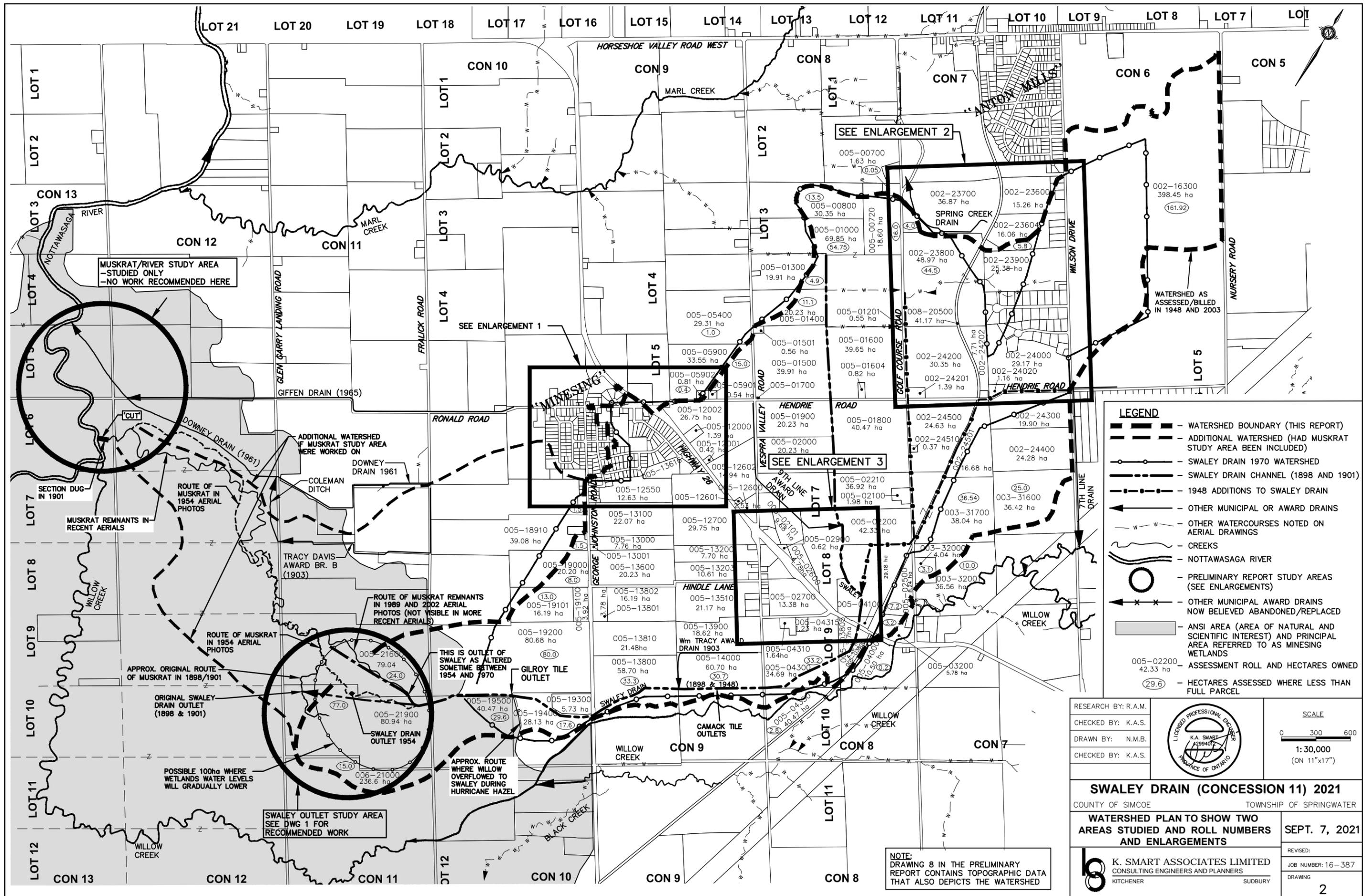


- LEGEND**
- SWALEY DRAIN (CHANNELS)
 - MAJOR WATERSHED
 - ADDITIONAL WATERSHED IF MUSKRAT AREA HAD BEEN INCLUDED
 - ALTERED ROUTE IN CONCESSION 11 (1970'S±)
 - HISTORIC ROUTES NOW INUNDATED
 - WHERE 750m WORK IS RECOMMENDED

RESEARCH BY: R.A.M.		SCALE
CHECKED BY: K.A.S.		0 250 500m
DRAWN BY: N.M.B.		1:25,000
CHECKED BY: K.A.S.		(ON 11"x17")
SWALEY DRAIN (CONCESSION 11) 2021		
COUNTY OF SIMCOE		TOWNSHIP OF SPRINGWATER
WATERSHED PLAN OF SWALEY DRAIN ON AERIAL BASE		SEPT. 7, 2021
K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS KITCHENER SUDBURY		REVISED:
		JOB NUMBER: 16-387
		DRAWING 1



- LEGEND**
- WATERSHED BOUNDARY (THIS REPORT)
 - - - ADDITIONAL WATERSHED (HAD MUSKRAT STUDY AREA BEEN INCLUDED)
 - SWALEY DRAIN 1970 WATERSHED
 - SWALEY DRAIN CHANNEL (1898 AND 1901)
 - 1948 ADDITIONS TO SWALEY DRAIN
 - OTHER MUNICIPAL OR AWARD DRAINS
 - OTHER WATERCOURSES NOTED ON AERIAL DRAWINGS
 - CREEKS
 - NOTTAWASAGA RIVER
 - PRELIMINARY REPORT STUDY AREAS (SEE ENLARGEMENTS)
 - OTHER MUNICIPAL AWARD DRAINS NOW BELIEVED ABANDONED/REPLACED
 - ANSI AREA (AREA OF NATURAL AND SCIENTIFIC INTEREST) AND PRINCIPAL AREA REFERRED TO AS MINESING WETLANDS
 - 005-02200 42.33 ha - ASSESSMENT ROLL AND HECTARES OWNED
 - 29.6 - HECTARES ASSESSED WHERE LESS THAN FULL PARCEL

RESEARCH BY: R.A.M.
 CHECKED BY: K.A.S.
 DRAWN BY: N.M.B.
 CHECKED BY: K.A.S.

SCALE
 0 300 600
 1:30,000
 (ON 11"x17")



SWALEY DRAIN (CONCESSION 11) 2021

COUNTY OF SIMCOE TOWNSHIP OF SPRINGWATER

WATERSHED PLAN TO SHOW TWO AREAS STUDIED AND ROLL NUMBERS AND ENLARGEMENTS

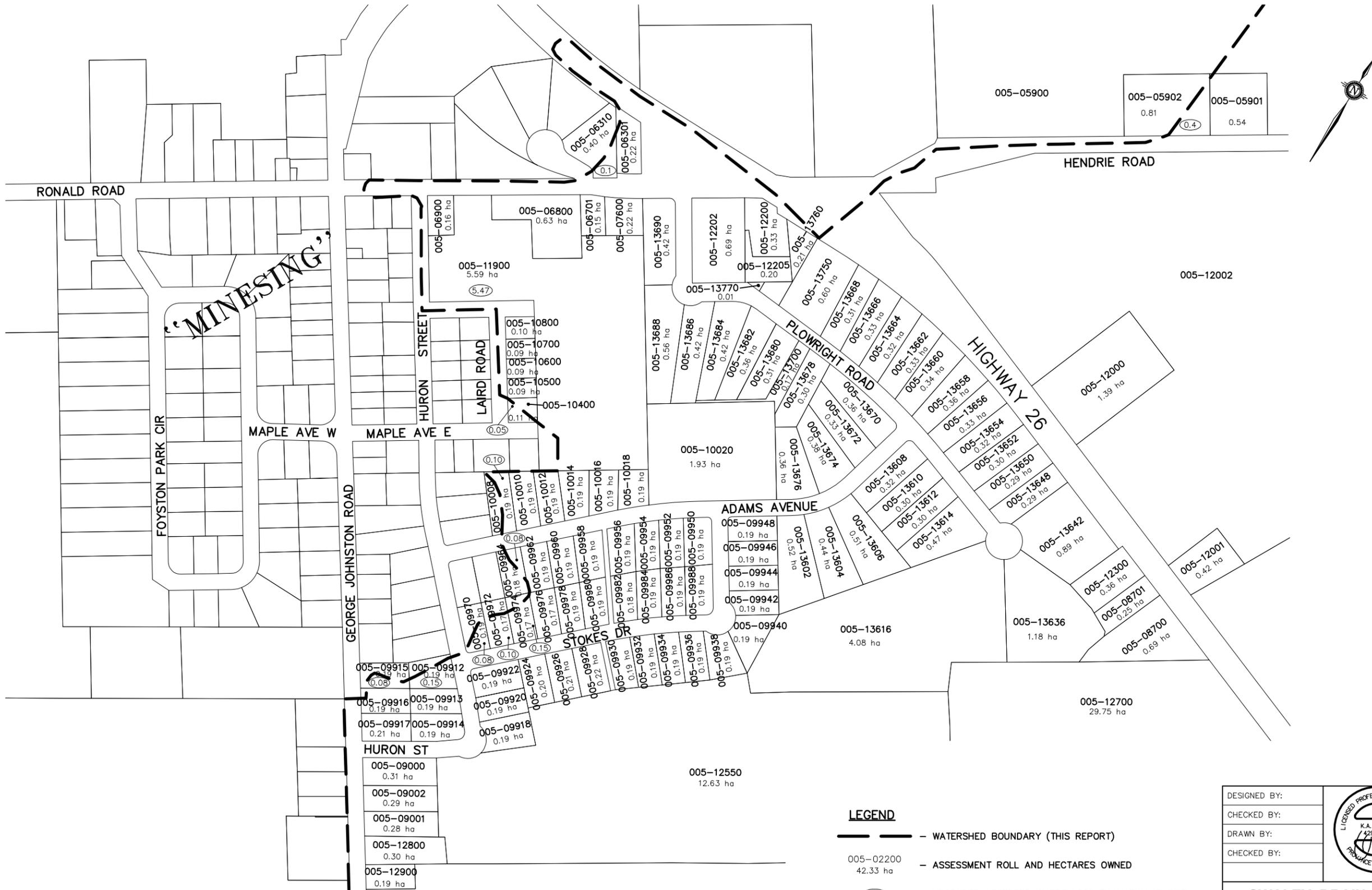
SEPT. 7, 2021

REVISED:
 JOB NUMBER: 16-387
 DRAWING

2

K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 KITCHENER SUDBURY

NOTE:
 DRAWING 8 IN THE PRELIMINARY REPORT CONTAINS TOPOGRAPHIC DATA THAT ALSO DEPICTS THE WATERSHED

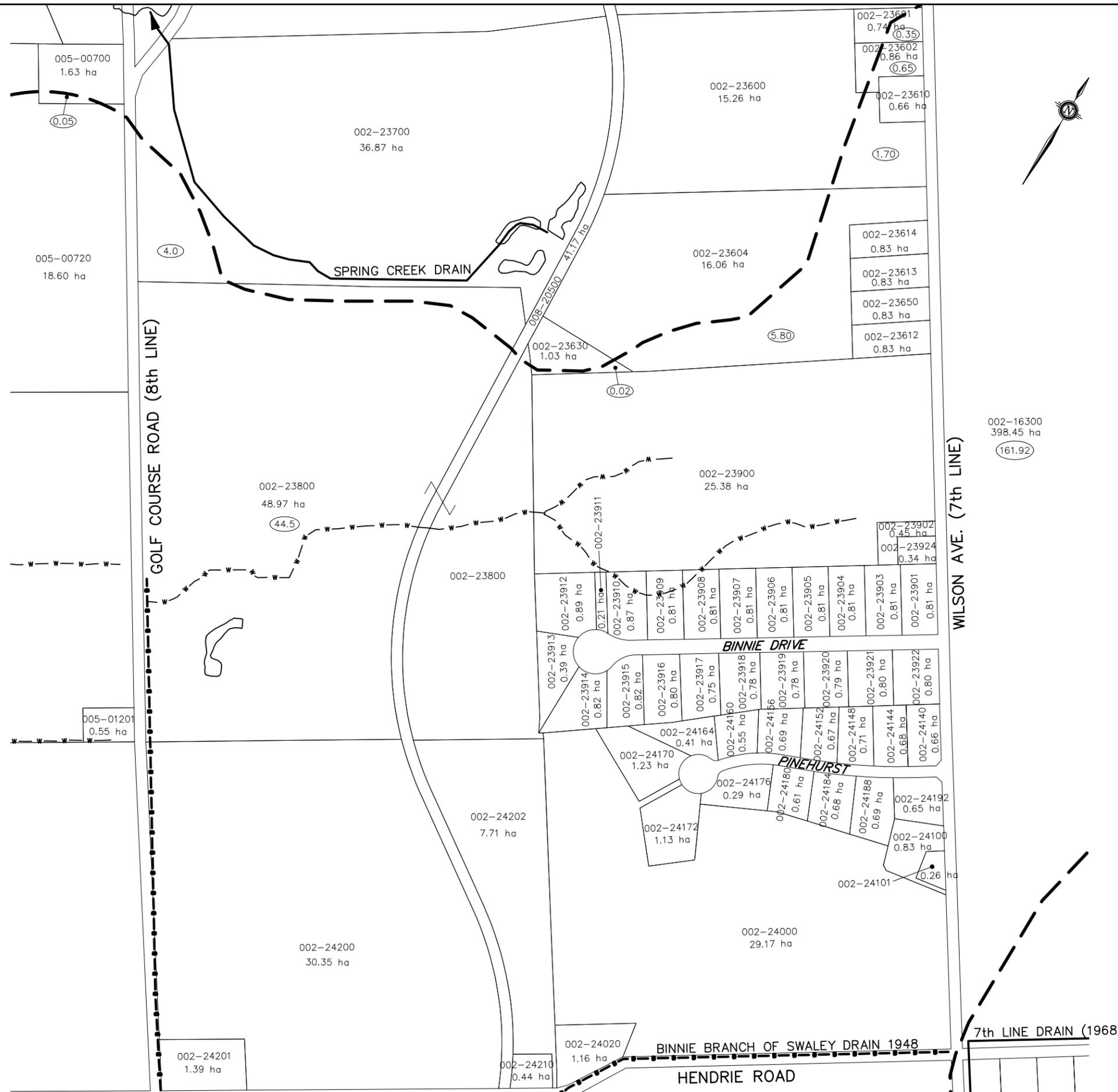


- THESE ENLARGEMENTS ARE PREPARED TO SHOW SMALL LOTS PRIMARILY. HECTARES OWNED ARE ALSO SHOWN
- THE CIRCLED NUMBER SHOWN REPRESENTS THE "HECTARES" ASSESSED WHERE IT IS LESS THEN HECTARES OWNED
- THE ASSESSMENT SCHEDULES USED WILL SHOW THAT THE HA OWNED ARE THE HECTARES ASSESSED EXCEPT WHERE NOT ALL OF THE LOT IS IN THE WATERSHED.

- LEGEND**
- WATERSHED BOUNDARY (THIS REPORT)
 - 005-02200 42.33 ha - ASSESSMENT ROLL AND HECTARES OWNED
 - HECTARES ASSESSED WHERE LESS THAN FULL PARCEL

DESIGNED BY:		SCALE
CHECKED BY:		
DRAWN BY:		1:5,000 (ON 11"x17")
CHECKED BY:		

SWALEY DRAIN (CONCESSION 11) 2021	
COUNTY OF SIMCOE TOWNSHIP OF SPRINGWATER	
ENLARGEMENT 1	SEPT. 7, 2021
	REVISED:
	JOB NUMBER: 16-387
	DRAWING
KITCHENER	SUDBURY



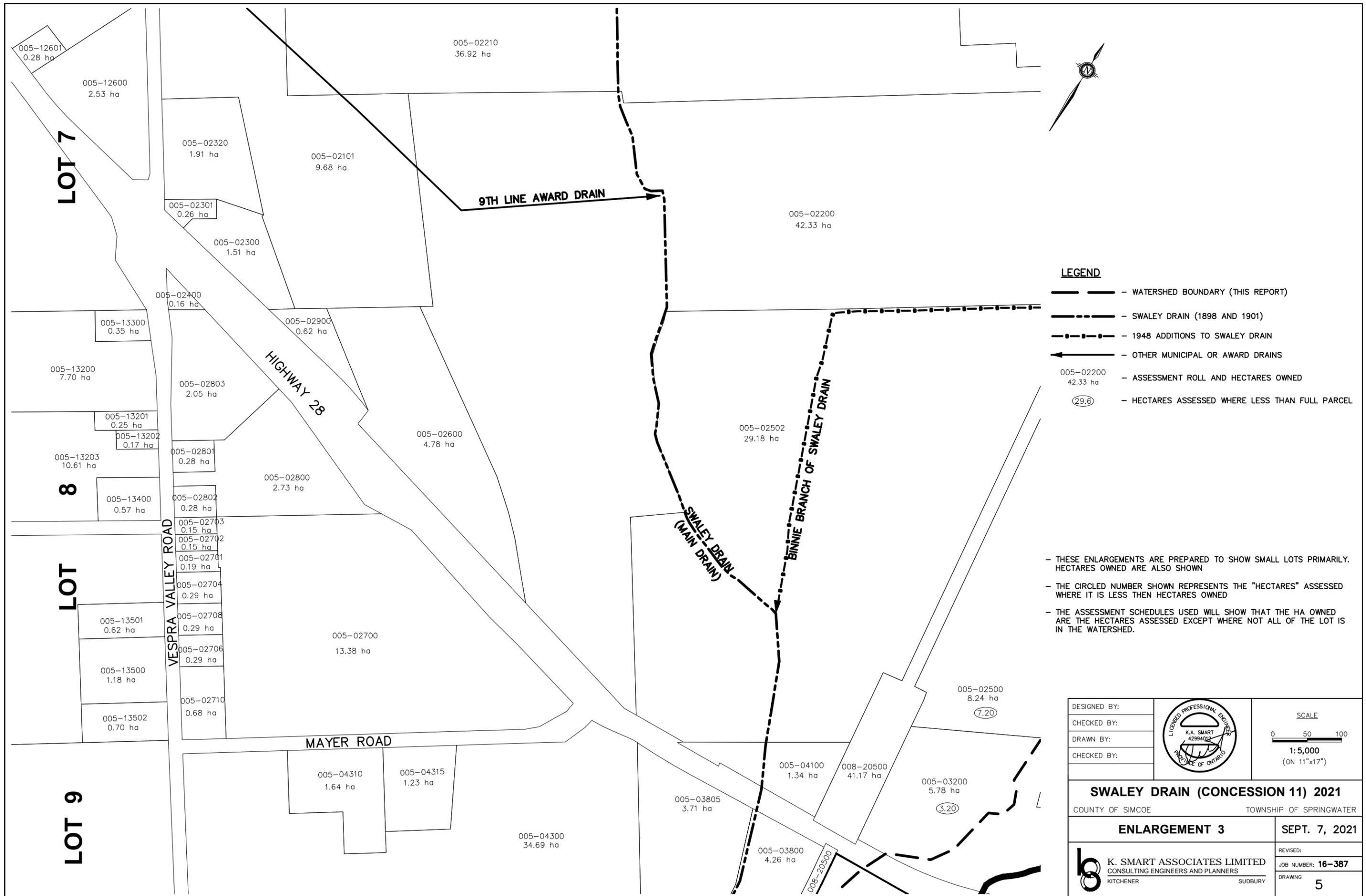
LEGEND

- WATERSHED BOUNDARY (THIS REPORT)
- 1948 ADDITIONS TO SWALEY DRAIN
- OTHER MUNICIPAL OR AWARD DRAINS
- OTHER WATERCOURSES NOTED ON AERIAL DRAWINGS
- 005-02200 42.33 ha - ASSESSMENT ROLL AND HECTARES OWNED
- HECTARES ASSESSED WHERE LESS THAN FULL PARCEL

- THESE ENLARGEMENTS ARE PREPARED TO SHOW SMALL LOTS PRIMARILY. HECTARES OWNED ARE ALSO SHOWN
- THE CIRCLED NUMBER SHOWN REPRESENTS THE "HECTARES" ASSESSED WHERE IT IS LESS THEN HECTARES OWNED
- THE ASSESSMENT SCHEDULES USED WILL SHOW THAT THE HA OWNED ARE THE HECTARES ASSESSED EXCEPT WHERE NOT ALL OF THE LOT IS IN THE WATERSHED.

DESIGNED BY:		SCALE
CHECKED BY:		
DRAWN BY:		1:7,500
CHECKED BY:		(ON 11"x17")

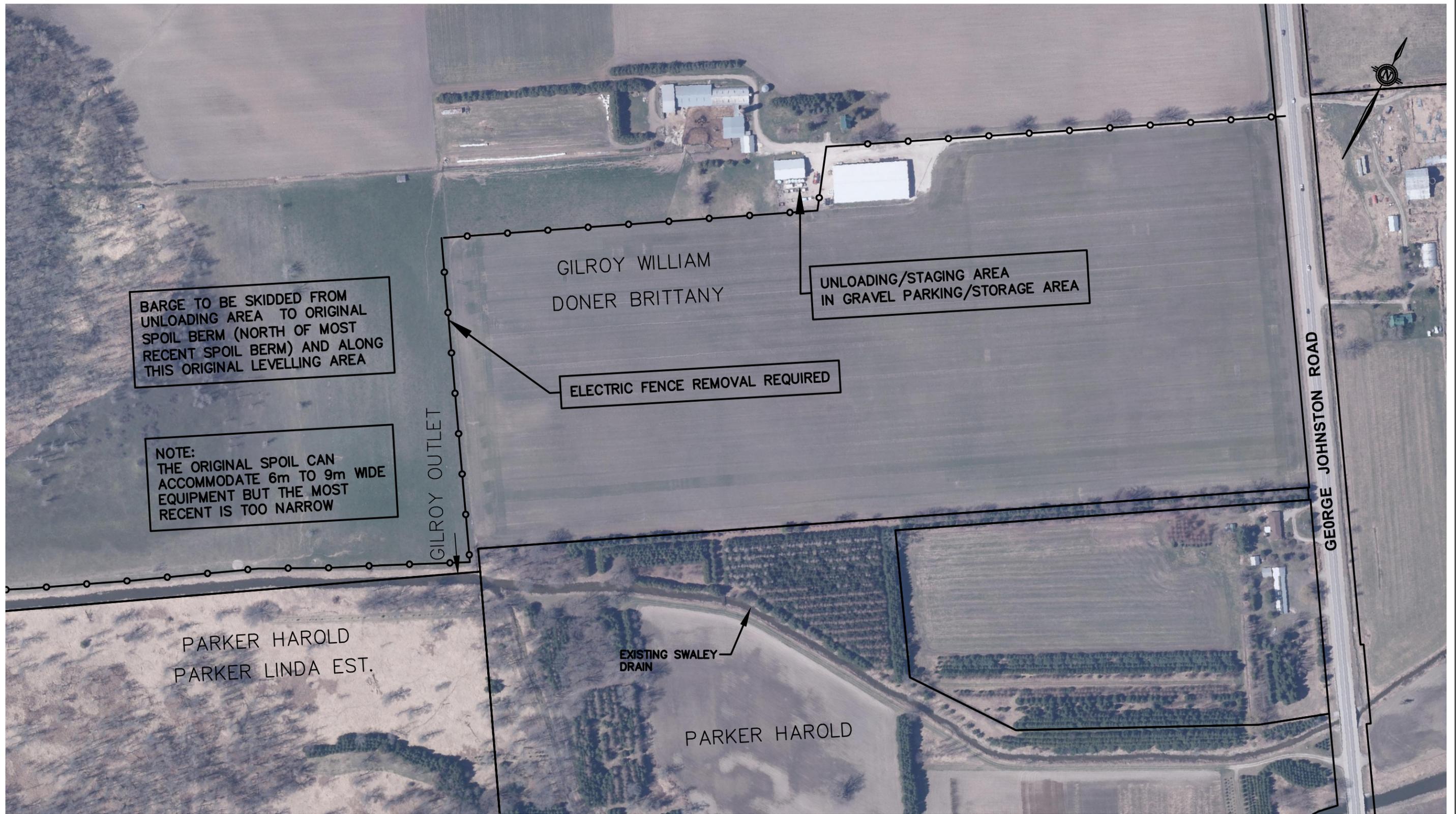
SWALEY DRAIN (CONCESSION 11) 2021	
COUNTY OF SIMCOE	TOWNSHIP OF SPRINGWATER
ENLARGEMENT 2	SEPT. 7, 2021
	REVISED:
	JOB NUMBER: 16-387
	DRAWING
KITCHENER	SUDBURY
4	



- LEGEND**
- - WATERSHED BOUNDARY (THIS REPORT)
 - - SWALEY DRAIN (1898 AND 1901)
 - - - - - 1948 ADDITIONS TO SWALEY DRAIN
 - ← - OTHER MUNICIPAL OR AWARD DRAINS
 - 005-02200
42.33 ha - ASSESSMENT ROLL AND HECTARES OWNED
 - (29.6) - HECTARES ASSESSED WHERE LESS THAN FULL PARCEL

- THESE ENLARGEMENTS ARE PREPARED TO SHOW SMALL LOTS PRIMARILY. HECTARES OWNED ARE ALSO SHOWN
- THE CIRCLED NUMBER SHOWN REPRESENTS THE "HECTARES" ASSESSED WHERE IT IS LESS THEN HECTARES OWNED
- THE ASSESSMENT SCHEDULES USED WILL SHOW THAT THE HA OWNED ARE THE HECTARES ASSESSED EXCEPT WHERE NOT ALL OF THE LOT IS IN THE WATERSHED.

DESIGNED BY:		SCALE
CHECKED BY:		0 50 100
DRAWN BY:		1:5,000
CHECKED BY:		(ON 11"x17")
SWALEY DRAIN (CONCESSION 11) 2021		
COUNTY OF SIMCOE		TOWNSHIP OF SPRINGWATER
ENLARGEMENT 3		SEPT. 7, 2021
	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS KITCHENER SUDBURY	
	REVISED:	JOB NUMBER: 16-387
	DRAWING	5



BARGE TO BE SKIDDED FROM UNLOADING AREA TO ORIGINAL SPOIL BERM (NORTH OF MOST RECENT SPOIL BERM) AND ALONG THIS ORIGINAL LEVELLING AREA

NOTE: THE ORIGINAL SPOIL CAN ACCOMMODATE 6m TO 9m WIDE EQUIPMENT BUT THE MOST RECENT IS TOO NARROW

NOTE: AERIAL PHOTO - SIMCOE COUNTY 2016

LEGEND

—○—○—○— — DENOTES ACCESS ROUTE THROUGH YARD AND FIELD



SCALE
0 30 60m
1:3,000
(ON 11"x17")

SWALEY DRAIN (CONCESSION 11) 2021	
COUNTY OF SIMCOE	TOWNSHIP OF SPRINGWATER
ACCESS ROUTE RECOMMENDED	
K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS KITCHENER SUDBURY	SEPT. 7, 2021 JOB NUMBER: 16-387 DRAWING 6



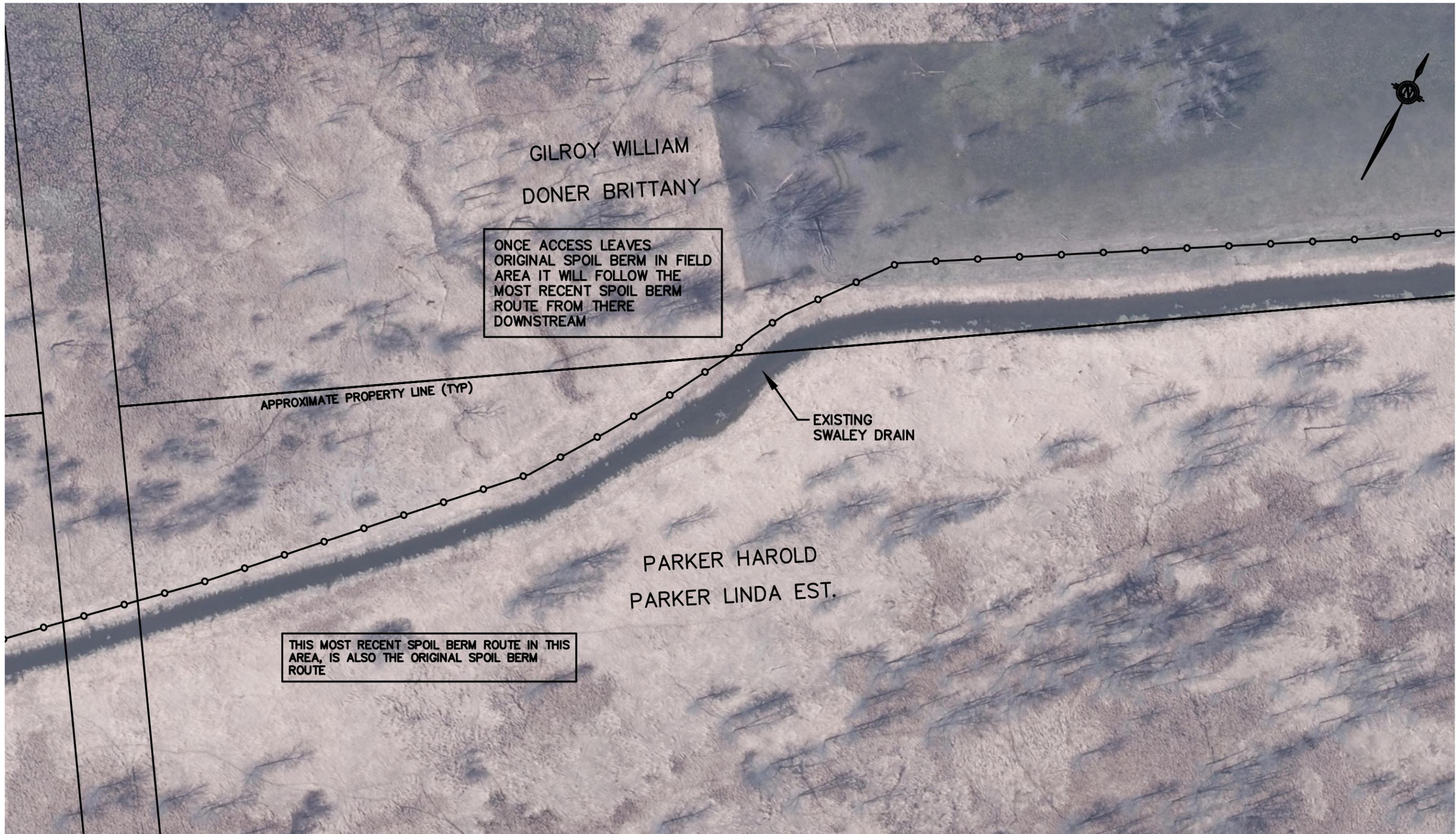
LEGEND

—○—○— — DENOTES ACCESS ROUTE ALONG ORIGINAL SPOIL BERM



SCALE
0 10 20m
1:1,000
(ON 11"x17")

SWALEY DRAIN (CONCESSION 11) 2021	
COUNTY OF SIMCOE	TOWNSHIP OF SPRINGWATER
ACCESS ROUTE CONTINUED	
K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS SUDBURY	SEPT. 7, 2021
	JOB NUMBER: 16-387
DRAWING	7



LEGEND

—○—○— — DENOTES ACCESS ROUTE ALONG ORIGINAL AND MOST RECENT SPOIL BERM

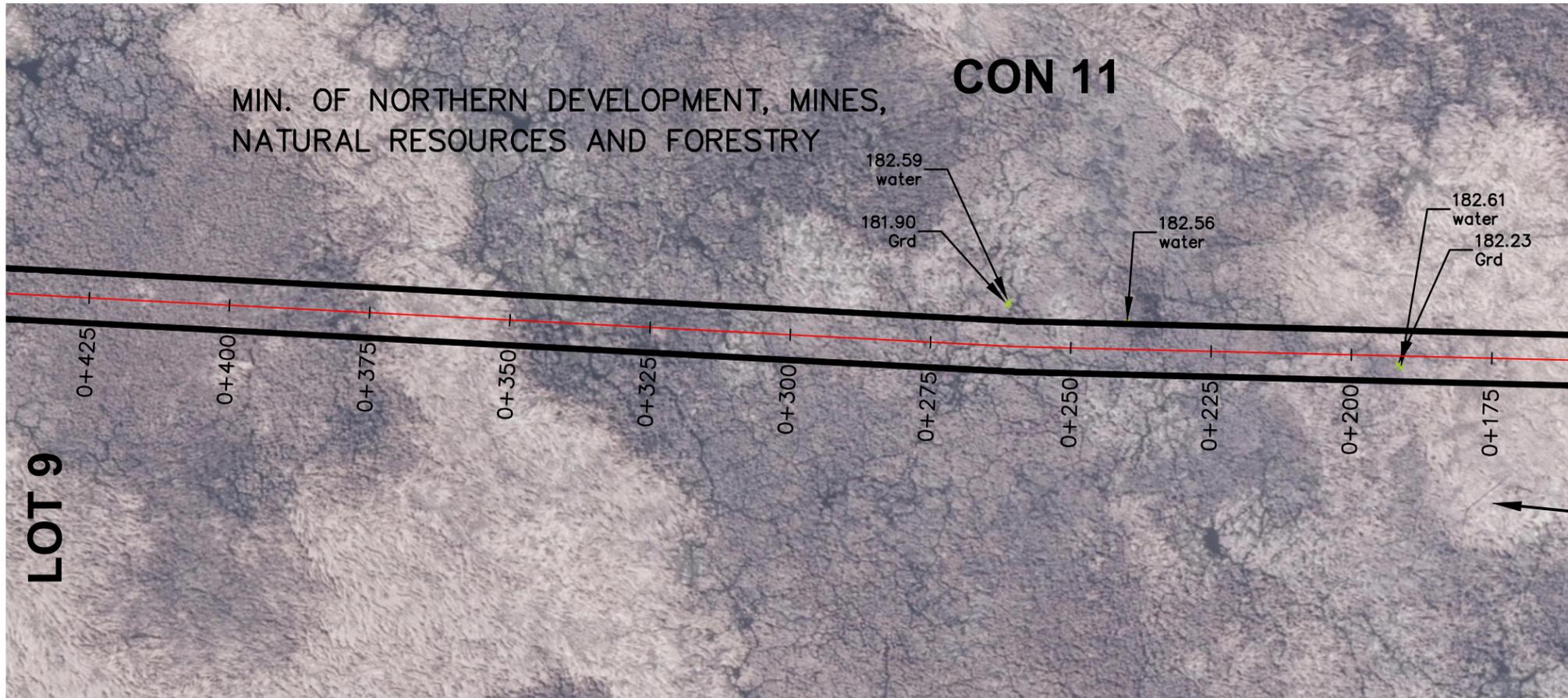


SCALE
0 10 20m
1:1,000
(ON 11"x17")

SWALEY DRAIN (CONCESSION 11) 2021	
COUNTY OF SIMCOE	TOWNSHIP OF SPRINGWATER
ACCESS ROUTE CONTINUED	
SEPT. 7, 2021	JOB NUMBER: 16-387
K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS KITCHENER SUDBURY	DRAWING 8

MIN. OF NORTHERN DEVELOPMENT, MINES,
NATURAL RESOURCES AND FORESTRY

CON 11

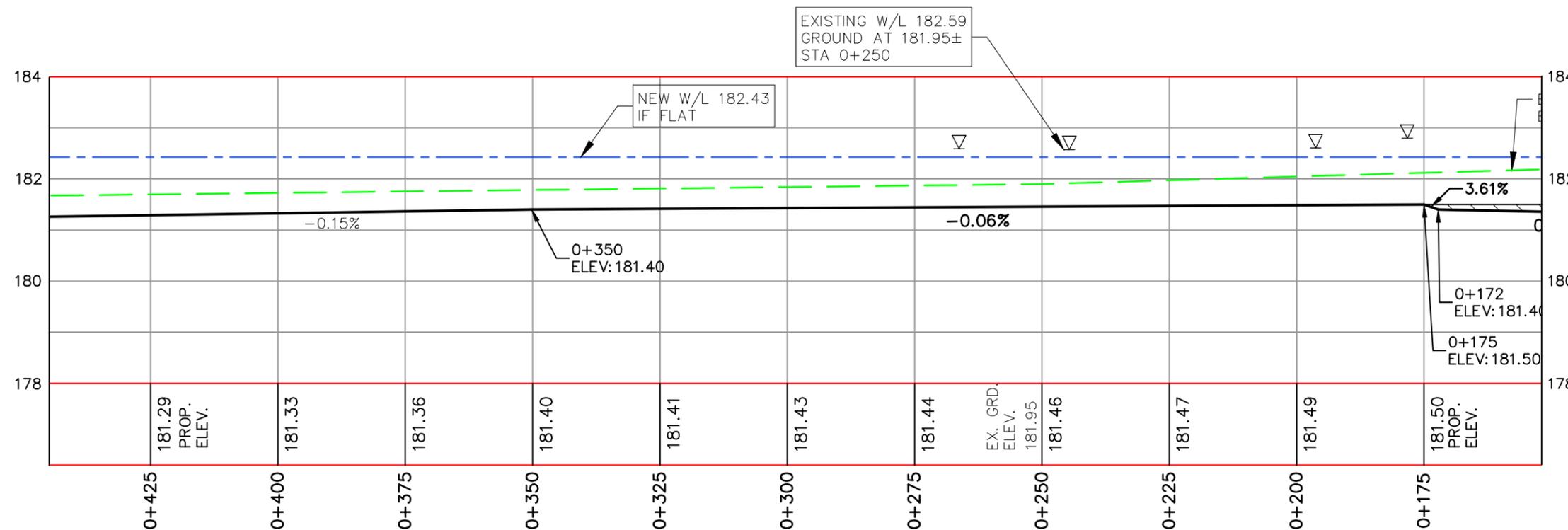


LOT 9

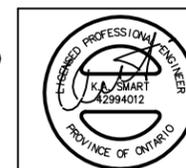
NOTES:
 - WATER LEVELS WERE RECORDED BY GPS SURVEY.
 - DISTANCES/STATIONS IN METERS ARE WHAT HAVE BEEN SCALED BETWEEN LOCATIONS OF RECORDED ELEVATIONS.

LEGEND

- PT 2 — DENOTES SURVEYED GROUND LOCATION BY GPS FEB. 20, 2019
- ▽ — DENOTES WATER LEVEL FEB. 20, 2019



- PROPOSED WATERLEVEL
- EXISTING WETLAND BOTTOM
- PROPOSED GRADE



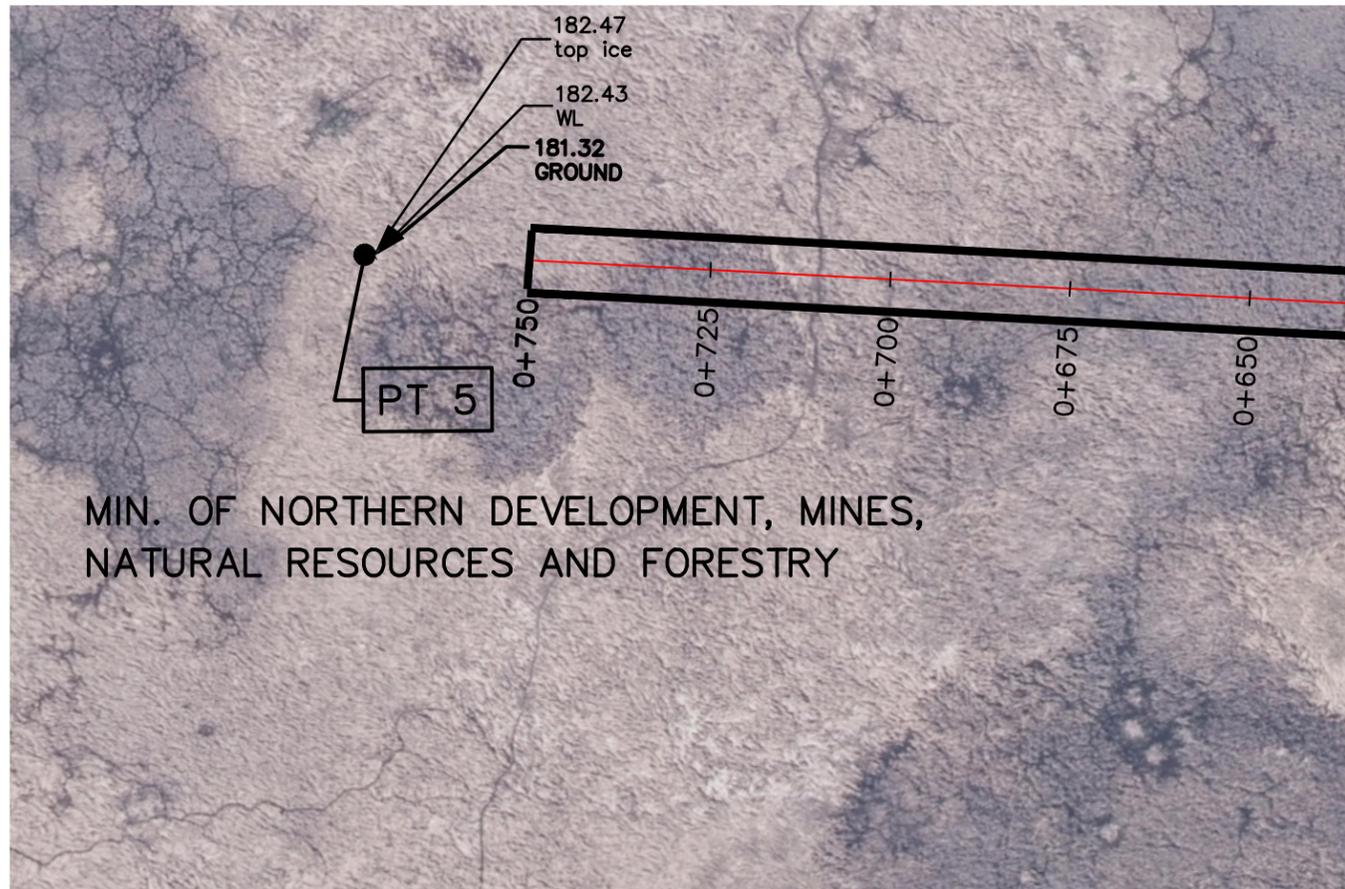
0 10 20m
 SCALE 1 : 1000
 HORZ.
 0 1m 2m
 SCALE 1 : 100
 VERT.
 (ON 11"x17")

SWALEY DRAIN (CONCESSION 11) 2021
 COUNTY OF SIMCOE TOWNSHIP OF SPRINGWATER

PLAN AND PROFILE No. 2
(750m EXTENSION)

K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 SUDBURY

SEPT. 7, 2021
 JOB NUMBER: 16-387
 DRAWING 10



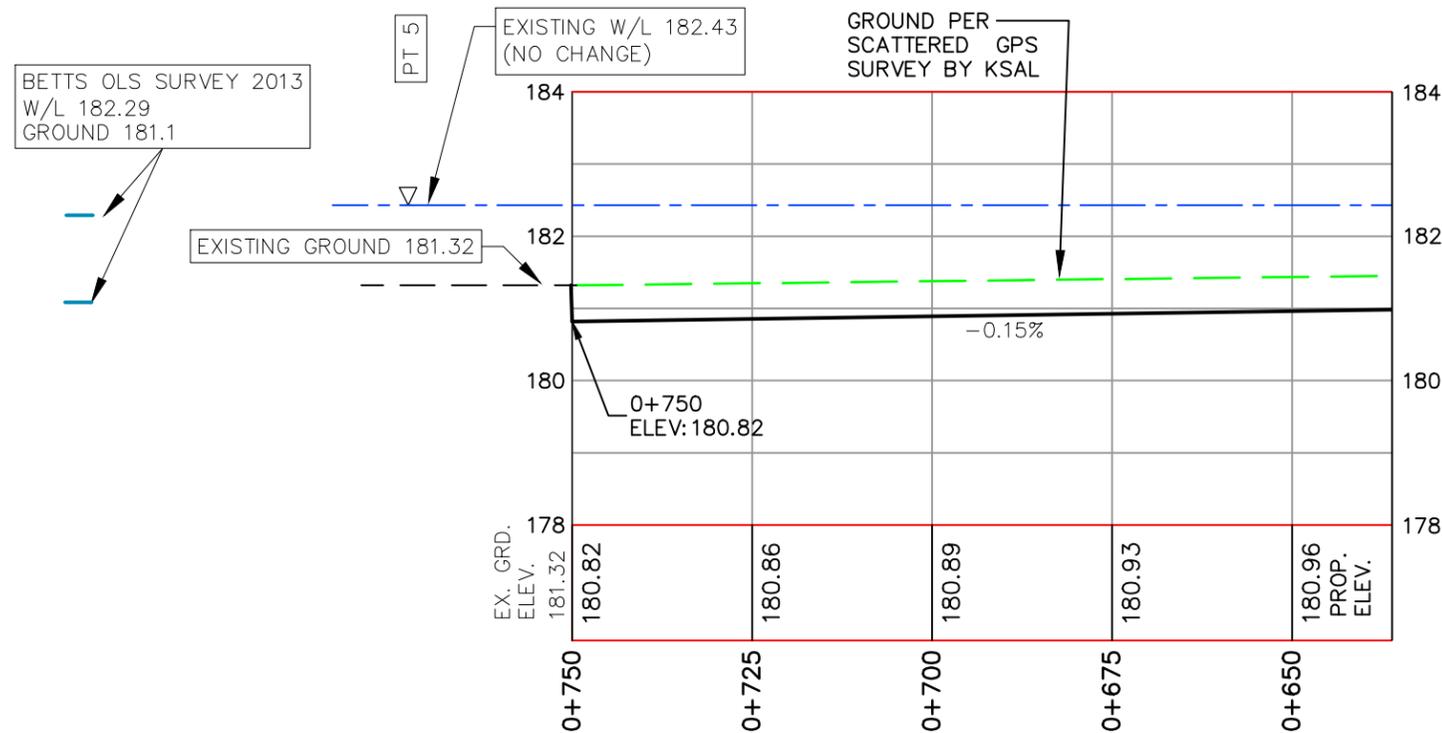
MIN. OF NORTHERN DEVELOPMENT, MINES,
NATURAL RESOURCES AND FORESTRY

NOTES:
 -WATER LEVELS WERE RECORDED BY GPS SURVEY.
 -DISTANCES/STATIONS IN METERS ARE WHAT HAVE BEEN SCALED BETWEEN LOCATIONS OF RECORDED ELEVATIONS.

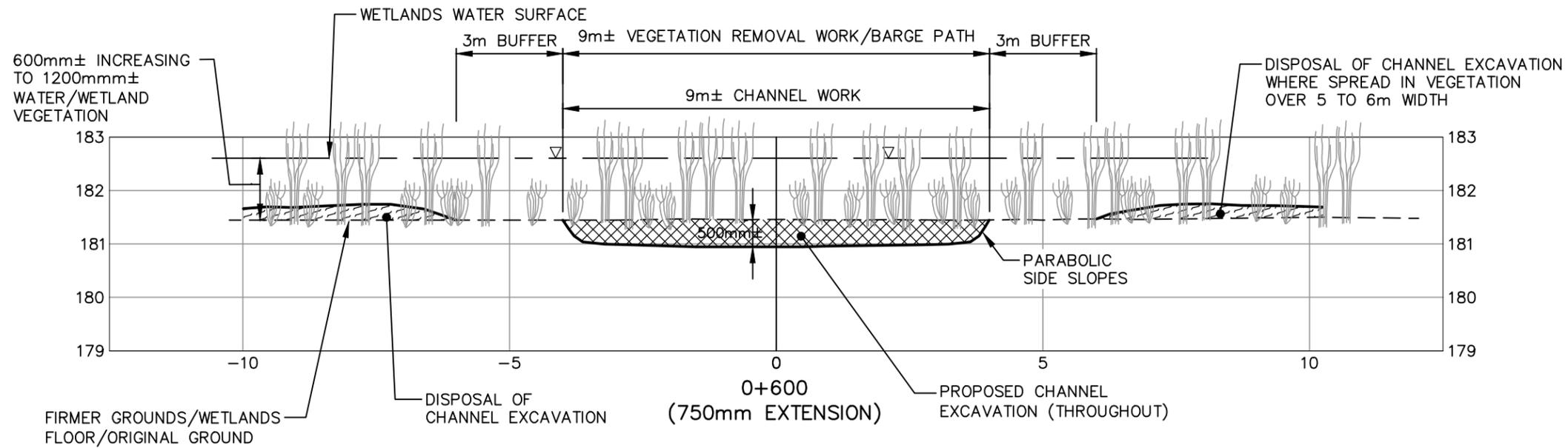
LEGEND

- PT 2 — DENOTES SURVEYED GROUND LOCATION BY GPS FEB. 20, 2019
- ∇ — DENOTES WATER LEVEL FEB. 20, 2019

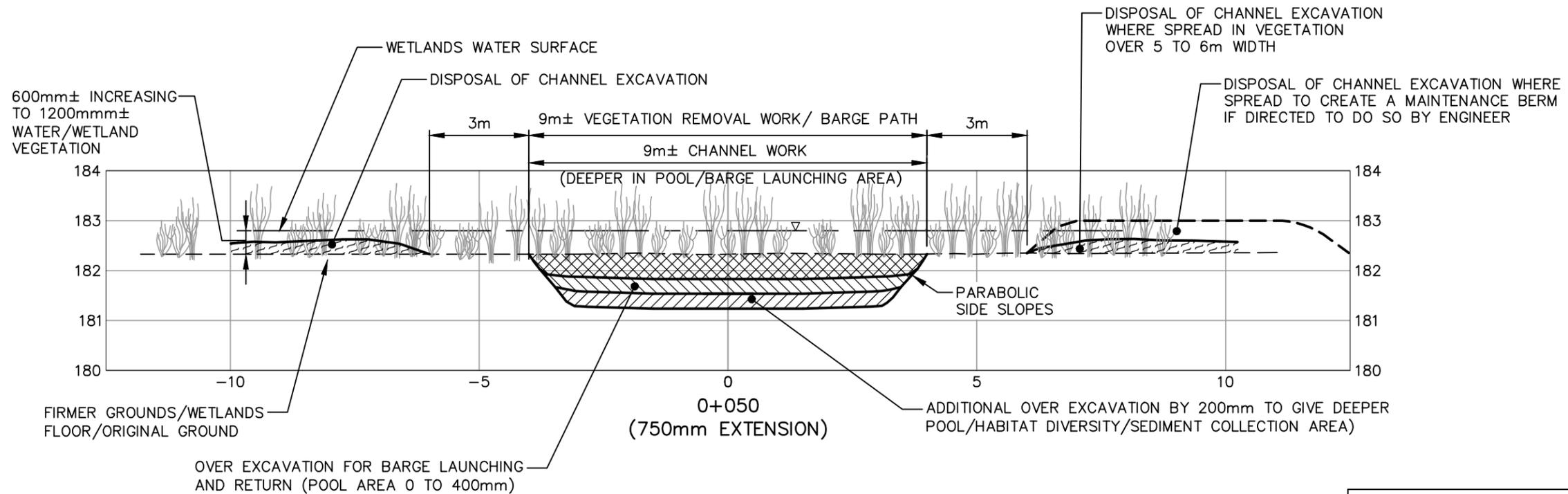
- PROPOSED WATERLEVEL
- EXISTING WETLAND BOTTOM
- PROPOSED GRADE



	<p>0 10 20m SCALE 1 : 1000 HORZ.</p> <p>0 1m 2m SCALE 1 : 100 VERT. (ON 11"x17")</p>
<p>SWALEY DRAIN (CONCESSION 11) 2021 COUNTY OF SIMCOE TOWNSHIP OF SPRINGWATER</p>	
<p>PLAN AND PROFILE No. 4 (750m EXTENSION)</p>	
	<p>SEPT. 7, 2021 JOB NUMBER: 16-387 DRAWING: 12</p>



NEW CHANNEL WITH NO DEEP POOL



NEW CHANNEL WITH DEEP POOL

SWALEY DRAIN (CONCESSION 11) 2021

COUNTY OF SIMCOE TOWNSHIP OF SPRINGWATER

TYPICAL CROSS SECTIONS FOR NEW WORK



0 1m 2m
SCALE 1 : 100
HORZ.

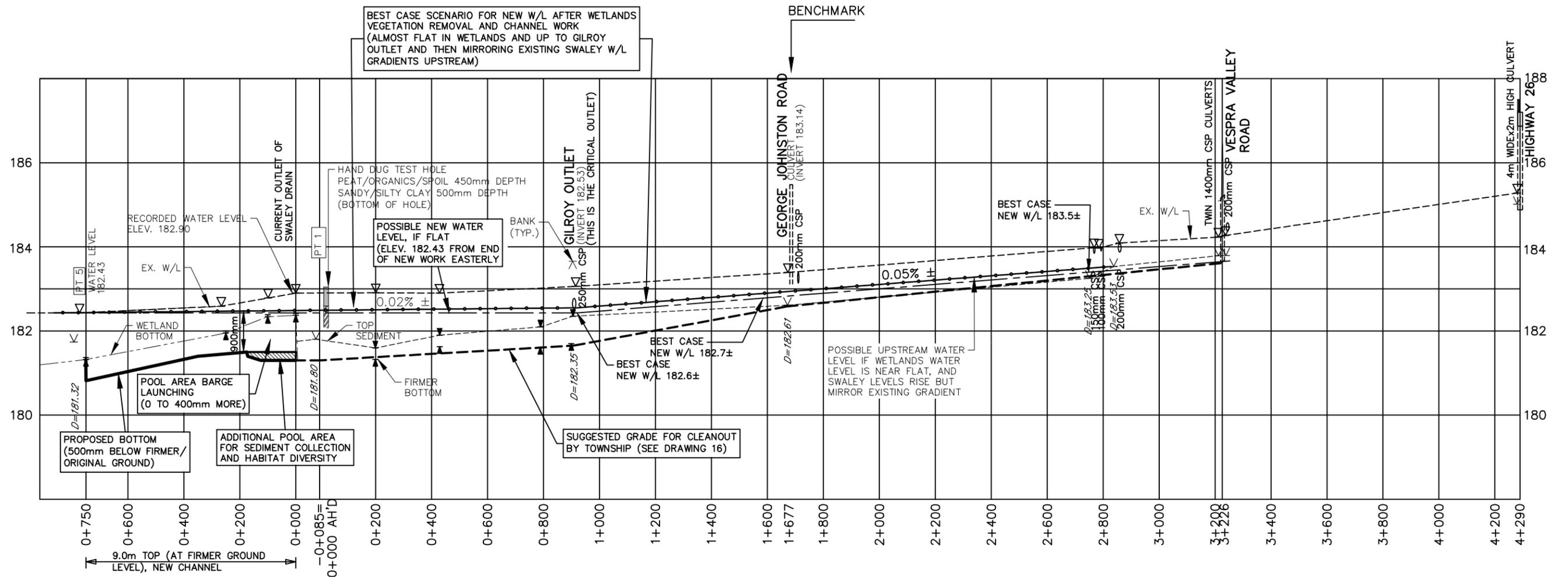
0 1m 2m
SCALE 1 : 100
VERT.
(ON 11"x17")

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

SEPT. 7, 2021

JOB NUMBER: 16-387

DRAWING 13



750m EXTENSION **ANY WORK IN THIS SECTION TO BE BY DRAINAGE SUPERINTENDENT AS SECTION 74 REPAIR**

RECOMMENDED CONCESSION 11 WORK AREA (SEE PLAN AND PROFILE FOR NEW CHANNEL BOTTOM ELEVATIONS)

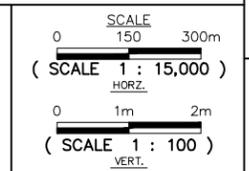
AND SUCH IS RECOMMENDED TO BE DONE SHORTLY AFTER WORK OF THIS REPORT IS DONE

BENCHMARK
 TOP OF CURB FOR SOFFIT ON OUTSIDE OF PARAPET WALL ON WESTSIDE OF GEORGE JOHNSTON ROAD AT SWALEY DRAIN CROSSING
 ELEV. 185.459

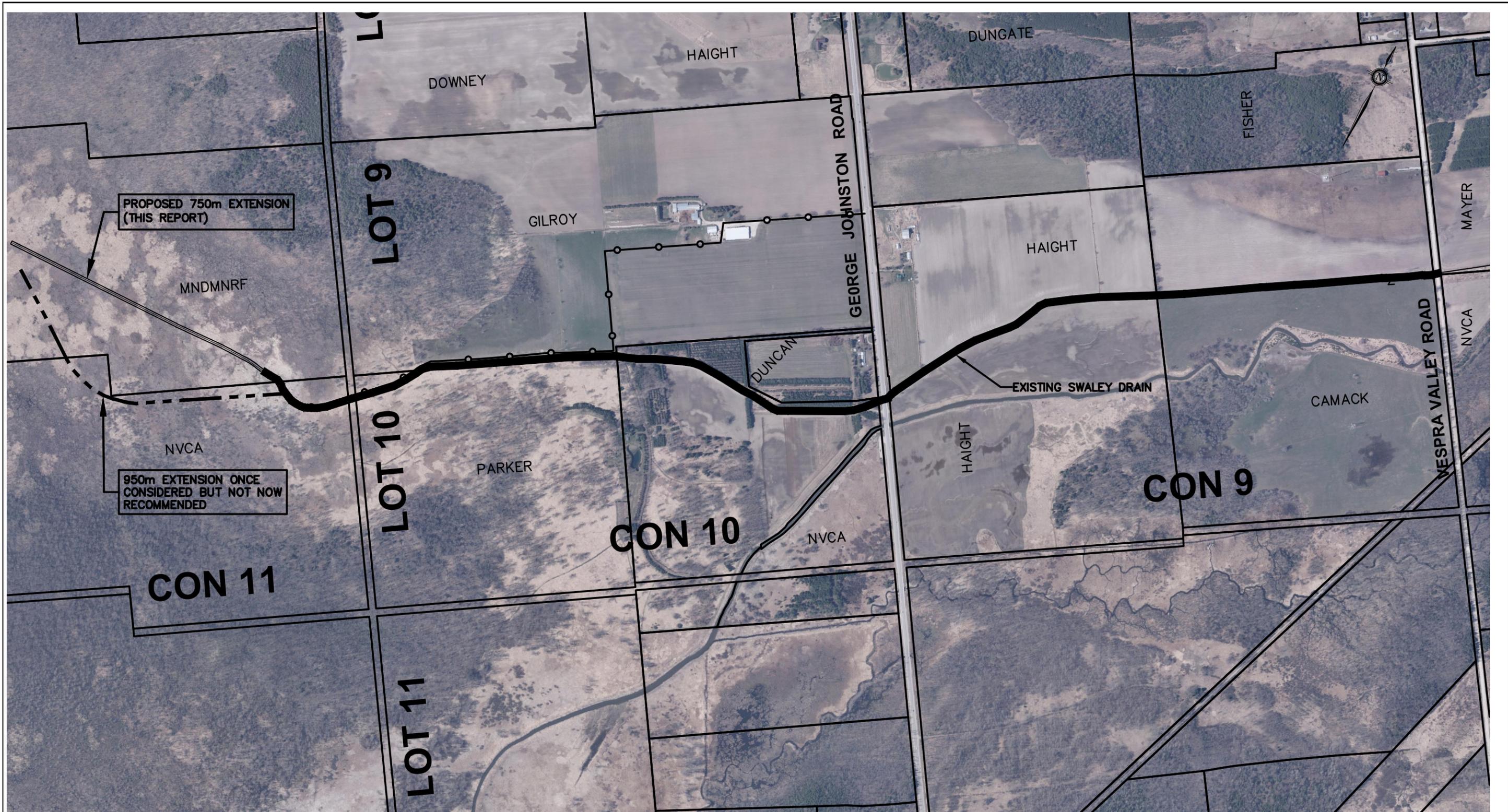
SURVEY DATA BY KSAL
 UPSTREAM OF 0+000 TAKEN AUGUST 2021
 DOWNSTREAM OF 0+000 TAKEN FEB. 2019

- PT 1 — DENOTES SURVEYED GROUND LOCATION (2019)
- ▽ — DENOTES WATER LEVEL (2021)
- ▽ — DENOTES DITCH BOTTOM (2019) DITCH ELEVATION
- — DENOTES APPROXIMATE WETLAND BOTTOM (2019) (ELEVATION AT WHICH SURVEY ROD BY KSAL TOUCHED FIRMER GROUND)
- ▽ — DENOTES TOP OF SEDIMENT PER SURVEY BY KSAL 2021 (IN EXISTING CHANNEL)
- ▲ — DENOTES FIRM BOTTOM PER SURVEY BY KSAL 2021 (IN EXISTING CHANNEL)

NOTES:
 -WATER LEVELS WERE RECORDED BY GPS SURVEY.
 -DISTANCES/STATIONS IN METERS ARE WHAT HAVE BEEN SCALED/OR ESTABLISHED BY GPS BETWEEN LOCATIONS OF RECORDED ELEVATIONS.



SWALEY DRAIN (CONCESSION 11) 2021	
COUNTY OF SIMCOE	TOWNSHIP OF SPRINGWATER
OVERALL PROFILE TO SHOW NEW WORK IN CONCESSION 11 PLUS EXISTING SWALEY DRAIN UPSTREAM TO HIGHWAY 26 (KSAL DATA ONLY IS SHOWN)	
K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS KITCHENER SUDBURY	SEPT. 7, 2021 JOB NUMBER: 16-387 DRAWING 14



LEGEND



LENGTH OF CHANNEL RECOMMENDED TO BE CLEANED BY DRAINAGE SUPERINTENDENT IN NEAR FUTURE



0 10 20m
SCALE 1 : 10,000
(ON 11"x17")

SWALEY DRAIN (CONCESSION 11) 2021
COUNTY OF SIMCOE TOWNSHIP OF SPRINGWATER

**EXISTING SWALEY PLAN
TO SHOW RECOMMENDED CLEANOUT
BY DRAINAGE SUPERINTENDENT
(FOR INFORMATION ONLY NOT PART OF THIS REPORT)**

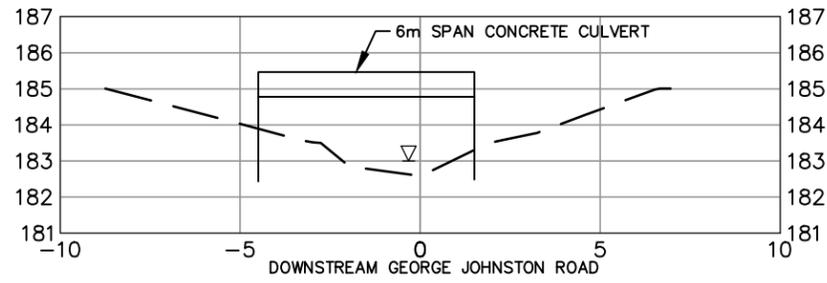
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
SUDBURY

SEPT. 7, 2021

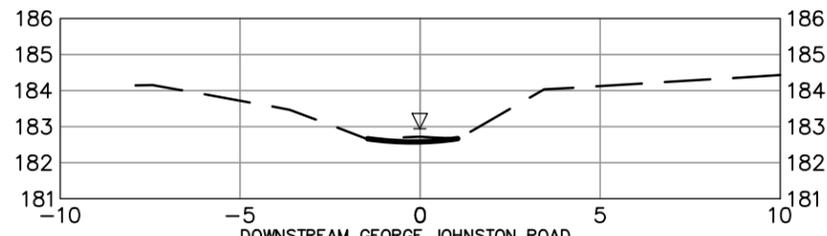
JOB NUMBER: 16-387

DRAWING

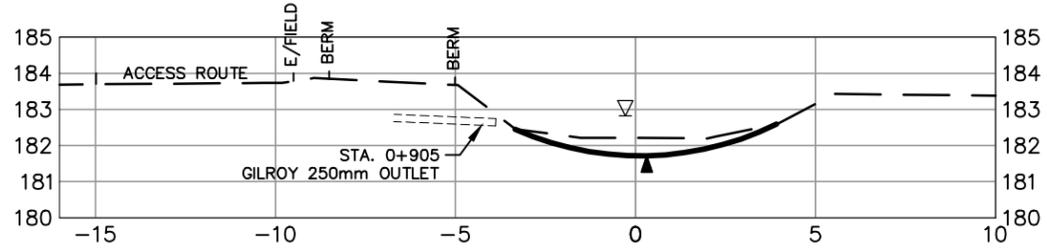
15



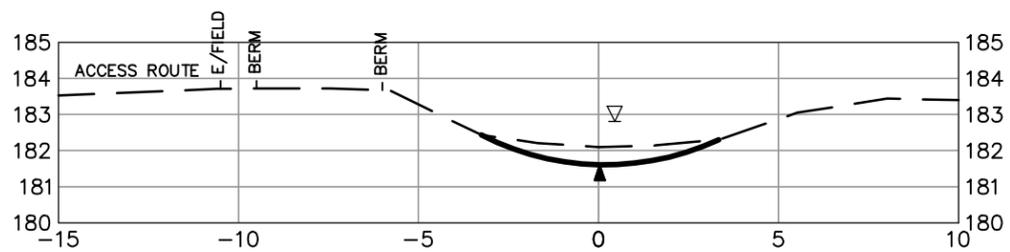
1+669



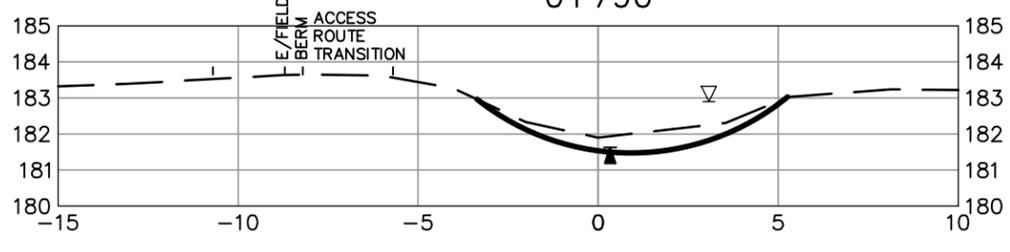
1+659



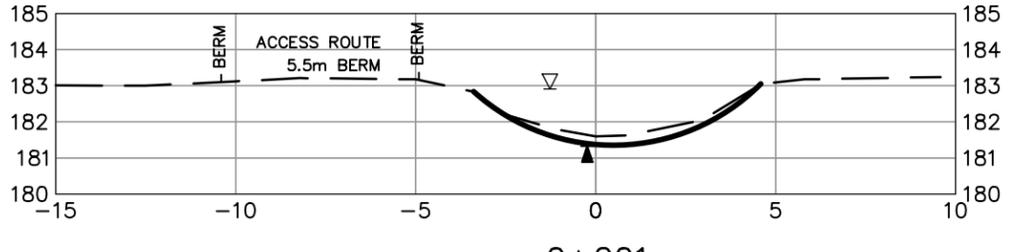
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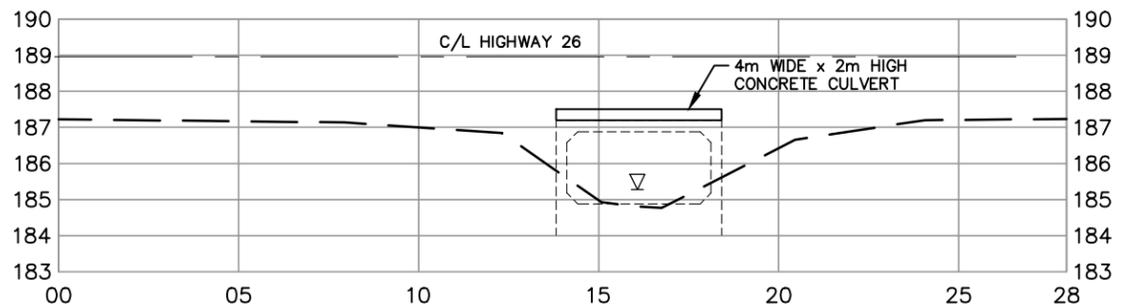
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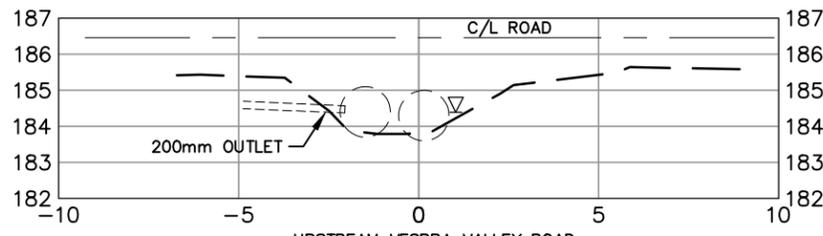
0+430



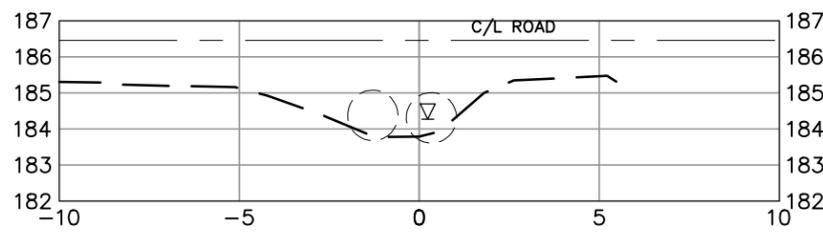
0+201



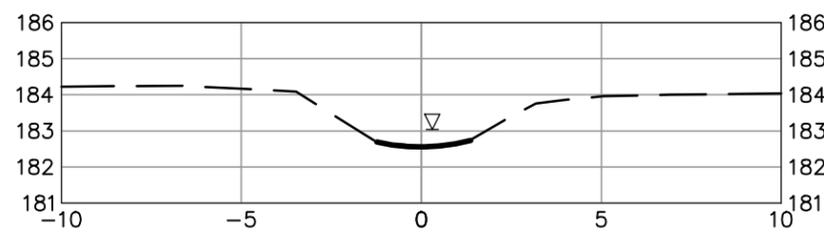
SECTION IS 16m DOWNSTREAM OF CULVERT



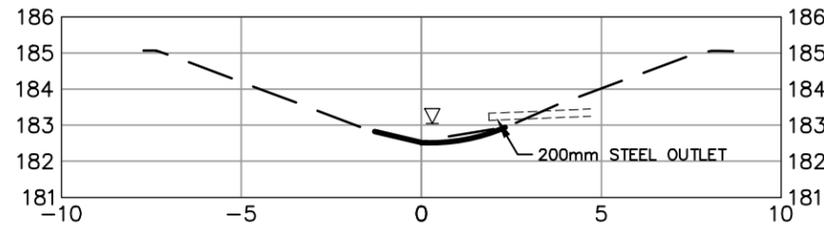
3+238



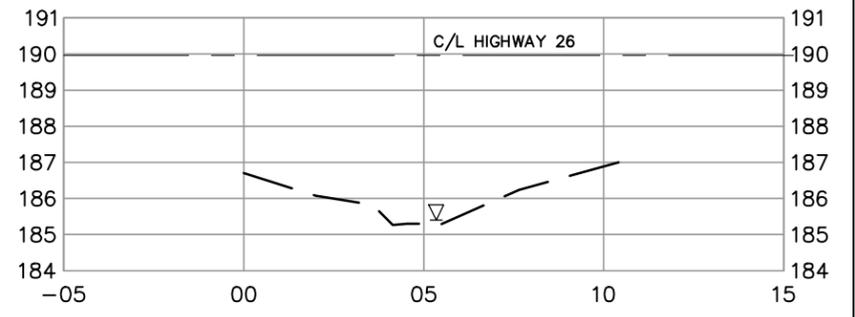
3+212



1+702



1+686



SECTION IS UPSTREAM OF HIGHWAY 26 CULVERT

- DENOTES EXISTING WATER LEVEL (2021)
- DENOTES MORE FIRM DITCH BOTTOM
- TOP OF SEDIMENTS AND EXISTING GROUND
- SUGGESTED GRADE FOR CLEANOUT



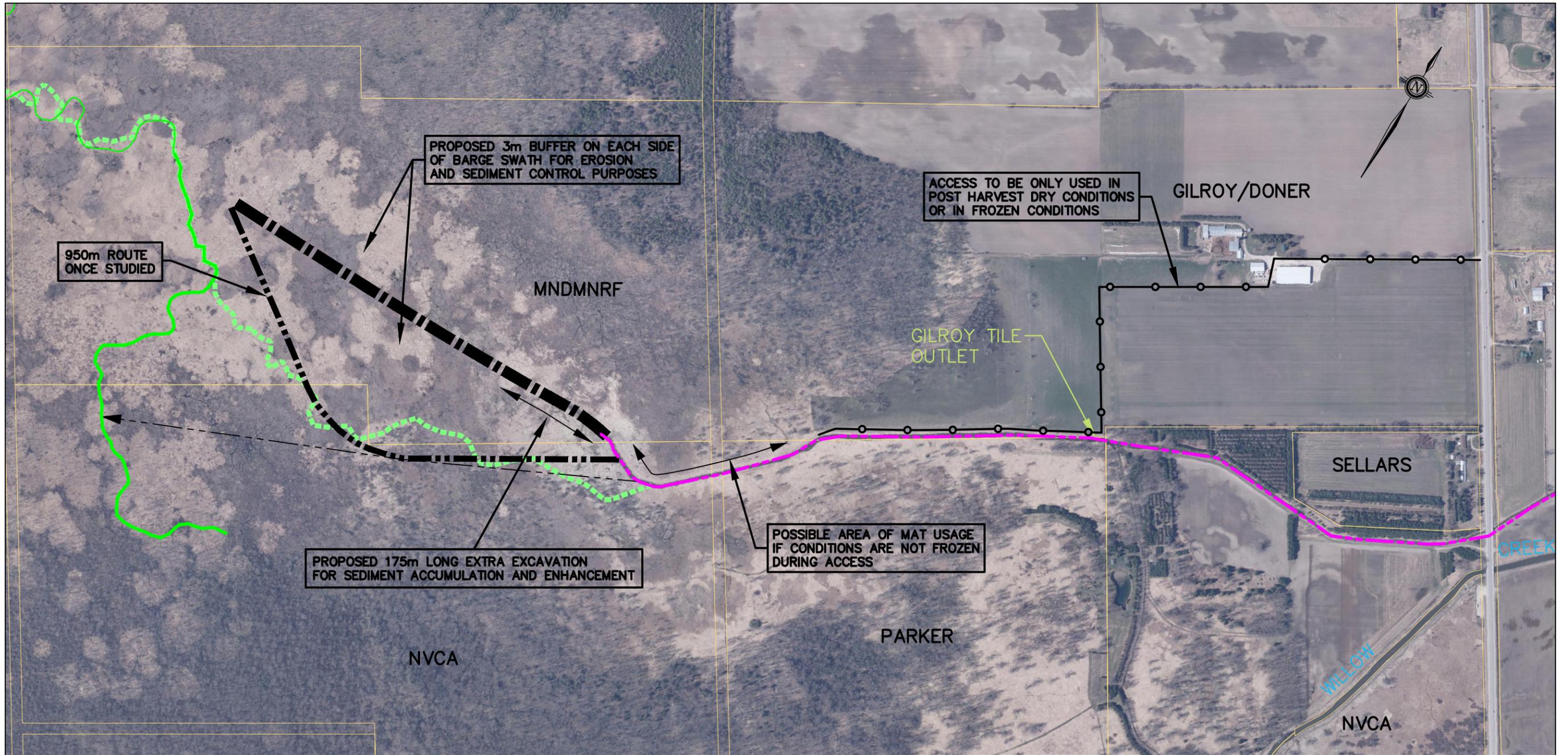
0 1m 2m
SCALE 1 : 200
HORZ.
0 1m 2m
SCALE 1 : 200
VERT.
(ON 11"x17")

SWALEY DRAIN (CONCESSION 11) 2021

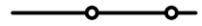
COUNTY OF SIMCOE TOWNSHIP OF SPRINGWATER

**CROSS SECTIONS
IF CLEANOUT IS DONE BY DRAINAGE
SUPERINTENDENT
(FOR INFORMATION ONLY)**

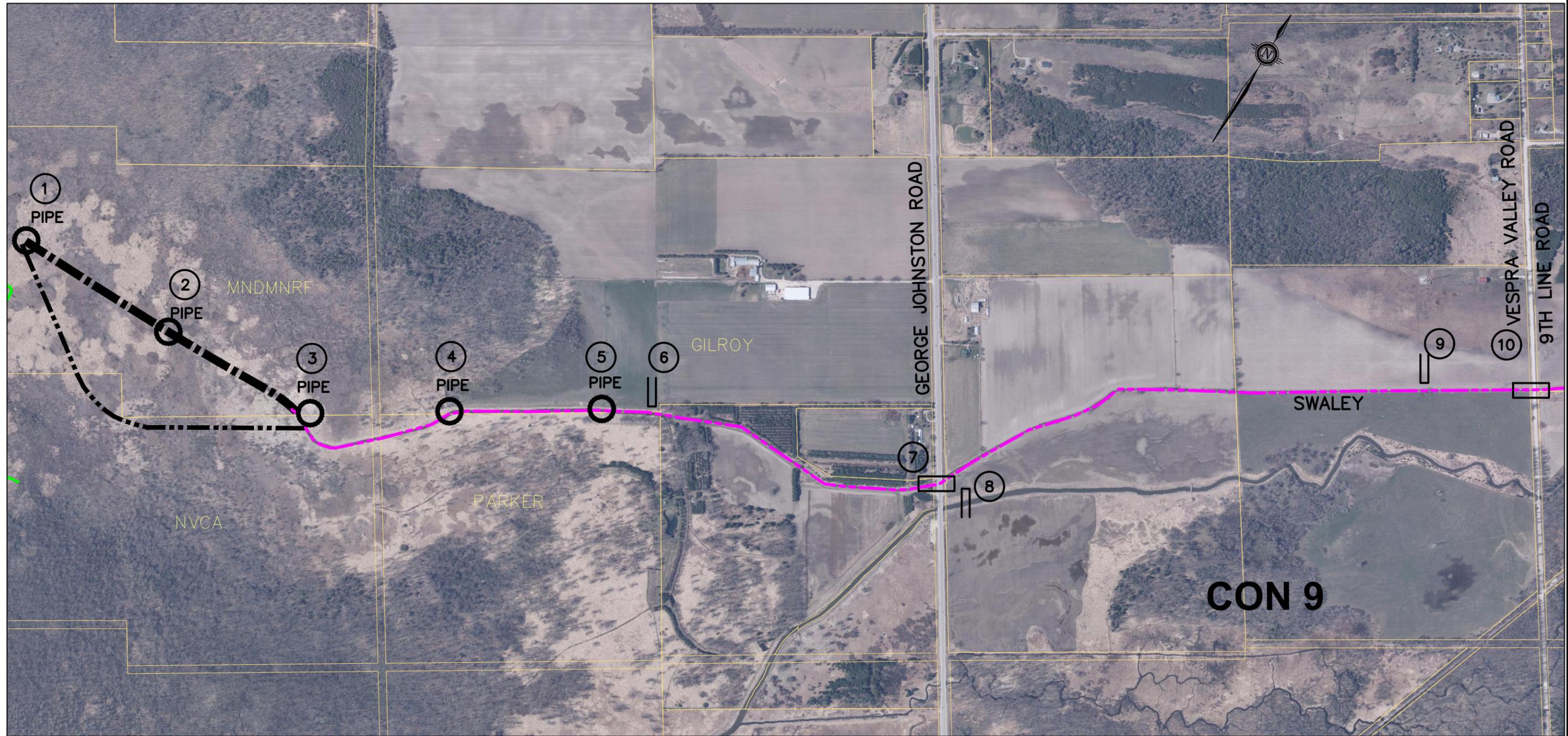
<p>K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS KITCHENER SUDBURY</p>	<p>SEPT. 7, 2021</p> <p>JOB NUMBER: 16-387</p> <p>DRAWING 17</p>
--	--



LEGEND

-  - HISTORIC ROUTES IN 1901
-  - SWALEY DRAIN AND MUSKRAT IN 1954
-  - WHERE NEW WORK IS RECOMMENDED NOW
-  - EXISTING SWALEY DRAIN CHANNEL. NO WORK TO BE DONE AS PER THIS REPORT
-  - ACCESS ROUTE ON GILROY/DONER PROPERTY

DESIGNED BY:		SCALE
CHECKED BY:		0 75 150
DRAWN BY:		1:7,500 (ON 11"x17")
CHECKED BY:		
SWALEY DRAIN (CONCESSION 11) 2021		
TOWNSHIP OF SPRINGWATER		
EROSION AND SEDIMENT CONTROL PLAN		SEPT. 7, 2021
 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS KITCHENER SUDBURY		REVISED: JOB NUMBER: 16-387 DRAWING: 18

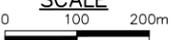


LEGEND

-  - PIPE MONITORING LOCATION
-  - TILE OUTLET MONITORING LOCATION
-  - CULVERT MONITORING LOCATION
-  - MONITORING LOCATION NUMBER

ELEVATIONS OF EXISTING MONITORING LOCATIONS

LOCATION No.	FEATURE	ELEVATION
6	- GILROY TILE OUTLET - INV. 250mm CSP	182.53
7	- TOP OF CURB ON CULVERT ON WEST SIDE OF GEORGE JOHNSTON ROAD (BENCHMARK)	185.459
8	- HAIGHT TILE OUTLET- INV. 200mm STEEL	183.14
9	- CAMACK TILE OUTLET- INV. 200mm CSP MOST EASTERLY OUTLET OF 3 APPROX 375m WEST OF VESPRA VALLEY ROAD	183.79
10	- TOP OF SOUTHERLY 1400mm DIA CULVERT ON VESPRA VALLEY ROAD	185.12

DESIGNED BY:		<p>SCALE</p>  <p>1:10,000 (ON 11"x17")</p>	
CHECKED BY:			
DRAWN BY:			
CHECKED BY:			
SWALEY DRAIN (CONCESSION 11) 2021			
COUNTY OF SIMCOE		TOWNSHIP OF SPRINGWATER	
MONITORING PLAN		SEPT. 7, 2021	
 <p>K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS KITCHENER SUDBURY</p>	REVISED:		
	JOB NUMBER: 16-387	DRAWING	19