

Court of Revision
AGENDA

Tuesday, July 26, 2016, 6:00 pm
Tecumseh Town Hall
www.tecumseh.ca

Pages

1. CALL TO ORDER

2. ROLL CALL

3. DISCLOSURE OF PECUNIARY INTEREST

4. INTRODUCTION AND PURPOSE OF MEETING

The purpose of the Court of Revision is to hear from any assessed landowner who wishes to appeal his/her assessment for future maintenance or any part thereof, as set out in the Drainage Report prepared by Rood Engineering Inc., dated April 28, 2016, and by Provisional By-law No. 2016-49, in accordance with the *Drainage Act*.

5. DELEGATIONS

- a. Charles MacLean

Re: West Branch Delisle Drain

6. COMMUNICATIONS

- | | | |
|----|---|----|
| a. | Notice of First Sitting of Court of Revision, July 4, 2016 | 1 |
| | Re: West Branch Delisle Drain | |
| b. | Revised Future Maintenance Assessment Schedule | 2 |
| | Re: West Branch Delisle Drain - E09DE(23) | |
| c. | Revised Assessment Schedule | 6 |
| | Re: West Branch Delisle Drain - E09DE(23) | |
| d. | Drainage Superintendent, May 13, 2016, Report No. 32/16 | 10 |
| | Re: West Branch Delisle Drain – Consider Engineer’s Drainage Report | |
| e. | By-law 2016-49 | 16 |
| | Being a by-law to provide for the repair and | |
| | improvements to the West Branch Delisle Drain | |

7. ADJOURNMENT

July 4, 2016

To: Affected Property Owners and Agencies

**Re: Notice of First Sitting of the Court of Revision
For the Repair and Improvement to the
West Branch Delisle Drain**

Tecumseh Council at their meeting held on June 28, 2016, adopted the Drainage Report prepared by Rood Engineering Inc., dated April 28, 2016, for improvements to the West Branch Delisle Drain (Report) by Provisional By-law No. 2016-49 in accordance with the *Drainage Act*.

NOTICE IS HEREBY GIVEN that a Court of Revision in respect of the Drainage Report will be held as follows:

Date: Tuesday, July 26, 2016

Time: 6:00 p.m.

**Place: Council Chambers
Tecumseh Town Hall
917 Lesperance
Tecumseh, ON**

NOTE: Attached to this invitation is a revised Schedule of Assessment and revised Future Maintenance Schedule of Assessment a result of a possible land severance application that may occur in the watershed. Should the Planning Act procedure for the parcel be accepted for the landowner, the revised Schedule of Assessments will be attached to the aforementioned drainage report as By-Law for the West Branch Delisle Drain.

The purpose of the Court of Revision is to hear any owner who wishes to appeal his/her assessment or any part thereof as set out in the Drainage Report. Any notice of such appeal is to be served in writing on the Clerk of the Town at least ten (10) days before the meeting of said Court of Revision. Notice shall be served at the address indicated above.

Additional information regarding the *Drainage Act* process is located on the Ontario Ministry of Agriculture & Food (OMAF) website at: www.ontario.ca/drainage

Attachments: 1. Provisional By-Law 2016-49 leaflet
2. 2016-04-29-Revised Schedule of Assessment – West Branch Delisle Drain
3. 2016-04-29-Revised Future Maintenance Schedule of Assessment

Laura Moy
Director, Corporate Services & Clerk



FUTURE MAINTENANCE SCHEDULE OF ASSESSMENT

WEST BRANCH DELISLE DRAIN - E09DE(23)

(Geographic Township of Sandwich South)

TOWN OF TECUMSEH

2. ONTARIO LANDS:

<u>Tax Roll</u> <u>No.</u>	<u>Plan</u> <u>No.</u>	<u>Lot or Part</u> <u>of Lot</u>	<u>Hectares</u> <u>Afft'd</u>	<u>Acres</u> <u>Afft'd</u>	<u>Owner's Name</u>	<u>Value of</u> <u>Benefit</u>	<u>Value of</u> <u>Outlet</u>	<u>Value of Special</u> <u>Benefit</u>	<u>TOTAL</u> <u>VALUE</u>
		King's Highway # 3	7.06	17.45	Ministry of Transportation Ontario	\$ 469.00	\$ 696.00	\$ -	\$ 1,165.00
Total on Ontario Lands.....						\$ 469.00	\$ 696.00	\$ -	\$ 1,165.00

3. MUNICIPAL LANDS:

<u>Tax Roll</u> <u>No.</u>	<u>Plan</u> <u>No.</u>	<u>Lot or Part</u> <u>of Lot</u>	<u>Hectares</u> <u>Afft'd</u>	<u>Acres</u> <u>Afft'd</u>	<u>Owner's Name</u>	<u>Value of</u> <u>Benefit</u>	<u>Value of</u> <u>Outlet</u>	<u>Value of Special</u> <u>Benefit</u>	<u>TOTAL</u> <u>VALUE</u>
		County Road 34	0.85	2.10	County of Essex	\$ 471.00	\$ 91.00	\$ -	\$ 562.00
		County Road 46	1.53	3.79	County of Essex	\$ 102.00	\$ 43.00	\$ -	\$ 145.00
		10th Concession Road	2.55	6.29	Town of Tecumseh	\$ 117.00	\$ -	\$ -	\$ 117.00
		Ruston Road	0.28	0.69	Town of Tecumseh	\$ 13.00	\$ -	\$ -	\$ 13.00
		South Talbot Road	2.57	6.34	Town of Tecumseh	\$ 301.00	\$ -	\$ -	\$ 301.00
		Canada South Railway Drive	0.77	1.90	Town of Tecumseh	\$ 36.00	\$ 216.00	\$ -	\$ 252.00
Total on Municipal Lands.....						\$ 1,040.00	\$ 350.00	\$ -	\$ 1,390.00

4. PRIVATELY OWNED - NON-AGRICULTURAL LANDS:

<u>Tax Roll</u> <u>No.</u>	<u>Plan</u> <u>No.</u>	<u>Lot or Part</u> <u>of Lot</u>	<u>Hectares</u> <u>Afft'd</u>	<u>Acres</u> <u>Afft'd</u>	<u>Owner's Name</u>	<u>Value of</u> <u>Benefit</u>	<u>Value of</u> <u>Outlet</u>	<u>Value of Special</u> <u>Benefit</u>	<u>TOTAL</u> <u>VALUE</u>
410-01301	9	5	0.73	1.81	Bradley Dupuis	\$ 34.00	\$ 9.00	\$ -	\$ 43.00
410-01600	9	5	0.40	1.00	Eric Mathers	\$ 18.00	\$ 5.00	\$ -	\$ 23.00
410-01660	9	4	0.20	0.50	Brian & Lisa McGuire	\$ -	\$ 3.00	\$ -	\$ 3.00

Schedule of Assessment - West Branch Delisle Drain
(Geographic Township of Sandwich South)
Town of Tecumseh E09DE(23)

- 19 -

2016-04-28
Rev. 2016-06-29

Tax Roll <u>No.</u>	Plan <u>No.</u>	Lot or Part <u>of Lot</u>	Hectares <u>Afft'd</u>	Acres <u>Afft'd</u>	<u>Owner's Name</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	Value of Special <u>Benefit</u>	TOTAL <u>VALUE</u>
410-02010	9	3	0.35	0.85	Matthew & Kari Loscher	\$ -	\$ 4.00	\$ -	\$ 4.00
410-02650	10	3	0.23	0.57	Nancy Steeves	\$ -	\$ 3.00	\$ -	\$ 3.00
410-02701	10	5	0.40	1.00	Christopher & Cathy-Lyn McCarthy	\$ -	\$ 5.00	\$ -	\$ 5.00
460-00690	STR	295	0.48	1.19	Michael & Deborah Bissonnette	\$ 23.00	\$ 6.00	\$ -	\$ 29.00
480-04000	NTR	295	1.44	3.56	Maidstone Recreation Centre	\$ -	\$ 14.00	\$ -	\$ 14.00
480-04300	NTR	295	0.31	0.76	Brian & Marguerite Foubert	\$ -	\$ 3.00	\$ -	\$ 3.00
480-04400	NTR	295	0.17	0.42	Mark Buhler	\$ -	\$ 1.00	\$ -	\$ 1.00
480-04500	NTR	295	0.17	0.42	Shawn & Grace Macdonald	\$ -	\$ 1.00	\$ -	\$ 1.00
480-04600	NTR	295	0.40	1.00	Ronald & Renee Ducharme	\$ -	\$ 4.00	\$ -	\$ 4.00
480-04700	NTR	295	3.35	8.28	Michael & Karen Langlois	\$ -	\$ 29.00	\$ -	\$ 29.00
480-04800	NTR	295	2.02	5.00	Daniel Ryall	\$ -	\$ 18.00	\$ -	\$ 18.00
480-04900	NTR	295	2.02	5.00	Kevin Nussio	\$ -	\$ 18.00	\$ -	\$ 18.00
480-05200	NTR	296	2.02	5.00	Danny & Starla O'Connor	\$ 94.00	\$ 18.00	\$ -	\$ 112.00
480-05300	NTR	296	2.21	5.47	Evelyn & Robert Corcoran	\$ 94.00	\$ 19.00	\$ -	\$ 113.00
480-05500	NTR	295	1.66	4.11	Samara Mouawad	\$ -	\$ 15.00	\$ -	\$ 15.00
480-05600	NTR	295	1.21	3.00	Robert & Nancy Thomson	\$ -	\$ 11.00	\$ -	\$ 11.00
480-05700	NTR	295	0.81	2.00	Heather Sharpe	\$ -	\$ 7.00	\$ -	\$ 7.00
480-05800	NTR	295	1.21	3.00	Michael & Allison Fredericks	\$ -	\$ 11.00	\$ -	\$ 11.00
480-05900	NTR	296	0.25	0.62	William & Gladys Peiffer	\$ 6.00	\$ 2.00	\$ -	\$ 8.00
480-06400	NTR	296	1.42	3.50	Nicolae & Marcela Paducel	\$ 34.00	\$ 13.00	\$ -	\$ 47.00
480-06500	NTR	296	0.40	1.00	Jessica Hillyard	\$ 9.00	\$ 4.00	\$ -	\$ 13.00
480-06600	NTR	296	0.64	1.59	Preston & Francine Parrott	\$ 15.00	\$ 6.00	\$ -	\$ 21.00
480-06700	NTR	296	1.37	3.38	Wanda Tarnowski	\$ 32.00	\$ 12.00	\$ -	\$ 44.00
480-06800	NTR	296	1.31	3.24	Giovanni & Angela Laudicina	\$ 30.00	\$ 12.00	\$ -	\$ 42.00
480-06900	NTR	296	0.67	1.65	Mustafa Enaami & Szilvia Simon	\$ 15.00	\$ 6.00	\$ -	\$ 21.00
480-07000	NTR	296	3.21	7.94	Danny Joksimovic	\$ 47.00	\$ 29.00	\$ -	\$ 76.00
480-07100	NTR	296	0.31	0.76	Frederick Stockwell	\$ 8.00	\$ 3.00	\$ -	\$ 11.00
480-09450	NTR	297	0.44	1.08	Beverly Santarossa	\$ 6.00	\$ 1.00	\$ -	\$ 7.00
480-09500	NTR	296	10.02	24.75	Joseph & Beverly Santarossa	\$ 141.00	\$ 36.00	\$ -	\$ 177.00
590-01000	NTR	Pts. 295-297	2.02	5.00	Canada Southern Railway Co.	\$ 94.00	\$ 18.00	\$ -	\$ 112.00
460-006??	STR	295	0.39	0.96	Charles & Carol McLean	\$ 19.00	\$ 5.00	\$ -	\$ 24.00
Total on Privately Owned - Non-Agricultural Lands.....						\$ 719.00	\$ 351.00	\$ -	\$ 1,070.00

Schedule of Assessment - West Branch Delisle Drain
(Geographic Township of Sandwich South)
Town of Tecumseh E09DE(23)

- 20 -

2016-04-28
Rev. 2016-06-29

Tax Roll <u>No.</u>	Plan <u>No.</u>	Lot or Part <u>of Lot</u>	Hectares <u>Afft'd</u>	Acres <u>Afft'd</u>	<u>Owner's Name</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	Value of Special <u>Benefit</u>	TOTAL <u>VALUE</u>
5. PRIVATELY OWNED - AGRICULTURAL LANDS (grantable):									
410-01400	9	5	8.09	20.00	William & Gloria Dennison	\$ 283.00	\$ 101.00	\$ -	\$ 384.00
410-01500	9	5	21.35	52.75	Madonna Gemus	\$ 697.00	\$ 266.00	\$ -	\$ 963.00
410-01550	9	5	0.51	1.25	Derek & Corey Gemus	\$ 24.00	\$ 6.00	\$ -	\$ 30.00
410-01700	9	4	24.08	59.50	Augustine & Gaynia Revenberg	\$ -	\$ 288.00	\$ -	\$ 288.00
410-01800	9	4	12.06	29.80	Tomo & Maria Dobrich	\$ -	\$ 144.00	\$ -	\$ 144.00
410-01900	9	3	6.48	16.00	Shirley Wilson	\$ -	\$ 77.00	\$ -	\$ 77.00
410-02000	9	3	3.70	9.15	Matthew & Kari Loscher	\$ -	\$ 38.00	\$ -	\$ 38.00
410-02550	10	3	6.88	17.00	Roberta Diemer	\$ -	\$ 81.00	\$ -	\$ 81.00
410-02600	10	3 & 4	6.65	16.43	Peter Steeves	\$ -	\$ 81.00	\$ -	\$ 81.00
410-02700	10	3, 4 & 5	19.19	47.42	John & Catherine Lafferty	\$ 283.00	\$ 240.00	\$ -	\$ 523.00
410-02702	10	5	0.66	1.64	Frank Lafferty Limited	\$ -	\$ 8.00	\$ -	\$ 8.00
460-00600	STR	295	19.91	49.20	Charles McLean & Carol McKeegan	\$ 467.00	\$ 237.00	\$ -	\$ 704.00
460-00700	STR	296	20.23	50.00	Thomas & Linda Halford	\$ 467.00	\$ 237.00	\$ -	\$ 704.00
460-03300	STR	295 & 296	39.39	97.33	John & Catherine Lafferty	\$ 970.00	\$ 416.00	\$ -	\$ 1,386.00
480-05100	NTR	295 & 296	4.04	9.99	Robert & Pamela Rudy	\$ 23.00	\$ 36.00	\$ -	\$ 59.00
480-05101	NTR	296	4.06	10.02	Roland Jacques & Estelle Vaillancourt	\$ 23.00	\$ 36.00	\$ -	\$ 59.00
480-05400	NTR	296	3.04	7.50	Norman & Rosemarie Jobin	\$ -	\$ 27.00	\$ -	\$ 27.00
480-06000	NTR	296	3.68	9.10	Douglas Desjardins	\$ 89.00	\$ 34.00	\$ -	\$ 123.00
480-06100	NTR	296	3.34	8.25	Robert Ouellette	\$ 38.00	\$ 14.00	\$ -	\$ 52.00
480-06200	NTR	296	0.51	1.25	Robert Ouellette & Jeraldine Anderson	\$ 94.00	\$ 18.00	\$ -	\$ 112.00
480-06300	NTR	296	2.42	5.98	Domenic & Paola Acchione	\$ 57.00	\$ 22.00	\$ -	\$ 79.00
480-07200	NTR	296	4.37	10.80	John & Margaret Dixon	\$ -	\$ 39.00	\$ -	\$ 39.00
480-09400	NTR	296 & 297	18.11	44.75	Norman & Rosemarie Jobin	\$ 258.00	\$ 102.00	\$ -	\$ 360.00
480-09600	NTR	296	10.12	25.00	Anthony & Loreta Vendittelli	\$ -	\$ 36.00	\$ -	\$ 36.00
Total on Privately Owned - Agricultural Lands (grantable).....						\$ 3,773.00	\$ 2,584.00	\$ -	\$ 6,357.00

Schedule of Assessment - West Branch Delisle Drain
 (Geographic Township of Sandwich South)
 Town of Tecumseh E09DE(23)

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2016-04-28
 Rev. 2016-06-29

Tax Roll <u>No.</u>	Plan <u>No.</u>	Lot or Part <u>of Lot</u>	Hectares <u>Afft'd</u>	Acres <u>Afft'd</u>	<u>Owner's Name</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	Value of Special <u>Benefit</u>	TOTAL <u>VALUE</u>
5. PRIVATELY OWNED - AGRICULTURAL LANDS (non-grantable):									
480-05000	NTR	295	2.02	5.00	Joseph & Grace Cassar	\$ -	\$ 18.00	\$ -	\$ 18.00
Total on Privately Owned - Agricultural Lands (non-grantable).....						\$ -	\$ 18.00	\$ -	\$ 18.00
TOTAL ASSESSMENT			304.77	753.09		\$ 6,001.00	\$ 3,999.00	\$ -	\$ 10,000.00

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Tecumseh Reference: E09DE(23)

1 Hectare = 2.471 Acres

Project No. REI2014D004

April 28th, 2016

Revised: June 29th, 2016

SCHEDULE OF ASSESSMENT
WEST BRANCH DELISLE DRAIN - E09DE(23)
(Geographic Township of Sandwich South)
TOWN OF TECUMSEH

2. ONTARIO LANDS:

Tax Roll <u>No.</u>	Plan <u>No.</u>	Lot or Part <u>of Lot</u>	Hectares <u>Afft'd</u>	Acres <u>Afft'd</u>	<u>Owner's Name</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	Value of Special <u>Benefit</u>	TOTAL <u>VALUE</u>
		King's Highway # 3	7.06	17.45	Ministry of Transportation Ontario	\$ 7,581.00	\$ 11,604.00	\$ -	\$ 19,185.00
Total on Ontario Lands.....						\$ 7,581.00	\$ 11,604.00	\$ -	\$ 19,185.00

3. MUNICIPAL LANDS:

Tax Roll <u>No.</u>	Plan <u>No.</u>	Lot or Part <u>of Lot</u>	Hectares <u>Afft'd</u>	Acres <u>Afft'd</u>	<u>Owner's Name</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	Value of Special <u>Benefit</u>	TOTAL <u>VALUE</u>
		County Road 34	0.85	2.10	County of Essex	\$ 7,583.00	\$ 1,508.00	\$ -	\$ 9,091.00
		County Road 46	1.53	3.79	County of Essex	\$ 1,638.00	\$ 695.00	\$ -	\$ 2,333.00
		10th Concession Road	2.55	6.29	Town of Tecumseh	\$ 1,881.00	\$ 134.00	\$ -	\$ 2,015.00
		Ruston Road	0.28	0.69	Town of Tecumseh	\$ 212.00	\$ 14.00	\$ -	\$ 226.00
		South Talbot Road	2.57	6.34	Town of Tecumseh	\$ 4,853.00	\$ 458.00	\$ -	\$ 5,311.00
		Canada South Railway Drive	0.77	1.90	Town of Tecumseh	\$ 576.00	\$ 3,514.00	\$ 3,725.00	\$ 7,815.00
Total on Municipal Lands.....						\$ 16,743.00	\$ 6,323.00	\$ 3,725.00	\$ 26,791.00

4. PRIVATELY OWNED - NON-AGRICULTURAL LANDS:

Tax Roll <u>No.</u>	Plan <u>No.</u>	Lot or Part <u>of Lot</u>	Hectares <u>Afft'd</u>	Acres <u>Afft'd</u>	<u>Owner's Name</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	Value of Special <u>Benefit</u>	TOTAL <u>VALUE</u>
410-01301	9	5	0.73	1.81	Bradley Dupuis	\$ 546.00	\$ 364.00	\$ 1,934.00	\$ 2,844.00
410-01600	9	5	0.40	1.00	Eric Mathers	\$ 302.00	\$ 93.00	\$ -	\$ 395.00
410-01660	9	4	0.20	0.50	Brian & Lisa McGuire	\$ -	\$ 53.00	\$ -	\$ 53.00

Schedule of Assessment - West Branch Delisle Drain
(Geographic Township of Sandwich South)
Town of Tecumseh E09DE(23)

- 19 -

2016-04-28
Rev. 2016-06-29

Tax Roll <u>No.</u>	Plan <u>No.</u>	Lot or Part <u>of Lot</u>	Hectares <u>Afft'd</u>	Acres <u>Afft'd</u>	<u>Owner's Name</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	Value of Special <u>Benefit</u>	TOTAL <u>VALUE</u>
410-02010	9	3	0.35	0.85	Matthew & Kari Loscher	\$ -	\$ 80.00	\$ -	\$ 80.00
410-02650	10	3	0.23	0.57	Nancy Steeves	\$ -	\$ 54.00	\$ -	\$ 54.00
410-02701	10	5	0.40	1.00	Christopher & Cathy-Lyn McCarthy	\$ -	\$ 93.00	\$ -	\$ 93.00
460-00690	STR	295	0.48	1.19	Michael & Deborah Bissonnette	\$ 364.00	\$ 107.00	\$ -	\$ 471.00
480-04000	NTR	295	1.44	3.56	Maidstone Recreation Centre	\$ -	\$ 260.00	\$ -	\$ 260.00
480-04300	NTR	295	0.31	0.76	Brian & Marguerite Foubert	\$ -	\$ 56.00	\$ -	\$ 56.00
480-04400	NTR	295	0.17	0.42	Mark Buhler	\$ -	\$ 30.00	\$ -	\$ 30.00
480-04500	NTR	295	0.17	0.42	Shawn & Grace Macdonald	\$ -	\$ 30.00	\$ -	\$ 30.00
480-04600	NTR	295	0.40	1.00	Ronald & Renee Ducharme	\$ -	\$ 70.00	\$ -	\$ 70.00
480-04700	NTR	295	3.35	8.28	Michael & Karen Langlois	\$ -	\$ 513.00	\$ -	\$ 513.00
480-04800	NTR	295	2.02	5.00	Daniel Ryall	\$ -	\$ 323.00	\$ -	\$ 323.00
480-04900	NTR	295	2.02	5.00	Kevin Nussio	\$ -	\$ 323.00	\$ -	\$ 323.00
480-05200	NTR	296	2.02	5.00	Danny & Starla O'Connor	\$ 1,517.00	\$ 301.00	\$ 3,877.00	\$ 5,695.00
480-05300	NTR	296	2.21	5.47	Evelyn & Robert Corcoran	\$ 1,517.00	\$ 324.00	\$ -	\$ 1,841.00
480-05500	NTR	295	1.66	4.11	Samara Mouawad	\$ -	\$ 273.00	\$ -	\$ 273.00
480-05600	NTR	295	1.21	3.00	Robert & Nancy Thomson	\$ -	\$ 201.00	\$ -	\$ 201.00
480-05700	NTR	295	0.81	2.00	Heather Sharpe	\$ -	\$ 135.00	\$ -	\$ 135.00
480-05800	NTR	295	1.21	3.00	Michael & Allison Fredericks	\$ -	\$ 201.00	\$ -	\$ 201.00
480-05900	NTR	296	0.25	0.62	William & Gladys Peiffer	\$ 91.00	\$ 44.00	\$ -	\$ 135.00
480-06400	NTR	296	1.42	3.50	Nicolae & Marcela Paducel	\$ 546.00	\$ 237.00	\$ -	\$ 783.00
480-06500	NTR	296	0.40	1.00	Jessica Hillyard	\$ 152.00	\$ 70.00	\$ -	\$ 222.00
480-06600	NTR	296	0.64	1.59	Preston & Francine Parrott	\$ 243.00	\$ 110.00	\$ -	\$ 353.00
480-06700	NTR	296	1.37	3.38	Wanda Tarnowski	\$ 516.00	\$ 225.00	\$ -	\$ 741.00
480-06800	NTR	296	1.31	3.24	Giovanni & Angela Laudicina	\$ 485.00	\$ 212.00	\$ -	\$ 697.00
480-06900	NTR	296	0.67	1.65	Mustafa Enaami & Szilvia Simon	\$ 243.00	\$ 110.00	\$ -	\$ 353.00
480-07000	NTR	296	3.21	7.94	Danny Joksimovic	\$ 758.00	\$ 504.00	\$ -	\$ 1,262.00
480-07100	NTR	296	0.31	0.76	Frederick Stockwell	\$ 121.00	\$ 56.00	\$ -	\$ 177.00
480-09450	NTR	297	0.44	1.08	Beverly Santarossa	\$ 91.00	\$ 23.00	\$ -	\$ 114.00
480-09500	NTR	296	10.02	24.75	Joseph & Beverly Santarossa	\$ 2,275.00	\$ 579.00	\$ -	\$ 2,854.00
590-01000	NTR	Pts. 295-297	2.02	5.00	Canada Southern Railway Co.	\$ 1,517.00	\$ 396.00	\$ -	\$ 1,913.00
460-006??	STR	295	0.39	0.96	Charles & Carol McLean	\$ 303.00	\$ 93.00	\$ -	\$ 396.00
Total on Privately Owned - Non-Agricultural Lands.....						\$ 11,587.00	\$ 6,543.00	\$ 5,811.00	\$ 23,941.00

Schedule of Assessment - West Branch Delisle Drain
(Geographic Township of Sandwich South)
Town of Tecumseh E09DE(23)

- 20 -

2016-04-28
Rev. 2016-06-29

Tax Roll <u>No.</u>	Plan <u>No.</u>	Lot or Part <u>of Lot</u>	Hectares <u>Afft'd</u>	Acres <u>Afft'd</u>	<u>Owner's Name</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	Value of Special <u>Benefit</u>	TOTAL <u>VALUE</u>
5. PRIVATELY OWNED - AGRICULTURAL LANDS (grantable):									
410-01400	9	5	8.09	20.00	William & Gloria Dennison	\$ 4,550.00	\$ 1,934.00	\$ 1,881.00	\$ 8,365.00
410-01500	9	5	21.35	52.75	Madonna Gemus	\$ 11,223.00	\$ 4,509.00	\$ -	\$ 15,732.00
410-01550	9	5	0.51	1.25	Derek & Corey Gemus	\$ 394.00	\$ 118.00	\$ -	\$ 512.00
410-01700	9	4	24.08	59.50	Augustine & Gaynia Revenberg	\$ -	\$ 4,885.00	\$ -	\$ 4,885.00
410-01800	9	4	12.06	29.80	Tomo & Maria Dobrich	\$ -	\$ 2,443.00	\$ -	\$ 2,443.00
410-01900	9	3	6.48	16.00	Shirley Wilson	\$ -	\$ 1,307.00	\$ -	\$ 1,307.00
410-02000	9	3	3.70	9.15	Matthew & Kari Loscher	\$ -	\$ 653.00	\$ -	\$ 653.00
410-02550	10	3	6.88	17.00	Roberta Diemer	\$ -	\$ 1,382.00	\$ -	\$ 1,382.00
410-02600	10	3 & 4	6.65	16.43	Peter Steeves	\$ -	\$ 1,379.00	\$ -	\$ 1,379.00
410-02700	10	3, 4 & 5	19.19	47.42	John & Catherine Lafferty	\$ 4,550.00	\$ 4,069.00	\$ -	\$ 8,619.00
410-02702	10	5	0.66	1.64	Frank Lafferty Limited	\$ -	\$ 144.00	\$ -	\$ 144.00
460-00600	STR	295	19.91	49.20	Charles McLean & Carol McKeegan	\$ 7,522.00	\$ 4,032.00	\$ -	\$ 11,554.00
460-00700	STR	296	20.23	50.00	Thomas & Linda Halford	\$ 7,522.00	\$ 4,035.00	\$ -	\$ 11,557.00
460-03300	STR	295 & 296	39.39	97.33	John & Catherine Lafferty	\$ 15,621.00	\$ 7,108.00	\$ -	\$ 22,729.00
480-05100	NTR	295 & 296	4.04	9.99	Robert & Pamela Rudy	\$ 364.00	\$ 621.00	\$ -	\$ 985.00
480-05101	NTR	296	4.06	10.02	Roland Jacques & Estelle Vaillancourt	\$ 364.00	\$ 621.00	\$ -	\$ 985.00
480-05400	NTR	296	3.04	7.50	Norman & Rosemarie Jobin	\$ -	\$ 477.00	\$ -	\$ 477.00
480-06000	NTR	296	3.68	9.10	Douglas Desjardins	\$ 1,426.00	\$ 583.00	\$ -	\$ 2,009.00
480-06100	NTR	296	3.34	8.25	Robert Ouellette	\$ 607.00	\$ 271.00	\$ -	\$ 878.00
480-06200	NTR	296	0.51	1.25	Robert Ouellette & Jeraldine Anderson	\$ 1,517.00	\$ 304.00	\$ -	\$ 1,821.00
480-06300	NTR	296	2.42	5.98	Domenic & Paola Acchione	\$ 910.00	\$ 385.00	\$ -	\$ 1,295.00
480-07200	NTR	296	4.37	10.80	John & Margaret Dixon	\$ -	\$ 671.00	\$ -	\$ 671.00
480-09400	NTR	296 & 297	18.11	44.75	Norman & Rosemarie Jobin	\$ 4,155.00	\$ 1,644.00	\$ -	\$ 5,799.00
480-09600	NTR	296	10.12	25.00	Anthony & Loreta Vendittelli	\$ -	\$ 579.00	\$ -	\$ 579.00
Total on Privately Owned - Agricultural Lands (grantable).....						\$ 60,725.00	\$ 44,154.00	\$ 1,881.00	\$ 106,760.00

Schedule of Assessment - West Branch Delisle Drain
 (Geographic Township of Sandwich South)
 Town of Tecumseh E09DE(23)

- 21 -

2016-04-28
 Rev. 2016-06-29

Tax Roll <u>No.</u>	Plan <u>No.</u>	Lot or Part <u>of Lot</u>	Hectares <u>Afft'd</u>	Acres <u>Afft'd</u>	<u>Owner's Name</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	Value of Special <u>Benefit</u>	TOTAL <u>VALUE</u>
5. PRIVATELY OWNED - AGRICULTURAL LANDS (non-grantable):									
480-05000	NTR	295	2.02	5.00	Joseph & Grace Cassar	\$ -	\$ 323.00	\$ -	\$ 323.00
Total on Privately Owned - Agricultural Lands (non-grantable).....						\$ -	\$ 323.00	\$ -	\$ 323.00
TOTAL ASSESSMENT			304.77	753.09		\$ 96,636.00	\$ 68,947.00	\$ 11,417.00	\$ 177,000.00

=====

Tecumseh Reference: E09DE(23)

1 Hectare = 2.471 Acres

Project No. REI2014D004

April 28th, 2016

Revised: June 29th, 2016



THE CORPORATION OF THE TOWN OF TECUMSEH

Public Works & Environmental Services
Report No. 32/16

TO: Mayor and Members of Council

FROM: Sam Paglia, B.A.Sc., EI, Drainage Superintendent

DATE: May 13, 2016

DATE TO COUNCIL: June 28, 2016

SUBJECT: West Branch Delisle Drain – Consider Engineer's Drainage Report

RECOMMENDATIONS

It is recommended that:

1. The Drainage Report and specifications for the West Branch Delisle Drain as prepared by Mr. Gerard Rood, P.Eng., of Rood Engineering Inc., dated April 28, 2016 (Drainage Report) be received; and that
2. Consideration be given to first and second readings of a provisional by-law to adopt the Drainage Report; and further that
3. The Clerk give notice to all affected landowners of the Court of Revision to be held on Tuesday, July 26, 2016, at 6:00 pm in accordance with Section 46(1) of the Drainage Act subject to adoption of the provisional by-law.

BACKGROUND

The Town received a Request for Repair and Improvement of a Municipal Drain on December 11, 2013, in accordance with Section 78 of *The Drainage Act*.

On January 14, 2014, Council accepted the recommendation under Public Works and Environmental Services Report No. 06/14 and passed resolution (RCM-14/14) as follows:

THAT Rood Engineering Inc. be appointed Drainage Engineer to:
a) make an examination of the area requiring improvements as described in the "Request for Repair and Improvement " of the West Branch of the Delisle Drain, as submitted by Mr. Frank Lafferty and dated December 11, 2013;
AND THAT a report be prepared in accordance with Section 78 of *The Drainage Act*; As recommended by the Manager, Engineering Services, under Report No. 06/14, dated January 2, 2014.

On April 13, 2016, a Public Information Centre was held with landowners in Council chambers to discuss the draft report and its contents. There were a few concerned landowners, but answers were provided by the Town Drainage Superintendent and the Drainage Engineer. Minutes from that meeting form part of the draft report for the drain.

COMMENTS

Section 41 Notice of Drainage Works

(1) Upon the filing the Engineer's Drainage Report with the Clerk, and within 30 days of the filing, a copy of the Drainage Report was sent together with a notice of the date of the Council meeting at which the Drainage Report will be considered, to:

1. Affected property owners, within the initiating municipality, according to the last revised assessment roll to be the owners of lands and roads assessed for the drainage works or for which compensation or other allowances have been provided in the report;
2. The Clerk of every other municipality in which any land or road is assessed for drainage works or compensation, or other allowances provided in the Report;
3. The Secretary-Treasurer of the Essex Region Conservation Authority (ERCA);
4. Any railway, public utility or road authority affected by the report; and
5. The Minister of Agriculture, Food and Rural Affairs.
6. The Director appointed for the purposes of the Drainage Act.

Consideration by Council

Subject to the discretion of Council, the Drainage Report may be:

- a. Referred back to the Drainage Engineer for reconsideration if it appears that there are, or may be errors in the report or for any other reason the report should be reconsidered ; or
- b. Provisionally approve by giving first and second readings to a Provisional By-law.

Following provisional adoption of the By-law, a meeting of the Court of Revision shall be scheduled to allow any affected owner of land assessed for the drainage works to appeal their assessed costs subject to the following:

- a. Any land or road has been assessed too high or too low; or
- b. Any land or road that should have been assessed has not been assessed; or
- c. Due consideration has not been given as to type of use of land.

Approvals

Correspondence with the Essex Regional Conservation Authority (ERCA) has been continuous and an application for approval under Section 28 of the Conservation Authorities Act will be required for the works as recommended under the Drainage Report.

Based on the comments above, it is recommended that:

1. The Drainage Report and specifications for the West Branch Delisle Drain as prepared by Mr. Gerard Rood, P.Eng., of Rood Engineering Inc., dated April 28, 2016 (Drainage Report) be received; and that
2. Consideration be given to first and second readings of a provisional by-law to adopt the Drainage Report; and further that
3. The Clerk give notice to all affected landowners of the Court of Revision to be held on Tuesday, July 26, 2016, at 6:00 pm in accordance with Section 46(1) of the Drainage Act subject to adoption of the provisional by-law.

CONSULTATIONS

Rood Engineering Inc.
Director Financial Services & Treasurer
Director Corporate Services & Clerk

FINANCIAL IMPLICATIONS

Engineer's Estimates for the West Branch Delisle Drain	
Description	Estimate
Construction	\$ 111,936
Incidentals	\$ 58,248
Allowances/Compensation	\$ 6,816
Total	\$ 177,000
Assessment Summary	
Province of Ontario – Road Authority MTO	\$19,262
County of Essex – Road Authority	\$11,477
Town of Tecumseh - Road Authority	\$15,414
Non-Agricultural lands	\$23,346
Privately owned Agricultural lands	**\$71,488
Privately owner Agricultural lands (non grantable)	\$323
Provincial Grants	*\$35,690
Total	\$177,000
**Represents 2/3 of the total value assessed to eligible lands.	
*Represents 1/3 recovered from OMAF (Provincial Grant)	

As shown in the table above, a portion of a Section 78 assessment for drainage works to agricultural lands described in an engineer's report are eligible for grants by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) through the provisions set out in Sections 85, 86 and 87 of the Drainage Act. Upon completion of the application form, the Minister may pay to the treasurer of the town 33 1/3 per cent of the assessments eligible for grant in accordance with the Agricultural Drainage Infrastructure Program.

The Town of Tecumseh lands have been assessed in the Drainage Engineer's Report for Special Benefit (\$3,725), Benefit (\$7,562), and Outlet Liability (\$4,127) totaling \$15,414 for works involving 6.17 hectares (15.24 acres) for 10th Concession Road, Ruston Road, South Talbot Road and Canada South Railway Drive.

If assessments are in excess of \$5,000 landowners have the option of paying the balance, plus interest at 3.1%, over a five (5) year period; the annual payments are added as a special charge on their taxes. Other than costs to administer the project, the cost of constructing the project is 100% recoverable by affected lands including the Town's portion of land mentioned above and detailed in the Assessment Schedule included in the Drainage Engineer's Report dated April 28, 2016.

The Town will utilize the Municipal Drain Lifecycle Reserve to pay for the Town's drainage assessment. A copy of the Municipal Drain Lifecycle Reserve is included below for reference.

Municipal Drain Lifecycle Reserve

	2016	2017	2018	2019	2020
Reserve Balance Start of Year	\$193,285	\$19,807	\$59,807	\$99,807	\$139,807
Allocation	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
Road LC re 10th Conc. Windsor (5055)	\$226,000				
Funds Available	\$459,285	\$59,807	\$99,807	\$139,807	\$179,807
Committed					
Malden Road West (5004)	\$42,200				
Gzowski (5008)	\$0				
Little 10th Concession (5012)	\$6,300				
South McPhee Drain (5014)	\$27,928				
O'Neil Drain (5024)	\$0				
West Branch Delisle (5036)	\$15,414				
O'Keefe (5044)	\$23,184				
South Talbot/Holden Branch (5027)	\$23,020				
McPherson East (5028)	\$32,890				
South Malden (Lower) & Graham (5033)	\$12,443				
8th Concession North (5052)	\$6,000				
10th Concession - Windsor (5055)	\$247,000				
Ninth Line and Branch Drain(5059)	\$974				
Balance Committed	\$437,353	\$0	\$0	\$0	\$0
Balance Uncommitted	\$21,932	\$59,807	\$99,807	\$139,807	\$179,807
Proposed					
Oldcastle Road Culvert (5021)					
Baillargeon & ETL Drain (5034)					
Gzowski Upper & Lower (5040)					
East Townline (Pike Creek) (5041)	\$2,125				
JC Smith (5042)					
Collins/Hwy#3 (5045)					
East Townline (St. Clair) (5046)					
7th Conc & Extension (5047)					
West Townline Mooney Creek					
Pike Creek Drain					
Sullivan Creek Drain(5056)					
Wellwood Drain (5060)					
Total Proposed	\$2,125	\$0	\$0	\$0	\$0
Balance Available	\$19,807	\$59,807	\$99,807	\$139,807	\$179,807

Other than costs to administer the project, the cost of constructing the project is 100% recoverable by affected lands and detailed in the Assessment Schedule included in the Drainage Report.

LINK TO STRATEGIC PRIORITIES

No.	2015-16 Strategic Priorities	Applicable
1.	Make the Town of Tecumseh an even better place to live, work and invest through a shared vision for our residents and newcomers.	✓
2.	Ensure that the Town of Tecumseh's current and future growth is built upon the principles of sustainability and strategic decision-making.	✓
3.	Integrate the principles of health and wellness into all of the Town of Tecumseh's plans and priorities.	✓
4.	Steward the Town's "continuous improvement" approach to municipal service delivery to residents and businesses.	✓
5.	Demonstrate the Town's leadership role in the community by promoting good governance and community engagement, by bringing together organizations serving the Town and the region to pursue common goals.	✓

COMMUNICATIONS

Not applicable ☒

Website ☐ Social Media ☐ News Release ☐ Local Newspaper ☐

This report has been reviewed by senior Administration as indicated below and recommended for submission by the CAO.

Prepared by:

Reviewed by:

Sam Paglia, B.A.Sc., EI
Drainage Superintendent

Phil Bartnik, P.Eng., PMP
Manager, Engineering Services

Reviewed by:

Reviewed by:

Dan Piescic, P.Eng.
Director, Public Works & Environmental
Services

Laura Moy, Dipl. M.M, CMMIII HR Professional
Director, Corporate Services & Clerk

Reviewed by:

Luc Gagnon, CPA, CA, BMath
Director, Financial Services & Treasurer

Recommended by:

Tony Haddad, MSA, CMO, CPFA
Chief Administrative Officer

SP

Attachments

1. Engineer's Drainage Report – West Branch Delisle Drain, dated April 28, 2016

THE CORPORATION OF THE TOWN OF TECUMSEH

BY-LAW NUMBER 2016-49

Being a by-law to provide for the repair and improvements to the West Branch Delisle Drain

WHEREAS the Council of The Corporation of the Town of Tecumseh [Town] has been requested to provide for the repair and improvement of the West Branch Delisle Drain;

AND WHEREAS the Town procured a Drainage Report for the West Branch Delisle Drain and specifications from the consulting engineering firm of Rood Engineering Inc., dated April 28, 2016 [Drainage Report];

AND WHEREAS notice of a Public Meeting to hear comments from the affected property owners was given on May 2, 2016;

AND WHEREAS a Public Meeting of Council was held on Tuesday, June 28, 2016, at 6:00 p.m. to hear from any affected property owners on the Drainage Report;

AND WHEREAS the Council of The Corporation of the Town of Tecumseh is of the opinion that the repair and improvement of the West Branch Delisle Drain is desirable;

NOW THEREFORE the Council of The Corporation of the Town of Tecumseh, pursuant to *The Drainage Act, R.S.O. 1990 (Act)*, hereby enacts as follows:

1. **THAT** the Drainage Report providing for the repair and improvement of the West Branch Delisle Drain, dated April 28, 2016, as prepared by the consulting engineering firm Rood Engineering Inc. and attached hereto as Schedule "A" to this by-law, is hereby adopted and the drainage works as therein indicated and set forth is hereby approved and shall be completed in accordance therewith.
2. **THAT** the Treasurer, subject to the approval of Council, may agree with any bank or person for temporary advances of money to meet the costs of construction pending the completion of the drain and grants and computed payments are received.
3. **THAT** the Town may issue debentures for the amount borrowed and the amount of such debentures shall be reduced to the total amount of:
 - (a) Grants received under Section 85 of the said Act;
 - (b) Commuted payments made in respect of land and roads assessed.
4. **THAT** such debentures shall be made payable within five (5) years from the date of the debenture and shall bear interest at a rate as approved by resolution of Council.
5. **THAT** the specifications and General Specifications as established are adopted as set out in the Drainage Report which forms part of this by-law.
6. **THAT** the Mayor and Clerk are authorized to cause a contract for the construction of the works to be made and entered into with some person or persons, firm or corporations, subject to the approval of the Council to be declared by resolution.
7. **THAT** this by-law shall come into force upon and after the final passing thereof.

READ a first and second time this 28th day of June, 2016.

Joe Bachetti, Deputy Mayor

Laura Moy, Clerk

READ a third and final time, and finally passed this ____ day of _____, 2016.

Gary McNamara, Mayor

Laura Moy, Clerk

WEST BRANCH DELISLE DRAIN

E09DE(23)

Repair and Improvement

Geographic Township of Sandwich South

TOWN OF TECUMSEH



***Town of Tecumseh
917 Lesperance Road
Tecumseh, Ontario N8N 1W9
519-735-2184***

Rood Engineering Inc.

Consulting Engineers

9 Nelson Street

Leamington, Ontario N8H 1G6

519-322-1621

REI Project 2014D004

April 28th, 2016

April 28th, 2016

Mayor and Municipal Council
Corporation of the Town of Tecumseh
917 Lesperance Road
Tecumseh, Ontario
N8N 1W9

Mayor McNamara and Members of Council:

WEST BRANCH DELISLE DRAIN E09DE(23)
(Geographic Twp. of Sandwich South)
REI Project 2014D004
Town of Tecumseh, County of Essex

I. INTRODUCTION

In accordance with the instructions provided at your January 14th, 2014 meeting and received from the Town by letter dated February 11th, 2014, from your Director Staff Services/Clerk, Laura Moy, we have prepared the following report that provides for repair and improvements of the open drain. The West Branch Delisle Drain comprises of an open drain generally located from its outlet in the Gzowski Drain, at County Road 46 at the line between Lots 296 and 297 N.T.R. (North Talbot Road) Concession, southerly to the south side of South Talbot Road and then westerly along the south edge of the roadway to the upper end of the open portion opposite the line of Lots 296 and 297 S.T.R. (South Talbot Road) Concession, in the geographic township of Sandwich South, Town of Tecumseh. A plan showing the West Branch Delisle Drain, as well as the general location of the bridges along the drain, is included herein as part of the report.

Our appointment and the works relative to the improvements to the West Branch Delisle Drain, proposed under this report, is in accordance with Section 78 of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2010". We have performed all of the necessary survey, investigations, etcetera, for the proposed bridge and drain improvements, and we report thereon as follows.

Report - West Branch Delisle Drain E09DE(23)
(Geographic Township of Sandwich South)
Town of Tecumseh - REI2014D004

2016-04-28

II. BACKGROUND

From our review of the information provided from the Municipality's drainage files we have established the following reports that we utilized as reference for carrying out this project:

1)	June 6, 1938	McPherson Drain	J.J. Newman, P.Eng.
2)	October 3, 1947	McPherson Drain	C.G.R. Armstrong, P.Eng.
3)	January 29, 1954	Ruston Drain	C.G.R. Armstrong, P.Eng.
4)	January 29, 1962	Dawson Drain	C.G.R. Armstrong, P.Eng.
5)	February 1, 1962	Halford Drain	C.G.R. Armstrong, P.Eng.
6)	September 29, 1967	J.C. Smith Drain	C.G.R. Armstrong, P.Eng.
7)	January 15, 1970	West Branch Delisle Drain	C.G.R. Armstrong, P.Eng.
8)	August 16, 1977	J.C. Smith Drain	M. Armstrong, P.Eng.
9)	October, 15, 1980	South Talbot Road Drain West	M. Armstrong, P.Eng.
10)	December 18, 1985	West Branch Delisle Dr.	M. Armstrong, P.Eng.
11)	November 25, 1999	West Branch Delisle Dr. & Santarossa Bridges	L. Zarlenga, P.Eng.
12)	November 29, 2007	Dawson Drain	T. Oliver, P.Eng.

The 1970 Report by C.G.R. Armstrong, P.Eng. provided for the general repairs and improvements to the entire length of the drain and has the latest profile for the grading of the drain.

We arranged with the Municipality to provide us with the updated assessment roll information for the affected parcels. We also reviewed reports for the abutting drains to help in establishing the current watershed limit for the West Branch Delisle Drain.

III. PRELIMINARY EXAMINATION AND ON-SITE MEETING

After reviewing all of the drainage information provided by the Town, we arranged with the Town Drainage Superintendent Sam Paglia, E.I., to schedule an on-site meeting for February 26th, 2014. The following people were in attendance at said meeting: Norm Jobin, Jim Croft,

Report - West Branch Delisle Drain E09DE(23)
(Geographic Township of Sandwich South)
Town of Tecumseh - REI2014D004

2016-04-28

John Dixon, Preston Parrott, Robert Rudy, Fred Stockwell, Daniel Ryall, Roland Jacques, Dan & Starla O'Connor, Heather Scaffè, Jessica Hillyard, Wanda Tarnowski, Nick Paducel, Sam Paglia (Town Drainage Superintendent), Phil Bartnik (Town Manager Engineering Services) and Gerard Rood (Rood Engineering). Details of the drain were discussed and the primary concern was some serious sediment accumulation in the drain with some bank erosion. It was discussed that the bridges along the drain would be inspected and owners of the bridges would be contacted if there were concerns with any of the structures. Once the work scope is confirmed, a final report is then prepared and submitted to Council and goes through the Drainage Act process of a Consideration meeting and Court of Revision meeting.

Mr. Rood asked the Town to provide information on any drainage changes that they might be aware of. The last report assessed most of the area immediately to the east and west of the north section of the drain.

It was discussed that all trees within the drain cross section from top of bank to top of bank will be removed to prevent obstruction of drainage. The east or west side of the drain will be basically cleared for access to carry out the work and dispose of material; however, some mature trees may be able to be saved if the Contractor can work around them. Material excavated along lawn areas and roadways will be trucked away.

IV. FIELD SURVEY AND INVESTIGATIONS

Subsequent to the on-site meeting we arranged for a topographic survey of the drain and bridges to be completed. We further arranged to get updated assessment roll information from the Municipality, and obtained information on the tax class of each of the properties affected by the Municipal Drain.

The Town made initial submissions to the Essex Region Conservation Authority (E.R.C.A.) regarding their requirements or any D.F.O. (Department of Fisheries and Oceans) requirements for work that would be proposed to be carried out on the West Branch Delisle Drain. A response from the Conservation Authority was received by email on December 18th, 2013 and indicated that the Town must apply for a permit and follow standard mitigation requirements. We also reviewed the Town maps for fish and mussel species at risk and find that there are no species indicated in the vicinity of this project. A copy of the concerns and requirements to satisfy E.R.C.A. and D.F.O. is included in **Appendix "A"** of this report.

We also arranged to review the Ministry of Natural Resources & Forestry (M.N.R.F.) Species at Risk (S.A.R.) former agreement made with the Town pursuant to the Endangered Species Act, 2007. The Agreement plans indicate that snake species are a concern for this work area and although turtles are not indicated, they are mobile and could be encountered. The former Agreement includes mitigation measures to be followed as outlined in "Schedule C Mitigation Measures" of the document and a copy of same as it relates to turtles and snakes is included herein in **Appendix "B"**.

Preliminary plans and designs for the repair and improvement of the Branch drain along the south side of King's Highway No. 3 were submitted to Mario Frechette, Technical Services Officer of the London office of the Ministry of Transportation Ontario (M.T.O.). The M.T.O. has not advised us of any concerns, but the Town will be required to arrange for a permit from M.T.O. for work within the Highway 3 corridor.

V. BRIDGES REVIEW

As part of our investigations, we made detailed inspections of all of the bridges along the open West Branch Delisle Drain. They were generally found to be in fair to good condition with no immediate need for major repair evident. Their condition and proposed work if any is summarized as follows:

- 1) This bridge serves parcel 480-09450 owned by Beverly Santarossa. It comprises of a 1550mm diameter concrete pipe with concrete brick headwalls having a top width of 8.8 metres constructed under the 1999 drainage report by L. Zarlenga, P.Eng., and was found to be in good condition.
- 2) This bridge connects parcels 480-09450 and 480-09500 owned by Beverly Santarossa and Joseph & Beverly Santarossa, respectively. The bridge comprises of a 1500mm diameter concrete pipe with concrete block headwalls having a top width of 9.2 metres and is in good condition. In accordance with the 1999 drainage report, the maintenance of this bridge is the responsibility of Parcel 480-09450 currently owned by Beverly Santarossa.
- 3) This bridge serves the Norman & Rose Jobin parcel 480-09400. The bridge consists of a 1200mm diameter corrugated steel pipe (C.S.P.) with concrete filled jute bag endwalls having a top width of 6.8 metres, which exceeds the standard minimum of 6.1 metres. The bridge appeared to be in fair condition with a small settlement near the southeast corner of the driveway that will require repair as part of the work.
- 4) This bridge comprises of a 2000mm diameter steel pipe serving the Danny & Starla O'Connor parcel 480-05200. The pipe appears to be in satisfactory condition but the wood plank endwalls are failing and require replacement.
- 5) The Canada South Railway Drive roadway is served by this 1500mm diameter C.S.P. The endwalls are formed by stacked broken concrete pieces. The upstream headwall on the south side of the roadway requires reconstruction as the pieces are falling down.
- 6) A 1500mm diameter steel pipe provides the Canada Southern Railway Co. parcel 590-01000 with access over the drain. The pipe has sloped ends and the structure appears to be in good condition.
- 7) The bridge consists of a concrete box culvert under King's Highway No. 3 with a span of 2.9 metres maintained by the Ministry of Transportation Ontario (M.T.O.) and is in good condition.
- 8) This bridge serves to connect the west and east parts of the John & Catherine Lafferty parcel 460-03300. The bridge is an 850mm diameter C.S.P. and is in fair condition but has a slightly narrow driveway top width with sloped rock protected ends. The pipe is also slightly small and should be replaced in the future with a larger 1200mm diameter pipe to provide the required capacity and embedment.
- 9) South Talbot Road is served by this 1.67m concrete span bridge that is in good condition.

Report - West Branch Delisle Drain E09DE(23)
(Geographic Township of Sandwich South)
Town of Tecumseh - REI2014D004

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- 10) The Eric Mathers parcel 410-01600 is served by a bridge comprised of an 850mm diameter C.S.P. on the west upstream end and a 700mm diameter concrete pipe on the east downstream side. The west end is protected with mortared gabion stone and the east end comprises of broken concrete pieces. The bridge appears to be okay for now.
- 11) The 850mm diameter C.S.P. bridge serving the Derek & Corey Gemus parcel 410-01550 has a top width of 5.2 metres that is slightly less than the current minimum standard of 6.1 metres. The ends are protected with broken concrete pieces and the bridge has an asphalt surface and appears to be in fair condition.
- 12) The William & Gloria Dennison parcel 410-01400 is served on the east by a 750mm diameter C.S.P. bridge with asphalt surface. The headwalls consist of broken concrete pieces. The bridge is in fair condition but the southwest headwall is falling apart and will require some repairs.
- 13) This bridge comprises a 700mm diameter C.S.P. serving as the second access to the William and Gloria Dennison parcel 410-01400. The concrete headwalls are cracked and deflecting from the middle. The bridge appears to be functional.
- 14) A 550mm diameter C.S.P. for this bridge serves the Bradley Dupuis parcel 410-01301. The 5.9m top width is slightly narrower than the 6.1m minimum and will be widened by the owner during work on the South Talbot Road Drain to the west. The endwalls comprise of broken concrete pieces some of which are covering the downstream easterly end of the pipe and that wall should be repaired.
- 15) Parcel 460-03300 owned by John & Catherine Lafferty is served by a 375mm diameter C.S.P. on the Branch Drain along the south side of Highway No. 3. This bridge is in good condition with a headwall on the west end and sloped end on the east side.

VI. PUBLIC INFORMATION CENTRE AND THE DRAINAGE ACT

The Town arranged for a meeting on April 13th, 2016 with the Drainage Superintendent, Engineer and interested owners at the Town Hall to discuss the draft drainage report dated February 10th, 2016 for this project. The Public Information Centre (P.I.C.) meeting is not a requirement under the Drainage Act but the Town holds these meetings to address questions and concerns and to solicit comments from the affected owners. The meeting was well attended with the following people present: Tom Halford, Peter Steeves, Charles & Carol McLean, Bill Dennison, Derek Gemus & Corey Lynn, Robert Ouellette, Robert Rudy, Paola & Domenic Acchione, Andrew Dowie (Town Council), Phil Bartnik (Manager Engineering Services), Sam Paglia (Drainage Superintendent) and Gerard Rood (Rood Engineering). Mr. Paglia went through a PowerPoint presentation outlining the general details of how drainage projects are handled by the Town and the requirements of the Drainage Act.

Mr. Rood spoke to concerns raised by Mr. Halford in his contact with Mr. Paglia. Item 9 of the draft report will be corrected to show the correct chainage. Proceeding with a Section 78 report instead of just trying to do maintenance provides the following advantages:

- 1) Up to date specifications are provided for future maintenance works
- 2) Work corridors are established in the report and allowances can be paid to owners affected by the work
- 3) Numerous severances are addressed so that proper cost sharing for work is in place
- 4) Cost sharing for bridges is established

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- 5) Drain profiles are re-established
- 6) The M.T.O. Highway#3 By-Pass is reflected in the plans, report and assessment
- 7) Mitigation is provided to satisfy legislative requirements of the Essex Region Conservation Authority (E.R.C.A.), Department of Fisheries and Oceans (D.F.O.), and Ministry of Natural Resources and Forestry (M.N.R.F.).

Concerns raised by Mr. McLean in an email to the Drainage Superintendent on April 5th were also addressed by Mr. Rood as follows:

- 1) Regarding the Value of Benefit and Value of Outlet, the owners were advised that the drain work is based on the 1970 report by Armstrong with adjustments for severances
- 2) Bridge work cost is shared to the owner served by the bridge as a Benefit and to upstream affected lands and roads based on their Outlet Liability. Sharing is based on the location of the bridge as set out further in the report
- 3) Brushing work will be carried out from top of bank to top of bank with additional clearing on the working corridor side, which is the west side of the drain in the area adjacent to the McLean parcel
- 4) Items for tile repairs are only estimates so that the Town has unit prices to go by when any damaged ends are discovered. The drain generally has built up sediment and is usually so overgrown that it is difficult to spot tiles during the field survey. If no damaged tiles are found, there will be no cost to the project

Mr. Rood also stated that he had been contacted by Mr. Frank Lafferty. Mr. Lafferty advised him that the 3 acre parcel in the point of land between County Road 34 and Highway 3 no longer drains westerly and should therefore not be assessed to the current project. The culvert on the Lafferty parcel was also discussed and it was confirmed that the report provides the required information for repair and improvement of same under the maintenance provisions of the Drainage Act and will not require a new engineer's report when it requires replacement.

The Town has also provided information on a new severance that was just approved on the north side of Highway 3 and the drainage report will be updated to reflect this change in land ownership.

Mr. Paglia asked for the owners' cooperation in marking tile ends at the time that the work on the drain is done. This will minimize the risk of damage to them and reduce the project cost. Owners are allowed to repair their own tile ends provided that the drain banks are not damaged. Buffer strips and tile repairs are a standard Best Management Practise (B.M.P.) to protect against erosion and to reduce future repairs and maintenance of the drain.

Mr. McLean requested a copy of the 1970 report and was advised that the Town would arrange for this. He spoke about the basis of the report and the proposed works and the cost estimates for incidentals. Mr. Rood explained that the Drainage Act requires the engineer to consider past reports and the acceptance of the reports in the past indicates that costs were fairly allocated to the affected lands. The cost to benefit ratio was raised and Mr. Rood pointed out that with land values in the range of \$7,000.00 per acre and higher, the assessments in the report appear

to be reasonable. Mr. Halford and Mr. McLean both indicated that they did not have problems along their stretch of the drain. They were reminded that they also have responsibility for the downstream work and there are no provisions under the Drainage Act to compensate owners for good stewardship of their portion of the drain. Drains are a communal project of the affected watershed and all lands and roads bear a share of the cost for the repair and improvement of a drainage works that serves the watershed. Although the profile on the plans shows that there is not much sediment in the drain bottom at their lands, there are other portions of the drain that require significant clean out including removal of brush and trees to ensure that the drain functions as intended.

Questions were raised about the benefit of the work and outlet liability. The definitions from the Drainage Act were discussed as outlined below. Mr. Paglia pointed out that there have been a lot of severances and doing apportionments of the original assessments does not result in a fair allocation of costs if the work is completed as a maintenance project. Having a drainage report done addresses this concern. Mr. Rood illustrated a spreadsheet of the assessment schedule on the overhead screen that showed how many parcels had to be adjusted to achieve a fair and balanced assessment.

A long term owner commented that he sees much higher flows in the drain now than in the past. Some of this is attributable to the highway improvements carried out in recent years. He sees the need for the drain to be put into a proper state of repair to protect the lands and roads. Mr. Paglia pointed out that a new drainage report provides many more tools to the Town to carry out repair and improvement including new methods and technologies not available if work has to be carried out in accordance with past reports as stipulated by the Drainage Act if only maintenance work is being done. Proper sharing of the cost for repair and improvement of bridges is a key benefit of a new report, and the provisions in the report generally allow works to proceed without the need of a further engineer's report and the associated costs.

The appeals process was reviewed. Mr. Bartnik reminded owners that appeals have to be made to the Town Council and Court of Revision before an owner can take an appeal to the Tribunal or Drainage Referee. This process is set out in the Drainage Act and the Town will guide owners on how to proceed if necessary. Owners were reminded that if the Construction price exceeds 133% of the estimate in the report, they will be provided the opportunity to meet with Town Council to review how to proceed.

Owners were reminded that they have the opportunity to present their concerns to Council regarding the report details at the Consideration meeting and assessment questions at the Court of Revision meeting, along with appeal rights to the O.M.A.F.R.A. Appeals Tribunal and the Drainage Referee as provided for in the Drainage Act.

The Drainage Act definitions and some applicable clauses are as follows:

“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 subsurface water, or any other advantages relating to the betterment of lands, roads, buildings or other structures.

“Outlet liability” means the part of the cost of the construction, improvement or maintenance of a drainage works that is required to provide such outlet or improved outlet. Lands and roads that use a drainage works as an outlet, or for which, when the drainage works is constructed or improved, an improved outlet is provided either directly or indirectly through the medium of any other drainage works or of a swale, ravine, creek or watercourse, may be assessed for outlet liability. The assessment for outlet liability shall be based upon the volume and rate of flow of the water artificially caused to flow upon the injured land or road or into the drainage works from the lands and roads liable for such assessments. Every drainage works constructed under this Act shall be continued to a sufficient outlet.

Owners are advised that they have a legal responsibility to convey their drainage to a sufficient outlet. For this reason, they have a share in the cost for upkeep of the drain downstream of their lands and this obligation is reflected in the assessment for Outlet Liability. Owners are reminded that the responsibility for carrying out maintenance on a Municipal drain rests with the Town as set out in the Drainage Act. Any owner on the drain can notify the Town that the drain requires maintenance and the Town has to take action pursuant to the Act. This system is generally reactive and requires the property owners to raise their concerns and issues to the Town. Owners are reminded that keeping brush clear along their portion of the drain and having buffer strips provides them with a direct benefit of improved crop yield and preservation of topsoil on their lands. Any maintenance work to the drain done by an owner shall only be carried out in liaison with the Town and no work shall proceed without the Town first being notified of same by the owner.

Owners have an Outlet Liability for the downstream portion of the drain. The owners are reminded that Municipal drainage is a communal project and basically a user pay system. As an example, when work is carried out on the Gzowski Drain downstream of the West Branch Delisle Drain outlet, the owners in the West Branch Delisle Drain watershed would be responsible for a portion of the cost, along with the other owners in the Gzowski Drain watershed. Owners are advised of the 1/3 grant available to agricultural lands that qualify for the Farm Property Tax Class and should be aware that the Town administers the grant process and reflects any available grant on the final billing to each qualified owner. Owners should confirm their tax class and take steps to be designated as Farm Property Tax Class, if eligible, so that the parcel can qualify for the 1/3 grant that is available from O.M.A.F.R.A. for those lands.

Owners may appeal their assessment as set out in the drainage report. They are advised that they should submit their appeal to the Court of Revision 10 days before the scheduled date of the meeting; however, the Court of Revision can agree to hear appeals presented at the meeting. If owners are still dissatisfied with the report after that meeting, they may submit an appeal to the O.M.A.F.R.A. Appeals Tribunal through the Town Clerk within 21 days of the closing of the Court of Revision pursuant to Section 54 of the Drainage Act.

The cost sharing for bridges is based on the location along the drain. Each owner has the right for one access across each Municipal drain. The owner generally pays 100% of the cost for the first bridge installation and it becomes part of the drain when included in an engineer's report, after which it is then maintained as part of the drain.

Owners should be aware that existing grass buffers and accesses will be protected and maintained as set out in the report specifications. Allowances as set out in the report are to offset damages to lands from the construction work and excavated material disposal. Owners are advised that the Contractor is responsible to remove any sticks and rocks (cobbles) etcetera from the spread materials and the Contractor is responsible for the maintenance of the drain for one (1) year after the work is completed.

VII. FINDINGS AND RECOMMENDATIONS

We find that the profile included in the 1970 report plans by engineer C.G.R. Armstrong provides a good fit to the existing profile of the drain. Said report and plans provided for improvements to the bridges and open drain and the plan profile still appears to be suited to the current conditions. The old report requires updating to reflect new uses of the lands, severances that have been created that require apportioning of costs, the ability to pay for damages, updated specifications to reflect current methods and materials, and other repairs and improvements that need to be addressed pursuant to a new report under Section 78 of the Drainage Act.

Based on our detailed survey, investigations, examinations, and discussions with the affected Owners and governing Authorities, we would recommend that drain improvement works be carried out as follows:

- a) We recommend that all drain improvements, including the cleaning of the access bridges, be carried out in accordance with the requirements established by E.R.C.A. and D.F.O. as set out in the documents within **Appendix "A"** attached to this report.
- b) As this is an existing Municipal drain, the repair and improvement can be carried out based on the provisions included within the former Agreement that the Municipality had with M.N.R.F. and the mitigation measures included within same. A copy of said mitigation measures is included in **Appendix "B"** within this report. We recommend that any work being completed shall be carried out in accordance with the **Schedule "C" Mitigation Plan** of the former agreement as included in **Appendix "B"** for reference by the owners and the Contractor who will be conducting the works and any new requirements that may be established in the future.
- c) We find that portions of the open drain have significant accumulation of brush, silt and debris and we recommend that these be cleaned out as set out further in this report.

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- d) The existing drain has some buffer strips and grass areas along the Municipal drain that reduce the amount of erosion and the sediment entering the drain, and enhance water quality. We recommend that the existing grass and buffer strips be protected as part of this project. For owners who want to further enhance the drain we suggest that new buffer strips be constructed by them in all areas where no current grass buffer exists.

We recommend that the West Branch Delisle Drain be repaired and improved, including the bridge cleanings as outlined, in accordance with this report, the attached specifications and the accompanying drawings, and that all works associated with same be carried out pursuant to Section 78 of the "Drainage Act, R.S.O. 1990, Chapter D.17 as amended 2010".

VIII. ALLOWANCES

We have provided that most of the work will generally be completed from the south and west sides of the drain except the portions just north of Highway No. 3 and the former railroad corridor. The working areas are highlighted on the plans in **Appendix "E"**. The Contractor will be required to restore any existing grassed buffer and driveway areas damaged by the work. We recommend that any materials removed from the open drain or existing bridges, be spread on the adjacent lands to the south and west of the drain for disposal by the Contractor, beyond the limits of any existing grass buffer or driveway access. Based on all of the above we find that allowances for damages are payable pursuant to Sections 29 and 30 of the Drainage Act.

We find that the provision of access along the south and west banks of the drain and disposal of excavated material on the abutting farm and non-residential lands requires payment for the land necessary to carry out same. We therefore recommend that the following owners be compensated for all work areas that will be impacted, including for the access to the drain and for damages to lands and crops, if any, as follows, namely:

1)	Beverly Santarossa, (480-09450)	Owner,	Part of Lot 297, N.T.R. Concession,	\$	280.00
2)	Norman & Rose Jobin, (480-09400)	Owners,	Part of Lots 296 and 297, S.T.R. Concession,	\$	973.00
3)	Robert Ouellette, (480-06100)	Owner,	Part of Lot 296, S.T.R. Concession,	\$	684.00
4)	John & Catherine Lafferty, (460-03300)	Owners,	Part of Lot 296, S.T.R. Concession,	\$	2,159.00
5)	Thomas & Linda Halford, (460-00700)	Owners,	Part of Lot 296, S.T.R. Concession,	\$	1,275.00

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6)	Madonna Gemus, (410-01500)	Owners,	Part of Lot 5, Concession 9,	\$	1,099.00
7)	William & Gloria Dennison, (410-01400)	Owners,	Part of Lot 5, Concession 9,	\$	346.00
TOTAL FOR ALLOWANCES AND DAMAGES					\$ 6,816.00

These values for allowances and damages are based on a strip of land parallel to and immediately adjacent to the drain or grassed buffer and driveway, for the parcels abutting the south and west sides of the Municipal drain, and are based on a value of \$1,227.00 per acre (\$3,032.00 per hectare) for the affected lands and crops, if any. These allowances provide for a spread depth of 100mm and are calculated using a rate per acre of \$700.00 for year one, \$350.00 for year two and \$177.00 for the third year. The impact after 3 years is considered negligible.

We have provided for this in our estimate as is provided for under Sections 29 and 30 of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2010".

IX. ESTIMATE OF COST

Our estimate of the Total Cost of this work, including all incidental expenses, is the sum of **ONE HUNDRED SEVENTY-SEVEN THOUSAND DOLLARS (\$177,000.00)**, made up as follows:

CONSTRUCTION

Item 1)	<u>Station 1+000 to Station 4+740;</u> Carry out excavation of the drain to remove accumulated sediment and restore the drain to the profile grade shown on the plans, including all disposal, hauling and leveling of material, approximately <u>3740</u> metres (approximately 1310 cubic metres).	Lump Sum \$	25,000.00
Item 2)	<u>Station 0+000 to Station 0+258 Branch Drain;</u> Carry out excavation of the drain to remove accumulated sediment and restore the drain to the profile grade shown on the plans, including all disposal, hauling and leveling of material, approximately <u>260</u> metres (approximately 150 cubic metres).	Lump Sum \$	1,500.00
Item 3)	<u>Bridge No. 3;</u> repair sinkhole at southeast corner of the bridge including topsoil placement, seeding and mulching, and restoration and clean up, complete. (Norman & Rose Jobin)	Lump Sum \$	500.00

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- Item 4) **Bridge No. 4 at MN 9120;** remove and dispose of existing plank endwalls and all deleterious materials; construct new concrete filled jute bag endwalls with concrete footings and caps including all excavation, loading, hauling, disposal, concrete and bag supply and placement, compacted granular backfill, clean up and restoration including topsoil placement, seeding and mulching, complete.
(Danny & Starla O'Connor) Lump Sum \$ 5,000.00
- Item 5) **Bridge No. 5 at Canada South Railway Drive;** remove and dispose of existing broken concrete headwall on the south end and all deleterious materials including all excavation, loading, hauling and disposal; supply and install concrete filled jute bag endwall with concrete footing and cap including all excavation, loading, hauling, disposal, concrete and bag supply and placement, compacted granular backfill, clean up and restoration including topsoil placement, seeding and mulching, complete.
(Town of Tecumseh) Lump Sum \$ 2,500.00
- Item 6) **Bridge No. 12 at MN 6531;** repair headwall of stacked broken concrete pieces at south end of west headwall including all excavation, supply and placement of broken concrete pieces including grouting joints; place compacted granular 'A' backfill behind reconstructed wall, all clean up and restoration, complete.
(William & Gloria Dennison) Lump Sum \$ 1,500.00
- Item 7) **Bridge No. 14 at MN 6421;** clean out all of the access bridge pipe including flushing, loading, hauling, disposal, and cleanup, complete.
(Bradley Dupuis) Lump Sum \$ 1,000.00
- Item 8) **Station 1+000 to Station 4+740;** Supply and install new heavy duty H.D.P.E. plastic tile main extensions, including connections, rodent grate, removal of any deleterious materials, excavation, backfill, compaction and restoration, complete:
- a) 3.0 metres (10') of 150mm (6") diameter pipe for 150mm diameter tiles: 5 required at \$200.00 each \$ 1,000.00

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	b) 3.0 metres (10') of 200mm (8") diameter pipe for 200mm diameter tiles: <u>5</u> required at <u>\$300.00</u> each	\$	1,500.00
Item 9)	<u>Station 1+000 to Station 4+740;</u> Supply and install approximately <u>50</u> standard lateral tile drain "ditch end" extensions to outlet end of existing damaged 100mm diameter lateral tiles entering the drain, including excavation, rodent grate, backfill, compaction, topsoil placement and seed and mulch, complete at <u>\$120.00</u> each.	\$	6,000.00
Item 10)	<u>Station 1+000 to Station 4+740;</u> Supply and install approximately <u>100</u> tonnes of quarried limestone rip rap for rock chute spillways and general erosion protection, complete at <u>\$65.00</u> per tonne.	\$	6,500.00
Item 11)	<u>Station 1+000 to Station 4+740;</u> Supply and install approximately <u>200</u> square metres of synthetic filter mat for rock chute spillways and general erosion protection, complete at <u>\$5.00</u> per square metre.	\$	1,000.00
Item 12)	<u>Station 1+000 to Station 4+740;</u> clean out all 14 access bridges and pipes including flushing, loading, hauling and disposal, complete. Lump Sum	\$	14,000.00
Item 13)	Brushing and grubbing along the complete length of the drain including all disposal and clean up (approximately 4000 lineal metres), removing and replacing concrete and other fences, complete. Lump Sum	\$	24,000.00
Item 14)	Spread scavenged topsoil; carry out seeding and mulching on all newly excavated side slopes including all harrowing, raking, preparation and cleanup, complete. Lump Sum	\$	16,000.00
Item 15)	Contingency allowance. Lump Sum	\$	3,000.00
SUB-TOTAL FOR CONSTRUCTION			\$ 110,000.00

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Estimated net Harmonized Sales Tax (1.76% H.S.T.) on construction items above.	Lump Sum	\$	1,936.00
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TOTAL FOR CONSTRUCTION		\$	111,936.00
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INCIDENTALS

1)	Report, Estimate, & Specifications	\$	8,000.00
2)	Survey, Assistants, Expenses, and Drawings	\$	36,000.00
3)	Duplication Cost of Report and Drawings	\$	1,000.00
4)	Estimated Cost of Letting Contract	\$	1,000.00
5)	Estimated Cost of Layout and Staking	\$	2,000.00
6)	Estimated Cost of Part-Time Supervision and Inspection During Construction (based on 2 week duration)	\$	6,000.00
7)	Net H.S.T. on Incidental Items Above (1.76%)	\$	950.00
8)	Estimated Cost of Interim Financing	\$	1,200.00
9)	Contingency Allowance	\$	2,098.00

TOTAL FOR INCIDENTALS	\$	58,248.00
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TOTAL FOR ALLOWANCES (brought forward)	\$	6,816.00
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TOTAL FOR CONSTRUCTION (brought forward)	\$	111,936.00
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TOTAL ESTIMATE	\$	177,000.00
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X. DRAWINGS AND SPECIFICATIONS

As part of this report, we have attached design drawings for the repair and improvement of the drain and bridge repairs. The design drawings show the bridge locations within the watershed

area. The drain design drawings are attached to the back of this report and are labelled **Appendix "E"**.

Also attached, we have prepared Specifications which set out the required construction details for the bridge improvements and drain repair and improvements, which also include Standard Specifications labelled therein as **Appendix "C"**.

XI. SCHEDULE OF ASSESSMENT

We would recommend that the Total Cost for construction of this project, including incidental costs, be charged against the lands and roads affected in accordance with the attached Schedule of Assessment. On September 22nd, 2005, the Ontario Ministry of Agriculture, Food and Rural Affairs (O.M.A.F.R.A.) issued Administrative Policies for the Agricultural Drainage Infrastructure Program (A.D.I.P.). This program has re-instated financial assistance for eligible costs and assessed lands pursuant to the Drainage Act. Sections 85 to 90 of the Drainage Act allow the Minister to provide grants for various activities under said Act. Sections 85 and 87 make it very clear that grants are provided at the discretion of the Minister. Based on the current A.D.I.P., "lands used for agricultural purposes" may be eligible for a grant in the amount of 1/3 of their total assessment. The new policies define "lands used for agricultural purposes" as those lands eligible for the "Farm Property Class Tax Rate". The Municipal Clerk provides this information to the Engineer from the current property tax roll. Properties that do not meet the criteria are not eligible for grants. In accordance with same we expect that this project will be qualified for the grant normally available for agricultural lands. The Ministry however, is continually reviewing their policy for grants, and we recommend that the Municipality monitor the policies, and make application to the Ministry for any grant should same become available through the A.D.I.P. program or other available funds.

XII. FUTURE MAINTENANCE

When maintenance work is carried out in the future on the open drain portion, the cost for said future maintenance shall be assessed in accordance with the attached Schedule of Assessment excluding any Special Benefit. When future maintenance work is carried out, the assessment to the affected Owners shall be based on the actual future maintenance cost shared on a pro-rata basis with the values shown in this assessment schedule.

When maintenance work is carried out on any bridges in the future, we recommend that the cost be shared as set out in the Table below and be assessed as a Benefit to the abutting parcel served by the access bridge. The remaining portion shall be assessed to the upstream lands and roads based on their affected area and outlet assessments as set out in the attached Schedule of Assessment.

When any works of maintenance are required to the existing bridges, the following provisions with respect to cost sharing shall apply:

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West Branch Delisle Drain
Bridge Sharing

<u>Bridge/ Encl.</u>	<u>Roll No.</u>	<u>Owners</u>	<u>Owners' Share</u>	<u>Upstream Share</u>
1	480-09450	Beverly Santarossa	52.2%	47.8%
2	480-09450	Beverly Santarossa	100.0%	0.0%
3	480-09400	Norman & Rose Jobin	49.3%	50.7%
4	480-05200	Danny & Starla O'Connor	51.0%	49.0%
5	Canada South Railway Drive	Town of Tecumseh	98.0%	2.0%
6	590-01000	Canada South Railway	98.0%	2.0%
7	King's Highway No. 3	Ministry of Transportation Ontario	98.0%	2.0%
8	460-03300	John & Catherine Lafferty	60.8%	39.2%
9	South Talbot Road	Town of Tecumseh	98.0%	2.0%
10	410-01600	Eric Mathers	79.5%	20.5%
11	410-01550	Derek & Corey Gemus	79.4%	20.6%
12	410-01400	William & Gloria Dennison	82.5%	17.5%
13	410-01400	William & Gloria Dennison	100.0%	0.0%
14	410-01301	Bradley Dupuis	84.8%	15.2%
<u>Hwy. 3 Branch Drain</u>				
15	460-03300	John & Catherine Lafferty	84.0%	16.0%

In the above table, Bridges 2 and 13 are considered the secondary access serving each of the parcels. Pursuant to the Drainage Act each parcel is entitled to one bridge for access. Any additional bridges are constructed and kept up and maintained by the Town at the sole cost of the parcel served by the secondary bridge. Should any works or maintenance be required to the other existing access and farm bridges, the cost will be shared as noted in the above table. The share indicated for the Owner shall be assessed as a Benefit to the bridge Owner and the remaining cost share shall be assessed as an Outlet Liability against the lands and roads within the watershed lying upstream of said access bridge, and shall be assessed in the same proportions as the Outlet assessments shown in the attached Schedule of Assessment.

We recommend that the bridge structures as identified herein, be maintained in the future as part of the drainage works. We would also recommend that the access bridges in the drain, for which the future maintenance costs are to be borne by the abutting affected landowners and upstream lands and roads, be maintained by the Town and that said maintenance would include works to the bridge culvert, bedding, backfill and end treatment. Where concrete,

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asphalt or other decorative driveway surfaces over the bridge culverts require removal as part of the maintenance works, these surfaces shall also be repaired or replaced as part of the works. Likewise, if any fencing, gate, decorative walls, guard rails or other special features exist that will be impacted by the maintenance work, they are also to be removed and restored or replaced as part of the bridge maintenance work. However, the cost of the supply and installation of any surface material other than Granular "A" material, and the cost of removal and restoration or replacement, if necessary, of any special features, shall be totally assessed to the benefiting adjoining parcel served by said access bridge.

We further recommend that the maintenance cost sharing as set out above shall remain as aforesaid until otherwise determined and re-established under the provisions of the "Drainage Act, R.S.O. 1990, Chapter D.17 as amended 2010".

All of which is respectfully submitted.

Rood Engineering Inc.



Gerard Rood, P.Eng.



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att.

ROOD ENGINEERING INC.

Consulting Engineers

9 Nelson Street

LEAMINGTON, Ontario N8H 1G6

SCHEDULE OF ASSESSMENT
WEST BRANCH DELISLE DRAIN - E09DE(23)
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TOWN OF TECUMSEH

2. ONTARIO LANDS:

<u>Tax Roll No.</u>	<u>Plan No.</u>	<u>Lot or Part of Lot</u>	<u>Hectares Afft'd</u>	<u>Acres Afft'd</u>	<u>Owner's Name</u>	<u>Value of Benefit</u>	<u>Value of Outlet</u>	<u>Value of Special Benefit</u>	<u>TOTAL VALUE</u>
		King's Highway # 3	7.06	17.45	Ministry of Transportation Ontario	\$ 7,625.00	\$ 11,637.00	\$ -	\$ 19,262.00
Total on Ontario Lands.....						\$ 7,625.00	\$ 11,637.00	\$ -	\$ 19,262.00

3. MUNICIPAL LANDS:

<u>Tax Roll No.</u>	<u>Plan No.</u>	<u>Lot or Part of Lot</u>	<u>Hectares Afft'd</u>	<u>Acres Afft'd</u>	<u>Owner's Name</u>	<u>Value of Benefit</u>	<u>Value of Outlet</u>	<u>Value of Special Benefit</u>	<u>TOTAL VALUE</u>
		County Road 34	0.85	2.10	County of Essex	\$ 7,623.00	\$ 1,511.00	\$ -	\$ 9,134.00
		County Road 46	1.53	3.79	County of Essex	\$ 1,647.00	\$ 696.00	\$ -	\$ 2,343.00
		10th Concession Road	2.55	6.29	Town of Tecumseh	\$ 1,891.00	\$ 134.00	\$ -	\$ 2,025.00
		Ruston Road	0.28	0.69	Town of Tecumseh	\$ 213.00	\$ 14.00	\$ -	\$ 227.00
		South Talbot Road	2.57	6.34	Town of Tecumseh	\$ 4,879.00	\$ 458.00	\$ -	\$ 5,337.00
		Canada South Railway Drive	0.77	1.90	Town of Tecumseh	\$ 579.00	\$ 3,521.00	\$ 3,725.00	\$ 7,825.00
Total on Municipal Lands.....						\$ 16,832.00	\$ 6,334.00	\$ 3,725.00	\$ 26,891.00

4. PRIVATELY OWNED - NON-AGRICULTURAL LANDS:

<u>Tax Roll No.</u>	<u>Plan No.</u>	<u>Lot or Part of Lot</u>	<u>Hectares Afft'd</u>	<u>Acres Afft'd</u>	<u>Owner's Name</u>	<u>Value of Benefit</u>	<u>Value of Outlet</u>	<u>Value of Special Benefit</u>	<u>TOTAL VALUE</u>
410-01301	9	5	0.73	1.81	Bradley Dupuis	\$ 549.00	\$ 364.00	\$ 1,934.00	\$ 2,847.00
410-01600	9	5	0.40	1.00	Eric Mathers	\$ 304.00	\$ 94.00	\$ -	\$ 398.00
410-01660	9	4	0.20	0.50	Brian & Lisa McGuire	\$ -	\$ 53.00	\$ -	\$ 53.00

Schedule of Assessment - West Branch Delisle Drain
(Geographic Township of Sandwich South)
Town of Tecumseh E09DE(23)

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Tax Roll <u>No.</u>	Plan <u>No.</u>	Lot or Part <u>of Lot</u>	Hectares <u>Afft'd</u>	Acres <u>Afft'd</u>	<u>Owner's Name</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	Value of Special <u>Benefit</u>	TOTAL <u>VALUE</u>
410-02010	9	3	0.35	0.85	Matthew & Kari Loscher	\$ -	\$ 81.00	\$ -	\$ 81.00
410-02650	10	3	0.23	0.57	Nancy Steeves	\$ -	\$ 54.00	\$ -	\$ 54.00
410-02701	10	5	0.40	1.00	Christopher & Cathy-Lyn McCarthy	\$ -	\$ 94.00	\$ -	\$ 94.00
460-00690	STR	295	0.20	0.50	Michael & Deborah Bissonnette	\$ 152.00	\$ 53.00	\$ -	\$ 205.00
480-04000	NTR	295	1.44	3.56	Maidstone Recreation Centre	\$ -	\$ 260.00	\$ -	\$ 260.00
480-04300	NTR	295	0.31	0.76	Brian & Marguerite Foubert	\$ -	\$ 56.00	\$ -	\$ 56.00
480-04400	NTR	295	0.17	0.42	Mark Buhler	\$ -	\$ 30.00	\$ -	\$ 30.00
480-04500	NTR	295	0.17	0.42	Shawn & Grace Macdonald	\$ -	\$ 30.00	\$ -	\$ 30.00
480-04600	NTR	295	0.40	1.00	Ronald & Renee Ducharme	\$ -	\$ 71.00	\$ -	\$ 71.00
480-04700	NTR	295	3.35	8.28	Michael & Karen Langlois	\$ -	\$ 514.00	\$ -	\$ 514.00
480-04800	NTR	295	2.02	5.00	Daniel Ryall	\$ -	\$ 323.00	\$ -	\$ 323.00
480-04900	NTR	295	2.02	5.00	Kevin Nussio	\$ -	\$ 323.00	\$ -	\$ 323.00
480-05200	NTR	296	2.02	5.00	Danny & Starla O'Connor	\$ 1,525.00	\$ 301.00	\$ 3,877.00	\$ 5,703.00
480-05300	NTR	296	2.21	5.47	Evelyn & Robert Corcoran	\$ 1,525.00	\$ 324.00	\$ -	\$ 1,849.00
480-05500	NTR	295	1.66	4.11	Samara Mouawad	\$ -	\$ 274.00	\$ -	\$ 274.00
480-05600	NTR	295	1.21	3.00	Robert & Nancy Thomson	\$ -	\$ 201.00	\$ -	\$ 201.00
480-05700	NTR	295	0.81	2.00	Heather Sharpe	\$ -	\$ 135.00	\$ -	\$ 135.00
480-05800	NTR	295	1.21	3.00	Michael & Allison Fredericks	\$ -	\$ 201.00	\$ -	\$ 201.00
480-05900	NTR	296	0.25	0.62	William & Gladys Peiffer	\$ 91.00	\$ 44.00	\$ -	\$ 135.00
480-06400	NTR	296	1.42	3.50	Nicolae & Marcela Paducel	\$ 549.00	\$ 238.00	\$ -	\$ 787.00
480-06500	NTR	296	0.40	1.00	Jessica Hillyard	\$ 152.00	\$ 71.00	\$ -	\$ 223.00
480-06600	NTR	296	0.64	1.59	Preston & Francine Parrott	\$ 244.00	\$ 110.00	\$ -	\$ 354.00
480-06700	NTR	296	1.37	3.38	Wanda Tarnowski	\$ 518.00	\$ 225.00	\$ -	\$ 743.00
480-06800	NTR	296	1.31	3.24	Giovanni & Angela Laudicina	\$ 488.00	\$ 213.00	\$ -	\$ 701.00
480-06900	NTR	296	0.67	1.65	Mustafa Enaami & Szilvia Simon	\$ 244.00	\$ 110.00	\$ -	\$ 354.00
480-07000	NTR	296	3.21	7.94	Danny Joksimovic	\$ 762.00	\$ 505.00	\$ -	\$ 1,267.00
480-07100	NTR	296	0.31	0.76	Frederick Stockwell	\$ 122.00	\$ 56.00	\$ -	\$ 178.00
480-09450	NTR	297	0.44	1.08	Beverly Santarossa	\$ 91.00	\$ 23.00	\$ -	\$ 114.00
480-09500	NTR	296	10.02	24.75	Joseph & Beverly Santarossa	\$ 2,287.00	\$ 580.00	\$ -	\$ 2,867.00
590-01000	NTR	Pts. 295-297	2.02	5.00	Canada Southern Railway Co.	\$ 1,525.00	\$ 396.00	\$ -	\$ 1,921.00
Total on Privately Owned - Non-Agricultural Lands.....						\$ 11,128.00	\$ 6,407.00	\$ 5,811.00	\$ 23,346.00

Schedule of Assessment - West Branch Delisle Drain
(Geographic Township of Sandwich South)
Town of Tecumseh E09DE(23)

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Tax Roll <u>No.</u>	Plan <u>No.</u>	Lot or Part <u>of Lot</u>	Hectares <u>Afft'd</u>	Acres <u>Afft'd</u>	<u>Owner's Name</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	Value of Special <u>Benefit</u>	TOTAL <u>VALUE</u>
5. PRIVATELY OWNED - AGRICULTURAL LANDS (grantable):									
410-01400	9	5	8.09	20.00	William & Gloria Dennison	\$ 4,574.00	\$ 1,937.00	\$ 1,881.00	\$ 8,392.00
410-01500	9	5	21.35	52.75	Madonna Gemus	\$ 11,283.00	\$ 4,518.00	\$ -	\$ 15,801.00
410-01550	9	5	0.51	1.25	Derek & Corey Gemus	\$ 396.00	\$ 118.00	\$ -	\$ 514.00
410-01700	9	4	24.08	59.50	Augustine & Gaynia Revenberg	\$ -	\$ 4,895.00	\$ -	\$ 4,895.00
410-01800	9	4	12.06	29.80	Tomo & Maria Dobrich	\$ -	\$ 2,448.00	\$ -	\$ 2,448.00
410-01900	9	3	6.48	16.00	Shirley Wilson	\$ -	\$ 1,310.00	\$ -	\$ 1,310.00
410-02000	9	3	3.70	9.15	Matthew & Kari Loscher	\$ -	\$ 654.00	\$ -	\$ 654.00
410-02550	10	3	6.88	17.00	Roberta Diemer	\$ -	\$ 1,384.00	\$ -	\$ 1,384.00
410-02600	10	3 & 4	6.65	16.43	Peter Steeves	\$ -	\$ 1,382.00	\$ -	\$ 1,382.00
410-02700	10	3, 4 & 5	19.19	47.42	John & Catherine Lafferty	\$ 4,574.00	\$ 4,078.00	\$ -	\$ 8,652.00
410-02702	10	5	0.66	1.64	Frank Lafferty Limited	\$ -	\$ 145.00	\$ -	\$ 145.00
460-00600	STR	295	20.59	50.87	Charles McLean & Carol McKeegan	\$ 7,562.00	\$ 4,046.00	\$ -	\$ 11,608.00
460-00700	STR	296	20.23	50.00	Thomas & Linda Halford	\$ 7,562.00	\$ 4,043.00	\$ -	\$ 11,605.00
460-03300	STR	295 & 296	39.39	97.33	John & Catherine Lafferty	\$ 15,704.00	\$ 7,122.00	\$ -	\$ 22,826.00
480-05100	NTR	295 & 296	4.04	9.99	Robert & Pamela Rudy	\$ 366.00	\$ 622.00	\$ -	\$ 988.00
480-05101	NTR	296	4.06	10.02	Roland Jacques & Estelle Vaillancourt	\$ 366.00	\$ 622.00	\$ -	\$ 988.00
480-05400	NTR	296	3.04	7.50	Norman & Rosemarie Jobin	\$ -	\$ 479.00	\$ -	\$ 479.00
480-06000	NTR	296	3.68	9.10	Douglas Desjardins	\$ 1,433.00	\$ 584.00	\$ -	\$ 2,017.00
480-06100	NTR	296	3.34	8.25	Robert Ouellette	\$ 610.00	\$ 271.00	\$ -	\$ 881.00
480-06200	NTR	296	0.51	1.25	Robert Ouellette & Jeraldine Anderson	\$ 1,525.00	\$ 304.00	\$ -	\$ 1,829.00
480-06300	NTR	296	2.42	5.98	Domenic & Paola Acchione	\$ 915.00	\$ 386.00	\$ -	\$ 1,301.00
480-07200	NTR	296	4.37	10.80	John & Margaret Dixon	\$ -	\$ 673.00	\$ -	\$ 673.00
480-09400	NTR	296 & 297	18.11	44.75	Norman & Rosemarie Jobin	\$ 4,178.00	\$ 1,648.00	\$ -	\$ 5,826.00
480-09600	NTR	296	10.12	25.00	Anthony & Loreta Vendittelli	\$ -	\$ 580.00	\$ -	\$ 580.00
Total on Privately Owned - Agricultural Lands (grantable).....						\$ 61,048.00	\$ 44,249.00	\$ 1,881.00	\$ 107,178.00

Schedule of Assessment - West Branch Delisle Drain
 (Geographic Township of Sandwich South)
 Town of Tecumseh E09DE(23)

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Tax Roll <u>No.</u>	Plan <u>No.</u>	Lot or Part <u>of Lot</u>	Hectares <u>Afft'd</u>	Acres <u>Afft'd</u>	<u>Owner's Name</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	Value of Special <u>Benefit</u>	TOTAL <u>VALUE</u>
5. PRIVATELY OWNED - AGRICULTURAL LANDS (non-grantable):									
480-05000	NTR	295	2.02	5.00	Joseph & Grace Cassar	\$ -	\$ 323.00	\$ -	\$ 323.00
Total on Privately Owned - Agricultural Lands (non-grantable).....						\$ -	\$ 323.00	\$ -	\$ 323.00
TOTAL ASSESSMENT			304.78	753.11		\$ 96,633.00	\$ 68,950.00	\$ 11,417.00	\$ 177,000.00

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Tecumseh Reference: E09DE(23)

1 Hectare = 2.471 Acres

Project No. REI2014D004

April 28th, 2016

SPECIFICATIONS**WEST BRANCH DELISLE DRAIN****E09DE(23)****(Geographic Township of Sandwich South)****TOWN OF TECUMSEH****I. GENERAL SCOPE OF WORK**

The West Branch Delisle Drain comprises of an open drain generally located between County Road 46 and South Talbot Road, just west of the community of Maidstone, in the geographic township of Sandwich South, Town of Tecumseh. The work on the drain will extend from the outlet in the Gzowski Drain at County Road 46 as shown on the plans, and proceed southerly to the south side of South Talbot Road, and then westerly along the road to the upstream end of the open drain. The work under this project generally comprises of improvements to the open drain to provide a suitable cross section for conveyance of flows, along with headwall repairs, and cleaning out of all the bridges along the course of the drain. The work on the bridges includes the installation of new concrete filled jute bag headwalls on each end to replace the existing plank endwalls that are collapsing on Bridge 4, a new concrete filled jute bag endwall on the south end of Bridge 5, and on other bridges the repair of headwalls comprising of stacked broken concrete pieces. Work on the drain includes excavation, supply and installation of quarried limestone on filter cloth general erosion protection and rock chute inlets. The proposed work is intended to address the repair and improvement of the open drain, bridges, any tile end improvements, and erosion protection in accordance with current standards.

All work shall be carried out in accordance with these specifications, the plans forming part of this drainage project, as well as the Standard Details included in **Appendix "C"**. All work carried out under this project shall be completed to the full satisfaction of the Town Drainage Superintendent and the Engineer.

II. E.R.C.A. AND D.F.O. CONSIDERATIONS

The Contractor will be required to implement stringent erosion and sedimentation controls during the course of the work to help minimize the amount of silt and sediment being carried downstream into the Gzowski Drain. It is intended that work on this project be carried out during relatively dry weather to ensure proper site and drain conditions and to avoid conflicts with sediment being deposited into the outlet drainage systems. All disturbed areas shall be restored as quickly as possible with grass seeding and mulching installed to ensure a protective cover and to minimize any erosion from the work site subsequent to construction. The Contractor may be required to provide temporary silt fencing and straw bales as outlined further in these specifications.

All of the work shall be carried out in accordance with any permits or authorizations issued by the Essex Region Conservation Authority (E.R.C.A.) or the Department of Fisheries and Oceans (D.F.O.), copies of which will be provided, if available, and the notes in **Appendix "A"**. The Contractor is advised that no work may be carried out in the existing drain from March 15th to

June 30th of any given year because the drain is directly connected to a downstream drain that is classified as sensitive to impacts on aquatic life and habitat by E.R.C.A. and D.F.O.

As part of its work, the Contractor will implement the following measures that will ensure that any potential adverse effects on fish and fish habitat will be mitigated:

- a) As per standard requirements, work will not be conducted at times when flows in the drain are elevated due to local rain events, storms, or seasonal floods. Work will be done in the dry.
- b) All disturbed soils on the drain banks and within the channel, including spoil, must be stabilized immediately upon completion of work. The restoration of the site must be completed to a like or better condition to what existed prior to the works. The spoil material must be hauled away and disposed of at a suitable site, or spread an appropriate distance from the top of the drain bank to ensure that it is not washed back into the drain.
- c) To prevent sediment entry into the Drain, in the event of an unexpected rainfall, silt barriers and/or traps must be placed in the channel during the works and until the site has been stabilized. All sediment and erosion control measures are to be in accordance with related Ontario Provincial Standards. It is incumbent on the proponent and their Contractors to ensure that sediment and erosion control measures are functioning properly and are maintained and upgraded as required.
- d) Silt or sand accumulated in the barrier traps must be removed and stabilized on land once the site is stabilized.
- e) All activities including maintenance procedures should be controlled to prevent the entry of petroleum products, debris, rubble, concrete, or other deleterious substances into the water. Vehicular refuelling and maintenance should be conducted away from the water.

III. M.N.R.F. CONSIDERATIONS

The Contractor is to note that this project has gone through the Ministry of Natural Resources and Forestry (M.N.R.F.) screening process by way of a Species at Risk (S.A.R.) former Municipal Agreement review. A copy of the relevant information that was provided in the former Agreement is included herein as part of **Appendix “B”**.

The Contractor is to review **Appendix “B”** in detail and is required to comply, in all regards, with the contents of said M.N.R.F. information, or any future requirements, and follow the special requirements therein included, during construction.

Notwithstanding the above, the Contractor is advised that the Town had signed an **Agreement** with the Ministry of Natural Resources and Forestry (M.N.R.F.) regarding the maintenance operations on Municipal drains and the Endangered Species Act (E.S.A.), 2007. We have reviewed the endangered species maps and any concerns will be provided in **Appendix “B”**. Certain species such as turtles and snakes are mobile and may be encountered during construction. Therefore, the **“SCHEDULE C MITIGATION PLAN”** of the former **Agreement** (pages 13 through 23) has been included in **Appendix “B”** in its entirety for further information and use by the Contractor.

The Contractor shall contact the Drainage Superintendent if an endangered species is encountered during construction. The Contractor shall be responsible for providing the necessary equipment and materials outlined in the **"SCHEDULE C MITIGATION PLAN"** to address the handling of any endangered species encountered during the course of the construction work. The Contractor shall cooperate fully and assist the Drainage Superintendent or M.N.R.F. staff in the proper handling of the endangered species as outlined in the **"MITIGATION PLAN"**, and as may be further directed by the Drainage Superintendent or the M.N.R.F., and shall govern all its operations accordingly.

IV. ACCESS TO WORK

The Contractor is advised that the majority of the work to be carried out on this project extends along the west and south sides of the West Branch Delisle Drain except for the area on Parcels 480-05200 and 480-06200 where the work will be done from the east side. The Contractor shall have access for a minimum width of 6 metres (20 feet) abutting the proposed drainage works. The Contractor may utilize the work area as necessary, to permit the completion of all of the work required to be carried out for this project along with an area sufficient to spread the excavated material to a maximum depth of 100mm on the adjacent lands beyond any grass buffer or driveway access. At all lawn areas the excavation material shall be trucked away and disposed of by the Contractor at a site to be obtained by the Contractor at its expense. The Contractor shall also have access along the roadway boulevards at lawn areas and through the driveways from King's Highway No. 3 and other roadways as necessary to access the open drain and carry out the work on the existing access bridges as set out on the plans and in these specifications, along with a sufficient area in the vicinity of the bridges to carry out the removal of the sediment, repairs of the headwalls, and ancillary work.

The Contractor shall ensure that the traveling public is protected at all times while utilizing the roadway for its access. The Contractor shall provide traffic control, including flag persons when required.

Throughout the course of the work it is imperative that the Contractor protect as much landscaping and vegetation as possible when accessing along the drain. This will be of particular concern along the grass buffer and driveway areas abutting the drain. Any accesses or areas used in carrying out the works are to be fully restored to their original conditions by the Contractor at its cost, including topsoil placement and lawn restoration as directed by the Town Drainage Superintendent and the Consulting Engineer. Restoration shall include but not be limited to all necessary levelling, grading, shaping, topsoil placement, seeding, mulching, and granular placement required to make good any damage caused.

V. REMOVAL OF BRUSH, TREES AND RUBBISH

Where there is any brush, trees or rubbish along the course of the drainage works from top of bank to top of bank, including the full width of the work access, all such brush, trees or rubbish shall be close cut and grubbed out, and the whole shall be chipped up for recycling, burned or otherwise satisfactorily disposed of by the Contractor. The brush and trees removed along the course of the work are to be cut as close to the ground as practicable and within the drain banks parallel to the side slopes. Except as noted herein, stumps shall be left in place and shall be sprayed with a single application of stump killer (Diphenoprop BK700 or approved equal). All removed materials shall be put into piles by the Contractor in locations adjacent to the drain and within the working corridors, where they can be safely chipped and disposed of, or burned by it, or hauled away and disposed of by the Contractor to a site to be obtained by it at its

expense. In all cases, trees and brush shall be stockpiled on the property on which they were cut. Prior to and during the course of any burning operations, the Contractor shall comply with the guidelines prepared by the Air Quality Branch of the Ontario Ministry of the Environment, and shall ensure that the Environmental Protection Act is not violated. The Contractor shall assume all responsibility for control of the burn, obtaining all utility locates in the area of each burn site, all responsibility for liabilities related to the burning of the brush and smoke generated, and will be required to notify the local fire authorities to obtain any permits and co-operate with them in the carrying out of any work. All work shall be carried out in conformance with the Town by-laws for same as attached to these specifications in **Appendix "D"**. The removal of brush and trees shall be carried out in close consultation with the Town Drainage Superintendent or Engineer to ensure that no decorative trees or shrubs are disturbed by the operations of the Contractor that can be saved. It is the intent of this project to save as many trees and bushes as practical on private lands adjacent to the drain and within the working corridors, especially mature trees beyond the drain sideslopes. The landowners will be requested to mark trees that they wish to save if possible and the Contractor shall review the removal of trees with the Drainage Superintendent or Engineer.

The Contractor shall protect all other trees, bushes, and shrubs located along the length of the drainage works except for those trees that are established, in consultation with the Town Drainage Superintendent, the Engineer, and the landowners, to be removed as part of the works. The Contractor shall note that protecting and saving the trees may require the Contractor to carry out hand work around the trees, bushes, and shrubs to complete the necessary final site grading and restoration.

Following the completion of the work, the Contractor is to trim up any broken or damaged limbs on trees which are to remain standing, and it shall dispose of said branches along with other brush, thus leaving the trees in a neat and tidy condition.

The Contractor shall remove all deleterious materials and rubbish along the course of the open drain and any such materials located in the bridge culverts and enclosures while carrying out its cleaning of same. All such deleterious materials and rubbish shall be loaded up and hauled away by the Contractor to a site to be obtained by it at its cost.

VI. DRAIN EXCAVATION

Prior to commencing excavation work, the Contractor shall arrange to meet on-site with the Town Drainage Superintendent to mark and accurately determine the number and location of any lateral and main tiles requiring repair.

The Contractor, when doing its excavation or any other portion of the work, shall be very careful not to interfere with, plug up or damage, any existing surface drains, swales and lateral or main tile ends. If it is found that said existing drains are interfered with in any way, the Contractor will be required to unplug or repair said drains immediately, at no extra cost to the project. If it is found that any existing lateral tiles or main tile drains or tile ends have been cut off or damaged in any way during the course of the work, the Contractor will be required to either repair or replace them. All work shall be completed to the full satisfaction of the Town Drainage Superintendent at no extra cost to the project.

The alignment of drains throughout shall be to the full satisfaction of the Town Drainage Superintendent. The whole of the work shall be done in a neat, thorough and workmanlike manner to the full satisfaction of the Town Drainage Superintendent.

The drain shall be of the size, type, depth, etc. as shown on the accompanying drawing. When completed, the drain shall have a uniform and even bottom and in no case shall such bottom project above the grade line, as shown on the accompanying drawing, and as determined from the Bench Mark. The finished side slopes of the drain shall be 1.5 metres horizontal to 1.0 metre vertical.

The excavated material to be cast onto the adjoining lands shall be well and evenly spread over a sufficient area so that no portion of the excavated earth is more than 100mm in depth. The material shall be kept at least 1.2 metres clear from the finished edge of the drain, care being taken not to fill up any existing tiles, ditches, furrows or drains with the excavated material. The excavated material to be spread upon the lands shall be free from rocks, cobbles, boulders, stumps, rubble, rubbish or other similar material and these materials, if encountered, shall be hauled away by the Contractor and disposed of at a site to be obtained by it at its expense.

Where the drain crosses any lawn, garden, orchard or driveway, etc., the excavated material for the full width of the above mentioned areas shall be hauled away by the Contractor and disposed of to a site to be obtained by the Contractor at its expense. All work at the disposal site shall be established between the Contractor and the site owner. The Contractor shall be responsible for any permits required and shall provide copies of same to the Town and Consulting Engineer when requested.

The Contractor shall satisfactorily clean through all existing pipe access bridges to the grade line as shown on the accompanying drawing. As part of the excavation work, the Contractor will also be required to clean out all concrete or steel span bridges along the course of the drain, and provide the channel cross-section as shown on the drawings. When necessary, the existing bridge shall be taken out and be re-installed to the correct grade in accordance with the profile on the plans. If the existing pipe is damaged in any way during the course of the work, the Contractor will be required to either repair or replace same to the full satisfaction of the Municipal Drainage Superintendent or the Engineer, at no extra cost to the project. Excavated materials from cleaning out bridges shall be disposed of by the Contractor to a site to be obtained by it at its expense.

The open drain shall be excavated to the lines, levels, grades and cross-sections as shown on the accompanying drawings, or as may be further established by the Municipal Drainage Superintendent or the Engineer at the time of the work. The drain shall be carefully excavated so as not to disturb the existing banks, rock protection and vegetation, except for those portions of the drain where widening or restoration of a stable drain bank configuration is required. The bottom width of the drain and the sideslopes of the excavation shall conform to the dimensions given on the drawings. In no case shall the drain bottom project above the grade line as shown on the accompanying drawings and as determined from the Bench Mark. The finished sideslopes of the drain shall be 1.5 horizontal to 1 vertical, unless otherwise noted and the drain shall have a bottom width of 0.9 metres throughout the length of the drain.

Stations have been established along the course of the drain and are numbered consecutively, 1+000, 1+030, 1+060, etc. Said Stations are spaced 30.0 metres apart. All cross-sections shown on the drawings indicate the appropriate banks and the Contractor shall take care to ensure that all bank cutting is completed on the proper side of the drain.

If cutting of the sideslopes is required, the Contractor shall scavenge any available topsoil from the sideslopes during its excavation operations. Said topsoil material shall be sprinkled on the finished cut slopes ready for harrowing and seeding in accordance with these Specifications. It is expected that approximately 25mm to 50mm of scavenged topsoil will be spread on all areas to be seeded.

In all cases, the disposal of any trucked material will be the responsibility of the Contractor and any work at the disposal site shall be established between the Contractor and the site owner. The Contractor shall ensure that any permits required for fill disposal are obtained from the appropriate authority. The Contractor will be responsible for keeping all private and public roadways free and clear of mud and debris resulting from its use of same for access and hauling purposes.

Should there be any out of repair lateral or main tiles along the course of the open portion of the Drain, the Municipal Drainage Superintendent shall arrange for the repair and improvement of same. The Contractor will be required to reconstruct same after completing the excavation works. For main tile extensions, the plastic drain tile to be used shall be of the same size as the existing plastic tile or one (1) size larger than an existing clay tile. It shall be placed at the outlet end and shall be installed no lower than 300mm above the finished bottom of the drain, and said end shall not extend beyond the drain sideslopes more than 150mm. All plastic drain tile extensions shall be backfilled with good, dry, clay type fill material available from the excavation and the same shall be satisfactorily compacted in place with the use of a shovel bucket so that a minimum Standard Proctor Density of 95% is achieved. All main tile extensions shall be connected to existing main tiles or pipes with the use of mortar joints or manufacturer's couplings. Mortar joints shall be composed of three (3) parts of clean, sharp sand to one (1) part of Portland cement with just sufficient water added to produce a stiff mix, and the mortar connection shall be performed to the full satisfaction of the Municipal Drainage Superintendent or the Engineer. All main tiles shall have rodent protection installed at the outlet ends by the Contractor.

The Contractor shall protect all tile ends along the course of the drain. If the Contractor damages any tiles during its operations, the Contractor shall repair same at its own cost. Should the Municipal Drainage Superintendent find any lateral tiles that are out of repair, he shall instruct the Contractor to repair and improve same. The Contractor shall install not less than 3.66 metres of similar sized Big "O" pipe, non-perforated, a similar sized plastic adapter to connect the Big "O" pipe to the tile, and a rodent screen on the outlet end of same. The Big "O" pipe shall be placed at the bank so that the outlet end, wherever possible, shall be set approximately 300mm above the finished bottom of the drain, and said end shall extend beyond the drain bank sideslopes not more than 150mm. The Big "O" pipe adapter and rodent screen are available from the Comber Tile Yard Ltd., Comber, Ontario. The Contractor shall note that the excavated area along the drain sideslopes where tile end extensions have been installed shall be fine graded and readied for seeding and mulching. The seeding and mulching shall be performed as specified herein, and shall be considered part of the tile drain extension and installation procedure. All work shall be in accordance with the "Standard Tile Outlet Detail" shown in **Appendix "C"**.

VII. FENCING

Where it is necessary to take down any fence to proceed with the work, the same shall be done by the Contractor across or along that portion of the work where such fence is located. The Contractor will be required to exercise extreme care in the removal of any fencing so as to cause a minimum of damage to same. The Contractor will be required to replace any fence that is taken down in order to proceed with the work, and the fence shall be replaced in a neat and workmanlike manner. The Contractor will not be required to procure any new materials for rebuilding the fence provided that it has used reasonable care in the removal and replacement of same. When any fence is removed by the Contractor, and the Owner thereof deems it advisable and procures new material for replacing the fence so removed, the Contractor shall

replace the fence using the new materials and the materials from the present fence shall remain the property of the Owner.

VIII. DETAILS OF BRIDGE WORK

The Contractor shall completely remove and dispose of any end protection on both ends of Bridge 4 and the south end of Bridge 5. For the other bridges to be repaired at this time, the Contractor shall salvage headwall materials that are useable and provide any additional materials as required. The existing pipes shall be cleaned out and the removed material disposed of as provided for in the schedule of items and prices. The Contractor shall load up and haul away all deleterious material from the bridge sites as set out further in these specifications. The drain cross section in the location of the bridges shall be restored in accordance with the profile and any exposed banks restored as noted in these specifications.

The Contractor shall also note that the placement and repair of the headwalls is to be performed totally in the dry, and it shall be prepared to take whatever steps are necessary to ensure same, all to the full satisfaction of the Town Drainage Superintendent or Engineer. As part of the work, the Contractor will be required to clean out the drain for a distance of 3.05 metres (10.0 ft.) upstream and downstream of said pipe. The design parameters of the West Branch Delisle Drain at the location of these access bridges consists of a 0.90m (3.0 ft.) bottom width, bottom grade as shown on the profile, and 1.50 horizontal to 1.00 vertical sideslopes. The Contractor shall be required to cut any brush and strip the existing drain sideslopes of any vegetation as part of the grubbing operation. The Contractor shall also be required to dispose of all excavated and deleterious materials, as well as any demolished unsuitable concrete, wood and grubbed out materials, to a site to be obtained by it at its own expense. The Contractor shall note that the survey indicates that the existing drain bottom is above the design grade. The Contractor shall be required to provide any and all labour, material and equipment to set the headwall to the required design grades. The Contractor shall also be required to supply, if necessary for a solid base, a minimum thickness of 150mm (6") of 20mm (3/4") clear stone bedding underneath the culvert pipe headwall footing, all to the full satisfaction of the Town Drainage Superintendent or Engineer.

The installation of the access bridge culvert headwalls, including all appurtenances, shall be completely inspected by the Town Drainage Superintendent or Engineer prior to backfilling any portions of same. Under no circumstance shall the Contractor backfill same until the Town Drainage Superintendent or Engineer inspects and approves said installation. The Contractor shall provide a minimum notice of 2 working days to the Town Drainage Superintendent or Engineer prior to the commencement of this work. The installation of this access bridge headwalls is to be performed during the normal working hours from Monday to Friday of the Town Drainage Superintendent or Engineer.

As the new headwalls are being satisfactorily set in place at the site, the Contractor shall completely backfill same with granular material M.T.O. Type "B" O.P.S. Form 1010, with the exception of the top 305mm (12") of the backfill material for the full top width of the drain and the area behind the headwalls, which shall be granular material M.T.O. Type "A" O.P.S. Form 1010.

The installation of the endwalls, as well as the backfilling of the pipe where applicable, shall be provided in compliance with Items 1), 3), and 4) of the "**Standard Specifications for Access Bridge Construction**" attached within **Appendix "C"** and in total compliance and in all respects with the General Conditions included in Item 4) of said Appendix. The Contractor, in all cases,

shall comply with these specifications and upon completion of the end protection installation shall restore the adjacent areas to their original conditions.

The Contractor shall also be required to provide all labour, equipment and material to provide granular fill to all gore areas at the bridge corners, and native fill to all gore areas. The Contractor shall protect any existing landscape features during the course of the work.

As part of the work the Contractor shall be required to protect or extend any existing lateral tile ends which are found to be damaged or out of repair. All existing lateral tile drains, where required, shall be extended with "ditch ends" with rodent grates and installed in accordance with the "Standard Lateral Tile Detail" as shown in **Appendix "C"**, unless otherwise noted. Connections shall be made using manufacturer's couplers wherever possible. All other connections shall be completely sealed with a sufficient mass of concrete grout around the full exterior perimeter of each joint and a rodent grate provided on the drain end.

The Contractor is to also note that all granular material being placed as backfill for any bridge headwall installation shall be compacted in place to a minimum Standard Proctor Density of 98%, and that all native fill material to be used for the construction shall be compacted in place to a minimum Standard Proctor Density of 95%.

All of the granular backfill, native fill, and the compaction levels for same shall be provided to the full satisfaction of the Town Drainage Superintendent or the Engineer. The Contractor shall also note that any sediment being removed from the drain bottom as previously specified herein, shall not be utilized for the construction of the driveway, and shall be disposed of by the Contractor to a site to be obtained by it at its own expense.

The Contractor shall be required to restore any and all drain sideslopes damaged by the access bridge repairs, utilizing the available scavenged topsoil, and shall seed and mulch over all of said areas.

The placing and grading of any topsoil shall be carefully and meticulously carried out in accordance with Ontario Provincial Standard Specifications, Form 802 dated November 2010, or as subsequently amended, or as amended by these specifications and be readied for the seeding and mulching process. The seeding and mulching of all of the above mentioned areas shall comply in all regards to Ontario Provincial Standard Specifications, Form 803 dated November 2010 and Form 804, dated November 2013, or as subsequently amended, or as amended by these specifications. The seeding mixture shall be the Standard Roadside Mix (Canada No. 1 Lawn Grass Seed Mixture) as set out in O.P.S.S. 804. All cleanup and restoration work shall be performed to the full satisfaction of the Town Drainage Superintendent or Engineer.

When all of the work for the installation has been completed, the Contractor shall ensure that positive drainage is provided to all areas, and shall ensure that the site is left in a neat and workmanlike manner, all to the full satisfaction of the Town Drainage Superintendent or Engineer.

The Contractor shall completely remove and dispose of the sediment in all the other access bridges along the course of the drain. Sediment shall be flushed out of the pipes with care being taken not to damage the pipes. All removed materials shall be loaded up and hauled away by the Contractor for disposal.

IX. REMOVALS

In the future when maintenance work is carried out and where existing access bridges are to be completely removed and replaced, the Contractor shall be required to excavate and completely extract the existing culvert pipe and the existing endwalls in their entirety, as well as any other deleterious materials that may be encountered in removing same. The Contractor shall also be required to completely dispose of all removed materials to a site to be obtained by it at its own expense.

All unsuitable and deleterious materials from the excavation and removal of the existing bridge culverts and drain cleaning shall be hauled away and disposed of by the Contractor to a site to be obtained by it at its expense. Likewise, any deleterious material excavated for removal of the headwalls shall also be hauled away and disposed of by the Contractor.

X. GENERAL QUARRIED LIMESTONE EROSION PROTECTION

Along the course of the existing drain, portions of the bank sideslopes have been protected with quarried limestone riprap on filter cloth material. The Contractor shall not place any rock chute or additional general erosion protection on the drain until such time as that portion of the drain has been completely excavated and any trimming of the sideslopes has been carried out. Where large erosion problems exist, the Contractor shall fill the washouts with well-compacted clay materials and provide a clearly defined outlet for the surface water.

Once the excavation of a portion of the drain has been completed, the Contractor shall contact the Municipal Drainage Superintendent on the project to attend at the site to ascertain and locate exactly where the rock chutes and general erosion protection are to be provided and the extent of same. The rock chutes and general erosion protection shall be embedded into the sideslopes of the drain a minimum thickness of 305mm and shall be underlain in all cases with a synthetic filter mat. The filter mat shall not only be laid along the flat portion of the rock chute or erosion protection, but also contoured to the exterior limits between the quarried limestone and the unprotected slope. The width of the rock chutes and general erosion protection shall be as determined and as directed by the Municipal Drainage Superintendent or the Engineer during construction. The Contractor in placing the rock chute and erosion protection shall carefully tamp quarried limestone pieces into place with the use of a shovel bucket so that the rock chutes and erosion protection when completed will be consistent, uniform and tightly laid. In no instance shall the quarried limestone protrude beyond the exterior contour of the unprotected drain and sideslopes along either side of the rock chute or general erosion protection. The rock chute and general erosion protection shall match the natural contour of the spillway where applicable, so that the surface water can freely discharge into the drain. The synthetic filter mat to be used shall be non-woven geotextile GMN160 conforming to O.P.S.S. 1860 Class I, as available from Armtec Construction Products, or equal. The quarried limestone to be used shall be graded in size from a minimum of 100mm to a maximum of 250mm, and is available from Amherst Quarries Ltd., in Amherstburg, Ontario, or equal.

At all of the swale and furrow locations entering the drain it is required that general quarried limestone erosion protection and rock chutes be provided on the drain slopes, at any locations indicated, and to the widths generally shown within the details and notes included in the accompanying drawings. The rock chutes shall be v-shaped and constructed to direct all flows through the centre portion of the rock chute. Where the drain banks are showing erosion or slumping and distress, the Contractor shall provide quarried limestone on filter cloth general erosion protection as outlined below. Protection locations shall be as established in

consultation with the Town Drainage Superintendent and the Engineer and shall include any areas noted on the profile.

The quarried limestone erosion protection shall be embedded into the sideslopes of the drain a minimum thickness of 305mm and shall be underlain in all cases with non-woven synthetic filter mat. The filter mat shall not only be laid along the flat portion of the erosion protection, but also contoured to the exterior limits of the quarried limestone and the unprotected slope. The width of the general erosion protection shall be as established in the accompanying drawings or as otherwise directed by the Town Drainage Superintendent or the Engineer during construction. In placing the erosion protection the Contractor shall carefully tamp the quarried limestone pieces into place with the use of the equipment bucket so that the erosion protection when completed will be consistent, uniform and tightly laid. In no instance shall the quarried limestone protrude beyond the exterior contour of the unprotected drain sideslopes along either side of said protection. The synthetic filter mat to be used shall be non-woven geotextile GMN160 conforming to O.P.S.S. 1860 Class I, as available from Armtec Construction Products, or equal. The quarried limestone to be used shall be graded in size from a minimum of 100mm to a maximum of 250mm, and is available from Walker Industries Amherstburg Quarry, in Amherstburg, Ontario, or equal.

XI. BENCH MARKS

Also, for use by the Contractor, we have established Bench Marks along the course of the work, as shown on the plans. The Contractor shall work with the Drainage Superintendent or Engineer to transfer the bench marks as necessary to be used in setting the drain and pipe design grades.

In all cases, the Contractor is to utilize the specified bench marks and drain grade to control its work. The Contractor shall ensure that it takes note of the direction of flow and sets all grades to assure that all flows go from west to east or south to north to match the direction of flow within the drain.

XII. ANCILLARY WORK

During the course of any work to the bridges along the course of the drain, the Contractor will be required to protect or extend any existing tile ends or swales and connect them to the drainage works to maintain the drainage from the adjacent lands. All existing tiles shall be extended utilizing solid Big 'O' "standard tile ends" or equal plastic pipe of the same diameter as the existing tile and shall be installed in accordance with the "**Standard Lateral Tile Detail**" included in the plans, unless otherwise noted. Connections shall be made using a manufactured coupling where possible. For other connections, the Contractor shall utilize a grouted connection. Grouted mortar joints shall be composed of three (3) parts of clean, sharp sand to one (1) part of Portland cement with just sufficient water added to provide a stiff plastic mix, and the mortar connection shall be performed to the full satisfaction of the Town Drainage Superintendent or the Consulting Engineer. The mortar joint shall be of a sufficient mass around the full circumference of the joint on the exterior side to ensure a tight, solid seal. The Contractor is to note that any intercepted pipes along the length of the existing culverts are to be extended and connected to the open drain unless otherwise noted in the accompanying drawings.

The Contractor shall re-grade the existing swales to allow for the surface flows to freely enter the drain. Any disturbed grass areas shall be fully restored with topsoil, seed and mulch.

Although it is anticipated that the bridge work at each site shall be undertaken in the dry, the Contractor shall supply and install a temporary straw bale check dam in the drain bottom immediately downstream of each bridge site during the time of construction. The straw bale check dam shall be to the satisfaction of the Town Drainage Superintendent or the Engineer and must be removed upon completion of the construction. The straw bales may be reused at each site subject to their condition. All costs associated with the supply and installation of this straw bale check dam shall be included in the cost bid for the bridge removal.

XIII. TOPSOIL, SEED AND MULCH

The Contractor will be required to protect grass buffers and driveway accesses along the top of the drain bank where they currently exist. Where any of these are damaged, they shall be fully restored including placement of topsoil. The topsoil shall be prepared for seeding as noted further in these specifications. Should the existing topsoil be treated to prevent grass growth, the Contractor shall strip the existing topsoil material back and spread it on the adjacent field and supply 50mm thick imported topsoil, or topsoil material scavenged from the drain banks at rock protection locations, that is suitable for growing grass.

The placing and grading of any topsoil shall be carefully and meticulously carried out in accordance with Ontario Provincial Standard Specifications, Form 802 dated November 2010, or as subsequently amended, or as amended by these specifications and be readied for the seeding and mulching process. The seeding and mulching of all of the above mentioned areas shall comply in all regards to Ontario Provincial Standard Specifications, Form 803 dated November 2010 and Form 804, dated November 2013, or as subsequently amended, or as amended by these specifications. The seeding mixture shall be the Standard Roadside Mix (Canada No. 1 Lawn Grass Seed Mixture) as set out in O.P.S.S. 804. All cleanup and restoration work shall be performed to the full satisfaction of the Town Drainage Superintendent or Engineer.

All of the work relative to the placement of topsoil and the seeding and mulching operation shall be meticulously done and completed in a good and workmanlike manner all to the full satisfaction of the Town Drainage Superintendent and the Engineer.

XIV. DETAILS OF FUTURE BRIDGE WORK

The Contractor shall provide all material, labour and equipment to repair and improve the existing access bridges requiring maintenance work in the future, along with endwall repairs and other improvements as noted.

All existing bridges and enclosures shall be replaced with new aluminized steel Type II corrugated Hel-Cor pipe, smooth wall aluminized steel Ultra Flo pipe, or Boss 2000 H.D.P.E. smooth wall plastic pipe, or equal. The pipes shall be long enough to provide a minimum clear top width of 6.1m (20') between the endwalls. Pipes shall be provided one size bigger than the existing pipes and be embedded a minimum of 10% of their diameter below the design bottom grade of the drain. Bridge 8 requires a 1200mm diameter pipe. All steel piping sections shall be connected by the use of 9 corrugations (9-C) or hugger band bolted couplers installed around the complete circumference of the pipe in accordance with the manufacturer's recommendations. Plastic piping shall be connected together with wrap couplers installed in accordance with the manufacturer's recommendations. Each coupler shall be wrapped in filter cloth material around the complete circumference to ensure that there will be no soil migration through the joints and into the pipe through said connections.

The culvert pipe replacements on this drain shall be set to the grades as shown on the plans or as otherwise established herein and the Town Drainage Superintendent or the Consulting Engineer may make minor changes to the bridge alignment as they deem necessary to suit the site conditions. All work on the bridges and enclosures shall be carried out in general accordance with the items in the **"STANDARD SPECIFICATIONS FOR ACCESS BRIDGE CONSTRUCTION"** attached to this specification and labelled **Appendix "C"**.

XV. FUTURE ACCESS BRIDGE & ENCLOSURE PIPE INSTALLATION

The new corrugated steel pipes (C.S.P.) or smooth steel Ultra Flo pipes to be installed on this project when the drain is maintained in the future shall be aluminized steel type II with the thickness and corrugation profile specified on the plans or in the schedule of items and prices. Pipes are required to be provided in the longest lengths that are available. Where the overall access pipe length exceeds the standard pipe lengths, the Contractor shall connect the pipe sections together by use of a manufactured 9-C or hugger band bolted coupler installed in accordance with the manufacturer's recommendations. All coupler joints shall be wrapped with a layer of filter cloth around the complete circumference that extends a minimum of 100mm beyond the coupler on each end, to ensure a positive seal against soil migration through the joints.

Any future new heavy duty smooth wall High Density Poly Ethylene (H.D.P.E.) plastic pipes to be installed on this drain are required to be provided in the longest lengths that are available, and shall be no less than 2.0 metres long when shorter sections are needed to meet the overall pipe length. All plastic pipe shall be 320 kPa strength and have a C.S.A. stamp. Where the overall access pipe length exceeds the standard pipe lengths, the Contractor shall connect the pipe sections together by use of a manufactured wrap coupler installed in accordance with the manufacturer's recommendations. All coupler joints shall be wrapped with a layer of filter cloth around the complete circumference that extends a minimum of 100mm beyond the coupler on each end, to ensure a positive seal against soil migration through the joints. Plastic pipe ends shall be secured against flotation.

The Contractor shall note that the placement of any new replacement culvert or enclosure pipe shall be performed totally in the dry and it shall be prepared to take whatever steps are necessary to ensure same, all to the full satisfaction of the Town Drainage Superintendent or the Consulting Engineer. As part of the work, the Contractor will be required to clean out the drain along the full length of the pipe and for a distance of 3.05 metres (10 ft.) upstream and downstream of the pipe. The Contractor shall note that the pipe inverts are to be set a minimum of 10% of the pipe diameter below the drain bottom to provide the embedment required by E.R.C.A. and D.F.O.

The installation of the complete length of the new replacement culvert or enclosure pipe, including all appurtenances, shall be completely inspected by the Town Drainage Superintendent or the Consulting Engineer's Inspector prior to backfilling any portions of same. Under no circumstance shall the Contractor commence the construction or backfill of the replacement culvert or enclosure pipe without the site presence of the Town Drainage Superintendent or the Consulting Engineer's Inspector to inspect and approve said installation. The Contractor shall provide notice to the Town Drainage Superintendent or the Consulting Engineer a minimum of two (2) working days prior to commencement of the work. The installations of the new replacement culvert structures are to be performed during normal working hours of the Town Drainage Superintendent and the Consulting Engineer from Monday to Friday unless written authorization is provided by them to amend said working hours.

For the access bridge and enclosure installations, once the new aluminized steel type II corrugated pipe, the smooth wall Ultra Flo aluminized pipe, or the H.D.P.E. plastic pipe has been satisfactorily set in place, the Contractor shall completely backfill same with granular material M.T.O. Type "B" O.P.S.S. Form 1010 with the following exception. The top 305mm (12") of the backfill material for the full top width of the access, and the full top width of the drain or the excavated trench, and any approaches to the west and transitions to the east shall be granular material M.T.O. Type "A" O.P.S.S. Form 1010. All of the driveway approach areas extending from the Municipal roadway to the west face of the new bridge culvert shall be backfilled with compacted granular material M.T.O. Type "A" O.P.S.S. Form 1010, but only after all topsoil material has been completely removed and disposed of, and the minimum thickness of this granular material shall be 305mm (12"). All areas outside of the access driveway shall be backfilled with native material compacted to 95% of Standard Proctor Density and topped with a minimum of 50mm of topsoil, and receive seed and mulch.

For hard surface driveway crossings, the top 305mm (12") of the backfill over the pipe below the hard surface treatment shall comprise granular material M.T.O. Type "A" O.P.S.S. Form 1010 compacted to a minimum of 100% Standard Proctor Density. The Contractor shall at all times be very careful when performing its backfilling and compaction operations so that no damage is caused to the pipe. To ensure that no damage is caused to the proposed pipe, alternative methods of achieving the required backfill compaction shall be submitted to the Consulting Engineer or the Town Drainage Superintendent for their approval prior to the commencement of this work. The Contractor shall restore any asphalt surface by placing a minimum of the existing thickness or a 90mm minimum thickness of Type HL-4 hot mix asphalt. The asphalt shall be supplied and placed in two (2) approximately equal lifts compacted to a value ranging from 92% to 96% of maximum relative density as per O.P.S.S. 310. For existing concrete driveways, the Contractor shall carefully remove the concrete to the nearest expansion joint. The concrete driveway shall be restored to the original length and width that was removed and include 150mm thick, 30mPa concrete, with 6% \pm 1% air entrainment and 6x6-6/6 welded wire fabric reinforcing installed at the midpoint of the slab. All slab surfaces shall be finished to provide an appearance approximating the finish on the existing concrete driveway abutting the replacement.

The Contractor will be responsible to restore any damage caused to the roadways at its cost. All damaged hard surface roadway areas shall be neatly saw cut and the damaged materials removed and disposed of by the Contractor prior to carrying out any restoration work. The extent of the repairs shall be established in consultation with the Town Drainage Superintendent, the Road Authority, and the Consulting Engineer and the repairs shall be completed to their full satisfaction.

The Contractor shall protect existing concrete headwalls wherever possible. The Contractor shall carefully extract the existing pipe from the wall, cautiously enlarge the opening as required, and install the new replacement pipe through the salvaged wall. The new pipe shall be thoroughly grouted in place for the full thickness of each headwall, with the surface finish of the grout blended to match to the existing concrete headwall finish, as closely as possible. Grout used for the wall repair shall be in pre-mixed bags or shall comprise of three (3) parts of clean, sharp sand to one (1) part of Portland cement with just sufficient water added to provide a stiff plastic mix and the grouted mortar connection shall be performed to the full satisfaction of the Town Drainage Superintendent or the Consulting Engineer. The Contractor is to note that any intercepted pipes along the length of the existing culverts or enclosures are to be extended and connected at its cost to the new pipe unless otherwise noted in the accompanying drawings.

The Contractor shall also note that the placing of the new access bridge culverts and enclosures shall be completed so that they totally comply with the parameters established and noted in the Bridge Details and Tables for each culvert replacement or new installation. These culverts shall be set on an even grade and the placement shall be performed totally in the dry, and the Contractor should be prepared to take whatever steps are necessary to ensure same, all to the full satisfaction of the Town Drainage Superintendent or the Consulting Engineer. The Contractor shall also be required to supply a minimum of 100mm (4") of 20mm (3/4") clear stone bedding underneath the culvert pipe extending from the bottom of the drain to the culvert invert grade, all to the full satisfaction of the Town Drainage Superintendent or the Consulting Engineer. Furthermore, if an unsound base is encountered, it must be removed and replaced with 20mm (3/4") clear stone satisfactorily compacted in place to the full satisfaction of the Town Drainage Superintendent or the Consulting Engineer. The Contractor is to note that when replacing the access bridge or enclosure culvert, it shall be required to excavate a trench having a width not less than the new pipe outside diameter plus a 600mm working width on both sides of the new pipe to allow for proper installation of granular backfill and compaction of same. The Contractor shall also note that all pipe installations are to be carried out with approximately 10% of their diameter embedded below the drain design bottom, as shown and noted on the plan and profiles for each of the access bridge installations.

Unless otherwise shown or noted, the Contractor is to provide new concrete filled jute bag headwalls or sloped quarried limestone on non-woven filter cloth end protection for the access bridges and enclosures being maintained in the future.

The concrete filled jute bags are to be provided and laid out to match the existing walls or as is shown and detailed in any accompanying drawings and as is noted in the Standard Specifications in **Appendix "C"**. In all cases, the concrete filled jute bag headwalls shall be topped with a minimum 100mm (4") thick continuous concrete cap for the entire length of the headwalls. The headwalls shall be installed on an inward batter to be not less than 1 horizontal to 5 vertical, and under no circumstances shall this batter, which is measured from the top of the headwall to the projection of the end of the pipe, be less than 305mm (12"). On the road side the walls shall be deflected approximately 45 degrees to provide daylighting and a better approach across the new replacement bridge.

The installation of the concrete filled jute bag headwalls, unless otherwise specified, shall be provided in total compliance with the Items 1, 3 and 4 included in the **"STANDARD SPECIFICATIONS FOR ACCESS BRIDGE CONSTRUCTION"**. These are attached to the back of this specification and labelled **Appendix "C"**. The Contractor shall comply in all respects with the General Conditions included in Item 4 and the **"Typical Concrete Filled Jute Bag Headwall End Protection"** detail also shown therein.

Where sloped end protection is specified, the top 305mm (12") of backfill material over the ends of the access pipe, from the invert of said pipe to the top of the driveway elevation of the access bridge or enclosure, shall be quarried limestone. The quarried limestone shall be provided as shown and detailed on the plans or as indicated in the Standard Specifications in **Appendix "C"** and shall be graded in size from a minimum of 100mm (4") to a maximum of 250mm (10"). The quarried limestone to be placed on the sloped ends of an access bridge or enclosure shall be underlain with a synthetic **non-woven** geotextile filter fabric. The sloped quarried limestone protection is to be rounded as shown on the plan details and shall also extend along the drain side slopes to a point directly in line with the ends of the culvert pipe. The road side approach to the entrance shall be provided with a minimum 5.0m radius at each end of the driveway entrance. All work shall be completed to the full satisfaction of the Municipal Drainage Superintendent or the Consulting Engineer.

The installation of the sloped quarried limestone end protection, unless otherwise specified herein, shall be provided in total compliance with Item 2, Item 3, and Item 4 of the **“STANDARD SPECIFICATIONS FOR ACCESS BRIDGE CONSTRUCTION”**. These are attached to the back of these specifications and labelled **Appendix “C”**. The Contractor shall comply in all respects with the General Conditions included in Item 4 and the **“Typical Quarried Limestone End Protection Detail”** also in **Appendix “C”**.

The quarried limestone erosion protection shall be embedded into the sideslopes of the drain a minimum thickness of 305mm and shall be underlain in all cases with non-woven synthetic filter mat. The filter mat shall not only be laid along the flat portion of the erosion protection, but also contoured to the exterior limits of the quarried limestone and the unprotected slope. The width of the erosion protection shall be as established in the accompanying drawings or as otherwise directed by the Municipal Drainage Superintendent or the Consulting Engineer during construction. In placing the erosion protection, the Contractor shall carefully tamp the quarried limestone pieces into place with the use of the excavator bucket so that the erosion protection when completed will be consistent, uniform and tightly laid. In no instance shall the quarried limestone protrude beyond the exterior contour of the unprotected drain sideslopes along either side of said protection. The synthetic filter mat to be used shall be non-woven geotextile GMN160 conforming to O.P.S.S. 1860 Class I, as available from Armttec Construction Products, or equal. The quarried limestone to be used shall be graded in size from a minimum of 100mm to a maximum of 250mm, and is available from Amherst Quarries Ltd., in Amherstburg, Ontario, or equal.

XVI. GENERAL CONDITIONS

- a) The Town Drainage Superintendent or Consulting Engineer shall have authority to carry out minor changes to the work where such changes do not lessen the efficiency of the work.
- b) The Contractor shall satisfy itself as to the exact location, nature and extent of any existing structure, utility or other object which it may encounter during the course of the work. The Contractor shall indemnify and save harmless the Town of Tecumseh, the Ministry of Transportation Ontario (M.T.O.) and the Consulting Engineer and their representatives for any damages which it may cause or sustain during the progress of the work. It shall not hold the Town of Tecumseh, M.T.O. or the Consulting Engineer liable for any legal action arising out of any claims brought about by such damage caused by it.
- c) The Contractor shall provide a sufficient number of layout stakes and grade points so that the Drainage Superintendent and Consulting Engineer can review same and check that the work will generally conform to the design and project intent.
- d) The Contractor will be responsible for any damage caused by it to any portion of the Municipal road system, especially to the travelled portion. When excavation work is being carried out and the excavation equipment is placed on the travelled portion of the road, the travelled portion shall be protected by having the excavation equipment placed on satisfactory timber planks or timber pads. If any part of the travelled portion of the road is damaged by the Contractor, the Town shall have the right to have the necessary repair work done by its employees and the cost of all labour and materials used to carry out the repair work shall be deducted from the Contractor's contract and credited to the Town. The Contractor, upon completing the works, shall clean all debris and junk, etcetera, from the roadside of the drain, and leave the site in a neat and workmanlike manner. The Contractor shall be responsible for keeping all public roadways utilized for hauling materials free and clear of mud and debris.

- e) The Contractor shall provide all necessary lights, signs, and barricades to protect the public. All work shall be carried out in accordance with the requirements of the Occupational Health and Safety Act, and latest amendments thereto. If traffic control is required on this project, signing is to comply with the M.T.O. Manual of Uniform Traffic Control Devices (M.U.T.C.D.) for Roadway Work Operations and the Ontario Traffic Manual Book 7.
- f) During the course of the work the Contractor shall be required to connect existing drainage pipes to the Municipal Drain. In the event that polluted flows are discovered, the Contractor shall delay the connection of the pipe and leave the end exposed and alert the Town, the Drainage Superintendent and the Consulting Engineer so that steps can be taken by the Town to address the concern with the owner and the appropriate authorities. Where necessary the Contractor shall cooperate with the Town in providing temporary measures to divert the drain or safely barricade same. Should the connection be found acceptable by the authorities, the Contractor shall complete the connection of the drain as provided for in the specifications, at no extra cost to the project.
- g) Following the completion of the work, the Contractor is to trim up any broken or damaged limbs on trees which are to remain standing, and it shall dispose of said branches along with other brush, thus leaving the trees in a neat and tidy condition.
- h) The whole of the work shall be satisfactorily cleaned up, and during the course of the construction, no work shall be left in any untidy or incomplete state before subsequent portions are undertaken.
- i) All driveways, laneways and access bridges, or any other means of access on to the job site shall be fully restored to their former condition at the Contractor's expense. Before authorizing Final Payment, the Town Drainage Superintendent and the Consulting Engineer shall inspect the work in order to be sure that the proper restoration has been performed. In the event that the Contractor fails to satisfactorily clean up any portion of these accesses, the Consulting Engineer shall order such cleanup to be carried out by others and the cost of same be deducted from any monies owing to the Contractor.
- j) The Contractor will be required to submit to the Town a Certificate of Good Standing from the Workplace Safety and Insurance Board prior to the commencement of the work. The Contractor will also be required to submit to the Town a Certificate of Clearance for the project from the Workplace Safety and Insurance Board before Final Payment is made to the Contractor.
- k) The Contractor shall furnish a Performance and Maintenance Bond along with a separate Labour and Material Payment Bond within ten (10) days after notification of the execution of the Agreement by the Owner. One copy of said bonds shall be bound into each of the executed sets of the Contract. Each Performance and Maintenance Bond and Labour and Material Payment Bond shall be in the amount of 100% of the total Tender Price. All Bonds shall be executed under corporate seal by the Contractor and a surety company, authorized by law to carry out business in the Province of Ontario. The Bonds shall be acceptable to the Owner in every way and shall guarantee faithful performance of the contract during the period of the contract, including the period of guaranteed maintenance which will be in effect for twelve (12) months after substantial completion of the works.

The Tenderer shall include the cost of bonds in the unit price of the Tender items as no additional payment will be made in this regard.

- l) The Contractor shall be required, as part of this Contract, to provide Comprehensive Liability Insurance coverage for not less than \$2,000,000.00 on this project, and shall name the Town of Tecumseh and its officials, M.T.O. and its officials and the Consulting Engineer and its staff as additional insured under the policy. The Contractor must submit a copy of this policy to both the Municipal Clerk and the Consulting Engineer prior to the commencement of work.
- m) Monthly progress orders for payment shall be furnished the Contractor by the Town Drainage Superintendent. Said orders shall be for not more than 90% of the value of the work done and the materials furnished on the site. The paying of the full 90% does not imply that any portion of the work has been accepted. The remaining 10% will be paid 45 days after the final acceptance and completion of the work and payment shall not be authorized until the Contractor provides the following:
 - i) a Certificate of Clearance for the project from the Workplace Safety and Insurance Board
 - ii) proof of advertising
 - iii) a Statutory Declaration, in a form satisfactory to the Consulting Engineer and the Town, that all liabilities incurred by the Contractor and its Sub-Contractors in carrying out the Contract have been discharged and that all liens in respect of the Contract and Sub-Contracts thereunder have expired or have been satisfied, discharged or provided for by payment into Court.

The Contractor shall satisfy the Consulting Engineer or Town that there are no liens or claims against the work and that all of the requirements as per the Construction Lien Act, 1983 and its subsequent amendments have been adhered to by the Contractor.

- n) In the event that the Specifications, Information to Tenderers, or the Form of Agreement do not apply to a specific condition or circumstance with respect to this project, the applicable section or sections from the Canadian Construction Documents Committee CCDC2 shall govern and be used to establish the requirements of the work.

APPENDIX "A"

RE: West Branch of the Delisle Drain - Town of Tecumseh

From: Cynthia Casagrande

Sent: Wednesday, December 18, 2013 12:20 PM

To: 'Phil Bartnik'

Cc: Gerard Rood (gerard@roodengineering.ca)

Subject: RE: West Branch of the Delisle Drain - Town of Tecumseh

Dear Phil:

This office received your notice of request for repair and improvement to the West Branch of the Delisle Drain.

A review of our floodplain mapping for the West Branch of the Delisle Drain indicates that this drain is located within an area that is under the jurisdiction of the Essex Region Conservation Authority (ERCA) (Section 28 of the *Conservation Authorities Act*). Prior to undertaking works, a permit is required from this office.

At this time, we do not expect that there will be any extraneous comments or concerns with respect to this project. However, we cannot be more specific in this regard without an actual proposal to review.

With respect to Department of Fisheries and Oceans (DFO) concerns and comments, as of November 25, 2013 due to amendments to the *Fisheries Act* coming into effect, the existing partnership agreements between DFO and Conservation Authorities (CA's) have lapsed. DFO and Conservation Ontario are currently working to develop a new Memorandum of Understanding for a partnership under the new Fisheries Protection Program. A target date of April 2014 has been set for the new agreements. In the interim, the proposed works to the West Branch of the Delisle Drain will need to be self-assessed by you, the proponent, through the DFO website at <http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>. Through the self-assessment process, you will be able to determine if these works require a formal authorization under the *Fisheries Act*.

If further information or clarification is required, please do not hesitate to contact this office.

Yours truly,

Cynthia Casagrande

Regulations Technician

Essex Region Conservation Authority

360 Fairview Avenue West, Suite 311

Essex ON N8M 1Y6

[\(519\) 776-5209, Ext. 349](tel:(519)776-5209)

STANDARD E.R.C.A. AND D.F.O.
MITIGATION REQUIREMENTS

As part of its work, the Contractor will implement the following measures that will ensure that any potential adverse effects on fish and fish habitat will be mitigated:

1. As per standard requirements, work will not be conducted at times when flows in the drain are elevated due to local rain events, storms, or seasonal floods. Work will be done in the dry.
2. All disturbed soils on the drain banks and within the channel, including spoil, must be stabilized immediately upon completion of work. The restoration of the site must be completed to a like or better condition to what existed prior to the works. The spoil material must be hauled away and disposed of at a suitable site, or spread an appropriate distance from the top of the drain bank to ensure that it is not washed back into the drain.
3. To prevent sediment entry into the drain in the event of an unexpected rainfall, silt barriers and/or traps must be placed in the channel during the works and until the site has been stabilized. All sediment and erosion control measures are to be in accordance with the related Ontario Provincial Standards. It is incumbent on the proponent and Contractors to ensure that sediment and erosion control measures are functioning properly and maintained/upgraded as required.
4. Silt or sand accumulated in the barrier traps must be removed and stabilized on land once the site is stabilized.
5. All activities including maintenance procedures should be controlled to prevent the entry of petroleum products, debris, rubble, concrete, or other deleterious substances into the water. Vehicular refuelling and maintenance should be conducted away from the water.
6. Any drain banks trimmed outside of the July 1st to September 15th timing window will require erosion control blankets to be installed to promote re-vegetation and to protect the slope from erosion in the interim.

Measures to Avoid Causing Harm to Fish and Fish Habitat

If you are conducting a project near water, it is your responsibility to ensure you avoid causing [serious harm to fish](#) in compliance with the *Fisheries Act*. The following advice will help you avoid causing harm and comply with the *Act*.

PLEASE NOTE: This advice applies to all project types and replaces all “Operational Statements” previously produced by DFO for different project types in all regions.

Measures

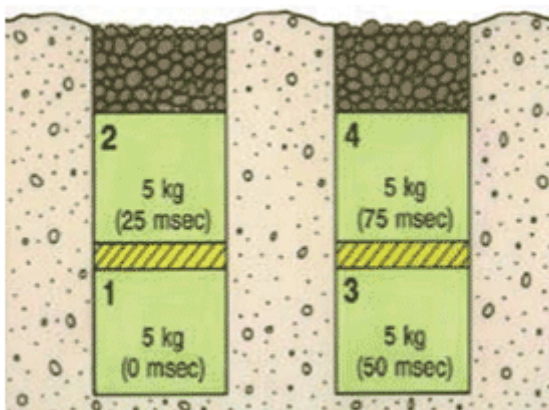
- Time work in water to respect [timing windows](#) to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed.
- Minimize duration of in-water work.
- Conduct instream work during periods of low flow, or at low tide, to further reduce the risk to fish and their habitat or to allow work in water to be isolated from flows.
- Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation.
- Design and plan activities and works in waterbody such that loss or disturbance to aquatic habitat is minimized and sensitive spawning habitats are avoided.
- Design and construct approaches to the waterbody such that they are perpendicular to the watercourse to minimize loss or disturbance to riparian vegetation.
- Avoid building structures on meander bends, braided streams, alluvial fans, active floodplains or any other area that is inherently unstable and may result in erosion and scouring of the stream bed or the built structures.
- Undertake all instream activities in isolation of open or flowing water to maintain the natural flow of water downstream and avoid introducing sediment into the watercourse.
- Plan activities near water such that materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals do not enter the watercourse.
- Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance and keep an emergency spill kit on site.
- Ensure that building material used in a watercourse has been handled and treated in a manner to prevent the release or leaching of substances into the water that may be deleterious to fish.

- Develop and implement an Erosion and Sediment Control Plan for the site that minimizes risk of sedimentation of the waterbody during all phases of the project. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized, suspended sediment has resettled to the bed of the waterbody or settling basin and runoff water is clear. The plan should, where applicable, include:
 - Installation of effective erosion and sediment control measures before starting work to prevent sediment from entering the water body.
 - Measures for managing water flowing onto the site, as well as water being pumped/diverted from the site such that sediment is filtered out prior to the water entering a waterbody. For example, pumping/diversion of water to a vegetated area, construction of a settling basin or other filtration system.
 - Site isolation measures (e.g., silt boom or silt curtain) for containing suspended sediment where in-water work is required (e.g., dredging, underwater cable installation).
 - Measures for containing and stabilizing waste material (e.g., dredging spoils, construction waste and materials, commercial logging waste, uprooted or cut aquatic plants, accumulated debris) above the high water mark of nearby waterbodies to prevent re-entry.
 - Regular inspection and maintenance of erosion and sediment control measures and structures during the course of construction.
 - Repairs to erosion and sediment control measures and structures if damage occurs.
 - Removal of non-biodegradable erosion and sediment control materials once site is stabilized.
- Clearing of riparian vegetation should be kept to a minimum: use existing trails, roads or cut lines wherever possible to avoid disturbance to the riparian vegetation and prevent soil compaction. When practicable, prune or top the vegetation instead of grubbing/uprooting.
- Minimize the removal of natural woody debris, rocks, sand or other materials from the banks, the shoreline or the bed of the waterbody below the ordinary high water mark. If material is removed from the waterbody, set it aside and return it to the original location once construction activities are completed.
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.
- Restore bed and banks of the waterbody to their original contour and gradient; if the original gradient cannot be restored due to instability, a stable gradient that does not obstruct fish passage should be restored.
- If replacement rock reinforcement/armouring is required to stabilize eroding or exposed areas, then ensure that appropriately-sized, clean rock is used; and that rock is installed at a similar slope to maintain a uniform bank/shoreline and natural stream/shoreline alignment.
- Remove all construction materials from site upon project completion.

- Ensure that all in-water activities, or associated in-water structures, do not interfere with fish passage, constrict the channel width, or reduce flows.
- Retain a qualified environmental professional to ensure applicable permits for relocating fish are obtained and to capture any fish trapped within an isolated/enclosed area at the work site and safely relocate them to an appropriate location in the same waters. Fish may need to be relocated again, should flooding occur on the site.
- Screen any water intakes or outlet pipes to prevent entrainment or impingement of fish. Entrainment occurs when a fish is drawn into a water intake and cannot escape. Impingement occurs when an entrapped fish is held in contact with the intake screen and is unable to free itself.
 - In freshwater, follow these measures for design and installation of intake end of pipe fish screens to protect fish where water is extracted from fish-bearing waters:
 - Screens should be located in areas and depths of water with low concentrations of fish throughout the year.
 - Screens should be located away from natural or artificial structures that may attract fish that are migrating, spawning, or in rearing habitat.
 - The screen face should be oriented in the same direction as the flow.
 - Ensure openings in the guides and seals are less than the opening criteria to make “fish tight”.
 - Screens should be located a minimum of 300 mm (12 in.) above the bottom of the watercourse to prevent entrainment of sediment and aquatic organisms associated with the bottom area.
 - Structural support should be provided to the screen panels to prevent sagging and collapse of the screen.
 - Large cylindrical and box-type screens should have a manifold installed in them to ensure even water velocity distribution across the screen surface. The ends of the structure should be made out of solid materials and the end of the manifold capped.
 - Heavier cages or trash racks can be fabricated out of bar or grating to protect the finer fish screen, especially where there is debris loading (woody material, leaves, algae mats, etc.). A 150 mm (6 in.) spacing between bars is typical.
 - Provision should be made for the removal, inspection, and cleaning of screens.
 - Ensure regular maintenance and repair of cleaning apparatus, seals, and screens is carried out to prevent debris-fouling and impingement of fish.
 - Pumps should be shut down when fish screens are removed for inspection and cleaning.
- Avoid using explosives in or near water. Use of explosives in or near water produces shock waves that can damage a fish swim bladder and rupture internal organs. Blasting vibrations may also kill or damage fish eggs or larvae.
 - If explosives are required as part of a project (e.g., removal of structures such as piers, pilings, footings; removal of obstructions such as beaver dams; or preparation of a river or lake bottom for installation of a structure such as a dam or water intake), the potential for impacts to fish and fish habitat should be minimized by implementing the following measures:

- Time in-water work requiring the use of explosives to prevent disruption of vulnerable fish life stages, including eggs and larvae, by adhering to appropriate fisheries [timing windows](#).
- Isolate the work site to exclude fish from within the blast area by using bubble/air curtains (i.e., a column of bubbled water extending from the substrate to the water surface as generated by forcing large volumes of air through a perforated pipe/hose), cofferdams or aquadams.
- Remove any fish trapped within the isolated area and release unharmed beyond the blast area prior to initiating blasting
- Minimize blast charge weights used and subdivide each charge into a series of smaller charges in blast holes (i.e., decking) with a minimum 25 millisecond (1/1000 seconds) delay between charge detonations (see Figure 1).
- Back-fill blast holes (stemmed) with sand or gravel to grade or to streambed/water interface to confine the blast.
- Place blasting mats over top of holes to minimize scattering of blast debris around the area.
- Do not use ammonium nitrate based explosives in or near water due to the production of toxic by-products.
- Remove all blasting debris and other associated equipment/products from the blast area.

Figure 1: Sample Blasting Arrangement



Per Fig. 1: 20 kg total weight of charge; 25 msecs delay between charges and blast holes; and decking of charges within holes.

- Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds.

- Whenever possible, operate machinery on land above the high water mark, on ice, or from a floating barge in a manner that minimizes disturbance to the banks and bed of the waterbody.
- Limit machinery fording of the watercourse to a one-time event (i.e., over and back), and only if no alternative crossing method is available. If repeated crossings of the watercourse are required, construct a temporary crossing structure.
- Use temporary crossing structures or other practices to cross streams or waterbodies with steep and highly erodible (e.g., dominated by organic materials and silts) banks and beds. For fording equipment without a temporary crossing structure, use stream bank and bed protection methods (e.g., swamp mats, pads) if minor rutting is likely to occur during fording.
- Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water.

Date modified:
2013-11-25

APPENDIX “B”

SCHEDULE C

MITIGATION PLAN

The Mitigation Plan shall be in effect until June 30, 2015.

The Municipality shall undertake measures to minimize adverse effects on species at risk in accordance with the general conditions described in Part B and taxa-specific conditions described in Part C, and the monitoring and reporting requirements described in Part D of this Mitigation Plan.

PART A. DEFINITIONS

1. Definitions:

1.1. In this Schedule, the following words shall have the following meanings:

"DFO" means Fisheries and Oceans Canada;

"MNR" means the Aylmer District Office of the Ministry of Natural Resources;

"Contact" means to contact the MNR in accordance with the notification/contact schedule provided to the Municipality by the MNR Designated Representative from time to time;

"Holding Tub" means a large, light-coloured container fitted with a non-airtight latchable lid approved by the MNR for the temporary storage of captured snakes, turtles, amphibians, birds or eggs;

"Interagency Notification Form" means the form issued by DFO, available at www.dfo-mpo.gc.ca, which is required to be completed when a drain is being maintained or constructed;

"Monitoring and Reporting Form" means the document that must be completed by the Municipality in accordance with Part D to this Schedule and will be provided to the Municipality;

"Ontario Operational Statement" means one of the documents issued by DFO, available at www.dfo-mpo.gc.ca, that sets out the conditions and measures to be incorporated into a project in order to avoid negative impacts to fish and fish habitat in Ontario, as modified from time to time;

"Process Charts" means the charts attached as Part E to this Schedule which describe the steps set out in this Mitigation Plan;

"Seasonal Timing Windows Chart" means the chart attached as Part G to this schedule which describes the Sensitive Periods applicable to each Taxonomic Group;

"Sensitive Area" means a geographic area in the Municipality where additional mitigation measures are required to be undertaken for one or more Taxonomic Groups;

"Sensitive Areas Map" means any one of the maps attached as Part F to this schedule which sets out the applicable Sensitive Areas;

"Sensitive Period" means a time of year set out in the Seasonal Timing Windows Chart during which taxa-specific mitigation measures are required to be undertaken for a Taxonomic Group because of ambient air/water temperatures, water-levels or important life-history stages;

"Taxonomic Group" means the distinct group comprising one or more Species based on their taxonomic relationship and common approaches to mitigating adverse effects (i.e., fish, mussels, turtles, snakes, amphibians, birds or plants); and

"Work Zone" means the geographic area in the Municipality where an Activity in respect of one of the Drainage Works is being conducted.

- 1.2. For greater certainty, any defined terms that are not defined in section 1.1 have the same meanings as in the Agreement.

PART B. GENERAL MEASURES TO MINIMIZE ADVERSE EFFECTS

2. Process Charts

- 2.1. The general steps set out in this Part B are visually described in the Process Charts (Part E).

3. Review of Documentation

- 3.1. Prior to conducting any Activities in respect of the Drainage Works the Municipality shall determine if conditions apply to the place, time or manner in which the Municipality wishes to pursue them by reviewing:
 - (a) the Sensitive Areas Maps (Part F) to determine if the Work Zone for the proposed Activities will occur within a Sensitive Area;
 - (b) the DFO Reference Guide for Fish and Mussel Species at Risk Distribution Maps: A Referral Review Tool for Projects Affecting Aquatic Species at Risk;
 - (c) the Seasonal Timing Windows Chart (Part G) to determine if the proposed Activities will occur during a Sensitive Period for one or more of the Taxonomic Groups; and
 - (d) the Process Charts to determine if prior notification is required;
 - (e) the mitigation measures for each applicable Taxonomic Group in Part C to determine what additional site-specific mitigation measures, if any, are required.
- 3.2. The Municipality shall document the results of the review undertaken in accordance with section 3.1 using the Monitoring and Reporting Form.

4. Sensitive Areas Maps

- 4.1. The Sensitive Areas Maps contain sensitive information about the distribution of species at risk, are provided for the sole purpose of informing this Agreement and are not to be copied or distributed for any other purposes or to any other party without the prior written authorization of the MNR Designated Representative.

5. Prior Notification to Seek Direction

- 5.1. If, after completing the review of documents described in section 3.1, the Municipality determines that the proposed Activities will be undertaken:
 - (a) in a place;
 - (b) at a time; or
 - (c) in a manner,

that requires prior notification in accordance with the Process Charts, the Municipality shall provide prior notification to the MNR in order for the MNR to determine if the Municipality must undertake additional site-specific or Species-specific mitigation

measures to minimize adverse effects on the Species and, if applicable, to identify such measures.

- 5.2. The prior notification under section 5.1 shall include a completed Interagency Notification Form:
- (a) in respect of maintenance/repair where the proposed Activities are being undertaken pursuant to subsection 3(18) or section 74 of the *Drainage Act*, or
 - (b) in respect of construction/improvement where the proposed Activities are being undertaken pursuant to section 77 or 78 of the *Drainage Act*.
- 5.3. Where an Activity is undertaken in accordance with section 124 of the *Drainage Act* and would otherwise have required prior notification under section 5.1, the Municipality shall Contact the MNR by email prior to the commencement of the Activity, and complete and submit the applicable Interagency Notification Form within one week of the Activity's completion, unless otherwise directed in writing by the MNR Designated Representative.

6. General Mitigation Measures

- 6.1. Notwithstanding that prior notification or additional mitigation measures may be required in accordance with this schedule, in undertaking any Activity at any time in respect of the Drainage Works the Municipality shall:
- (a) undertake the mitigation measures for sediment control and for erosion control and bank stabilization set out in The Drain Primer (Cliff Evanitski 2008) published by DFO (ISBN 978-0-662-48027-3), unless otherwise authorized in writing by the MNR Designated Representative;
 - (b) use net free, 100% biodegradable erosion control blanket for all erosion control or bank stabilization done in conjunction with their Activities or, if authorized in writing by the MNR Designated Representative, alternative erosion control blankets that provide equal or greater protection to individual Species; and
 - (c) where applicable, follow the guidelines set out in the following Ontario Operational Statements:
 - (i) Beaver Dam Removal;
 - (ii) Bridge Maintenance;
 - (iii) Culvert Maintenance;
 - (iv) Isolated Pond Construction;
 - (v) Maintenance of Riparian Vegetation in Existing Right of Ways; and
 - (vi) Temporary Stream Crossing.

PART C. TAXA-SPECIFIC MEASURES TO MINIMIZE ADVERSE EFFECTS

ADDITIONAL MITIGATION MEASURES FOR FISH SPECIES

7. Activities undertaken in Sensitive Areas for Fish

- 7.1. Subject to section 7.2, where a proposed Activity will occur in a Sensitive Area for a fish Species, the Municipality shall Contact the MNR to seek further direction.
- 7.2. Section 7.1 does not apply where the applicable Drainage Works are:
 - (a) in a naturally dry condition;
 - (b) classified as a Class F drain under DFO's *Class Authorization System for the Maintenance of Agricultural Municipal Drains in Ontario* (ISBN 0-662-72748-7); or
 - (c) a closed drain.

ADDITIONAL MITIGATION MEASURES FOR MUSSEL SPECIES

8. Activities undertaken in Sensitive Areas for Mussels

- 8.1. Subject to section 8.2, where a proposed Activity will occur in a Sensitive Area for a mussel Species, the Municipality shall Contact the MNR to seek further direction.
- 8.2. Section 8.1 does not apply where the applicable Drainage Works are:
 - (a) in a naturally dry condition;
 - (b) classified as a Class F drain in DFO's *Class Authorization System for the Maintenance of Agricultural Municipal Drains in Ontario* (ISBN 0-662-72748-7); or
 - (c) a closed drain.

ADDITIONAL MITIGATION MEASURES FOR TURTLE SPECIES

9. Training and Required On Site Materials for Turtles

- 9.1. The Municipality will ensure any person:
 - (a) involved in the capture, temporary holding, transfer and release of any turtle Species has received training in proper turtle handling procedures; and
 - (b) who undertakes an Activity has a minimum of two Holding Tubs and cotton sacks on site at all times.

10. Activities undertaken in Sensitive Areas and Sensitive Periods for Turtles

- 10.1. Subject to section 10.2, where a proposed Activity will occur in a Sensitive Area for any turtle Species and during a Sensitive Period for that Species, the Municipality shall:
 - (a) not undertake any Activities that include the excavation of sediment or disturbance to banks during the applicable Sensitive Period unless otherwise authorized;
 - (b) undertake Activities in accordance with any additional site-specific measures provided in writing by the MNR Designated Representative;
 - (c) avoid draw-down and de-watering of the Sensitive Area during the applicable Sensitive Period; and

- (d) if authorized by the MNR Designated Representative under (a) above to undertake Activities that include excavation of sediment or disturbance of banks, in addition to any other measures required under (b) above, ensure any person undertaking an Activity has at least two Holding Tubs on site at all times.

10.2. Section 10.1 does not apply where the applicable Drainage Works are:

- (a) in a naturally dry condition;
- (b) classified as a Class F drain in DFO's *Class Authorization System for the Maintenance of Agricultural Municipal Drains in Ontario* (ISBN 0-662-72748-7); or
- (c) a closed drain.

11. Measures for Encounters with Turtles During a Sensitive Period

- 11.1. Where one or more individuals belonging to a turtle Species is encountered in the undertaking of an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) during a Sensitive Period for that Species, the Municipality shall:
- (a) capture and transfer all uninjured individuals of that Species into a Holding Tub;
 - (b) capture and transfer all individuals injured as a result of the Activities into a Holding Tub separate from any Holding Tub containing uninjured individuals;
 - (c) ensure that the Holding Tubs with the captured individuals are stored at a cool temperature to prevent freezing until the individuals can be transferred; and
 - (d) immediately Contact the MNR to seek direction and to arrange for the transfer of the individual turtles.

12. Measures for Encounters with Turtles Laying Eggs or Nest Sites

- 12.1. Where one or more individuals belonging to a turtle Species laying eggs, or an active nest site of any turtle Species, is encountered in undertaking an Activity in a Work Zone, the Municipality shall:
- (a) not disturb a turtle encountered laying eggs and not conduct any Activities within 20 metres of the turtle while it is laying eggs;
 - (b) collect any displaced or damaged eggs and capture any injured dispersing juveniles and transfer them to a Holding Tub;
 - (c) store all captured injured individuals and collected eggs out of direct sunlight;
 - (d) immediately Contact the MNR to seek direction and to arrange for the transfer of any injured individuals and eggs;
 - (e) immediately stop any disturbance to the nest site and recover exposed portions with soil or organic material to protect the integrity of the remaining individuals;
 - (f) not drive any equipment over the nest site or conduct any Activities within 5 metres of the nest site;
 - (g) not place any dredged materials removed from the Drainage Works on top of the nest site;
 - (h) mark out the physical location of the nest site for the duration of the project but not by any means that might increase the susceptibility of the nest to predation or poaching; and
 - (i) where there are no collected eggs or captured individuals, record relevant information and Contact the MNR within 72 hours to provide information on the location of the nest site.

13. Measures for Encounters with Turtles Outside of a Sensitive Period

- 13.1. Where one or more individuals belonging to a turtle Species is encountered while undertaking an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) but outside of any Sensitive Period for that Species, the Municipality shall:
- (a) briefly stop the Activity for a reasonable period of time to allow any uninjured individual turtles of that Species to leave the Work Zone;
 - (b) where individuals do not leave the Work Zone after the Activity is briefly stopped in accordance with (a) above, capture all uninjured individuals and release them in accordance with section 14.1;
 - (c) where circumstances do not allow for their immediate release, transfer captured uninjured individuals for a maximum of 24 hours into a Holding Tub which shall be stored out of direct sunlight and then release them in accordance with section 14.1;
 - (d) capture and transfer any individuals that have been injured into a Holding Tub separate from any Holding Tub containing uninjured individuals; and
 - (e) store all captured injured individuals out of direct sunlight and immediately Contact the MNR to seek direction and to arrange for their transfer.

14. Release of Captured Individuals Outside of a Sensitive Period

- 14.1. Where uninjured individuals are captured under section 13.1, they shall be released:
- (a) within 24 hours of capture;
 - (b) in an area immediately adjacent to the Drainage Works;
 - (c) in an area that will not be further impacted by the undertaking of any Activity; and
 - (d) not more than 250 metres from the capture site.
- 14.2. Following a release under section 14.1, the Municipality shall Contact the MNR within 72 hours of the release to provide information on the name of the Drainage Works, the location of the encounter and the location of the release site.

15. Measures for Dead Turtles

- 15.1. Where one or more individuals of a turtle Species is killed as a result of an Activity in a Work Zone, or if a person undertaking an Activity finds a deceased individual of a turtle Species within the Work Zone, the Municipality shall:
- (a) place any dead turtles in a Holding Tub outside of direct sunlight; and
 - (b) Contact the MNR within 72 hours to seek direction and to arrange for the transfer of the dead individuals.

ADDITIONAL MITIGATION MEASURES FOR SNAKE SPECIES

16. Training and Required On Site Materials for Snakes

- 16.1. The Municipality will ensure any person:
- (a) involved in the capture, temporary holding, transfer and release of any snake Species has received training in proper snake handling procedures; and
 - (b) who undertakes an Activity has a minimum of two Holding Tubs and cotton sacks on site at all times.

17. Activities undertaken in Sensitive Areas and Sensitive Periods for Snakes

- 17.1. Where a proposed Activity involves physical infrastructure (e.g., culverts, pump houses, etc.) and will occur in a Sensitive Area for any snake Species and during a *Sensitive Period – Hibernation* for that Species, the Municipality shall undertake the Activity outside of the Sensitive Period, unless otherwise authorized by and in accordance with any site-specific measures provided in writing by the MNR Designated Representative.
- 17.2. Where a proposed Activity will occur at or adjacent to a known hibernacula (as identified by the MNR) for any snake Species and during a *Sensitive Period – Staging* for that Species, the Municipality shall:
 - (a) erect effective temporary snake barriers approved by the MNR that will not pose a risk of entanglement for snakes and that shall be secured so that individual snakes may not pass over or under the barrier or between any openings to enter or re-enter the Work Zone;
 - (b) inspect the temporary snake barriers daily during periods when snakes are active, capture any individuals incidentally encountered within the area bounded by the snake barrier and release the captured individuals in accordance with section 21.1; and
 - (c) remove the temporary snake barriers immediately upon completion of the Activity.
- 17.3. Where a proposed Activity that does not involve physical infrastructure will occur in a Sensitive Area for any snake Species and during a *Sensitive Period – Staging* for that Species, the Municipality shall undertake the Activity outside of the Sensitive Period, unless otherwise authorized by and in accordance with any site-specific measures provided in writing by the MNR Designated Representative.

18. Measures for Encounters with Snakes During a Sensitive Period

- 18.1. Where one or more individuals belonging to a snake Species is encountered, or should an active hibernacula be uncovered, while conducting an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) during a Sensitive Period for that Species, the Municipality shall:
 - (a) capture and transfer all injured and uninjured individual snakes of that Species into individual light-coloured, drawstring cotton sacks;
 - (b) place all cotton sacks filled with the captured individuals into a Holding Tub;
 - (c) ensure that the Holding Tub with the captured individuals is stored at a cool temperature to protect the snakes from freezing until the individuals can be retrieved or transferred;
 - (d) if an active hibernacula is uncovered, cease all Activities at the hibernacula site; and
 - (e) immediately Contact the MNR to seek direction and to arrange for the transfer and/or retrieval.

19. Measures for Encounters with Snake Nests

- 19.1. Where an active nest of any of the snake Species is encountered and disturbed while undertaking an Activity in any part of a Work Zone, the Municipality shall:
 - (a) collect any displaced or damaged eggs and transfer them to a Holding Tub;
 - (b) capture and transfer all injured dispersing juveniles of that Species into a light-coloured drawstring cotton sack;
 - (c) place all cotton sacks with the captured injured individuals into a Holding Tub;

- (d) ensure that the Holding Tub with the captured injured individuals is stored out of direct sunlight;
- (e) immediately Contact the MNR to seek direction and to arrange for the transfer of the injured individuals;
- (f) immediately stop any disturbance to the nest site and loosely cover exposed portions with soil or organic material to protect the integrity of the remaining individuals;
- (g) not drive any equipment over the nest site or conduct any Activities within 5 metres of the nest site;
- (h) not place any dredged materials removed from the Drainage Works on top of the nest site;
- (i) mark out the physical location of the nest site but not by any means that might increase the susceptibility of the nest to predation or poaching; and
- (j) where there are no collected eggs or captured individuals, Contact the MNR within 72 hours to provide information on the location of the nest site.

20. Measures for Encounters with Snakes Outside of a Sensitive Period

- 20.1. Where one or more individuals belonging to a snake Species is encountered while undertaking an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) but outside of any Sensitive Period for that Species, the Municipality shall:
- (a) follow the requirements in section 16;
 - (b) briefly stop the Activity for a reasonable period of time to allow any uninjured individual snakes of that Species to leave the Work Zone;
 - (c) if the individuals do not leave the Work Zone after the Activity is briefly stopped in accordance with (b) above, capture all uninjured individuals and release them in accordance with section 21.1;
 - (d) where circumstances do not allow for the immediate release of captured uninjured individuals, they may be transferred into individual, light-coloured, drawstring cotton sacks before placing them in a Holding Tub which shall be stored out of direct sunlight for a maximum of 24 hours before releasing them in accordance with section 21.1;
 - (e) capture and transfer any individuals injured as a result of conducting the Activities into a Holding Tub separate from any Holding Tub containing uninjured individuals; and
 - (f) store all captured injured individuals out of direct sunlight and immediately Contact the MNR to seek direction and to arrange for their transfer.

21. Release of Captured Individuals Outside of a Sensitive Period

- 21.1. Where uninjured individuals are captured under section 20.1, they shall be released:
- (a) within 24 hours of capture;
 - (b) in an area immediately adjacent to the Drainage Works where there is natural vegetation cover;
 - (c) in an area that will not be further impacted by the undertaking of any Activity; and
 - (d) not more than 250 metres from the capture site.

- 21.2. Following a release under section 21.1, the Municipality shall Contact the MNR within 72 hours of the release to provide information on the name of the Drainage Works, the location of the encounter and the location of the release site.

22. Measures for Dead Snakes

- 22.1. Where one or more individuals belonging to a snake Species is killed as a result of an Activity in a Work Zone, or if a person undertaking an Activity finds a deceased individual of a snake Species within the Work Zone, the Municipality shall:
- (a) collect and transfer any dead individuals into a Holding Tub outside of direct sunlight; and
 - (b) Contact the MNR within 72 hours to seek direction and to arrange for the transfer of the carcasses of the dead individuals.

ADDITIONAL MITIGATION MEASURES FOR HERBACEOUS PLANTS

23. Activities Undertaken in Sensitive Areas for Herbaceous Plants

- 23.1. Where a proposed Activity will occur that involves physical disturbance to vegetated banks or the killing and/or removal of vegetation through chemical or mechanical means in a Sensitive Area for any herbaceous plant Species, the Municipality shall:
- (a) undertake the Activity outside of the Sensitive Period, unless otherwise authorized;
 - (b) limit equipment access and operations to the side of the Drainage Works that will minimize disturbances where any of the plant Species occur;
 - (c) locate temporary storage sites for excavated sediments or bank materials on areas of open soil away from where any of the plant Species are likely to occur;
 - (d) not use any broad spectrum herbicides in Sensitive Areas; and
 - (e) undertake Activities in accordance with any additional site-specific measures provided in writing by the MNR Designated Representative.

ADDITIONAL MITIGATION MEASURES FOR TREE SPECIES

24. Additional Measures for Butternut

- 24.1. Where Butternuts may exist in a Work Zone and may be affected by an Activity, the Municipality shall:
- (a) identify and mark as retainable trees all individual Butternut trees within the Work Zone during work planning site visits unless the individual Butternut has been assessed as a non-retainable tree due to infection by Butternut canker by a person designated by the Minister as a Butternut Health Assessor;
 - (b) retain and avoid disturbance to all individuals identified under (a) above that have been identified as retainable trees or that have not been assessed, unless otherwise authorized in writing by the MNR Designated Representative;
 - (c) conduct Activities by:
 - (i) limiting equipment access and operations to the side of the Drainage Works that will minimize disturbance to where any of the individual Butternut trees occur,
 - (ii) working around trees,

- (iii) avoiding compacting and/or disturbing the soil by keeping excavation and other heavy equipment a minimum of 2 metres away from the main stem of retained individuals to avoid damaging roots and stems,
- (iv) placing excavated materials on areas not within 2 metres of the main stem of retained individuals, and
- (v) where branches are required to be removed to allow for safe operation of equipment, removing them using appropriate equipment, such as pruning saws, chain saws or lopping shears, in accordance with good forestry practices.

25. Measures for Other Trees

- 25.1. Where Kentucky Coffee-tree may exist in a Work Zone and may be affected by an Activity, the Municipality shall:
- (a) identify and mark all individual Kentucky Coffee-tree within the Work Zone during work planning site visits;
 - (b) avoid disturbance to all individuals identified under (a) above, unless otherwise authorized in writing by the MNR Designated Representative;
 - (c) conduct Activities by:
 - (i) limiting equipment access and operations to the side of the Drainage Works that will minimize disturbance where any of the individuals occur,
 - (ii) working around trees,
 - (iii) avoiding compacting and/or disturbing the soil by keeping excavation and other heavy equipment a minimum of 2 metres away from the main stem of retained individuals to avoid damaging roots and stems, and
 - (iv) placing excavated materials on areas not within 2 metres of the main stem of retained individuals; and
 - (d) where branches are required to be removed to allow for safe operation of equipment, remove them using appropriate equipment, such as pruning saws, chain saws or lopping shears, in accordance with good forestry practices.

PART D. MONITORING AND REPORTING REQUIREMENTS

26. Compliance Monitoring.

- 26.1. The Municipality shall inspect the undertaking of the Activities at the locations described in Part F of this Schedule C, and shall record the results of the inspections in the Monitoring and Reporting Form.
- 26.2. The Municipality shall record all encounters with Species and the resulting mitigation measures taken by the Municipality in the Monitoring and Reporting Form.

27. Reporting

- 27.1. Prior to March 31 of each year the Mitigation Plan is in effect, the Municipality shall submit a completed Monitoring and Reporting Form containing all of the information collected under sections 26.1 and 26.2 during the previous twelve months to the MNR Designated Representative.

28. Review

- 28.1. Within six months of the expiry of this Mitigation Plan but no later than three months from the time of its expiry, the Parties shall meet to review the measures and actions taken and the Activities undertaken during its term and to discuss the terms and conditions of the next Mitigation Plan.

APPENDIX 'C'

STANDARD SPECIFICATIONS **FOR ACCESS BRIDGE CONSTRUCTION**

1. CONCRETE FILLED JUTE BAG HEADWALLS

After the Contractor has set the new pipe in place, it shall completely backfill same and install new concrete filled jute bag headwalls at the locations and parameters indicated on the drawing. When constructing the concrete filled jute bag headwalls, the Contractor shall place the bags so that the completed headwall will have a slope inward from the bottom of the pipe to the top of the finished headwall. The slope of the headwall shall be one unit horizontal to five units vertical. The Contractor shall completely backfill behind the new concrete filled jute bag headwalls with Granular "B" and Granular "A" material as per O.P.S.S. Form 1010 and the granular material shall be compacted in place to a Standard Proctor Density of 100%. The placing of the jute bag headwalls and the backfilling shall be performed in lifts simultaneously. The granular backfill shall be placed and compacted in lifts not to exceed 305mm (12") in thickness.

The concrete filled jute bag headwalls shall be constructed by filling jute bags with concrete. All concrete used to fill the jute bags shall have a minimum compressive strength of 25 MPa in 28 days and shall be provided and placed only as a wet mix. Under no circumstance shall the concrete to be used for filling the jute bags be placed as a dry mix. The jute bags, before being filled with concrete, shall have a dimension of 460mm (18") x 660mm (26"). The jute bags shall be filled with concrete so that when they are laid flat, they will be approximately 100mm (4") thick, 305mm (12") to 380mm (15") wide and 460mm (18") long.

The concrete jute bag headwall to be provided at the end of the bridge pipe shall be a single or double bag wall construction as set out in the specifications. The concrete filled bags shall be laid so that the 460mm (18") dimension is parallel with the length of the new pipe. The concrete filled jute bags shall be laid on a footing of plain concrete being 460mm (18") wide, extending for the full length of the wall, and 305mm (12") thick extending below the bottom of the culvert pipe.

All concrete used for the footing, cap and bags shall have a minimum compressive strength of 25 Mpa at 28 days and shall include 6% \pm 1% air entrainment.

Upon completion of the jute bag headwall the Contractor shall cap the top row of concrete filled bags with a layer of plain concrete, minimum 100mm (4") thick, and hand trowelled to obtain a pleasing appearance. If the cap is made more than 100mm thick, the Contractor shall provide two (2) continuous 15M reinforcing bars set at mid-depth and equally spaced in the cap. The Contractor shall fill all voids between the concrete filled jute bags and the corrugated steel pipe with concrete, particular care being taken underneath the pipe haunches to fill all voids.

The completed jute bag headwalls shall be securely embedded into the drain bank a minimum of 500mm (20") measured perpendicular to the sideslopes of the drain.

As an alternate to constructing a concrete filled jute bag headwall, the Contractor may construct a grouted concrete rip rap headwall. The specifications for the installation of a concrete filled jute bag headwall shall be followed with the exception that broken pieces of concrete may be substituted for the jute bags. The concrete rip rap shall be approximately 460mm (18") square and 100mm (4") thick and shall have two (2) flat parallel sides. The concrete rip rap shall be fully mortared in place using a mixture composed of three (3) parts of clean sharp sand and one (1) part of Portland cement.

The complete placement and backfilling of the headwalls shall be performed to the full satisfaction of the Town Drainage Superintendent and the Engineer.

2. QUARRIED LIMESTONE ENDWALLS

The backfill over the ends of the corrugated steel pipe shall be set on a slope of 1-½ units horizontal to 1 unit vertical from the bottom of the corrugated steel pipe to the top of each end slope and between the drain banks. The top 305mm (12") in thickness of the backfill over the ends of the corrugated steel pipe shall be quarried limestone. The quarried limestone shall also be placed on a slope of 1-½ units horizontal to 1 unit vertical from the bottom of the corrugated steel pipe to the top of each bank of the drain adjacent each end slope. The quarried limestone shall have a minimum dimension of 100mm (4") and a maximum dimension of 250mm (10"). The end slope protection shall be placed with the quarried limestone pieces carefully tamped into place with the use of a shovel bucket so that, when complete, the end protection shall be consistent, uniform, and tightly laid in place.

Prior to placing the quarried limestone end protection over the granular backfill and on the drain banks, the Contractor shall lay non-woven geotextile filter fabric "GMN160" conforming to O.P.S.S. 1860 Class I or approved equal. The geotextile filter fabric shall extend from the bottom of the corrugated steel pipe to the top of each end slope of the bridge and along both banks of the drain to a point opposite the ends of the pipe.

The Contractor shall take extreme care not to damage the geotextile filter fabric when placing the quarried limestone on top of the filter fabric.

3. BRIDGE BACKFILL

After the corrugated steel pipe has been set in place, the Contractor shall backfill the pipe with Granular "B" material, O.P.S.S. Form 1010 with the exception of the top 305mm (12") of the backfill. The top 305mm (12") of the backfill for the full width of the excavated area (between each bank of the drain) and for the top width of the driveway, shall be Granular "A" material, O.P.S.S. Form 1010. The granular backfill shall be compacted in place to a Standard Proctor Density of 100% by means of mechanical compactors. All of the backfill material, equipment used, and method of compacting the backfill material shall be inspected and approved and meet with the full satisfaction of the Town Drainage Superintendent and Engineer.

4. GENERAL

Prior to the work commencing, the Town Drainage Superintendent and Engineer must be notified, and under no circumstances shall work begin without one of them being at the site. Furthermore, the grade setting of the pipe must be checked, confirmed, and approved by the Superintendent or Engineer prior to continuing on with the bridge installation.

The alignment of the new bridge culvert pipe shall be in the centreline of the existing drain, and the placing of same must be performed totally in the dry.

Prior to the installation of the new access bridge culvert, the existing sediment build-up in the drain bottom must be excavated and completely removed. This must be done not only along the drain where the bridge culvert pipe is to be installed, but also for a distance of 3.05 metres (10 ft.) both upstream and downstream of said new access bridge culvert. When setting the new bridge culvert pipe in place it must be founded on a good undisturbed base. If unsound soil is encountered, it must be totally removed and replaced with 20mm (3/4") clear stone, satisfactorily compacted in place.

When doing the excavation work or any other portion of the work relative to the bridge installation, care should be taken not to interfere with, plug up, or damage any existing surface drains, swales, and lateral or main tile ends. Where damage is encountered, repairs to correct same must be performed immediately as part of the work.

The Contractor and/or landowner performing the bridge installation shall satisfy themselves as to the exact location, nature and extent of any existing structure, utility or other object that they may encounter during the course of the work. The Contractor shall indemnify and save harmless the Town, the Engineer and their staff from any damages which it may cause or sustain during the progress of the work. It shall not hold them liable for any legal action arising out of any claims brought about by such damage caused by it.

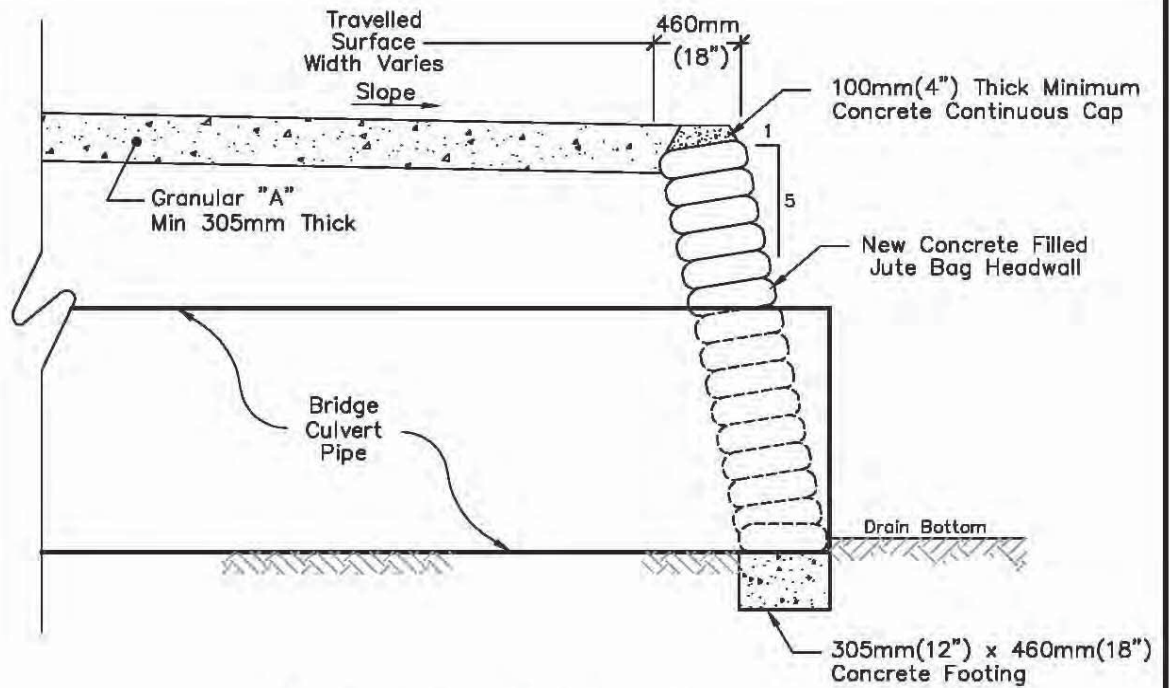
Where applicable, the Contractor and/or landowner constructing the new bridge shall be responsible for any damage caused by them to any portion of the Town road right-of-way. They shall take whatever precautions are necessary to cause a minimum of damage to same and must restore the roadway to its original condition upon completion of the works.

When working along a municipal roadway, the Contractor shall provide all necessary lights, signs, barricades and flagpersons as required to protect the public. All work shall be carried out in accordance with the requirements of the Occupational Health and Safety Act, and latest amendments thereto. If traffic control is required on this project, it is to comply with the M.T.O. Traffic Control Manual for Roadway Work Operations.

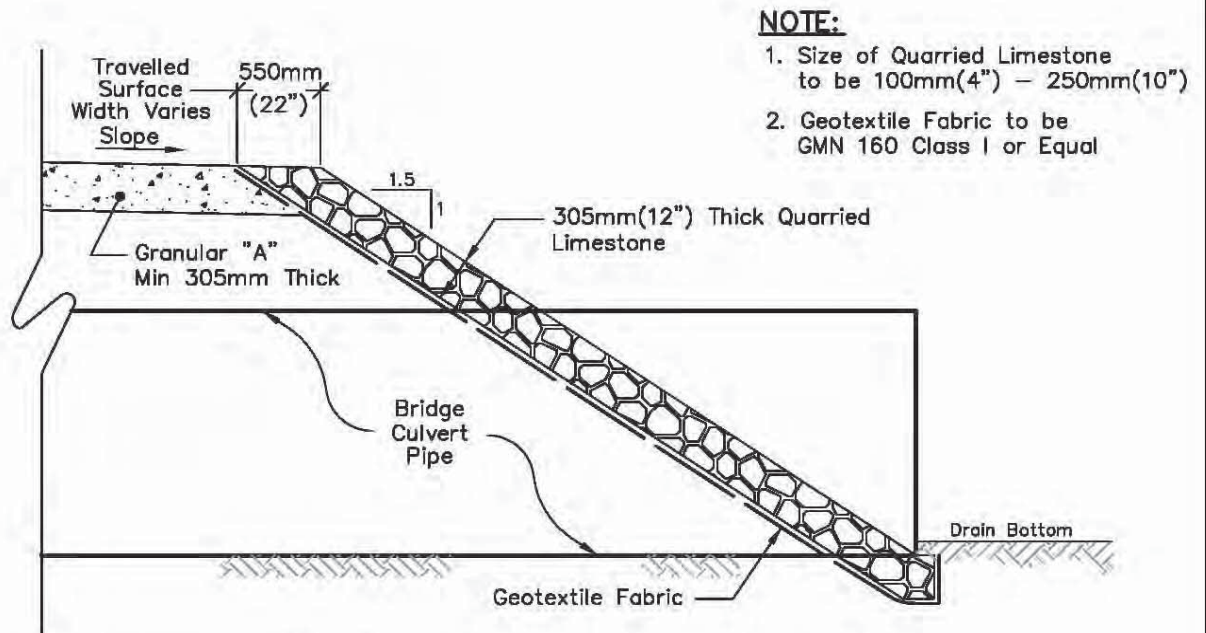
Once the bridge installation has been completed, the drain sideslopes directly adjacent the new headwalls and/or endwalls are to be completely restored including revegetation, where necessary.

All of the work required towards the installation of the bridge shall be performed in a neat and workmanlike manner. The general site shall be restored to its' original condition, and the general area shall be cleaned of all debris and junk, etc. caused by the work

All of the excavation, installation procedures, and parameters as above mentioned are to be carried out and performed to the full satisfaction of the Town Drainage Superintendent and Engineer.



Typical Jute Bag Headwall



Typical Quarried Limestone End Protection

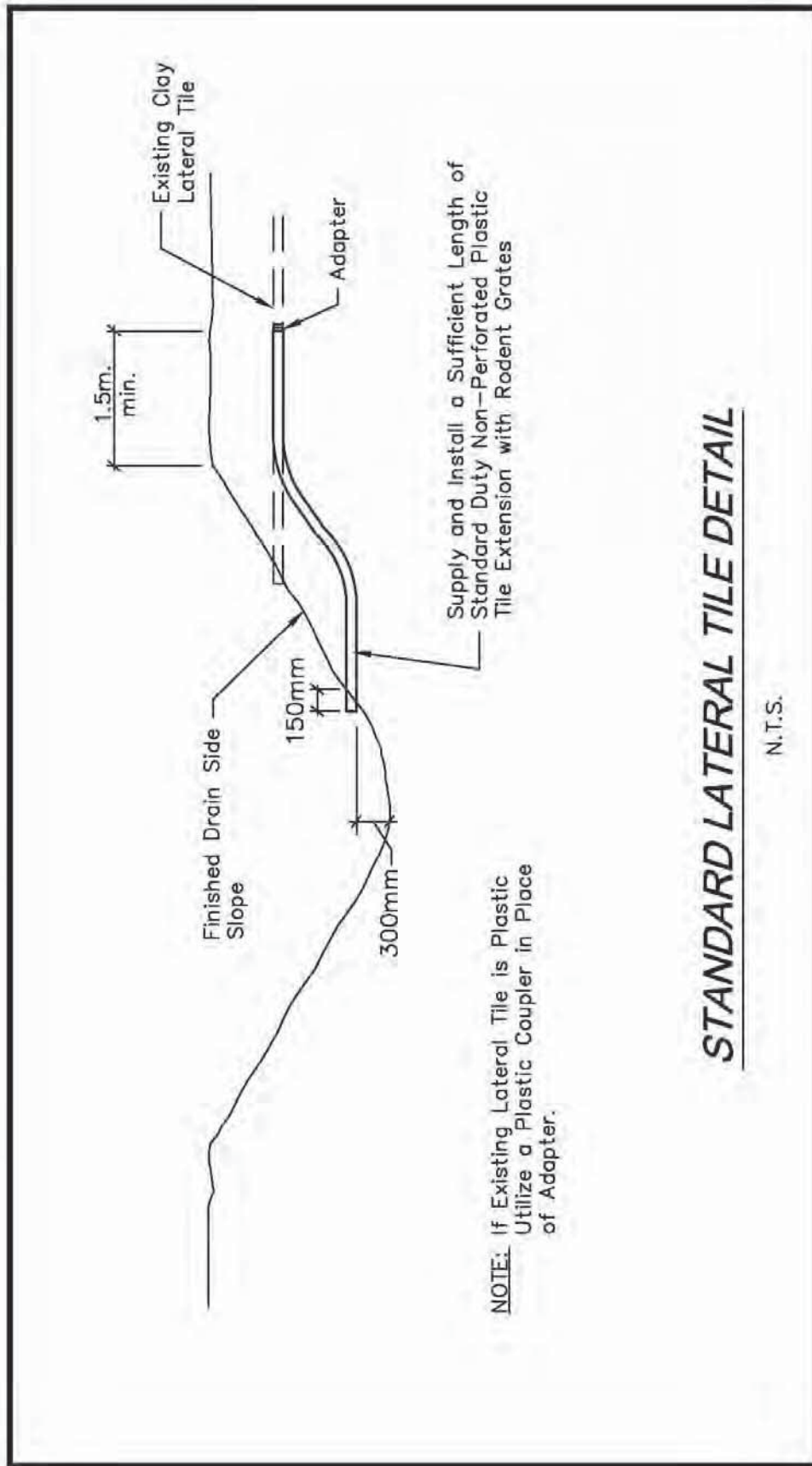
Rood Engineering Inc.

Consulting Engineers

9 Nelson Street

Leamington, Ontario N8H 1G6

519-322-1621



APPENDIX 'D'

THE CORPORATION OF THE TOWN OF TECUMSEH

BY-LAW NO. 2007-51

Being a by-law to amend By-law No. 2007-41 to regulate the setting of open air fires and identify the precautions and conditions to be observed for such fires within The Corporation of the Town of Tecumseh.

WHEREAS Council considers excessive smoke, smell, airborne sparks or embers to be or could become or cause public nuisances by creating negative health effects on neighbouring residents, increasing fire exposure hazards, infringing the enjoyment of the use of neighbouring properties and generating false or nuisance alarms;

AND WHEREAS Council is empowered under Section 128 of the *Municipal Act* 2001, S.O. 2001, c. 25 as amended, to pass by-laws to prohibit and regulate public nuisances, including matters that, in the opinion of Council are, or could become or cause public nuisances;

AND WHEREAS in accordance with Section 425 of the *Municipal Act* 2001, S.O. 2001, c. 25 as amended, a municipality may pass by-laws providing that a person who contravenes a by-law of the municipality passed under this Act is guilty of an offence;

AND WHEREAS Section 444 of the *Municipal Act* 2001, c. 25 states if a municipality is satisfied that a contravention of a by-law of the municipality passed under this Act has occurred, the municipality may make an order requiring the person who contravened the by-law or who caused or permitted the contravention or the owner or occupier of the land on which the contravention occurred to discontinue the contravening activity;

AND WHEREAS the Council of The Corporation of the Town of Tecumseh enacted By-law No. 2007-41 on the 26th day of June, 2007 to regulate the setting of open air fires and identify the precautions and conditions to be observed for such fires within The Corporation of the Town of Tecumseh;

AND WHEREAS the Council of The Corporation of the Town of Tecumseh is desirous of amending By-law No. 2007-41;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWN OF TECUMSEH ENACTS AS FOLLOWS:

1. **That** paragraph 4.9 be deleted and replaced with the following paragraph:
 - 4.9 Permitted fires, except those described in Section 4.4, shall,
 - a) be kept to manageable size that shall not be greater than one (1) square metre with flames no higher than one (1) metre in height; and,
 - b) in residentially zoned areas, be completely extinguished by 2:00 a.m.
2. **That** paragraph 5.2 be deleted and replaced with the following paragraph:
 - 5.2 An application for a Permit must be completed on the form/forms provided by the Tecumseh Fire/Rescue Services.

3. **That** paragraph 5.3 be deleted and replaced with the following paragraph:

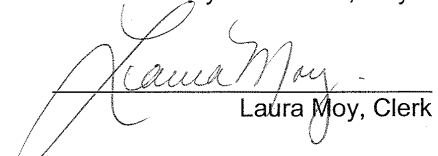
5.3 An application must be filed with the Chief Fire Official of the Tecumseh Fire/Rescue Services. Approved permits must be retained and presented to an attending fire official in the event that there is a need for a fire official to attend at the burn location due to complaint.

4. **That** this by-law shall take full force and effect on the third and final reading.

READ a first, second, third time and finally passed this 11th day of September, 2007.



Gary McNamara, Mayor



Laura Moy, Clerk

THE CORPORATION OF THE TOWN OF TECUMSEH

BY-LAW NUMBER 2007-41

A by-law to regulate the setting of open air fires and identify the precautions and conditions to be observed for such fires within The Corporation of the Town of Tecumseh.

WHEREAS Council considers excessive smoke, smell, airborne sparks or embers to be or could become or cause public nuisances by creating negative health effects on neighbouring residents, increasing fire exposure hazards, infringing on the enjoyment of the use of neighbouring properties and generating false or nuisance alarms;

AND WHEREAS Council is empowered under Section 128 of the *Municipal Act* 2001, S.O. 2001, c. 25 as amended, to pass bylaws to prohibit and regulate public nuisances, including matters that, in the opinion of Council are, or could become or cause public nuisances;

AND WHEREAS in accordance with Section 425 of the *Municipal Act* 2001, S.O. 2001, c. 25 as amended, a municipality may pass by-laws providing that a person who contravenes a by-law of the municipality passed under this Act is guilty of an offence;

AND WHEREAS Section 444 of the *Municipal Act* 2001 c. 25 states if a municipality is satisfied that a contravention of a by-law of the municipality passed under this Act has occurred, the municipality may make an order requiring the person who contravened the by-law or who caused or permitted the contravention or the owner or occupier of the land on which the contravention occurred to discontinue the contravening activity;

AND WHEREAS Section 446(1) of the *Municipal Act* 2001 c.25 states that if a municipality has the authority under this or any other Act or under a by-law under this or any other Act to direct or require a person to do a matter or thing, the municipality may:

- provide that, in default of it being done by the person directed or required to do it, the matter or thing shall be done at the person's expense;
- enter upon land at any reasonable time;
- recover the costs of doing a matter or thing from the person directed or required to do it by action or by adding the costs to the tax roll and collecting them in the same manner as property taxes; and
- that costs include interest calculated at a rate of 15 per cent or such lesser rate as may be determined by the municipality, calculated for the period commencing on the day the municipality incurs the costs;
- the costs, including interest, constitutes a lien on the land upon the registration in the proper land registry office of a notice of lien;

AND WHEREAS Section 390 of the *Municipal Act* 2001 c.25 provides that a "person" includes a municipality and a local board and the Crown;

AND WHEREAS Section 426 of the *Municipal Act* 2001 c. 25 provides that no person shall hinder or obstruct, or attempt to hinder or obstruct any person exercising a power or performing a duty under this Act or a by-law under this Act and that any person who contravenes subsection (1) is guilty of an offence;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWN OF TECUMSEH ENACTS AS FOLLOWS:

1. DEFINITIONS

In this By-law:

- 1.1 "Burning Appliance" means any device designed or engineered to have a fire set within a contained area and totally enclosed by various means of screening and/or other methods.
- 1.2 "By-law Enforcement Officer" means the municipal person appointed by the Town of Tecumseh who shall be responsible for the enforcement of the provisions of this by-law.
- 1.3 "Chief Fire Official" means the Fire Chief of the Tecumseh Fire/ Rescue Services or designate.
- 1.4 "Competent Adult" means any person (18 years of age or older) who, in the opinion of those charged with enforcement of this By-Law, is capable of exercising the required judgement and capable of performing the necessary actions to control and prevent its unwanted spread.
- 1.5 "Farmer" means the owner or operator of an agricultural operation within an area zoned for agricultural pursuant to the *Farming & Food Protection Act*, 1998.
- 1.6 "Farmlands" means land designated "agricultural".
- 1.7 "Firefighter" means any person or any rank of person employed in, or appointed to the Tecumseh Fire/Rescue Services and assigned to undertake fire protection or fire prevention services.
- 1.8 "Full Cost Recovery Basis" has the meaning as described in Schedule "A" attached hereto.
- 1.9 "Open Air" means any open place, yard, field, lot, part lot or construction area which is not enclosed by a building or structure.
- 1.10 "Open Air Burning" means any fire set in the Open Air.
- 1.11 "Owner" means the registered owner or any person, firm or corporation having control over, or possession, of any portion of the building or property under consideration and includes the persons in the building or on the property.
- 1.12 "Permit" means a permit issued by the Chief Fire Official to set a fire in the Open Air for a specified date and period of time.
- 1.13 "Person" means an individual, business, a partnership or a corporation.
- 1.14 "Pit" means an area dug into the ground and/or surrounded by materials designed to contain the fire and prevent its spread to areas beyond the Pit.
- 1.15 "Police Officer" means any member of the Ontario Provincial Police.
- 1.16 "Tenant" means the occupant having possession or Person having control of a property or premises.
- 1.17 "Town" means The Corporation of the Town of Tecumseh.

2. ADMINISTRATION AND ENFORCEMENT

- 2.1 The Chief Fire Official shall be responsible for the administration of this by-law.
- 2.2 Enforcement of this by-law is the responsibility of the Chief Fire Official, any Fire-fighter, any Police Officer or any By-law Enforcement Officer.
- 2.3 The Chief Fire Official may refuse to issue a Permit or revoke any or all issued Permits.
- 2.4 The Fire Chief, Firefighters or Police Officers may, at all times enter and inspect any property or premises in order to ascertain whether the provisions of this by-law are complied with and to enforce or carry into effect the by-law.
- 2.5 Any person who fails to comply with the provisions of this by-law or fails to extinguish a fire once notification to do so has been given to him by the Chief Fire Official, a Police Officer or a Firefighter shall, in addition to any penalty provided herein, be liable to the municipality for all expenses incurred for the purposes of controlling and extinguishing of any fire so set or left to burn and such expenses may be recovered by court action or in a like manner as municipal taxes.

3. ENVIRONMENT

- 3.1 All Open Air Burning shall comply with the provisions of the *Environmental Protection Act*, R.S.O. 1990. c. E19.
- 3.2 No Open Air Burning shall be permitted when a smog alert has been issued for the region of Essex County, which includes the Town.
- 3.3 No Open Fire shall be started or maintained when wind condition is in such direction or intensity so as to cause any or all of the following:
 - (a) decrease in visibility on any highway or roadway;
 - (b) threaten a rapid spread of fire through a grass or brush area;
 - (c) smoke which causes annoyance or irritation to adjacent persons, properties or premises.

4. GENERAL PROVISIONS

- 4.1 No Person being the Owner or Tenant in possession of lands within the Town shall allow a fire to be set or burn on such lands unless a Permit has been obtained.
- 4.2 No Person shall allow a fire to be set or burned exceeding the requirements of Sections 4.8 and 4.9.
- 4.3 Notwithstanding any provisions herein, no Person shall set or maintain a fire,
 - (a) in contravention of the *Ontario Fire Code*, the *Environmental Protection Act* or any other statutory requirements of the Province of Ontario or the Government of Canada;
 - (b) where the consumption of material or size and area of the fire will exceed the limits set by the Chief Fire Official and/or listed within this by-law in Sections 4.8 and 4.9.

- 4.4 (a) No Permit shall be required for domestic barbeques or permanent outdoor fireplaces used solely for the cooking of food on a grill and extinguished immediately upon completion of the cooking process or any Burning Appliance, or a Pit or open area where the requirements of Sections 4.8 and 4.9 are not exceeded;
- (b) installation and location of Burning Appliances must meet the manufacturer's specifications.
- 4.5 (a) A farmer who intends to set or maintain a fire in the Open Air on a specified day for disposal of vegetable matter or vegetation on Farmlands which is normal and incidental for farming purposes shall obtain a Permit to cover the period of the proposed Open Air fire, and will be required to notify the Tecumseh Fire/Rescue Services for each day that the proposed Open Air fire will take place;
- (b) an Open Air fire shall be supervised by a Competent Adult equipped with sufficient equipment to control and contain the Open Air fire to prevent the spread of the Open Air fire that would endanger or put at risk other properties or premises;
- (c) an Open Air fire shall be restricted to daylight hours only;
- (d) an Open Air fire shall be surrounded by a tilled area wide enough to prevent an Open Air fire from jumping across the tilled area and to maintain the area of the burn to be no greater than one (1) hectare in size;
- (e) the leading edge of the flame of an Open Air fire shall not exceed thirty (30) metres in length.
- 4.6 No Person shall set any fire in the Open Air to burn asphalt products, tires, treated wood, construction materials or rubble, kitchen garbage or any garbage or trash, rubber plastics and like items.
- 4.7 No Person shall set any fire in the Open Air except where permitted and only in the presence of a Competent Adult. The Competent Adult shall not leave the burning operation until such time as the fire has been completely extinguished and there is no threat of re-ignition or spreading of the fire.
- 4.8 Every Person that starts a fire in the Open Air shall ensure that there are adequate tools and/or water on hand to contain or extinguish the fire.
- 4.9 Permitted fires, except those described in Section 4.4, shall be kept to manageable size that shall not be greater than one (1) square metre with flames no higher than one (1) metre in height.
- 4.10 Every Person who sets an Open Air fire in the Town of Tecumseh shall be:
- (a) responsible and liable for any damage to property or injury to person occasioned by said fire;
- (b) liable for all costs incurred by the Town of Tecumseh, including but not limited to, the Fire/Rescue Services, including personnel and other agencies called to control and extinguish said fire on a Full Cost Recovery Basis. All fees and charges to be paid under this subsection shall be payable in the manner and subject any interest and penalties set forth in paragraph 5 and 6 of the Administrative Fees and Charges By-law 2007-12, as may be amended or repealed from time to time;

- (c) the fees and charges under this section shall not be payable by that class of persons which have obtained a permit for an Open Air fire and complied with the terms of such permit.

- 4.11 Notwithstanding the aforementioned sections listed herein, the Fire Chief may issue a Permit upon application and approve the setting of any fire subject to the fire being adequately supervised and controlled through special conditions addressed by the Chief Fire Official.
- 4.12 No fire shall be set to dispose of commercial, industrial or construction waste or other like materials in areas zoned for commercial or industrial occupancies and such aforementioned materials shall not be transported to residential or agricultural areas for burning purposes.
- 4.13 No fires shall be set at construction and/or demolition sites for the purpose of disposing of waste, building material or rubble.

5. FIRES REQUIRING PERMITS

- 5.1 Except as provided in section 4.3 of this by-law, no Person shall set, maintain or cause to be set or maintained, a fire in the Open Air unless a Permit has been issued by the Chief Fire Official.
- 5.2 An application for a Permit must be completed on the form/forms provided by the Tecumseh Fire/Rescue Services. Such forms are available to fill out by telephone call to Tecumseh Fire Station No. 1, Monday to Friday from 08:30 hr to 16:30 hr.
- 5.3 Each completed application for a Permit must be filed with the Chief Fire Official of the Tecumseh Fire/Rescue Services, at the administration offices located at 985 Lesperance Road, Tecumseh, Ontario.
- 5.4 In issuing a Permit under this part for Open Air Burning, the Chief Fire Official may impose any additional requirements or conditions as may be deemed necessary.

6. OFFENCES

- 6.1 (a) Any person who contravenes any of the provisions of this by-law is guilty of an Offence;
- (b) any person who hinders or obstructs a person lawfully carrying out the enforcement of this by-law is guilty of an Offence.

7. FINES

- 7.1 Every Person who is convicted of an Offence is liable to a Fine of not more than Five Thousand (\$5,000.00) Dollars as provided for in the *Provincial Offences Act*, R. S.O. 1990, Chap. P.33.

8. SEVERABILITY

- 8.1 If any section or sections of this by-law or parts thereof are found in any court to be illegal or beyond the power of Council to enact, such section or sections or parts thereof shall be deemed severable and all other sections or parts of this by-law shall be deemed separate and independent there from and enacted as such.

9. **SHORT TITLE**

9.1 The short title of this by-law shall be TECUMSEH OPEN AIR BURNING BY-LAW.

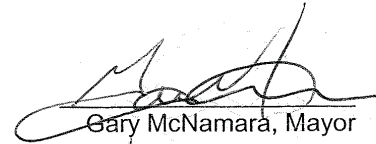
10. **EFFECTIVE DATE**

10.1 This by-law shall come into full force and take effect on the 1st day of July, 2007.

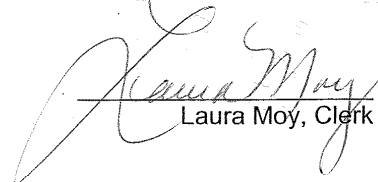
11. **REPEAL**

11.1 By-law No. 2005-57 is hereby repealed.

READ a first, second, third time and finally passed this 26th day of June, 2007.



Gary McNamara, Mayor



Laura Moy, Clerk

SCHEDULE "A"
By-law Number 2007-41

**THE CORPORATION OF THE TOWN OF TECUMSEH
TECUMSEH FIRE/RESCUE SERVICES EQUIPMENT SERVICES RATES**

"Full Cost Recovery Basis" includes any and all charges and costs howsoever incurred by the Town directly or indirectly in controlling and extinguishing the Open Air fire and shall include without limitations:

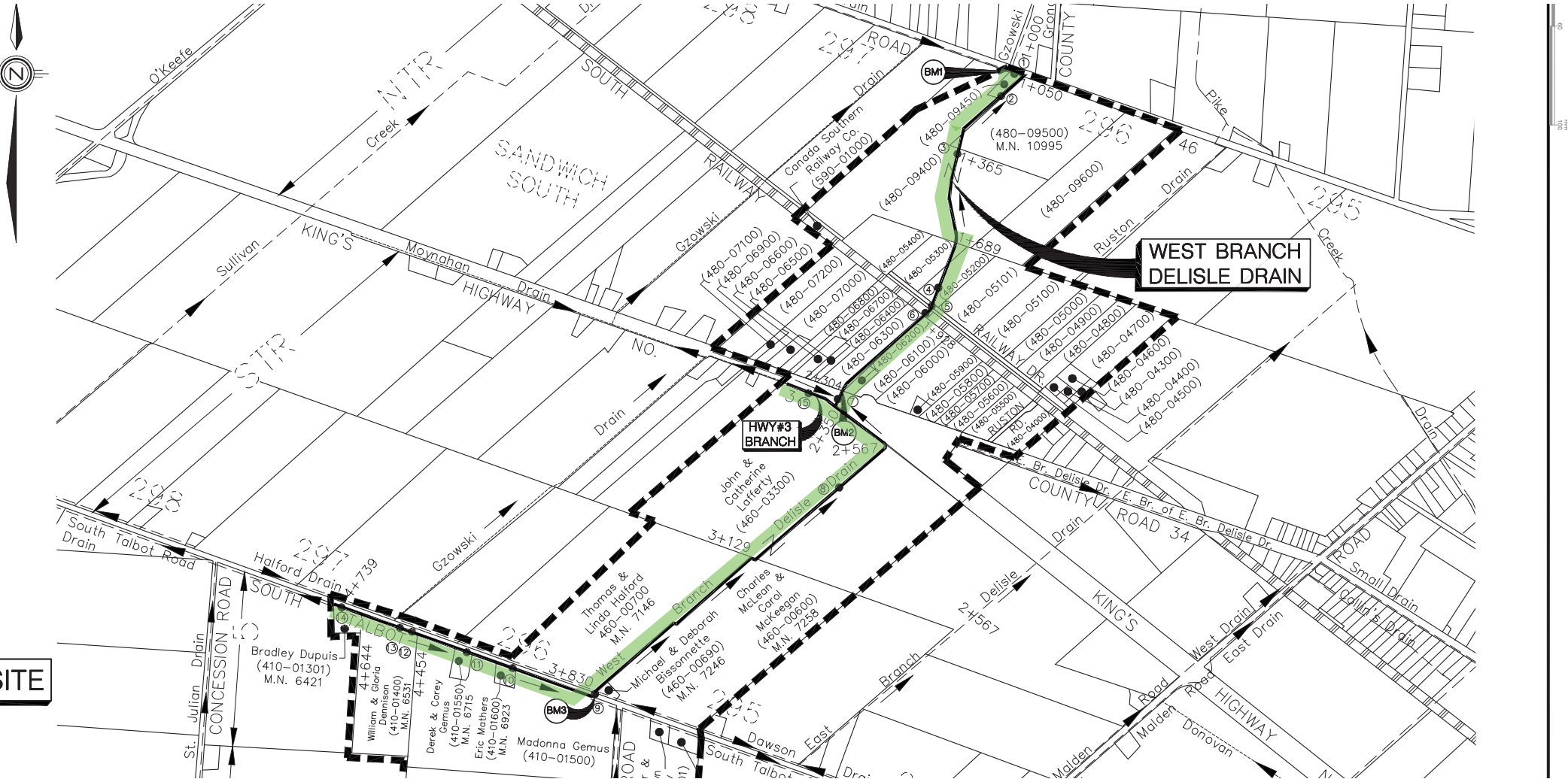
Emergency Services Rendered:

- (a) \$350.00 first hour or part thereof per piece of equipment;
- (b) \$175.00 each additional half-hour or part thereof per piece of equipment;
- (c) \$42.00 first hour or part thereof per firefighter who responds to the call;
- (d) \$27.50 for each additional hour or part thereof per firefighter until all equipment is cleaned, checked and returned to service;
- (e) the cost of all extinguishing agents required to extinguish the fire.

No Emergency Services Rendered:

- (a) \$350.00 flat rate per piece of equipment where services are not required nor provided;
- (b) \$42.00 flat rate per firefighter who responds to the call for service.

APPENDIX 'E'



Drain Work Area

PLANS, PROFILES & SECTIONS

OF THE

WEST BRANCH OF DELISLE DRAIN

(Geographic Township of Sandwich South)

IN THE
TOWN OF TECUMSEH

IN THE
COUNTY OF ESSEX • ONTARIO

Sand Road
GERARD ROOD, P.ENG.

**ROOD
ENGINEERING
INC.**



CONSULTING ENGINEERS
Lambton, Ontario
519-322-1621

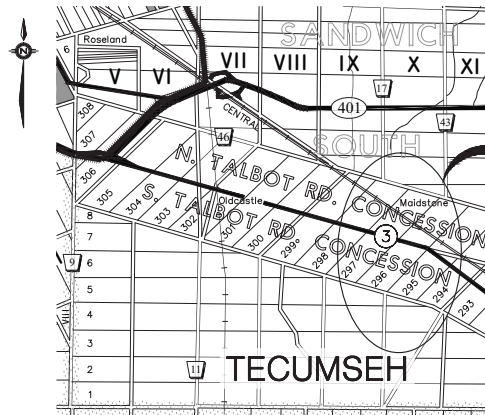
DATE: April 28th, 2016

TOWN OF TECUMSEH

MAYOR: Gary McNamee
CLERK: Laura May
DRAINAGE SUPERINTENDENT: Sam Paglia

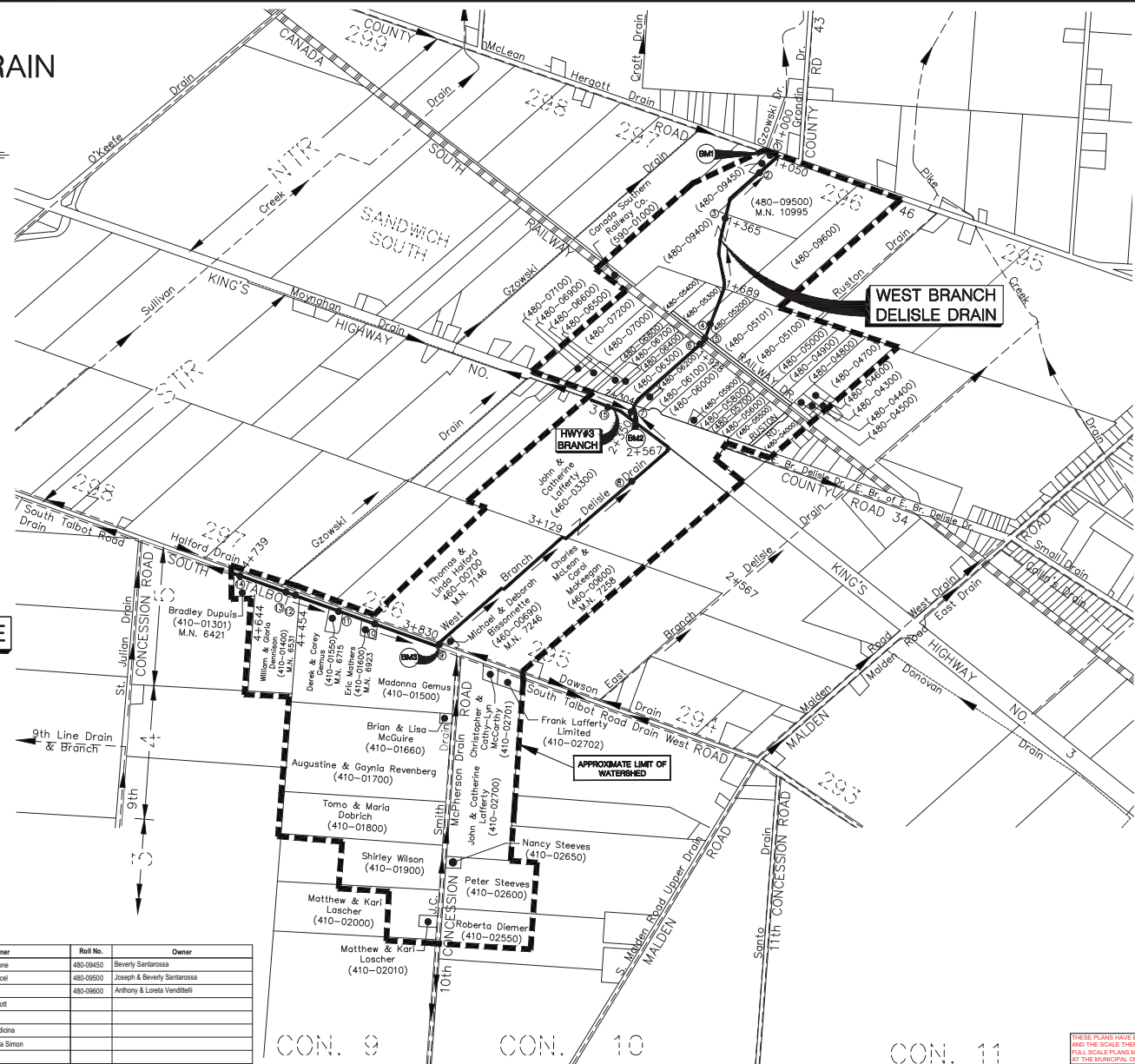
BENCHMARKS:

- 1) TOP MIDDLE OF EAST HEADWALL ON 1500mm CONCRETE PIPE AT STATION
1+012.5 JUST EAST OF GZOWSKI BRIDGE UNDER COUNTY ROAD 46
ELEV. = 188.330m
- 2) TOP AT MIDDLE OF NORTH END OF CONCRETE CULVERT ON WEST BRANCH OF
DELISLE DRAIN ON NORTH SIDE OF HIGHWAY 3
ELEV. = 189.757m
- 3) TOP AT MIDDLE OF SOUTH CURB OF CONCRETE BRIDGE UNDER SOUTH TALBOT
ROAD
ELEV. = 191.812m



KEY PLAN
Scale = 1:50,000

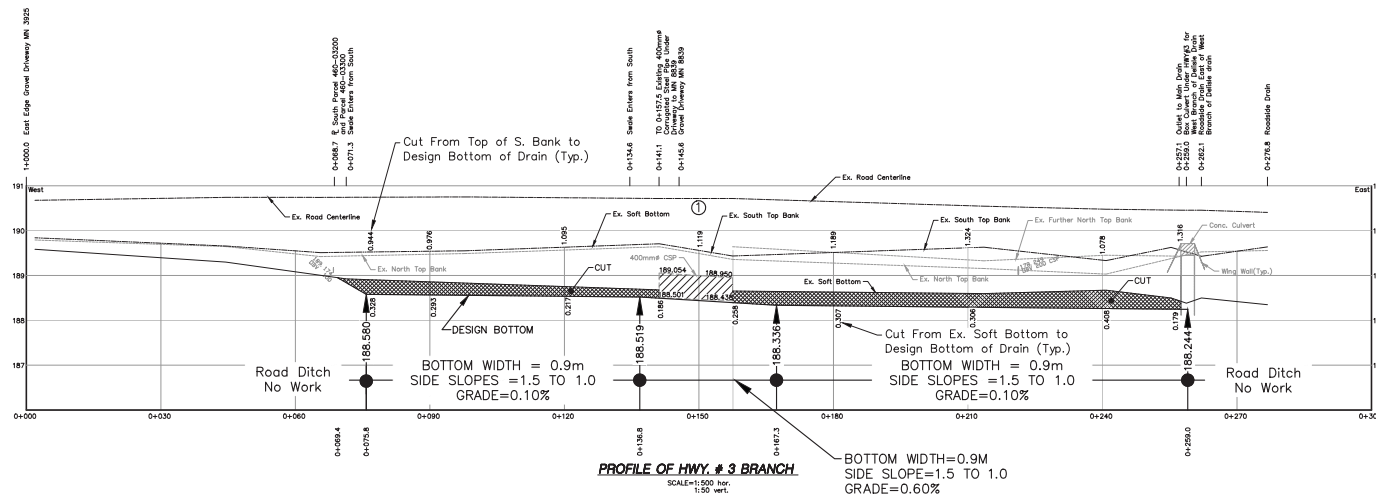
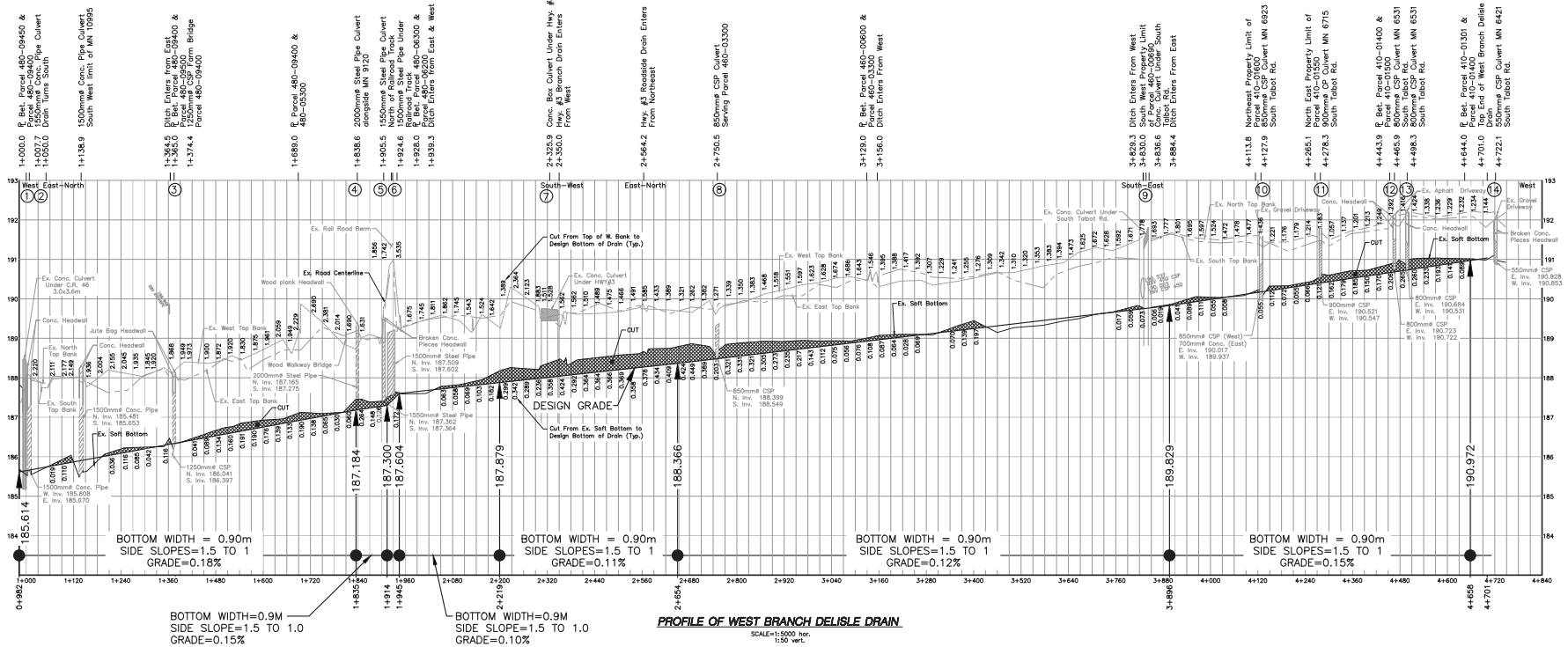
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480-04300	Brian & Marguerite Foubert	480-05300	Evelyn & Robert Corcoran	480-06400	Nicole & Marcela Paduani	480-09500	Joseph & Beverly Santarossa
480-04400	Mark Buhler	480-05400	Norman Jobin	480-06500	Jessica Hilgard	480-09600	Anthony & Lorela Venditti
480-04500	Shawn & Grace Macdonald	480-05500	Samara Mousaw	480-06600	Preston & Francine Pirnot		
480-04600	Ronald & Renee Ducharme	480-05600	Nancy & Robert Thomson	480-06700	Wanda Tancowski		
480-04700	Michael & Karen Langlos	480-05700	Stanley Scalfi	480-06800	Giovanni & Angela Laudina		
480-04800	Daniel Ryall	480-05800	Michael & Allison Fredericks	480-06900	Mustafa Ennami & Silvia Simon		
480-04900	Kevin Nussio	480-05900	William & Gladys Pfeiffer	480-07000	Danny Joksimovic		
480-05000	Joseph & Grace Caesar	480-06000	Douglas Desjardins	480-07100	Frederick & Tara Stockwell		
480-05100	Robert & Pamela Rudy	480-06100	Robert Ouellette	480-07200	Margaret & John Dixon		
480-05101	Roland Jacques & Estelle Vallancourt	480-06200	Robert Ouellette & Jeraldine Anderson	480-09400	Norman & Rose Jobin		

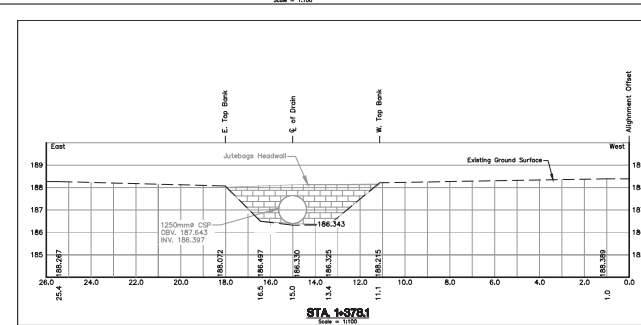
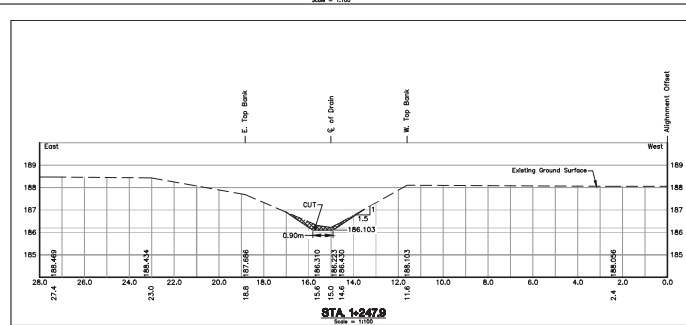


WATERSHED PLAN
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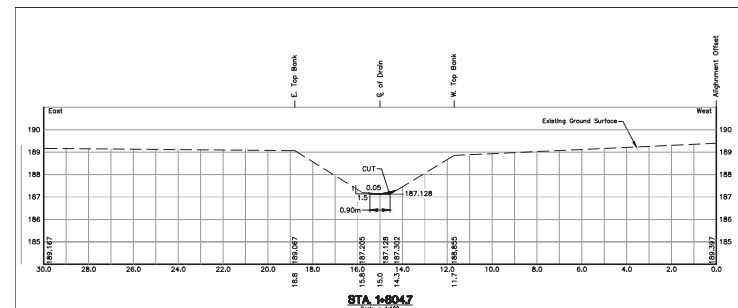
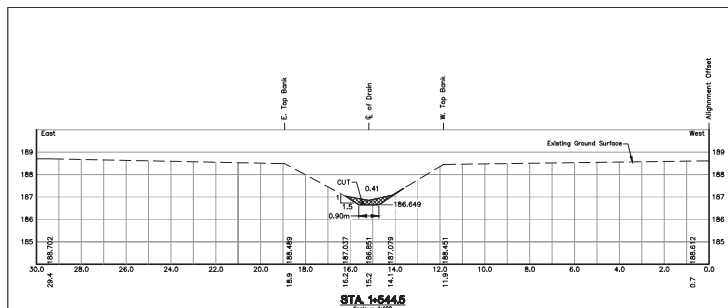
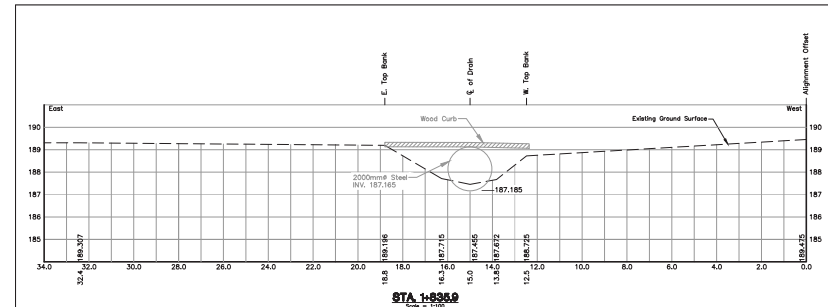
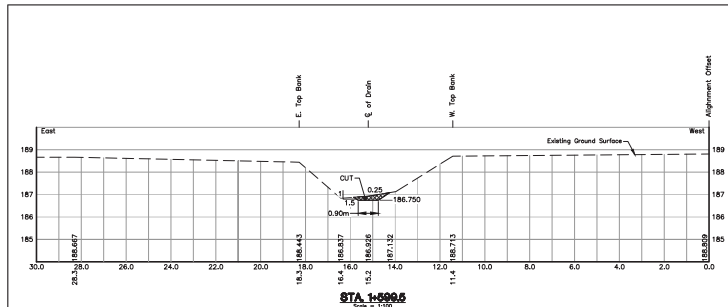
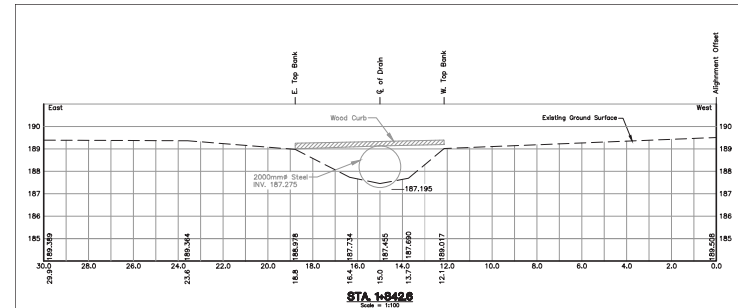
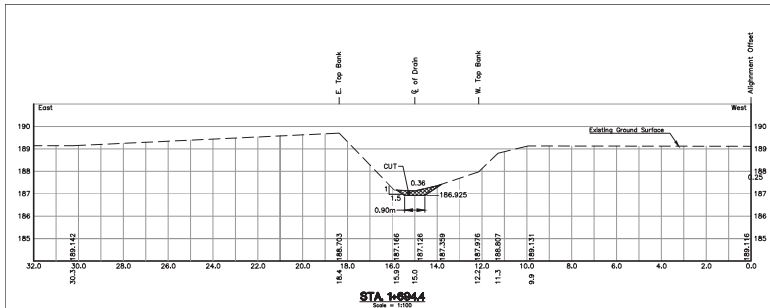
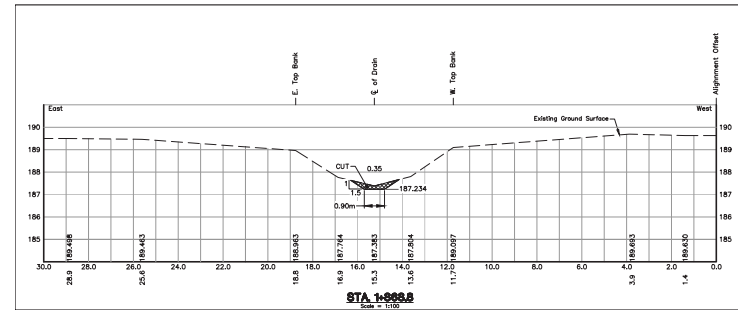
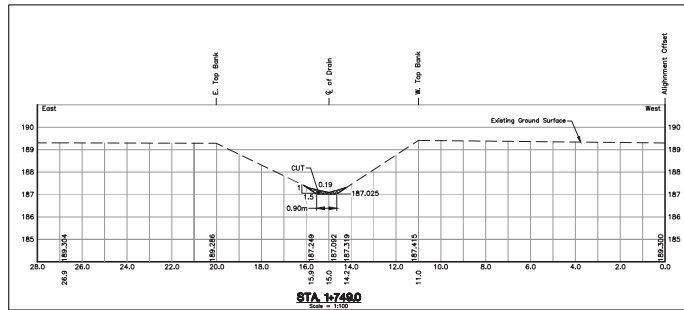
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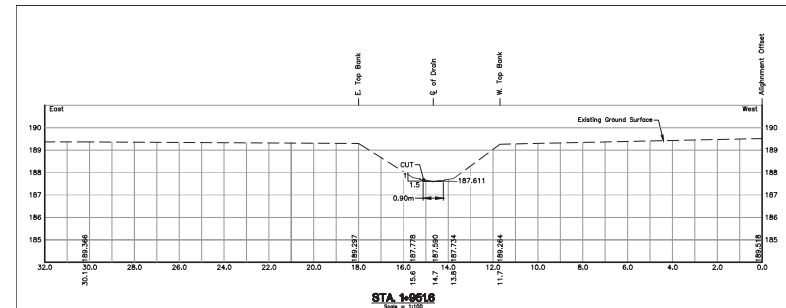
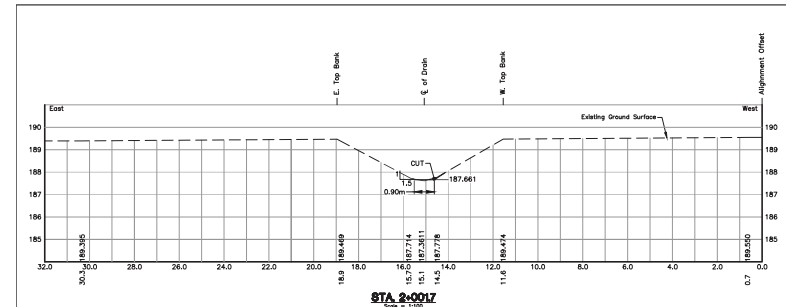
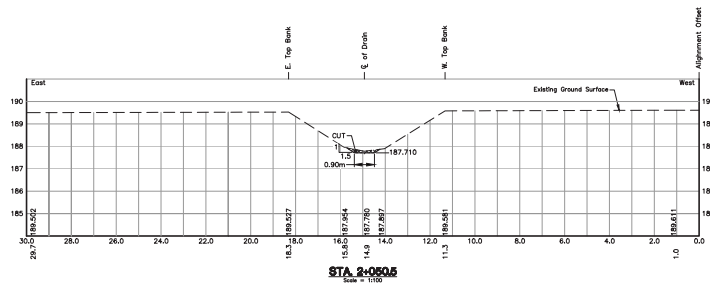
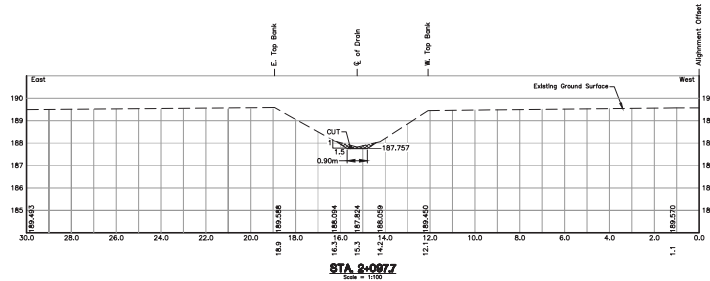
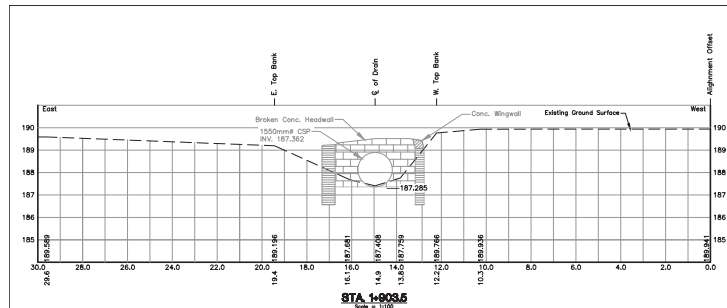
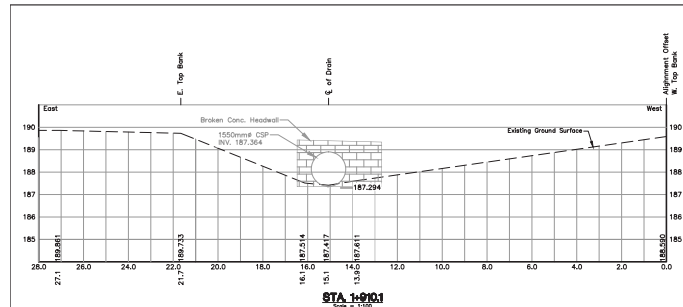
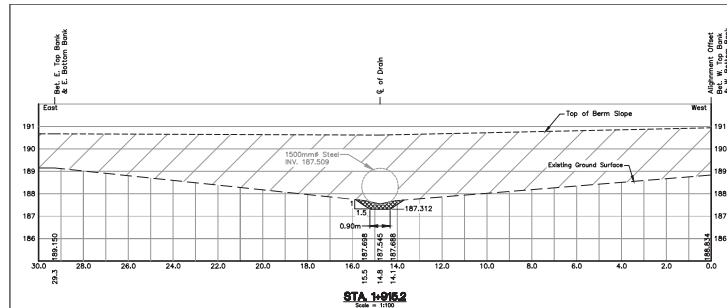
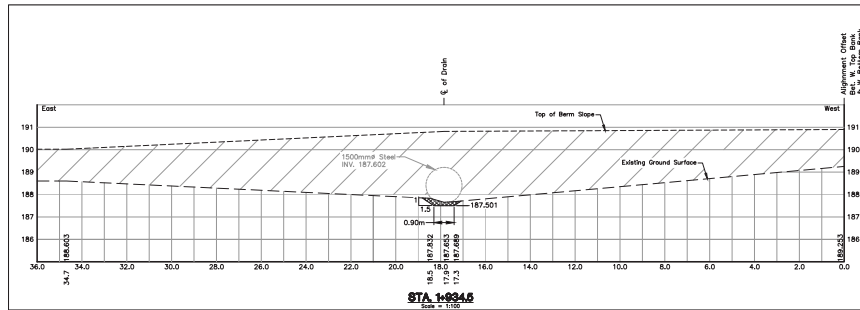
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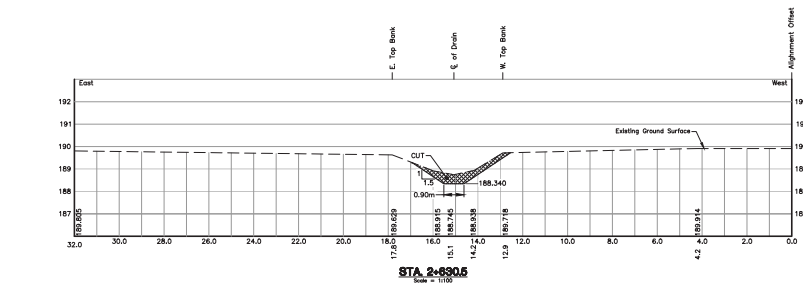
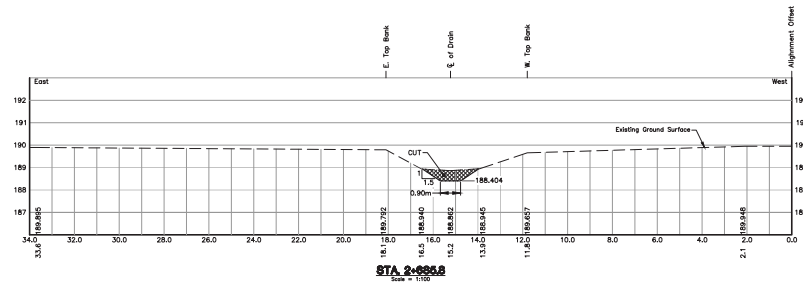
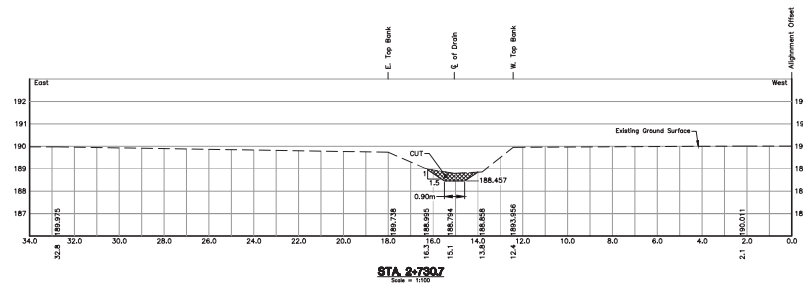
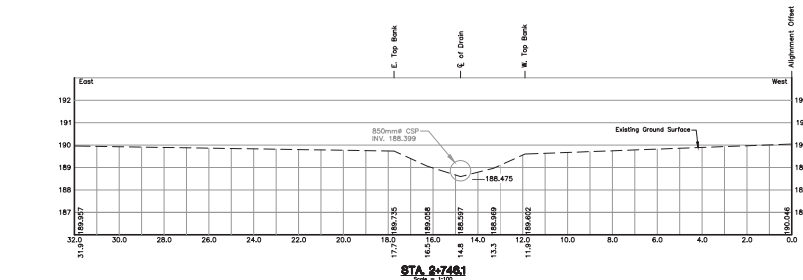
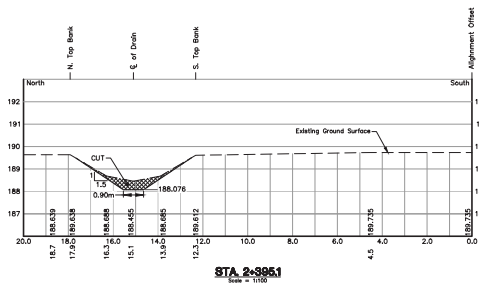
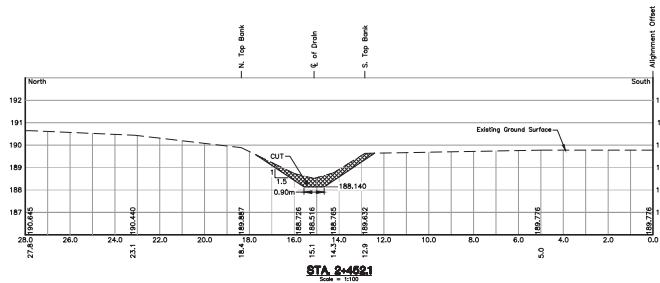
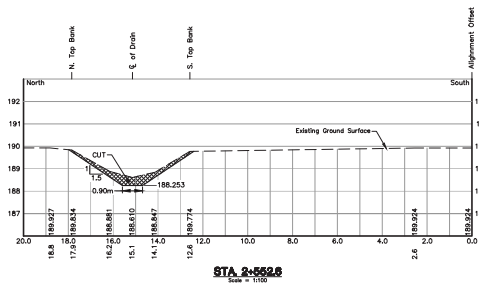
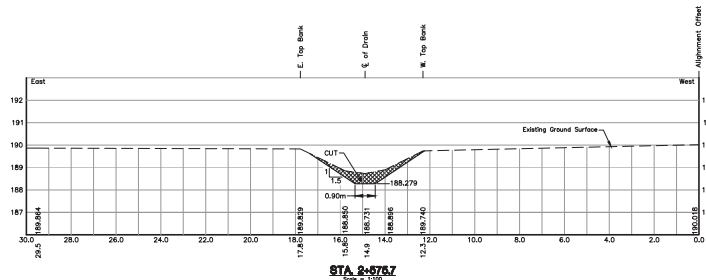
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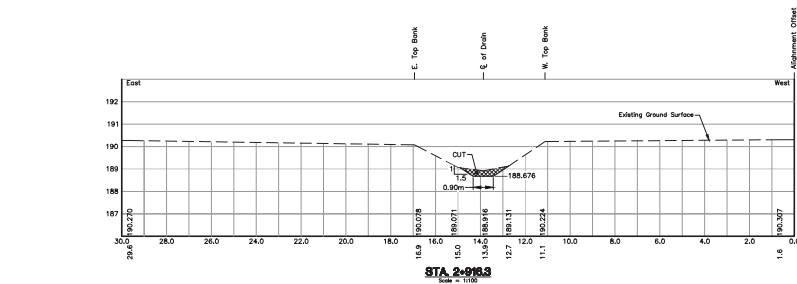
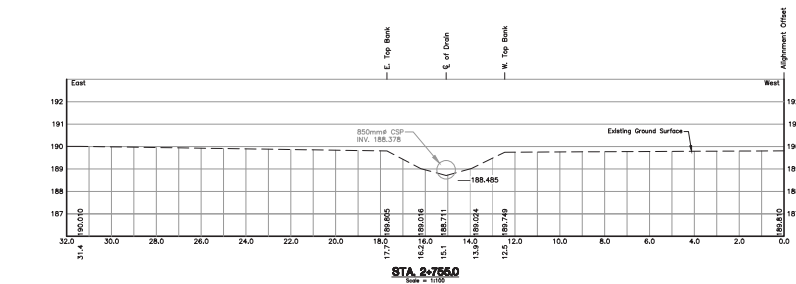
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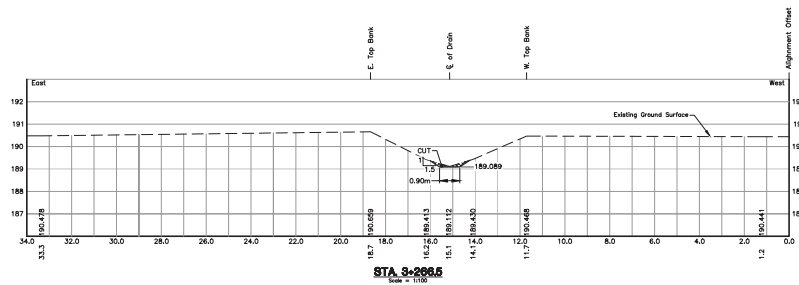
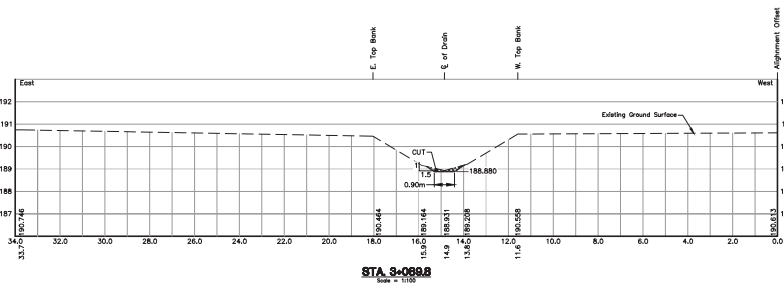
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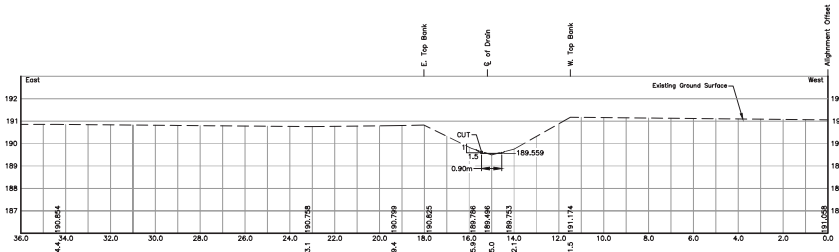
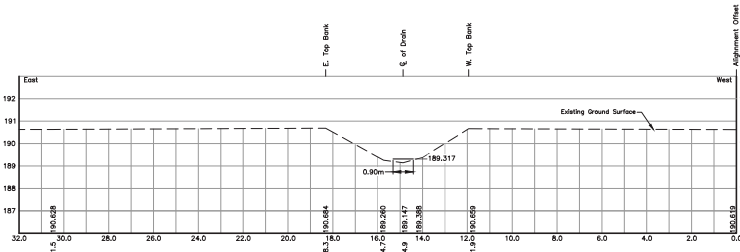
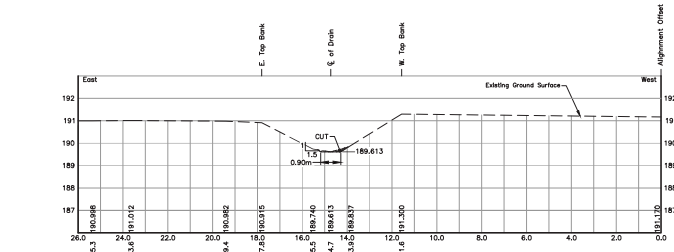
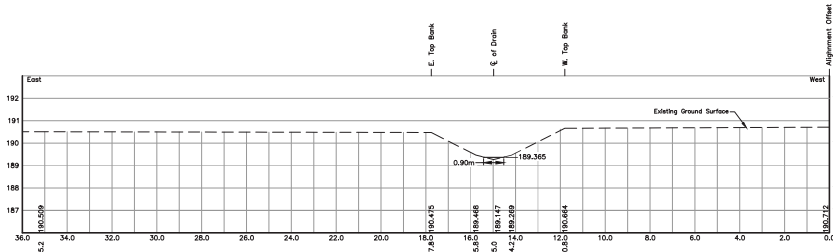
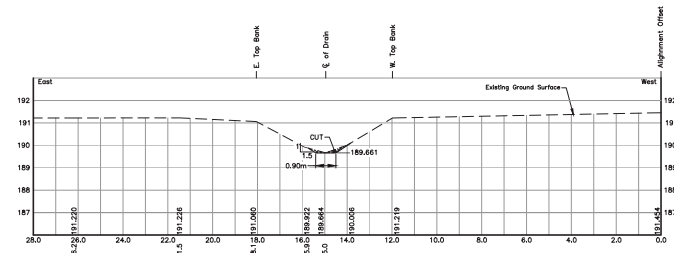
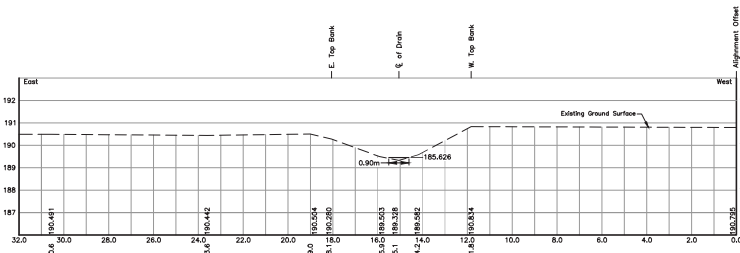
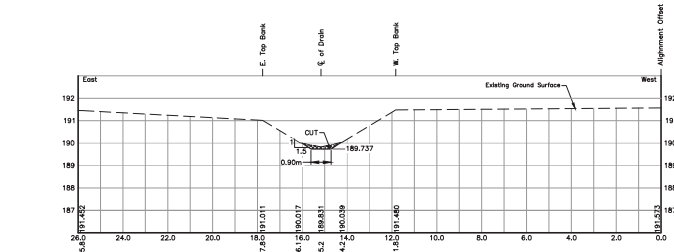
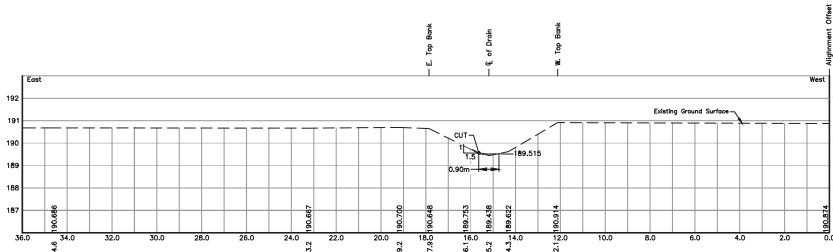
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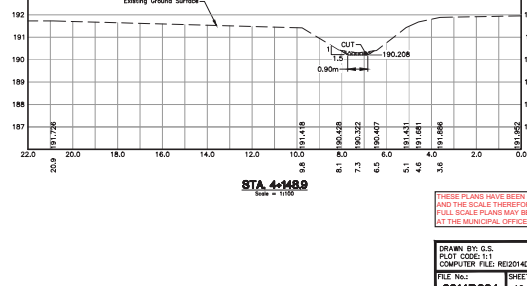
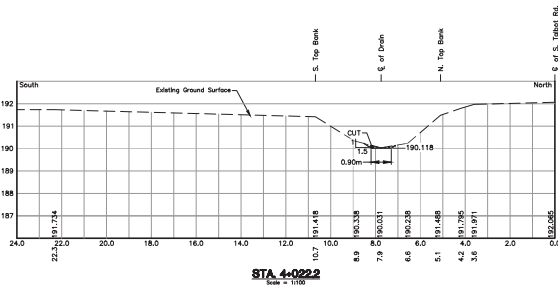
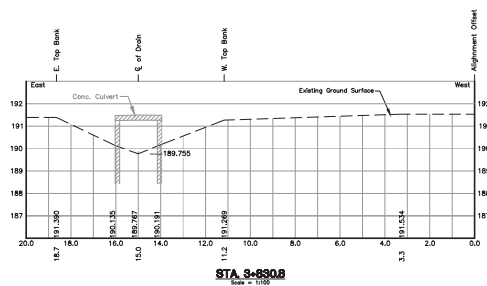
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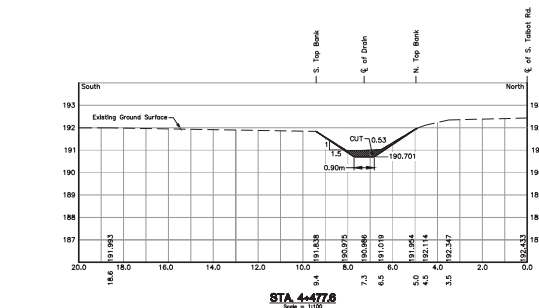
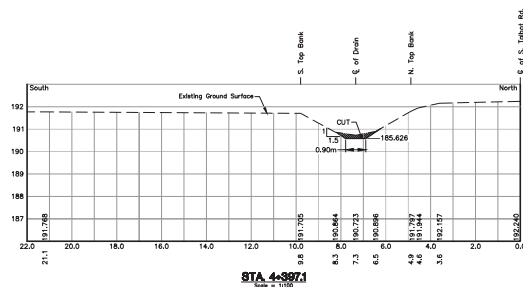
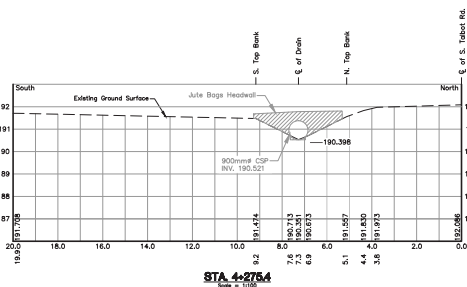
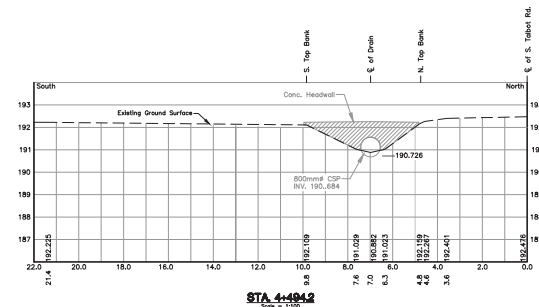
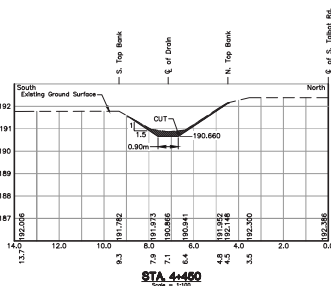
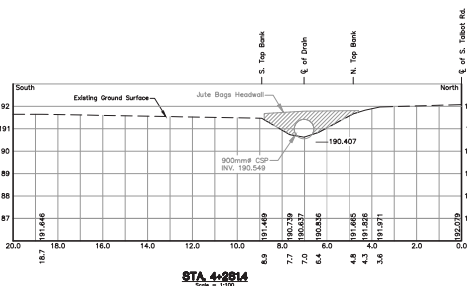
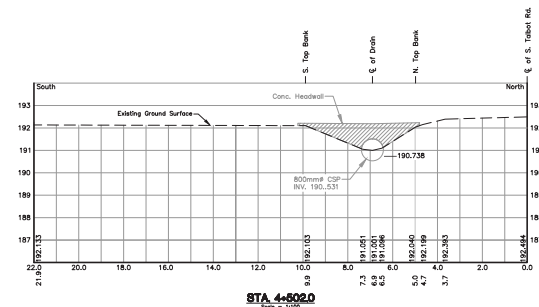
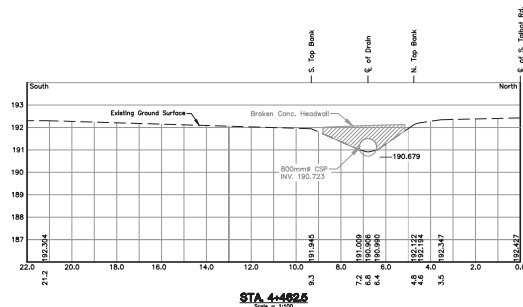
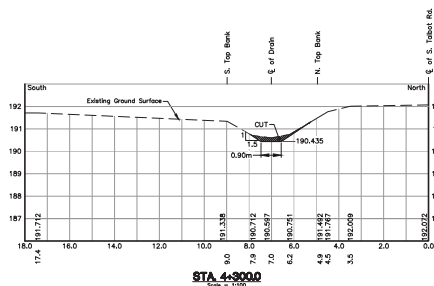
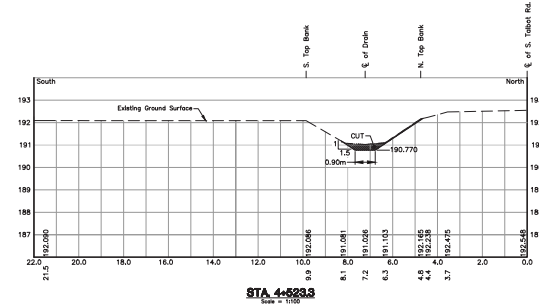
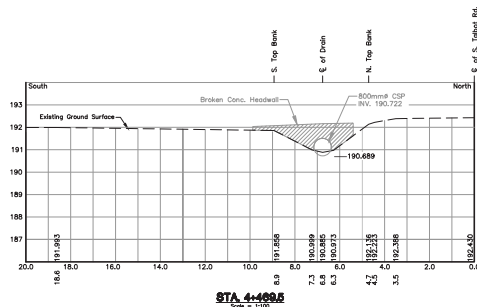
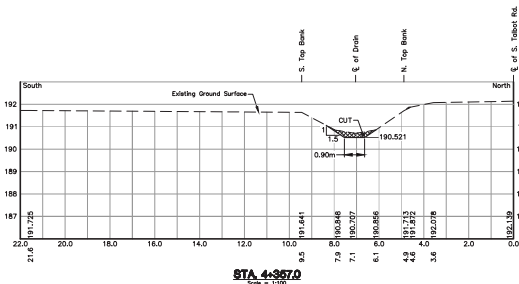
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DATE: 10/20/2014
SHEET NO.: 11 OF 15



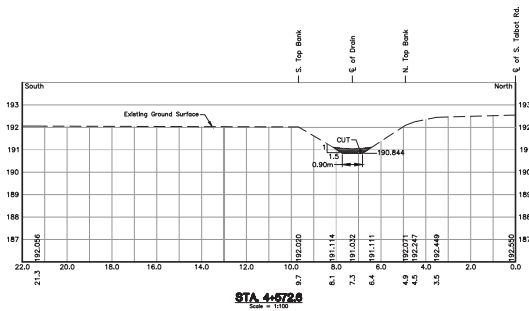
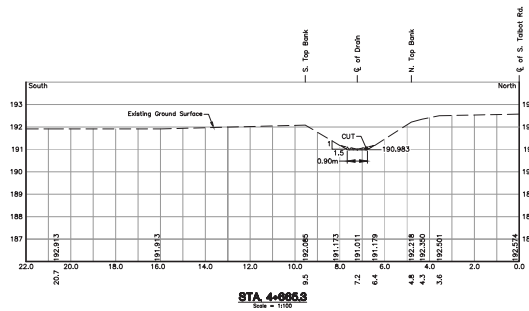
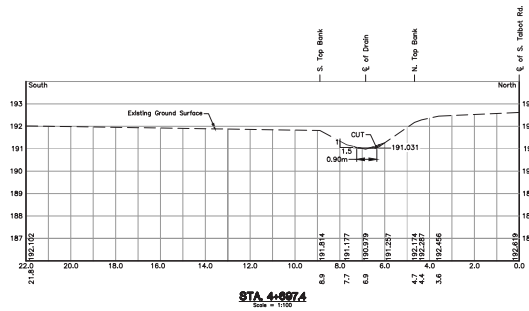
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