



K. SMART ASSOCIATES LIMITED

CONSULTING ENGINEERS & PLANNERS

85 McIntyre Drive
Kitchener, ON N2R 1H6

Tel: 519-748-1199

August 15, 2025

File No. 25-163

Email to: Calvin Township

Subject: Municipality of Calvin State of Emergency Drain Inspection

Executive Summary;

Background;

The Township of Calvin, along with other municipalities North of Algonquin, was on the 21st of June, 2025, subjected to a severe weather event consisting of intense rain approaching a 100 year storm, combined with violent wind shear. This resulted in heavy infrastructure damage and the declaration of a State of Emergency.

As part of damage assessment Municipal staff on 1st July 2025 requested the Drainage Superintendent, appointed under the Drainage Act, to conduct an examination of drainage systems maintained by the municipality under the Act.

The Township of Calvin has six municipal drain systems, each with multiple branches, maintained under By-laws and Engineers reports, and for which the municipality is legally responsible to maintain.

Methodology;

The Drainage Superintendent traveled to the Township of Calvin during the week of July 7th and carried out a site examination of all drains in the field. The Superintendent also interviewed major landowners as to their observations of the drain systems before, during and after the storm event. The Superintendent met municipal staff to review results and examine file information.

Observations;

All drainage systems in the Township are rural in nature and mostly located in agricultural lands. Most drains are open channels with only a few enclosed drains. The enclosed drains are outlet systems in nature with restricted surface inlets and not designed to storm drain standards. During the rain event there was evidence on the ground and by observation that almost all drains were exceeded in channel capacity and flood waters rose out of the channels and spread over adjacent flood plains. Following the rain event the drainage channels and tiles carried off excess flood waters and within a day flows returned to capacity of the drains. It was apparent that when the flood waters encountered restrictions in the form of road embankments and pipes that heavy damage and failure frequently resulted to the road infrastructure.



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Conclusions;

It is the Superintendents opinion that the municipal drain system weathered the storm event without major damage.

There was heavy damage at many intersections of drainage infrastructure and road infrastructure. This road damage is being identified, corrected and compensated under other none municipal drain programs.

There were several drainage maintenance items identified before the storm event and also during the system inspection. However, these are maintenance and repair items attributable to normal wear and tear on a drain and not due to storm damage. These items are in process to be maintained and repaired under the normal municipal drain maintenance program. Costs of these repairs are recoverable from landowner assessments and OMAFA grants.

A comprehensive report / chart of drain condition on a branch by branch basis is in preparation.

Respectfully Submitted;
Garth Noecker,
Drain Superintendent



Garth Noecker, C.S.T., C.E.T.
K. Smart Associates Limited

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STATE OF EMERGENCY DRAIN INSPECTION

TOWNSHIP OF CALVIN

September 16, 2025

File No. 25-163



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STATE OF EMERGENCY DRAIN INSPECTION

BACKGROUND

The Township of Calvin, along with other municipalities north of Algonquin, was on June 21, 2025, subjected to a severe weather event consisting of intense rain approaching a 100-year storm, combined with violent wind shear. This resulted in heavy infrastructure damage and the declaration of a State of Emergency.

As part of damage assessment, on July 1, 2025, Township staff requested the Drainage Superintendent, appointed under the Drainage Act, to conduct an examination of drainage systems maintained by the Township under the Act.

METHODOLOGY

Municipal Drains are drains constructed under the authority of the Drainage Act, RSO 1990 and for which the Township, under Section 74 of that Act, is responsible for the maintenance and repair at the cost of the upstream watershed.

The Township of Calvin has six such drain systems constructed and maintained under Township By-laws. Each drainage system consists of multiple branches. These drains are primarily open ditches with a few enclosed tile lines.

In this report, reference is made to **Appendix 1** which contains maps of all 6 of the municipal drains within the Township.

On July 9 to 11, 2025, the Drainage Superintendent travelled to the Township, examined all drainage systems in the field and in most cases was able to speak with major landowners who have drainage infrastructure located on their property.



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OBSERVATIONS

Calvin Drain No. 1

Calvin Drain No. 1 was built in or about 1974 under a report prepared by J. K. Young, P. Eng. dated March 7, 1974. It is maintained under By-Law 381. (See **Appendix A** for watershed plan.)

Branch A

Branch A is 1,800 metres of open ditch. It was observed to be relatively clear and operating as it should, and not suffering any damage from the storm. This drain was cleaned within the last 10 years.

Branch B

Branch B is an open ditch, 1,080m in length. It was observed to be working satisfactorily with no major damage attributable to the storm. This drain has been maintained within the last 10 years.

Branch C

Branch C is a 480 metre long ditch located in farmland which is not currently being actively farmed. It is heavily overgrown with brush but was operating at the time of the inspection with no major damage attributable to the storm.

Branch D

Branch D is an open ditch which is 334 metres long and was observed to be operating satisfactorily at the time of inspection with no major damage attributable to the storm. This branch has been maintained within the last 10 years.

The major landowner on Calvin Drain No. 1 is Pauline Carmichael. She was interviewed and was of the same opinion as the Drainage Superintendent that the open ditch system, although overtopped during the storm, had returned within its banks and was operating satisfactorily.

Calvin Drain No. 2

Calvin Drain No. 2 is a system of two branch drains and is open drains throughout. It was built in 1977 under a report prepared by J. K. Young, P. Eng. dated January 10, 1977. It is currently maintained under By-Law 402. (See **Appendix A** for watershed plan.)

Branch A

Branch A is an open ditch 2,575 metres in length. At the time of inspection, it was observed to be relatively clean and working without incident.

There was no visible damage attributable to the aftermath of the storm.

Branch B

Branch B is an open ditch, 577m in length. At the time of the examination, no damage was observable that could be attributed to the storm.

There are two major landowners on Calvin Drain No. 2, Blair Groves and Roger Guignon. Both landowners were interviewed by the Drainage Superintendent and agreed with the Drainage Superintendent that the open ditch system had performed well during the storm and that there was no damage to the system at the time of inspection that could be attributed to the storm.

Calvin Drain No. 3

Calvin Drain No. 3 was built in 1978 and expanded by an Engineer's Report in 2002 prepared by K. A. Smart, P. Eng. dated July 19, 2002. It is currently maintained under By-Law 413. (See **Appendix A** for watershed plan.)

Branch A

Branch A consists of approximately 400 metres of ditch in the Township of Calvin, as well as a short length of ditch in the Township of Papineau-Cameron. This ditch is impacted by beaver activity and is need of a cleanout. However, this situation existed prior to the storm and has not been further damaged by the storm.

Branch B

Branch B is an open ditch, 1,108m long. It was observed to be working well and has had no impact at the time of the inspection from the storm.

Branch C

Branch C is an open ditch, 242m long. It is overgrown with brush but is operating well.

Branch D (Tile)

Branch D is a tile drain which is 847m in length. It was overtopped and surface flow occurred in the field at the time of the storm, but the tile itself performed well and is currently in good condition.

Branch E (Tile)

Branch E is a tile drain which is 370m in length. There is evidence that it was also exceeded in capacity during the storm with overland flow through the field occurring. However, at the time of inspection it was operating well with no evidence of damage from the storm.

Branch F

Branch F is an open ditch that was incorporated into Calvin Drain No. 5 in a subsequent Engineer's report and is being dealt with under Calvin Drain No. 5 inspection.

Branch G

Branch G is a short open ditch which was abandoned at the time of the Engineer's report in 2002 and was replaced with Drain H.

Branch H (Tile)

Branch H is a short tile, 83m long and was observed to be operating well at the time of the inspection with no evidence of damage from the storm.

The two major landowners on Calvin Drain No. 3 are Blair Groves and Roger Guignon. Both landowners were interviewed by the Drainage Superintendent and had the same conclusion, i.e. that although the drain capacity had been exceeded during the storm, the waters had subsequently returned to the confined channel and tile and that no permanent damage was evident from the storm.

Calvin Drain No. 4

Calvin Drain No. 4 was built in 1984 under a report prepared by Maurice B. Leger, P. Eng. dated April 12, 1984. It is maintained under By-Law 447. It consists of open ditches throughout. (See **Appendix A** for watershed plan.)

Main Drain

The Main Drain is an open ditch 1,225m in length and was observed to be impacted by beaver activity and brush growth. This is normal "wear and tear" on a drain and was not attributable to the storm. This drain was maintained approximately 10 years ago.

The Main Drain is slated for repair by brushing and bottom cleanout and removal of beaver dams. However, these are normal maintenance procedures and again are not attributable to the storm.

Branch 1

Branch 1 is a 93m long open ditch which is overgrown with brush but appeared to be operating well at the time of the inspection.

Branch 2

Branch 2 is a 218m long open ditch. Although overgrown with brush, it appears to be working and there is no damage attributable to the storm.

Branch 3

Branch 3 is a 735m long open ditch. Although partially overgrown with brush, it was observed to be working well at the time of the inspection.

Branch 4

Branch 4 is a 157m long open ditch. It appeared to be operating well at the time of the inspection.

The major landowner on several of the branches on Calvin Drain 4 is Roger Guignon. He again agreed with the Superintendent that although the ditches had been exceeded in capacity at the time of the storm, the flows had subsequently returned to the confined channels. Although in need of maintenance, the channels were not damaged by the storm.

Calvin Drain No. 5

Calvin Drain No. 5 was built in 1986 under a report prepared by P. A. McNeely, P. Eng. dated June 17, 1986. It is currently maintained under By-Law 413. It consists of open drains throughout. (See **Appendix A** for watershed plan.)

Main Drain

The Main Drain is 1,075m in length of open ditch. This drain is impacted by beaver activity, by brush growth and is in need of a bottom cleanout. However, this need existed prior to the storm and is scheduled for maintenance in 2025, and there was no long term damage to the drain attributable to the storm.

Branch 1

Branch 1 is an open ditch 138 metres in length. It is overgrown with brush and in need of a cleanout. However, this is normal maintenance and there was no visible damage due to the storm.

Branch 2

Branch 2 is 648m in length and is an open ditch which is heavily overgrown with brush and in need of a cleanout. However, the drain was operating and there was no damage attributable to the storm.

Branch 3

Branch 3 is a 316m long open ditch which is heavily overgrown with brush and is in need of brushing and a bottom cleaning. This is scheduled to take place in 2025 and was planned prior to the storm. Again, there is no damage to Branch 3 that can be attributed to the storm.

The two major landowners on Calvin Drain No.5 are Matt Coleman and Conner Duquette. Both landowners were spoken to, and were in attendance at the time of the inspection of this drain. While both agreed that the drain was in need of maintenance, this discussion had taken place prior to the storm, and both are of the opinion that the drain was in essentially the same condition at the time of inspection as it had been prior to the storm and that there was no major damage to the drains attributable to the storm.

Calvin Drain No. 6

Calvin Drain No. 6 was built in 2003 under a report prepared by K. A. Smart, P. Eng. dated June 30, 2000. It is currently maintained under Calvin Township By-Law. It consists of a Main Drain and 5 branches, which are a mixture of open ditch and tile. (See **Appendix A** for watershed plan.)

Main Drain

The Main Drain is an open ditch that is 1,207m in length. This drain is in relatively good condition with very little brush and has in general been brushed clean. There was no obvious damage to the drain itself from the storm, although an upstream road culvert on Highway 630 had been washed out but had been repaired by the Ministry of Transportation.

Branch A

Branch A is an open ditch 230m long. At the time of the inspection, it was overgrown with brush but was carrying water and upon observation there was not damage to the drain attributable to the storm.

Branch B

Branch B is an open ditch 290m long. It was partially overgrown with brush but was operating at the time of inspection, with no damage attributable to the storm.

Branch B1 (Tile)

Branch B1 is a tile system, 108m long, installed adjacent to Branch B in order to carry low flows. At the time of the inspection, it appeared to be operating as designed with no damage.

Branch C (Tile)

Branch C is a 300mm diameter tile system extending from the Highway 630 road crossing, across the farm to outlet in the Main Drain. It is 258m long and at the time of the inspection was actually working better than it had been in previous years, in that the storm had washed sand and trash off of the upstream inlet catchbasin and water was now entering the catchbasin and being carried by the tile. There was no damage attributable to the storm.

Branch D

Branch D is an open ditch 170m in length. It appeared to be operating as designed at the time of the inspection and there is no damage attributable to the storm.

Attempts were made to contact the landowner of Calvin Drain No. 6 but were unsuccessful as the owner was not in permanent residence on the property.

This completes the inspection of all drains and branches of the six municipal drainage systems within the Township. As a general comment, it was observed that all the drains had functioned well during the storm. Although most had their capacity exceeded, upon the passing of the high flows, the normal flows had returned to the drains as designed, and there appeared to be little or no damage to the agricultural rural portions of the drainage systems attributable to the storm.

CONCLUSION

All six municipal drainage systems within the Township of Calvin were inspected in the field and in most cases landowners were contacted and spoke to as to their impressions of the drain conditions and performance.

As a general rule, it can be stated that the drains performed as designed and although exceeded in capacity during the storm, the flows rapidly returned to the designed channels and tile and were operating without damage at the time of the inspection.

Some of the drains were in need of maintenance prior to the inspection. After discussions with landowners, several items of maintenance will go ahead later in 2025. However, these are attributable to normal siltation and vegetation growth within the drain channels and are not a result of storm damage.

All six drainage systems are rural in nature and exceeding their capacity during the storm is to be expected. Upon the passing of the flood waters, the normal drainage water quickly returned to the defined channels.

Where the flood waters encountered road infrastructure, there was often times observed to be exceeding of capacity and damage to the roads. However, this damage was in the process of being corrected by the road forces at the time of inspection and is not a concern for the municipal drain system.

All of which is respectfully submitted.



Garth Noecker, CET, CST
Drainage Superintendent
Township of Calvin

mw

Appendix 1



N. BLAY

31

30

29

28

27

60+00

52+35

D. WISE

CON. 3

N. BLAY

A

35+40

0+00

28+80

C.
CARMICHAEL

N. EDMONDS

B

A

0+00

D

15+80D
21+60B

25+35

16+00

C

0+00C
27+25B

B

36+00

F. EDMONDS

CON. 2

F. EDMONDS

N. EDMONDS

K. ADAMS

J.
MACGILLIVARY

E. WALL

TOWNSHIP OF CALVIN

CALVIN DRAIN No. 1

MAR. 7
1974

SCALE
1" = 1000'

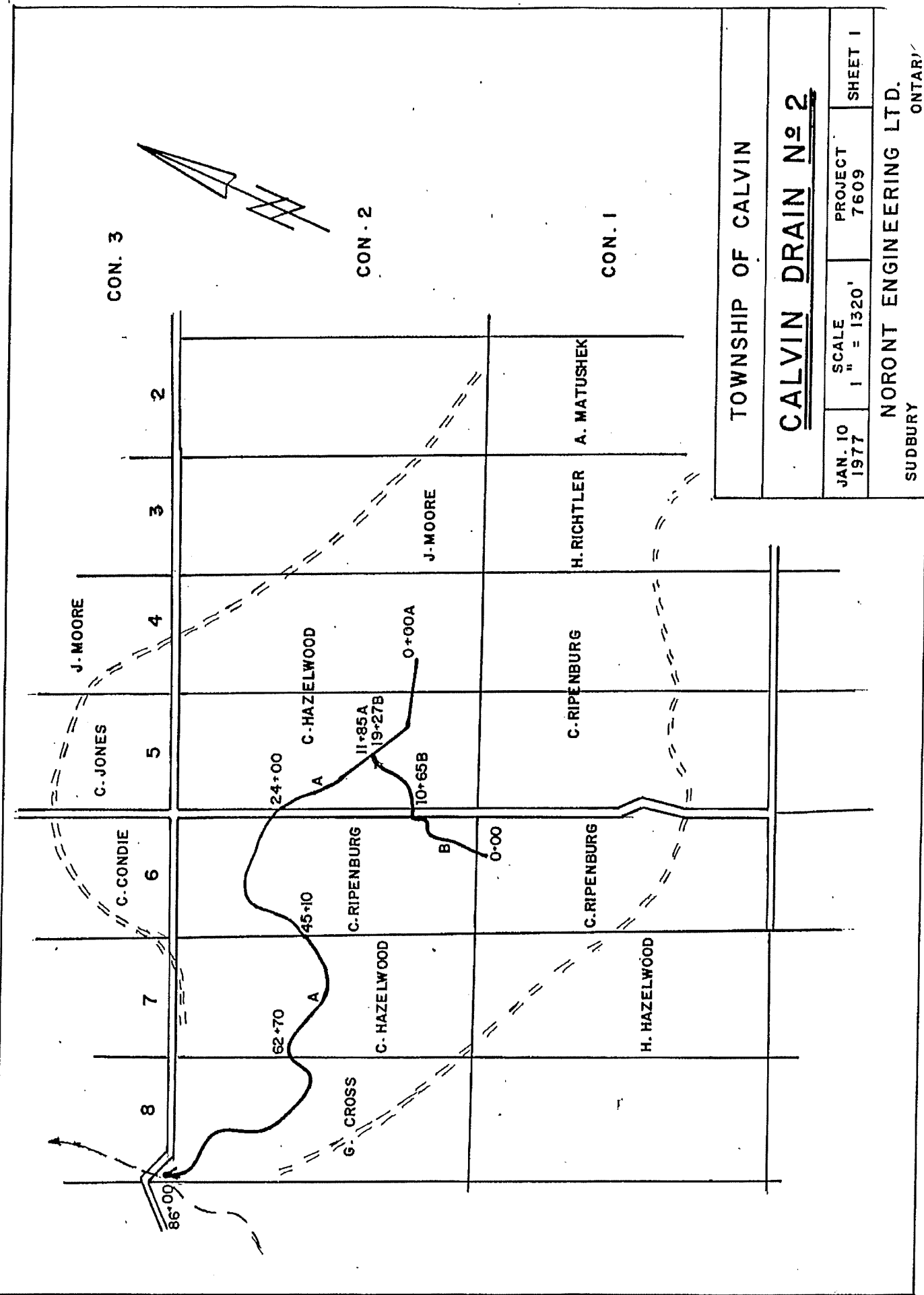
PROJECT
7401

SHEET 1

J.K. YOUNG P. ENG.

SUDBURY

ONTARIO



CON. 3

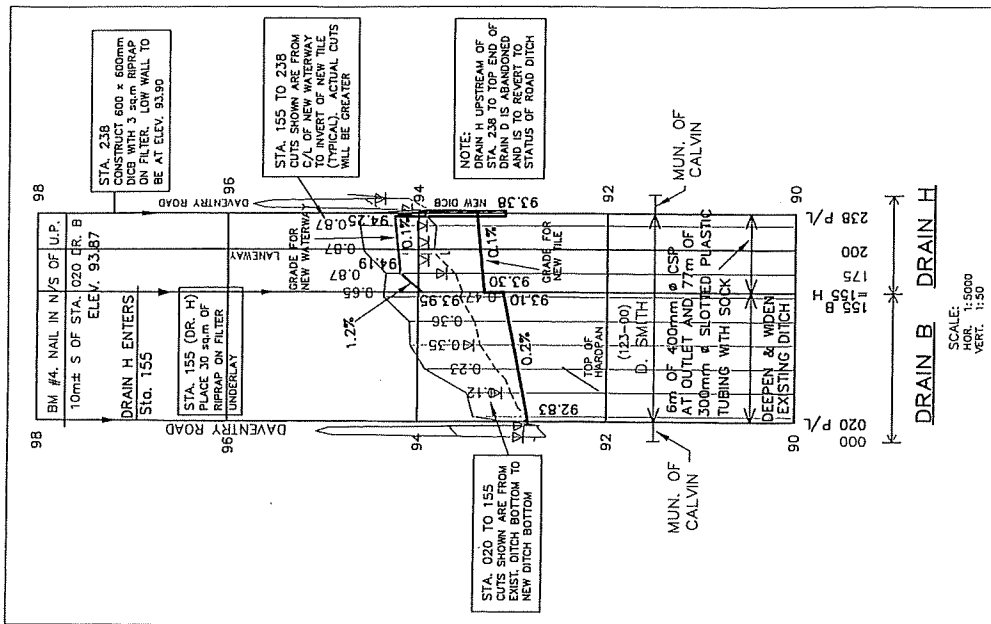
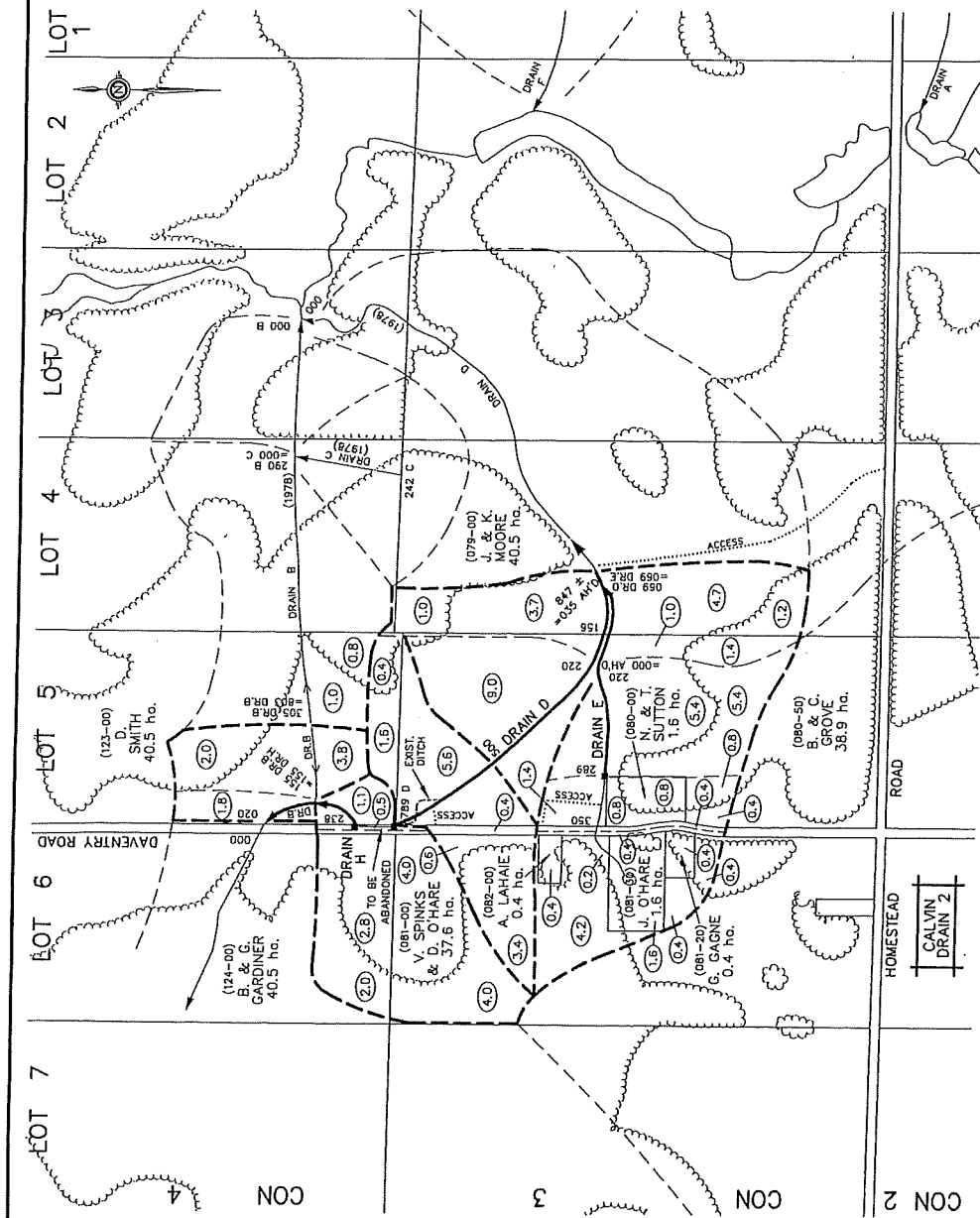
CON. 2

CON. 1

TOWNSHIP OF CALVIN

CALVIN DRAIN No 2

JAN. 10 1977	SCALE 1" = 1320'	PROJECT 7609	SHEET 1
NORONT ENGINEERING LTD. SUDBURY ONTARIO			



PLAN LEGEND

- MAJOR WATERSHED
- INTERMEDIATE WATERSHED
- PROPOSED WORK OR INCORPORATION
- ACCESS
- BUSH
- DENOTES PROPERTY OWNERSHIP
- BOTH SIDES OF LOT LINE
- APPROXIMATE HECTARES
- PROPOSED WORK OR INCORPORATION
- HECTARES OWNED
- ASSESSMENT ROLL NUMBER

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND UTILITIES AND STRUCTURES, AND WHERE SHOWN, THE CONTRACTOR SHALL INQUIRE FROM THE LOCAL AUTHORITIES FOR THE LOCATION OF SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

DESIGNED BY: K.A.S.
CHECKED BY: K.A.S.
DRAWN BY: J.R.A./D.D.
CHECKED BY: K.A.S.
FIELD BOOK: 02-088

SCALE:
 HORIZ. 1:5000
 VERT. 1:500

PLAN AND PROFILE

SCALE:
 HORIZ. 1:5000
 VERT. 1:500

STATIONING

0 100 200m
 PLAN 1:10,000
 FIELD 1:10,000

DESIGNED BY: K.A.S.
CHECKED BY: K.A.S.
DRAWN BY: J.R.A./D.D.
CHECKED BY: K.A.S.
FIELD BOOK: 02-088

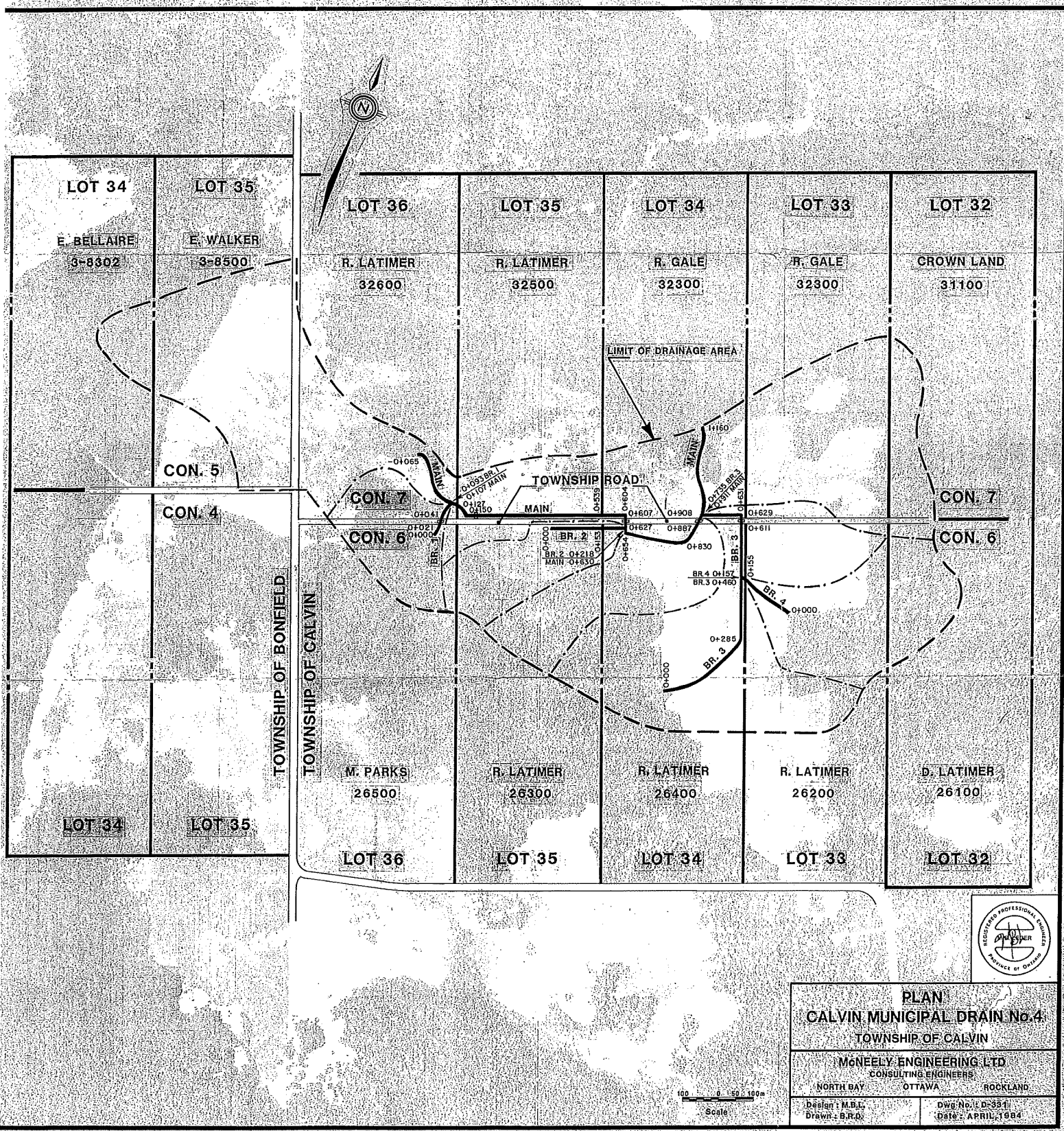
STATIONING

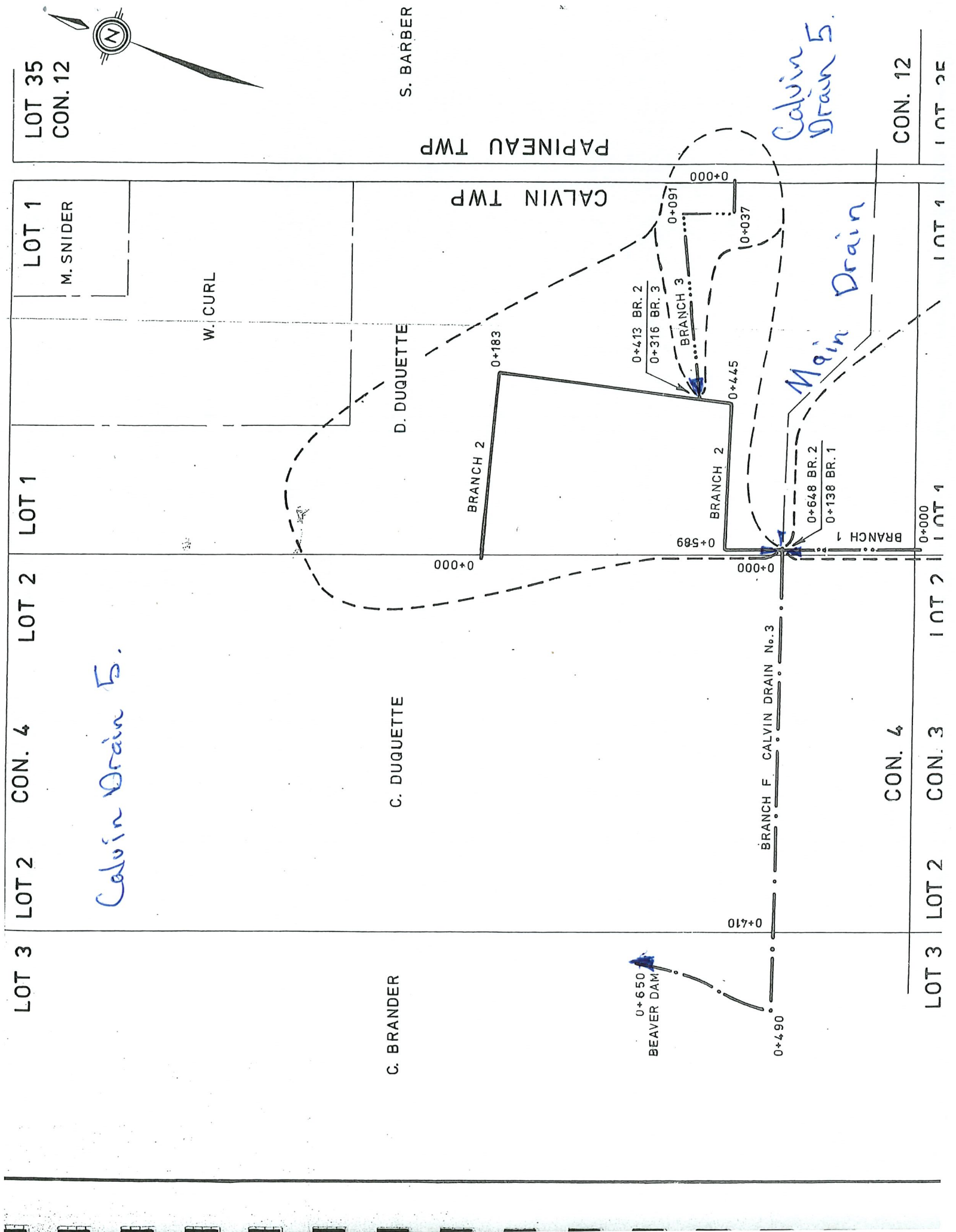
0 100 200m
 PLAN 1:10,000
 FIELD 1:10,000

DESIGNED BY: K.A.S.
CHECKED BY: K.A.S.
DRAWN BY: J.R.A./D.D.
CHECKED BY: K.A.S.
FIELD BOOK: 02-088

STATIONING

0 100 200m
 PLAN 1:10,000
 FIELD 1:10,000





Calvin Drain 5.

Calvin Drain 5.

Main Drain

LOT 35
CON. 12

LOT 1
M. SNIDER

LOT 1

LOT 2

CON. 4

LOT 2

LOT 3

C. BRANDER

C. DUQUETTE

D. DUQUETTE

CALVIN TWP

PAPINEAU TWP

S. BARBER

0+650
BEAVER DAM

0+490
0+410

BRANCH F. CALVIN DRAIN No. 3

0+589
0+000

BRANCH 1
0+648 BR. 2
0+138 BR. 1

BRANCH 2
0+445

0+413 BR. 2
0+316 BR. 3
BRANCH 3
0+091

0+183

BRANCH 2

W. CURL

CON. 4

LOT 2

CON. 3

LOT 2

LOT 4

LOT 4

CON. 12

LOT 35

PLAN LEGEND

- MAJOR WATERSHED
- INTERMEDIATE WATERSHED
- PROPOSED DRAIN
- EXISTING DRAIN
- BUSH
- DENOTES PROPERTY OWNERSHIP ON BOTH SIDES OF LOT LINE
- APPROXIMATE HECTARES IN WATERSHED
- ASSESSMENT ROLL NUMBER
- ACCESS

REVISED FOR
ADDENDUM No. 1
MARCH 21, 2003

SCALE
HORIZ. 1:10,000

GEOGRAPHIC TOWNSHIPS OF CALVIN AND LAUDER

CALVIN DRAIN NO. 6

DISTRICT OF NIPISSING	PLAN	MUNICIPALITY OF CALVIN
99218		JOB NUMBER
K. SMART ASSOCIATES LIMITED		DATE
CONSULTING ENGINEERS AND PLANNERS		JUNE 30, 2000
KITCHENER		DRAWING NUMBER
ENGLISHTOWN		1 OF 5

