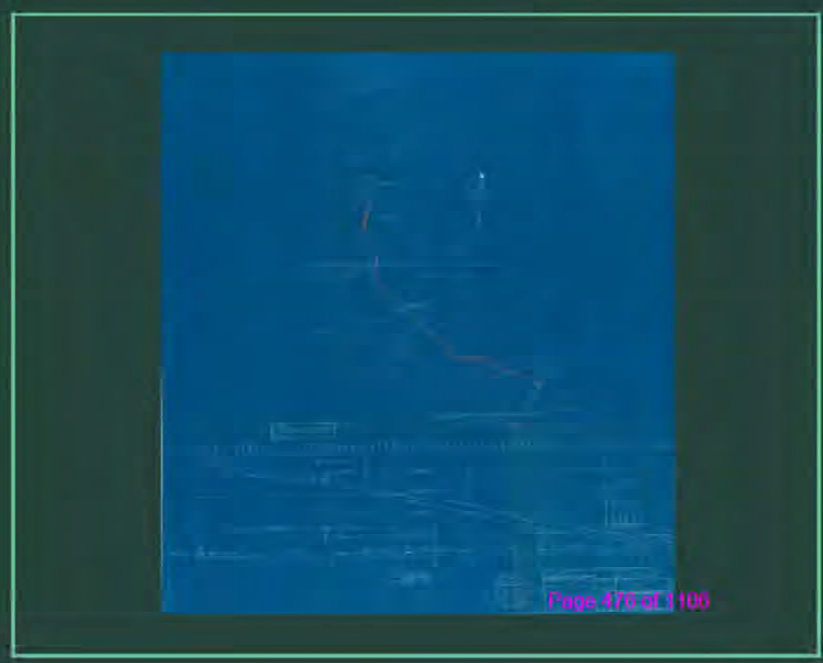
REPORT ON THE KOCH-LEIS DRAIN

TOWNSHIP OF WILMOT
AND
TOWNSHIP OF WELLESLEY

To the Mayor and Council,
Township of Wilmot,
Mr. C. W. Hagel, Township Clerk,
Baden, Ontario.

Gentlemen:

Acting on petition of the Owners of certain lands in the Township of Wilmot and Wellesley, in the County of Waterloo, and on the authority of Resolution passed by the Corporation of the Township of Wilmot and Wellesley, I have made an examination of Lots 10, 11 and 12, Concession 3, in the Township of Wilmot, together with Lots 9 and 8, Concession 3 and Lot 8, Concession 2 in the Township of Wellesley, Township as same is to be Drained by the Koch-Leis Municipal Drain. I have defined the area to be drained as shown on Plan No. 1 attached hereto and I have carried this Drain to a central outlet in Lot 7, Concession 3, as shown. I have made a Plan and profile and I estimate the cost of this drain as follows:



Maintenance History

Summer 1985
Ditch Cleanout in Wilmot

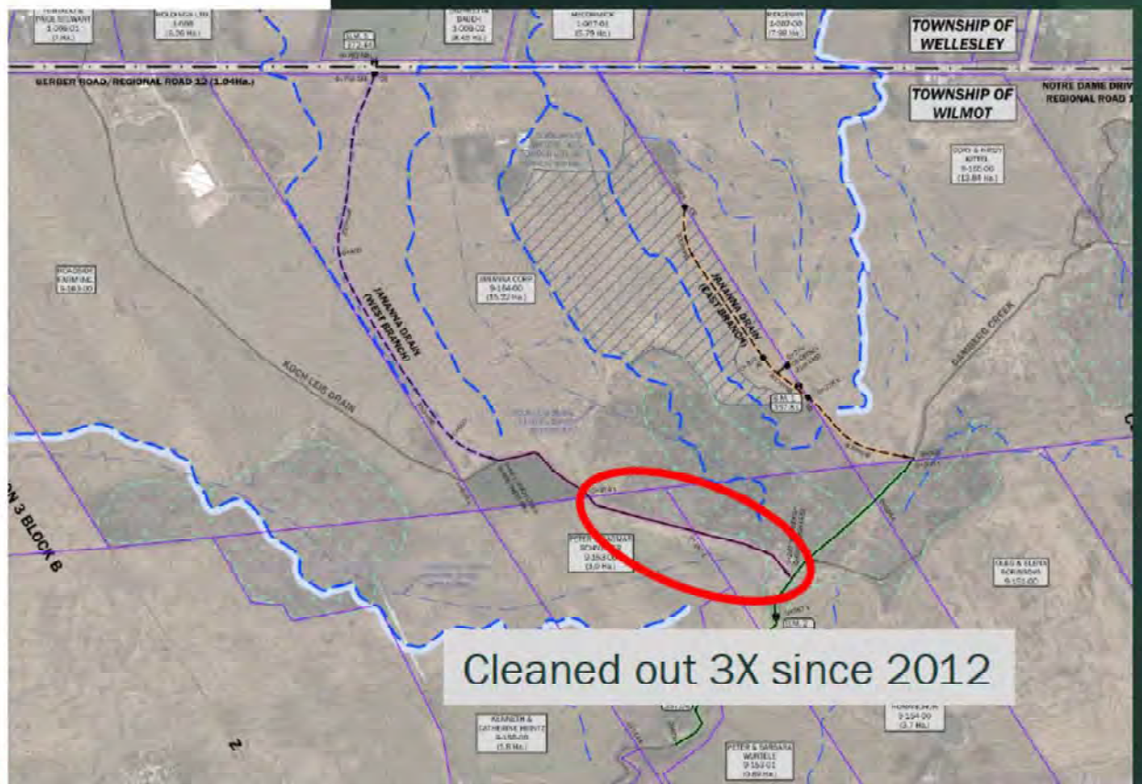
Oct. 2010
Beaver removal at Bamberg Creek
Dam removal

Nov. 2010
Beaver removal at Bamberg Creek

Mar. 2012
Cleanout of Koch-Leis Drain on Schneider & Homanchuk properties

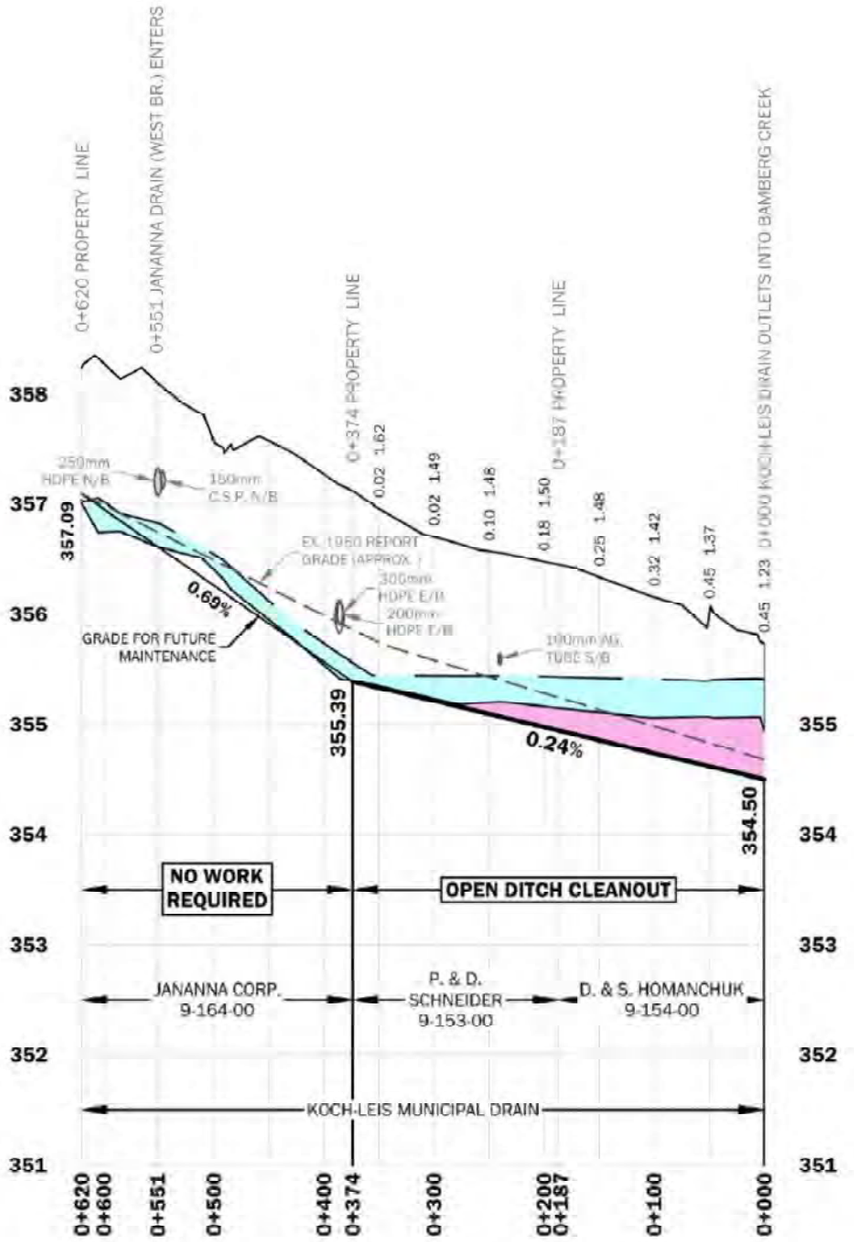
Spring 2018
Cleanout and brushing on Koch-Leis Drain on Schneider, Homanchuk and Jananna properties
Spot cleanout and brushing upstream to Gerber Road

Nov. 2021
Cleanout and brushing on Koch-Leis Drain on Schneider & Homanchuk properties

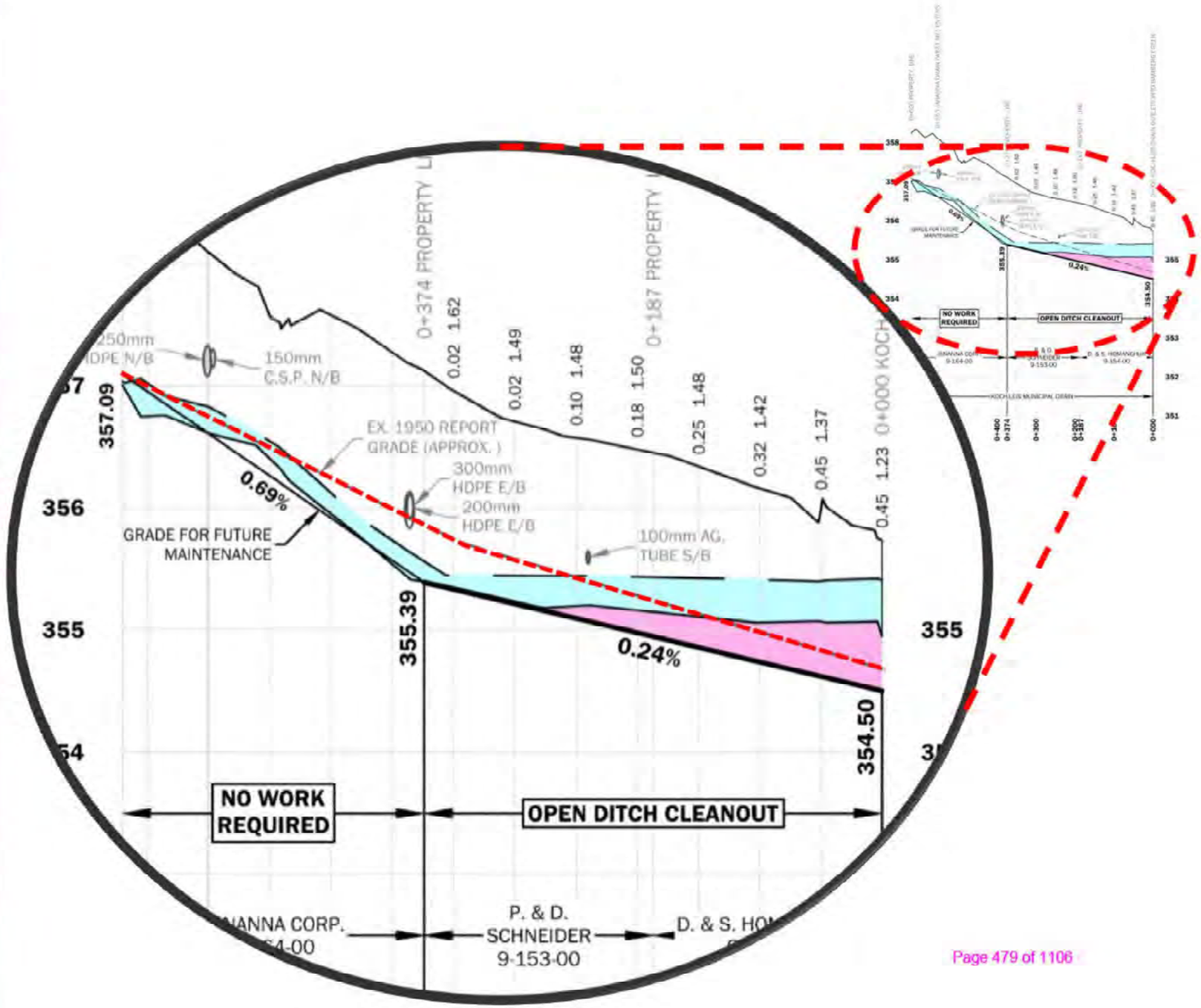


Cleaned out 3X since 2012

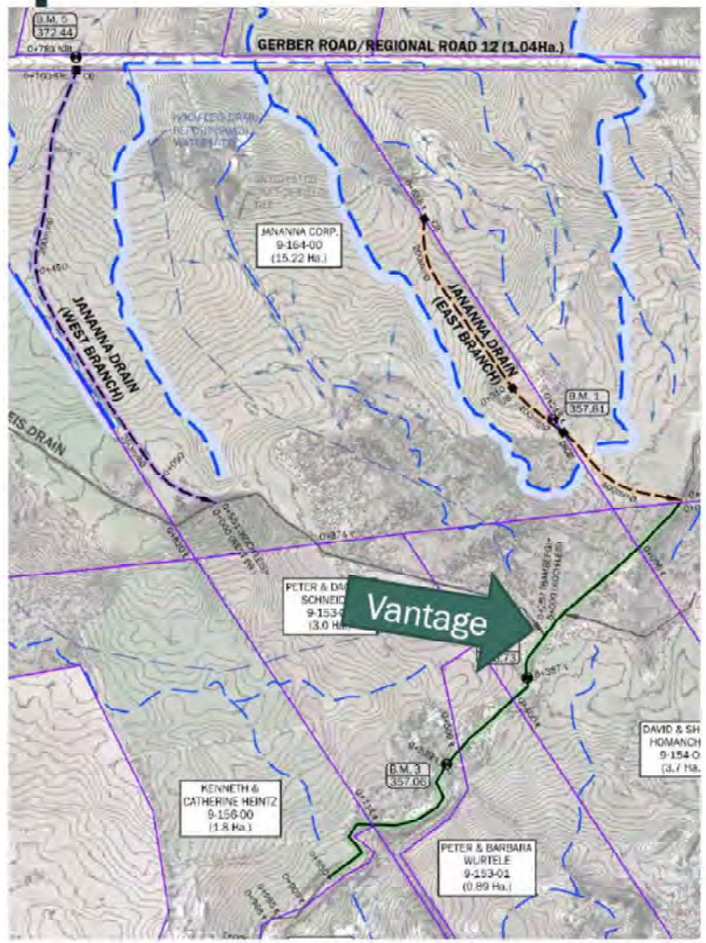
Koch-Leis Profile (changes over time)



Koch-Leis Profile (changes over time)



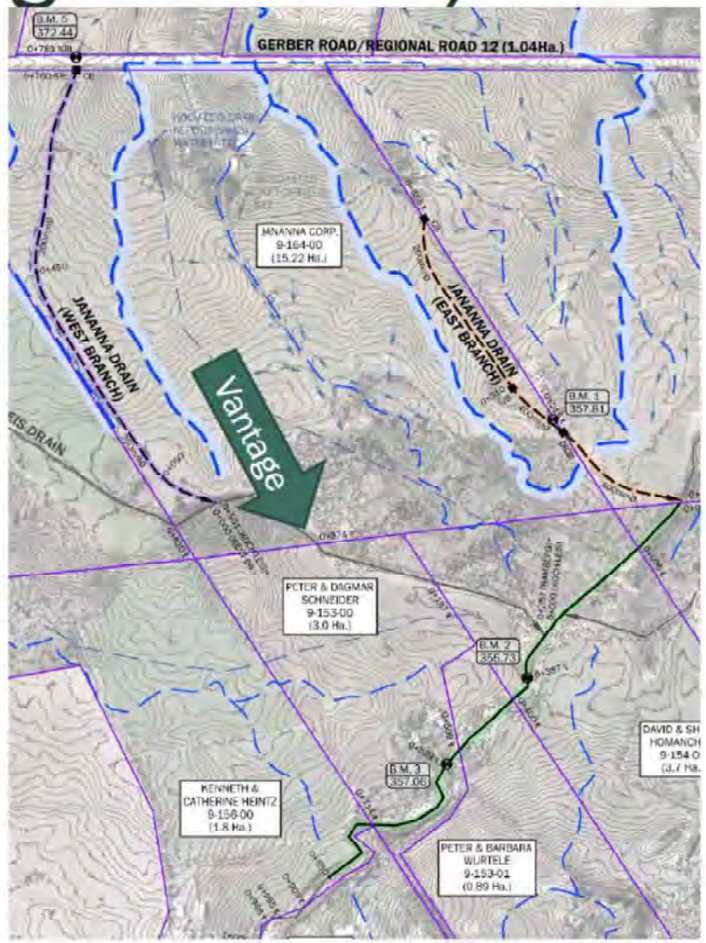
Findings – Bamberg Creek Depth



November 24, 2021

November 24, 2021

Findings – Koch-Leis Drain Outlet (example of good outlet)



November 24, 2021

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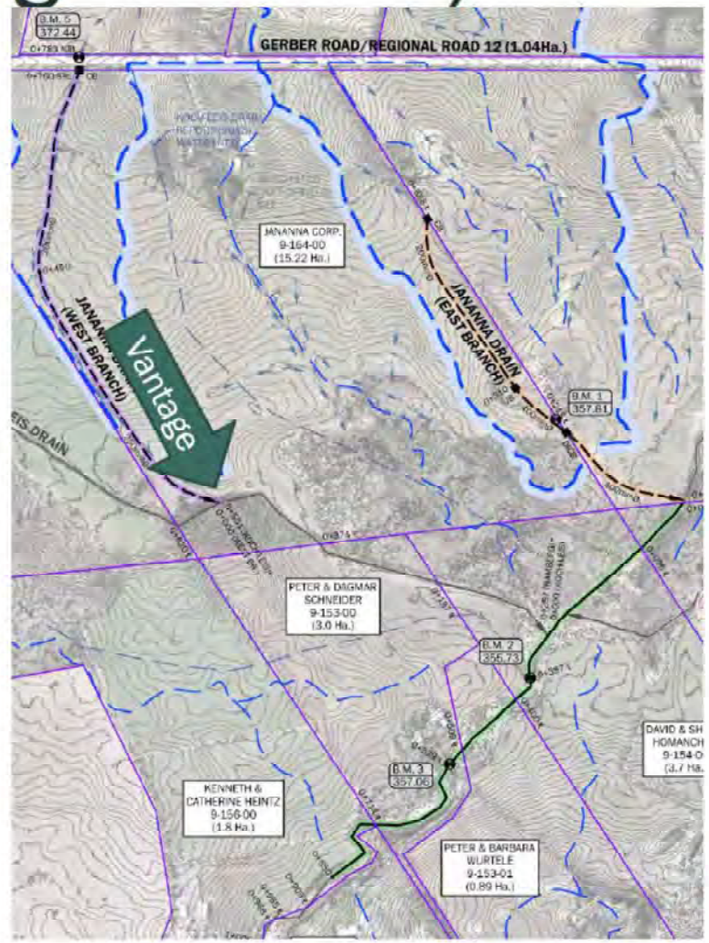
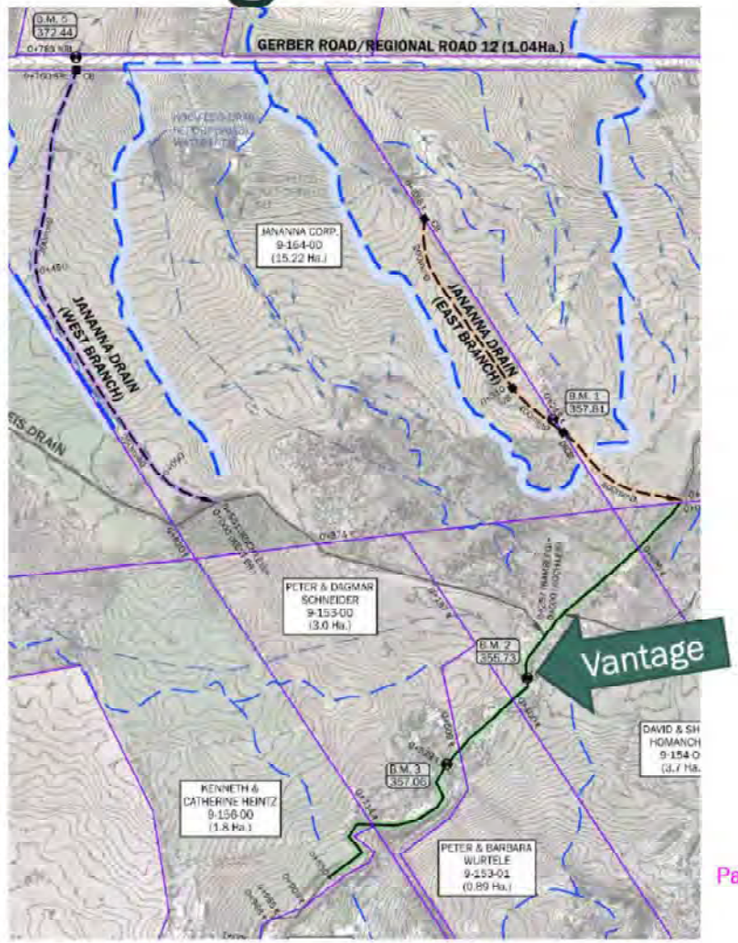
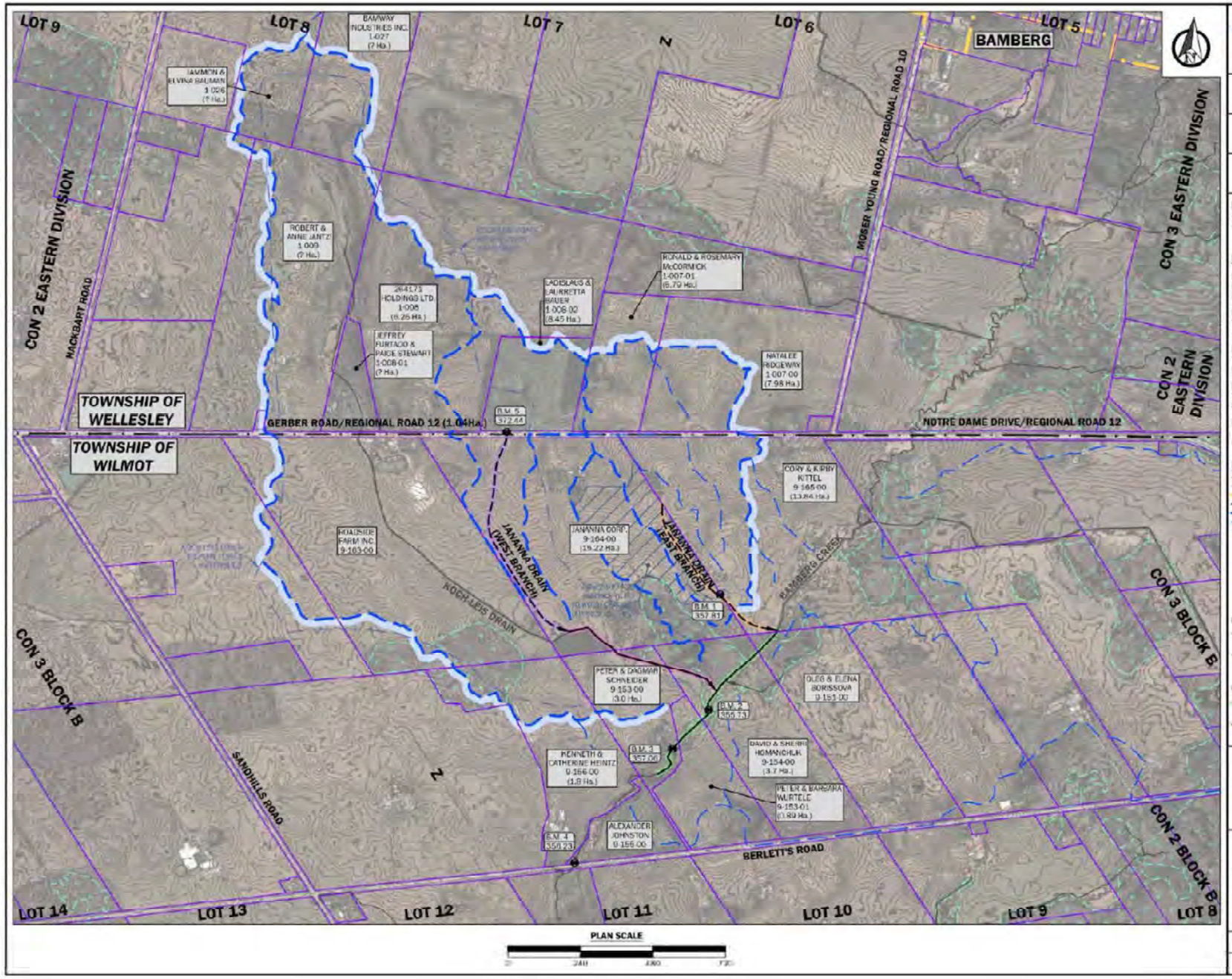


Findings – Crossings



November 24, 2021



Township of Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Watershed Plan

NOTES:

1. AERIAL PHOTOGRAPHY PROVIDED BY WILMOT TOWNSHIP.
2. CONTOURS GENERATED USING 2015 LIDAR DERIVED DATASET REPRESENTING BARE EARTH TERRAIN FROM LAND INFORMATION ONTARIO.

BENCHMARK DESCRIPTIONS

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TOP CENTRE UPSTREAM END OF 450mmØ H.D.P.E. SURFACE CULVERT AT STA. 0+780 (WEST BR.)

LEGEND

LOT/CONCESSION LINE
PROPERTY LINE
URBAN BOUNDARY
TOWNSHIP BOUNDARY
MAJOR WATERSHED BOUNDARY
MINOR WATERSHED BOUNDARY
WETLAND LIMIT
BENCHMARK LOCATION
B.M. 1 — BENCHMARK No.
372.44 — BENCHMARK ELEVATION
JOHN & JANE SMITH — LANDOWNER NAME(S)
12 345 — ASSESSMENT ROLL No. (ABBREVIATED)
(12.3 Ha.) — APPROX. AREA AFFECTED

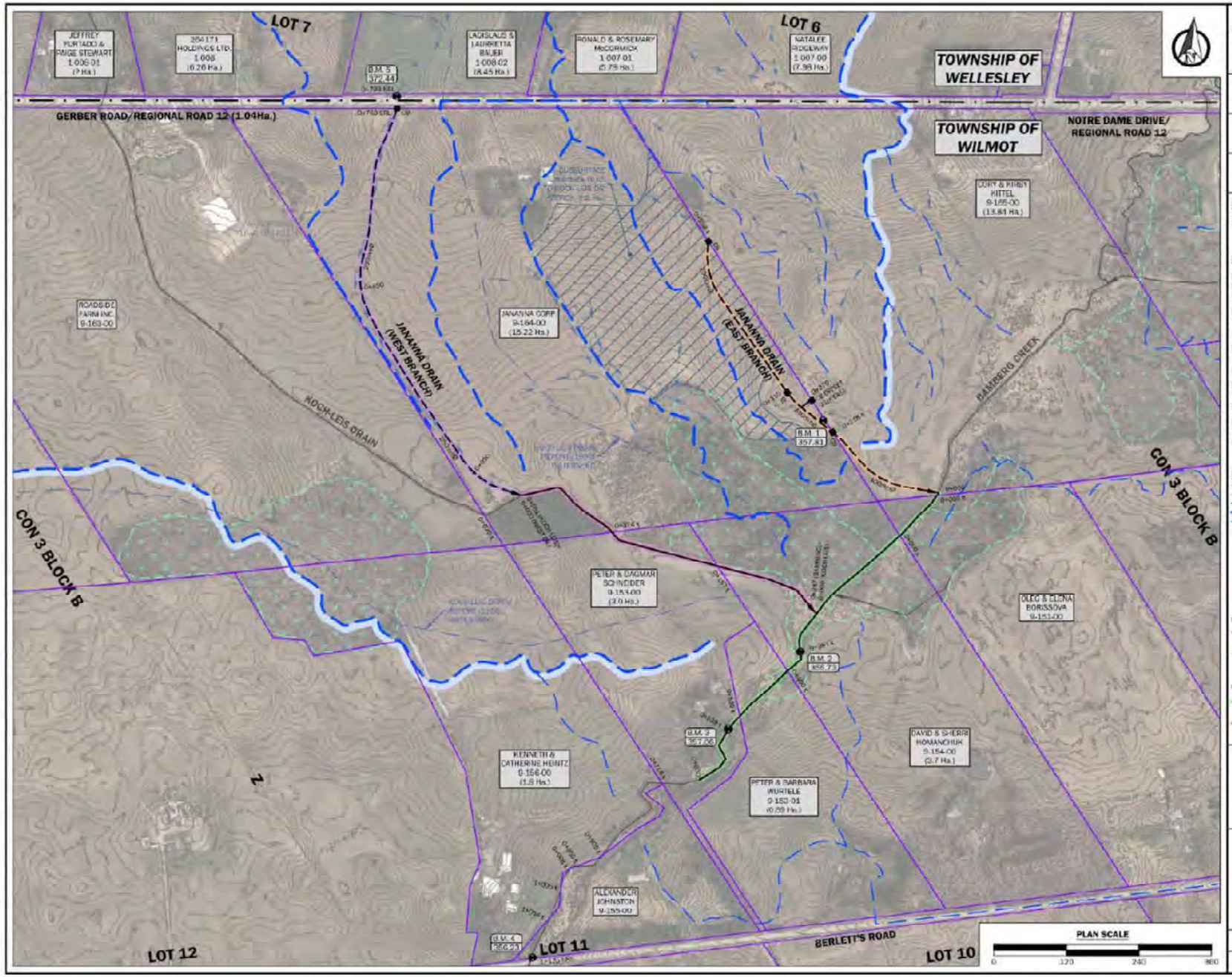
EXISTING FEATURES:
DRAIN NAME — OPEN DRAIN WITH CROSSING AND FLOW DIRECTION
DRAIN NAME — CLOSED DRAIN WITH CATCH BASIN, MANHOLE AND FLOW DIRECTION
OVERLAND FLOW PATH

PROPOSED FEATURES:
DRAIN NAME — OPEN DRAIN WITH CROSSING AND FLOW DIRECTION
DRAIN NAME — CLOSED DRAIN WITH CATCH BASIN, MANHOLE AND FLOW DIRECTION

No.	REVISION	DATE (YY-MM-DD)
3	INFORMATION Meeting NO. 2	22-11-24
2	INFORMATION MEETING	22-09-29
1	ON-SITE MEETING	21-09-22

Headway Engineering

DRAWN BY	DESIGNED BY	
R.U.	A.H.	
DATE: 2022-11-24	REFERENCE No.: WLWT-0502	DRAWING No.: 1 OF 6



Township of Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Work Area Plan

NOTES:

1. AERIAL PHOTOGRAPHY PROVIDED BY WILMOT TOWNSHIP.
2. CONTOURS GENERATED USING 2018 LIDAR DERIVED DATASET REPRESENTING BARE EARTH TERRAIN FROM LAND INFORMATION ONTARIO.

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 **ELEV.=357.81**
NAIL IN NORTH FACE OF FENCE POST 5m EAST OF STA. 0+234 (JANANNA)

BENCHMARK No. 2 **ELEV.=355.73**
TOP CENTRE DOWNSTREAM END OF 900mmØ CONCRETE CULVERT AT STA. 0+358 (BAMBERG)

BENCHMARK No. 3 **ELEV.=357.06**
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. 0+537 (BAMBERG)

BENCHMARK No. 4 **ELEV.=356.23**
TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. 1+125 (BAMBERG)

BENCHMARK No. 5 **ELEV.=372.44**
TOP CENTRE UPSTREAM END OF 450mmØ H.D.P.E. SURFACE CULVERT AT STA. 0+780 (WEST BR.)

LEGEND

- LOT/CONCESSION LINE
- PROPERTY LINE
- TOWNSHIP BOUNDARY
- MAJOR WATERSHED BOUNDARY
- MINOR WATERSHED BOUNDARY
- WETLAND LIMIT
- BENCHMARK LOCATION (B.M. 1 / 123.45) — BENCHMARK No. / BENCHMARK ELEVATION
- JOHN & JANE SMITH 12.346 (12.3 Ha.) — LANDOWNER NAME(S) / ASSESSMENT ROLL No. (ABBREVIATED) / APPROX. AREA AFFECTED

EXISTING FEATURES:

- DRAIN NAME — OPEN DRAIN WITH CROSSING AND FLOW DIRECTION
- DRAIN NAME — CLOSED DRAIN WITH CATCH BASIN, MANHOLE AND FLOW DIRECTION
- OVERLAND FLOW PATH

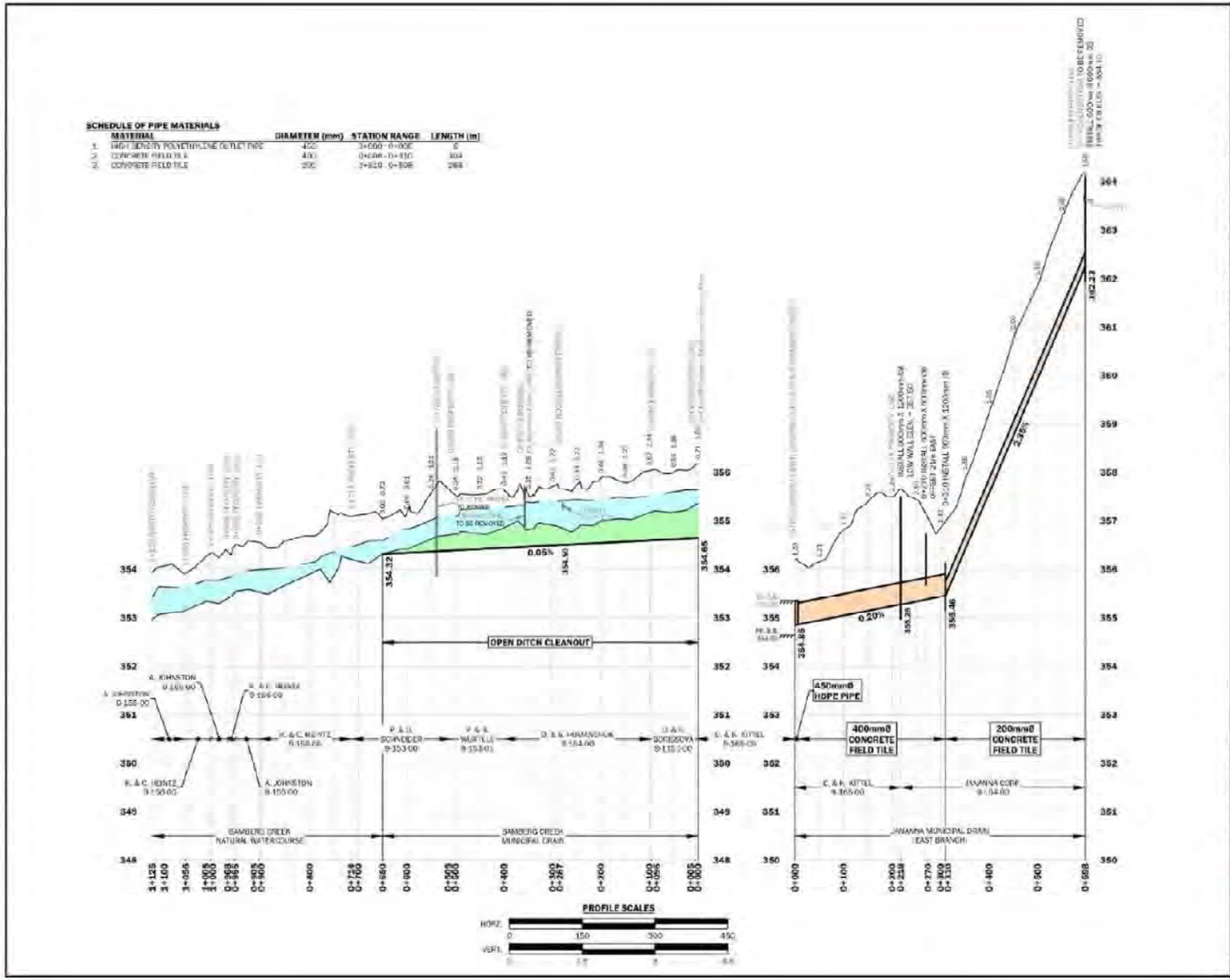
PROPOSED FEATURES:

- DRAIN NAME — OPEN DRAIN WITH CROSSING AND FLOW DIRECTION
- DRAIN NAME — CLOSED DRAIN WITH CATCH BASIN, MANHOLE AND FLOW DIRECTION

No.	REVISION	DATE (YY-MM-DD)
3	INFORMATION MEETING NO. 2	22-11-24
2	INFORMATION MEETING	22-09-29
1	ON SITE MEETING	21-05-22

Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
R.D.	A.H.	
DATE: 2022-11-24	REFERENCE No.: WLWT-002	DRAWING No.: 2 OF 6



Township of Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Jananna Drain (East Branch) Profile

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 ELEV.=357.81
SPIKE IN NORTH FACE OF HYDRO POST 5.0 M WEST OF STA. 0+234 (JANANNA)

BENCHMARK No. 2 ELEV.=355.73
TOP CENTRE DOWNSTREAM END OF 1200mmØ CONCRETE CULVERT AT STA. 0+268 (BAMBERG)

BENCHMARK No. 3 ELEV.=357.06
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. 0+537 (BAMBERG)

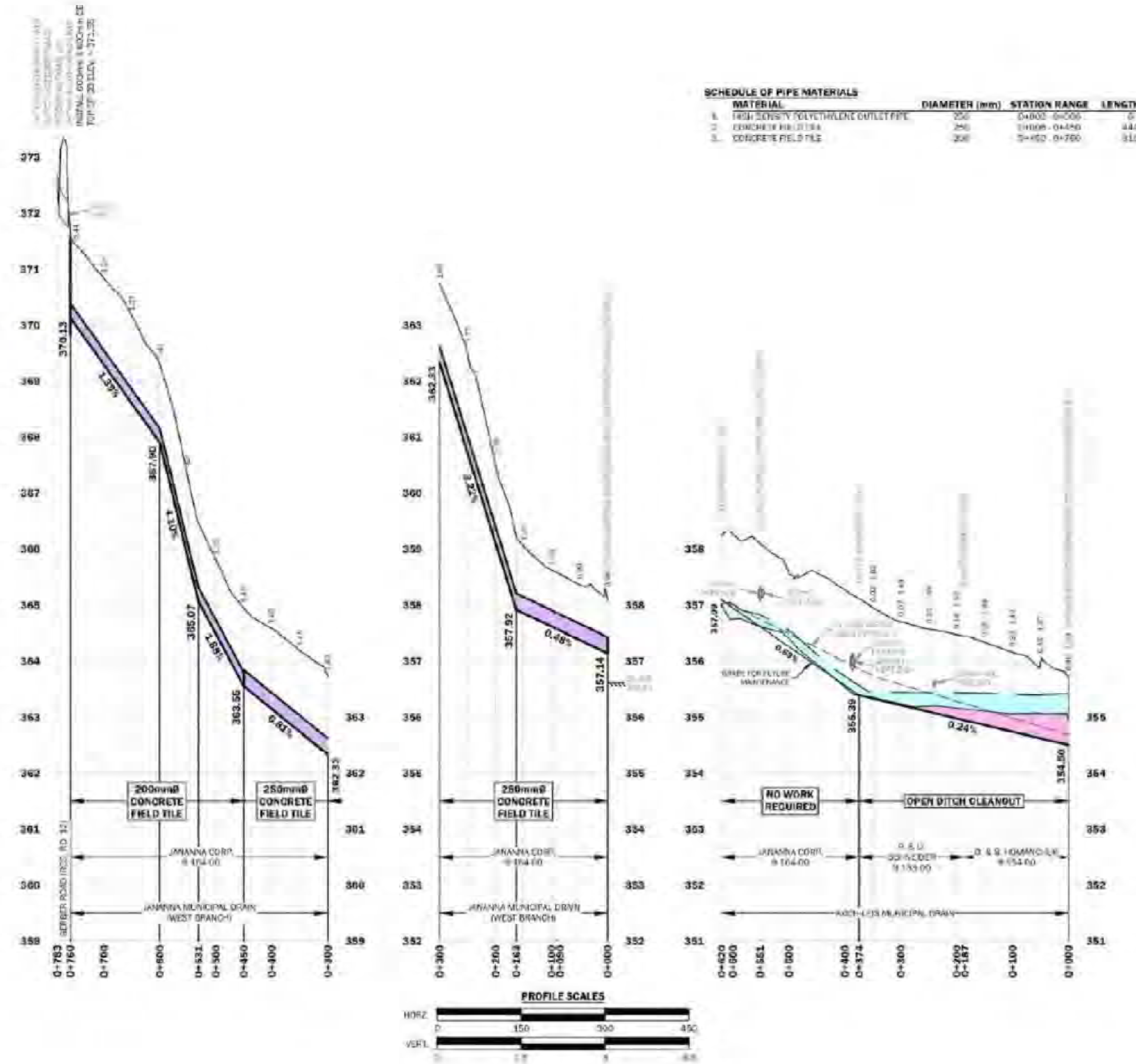
BENCHMARK No. 4 ELEV.=356.23
TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. 1+125 (BAMBERG)

BENCHMARK No. 5 ELEV.=372.44
TOP CENTRE UPSTREAM END OF 450mmØ H.D.P.E. SURFACE CULVERT AT STA. 0+790 (E)

3	INFORMATION MEETING NO. 2	22-11-24
2	INFORMATION MEETING	22-09-29
1	ON-SITE MEETING	21-09-22
NO.	REVISION	DATE (Y-M-D)

Headway Engineering

DRAWN BY: RH	DESIGNED BY: AH	CHECKED BY:
DATE: 2022-11-24	DRAWING No.: WLYR-002	DRAWING No.: 3 OF 6



SCHEDULE OF PIPE MATERIALS

	MATERIAL	DIAMETER (mm)	STATION RANGE	LENGTH (m)
1.	HIGH DENSITY POLYETHYLENE OUTLET PIPE	250	0+000 - 0+006	6
2.	CONCRETE FIELD TILE	250	0+006 - 0+450	444
3.	CONCRETE FIELD TILE	200	0+450 - 0+760	310

TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Jananna Drain (West Branch) Profile

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 ELEV.=357.81
(JANANNA)

BENCHMARK No. 2 ELEV.=359.73
TOP CENTRE DOWNSTREAM END OF CONCRETE CULVERT

BENCHMARK No. 3 ELEV.=357.06
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. 0+537 (BAMBERG)

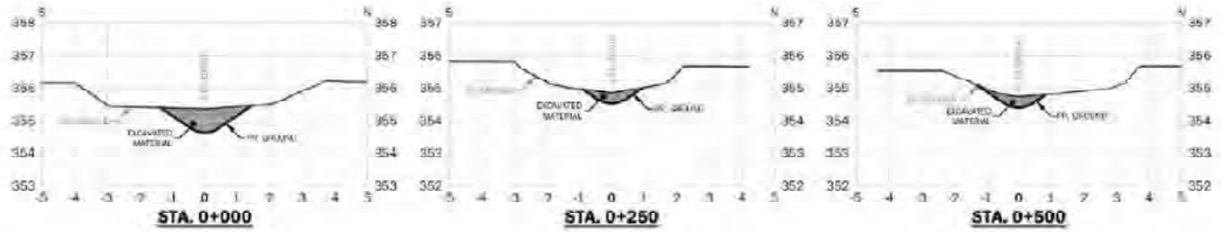
BENCHMARK No. 4 ELEV.=356.23
TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. 1+125 (BAMBERG)

BENCHMARK No. 5 ELEV.=372.44
TOP CENTRE UPSTREAM END OF 450mmØ H.D.P.E. CULVERT AT STA. 0+780

No.	REVISION	DATE
3	INFORMATION MEETING NO. 2	2022-11-24
2	INFORMATION MEETING	22-09-29
1	ON-SITE MEETING	21-09-22

Headway Engineering

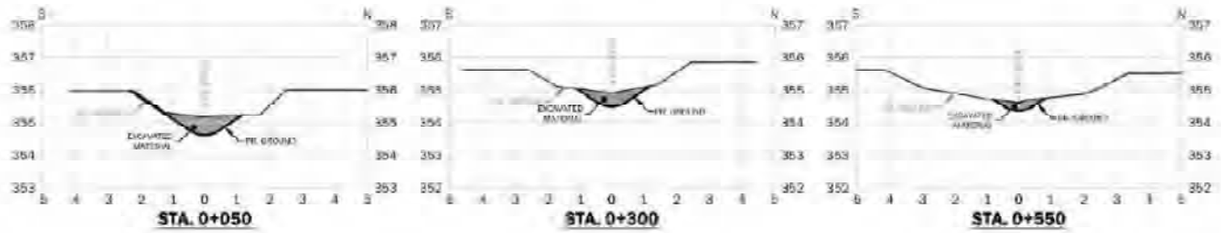
DRAWN BY | DESIGNED BY
DATE 2022-11-24 | WLWT-002 | 4 OF 6



STA. 0+000

STA. 0+250

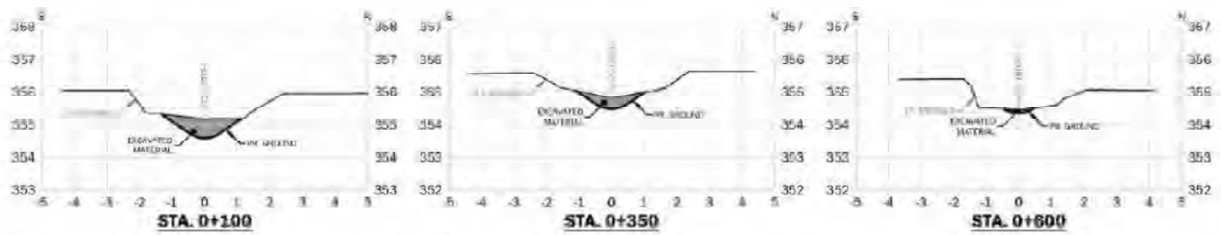
STA. 0+500



STA. 0+050

STA. 0+300

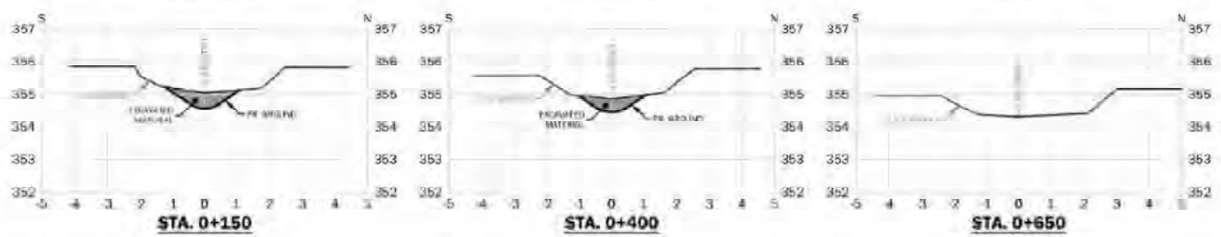
STA. 0+550



STA. 0+100

STA. 0+350

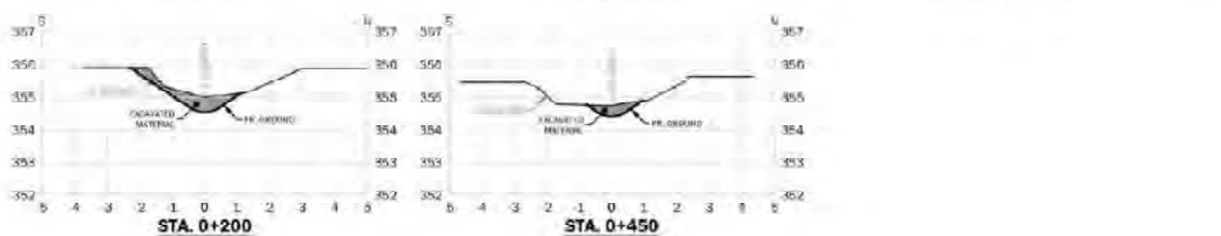
STA. 0+600



STA. 0+150

STA. 0+400

STA. 0+650



STA. 0+200

STA. 0+450

SECTION SCALE

Township of Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Bamburg Creek Sections

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 **ELEV.=357.81**
NAIL IN NORTH FACE OF FENCE POST 5m EAST OF STA. 0+234 (JANANNA)

BENCHMARK No. 2 **ELEV.=355.73**
TOP CENTRE DOWNSTREAM END OF 1200mmØ CONCRETE CULVERT AT STA. 0+358 (BAMBERG)

BENCHMARK No. 3 **ELEV.=357.06**
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. 0+537 (BAMBERG)

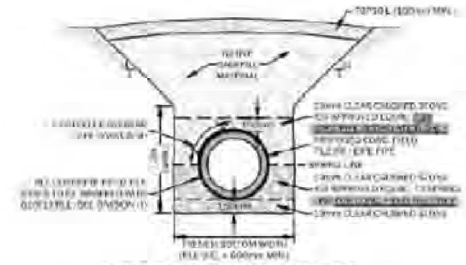
BENCHMARK No. 4 **ELEV.=356.23**
TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. 1+125 (BAMBERG)

BENCHMARK No. 5 **ELEV.=372.44**
TOP CENTRE UPSTREAM END OF 450mmØ R.C.P.C. SURFACE CULVERT AT STA. 0+780 (?)

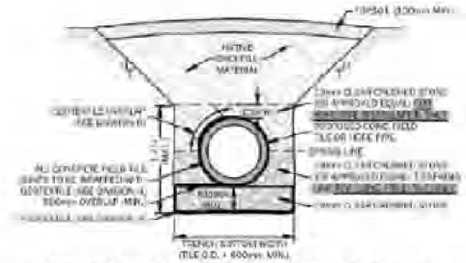
3	INFORMATION MEETING NO. 2	22-11-24
2	INFORMATION MEETING	22-09-29
1	ON-SITE MEETING	21-09-22
No.	REVISION	DATE (YY-MM-DD)

Headway Engineering

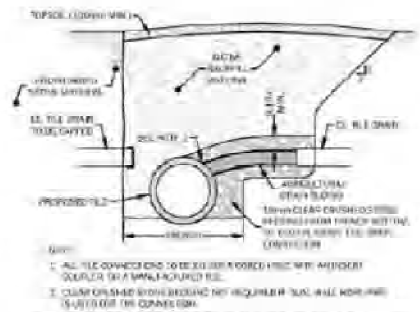
DRAWN BY: R.H	DESIGNED BY: A.H	CHECKED BY:
DATE: 2022-11-24	HEADWAY No.: WLWT-002	DRAWING No.: 2 OF 6



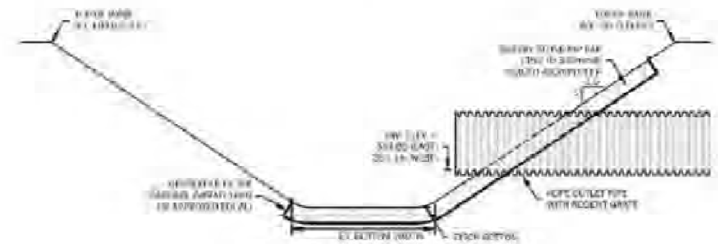
TYPICAL PIPE INSTALLATION ON STONE BEDDING DETAIL
N.T.S.



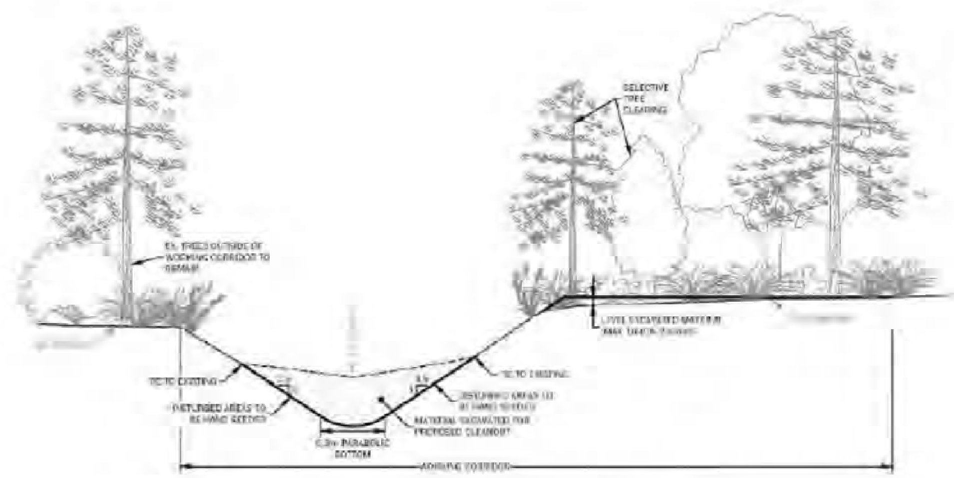
TYPICAL PIPE INSTALLATION ON WRAPPED STONE BEDDING DETAIL (PROVISIONAL ITEM)
N.T.S.



TYPICAL TILE CONNECTION DETAIL
N.T.S.



TYPICAL OUTLET DETAIL
N.T.S.



TYPICAL OPEN DITCH CLEANOUT DETAIL
N.T.S.

TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Details

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 ELEV.=357.81
(JANANNA)

BENCHMARK No. 2 ELEV.=355.73
(BAMBERG)

BENCHMARK No. 3 ELEV.=357.06
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. [illegible]
(BAMBERG)

BENCHMARK No. 4 ELEV.=356.23
TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. [illegible]

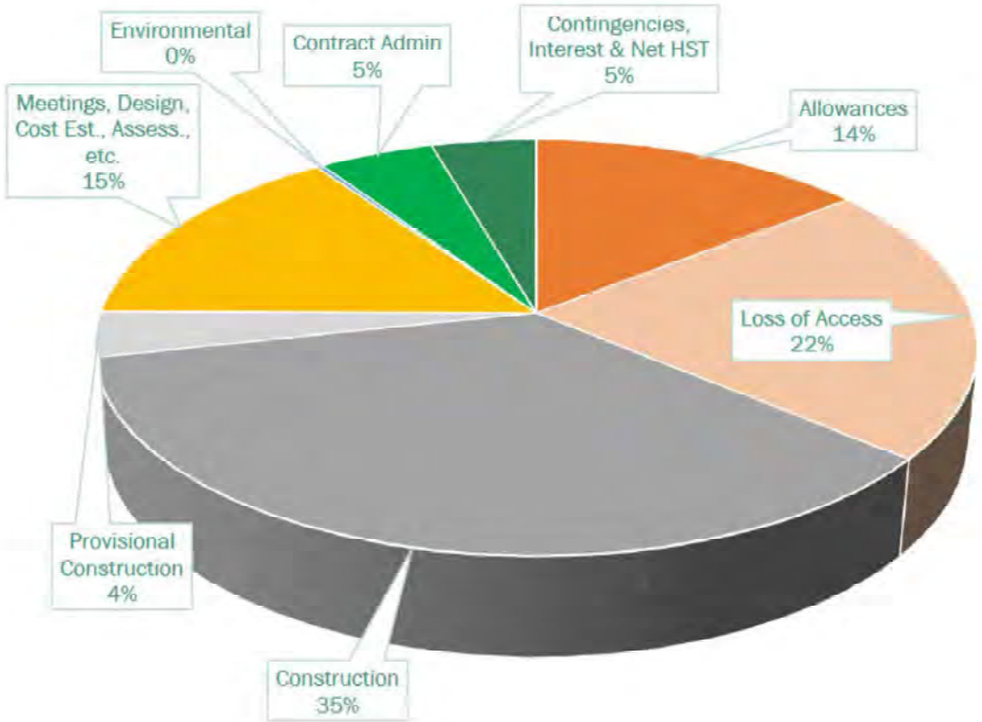
BENCHMARK No. 5 ELEV.=372.44

No.	REVISION	DATE
3	INFORMATION MEETING NO. 2	22-11-24
2	INFORMATION MEETING	22-09-29
1	ON-SITE MEETING	21-09-22

Headway Engineering

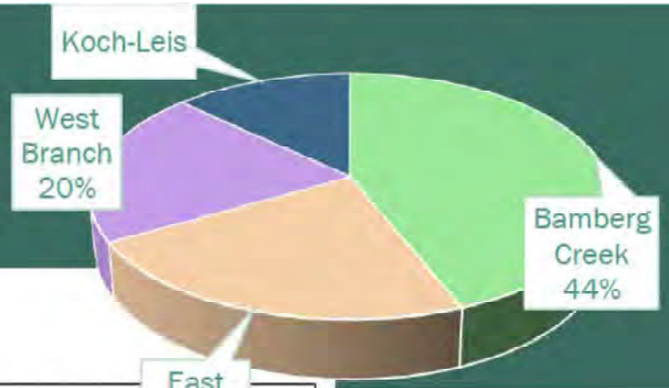
DRAWN BY	DESIGNED BY	
R.H.	A.H.	

Estimated Project Costs



- Allowances
- Construction Costs (including Contingencies)
- Meetings/Correspondence, Design Review, Cost Estimates, Reporting, etc.
- Environmental Consultations
- Contract Documents, Administration, Supervision & Inspection
- $ Interest & NET HST
- **Total Estimated Costs: $462,900**

Assessment of Costs



Schedule of Assessment for Construction
Bamberg Creek, Jananna and Koch-Leis Municipal Drains 2022

Bamberg Creek, Jananna and Koch-Leis Municipal Drains 2022

Property Details				Assessment Summary					For Inform		
Part Lot	Concession	Landowner	Roll Number	Bamberg Creek Drain	East Branch	West Branch	Koch-Leis Drain	Total Assessment	Less Govt Grant	Less Allowances	imated Expense
Township of Wilmot											
9	3 Block B	Oleg & Elena Borissova	9-151	$ 7,857.00	$ -	$ -	$ -	$ 7,857.00	$ 2,619.00	$ 3,040.00	$ 2,198.00
9	3 Block B	Cory & Kirby Kittle	9-165	$ 22,615.00	$ 26,756.00	$ -	$ -	$ 49,371.00	$ 16,457.00	$ 7,580.00	$ 25,334.00
10	3 Block B	Peter & Dagmar Schneider	9-153	$ 14,433.00	$ -	$ -	$ 17,389.00	$ 31,822.00	$ 10,607.00	$ 16,070.00	$ 5,145.00
10	3 Block B	Peter & Barbara Wurtele	9-153-01	$ 45,013.00	$ -	$ -	$ -	$ 45,013.00	$ 15,004.00	$ 37,110.00	-$ (7,101.00)
10	3 Block B	David & Sherri Homanchuk	9-154	$ 63,738.00	$ -	$ -	$ 8,513.00	$ 72,251.00	$ 24,084.00	$ 50,140.00	-$ (1,973.00)
10	3 Block B	Jananna Corp.	9-164	$ 21,689.00	$ 61,299.00	$ 57,500.00	$ 25,864.00	$ 166,352.00	$ 55,451.00	$ 53,460.00	$ 57,441.00
11	3 Block B	Kenneth & Catherine Heintz	9-156	$ 1,030.00	$ -	$ -	$ 202.00	$ 1,232.00	$ 411.00	$ -	$ 821.00
11	3 Block B	Roadside Farm Inc.	9-163	$ 8,864.00	$ -	$ -	$ 3,158.00	$ 12,022.00	$ 4,007.00	$ -	$ 8,015.00
12	3 Block B	David & Eva Cressman	9-160	$ 684.00	$ -	$ -	$ 244.00	$ 928.00	$ 309.00	$ -	$ 619.00
Total Assessments on Lands				$ 185,923.00	$ 88,055.00	$ 57,500.00	$ 55,370.00	$ 386,848.00	$ 128,949.00	$ 167,400.00	$ 90,499.00
Gerber Road		Region of Waterloo		$ 4,364.00	$ 7,205.00	$ 20,255.00	$ 825.00	$ 32,649.00			$ 32,649.00
Total Assessments on Roads				$ 4,364.00	$ 7,205.00	$ 20,255.00	$ 825.00	$ 32,649.00			$ 32,649.00
Total Assessments Main Open Township of Wilmot				$ 190,287.00	$ 95,260.00	$ 77,755.00	$ 56,195.00	$ 419,497.00	$ 128,949.00	$ 167,400.00	$ 123,148.00
Township of Wellesley											
6	2 East	Natalee Ridgeway	1-007-00	$ 1,571.00	$ 5,529.00	$ -	$ -	$ 7,100.00	$ 2,367.00		$ 4,733.00
6	2 East	Ronald & Rosemary McCormick	1-007-01	$ 1,140.00	$ 4,011.00	$ -	$ -	$ 5,151.00	$ 1,717.00		$ 3,434.00
7	2 East	Ladislaus & Laurretta Bauer	1-008-02	$ 848.00	$ -	$ 9,395.00	$ 302.00	$ 10,545.00	$ 3,515.00		$ 7,030.00
7	2 East	264171 Holdings Ltd.	1-008	$ 2,757.00	$ -	$ 7,650.00	$ 982.00	$ 11,389.00	$ 3,796.00		$ 7,593.00
7	2 East	Jeffrey Furtado & Paige Stewart	1-008-01	$ 99.00	$ -	$ -	$ 35.00	$ 134.00	$ 45.00		$ 89.00
8	2 East	Robert & Anne Jantzi	1-009	$ 4,759.00	$ -	$ -	$ 1,696.00	$ 6,455.00	$ 2,152.00		$ 4,303.00
8	3 East	Bamway Industries Inc.	1-027	$ 1,006.00	$ -	$ -	$ 358.00	$ 1,364.00	$ 455.00		$ 909.00
8	3 East	Jammon & Elvina Bauman	1-026	$ 933.00	$ -	$ -	$ 332.00	$ 1,265.00	$ 422.00		$ 843.00
Total Assessments on Lands				$ 13,113.00	$ 9,540.00	$ 17,045.00	$ 3,705.00	$ 43,403.00	$ 14,469.00	$ -	$ 28,934.00
Total Assessments Township of Wellesley				$ 13,113.00	$ 9,540.00	$ 17,045.00	$ 3,705.00	$ 43,403.00	$ 14,469.00	$ -	$ 28,934.00
Total Assessments Bamberg Creek, Jananna and Koch-Leis Municipal D				$ 203,400.00	$ 104,800.00	$ 94,800.00	$ 59,900.00	$ 462,900.00	$ 143,418.00	$ 167,400.00	$ 152,082.00

Process

- Appointment of an Engineer – Complete
- Onsite Meeting – Complete
- Survey – Complete
- Drafting – Complete
- Design and Cost Estimating – Complete
- **Public Engagements – Today**
- Environmental Consultations – Ongoing
- Prepare final Report
- **Processing the Report** – Next Slide
- Tendering
- Construction
- Recover Costs

Processing the Report

- **Engineer files the report** with the Township
- Township schedules Meeting to Consider the Report
- Township mails a copy of the report, and a Notice of the Meeting to Consider the Report to everybody affected
- Meeting to Consider
- Township forwards a copy of the provisional by-law to Landowners, along with a notice of the Court of Revision
- Appeals Process
  - **Court of Revision – Assessment Based Appeals**
  - Tribunal and Referee (if necessary)
- **Third Reading of the By-Law**

Process

- Appointment of an Engineer – Complete
- Onsite Meeting – Complete
- Survey – Complete
- Drafting – Complete
- Design and Cost Estimating – Complete
- **Public Engagements – Today**
- Environmental Consultations – Ongoing
- Prepare final Report
- **Processing the Report** – Next Slide
- Tendering
- Construction
- Recover Costs

PLAN SCALE

0 240 480 720

TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Watershed Plan

NOTES:

1. AERIAL PHOTOGRAPHY PROVIDED BY WILMOT TOWNSHIP.
2. CONTOURS GENERATED USING 2018 LIDAR DERIVED DATASET REPRESENTING BARE-EARTH TERRAIN FROM LAND INFORMATION ONTARIO.

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TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. 1+125 (BAMBERG)

BENCHMARK No. 5 **ELEV.=372.44**
TOP CENTRE UPSTREAM END OF 450mmØ H.D.P.E. SURFACE CULVERT AT STA. 0+780 (WEST BR.)

LEGEND

- LOT/CONCESSION LINE
- PROPERTY LINE
- URBAN BOUNDARY
- TOWNSHIP BOUNDARY
- MAJOR WATERSHED BOUNDARY
- MINOR WATERSHED BOUNDARY
- WETLAND LIMIT
- BENCHMARK LOCATION
- B.M. 1 / 123.45 — BENCHMARK No. / BENCHMARK ELEVATION
- JOHN & JANE SMITH / 12-345 / (12.3 Ha.) — LANDOWNER NAME(S) / ASSESSMENT ROLL No. (ABBREVIATED) / APPROX. AREA AFFECTED

EXISTING FEATURES:

- DRAIN NAME — OPEN DRAIN WITH CROSSING AND FLOW DIRECTION
- DRAIN NAME — CLOSED DRAIN WITH CATCH BASIN, MANHOLE AND FLOW DIRECTION (CB, MH)
- OVERLAND FLOW PATH

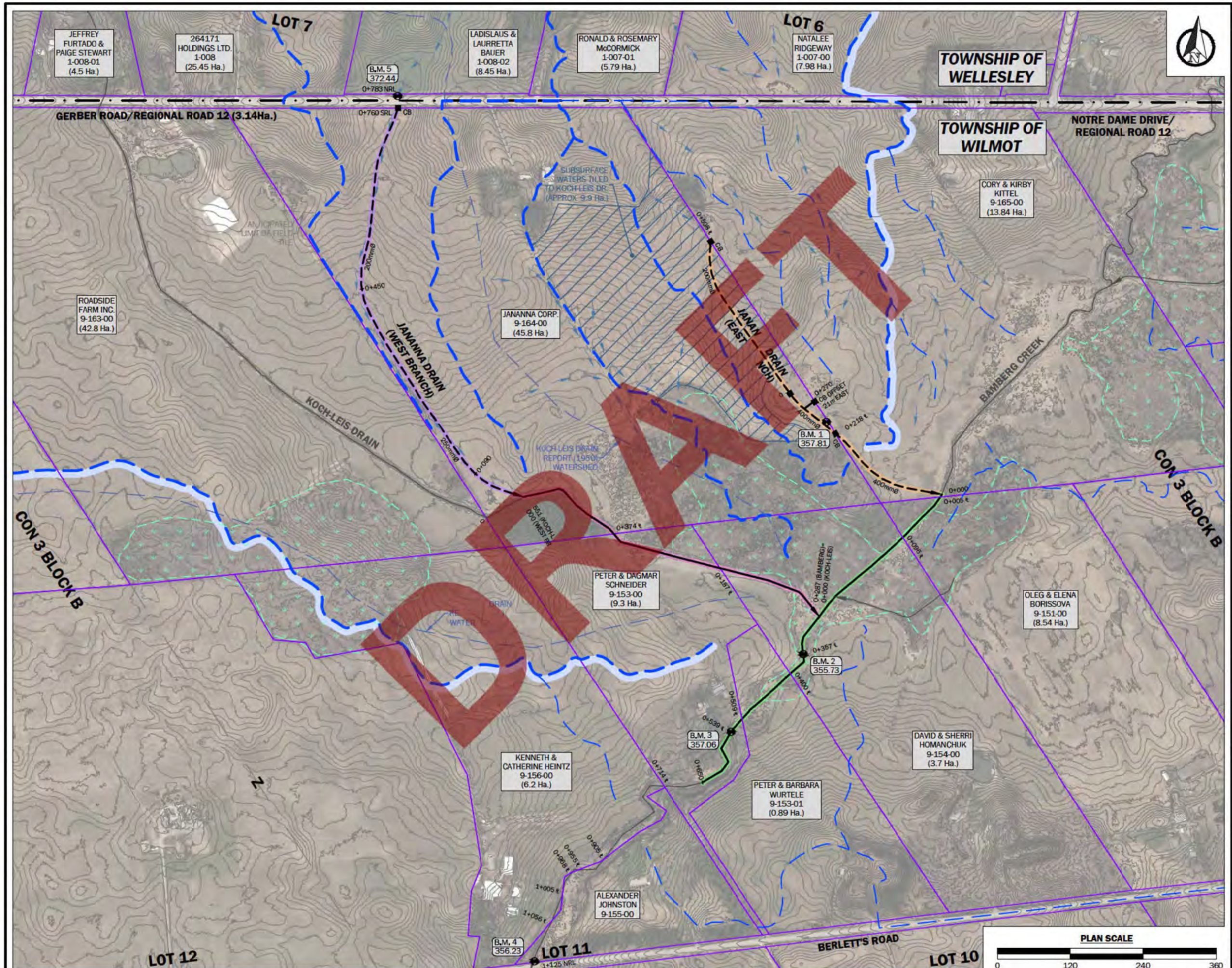
PROPOSED FEATURES:

- DRAIN NAME — OPEN DRAIN WITH CROSSING AND FLOW DIRECTION
- DRAIN NAME — CLOSED DRAIN WITH CATCH BASIN, MANHOLE AND FLOW DIRECTION (CB, MH)

No.	REVISION	DATE (YY-MM-DD)
3	KOCH-LEIS INFORMATION MTG.	22-11-24
2	INFORMATION MEETING	22-09-29
1	ON-SITE MEETING	21-09-22

Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
R.U.	A.H.	S.B.
DATE:	REFERENCE No.	DRAWING No.
2022-11-24	WLMT-002	1 OF 6



TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Work Area Plan

NOTES:

1. AERIAL PHOTOGRAPHY PROVIDED BY WILMOT TOWNSHIP.
2. CONTOURS GENERATED USING 2018 LIDAR DERIVED DATASET REPRESENTING BARE-EARTH TERRAIN FROM LAND INFORMATION ONTARIO.

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LEGEND

- LOT/CONCESSION LINE
- PROPERTY LINE
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- MAJOR WATERSHED BOUNDARY
- MINOR WATERSHED BOUNDARY
- WETLAND LIMIT
- BENCHMARK LOCATION
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- OVERLAND FLOW PATH

PROPOSED FEATURES:

- DRAIN NAME — OPEN DRAIN WITH CROSSING AND FLOW DIRECTION
- DRAIN NAME — CB / MH — CLOSED DRAIN WITH CATCH BASIN, MANHOLE AND FLOW DIRECTION

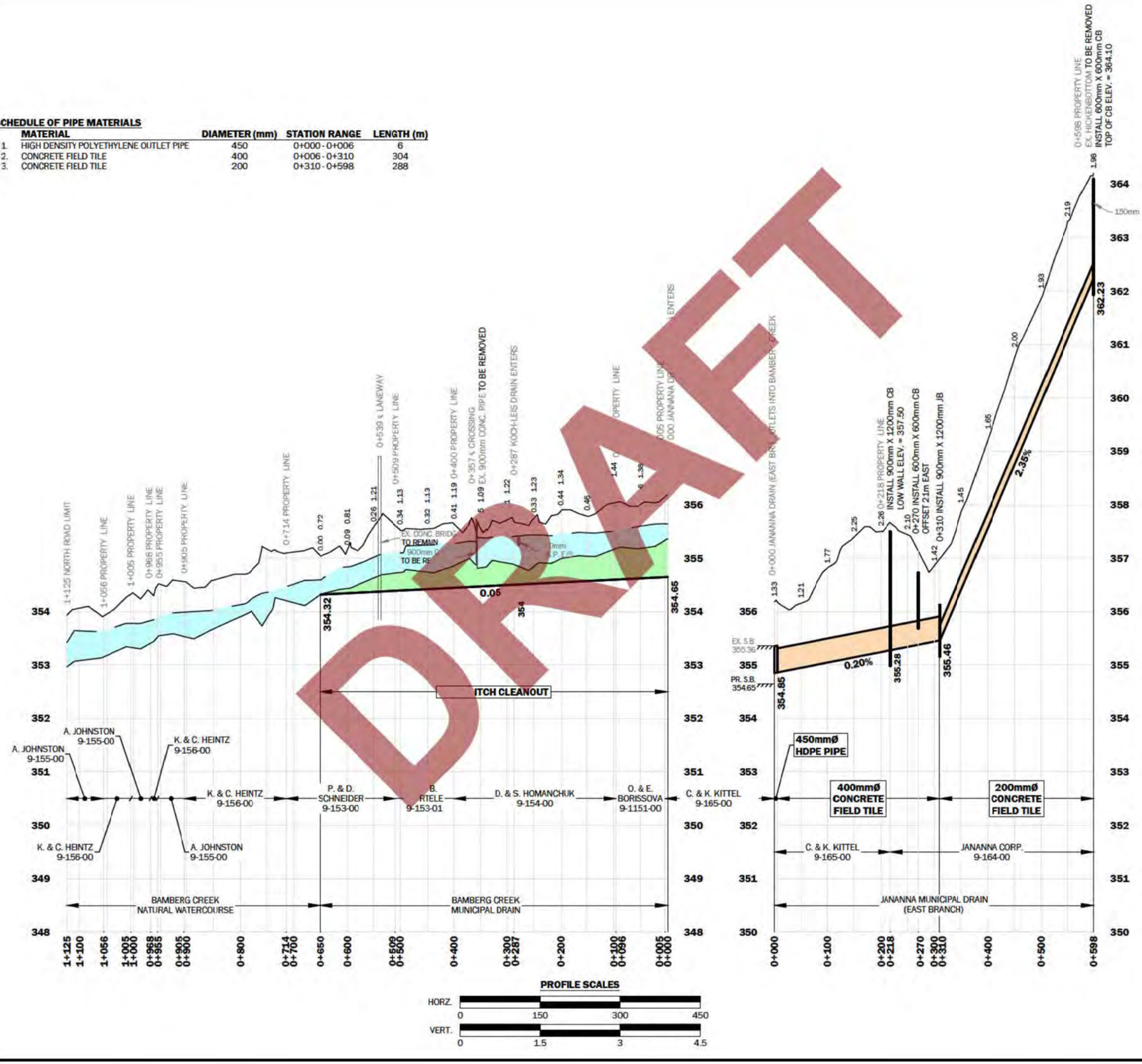
No.	REVISION	DATE (YY-MM-DD)
3	KOCH-LEIS INFORMATION MTG.	22-11-24
2	INFORMATION MEETING	22-09-29
1	ON-SITE MEETING	21-09-22

Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
R.U.	A.H.	S.B.
DATE:	REFERENCE No.	DRAWING No.
2022-11-24	WLMT-002	2 OF 6

SCHEDULE OF PIPE MATERIALS

	MATERIAL	DIAMETER (mm)	STATION RANGE	LENGTH (m)
1.	HIGH DENSITY POLYETHYLENE OUTLET PIPE	450	0+000 - 0+006	6
2.	CONCRETE FIELD TILE	400	0+006 - 0+310	304
3.	CONCRETE FIELD TILE	200	0+310 - 0+598	288



TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Jananna Drain
(East Branch) Profile

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 **ELEV.=357.81**
NAIL IN NORTH FACE OF FENCE POST 5m EAST OF STA. 0+234 (JANANNA)

BENCHMARK No. 2 **ELEV.=355.73**
TOP CENTRE DOWNSTREAM END OF 900mmØ CONCRETE CULVERT AT STA. 0+358 (BAMBERG)

BENCHMARK No. 3 **ELEV.=357.06**
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. 0+537 (BAMBERG)

BENCHMARK No. 4 **ELEV.=356.23**
TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. 1+125 (BAMBERG)

BENCHMARK No. 5 **ELEV.=372.44**
TOP CENTRE UPSTREAM END OF 450mmØ H.D.P.E. SURFACE CULVERT AT STA. 0+780 (?)

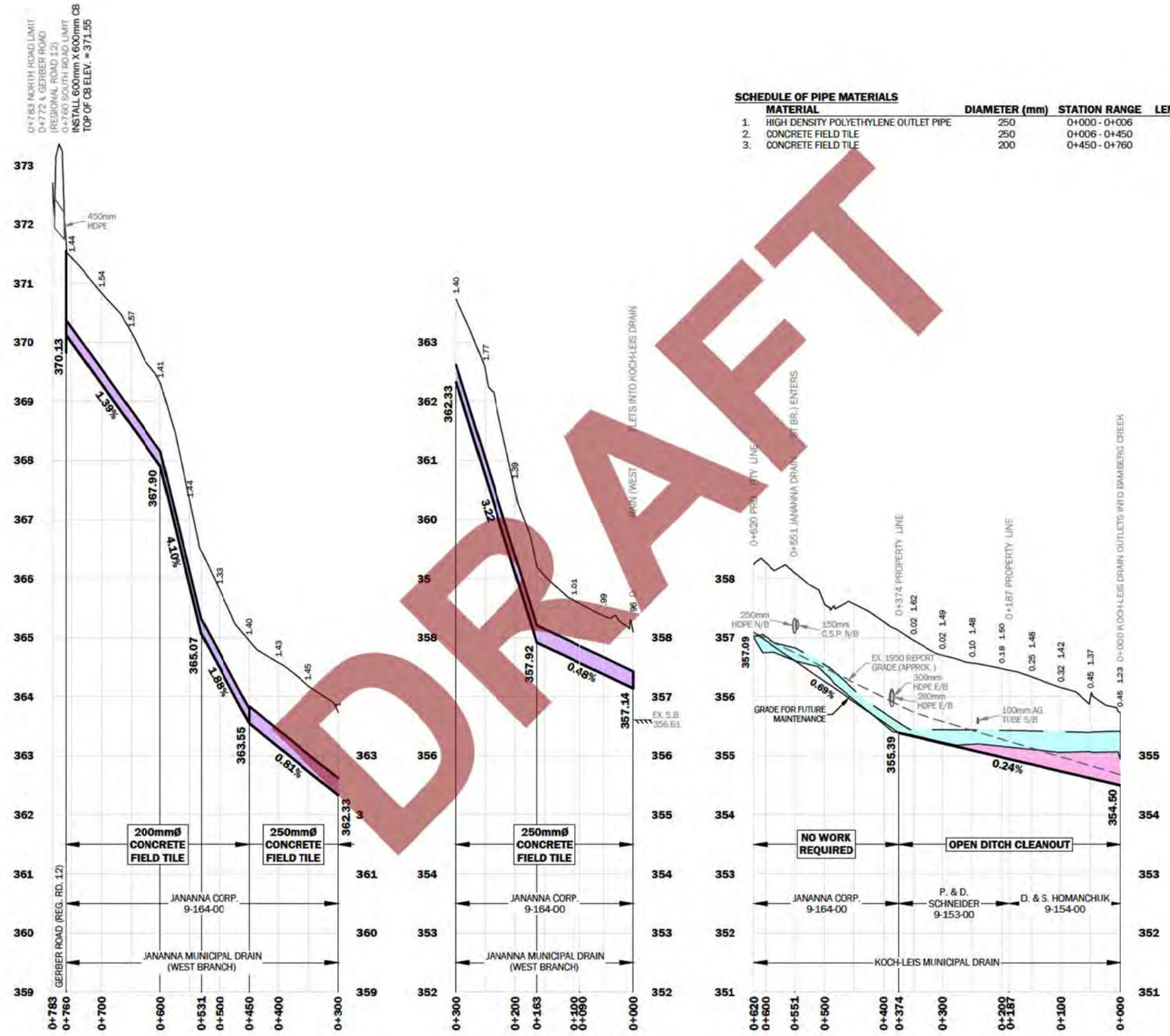
No.	REVISION	DATE (YY-MM-DD)
3	KOCH-LEIS INFORMATION MTG.	22-11-24
2	INFORMATION MEETING	22-09-29
1	ON-SITE MEETING	21-09-22

Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
R.U.	A.H.	S.B.
DATE: 2022-11-24	REFERENCE No. WLMT-002	DRAWING No. 3 OF 6

SCHEDULE OF PIPE MATERIALS

	MATERIAL	DIAMETER (mm)	STATION RANGE	LENGTH (m)
1.	HIGH DENSITY POLYETHYLENE OUTLET PIPE	250	0+000 - 0+006	6
2.	CONCRETE FIELD TILE	250	0+006 - 0+450	444
3.	CONCRETE FIELD TILE	200	0+450 - 0+760	310



PROFILE SCALES

HORZ. 0 150 300 450

VERT. 0 1.5 3 4.5

TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Jananna Drain (West Branch) Profile

BENCHMARK DESCRIPTIONS

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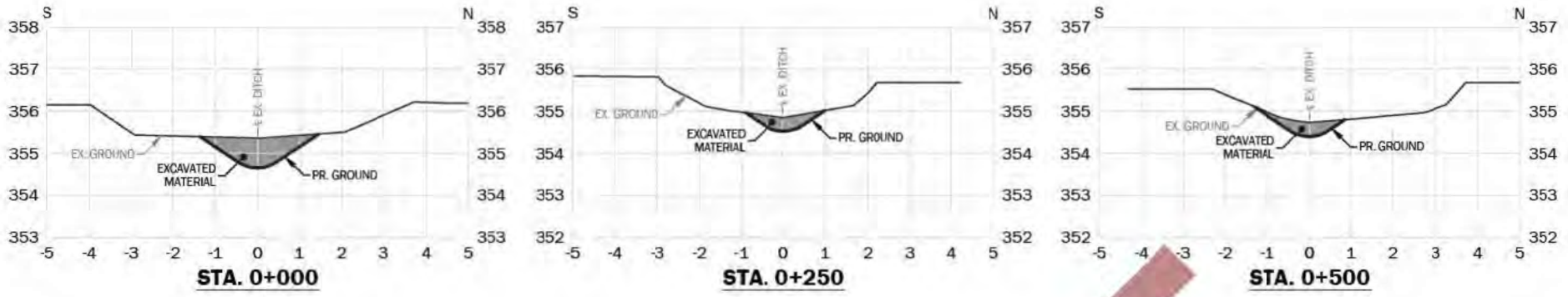
Headway Engineering

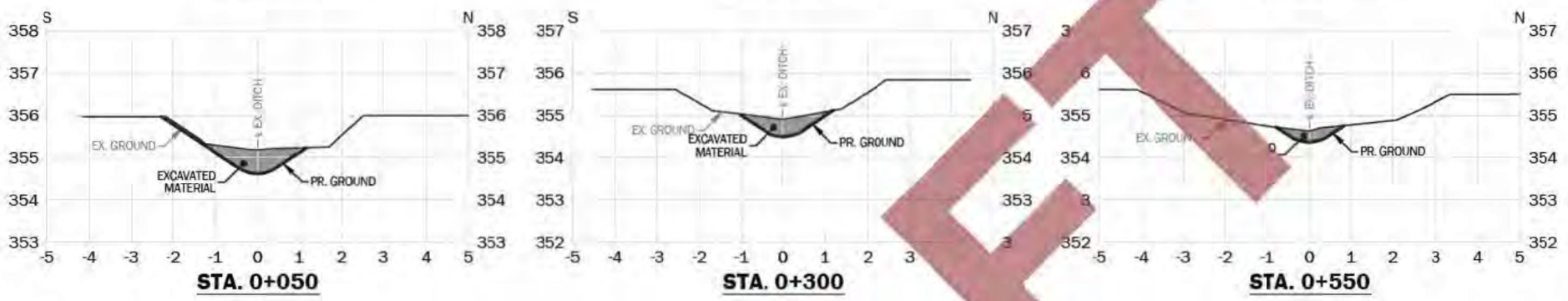
DRAWN BY:	DESIGNED BY:	CHECKED BY:
R.U.	A.H.	S.B.
DATE: 2022-11-24	REFERENCE No.: WLMT-002	DRAWING No.: 4 OF 6



STA. 0+000

STA. 0+250

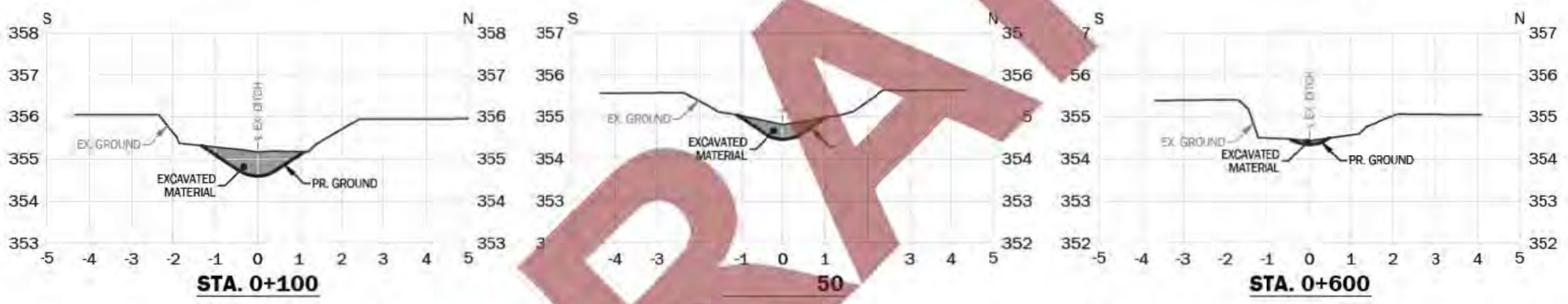
STA. 0+500



STA. 0+050

STA. 0+300

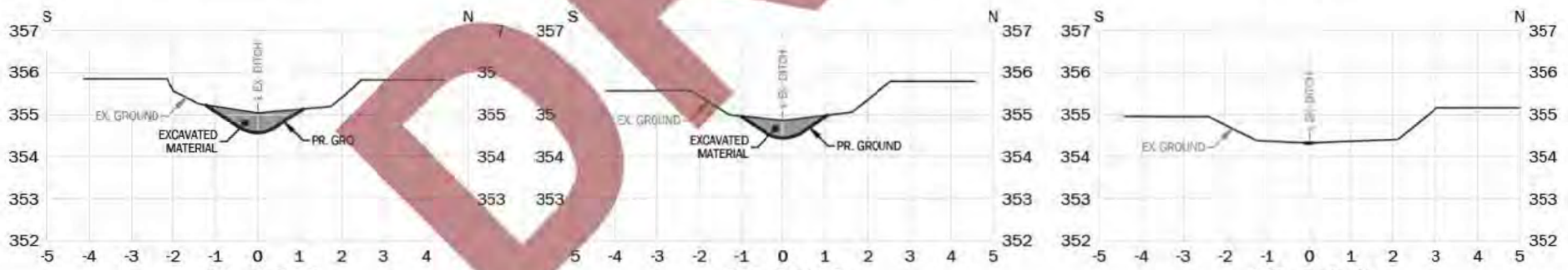
STA. 0+550



STA. 0+100

50

STA. 0+600



STA. 0+150

STA. 0+400

STA. 0+650

STA. 0+200

STA. 0+450

SECTION SCALE

0 3 6 9

TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Bamberg Creek Sections

BENCHMARK DESCRIPTIONS

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2	INFORMATION MEETING	22-09-29
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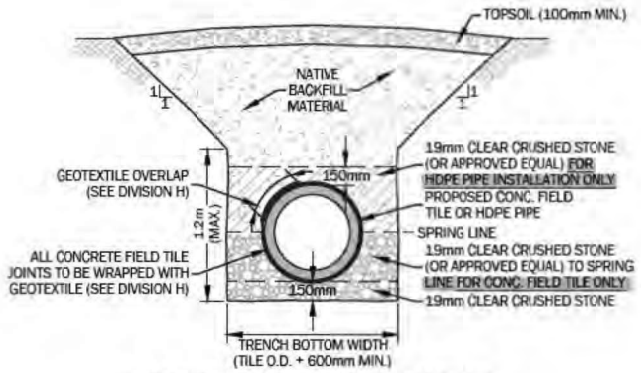
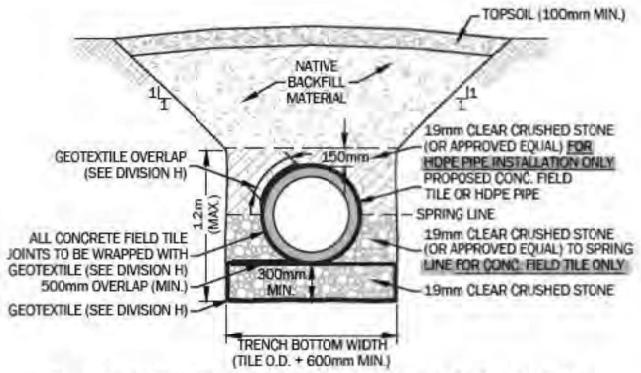
Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
R.U.	A.H.	S.B.
DATE: 2022-11-24	REFERENCE No.: WLMT-002	DRAWING No.: 5 OF 6



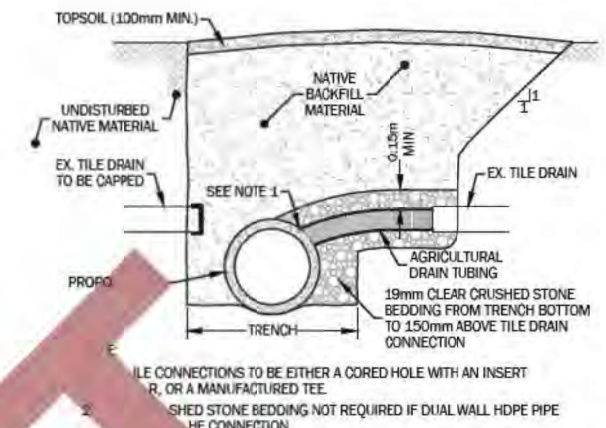
TYPICAL PIPE INSTALLATION ON STONE BEDDING DETAIL

N.T.S.



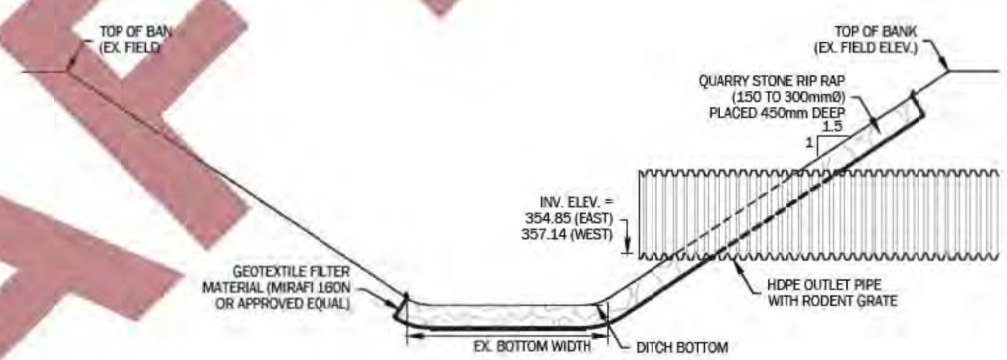
TYPICAL PIPE INSTALLATION ON WRAPPED STONE BEDDING DETAIL (PROVISIONAL ITEM)

N.T.S.



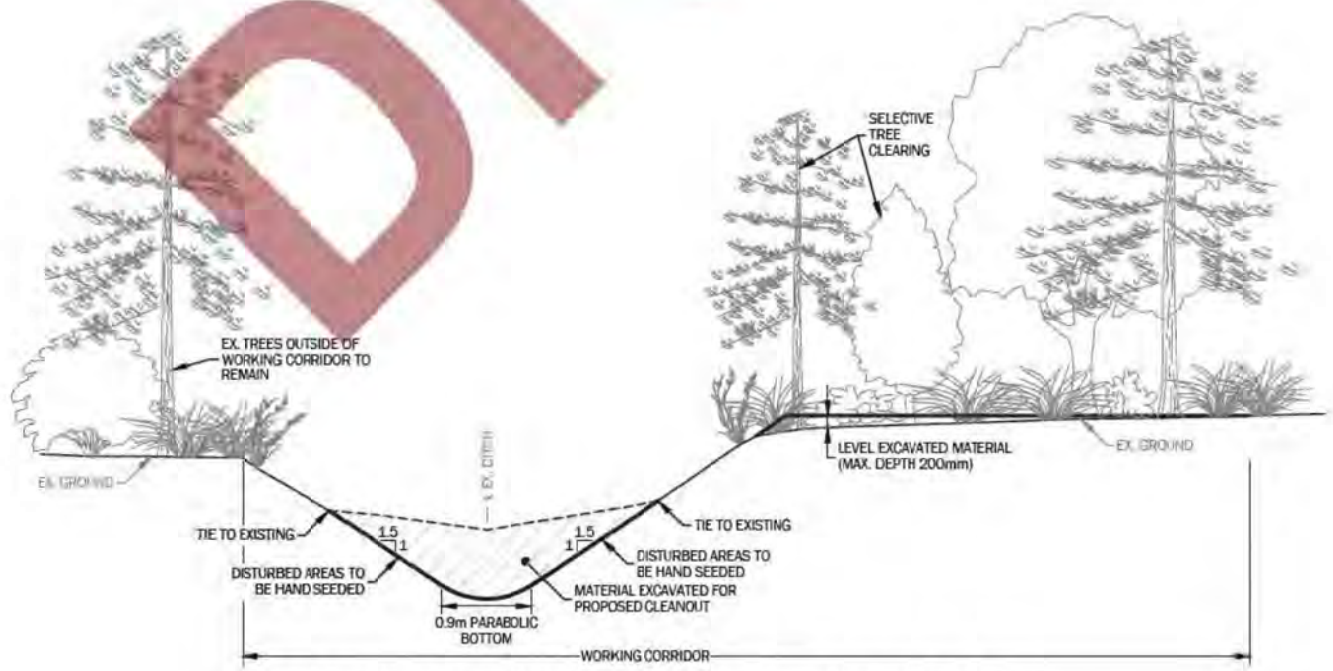
TYP TILE CONNECTION DETAIL

N.T.S.



TYPICAL OUTLET DETAIL

N.T.S.



TYPICAL OPEN DITCH CLEANOUT DETAIL (BAMBERG CREEK)

N.T.S.

TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Details

BENCHMARK DESCRIPTIONS

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Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
R.U.	A.H.	S.B.
DATE: 2022-11-24	REFERENCE No. WLMT-002	DRAWING No. 6 OF 6

Schedule of Assessment for Construction
Bamberg Creek, Jananna and Koch-Leis Municipal Drains 2022

Bamberg Creek, Jananna and Koch-Leis Municipal Drains 2022

Property Details				Assessment Summary					For Information		
Part Lot	Concession	Landowner	Roll Number	Bamberg Creek Drain	East Branch	West Branch	Koch-Leis Drain	Total Assessment	Less Gov't Grant	Less Allowances	Net Estimated Expense
Township of Wilmot											
9	3 Block B	Oleg & Elena Borissova	9-151	$ 7,857.00	$ -	$ -	$ -	$ 7,857.00	$ 2,619.00	$ 3,040.00	$ 2,198.00
9	3 Block B	Cory & Kirby Kittle	9-165	$ 22,615.00	$ 26,756.00	$ -	$ -	$ 49,371.00	$ 16,457.00	$ 7,580.00	$ 25,334.00
10	3 Block B	Peter & Dagmar Schneider	9-153	$ 14,433.00	$ -	$ -	$ 17,389.00	$ 31,822.00	$ 10,607.00	$ 16,070.00	$ 5,145.00
10	3 Block B	Peter & Barbara Wurtele	9-153-01	$ 45,013.00	$ -	$ -	$ -	$ 45,013.00	$ 15,004.00	$ 37,110.00	-$ (7,101.00)
10	3 Block B	David & Sherri Homanchuk	9-154	$ 63,738.00	$ -	$ -	$ 8,513.00	$ 72,251.00	$ 24,084.00	$ 50,140.00	-$ (1,973.00)
10	3 Block B	Jananna Corp.	9-164	$ 21,689.00	$ 61,299.00	$ 57,500.00	$ 25,864.00	$ 166,352.00	$ 55,451.00	$ 53,460.00	$ 57,441.00
11	3 Block B	Kenneth & Catherine Heintz	9-156	$ 1,030.00	$ -	$ -	$ 202.00	$ 1,232.00	$ 411.00	$ -	$ 821.00
11	3 Block B	Roadside Farm Inc.	9-163	$ 8,864.00	$ -	$ -	$ 3,158.00	$ 12,022.00	$ 4,007.00	$ -	$ 8,015.00
12	3 Block B	David & Eva Cressman	9-160	$ 684.00	$ -	$ -	$ 244.00	$ 928.00	$ 309.00	$ -	$ 619.00
Total Assessments on Lands				$ 185,923.00	$ 88,055.00	$ 57,500.00	$ 55,370.00	$ 386,848.00	$ 128,949.00	$ 167,400.00	$ 90,499.00
Gerber Road		Region of Waterloo		$ 4,364.00	$ 7,205.00	$ 20,255.00	$ 825.00	$ 32,649.00			$ 32,649.00
Total Assessments on Roads				$ 4,364.00	$ 7,205.00	$ 20,255.00	$ 825.00	$ 32,649.00			$ 32,649.00
Total Assessments Main Open Township of Wilmot				$ 190,287.00	$ 95,260.00	$ 77,755.00	$ 56,195.00	$ 419,497.00	$ 128,949.00	$ 167,400.00	$ 123,148.00
Township of Wellesley											
6	2 East	Natalee Ridgeway	1-007-00	$ 1,571.00	$ 5,529.00	$ -	$ -	$ 7,100.00	$ 2,367.00		$ 4,733.00
6	2 East	Ronald & Rosemary McCormick	1-007-01	$ 1,140.00	$ 4,011.00	$ -	$ -	$ 5,151.00	$ 1,717.00		$ 3,434.00
7	2 East	Ladislaus & Laurretta Bauer	1-008-02	$ 848.00	$ -	$ 9,395.00	$ 302.00	$ 10,545.00	$ 3,515.00		$ 7,030.00
7	2 East	264171 Holdings Ltd.	1-008	$ 2,757.00	$ -	$ 7,650.00	$ 982.00	$ 11,389.00	$ 3,796.00		$ 7,593.00
7	2 East	Jeffrey Furtado & Paige Stewart	1-008-01	$ 99.00	$ -	$ -	$ 35.00	$ 134.00	$ 45.00		$ 89.00
8	2 East	Robert & Anne Jantzi	1-009	$ 4,759.00	$ -	$ -	$ 1,696.00	$ 6,455.00	$ 2,152.00		$ 4,303.00
8	3 East	Bamway Industries Inc.	1-027	$ 1,006.00	$ -	$ -	$ 358.00	$ 1,364.00	$ 455.00		$ 909.00
8	3 East	Jammon & Elvina Bauman	1-026	$ 933.00	$ -	$ -	$ 332.00	$ 1,265.00	$ 422.00		$ 843.00
Total Assessments on Lands				$ 13,113.00	$ 9,540.00	$ 17,045.00	$ 3,705.00	$ 43,403.00	$ 14,469.00	$ -	$ 28,934.00
Total Assessments Township of Wellesley				$ 13,113.00	$ 9,540.00	$ 17,045.00	$ 3,705.00	$ 43,403.00	$ 14,469.00	$ -	$ 28,934.00
Total Assessments Bamberg Creek, Jananna and Koch-Leis Municipal Drains 2022				$ 203,400.00	$ 104,800.00	$ 94,800.00	$ 59,900.00	$ 462,900.00	$ 143,418.00	$ 167,400.00	$ 152,082.00

Headway Engineering	Project: **Jananna Drain-Koch Leis**	Reference No. **WLMT-002**
	By: a.h.	Date: November 24, 2022
	Checked By:	Page: 1 of 2

Subject: **Preliminary Meeting – Sign-in Sheet**

Name	Organization or Property	Phone Number	Email Address
Stephen Brickman	Headway Engineering	226 243 6614	Stephen.brickman@headwayeng.ca
Adam Hall	Headway Engineering	226 243 6614	adam.hall@headwayeng.ca
John Kuntze	Wilmot & Wellesley Drain Super		
Ken & Cathy Heintz			
Kenneth Kummer	Region of Waterloo	519-584-5616	kkummer@regionofwaterloo.ca
Jeff Cressman	Roadside Farm	[redacted]	
Dave Cressman Eva Cressman	"		
Lucy Dearen			
Irene Schneider			
Walt Krupenik			
Ted Schneider			
Garth Noecker	Dr. Supt. - Wellesley		
John Kuntze	Dr Sup Wilmot		
CHRIS GAWRON			
& KEITH TURNER			

This is **EXHIBIT "T"** referred to in the Affidavit of Stephen Brickman sworn before me on this day, June 20, 2024

A Commissioner for taking affidavits

Feb 9, 2023 Mtg with Cory (10:00am to 12:30)

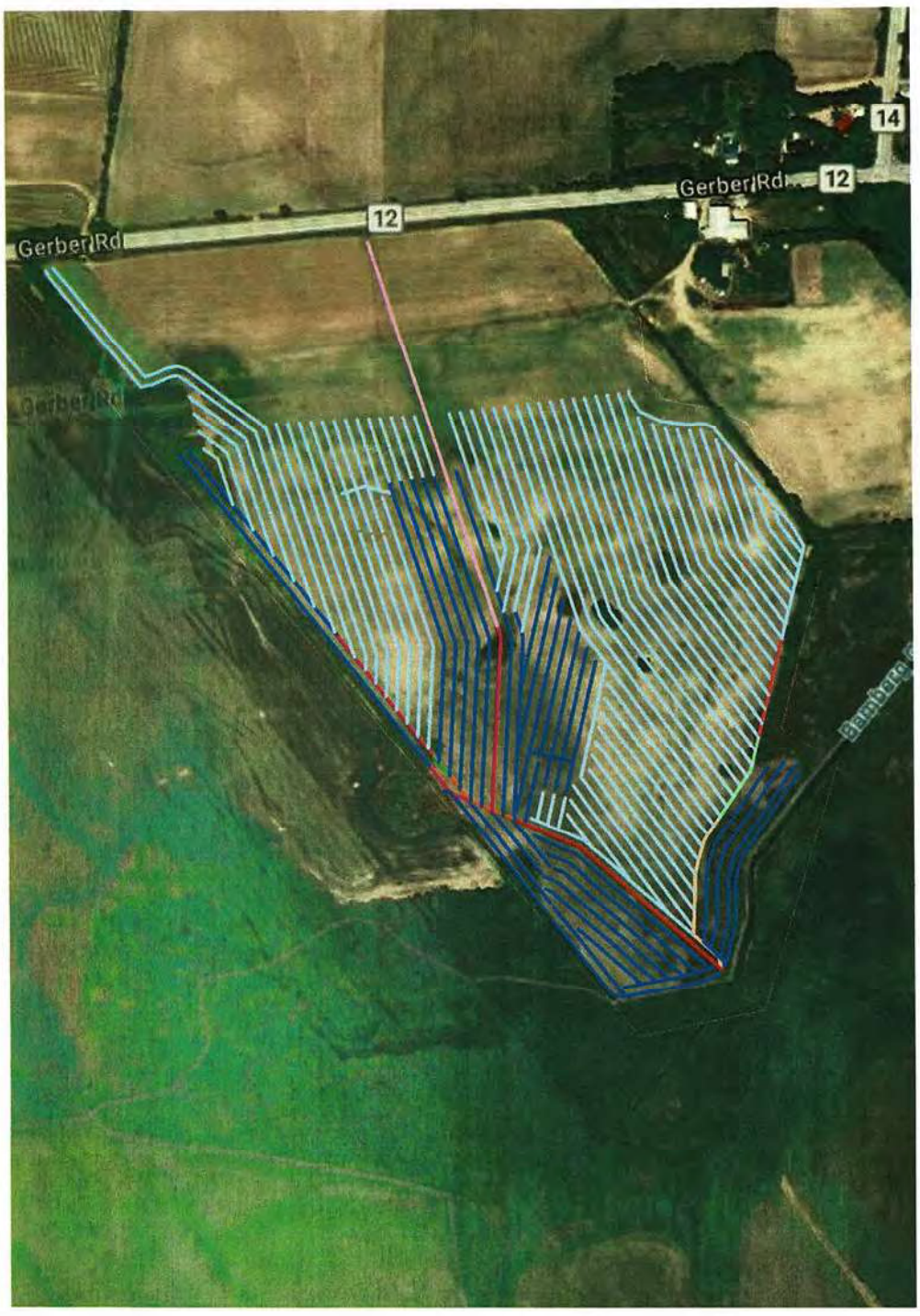
I presented the latest dwgs showing the changes to the Koch-Lease Drain, which Cory could not have seen. I also presented the revised assessment schedules, showing the additional work on the Koch-Leis drain, and the change in assessments. I told him that his assessment had dropped (I also included the assessment he was presented with in September). I explained that a portion of that is because there was less work in Bamberg Creek, and also that we have accepted some of his arguments for being assessed too high (we may have overestimated his benefits).

He had the following points:

- No body wants the drain. He has talked to everybody and they have all signed a petition to stop the drain. (this point is frequently recurring)
- Nobody wants it, nobody asked for it
- This whole thing is for 1acre maybe.
- Everybody is opposed to it, but maybe for different reasons. Some have enviro issues, some have necessity issues. One person just lost their wife, another just had a baby, other's are on fixed income.
- Cory will fix the pond thing on his own dime. That should end the project. The lower acre at the bottom isn't worth it.
- The drain will disrupt the tiling that is already in place.
- The tiling that is already in place is a demonstration (to everybody in the watershed) that no new system is needed.
- People say we (headway) are making work for ourselves, and that John K. jumps into drains too quickly and doesn't filter out projects.
- Do you (SB) and John K. know each other, have you worked together in the past? Is this a gig to make work for each other?
    - I said John and I served on the LDC together for three years. Aside from that our, our paths occasionally cross, but No, I've never worked for John before.
- Even the people who are getting money back are against it (they signed the petition against the work) – he showed me the petition, it was two and half pages of names. I couldn't read the names.
- He provided tile maps of Jananna's property, and phased tile maps of his property (not completed but to be done). His tiling contractor's design looks perfect in my opinion interms of layout and headers. I don't know how they can outlet into Bamberg Creek, unless willing to be right at streambed.
- He has prepared a lengthy powerpoint that I'm sure is intended for Council and Tribunals when the time comes.
- It doesn't make sense that Jananna is doing what they're doing.
- He asked for a breakdown of his assessment.
- He asked if I have the power to stop the project on the basis that it doesn't make financial sense.
    - I said we're obligated to fulfil our role under the DA as long as there is a valid petition.

    - I said if we were to file a report stating that a works doesn't make sense, then the Jananna property could appeal, and they would definitely win.
    - We talked about insufficient outlet for the lands that don't have outlet. That would make less sense as there is no benefit to be derived anywhere.
- This job is guaranteed to get appealed regardless (by Jananna or everybody else).
- He said that John K. and I discouraged appeals at the public meeting.
    - I said I have no recall of that. I remember talking about the cost of appealing (when asked by landowners) and about the time delays. He said he had a hard time biting his tongue during that.
- Just because you can doesn't mean you should do the project.
- He said most farms consider drains to be a liablilty to the property, and a reason to not purchase. I said we've only found exactly the opposite. – agree to disagree.
- The benefits don't justify the work. He assess the benefits as only the 1 acre without outlet (which is being farmed).
    - I said that the 'benefits aren't commensurate with costs' argument isn't being applied properly when you only consider the benefited area as being the area requiring drainage (disregarding the 1ac. ARD being grossly underestimated).
    - I explained that the drainage system needed to provide a sufficient outlet to the ARD also results in benefits to other lands. Although those lands are not in the ARD, they are still beneifting. Those benefiting lands (including all other properties) are how a determination regarding costs of the drain need to be justified.
    - He considers no other lands to be benefiting
- He didn't even know that the pond was causing problems and he's going to fix it in March (weather permitting).
- He respects our technical judgement, but we haven't handled public relations well, nor simple accounting.
- The holding company in Wellesley is full of lawyers etc. and they will be opposing the project.
- Why isn't the rest of Bamberg Creek paying?
    - I discussed liable watershed, and the costs which are being assessed (the costs to provide an outlet to the liable watershed, and not the watershed proper).
- Nobody wants this. The Drainage Act is about helping the community.
- He asked about timelines. I said we wanted to file a report by the end of February.
- Nobody can explain why we are even doing this job.
- They survey/data sampling was done only during one day, and that isn't enough sampling to qualify as information to complete a design on. The site is so dynamic, and there should have been a year of data collection.
- **I said I may contact Jananna to see if they are open to discussing an agreement for a private drain on the East Branch.** I said it definitely isn't my job to convince them of anything, and he knows that, but he wants them to know (for context) that this is to relieve the community and not just them.

c03 blck b l09 wilmot
Pipe



0 400 800
feet

AWF CONTRACTORS LTD.

4 in perf	18024.66 ft
4in future	37984.55 ft
6 in filter	1088.83 ft
6in nonperf	274.27 ft
6in perf	1064.67 ft
8in filter	247.18 ft
8in perf	71.22 ft
10in filter	454.41 ft
10in perf	209.12 ft
12 in perf	698.58 ft
15" smoothwall	8.31 ft

Trimble

This is **EXHIBIT "U"** referred to in the Affidavit of Stephen Brickman sworn before me on this day, June 20, 2024

A Commissioner for taking affidavits

Bamberg Creek, Jananna, and Koch-Leis Municipal Drains 2023

April 28, 2023

Prepared for:

TOWNSHIP OF Wilmot

Headway Engineering
23-500 Fairway Road South
Suite 308
Kitchener, Ontario N2C 1X3
226 243 6614
www.headwayeng.ca

23-500 Fairway Road South
Suite 308
Kitchener, Ontario N2C 1X3
226 243 6614
www.headwayeng.ca

Kitchener, Ontario
April 28, 2023

To the Mayor and Members of Council:

Re: Bamberg Creek, Jananna, and Koch-Leis Municipal Drains 2023
Township of Wilmot
Our Reference No. WLMT-002

Headway Engineering is pleased to provide its report for the **Bamberg Creek, Jananna, and Koch-Leis Municipal Drains 2023** in the Township of Wilmot.

The preparation of this report was authorized by resolutions of the Council of the Township of Wilmot on July 12, 2021, per Section 4(1) of the Drainage Act.

The primary objective of this report is to establish a new Municipal Drain designed to today's standards of drainage for an area requiring drainage. The report recommends the construction of a new closed municipal drain from two locations on the North Part of Lot 10, Concession 3, Block B and extending downstream to its outlet into the Koch-Leis Drain and the Bamburg Creek. Improvements are required to portions of the Koch-Leis Drain, and the Bamburg Creek.

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

Municipal Lands	$32,649
Privately Owned Agricultural – Grantable	$430,251
Total Estimated Assessments	**$462,900**

Yours truly,

Stephen Brickman, P.Eng.
Project Engineer and Manager

[redacted]

Adam Hall
Project Coordinator
HEADWAY ENGINEERING
SB/

CONTENTS

SCHEDULES

SPECIFICATIONS FOR THE CONSTRUCTION OF MUNICIPAL DRAINAGE WORKS

Headway Engineering

23-500 Fairway Road South
Suite 308
Kitchener, Ontario N2C 1X3
226 243 6614
www.headwayeng.ca

1.0 INTRODUCTION AND LOCATION

The Council of the Township of Wilmot has appointed Headway Engineering to investigate a petition for a new municipal drainage works. The project services parts of Lots 9 to 12 in Concessions 3 Block B, in the Township of Wilmot, and parts of Lots 6 to 8 in Concession 2, Eastern Division, and part of Lot 8, Concession 3, Eastern Division in the Township of Wellesley.

The liable drainage area comprises of approximately 221 hectares, and land uses within the watershed include agriculture, bush lands, and roads.

The attached Plans, Profiles and Details; Drawing Numbers 1 to 6, show and describe in detail the location and extent of the work to be completed and the lands which are affected.

2.0 PROJECT AUTHORIZATION

Authority to prepare this report was obtained by resolutions of the Council of the Township of Wilmot at its July 12, 2021 Council Meeting to appoint Headway Engineering to prepare an Engineer's Report under Section 4 of the Drainage Act. The area requiring drainage is part of Lot 10, Concession 3, Block B. The petition is valid in accordance with Section 4(1)(a) of the Drainage Act.

3.0 MUNICIPAL DRAINAGE HISTORY

3.1 Koch-Leis Drain (1950)

The Koch-Leis Drain was originally constructed under the authority of a report prepared by Graham Reid & Associates, dated November 15, 1950. This 1950 report provided for the construction of the entire Koch-Leis Drain as an open ditch.

The following table summarizes the maintenance activities on the Koch-Leis Drain, per Township records:

Year	Location	Description
1985 (Summer)	Gerber Road, downstream to Bamberg Creek	Ditch cleanout
2010 (Fall)	Bamberg Creek	Beaver, and beaver dam removals
2012 (Spring)	Sta. 0+000 to Sta. 0+374 (approx.)	Ditch cleanout
2018 (Spring)	Sta. 0+000 to Sta. 0+620 (approx.), and spot locations upstream	Ditch cleanout and brushing, spot cleanouts.
2021 (Fall)	Sta. 0+000 to Sta. 0+374 (approx.)	Ditch cleanout and brushing

4.0 PUBLIC MEETINGS AND ENGAGEMENTS

4.1 On-Site Meeting

Per Section 9(1) of the Drainage Act, an on-site meeting was held on September 22, 2021 to address the Section 4 Petition. Persons in attendance were:

Stephen Brickman, P.Eng.	Headway Engineering
Adam Hall	Headway Engineering
John Kuntze, P.Eng.	Township of Wilmot, Drainage Superintendent
Josh Graham, C.E.T.	Region of Waterloo
Ken Renner	Region of Waterloo

Landowners included:

Lucy Gawron	Walter Krupnik	Wayne & Irene Schneider
Ron McCormick	Christine Gawron	

4.2 Public Information Meeting No. 1

A Public Information Meeting was held on September 29, 2022. Persons in attendance were:

Stephen Brickman, P.Eng.	Headway Engineering
Adam Hall	Headway Engineering
John Kuntze, P.Eng.	Township of Wilmot, Drainage Superintendent

Landowners included:

Cory Kittel	Wayne & Irene Schneider	Walter Krupnik
Lucy Gawron	Ken & Cathy Heintz	Justin Miller
Chris & Keith Turner	Ron McCormick	Theresa Gawron (Virtually)

The information supplied included details on the proposed construction of two pipe drainage systems identified as the East and West Branches, and improvements to Bamberg Creek.

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

Subsequent to the meeting, improvements were requested to the lower end of the Koch-Leis Drain. Given the frequent need for cleanouts (three cleanouts in 10 years at the lower end), and the newly proposed improvements to Bamberg Creek, additional grade is available to the Koch-Leis Drain.

4.3 Public Information Meeting No. 2 (Koch-Leis Drain Improvements)

A second Public Information Meeting was held on November 24, 2022. Persons in attendance were:

Stephen Brickman, P.Eng.	Headway Engineering
Adam Hall	Headway Engineering
John Kuntze, P.Eng.	Township of Wilmot, Drainage Superintendent
Garth Noecker	Township of Wellesley, Drainage Superintendent
Ken Renner	Region of Waterloo

Landowners included:

Lucy Gawron	Wayne & Irene Schneider	Walter Krupnik
Jeff Cressman	Dave and Eva Cressman	Ken & Cathy Heintz
Chris Gawron	Keith Turner	Peter Schneider

The information supplied essentially included the same details as presented at the Public Information Meeting No. 1, but with improved grade at the lower end of the Koch-Leis Drain.

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

5.0 FINDINGS

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

5.1 General Findings:

- The watershed was established through the analysis of tile drainage maps, previous engineers' reports for surrounding systems, field investigations, surveys, and data analysis of the Southwestern Ontario Orthophotographic Project (SWOOP). The drainage area liable for assessment comprises of approximately 221 hectares.
- Land uses within the drainage area are as follows:
    - Agricultural: 180.4 hectares (82%)
    - Bush: 37.5 hectares (17%)
    - Roads: 3.1 hectares (1%)
- The Ontario Ministry of Agriculture, Food and Rural Affairs' Agricultural Information Atlas describes the soil types within the watershed and along the route of the drain as follows:
    - Silt Loam (approximately 24%)
    - Silty Clay Loam (approximately 31%)
    - Sandy Loam (approximately 45%).
- Lands north of Gerber Road, and immediately south of Gerber Road are noted to be sandy with above average properties for infiltration.

5.2 Existing Drainage System:

- The Koch-Leis Drain has a very flat grade for approximately 300m at its outlet. The previous drainage report indicates that the Koch-Leis Drain was constructed with more grade.
- The outlet for the entire system is Bamberg Creek.
- Bamberg Creek shows signs of artificial improvements in its history, such as straightening, and additional depth at the time the Koch-Leis Drain was originally constructed (1950).

5.3 Outlet:

- The outlet for the system is Bamberg Creek approaching Berlett's Road, where the natural watercourse begins to take on more grade.

5.4 Other noted issues:

- The north part of Lot 10, Concession 3, Block B has been recently systematically tiled toward the Koch-Leis Drain. The north side of the property is not systematically tiled, as conditions improve for drainage.
- Eastern portions of Lot 10, Concession 3, Block B have been tiled toward the Koch-Leis Drain, where those lands would naturally drain south toward Bamberg Creek. The south-east portion of the property could not be drained toward the Koch-Leis Drain, and requires a legal outlet.
- Surface flows along the upper alignment of the East Branch and West Branch are causing reduced usability of the surrounding lands.
- Areas within the drainage area are likely to be tiled in the future.
- Tile outlets into Bamberg Creek do not have sufficient depth for today's standards of drainage.
- Bamberg Creek is prone to beaver activity. The municipality currently has limited ability to complete any maintenance on Bamberg Creek.
- Current topographic data indicates that portions of the Koch-Leis Drain watershed, as noted in the 1950 report, are incorrect.

5.5 Environmental Condition:

- Portions of the proposed drainage system pass through components of the Provincially Significant Sunfish Lake Laurel Creek Wetland Complex.

6.0 DESIGN CONSIDERATIONS

The proposed tile drainage system is sized using the Drainage Coefficient method contained in the OMAFRA Publication 29 – 'Drainage Guide for Ontario'. The Drainage Coefficient describes a depth of water to be conveyed by the drainage works per a 24-hour period and is expressed in millimeters per 24 hours. The drainage coefficient design standard used for the works proposed in this report is 25mm per 24-hour period.

The tile drains are to be installed along an alignment which approximately follows the natural flow paths.

Headway Engineering investigated a design option which relied on the use of the existing private drain for the lower portion of the West Branch as a municipal drain. This design option resulted in minimal cost savings while providing for smaller infrastructure. A single pipe system sized to today's standards is the most feasible option.

Pipe materials were selected based on location and intended land uses adjacent to the drainage system.

Surface water inlets have been placed purposefully to receive surface flow and allow for subsurface connections. Likewise, the elevation of the pipe systems are designed to provide for subsurface tile connections at, and between surface water inlets.

Works in Bamberg Creek have been designed to provide for sufficient outlet for the Koch-Leis Drain, and the East Branch. The proposed works also provide opportunity for improved tile drainage for workable areas adjacent to, or near works proposed in Bamberg Creek.

7.0 ENVIRONMENTAL CONSIDERATIONS AND PERMITTING

7.1 Department of Fisheries and Oceans (DFO)

The work proposed under this report consists of the new construction of a closed drainage system, and improvements to existing open watercourses. Headway Engineering submitted a Request for Review by DFO on April 12, 2022. DFO contacted Headway Engineering for additional discussion, and upon DFO's completion of their review, DFO provided the following correspondence, dated June 27, 2022:

> *"... the [Fish and Fish Habitat Protection] Program is of the view that your proposal will not require an authorization under the* Fisheries Act*, or the* Species at Risk Act*."*

7.2 Ministry of Natural Resources and Forestry (MNRF) and the Ministry of Environment, Conservation and Parks (MECP)

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

In response to a public inquiry, the MECP reached out to Headway Engineering to request information, mainly relating to Eastern Meadowlark. Special provisions to locate (if present) the species within the work area have been prepared by Headway Engineering and approved by the MECP.

7.3 Grand River Conservation Authority (GRCA)

The GRCA provided correspondence dated October 21, 2021, which states the following:

> *"... our [GRCA] comments on works under the Drainage Act are advisory, and will not require a GRCA permit."*

The correspondence also states the following:

> *"... we [GRCA] wish to stay involved as the study process moves forward."*

The GRCA has been included on the circulation list for this report and has been notified of all public engagements. Additionally, Headway Engineering has forwarded design drawings to the GRCA on January 20, 2023, for comment, and held a virtual meeting with GRCA staff on February 3, 2023.

8.0 RECOMMENDATIONS

Headway Engineering recommends the following:

- A new municipal drainage system be installed from the outlet into Bamberg Creek in Lot 9, Concession 3, Block B, and extending upstream to the property line separating Lots 9 and 10, in the same concession. This Branch shall be known as the East Branch of the Jannana Municipal Drain.

- A new municipal drainage system be installed from the outlet into the Koch-Leis Drain in Lot 10, Concession 3, Block B, and extending upstream to the south road limit of Gerber Road, in the same concession. This Branch shall be known as the West Branch of the Jannana Municipal Drain.
- Improvements be made to the Koch-Leis Drain from its outlet into Bamberg Creek in Lot 10, Concession 3, Block B and extending upstream to the outlet of the West Branch.
- Improvements be made to Bamberg Creek from the outlet of the East Branch, and extending downstream to a sufficient outlet on the Schneider property (Roll No. 9-153).
- The proposed tile drainage system includes the installation of approximately 1,358m of 200mm to 450mm diameter pipes and is designed to convey flows at a design standard of 25mm per 24-hour period. The proposed improvements to the open channels consists of approximately 1,201m of cleanout.
- The proposed drainage system shall be constructed at an elevation adequate to drain the surrounding subsurface lands.
- This improved drainage system shall be known as the **Bamberg Creek, Jananna and Koch-Leis Municipal Drains 2023**. The Jananna Municipal Drain shall include the **East Branch**, and the **West Branch**. The Koch-Leis Drain will continue with the same identification.
- The watershed for the Koch-Leis Drain be updated per the most current topographic information, and the maintenance assessment be altered accordingly.
- Headway Engineering also recommends that the watersheds of the surrounding municipal drains be updated when those drainage systems are revisited in the future.

9.0 SUMMARY OF PROPOSED WORKS

The proposed work consists of:

1. The installation of approximately 1,358m of 200mm to 450mm diameter concrete field tile and HDPE pipe.
2. The installation of four concrete catch basins and one junction box, and
3. The improvement of approximately 1,201m of open channels.

10.0 WORKING AREA AND ACCESS

Access to the working area shall be as designated on the plans. In locations where access is not shown on the plans then access shall be designated by the Landowners.

10.1 Closed Drains (East and West Branches)

The working area shall be an average width of 25m for construction purposes, and an average width of 10m for maintenance purposes along the alignment of the proposed drain.

10.2 Open Drains (Bamberg Creek and Koch-Leis Municipal Drains)

The working area shall be an average width of 10m for construction and maintenance purposes along the working side of the open drain.

11.0 SCHEDULES

Four schedules are attached and form part of this report.

11.1 Schedule A – Schedule of Allowances

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

11.2 Schedule B – Schedule of Estimated Construction Costs

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

11.3 Schedule C – Schedule of Assessment for Construction

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

11.4 Schedule D – Schedule of Assessment for Maintenance

Schedule D provides details of the distribution of future maintenance costs for the municipal drain. Maintenance assessments are expressed as a percentage of the total maintenance. Lands located upstream of the maintenance shall be determined by the Drainage Superintendent and assessed according to this schedule.

12.0 ALLOWANCES

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

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

The Right-of-Way allowance compensates the lands for the right to enter onto the land at various times for the purpose of inspecting the drainage system and conducting maintenance activities. The land value used for the Right-of-Way calculation is adjusted for closed drainage systems to account for the continued use of the land after the construction.

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

Land Use	Land Value	Adjustment Factor for Drainage Act Right-of-Way	Adjusted Land Value for Drainage Act Right-of-Way Allowance
Agricultural (Maintenance Corridor)	$60,000/Ha	25%	$15,000/Ha
Wooded (Maintenance Corridor)	$15,000/Ha	25%	$3,750/Ha
Watercourse (Land Taken)	$15,000/Ha	100%	$15,000/Ha

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

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

Area values used for calculating allowances for Damages are as follows:

Land Use	Damage Value
Agricultural	$6,000/Ha
Wooded	$3,000/Ha

12.1 Allowances for Loss of Access (Section 33)

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

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

Five Loss of Access allowances are provided in this report, all of which resulted with the value of the land severed as the lesser of the above calculations.

Total Allowances, under Sections 29, 30, and 33 of the Drainage Act are $167,400. Allowances payable to Landowners are shown in Schedule A.

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

13.0 ESTIMATED CONSTRUCTION COSTS

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

Part A – Bamberg Creek Drain	$	44,400
Part B – Jananna – East Branch	$	60,300
Part C – Jananna – West Branch	$	50,100
Part D – Koch-Leis Drain	$	9,800
Part E – Provisional Items	$	16,200
Total Estimated Construction Costs	**$**	**180,800**

14.0 SUMMARY OF ESTIMATED PROJECT COSTS

The total estimated project costs are as follows:

Allowances under Sections 29, 30, 33 of the Drainage Act (Refer to Schedule A)	$ 167,400
Total Estimated Construction Costs (Refer to Schedule B)	$ 180,800
Public engagements, survey, design and drafting, preparation of preliminary cost estimates and assessments, preparation of drainage report, consideration of report	$ 70,300
Agency Consultations and Approvals	$ 1,200
Tendering, supervision, and inspection of construction, as-recorded drawing preparation	$ 22,900
Contingencies, Interest and net H.S.T.	$ 20,300
TOTAL ESTIMATED PROJECT COSTS BAMBERG CREEK, JANANNA, AND KOCH-LEIS MUNICIPAL DRAINS 2023	**$ 462,900**

The estimated cost of the work in the Township of Wilmot is $462,900.

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

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

15.0 ASSESSMENT

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

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

15.1 Benefit (Section 22)

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

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

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

15.2 Outlet Liability (Section 23)

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

15.3 Special Benefit (Section 24)

15.3.1 Assessment of Costs for Crossing Considerations

The Special Benefit instrument of assessment is used to separate the benefit portion of the crossing considerations from the remaining costs of the project. Crossing considerations include the Loss of Access allowances.

16.0 GRANT ELIGIBILITY

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

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

16.1 Allowance for Loss of Access

Following policy number 2.4 e) of the ADIP policies, no grant will be paid on an allowance for loss of access except when the cost of providing a crossing exceeds the value of the land losing access. As noted under Heading 12.1 of this report, all Loss of Access allowances were calculated based on the value of the land losing access. The Loss of Access allowances qualify for ADIP grants.

17.0 MAINTENANCE

After completion, the Bamberg Creek, Jananna, and Koch-Leis Municipal Drains shall be maintained by the Township of Wilmot and the Township of Wellesley for those portions of the drainage systems which are located in their respective municipalities, at the expense of all the lands and roads assessed in accordance with the attached Schedule D – Assessment for Maintenance, and in the same relative proportions until such time as the assessment is changed under the Drainage Act, except for the portions of the drainage works on municipal right-of-ways. These portions shall be maintained at the expense of the road authority having jurisdiction over the road.

Schedule A

Allowances

Schedule of Allowances
Bamberg Creek, Jananna, and Koch-Leis Municipal Drains 2023

Bamberg Creek Drain

Property Details				Drainage Act Allowances			
Part Lot	Concession	Landowner	Roll Number	Right of Way (Sec. 29)	Damages (Sec. 30)	Loss of Access (Sec. 33)	Total Allowances
9	3 Block B	Oleg & Elena Borissova	9-151	$ 1,020.00	$ 1,020.00	$ 1,000.00	$ 3,040.00
9	3 Block B	Cory & Kirby Kittel	9-165	$ 270.00	$ 270.00		$ 540.00
10	3 Block B	Peter & Dagmar Schneider	9-153	$ 2,310.00	$ 1,720.00		$ 4,030.00
10	3 Block B	Peter & Barbara Wurtele	9-153-01	$ 1,230.00	$ 1,080.00	$ 34,800.00	$ 37,110.00
10	3 Block B	David & Sherri Homanchuk	9-154	$ 3,420.00	$ 3,190.00	$ 39,600.00	$ 46,210.00
Total Allowances Bamberg Creek Drain				**$ 8,250.00**	**$ 7,280.00**	**$ 75,400.00**	**$ 90,930.00**

Jananna - East Branch

Property Details				Drainage Act Allowances			
Part Lot	Concession	Landowner	Roll Number	Right of Way (Sec. 29)	Damages (Sec. 30)	Loss of Access (Sec. 33)	Total Allowances
9	3 Block B	Cory & Kirby Kittel	9-165	$ 3,270.00	$ 3,770.00		$ 7,040.00
10	3 Block B	Jananna Corp.	9-164	$ 5,750.00	$ 5,750.00		$ 11,500.00
Total Allowances Jananna - East Branch				**$ 9,020.00**	**$ 9,520.00**	**$ -**	**$ 18,540.00**

Jananna - West Branch

Property Details				Drainage Act Allowances			
Part Lot	Concession	Landowner	Roll Number	Right of Way (Sec. 29)	Damages (Sec. 30)	Loss of Access (Sec. 33)	Total Allowances
10	3 Block B	Jananna Corp.	9-164	$ 11,400.00	$ 11,400.00		$ 22,800.00
Total Allowances Jananna - West Branch				**$ 11,400.00**	**$ 11,400.00**	**$ -**	**$ 22,800.00**

Koch-Leis Drain	Property Details				Drainage Act Allowances			
	Part Lot	Concession	Landowner	Roll Number	Right of Way (Sec. 29)	Damages (Sec. 30)	Loss of Access (Sec. 33)	Total Allowances
	10	3 Block B	Peter & Dagmar Schneider	9-153	$ 2,810.00	$ 530.00	$ 8,700.00	$ 12,040.00
	10	3 Block B	David & Sherri Homanchuk	9-154	$ 2,810.00	$ 1,120.00		$ 3,930.00
	10	3 Block B	Jananna Corp.	9-164	$ 2,660.00	$ -	$ 16,500.00	$ 19,160.00
	Total Allowances Koch-Leis Drain				**$ 8,280.00**	**$ 1,650.00**	**$ 25,200.00**	**$ 35,130.00**

	Right of Way (Sec. 29)	Damages (Sec. 30)	Loss of Access (Sec. 33)	Total Allowances
Total Allowances Bamberg Creek, Jananna, and Koch-Leis Municipal Drains 2023	**$ 36,950.00**	**$ 29,850.00**	**$ 100,600.00**	**$ 167,400.00**

Schedule B

Estimated Construction Costs

Schedule of Estimated Construction Costs

We have made an estimate of the cost of the proposed work which is outlined in detail as follows:

Part A - Bamberg Creek Drain

	Description	Estimated Quantity		$/Unit	Total
1)	Clearing, brushing and mulching	l.s.			$ 20,000.00
2)	Open ditch excavation (approx. 400m^3) including cleanout through concrete bridge at Sta. 0+539	650	m	$ 20.00	$ 13,000.00
3)	Levelling of excavated material	650	m	$ 6.00	$ 3,900.00
4)	Seeding of disturbed side slopes	2000	m2	$ 1.25	$ 2,500.00
5)	Supply and place rip-rap erosion protection at Sta. 0+000 to transition Bamberg Creek existing grade to proposed streambed (approx. 10m length)	l.s.			$ 5,000.00

Total Estimated Construction Costs
Part A - Bamberg Creek Drain **$ 44,400.00**

Part B - Jananna - East Branch

	Description	Estimated Quantity		$/Unit	Total
1)	Supply 200mm diameter concrete field tile	288	m	$ 20.00	$ 5,760.00
	Installation (Sta. 0+310 to Sta. 0+598)	288	m	$ 32.00	$ 9,216.00
2)	Supply 400mm diameter concrete field tile	304	m	$ 35.00	$ 10,640.00
	Installation (Sta. 0+006 to Sta. 0+310)	304	m	$ 36.00	$ 10,944.00
3)	Supply 450mm diameter HDPE outlet pipe (CSA B182.8) complete with rodent grate	6	m	$ 120.00	$ 720.00

	Description	Estimated Quantity	$/Unit	Total
4)	Installation of 450mm diameter outlet pipe complete with quarry stone rip-rap protection and geotextile filter material (50m^2)	l.s.		$ 9,020.00
5)	Supply and install 600mm X 600mm concrete catchbasin at Sta. 0+598 (inline type)	1 ea.	$ 2,500.00	$ 2,500.00
6)	Supply and install 600mm X 600mm concrete catchbasin offset 21m east of Sta. 0+270 including connection to the main drain with 300mm diameter pipe	1 ea.	$ 4,500.00	$ 4,500.00
7)	Supply and install 900mm X 1200mm concrete junction box at Sta. 0+310 (inline type)	1 ea.	$ 3,000.00	$ 3,000.00
6)	Supply and install 900mm X 1200mm concrete ditch inlet catch basin at Sta. 0+218 (inline type)	1 ea.	$ 4,000.00	$ 4,000.00

Total Estimated Construction Costs
Part B - Jananna - East Branch **$ 60,300.00**

Part C - Jananna - West Branch

	Description	Estimated Quantity	$/Unit	Total
1)	Supply 200mm diameter concrete field tile	310 m	$ 20.00	$ 6,200.00
	Installation (Sta. 0+450 to Sta. 0+760)	310 m	$ 32.00	$ 9,920.00
2)	Supply 250mm diameter concrete field tile	444 m	$ 25.00	$ 11,100.00
	Installation (Sta. 0+006 to Sta. 0+450)	444 m	$ 34.00	$ 15,096.00
3)	Supply 250mm diameter HDPE outlet pipe (CSA B182.8) complete with rodent grate	6 m	$ 120.00	$ 720.00
4)	Installation of 250mm diameter outlet pipe complete with quarry stone rip-rap protection and geotextile filter material (30m^2)	l.s.		$ 7,064.00

Total Estimated Construction Costs
Part C - Jananna - West Branch **$ 50,100.00**

Part D - Koch-Leis Drain

	Description	Estimated Quantity		$/Unit	Total
1)	Clearing, brushing and mulching	l.s.			$ 2,025.00
2)	Open ditch cleanout	275	m	$ 20.00	$ 5,500.00
3)	Levelling of excavated material	275	m	$ 6.00	$ 1,650.00
4)	Seeding of disturbed side slopes	500	m2	$ 1.25	$ 625.00

Total Estimated Construction Costs
Part D - Koch-Leis Drain **$ 9,800.00**

Part E - Provisional Items

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

1) Additional costs associated with installation of tile drain on 19mm diameter crushed clear stone bedding. This includes the supply and placement of all stone, and additional labour and equipment required for installation in accordance with the Typical Pipe Installation on wrapped Stone Bedding

Description	Estimated Quantity		$/Unit	Total
250mm diameter pipe	75	m	$ 40.00	$ 3,000.00
400mm diameter pipe	150	m	$ 50.00	$ 7,500.00

2) Additional costs associated with installation of tile drain on 19mm diameter crushed clear stone bedding. This includes the supply and placement of all stone, and additional labour and equipment required for installation in accordance with the Typical Pipe Installation on Stone Bedding Detail (un-wrapped bedding).

Description	Estimated Quantity		$/Unit	Total
250mm diameter pipe	25	m	$ 30.00	$ 750.00
400mm diameter pipe	50	m	$ 40.00	$ 2,000.00

	Description	Estimated Quantity	$/Unit	Total
3)	Wheel machine lift outs due to stony conditions	3 ea.	$ 300.00	$ 900.00

4) Tile connections:

Description	Estimated Quantity*	$/Unit	Total
100mm diameter	10 ea.	$ 90.00	$ 900.00
150mm diameter	5 ea.	$ 100.00	$ 500.00
200mm diameter	5 ea.	$ 130.00	$ 650.00

*The Contractor shall be paid for the actual quantity of tile connections at the above fixed unit prices.

Total Estimated Construction Costs
Part E - Provisional Items **$ 16,200.00**

Summary of Estimated Construction Costs

Part A - Bamberg Creek Drain	$ 44,400.00
Part B - Jananna - East Branch	$ 60,300.00
Part C - Jananna - West Branch	$ 50,100.00
Part D - Koch-Leis Drain	$ 9,800.00
Part E - Provisional Items	$ 16,200.00
Total Estimated Construction Costs	**$ 180,800.00**
Total Estimated Materials	$ 35,140.00
Total Estimated Labour and Equipment	$ 145,660.00

Total Estimated Construction Costs
Bamberg Creek, Jananna, and Koch-Leis Municipal Drains
2023 **$ 180,800.00**

Schedule C

Assessment for Construction

Schedule of Assessment for Construction
Bamberg Creek, Jananna, and Koch-Leis Municipal Drains 2023

Bamberg Creek Drain

Property Details					Drainage Act Instruments of Assessment				For Information		
Part Lot	Concession	Landowner	Roll Number	Approx. Ha. Affected	Benefit (Sec. 22)	Outlet Liability (Sec. 23)	Special Benefit (Sec. 24)	Total Assessment	Less Gov't Grant	Less Allowances	Net Estimated Expense
Township of Wilmot											
9	3 Block B	Oleg & Elena Borissova	9-151	8.54	$ 5,503.00	$ 2,354.00		$ 7,857.00	$ 2,619.00	$ 3,040.00	$ 2,198.00
9	3 Block B	Cory & Kirby Kittel	9-165	13.84	$ 18,241.00	$ 4,374.00		$ 22,615.00	$ 7,538.00	$ 540.00	$ 14,537.00
10	3 Block B	Peter & Dagmar Schneider	9-153	9.3	$ 12,500.00	$ 1,933.00		$ 14,433.00	$ 4,811.00	$ 4,030.00	$ 5,592.00
10	3 Block B	Peter & Barbara Wurtele	9-153-01	0.89	$ 12,811.00	$ 182.00	$ 32,020.00	$ 45,013.00	$ 15,004.00	$ 37,110.00	-$ (7,101.00)
10	3 Block B	David & Sherri Homanchuk	9-154	3.7	$ 26,336.00	$ 962.00	$ 36,440.00	$ 63,738.00	$ 21,246.00	$ 46,210.00	-$ (3,718.00)
10	3 Block B	Jananna Corp.	9-164	45.3	$ 10,649.00	$ 11,040.00		$ 21,689.00	$ 7,230.00	$ -	$ 14,459.00
11	3 Block B	Kenneth & Catherine Heintz	9-156	6.2	$ -	$ 1,030.00		$ 1,030.00	$ 343.00	$ -	$ 687.00
11	3 Block B	Roadside Farm Inc.	9-163	42.8	$ -	$ 8,864.00		$ 8,864.00	$ 2,955.00	$ -	$ 5,909.00
12	3 Block B	David & Eva Cressman	9-160	3.1	$ -	$ 684.00		$ 684.00	$ 228.00	$ -	$ 456.00
Total Assessments on Lands					$ 86,040.00	$ 31,423.00	$ 68,460.00	$ 185,923.00	$ 61,974.00	$ 90,930.00	$ 33,019.00
Gerber Road		Region of Waterloo			$ -	$ 4,364.00		$ 4,364.00			$ 4,364.00
Total Assessments on Roads					$ -	$ 4,364.00	$ -	$ 4,364.00			$ 4,364.00
Total Assessments Main Open Township of Wilmot					$ 86,040.00	$ 35,787.00	$ 68,460.00	$ 190,287.00	$ 61,974.00	$ 90,930.00	$ 37,383.00
Township of Wellesley											
6	2 East	Natalee Ridgeway	1-007-00	7.98	$ -	$ 1,571.00		$ 1,571.00	$ 524.00	$ -	$ 1,047.00
6	2 East	Ronald & Rosemary McCormick	1-007-01	5.79	$ -	$ 1,140.00		$ 1,140.00	$ 380.00	$ -	$ 760.00
7	2 East	Ladislaus & Laurretta Bauer	1-008-02	8.45	$ -	$ 848.00		$ 848.00	$ 283.00	$ -	$ 565.00
7	2 East	264171 Holdings Ltd.	1-008	25.45	$ -	$ 2,757.00		$ 2,757.00	$ 919.00	$ -	$ 1,838.00
7	2 East	Jeffrey Furtado & Paige Stewart	1-008-01	4.5	$ -	$ 99.00		$ 99.00	$ 33.00	$ -	$ 66.00
8	2 East	Robert & Anne Jantzi	1-009	25	$ -	$ 4,759.00		$ 4,759.00	$ 1,586.00	$ -	$ 3,173.00
8	3 East	Bamway Industries Inc.	1-027	6.9	$ -	$ 1,006.00		$ 1,006.00	$ 335.00	$ -	$ 671.00
8	3 East	Jammon & Elvina Bauman	1-026	6.3	$ -	$ 933.00		$ 933.00	$ 311.00	$ -	$ 622.00
Total Assessments on Lands					$ -	$ 13,113.00	$ -	$ 13,113.00	$ 4,371.00	$ -	$ 8,742.00
Total Assessments Township of Wellesley					$ -	$ 13,113.00	$ -	$ 13,113.00	$ 4,371.00	$ -	$ 8,742.00
Total Assessments Bamberg Creek Drain					$ 86,040.00	$ 48,900.00	$ 68,460.00	$ 203,400.00	$ 66,345.00	$ 90,930.00	$ 46,125.00

Jananna - East Branch

Property Details					Drainage Act Instruments of Assessment				For Information		
Part Lot	Concession	Landowner	Roll Number	Approx. Ha. Affected	Benefit (Sec. 22)	Outlet Liability (Sec. 23)	Special Benefit (Sec. 24)	Total Assessment	Less Gov't Grant	Less Allowances	Net Estimated Expense
Township of Wilmot											
9	3 Block B	Cory & Kirby Kittel	9-165	13.84	$ 9,278.00	$ 17,478.00		$ 26,756.00	$ 8,919.00	$ 7,040.00	$ 10,797.00
10	3 Block B	Jananna Corp.	9-164	5.88	$ 52,342.00	$ 8,957.00		$ 61,299.00	$ 20,433.00	$ 11,500.00	$ 29,366.00
Total Assessments on Lands					$ 61,620.00	$ 26,435.00	$ -	$ 88,055.00	$ 29,352.00	$ 18,540.00	$ 40,163.00
Gerber Road		Region of Waterloo		1.04	$ -	$ 7,205.00		$ 7,205.00			$ 7,205.00
Total Assessments on Roads					$ -	$ 7,205.00	$ -	$ 7,205.00			$ 7,205.00
Total Assessments Main Closed Township of Wilmot					$ 61,620.00	$ 33,640.00	$ -	$ 95,260.00	$ 29,352.00	$ 18,540.00	$ 47,368.00
Township of Wellesley											
6	2 East	Natalee Ridgeway	1-007-00	7.98	$ -	$ 5,529.00		$ 5,529.00	$ 1,843.00	$ -	$ 3,686.00
6	2 East	Ronald & Rosemary McCormick	1-007-01	5.79	$ -	$ 4,011.00		$ 4,011.00	$ 1,337.00	$ -	$ 2,674.00
Total Assessments on Lands					$ -	$ 9,540.00	$ -	$ 9,540.00	$ 3,180.00	$ -	$ 6,360.00
Total Assessments Main Closed Township of Wellesley					$ -	$ 9,540.00	$ -	$ 9,540.00	$ 3,180.00	$ -	$ 6,360.00
Total Assessments Jananna - East Branch					$ 61,620.00	$ 43,180.00	$ -	$ 104,800.00	$ 32,532.00	$ 18,540.00	$ 53,728.00

Jananna - West Branch

Property Details					Drainage Act Instruments of Assessment				For Information		
Part Lot	Concession	Landowner	Roll Number	Approx. Ha. Affected	Benefit (Sec. 22)	Outlet Liability (Sec. 23)	Special Benefit (Sec. 24)	Total Assessment	Less Gov't Grant	Less Allowances	Net Estimated Expense
Township of Wilmot											
10	3 Block B	Jananna Corp.	9-164	9.34	$ 51,156.00	$ 6,344.00		$ 57,500.00	$ 19,167.00	$ 22,800.00	$ 15,533.00
Total Assessments on Lands					$ 51,156.00	$ 6,344.00	$ -	$ 57,500.00	$ 19,167.00	$ 22,800.00	$ 15,533.00
Gerber Road		Region of Waterloo		0.87	$ 9,624.00	$ 10,631.00		$ 20,255.00			$ 20,255.00
Total Assessments on Roads					$ 9,624.00	$ 10,631.00	$ -	$ 20,255.00			$ 20,255.00
Total Assessments Branch Township of Wilmot					$ 60,780.00	$ 16,975.00	$ -	$ 77,755.00	$ 19,167.00	$ 22,800.00	$ 35,788.00
Township of Wellesley											
7	1-008-02	Ladislaus & Laurretta Bauer	1-008-02	8.45	$ -	$ 9,395.00		$ 9,395.00	$ 3,132.00	$ -	$ 6,263.00
7	1-008	264171 Holdings Ltd.	1-008	6.26	$ -	$ 7,650.00		$ 7,650.00	$ 2,550.00	$ -	$ 5,100.00
Total Assessments on Lands					$ -	$ 17,045.00	$ -	$ 17,045.00	$ 5,682.00	$ -	$ 11,363.00
Total Assessments Township of Wellesley					$ -	$ 17,045.00	$ -	$ 17,045.00	$ 5,682.00	$ -	$ 11,363.00
Total Assessments Jananna - West Branch					$ 60,780.00	$ 34,020.00	$ -	$ 94,800.00	$ 24,849.00	$ 22,800.00	$ 47,151.00

Koch-Leis Drain	Part Lot	Concession	Landowner	Roll Number	Approx. Ha. Affected	Benefit (Sec. 22)	Outlet Liability (Sec. 23)	Special Benefit (Sec. 24)	Total Assessment	Less Gov't Grant	Less Allowances	Net Estimated Expense
	Property Details					**Drainage Act Instruments of Assessment**				**For Information**		
	Township of Wilmot											
	10	3 Block B	Peter & Dagmar Schneider	9-153	6.3	$ 6,317.00	$ 272.00	$ 10,800.00	$ 17,389.00	$ 5,796.00	$ 12,040.00	-$ 447.00
	10	3 Block B	David & Sherri Homanchuk	9-154	1.7	$ 8,509.00	$ 4.00		$ 8,513.00	$ 2,838.00	$ 3,930.00	$ 1,745.00
	10	3 Block B	Jananna Corp.	9-164	28.7	$ 3,494.00	$ 1,850.00	$ 20,520.00	$ 25,864.00	$ 8,621.00	$ 19,160.00	-$ 1,917.00
	11	3 Block B	Kenneth & Catherine Heintz	9-156	6.2	$ -	$ 202.00		$ 202.00	$ 67.00	$ -	$ 135.00
	11	3 Block B	Roadside Farm Inc.	9-163	42.8	$ -	$ 3,158.00		$ 3,158.00	$ 1,053.00	$ -	$ 2,105.00
	12	3 Block B	David & Eva Cressman	9-160	3.1	$ -	$ 244.00		$ 244.00	$ 81.00	$ -	$ 163.00
	Total Assessments on Lands					$ 18,320.00	$ 5,730.00	$ 31,320.00	$ 55,370.00	$ 18,456.00	$ 35,130.00	$ 1,784.00
	Gerber Road		Region of Waterloo		2.1	$ -	$ 825.00		$ 825.00			$ 825.00
	Total Assessments on Roads					$ -	$ 825.00	$ -	$ 825.00			$ 825.00
	Total Assessments Branch Township of Wilmot					$ 18,320.00	$ 6,555.00	$ 31,320.00	$ 56,195.00	$ 18,456.00	$ 35,130.00	$ 2,609.00
	Township of Wellesley											
	7	2 East	Ladislaus & Laurretta Bauer	1-008-02	8.45	$ -	$ 302.00		$ 302.00	$ 101.00	$ -	$ 201.00
	7	2 East	264171 Holdings Ltd.	1-008	25.45	$ -	$ 982.00		$ 982.00	$ 327.00	$ -	$ 655.00
	7	2 East	Jeffrey Furtado & Paige Stewart	1-008-01	4.5	$ -	$ 35.00		$ 35.00	$ 12.00	$ -	$ 23.00
	8	2 East	Robert & Anne Jantzi	1-009	25	$ -	$ 1,696.00		$ 1,696.00	$ 565.00	$ -	$ 1,131.00
	8	3 East	Bamway Industries Inc.	1-027	6.9	$ -	$ 358.00		$ 358.00	$ 119.00	$ -	$ 239.00
	8	3 East	Jammon & Elvina Bauman	1-026	6.3	$ -	$ 332.00		$ 332.00	$ 111.00	$ -	$ 221.00
	Total Assessments on Lands					$ -	$ 3,705.00	$ -	$ 3,705.00	$ 1,235.00	$ -	$ 2,470.00
	Total Assessments Township of Wellesley					$ -	$ 3,705.00	$ -	$ 3,705.00	$ 1,235.00	$ -	$ 2,470.00
	Total Assessments Koch-Leis Drain					$ 18,320.00	$ 10,260.00	$ 31,320.00	$ 59,900.00	$ 19,691.00	$ 35,130.00	$ 5,079.00

	Benefit (Sec. 22)	Outlet Liability (Sec. 23)	Special Benefit (Sec. 24)	Total Assessment	Less Gov't Grant	Less Allowances	Net Estimated Expense
	Drainage Act Instruments of Assessment				**For Information**		
Total Assessments Bamberg Creek, Jananna, and Koch-Leis Municipal Drains 2023	$ 226,760.00	$ 136,360.00	$ 99,780.00	$ 462,900.00	$ 143,417.00	$ 167,400.00	$ 152,083.00

Notes:

1 All Lands may be eligible for ADIP Grants.

2 The Special Benefit Assessment (Sec. 24) is the benefit portion of the crossing considerations.

3 The Net Estimated Expense is the Total Assessment less gov't grants and allowances (if applicable).

Schedule of Assessment for Construction
Bamberg Creek, Jananna, and Koch-Leis Municipal Drains 2023

Bamberg Creek, Jananna, and Koch-Leis Municipal Drains 2023

Property Details				Assessment Summary					For Information		
Part Lot	Concession	Landowner	Roll Number	Bamberg Creek Drain	Jananna - East Branch	Jananna - West Branch	Koch-Leis Drain	Total Assessment	Less Gov't Grant	Less Allowances	Net Estimated Expense
Township of Wilmot											
9	3 Block B	Oleg & Elena Borissova	9-151	$ 7,857.00	$ -	$ -	$ -	$ 7,857.00	$ 2,619.00	$ 3,040.00	$ 2,198.00
9	3 Block B	Cory & Kirby Kittel	9-165	$ 22,615.00	$ 26,756.00	$ -	$ -	$ 49,371.00	$ 16,457.00	$ 7,580.00	$ 25,334.00
10	3 Block B	Peter & Dagmar Schneider	9-153	$ 14,433.00	$ -	$ -	$ 17,389.00	$ 31,822.00	$ 10,607.00	$ 16,070.00	$ 5,145.00
10	3 Block B	Peter & Barbara Wurtele	9-153-01	$ 45,013.00	$ -	$ -	$ -	$ 45,013.00	$ 15,004.00	$ 37,110.00	-$ (7,101.00)
10	3 Block B	David & Sherri Homanchuk	9-154	$ 63,738.00	$ -	$ -	$ 8,513.00	$ 72,251.00	$ 24,084.00	$ 50,140.00	-$ (1,973.00)
10	3 Block B	Jananna Corp.	9-164	$ 21,689.00	$ 61,299.00	$ 57,500.00	$ 25,864.00	$ 166,352.00	$ 55,451.00	$ 53,460.00	$ 57,441.00
11	3 Block B	Kenneth & Catherine Heintz	9-156	$ 1,030.00	$ -	$ -	$ 202.00	$ 1,232.00	$ 411.00	$ -	$ 821.00
11	3 Block B	Roadside Farm Inc.	9-163	$ 8,864.00	$ -	$ -	$ 3,158.00	$ 12,022.00	$ 4,007.00	$ -	$ 8,015.00
12	3 Block B	David & Eva Cressman	9-160	$ 684.00	$ -	$ -	$ 244.00	$ 928.00	$ 309.00	$ -	$ 619.00
Total Assessments on Lands				$ 185,923.00	$ 88,055.00	$ 57,500.00	$ 55,370.00	$ 386,848.00	$ 128,949.00	$ 167,400.00	$ 90,499.00
Gerber Road		Region of Waterloo		$ 4,364.00	$ 7,205.00	$ 20,255.00	$ 825.00	$ 32,649.00			$ 32,649.00
Total Assessments on Roads				$ 4,364.00	$ 7,205.00	$ 20,255.00	$ 825.00	$ 32,649.00			$ 32,649.00
Total Assessments Township of Wilmot				$ 190,287.00	$ 95,260.00	$ 77,755.00	$ 56,195.00	$ 419,497.00	$ 128,949.00	$ 167,400.00	$ 123,148.00
Township of Wellesley											
6	2 East	Natalee Ridgeway	1-007-00	$ 1,571.00	$ 5,529.00	$ -	$ -	$ 7,100.00	$ 2,367.00		$ 4,733.00
6	2 East	Ronald & Rosemary McCormick	1-007-01	$ 1,140.00	$ 4,011.00	$ -	$ -	$ 5,151.00	$ 1,717.00		$ 3,434.00
7	2 East	Ladislaus & Laurretta Bauer	1-008-02	$ 848.00	$ -	$ 9,395.00	$ 302.00	$ 10,545.00	$ 3,515.00		$ 7,030.00
7	2 East	264171 Holdings Ltd.	1-008	$ 2,757.00	$ -	$ 7,650.00	$ 982.00	$ 11,389.00	$ 3,796.00		$ 7,593.00
7	2 East	Jeffrey Furtado & Paige Stewart	1-008-01	$ 99.00	$ -	$ -	$ 35.00	$ 134.00	$ 45.00		$ 89.00
8	2 East	Robert & Anne Jantzi	1-009	$ 4,759.00	$ -	$ -	$ 1,696.00	$ 6,455.00	$ 2,152.00		$ 4,303.00
8	3 East	Bamway Industries Inc.	1-027	$ 1,006.00	$ -	$ -	$ 358.00	$ 1,364.00	$ 455.00		$ 909.00
8	3 East	Jammon & Elvina Bauman	1-026	$ 933.00	$ -	$ -	$ 332.00	$ 1,265.00	$ 422.00		$ 843.00
Total Assessments on Lands				$ 13,113.00	$ 9,540.00	$ 17,045.00	$ 3,705.00	$ 43,403.00	$ 14,469.00	$ -	$ 28,934.00
Total Assessments Township of Wellesley				$ 13,113.00	$ 9,540.00	$ 17,045.00	$ 3,705.00	$ 43,403.00	$ 14,469.00	$ -	$ 28,934.00
Total Assessments Bamberg Creek, Jananna, and Koch-Leis Municipal Drains 2023				$ 203,400.00	$ 104,800.00	$ 94,800.00	$ 59,900.00	$ 462,900.00	$ 143,418.00	$ 167,400.00	$ 152,082.00

Notes:

1 All Lands may be eligible for ADIP Grants.

2 The Net Estimated Expense is the Total Assessment less gov't grants and allowances (if applicable).

Schedule D

Assessment for Future Maintenance

Schedule of Assessment for Future Maintenance
Bamberg Creek, Jananna, and Koch-Leis Municipal Drains 2023

	Property Details				Interval			
					0+000 to 0+287		0+287 to 0+650	
	Part Lot	Concession	Landowner	Roll Number	Approx. Hectares Affected	Portion of Maintenance Assessment	Approx. Hectares Affected	Portion of Maintenance Assessment
Bamberg Creek Drain	Township of Wilmot							
	9	3 Block B	Oleg & Elena Borissova	9-151	2.00	8.9%	8.54	4.0%
	9	3 Block B	Cory & Kirby Kittel	9-165	13.84	32.1%	13.84	5.2%
	10	3 Block B	Peter & Dagmar Schneider	9-153			9.30	8.2%
	10	3 Block B	Peter & Barbara Wurtele	9-153-01			0.89	3.4%
	10	3 Block B	David & Sherri Homanchuk	9-154	1.00	9.5%	3.70	4.8%
	10	3 Block B	Jananna Corp.	9-164	5.88	14.7%	45.30	21.5%
	11	3 Block B	Kenneth & Catherine Heintz	9-156			6.20	2.2%
	11	3 Block B	Roadside Farm Inc.	9-163			42.80	18.8%
	12	3 Block B	David & Eva Cressman	9-160			3.10	1.4%
	Total Assessments on Lands				22.72	65.2%	133.67	69.6%
	Gerber Road		Region of Waterloo		1.04	15.0%	3.14	5.2%
	Total Assessments on Roads				1.04	15.0%	3.14	5.2%
	Total Assessments Township of Wilmot				23.76	80.2%	136.81	74.7%
	Township of Wellesley							
	6	2 East	Natalee Ridgeway	1-007-00	7.98	11.5%	7.98	1.9%
	6	2 East	Ronald & Rosemary McCormick	1-007-01	5.79	8.3%	5.79	1.4%
	7	2 East	Ladislaus & Laurretta Bauer	1-008-02			8.45	1.8%
	7	2 East	264171 Holdings Ltd.	1-008			25.45	5.8%
	7	2 East	Jeffrey Furtado & Paige Stewart	1-008-01			4.50	0.2%
	8	2 East	Robert & Anne Jantzi	1-009			25.00	10.1%
	8	3 East	Bamway Industries Inc.	1-027			6.90	2.1%
	8	3 East	Jammon & Elvina Bauman	1-026			6.30	2.0%
	Total Assessments on Lands				13.77	19.8%	84.58	25.2%
	Total Assessments Township of Wellesley				13.77	19.8%	84.58	25.2%
	Total Assessments Bamberg Creek Drain				37.53	100.0%	221.39	100.0%

Jananna - East Branch	Property Details				Interval			
					0+000 to 0+218		0+218 to 0+598	
	Part Lot	Concession	Landowner	Roll Number	Approx. Hectares Affected	Portion of Maintenance Assessment	Approx. Hectares Affected	Portion of Maintenance Assessment
	Township of Wilmot							
	9	3 Block B	Cory & Kirby Kittel	9-165	13.84	43.3%	0.68	36.8%
	10	3 Block B	Jananna Corp.	9-164	5.88	16.9%	1.50	63.2%
	Total Assessments on Lands				19.72	60.2%	2.18	100.0%
	Gerber Road		Region of Waterloo		1.04	17.1%		
	Total Assessments on Roads				1.04	17.1%		
	Total Assessments Main Closed Township of Wilmot				20.76	77.3%	2.18	100.0%
	Township of Wellesley							
	6	2 East	Natalee Ridgeway	1-007-00	7.98	13.1%		
	6	2 East	Ronald & Rosemary McCormick	1-007-01	5.79	9.5%		
	Total Assessments on Lands				7.98	22.7%		
	Total Assessments Township of Wellesley				7.98	22.7%		
	Total Assessments Jananna - East Branch				28.74	100.0%	2.18	100.0%

Jananna - West Branch	Property Details				Interval 0+000 to 0+760	
	Part Lot	Concession	Landowner	Roll Number	Approx. Hectares Affected	Portion of Maintenance Assessment
	Township of Wilmot					
	10	3 Block B	Jananna Corp.	9-164	9.34	42.6%
	Total Assessments on Lands				9.34	42.6%
	Gerber Road		Region of Waterloo		0.87	22.0%
	Total Assessments on Roads				0.87	22.0%
	Total Assessments Township of Wilmot				10.21	64.7%
	7	2 East	Ladislaus & Laurretta Bauer	1-008-02	8.45	19.5%
	7	2 East	264171 Holdings Ltd.	1-008	6.26	15.9%
	Total Assessments on Lands				8.45	35.3%
	Total Assessments Township of Wellesley				8.45	35.3%
	Total Assessments Jananna - West Branch				18.66	100.0%

Koch-Leis Drain	Property Details				Interval					
					0+000 to 0+551		0+551 to Gerber Road		Township of Wellesley	
	Part Lot	Concession	Landowner	Roll Number	Approx. Hectares Affected	Portion of Maintenance Assessment	Approx. Hectares Affected	Portion of Maintenance Assessment	Approx. Hectares Affected	Portion of Maintenance Assessment
	Township of Wilmot									
	10	3 Block B	Peter & Dagmar Schneider	9-153	6.30	7.3%				
	10	3 Block B	David & Sherri Homanchuk	9-154	1.70	4.5%				
	10	3 Block B	Jananna Corp.	9-164	28.70	22.1%	0.50	0.70%		
	11	3 Block B	Kenneth & Catherine Heintz	9-156	6.20	2.9%				
	11	3 Block B	Roadside Farm Inc.	9-163	42.80	25.1%	25.00	39.5%		
	12	3 Block B	David & Eva Cressman	9-160	3.10	1.9%	3.10	3.7%		
	Total Assessments on Lands				88.80	63.9%	28.60	44.0%		
	Gerber Road		Region of Waterloo		2.10	6.6%	1.23	7.4%		
	Total Assessments on Roads				2.10	6.6%	1.23	7.4%	0.00	0.0%
	Total Assessments Township of Wilmot				90.90	70.5%	29.83	51.4%	0.00	0.0%
	7	2 East	Ladislaus & Laurretta Bauer	1-008-02	8.45	2.4%				
	7	2 East	264171 Holdings Ltd.	1-008	25.45	7.8%	18.69	11.3%	18.69	23.8%
	7	2 East	Jeffrey Furtado & Paige Stewart	1-008-01	4.50	0.3%	4.50	0.5%	4.50	1.1%
	8	2 East	Robert & Anne Jantzi	1-009	25.00	13.5%	25.00	26.1%	25.00	54.0%
	8	3 East	Bamway Industries Inc.	1-027	6.90	2.9%	6.90	5.5%	6.90	10.9%
	8	3 East	Jammon & Elvina Bauman	1-026	6.30	2.6%	6.30	5.1%	6.30	10.2%
	Total Assessments on Lands				76.60	29.5%	61.39	48.6%	61.39	100.0%
	Total Assessments Township of Wellesley				76.60	29.5%	61.39	48.6%	61.39	100.0%
	Total Assessments Koch-Leis Drain				167.50	100.0%	91.22	100.0%	61.39	100.0%

Notes:

1 All Lands may be eligible for ADIP Grants.
2 All maintenance activities on road right-of-ways shall be completed at the expense of the the road authority having jurisdiction over the road.
3 Lands located upstream of the maintenance shall be determined by the the Drainage Superintendent.

Specifications for the Construction of Municipal Drainage Works

DIVISION A – General Conditions
DIVISION B – Specifications for Open Drains
DIVISION C – Specifications for Tile Drains
DIVISION H – Special Provisions

DIVISION A

General Conditions

CONTENTS

DIVISION A – GENERAL CONDITIONS

A.1. Scope

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

A.2. Tenders

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

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

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

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

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

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

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

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

A.4. Payment

Progress payments equal to 87±% of the value of work completed and materials incorporated in the work will be made to the Contractor monthly. An additional ten per cent (10±%) will be paid 45 days after the final acceptance by the Engineer, and three per cent (3±%) of the Contract price may be reserved by the Municipality as a maintenance holdback for a one (1) year period from the date of the Completion Certificate. A greater percentage of the Contract price may be reserved by the Municipality for the same one (1) year period if in the opinion of the Engineer, particular conditions of the Contract requires such greater holdback.

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

A.5. Contractor's Liability Insurance

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

The following are to be named as co-insured:

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

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

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

A.7. Commencement and Completion of Work

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

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

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

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

A.8. Working Area and Access

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

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

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

A.9. Sub-Contractors

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

A.10. Permits, Notices, Laws and Rules

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

A.11. Railways, Highways, and Utilities

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

A.12. Errors and Unusual Conditions

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

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

A.13. Alterations and Additions

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

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

A.14. Supervision

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

A.15. Field Meetings

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

A.16. Periodic and Final Inspections

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

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

A.17. Acceptance By the Municipality

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

A.18. Warranty

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

A.19. Termination of Contract By The Municipality

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

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

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

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

A.20. Tests

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

A.21. Pollution

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

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

A.22. Species and Risk

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

A.23. Road Crossings

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

A.23.1. Road Occupancy Permit

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

A.23.2. Road Closure Request and Construction Notification

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

A.23.3. Traffic Control

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

A.23.4. Weather

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

A.23.5. Equipment

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

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

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

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

A.24. Laneways

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

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

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

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

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

A.25. Fences

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

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

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

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

A.26. Livestock

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

A.27. Standing Crops

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

A.28. Surplus Gravel

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

A.29. Iron Bars

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

A.30. Rip-Rap

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

A.31. Clearing, Grubbing and Brushing

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

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

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

A.32. Restoration of Lawns

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

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

END OF DIVISION

DIVISION B

Specifications for Open Drains

CONTENTS

DIVISION B – SPECIFICATIONS FOR OPEN DRAINS

B.1. Alignment

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

B.2. Profile

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

B.3. Excavation

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

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

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

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

B.4. Excavated Material

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

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

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

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

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

B.5. Excavation at Existing Bridge and Culvert Sites

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

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

B.6. Pipe Culverts

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

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

B.7. Rip-Rap Protection For Culverts

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

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

B.8. Clearing, Grubbing and Mulching

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

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

B.9. Tributary Tile Outlets

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

B.10. Seeding

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

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

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

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

B.11. Hydro Seeding

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

B.12. Hand Seeding

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

B.13. Completion

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

END OF DIVISION

DIVISION C

Specifications for Tile Drains

CONTENTS

DIVISION C – SPECIFICATIONS FOR TILE DRAINS

C.1. Pipe Materials

Concrete Tile

Concrete drain tile shall conform to the requirements of the most recent A.S.T.M. specification for Heavy-Duty Extra Quality drain tile. All tile with diameters less than 600mm shall have a pipe strength of 1500D. All tile with diameters 600mm or larger shall have a pipe strength of 2000D.

All tile furnished shall be subject to the approval of the Engineer. All rejected tile are to be immediately removed from the site.

High Density Polyethylene (HDPE) Pipe

All HDPE pipe shall be dual-wall corrugated drainage pipe with a smooth inner wall. HDPE pipe shall have a minimum stiffness of 320 kPa at 5% deflection.

Unless otherwise noted, all sealed HDPE pipe shall have a water tight gasketed bell and spigot joining system meeting the minimum requirements of CSA B182.8. Perforated HDPE pipe shall have a soil tight joining system, and shall be enveloped in non-woven geotextile filter sock.

C.2. Alignment

The Contractor shall contact the Engineer to establish the course of the drain. Where an existing drain is to be removed and replaced by the new drain, or where the new drain is to be installed parallel to an existing drain, the Contractor shall locate the existing drain (including repairing damaged tile caused by locating) at intervals along the course of the drain. The costs of locating shall be included in the tender price.

The drain shall run in as straight a line as possible throughout its length, except that at intersections of other watercourses or at sharp corners, it shall run on a curve of at least 15 metres radius. The new tile drain shall be constructed at an offset from and parallel with any ditch or defined watercourse in order that fresh backfill in the trench will not be eroded by the flow of surface water.

The Contractor shall exercise care not to disturb any existing tile drain or drains which parallel the course of the new drain, particularly where the new and existing tile act together to provide the necessary capacity. Where any such existing drain is disturbed or damaged, the Contractor shall perform the necessary repair at his expense.

C.3. Profile

Benchmarks have been established along the course of the drain which are to govern the elevations of the drain. The location and elevations of the benchmarks are shown on the drawings. 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.

When installing a drain towards a fixed point such as a bore pipe, the Contractor shall uncover the pipe and confirm the elevation a sufficient distance away from the pipe in order to allow for any necessary minor grade adjustments to be made.

C.4. Excavation

Wheel machine

Unless otherwise specified, all trenching shall be carried out with a wheel machine approved by the Engineer. The wheel machine shall shape the bottom of the trench to conform to the outside diameter of the pipe. The minimum trench width shall be equal to the outside diameter of the pipe plus 100mm on each side of the pipe, unless otherwise specified. The maximum trench width shall be equal to the outside diameter of the pipe plus 300mm on each side of the pipe, unless otherwise specified.

Scalping

Where the depths of cuts in isolated areas along the course of the drain as shown on the profile exceed the capability of the Contractor's wheel machine, he shall lower the surface grade in order that the wheel machine may trench to the correct depth. Topsoil is to be stripped over a sufficient width that no subsoil will be deposited on top of the topsoil. Subsoil will then be removed to the required depth and piled separately. Upon completion, the topsoil will then be replaced to an even depth over the disturbed area. The cost for this work shall be included in his tender price.

Excavator

Where the use of an excavator is used in-lieu of a wheel machine, the topsoil shall be stripped and replaced in accordance with Item C.4.2. All tile shall be installed on 19mm clear crushed stone bedding placed to a minimum depth of 150mm which has been shaped to conform to the bottom of the pipe. The Contractor shall include the costs of this work in his tender price.

C.5. Installation

Concrete Tile

The tile is to be laid with close joints and in regular grade and alignment in accordance with the drawings. The tiles are to be bevelled, if necessary to ensure close joints. The inside of the tile is to be kept clear when laid. The sides of the tile are to be supported by partial filling of the trench (blinding) prior to inspection by the Engineer. No tile shall be backfilled until inspected by the Engineer unless otherwise permitted by the Engineer. The tile shall be backfilled such that a sufficient mound of backfill is placed over the trench to ensure that no depression remains after settling occurs in the backfill.

Where a tile connects to a catch basin or similar structure, the Contractor shall include in his tender price for the supply and placement of compacted Granular 'A' bedding or 19mm clear crushed stone under areas backfilled from the underside of the pipe to undisturbed soil. Where a tile drain passes through a bore pit, the Contractor shall include in his tender price for the supply and placement of compacted Granular 'A' bedding or 19mm clear crushed stone from the underside of the pipe down to undisturbed soil with the limits of the bore pit.

The Contractor shall supply and wrap all concrete tile joints with Mirafi 160N geotextile filter material as part of this contract. The width of the filter material should be:

- 300mm wide for tile sizes 150mm diameter to 350mm diameter.
- 400mm wide for tile sizes 400mm diameter to 750mm diameter.
- 500mm wide for tile sizes larger than 750mm diameter.

The filter material shall completely cover the tile joint and shall have a minimum overlap of 300mm. The type of filter material shall be.

HDPE Pipe

HDPE pipe shall be installed using compacted Granular 'A' bedding or 19mm clear crushed stone bedding from 150mm below the pipe to 300mm above the pipe. All granular material shall be compacted using a suitable mechanical vibratory compactor. Granular bedding and backfill shall be placed in lifts not exceeding 300mm and compacted to at least 95% Standard Proctor Maximum Dry Density (SPMDD).

Where a pipe connects to a catch basin or similar structure, the Contractor shall include in his tender price for the supply and placement of compacted Granular 'A' bedding or 19mm clear crushed stone under areas backfilled from the underside of the pipe to undisturbed soil. Where a pipe passes through a bore pit, the Contractor shall include in his tender price for the supply and placement of compacted Granular 'A' bedding or 19mm clear crushed stone from the underside of the pipe down to undisturbed soil with the limits of the bore pit.

As determined by the Engineer, unsuitable backfill material must be hauled off-site by the Contractor and Granular "B" shall be used as replacement backfill material.

C.6. Trench Crossings

The Contractor shall not cross the backfilled trench with any construction equipment or vehicles, except by one designated crossing location on each property. The Contractor shall ensure that the bedding and backfill material at this designated crossing location is properly placed and compacted so as to adequately support the equipment and vehicles that may cross the trench. The Contractor may undertake any other approved work to ensure the integrity of the tile at the crossing location. The Contractor shall ensure that no equipment or vehicles travel along the length of the trench. The Contractor shall be responsible for any damage to the new tile caused by the construction of the drain.

C.7. Outlet Protection

A tile drain outlet into a ditch shall be either HDPE pipe or corrugated steel pipe and shall include a hinged grate for rodent protection. The maximum spacing between bars on the rodent grate shall be 40mm. All corrugated steel outlet pipes shall be bevelled at the end to generally conform to the slope of the ditch bank.

Quarry stone rock rip-rap protection and geotextile filter material (Mirafi 160N), shall be installed around the outlet pipe and extended downstream a minimum distance of three metres, unless otherwise specified. The protection shall extend to the top of the backfilled trench and below the pipe to 300 mm under the streambed. The protection shall also extend 600mm into undisturbed soil on either side of the backfilled trench. In some locations, rip-rap may be required on the bank opposite the outlet.

Where the outlet occurs at the upper end of an open ditch, the rip-rap protection will extend all around the end of the ditch and to a point 800mm downstream on either side. Where heavy overflow is likely to occur, sufficient additional rip-rap and filter material shall be placed as directed by the Engineer to prevent the water cutting around the protection.

C.8. Catch Basins and Junction Boxes

Unless otherwise noted, catch basins shall be in accordance with OPSD 705.010 and 705.030. The catch basin grate shall be a "Birdcage" type substantial steel grate, removable for cleaning and shall be inset into a recess provided around the top of the structure. The grate shall be fastened to the catch basin with bolts into the concrete. Spacing of bars on grates for use on 600mmX600mm

structures shall be 65mm centre to centre. Spacing of bars on grates for use on structures larger than 600mmX600mm shall be 90mm.

All catch basins shall be backfilled with compacted Granular 'A' or 19mm clear crushed stone placed to a minimum width of 300mm on all sides. If settling occurs after construction, the Contractor shall supply and place sufficient granular material to maintain the backfill level flush with adjacent ground. The riser sections of the catch basin shall be wrapped with filter cloth.

Quarry stone rip-rap protection shall be placed around all catch basins and shall extend a minimum distance of one (1) metre away from the outer edge of each side of the catch basin, and shall be placed so that the finished surface of the rip-rap is flush with the existing ground.

If there are no existing drains to be connected to the catch basin at the top end of the drain, a plugged tile shall be placed in the upstream wall with the same elevations as the outlet tile.

Junction boxes shall have a minimum cover over the lid of 450mm.

The Contractor shall include in his tender price for the construction of a berm behind all ditch inlet structures. The berm shall be constructed of compacted clay keyed 300mm into undisturbed soil. The top of the spill way of the earth berm shall be the same elevation as the high wall of the ditch inlet catch basin. The earth berm shall be covered with 100mm depth of topsoil and seeded with an approved green seed mixture. The Contractor shall also include for regrading, shaping and seeding of road ditches for a maximum of 15 metres each way from all catch basins.

The Contractor shall clean all catch basin sumps after completion of the drain installation. Catch basin markers shall be placed beside each catch basin.

C.9. Tributary Drains

Any tributary tile encountered in the course of the drain is to be carefully taken up by the Contractor and placed clear of the excavated earth. If the tributary drains encountered are clean or reasonably clean, they shall be connected into the new drain in accordance with the typical tile drain connection detail. Tributary tile drain connections into the new drain shall be made using high density polyethylene agricultural drain tubing installed on and backfilled with 19mm clear crushed stone. All tile drain connections into the new drain shall be either a cored hole with an insert coupler or a manufactured tee.

Where the existing drains are full of sediment, the decision to connect the tributary drain to the new drain shall be left to the Engineer. The Contractor shall be paid for each tributary drain connection as outlined in the Form of Tender and Agreement.

The Contractor shall be responsible for all tributary tile connections for a period of one year from the date of the Completion Certificate. After construction, any missed tile connections required to be made into the new drain shall be paid at the same rate as defined in the Form of Tender and Agreement. The Contractor will have the option to make any subsequent tile connections or have the Municipality make the required connections and have the cost of which deducted from the holdback.

Where an open ditch is being replaced by a new tile drain, existing tile outlets entering the ditch from the side opposite the new drain shall be extended to the new drain.

Where the Contractor is required to connect an existing tile which is not encountered in the course of the drain, the cost of such work shall constitute an extra to the contract.

C.10. Clearing, Grubbing and Mulching

The Contractor shall clear, brush and stump trees from within the working area.

All trees or limbs 150mm or larger, that is necessary to remove, shall be cut, trimmed and neatly stacked in the working width for the use or disposal by the Landowner. Brush and limbs less than 150mm in diameter shall be mulched.

Clearing, grubbing and mulching shall be carried out as a separate operation from installing the drain, and shall not be completed simultaneously at the same location.

C.11. Roads and Laneway Sub-Surface Crossings

All roads and laneway crossings may be made with an open cut. The Contractor may use original ground as backfill to within 600mm of finished grade only if adequate compaction and if the use of the original ground backfill has been approved beforehand by the Engineer.

C.12. Filling In Existing Ditches

The Contractor shall backfill the ditch sufficiently for traversing by farm equipment. If sufficient material is available on-site to fill in the existing ditch, the topsoil shall be stripped and the subsoil shall be bulldozed into the ditch and the topsoil shall then be spread over the backfilled waterway. The Contractor shall ensure sufficient compaction of the backfill and if required, repair excess settlement up to the end of the warranty period.

C.13. Construction of Grassed Waterways

Where the Contractor is required to construct a grassed waterway, the existing waterway shall be filled in, regraded, shaped and a seed bed prepared prior to applying the grass seed. The grass seed shall be fresh, clean and new crop seed, meeting the requirements of the MTO.

- 55% Creeping Red Fescue
- 15% Perennial Rye Grass
- 27% Kentucky Bluegrass
- 3% White Clover

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

C.14. Unstable Soil

The Contractor shall immediately contact the Engineer if unstable soil is encountered. The Engineer shall, after consultation with the Contractor, determine the action necessary and a price for additions or deletions shall be agreed upon prior to further drain installation.

C.15. Rocks

The Contractor shall immediately contact the Engineer if boulders of sufficient size and number are encountered such that the Contractor cannot continue trenching with a wheel machine. The Engineer shall determine the action necessary and a price for additions or deletions shall be agreed upon prior to further drain installation.

If only scattered large stone or boulders are removed on any project, the Contractor shall either excavate a hole to bury same adjacent to the drain, or he shall haul the stones or boulders to a location designated by the Landowner.

C.16. Broken or Damaged Tile

The Contractor shall remove and dispose of all broken (existing or new), damaged or excess tile off site.

C.17. Recommended Practice For Construction of Sub-Surface Drainage Systems

Drainage Guide for Ontario, Ministry of Agriculture, Food and Rural Affairs, Publication 29 and its amendments, dealing with the construction of Subsurface Drainage Systems, shall be the guide to all methods and materials to be used in the construction of tile drains except where superseded by other Specifications of the Contract.

END OF DIVISION

SPECIAL PROVISIONS

Bamberg Creek, Jananna, and Koch-Leis Municipal Drains 2023

CONTENTS

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

1.0 GENERAL

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

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

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

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

The Contractor must maintain access to all driveways along the route of the drain as well as always maintain access for all emergency vehicles during the construction.

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

2.0 UTILITIES

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

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

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

3.0 WORKING AREA AND ACCESS

Access to the working area shall be designated by the Landowner.

3.1 Closed Portion

The average working width for construction purposes shall be 25 metres along the alignment of the proposed drain.

3.2 Open Portion

The working area shall be an average working width of 12 metres for construction purposes along the working side.

4.0 CLEARING BRUSHING AND MULCHING

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

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

5.0 PIPE AND INSTALLATION

5.1 Concrete Field Tile

An approved wheel trencher shall be used to install the concrete field tile whenever possible.

All concrete tile shall be Heavy-Duty Extra Quality Concrete Drain Tile 2000D.

Where the drain is to be installed by means of an approved wheel trencher, the Contractor shall strip the topsoil for the specified width centred on the proposed drain. Where the drain is to be installed by means of an approved hydraulic excavator (due to poor soil conditions), the Contractor shall strip the topsoil for a width equal to the top width of the trench, or the specified width, whichever is greater. The Contractor shall stockpile the topsoil and later spread it over the backfilled trench. The Contractor shall ensure that the top soiled trench is left in a condition such that the landowner can perform final restoration using nothing more than farm equipment. The Contractor will not attempt to place frozen topsoil over the backfilled trench.

Concrete field tile installed by means of a wheel machine shall be backfilled using suitable native material. The backfill shall not be compacted but a sufficient mound shall be left over the trench by the Contractor to allow for settlement flush with adjacent lands.

Concrete field tile installed by means of an approved hydraulic excavator shall be installed using 19mm crushed stone bedding from a minimum of 150mm below the pipe to the springline of the pipe. Suitable native material shall be used as backfill from the springline to the underside of the topsoil.

The Contractor shall supply and wrap all concrete joints with geotextile filter material. The width of the filter material shall be:

- 300mm wide with 300mm overlap for tile sizes up to 350mm diameter.
- 400mm wide with 400mm overlap for tile size 400mm diameter.

The filter material shall completely cover the tile joint.

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

5.2 High Density Polyethylene Pipe (HDPE)

All HDPE pipe shall be CSA B182.8 with gasketed watertight jointing systems.

All HDPE pipe shall be installed using 19mm crushed stone bedding (or approved equivalent) from a minimum of 150mm below the pipe to 150mm above the pipe. Suitable native material shall be used as backfill from 150mm above the pipe to the underside of the topsoil.

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

5.3 Poor Soil Conditions

The Contractor shall submit a unit price for installation of the pipe per the detail on wrapped crushed stone bedding as a provisional item. The provisional amount for installation on wrapped crushed stone bedding shall include the supply and installation of all additional labour, equipment and materials required for the installation of the pipe by this method.

If poor soil conditions are encountered, the Contractor shall install the pipe in accordance with the detail for wrapped crushed stone bedding and shall be entitled to the provisional tender amount, in addition to the tendered standard installation price. The Contractor shall be paid for the actual lengths installed in this condition.

6.0 TOPSOIL STRIPPING AND FINE GRADING

The Contractor shall strip the topsoil along the alignment of the tile drain to a width of four metres. The Contractor shall stockpile the topsoil and later spread it over the backfilled trench. The Contractor shall ensure that the topsoiled trench is left in a condition that the Landowner can perform final restoration using nothing more than farm equipment.

7.0 EXCAVATED MATERIAL

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

8.0 SEEDING

The Contractor shall supply and spread an approved seed mixture (OPS 803 – Lowland Mix) over the disturbed areas.

All seed shall be applies using the manufacturer's application recommendations.

9.0 OUTLET STRUCTURE

The Contractor shall place riprap in the streambed and up the sideslope of Bamberg Creek in accordance with the typical outlet detail included in the drawing set.

10.0 EXISTING DRAINS/TILE CONNECTIONS

The Contractor shall make all tributary tile drain connections.

The Contractor shall be responsible for all tile connections for a period of one year after the issuance of the completion certificate. Tile connections required to be made within this warranty period shall be made at the expense of the Contractor. After construction, the Contractor will be given the option to make any subsequent tile connections or have the Municipality make said connections and have the costs of which deducted from the holdback.

The Contractor shall supply all necessary materials to compete the connections of the existing drains to the new drain. The type of materials used to make the tributary drain connections shall be verified with the engineer.

All existing drains cut off during the installation of the new drainage system that will be connected to the new drainage system shall be flagged or marked by the Contractor prior to the connection being made.

11.0 CATCHBASINS AND JUNCTION BOXES

All catchbasins shall be precast concrete catchbasins and shall have a 300mm sump.

All catchbasin grates shall be fastened to the new catchbasin and shall be hot dipped galvanized bird cage grates. Catchbasin marker signs shall be erected at all catchbasins.

All existing catchbasins that are to be removed shall be disposed of off-site by the Contractor.

The catchbasin grate elevations shall be set to the satisfaction of the Engineer. Lifts shall be placed by the Contractor on all catchbasins if necessary to achieve the desired elevation when field setting the structures.

All catchbasins shall be installed using 19mm crushed stone bedding from 150mm below the structure to 150mm above the top of the highest pipe entering or exiting the structure. Structures within the road allowances shall have 300mm minimum of Granular 'B' backfill around all sides up to the underside of the topsoil layer. Structures on private property shall be backfilled using approved native material up to the underside of the topsoil layer. All backfill material shall be placed and thoroughly compacted evenly around each structure in lifts not exceeding 300mm to minimize settlement around the structures. The Contractor shall be responsible for all settlement around catchbasins. Should the area around the catchbasin settle after construction, the Contractor shall be responsible for providing additional rip-rap required so that the top of the rip-rap is flush with the surrounding ground.

The Contractor shall place quarry stone rip-rap material around all sides of the catchbasin for a width of one metre and shall be placed on geotextile filter material.

All holes for catchbasin pipe connections to be cored by the manufacturer. All pipes entering or exiting a catchbasin or shall be installed such that the face of the pipe is flush with the inside wall of the structure.

The Contractor shall be responsible to repair or reapply mortar for all mortared connections into any catchbasin for a period of one year after the completion certificate has been issued.

12.0 ROAD WORKS

The Contractor shall be responsible to arrange all traffic control signals, signs and devices that are required for safe and proper traffic management during the installation of the drainage system. The Contractor shall contact the Region of Waterloo for specific local procedures, guidelines, and timelines. Traffic control shall meet the standards of Book 7 of the Ontario Traffic Manual.

The Contractor shall grade the road ditches to the new catchbasin. Any disturbed area within the Municipal Right-of-Way during construction shall be topsoiled and seeded with an approved grass seed mixture.

13.0 RIP-RAP

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

14.0 EROSION AND SEDIMENT CONTROL

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

15.0 ENDAGERED SPECIES ACT AND THE EASTERN MEADOWLARK

The Contractor shall review species information made available by the Ministry of Environment, Conservation & Parks (MECP) prior to the start of construction to identify the species should any be observed on site.

The Contractor shall designate a staff member to inspect the daily working area for the species, and their nests prior to the start of any work activities each day. The Contractor shall complete the following daily log of inspections.

Eastern Meadowlark – Daily Inspection Log				
Date	Daily Work Area (Sta. x+xxx to Sta. y+yyy)	Number of Sightings	Comments	Staff Signature

Should an Eastern Meadowlark or its nest be encountered, the Contractor shall immediately flag the location, obtain GPS coordinates of nesting site flags, and notify the Contractor Administrator, and the Site Foreman. The Contractor shall ensure that construction activities are modified to not cause harm to the species, or its nest. The Contract Administrator shall notify the MECP.

LOT 9 LOT 8 LOT 7 LOT 6 LOT 5

BAMWAY INDUSTRIES INC. 1-027 (6.9 Ha.)

JAMMON & ELVINA BAUMAN 1-026 (6.3 Ha.)

BAMBERG

N

MOSER YOUNG ROAD/REGIONAL ROAD 10

CON 3 EASTERN DIVISION

CON 2 EASTERN DIVISION

HACKBART ROAD

ROBERT & ANNE JANTZI 1-009 (25 Ha.)

KOCH-LEIS DRAIN REPORT (1950) WATERSHED

RONALD & ROSEMARY McCORMICK 1-007-01 (5.79 Ha.)

264171 HOLDINGS LTD. 1-008 (25.45 Ha.)

LADISLAUS & LAURRETTA BAUER 1-008-02 (8.45 Ha.)

JEFFREY FURTADO & PAIGE STEWART 1-008-01 (4.5 Ha.)

NATALEE RIDGEWAY 1-007-00 (7.98 Ha.)

CON 2 EASTERN DIVISION

TOWNSHIP OF WELLESLEY

B.M. 4 372.44

GERBER ROAD/REGIONAL ROAD 12 (3.14Ha.)

NOTRE DAME DRIVE/REGIONAL ROAD 12

TOWNSHIP OF WILMOT

DAVID & EVA CRESSMAN 9-160-00 (3.1 Ha.)

ROADSIDE FARM INC. 9-163-00 (42.8 Ha.)

JANANNA CORP. 9-164-00 (45.8 Ha.)

JANANNA DRAIN (WEST BRANCH)

JANANNA DRAIN (EAST BRANCH)

CORY & KIRBY KITTEL 9-165-00 (13.84 Ha.)

KOCH-LEIS DRAIN REPORT (1950) WATERSHED

SUBSURFACE WATERS TILED TO KOCH-LEIS DR. (APPROX. 9.0 Ha.)

KOCH-LEIS DRAIN

BAMBERG CREEK

B.M. 1 357.81

CON 3 BLOCK B

PETER & DAGMAR SCHNEIDER 9-153-00 (9.3 Ha.)

OLEG & ELENA BORISSOVA 9-151-00 (8.54 Ha.)

KENNETH & CATHERINE HEINTZ 9-156-00 (6.2 Ha.)

B.M. 2 357.06

DAVID & SHERRI HOMANCHUK 9-154-00 (3.7 Ha.)

PETER & BARBARA WURTELE 9-153-01 (0.89 Ha.)

SANDHILLS ROAD

B.M. 3 356.23

ALEXANDER JOHNSTON 9-155-00

BERLETT'S ROAD

CON 2 BLOCK B

LOT 14 LOT 13 LOT 12 LOT 11 LOT 10 LOT 9 LOT 8

PLAN SCALE

0 240 480 720

TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Watershed Plan

NOTES:

1. AERIAL PHOTOGRAPHY PROVIDED BY WILMOT TOWNSHIP.
2. CONTOURS GENERATED USING 2018 LIDAR DERIVED DATASET REPRESENTING BARE-EARTH TERRAIN FROM LAND INFORMATION ONTARIO.

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 **ELEV.=357.81**
NAIL IN NORTH FACE OF FENCE POST 5m EAST OF STA. 0+234 (JANANNA EAST BR.)

BENCHMARK No. 2 **ELEV.=357.06**
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. 0+537 (BAMBERG)

BENCHMARK No. 3 **ELEV.=356.23**
TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. 1+125 (BAMBERG)

BENCHMARK No. 4 **ELEV.=372.44**
TOP CENTRE UPSTREAM END OF 450mmØ H.D.P.E. SURFACE CULVERT AT STA. 0+780 (JANANNA WEST BR.)

LEGEND

- LOT/CONCESSION LINE
- PROPERTY LINE
- URBAN BOUNDARY
- TOWNSHIP BOUNDARY
- MAJOR WATERSHED BOUNDARY
- MINOR WATERSHED BOUNDARY
- WETLAND LIMIT
- BENCHMARK LOCATION
- B.M. 1 / 123.45 — BENCHMARK No. / BENCHMARK ELEVATION
- JOHN & JANE SMITH / 12-345 / (12.3 Ha.) — LANDOWNER NAME(S) / ASSESSMENT ROLL No. (ABBREVIATED) / APPROX. AREA AFFECTED

EXISTING FEATURES:
- DRAIN NAME — OPEN DRAIN WITH CROSSING AND FLOW DIRECTION
- DRAIN NAME — CB, MH — CLOSED DRAIN WITH CATCH BASIN, MANHOLE AND FLOW DIRECTION
- OVERLAND FLOW PATH

PROPOSED FEATURES:
- DRAIN NAME — OPEN DRAIN WITH CROSSING AND FLOW DIRECTION
- DRAIN NAME — CB, MH — CLOSED DRAIN WITH CATCH BASIN, MANHOLE AND FLOW DIRECTION

LICENCED PROFESSIONAL ENGINEER S.G.R. BROWN 100150920 PROVINCE OF ONTARIO April 27, 2023

No.	REVISION	DATE (YY-MM-DD)
4	REPORT SUBMISSION	23-04-28
3	KOCH-LEIS INFORMATION MTG.	22-11-24
2	INFORMATION MEETING	22-09-29
1	ON-SITE MEETING	21-09-22

Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
R.U.	A.H.	S.B.
DATE: 2023-04-28	REFERENCE No. WLMT-002	DRAWING No. 1 OF 6

TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Work Area Plan

NOTES:
1. AERIAL PHOTOGRAPHY PROVIDED BY WILMOT TOWNSHIP.
2. CONTOURS GENERATED USING 2018 LIDAR DERIVED DATASET REPRESENTING BARE-EARTH TERRAIN FROM LAND INFORMATION ONTARIO.

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- PROPERTY LINE
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- MAJOR WATERSHED BOUNDARY
- MINOR WATERSHED BOUNDARY
- WETLAND LIMIT
- CONSTRUCTION/MAINTENANCE ACCESS
- BENCHMARK LOCATION
- B.M. 1 / 123.45 — BENCHMARK No. / BENCHMARK ELEVATION
- JOHN & JANE SMITH / 12-345 / (12.3 Ha.) — LANDOWNER NAME(S) / ASSESSMENT ROLL No. (ABBREVIATED) / APPROX. AREA AFFECTED

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LICENCED PROFESSIONAL ENGINEER — S.G.R. BROWN — 100150920 — PROVINCE OF ONTARIO — April 27, 2023

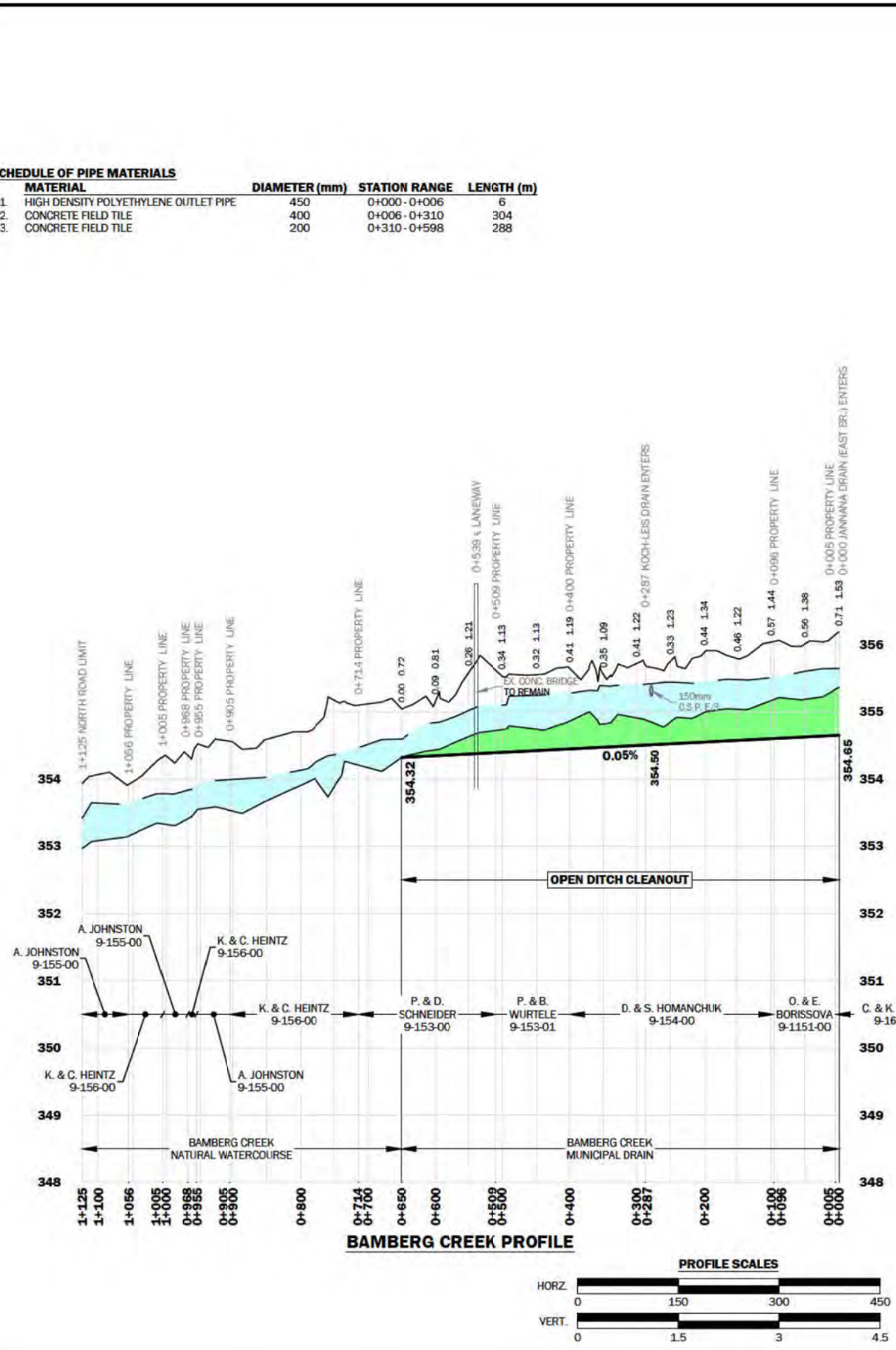
Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
R.U.	A.H.	S.B.
DATE: 2023-04-28	REFERENCE No. WLMT-002	DRAWING No. 2 OF 6

PLAN SCALE
0 120 240 360

SCHEDULE OF PIPE MATERIALS

	MATERIAL	DIAMETER (mm)	STATION RANGE	LENGTH (m)
1.	HIGH DENSITY POLYETHYLENE OUTLET PIPE	450	0+000 - 0+006	6
2.	CONCRETE FIELD TILE	400	0+006 - 0+310	304
3.	CONCRETE FIELD TILE	200	0+310 - 0+598	288



TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Bamberg Creek and East Branch Profiles

BENCHMARK DESCRIPTIONS

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LICENCED PROFESSIONAL ENGINEER S.G.R. BROWN 100150920 PROVINCE OF ONTARIO

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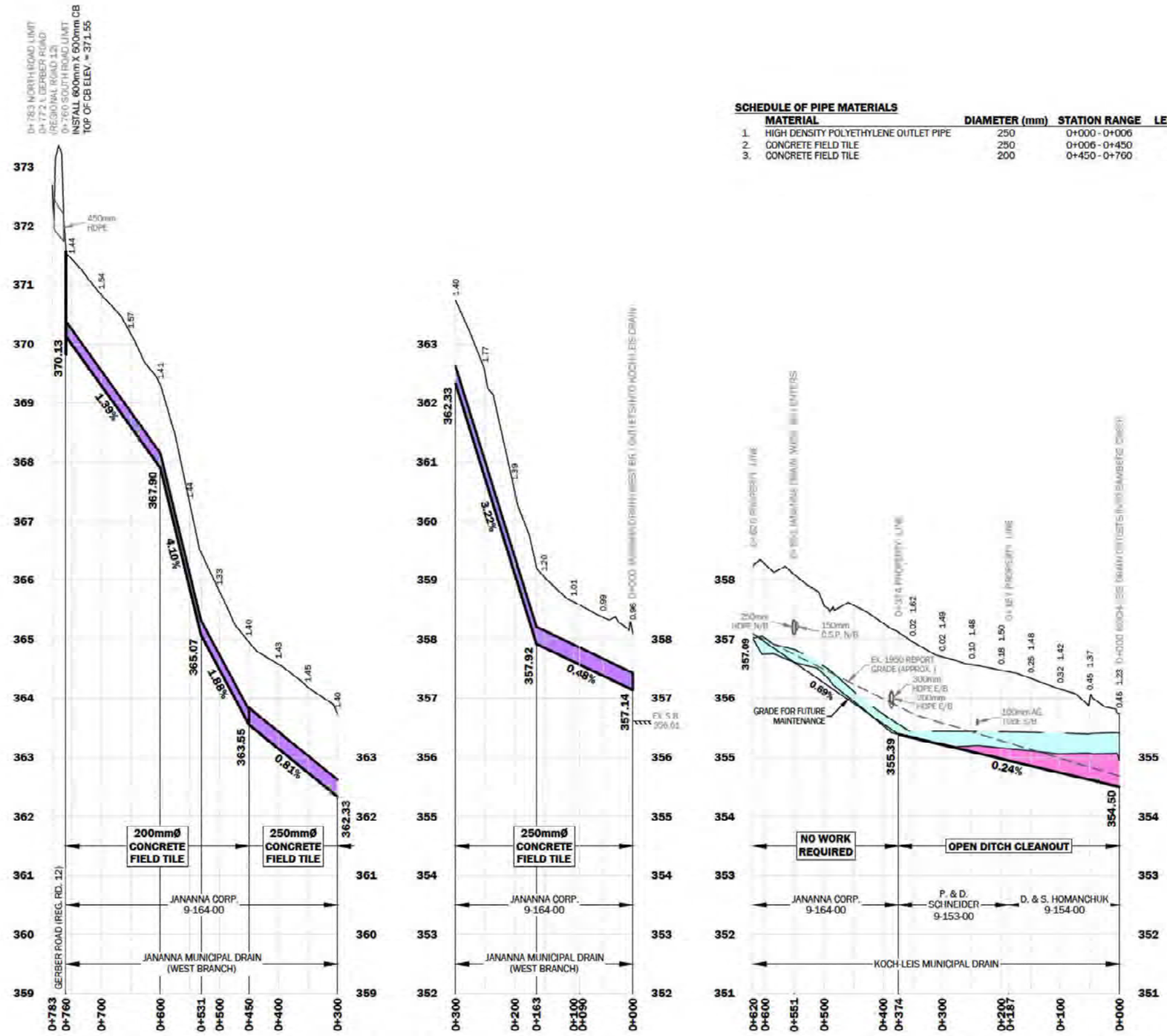
	MATERIAL	DIAMETER (mm)	STATION RANGE	LENGTH (m)
1.	HIGH DENSITY POLYETHYLENE OUTLET PIPE	250	0+000 - 0+006	6
2.	CONCRETE FIELD TILE	250	0+006 - 0+450	444
3.	CONCRETE FIELD TILE	200	0+450 - 0+760	310



PROFILE SCALES

HORZ. 0 150 300 450

VERT. 0 1.5 3 4.5

TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

West Branch and Koch-Leis Drain Profiles

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 **ELEV.=357.81**
NAIL IN NORTH FACE OF FENCE POST 5m EAST OF STA. 0+234 (JANANNA EAST BR.)

BENCHMARK No. 2 **ELEV.=357.06**
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. 0+537 (BAMBERG)

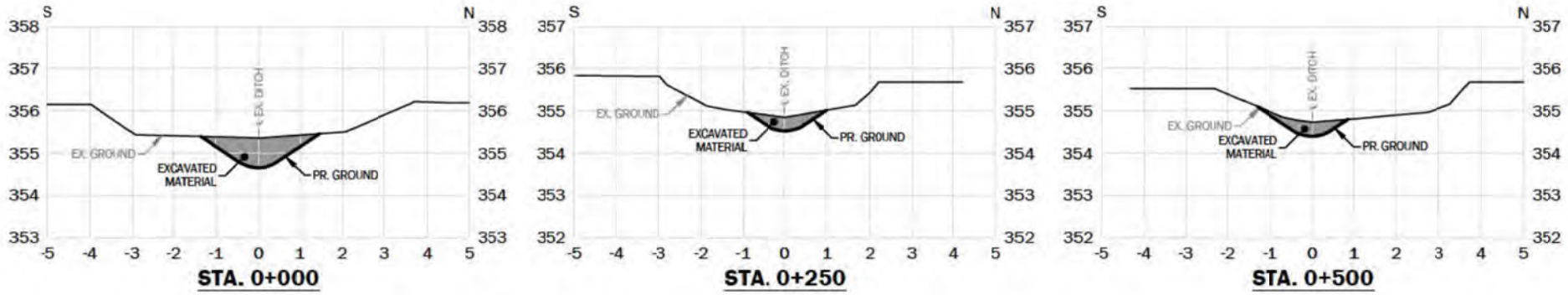
BENCHMARK No. 3 **ELEV.=356.23**
TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. 1+125 (BAMBERG)

BENCHMARK No. 4 **ELEV.=372.44**
TOP CENTRE UPSTREAM END OF 450mmØ H.D.P.E. SURFACE CULVERT AT STA. 0+780 (JANANNA WEST BR.)

No.	REVISION	DATE (YY-MM-DD)
4	REPORT SUBMISSION	23-04-28
3	KOCH-LEIS INFORMATION MTG.	22-11-24
2	INFORMATION MEETING	22-09-29
1	ON-SITE MEETING	21-09-22

Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
R.U.	A.H.	S.B.
DATE: 2023-04-28	REFERENCE No. WLMT-002	DRAWING No. 4 OF 6



STA. 0+000 | STA. 0+250 | STA. 0+500

STA. 0+050 | STA. 0+300 | STA. 0+550

STA. 0+100 | STA. 0+350 | STA. 0+600

STA. 0+150 | STA. 0+400 | STA. 0+650

STA. 0+200 | STA. 0+450

SECTION SCALE

0 3 6 9

TOWNSHIP OF Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Bamberg Creek Sections

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 **ELEV.=357.81**
NAIL IN NORTH FACE OF FENCE POST 5m EAST OF STA. 0+234 (JANANNA EAST BR.)

BENCHMARK No. 2 **ELEV.=357.06**
TOP CENTRE UPSTREAM END OF CONCRETE BRIDGE AT STA. 0+537 (BAMBERG)

BENCHMARK No. 3 **ELEV.=356.23**
TOP CENTRE UPSTREAM END OF CONCRETE BOX CULVERT AT STA. 1+125 (BAMBERG)

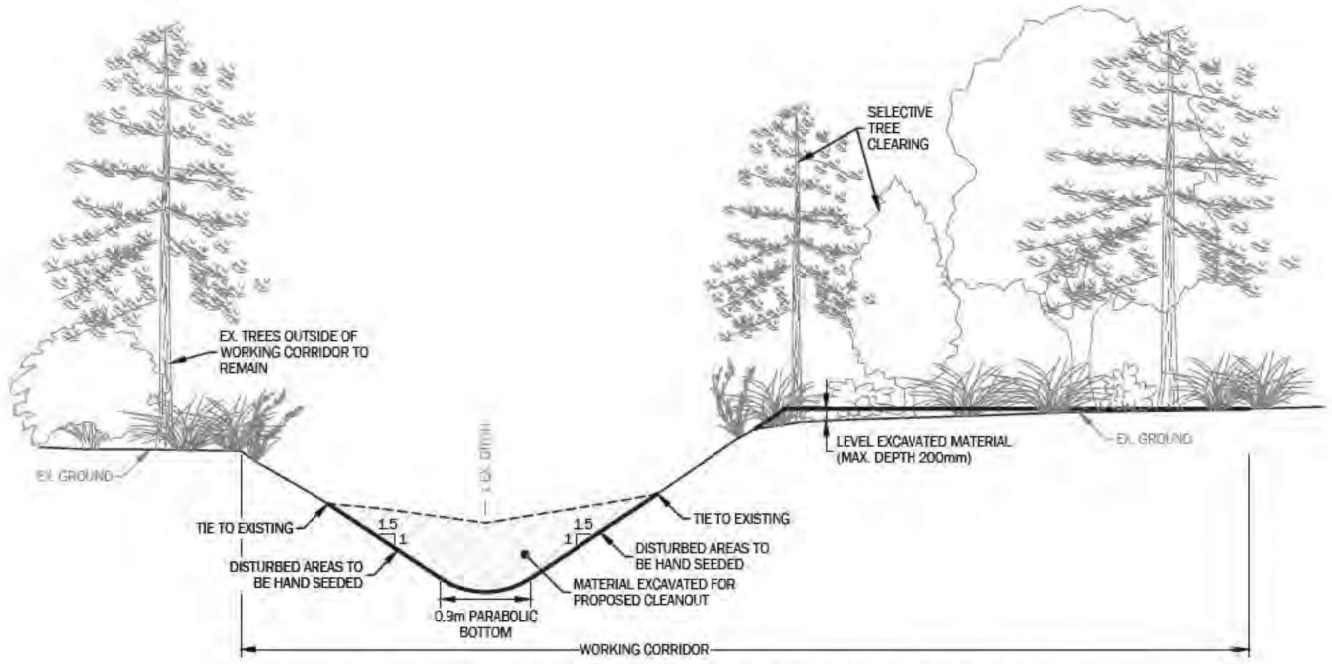
BENCHMARK No. 4 **ELEV.=372.44**
TOP CENTRE UPSTREAM END OF 450mmØ H.D.P.E. SURFACE CULVERT AT STA. 0+780 (JANANNA WEST BR.)

LICENSED PROFESSIONAL ENGINEER
S.G.R. BROWN
100150920
PROVINCE OF ONTARIO

No.	REVISION	DATE (YY-MM-DD)
4	REPORT SUBMISSION	23-04-28
3	KOCH-LEIS INFORMATION MTG.	22-11-24
2	INFORMATION MEETING	22-09-29
1	ON-SITE MEETING	21-09-22

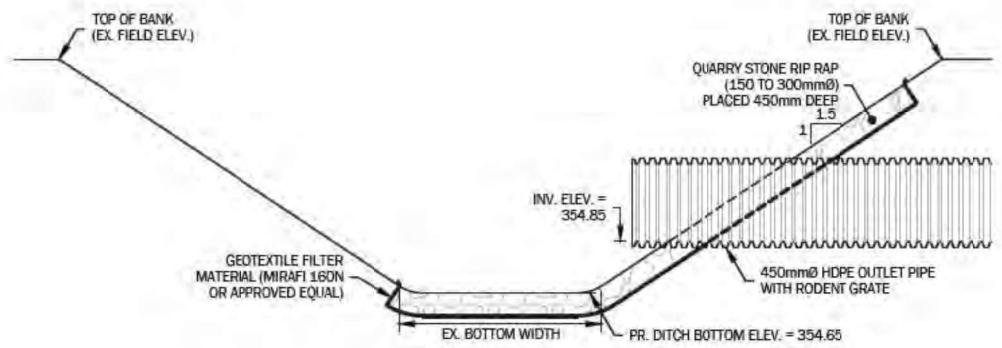
Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
R.U.	A.H.	S.B.
DATE: 2023-04-28	REFERENCE No. WLMT-002	DRAWING No. 5 OF 6



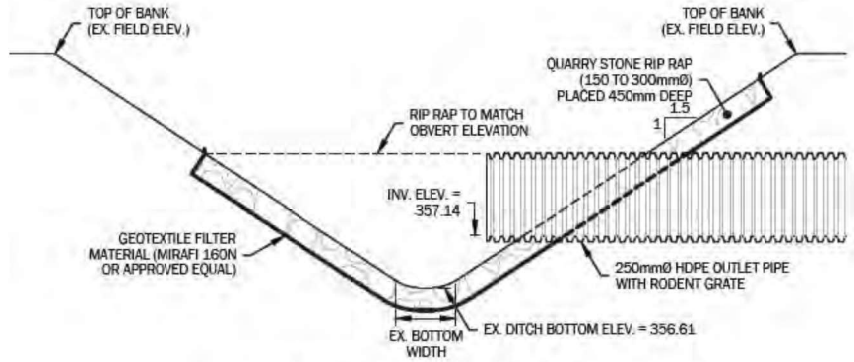
TYPICAL OPEN DITCH CLEANOUT DETAIL (BAMBERG CREEK)

N.T.S.



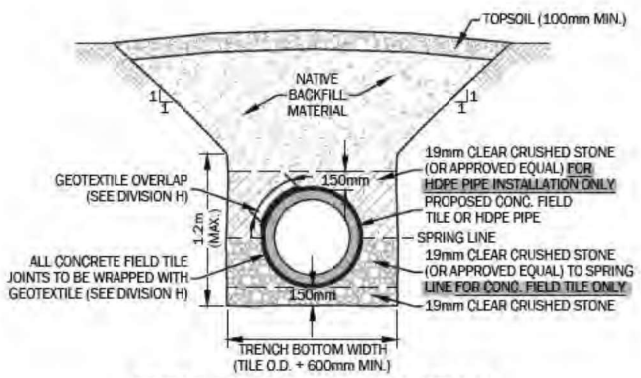
EAST BRANCH OUTLET DETAIL

N.T.S.



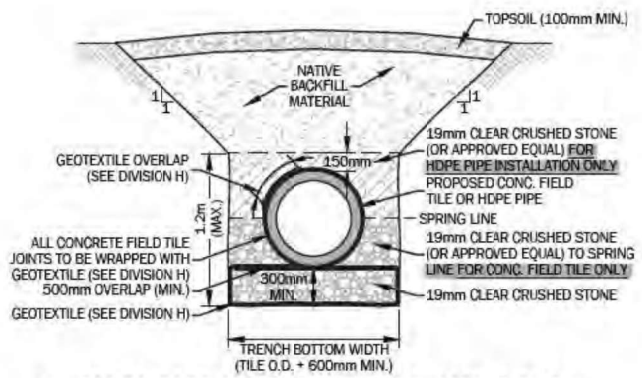
WEST BRANCH OUTLET DETAIL

N.T.S.



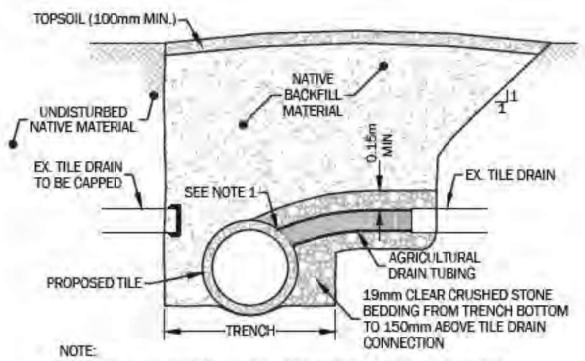
TYPICAL PIPE INSTALLATION ON STONE BEDDING DETAIL

N.T.S.



TYPICAL PIPE INSTALLATION ON WRAPPED STONE BEDDING DETAIL (PROVISIONAL ITEM)

N.T.S.



NOTE:

1. ALL TILE CONNECTIONS TO BE EITHER A CORED HOLE WITH AN INSERT COUPLER, OR A MANUFACTURED TEE.
2. CLEAR CRUSHED STONE BEDDING NOT REQUIRED IF DUAL WALL HDPE PIPE IS USED FOR THE CONNECTION.

TYPICAL TILE CONNECTION DETAIL

N.T.S.

Township of Wilmot

WARD 2

JANANNA MUNICIPAL DRAIN

Details

BENCHMARK DESCRIPTIONS

BENCHMARK No. 1 **ELEV.=357.81**
NAIL IN NORTH FACE OF FENCE POST 5m EAST OF STA. 0+234 (JANANNA EAST BR.)

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No.	REVISION	DATE (YY-MM-DD)
4	REPORT SUBMISSION	23-04-28
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S.G.R. BROWN 100150220 LICENCE OF ONTARIO

Headway Engineering

DRAWN BY:	DESIGNED BY:	CHECKED BY:
R.U.	A.H.	S.B.
DATE:	REFERENCE No.	DRAWING No.
2023-04-28	WLMT-002	6 OF 6

This is **EXHIBIT "V"** referred to in the Affidavit of Stephen Brickman sworn before me on this day, June 20, 2024

A Commissioner for taking affidavits

Bamberg Cree, Jananna, and Koch-Leis Municipal Drains 2023

Township of Wilmot – Meeting to Consider the Report

June 26, 2023

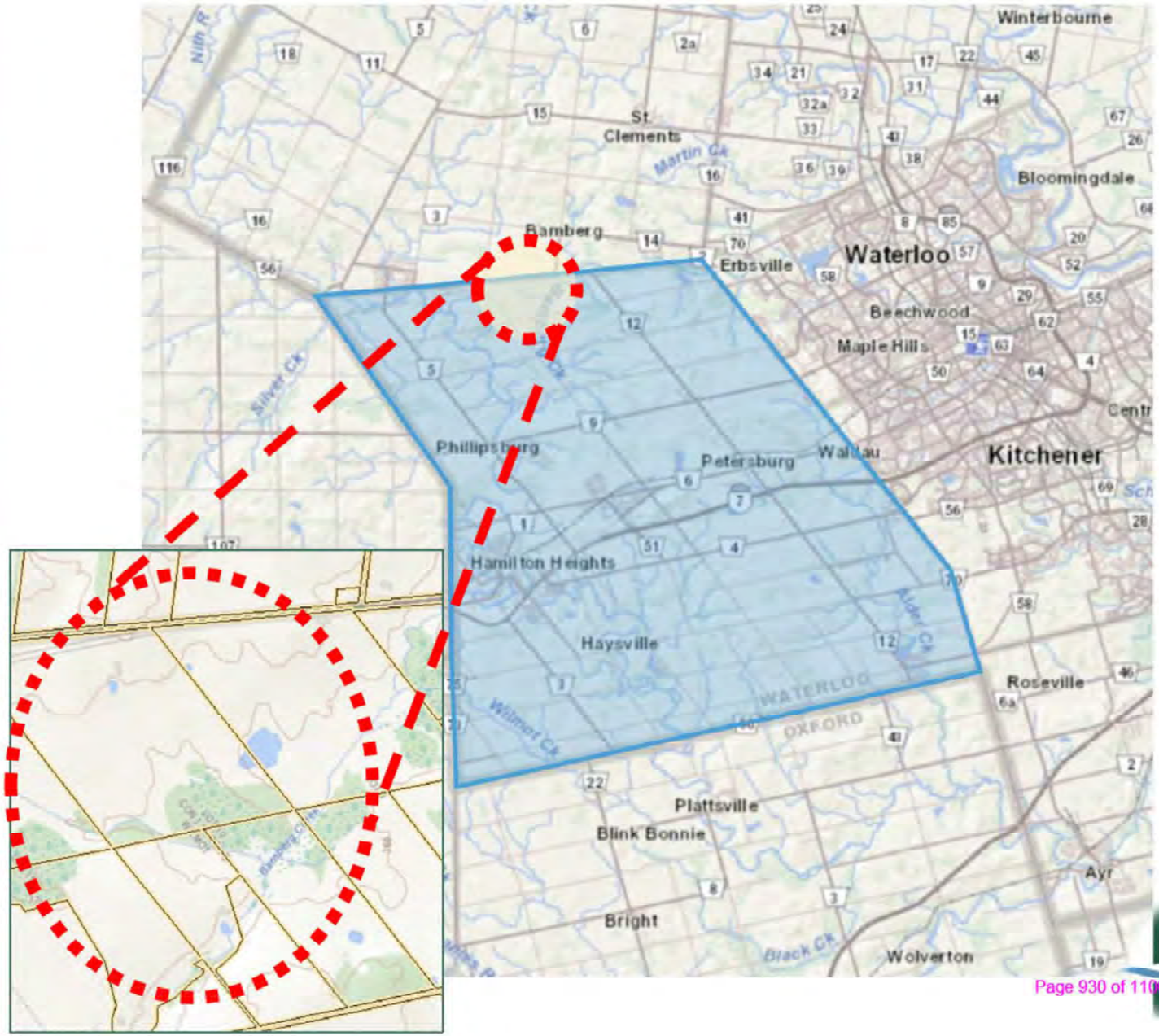
Headway Engineering

Township of Wilmot

Authority

- Headway was appointed under Section 4(1) of the Drainage Act on July 12, 2021

Project Location



Steps to Producing the Report

Duties of Engineer (Section 11 of the Drainage Act)

11 The engineer shall, to the best of the engineer's skill, knowledge, judgment and ability, honestly and faithfully, and without fear of, favour to or prejudice against any person, perform the duty assigned to the engineer in connection with any drainage works and make a true report thereon. R.S.O. 1990, c. D.17, s. 11.

Steps to Producing the Report

Engineering

Duties of Engineer
(Section 11 of the Drainage Act)

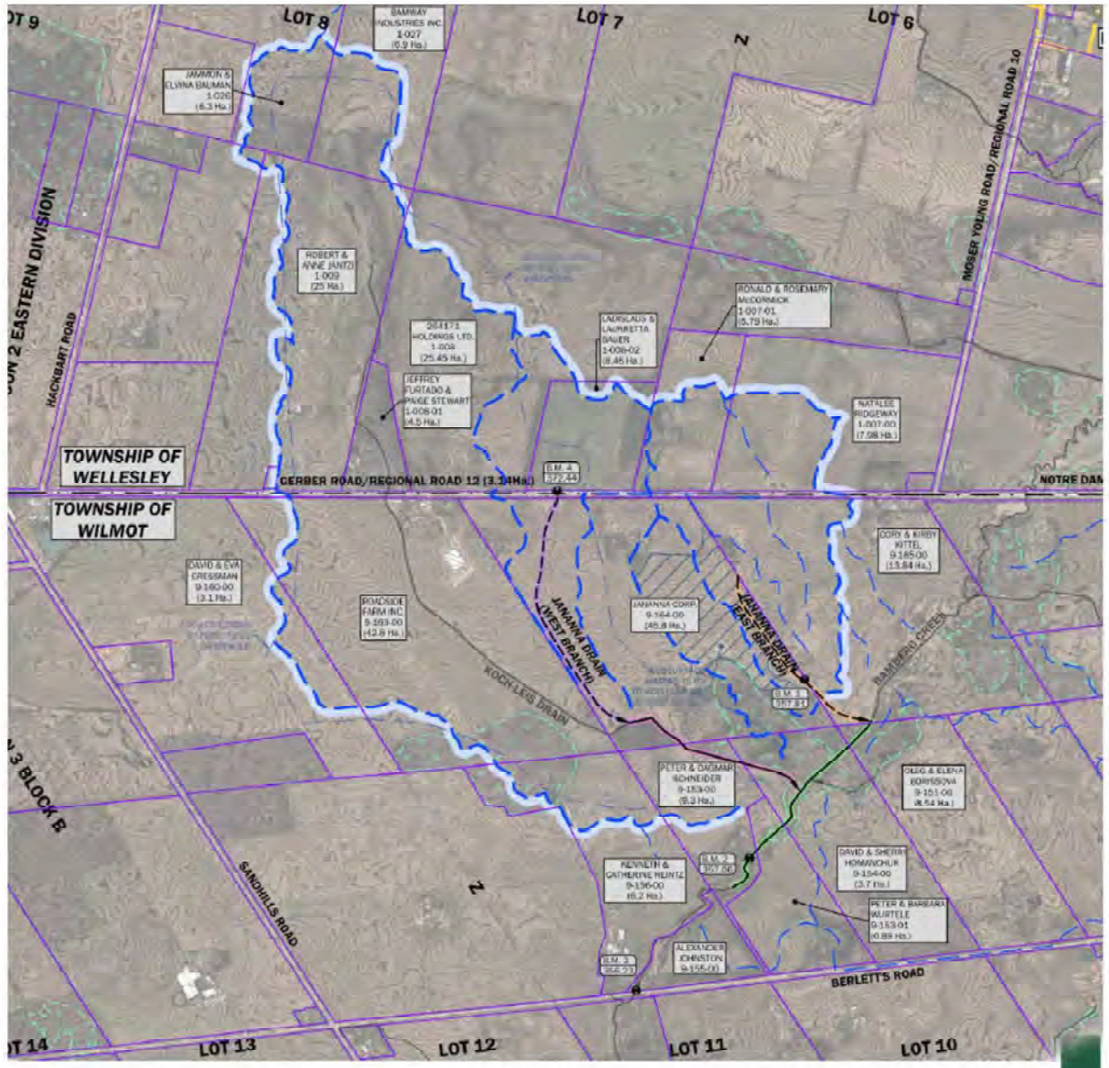
11 The engineer shall, to the best of the engineer's skill, knowledge, judgment and ability, honestly and faithfully, and without fear of, favour to or prejudice against any person, perform the duty assigned to the engineer in connection with any drainage works and make a true report thereon. R.S.O. 1990, c. D.17, s. 11.

Findings

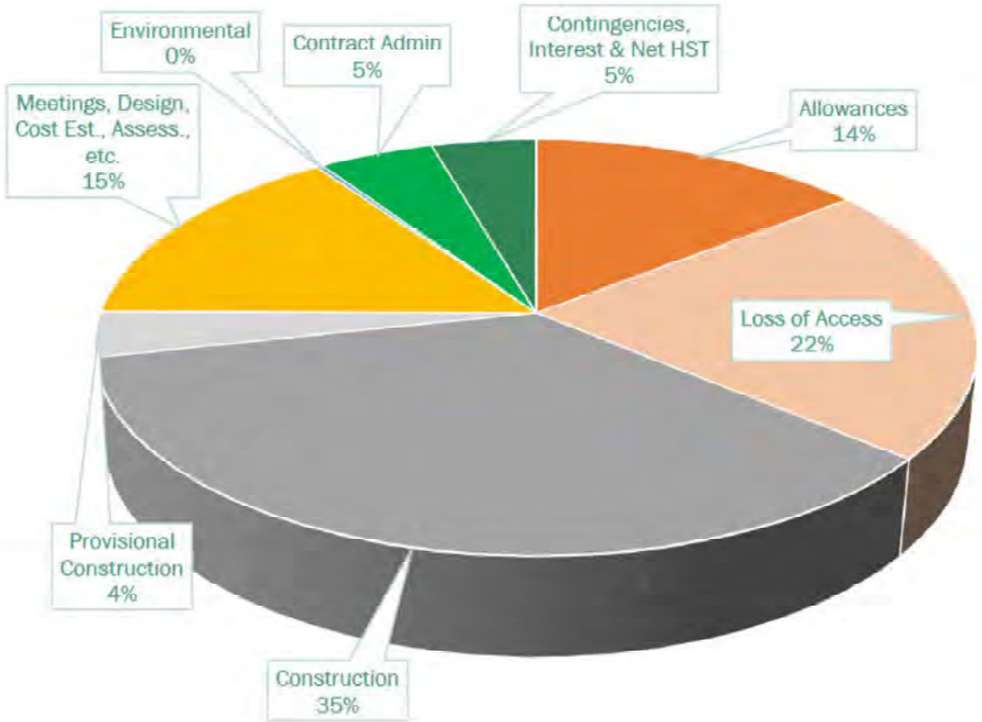
- The Koch-Leis Drain has a very flat grade for approximately 300m at its outlet. The previous drainage report indicates that the Koch-Leis Drain was constructed with more grade.
- Bamberg Creek shows signs of artificial improvements in its history, such as straightening, and additional depth at the time the Koch-Leis Drain was originally constructed (1950).
- The west part of Lot 10, Concession 3, Block B has been recently systematically tiled toward the Koch-Leis Drain. The north side of the property is not systematically tiled, as conditions improve for drainage.
- Eastern portions of Lot 10, Concession 3, Block B have been tiled toward the Koch-Leis Drain, where those lands would naturally drain south toward Bamberg Creek. The south-east portion of the property could not be drained toward the Koch-Leis Drain, and requires a legal outlet.
- Surface flows along the upper alignment of the East Branch and West Branch are causing reduced usability of the surrounding lands.
- Areas within the drainage area are likely to be tiled in the future.
- Tile outlets into Bamberg Creek do not have sufficient depth for today's standards of drainage.
- Bamberg Creek is prone to beaver activity. The municipality currently has limited ability to complete any maintenance on Bamberg Creek.
- Current topographic data indicates that portions of the Koch-Leis Drain watershed, as noted in the 1950 report, are incorrect.

Recommendations

1. The installation of approximately 1,358m of 200mm to 450mm diameter concrete field tile and HDPE pipe.
2. The improvement of approximately 1,024m of open channels.



Estimated Project Costs



- Allowances
- Construction Costs (including Contingencies)
- Meetings/Correspondence, Design Review, Cost Estimates, Reporting, etc.
- Environmental Consultations
- Contract Documents, Administration, Supervision & Inspection
- Interest & NET HST
- **Total Estimated Costs: $462,900**

Steps to Producing the Report

Engineering

Duties of Engineer (Section 11 of the Drainage Act)

11 The engineer shall, to the best of the engineer's skill, knowledge, judgment and ability, honestly and faithfully, and without fear of, favour to or prejudice against any person, perform the duty assigned to the engineer in connection with any drainage works and make a true report thereon. R.S.O. 1990, c. D.17, s. 11.

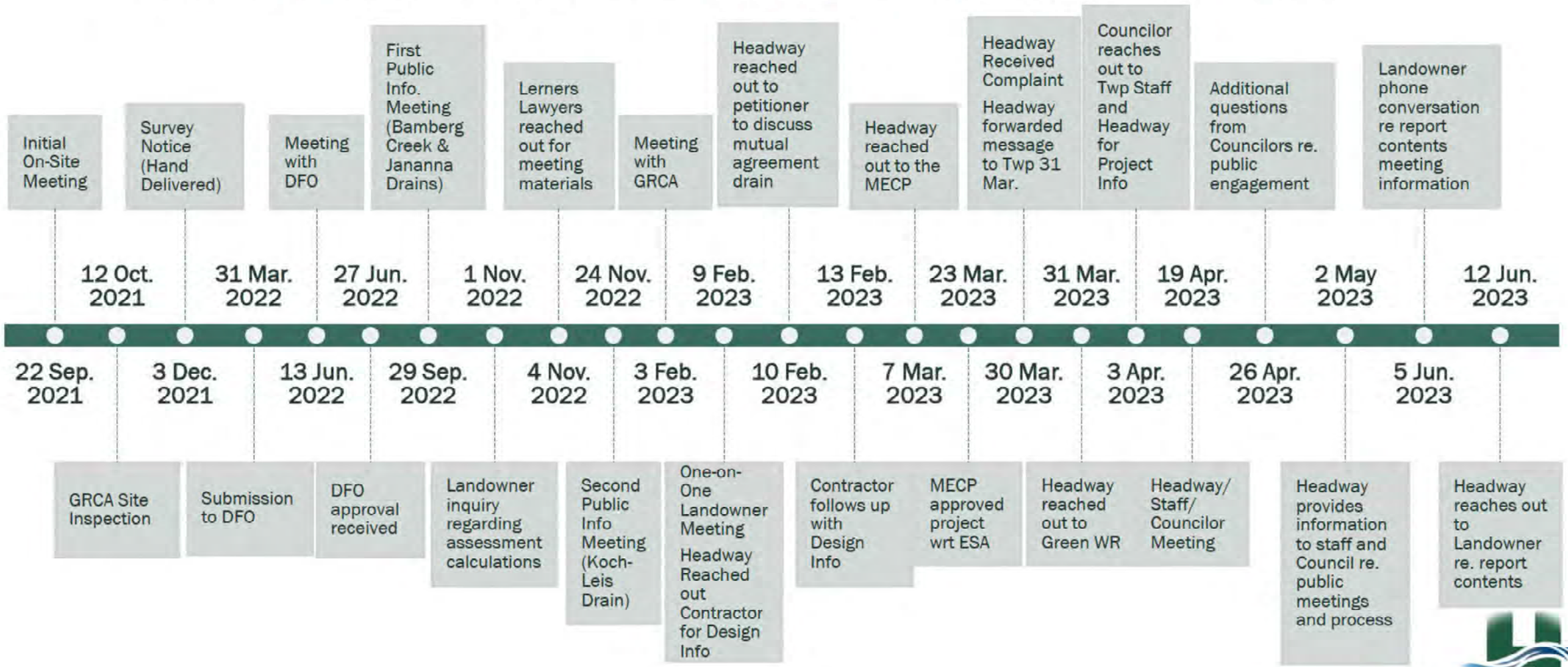
Steps to Producing the Report

Public Consultations

Duties of Engineer
(Section 11 of the Drainage Act)

11 The engineer shall, to the best of the engineer's skill, knowledge, judgment and ability, honestly and faithfully, and without fear of, favour to or prejudice against any person, perform the duty assigned to the engineer in connection with any drainage works and make a true report thereon. R.S.O. 1990, c. D.17, s. 11.

Public and Stakeholder Engagements



Initial Onsite Meeting (September 22, 2021)

Headway Engineering

23-500 Fairway Road South
Suite 308
Kitchener, Ontario N2C 1X3
226 243 6614
www.headwayeng.ca

September 8, 2021

Dear Sir or Madam:

Re: On-Site Meeting
Jananna Municipal Drain (Gawron Petition)
Township of Wilmot
Our Reference No. WLMT-002

We have been appointed by the Council of the Township of Wilmot under Section 4 of the Drainage Act to investigate a petition the Township has received for the above noted Municipal Drain. Please find enclosed a preliminary plan of the drainage basin.

This is the initial meeting under the Drainage Act, and its primary purpose is for affected landowners to provide the engineer with information concerning the possible drainage works.

We will be present at 1184 Gerber Road on September 22nd at 10:00 A.M. to discuss the area and site of the possible drainage works. Please refer to the attached drawing showing the location of the meeting.

You, as an owner of land affected by this municipal drainage project, are asked to attend at such time and place if you have any questions or suggestions concerning the potential work.

Furthermore, please bring to the meeting any tile maps that you may have for lands within the watershed as indicated on the attached plan.

If you have any questions beforehand, please telephone (226) 243 6614.

Yours truly,

Stephen Brickman, P.Eng.
Project Engineer and Manager
HEADWAY ENGINEERING

SB/

Tracey Murray
Manager of Information and Legislative Services / Deputy Clerk
Township of Wilmot
[redacted]

Bryan Bishop, C.E.T.
Manager of Engineering
Township of Wilmot
[redacted]

John Kuntze, P.Eng.
Drainage Superintendent
Township of Wilmot
[redacted]

Steve van De Keere
Director of Transportation
Region of Waterloo
[redacted]

Lucy Gawron
[redacted]

Cory & Kirby Kittle
[redacted]

Jananna Corp
[redacted]

Natalee Ridgeway
[redacted]

Ronald & Rosemary McCormick
[redacted]

Trevor Heywood
Resource Planner
Grand River Conservation Authority
[redacted]

- Notices Mailed Sept 8 (two weeks prior)
- Mailing list shown to left
- Attended by:
  - Twp
  - Region
  - Gawron Family for Jananna
  - McCormick
  - Kittel (not attend, but p[illegible] in after)

Initial Onsite Meeting (September 22, 2021)

- Introductions
- Headway explained Drainage Act Appointment
- Purpose of the meeting:
  - The purpose of the meeting is for the landowners to provide the engineer with information which will be helpful for completing this investigation. If landowners have problems
  - blow outs
  - lack of depth
  - excessive runoff
  - unending repairs etc.
  - get copies of tile maps
  - watershed issues
  - tile maps
- Landowner comments:
  - Surface water issues, needs a drain to control surface water
  - Farm was recently drained
  - An attempt was made in the past to reach an agreement. It didn't get very far.
  - Concerns about Bamberg Creek outlet depth
  - Questions about timeline – Headway couldn't specify timelines because of GRCA concerns
  - Lands near Gerber Road and North are very sandy
  - Concerns relating to assessments. Headway responded that the next meeting will have much better information about assessment.
  - Some landowners noted that they didn't want to be involved – Headway acknowledged
  - Questions received about the condition of the road pipes – Headway provided photos
- Next Steps
- Timelines (timelines were noted to be unpredictable at this stage)

Survey Notice (December 3, 2021)

Headway Engineering

23-500 Fairway Road South
Suite 309
Kitchener, Ontario N2C 1X3
226 243 6614
www.headwayeng.ca

December 3, 2021

Dear Sir or Madam:

Re: Survey Notice
Township of Wilmot

We have been appointed by the Council of the Township of Wilmot under the Drainage Act to investigate a petition the Township has received.

We need to a complete a survey on Bamburg Creek. We will have a crew onsite walking along Bamburg Creek taking elevation readings with a GPS.

If you have any questions beforehand, please telephone (226) 243 6614.

Yours truly,

Adam Hall
Field Services Manager
HEADWAY ENGINEERING

AH/

Peter & Dagmar Schneider
[redacted]

Alexander Johnston
[redacted]

Kenneth & Catherine Heintz
[redacted]

- Hand Delivered on December 3.
- Delivered to Landowners on Bamberg Creek

First Public Information Meeting (September 13, 2022)

Headway Engineering

23-500 Fairway Road South
Suite 308
Kitchener, Ontario N2G 1X3
226 243 6614
www.headwayeng.ca

September 15, 2022

Dear Sir/Madam,

Re: Public Information Meeting
Jananna Municipal Drain
Township of Wilmot
Our Reference No. WLMT-002

We have completed additional work on this municipal drain and would like to review our findings with everyone concerned.

This review will cover:

1. Type and design of drainage system
2. Estimated Costs
3. Proposed Assessment of costs

We will be present at the **Wilmot Recreation Complex Wayne Roth Meeting Room located at 1291 Nafziger Road on Thursday September 29, 2022, at 2:00pm.**

The draft design drawings, assessment schedules and other presentation materials will be available through our website following the meeting. Please use the following instructions for accessing the presentation materials.

1. Visit www.headwayeng.ca
2. Select '**Public Engagements**' from the upper right corner.
3. Find '**Jananna Municipal Drain**' and select '**Read More**'.
4. You will be prompted for a password. The Password is: **WLMT-002**

Please plan to attend since this meeting is being held to review this municipal drainage project and answer any questions concerning the proposed work before preparing the final report.

If you have any questions beforehand, please telephone (226) 243-6614.

Yours truly,

Adam Hall
Project Coordinator
HEADWAY ENGINEERING

AH/

Bryan Bishop, C.E.T.
Manager of Engineering
Township of Wilmot
[redacted]

John Kuntze, P.Eng.
Drainage Superintendent
Township of Wilmot
[redacted]

Josh Graham
Supervisor, Corridor Management
Region of Waterloo
[redacted]

Lucy Gawron
1184 Gerber Road
[redacted]

Cory & Kirby Kittle
[redacted]

Jananna Corp
[redacted]

Natalee Ridgeway
[redacted]

Ronald & Rosemary McCormick
[redacted]

Ladislaus & Laurrotta Bauer
[redacted]

Oleg & Elana Borissova
[redacted]

David & Sherri Hornanchuk
[redacted]

Peter & Barbara Wuerth
[redacted]

Peter & Dagmar Schneider
[redacted]

Kenneth & Catherine Heintz
[redacted]

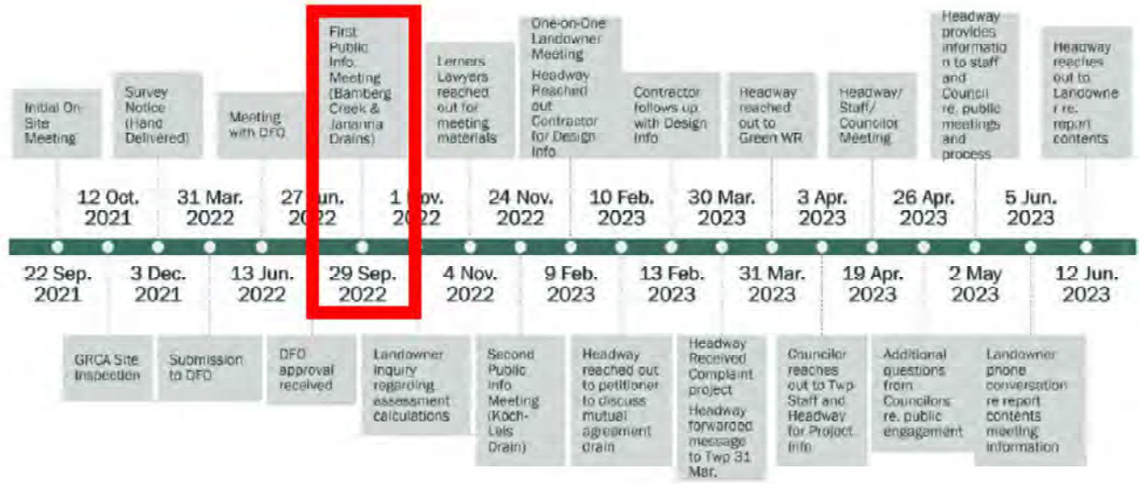
Alexander Johnston
[redacted]

2641171 Holding Inc.
C/O Robert Sanderson
[redacted]

Trevor Heywood
Resource Planner
Grand River Conservation Authority
[redacted]

- Notices Mailed Sept 15 (two weeks prior)
- Mailing list shown below
- Attended by:
  - Twp
  - Gawron Family for Jananna
  - McCormick
  - Kittel
  - Ridgeway (Miller)
  - Heintz

First Public Information Meeting (September 13, 2022)



- All presentation materials are available online. https://www.headwayeng.ca/jananna
  - Guest Access Code: WLMT-002
- Comments received:
  - Design:
    - There have been beavers in Bamberg Creek – Headway commented on dealing with beavers through maintenance.
    - The streambed is stony/bedrock – Headway commented that we will double check the design and conditions in the area. The design was revised to reduce work in Bamberg Creek
    - The Koch-Leis Drain needs better grade at the lower end (this comment came the following day). – Headway revised the design to improve the grade at the lower end.
  - Questions/comments/notes
    - Purpose of the project? – Headway responded: To provide a legal outlet at two locations which are receiving surface flows from external neighbouring properties.
    - Business case? – Headway described the process to request a Cost Benefit Analysis
    - Significant dispute between landowners took place regarding receiving surface flows.
    - How are assessments calculated? – Headway described in detail how assessments were calculated and what instruments of assessment were used.
    - What is the timeline? – Headway noted that it's tough to predict the timeline, but thought best case scenario would be 2024 construction.
    - Additional 45-minute one-on-one meeting with Landowner after meeting
      - Discussion Points:
        - What is the purpose of the project? – Headway responded: To provide a legal outlet at two locations which are receiving surface flows from external neighbouring properties.
        - How are assessments calculated? – Headway described in detail how assessments were calculated and what instruments of assessment were used.
        - Do the petitioners need this? – Headway resonded that they are receiving surface flows unwillingly. They also need an outlet for lands which can't be drained to the Koch-Leis Drain.

Second Public Information Meeting (November 24, 2022)

Headway Engineering

22-500 Fairway Road South
Suite 308
Kitchener, Ontario N2C 1X3
226 243 6614
www.headwayeng.ca

November 10, 2022

Dear Sir/Madam,

Re: Public Information Meeting
Koch-Leis Municipal Drain
Township of Wilmot
Our Reference No. WLMT-002

A request has been received for improvements to the Koch-Leis Municipal Drain. We have completed design work on this municipal drain and would like to review our findings with everyone concerned.

This review will cover:

1. Type and design of drainage system
2. Estimated Costs
3. Proposed Assessment of costs

We will be present at the **Wilmot Recreation Complex Wayne Roth Meeting Room located at 1291 Nafziger Road on Thursday November 24, 2022, at 1:00pm**.

The draft design drawings, assessment schedules and other presentation materials will be available through our website following the meeting. Please use the following instructions for accessing the presentation materials.

1. Visit www.headwayeng.ca
2. Select **'Public Engagements'** from the upper right corner.
3. Find **'Koch-Leis Municipal Drain'** and select **'Read More'**.
4. You will be prompted for a password. The Password is: **WLMT-002**

Please plan to attend since this meeting is being held to review this municipal drainage project and answer any questions concerning the proposed work before preparing the final report.

If you have any questions beforehand, please telephone (226) 243-6614.

Yours truly,

Adam Hall
Project Coordinator
HEADWAY ENGINEERING

AH/

Jeff Molenhuis, P. Eng.
Director of Infrastructure Services
Township of Wilmot
[redacted]

John Kuntze, P.E
Drainage Superi
Township of Wilm
[redacted]

Josh Grainger
Supervisor, Corridor Management
Region of Waterloo
[redacted]

2841711 Holding Inc.
C/O Robert Sanderson
[redacted]

Jeffrey Furtado and Paige Stewart
[redacted]

Robert and Anne Jamzi
[redacted]

Ammon and Elvina Bauman
[redacted]

David & Sherri Hornanchuk
[redacted]

Peter & Dagmar Schneider
[redacted]

Kenneth & Catherine Heintz
[redacted]

Lucy Gawron
[redacted]

Janonna Corp
[redacted]

Theresa Gawron
[redacted]

Trevor Heywood
Resource Planner
Grand River Conservation Authority
[redacted]

- Notices Mailed November 10 (two weeks prior)
- Mailing list shown below
- Attended by:
  - Wilmot Twp
  - Wellesley Twp
  - Gawron Family for Janonna
  - Region of Waterloo
  - Cressman Family
  - Heintz
  - Schnieder

Second Public Information Meeting (Koch-Leis Drain Focus) (November 24, 2022)

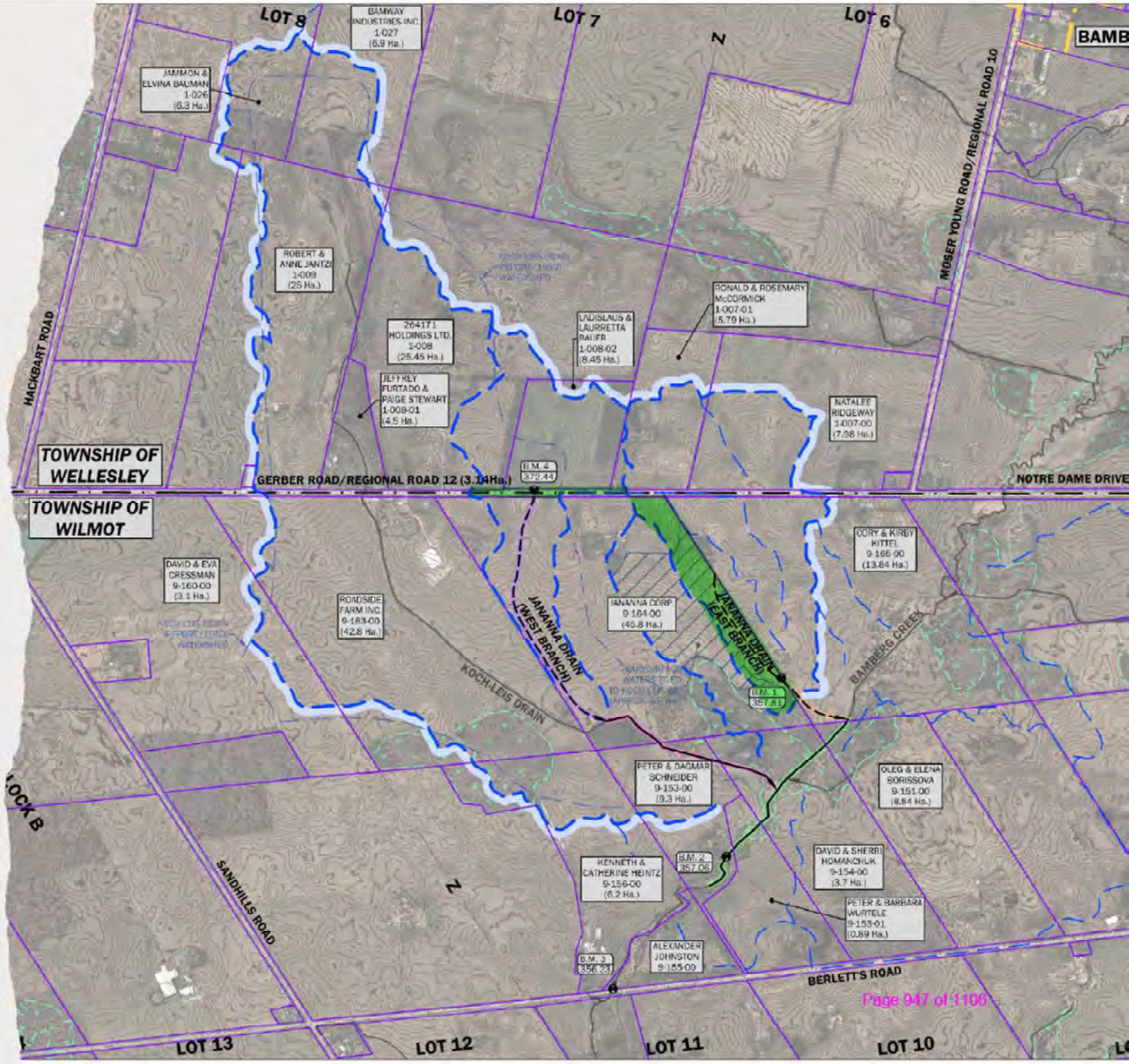
- All presentation materials are available online. https://www.headwayeng.ca/koch-leisdrain
  - Guest Access Code: WLMT-002
- Design Revisions from previous meeting
  - The streambed is stony/bedrock
    - **The grades of the Bamberg Creek were adjusted to reduce the extent of work in Bamberg Creek**
  - The Koch-Leis Drain needs better grade at the lower end
    - **The grades of the Koch-Leis were improved**
- Comments received:
  - Questions/comments/notes
    - Why the expansion of the project? – Headway explained that there was a request for improved grade at the lower end of the Koch-Leis Drain as the current grade is flat with poor outlet, and requires frequent maintenance.
    - Headway asked if there were other requirements for the Koch-Leis Drian. Landowners did not request further investigation, nor did Wellesley Township Drainage Superintendent.
    - Purpose of the project? – Headway responded: To provide a legal outlet at two locations which are receiving surface flows from external neighbouring properties.
    - What is the timeline? – Headway noted that it's tough to predict the timeline, but thought best case scenario would be 2024 construction.

One-on-One Landowner Meeting (90 min) (February 9, 2023)

- Broad discussion points:
  - Who wants the drain, and who doesn't. Headway acknowledged that the drain is unpopular.
  - The area requiring drainage vs. the benefiting area, vs. the liable area. Headway explained the differences between all three.
  - Proposed plan for tile drainage. Tile plans provided.
  - Is Headway making work? Headway responded that we tried to minimize the work as much as possible.
  - Payback periods.
  - Roles under the Drainage Act. Headway discussed the engineer's obligations under the Drainage Act.
  - Appeal process and the information provided at the public meeting. Headway commented that appeals were not budgeted in the estimates provided.
  - Timelines
- Action items:
  - Headway to contact the petitioner regarding mutual agreement
    - Completed the next day, follow up from petitioner the following business day
  - Headway reached out to Contractor for design information regarding tiling system
    - Completed same day, Contractor responded the following a few days later.
  - Follow up complaint regarding Headway's duties under the Drainage Act (Mar 30)
    - Headway forwarded the complaint to the Township (Mar 31)

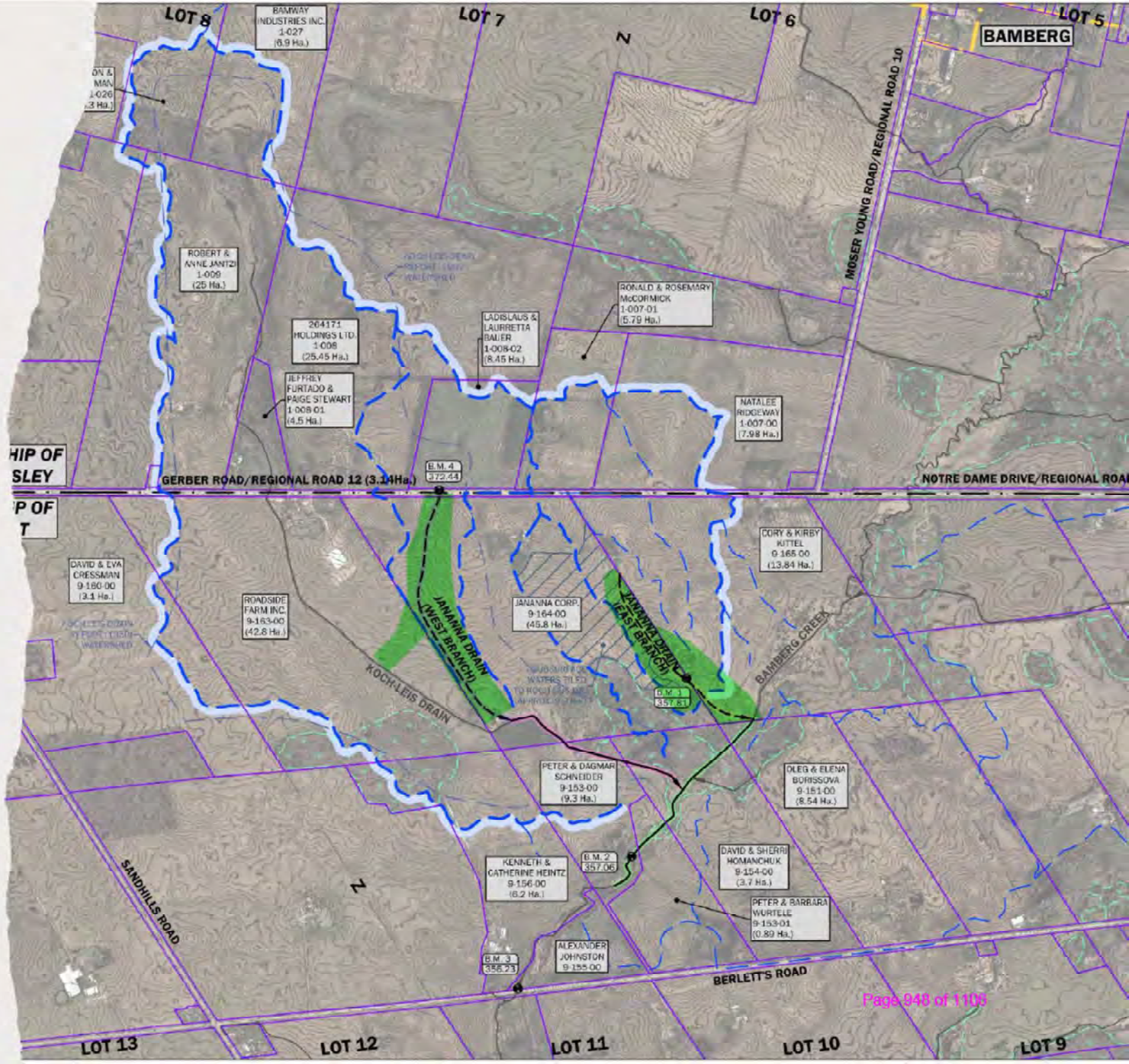
What are the Benefits?

- Provide a legal outlet to an area which doesn't have one.



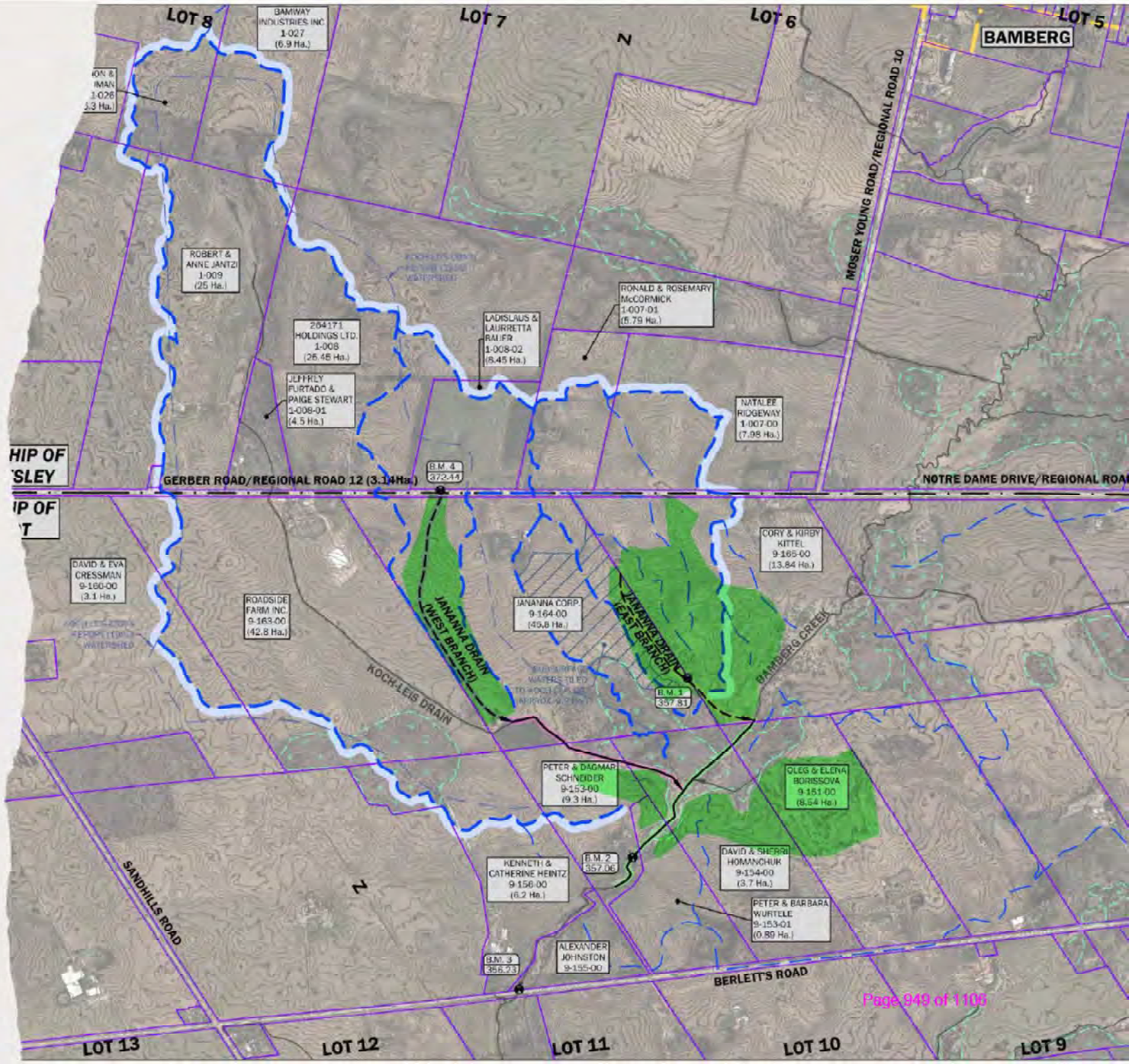
What are the Benefits?

- To control surface flows entering a property which has no obligation to receive surface flows.



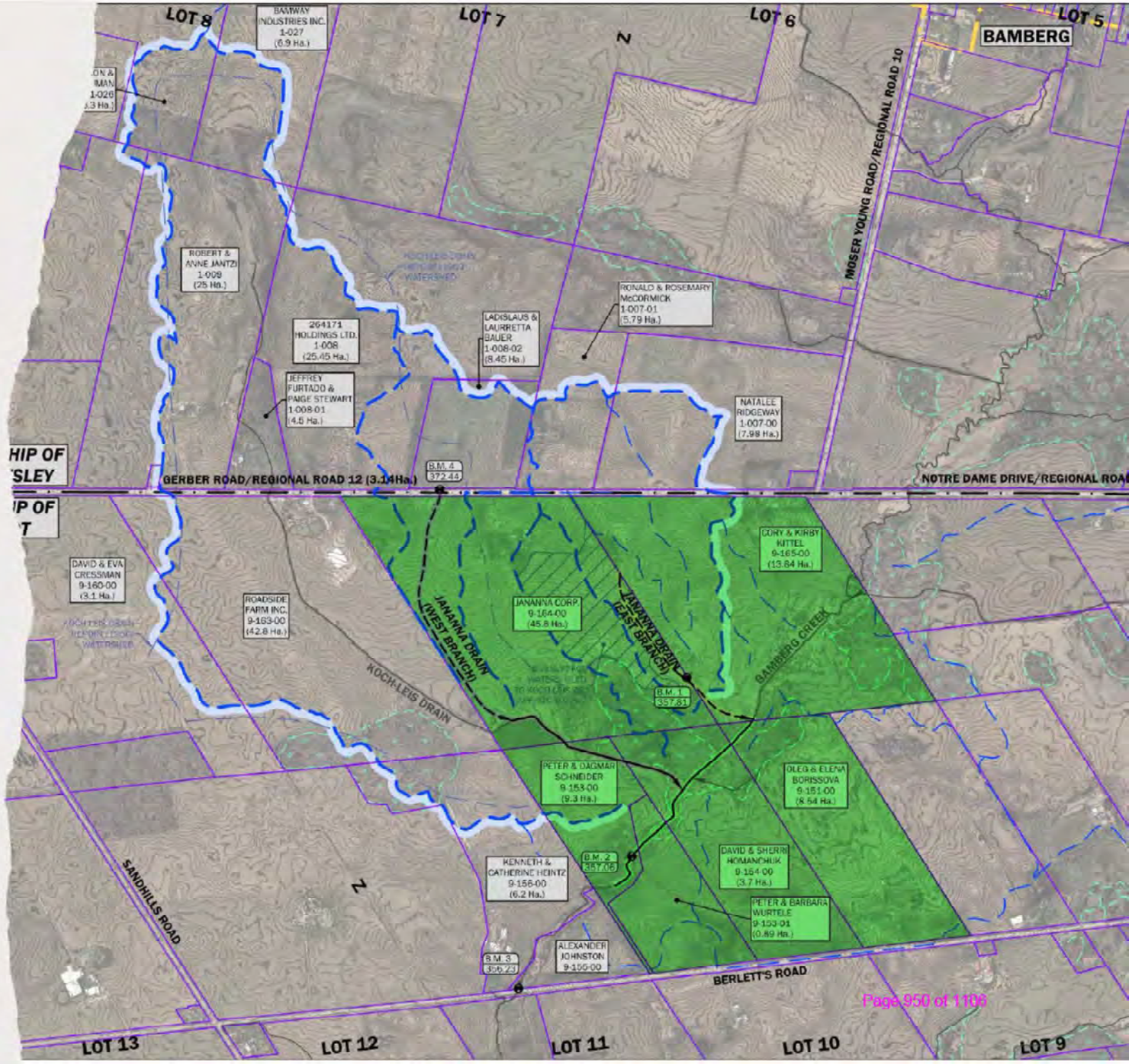
What are the Benefits?

- Enable increased crop production.
- Enable improved usability.



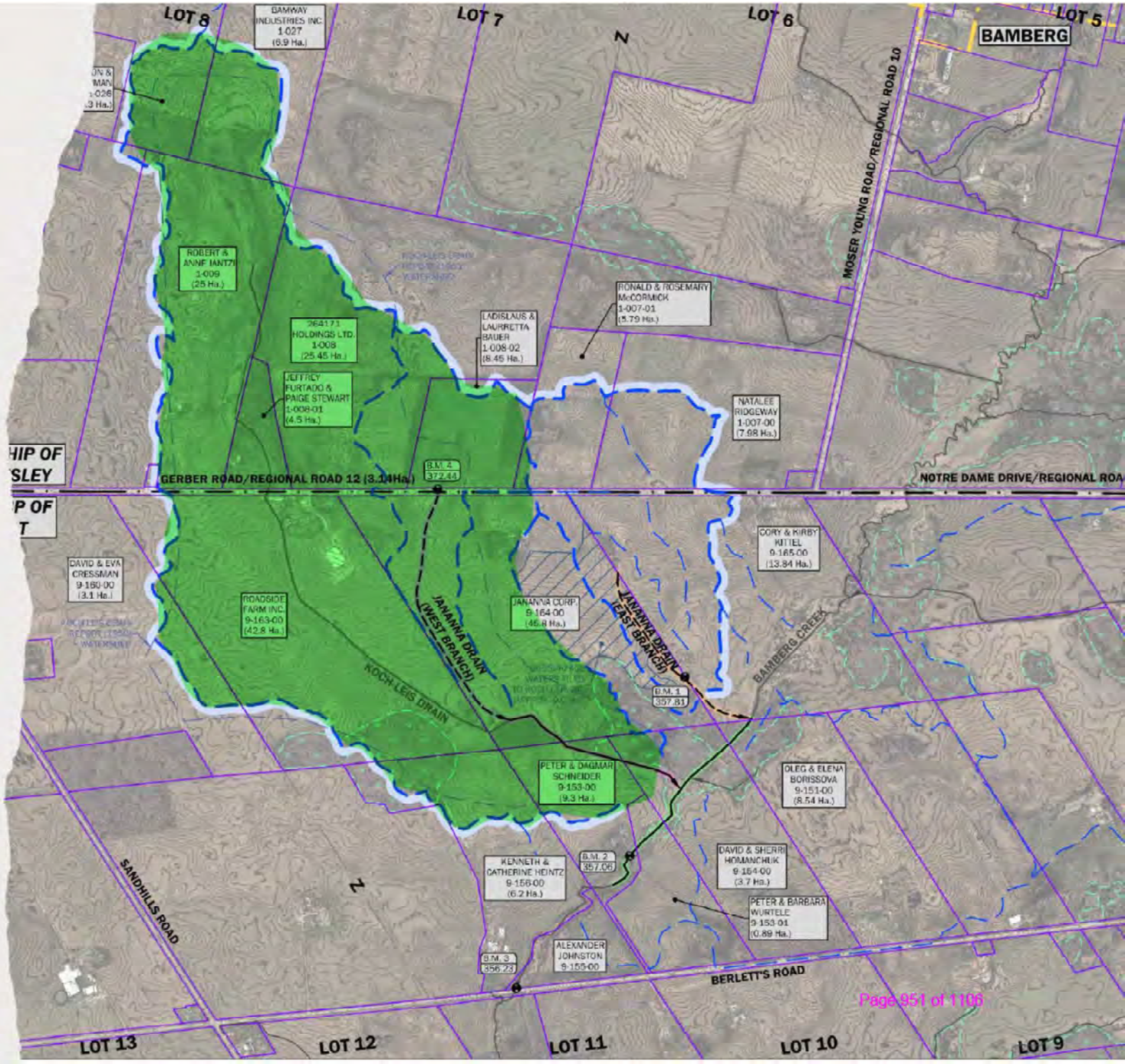
What are the Benefits?

- Higher market value.



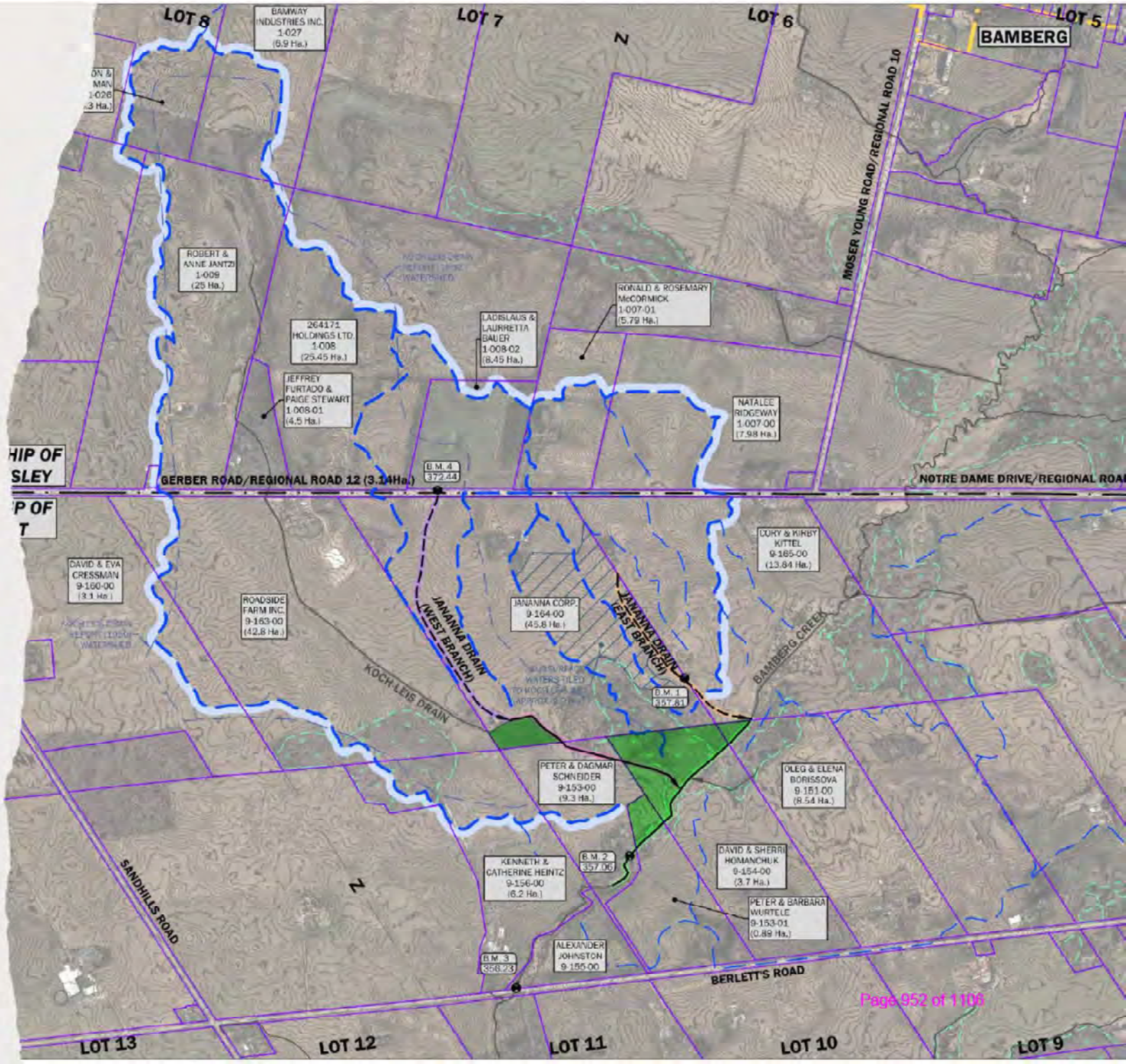
What are the Benefits?

- To reduce maintenance frequency and the impacts of future maintenance costs.

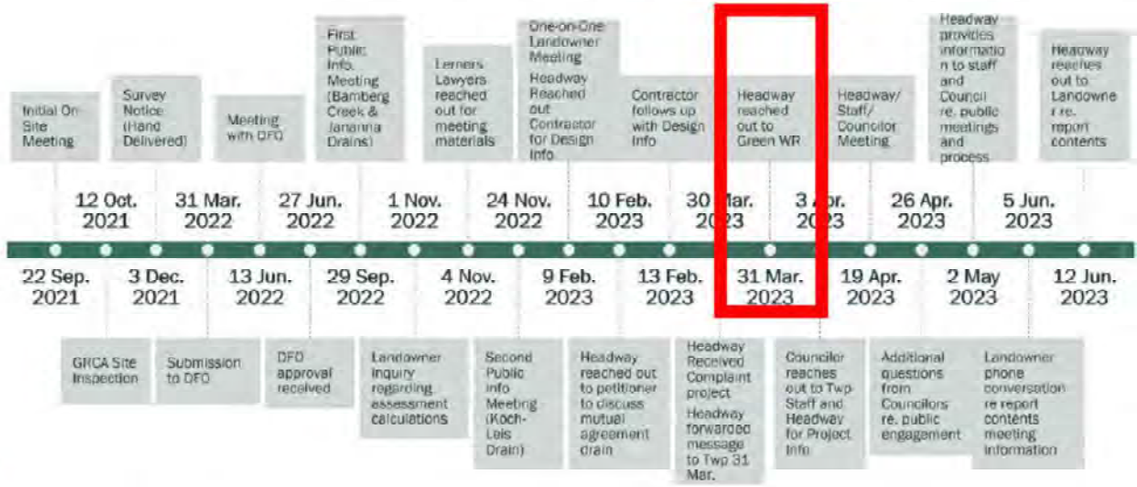


What are the Benefits?

- To recognize crossing considerations, and lands severed.

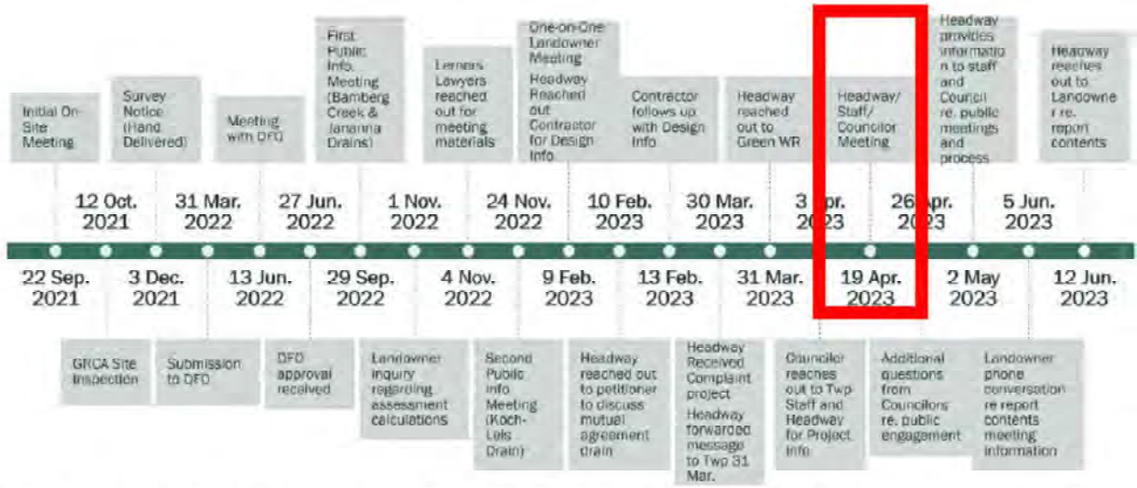


GreenWR Engagement (March 31, 2023)



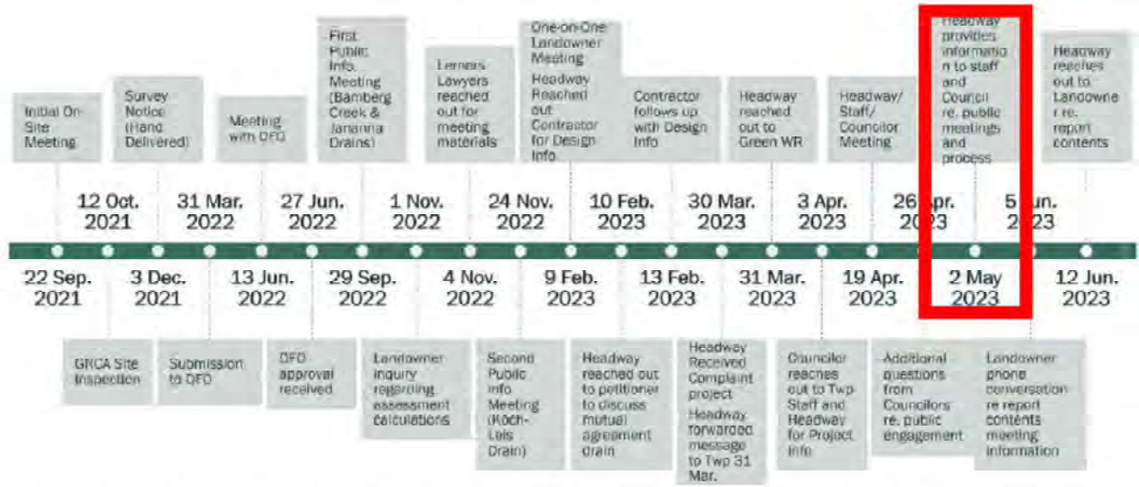
- Broad discussion points:
  - Green infrastructure in rural drainage
  - Low carbon concrete, tree planting, berming, etc.
    - Headway shared examples of projects with these features
    - Headway provided information on the importance of location
  - Rural Green Development Standards Group
    - Focus on talking to planners, township staff
    - Consider ways to implement low carbon materials
  - A landowner has reached out to GreenWR. GreenWR asked if environmental features could be incorporated, such as buffer strips. Headway replied that Bamburg Creek will continue to be buffered. Headway also discussed projects that have added environmental features, and the importance of site selection.

Councilor/Staff/Headway (April 19, 2023)



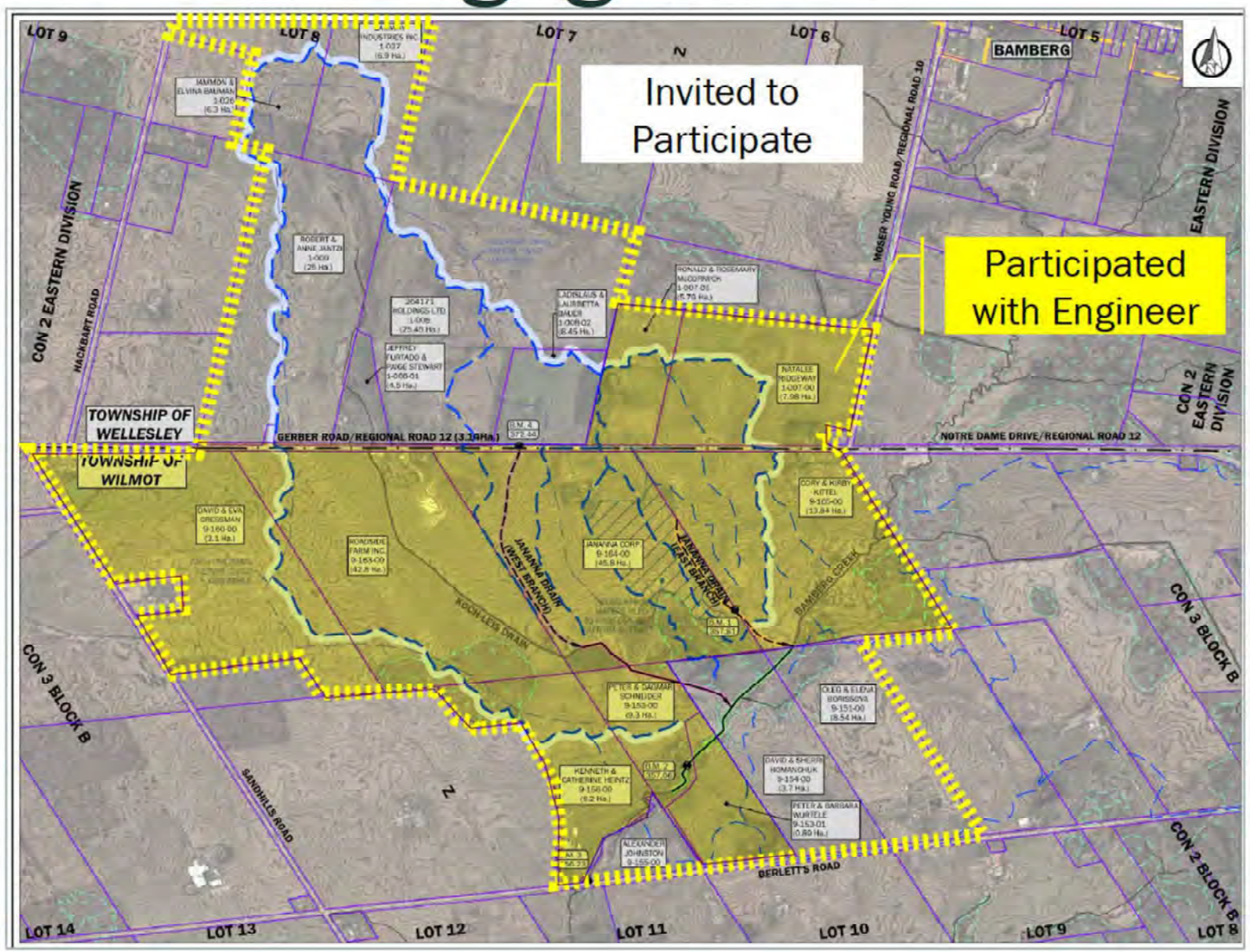
- Broad discussion points:
  - Headway reviewed the presentation notes from the public engagements with Council Members and Staff.
  - Drainage Act Process discussion including:
    - The Drainage Act's requirement for a by-law
      - Provisional by-law first
        - What is the provisional part of a provisional by-law
          - Answer: the provision is that the report must survive the appeal process. The appeal process cannot begin without a provisional by-law.
      - Third and Final reading of by-law after appeals have been dealt with.
      - Only Council can make a by-law, nobody else can (staff, tribunal, etc.)

Council Inquiries (May 2, 2023)



- Councilors asked for information regarding the project
- Staff forwarded questions to Headway
- Headway provided information relating to:
  - Public engagement
    - Who was invited to participate
    - Who participated with us
  - Drainage Act Process
  - Education
    - The importance if information, and upholding the rights of everybody.

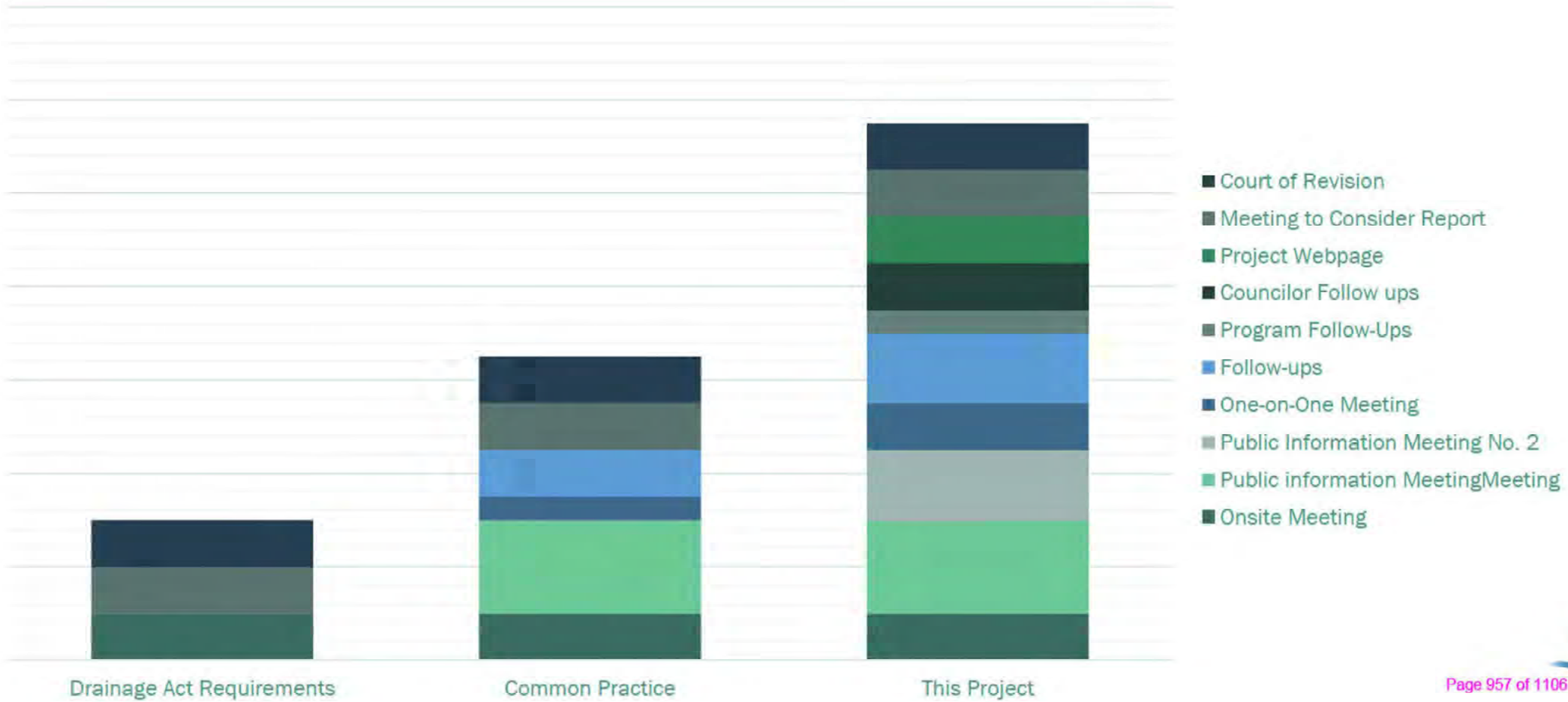
Public Engagement



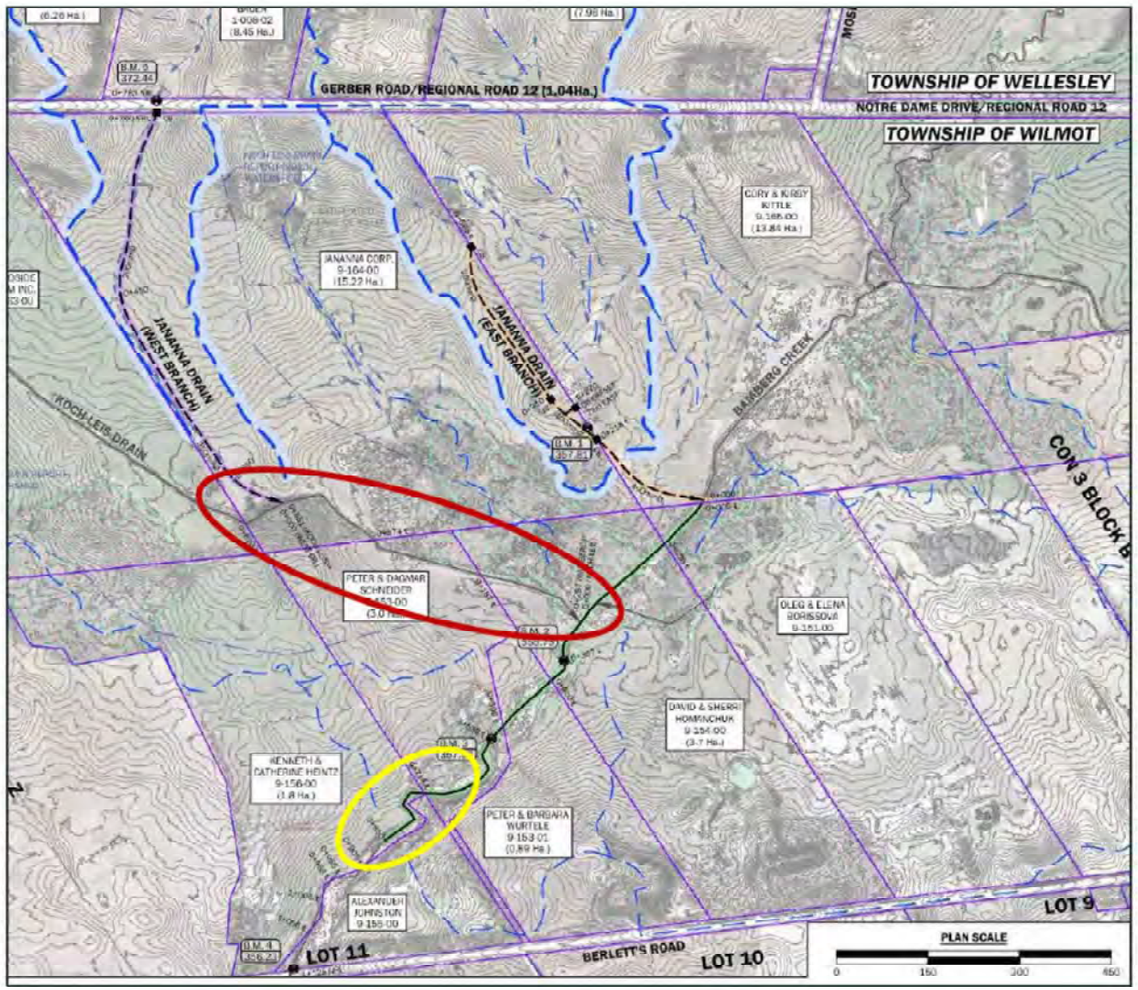
Additional Participation:

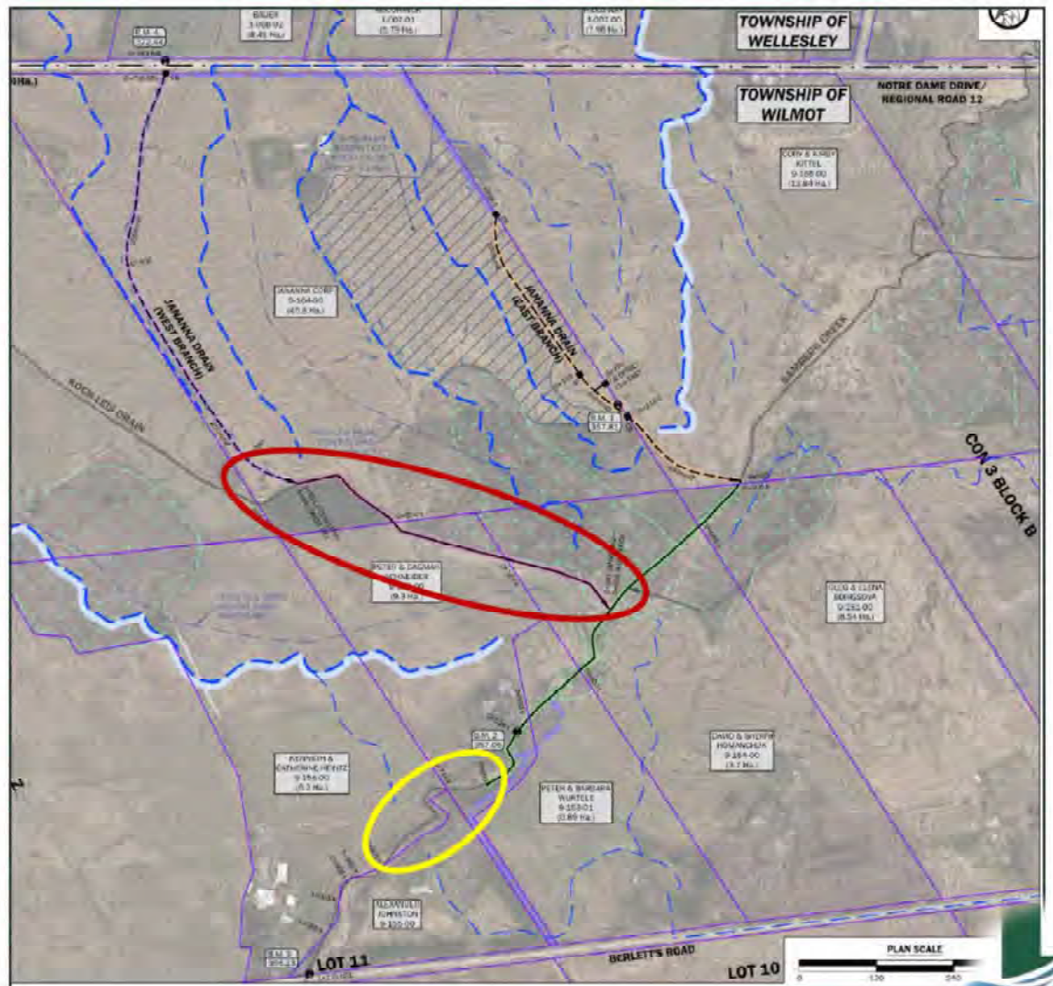
- Township of Wilmot
- Wilmot Council
- Township of Wellesley
- Region of Waterloo
- GRCA
- MECP
- DFO
- Green Development Standards WR (GreenWR)

Public Engagement Effort Required – Common – This Project

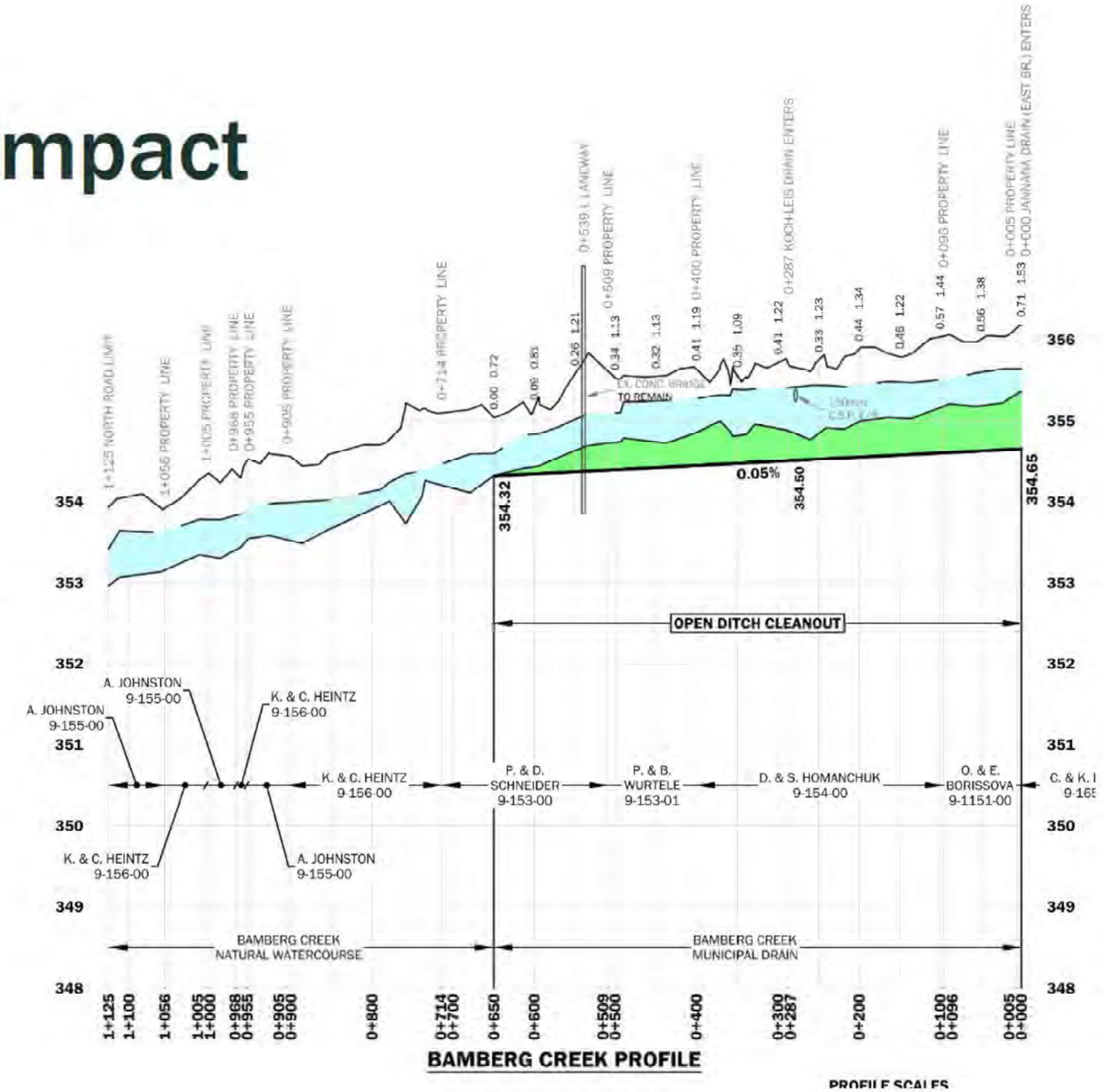


Public Impact

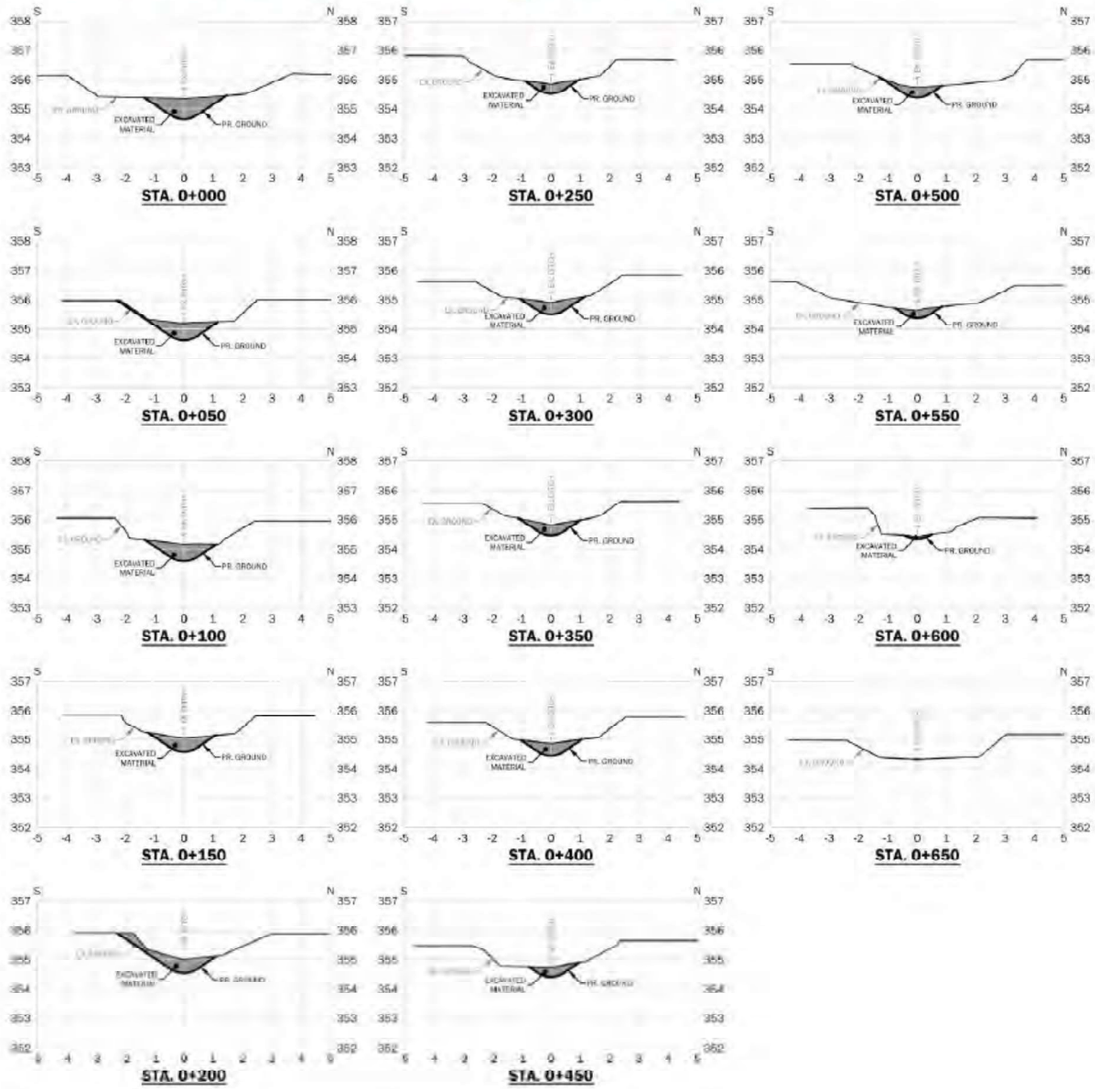




Public Impact



Public Impact



Steps to Producing the Report

Duties of Engineer
(Section 11 of the Drainage Act)

11 The engineer shall, to the best of the engineer's skill, knowledge, judgment and ability, honestly and faithfully, and without fear of, favour to or prejudice against any person, perform the duty assigned to the engineer in connection with any drainage works and make a true report thereon. R.S.O. 1990, c. D.17, s. 11.

Good evening, members of the Council and the Township of Wilmot. I would like to express my thanks for this opportunity to present the report on the Bamberg Creek, Jananna, and Koch-Leis Municipal Drains. This project has generated a lot of interest and controversy, so tonight, I will focus on the extensive work that Headway Engineering has undertaken to produce this report.

Firstly, I would like to mention that Headway Engineering was appointed under Section 4 of the Drainage Act on July 12, 2021. The project is located on the North side of Wilmot Township, with a portion of the watershed falling within Wellesley Township.

Section 11 of the Drainage Act states the duties of the engineer appointed to investigate the drainage works. According to this section, the engineer is expected to fulfill the following responsibilities:

1. Exercise skill, knowledge, judgment, and ability: The engineer should utilize their expertise and capabilities to the best of their abilities in carrying out their duties related to drainage works. This implies applying their professional skills and knowledge to the task at hand.
2. Honesty and faithfulness: The engineer should act honestly and faithfully while performing their duties. This means conducting themselves with integrity, being truthful, and acting in the best interest of the project and the public.
3. Impartiality: The engineer should not show favoritism or prejudice towards any individual or group involved in the drainage works. They should remain unbiased and impartial in their decision-making process.
4. Performance of assigned duties: The engineer is required to perform the duty assigned to them in connection with the drainage works. This includes fulfilling their obligations, carrying out necessary assessments, investigations, and inspections, and ensuring that the drainage works comply with relevant regulations and standards.
5. True report: The engineer is responsible for preparing a true and accurate report on the drainage works. This involves providing an honest assessment of the project, including any findings, recommendations, or conclusions based on their observations and analysis.

Overall, Section 11 emphasizes the importance of the engineer's professionalism, honesty, impartiality, and diligent performance of their duties in relation to drainage works.

Now, let's delve into the technical findings of our report. We have made several important observations, including:

1. The Koch-Leis Drain has a very flat grade for approximately 300m at its outlet, contrary to the previous drainage report's indication of a steeper grade during its construction.
2. Historical evidence suggests artificial improvements to Bamberg Creek, such as straightening and increased depth when the Koch-Leis Drain was initially built in 1950.
3. The western part of Lot 10, Concession 3, Block B has been systematically tiled towards the Koch-Leis Drain, while the northern side does not require systematic tiling due to special soil conditions.

4. Eastern portions of Lot 10, Concession 3, Block B have been tiled towards the Koch-Leis Drain, even though the natural drainage direction is south towards Bamberg Creek. However, the southeastern part of the property requires a legal outlet for drainage.
5. Surface flows along the upper alignment of the East Branch and West Branch are negatively impacting the usability of surrounding lands.
6. Future tiling is expected within the drainage area.
7. The tile outlets into Bamberg Creek do not meet current standards for drainage depth.
8. Beaver activity is a concern in Bamberg Creek, and the municipality currently has limited ability to perform maintenance.
9. Current topographic data reveals inaccuracies in the Koch-Leis Drain watershed, as stated in the 1950 report.

Based on these findings, our report recommends specific actions, which include:

1. Installing approximately 1,358m of 200mm to 450mm diameter concrete field tile and HDPE pipe.
2. Improving approximately 1,024m of open channels.

Now, I'm going to shift our focus to the public consultations we conducted as part of our duties under the Drainage Act. Section 11 is particularly relevant to the topic of public consultations, as it emphasizes the engineer's responsibility to gather accurate information and report on it faithfully. With this in mind, I would like to outline the series of consultations that Headway Engineering has undergone throughout the course of this project.

To ensure a comprehensive and transparent process, Headway Engineering conducted multiple consultations, engaging with various stakeholders. Here is a timeline of the consultations that have taken place:

1. September 22, 2021 - Initial Onsite Meeting: Headway Engineering held an initial meeting at the project site to assess the existing conditions and gather relevant information.
2. October 12, 2021 - GRCA (Conservation Authority) Site Inspection: A site inspection was conducted in collaboration with the GRCA to assess environmental factors and potential impacts.
3. December 3, 2021 - Survey Notice Hand Delivered to Residents along Bamberg Creek: Notices were distributed to residents living along Bamberg Creek to inform them of an upcoming survey. Landowners were invited to contact Headway Engineering.
4. March 31, 2022 - Submission to DFO (Fisheries): Headway Engineering submitted the project plans to the Department of Fisheries and Oceans (DFO) for their review and feedback.
5. June 13, 2022 - Meeting with DFO: A meeting was held between Headway Engineering and representatives from the DFO to discuss the project and address any concerns or requirements.

6. June 27, 2022 - DFO Approval Received: Following the meeting with the DFO, their approval for the project was obtained.
7. September 29, 2022 - First Public Information Meeting for Jananna and Bamberg Creek: Headway Engineering organized a public information meeting to present the project details, address concerns, and gather feedback from the community.
8. November 1, 2022 - Landowner Inquired about Assessment Calculations: A landowner raised questions regarding the calculations used for assessments, and Headway Engineering responded to their inquiry.
9. November 4, 2022 - Lerners Lawyers Reached out for Meeting Materials: Lerners Lawyers, representing certain stakeholders, requested the meeting materials which Headway Engineering then provided access to.
10. November 24, 2022 - Second Public Information Meeting (Koch-Leis Drain): A second public information meeting was held specifically for the Koch-Leis Drain project, providing an opportunity for residents to engage and voice their concerns.
11. February 3, 2023 - Meeting with GRCA: A meeting was arranged between Headway Engineering and the GRCA to discuss project details and address any environmental considerations.
12. February 9, 2023 - One-on-One Landowner Meeting: Headway Engineering engaged in a one-on-one meeting with a landowner to discuss the project.
13. February 10, 2023 - Headway Reached out to Petitioner: Headway Engineering reached out to the petitioner to explore the potential for a mutual agreement drain solution.
14. February 13, 2023 - Contractor Follows up with Design Details: Following the previous one-on-one meeting, a contractor reached out to Headway Engineering with additional design details.
15. March 7, 2023 - Headway Reached out to MECP (Ministry of the Environment, Conservation and Parks) regarding Endangered Species: Headway Engineering contacted the MECP to address any concerns related to endangered species and seek approval for the project.
16. March 23, 2023 - MECP Approved Project: The MECP reviewed the project and granted their approval.
17. March 30, 2023 - Headway Received a Complaint from a Landowner: Headway Engineering received a complaint from a landowner, and on March 31, they promptly forwarded the complaint to the Township.
18. March 31, 2023 - Headway Reached out to GreenWR: Headway Engineering initiated contact with GreenWR, an environmental advocacy group, to discuss the project and the mandate of GreenWR.
19. April 3, 2023 - Councillor Reaches out to Township Staff: A councillor reached out to Township staff to inquire about the project, leading to a request for Headway Engineering to provide additional project information.

20. April 19, 2023 - Headway, Council Members, and Staff Meeting: Headway Engineering, council members, and staff convened to discuss the project.
21. April 26, 2023 - Additional Questions from Councillors regarding Public Engagement: Councillors posed further questions regarding the public engagement process, seeking clarity and information.
22. May 2, 2023 - Headway Provides Information to Staff and Council: In response to the council's request, Headway Engineering supplied comprehensive information regarding the public engagement process.
23. June 5, 2023 - Landowner Reaches out to Headway regarding Report Contents and Meeting Information: A landowner contacted Headway Engineering with inquiries about the report contents and information regarding meetings.
24. June 12, 2023 - Headway Reaches out to Landowner regarding Report Contents: In an effort to address a landowner's concerns, Headway Engineering proactively engaged in discussions to provide clarification on the report contents.

These consultations demonstrate our commitment to transparency, accountability, and addressing the concerns of the public and stakeholders. We have made extensive efforts to engage with various individuals and organizations throughout the project timeline.

Initial onsite meeting held on September 22, 2021. During this meeting, the purpose was to introduce the project and allow landowners to provide information to assist the engineer in completing the investigation.

Firstly, introductions were made to ensure everyone was familiar with each other and their respective roles. Headway Engineering explained their appointment under the Drainage Act and the purpose of the meeting, which was to gather crucial information from the landowners regarding the drainage issues in the area.

The meeting began with a discussion on the purpose of the project, emphasizing the need to address concerns such as blowouts, lack of depth, excessive runoff, unending repairs, and other related issues. Landowners were encouraged to provide copies of tile maps and share any knowledge they had regarding watershed issues.

During the meeting, several landowners expressed their comments and concerns:

1. Surface water issues: Some landowners highlighted the need for a drain to control surface water, as it was causing problems on their property.
2. Recent drainage on a farm: One landowner mentioned that their farm had undergone drainage work recently.
3. Past attempts to reach an agreement: It was noted that a previous attempt to reach an agreement regarding the drainage had not made significant progress.
4. Concerns about Bamberg Creek outlet depth: Some landowners expressed concerns about the depth of the outlet of Bamberg Creek.

5. Questions about the timeline: Landowners inquired about the project timeline, but Headway Engineering couldn't provide specific timelines due to concerns raised by the GRCA (Conservation Authority).
6. Sandy lands near Gerber Road and North: It was mentioned that the lands in the vicinity of Gerber Road and North had predominantly sandy soil conditions, which might impact the drainage.
7. Assessment concerns: Some landowners raised questions about the assessment process. Headway Engineering assured them that better information regarding assessments would be provided in the next meeting.
8. Landowners opting out: It was acknowledged that some landowners expressed their desire not to be involved in the project.

Additionally, there were inquiries about the condition of road pipes, and Headway Engineering addressed these concerns by providing photos for reference.

As for the next steps discussed during the meeting, it was noted that specific timelines were unpredictable at that stage due to the concerns raised by the GRCA. However, the project would progress further, taking into account the information shared by the landowners.

Continuing with the presentation, let's move on to the details of the next meetings and points of contact.

December 3, 2021 - Survey Notice: A survey notice was hand-delivered to the Landowners along Bamberg Creek.

September 13, 2022 - First Public Information Meeting: The meeting began by informing attendees that all presentation materials were available online, with the website and guest access code provided in the notice. The discussions during the meeting were as follows:

Design-related comments:

- Beavers in Bamberg Creek: Headway Engineering addressed concerns about dealing with beavers through maintenance.
- Stony/bedrock streambed: Headway Engineering acknowledged the comment and assured the attendees that the design would be reviewed and revised as needed to account for the conditions in the area. As a result, the design was adjusted to reduce work in Bamberg Creek.
- Better grade for Koch-Leis Drain: Feedback received the day after the meeting prompted Headway Engineering to revise the design, ensuring improved grading at the lower end of the Koch-Leis Drain.

Questions, comments, and notes:

- Purpose of the project: Attendees sought clarification on the project's purpose, to which Headway Engineering responded that it aimed to provide a legal outlet at two locations affected by surface flows from neighboring properties.

- Business case: A query regarding the business case prompted Headway Engineering to explain the process for requesting a Cost Benefit Analysis.
- Dispute between landowners: It was noted that a significant dispute occurred among landowners regarding the receipt of surface flows.
- Assessment calculations: Attendees expressed curiosity about how assessments were calculated. Headway Engineering provided a detailed explanation of the assessment calculation process and the instruments used.
- Timeline: While acknowledging the difficulty of predicting timelines accurately, Headway Engineering estimated the best-case scenario for construction to be in 2024.

Additionally, a 45-minute one-on-one meeting was held after the public meeting with a landowner. The following discussion points were covered:

- Purpose of the project: Headway Engineering reiterated that the project aimed to provide a legal outlet at two locations affected by surface flows from neighboring properties.
- Assessment calculations: Detailed explanations were provided on how assessments were calculated and the instruments of assessment used.
- Relevance to petitioners: Headway Engineering confirmed that the petitioners were receiving surface flows involuntarily and required an outlet for lands that couldn't be drained to the Koch-Leis Drain.

November 24, 2022 - Second Public Information Meeting: Similar to the previous meeting, all presentation materials were made available online, with the website and guest access code provided. The meeting focused on the following:

Design revisions from the previous meeting:

- Stony/bedrock streambed: Adjustments were made to the grades of Bamberg Creek to reduce the extent of work needed in that area.
- Better grade for Koch-Leis Drain: Improvements were implemented to address concerns about the grade at the lower end of the Koch-Leis Drain.

Comments, questions, and notes:

- Expansion of the project: Attendees inquired about the reasons for expanding the project. Headway Engineering explained that a request was made for an improved grade at the lower end of the Koch-Leis Drain, as the current grade was flat with a poor outlet, requiring frequent maintenance.
- Additional requirements for Koch-Leis Drain: Headway Engineering inquired if there were any other requirements for the Koch-Leis Drain, but the landowners and the Wellesley Township Drainage Superintendent did not request further investigation.

- Purpose of the project: Attendees sought clarification on the project's purpose, and Headway Engineering reiterated that it aimed to provide a legal outlet at two locations affected by surface flows from neighboring properties.
- Timeline: Headway Engineering acknowledged the challenge of predicting timelines accurately but stated that the best-case scenario for construction would be in 2024.

February 9, 2023 - One-on-One Meeting with Landowner: During this meeting, the following broad discussion points were covered:

- Who wants the drain and who doesn't: Headway Engineering acknowledged that the drain was unpopular and discussed the sentiments expressed by different parties involved.
- Area requiring drainage vs. benefiting area vs. liable area: Headway Engineering explained the distinctions between these three areas, clarifying the scope and responsibilities associated with each.
- Proposed plan for tile drainage: the landowner provided Headway Engineering with the proposed tile drainage plans for review.
- Work concerns: The landowner inquired whether Headway Engineering was intentionally creating unnecessary work. Headway Engineering responded that efforts were made to minimize work wherever possible.
- Payback periods: Discussions were held regarding payback periods associated with the project.
- Roles under the Drainage Act: Headway Engineering discussed the obligations of the engineer under the Drainage Act.
- Appeal process and information provided at the public meeting: Headway Engineering informed the landowner that appeals were not budgeted in the estimates provided
- Following the meeting, on March 31, a complaint regarding duties under the Drainage Act had been forwarded to the Township.

Following this meeting, several action items were addressed, including contacting the petitioner for a mutual agreement, reaching out to the contractor for design information regarding the tiling system, and forwarding a complaint regarding duties under the Drainage Act to the Township.

Benefits

One common question that arises is, "What are the benefits, and why are we doing this?" Let's explore the benefits by looking at several slides that depict the areas that will benefit from this project.

The first slide demonstrates the **control of surface flows entering a property** that currently has no legal obligation to receive surface flow. By providing legal outlets, we can ensure that the affected properties are no longer burdened with illegitimate surface flows, enhancing their overall functionality.

The second slide displays the areas where **new legal outlets** will be established. This will improve outlet depth and enhance the usability of the affected lands. It is essential to address these issues to prevent the accumulation of excessive runoff, and creating a more sustainable and manageable environment.

Moving on to the third slide, we can observe the properties that would experience an **increase in market** value as a result of this project. By addressing drainage concerns and improving the overall functionality of the land, property values are likely to rise.

The fourth slide highlights a watershed area that will experience **reduced maintenance frequency**. With effective drainage solutions in place, the need for frequent maintenance and repairs will diminish. This not only saves resources but also ensures the longevity and sustainability of the drainage system.

Lastly, the sixth slide acknowledges the **considerations for lands severed**. It is important to recognize the impact on these lands and address any concerns associated with the project. By carefully assessing and accounting for the effects on severed lands, we aim to find a balanced and equitable solution for all parties involved.

By implementing this drainage project, we are working towards improving the overall quality of the lands for landowners, enhancing the functionality of the affected lands, and fostering a sustainable and resilient system.

March 31, 2023 - Engagement with GreenWR

Turning our attention back to the engagements that took place during the project. On March 31, 2023, Headway Engineering reached out to GreenWR.

During the call, we had a broad discussion on green infrastructure in rural drainage. We explored various environmentally friendly practices such as low carbon concrete, tree planting, and berming. Headway shared examples of projects that have successfully incorporated these features, highlighting their benefits and positive impacts.

Furthermore, GreenWR emphasized the importance of engaging with planners and township staff to promote rural green development. We discussed ways to implement low carbon materials and explore opportunities for incorporating environmental features like buffer strips. In response to a landowner's inquiry, Headway assured GreenWR that Bamberg Creek will continue to be buffered. We also stressed the significance of carefully selecting project sites to maximize the effectiveness of environmental features.

April 19, 2023 - Meeting with Staff and Council Members

Moving on, a meeting took place on April 19, 2023, where Headway Engineering, staff, and a couple council members gathered to discuss the project.

During the meeting, Headway reviewed the presentation notes from the public engagements. We delved into the Drainage Act process, particularly focusing on the requirement for a by-law. We explained the importance of a provisional by-law, which ensures that the report survives the appeal process. Only after dealing with any appeals can the third and final reading of the by-law be conducted. We also discussed the unique ability that that only the council has the authority to make a by-law.

Additionally, we emphasized the significance of education and information throughout the project. We stressed the importance of upholding the rights of everyone involved and ensuring that accurate and comprehensive information is provided. We discussed the role of public engagement and shared details about who was invited to participate and who actively participated.

May 2, 2023 - Request for Comments from Councillors

Lastly, let's touch upon the request for comments Headway Engineering received from councillors on May 2, 2023.

Councillors sought more information regarding the project, and staff forwarded their questions to Headway. We provided comprehensive responses, addressing various aspects of the project. We discussed the details of our public engagement efforts, including who was invited to participate and who actively engaged with us. Furthermore, we provided an overview of the Drainage Act process, ensuring that everyone involved understands its significance.

Throughout our responses, we emphasized the importance of education and the commitment to upholding the rights of all stakeholders. We stressed the value of providing accurate information to ensure transparency and fairness throughout the project.

Now, let's take a look at who has been **invited to participate** and who has actively engaged with the engineer throughout the project. This visual representation demonstrates the extent of participation and involvement from various stakeholders.

Moving on, let's compare the **level of engagement** required under the Drainage Act, common practice, and the effort invested in this project. As you can see, this project has gone above and beyond the norm, demonstrating a comprehensive and thorough approach to engagement.

Now, let's explore how the input received from stakeholders has influenced the content of the report. The red circle highlights how comments regarding frequent maintenance at the lower end of the Koch-Leis Drain have been addressed through improved grading. The yellow circle demonstrates how public input has led to a reduction in the scope of work in Bamberg Creek. This exemplifies the direct impact of stakeholder input on shaping the final report.

Furthermore, let's take a look at how the design in Bamberg Creek has evolved from the first public information meeting to the final report. This showcases the iterative process and responsiveness to feedback throughout the project.

To reiterate, the duty of the engineer is to perform the assigned duty honestly, faithfully, and without favoritism or prejudice. We have fulfilled this duty by conducting a thorough investigation, considering all relevant factors, and producing a true and comprehensive report.

In conclusion, we have presented this information to inform the council about the extensive work that has been put into this project and the rationale behind our conclusions. We acknowledge that the project is unpopular. As engineers appointed to investigate this matter, we have a responsibility to uphold the rights of everyone involved. This report does precisely that.

Thank you for your attention and consideration. If you have any further questions or require additional information, please feel free to ask.

Headway Engineering
23-500 Fairway Road South, Suite 30
Kitchener, Ontario, N2C 1X3

Project Number: WLMT-002 Page: 1 of 12

Project Name: Jananna Dr.

Author: SB

Date: June 26 2023

Description: Consideration Notes & Comments.

Pre meeting:

Kris knows all the Stuff.

↳ Bring machines from the North?

↳ Kris is right in the thick of it.

Headway Engineering
23-500 Fairway Road South, Suite 30
Kitchener, Ontario, N2C 1X3

Project Number:

Page: 2 of

Project Name:

Author:

Date:

Description:

Design only 7:05

Assessment not part ~~of~~ for CoR

Cressman & Wilkinson CoR

Re

Kris. – What happened before we were appointed?

S. Martin.

– ~~Not in favour~~

– Why are people not in favour?

↳ What is our Role.

Headway Engineering
23-500 Fairway Road South, Suite 30
Kitchener, Ontario, N2C 1X3

Project Number:

Page: 3 of 12

Project Name:

Author:

Date:

Description:

Gauron.

↳ Continue to experience spring & Fall surface flow

↳ Need ~~an~~ outlet

↳ Runoff water is received

↳ Significant from Kittle

↳ Legally responsible

↳ possibly address future problems. ✓

↳ Active farm for approx. 100 years 1927.

↳ drainage system determined

Headway Engineering
23-500 Fairway Road South, Suite 30
Kitchener, Ontario, N2C 1X3

Project Number:

Project Name:

Author:

Date:

Description:

- Response of neighbour was a No.
  2018 or 2019.
- concern for loss of farm lands.
- ~~the~~ citiots moving in.
- They want the Report.
  ↳ they are optimistic that Wilmot appreciate the sense of value in this report.
- No Questions from Council

Ted
→ Derry -
↳ Wilmot Resident for 40 years
↳ Avontrail Rep.
↳ 28 km goes through Wilmot.
↳ Concerns w crossing
2020 → Built the bridge
↳ signing of (GRCA)

Headway Engineering
23-500 Fairway Road South, Suite 30
Kitchener, Ontario, N2C 1X3

Project Number:

Project Name:

Author:

Date:

Description:

→ Appreciate need for drainage

↳ Concern for integrity of Bridge

↳ Bombarded ~~to~~ with Facts from Eng - Appreciate

↳ Jodi Michel - ~~pave~~ paradise put up a parking lot.

Cory Kittle

↳ Onsite

Non-Existant Public Consult.

Validity of Petition.

Headway Engineering
23-500 Fairway Road South, Suite 30
Kitchener, Ontario, N2C 1X3

Project Number:

Page: 6 of 12

Project Name:

Author:

Date:

Description:

Focus on Validity of Petition
Without legally required public
↔
Democratic Process
↳ Eng. didn't determine ARD
properly

Wurtell ✓ Conservation of land tax incentive
promise not to damage the land

The PSW is at risk ~~long~~
if project goes forward

Alternatives to the proposal

Headway Engineering
23-500 Fairway Road South, Suite 30
Kitchener, Ontario, N2C 1X3

Project Number:

Page: 7 of 12

Project Name:

Author:

Date:

Description:

barely anybody involved
↳ No opportunity to participate
↳ couldn't participate because out of the country
↳ Cluttering of citizens.
↳ Bend the system - Leave it as it is
↳ Ponding
↳ Eliminate East Branch
↳ drain to Koch-Leis.
↳ Lower land owner never has a problem
↳ Stop project today.

Headway Engineering
23-500 Fairway Road South, Suite 30
Kitchener, Ontario, N2C 1X3

Description:

Borrison.

↳ Owners

↳ insufficient public engagement

↳ Contacted Tim Brook

↳ Drainage Guide.

↳ Never invited to onsite

↳ Not until a year later

↳ Obvious that petition is invalid.

↳ ~~[redacted]~~ R is not the boundary of the ABD

↳ BCA → in report

↳ $86K (B) of Bumbary

Headway Engineering
23-500 Fairway Road South, Suite 30
Kitchener, Ontario, N2C 1X3

Project Number:

Project Name:

Author:

Date:

Description:

(B) is less than costs of the work, ∴ job doesn't make sense

ARD is 1 acre

(B) - half of Prop. (B)
↳ removal of wall benefits them?

how can prop. (B) -
↳ Beaver Dam
↳ Area assessed by Eng didn't account for Dam.
↳ Beavers build big dams

Headway Engineering
23-500 Fairway Road South, Suite 30
Kitchener, Ontario, N2C 1X3

Project Number:

Project Name:

Author:

Date:

Description:

GRCA. – Removes ~~beavers~~ beaver's dam

Ken – Removed ~~beaver~~ beaver dam

↳ Council came to Property

Ken ~~Ellis~~ – comments

↳ Hientz Land owner

and Farms lands all around

↳ Piled dirt on ditch bank.

6-8 acres w poor drainage

↳ All photos w measurements taken

w Beaver in there.

↳ Drains going up to land

→ No water going through Road culv.

→ could use 6" perf.

↳ money grab

↳ waste of money

↳ No problem

↳ Just Bauer $500K.

↳ S Martin asked if Ken Burns the prop. — Cowron

Kris Wilkinson

↳ Council's course for path is fixed

Headway Engineering
23-500 Fairway Road South, Suite 30
Kitchener, Ontario, N2C 1X3

Project Number:

Project Name:

Author:

Date:

Description:

Kris - One name is valid.

32 - insufficient outlet.

Cure situation as a whole

The next farm may require

Advance the process.

Needs of few / Needs of the many

I can't look at a tax payer and say they did the right thing

Vote carried unanimously

This is **EXHIBIT "W"** referred to in the Affidavit of Stephen Brickman sworn before me on this day, June 20, 2024

A Commissioner for taking affidavits

Council Meeting Minutes

Council Meeting

Date:	June 26, 2023, 6:00 P.M.
Location:	Council Chambers - Hybrid 60 Snyder's Road West Baden, Ontario N3A 1A1
Members Present:	Councillor S. Cressman Councillor K. Wilkinson Councillor H. Sidhu Councillor L. Dunstall Councillor S. Martin
Staff Present:	Chief Administrative Officer, S. Chambers Director of Corporate Services/Treasurer, P. Kelly Director of Infrastructure Services, J. Molenhuis Supervisor of IT, K. Jeffreys Manager of Planning and Economic Development, A. Martin Manager of Finance/Deputy Treasurer, A. Romany Director of Community Services, C. Catania Manager of Legislative Services/Clerk, J. Bunn Administrative Clerk, C. Greenley Desktop Support Technician, R. Ubhi

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1. MOTION TO CONVENE INTO CLOSED MEETING

Councillor L. Dunstall served as Acting Mayor for this meeting.

Moved by: Councillor S. Martin
Seconded by: Councillor S. Cressman

THAT a Closed Meeting of Council be held on June 26, 2023 at 6:00 p.m. in accordance with Section 239(2)(f) of the Municipal Act, 2001 to consider the following:

- Drainage Matter - 239(2)(f) advice that is subject to solicitor-client privilege, including communications necessary for that purpose.

Motion Carried

2. MOTION TO RECONVENE IN OPEN MEETING

Moved by: Councillor H. Sidhu
Seconded by: Councillor S. Martin

THAT Council reconvenes in Open Session at 7:00 p.m.

Motion Carried

3. MOMENT OF REFLECTION

Tomorrow, June 27, is Canadian Multiculturalism Day. We recognize and celebrate the many cultural communities that help build a strong and vibrant Canada.

It is essential to enhance the awareness of cultural diversity throughout the Township of Wilmot as we work together to honour the values of equality, mutual respect, and inclusion that make our community a great place to live.

Canada Day is also quickly approaching. Canada Day is a time to celebrate and appreciate the beautiful country we live in and we take a moment to show gratitude for the opportunities and freedoms we enjoy as Canadians.

However, you may choose to recognize July 1, let's be mindful and respectful. Let's continue to work together towards an even stronger and more inclusive Canada.

For more information about events happening in Wilmot through Canada Day weekend, please visit wilmot.ca/CommunityCalendar.

4. TERRITORIAL ACKNOWLEDGEMENT

Councillor S. Cressman read the Territorial Acknowledgement.

5. DISCLOSURE OF PECUNIARY INTEREST UNDER THE MUNICIPAL CONFLICT OF INTEREST ACT

5.1 Councillor S. Martin - Correspondence from Gord Mills, New Hamburg Firebirds, Regarding Request for Support (addendum)

Councillor S. Martin declared a Pecuniary Interest on Item 13.7 of the agenda. Please visit Registry of Disclosure of Pecuniary Interest for further details.

6. ADDITIONS TO THE AGENDA

Item 13.6 - Correspondence from Peter Wurtele Regarding Bamberg Creek, Jananna, and Koch-Leis Municipal Drain

Item 13.7 - Correspondence from Gord Mills, New Hamburg Firebirds, Regarding Request for Support

Item 13.8 - Correspondence from Chrisdtine and Lucy Gawron Regarding Bamberg Creek, Jananna, and Koch-Leis Municipal Drain

Item 13.9 - Correspondence from Kevin Thomason Regarding Bamberg Creek, Jananna, and Koch-Leis Municipal Drain

Item 13.10 - Correspondence from Ron and Rosemary McCormick Regarding Bamberg Creek, Jananna, and Koch-Leis Municipal Drain

Item 14.2 - By- Law 2023-32 Being a By-Law to Provide for Drainage Works for the Construction and Improvement of the Bamberg Creek, Jananna, and Koch-Leis Municipal Drain

Item 14.3 - By-Law 2023-33 Being a By-Law to Confirm the Establishment of a Highway in the Township of Wilmot (Joseph Street road widening)

7. ADOPTION OF THE AGENDA

Moved by: Councillor S. Cressman
Seconded by: Councillor S. Martin

That the Agenda as presented for June 26, 2023, be adopted.

Motion Carried

8. MINUTES OF PREVIOUS MEETINGS

Moved by: Councillor S. Martin
Seconded by: Councillor H. Sidhu

THAT the minutes of the following meetings be adopted as presented:

- June 12, 2023 Regular Council Meeting

Motion Carried

9. PUBLIC MEETINGS

9.1 Bamberg Creek, Jananna, and Koch-Leis Municipal Drain, COR-2023-43

Council appointed Councillor S. Cressman and Counicillor K. Wilkinson as members of the Court of Revision scheduled for August 16, 2023.

Stephen Brickman, Headway Engineering, gave a high-level overview of their drainage report.

Council asked and received answers from Mr. Brickman on the following:

- whether mutual agreement options were discussed after petition was filed; and
- reasons that some landowners may not be in favour of the proposed drainage works.

Christine Gawron and Lucy Gawron, Jananna Corporation, spoke in support of their petition for drainage works.

Ted Derry, representing the Avon Trail Association, spoke in opposition of the proposed drainage works. Mr. Derry expressed concerns regarding the integrity of the trail and recently constructed bridge in that area.

Cory Kittel spoke in opposition of the proposed drainage works. Mr. Kittel expressed concerns regarding the validity of the petition.

Peter Wurtele spoke in opposition of and suggested alternatives to the proposed drainage works.

Elena and Oleg Borissov spoke in opposition of the proposed drainage works and expressed a number of their concerns regarding the petition and proposed drainage works.

Acting Mayor L. Dunstall asked if there were any persons in the audience who wished to address Council on this matter.

Landowner Ken Heintz came forward and spoke in opposition of the proposed drainage works. Mr. Heintz expressed concerns regarding the design of and need for the proposed drain.

Council asked and received answers from Mr. Heintz regarding whether he himself farms the lands in question.

Acting Mayor L. Dunstall asked if there were any persons who wished to address Council. There were none.

Acting Mayor L. Dunstall asked a second time if there were any persons who wished to address Council. There were none.

Acting Mayor L. Dunstall asked if there were any petitioners who wished to add or remove their name. There were none.

Moved by: Councillor S. Martin
Seconded by: Councillor H. Sidhu

THAT the Engineer's Report dated April 28, 2023, for the Bamberg Creek, Jananna, and Koch-Leis Municipal Drain for construction of a new closed municipal drain from two locations on the North Part of Lot 10, Concession 3, Block B and extending downstream to its outlet into the Koch-Leis Drain and the Bamberg Creek be considered in accordance with Section 42 of the Drainage Act; and

THAT the by-law 2023-32, as attached to this agenda, be given first and second reading to provisionally adopt the Report if the Report if the petition remains valid after consideration of the Report; and

THAT the date for the Court of Revision be scheduled for August 16, 2023, if By-law 2023-32, as attached to this agenda, is provisionally adopted, with the following two members of Council appointed: Councillor S. Cressman and Councillor K. Wilkinson.

Motion Carried

10. PRESENTATIONS

10.1 2022 Audited Financial Statements, COR 2023-36

Mike Arndt, Graham Matthew Professional Corporation presented the 2022 Audited Financial Statements to Council.

Council asked and received answers on the following:

- equity and liability since the merge of Kitchener-Wilmot Hydro Inc. and Waterloo North Hydro Inc., creating Enova Power Corporation; and
- steps taken by the auditing firm, which are unique to the municipal sector.

Council discussed the amounts of taxes retained by the Township and portions that are paid out to the Region of Waterloo and commented on the 6-year growth comparison.

Moved by: Councillor S. Martin
Seconded by: Councillor S. Cressman

THAT Report COR 2023-36 regarding the 2022 Audited Financial Statements be received for information purposes.

Motion Carried

11. CONSENT AGENDA

Moved by: Councillor H. Sidhu
Seconded by: Councillor S. Martin

THAT Consent Agenda items 11.12, 11.2, 11.3, and 11.4 be approved.

Motion Carried

11.1 Award of Contract – Concrete Sidewalk Replacement, IS-2023-15

THAT Council award RFT 2023-09 Concrete Sidewalk Replacement Program to Chad Hartman Construction of St. Pauls, Ontario as per their tender submitted Thursday June 8, 2023, in the amount of $66,140.00, plus HST.

11.2 Seniors Active Living Centres Program Grant, CS-2023-14

THAT Report CS 2023-14 regarding the Seniors Active Living Centres Program Grant opportunity be received; and further

THAT Council direct staff to issue a letter of support to Community Care Concepts in conjunction with their grant funding application.

11.3 Interim Control By-laws, DS-2023-13

THAT Report DS 2023-011 be received for information.

11.4 Proposed Streamlining of Approvals Under the Aggregate Resources Act, DS-2023-14

THAT Report DS-2023-14 be received for information.

12. REPORTS - NONE

13. CORRESPONDENCE

13.1 Correspondence from the Township of Wellesley re: Notice of Request for Major Drain Improvements - Paff Drainage Works - Resolution No. 5

13.2 Petition regarding proposed Bamberg Creek, Jananna, and Koch-Leis Municipal Drain

13.3 Correspondence from Ken Heintz Regarding Bamberg Creek, Jananna, and Koch-Leis Municipal Drain

13.4 Correspondence from Landowners Regarding Bamberg Creek, Jananna, and Koch-Leis Municipal Drainage Works

13.5 Correspondence from Cory Kittel re: Regarding Bamberg Creek, Jananna, and Koch-Leis Municipal Drain

13.6 Correspondence from Peter Wurtele Regarding Bamberg Creek, Jananna, and Koch-Leis Municipal Drain (addendum)

13.7 Correspondence from Gord Mills, New Hamburg Firebirds, Regarding Request for Support (addendum)

Councillor S. Martin declared a conflict on this item. (Councillor S. Martin declared a Pecuniary Interest on Item 13.7 of the agenda. Please visit Registry of Disclosure of Pecuniary Interest for further details.)

Council waived notice in order to consider the correspondence received by Gord Mills, New Hamburg Firebirds. Manager of Legislative Services/Clerk, J. Bunn noted that Council would require two-thirds support to waive notice.

Councillor H. Sidhu brought forward a motion directing Staff to bring a Report to the July 24, 2023, Regular Council Meeting, regarding potential opportunities for the Township to financially support the New Hamburg Firebirds.

Council requested Manager of Legislative Services/Clerk J. Bunn provide an overview of lotteries and associated liabilities.

Moved by: Councillor K. Wilkinson
Seconded by: Councillor S. Cressman

THAT in accordance with Section 7.12.7 of the Rules of Procedure, notice be waved to consider correspondence received by Gord Mills of the New Hamburg Firebirds regarding their request for Council support.

Motion Carried

Moved by: Councillor H. Sidhu
Seconded by: Councillor K. Wilkinson

THAT Staff be directed to prepare a Report for the Regular Council Meeting to be held on July 24, 2023, with potential opportunities for financial support for the New Hamburg Firebirds.

Motion Carried

13.8 Correspondence from Christine and Lucy Gawron Regarding Bamberg Creek, Jananna, and Koch-Leis Municipal Drain (addendum)

13.9 Correspondence from Kevin Thomason Regarding Bamberg Creek, Jananna and Koch-Leis Municipal Drain (addendum)

13.10 Correspondence from Ron and Rosemary McCormick Regarding Bamberg Creek, Jananna and Koch-Leis Municipal Drain (addendum)

14. BY-LAWS

Moved by: Councillor K. Wilkinson
Seconded by: Councillor H. Sidhu

THAT By-Law 2023-23 at item 14.1 as attached to this Agenda be read a third and final time and finally passed in Open Council; and

THAT By-Law 2023-32 at item 14.2 as attached to this Agenda be read for a first and second time, and be brought back to council at a future date for a third reading; and further

THAT By-Law 2023-33 at item 14.3 as attached to this Agenda be read for a first, second and third time and finally passed in Open Council.

Motion Carried

14.1 By-Law 2023-23 Being a By-Law to Provide for Drainage Works for the Construction and Improvement of the Delton Reibling Municipal Drain

14.2 By- Law 2023-32 Being a By-Law to Provide for Drainage Works for the Construction and Improvement of the Bamberg Creek, Jananna, and Koch-Leis Municipal Drain (addendum)

14.3 By-Law 2023-33 Being a By-Law to Confirm the Establishment of a Highway in the Township of Wilmot (Joseph Street road widening) (addendum)

15. NOTICE OF MOTIONS - NONE

16. ANNOUNCEMENTS

Councillor S. Martin made announcement regarding Canada Day celebrations at Norm Hill and the Royal Canadian Legion in Wilmot.

17. BUSINESS ARISING FROM CLOSED SESSION

There was no business arising from Closed Session on this date.

18. CONFIRMATORY BY-LAW

Moved by: Councillor S. Cressman
Seconded by: Councillor S. Martin

THAT the Confirmatory By-Law, as attached to this agenda, be read a first, second and third time, and finally passed in Open Council.

Motion Carried

19. ADJOURNMENT

Moved by: Councillor S. Cressman
Seconded by: Councillor S. Martin

THAT we do now adjourn to meet again at the call of the Mayor.

Motion Carried