The Corporation of the Town of Tecumseh

By-Law Number 2023 - 063

Being a bylaw to provide for the repair and improvements to the East Townline Drain (Lower Portion Improvements)

Whereas the Council of The Corporation of the Town of Tecumseh (hereafter "Town") has been requested to provide for the repair and improvement of the East Townline Drain (Lower Portion Improvements);

And Whereas the Town procured a Drainage Report for the East Townline Drain (Lower Portion Improvements) and specifications from the consulting engineering firm of Dillon Consulting, dated April 14, 2023 (hereafter "Drainage Report");

And Whereas notice of a Public Meeting to hear comments from the affected property owners was given on Monday, May 8, 2023;

And Whereas a Public Meeting of Council was held on Tuesday, May 23, 2023, at 4:30 pm 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 East Townline Drain (Lower Portion Improvements) is desirable;

Now Therefore the Council of The Corporation of The Town of Tecumseh Enacts as follows:

1. **That** the Drainage Report providing for the repair and improvement of the East Townline Drain (Lower Portion Improvements), dated April 14, 2023, as prepared by the consulting engineering firm of Dillon Consulting 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 23rd day of May, 2023.

Gary McNamara, Mayor

Robert Auger, Clerk

Read a third and final time this Choose an item. day of Choose an item., 2023.

Gary McNamara, Mayor

Robert Auger, Clerk

DRAINAGE REPORT
FOR THE

EAST TOWNLINE DRAIN (LOWER PORTION) IMPROVEMENTS

IN THE
TOWN OF TECUMSEH

(FINAL-COUNCIL CONSIDERATION)
14 APRIL 2023

MARK D. HERNANDEZ, P.ENG.

FILE No. 20-2079
TECUMSEH FILE NO. E09ET(32)

DILLON CONSULTING

File No. 20-2079

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

DILLON CONSULTING

3200 Deziel Drive
Suite 608
Windsor, Ontario
Canada
N8W 5K8
Telephone
519.948.5000
Fax
519.948.5054

Drainage Report for the EAST TOWNLINE DRAIN (LOWER PORTION) IMPROVEMENTS In the Town of Tecumseh

Mayor and Council:

Instructions

The Municipality filed a request to repair and improve the East Townline Drain on the 8th July 2019. Council accepted the request under Section 78 of the Drainage Act and on 7th January 2020 appointed Dillon Consulting Limited to prepare a report.

Background

In 2013 and 2014, Manning Road Improvements Phase 1 was completed. This project consisted of the construction of the new pump station including the inlet and outlet structures for the East Townline Drain.

In 2015, a channel was constructed through Lakewood Park and was connected at the downstream end to the box culvert which conveys flows to the East Townline Drain Pump Station.

In 2021 and 2022, Phase 2 of the Manning Road Improvements was completed. Phase 2 primarily consisted of the enclosure and relocation of the East Townline Drain from north of St. Gregory's Road to the channel in Lakewood Park. The remaining section of open drain from St. Thomas to south of Riverside Drive was enclosed with a storm sewer that also flows to the East Townline Drain Pump Station.

Phase 3 of the Manning Road Improvements project will include the roadwork and other related surface works with timing of construction to be confirmed.

The purpose of this report is to incorporate the changes to the East Townline Drain under the Drainage Act which will include the relocation of the lower portion of drain to the east side of Manning Road (approximately 688 metres) and the enclosure of the drain upstream (approximately 287 metres).

Watershed Description

The East Townline Drain commences at the north side of County Road No. 42, and flows northerly along the west side of Manning Road (County Road No. 19) to a pump station north of Riverside Drive where it is pumped into Lake St. Clair. The total length is approximately 5,100 metres. The watershed area encompasses approximately 557.6 ha (1,404.4 acres) which consists of approximately 46.8 ha (115.5 acres) within the Town of Lakeshore and the remaining 510.8 ha (1,288.9 acres) within the Town of Tecumseh.

The lands comprising the watershed are of mixed agricultural, residential, commercial and light industrial land uses. There is little topographic relief. From the Ontario Soil Survey, the principle surficial soil in the study area is described as Brookston Clay with an area in the northerly section of the watershed described as Brookston Clay Sand Spot Phase. The soils are predominantly poorly drained clay.

The East Townline Drain provides outlet for the Antaya Drain, Baillargeon Drain, Cyr Drain, Manning Road Drain and several urban storm sewer systems. The watershed boundary has been expanded to include the lands in Block 'D'. Under frequent storm events, the Block 'D' lands drain through an urban storm system that outlets to Lake St. Clair via the East St. Louis Pump Station. During larger storm events, an overflow into the East Townline Drain at St. Thomas Street will be utilized to provide relief to the system. It should be noted that this does not reduce the capacity of the East Townline Drain as the timing of the peak flows from each system do not coincide.

Drain History

The recent history of Engineers' reports for the East Townline Drain follows:

- **13 February 2019 by Mark D. Hernandez, P. Eng.:** The report recommended the repair and improvement of the drain from County Road No. 42 to County Road No. 22 including multiple bridge replacements.
- **7 September 2012 by Tom H. Marentette, P.Eng.:** The report provided for removal and replacement of the existing pump station as well as demolition and removal of the existing bridge on Riverside Drive. Also, included was the supply and installation of concrete box culvert sections to connect the existing drain to the new pump station and improvements to the drain outlet on the shoreline of Lake St. Clair.
- **12 September 2005 by Bruce Crozier, P.Eng.:** The report provided for enclosing of the drain from the south side of Tecumseh Road northerly to a point north of St. Gregory's Road with a 3000 mm x 1800 mm precast concrete box culvert as part of the reconstruction of Manning and Tecumseh Roads.
- **5 May 2005 by Bruce Crozier, P.Eng.:** The report provided for enclosure of the drain from the Via Rail tracks southerly to a point north of County Road No. 22 with a 3000 mm x 1800 mm precast concrete box culvert to allow for reconstruction of that section of Manning Road.
- **17 April 1995 by Lou Zarlenga, P.Eng.:** The report provided for the partial enclosure of the drain from an existing 2400 mm diameter CSP, approximately 55 m south of the centerline of the Via Rail tracks to the north edge of Tecumseh Road.
- **18 January 1982 by L.G. Eansor, P.Eng.:** The report found the drain from County Road No. 42 to Lake St. Clair to be hydraulically adequate and in a good state of repair and requiring only minimal cleaning. Existing culverts were examined at that time and most were found to have adequate capacity. Deficient culverts were recommended for replacement. Some minor improvements to the pump were also recommended.

On-Site Meeting

An on-site meeting was held on 4 February 2020. A record of this meeting is provided in Schedule 'A', which is appended hereto.

Survey

A topographical survey of the existing drain and proposed drain realignment was completed in 2017. Our survey commenced at the north limit of the existing box culvert drain enclosure, located north of St. Gregory Road on the west side of Manning Road. The survey then proceeded downstream (north) along the existing alignment of the open drain to Riverside Drive. The work also included recording survey information of the existing bridges and drain tile outlets currently served by the drain.

Design Considerations

Due to the complexity of the existing drainage system north of County Road No. 22, a hydraulic model of the system was developed to assess the performance of the East Town Line Drain. A dynamic simulation model was utilized to model the proposed changes to the drain north of St. Gregory's Road. The model used the hydrologic input established from the baseline or existing condition hydrologic model to establish 'un-calibrated' dynamic system flows. The enclosure was analyzed for 1:5 year and 1:100 year storm events.

The East Townline Drain (Lower Portion) Improvements are intended to divert flows away from the residential area along the west side of Manning Road and allow for future road improvements. In addition, the open channel along the east side of Manning Road has been designed to retain the 1:100 year storm event. The open channel along the east side of Manning Road is existing and was designed and constructed by others. A new local sewer was constructed along the west side of Manning Road to continue to provide drainage to the homes and are protected with a backflow preventer at the confluence with the East Townline Drain.

Allowances

In accordance with Section 29 and 30 of the Drainage Act, no private lands have been damaged or taken as a result of the proposed drainage works. Any residential properties and grassed or landscaped areas disturbed as a result of this work will be restored to original conditions. Since the construction was completed and all costs were paid for by the Town of Tecumseh, there will not be Section 31 allowances provided for the East Townline Drain (Lower Portion) improvements. Therefore, no allowances have been included in this report.

Recommendations and Cost Estimate

A new covered drain in the form of a box culvert storm sewer was constructed along the west side of Manning Road from the existing enclosed drain approximately 223 metres south of St. Thomas Street to the new outlet structure into the Lakewood Park stormwater channel. We recommend that the new enclosed portion of drain on the west side of Manning Road from Station 0+687.7 to Station 0+975.2 be incorporated under Section 78 of the Drainage Act. We also recommend that the new stormwater channel on the east side of Manning Road from Station 0+000 to Station 0+687.7 and associated downstream outlet culvert structures and box culvert be incorporated under Section 78 of the Drainage Act.

We also recommend that the enclosed section of the existing East Townline Drain along the west side of Manning Road from St. Thomas Street north to the inlet structure at Municipal No. 157, be abandoned under Section 19 of the Drainage Act. The existing drain has been filled in and replaced with a new urban storm sewer. The local storm sewer outlets to the existing stormwater pump station via a new water quality unit and existing box culvert. A backflow preventer has been included at the connection to the existing box culvert. This work was completed as part of the enclosure and is now considered a town storm sewer and not part of the municipal drain.

In order for the cost of future maintenance works to be fairly proportioned against the lands and roads within the watershed that are affected by the East Townline Drain (Lower Portion) Improvements, we recommend that the new schedule of assessment included in this report be adopted and used for future maintenance. The new schedule, Schedule 'E', defines the lands and roads which are affected.

Based on our review of the history, the information obtained during the site meeting and our examination and analysis of the survey data, we recommend that the recently completed works on the East Townline Drain (Lower Portion) be incorporated as described below:

Item	Description	Amount
	EAST TOWNLINE DRAIN LOWER PORTION (STA. 0+000 TO STA. 0+687.7)	
1.	Strip and place topsoil, as follows:	
	a) From Station 0+040 to Station 0+687.7 strip topsoil (minimum 150 mm depth) across the width over the proposed stormwater channel and temporarily stockpile separately within the designated working corridors. Upon completion of excavation, spread a thin layer of salvaged topsoil a minimum 25 mm thickness over the banks of the new channel from Station 0+040 to Station 0+687.7.	$77,000.00
2.	Excavation and trucking of excavated materials, as follows:	
	a) Excavation of new stormwater channel from Station 0+040 to Station 0+687.7, totally approximately 648 lineal metres of drain.	$15,000.00
	b) Trucking and disposal of excavated material off-site.	$120,000.00
3.	Seeding of new stormwater channel banks, as follows:	
	a) Supply and placement of hydro-seed on new banks from Station 0+040 to Station 0+687.7.	$60,000.00
4.	Supply and install stone erosion protection (minimum 300 mm thickness) on channel banks complete with filter fabric underlay at the following locations:	

Item	Description	Amount
	a) Station 0+060 – Supply and install stone erosion protection around outlet of existing 300 mm diameter PVC pipe.	$1,000.00
	b) Station 0+544 - Supply and install stone erosion protection around outlet of existing 300 mm diameter HDPE pipe.	$1,000.00
	c) Station 0+596 - Supply and install stone erosion protection around outlet of existing 450 mm diameter PVC pipe.	$1,000.00
5.	Supply and installation of six (6) plunge pools at the following locations:	
	a) Station 0+085 to Station 0+095	$1,000.00
	b) Station 0+195 to Station 0+205	$1,000.00
	c) Station 0+290 to Station 0+300	$1,000.00
	d) Station 0+390 to Station 0+400	$1,000.00
	e) Station 0+493 to Station 0+503	$1,000.00
	f) Station 0+643 to Station 0+653	$1,000.00
6.	Supply and installation of stormwater channel outlet, as follows:	
	a) Supply and installation of 40 m of 3000 mm x 1800 mm concrete box culvert and 2400 x 1800 mm concrete box culvert including grate, increaser, elbow and connection to existing chamber. Work includes dewatering, maintenance of flows and diversion of water around work site.	$185,000.00
	b) Supply and installation of concrete weir at Station 0+046.	$2,000.00
	c) Supply and installation of stone retaining wall with decorative aluminum railings and concrete walkway at Station 0+040.	$80,673.00
7.	Engineering including design services.	$67,000.00
	SUB-TOTAL – LOWER PORTION COSTS	**$615,673.00**

	EAST TOWNLINE DRAIN ENCLOSURE (STA. 0+687.7 TO STA. 0+975.2)	
8.	Brushing and grubbing of the drain from Station 0+765 to Station 0+975.2 including removal off-site with trimming and/or removal of existing trees within the drain as required to accommodate the drainage works. The work shall include disposal of brush to be trucked off-site.	$1,500.00
9.	Remove all vegetation, organic debris and topsoil from the existing drain slopes from Station 0+765 to Station 0+975.2 including hauling. Any excess materials to be hauled away off-site.	$2,000.00
10.	Removals, as follows:	
	d) Removal and disposal of existing concrete bridge at St. Thomas Street including backfilling and restoration. Salvage existing steel plate and deliver to Town's public works yard.	$10,000.00
	e) Removal and disposal of existing rip rap and gabion baskets from existing box culvert outlet and stormwater channel inlet.	$200.00
11.	Drain enclosure installation as follows:	
	a) Supply and installation of 287.5 m of 3000 mm x 1800 mm concrete box culvert including bends, transitions, maintenance tees, catchbasins, boulevard catchbasins, private storm connections and connection to existing box culvert. Work includes dewatering, maintenance of flows and diversion of water around work site.	$1,509,400.00
	b) Supply and installation of precast concrete outlet structure with galvanized grate and handrail.	$25,000.00
	c) Supply and installation of stone erosion protection (min. 300 mm thickness)(approx. 376 m^2) with filter fabric underlay and cable concrete apron (approx. 187 m^2).	$72,000.00
12.	Temporary silt control measures during construction	$800.00
	SUB-TOTAL – DRAIN ENCLOSURE COSTS	**$1,620,900.00**
13.	Survey, Report, Assessment and Final Inspection	$62,500.00
14.	Expenses and incidentals	$2,500.00
15.	ERCA application review and permit fee	$800.00
	TOTAL ESTIMATE	**$2,302,373.00**

The estimate provided in this report was prepared according to prices provided in the successful documents. Unforeseen costs additional to the original tender have also been included.

Assessment of Costs

The total individual assessments are generally comprised of up to three (3) separate assessment components including:

i. *Benefit (advantages relating to the betterment of lands, roads, buildings, or other structures resulting from the improvement to the drain).*

ii. *Outlet Liability (part of cost required to provide outlet for lands and roads).*

iii. *Special Benefit (additional work or feature that may not affect function of the drain).*

We have assessed the above estimated costs against the affected lands and roads as shown in Schedule 'B' under "Value of Special Benefit" and "Value of Outlet". Details of Special Benefit assessment have been provided in Schedule 'D.'

Assessment Rationale

Special Benefit assessments shown in Schedule 'C' were derived as follows:

1. As the proposed works are directly a result of the proposed road reconstruction and realignment, all associated construction and engineering costs for preparation and consideration of this report shall be assessed 100% against the Town of Tecumseh, as the Road Authority in accordance with Section 26 of the Drainage Act.

Future Maintenance of East Townline Drain Downstream Outlet Culvert Structures (Sta. 0+000 to Sta. 0+040)

After completion, the outlet culvert structures of the East Townline Drain shall be maintained by the Town of Tecumseh and assessed 100% to the Town of Tecumseh Road Authority.

Future Maintenance of East Townline Drain Lower Portion (Sta. 0+040 to Sta. 0+687.7)

After completion, the lower open portion of East Townline Drain shall be maintained by the Town of Tecumseh at the expense of the lands and roads herein assessed in Schedule E," and in the same relative proportions subject, of course, to any variations that may be made under the authority of the Drainage Act. The assessments are based on an arbitrary amount of $20,000.00.

Future Maintenance of East Townline Drain Enclosure (Sta. 0+687.7 to Sta. 0+975.2)

After completion, the enclosed portion of the East Townline Drain shall be maintained by the Town of Tecumseh and assessed 100% to the Town of Tecumseh Road Authority.

For frequent events, Block 'D' is serviced by an urban storm sewer system which outlets into the East St. Louis Pump Station and during large storm events will overflow into the East Townline Drain (Lower Portion) through an overflow pipe at St. Thomas Street. As a result, the lands and roads that make up Block 'D' have been assessed at a reduced rate.

We recommend that the costs of future works of repair and maintenance of the East Townline Drain (Lower Portion) Improvements be carried out as described below:

1. Tile inlet repairs and stone erosion protection shall be assessed 100% against the property on which the tile or surface water inlet serves.
2. Road crossings shall be maintained at the sole expense of the applicable Road Authority under Section 26 of the Drainage Act and shall be a non-proratable assessment.

Drawings & Specifications

Attached to this report is "Schedule F" which is the specifications setting out the details of the recommended works and "Schedule G" which represents the following drawings that are also attached to this report:

Page 1 of 5: **Watershed Plan**
Page 2 of 5: **Parcel Information Tables**
Page 3 of 5: **Relocation of Lower Drain Portion Plan & Profile**
Page 4 of 5: **Drain Enclosure Plan & Profile**
Page 5 of 5: **Outlet Details**

Construction and Design Drawings

The work included in this report for the proposed drain enclosure has been completed under the contract for the Manning Road Improvements Phase 2. Drawings and specifications prepared for the Manning Road construction must adhere to the new drain grade, alignment, sizes, materials, location and, maintenance holes shown in this drainage report and shall be in general compliance with this report.

The drawings associated with the existing Lakewood Park Stormwater Channel prepared by Odan/Detech that represent the relocation of the lower drain portion have been appended to this report.

Approvals

The construction and/or improvement to a drainage works, including repair and maintenance activities, and all operations connected therewith are subject to the approval, inspection, by-laws and regulations of all Municipal, Provincial, Federal and other authorities having jurisdiction in respect to any matters embraced by the proposed works. Prior to any construction or maintenance works, the Municipality or proponent designated on the Municipality's behalf shall obtain all required approvals/permits and confirm any construction limitations including timing windows, mitigation/off-setting measures, standard practices or any other limitations related to in-stream works.

Respectfully submitted,

DILLON CONSULTING LIMITED

Mark D. Hernandez, P.Eng.
MDH:wlb

TOWN OF Tecumseh
ONTARIO · CANADA

SIGN IN SHEET – ETLD – SITE MEETING

Feb 4, 2020
~~January 20, 2020~~

NAME	ADDRESS	PHONE	EMAIL
Stephen/Theresa Smith	323 Lakewood	519-956-7276	
Terri & Zoran Pavlovic	304 Lakewood	519-979-3868	
Walter Murphy	12135 Interraction	519 735 8017	
Mark Fishleigh	County of Essex		
John Copland	171 Manning	519-300-4843	
Dennis Menard	339 MANNING	519-735-0173	
Morris Kolody	350 LAKEWOOD CT	5199798459	MAMKOLODY@SYMPATICO.CA
Daniel/Kerri Gagnon	345 Manning Rd	(519) 903-4660	
Adel Jasmin	12333 Candlewood Drive, N9K 1B6	(519) 257-9494	lusmyn@gmail.com
Gregory Peck	141 Manning	519 919 6407	grespeck1952@gmail.com
Coleen Tot	112 Hayes Ave	226 787-5602	mcetote@gmail.com
James Sylvestre	1865 Manning Rd	519 7355019	jimjean44@gmail.com
Karl Klay	187 Manning Rd	5195679784	forestow19@gmail.com
PETER/IRENE KHOURY	373 Manning Rd	519 735-5158	couragemom@hotmail.com
Marc Vickerd	12861 LANOUE ST	519 566 5708	vickerd1@sympatico.ca
Vince Perta	253 Manning Rd	519 735 4773	vperta@cogeco.ca
Rick DeMarse	1754 LESPERANCE	519 735 0065	rddemarse@gmail.com
Brad Lewis	12930 LANOUE ST	519-979-7942	lewisbrad1@hotmail.com

TOWN OF Tecumseh
ONTARIO · CANADA

Sign-in Sheet - East Townline Drain - Site Meeting

February 4, 2020

NAME	ADDRESS	PHONE	EMAIL
Angel Leon	1622 Heatherglen Dr	226-246-5970	leonange@gmail.com
Amanda & John Pignanelli	241 Manning Rd	519-965-1979	pignanellij@hotmail.com
ROBERT NG	1653 HEATHERGLEN Dr.	519-965-9962	—
BRIAN LUXFORD	2021 LESPERANCE RD	519-735-0151	
ANNE-MARIE BEAUDET	356 LAKEWOOD CRES	226-344-3833	annemarie.beaudet@hotmail.com
Bill Nancy Ruch	163 Manning Rd.	519979-8476	nanaruch@hotmail.com.
Rick Macdonald	1778 LESPERANCE	519-735-8822	
BARB BIGGAR	1778 LESPERANCE	519-735-8362	
Pam Jamm + Peter Kaczmarek	12843 Lanoue St.	2263480026	
Miro Tot	112 Hayes Ave	226-787-2643	miro.tot@gmail.com
PAUL GROFF	12922 Lemire St	519-980-6542	paulgretfie@gmail.com
DENIS MAYEA	1960 MANNING RD	519-735-7915	
Dorothy Souchuk	12617 Lanoue	(519)735-7825	
JANE WEIR	1504 HEATHERGLEN	519.735.9381	JWEIRNOT@YAHOO.CA

TOWN OF Tecumseh
ONTARIO · CANADA

SIGN IN SHEET – ETLD – SITE MEETING

Feb 4, 2020
~~January 20, 2020~~

NAME	ADDRESS	PHONE	EMAIL
M-A Gagnier	2306 Lesperance	735-5722	
Jill Fiorito	Town of Lakeshore	728-2900	
Terri Gagnon	345 Manning	519 564 4660	
Camille Jacques	12817 Lemire St	519-9967556	

Meeting Minutes

Subject: East Townline Drain (North of 22)

Date: February 4, 2020

Location: Tecumseh Arena, Horwood Room

Our File: 20-2079

Distribution: Distribution

Attendees

Sam Paglia	Town of Tecumseh
John Henderson	Town of Tecumseh
Cameron Hedges	Town of Tecumseh
Kristine Wilkinson	Dillon Consulting Limited
Landowners	See Separate Sign In Sheets

Notes

Item	Discussion	Action by
1.	During construction the town has indicated that there may be opportunity for landowners to install rear yard catch basins while the drain is being enclosed.	
2.	Question: Can the Town restrict future development along the East Townline Drain?	
2.1.	The Town explained that any proposed development within the watershed will be restricted to the allowable release rates established by the Town.	
3.	Question: What will happen to the houses on Hayes when it rains?	
3.1.	The Town has indicated that the topography of the land is such that the elevations of the houses in that subdivision are higher than the drain, and that the developer has installed stormwater management facilities to service the residents within the subdivision.	
4.	Question: what is the Lakewood Park Stormwater Channel storage capacity?	
4.1.	The Town and Dillon indicated multiple times that the capacity of the channel and the surrounding park is such that it can contain the flow volumes that make it to the channel during a 100 year storm event.	
5.	Question: When will construction begin?	
5.1.	The start date of this project is dependent on funding, it is anticipated that construction will begin the next few years.	
6.	Question: How is this project going to be funded?	
6.1.	The Town is funding 100% of this projects with reserves, however if during the drainage report process it is established that a landowner is provided with a special benefit due to the enclosure, those costs will be assessed to landowners after construction is completed.	
7.	Question: Why wait a year to begin construction?	
7.1.	The Town has indicated that the drainage process takes time, and that it must be completed prior to construction commencing.	

Item	Discussion	Action by
8.	What section of the Drainage Act does this report fall under?	
8.1.	Section 78 “Improvement”	
9.	Question: Are there calculations completed along the drain to establish flow rates to ensure volume and rate of flow are sufficient to the outlet?	
9.1.	Dillon will complete these calculations, however they are not included in report.	

Errors and/or Omissions

These minutes were prepared by Kristine Wilkinson, who should be notified of any errors and/or omissions.

"SCHEDULE C"
SCHEDULE OF ASSESSMENT
EAST TOWNLINE DRAIN (LOWER PORTION) IMPROVEMENTS
TOWN OF TECUMSEH

MUNICIPAL LANDS:

Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
Manning Road	12.60	5.10	Town of Tecumseh	$2,302,373.00	$0.00	$0.00	$2,302,373.00
Total on Municipal Lands				$2,302,373.00	$0.00	$0.00	$2,302,373.00
TOTAL ASSESSMENT				**$2,302,373.00**	**$0.00**	**$0.00**	**$2,302,373.00**

"SCHEDULE D"
DETAILS OF SPECIAL BENEFIT
EAST TOWNLINE DRAIN (LOWER PORTION) IMPROVEMENTS
TOWN OF TECUMSEH

SPECIAL BENEFIT ASSESSMENT
(GENERAL DESCRIPTION OF SPECIAL BENEFIT)

Owner	Item Description	Estimated Cost	Cost of Report	Special Benefit
Manning Road Town of Tecumseh Road Authority	Manning Road Enclosure and Lakewood Park Stormwater Channel	$2,236,573.00	$65,800.00	$2,302,373.00
Total Special Benefit Assessement.....		$2,236,573.00	$65,800.00	$2,302,373.00
TOTAL SPECIAL BENEFIT ASSESSMENT		**$2,236,573.00**	**$65,800.00**	**$2,302,373.00**

"SCHEDULE E"
SCHEDULE OF ASSESSMENT FOR FUTURE MAINTENANCE
FOR THE
EAST TOWNLINE DRAIN LOWER PORTION (STA. 0+000 TO STA. 0+687.7)
TOWN OF TECUMSEH

TOWN OF TECUMSEH

MUNICIPAL LANDS:

Description			Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
County Road No. 19			9.00	3.64	County of Essex	$0.00	$41.00	$243.00	$284.00
County Road No. 22			17.60	7.12	County of Essex	$0.00	$79.00	$475.00	$554.00
Desro Drive			2.65	1.07	Town of Tecumseh	$0.00	$12.00	$72.00	$84.00
Jamsyl Drive			2.37	0.96	Town of Tecumseh	$0.00	$11.00	$64.00	$75.00
Sylvestre Drive			6.70	2.71	Town of Tecumseh	$0.00	$30.00	$181.00	$211.00
Westlake Drive			0.80	0.32	Town of Tecumseh	$0.00	$4.00	$22.00	$26.00
Manning Road			12.60	5.10	Town of Tecumseh	$0.00	$754.00	$347.00	$1,101.00
Block 'A'									
Lands			164.37	66.52		$0.00	$2,247.00	$2,664.00	$4,911.00
Roads			13.18	5.33	Town of Tecumseh	$0.00	$137.00	$356.00	$493.00
Block 'B'									
Lands			101.70	41.16		$0.00	$275.00	$1,648.00	$1,923.00
Roads			19.57	7.92	Town of Tecumseh	$0.00	$88.00	$529.00	$617.00
Block 'C'									
Lands			186.80	75.60		$0.00	$505.00	$3,027.00	$3,532.00
Roads			43.24	17.50	Town of Tecumseh	$0.00	$195.00	$1,168.00	$1,363.00
Block 'D' (Overflow)									
Lands			193.16	78.17		$0.00	$26.00	$157.00	$183.00
Roads			50.16	20.30	Town of Tecumseh	$0.00	$11.00	$68.00	$79.00
570-47900	1	Pt. Lot 156	6.24	2.53	County of Essex	$0.00	$6.00	$34.00	$40.00
Total on Municipal Lands (Town of Tecumseh).....						$0.00	$4,421.00	$11,055.00	$15,476.00

PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:

Roll No.	Con.	Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
570-47903	1	Pt. Lot 156 RP12R10051 Pts. 3,4,11,12,17, 18,25&26	2.42	0.98	401 Real Estate Trust Inc.	$0.00	$2.00	$15.00	$17.00
570-47904	1	Pt. Lot 155 & 156 RP12R18783 Pts. 1 &2	2.16	0.87	Sync Synergy Inc.	$0.00	$2.00	$14.00	$16.00
570-47810	1	Pt. Lots 154&155 RP12R14005 Pts. 25&26	2.00	0.81	401 Real Estate Trust Inc.	$0.00	$2.00	$14.00	$16.00
570-47812	1	Pt. Lot 155 RP12R16351 Pts. 1&2	1.27	0.51	Team Goron Inc.	$0.00	$2.00	$12.00	$14.00
570-47815	1	Pt. Lot 155 RP12R17521 Pts. 1&2	1.62	0.66	JD & DD Enterprises Inc.	$0.00	$2.00	$13.00	$15.00
570-47835	1	Pt. Lot 155 RP12R19729 Pts. 3,9,10,11,15 &16	2.00	0.81	1859283 Ontario Inc.	$0.00	$2.00	$14.00	$16.00
570-06500	2	Pt. Lot 153, Plan 395,Pt. Lot 5	11.41	4.62	Fairlane Developments Inc.	$0.00	$10.00	$62.00	$72.00
570-05500	-	Plan 395, Pt. Lot 6	0.71	0.29	Danny & Domenica Bechara	$0.00	$2.00	$10.00	$12.00

Roll No.	Con.	Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
570-05600	-	Plan 395, N. Pt. Lot 6 RP12R2979 Pt. 1	0.69	0.28	Normand L. & Rosemary A. Kennette	$0.00	$2.00	$10.00	$12.00
570-05601	-	Plan 395, N. Pt. Lot 6 RP12R2979 Pt. 2	0.81	0.33	James A. & Ellen Desjardins	$0.00	$2.00	$10.00	$12.00
570-05700	2	Plan 395, Pt. Lot 5 RP12R16258 Pts. 1&3	2.54	1.03	Philippe J. & Maureen A. LeBlanc	$0.00	$3.00	$15.00	$18.00
570-05800		Plan 395, Pt. Lot 5	1.47	0.59	Susan G. Fitzpatrick	$0.00	$2.00	$12.00	$14.00
570-06000		Plan 395, Pt. Lot 5 RP12R27334 Pts. 1&2	2.88	1.17	Bernard J. & Diana L. McGraw	$0.00	$3.00	$16.00	$19.00
570-04410		Plan 395, Pt. Lot 6	3.99	1.61	1046399 Ontario Ltd.	$0.00	$4.00	$22.00	$26.00
570-04092		Plan 395, Pt. Lot 6	0.80	0.32	Rocco & Anna Lecce	$0.00	$2.00	$10.00	$12.00
570-47920	2	Pt. Lot 155 RP12R13736 Pts. 3&6	0.54	0.22	Pahal Group Inc.	$0.00	$1.00	$8.00	$9.00
570-47916	1	Pt. Lot 156 RP12R13736 Pts. 2&5	0.59	0.24	Sersa Holdings Inc.	$0.00	$1.00	$9.00	$10.00
570-47914	1	Pt. Lot 156 RP12R13736 Pts. 1&4	0.48	0.19	Guy Mantha & Cheryl Demarse	$0.00	$1.00	$8.00	$9.00
570-47910	2	Pt. Lot 156 RP12R12971 Pts. 1&2	0.49	0.20	Teddan Investments Inc.	$0.00	$1.00	$8.00	$9.00
570-47909	2	Pt. Lot 156 RP12R12796 Pts. 2&3	0.49	0.20	Vortex Snow Removal Inc.	$0.00	$1.00	$8.00	$9.00
570-47905	2	Pt. Lot 156 RP12R10047 Pts. 1&2	1.75	0.71	2860606 Ontario Inc.	$0.00	$2.00	$13.00	$15.00
570-48000	2	Pt. Lot 155 & 156 RP12R9267 Pt. Pt. 2	8.84	3.58	Geetinder K. & Balbir S. Kooner	$0.00	$8.00	$48.00	$56.00
570-48005	1	Pt. Lot 156 RP12R18001 Pts. 1-9	2.76	1.12	1403440 Ontario Inc.	$0.00	$3.00	$16.00	$19.00
570-47880	1	Pt. Lot 155 RP12R21309 Pts. 1-4	1.76	0.71	2516630 Ontario Inc.	$0.00	$2.00	$13.00	$15.00
570-47890	1	Pt. Lot 155 RP12R14115 Pts. 1&2	1.07	0.43	2679093 Ontario Ltd.	$0.00	$2.00	$11.00	$13.00
570-47895	1	Pt. Lot 155 RP12R14115 Pts. 3&4	0.67	0.27	Jamsyl Group Inc.	$0.00	$2.00	$10.00	$12.00
570-47894	1	Pt. Lot 155 RP12R15944 Pts. 1&2	2.06	0.83	2221836 Ontario Ltd.	$0.00	$2.00	$14.00	$16.00

Roll No.	Con.	Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
570-48114	1	Pt. Lot 155 & 156 RP12R16840 Pts. 2&6	0.78	0.32	2626637 Ontario Inc.	$0.00	$2.00	$10.00	$12.00
570-48112	1	Pt. Lot 155 & 156 RP12R16840 Pts. 1&5	0.78	0.32	Jamsyl Group Inc.	$0.00	$2.00	$10.00	$12.00
570-48110	1	Pt. Lot 155 & 156 RP12R14005 Pts. 44-46&48	2.79	1.13	Jamsyl Group Inc.	$0.00	$3.00	$16.00	$19.00
570-48120	1	Pt. Lot 155 & 156 RP12R14005 Pt. Pts. 42&43	2.12	0.86	Jamsyl Group Inc.	$0.00	$2.00	$14.00	$16.00
570-48300	1	Pt. Lot 156 RP12R13139 Pts. 1-4	6.18	2.50	Storage Vault Canada Inc.	$0.00	$6.00	$33.00	$39.00
570-48200	2	Pt. Lot 156 RP12R8134 Pt. 1	0.79	0.32	851381 Ontario Ltd.	$0.00	$2.00	$10.00	$12.00
570-48350	1	Pt. Lot 156	3.83	1.55	JSNC Holdings Inc.	$0.00	$3.00	$21.00	$24.00
570-48380	1	Pt. Lot 156	1.03	0.42	Jamsyl Group Inc.	$0.00	$2.00	$11.00	$13.00
570-48400	2	Pt. Lot 155 & 156 RP12R9571 Pt. 1	1.45	0.59	2211211 Ontario Limited	$0.00	$2.00	$12.00	$14.00
570-48403	2	Pt. Lot 155 RP12R12676 Pts. 1-4	0.95	0.38	Marack Holdings Incorporated	$0.00	$2.00	$11.00	$13.00
570-48405	1	Pt. Lot 156 RP12R13121 Pts. 2&4	0.59	0.24	CLK Machining Ltd.	$0.00	$1.00	$9.00	$10.00
570-48406	1	Pt. Lot 156 RP12R13121 Pts. 1&3	0.89	0.36	1560896 Ontario Inc.	$0.00	$2.00	$11.00	$13.00
570-48407	2	Pt. Lot 155 RP12R12496 Pts. 6&7	0.49	0.20	7264119 Canada Corporation	$0.00	$1.00	$8.00	$9.00
570-48139		RP12R14315 Pts. 19-22	0.75	0.30	2402448 Ontario Inc.	$0.00	$2.00	$10.00	$12.00
570-48409	2	Pt. Lot 156 RP12R15377 Pts. 1,4&5	0.55	0.22	Catherine L. & David DeSantis	$0.00	$1.00	$9.00	$10.00
570-48410	1	Pt. Lot 156 RP12R12489 Pts. 2&3	0.58	0.23	J Y International Inc.	$0.00	$1.00	$9.00	$10.00
570-48415	2	Pt. Lot 156 RP12R12489 Pts. 1&4	0.87	0.35	Jamsyl Limited Partnership	$0.00	$2.00	$11.00	$13.00
570-48420	1	Pt. Lot 155 RP12R9983 Pts. 1&2	2.04	0.83	DC Holdings Ltd.	$0.00	$2.00	$14.00	$16.00
570-48430	2	Pt. Lot 155 & 156 RP12R11362 Pts. 1-3	1.67	0.68	Jamsyl Limited Partnership	$0.00	$2.00	$13.00	$15.00

Roll No.	Con.	Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
570-48600	3	S. Pt. Lot 156	0.50	0.20	Harbans Budwal	$0.00	$1.00	$8.00	$9.00
570-48810	3	Pt. Lot 155 RP12R9429 Pts. 1&2	0.59	0.24	Union Gas Ltd.	$0.00	$1.00	$9.00	$10.00
570-03100	3	Pt. Lot 152 & 153 RP12R25820 Pts. 1-3	4.36	1.76	Brian J. Berry	$0.00	$4.00	$24.00	$28.00
570-03101	3	Pt. Lot 152 RP12R1289 Pts. 1-3	0.31	0.13	Cassandra L. Catalanc	$0.00	$1.00	$5.00	$6.00
570-49000	3	Pt. Lot 154 & 155	3.16	1.28	Herbert A. & Mary J. Drew	$0.00	$3.00	$17.00	$20.00
570-49100	3	Pt. Lot 156	4.70	1.90	Garry W. Leclair	$0.00	$4.00	$25.00	$29.00
570-00699	3	Pt. Lot 153 RP12R11508 Pt. Pt. 1	1.34	0.54	James Sylvestre Developments Ltd.	$0.00	$2.00	$12.00	$14.00
570-00100	12	Gore 156 RP12R16731 Pts. 3,5&6	0.87	0.35	Elie Alagha	$0.00	$2.00	$11.00	$13.00
570-00101	1	Pt. Lot 156 RP12R16731 Pts. 4,7&8	0.39	0.16	Kartar & Company Ltd.	$0.00	$1.00	$6.00	$7.00
570-00300	3	S. Pt. Lot 153 RP12R8739 Pt. 1	0.43	0.17	Bradley J. Chauvin & Ruth A. Chittle	$0.00	$1.00	$7.00	$8.00
240-09200	-		6.80	2.75	Via Rail Canada Inc.	$0.00	$18.00	$110.00	$128.00
590-01100			9.00	3.64	Canadian Pacific Railway	$0.00	$24.00	$146.00	$170.00
590-00500			32.32	13.08	Hydro One Networks Inc.	$0.00	$29.00	$175.00	$204.00
570-00200	1	Pt. Lot 156 RP12R16731 Pt. 2	5.83	2.36	11662724 Canada Ltd.	$0.00	$5.00	$31.00	$36.00
570-48900	3	Pt. Lot 154 & 155 RP12R5639 Pt. 1	27.70	11.21	James Sylvestre Development Ltd.	$0.00	$25.00	$150.00	$175.00
570-48950	3	Pt. Lot 153 RP12R12424 Pt. 1	10.29	4.16	James Sylvestre Development Ltd.	$0.00	$9.00	$56.00	$65.00
570-48500	3	Pt. Lot 155 & 156	32.08	12.98	James Sylvestre Development Ltd.	$0.00	$29.00	$173.00	$202.00
570-48408	1	Pt. Lot 155 & 156 RP12R13139 Pts. 5,6,8-17	3.76	1.52	James Sylvestre Development Ltd.	$0.00	$3.00	$20.00	$23.00
570-48301	1	Pt. Lot 156 RP12R13139 Pt. 7	3.12	1.26	Jamsyl Group Inc.	$0.00	$3.00	$17.00	$20.00
570-48100	2	Pt. Lot 155 & 156 RP12R14005 Pts. 47,49-53	8.89	3.60	James Sylvestre Development Ltd.	$0.00	$8.00	$48.00	$56.00
570-48050	1	Pt. Lot 155 RP12R19278 Pts. 16&18	1.61	0.65	James Sylvestre Development Ltd.	$0.00	$2.00	$13.00	$15.00
570-47825	1	Pt. Lots 154 & 155 RP12R20993 Pts. 1,2,3,4&8	4.50	1.82	2292093 Ontario Inc.	$0.00	$4.00	$24.00	$28.00
570-47850	1	Pt. Lots 154 & 155 RP12R19729 Pts. 4,7,18-26&31	7.09	2.87	Jamsyl Group Inc.	$0.00	$6.00	$38.00	$44.00

Roll No.	Con.	Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
570-48130	1	Pt. Lot 155 RP12R14005 Pt. Pts. 38&39	6.00	2.43	Jamsyl Group Inc.	$0.00	$5.00	$32.00	$37.00
570-47700	2	Pt. Lot 153	16.69	6.75	Mary Dragicevic & Mary L. Lesperance	$0.00	$15.00	$90.00	$105.00
Total on Non-Agricultural Lands Lands.....						$0.00	$313.00	$1,904.00	$2,217.00

PRIVATELY-OWNED - AGRICULTURAL LANDS

Roll No.	Con.	Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
570-47600	2	Pt. Lot 153	6.33	2.56	Richard J. & Gale A. Demarse	$0.00	$6.00	$34.00	$40.00
570-04000	2	Pt. Lot 153	20.87	8.45	860831 Ontario Ltd.	$0.00	$19.00	$113.00	$132.00
570-47800	1	Pt. Lot 155 RP12R19278 Pts. 7,12&17	3.32	1.34	401 Real Estate Trust Inc.	$0.00	$3.00	$18.00	$21.00
570-47875	1	Pt. Lot 154 & 155	31.38	12.70	Jamsyl Group Inc.	$0.00	$28.00	$170.00	$198.00
570-48010	1	Pt. Lot 156 RP12R14005 Pt. PTS. 9-11	6.06	2.45	Jamsyl Group Inc.	$0.00	$5.00	$33.00	$38.00
570-48030	1	Pt. Lot 156 RP12R14005 Pts. 12-15	3.40	1.38	Jamsyl Group Inc.	$0.00	$3.00	$18.00	$21.00
570-48040	1	Pt. Lot 155 & 156 RP12R14005 Pts. 16&17	4.93	2.00	Jamsyl Group Inc.	$0.00	$4.00	$27.00	$31.00
570-47865	1	Pt. Lot 155 RP12R21309 Pts. 5&6	1.78	0.72	Jamsyl Group Inc.	$0.00	$2.00	$10.00	$12.00
570-48460	1	Pt. Lot 156 RP12R12938 Pts. 7&10	2.88	1.17	Jeannette Sylvestre & 851381 Ontario Ltd.	$0.00	$3.00	$16.00	$19.00
570-48470	3	Pt. Lot 156 RP12R14315 Pts. 4-7	2.75	1.11	Jeannette Sylvestre	$0.00	$2.00	$15.00	$17.00
570-48480	3	Pt. Lot 156 RP12R14315 Pts. 8-11	10.00	4.05	851381 Ontario Ltd.	$0.00	$9.00	$54.00	$63.00
570-48595	1	Pt. Gore & Lot 156 RP12R11035 Pt. 1	1.00	0.40	James B. Sylvestre	$0.00	$1.00	$5.00	$6.00
570-48800	3	Pt. Lot 155 & 156 RP12R20745 Pts. 1-7	84.28	34.11	2024120 Ontario Ltd. & 2041235 Ontario Ltd.	$0.00	$1.00	$455.00	$456.00
Total on Agricultural Lands Lands.....						$0.00	$86.00	$968.00	$1,054.00
TOTAL ASSESSMENT (Town of Tecumseh).						**$0.00**	**$4,820.00**	**$13,927.00**	**$18,747.00**

	(Acres)	(Ha.)
Total Area for Town of Tecumseh:	**1,288.85**	**521.58**

TOWN OF LAKESHORE

MUNICIPAL LANDS:

Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
Amy Croft Drive	0.44	0.18	Town of Lakeshore	$0.00	$2.00	$12.00	$14.00
Little Baseline Road	0.67	0.27	Town of Lakeshore	$0.00	$3.00	$18.00	$21.00

Roll No.	Con.	Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
County Road No. 22			2.70	1.09	County of Essex	$0.00	$12.00	$73.00	$85.00
County Road No. 19 (Manning Road)			10.00	4.05	County of Essex	$0.00	$45.00	$270.00	$315.00
Total on Municipal Lands.....						$0.00	$62.00	$373.00	$435.00

PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:

Roll No.	Con.	Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
220-00100	WPC	Pt. Lot 2 RP12R7364 Pt. Pt. 1	1.83	0.74	RKL Animal Health Care Ltd.	$0.00	$2.00	$13.00	$15.00
220-00101	WPC	Pt. Lot 2 RP12R7364 Pt. Pt. 2	1.82	0.74	RKL Animal Health Care Ltd.	$0.00	$2.00	$13.00	$15.00
220-00200	WPC	Pt. Lot 2 RP12R8064 Pt. 1	0.40	0.16	2741981 Ontario Limited	$0.00	$1.00	$6.00	$7.00
220-00301	WPC	Pt. Lots 2&3 RP12R27279 Pt. Pt. 1	3.00	1.21	Manning Developments Inc.	$0.00	$3.00	$16.00	$19.00
220-00319	WPC	Pt. Lots 2&3 RP12R27279 Pt. Pt. 2	0.50	0.20	Valente Development Corp.	$0.00	$1.00	$8.00	$9.00
220-00305	WPC	Pt. Lots 2&3 RP12R27653 Pts. 1&3	0.85	0.34	Petcon Hospitality Group Inc.	$0.00	$2.00	$10.00	$12.00
220-00310	WPC	Pt. Lots 2&3 RP12R22804 Pt. 1	2.14	0.87	Jaffer Property Inc.	$0.00	$2.00	$14.00	$16.00
220-00490	-	Plan 12M445, Pt. Blk 121	1.08	0.44	Prime Properties Lakeshore Holdings Inc.	$0.00	$2.00	$11.00	$13.00
220-00475	-	Plan 12M445, Pt. Blk 121	1.90	0.77	TDL Group Ltd. in Trust c/o Timwen Partnership	$0.00	$2.00	$13.00	$15.00
220-00600	WPC	N. Pt. Lot 4	1.55	0.63	Petrovec Investments Limited	$0.00	$2.00	$12.00	$14.00
220-00700	WPC	N. Pt. Lot 4	0.42	0.17	Lakeshore Square Inc.	$0.00	$1.00	$7.00	$8.00
220-00800	WPC	N. Pt. Lot 4	1.09	0.44	Lakeshore Square Inc.	$0.00	$2.00	$11.00	$13.00
220-00900	WPC	W. Pt. Lot 4	0.79	0.32	Lakeshore Square Inc.	$0.00	$2.00	$10.00	$12.00
220-01000	WPC	W. Pt. Lot 4	0.80	0.32	Lakeshore Square Inc.	$0.00	$2.00	$10.00	$12.00
220-01100	WPC	S. Pt. Lot 4	0.82	0.33	Petrovec Investments Limited	$0.00	$2.00	$10.00	$12.00
220-01200	WPC	S. Pt. Lot 4	0.84	0.34	Lakeshore Square Inc.	$0.00	$2.00	$10.00	$12.00
220-01500	WPC	Pt. Lots 5&6 RP12R4864 Pt. Pt. 1	5.40	2.19	Terry J. & Louise Orr	$0.00	$5.00	$29.00	$34.00
220-01590	WPC	Pt. Lot 6 RP12R13582 Pt. 1	1.00	0.40	Jeanne M. Orr	$0.00	$2.00	$11.00	$13.00
220-01700	WPC	S. Pt. Lot 6	1.03	0.42	Kamaljit Bhogal	$0.00	$2.00	$11.00	$13.00
220-01800	WPC	S. Pt. Lot 5	0.43	0.17	Denis C. & Jeanne T. Mayea	$0.00	$1.00	$7.00	$8.00
220-01850	WPC	Pt. Lot 6 RP12R10086 Pt. 2	0.55	0.22	Lewis C. & Ellen Mayea	$0.00	$1.00	$9.00	$10.00
220-02500	WPC	Pt. Lot 7 RP12R1458 Pt. 1	0.64	0.26	Denis L. & Sharon L. Sylvestre	$0.00	$2.00	$9.00	$11.00
220-02650	WPC	Pt. Lot 7 RP12R11154 Pt. 3	1.97	0.80	Fairlane Machine Tools Inc.	$0.00	$2.00	$13.00	$15.00
220-02700	WPC	S. Pt. Lot 7	1.00	0.40	Gary J. Anger	$0.00	$2.00	$11.00	$13.00
220-02800	WPC	N. Pt. Lot 8	2.26	0.91	S. Ranjit & Joan S. Kooner	$0.00	$2.00	$14.00	$16.00
220-02850	WPC	N. Pt. Lot 8 RP12R18427 Pt. 1	1.07	0.43	Kaljit Bath	$0.00	$2.00	$11.00	$13.00
220-02900	WPC	N. Pt. Lot 8 RP12R18427 Pt. 2	1.17	0.47	Stewart Gilbert	$0.00	$2.00	$12.00	$14.00

Roll No.	Con.	Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
220-03000	WPC	W. Pt. Lot 8	4.55	1.84	Fausto & Franca Volpatti	$0.00	$4.00	$25.00	$29.00
220-03100	WPC	S. Pt. Lot 8	0.76	0.31	R. Lessard Trucking Ltd.	$0.00	$2.00	$10.00	$12.00
220-03200	WPC	S. Pt. Lot 8	2.03	0.82	Louella M. Lessard	$0.00	$2.00	$14.00	$16.00
220-07810	WPC	Pt. Lot 9 RP12R20205 Pt. 1	2.00	0.81	Michael P. Mutter	$0.00	$2.00	$14.00	$16.00
220-03310	WPC	Pt. Lot 10 RP12R8829 Pt. 1	0.72	0.29	RZ & Saj Enterprise Inc.	$0.00	$2.00	$10.00	$12.00
220-03350	WPC	Pt. Lot 10 RP12R8829 Pts. 2&3	1.24	0.50	2246728 Ontario Inc.	$0.00	$2.00	$12.00	$14.00
180-01000			5.00	2.02	Hydro One Networks Inc.	$0.00	$5.00	$27.00	$32.00
180-01100			1.06	0.43	Canadian Pacific Ltd.	$0.00	$3.00	$17.00	$20.00
Total on Privately-Owned - Non-Agricultural Lands.....						$0.00	$75.00	$440.00	$515.00

PRIVATELY-OWNED - AGRICULTURAL LANDS

Roll No.	Con.	Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
220-01300	WPC	S. Pt. Lot 4	2.90	1.17	1027458 Ontario Inc.	$0.00	$3.00	$16.00	$19.00
220-01400	WPC	W. Pt. Lot 5	9.40	3.80	Ermino & Antonetta Petrozzi & Oranto Ciccone	$0.00	$8.00	$51.00	$59.00
220-01600	WPC	N. Pt. Lot 6 RP12R995 Pt. 1	3.25	1.32	701195 Ontario Ltd.	$0.00	$3.00	$18.00	$21.00
220-01900	WPC	S. Pt. Lot 6 RP12R10086 Pt. 1	4.49	1.82	Edward G. Docherty & 701195 Ontario Inc.	$0.00	$4.00	$24.00	$28.00
220-08600	WPC	N. Pt. Lot 7	6.57	2.66	Elizabeth Campeau, Shirley Burrows & Pauline Horvath	$0.00	$6.00	$35.00	$41.00
220-02600	WPC	SE. Pt. Lot 7 RP12R12294 Pt. 1	2.34	0.95	D. Sylvestre Enterprises Inc. & Sylvestre Group Inc.	$0.00	$2.00	$13.00	$15.00
220-02640	WPC	Pt. Lots 7&8 RP12R11154 Pts. 2,4,5&7	0.74	0.30	2438305 Ontario Limited	$0.00	$1.00	$4.00	$5.00
220-07800	WPC	Pt. Lot 9	4.96	2.01	Michael P. Mutter	$0.00	$4.00	$27.00	$31.00
220-03300	WPC	Pt. Lot 9 & 10	13.36	5.41	M. Mutter & Associates Ltd.	$0.00	$12.00	$72.00	$84.00
Total on Privately-Owned - Agricultural Lands.....						$0.00	$43.00	$260.00	$303.00
TOTAL ASSESSMENT (Town of Lakeshore).....						**$0.00**	**$180.00**	**$1,073.00**	**$1,253.00**

	(Acres)	(Ha.)
Total Area for Town of Lakeshore:	**115.53**	**46.75**

TOTAL ASSESSMENT (Town of Tecumseh).....	**$0.00**	**$4,820.00**	**$13,927.00**	**$18,747.00**
TOTAL ASSESSMENT (Town of Lakeshore).....	**$0.00**	**$180.00**	**$1,073.00**	**$1,253.00**
TOTAL OVERALL ASSESSMENT.....	**$0.00**	**$5,000.00**	**$15,000.00**	**$20,000.00**

	(Acres)	(Ha.)
Total Area for Town of Lakeshore:	**115.53**	**46.75**
Town of Tecumseh:	**1,288.85**	**510.81**
Combined Total Area:	**1,404.38**	**557.57**

”SCHEDULE F”
DRAINAGE REPORT FOR THE
EAST TOWNLINE DRAIN (LOWER PORTION) IMPROVEMENTS
IN THE TOWN OF TECUMSEH

SPECIAL PROVISIONS - GENERAL

1.0 GENERAL SPECIFICATIONS

The General Specifications attached hereto is part of “Schedule F.” It also forms part of this specification and is to be read with it, but where there is a difference between the requirements of the General Specifications and those of the Special Provisions which follow, the Special Provisions will take precedence.

2.0 DESCRIPTION OF WORK

The work to be carried out under this Contract includes, but is not limited to, the supply of all **labour, equipment and materials** to complete the following items:

EAST TOWNLINE DRAIN LOWER PORTION (STA. 0+000 TO STA. 0+687.7)

- Strip and place topsoil, as follows:
    - From Station 0+040 to Station 0+687.7 strip topsoil (minimum 150 mm depth) across the width over the proposed stormwater channel and temporarily stockpile separately within the designated working corridors. Upon completion of excavation, spread a thin layer of salvaged topsoil a minimum 25 mm thickness over the banks of the new channel from Station 0+040 to Station 0+687.7.
- Excavation and trucking of excavated materials, as follows:
    - Excavation of new stormwater channel from Station 0+040 to Station 0+687.7, totally approximately 648 lineal metres of drain.
    - Trucking and disposal of excavated material off-site.
- Seeding of new stormwater channel banks, as follows:
    - Supply and placement of hydro-seed on new banks from Station 0+040 to Station 0+687.7.
- Supply and install stone erosion protection (minimum 300 mm thickness) on channel banks complete with filter fabric underlay at the following locations:
    - Station 0+060 – Supply and install stone erosion protection around outlet of existing 300 mm diameter PVC pipe.
    - Station 0+544 - Supply and install stone erosion protection around outlet of existing 300 mm diameter HDPE pipe.
    - Station 0+596 - Supply and install stone erosion protection around outlet of existing 450 mm diameter PVC pipe.
- Supply and installation of six (6) plunge pools at the following locations:
    - Station 0+085 to Station 0+095

- Station 0+195 to Station 0+205
- Station 0+290 to Station 0+300
- Station 0+390 to Station 0+400
- Station 0+493 to Station 0+503
- Station 0+643 to Station 0+653

- Supply and installation of stormwater channel outlet, as follows:
  - Supply and installation of 40 m of 3000 mm x 1800 mm concrete box culvert and 2400 x 1800 mm concrete box culvert including grate, increaser, elbow and connection to existing chamber. Work includes dewatering, maintenance of flows and diversion of water around work site.
- Supply and installation of concrete weir at Station 0+046.
- Supply and installation of stone retaining wall with decorative aluminum railings and concrete walkway at Station 0+040.

EAST TOWNLINE DRAIN ENCLOSURE (STA. 0+687.7 TO STA. 0+975.2)

- Brushing and grubbing of the drain from Station 0+765 to Station 0+975.2 including removal off-site with trimming and/or removal of existing trees within the drain as required to accommodate the drainage works. The work shall include disposal of brush to be trucked off-site.
- Remove all vegetation, organic debris and topsoil from the existing drain slopes from Station 0+765 to Station 0+975.2 including hauling. Any excess materials to be hauled away off-site.
- Removals, as follows:
  - Removal and disposal of existing concrete bridge at St. Thomas Street including backfilling and restoration. Salvage existing steel plate and deliver to Town's public works yard.
  - Removal and disposal of existing rip rap and gabion baskets from existing box culvert outlet and stormwater channel inlet.
- Drain enclosure installation as follows:
  - Supply and installation of 287.5 m of 3000 mm x 1800 mm concrete box culvert including bends, transitions, maintenance tees, catchbasins, boulevard catchbasins, private storm connections and connection to existing box culvert. Work includes dewatering, maintenance of flows and diversion of water around work site.
  - Supply and installation of precast concrete outlet structure with galvanized grate and handrail.
  - Supply and installation of stone erosion protection (min. 300 mm thickness)(approx. 376 m^2) with filter fabric underlay and cable concrete apron (approx. 187 m^2).
  - Supply and installation of stone erosion protection (min. 300 mm thickness) with filter fabric underlay and cable concrete apron.

- Temporary silt control measures during construction

3.0 ACCESS TO THE WORK

Access to the drain shall be from (County Road No. 19) Manning Road. The Contractor shall make his/her own arrangements for any additional access for his/her convenience. All road areas and grass lawn areas disturbed shall be restored to original conditions at the Contractor's expense.

4.0 WORKING AREA

On the Town of Tecumseh lands (Lakewood Park) Station 0+000 to Station 0+687.7, the working area shall include the area required to accommodate the proposed enclosed portion and open channel and a 9.0 m wide working corridor on both sides of the new drain which shall provide for access and work on the drain. No excavated material will be left on the working corridor. The working area for the new enclosed portion of the drain Station 0+687.7 to Station 0+975.2 shall be in the Manning Road right-of-way. The Contractor shall make his/her own arrangements for any additional access for his/her convenience.

The Contractor shall restrict his equipment to the working corridors as specified in this Section. Any damage resulting from non-compliance with this Section shall be borne by the Contractor.

5.0 CLEARING, GRUBBING AND BENCHING

OPSS Form 201 shall apply and govern except as amended or extended herein.

The Contractor shall clear and grub existing trees and shrubs and strip topsoil, debris, and organic material for the installation of the storm sewer at the locations indicated on the Contract Drawings and as Directed by the Engineer.

Benching of the side slopes of the existing drain per OPSD 208.010 shall be considered incidental to this work.

The Contractor shall clear and grub existing trees and shrubs, as detailed on the Contract Drawings and as directed by the Engineer. Excavations resulting from stump removal shall be backfilled with compacted Granular "A". The protection and trimming of existing trees, which are to remain, shall be incidental to this work.

The Contractor shall ensure that adjacent property owners are provided with an opportunity to remove existing trees and shrubs, prior to construction.

The Contractor shall dispose of all wood branches, roots, leaves, stumps, rubbish, debris, organic materials, etc., off of the site. No burning of materials will be allowed.

6.0 STONE EROSION PROTECTION (SEP)

Erosion protection, as specified in the locations on the drawings, shall be constructed of quarry stone rip-rap consisting of 150 - 250 mm sized clear quarry angular limestone materials placed over a non-woven filter fabric Terrafix 270R or approved equivalent.

Minimum 300mm thick, grouted rip rap shall be installed for erosion control and slope protection, on Type 2 non-woven geotextile material, as shown on the Contract Drawings.

The rip rap shall be R-50, it shall be non-uniform and shall not exceed 300mm, measured in any one direction and no smaller than 150mm in one direction.

Prior to placement of rip rap, the Contractor shall carefully prepare the underlying surface and install a single layer of Terrafix 270R geotextile fabric or approved equal. The placing of rip rap shall be undertaken so that there is no tearing or damage to the geotextile. The rip rap shall be recessed into the side slopes so that the surface is aligned with the adjacent drain channel.

At locations where surface water run-off enters the drain, as determined on site by the Drainage Superintendent, the contractor shall install surface water inlets.

7.0 PLUNGE POOLS

The Contractor shall construct a plunge pool in the bottom of the new open drain at Stations 0+090, 0+200, 0+295, 0+395, 0+498 and 0+648. The contractor shall excavate the pool in the drain bottom to enhance fish habitat. The pool shall have a length of 25 metres, a varying bottom width (as shown on detail) with 1:3 side slopes and a depth below design grade of 1.0 m. A stone rip-rap lining, countersunk and 300 mm thick with filter fabric underlay, shall be placed in the bottom. The pool shall be centred on the finished bottom width of the drain as specified herein. Material excavated from the pool shall be disposed of in the same manner as all other material excavated from the channel bottom.

8.0 SEEDING

The Contractor shall seed all disturbed grassed lawn areas including existing lawns and grassed areas within the road allowance. Topsoil shall be salvaged from the site and/or trucked to site to provide a minimum of 100 mm of topsoil in all lawn areas.

Prior to seeding, all areas to be seeded shall be fine graded, and loosened to a minimum depth of 25 mm and shall be rendered uniformly loose for that 25 mm depth. The surface shall be predominantly fine graded and free from weeds and other unwanted vegetation. All other loose surface litter shall be removed and disposed of.

The Contractor shall supply, seed and mulch, as directed by the Engineer. The seed shall be a mixture with the following composition:

50% Alkaligrass
35% Creeping Red Fescue
15% Kentucky Bluegrass

This is intended to provide salt tolerance and is supplied by the Ontario Seed Company.

Fertilizer shall be supplied and placed in accordance with the seed supplier's recommendations.

Seed and mulch shall not be applied during adverse weather conditions such as high wind, heavy rain, high or low temperatures, etc. or when field conditions are not conducive to seed germination such as frozen soil or soil covered with snow, ice or standing water.

Bags shall bear the label of the supplier indicating the content by species, grade and mass. Seed shall be applied at a rate of 200 kg per 10,000 m². Fertilizer shall be 8-32-16 applied at 350 kg per 10,000 m². It shall be in granular form, dry, free from lumps and in bags bearing the label of the manufacturer, indicting mass and analysis.

Seeding shall be carried out immediately following construction and shall be drilled into the topsoil layer. The contractor shall note that seeding will not be deemed complete, until the seed has established and formed a protective mat over the soil. Accordingly, the Contractor will be required to continue seeding until the Engineer and the Drainage Superintendent are satisfied with the area seeded under this item.

9.0 STORM PRIVATE DRAIN CONNECTIONS

The Contractor shall connect the existing private drain connections to the proposed storm sewer. The connection to the proposed storm sewer shall be made using prefabricated tee fittings.

All PDC's shall include a cleanout at the property line. Cleanout caps located within driveways or paved areas shall be of cast iron construction.

The end of all connections at the lot line shall include a cleanout and a minimum of 1.0 metre of pipe beyond the cleanout and shall be capped with a sewer plug and marked with a 50mm x 100mm wood post which is to extend from the invert of the connection to 300mm above existing grade.

The Contractor shall supply and install all fittings required for cleanouts and all bends and couplings required to install the service connections. Connection of the PDC to existing PDC's shall be made using appropriate fittings where required.

All private drain connection materials shall be 150mm diameter PVC DR-28, conforming to CSA B182.1-87.

10.0 IMPORTED TOPSOIL

The Contractor shall supply and place topsoil, as directed by the Engineer or as shown on the Contract drawings. This work shall include placing and grading of the material at the required locations and to the required grades and shall be placed to a depth of 100mm.

11.0 ARTICULATED CONCRETE BLOCK

The stormwater channel from Station 0+673 to Station 0+687 is to be lined with an articulated concrete block overlay, International Erosion Control Systems (IECS) CC-35 Cable Concrete Articulated Concrete Block system or approved equal, including geotextile underlay, anchoring and cable connections. Installation of articulated concrete block is to be done according to details outlined herein and in accordance with the detailed drawings, manufacturer specifications and safety requirements as required by the manufacturer.

Appurtenances for installation of the concrete block, including but not limited to cable clamps and anchors are required to match manufacturer specifications. Installation of stainless steel cable clamps securing mats longitudinally and laterally along the channel at locations including lateral edges of mats, including the centre point of each mat on the drain bed, and intersection of four mat corners along centerline of drain bed.

12.0 CONCRETE HEADWALL

Precast concrete headwall as per OPSD 804.030 shall be installed at Station 0+687.7 on the north end of the concrete box culvert. OPSS Form 407 shall apply and govern except as amended or extended herein.

Backfill shall be approved OPSS Granular "B", Type I uniformly, mechanically compacted to 98 percent of the Standard Proctor Maximum Dry Density. Hand held mechanical compaction equipment shall be used where conventional compaction equipment cannot be used.

12.1 Excavation

Excavation will be undertaken as necessary to construct the concrete headwall. The excavation will be governed by OPSS 182, 902 AND 507 except as extended or amended herein.

The Contractor shall excavate neat to the lines and grades specified on the drawings. All excavations shall be kept dry during the construction period. No equipment shall be allowed in the excavation prior to the placing of the working mat.

The Contractor shall excavate for the construction of the proposed footing, including grading and shaping of the proposed subgrade and all necessary work to the limits shown on the drawings.

12.2 Concrete

The concrete headwall will be constructed in place. OPSS 904, 905 and 919 shall apply and govern except as extended or amended herein.

This includes the supply, placing and finishing of all concrete in the structure, including footings as shown on the drawings or as specified herein. Mass concrete shall be placed within 4 hours of excavation.

Concrete, except mass concrete, shall be designed to provide minimum compressive strength of 35 MPa at 28 days with not less than the minimum cement content nor more than the maximum water content as outlined in OPSS 1350 (municipal). The maximum water-cement ratio shall be 0.4. Maximum water content shall include free water in aggregates. The mix shall be designed to provide a maximum slump of 100 mm for all concrete on the project unless ordered otherwise in writing by the Contract Administrator.

Concrete shall be finished as outlined in OPSS 904.

The Contractor to make all provisions for hot and cold weather concreting as may be required. No extra payment shall be made for hot and cold weather concreting.

13.0 BRIDGE REMOVAL

The Contractor shall remove and dispose of the bridge structure located at St. Thomas Street at Station 0+753. Salvage existing steel plate and deliver to Town's public works yard. Abutments, footings and pilings (if any) may remain in place. Extreme care must be taken when removing the bridge to ensure no material falls into the drain. All material falling into the drain shall be promptly removed.

Burying of broken concrete or other debris at the site will not be allowed. All materials removed from the site shall be disposed of in accordance with all local, provincial and federal regulations.

The Contractor shall note the existence of utilities in the vicinity of the structures. Extreme care shall be exercised when working adjacent to utilities.

OPSS Form 182, 510, 517 and 518 shall apply and govern except as extended or amended herein.

14.0 REMOVAL OF RIP RAP, GABION BASKETS AND DEBRIS FROM EXISTING DRAIN

OPSS Form 510 shall apply and govern except as amended or extended herein.

The Contractor shall remove and dispose of rip rap, gabion baskets, rocks, concrete, brick, garbage and other debris from the existing drain outlets to facilitate construction of the new sewer.

SPECIAL PROVISIONS – CONCRETE BOX UNITS AND MANHOLES

15.0 BOX CULVERT CONSTRUCTION

15.1 General

OPSS Forms 410, 421, 422 and 1821 shall apply and govern except as amended or extended herein.

Storm sewers shall be supplied and installed as shown on the Contract Drawings and described herein, including connections to and connection of all existing and proposed sewers and manholes as well as abandoning of existing sewers, all as noted on the Drawings.

15.2 Scope of Work

Storm sewer and precast concrete box culvert shall be supplied and installed as shown on the Drawings and described herein, including connections to and connection of all existing and proposed sewers, catchbasin leads, manholes, storm PDC's and junctions, all as noted on the Contract Drawings.

The Contractor shall strip all existing open drains in advance of the storm sewer construction to remove all organic materials and to identify any existing storm PDC's. The excavated material shall be removed from the site and will in no case be permitted for use as backfill material.

All box culvert and pipe sections shall be installed through the use of pipe/culvert pullers or come-along devices. The use of heavy equipment (excavating/grading, etc.) to push culvert/pipe sections into place will not be accepted. Any pipe or box culvert sections damaged, as determined by the Contract Administrator, shall be removed and replaced at no additional cost. The Contractor to submit the proposed culvert/pipe installation method to the Engineer one week prior to installation.

The Contractor is responsible to coordinate with Essex Powerlines, Cogeco, MNSi, Enbridge and Bell Canada for the support of existing/proposed underground infrastructure and hydro poles where required. Payment for support of existing/proposed infrastructure will be covered under a separate item as listed in the Form of Tender.

15.3 Excavation

It is the intention of this work to minimize damage to existing and adjacent pavement, curb, sidewalk, etc. The Contractor shall be responsible to ensure that the use of engineered or prefabricated trench support systems are appropriate to satisfy the requirements of the Occupational Health and Safety Act.

The excavation must not cause damage to existing asphalt other than at locations shown on the Drawings. The Contractor shall be responsible for the full costs of repair or replacement of asphalt pavement, as determined by the Engineer, including excavation, removal of existing asphalt, Granular 'A', paving equipment, labour, traffic control, and any other costs associated with replacement of asphalt which is damaged as part of this work. The repair/replacement shall be inspected and approved by the Engineer and the Town prior to project completion. No payment will be made for restoration/repair of damaged asphalt caused by construction activities outside of the areas shown on the Contract Drawings.

Lateral stability shall be maintained throughout the excavation and box unit installation. Soil cave-in into the excavation hole shall be prevented.

15.4 Excavated Materials

All excavated materials determined to be excess by the Engineer, including earth and rock excavation, broken concrete, rubble and broken asphalt, and organic materials stripped from open drain embankments shall be removed from the work by the Contractor. The Contractor shall make arrangements as to disposal, but must comply with legislation governing disposal sites as outlined within the Contract Documents.

All excess material, as well as select native material which is to be used for backfill, is to be placed directly into trucks and either hauled from the site or used to backfill the sewer trench.

The cost of removal and disposal of excess materials shall be included in the Contractor's Tender prices.

No sidecasting of excavated materials will be permitted, without the approval of the Engineer.

The Contractor shall be responsible to ensure that the use of engineered or prefabricated trench support systems are appropriate to satisfy the requirements of the Occupational Health and Safety Act.

15.5 Utility Supports

The Contractor shall construct permanent/temporary utility supports as required by the respective utility companies per the respective standards and guideline. This work shall be considered incidental to this item, unless otherwise indicated. No payment will be made for supports either temporary or permanent.

15.6 Control of Water

The Contractor shall be solely responsible for ensuring that all work is carried out is dry and that partially completed work shall remain dry.

The method or methods of controlling surface or sub-surface water shall be by pumping or other methods as may be approved by the Engineer.

The Contractor shall assume full responsibility for all damages done to the works through the influence of water. They shall immediately make good any damage so caused without cost to the Owner.

15.7 Foundations

The box units shall be founded on competent in situ soil or compacted backfill with a minimum 200mm thick compacted and level 19mm diameter clear stone bedding on non-woven geotextile, or as specified in the Contract Documents.

When unsuitable material is encountered during excavation for the box units' foundation, the unsuitable material shall be removed to competent stratum and replaced to the foundation grade with compacted Granular "A" material.

The final founding elevations shall be as specified in the Contract Documents or an elevation approved in writing by the Contract Administrator.

15.8 Installing Box Units

All precast box unit joints shall be provided with steel reinforced articulated ends such as bell and spigot. The box units shall be installed to make a continuous line forming a box culvert or box sewer. The gap at the box unit joints shall not exceed 15mm.

As part of the work, the contractor shall include fabrication, delivery, and installation of the following:

a) Precast site connections, bends, transition plugs, and associated accessories.

b) Precast concrete headwall and wing walls as shown on the Contract Drawings, including supply and install of railing, grates, and dowels and non-shrink grout to connect the head wall/wing wall together with the precast concrete culvert end units per manufacturer's recommendations.

All shall be as shown on the Contract Drawings.

15.9 Geotextile at Joints

Unless otherwise specified in the Contract Documents, a minimum 450mm wide strip of self-adhering SBS rubbered composite asphalt waterproofing membrane including primer followed by a 900mm cap sheet and protection board shall be placed to form a continuous barrier centred around the exterior of all buried joints.

15.10 Backfill and Compaction

Backfilling operations are to follow immediately behind storm sewer and/or catchbasin lead installation.

Imported granular sewer trench backfill shall be as specified on the Contract Drawings. No native backfill shall be allowed within or adjacent to road limits as detailed below.

Where the sewer trench is located outside the limits of the roadways and/or driveways, sewer trench backfill shall be engineered fill approved by the Engineer.

15.11 Setting Out

The Engineer shall provide the Contractor in writing with benchmarks and points of reference. From these benchmarks and points of reference, the contractor will do his own setting out. The setting out by the Contractor shall include but shall not be limited to the preparation of grade sheets, the installation of centerline stakes, grade stakes, offsets, and sight rails.

If, during the setting out, the Contractor finds an error in the benchmarks or points of reference provided by the Engineer or is uncertain as to the interpretation of the information provided or the work intended, he shall notify the Engineer immediately for additional verification or clarification before proceeding with construction.

The Contractor shall be responsible for the true and proper setting out of the works and for the correctness of the position, levels, dimensions and alignment of all parts of the work.

The Contractor shall be responsible to ensure that the alignment selected results in a minimum depth of cover of 600 mm over the top of the drainage pipe to be installed.

If, at any time during the progress of the works, an error shall appear or arise in the position, levels, dimensions or alignment of any part of the works, the Contractor shall, at his own expense, rectify such error to the satisfaction of the Engineer, unless such error is based on incorrect data supplied in writing by the Engineer.

15.12 Profile

The drainage pipe shall be laid so that its invert shall be at the gradeline shown on the profile, which gradeline is governed by the benchmarks. The profile shows, for the convenience of the Contractors and others, the approximate depth of cut from the surface of the ground at 50 metre intervals, to the final invert of the drainage pipe in metres and decimals of a metre. Benchmarks, which have been established along the course of the drain, shall govern the final elevation of the drain. The locations and elevations of the benchmarks are shown on the General Details.

Maximum acceptable deviations in the sewer grade shall be +/- 0.02% which is equivalent to 20 mm in 100 m of installation.

15.13 Obstructions

All brush, timber, logs, stumps, stones or other obstructions that interfere with the construction of the drain, encountered along the course of the drain are to be removed by the Contractor. Timber, logs and stumps are to be dealt with in the same manner as specified for brush and trees. Large stones and other similar material are to be piled near the limit of the working corridor and the disposal of this material will be the responsibility of the Owner.

15.14 Location of New Concrete Box Culvert

The new drain shall be installed as shown on the Drawings attached hereto.

15.15 Drainage Materials

16.15.1 Precast Concrete Box Culvert

Precast Conc. Box Units	*New 3000 mm x 1800 mm precast concrete box culvert CAN/CSA S6-19 (CHBDC).*
	New 3000 mm x 1800 mm 27º bend precast concrete box culvert CAN/CSA S6-19 (CHBDC).
	New 3000 mm x 1800 mm 18º bend precast concrete box culvert CAN/CSA S6-19 (CHBDC).
	New 2400 mm x 1800 mm precast concrete box culvert CAN/CSA S6-19 (CHBDC).
	New 2400 mm x 1800 mm to 3000 mm x 1800 mm increaser precast concrete box culvert CAN/CSA S6-19 (CHBDC).
Pipe Bedding Under Entire Pipe	*Granular 'A' conforming to OPSS Division 10.*
Backfill	*Granular 'A' conforming to OPSS Division 10*

15.16 Maintenance of Flow in Sewers

The Contractor shall at his own cost and expense, permanently provide for and maintain the flow in all sewers or ditches which may be encountered during the progress of the work. This work shall include measures by the contractor to facilitate methods of construction and staging of the works, while maintaining flows.

The Contractor shall maintain existing flows in the East Townline Drain which may be encountered during the progress of the work until the proposed storm sewer is operational. This work shall include:

- Work completed adjacent to the East Townline Drain shall be completed in the dry.
- Work in the East Townline Drain cannot be completed until a fish salvage is undertaken. Two weeks advance notice is required to arrange for fish salvage.
- Pumping around a work area within the East Townline Drain will be permitted; however, provisions must be made for accommodating flows from storm events which may approach in excess of 9.3 m^3/s. Further, any permit to take water (PTTW) required to facilitate construction will be obtained by the Contractor at no cost to the Owner.
- The work shall conform to the requirements of DFO and ERCA.
- Maintaining private drain connection flows until connection can be made to the proposed storm sewer.

Should the Contractor wish to divert, block or otherwise impede or alter flows in any existing sewers, drains, ditches or water courses, he shall be required to submit details and sketches of the proposed methods to the Engineer for approval, prior to proceeding. This submission shall include any emergency measures which may be required in the event of heavy rainfalls, sewer surcharging, flooding, etc.

15.17 Connections to Existing Sewers and Manholes

The Contractor shall use shop fabricated specials (tees, bends etc.) to connect existing sewers and manholes to ensure a watertight seal. Should no shop fabricated specials be available, a concrete collar with a minimum thickness of 200 mm and 600 mm minimum width shall be used to make the connection.

16.0 CONNECTION TO EXISTING BOX CULVERT

The Contractor shall connect to the existing 3.0m x 1.8m box culvert at approximate Station 0+975.2 as shown in the Contract Drawings. Approximate measurements of the existing culvert are listed below. It is the responsibility of the Contractor to verify these dimensions in the field to satisfy themselves.

Dimensions (STA 0+975.2)

Inside Width:	3048mm
Inside Height:	1829mm
Wall Thickness:	250mm
Haunch:	Unknown

Approved Connection Methods

There are two (2) methods of connection that will be deemed acceptable by the Engineer, these methods are as follows:

Cast-in Place Concrete Connection (Closure Strip)

OPSS Forms 904, 905, and 919 shall apply and govern except as amended herein.

A design of the cast-in-place concrete closure strip shall, at a minimum; include full perimeter dowels (adhesive embedded 150mm deep (min) in Hilti HIT-RE 500-SD or approved equal) and S15M reinforcing bars at 300 O/C, match flush with the outer and inner surfaces of the existing and proposed culverts, provide a water tight connection; and the connection shall be a minimum of 600mm in length. The Contractor will be required to provide shop drawings stamped by a Professional Engineer licensed in the province of Ontario for approval by the Engineer prior to commencing work.

This connection shall not alter the alignment of the proposed downstream box culvert outlet. Any modifications required to correct variation of the proposed alignment (cast-in-place or precast concrete), as deemed necessary by the Engineer, shall require submission of shop drawings to be approved by the Engineer prior to implementation and shall be considered incidental to this work.

Direct Connection to Existing Box Culvert

The Contractor shall provide a compatible box culvert section that can be connected to the existing box culvert **with no modifications**. This work will include removal and disposal of the existing end-section to expose a bell or spigot end and provide a connection point. The existing culvert must be inspected by the Engineer prior to connection to ensure there is no damage to the mating surfaces that could compromise the joint integrity. Care should be taken by the Contractor when removing box culvert sections as not to damage the remaining sections. If it is determined that the existing culvert is not suitable for connection, further sections may be removed until a suitable section is found. Excavation, backfill, removal and disposal of the existing culvert shall be considered incidental to this work.

17.0 CATCHBASINS

The Contractor shall supply and install precast concrete catchbasins, including cast iron frames and covers as detailed on the Contract Drawings.

Where a standard catchbasin (CB) is specified, it shall conform to OPSD 705.010. Grate to OPSD 400.020.

Where a boulevard catchbasin (BCB) or round catchbasin (RCB) is specified, it shall be a 450mm or 600mm diameter HDPE catchbasin with cast iron grate. The depth of the BCB or RCB will range from 1200mm to 1800mm and should be installed to correspond with what is shown on the Contract Drawings. The hole shall be circular and neatly cut to shape the proposed diameter of the pipe. The sump bottom shall include a 100mm poured concrete base.

The Contractor shall allow for adjustment if required, to all catchbasins to ensure positive drainage, to the satisfaction of the Engineer prior to the placement of nursery sod and/or seed.

The Contractor shall ensure that all mortar, debris, etc. is removed from the catchbasins prior to the date of Substantial Performance.

Connection to existing catchbasins shall include removal of the existing catchbasin lead and reconnection of the proposed lead.

18.0 STORM BOX CULVERT MANHOLE TEES

OPSS Form 407 and 510 shall apply and govern except as amended or extended herein.

Precast box culvert manhole tees are to be supplied and installed in conjunction with the installation of the storm sewer and shall be equipped with frames, covers, safety platforms, ladder rungs and adjustment rings. Class 'A' bedding shall be used for concrete pipe sewers to the first joint outside the manhole wall.

Manhole frames and covers shall be installed at the proposed grade of the boulevard or surface course asphalt; and consistent with the pavement crossfall of the proposed roadway. The Contractor will be required to supply and install HDPE adjustment rings, as approved by the Owner, to raise the manhole covers to the final boulevard or surface asphalt grades prior to placing surface course asphalt or seed/sod.

The Contractor shall be responsible to ensure that the use of engineered or prefabricated trench support systems are appropriate to satisfy the requirements of the Occupational Health and Safety Act.

The Contractor shall ensure that any existing storm sewers or connections to manholes that are being removed shall be reconnected into the new manhole, or where this is not easily achieved, reconnected to the proposed storm sewer.

Backfill shall be imported approved OPSS Granular “A” or “B” - Type II uniformly compacted to 98 percent of the Standard Proctor Maximum Dry Density. Foundry/Black mold sand shall not be permitted as backfill.

GENERAL SPECIFICATIONS

1.0 AGREEMENT AND GENERAL CONDITIONS

The part of the Specifications headed "Special Provisions" which is attached hereto forms part of this Specification and is to be read with it. Where there is any difference between the requirements of this General Specification and those of the Special Provisions, the Special Provisions shall govern.

Where the word "Drainage Superintendent" is used in this specification, it shall mean the person or persons appointed by the Council of the Municipality having jurisdiction to superintend the work.

Tenders will be received and contracts awarded only in the form of a lump sum contract for the completion of the whole work or of specified sections thereof. The Tenderer agrees to enter into a formal contract with the Municipality upon acceptance of the tender. The General Conditions of the contract and Form of Agreement shall be those of the Stipulated Price Contract CCDC2-Engineers, 1994 or the most recent revision of this document.

2.0 EXAMINATION OF SITE, PLANS AND SPECIFICATIONS

Each tenderer must visit the site and review the plans and specifications before submitting his/her tender and must satisfy himself/herself as to the extent of the work and local conditions to be met during the construction. Claims made at any time after submission of his/her tender that there was any misunderstanding of the terms and conditions of the contract relating to site conditions, will not be allowed. The Contractor will be at liberty, before bidding to examine any data in the possession of the Municipality or of the Engineer.

The quantities shown or indicated on the drawings or in the report are estimates only and are for the sole purpose of indicating to the tenderers the general magnitude of the work. The tenderer is responsible for checking the quantities for accuracy prior to submitting his/her tender.

3.0 MAINTENANCE PERIOD

The successful Tenderer shall guarantee the work for a period of one (1) year from the date of acceptance thereof from deficiencies that, in the opinion of the Engineer, were caused by faulty workmanship or materials. The successful Tenderer shall, at his/her own expense, make good and repair deficiencies and every part thereof, all to the satisfaction of the Engineer. Should the successful Tenderer for any cause, fail to do so, then the Municipality may do so and employ such other person or persons as the Engineer may deem proper to make such repairs or do such work, and the whole costs, charges and expense so incurred may be deducted from any amount due to the Tenderer or may be collected otherwise by the Municipality from the Tenderer.

4.0 GENERAL CO-ORDINATION

The Contractor shall be responsible for the coordination between the working forces of other organizations and utility companies in connection with this work. The Contractor shall have no cause of action against the Municipality or the Engineer for delays based on the allegation that the site of the work was not made available to him by the Municipality or the Engineer by reason of the acts, omissions, misfeasance or non-feasance of other organizations or utility companies engaged in other work.

5.0 RESPONSIBILITY FOR DAMAGES TO UTILITIES

The Contractor shall note that overhead and underground utilities such as hydro, gas, telephone and water are not necessarily shown on the drawings. It is the Contractor's responsibility to contact utility companies for information regarding utilities, to exercise the necessary care in construction operations and to take other precautions to safeguard the utilities from damage. All work on or adjacent to any utility, pipeline, railway, etc., is to be carried out in accordance with the requirements of the utility, pipeline, railway, or other, as the case may be, and its specifications for such work are to be followed as if they were part of this specification. The Contractor will be liable for any damage to utilities.

6.0 CONTRACTOR'S LIABILITY

The Contractor, his/her agents and all workmen or persons under his/her control including sub-contractors, shall use due care that no person or property is injured and that no rights are infringed in the prosecution of the work. The Contractor shall be solely responsible for all damages, by whomsoever claimable, in respect to any injury to persons or property of whatever description and in respect of any infringement of any right, privilege or easement whatever, occasioned in the carrying on of the work, or by any neglect on the Contractor's part.

The Contractor, shall indemnify and hold harmless the Municipality and the Engineer, their agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of or attributable to the Contractor's performance of the contract.

7.0 PROPERTY BARS AND SURVEY MONUMENTS

The Contractor shall be responsible for marking and protecting all property bars and survey monuments during construction. All missing, disturbed or damaged property bars and survey monuments shall be replaced at the Contractor's expense, by an Ontario Land Surveyor.

8.0 MAINTENANCE OF FLOW

The Contractor shall, at his/her own cost and expense, permanently provide for and maintain the flow of all drains, ditches and water courses that may be encountered during the progress of the work.

9.0 ONTARIO PROVINCIAL STANDARDS

Ontario Provincial Standard Specifications (OPSS) and Ontario Provincial Standard Drawings (OPSD) shall apply and govern at all times unless otherwise amended or extended in these Specifications or on the Drawing. Access to the electronic version of the Ontario Provincial Standards is available online through the MTO website, free of charge to all users. To access the electronic standards on the Web go to http://www.mto.gov.on.ca/english/transrd/. Under the title Technical Manuals is a link to the Ontario Provincial Standards. Users require Adobe Acrobat to view all pdf files.

10.0 APPROVALS, PERMITS AND NOTICES

The construction of the works and all operations connected therewith are subject to the approval, inspection, by-laws and regulations of all Municipal, Provincial, Federal and other authorities having jurisdiction in respect to any matters embraced in this Contract. The Contractor shall obtain all approvals and permits and notify the affected authorities when carrying out work in the vicinity of any public utility, power, underground cables, railways, etc.

11.0 SUBLETTING

The Contractor shall keep the work under his/her personal control, and shall not assign, transfer, or sublet any portion without first obtaining the written consent of the Municipality.

12.0 TIME OF COMPLETION

The Contractor shall complete all work on or before the date fixed at the time of tendering. The Contractor will be held liable for any damages or expenses occasioned by his/her failure to complete the work on time and for any expenses of inspection, superintending, re-tendering or re-surveying, due to their neglect or failure to carry out the work in a timely manner.

13.0 TRAFFIC CONTROL

The Contractor will be required to control vehicular and pedestrian traffic along roads at all times and shall, at his/her own expense, provide for placing and maintaining such barricades, signs, flags, lights and flag persons as may be required to ensure public safety. The Contractor will be solely responsible for controlling traffic and shall appoint a representative to maintain the signs and warning lights at night, on weekends and holidays and at all other times that work is not in progress. All traffic control during construction shall be strictly in accordance with the **Occupational Health and Safety Act** and the current version of the **Ontario Traffic Manuals**. Access to the electronic version of the **Ontario Traffic Manual** is available online through the MTO website, free of charge to all users. To access the electronic standards on the Web go to http://www.mto.gov.on.ca/english/transrd/, click on "Library Catalogue," under the "Title," enter "Ontario Traffic Manual" as the search. Open the applicable "Manual(s)" by choosing the "Access Key," once open look for the "Attachment," click the pdf file. Users require Adobe Acrobat to view all pdf files.

Contractors are reminded of the requirements of the Occupational Health and Safety Act pertaining to Traffic Protection Plans for workers and Traffic Control Plan for Public Safety.

14.0 SITE CLEANUP AND RESTORATION

As part of the work and upon completion, the Contractor shall remove and dispose of, off-site any loose timber, logs, stumps, large stones, rubber tires, cinder blocks or other debris from the drain bottom and from the side slopes. Where the construction works cross a lawn, the Contractor shall take extreme care to avoid damaging the lawn, shrubs and trees encountered. Upon completion of the work, the Contractor shall completely restore the area by the placement and fine grading of topsoil and seeding or sodding the area as specified by the Engineer or Drainage Superintendent.

15.0 UTILITY RELOCATION WORKS

In accordance with Section 26 of the Drainage Act, if utilities are encountered during the installation of the drainage works that conflict with the placement of the new culvert, the operating utility company shall relocate the utility at their own costs. The Contractor however will be responsible to co-ordinate these required relocations (if any) and their co-ordination work shall be considered incidental to the drainage works.

16.0 FINAL INSPECTION

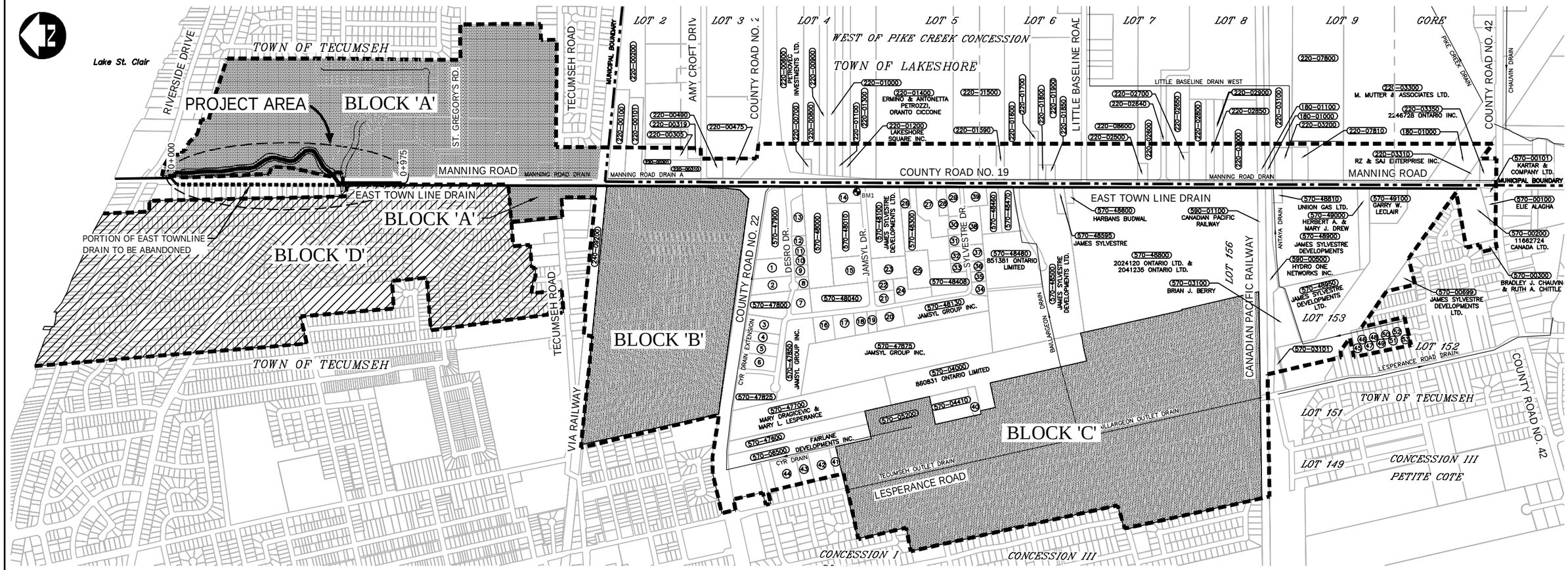
All work shall be carried out to the satisfaction of the Drainage Superintendent for the Municipality, in compliance with the specifications, drawings and the Drainage Act. Upon completion of the project, the work will be inspected by the Engineer and the Drainage Superintendent. Any deficiencies noted during the final inspection shall be immediately rectified by the Contractor.

Final inspection will be made by the Engineer within 20 days after the Drainage Superintendent has

received notice in writing from the Contractor that the work is completed, or as soon thereafter as weather conditions permit.

17.0 FISHERIES CONCERNS

Standard practices to be followed to minimize disruption to fish habitat include embedment of the culvert a minimum 10% below grade, constructing the work 'in the dry' and cutting only trees necessary to do the work (no clear-cutting). No in-water work is to occur during the timing window unless otherwise approved by the appropriate authorities.



WATERSHED PLAN

SCALE-1:15,000

SITE BENCHMARKS

LAKEWOOD PARK STORMWATER CHANNEL–
TOWN OF TECUMSEH BENCHMARK NO. 40.

ELEVATION=177.02m

PROPOSED ENCLOSURE–
TOWN OF TECUMSEH BENCHMARK NO. 120
MANNING ROAD & ST. THOMAS BRIDGE, PLATE IS LOCATED ON SOUTH SIDE OF BRIDGE 0.21m WEST OF EAST END, 0.09m BELOW TOP OF CONCRETE.

ELEVATION=176.478m

NOTE: CONTRACTOR TO VERIFY BENCHMARKS PRIOR TO CONSTRUCTION.

LEGEND

- EAST TOWNLINE DRAIN WATERSHED AREA
- EAST TOWNLINE DRAIN
- OTHER DRAINS
- MUNICIPAL BOUNDARY
- BLOCK ASSESSMENT BOUNDARIES
- BLOCK ASSESSMENT REDUCED RATE FOR OVERFLOW

LICENSED PROFESSIONAL ENGINEER
M. D. HERNANDEZ
100078099
PROVINCE OF ONTARIO
Apr 14/23

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DESIGN: MDH | REVIEWED BY: CDP
DRAWN: WLB | CHECKED BY: TRO
DATE: April 14, 2023
SCALE: AS SHOWN

DILLON CONSULTING

PROJECT NO. 20-2079

DRAWING SCALES BASED ON A 11" X 17" SHEET

'SCHEDULE G'

Drainage Report for the
EAST TOWNLINE DRAIN (LOWER PORTION) IMPROVEMENTS
Town of Tecumseh

SHEET TITLE: WATERSHED PLAN

TOWN OF TECUMSEH PARCEL INFORMATION		
PARCEL No.	ROLL No.	LANDOWNER
1	570-47903	401 REAL ESTATE TRUST INC.
2	570-47904	SYNC SYNERGY INC.
3	570-47810	401 REAL ESTATE TRUST INC.
4	570-47812	TEAM GORAN INC.
5	570-47815	JD & DD ENTERPRISES INC.
6	570-47835	1859283 ONTARIO INC.
7	570-48050	JAMES SYLVESTRE DEVELOPMENT LTD.
8	570-47920	PAHAL HOLDINGS INC.
9	570-47916	SERSA HOLDINGS INC.
10	570-47914	GUY MANTHA & CHERYL DEMARSE
11	570-47910	TEDDAN INVESTMENTS INC.
12	570-47909	VORTEX SNOW REMOVAL INC.
13	570-47905	2860606 ONTARIO INC.
14	570-48005	1403440 ONTARIO INC.
15	570-48030	JAMSYL GROUP INC.
16	570-47865	JAMSYL GROUP INC.
17	570-47880	2516630 ONTARIO INC.
18	570-47890	2679093 ONTARIO LTD.
19	570-47895	JAMSYL GROUP INC.
20	570-47894	2221836 ONTARIO LIMITED
21	570-48114	2626637 ONTARIO INC.
22	570-48112	JAMSYL GROUP INC.
23	570-48110	JAMSYL GROUP INC.
24	570-48120	JAMSYL GROUP INC.
25	570-48301	JAMSYL GROUP INC.
26	570-48200	851381 ONTARIO LTD.
27	570-48350	JSNC HOLDINGS INC.
28	570-48380	JAMSYL GROUP INC.
29	570-48400	2211211 ONTARIO LIMITED
30	570-48403	MARACK HOLDINGS INCORPORATED
31	570-48405	CLK MACHINING LTD.
32	570-48406	1560896 ONTARIO INC.
33	570-48407	7264119 CANADA CORPORATION
34	570-48139	2402448 ONTARIO INC.
35	570-48409	CATHERINE L. & DAVID DESANTIS
36	570-48410	J Y INTERNATIONAL INC.
37	570-48415	JAMSYL LIMITED PARTNERSHIP
38	570-48420	DC HOLDINGS LTD.
39	570-48430	JAMSYL LIMITED PARTNERSHIP
40	570-04092	ROCCO & ANNA LECCE
41	570-05601	JAMES A. & ELLEN DESJARDINS
42	570-05700	PHILIPPE J. & MAUREEN A LEBLANC
43	570-05800	SUSAN G. FITZPATRICK
44	570-06000	BERNARD J. & DIANA L. MCGRAW
45	570-02600	FARINA G. KEUHFUSS
46	570-02500	MARIE A. GAGNIER
47	570-02400	CAROLE KITCHING
48	570-02300	BLAZE, ANKA & LIUBICA RISTOVSKI
49	570-02200	BRIAN & KAREN RUTHERFORD
50	570-02100	MARY A. LEE
51	570-02000	LEHMBER S. & KULWANT K. PAHAL
52	570-01900	DANIEL R. BEAULIEU
53	570-01800	PAUL A. ADAMS

TOWN OF TECUMSEH PARCEL INFORMATION	
ROLL No.	LANDOWNER
570-03101	CASSANDRA L. CATALANC
570-04410	1046399 ONTARIO LTD.
570-05200	ROMANO & JADRANKA ZOHIL
570-47800	401 REAL ESTATE TRUST INC.
570-47900	COUNTY OF ESSEX
570-48000	BALBIR S. & GEETINDER K. KOONER
570-48010	JAMSYL GROUP INC.
570-48040	JAMSYL GROUP INC.
570-48408	JAMES SYLVESTRE DEVELOPMENT LTD.
570-48300	STORAGE VAULT CANADA INC.
570-48460	JEANNETTE SYLVESTRE & 851381 ONTARIO LTD.
570-48470	JEANNETTE SYLVESTRE
570-48595	JAMES B. SYLVESTRE
570-47825	2292093 ONTARIO INC.
570-47600	RICHARD J. & GALE A. DEMARSE

TOWN OF LAKESHORE PARCEL INFORMATION	
ROLL No.	LANDOWNER
220-03350	2246728 ONTARIO INC.
220-03310	RZ & SAJ ENTERPRISE INC.
180-01000	HYDRO ONE NETWORKS INC.
220-03300	M. MUTTER & ASSOCIATES LTD.
220-07800	MICHAEL P. MUTTER
220-07810	MICHAEL P. MUTTER
220-03200	LOUELLA M. LESSARD
220-03100	R. LESSARD TRUCKING LTD.
180-01100	CANADIAN PACIFIC LIMITED
220-03000	FAUSTO & FRANCA VOLPATTI
220-02900	STEWART GILBERT
220-02850	KALJIT BATH
220-02800	RANJIT & JOAN S. KOONER
220-02700	GARY J. ANGER
220-02650	FAIRLANE MACHINE TOOLS INC.
220-02640	2438305 ONTARIO LIMITED
220-02600	D. SYLVESTRE ENTERPRISES INC.
220-02500	DENNIS L. & SHARON L. SYLVESTRE
220-08600	ELIZABETH CAMPEAU, SHIRLEY BURROWS & PAULINE HORVATH
220-01900	EDWARD G. DOCHERTY & 701195 ONTARIO INC.
220-01850	LEWIS C. & ELLEN MAYEA
220-01800	DENIS C. & JEANNE T. MAYEA
220-01700	KAMALJIT BHOGAL
220-01600	701195 ONTARIO LTD.
220-01590	JEANNE M. ORR
220-01500	TERRY J. & LOUISE ORR
220-01400	ERMINIO & ANTONETTA PETROZZI & ORANTO CICCONE
220-01300	1027458 ONTARIO INC.
220-01200	LAKESHORE SQUARE INC.
220-01100	PETROVEC INVESTMENTS LIMITED
220-01000	LAKESHORE SQUARE INC.
220-00900	LAKESHORE SQUARE INC.
220-00800	LAKESHORE SQUARE INC.
220-00700	LAKESHORE SQUARE INC.
220-00600	PETROVEC INVESTMENTS LIMITED
220-00475	TDL GROUP LTD. IN TRUST
220-00490	PRIME PROPERTIES LAKESHORE HOLDINGS INC.
220-00310	JAFFER PROPERTY INC.
220-00301	MANNING DEVELOPMENTS INC.
220-00319	VALENTE DEVELOPMENT CORP.
220-00305	PETCON HOSPITALITY GROUP INC.
220-00200	2741981 ONTARIO LTD.
220-00101	RKL ANIMAL HEALTH CARE LTD.
220-00100	RKL ANIMAL HEALTH CARE LTD.

LICENSED PROFESSIONAL ENGINEER
M. D. HERNANDEZ
100078099
Apr 14/23
PROVINCE OF ONTARIO

'SCHEDULE G'

Conditions of Use

Verify elevations and/or dimensions on drawing prior to use. Report any discrepancies to Dillon Consulting Limited.

Do not scale dimensions from drawing.

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2	FINAL REPORT SUBMISSION	APR. 14/23	MDH
1	CLIENT REVIEW	SEPT. 26/22	MDH

DESIGN: MDH | REVIEWED BY: CDP
DRAWN: WLB | CHECKED BY: TRO
DATE: April 14, 2023
SCALE: AS SHOWN

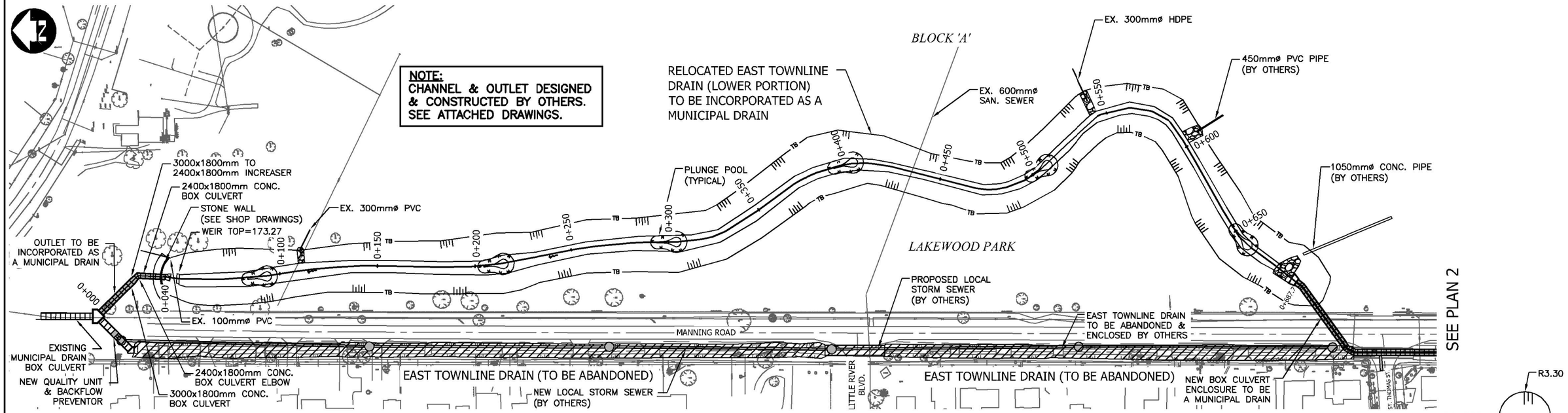
DILLON CONSULTING

PROJECT NO. 20-2079

DRAWING SCALES BASED ON A 11" X 17" SHEET

Drainage Report for the
EAST TOWNLINE DRAIN (LOWER PORTION) IMPROVEMENTS
Town of Tecumseh

SHEET TITLE
PARCEL INFORMATION TABLES



PLAN
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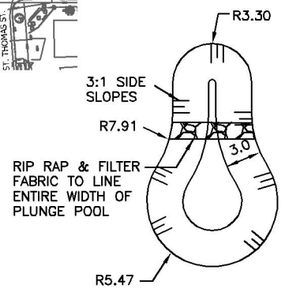
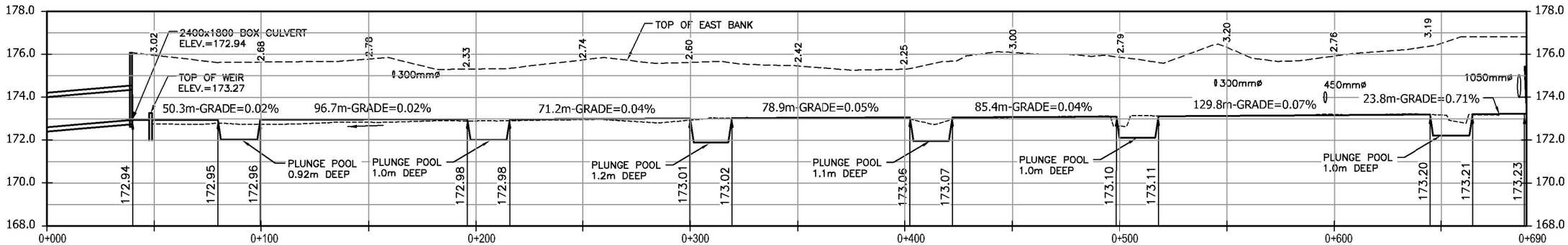


PLUNGE POOL
N.T.S.



PROFILE
SCALE HORIZ.1:2000
VER. 1:200

NOTE:
CHANNEL & OUTLET DESIGNED & CONSTRUCTED BY OTHERS. SEE ATTACHED DRAWINGS.

LICENSED PROFESSIONAL ENGINEER
M. D. HERNANDEZ
100078099
Apr 14/23
PROVINCE OF ONTARIO

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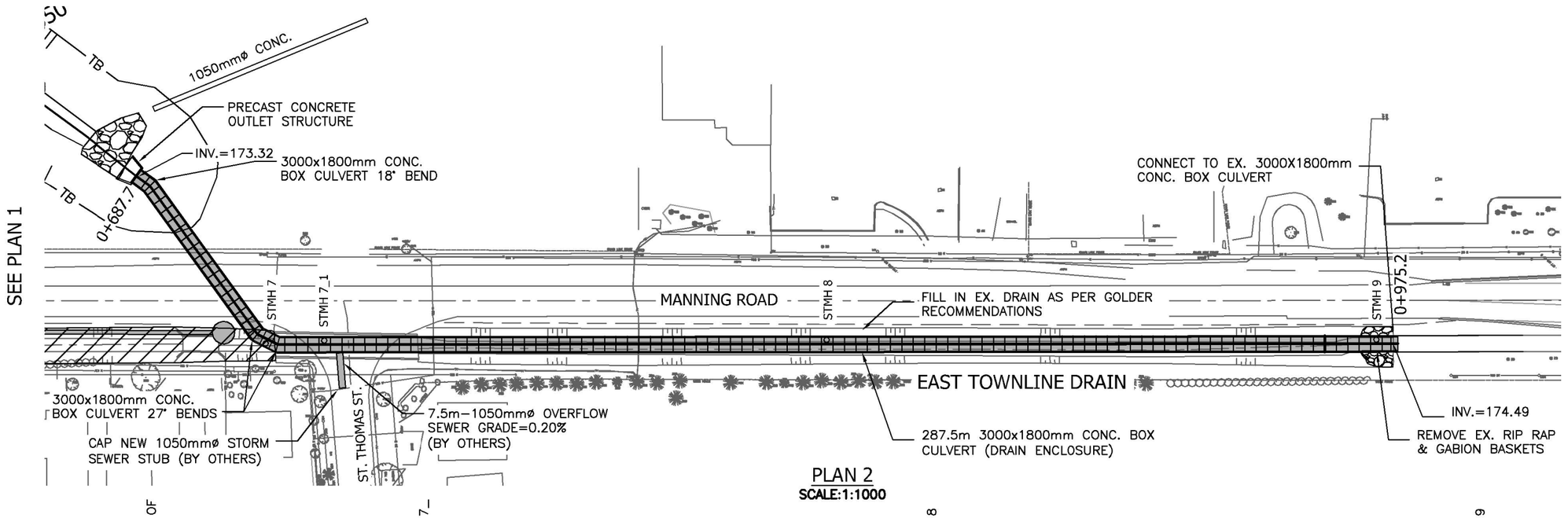
EAST TOWNLINE DRAIN (LOWER PORTION) IMPROVEMENTS
Town of Tecumseh

SHEET TITLE
RELOCATION OF LOWER DRAIN PORTION PLAN & PROFILE

PAGE NO. 3 of 5



PLAN 2
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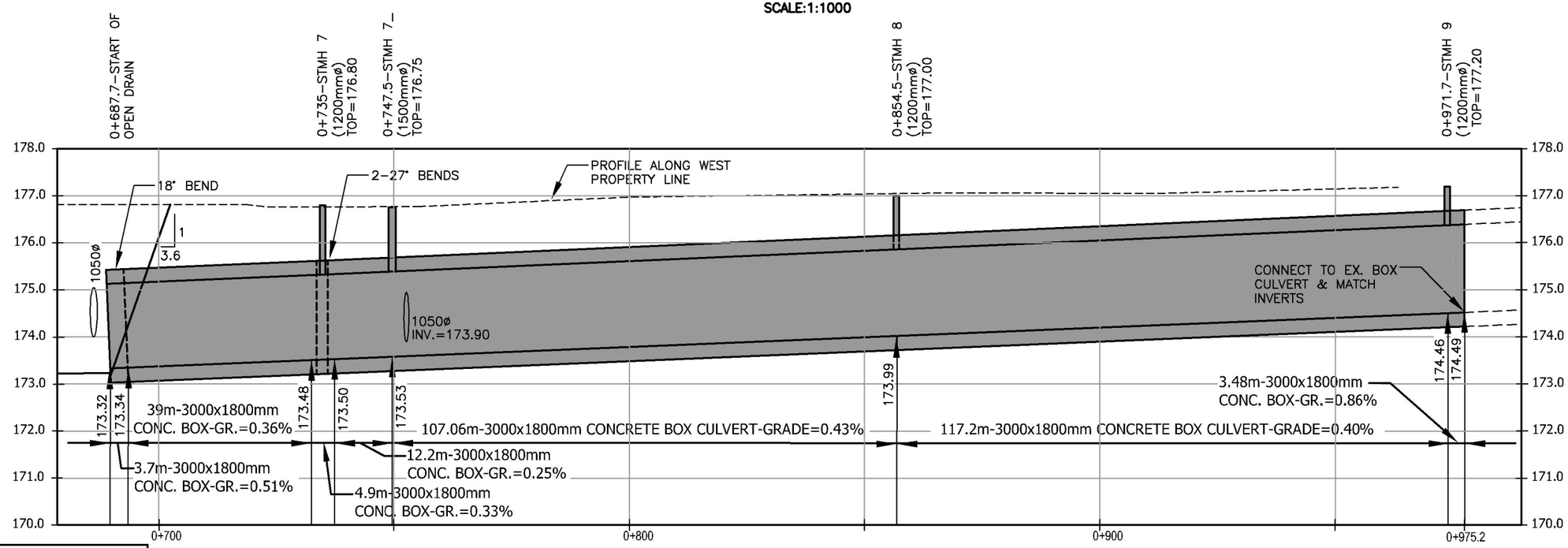

PROFILE
SCALE HORIZ.1:1000
VERT. 1:100

'SCHEDULE G'

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Town of Tecumseh

SHEET TITLE
DRAIN ENCLOSURE PLAN & PROFILE

PAGE NO. 4 of 5

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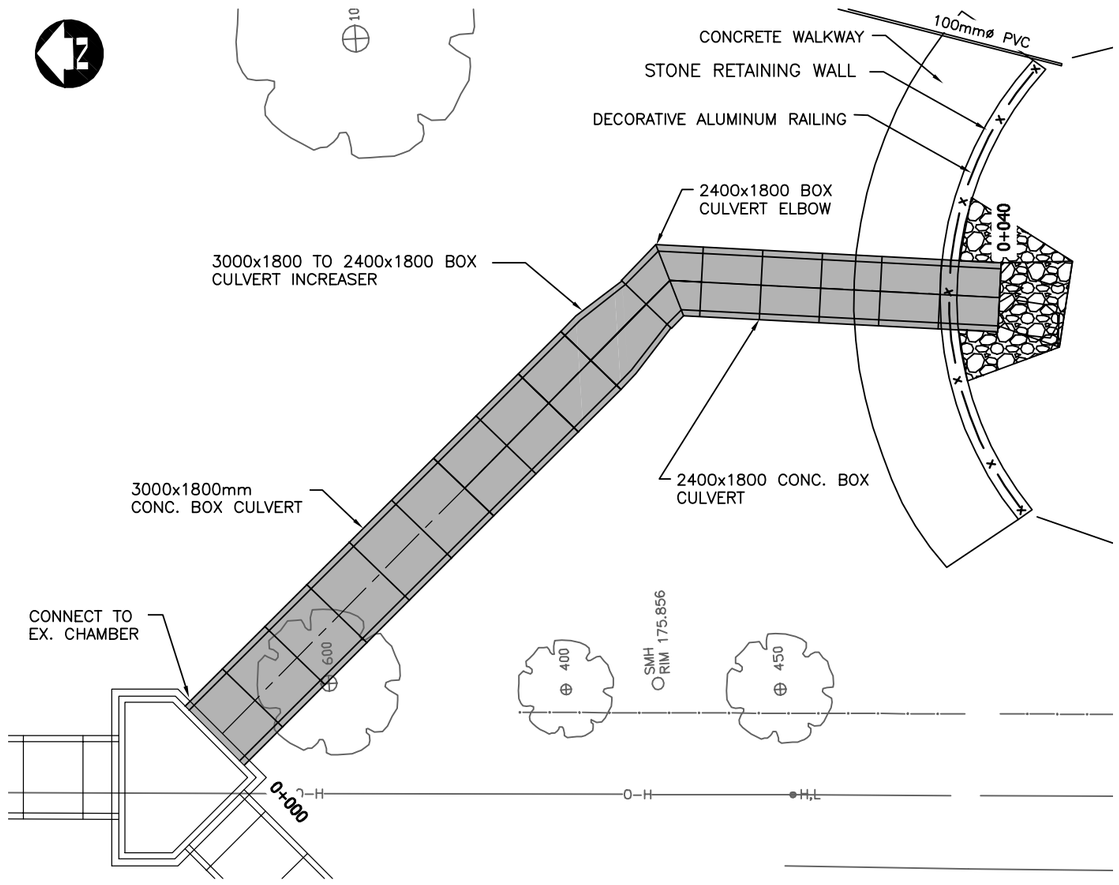
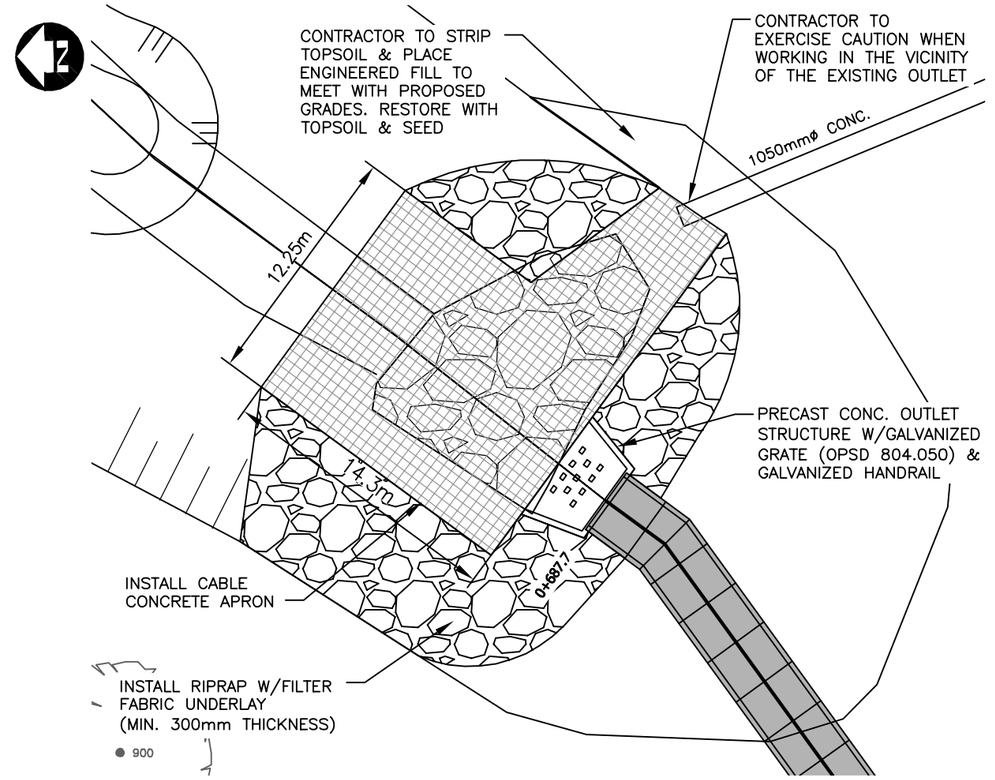


STORMWATER CHANNEL OUTLET DETAIL

SCALE:1:500

DESIGNED & CONSTRUCTED BY OTHERS



STORM SEWER OUTLET DETAIL

SCALE:1:300

DESIGNED & CONSTRUCTED BY OTHERS

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100078099
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SHEET TITLE: OUTLET DETAILS

PAGE NO. 5 of 5

LAKEWOOD PARK STORMWATER CHANNEL

TECUMSEH, ONTARIO

(RECORD DWG'S)

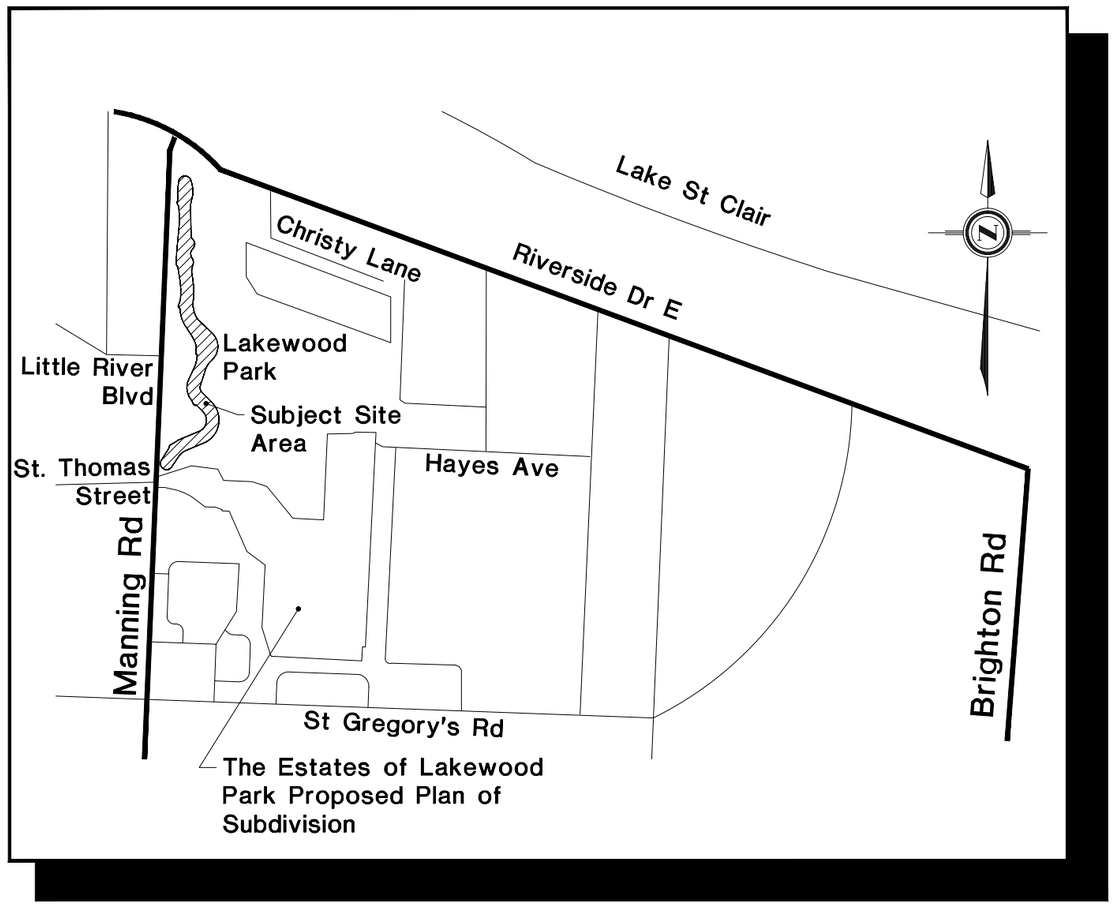
LIST OF DRAWINGS

1. Cover Sheet
2. Legend, Abbreviations and Notes
3. General Channel Plan
4. Plan & Profiles - Sheet 1
5. Plan & Profiles - Sheet 2
6. Tree Removal & ESC Drawing
7. Sections

8.1. Details

8.2. Details, shop drawings

9. Stockpile Plan



OWNER

THE TOWN OF TECUMSEH

ENGINEERS

THE ODAN/DETECH GROUP INC.
5230 South Service Road Burlington,
Ontario L7L 5K2

TOWN OF TECUMSEH

TECUMSEH TOWN HALL (MUNICIPAL OFFICES)
917 LESPERANCE ROAD
TECUMSEH, ON
N8N 1W9

PROJECT NO.

FILE: 14226 LAKEWOOD PARK CHANNEL

DATE

AUGUST, 2015

ODAN/DETECH
THE ODAN/DETECH GROUP - CONSULTING ENGINEERS

ODAN/DETECH
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ODAN/DETECH
THE ODAN/DETECH GROUP - CONSULTING ENGINEERS

ABBREVIATIONS

ABUTMENT	ABUT.	INCH	IN.
ACRES	AC.	INDUSTRIAL	IND.
ALLOWANCE	ALL'CE	INSIDE DIAMETER	I.D.
AMERICAN SOCIETY FOR TESTING AND MATERIALS	A.S.T.M.	INSTRUMENT	INSTR.
APARTMENT	APT.	INSULATED	INS.
APPROVED	APP'D	INTERMEDIATE SIGHT	I.S.
ASBESTOS	ASB.	INVERT	INV.
ASBESTOS CEMENT	A.C.	IRON BAR	I.B.
ASBESTOS CEMENT PIPE	A.C.P.	IRON PIPE	I.P.
ASBESTOS CEMENT PRESSURE PIPE	A.C.P.P.		
ASPHALT	ASPH.		
AVENUE	AVE.	LEFT	LT.
AVERAGE	AV.	LENGHT	LEN.
AVERAGE ANNUAL DAILY TRAFFIC	A.A.D.T.	LENGHT OF VERTICAL CURVE	L.V.C.
AZIMUTH	AZ	LIGHT STANDARD	L.S.
		LINEAL FOOT	L.F.T.
		LOW POINT	L.P.
		LOW WATER LEVEL	L.W.L.
BACK FILL	B.FILL		
BACK SIGHT OR BUS STOP	B.S.		
BASEMENT	BSMT.		
BEDDING	BED	MAIL BOX	M.B.
BEGINNING OF CURVE	B.C.	MANHOLE	MH.
BEGINNING OF VERTICAL CURVE	B.V.C.	MAXIMUM	MAX.
BELL TELEPHONE	B.	MILES PER HOUR	M.P.H.
BENCH MARK	B.M.	MINISTRY OF TRANSPORTATION OF ONTARIO	M.T.O.
BOULEVARD	BLVD.	MINIMUM	MIN.
BUILDING	BLDG.	MUNICIPAL	MUN.
BUILDING LINE	B/L		
CANADIAN NATIONAL RAILWAY	C.N.R.	NO PARKING	∅
CANADIAN PACIFIC RAILWAY	C.P.R.	NORTH	N
CANADIAN STANDARD ASSOCIATION	C.S.A.	NOT TO SCALE	N.T.S.
CAST IRON PIPE	C.I.P.	NUMBER	NO.
CATCH BASIN	C.B.		
CENTRE LINE	C.L. OR ℄		
CHAINAGE EQUATION	CH. EQ.		
CHAIN LINK FENCE	C.L.F.	OBVERT	OBV.
CHECKED	CHK'D.	ORIGINAL GROUND	O.G.
CHORD	CH.	OUTSIDE DIAMETER	O.D.
CLASS OR CLAY	CL.		
CLAY PIPE	CL.P.		
CLEAN OUT	C.O.		
COMMERCIAL	COMM.	PARKWAY	PKWY.
CONCESSION	CON.	PART OR POINT	PT.
CONCRETE	CONC.	PAVEMENT	PAV.T
CONCRETE MONUMENT	C.M.	PERSONS PER ACRE	P.P.A.
CONCRETE PIPE	C.P.	PIPE	P.
CONSTRUCTION	CONST.	POINT OF COMPOUND CURVE	P.C.C.
CORNER	COR.	POINT OF CURVE	P.C.
CORRUGATED STEEL PIPE	C.S.P.	POINT OF INTERSECTION	P.I.
COUNTY	CO.	POUNDS PER SQURE INCH	P.S.I.
COURT	CT.	PROPERTY OR PROPOSED	PROP.
CREEK	CR.	PROPERTY LINE	P/L OR ℄
CRESCENT	CRES.	PUMPING STATION	P.S.
CROSS SECTION	X-SECT.		
CUBIC	CU.		
CUBIC FEET PER SECOND	C.F.S.		
CULVERT	CULV.	QUANTITY	QTY.
CURB AND GUTTER	C.& G.		
CURVE TO SPIRAL	C.S.		
		RADIUS	R. OR RAD.
		RAILWAY	RWY.
DEGREE OF CURVE	D.	REGISTERED PLAN	R.P.
DEPARTMENT	DEPT.	REINFORCED	REINF.
DIA.	DIA.	RESIDENTIAL	RES.
DISTANCE	DIST.	RETAINING WALL	RET. W.
DITCH INLET	D.I.	REVISION	REV.
DIVISION	DIV.	RIGHT	RT.
DRAWING	DWG.	RIGHT OF WAY	R.O.W.
DRIVE	DR.	ROAD	RD.
DRIVEWAY	DWY.	ROUND IRON BAR	R.I.B.
DUCTILE IRON PIPE	D.I.P.		
		SAFE PASSING SIGHT DISTANCE	S.P.S.D.
EACH	EA.	SAFE STOPPING SIGHT DISTANCE	S.S.S.D.
EARTH CUT OR END OF CURVE	E.C.	SAND	SA.
EARTH FILL	E.F.	SANITARY	SAN.
EAST OR EXTERNAL	E.	SECTION	SECT.
EDGE OF PAVEMENT	E.O.P.	SEWAGE TREATMENT PLANT	S.T.P.
ELECTRIC	ELEC.	SEWER	SEW.
ELEVATION	EL.	SHEET	SH.
END OF VERTICAL CURVE	E.V.C.	SIDWALK	S/W
ENGINEER	ENG.	SIGNAL	SIG.
ENTRANCE	ENT.	SOUTH OR SUPERELEVATION	S
ESTIMATE	EST.	SPECIFICATION	SPEC.
EXCAVATION	EXC.	SPIRAL TO CURVE	S.C.
EXISTING	EX.	SPIRAL TO TANGENT	S.T.
EXPRESSWAY	EXPY.	SQUARE	SQ.
EXTRA STRENGTH	E.S.	STANDARD	STD.
		STANDARD IRON BAR	S.I.B.
		STANDARD STRENGTH	S.S.
		STATION	STA.
FEET OR FOOT	FT.	STOP OR STREET	ST.
FINAL MEASUREMENT	F.M.	STOPPING SIGHT DISTANCE	S.S.D.
FLOOR	FL.	STORM	STM.
FOOTING	FTG.	STOREY	STY.
FORESIGHT	FS.	STRUCTURE	STR.
FOUNDATION	FND.	STUCCO	STUC.
FRAME	FR.	SUBDIVISION	SUBD.
FREEWAY	FRWY.		
		TANGENT	TAN.
GALLONS PER MINUTE	G.P.M.	TANGENT TO SPIRAL	T.S.
GALVANIZED	GAVL.	TECHNICAL TO SPIRAL	TECH.
GARAGE	GAR.	TELEGRAPH	T
GAS	G.	TERRACE	TER.
GAUGE	GA.	TOWNSHIP	TWP.
GEODETIC BENCH MARK	G.B.M.	TRAFFIC LIGHT	T.L.
GRADE OR GRAVEL	GR.	TRANSFORMER	TRANS.
GRANULAR	GRAN.	TURNING POINT	T.P.
GUIDE RAIL	G.R.	TYPICAL	TYP.
HEADWALL	HD.W.	VALVE	V.
HIGH POINT	H.P.	VELOCITY	VEL.
HIGH WATER LEVEL	H.W.L.	VERTICAL	VERT.
HIGHWAY	HWY.	VERTICAL POINT OF INTERSECTION	V.P.I.
HORIZONTAL	HOR.	VISIBILITY CURVE	V.C.
HOT LAID	H.L.	VITRIFIED PIPE	V.T.P.
HOT MIX	H.M.	VOLUME	VOL.
HOUSE	HSE.		
HYDRANT	HYD.		
HYDRO	H.	WALKWAY	W/W
		WATER LEVEL	W.L.
		WATER OR WEST	W.
		WATERMAIN	W/M
		YARD	YD.

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

GENERAL NOTES

1). DRAWINGS ARE NOT TO BE SCALED.
2). DO NOT SITE BUILDINGS WITH THIS DRAWING.
3). ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON THE SITE PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER BEFORE PROCEEDING.
4). UNLESS OTHERWISE NOTED ON THE DRAWINGS THE STANDARD TOWN, REGION/COUNTY, MTO AND OPSD AND OPSS ARE TO CONSTITUTE PART OF THIS CONTRACT AND SITE PLAN DRAWINGS.
5). REFER TO TOWN STANDARDS AND SPECIFICATIONS FOR LIST OF APPROVED MANUFACTURERS AND MATERIALS.
6). EXISTING STRUCTURES ARE NOT TO BE DISTURBED, NOR ENCROACHMENT ON ADJACENT PROPERTIES UNLESS INSTRUCTED BY THE ENGINEER.
7). THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE OWNERS CONTRACTOR FROM OBTAINING AND PAYING FOR, BUT NOT LIMITED TO THE FOLLOWING PERMITS, ROAD CUTS, SEWER PERMITS, RELOCATION OF SERVICES, ENCROACHMENT AGREEMENTS, APPROACH APPROVAL PERMITS, ETC. ALL RESTORATION AS PER TOWN STANDARDS.
8). PRIOR TO CONSTRUCTION, THE ENGINEER IS TO BE NOTIFIED BY THE TOWN AND THE CONTRACTOR AS TO THE EXTENT OF THE CONSTRUCTION LIMITS THEY PROPOSE.
9). THIS SET IS TO BE READ IN CONJUNCTION WITH THE TOWN'S PARK PLAN, ESTATES OF LAKEWOOD PARK SET, THE TOWN'S SANITARY PUMP STATION PLANS, AND ANY OTHER PLANS OR DRAWINGS WHICH DEPICT WORKS THAT ARE PROPOSED FOR THIS SITE.
10). THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING THE SUPPLY, INSTALLATION AND REMOVAL OF ALL NECESSARY SIGNAGE, DELINEATORS, MARKERS AND BARRIERS. ALL SIGNS, ETC. SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS FOR THE TOWN AND ONTARIO TRAFFIC MANUAL BOOK 7, 2001.
11). THE CONTRACTOR SHALL ENDEAVOR TO PREVENT MUD TRACKING ONTO EXISTING RIGHT-OF-WAYS AND SHALL PROVIDE FOR CLEANUP AT HIS OWN EXPENSE AS DIRECTED BY THE TOWN. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE TO CONTROL DUST ON THE PROJECT AND HE SHALL PROVIDE AT HIS OWN EXPENSE, CONTROLLING MEASURES AS DIRECTED BY THE TOWN.
12). THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES PRIOR TO AND DURING CONSTRUCTION. LOCATION OF EXISTING UTILITIES TO BE VERIFIED IN THE FIELD.
13). THE CONTRACTOR SHALL RECTIFY ALL DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER AND TO THE SATISFACTION OF THE TOWN.
14). BLASTING WILL NOT BE ALLOWED UNLESS AUTHORIZED BY THE TOWN.
15). ALL DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF SERVICE AND THE PROPERTY OF THE ENGINEER WHICH MUST BE RETURNED AT THE COMPLETION OF WORK.
16). ALL CONSTRUCTION WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
17). CONSTRUCTION ACCESS SHALL BE CONSTRUCTED WITH A MIN. OF 450mm THICK CRUSHED STONE BASE FROM MUNICIPAL CURB OR EDGE OF PAVEMENT TO THE PROPERTY LINE TO THE SATISFACTION OF THE TOWN. LOCATION SHALL BE AS PER THE TOWN.
18). MINIMUM CLEARANCE OF 1.0m FROM ALL ABOVE GROUND SERVICES AND UTILITIES.
19). ALL EXISTING SEWERS ARE TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION INCLUDING SEWER INVERTS, MATERIAL TYPE, AND SIZE. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER.
20). ALL RELOCATION, RECONSTRUCTION AND RESTORATION TO BE PERFORMED TO THE SATISFACTION OF THE DIRECTOR OF ENGINEERING.

GENERAL PLAN

1). THE GENERAL PLAN IS TO BE READ WITH THE PLAN & PROFILES DRAWING AND THE DETAILS.
2). CONTRACTOR TO RESTORE ALL DISTURBED AREAS (I.E. PUBLIC R.O.W., ADJACENT LANDS) WHICH HAVE BEEN DISTURBED DURING CONSTRUCTION TO PREVIOUS OR BETTER CONDITION.
3). ALL GRADING MATERIAL AND CONSTRUCTION METHODS MUST CONFORM TO CURRENT TOWN STANDARDS AND SPECIFICATIONS.
4). EXCESS EXCAVATED FILL FROM SITE TO BE STOCKPILED IN MARKED LOCATIONS ON THE ADJACENT PROPERTY TO THE SOUTH. REFER TO THE ADJACENT PROPERTY ESC DRAWING AS ATTACHED TO THE TENDER.
5). SILT FENCE(S) TO BE INSTALLED AND MAINTAINED TO PREVENT SILT FLOWING ONTO ADJACENT LANDS SILTATION CONTROL METHODS SUCH AS ENVIROFENCE OR APPROVED EQUAL SHALL BE ERECTED PRIOR TO ANY GRADING OR CONSTRUCTION AND SHALL BE MAINTAINED IN GOOD REPAIR THROUGHOUT THE CONSTRUCTION AND GRADING PHASES. THE LOCATION AND ERECTION OF THE SILTATION CONTROL METHODS TO BE APPROVED BY THE TOWN. REFER TO SILT CONTROL DETAIL.
6). ANY CHANGES IN GRADES OR CATCH BASINS REQUIRE THE APPROVAL OF THE ODAN/DETECH GROUP INC.
7). ALL LANDSCAPING TO BE INSTALLED AS SOON AS POSSIBLE OR PRIOR TO THE END OF THE FIRST GROWING SEASON. LANDSCAPING TO BE MAINTAINED UNTIL IT IS ESTABLISHED.
8). SLOPES IN LANDSCAPE AREAS AND ON BERMS SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL.

SERVICING NOTES
STORM SEWERS

1). ALL STORM SEWERS 450mmØ AND SMALLER TO BE PVC ULTRA-RIB OR PVC DR IN ACCORDANCE WITH CSA-B182.4, ASTM F794, ASTM D1784 OR LATEST REVISIONS. 525mmØ AND LARGER TO BE CONCRETE IN ACCORDANCE WITH CSA A257.2, CLASS 65D OR LATEST REVISIONS. UNLESS OTHERWISE NOTED.
2). BEDDING AND COVER FOR PVC SEWERS (FLEXIBLE PIPE) AS PER OPSD 802.010, GRANULAR "A" COMPACTED TO 100% SPD.
3). BEDDING AND COVER FOR CONCRETE SEWERS (RIGID PIPE) AS PER OPSD 802.030, CLASS B, GRANULAR 'A', COMPACTED TO 100% SPD. UNLESS OTHERWISE SPECIFIED.
4). ALL HEADWALLS AS PER OPSD 804.030 WITH CABLE CONCRETE-35 SPILLWAY EXTENDING 1m VERTICAL UP THE OTHERSIDE OF THE CHANNEL.
5). ALL CABLE CONCRETE TREATMENT FOR SEWER AND CULVERT OUTLETS SHALL BE AS PER MANUFACTURERS SPECIFICATIONS. IN ADDITION CABLE CONCRETE SHALL HAVE CREVICES BACKFILLED WITH TOPSOIL AND HYDROSEEDED.
6). CONTRACTOR SHALL PROVIDE COLOUR VIDEO OF STORM SEWER UPON COMPLETION TO THE ENGINEER.
7). ALL BOX CULVERTS SHALL CONFORM TO OPSS 1821.

UTILITY SUPPORTS AND TRENCHES

1). ALL SERVICES, UTILITIES AND CATCH BASIN LEADS SHALL BE SUPPORTED AS PER OPSD-1007.01 AND OPSD-1007.02
2). ALL UTILITIES SHALL BE LOCATED, SUPPORTED AND PROTECTED TO THE SATISFACTION OF THE UTILITY COMPANY DURING THE CONSTRUCTION PERIOD.

REFERENCE POINTS

- DENOTES IRON PIPE
- DENOTES ROUND IRON BAR
- DENOTES 5/8" SQUARE IRON BAR
- DENOTES 1" STANDARD IRON BAR
- DENOTES CONC. MONUMENT
- DENOTES BORE HOLE
- DENOTES BENCH MARK

RAILWAYS

- DENOTES RAILWAY SIGNAL WITH BELL OR LIGHTS
- DENOTES SINGLE RAILWAY TRACK
- DENOTES DOUBLE RAILWAY TRACK OR MORE

STORM AND SANITARY

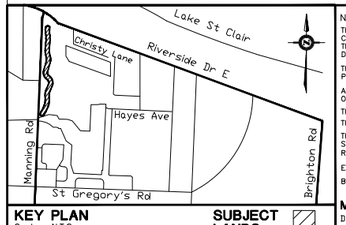
- DENOTES EXISTING STORM MANHOLE
- DENOTES STORM MANHOLE
- DENOTES EXISTING CATCHBASIN
- DENOTES CATCHBASIN
- DENOTES EXISTING DOUBLE CATCHBASIN
- DENOTES DOUBLE CATCHBASIN
- DENOTES STORMCEPTOR
- DENOTES INLET CONTROL DEVICE (ICD)
- DENOTES EXISTING STORM SEWER
- DENOTES STORM SEWER
- DENOTES EXISTING SANITARY MANHOLE
- DENOTES SANITARY MANHOLE
- C.O. DENOTES CLEAN OUT
- DENOTES REAR YARD DRAIN
- DENOTES SANITARY SEWER
- DENOTES EXISTING SANITARY SEWER
- DENOTES CULVERT
- DENOTES EXISTING CULVERT
- DENOTES DITCH CENTRE LINE AND DIRECTION OF FLOW
- DENOTES EMERGENCY OVERLAND FLOW
- DENOTES SUMP PUMP
- DENOTES ROOF DRAIN

UTILITIES

- DENOTES HYDRO BURIED CABLES AND DUCTS
- HYDRO DENOTES HYDRO TRANSFORMER VAULT AND CHAMBER
- DENOTES BELL TELEPHONE BURIED CABLES AND DUCTS
- B.T.O. DENOTES B.T.O. MANHOLE
- B. DENOTES BELL PEDESTAL
- DENOTES GAS MAINS
- DENOTES GAS MAINS(HIGH PRESSURE)
- G DENOTES GAS VALVE
- O.B. DENOTES BELL TELEPHONE POLE
- O.H.P. DENOTES HYDRO POLE
- O.T. DENOTES TELEGRAPH POLE
- O.L.S. DENOTES LIGHT STANDARD
- O.T.L. DENOTES TRAFFIC LIGHT
- DENOTES GUY AND ANCHOR
- DENOTES EXISTING LIGHT STANDARD
- DENOTES FUTURE LIGHT STANDARD
- DENOTES LIGHT STANDARD
- DENOTES LIGHT STANDARD PEDESTAL
- DENOTES HYDRANT
- DENOTES EXISTING HYDRANT
- DENOTES WATER VALVE & BOX
- DENOTES EXISTING WATER VALVE & BOX
- DENOTES BLOW OFF VALVE
- DENOTES WATER METER
- DENOTES EXISTING WATER MAIN
- DENOTES WATER MAIN
- DENOTES SIAMESE CONNECTION
- DENOTES CAP FOR SANITARY, STORM, AND/OR WATER AS NOTED
- (42) DENOTES LOT NUMBER FROM THE 21M – PHASE 1

MISCELLANEOUS

- DENOTES CONIFEROUS TREE
- DENOTES DECIDUOUS TREE
- DENOTES BUSH/HEDGE
- DENOTES SWAMP
- DENOTES EXISTING STUMP
- DENOTES TRAFFIC FLOW
- RET.W. DENOTES RETAINING WALL
- DENOTES STEEL HYDRO TOWER
- DENOTES TRAFFIC SIGN
- DENOTES STONE OR GABION
- DENOTES LAKE OR RIVER BANK
- C.L.F. DENOTES FENCE
- DENOTES CHAIN LINK FENCE
- W.F. DENOTES WOOD FENCE
- S.F. DENOTES STEEL FENCE
- P.&W.F. DENOTES POST AND WIRE FENCE
- 100.00 DENOTES APPROX ELEVATION (GROUND ELEVATION AT HIGHEST POINT AROUND THE DWELLING)
- BTF 101.80 DENOTES BASEMENT FLOOR ELEVATION
- DENOTES MUD MAT
- DENOTES RETAINING WALL
- DENOTES ASPHALT REMOVAL
- DENOTES RIP-RAP
- DENOTES PIPE INSULATION
- DENOTES ROCK CUT
- DENOTES ACCESS HATCH
- DENOTES AREA OF EXPANSION
- DENOTES PIPE REMOVAL
- DENOTES CROSS-SECTION REFERENCE
- DENOTES DRAWING NUMBER
- DENOTES SUBDRAIN
- DENOTES GEOGRID
- 113.68 100.00 PTC DENOTES PRIOR TO CONSTRUCTION SPOT ELEVATION
- · 100.00 DENOTES SPOT ELEVATION
- · 100.00T/C DENOTES TOP OF CURB ELEVATION
- · 100.00G/L DENOTES GUTTER LINE ELEVATION
- · 100.00 HP DENOTES HIGH POINT
- · 100.00 DENOTES SWALE INVERT ELEVATION
- · (100.00) DENOTES ELEVATION BY OTHERS
- 1.0% DENOTES FLOW ARROW AND SLOPE
- DENOTES FLOW ARROW
- DENOTES SLOPE (3:1 OR HIGHER)
- 195.50 DENOTES EXISTING CONTOUR
- DENOTES SILT FENCE
- DENOTES ENTRANCE LOCATION
- DENOTES EXTENT OF MAX. PONDING (0.25m) 100 YEAR STORM.
- DENOTES LIMIT OF CONSTRUCTION
- DENOTES PROPERTY LINE
- DENOTES PROPOSED LIMIT OF HEAVY DUTY ASPHALT
- 48 DENOTES EXISTING LOT BY OTHERS
- 48 DENOTES TRIBUTARY AREA INFORMATION
- DENOTES TRIBUTARY AREA
- STOP DENOTES STOP AND STREET NAME SIGN LOCATION



KEY PLAN
Scale : N.T.S.

SUBJECT LANDS

NOTE :
THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND UNDERGROUND AND ABOVE GROUND UTILITIES IS NOT NECESSARILY SHOWN ON THE CONTRACT, DRAWINGS AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING THE WORK THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS ON THE JOB AND REPORT ANY DISCREPANCY TO THE ARCHITECTS/ENGINEERS BEFORE PROCEEDING WITH THE WORKS.

ALL DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF SERVICE AND THE PROPERTY OF THE ENGINEER WHICH MUST BE RETURNED AT THE COMPLETION OF WORK.

THIS DRAWING IS NOT TO BE SCALED.

THIS PLAN MUST NOT BE USED TO SITE THE PROPOSED BUILDINGS.

THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE OWNER'S CONTRACTOR FROM OBTAINING, BUT NOT LIMITED TO THE FOLLOWING PERMITS: ROAD CUT, SEWER PERMITS, RELOCATION OF SERVICES, ENCROACHMENT AGREEMENTS, APPROACH APPROVAL PERMITS, RELOCATION OF SERVICES, ENCROACHMENT AGREEMENTS, APPROACH APPROVAL PERMITS, ETC...

EXISTING TOPOGRAPHICAL INFORMATION SUPPLIED BY CLARKE SURVEYORS INCORPORATED, ONTARIO LAND SURVEYORS.

BOUNDARY DATA DERIVED FROM INFORMATION FROM CLARKE SURVEYORS INCORPORATED, ONTARIO LAND SURVEYORS.

METRIC NOTE:
DISTANCES AND ELEVATIONS ON THIS PLAN ARE TYPICALLY SHOWN IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

CLIENT :
THE TOWN OF TECUMSEH

PROJECT :
LAKEWOOD PARK STORMWATER CHANNEL
TECUMSEH, ONTARIO

DRAWING :
LEGEND, ABBREVIATIONS, AND NOTES

BENCH MARK :
ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE DERIVED FROM THE TOWN OF TECUMSEH BENCH MARK #40, ELEVATION 177.02m.

BEARING NOTE :
BEARINGS ARE GRID BEARINGS UTM ZONE 17 NAD83 (CSRS) AND ARE DERIVED FROM THE POWERNET GPS NETWORK WINDSOR BASE NORTH 4682543816, EAST 345068.732 AND ARE REFERRED TO THE CENTRAL MERIDIAN 81° WEST.

NO	REVISIONS	DATE	BY
7	AS PER CITY COMMENTS	SEPT 8/2015	A.R.
6	AS PER AS RECORDED CONDITIONS	AUG 20/2015	A.R.
5	AS PER TOWN COMMENTS	AUG 21/2014	K.M.
4	AS PER TOWN COMMENTS	AUG 20/2014	K.M.
3	FOR SUBMISSION 3 – TOWN REVIEW	AUG 11/2014	K.M.
2	FOR SUBMISSION 2 – TOWN REVIEW	JUL 21/2014	K.M.
1	FOR SUBMISSION 1 – TOWN REVIEW	JAN 31/2014	K.M.

BAR SCALE :

DESIGN BY: J.K.
DRAWN BY: K.M.
CHECKED BY: D.C.S.
APPROVED BY: J.K.

ODAN/DETECH
THE ODAN/DETECH GROUP - CONSULTING ENGINEERS
5230 SOUTH SERVICE ROAD, BURLINGTON, ONTARIO L7L 5K2
OFF(905)632-3811 FAX(905)632-3363

REGISTERED PROFESSIONAL ENGINEER
I. KRPAN
SEPT-08-15
PROVINCE OF ONTARIO
ENGINEER

SCALE: N.T.S.
PROJ. NO.: 14226
FILE NO.: 14226-2AS RECORDED.DWG
DRWG. NO.: 2 of 9
DATE : AUG/2014

construction north

STRIP TOPSOIL, STOCKPILE ENOUGH FOR A MIN. OF 6" TO LINE THE FINISHED CHANNEL.

CHRISTY LN

RIVERSIDE DR

WOOD FRAME GARAGE

BUILDING

LAKEWOOD PARK (NORTH)

EX CB

EX. STM MH
RIM EL 175.89

EX. 300mmø PVC STM

PROP LIMITS OF CONSTRUCTION

DETAIL 1
REF. DWG. 8

RIP-RAP

EX. HYDRO CORRIDOR

CAPPED STM SEWER AT CHANNEL

EX. CBMH
RIM EL 175.80

HYDRO CORRIDOR BY OTHERS

MANNING RD

EX 600mm CONC SAN @ 0.00%

PROP 81.2m 2250mm CONC SAN @ 0.00%

EX 2250mm CONCRETE SAN

EX SAN TRUNK SEWER

MH
NW INV.EL 168.15
SE INV'EL -1.12

MH
NW INV.EL -1.12
SE INV'EL -1.12

MH
NW INV.EL -1.12
SE INV'EL -1.12

OUTLET PIPE TO CHANNEL – EX. 300mm HDPE
0.6m ABOVE BOTTOM OF BANK
INV @ CHANNEL 174.53

600mmø SAN SEWER OBV @ CHANNEL CROSSING APPROX. 172.90m

2250mmø SAN SEWER OBV @ CHANNEL CROSSING 168.15m

PLUNGE POOL TYP.

450mm PVC PIPE (BY OTHERS)
INV. @ CHANNEL 173.78

SWM POND (BY OTHERS)

FUT SUBDIVISION BY OTHERS

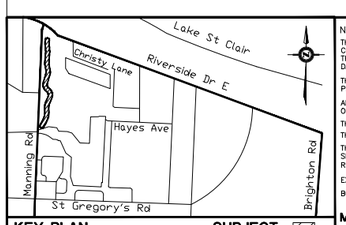
BOX CULVERT BY OTHERS

SANITARY PUMP STATION (BY OTHERS)

LITTLE RIVER BOULEVARD

ST. THOMAS STREET

ESSEX CON



KEY PLAN
Scale : N.T.S.

SUBJECT LANDS

NOTE :

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METRIC NOTE:

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CLIENT : **THE TOWN OF TECUMSEH**

PROJECT : **LAKEWOOD PARK STORMWATER CHANNEL**
TECUMSEH, ONTARIO

DRAWING : **GENERAL CHANNEL PLAN**

BENCH MARK :
ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE DERIVED FROM THE TOWN OF TECUMSEH BENCH MARK #40, ELEVATION 177.02m.

BEARING NOTE :
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NO	REVISIONS	DATE	BY
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5	AS PER TOWN COMMENTS	AUG 21/2014	K.M.
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2	FOR SUBMISSION 2 – TOWN REVIEW	JUL 21/2014	K.M.
1	FOR SUBMISSION 1 – TOWN REVIEW	JAN 31/2014	K.M.

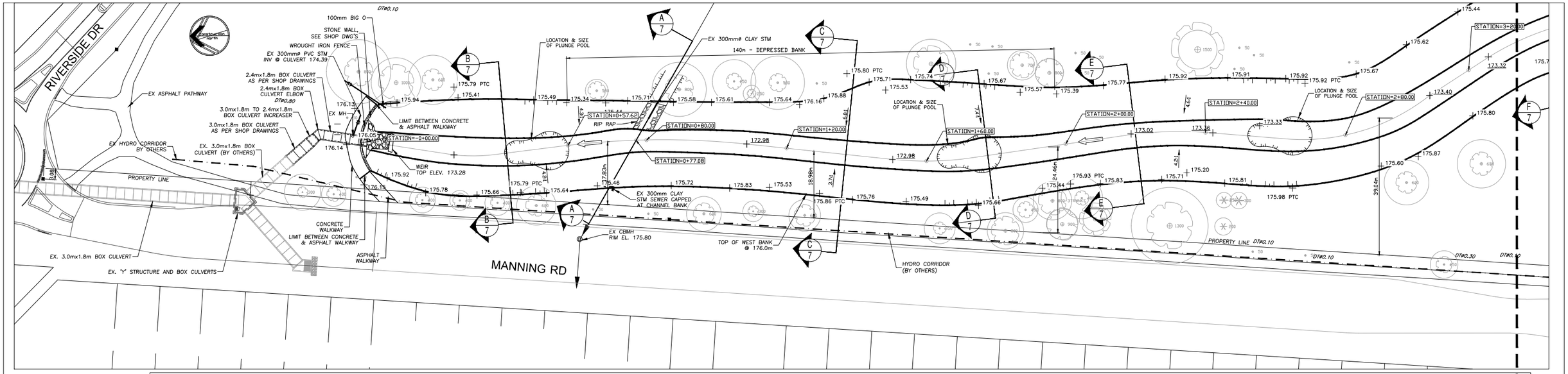
BAR SCALE : 0 20 40 60 80 100

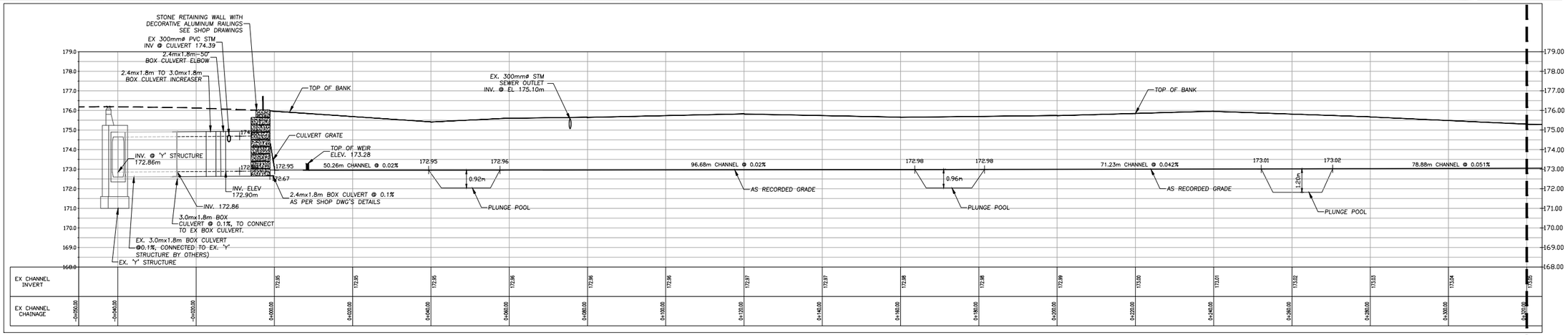
DESIGN BY: J.K.
DRAWN BY: K.M.
CHECKED BY: D.C.S.
APPROVED BY: J.K.

ODAN/DETECH
THE ODAN/DETECH GROUP • CONSULTING ENGINEERS
5230 SOUTH SERVICE ROAD, BURLINGTON, ONTARIO L7L 5K2
OFF(905)632-3811 FAX(905)632-3363

REGISTERED PROFESSIONAL ENGINEER
I. KRPAN
SEPT-08-15
PROVINCE OF ONTARIO
ENGINEER

SCALE:	PROJ. NO.:	FILE NO.:	DRWG. NO.:	DATE :
1:1000	14226	14226-3AS RECORDED.DWG	3 of 9	AUG/2014

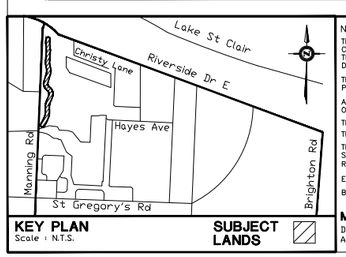




MATCH LINE REF. SHEET 5

LEGEND:

- 113.62 + 100.00 PTC — DENOTES PRIOR TO CONSTRUCTION SPOT ELEVATION
- + 100.00 — DENOTES SPOT ELEVATION
- + 100.00 T/C — DENOTES TOP OF CURB ELEVATION
- + 100.00 G/L — DENOTES GUTTER LINE ELEVATION
- + 100.00 T/S — DENOTES TOP ELEVATION OF SLOPE
- + 100.00 E/P — DENOTES EDGE ELEVATION OF PAVEMENT
- + 100.00 HP — DENOTES HIGH POINT
- + 100.00 — DENOTES SWALE INVERT ELEVATION
- + [100.00] — DENOTES ELEVATION BY OTHERS
- 1.0% — DENOTES FLOW ARROW AND SLOPE
- DENOTES FLOW ARROW
- DENOTES EMERGENCY OVERLAND FLOW
- DENOTES SLOPE (3:1 OR HIGHER)
- STATION=0+00 — DENOTES STATION OF BEGINNING/END OF PLUNGE POOL
- L=10 R=15 — DENOTES LENGTH/RADIUS BETWEEN DIMENSIONED ALIGNMENT GEOMETRY POINTS



KEY PLAN
Scale : N.T.S.

SUBJECT LANDS

NOTE :
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CLIENT : **THE TOWN OF TECUMSEH**

PROJECT : **LAKEWOOD PARK STORMWATER CHANNEL**
TECUMSEH, ONTARIO

DRAWING : **PLAN & PROFILES - SHEET 1**

BENCH MARK :
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BAR SCALE :
0 10 20 30 40 50
0 2 4 6 8 10

DESIGN BY: J.K.
DRAWN BY: K.M.
CHECKED BY: D.C.S.
APPROVED BY: J.K.

SCALE: HORIZONTAL: 1:500 VERTICAL: 1:100

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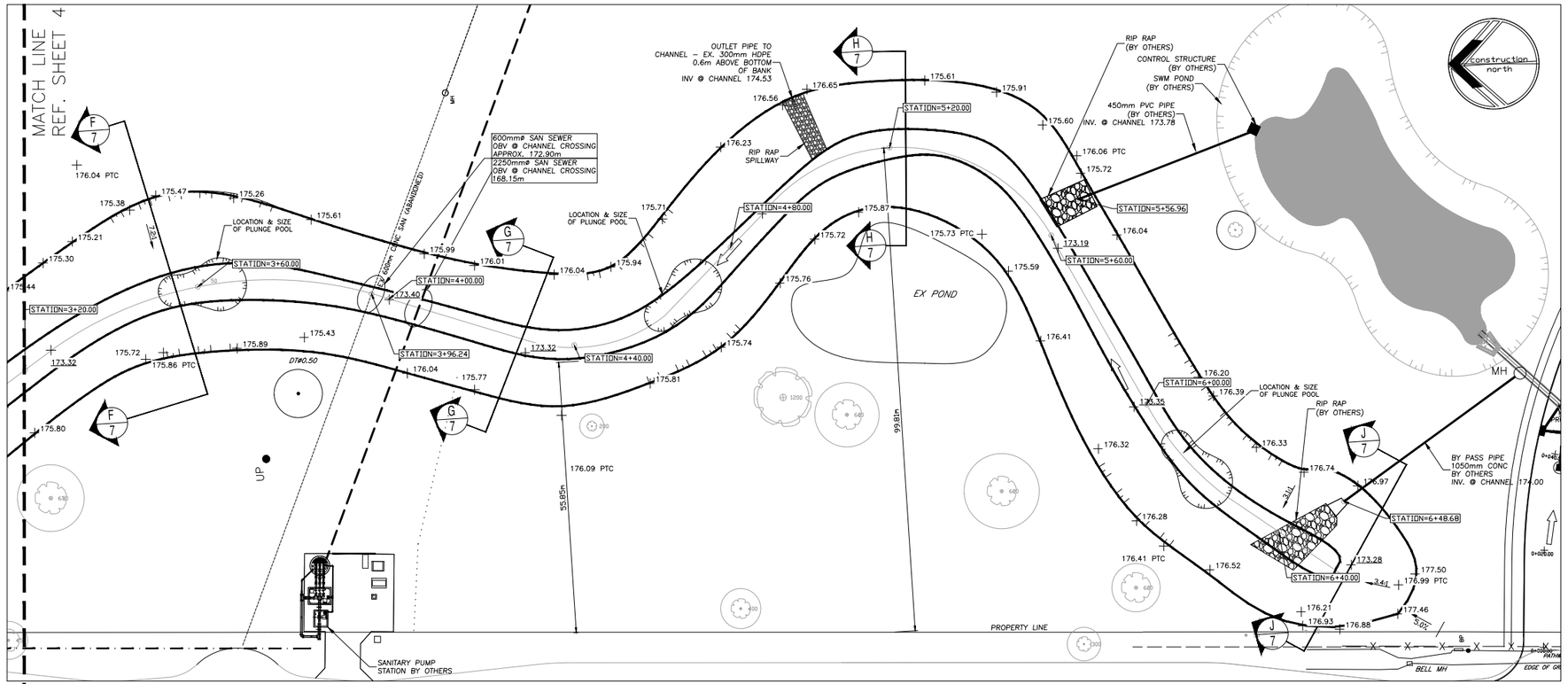
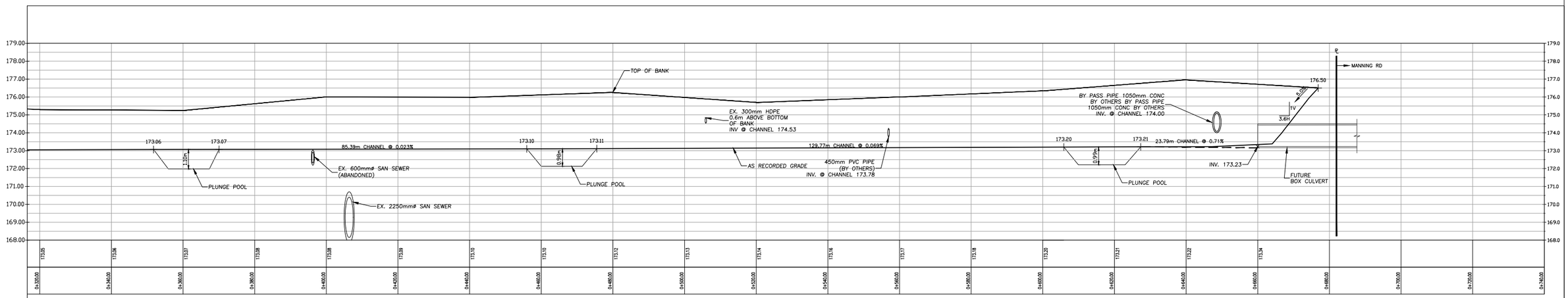
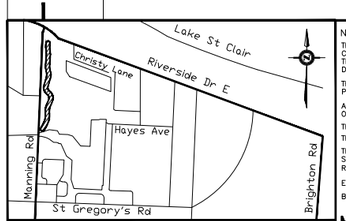
REGISTERED PROFESSIONAL ENGINEER I. KRPAN SEPT-08-15 PROVINCE OF ONTARIO
ENGINEER

PROJ. NO.	FILE NO.	DRWG. NO.	DATE
14226	14226-4AS RECORDED.DWG	4 of 9	AUG/2014







KEY PLAN
Scale : N.T.S.

SUBJECT LANDS

NOTE :

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CLIENT :

THE TOWN OF TECUMSEH

PROJECT :

LAKEWOOD PARK STORMWATER CHANNEL

TECUMSEH, ONTARIO

DRAWING :

SECTIONS

BENCH MARK :

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BAR SCALE :

0 10 20 30 40 50

0 2 4 6 8 10

DESIGN BY: J.K.

DRAWN BY: K.M.

CHECKED BY: D.C.S.

APPROVED BY: J.K.

SCALE: HORIZONTAL: 1:500 VERTICAL: 1:100

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REGISTERED PROFESSIONAL ENGINEER I. KRPAN SEPT-08-15 PROVINCE OF ONTARIO

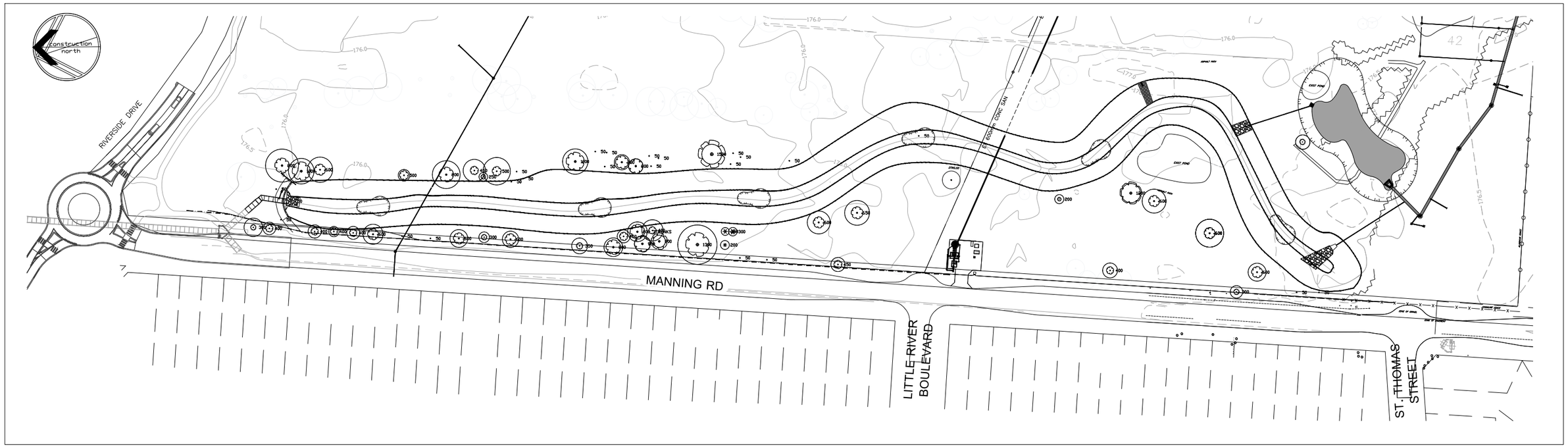
ENGINEER

PROJ. NO.: 14226

FILE NO.: 14226-SAS RECORDED.DWG

DRWG. NO.: 5 of 9

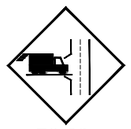
DATE : AUG/2014

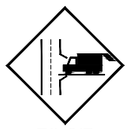


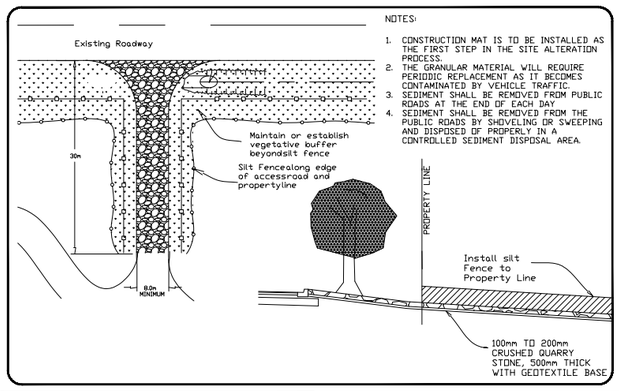
CONSTRUCTION ACCESS NOTES:

1. TEMPORARY 'TRUCK ENTRANCE' SIGNS SHALL BE INSTALLED ON THE SHOULDER, 150m IN ADVANCE OF THE ACCESS (NOTE: SEE DETAILS ON USE OF THESE SIGNS IN THE M.T.O. UNIFORM TRAFFIC CONTROL DEVICES MANUAL.) THE APPLICANT WILL BE RESPONSIBLE FOR THE COST OF OBTAINING, ERECTING AND MAINTAINING THESE SIGNS.

2. TEMPORARY CONSTRUCTION ACCESS SHALL BE REMOVED FROM THE REGIONAL ROAD ALLOWANCE AND ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.


TC-31L


TC-31R



LEGEND:

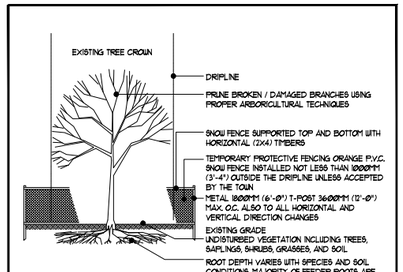
OVERLAND FLOW

219 DENOTES EXISTING CONTOUR

EXCAVATED FILL FROM SITE TO BE STOCKPILED IN MARKED LOCATIONS AS PER DWG 9.

DUST CONTROL

1. CONTRACTOR TO MINIMIZE DUST ON-SITE WITH USE OF CALCIUM OR AN EQUIVALENT METHOD
2. CONTRACTOR TO CLEAN ROADWAY DAILY
3. CONTRACTOR TO WASH ROAD WEEKLY



NOTES:

1. EXISTING TREES ARE TO BE PROTECTED FROM CONSTRUCTION WITH THE INSTALLATION OF A 1200MM (4'-0") HIGH SNOW FENCE, AT NOT LESS THEN 1000MM (3'-4") FROM THE EXISTING DRIPLINE, HELD IN PLACE WITH 1800MM (6'-0") T-BARS.
2. THE BARRIER IS TO BE INSTALLED PRIOR TO ANY CONSTRUCTION AND MUST REMAIN IN PLACE UNTIL ALL CONSTRUCTION IS COMPLETED.
3. ALL SUPPORTS AND BRACING SHOULD BE INSIDE THE TREE PROTECTION ZONE. ALL SUCH SUPPORTS SHOULD MINIMIZE DAMAGING ROOTS IN THE TREE PROTECTION ZONE.
4. NO CONSTRUCTION ACTIVITY, GRADE CHANGES, SURFACE TREATMENT, OR EXCAVATION OF ANY KIND IS PERMITTED WITHIN THE TREE PROTECTION ZONE.
5. NO MOVEMENT OF EQUIPMENT, STORAGE OF BUILDING SUPPLIES, CLEANING OR EQUIPMENT, OR DUMPING OF SOLVENTS, GASOLINE, ETC., MAY OCCUR WITHIN THIS FENCE LINE.
6. WHERE HIGH QUALITY SPECIMENS OCCUR ADJACENT TO AREAS SUBJECTED TO INTENSIVE CONSTRUCTION ACTIVITY, WOODEN CRIBBING SHOULD BE INSTALLED TO PROTECT TRUNKS FROM DAMAGE IN THE EVENT THAT HEAVY EQUIPMENT BREAKS DOWN THE SNOW FENCING.

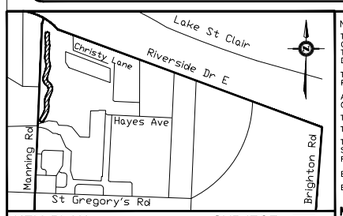
TEMPORARY TREE PROTECTION BARRIER - N.T.S.

NOTE: TREE PLANTINGS ARE PROVISIONAL

THE ENGINNERING CONSULTANT SHALL REGULARILY INSPECT THE SITE TO ENSURE THE SITE SILT CONTROL DEVICES ARE FUNCTIONING PROPERLY.

DEFICIENCIES ARE TO BE RECORDED AND REPORTED TO THE CONTRACTOR IMMEDIATLY SUCH THAT THEY ARE PROMPTLY REPAIRED, REPLACED OR UPGRADED TO ACHIEVE ADEQUATE PERFROMANCE.

THE ENGINEERING CONSULTANT SHALL RECORD WHEN THE DEFICIENCES HAVE BEEN CORRECTED



KEY PLAN Scale : N.T.S.

SUBJECT LANDS

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CLIENT : **THE TOWN OF TECUMSEH**

PROJECT :

LAKEWOOD PARK STORMWATER CHANNEL

TECUMSEH, ONTARIO

DRAWING : **TREE REMOVAL & SEC DRAWING**

BENCH MARK :

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BAR SCALE : 0 20 40 60 80 100

DESIGN BY: J.K.

DRAWN BY: K.M.

CHECKED BY: D.C.S.

APPROVED BY: J.K.

SCALE: 1:1000

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REGISTERED PROFESSIONAL ENGINEER I. KRPAN SEPT-08-15 PROVINCE OF ONTARIO

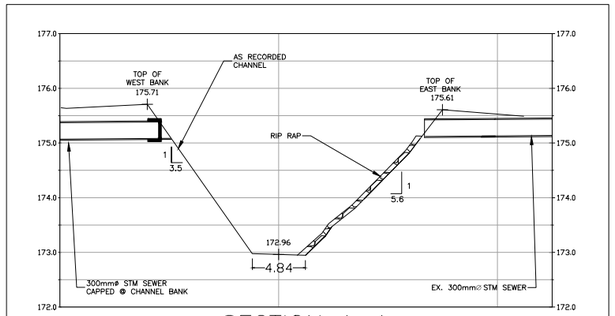
ENGINEER

PROJ. NO.: 14226

FILE NO.: 14226-6AS RECORDED.DWG

DRWG. NO.: 6 of 9

DATE : AUG/2014



SECTION A–A

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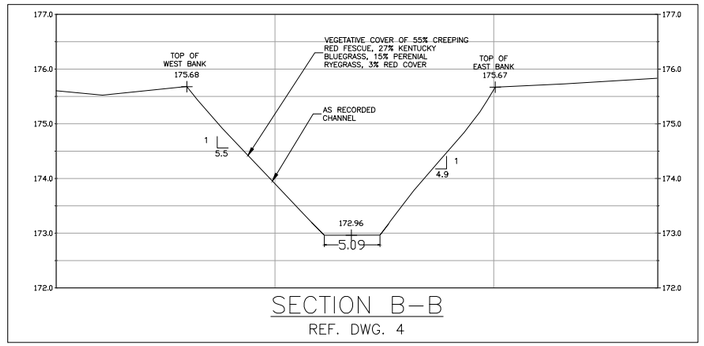

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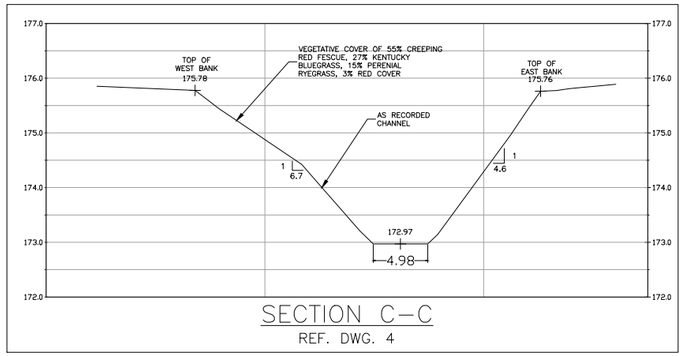

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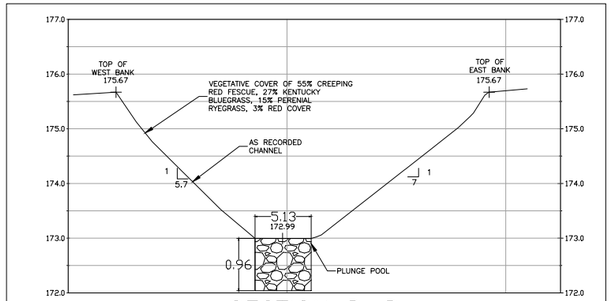

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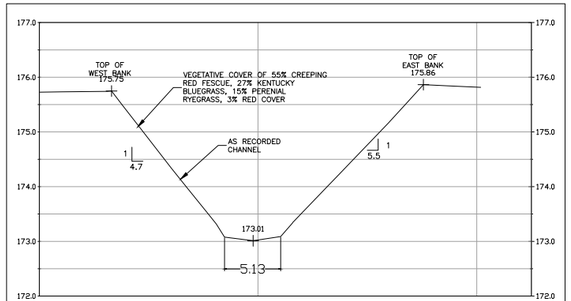
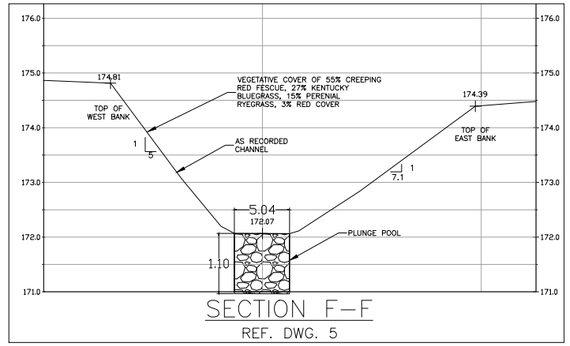


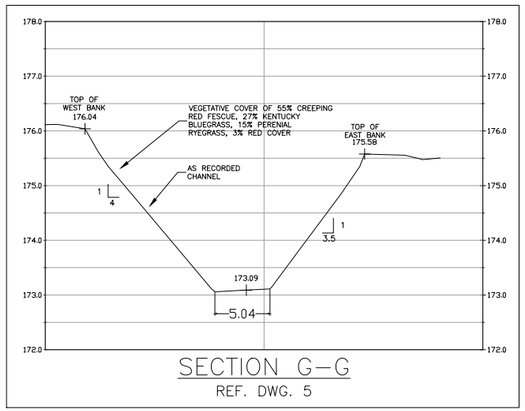
SECTION E–E

REF. DWG. 4



SECTION F–F

REF. DWG. 5



SECTION G–G

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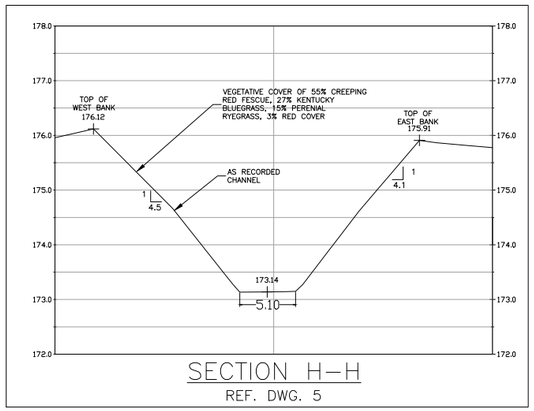
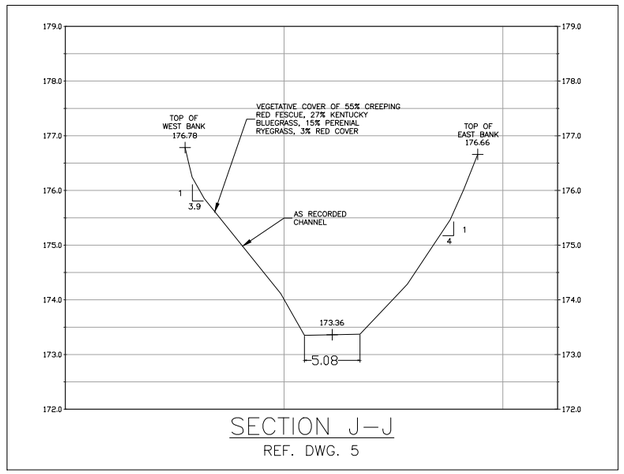


SECTION H–H

REF. DWG. 5



SECTION J–J

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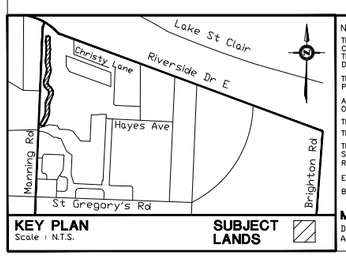

KEY PLAN
Scale : N.T.S.

SUBJECT LANDS

NOTE :

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BOUNDARY DATA DERIVED FROM INFORMATION FROM CLARKE SURVEYORS INCORPORATED, ONTARIO LAND SURVEYORS.

METRIC NOTE:

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CLIENT : **THE TOWN OF TECUMSEH**

PROJECT :

LAKEWOOD PARK STORMWATER CHANNEL

TECUMSEH, ONTARIO

DRAWING : **PLAN & PROFILES - SHEET 2**

BENCH MARK :

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE DERIVED FROM THE TOWN OF TECUMSEH BENCH MARK #40, ELEVATION 177.02m.

BEARING NOTE :

BEARINGS ARE GRID BEARINGS UTM ZONE 17 NAD83 (CSRS) AND ARE DERIVED FROM THE PIWERNET GPS NETWORK. WINDSOR BASE NORTH 4682543.816, EAST 345068.732 AND ARE REFERRED TO THE CENTRAL MERIDIAN 81° WEST.

NO	REVISIONS	DATE	BY
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1	FOR SUBMISSION 1 – TOWN REVIEW	JAN 31/2014	K.M.

BAR SCALE : 0 5 10 15 20 25 / 0 2 4 6 8 10

DESIGN BY: J.K.
DRAWN BY: K.M.
CHECKED BY: D.C.S.
APPROVED BY: J.K.

SCALE: HORIZONTAL: 1:250 VERTICAL: 1:100

ODAN/DETECH
THE ODAN/DETECH GROUP - CONSULTING ENGINEERS
5230 SOUTH SERVICE ROAD, BURLINGTON, ONTARIO L7L 5K2
OFF(905)632-3811 FAX(905)632-3363

REGISTERED PROFESSIONAL ENGINEER I. KRPAN SEPT-08-15 PROVINCE OF ONTARIO

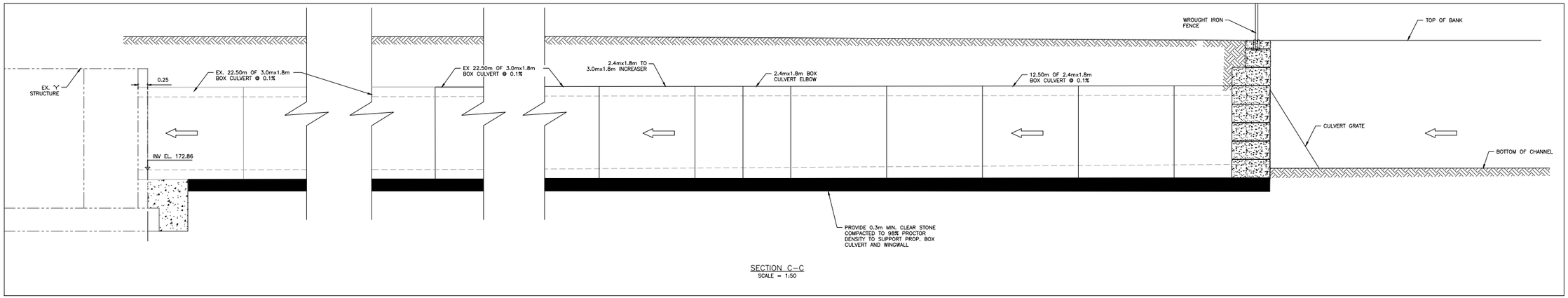
ENGINEER

PROJ. NO.: 14226

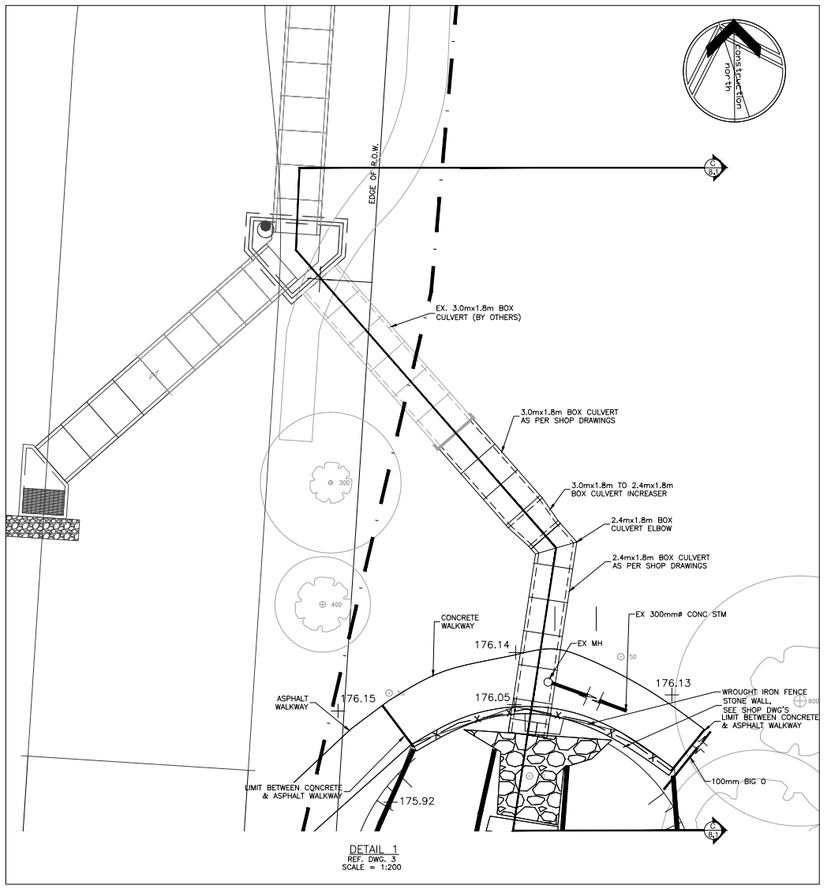
FILE NO.: 14226-SAS RECORDED.DWG

DRWG. NO.: 7 of 9

DATE : AUG/2014



SECTION C–C
SCALE = 1:50



DETAIL 1
REF. DWG. 3
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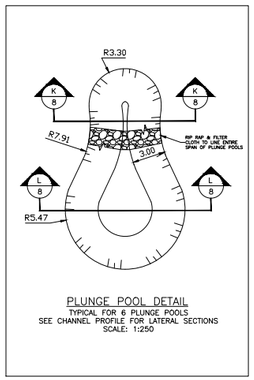
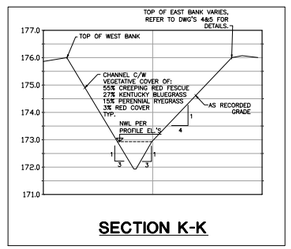
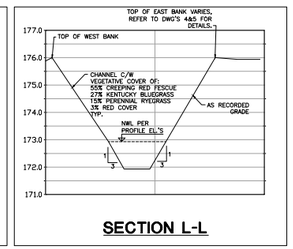


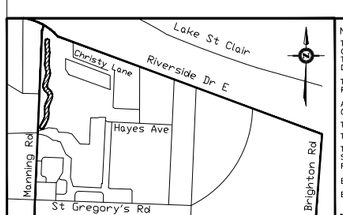
PLUNGE POOL DETAIL
TYPICAL FOR 6 PLUNGE POOLS
SEE CHANNEL PROFILE FOR LATERAL SECTIONS
SCALE: 1:250



SECTION K-K



SECTION L-L



KEY PLAN
Scale : N.T.S.

SUBJECT LANDS

NOTE :

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METRIC NOTE:

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CLIENT : **THE TOWN OF TECUMSEH**

PROJECT : **LAKEWOOD PARK STORMWATER CHANNEL**
TECUMSEH, ONTARIO

DRAWING : **DETAILS**

BENCH MARK :
ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE DERIVED FROM THE TOWN OF TECUMSEH BENCH MARK #40, ELEVATION 177.02m.

BEARING NOTE :
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BAR SCALE :

DESIGN BY: J.K.
DRAWN BY: K.M.
CHECKED BY: D.C.S.
APPROVED BY: J.K.
SCALE: AS SHOWN

ODAN/DETECH
THE ODAN/DETECH GROUP - CONSULTING ENGINEERS
5230 SOUTH SERVICE ROAD, BURLINGTON, ONTARIO L7L 5K2
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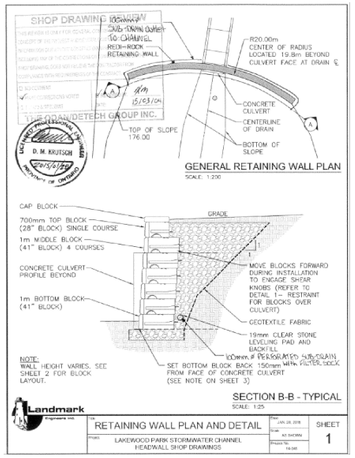
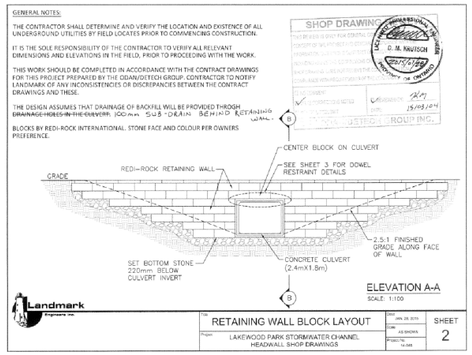
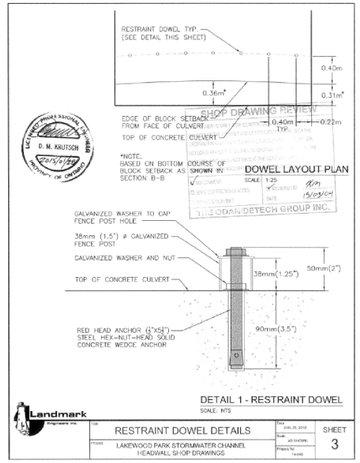
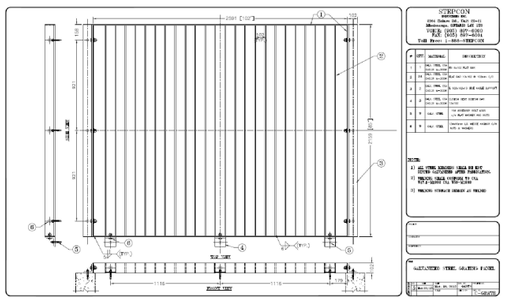
REGISTERED PROFESSIONAL ENGINEER
I. KRPAN
SEPT-08-15
PROVINCE OF ONTARIO
ENGINEER

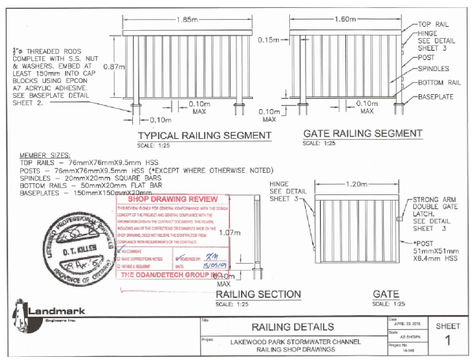
PROJ. NO.:	FILE NO.:	DRWG. NO.:	DATE :
14226	14226-8.1AS RECORDED.DWG	8.1 of 9	AUG/2014

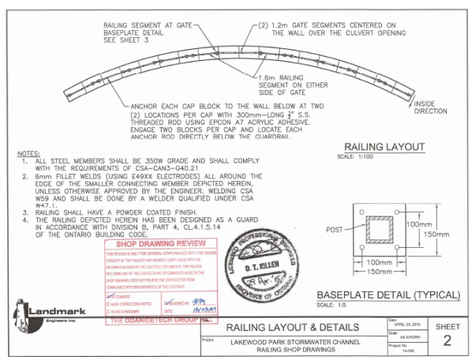


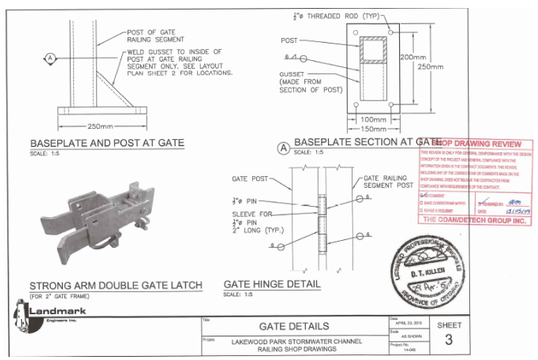


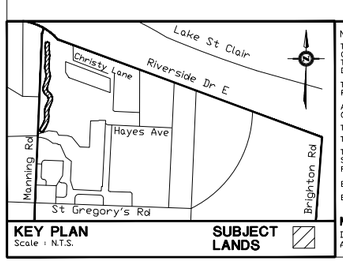












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PROJECT : **LAKEWOOD PARK STORMWATER CHANNEL**
TECUMSEH, ONTARIO

DRAWING : **DETAILS**

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BAR SCALE :

DESIGN BY: J.K.
DRAWN BY: K.M.
CHECKED BY: D.C.S.
APPROVED BY: J.K.
SCALE: AS SHOWN

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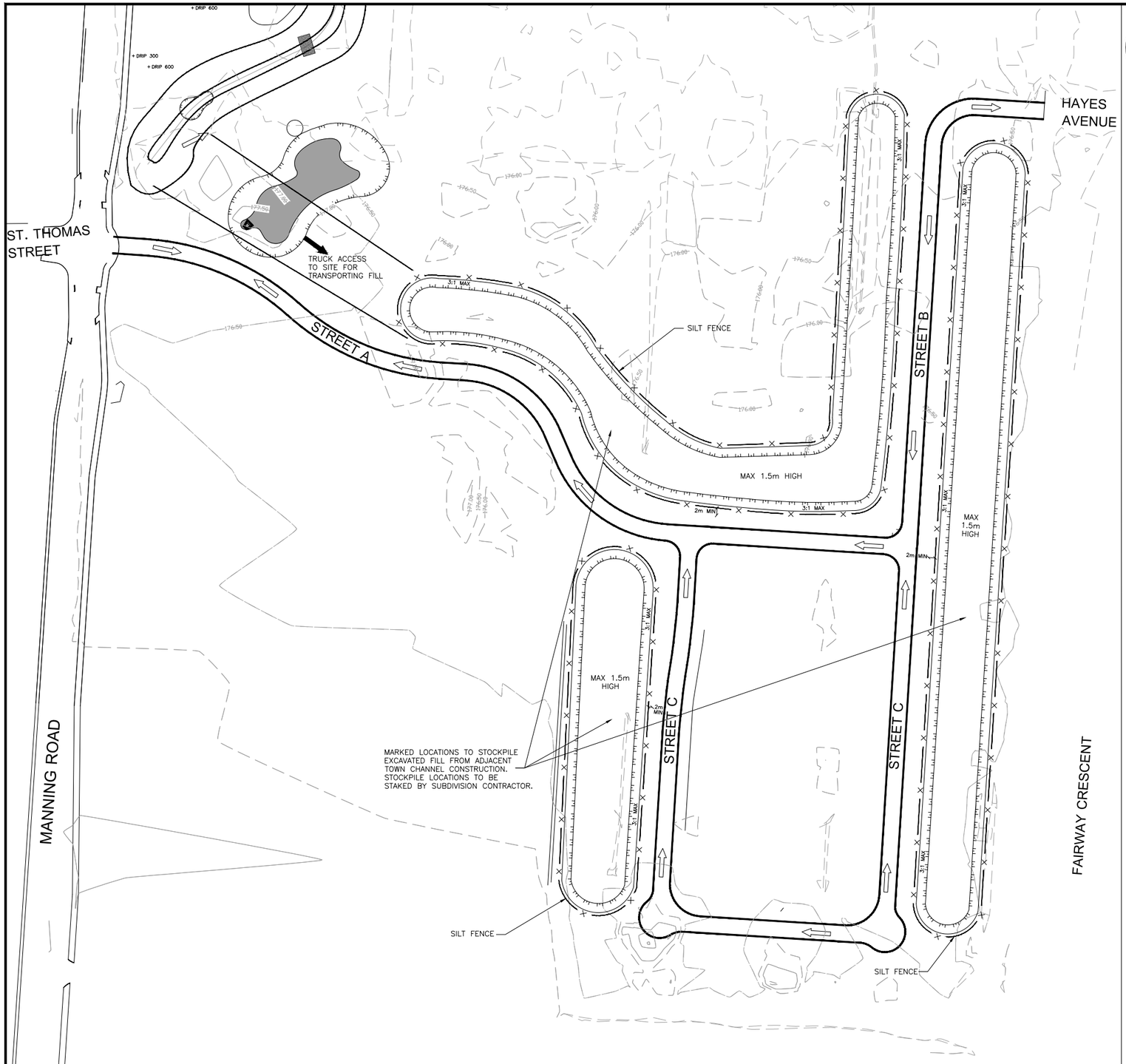
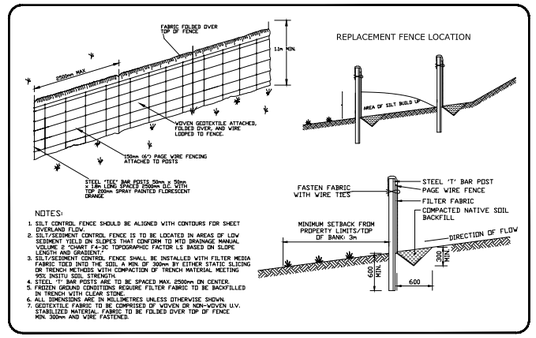
THE ODAN/DETECH GROUP - CONSULTING ENGINEERS
5230 SOUTH SERVICE ROAD, BURLINGTON, ONTARIO L7L 5K2
OFF(905)632-3811 FAX(905)632-3363

REGISTERED PROFESSIONAL ENGINEER I. KRPAN SEPT-08-15 PROVINCE OF ONTARIO
ENGINEER

PROJ. NO.: 14226
FILE NO.: 14226-8.2AS RECORDED.DWG
DRWG. NO.: 8.2 of 9
DATE : AUG/2014



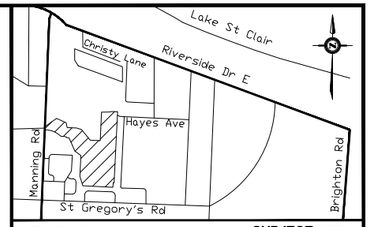


REPLACEMENT FENCE LOCATION

LEGEND:

- OVERLAND FLOW
- 219 — DENOTES EXISTING CONTOUR
- DENOTES PROPOSED SILT FENCE

NOTE: EXISTING TOPSOIL TO BE STRIPPED AND REMOVED OFF-SITE BY OTHERS. TO BE DONE PRIOR TO ACCEPTING AND STOCKPILING FILL FROM CHANNEL.



KEY PLAN Scale : N.T.S.

SUBJECT LANDS

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SCALE:

DRAWING :

STOCKPILE PLAN

CLIENT :

THE TOWN OF TECUMSEH

PROJECT :

LAKEWOOD PARK STORMWATER CHANNEL
TECUMSEH, ONTARIO

ODAN/DETECH
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5230 SOUTH SERVICE ROAD, BURLINGTON, ONTARIO L7L 5K2
OFF: (905) 632-3811 FAX: (905) 632-3363

SCALE :	PROJ. NO.:	DATE STARTED:	DESIGN BY:
1:1000	14226	JULY/14	J.K.

DRAWN BY: K.M.

FILE NO.: 14226-9AS RECORDED.DWG

CHECKED BY: D.C.S.

APPROVED BY: J.K.

DRWG. NO.: 9 of 9

REGISTERED PROFESSIONAL ENGINEER I. KRPAN SEPT-08-15 PROVINCE OF ONTARIO

FILE NUMBER | ENGINEER