Final Report

FUNCTIONAL SERVICING REPORT PHASE 2

12304 Heart Lake Road, Caledon

Prepared for Broccolini
by IBI Group
April 22, 2022

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1 Introduction

1.1 Background

IBI Group Canada (IBI) has been retained by Broccolini (the "Owner") to prepare a set of engineering drawings for the extension of Abbotside Way as part of a Development Agreement, and to prepare a Functional Servicing Report to support the Zoning By-Law Amendment (ZBA) and Site Plan Application (SPA) processes for Phase 2 of a proposed industrial development located at 12304 Heart Lake Road. The site is located in the Town of Caledon (the "Town") and the Region of Peel (the "Region"). The purpose of this report is to provide a municipal servicing strategy for both sanitary discharge, and water supply. More specifically, the report will present the following:

- Evaluate groundwater quantity and quality parameters from the hydrogeological report and develop a strategy to manage groundwater under both short- and long-term conditions
- Identify sanitary servicing opportunities and constraints and evaluate the capacity of the receiving municipal sewer.
- Identify water servicing opportunities and constraints, calculate the proposed domestic water and firefighting supply needs; and evaluate the capacity of the municipal infrastructure.

The following documents have been obtained from various sources:

- Approved Town of Caledon plan and profile drawings for Abbotside Way, prepared by SCS Consulting Group Ltd. (SCS), dated August 2016;
- Mayfield West Functional Servicing and Stormwater Management Study (Mayfield West FSR), prepared by David Schaeffer Engineering Ltd., dated November 2007;
- Region of Peel 2041 Wastewater Capital Program, dated June 2020;
- Speirs Giffen Avenue Ultimate Sanitary Area Drainage Plan, prepared by IBI Group, dated July 2019;
- Approved Spiers Giffen Avenue Drawing Set, prepared by IBI Group, approved on October 16, 2019.
- Topographic Survey prepared by R-PE Surveying Ltd., dated September 2021; and,
- Architectural plans and site statistics prepared by Ware Malcomb.

1.2 Site Description

Located at 12304 Heart Lake Road in the Town of Caledon and Region of Peel, the overall subject site is approximately 37 ha in size, however, it should be noted that this report will only consider Phase 2 of the development. Phase 2 consists of a 6.53 ha lot at the southeast of the site, bounded by the Abbotside Way extension to the north, Heart Lake Road to the east, Highway 410 to the south, and Phase 1 of the same development to the west. A vicinity map and an aerial exhibit can be found as **Figure 1** and **Figure 2** respectively following the report.

The Phase 2 site is currently comprised of agricultural land and slopes in a southwesterly and southeasterly direction with a drainage split running north – south through the centre of the Phase 2 site. There is a change in elevation starting at ± 274 m at the site's high point, falling to ± 272.25 m at the west property line. There is a change in elevation starting at ± 274 m at the site's high point, falling to ± 269.5 m at the east property line. A copy of the topographic survey can be found in **Appendix A** for reference.

The site is located within the Mayfield West Study Area for which a Functional Servicing and Stormwater Management Study was completed in November 2007.

1.3 Site Proposal

As previously noted, this report will only consider Phase 2 of the development, which includes a 29,830 m^2 building (Building 2) within a 6.53 ha lot at the southeast corner of the site. Construction will be slab on grade, with no underground levels. Sample architectural drawings can be found in **Appendix A** for reference.

It should also be noted that Abbotside Way will be extended in an easterly direction to Heart Lake Road and is to be conveyed to the Town through a Development Agreement.

2 Terms of Reference and Methodology

2.1 Terms of Reference

The terms of reference used for the scope of this report are based on the Region's Design, Specifications, and Procedures Manual for Linear Infrastructure, dated March 2017; the Town's Engineering design criteria; and the aforementioned background studies and reports.

2.2 Methodology: Sanitary Discharge

Peak sanitary sewer flows, excluding infiltration, will be based on Region of Peel Sewage Flows (Excluding Infiltration) Std. Dwg. 2-9-2 as outlined in the Region of Peel Sanitary Sewer Design Criteria dated March 2017. This standard detail drawing is based on the sanitary design parameters outlined in **Table 2.1** below, in accordance with the Region's sanitary design criteria. Based on the calculated peak flows, the adequacy of the existing infrastructure to support the proposed development will be discussed.

Table 2.1 Sanitary Design Parameters

Criteria	Unit	Source
Industrial Population	70 pp/ha	Peel
Average Flow	302.8 L/cap/day	Peel
Infiltration	0.0002 m^3/s/ha	Peel

2.3

2.4 Methodology: Water Usage

The domestic water usage will be calculated based on **Table 2.2** below, in accordance with the Region's design criteria. Pressure and flow testing to determine the adequacy of the existing watermain to support the development with fire suppression in accordance with the Fire Underwriters Survey (FUS) Guidelines will be discussed in the subsequent sections.

Table 2.2 Water Design Parameters

Criteria	Unit	Source
ICI Average Consumption	300 L/Employee/day	Peel
Maximum Day Factor	1.4	Peel
Peak Hour Factor	3.0	Peel

3 Groundwater Discharge

3.1 Groundwater Quality

A hydrogeological assessment was carried out by EXP Services Inc. (EXP) to assess existing groundwater conditions from both quality and quantity perspectives. The following table is a summary of the observed groundwater quality parameters compared to the Region's limits for discharge:

Table 3.1 Groundwater Quality Exceedances

Parameter	Storm By-Law Criteria (µg/L)	Sanitary By-Law Criteria (µg/L)	Measured Reading (µg/L)
Total Manganese	50	5,000	**78**
Chloroform	2	40	**2.8**

Per the hydrogeological assessment, observed levels of Total Manganese and Chloroform exceed the City's and Region's threshold for discharge to storm sewer but meet the threshold for discharge to sanitary sewers. Despite this, as noted in the Hydrogeological Report, during construction it is anticipated that TSS levels and some other parameters may become elevated and exceed both sanitary and storm use by-law limits. It is recommended that a suitable treatment method be implemented during construction dewatering activities to discharge to the applicable sewer system. For more information, please see **Appendix B** for an excerpt copy of the hydrogeological assessment.

3.2 Short-term Groundwater Discharge

The anticipated average short-term groundwater discharge has been estimated by EXP as shown in the table below. At the time of this report, a dewatering plan was not made available. It is therefore assumed that groundwater pumping will operate for 16 hours per day resulting in a corresponding maximum pumping rate as shown:

Table 3.2 Short-Term Groundwater Discharge

Building	Average Discharge[1]	Average Discharge	Hours of Operation	Peak Discharge	Connection Outlet	Treatment Required
Building 2	483,000 L/day	5.6 L/s	16 hrs	8.4 L/s	Sanitary	None

It should be noted that a Permit to Take Water (PTTW) application must be submitted to the Ministry of the Environment, Conservation and Parks (MECP) if dewatering rates exceed 50 m^3/day.

3.3 Long-term Groundwater Discharge

Per the hydrogeological assessment, a Private Water Drainage System (PWDS) will not be required, as the building will utilize slab on grade construction. Please see **Appendix B** for an excerpt copy of the hydrogeological assessment.

4 Sanitary Drainage System

4.1 Existing Sanitary Drainage System

Per the proposed Abbotside Way extension plan and profiles, prepared by SCS Consulting attached in **Appendix A**, proposed sanitary infrastructure within the Abbotside Way extension will consist of 300 mm sanitary sewers which flow in an easterly direction across Heart Lake Road. These sewers connect to the proposed sanitary infrastructure included as part of the future Spiers Giffen extension (as prepared by IBI Group, dated July 2019) and convey flows to 525 mm sanitary trunk sewers on Spiers Giffen and Dixie Road. Further west of the Phase 2 subject site, existing 250 mm sanitary sewers convey flow in a westerly direction to a 525mm sanitary trunk sewer within Kennedy Road.

4.2 Proposed Sanitary Drainage System

As illustrated in the sanitary drainage area plans prepared by SCS, the overall site has been identified as industrial lands. The Phase 2 portion in the southeast corner has been allocated to the approved 300 mm sanitary sewers which have been identified as part of the plan and profiles (#409 and #410) for the **Abbotside Way Extension**. These sanitary sewers will convey flows in an easterly direction to the Spiers Giffen Avenue sanitary sewer system east of Heart Lake Road which is approved but has not yet been extended to Heart Lake Road. The Spiers Giffen sanitary sewer system was previously designed by IBI Group and has since been approved on October 16, 2019.

[1] Includes short-term groundwater discharge with a safety factor of 2.0, and stormwater removal from a 15 mm precipitation event

It is therefore proposed to install this 300 mm sanitary sewer which will convey flows in an easterly direction to Heart Lake Road as part of proposed **Abbotside Way Extension**. Furthermore, the remaining length of sanitary sewer east of Heart Lake Road, which is part of the Spiers Giffen Phase 2 extension is also proposed to be constructed and drawing sets for both the Abbotside Way Extension and the Spiers Giffen sanitary sewer extension have been included in this submission package.

Copies of the approved plan and profile drawings prepared by SCS for the **Abbotside Way Extension** can be found in **Appendix A**. Copies of the originally designed and approved **Spiers Giffen Avenue** have also been included in **Appendix A**. Excerpt copies of the Mayfield West FSR, Speirs Giffen sanitary drainage area plan, and the Livingston Estates drainage area plan prepared by SCS can be found in **Appendix C** for reference.

4.3 Post-Development Population

The following post-development population will be used to size the sanitary service connection:

Table 4.1 Post-Development Populations

Building	Area	Population Density	Pop.
Building 2	6.53 ha	70 pp/ha/day	457

Please see **Appendix C** for the detailed design sheet.

4.4 Post-Development Sanitary Design Flow

Based on the criteria set in **Section 2.2** and based on the Region of Peel Sewage Flows Std. Dwg. 2-9-2, the post-development sanitary sewage flow is **13 L/s**, with and additional **1.3 L/s** allotted for infiltration. The total peak post-development sanitary design flow is **14.3 L/s**.

4.5 Sanitary Service Connection

A 300 mm sanitary service will need to be installed as part of the proposed **Abbotside Way Extension**.

The following table illustrates the peak flow and corresponding capacity of the proposed service:

Table 4.2 Sanitary Service Performance

Building	From	To	Service Size (mm)	Service Slope	Peak Flow (L/s)	Capacity (L/s)	Percent of Full Flow
Bldg. 2	Cntrl.MH	300mm Mainline San. Sewer	300	1.0 %	14.3	100.9	14 %

As shown above, the sanitary service will convey the post-development peak sanitary flow while operating at 14% of full flow capacity.

Please see the approved plan and profile drawings prepared by SCS which can be found in **Appendix A**, the detailed design sheet which can be found in **Appendix C**, and the enclosed **Abbotside Way Extension** drawing set.

4.6 Sanitary Sewer (Abbotside Way Extension)

As previously mentioned, the Phase 2 development will rely on new, proposed 300 mm sanitary sewers which are to be installed within the Abbotside Way extension at a 0.4% slope as outlined in the approved Livingston Estates Plan and Profiles prepared by SCS. This new municipal sewer is to be connected to the proposed Speirs Giffen sanitary sewer extension, east of Heart Lake Road which is also to be constructed within the same timeline as this development. Please see approved plan and profile drawings prepared by SCS which can be found in **Appendix A** for reference, and the new Spiers Giffen Sanitary Sewer Extension drawings enclosed for reference.

4.7 Sanitary Sewer (Spiers Giffen Sanitary Sewer Extension)

The Phase 2 development will also rely on the extension of sanitary sewers along future Spiers Giffen Avenue. The existing sanitary infrastructure on Spiers Giffen Avenue currently terminates at a cul-de-sac, several hundred meters east of Heart Lake Road. In order to bridge the gap between the proposed sanitary sewers which are to be installed as part of the Abbotside Way Extension previously noted in Section 4.6, and the existing sanitary sewers on Spiers Giffen Avenue, the sanitary sewer infrastructure must be extended as per the approved Spiers Giffen Avenue Phase 2 plans prepared by IBI Group and approved in October 2019. The sanitary sewer extension has been designed in detail and included under a separate cover as part of this submission.

5 Water Supply System

5.1 Existing Water Supply System

Per the proposed Abbotside Way extension plan and profiles, prepared by SCS Consulting attached in **Appendix A**, proposed water infrastructure within Abbotside Way consists of a 300 mm watermain, a local 400 mm watermain within Heart Lake Road, and both a 900 mm and a 1200 mm feedermain within Heart Lake Road.

Hydrant flow testing was performed at existing fire hydrants along Abbotside Way to confirm the available water supply's flow-pressure response curve. These tests were performed on November 18, 2021 and were conducted in accordance with NFPA 291. The results are summarized as follows:

Table 5.1 Hydrant Response Curve

Abbotside Way			
Flow (gpm)	**Flow (L/s)**	**Pressure (psi)**	**Pressure (kPa)**
0	0	81	558
1,126	71.0	74	510
1,838	116.0	73	503

As shown above, static pressure within the system is expected to be approximately 81 psi. A copy of the hydrant flow test can be found in **Appendix D** for reference.

5.2 Proposed Water Supply System

As part of the Mayfield West FSR, the existing 300 mm watermain within Abbotside Way shall be extended within the proposed Abbotside Way extension and connected to the existing 400 mm watermain within Heart Lake Road. Please refer to the water distribution plan as part of the Mayfield West FSR which can be found in **Appendix D** for reference.

5.3 Domestic Water Supply Demands

The Average Day Demand (ADD), Peak Hour Demand (PHD), and Max Day Demand (MDD) for the overall site have been calculated using the criteria set in **Section 2.3**, and are summarized as follows:

Table 5.1 Domestic Water Demands

Building	Population	ADD (L/s)	PHD (L/s)	MDD (L/s)
Building 2	458	1.6	4.8	2.2

The domestic supply line for the building will be designed based on PHD while maintaining a minimum available pressure of 40 psi (275 kPa) at the face of the building. Please see **Appendix D** for the detailed calculations.

5.4 Fire Supply Demands

The recommended fire flow demand for the building has been calculated using the design criteria outlined in the Water Supply for Public Fire Protection Manual, 1999 by the Fire Underwriters Survey (FUS). As the building will constructed using fire resistive materials, the effective floor area is taken as the largest floor area plus 25 % of the two adjacent floors. The corresponding floor area and FUS factors will be applied as follows:

Table 5.2 Effective Floor Area and Fire Underwriters Survey Factors

Building	Floor Area (m^2)	Construction Coefficient	Building Occupancy	Sprinkler Adjustment	Proximity Factor
Building 2	29,830	0.6 (resistive)	-15% (limited)	-30%	+15%

Using the effective floor area for the building and the appropriate FUS factors, the required fire flow is calculated as follows:

Table 5.3 Fire Demand Calculations

Fire Flow (F) Calculation	Applying FUS factors	Adjusted Fire Flow	Total Demand (TD)
$F = 220 \cdot 0.6 \sqrt{Area}$	$F_1=F \cdot 0.85$ = 19,550 L/min	Fire Flow = $F_1 - F_2 + F_3$	TD= FF + MDD
$F = 220 \cdot 0.6 \sqrt{29,830\ m^2}$	$F_2=F_1 \cdot 0.30$ = 5,865 L/min	FF= 17,000 L/min *(rnd'd)*	TD= 283.3 L/s + 2.2 L/s
F = 23,000 L/min *(rnd'd)*	$F_3=F_1 \cdot 0.15$ = 2,933 L/min	FF = 283.3 L/s	**TD= 285.6 L/s**

The fire supply line for the building will be designed based on Total Demand (Fire Flow + MDD) while maintaining a minimum available pressure of 20 psi (140 kPa) at the face of the building. Please see **Appendix D** for the detailed calculations.

5.5 System Pressure Under Normal Operation

As previously mentioned, the domestic service for the building shall be sized to convey domestic demands under normal system operating conditions (PHD) while maintaining a minimum available pressure of 40 psi (275 kPa). The residual pressure at the building is calculated by first interpolating the PHD residual pressure within the existing watermain, and then subtracting head losses within the system using the Hazen-Williams formula. The following table summarizes the residual pressure for the proposed domestic service:

Table 5-2 Residual Pressure under PHD Conditions

Flow Conditions	PHD (L/s)	Domestic Service (mm)	Residual Pressure @ Main		Residual Pressure @ Bldg.	
			(psi)	(kPa)	(psi)	(kPa)
PHD	4.8	150	81	558	81	558

As shown above, there is no appreciable head loss within the system, and the residual pressure at the building face is above the minimum acceptable pressure of 40 psi (275 kPa) under PHD conditions. Please see **Appendix E** for the detailed design calculations.

5.6 System Pressure Under Fire Flow

As previously mentioned, the fire service shall be sized to convey the total fire demand (Fire + MDD) while maintaining a minimum available pressure of 20 psi (140 kPa). The residual pressure at the building is calculated by first interpolating the residual pressure within the existing watermain, and then subtracting head losses within the system using the Hazen-Williams formula. The following table summarizes the residual pressure for the proposed fire service:

Table 5-3 Residual Pressure under Fire + MDD Conditions

Flow Conditions	FF+MDD (L/s)	Fire Service (mm)	Residual Pressure @ Main		Residual Pressure @ Bldg.	
			(psi)	(kPa)	(psi)	(kPa)
FF+MDD	285.6	300	39	266	34	238

As shown above, the residual pressure at the building face for the fire service is above the minimum acceptable pressure of 20 psi (140 kPa) under fire demand conditions (Fire + MDD). Please see **Appendix D** for the detailed design calculations.

5.7 Water Service Connections

To service the proposed building, a new 300 mm fire service is proposed to be looped around the building with two connections to the proposed 300 mm watermain within the Abbotside Way Extension. A separate 150 mm domestic service will tee off from the fire line, and a new valve and box shall be installed at the property line for each incoming service.

Each incoming 300 mm fire service shall be installed with a detector check valve placed in a 1800 mm precast chamber per Peel Dwg. 1-3-1, and the incoming 150 mm water service shall be installed with a meter placed in a 1500 mm precast chamber per Peel Dwg. 1-4-4.

The National Fire Protection Association (NFPA) considers any building over 23 m in height to be classified as a high-rise building and thus requires a remotely located secondary siamese connection for each zone. As the proposed building is less than 23 m in height, one siamese connection will suffice, however additional siamese connections may be required for multiple fire zones, and shall be confirmed at the Building Permit stage. Two Siamese connections have been provided along the north face of Building 2. All siamese connections are placed within 45 m of a hydrant.

Please see enclosed servicing drawings **SS-01** through **SS-04**, and the enclosed **Abbotside Way Extension** drawing set for reference.

5.8 Hydrant Coverage

Existing hydrants are located on the north side of Abbotside Way and on either side of Heart Lake Road. Four new municipal hydrants are proposed within the north boulevard of the **Abbotside Way Extension**. Additional private hydrants shall be installed around the permitter of Building 2, and as previously mentioned all proposed siamese connections shall be strategically placed within 45 m of a hydrant to satisfy OBC requirements.

Please see Drawings **SS-01** through **SS-04** and the enclosed **Abbotside Way Extension** drawing set for the location of all existing and proposed water infrastructure.

6 Conclusions and Recommendations

Sanitary Sewers

The receiving sanitary system within the Abbotside Way Extension, which was designed as part of the Mayfield West FSR, and detailed as part of the Livingston Estates FSR, has been sized to accommodate sanitary flows from the subject site.

Water Supply

The existing watermain network has been designed in accordance with the Mayfield West FSR. It is noted that additional hydrant testing will be conducted shortly, and it is expected that the watermain network will easily support the proposed fire and domestic water demands for the proposed development.

Summary

In summary, it can be concluded that both the Zoning By-Law Amendment and Site Plan Application can be supported from a municipal site servicing perspective subject to further fire flow testing.

Should you have any questions, please do not hesitate to contact the undersigned.

Respectfully Submitted,

IBI Group Canada Inc.

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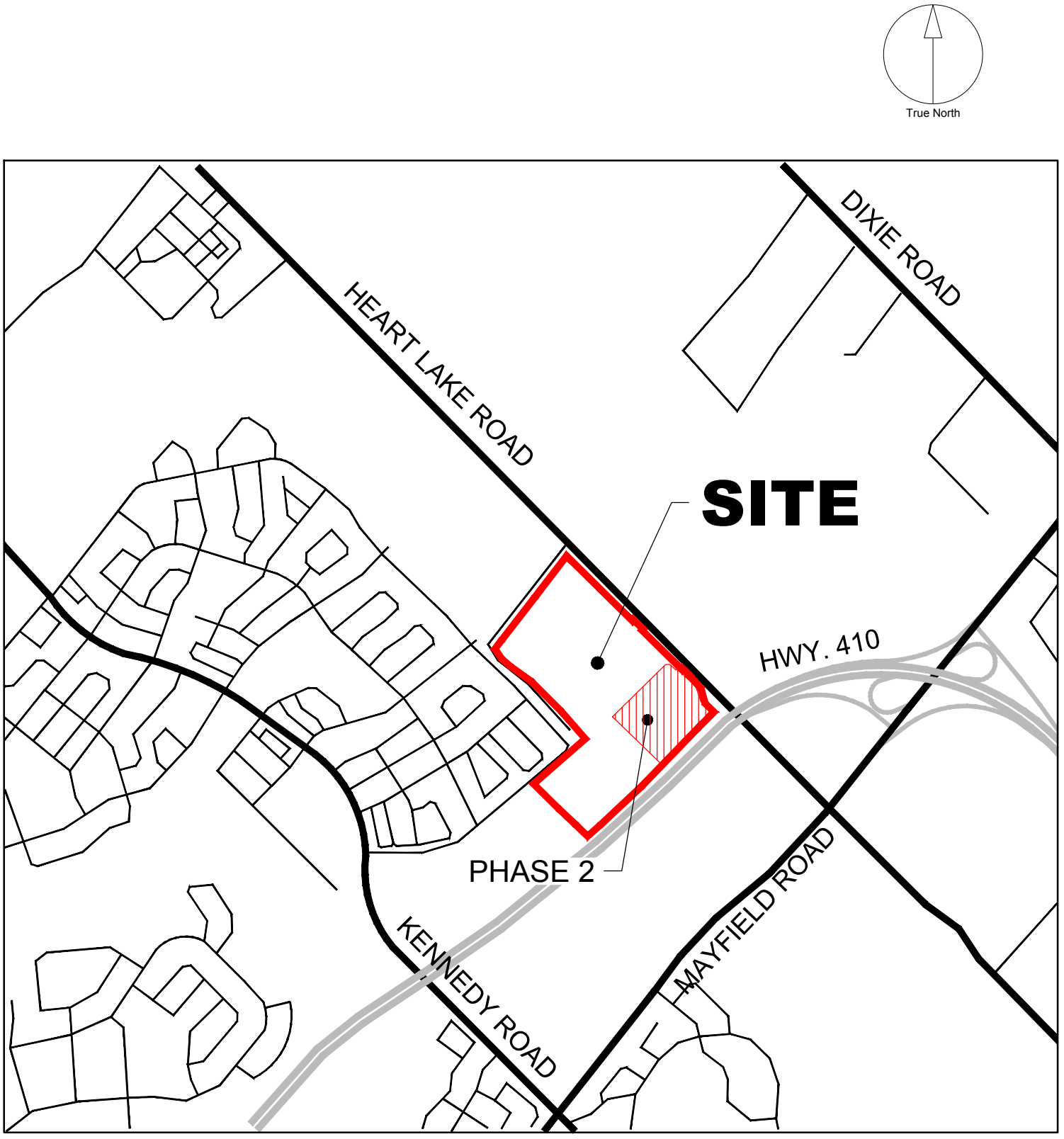
https://ibigroup.sharepoint.com/sites/projects1/135636/internal documents/6.0_technical/6.04_civil/03_tech-reports/phase 1/zba and spa/revision 1/functional servicing/135636 - functional servicing report (revision 1).docx

Figure 1 – Vicinity Map



PROJECT NAME INDUSTRIAL DEVELOPMENT - PHASE 2 12304 HEART LAKE ROAD CALEDON, ONTARIO		**IBI GROUP** Unit 300 – 8133 Warden Avenue Markham ON L6G 1B3 Canada tel 905 763 2322 fax 905 763 9983 **ibigroup.com**	
SCALE: N.T.S.	DATE: MAR 2022	FIGURE NAME KEY PLAN	FIGURE NO. FIG-1
PROJECT ENG: JJ	DRAWN BY: NDS		REVISION
CHECKED BY: JJ	APPROVED BY:		
PROJECT NO: 135636			

File Location: J:\135636_12304Heart\7.0_Production\7.03_Design\04_CivilSheets\SPA\Phase 2\Figures\135636-SHT-PH2-FIG.dwg Last Saved: March 16, 2022, by nicolas.distefano
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SCALE CHECK 1 in 10mm

Figure 2 – Aerial Plan

True North

PROJECT NAME INDUSTRIAL DEVELOPMENT - PHASE 2 12304 HEART LAKE ROAD CALEDON , ONTARIO		**IBI GROUP** Unit 300 – 8133 Warden Avenue Markham ON L6G 1B3 Canada tel 905 763 2322 fax 905 763 9983 **ibigroup.com**	
SCALE: N.T.S.	DATE: MAR 2022	FIGURE NAME AERIAL PLAN	FIGURE NO. FIG-2
PROJECT ENG: JJ	DRAWN BY: NDS		REVISION
CHECKED BY: JJ	APPROVED BY:		
PROJECT NO: 135636			

SCALE CHECK 1 in 10mm

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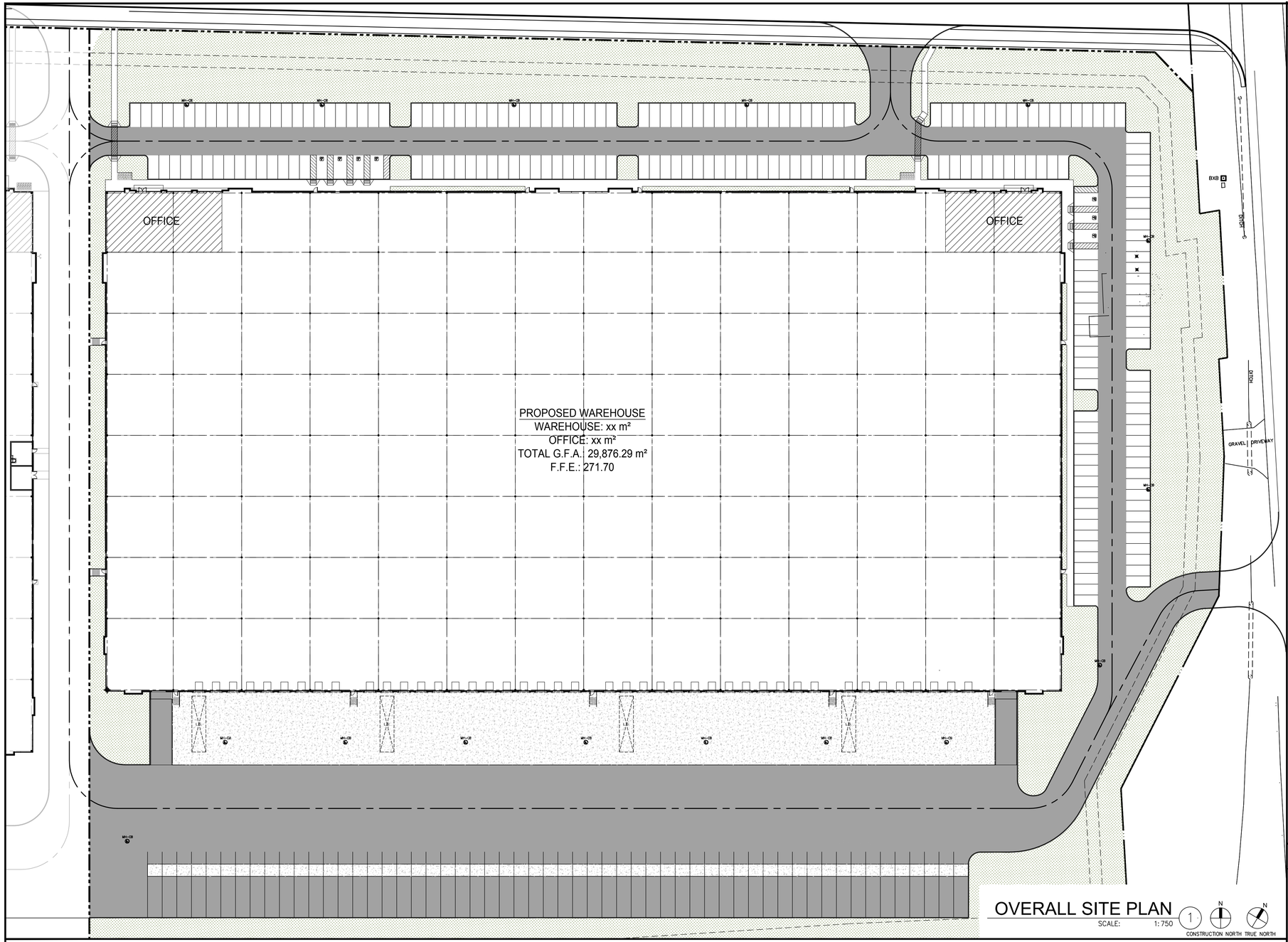
Appendix A – Background Information

Sample Architectural Drawings (Ware Malcomb)
Topographic Survey (R-PE)
Plan and Profile Drawings (Town of Caledon)
Approved Spiers Giffen Avenue Drawings (IBI Group)

CAUTION: IF THIS SHEET IS NOT 24"x36" IT IS A REDUCED PRINT



OVERALL SITE PLAN
SCALE: 1: 750 (1) CONSTRUCTION NORTH TRUE NORTH

PROJECT DATA

TOR21-0032-00 HEART LAKE ROAD - OVERALL SITE

SITE STATISTICS		
Zoning Category	MP/MS	
Proposed Use	Warehouse	
Building Classification	Group F2 (O.B.C. A- 3.1.2.1.(1))	
GROSS SITE AREA	65,226.64m²	702,093.03 ft²
Zone Permitted Use *(CALEDON BY-LAW NO. 2006-50)*		
Proposed Use	Warehouse	
Regulations (Prestige Industrial, Exceptions - 462)		
	Proposed	**Required**
Min. Lot Area	65,226.64m²	0.8ha
Min. Lot Frontage (m)	219.13	30.0m min
Min. Front Yard Building Setback (m)		15.0(W), 6.0(E)
Min. Interior Side Yard Building Set back (m)		NIC
Min. Exterior Side Yard Building Set back (m)		7.5
Min.Rear Yard Building Setback (m)		14.0
Min.Landscape Buffer		3.0
BUILDING HEIGHT	12.5	18m max
BUILDING FLOOR AREA		
Warehouse		
Future Accessory Office		
TOTAL BUILDING GFA	**29,876.29m²**	
BUILDING COVERAGE	45.80%	max 50%
PARKING REQUIREMENT		
	PROPOSED	***REQUIRED***
Warehouse		
1st 7000m² @ 1.0/90 m²		78
7000m² - 20,000m² @ 1.0/145 m²		90
OVER 20,000m² @ 1.0/168 m²		59
Total No. of Parking Spaces	227	227
Total No. of Accessible Parking Spaces	7	7
Parking Stall Dimensions	STANDARD - 2.75m X 6.0m ACCESSIBLE TYPE A - 3.4m X 5.2m TYPE B - 2.75m X 6.0m	
Loading Space	4	4
Loading Space Dimensions	3.5m X 14.0m	
Dock High Doors	67	N/A
Drive-In Doors	2	
Landscape area		min 10%

SITE PLAN NOTES

1. PROPERTY LINE
2. 2.75x6.00m PARKING STALL, PAINTED PARKING STRIPPING PER CITY STANDARDS.
3. PRINCIPLE ENTRY – TO HAVE AUTOMATIC DOOR OPERATOR INSTALLED AND BE KEPT CLEAR OF ANY BARRIERS OR OBSTRUCTIONS.
4. 1500mm MIN. WIDE SIDEWALK TYPICAL U.N.O – TO BE POURED CONCRETE, UNIT PAVING, OR PERMEABLE PAVEMENT
5. DRIVE–IN RAMP, SEE CIVIL DRAWING FOR SLOPE %
6. ACCESSIBLE PARKING SIGNS CENTERED AT THE END OF ALL ACCESSIBLE PARKING SPACES, TO BE MIN MOUNTED 1.0M (MAX 2.0M) ABOVE PARKING LOT SURFACE, POLE MOUNTED AND DESIGNED IN ACCORDANCE WITH SECTION 11 OF REG. 581 WITHIN THE HIGHWAY TRAFFIC ACT. ALL SIGNAGE AT 'TYPE A' SPACES TO IDENTIFY SPACE AS "VAN ACCESSIBLE"
7. CONCRETE APRON – SEE CIVIL DWGS.
8. LANDSCAPE AREA – SEE LANDSCAPE DWGS.
9. PROVIDE CONCRETE FILLED PROTECTION BOLLARDS AT BOTTOM OF STEEL STAIRS AT EACH GUARDRAIL.
10. TYPICAL SHARED ACCESSIBLE PARKING STALLS, PAINTED PARKING STRIPING PER CITY STANDARDS. EACH PAIR OF SHARED STALLS TO HAVE (1) TYPE A (3.40x6.00m) & (1) TYPE B (2.75x6.00m) STALL C/W A 1.5m PAINTED AISLE – REFER TO SCHEDULE 'K' TOWN OF CALEDON STANDARDS AND DETAIL A/A1.2 C/W ACCESSIBLE PARKING SIGNAGE
11. 150mm WIDE CURB TYPICAL
12. LOADING SPACE – L.S. (3.5m x 14.0m)
13. FIRE DEPARTMENT CONNECTION / SIAMESE
14. TRUCK LOADING DOCK, TYP.
15. FIRE ACCESS ROUTE W/ 12.0m TURNING RADIUS (————) PROVIDE FIRE ROUTE SIGNAGE AS REQUIRED BY TOWN OF CALEDON BY–LAW BL–2015–058, AS PER DETAIL B/A1.2.
16. PEDESTRIAN WALKWAY WITH PAINTED LINE PER TOWN OF CALEDON STANDARDS.
17. LINE OF CANOPY ABOVE
18. PROPOSED LOCATION OF ELECTRICAL ROOM
19. PROPOSED LOCATION OF MECHANICAL ROOM
20. HATCHED AREA DENOTES HEAVY DUTY ASPHALT. TYPICAL FOR ALL AREAS REQUIRING FIRE TRUCK OR TRACTOR TRUCK ACCESS. FIRE ACCESS ROUTE WILL BE DESIGNED TO SUPPORT A LOAD OF NOT LESS THAN 11,363 Kg. PER AXLE AND HAVE A CHANGE IN GRADIENT OF NOT MORE THAN 1 IN 12.5 OVER A MINIMUM DISTANCE OF 15 M.
21. FIRE HYDRANT
22. ROAD CURB AND SIDEWALK TO BE CONTINUOUS THROUGH THE DRIVEWAY. DRIVEWAY GRADE TO BE COMPATIBLE WITH EXIST. SIDEWALK AND A CURB DEPRESSION WILL BE PROVIDED AT EACH ENTRANCE. SITE ENTRANCE PER CITY STANDARD DRAWING NO. 402, OPSD 350.010. SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 80.27 OF THE IAS.
23. DETECTABLE TACTILE WARNING SURFACE. CONFORIMNG TO 2012 O.B.C
24. ACCESSIBLE CURB RAMP
25. PEDESTRIAN RAIL SET INTO RETAINING WALL WHERE GRADE CHANGE GREATER THAN 0.60m. PROVIDE CONCRETE–FILLED STEEL BOLLARD AT END OF RETAINING WALL – SEE CIVIL DWGS.
26. AMENITY AREA – REFER TO LANDSCAPE DWGS
27. ACCESSIBLE RAMP
28. LOCATION OF BICYCLE RACK – SEE LANDSCAPE DWGS.
29. RETAINING WALL – SEE CIVIL DWGS.

SITE LEGEND

- NEW HEAVY DUTY PAVEMENT (HATCHED)
- NEW LANDSCAPED AREA (HATCHED)
- FIRE ACCESS ROUTE MIN. 12.0M TURNING RADIUS
- MAN DOOR ENTRY
- TRUCK LOADING DOCK DOOR
- DRIVE IN DOOR
- PROPOSED FIRE HYDRANT (VERIFY LOCATION W/CIVIL DWGS)
- EXISTING FIRE HYDRANT VERIFY LOCATION W/CIVIL DWGS)
- (F) FIRE ROUTE SIGNAGE 30CM X 45CM – AS PER TOWN OF CALEDON BY–LAW 2015 – REFER TO DETAIL 2/A1.0
- RC–93 BARRIER–FREE PARKING SIGNS FOR ALL ACCESSIBLE PARKING SPACES
- SIAMESE CONNECTION (VERIFY LOCATION W/CIVIL DWGS)
- DENOTES CATCHBASIN (SEE CIVIL DWGS)
- DENOTES MANHOLE (SEE CIVIL DWGS)
- DC DEPRESSED CURB.(SEE DETAIL 2/A1.0)
- LS LOADING SPACE (3.5m X 9.0m) TYP.
- (#) NO. OF PARKING SPACES
- EXTERIOR WALL LIGHTS (SEE PHOTOMETRICS DWGS)
- EXTERIOR LIGHTS POLES (SEE PHOTOMETRICS DWGS)
- BICYCLE PARKING

WARE MALCOMB
Leading Design for Commercial Real Estate
architecture
planning
interiors
graphics
civil engineering
180 bass pro mills drive, unit 103
vaughan, ontario, L4K 5W9
p 905.760.1221
f 905.248.3344
a business name of WMA Inc.

XXXXX
HEART LAKE ROAD
XXXXX HEART LAKE ROAD
CALEDON, ON

OVERALL SITE PLAN

DATE	REMARKS

PA / PM:	AM
DRAWN BY:	
JOB NO.:	TOR21–0032–00

SHEET
A1.0

2021-11-24_ISSUED FOR SPA

\\Wma-arch.com\wm\TOR\21\0032\00\Architectural\Cad\SD_B2\0032_A10.dwg

SKETCH SHOWING ELEVATIONS FOR CONSULTANT'S USE

SCALE 1:1000

10m 5m 0m 10m 20m 30m 40meters

R–PE SURVEYING LTD., O.L.S.

METRIC

LEGEND

BXB	DENOTES BELL BOX
CB	DENOTES CATCH BASIN
CONC	DENOTES CONCRETE
FH	DENOTES FIRE HYDRANT
P.I.N.	DENOTES PROPERTY IDENTIFIER NUMBER
LS	DENOTES LAMP STANDARD
MH	DENOTES MANHOLE
MHSA	DENOTES MANHOLE SANITARY
MHST	DENOTES MANHOLE STORM
MHW	DENOTES MANHOLE WATER
INV.	DENOTES INVERT ELEVATION
UP	DENOTES UTILITY POLE
WV	DENOTES WATER VALVE
–W–	DENOTES OVERHEAD WIRE
Ø	DENOTES DIAMETER
	DENOTES FENCE LINE
HYDRANT	DENOTES HYDRANT
	DENOTES CURB CUT
	DENOTES ANCHOR GUY WIRE

CAUTION

THIS IS NOT A PLAN OF SURVEY AND SHALL NOT TO BE USED EXCEPT FOR THE PURPOSE INDICATED IN THE TITLE BLOCK.

NOTES

BOUNDARY LINE–WORK TAKEN FROM PLAN OF SURVEY BY R–PE SURVEYING LTD., DATED FEBUARY 5, 2021. (CAD FILE No. 21–009R01)

THIS SKETCH IS AN ORIGINAL COPY IF EMBOSSED BY THE SURVEYOR.

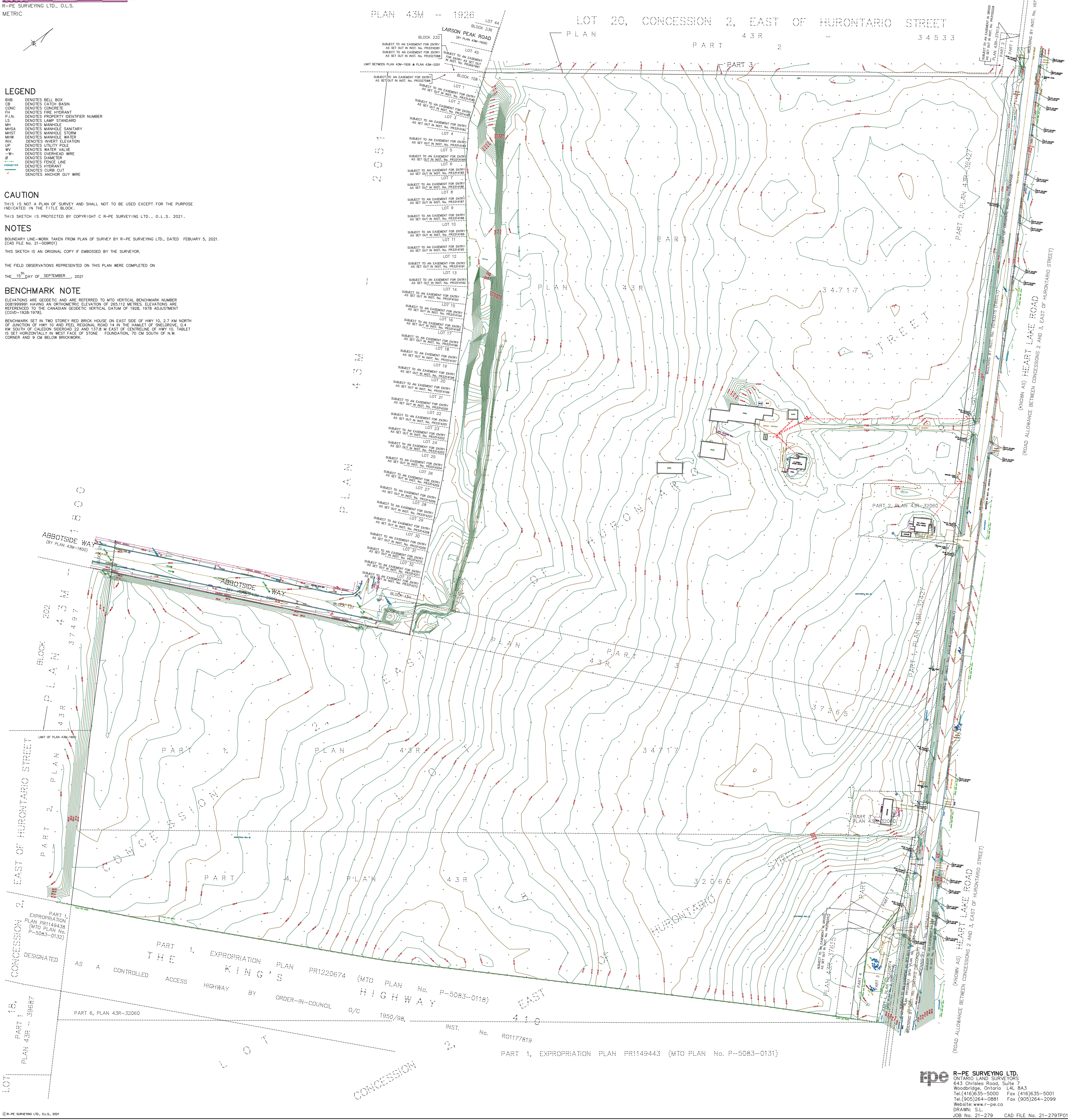
THE FIELD OBSERVATIONS REPRESENTED ON THIS PLAN WERE COMPLETED ON

THE 15th DAY OF SEPTEMBER, 2021

BENCHMARK NOTE

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO MTO VERTICAL BENCHMARK NUMBER 0081999991 HAVING AN ORTHOMETRIC ELEVATION OF 265.112 METRES. ELEVATIONS ARE REFERENCED TO THE CANADIAN GEODETIC VERTICAL DATUM OF 1928, 1978 ADJUSTMENT (CGVD–1928:1978).

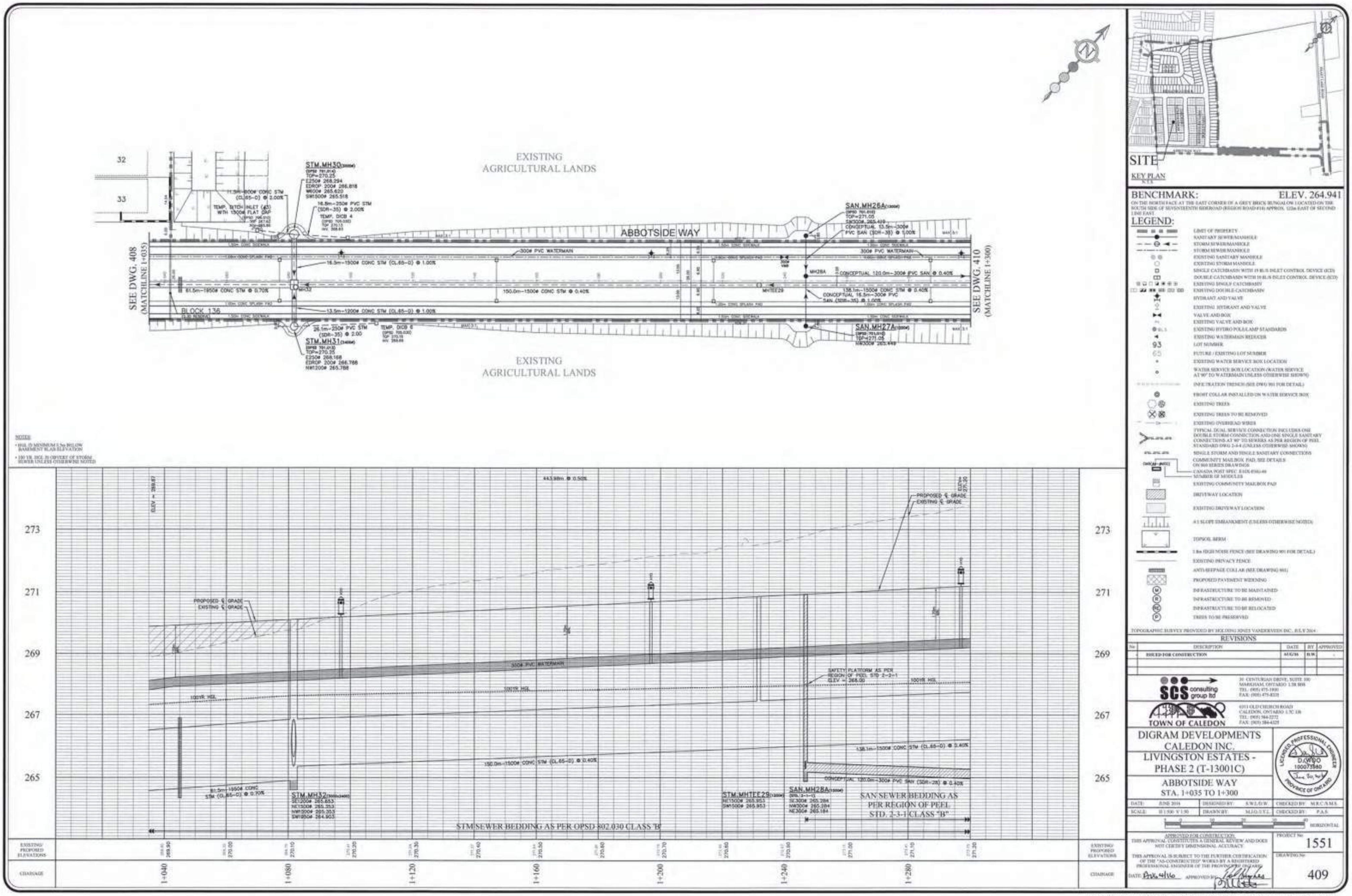
BENCHMARK SET IN TWO STOREY RED BRICK HOUSE ON EAST SIDE OF HWY 10, 2.7 KM NORTH OF JUNCTION OF HWY 10 AND PEEL REGIONAL ROAD 14 IN THE HAMLET OF SNELGROVE, 0.4 KM SOUTH OF CALEDON SIDEROAD 22 AND 137.8 M EAST OF CENTRELINE OF HWY 10. TABLET IS SET HORIZONTALLY IN WEST FACE OF STONE FOUNDATION, 70 CM SOUTH OF N.W. CORNER AND 9 CM BELOW BRICKWORK.

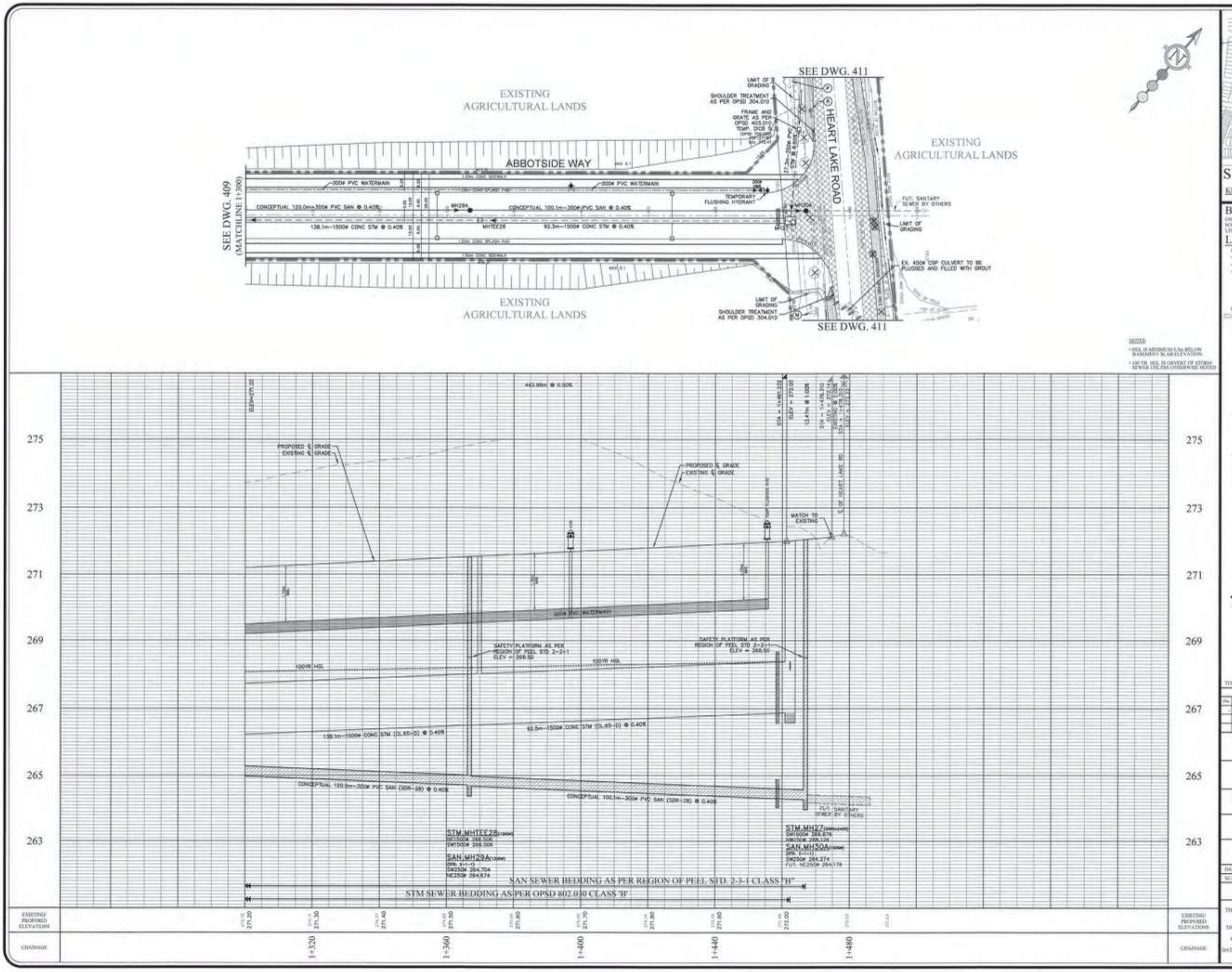


R–PE SURVEYING LTD.
ONTARIO LAND SURVEYORS
643 Chrislea Road, Suite 7
Woodbridge, Ontario L4L 8A3
Tel.(416)635–5000 Fax (416)635–5001
Tel.(905)264–0881 Fax (905)264–2099
Website: www.r–pe.ca

DRAWN: S.L.

JOB No. 21–279 CAD FILE No. 21–279TP01


EXISTING AGRICULTURAL LANDS
ABBOTSIDE WAY
SEE DWG. 408 (MATCHLINE 1+035)
SEE DWG. 410 (MATCHLINE 1+300)
BLOCK 136
STM.MH30
STM.MH31
STM.MH32
SAN.MH26A
SAN.MH27A
SAN.MH28A
STM.MHTEE29
300Ø PVC WATERMAIN
150.0m-1500Ø CONC STM @ 0.40%
138.1m-1500Ø CONC STM @ 0.40%
PROPOSED ℄ GRADE
EXISTING ℄ GRADE
100YR HGL
SAFETY PLATFORM AS PER REGION OF PEEL STD 2-2-1
STM SEWER BEDDING AS PER OPSD 802.030 CLASS 'B'
SAN SEWER BEDDING AS PER REGION OF PEEL STD. 2-3-1 CLASS "B"
273
271
269
267
265
1+040
1+080
1+120
1+160
1+200
1+240
1+280
EXISTING/ PROPOSED ELEVATIONS
CHAINAGE
SITE
KEY PLAN
BENCHMARK: ELEV. 264.941
LEGEND:
REVISIONS
ISSUED FOR CONSTRUCTION
SCS consulting group ltd
TOWN OF CALEDON
DIGRAM DEVELOPMENTS CALEDON INC.
LIVINGSTON ESTATES - PHASE 2 (T-13001C)
ABBOTSIDE WAY
STA. 1+035 TO 1+300
DATE: JUNE 2016
HORIZONTAL
APPROVED FOR CONSTRUCTION
PROJECT No 1551
DRAWING No 409



SITE

KEY PLAN

BENCHMARK: ELEV. 264.941

LEGEND:

TOPOGRAPHIC SURVEY PROVIDED BY HOLDING JONES VANDERVEEN INC., JULY 2014.

REVISIONS

No.	DESCRIPTION	DATE	BY	APPROVED
-	ISSUED FOR CONSTRUCTION	AUG/16	D.W.	-

SCS consulting group ltd

TOWN OF CALEDON

DIGRAM DEVELOPMENTS CALEDON INC.

LIVINGSTON ESTATES - PHASE 2 (T-13001C)

ABBOTSIDE WAY

STA. 1+300 TO 1+491.459

DATE: JUNE 2016	DESIGNED BY: S.W.L/D.W.	CHECKED BY: M.R.C./N.M.S.
SCALE: H 1:500 V 1:50	DRAWN BY: M.J.O./J.Y.L.	CHECKED BY: P.A.B.

APPROVED FOR CONSTRUCTION
THIS APPROVAL CONSTITUTES A GENERAL REVIEW AND DOES NOT CERTIFY DIMENSIONAL ACCURACY.
THIS APPROVAL IS SUBJECT TO THE FURTHER CERTIFICATION OF THE "AS-CONSTRUCTED" WORKS BY A REGISTERED PROFESSIONAL ENGINEER OF THE PROVINCE OF ONTARIO

PROJECT No: 1551

DRAWING No: 410

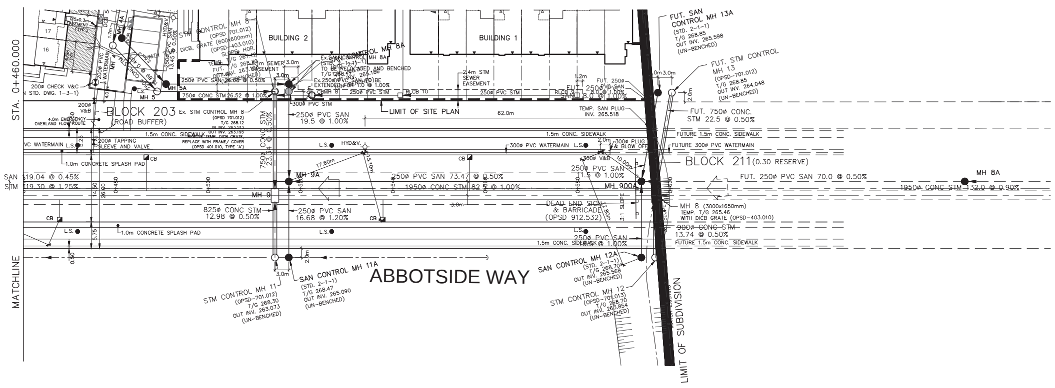
PAVEMENT DESIGN

40mm DFC ASPHALT CONCRETE
110mm HDBC ASPHALT CONCRETE
150mm GRANULAR "A"
450mm GRANULAR "B" SUB-BASE

LEGEND

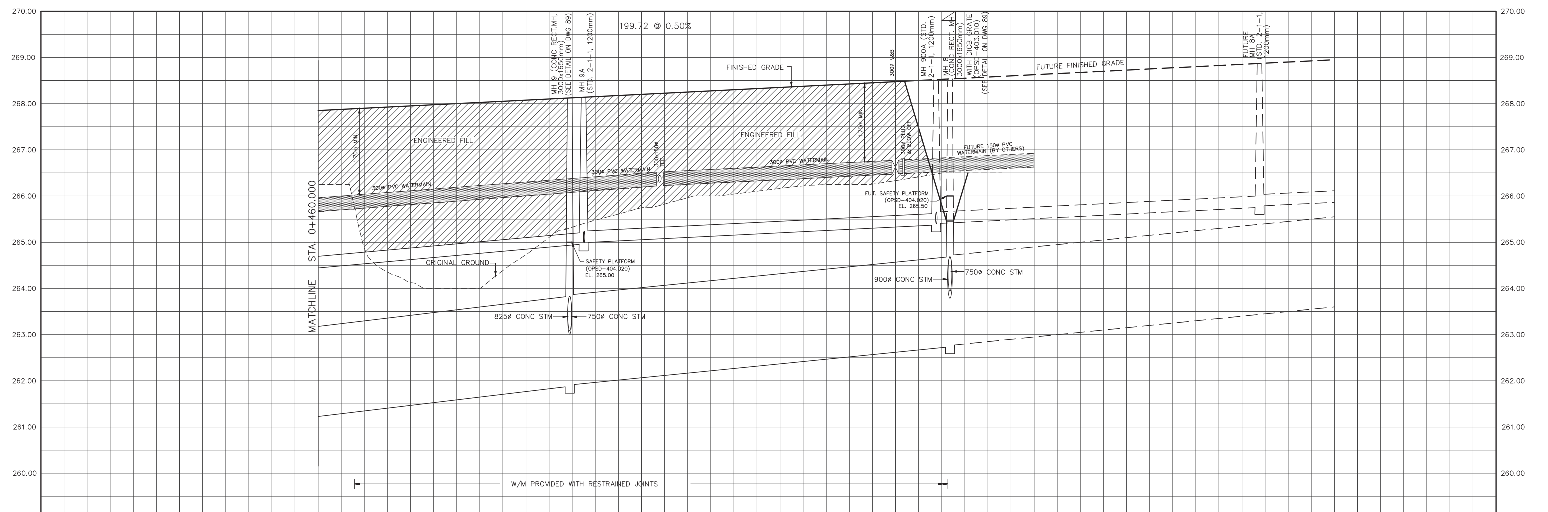
- VALVE AND BOX
- VALVE AND CHAMBER
- HYDRANT
- SINGLE CATCHBASIN
- DOUBLE CATCHBASIN
- CATCHBASIN WITH INLET CONT. DEVICE TYPE B (Qmax=28.4 L/s)
- CATCHBASIN WITH INLET CONT. DEVICE TYPE C (Qmax=37 L/s)
- CATCHBASIN WITH INLET CONT. DEVICE TYPE D (Qmax=54 L/s)
- CATCHBASIN WITH INLET CONT. DEVICE TYPE F (Qmax=76 L/s)
- CATCHBASIN WITH INLET CONT. DEVICE TYPE G (Qmax=100 L/s)
- CATCHBASIN WITH INLET CONT. DEVICE TYPE H (Qmax=150 L/s)
- CATCHBASIN WITH INLET CONT. DEVICE TYPE I (Qmax=200 L/s)
- CATCHBASIN WITH INLET CONT. DEVICE TYPE J (Qmax=250 L/s)
- SANITARY MANHOLE
- STORM MANHOLE
- SINGLE STM. & SAN. HOUSE CONNECTION
- DOUBLE STM. & SAN. HOUSE CONNECTION
- WATER CONNECTION
- COMMUNITY MAIL BOX AND PAD LOCATION (WITH SIDEWALK)
- COMMUNITY MAIL BOX AND PAD LOCATION (WITHOUT SIDEWALK)
- LIGHT STANDARD
- 1.8m HIGH ACOUSTIC FENCE
- 2.0m HIGH ACOUSTIC FENCE SEE LANDSCAPE DWG. FOR DETAIL
- 1.5m HIGH BLACK VINYL CHAIN LINK FENCE UNLESS OTHERWISE NOTED
- RETAINING WALL (SEE NOTES ON DWG. 1, SEE RW-1, RW-2, RW-3, RW-4 FOR DETAIL)
- MIN. BASEMENT FLOOR ELEVATION
- PHASING LIMIT
- 150ø FILTRATION SUBDRAIN (SEE DETAIL ON DWG. No. 88)
- OVERLAND FLOW DIRECTION
- OVERLAND FLOW DIRECTION
- REGIONAL FLOOD LEVEL

REFER TO DWG No. 64

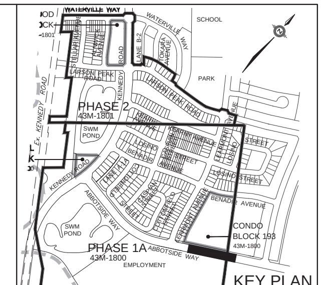


FOR NOTES OF WATERMAIN CONSTRUCTED IN FILL AREA SEE DWG. No. 37

NOTE:
ALL AS-CONSTRUCTED INFORMATION PROVIDED BY RADY-PENTEK & EDWARD SURVEYING LTD.



SANITARY INVERT	250ø PVC SAN 119.04 @ 0.45% SDR-35; SW 264.870 SE 264.890 NW 264.890 NE 264.890; 250ø PVC SAN 73.47 @ 0.50% SDR-35; SW 265.373 SE 265.403 N 265.403 NE 265.403; FUTURE 250ø PVC SAN 70.0 @ 0.50% SDR-35; SW 265.753 NE 265.783	SANITARY INVERT
STORM INVERT	1950ø CONC STM 119.30 @ 1.25% 100-D; SW 261.720 NW 263.081 SE 261.740 NE 261.971; 1950ø CONC STM 82.5 @ 1.00% 100-D; SW 262.640 SE 262.786 NE 262.786; FUTURE 1950ø CONC STM	STORM INVERT
EXISTING ℄ RD GRADES	268.541	EXISTING ℄ RD GRADES
CENTERLINE CHAINAGE	0+460.000, 0+480.000, 0+500.000, 0+520.000, 0+540.000, 0+560.000, 0+580.000, PI 0+597.983, 0+600.000, EP 0+607.983, 0+620.000	CENTERLINE CHAINAGE



KEY PLAN
SCALE 1:8000

TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY RADY-PENTEK & EDWARD SURVEYING LTD., PROJECT No. 05-260, TOPOGRAPHIC SURVEY DATED ON FEBRUARY 27, 2008.

LEGAL INFORMATION

CALCULATED M-PLAN PROVIDED BY RADY-PENTEK & EDWARD SURVEYING LTD., PROJECT No. 07-258 FOR PHASE 1A, SURVEY DATED APRIL 24, 2008. PROJECT No. 07-259 FOR PHASE 2, SURVEY DATED FEBRUARY 19, 2008.

AS-CONSTRUCTED

NO.	BY	DATE	REVISION	CONS. CHECKED	TOWN APPR'D
2	A.S.	10-01-22	AS-CONSTRUCTED SANITARY AND STORM SEWERS		
1	Z.L.	08-10-09	CONCRETE SPLASH PAD ADDED FOR ABBOTSIDE WAY		

APPROVED FOR CONSTRUCTION
THIS APPROVAL CONSTITUTES A GENERAL REVIEW AND DOES NOT CERTIFY DIMENSIONAL ACCURACY.

THIS APPROVAL IS SUBJECT TO THE FURTHER CERTIFICATION OF THE "AS CONSTRUCTED" WORKS BY A REGISTERED PROFESSIONAL ENGINEER OF THE PROVINCE OF ONTARIO.

DATE: SEPT. 9, 2008 APPROVED BY: C. CAMPBELL (ORIGINALLY SIGNED)
C. CAMPBELL, C.E.T.
DIRECTOR OF PUBLIC WORKS AND ENGINEERING

BENCH MARK:

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO THE CITY OF BRAMPTON BENCHMARK No. JI-313, HAVING AN ELEVATION OF 252.147 METRES, LOCATED ON SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW No. 11575 DIXIE ROAD, BEING 0.55km SOUTH OF MAYFIELD ROAD. TABLET IS SET 0.07m BELOW TOP OF DECK AND 0.27m EAST OF SOUTHEAST CORNER OF DECK.

ELEVATION = 252.147 m

ORIGINALLY APPROVED BY THE REGION OF PEEL ON SEPT. 12, 2008

SOUTH FIELDS COMMUNITY MOSCORP
PHASES 1A (21T-06004C)
PHASES 2 (21T-06002C)

DSEL david schaeffer engineering ltd
600 Alden Road, Suite 500
Markham, Ontario, L3R 0E7
Tel. (905) 475-3080
Fax. (905) 475-3081
www.DSEL.ca

Region of Peel Public Works

TOWN OF CALEDON

PLAN AND PROFILE OF
ABBOTSIDE WAY
(FROM STA. 0+460.000 TO STA. 0+597.983)

SCALE: HORIZ. 1:500 VERT. 1:50		PROJECT No. 07-294
DESIGNED BY: K.M.	DRAWN BY: M.Z./D.Z.	DRAWING No. 65
CHECKED BY: Z.L.	DATE: MARCH 2008	

TOWN OF CALEDON

Project No: 166965

TOWN OF CALEDON
REGION OF PEEL
REGION OF PEEL PROJECT No: C-06-302

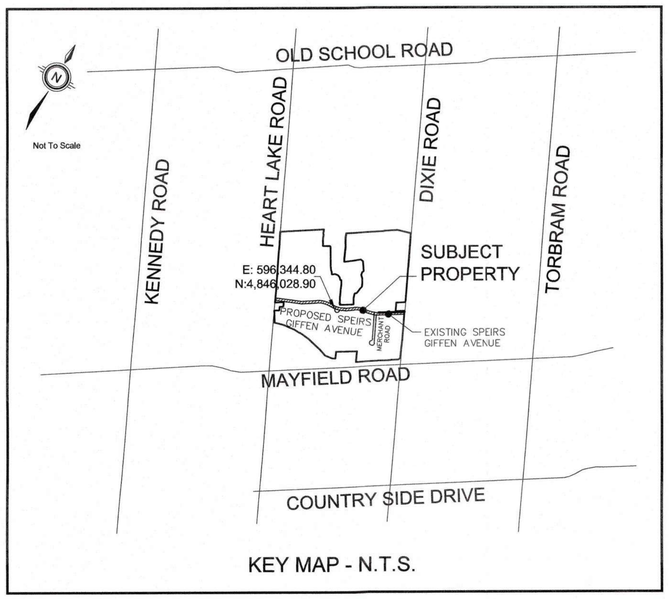
CANADIAN COMMERICAL CAPITAL
20 BAY ST. STE. 1100
TORONTO, ON, M5J 2N8
Tel: 416-203-3798
Fax: 416-203-3799

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com

MAYFIELD WEST INDUSTRIAL LANDS
SPEIRS GIFFEN AVENUE - PHASE 2

FOR CONSTRUCTION

2019-03-07- ISSUED FOR TRCA PERMIT APPLICATION
2019-06-11 - REVISED PER TOWN, REGION & TRCA COMMENTS 2019-07-24 - ISSUED FOR CONSTRUCTION
2019-08-15 - REVISED PER TRCA COMMENTS
2019-09-18 - REVISED PER TRCA COMMENTS, ISSUED FOR TOWN SIGNATURE



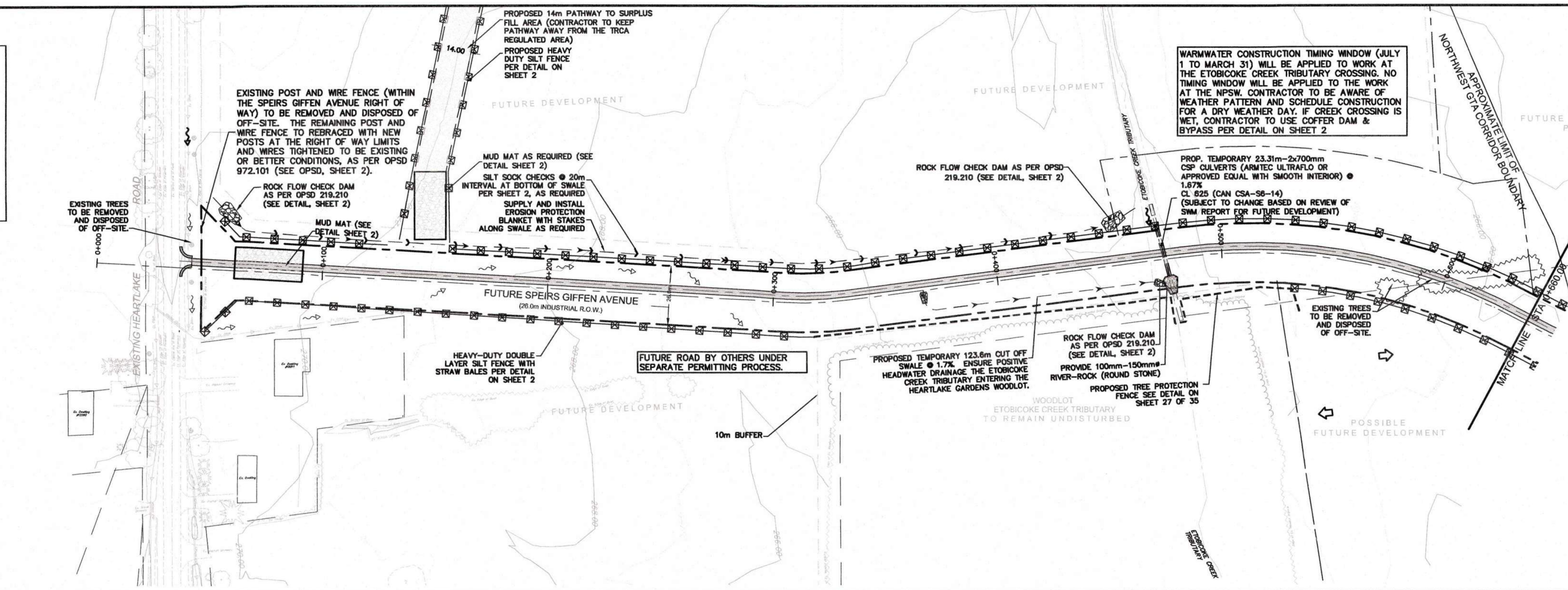
KEY MAP - N.T.S.

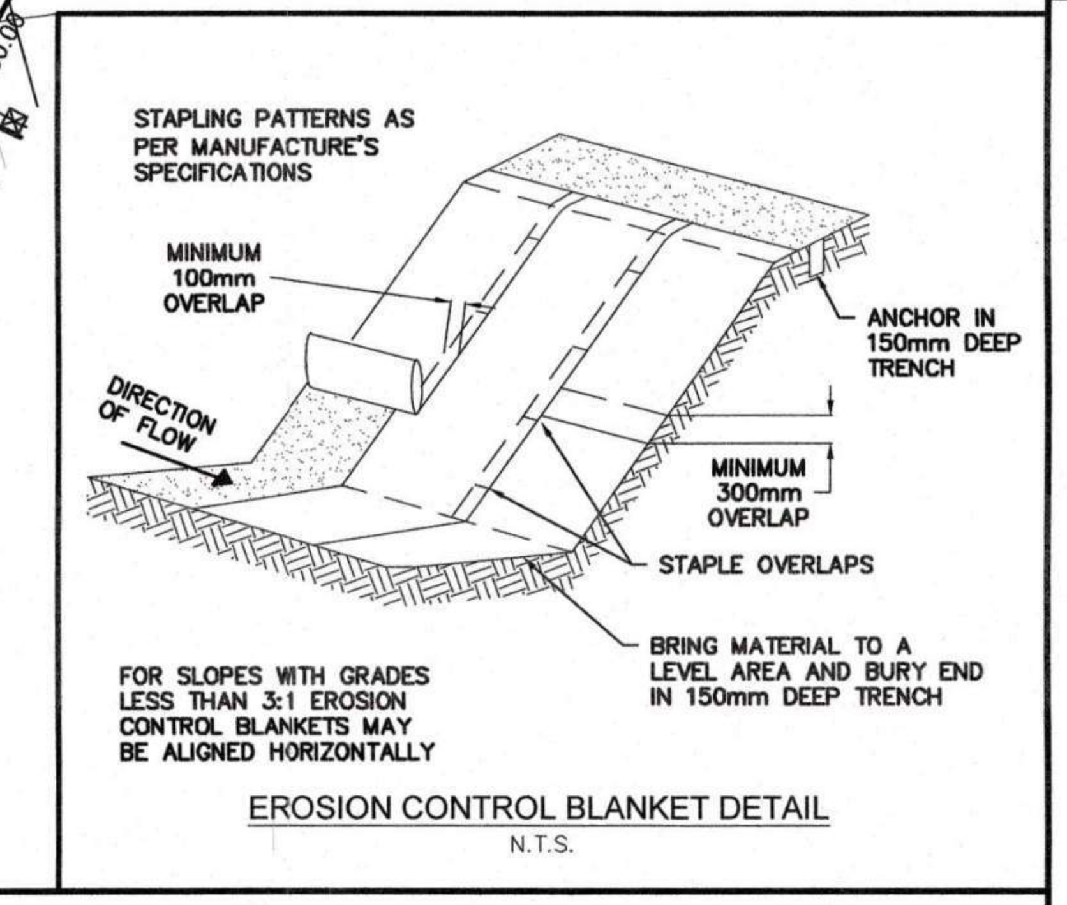
DESCRIPTION:

26.0m INDUSTRIAL COLLECTOR, TOTAL RIGHT OF WAY AREA = 3.5 ha (1.9 ha Proposed, 1.6 ha Future)
INCLUDING ROAD CONSTRUCTION, WATERMAIN, SANITARY SEWER, STORM SEWER AND RIGHT OF WAY GRADING.

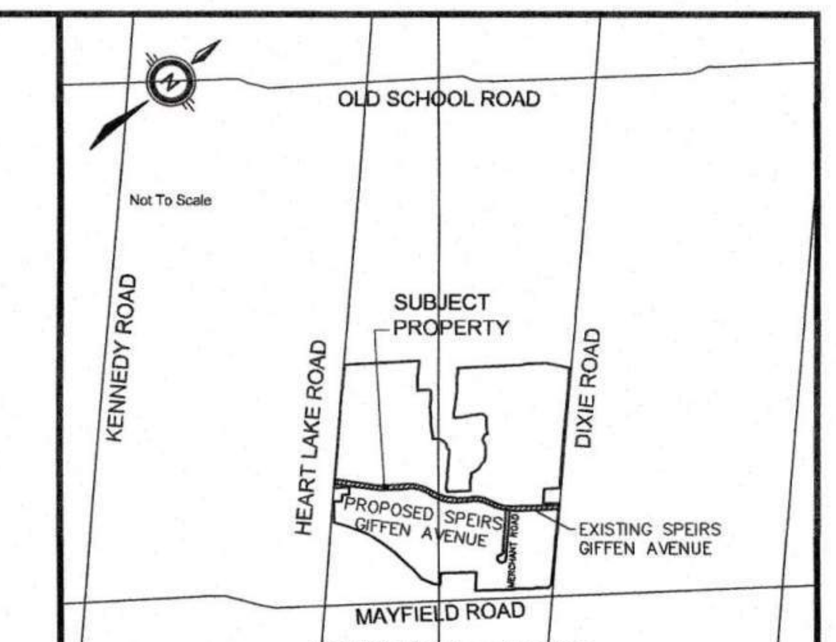
FILE:S:\116965_AbbotsideWay\5.9 Drawings\59cvil\layouts\116965-Title-Page.dwg LAYOUT:COVER
LAST SAVED BY:CNoe.cao, Thursday, August 15, 2019 10:31:06 AM PLOTTED BY:Michael Bucci Thursday, September 19, 2019 10:55:47 AM

Town of Caledon
APPROVED
AS NOTED
This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.
Date: Oct 16/19
Approved By: [signature]
Print Name: [signature]





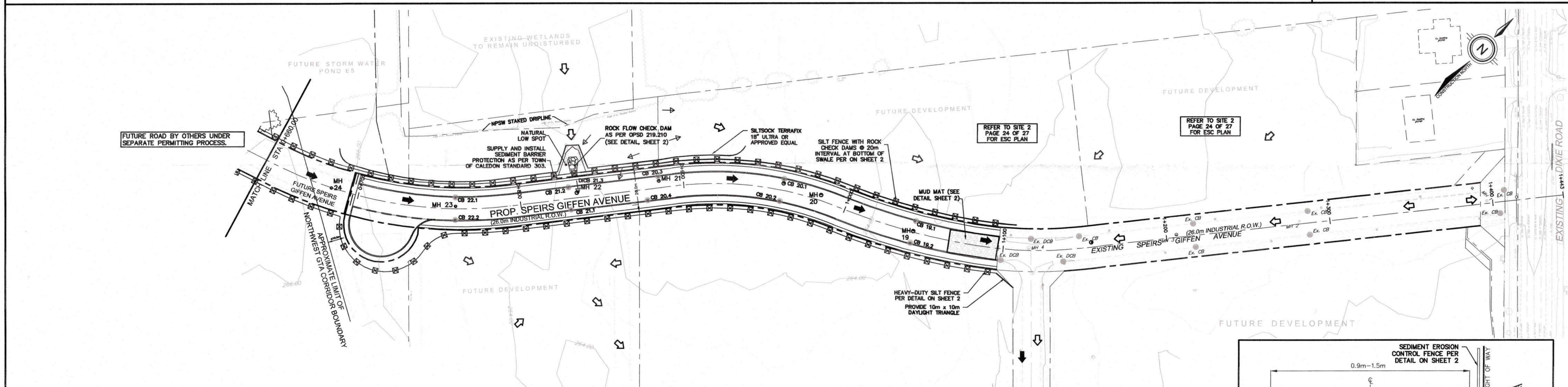
EROSION CONTROL BLANKET DETAIL
N.T.S.



KEY MAP - N.T.S.

LEGEND

- EXISTING GROUND CONTOURS
- PROPOSED GRADE CONTOURS
- CB CATCHBASIN
- DCB DOUBLE CATCHBASIN
- DICB DITCH INLET CATCH BASIN
- MH PROPOSED STORM MANHOLE
- EXISTING DITCH & FLOW DIRECTION
- STONE MUD MAT
- EXISTING OVERLAND FLOW ROUTE
- PROPOSED OVERLAND FLOW ROUTE
- LIMIT OF 26.0m INDUSTRIAL ROAD R.O.W.
- TOPSOIL STOCKPILE LOCATION
- TEMPORARY INTERCEPTOR DITCH/SWALE
- ROCK CHECK DAM
- STONE MUD MAT
- SILT FENCE
- SILT SACK
- HEAD WATER FEATURE DRAINAGE ROUTE RELOCATION AS PER RECOMMENDATIONS IN MAYFIELD WEST ENVIRONMENTAL IMPACT STATEMENT
- APPROIMATE LOCATION OF HEAD WATER FEATURE DRAINAGE ROUTE
- EXISTING CHANNEL / SWALE FLOW DIRECTION
- ROCK FLOW CHECK DAM AS PER OPSD 219.210 (SEE DETAIL SHEET 2)
- PROPOSED LIMIT OF RIGHT OF WAY
- EXISTING PROPERTY BOUNDARY
- SILTSOCK (TERRAFIX 18" ULTRA)
- TEMPORARY TREE PROTECTION FENCE



FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
11	09/27/19	J.P.	REVISED PER TRCA COMMENTS
10	09/18/19	J.P.	REVISED PER TRCA COMMENTS
9	08/29/19	J.P.	REVISED PER TRCA COMMENTS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS

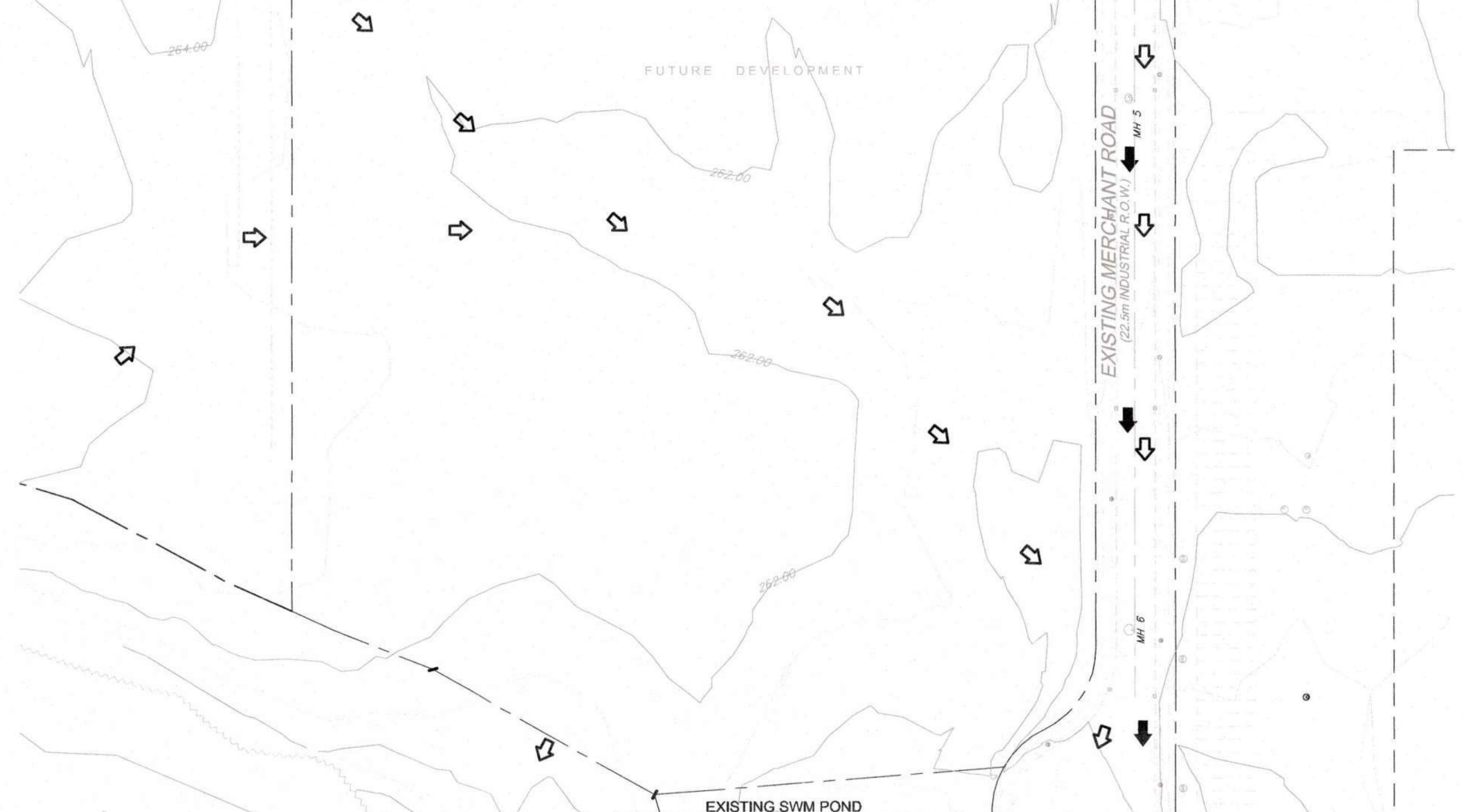
IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com

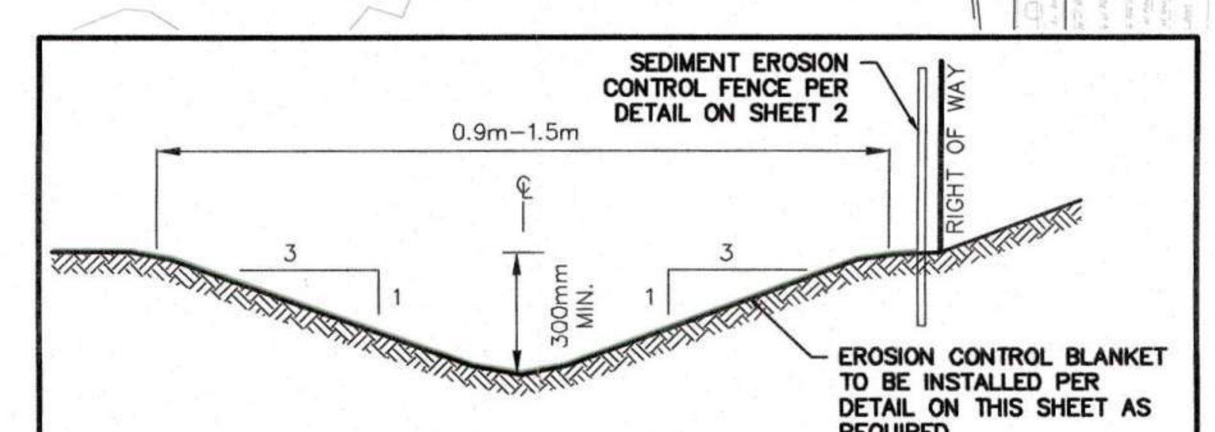
TOWN OF CALEDON

Region of Peel
working with you

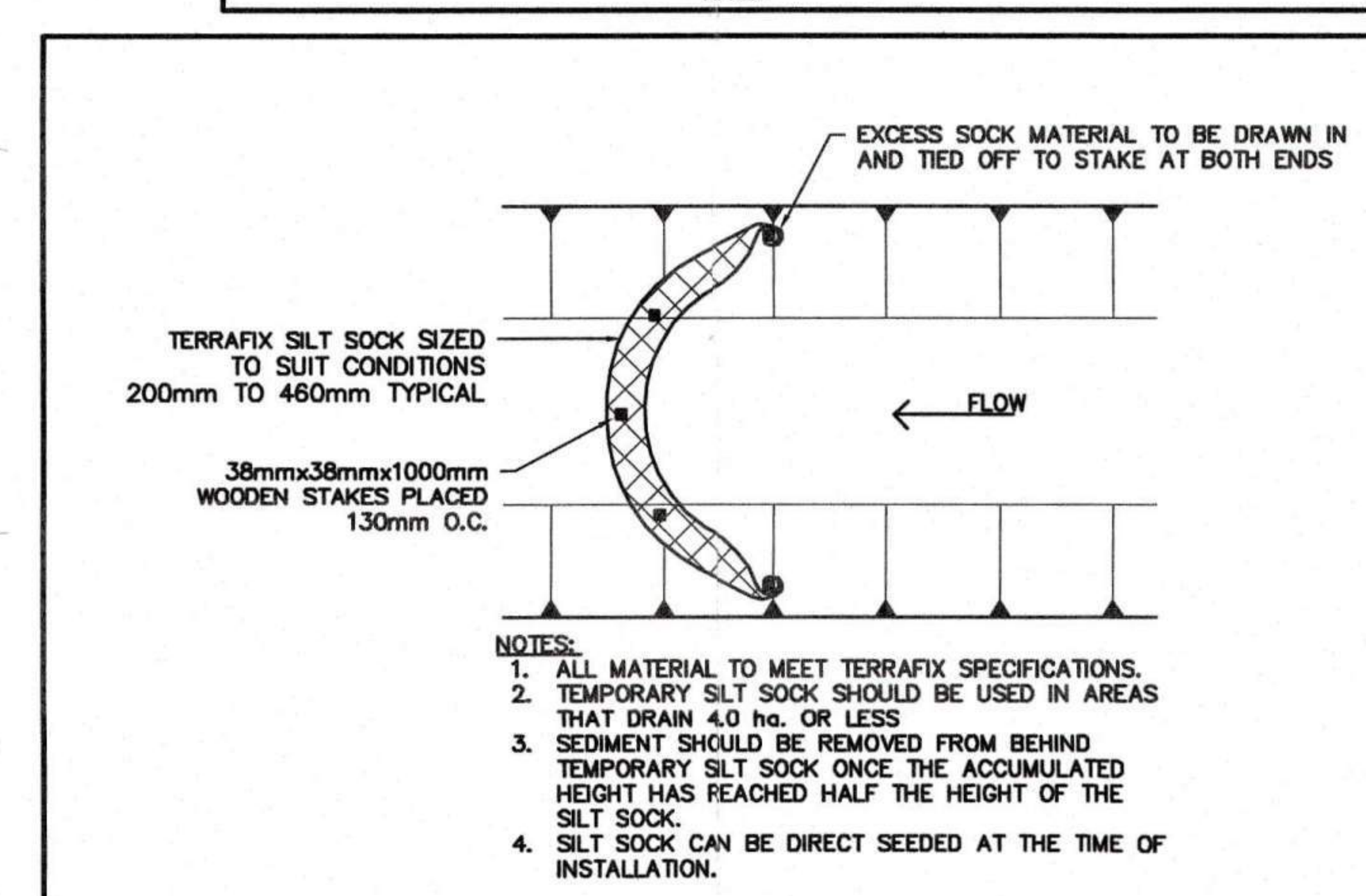
EROSION CONTROL MEASURES

1. ALL EROSION AND SEDIMENT CONTROL FACILITIES ARE TO BE INSPECTED BY THE CONSULTING ENGINEER ONCE A WEEK AND AFTER EACH RAINFALL OF 10mm OR GREATER OR A SIGNIFICANT SNOW MELT. DAILY INSPECTIONS ARE REQUIRED DURING EXTENDED RAINFALL OR SNOW MELT PERIODS.
2. ALL DAMAGED ESC FACILITIES ARE TO BE REPAIRED AND/OR REPLACED WITHIN 48 HOURS OF INSPECTION.
3. SILTATION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO WORKS COMMENCING ON THE SITE AND SHALL BE MAINTAINED FOR THE DURATION OF CONSTRUCTION, TO THE SATISFACTION OF THE CITY.
4. ALTERNATIVE METHODS OF EROSION CONTROL MUST BE REVIEWED AND APPROVED BY IBI GROUP PRIOR TO IMPLEMENTATION. CONTRACTOR TO SUBMIT PLAN FOR REVIEW AND APPROVAL BY IBI GROUP.
5. SILT FENCING SHALL BE AS PER TOWN OF CALEDON STD NO.304 PER DETAIL AND INSTALLED PRIOR TO COMMENCEMENT OF ANY AREA GRADING, EXCAVATION OR DEMOLITION AND LOCATED WHERE OFF-SITE FLOWS OCCUR.
6. ALL CATCHBASINS TO HAVE SEDIMENT TRAP OR SEDIMENT BARRIER INSTALLED AS PER TOWN OF CALEDON STDS NO.302 AND 303.
7. ALL STOCKPILE LOCATIONS TO BE MINIMUM 2.50m FROM PROPERTY LINE AND SURROUNDED BY SILT FENCING TO AVOID OFF-SITE MIGRATION OF SEDIMENT.
8. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS SITE DEVELOPMENT PROGRESSES. CONTRACTOR TO PROVIDE ALL ADDITIONAL EROSION CONTROL FEATURES TO PREVENT SEDIMENT FROM LEAVING THE SITE.
9. CONTRACTOR IS RESPONSIBLE FOR REMOVING SEDIMENTS FROM THE MUNICIPAL ROADWAY AND SIDEWALKS AT THE END OF EACH WORK DAY.
10. ALL EROSION CONTROL STRUCTURES TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN RE-STABILIZED EITHER BY PAVING OR RESTORATION OF VEGETATIVE GROUND COVER.
11. CONTRACTOR TO MINIMIZE EXTENT OF DISTURBED AREA AND DURATION OF EXPOSURE. STABILIZE/PROTECT DISTURBED AREA AS SOON AS POSSIBLE.
12. CONTRACTOR TO MONITOR THE SITE DEVELOPMENT TO ENSURE ALL EROSION CONTROLS ARE INSTALLED AND MAINTAINED TO MUNICIPAL REQUIREMENTS.
13. CONTRACTOR TO COMPLY WITH THE ENGINEER'S INSTRUCTIONS TO INSTALL, MODIFY OR MAINTAIN EROSION CONTROL WORKS.
14. EROSION CONTROL STRUCTURES TO BE MONITORED REGULARLY BY IBI GROUP AND ANY DAMAGE REPAIRED IMMEDIATELY. CONTRACTOR WILL REMOVE SEDIMENTS WHEN ACCUMULATIONS REACH A MAXIMUM OF 1/3 THE HEIGHT OF THE STRUCTURE. (I.E. FENCE)
15. SEE DETAIL PAGE FOR FURTHER INFO FOR SEDIMENT CONTROL MEASURES.
16. SEE STORMWATER MANAGEMENT REPORT PREPARED BY IBI GROUP(IBI PROJECT NO. 32529) FOR FURTHER INFO ON EROSION AND SEDIMENT CONTROLS.
17. ALL DISTURBED GROUND LEFT INACTIVE SHALL BE STABILIZED BY SEEDING, SODDING, MULCHING OR COVERING, OR OTHER EQUIVALENT CONTROL MEASURE. THE PERIOD OF TIME OF INACTIVITY SHALL NOT EXCEED 30 DAYS, UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR OF PUBLIC WORKS AND ENGINEERING.
18. CONSTRUCTION ACCESS ROUTES SHALL BE CLEARED OF MUD AND DUST DAILY.
19. INTERNAL AND EXTERNAL ROADS TO BE SCRAPED, FLUSHED AND SWEPT TWICE WEEKLY. THIS WORK SHALL BE COMPLETED EVERY TUESDAY AND FRIDAY OF EACH WEEK AND CONTINUE UNTIL ALL LOTS ARE SODDED.





TYPICAL SWALE X-SECTION
N.T.S.



NOTES:
1. ALL MATERIAL TO MEET TERRAFIX SPECIFICATIONS.
2. TEMPORARY SILT SOCK SHOULD BE USED IN AREAS THAT DRAIN 4.0 ha. OR LESS
3. SEDIMENT SHOULD BE REMOVED FROM BEHIND TEMPORARY SILT SOCK ONCE THE ACCUMULATED HEIGHT HAS REACHED HALF THE HEIGHT OF THE SILT SOCK.
4. SILT SOCK CAN BE DIRECT SEEDED AT THE TIME OF INSTALLATION.

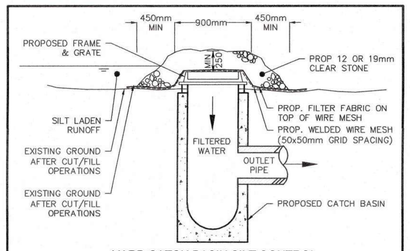
TEMPORARY SILT SOCK DETAIL
N.T.S.

LICENSED PROFESSIONAL ENGINEER
SEPT. 27, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

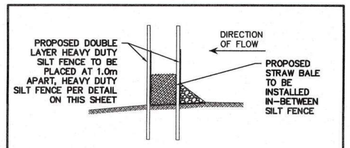
EROSION & SEDIMENT CONTROL PLAN

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	1:1250	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
1 of 35		DWG NO.	116965-ESC1



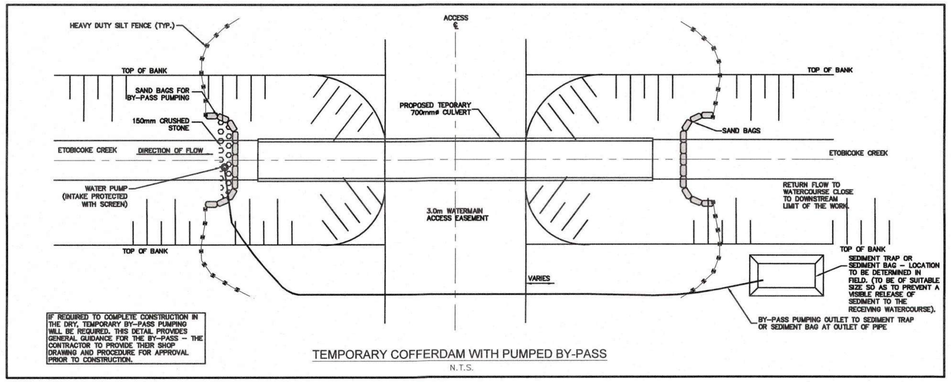
YARD CATCH BASIN SILT CONTROL
DETAIL 'C'

GRASSED AREAS N.T.S.



DOUBLE LAYER SILT FENCE WITH STRAW BALE

N.T.S.



TEMPORARY COFFERDAM WITH PUMPED BY-PASS

N.T.S.

SILTATION AND EROSION CONTROL

A. SILTATION CONTROL BARRIERS SHALL BE PLACED AS DETAILED.
B. ALL SILTATION CONTROL MEASURES SHALL BE CLEANED AND MAINTAINED AFTER EACH RAINFALL AS DIRECTED AND TO THE SATISFACTION OF THE TOWN OF CALEDON.
C. ADDITIONAL SILT CONTROL LOCATIONS MAY BE REQUIRED AS DETERMINED BY THE TOWN OF CALEDON.

IMPORTANT NOTE:

IN THE EVENT THAT THE APPROVED EROSION AND SEDIMENT CONTROLS AND STORMWATER MANAGEMENT FACILITIES ARE NOT EFFECTIVELY CONTROLLING SEDIMENT RELEASE INTO THE NATURAL ENVIRONMENT, THE PROJECT MANAGER OR SITE SUPERVISOR WILL IMMEDIATELY UPGRADE CONTROLS TO RECTIFY THE SITUATION.

EROSION AND SEDIMENT CONTROL NOTES:

FOLLOWING ARE THE MINIMUM OR "GOOD HOUSEKEEPING" REQUIREMENTS, TO ACHIEVE EROSION CONTROL DURING THE CONSTRUCTION PERIOD. THE MEASURES WILL BE INSPECTED PERIODICALLY BY MUNICIPAL STAFF. IT IS THE RESPONSIBILITY OF THE DEVELOPER/GENERAL CONTRACTOR TO ASSURE THEIR CONTINUED EFFECTIVENESS THROUGHOUT CONSTRUCTION.

1. PROVIDE GRAVEL ENTRANCE WHEREVER EQUIPMENT LEAVES THE SITE TO PREVENT MUD TRACKING ONTO PAVED SURFACES. GRAVEL BED SHALL BE A MINIMUM OF 30m LONG, 6m WIDE AND 0.45m DEEP AND SHALL CONSIST OF COARSE (2" CRUSHER-RUN LIMESTONE) MATERIAL. MAINTAIN GRAVEL ENTRANCE IN CLEAN CONDITION.
2. COVER ALL CATCHBASINS WITH 6mm STEEL PLATE THAT IS FIRMLY SECURED TO THE CB GRATING WITH CLAMPS, SCREWS OR WIRES. COVER TO REMAIN IN PLACE UNTIL ROUGH PAVING IS COMPLETED. MAINTAIN GOOD HOUSEKEEPING TO PREVENT WATERBORNE SEDIMENT FROM ENTERING THE STORM SEWER SYSTEM. IF THE CB'S MUST BE USED FOR SITE DRAINAGE DURING CONSTRUCTION, THEY ARE EACH TO BE SURROUNDED BY A STRAW BALE SILT-TRAP.
3. DO NOT LOCATE TOPSOIL PILES AND EXCAVATION MATERIAL CLOSER THAN 2.5m FROM ANY PAVED SURFACE, OR ONE WHICH IS TO BE PAVED BEFORE THE PILE IS REMOVED. ALL TOPSOIL PILES TO BE SEEDED IF THEY ARE TO REMAIN ON-SITE LONG ENOUGH FOR SEEDS TO GROW (LONGER THAN ONE MONTH).
4. CONTROL WIND-BLOWN DUST OFF-SITE TO ACCEPTABLE LEVELS, BY SEEDING TOPSOIL PILES AND OTHER AREAS TEMPORARILY, AND/OR WATERING, AS REQUIRED.
5. TEMPORARY SOIL STOCKPILES SHOULD BE PLACED AWAY FROM ALL WATERCOURSES.
6. SILT FENCE & SEDIMENT TRAP TO BE CLEANED PERIODICALLY AS REQUIRED.

DURING CONSTRUCTION:

1. STONE JACKET TO BE WRAPPED IN FILTER CLOTH.
2. FILTER CLOTH WRAPPING ON STONE JACKET TO BE INSPECTED AFTER EACH RAINFALL EVENT AND REPLACED IF CLOGGED.
3. ACCUMULATED SEDIMENT TO BE REMOVED AS REQUIRED.
4. AT COMPLETION OF CONSTRUCTION:
   - ACCUMULATED SEDIMENT TO BE REMOVED AND DISPOSED OFFSITE.
   - FILTER CLOTH TO BE REMOVED FROM STONE JACKET.
   - TOPSOIL, SEED AND PLANT AS PER SPECIFICATIONS.

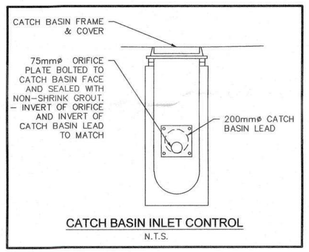
SEQUENCE OF CONSTRUCTION TO BE AS FOLLOWS:

1. SILT TRAPS ARE TO BE INSTALLED ON ALL CATCH BASINS. REGULAR INSPECTION IS REQUIRED & SEDIMENT MUST BE CLEANED OUT AND PROPERLY DISPOSED OF BEFORE ACCUMULATION REACHES 50% OF TRAP HEIGHT.
2. THE TEMPORARY SEDIMENT CONTROL STRUCTURE & OUTLET CAN BE REMOVED ONCE THE PERMANENT STORM SEWER OUTFALL HAS BEEN INSTALLED.
3. ALL SEDIMENT CONTROLS TO BE REMOVED AND STORM SEWER LAYOUT TO BE FLUSHED CLEAN ONCE CONSTRUCTION IS COMPLETE. SEDIMENT TO BE REMOVED FROM PERMANENT SWM FACILITY, AND PROPERLY DISPOSED OFF SIDE.
4. POND TO BE FINE GRADED AND PLANTING COMPLETED IN ACCORDANCE WITH LANDSCAPE DRAWINGS.
5. SILT FENCE & SEDIMENT TRAP TO BE CLEANED PERIODICALLY AS REQUIRED.
6. ALL SILT FENCE & SEDIMENT TRAPS ARE TO BE REMOVED WHEN CONSTRUCTION IS COMPLETED. THE REMAINING SEDIMENT IS TO BE GRADED, PREPARED AND SEEDED OR SODDED.

SOIL STABILIZATION:

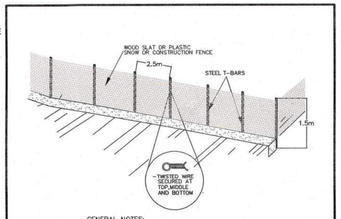
1. STABILIZE DISTURBED GROUND AND STOCKPILES BY SEEDING, SODDING, MULCHING, COVERING, OR OTHER ACCEPTABLE CONTROL MEASURES, IF GROUND IS INACTIVE FOR THIRTY(30) DAYS. (SEE TRCA ESC GUIDELINES FOR DETAILS)

* THE EROSION AND SEDIMENT CONTROL (ESC) STRATEGIES OUTLINED ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED/AMENDED AS SITE CONDITIONS CHANGE TO PREVENT SEDIMENT RELEASES TO THE NATURAL ENVIRONMENT. FAILED ESC MEASURES SHOULD BE REPAIRED WITHIN 48 HOURS.



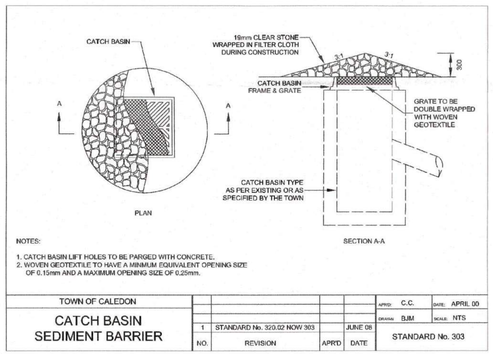
CATCH BASIN INLET CONTROL

N.T.S.



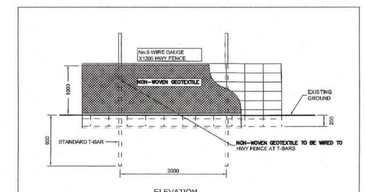
GENERAL NOTES:
1. SPLICING DETAIL:
LAY TOGETHER END STAY WIRES OF EACH OF THE TWO SECTIONS TO BE SPLICED, THEN WRAP THE OVERHANGING ENDS TIGHTLY AROUND LINE WIRE WITH PLIERS OR SPLICING TOOL. CUT AWAY IF NECESSARY TO ALLOW SUFFICIENT LENGTH FOR SPLICING.

SEPARATION FENCE DETAIL



NOTES:
1. CATCH BASIN LIFT HOLES TO BE PARGED WITH CONCRETE.
2. WOVEN GEOTEXTILE TO HAVE A MINIMUM EQUIVALENT OPENING SIZE OF 0.15mm AND A MAXIMUM OPENING SIZE OF 0.25mm.

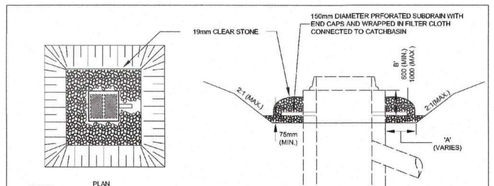
TOWN OF CALEDON						
CATCH BASIN SEDIMENT BARRIER					APRD: C.C.	DATE: APRIL 00
					DRAWN: BJM	SCALE: NTS
	NO.	REVISION	APRD	DATE	STANDARD No. 303	
	1	STANDARD No. 303.02 NOW 303		JUNE 08		



NOTES:
1 NON-WOVEN GEOTEXTILE TO HAVE A WEAVE DENSITY OF 270G OR GREATER
2 NON-WOVEN GEOTEXTILE TO HAVE A HORIZONTAL OVERLAP OF 1000mm AT JOINTS
3. END RUN-S SHALL BE TURNED UPSTREAM AT 30°

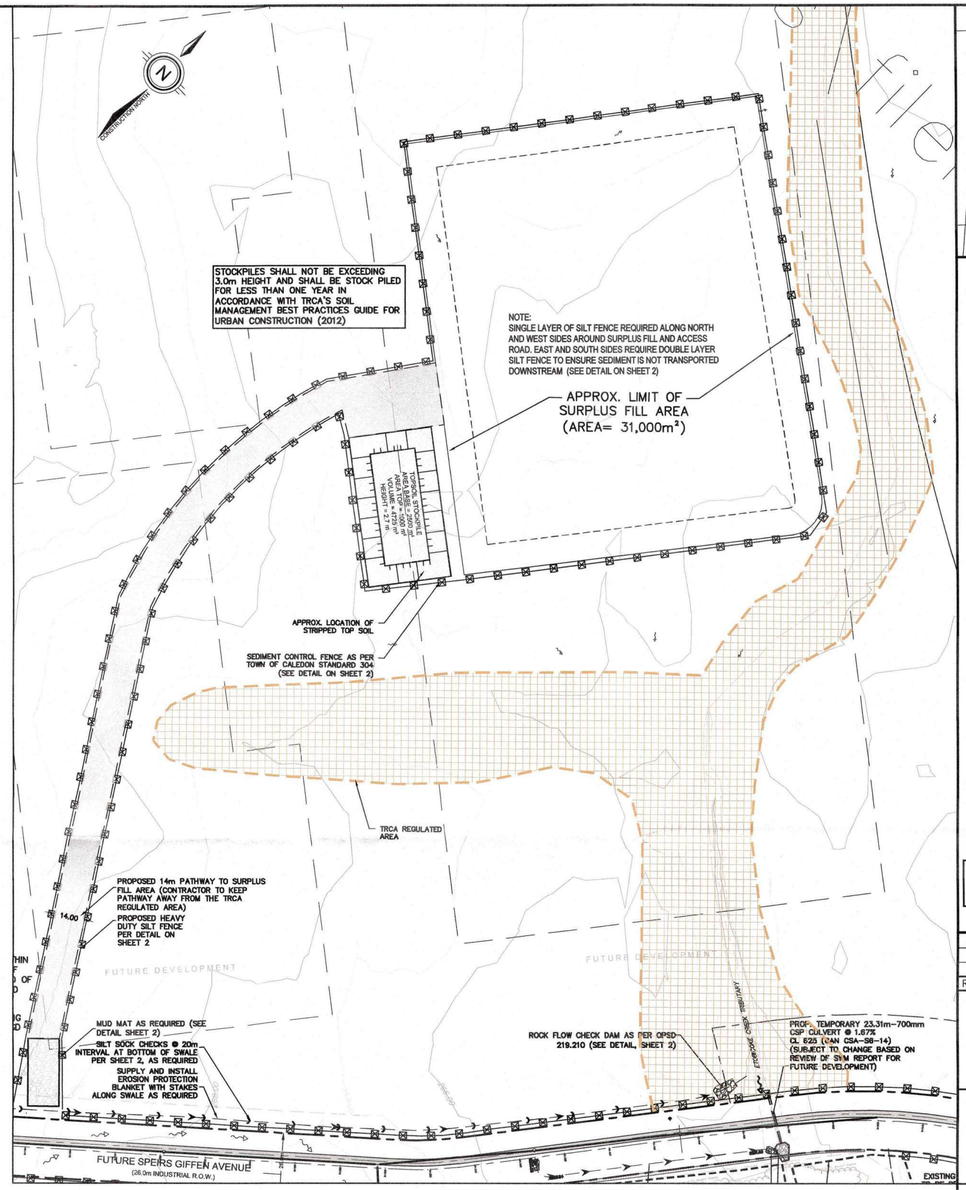
NO.	REVISION	APRD	DATE
2	NAME CHANGED, STANDARD No. 320.01 NOW 304		JUNE 08
1	SUPPORT FENCING IS CHANGED TO HWY FENCE		Oct 02

TOWN OF CALEDON			
SEDIMENT CONTROL FENCE	APRD: C.C.	DATE: APRIL 2000	
	DRAWN: BJM	SCALE: N.T.S.	
	STANDARD No. 304		



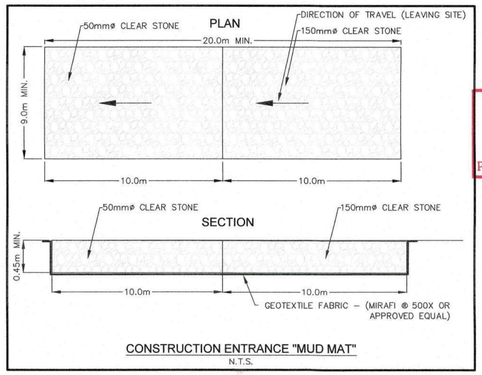
NOTES:
1 VOLUME OF SEDIMENT TRAP TO BE 125m³ PER HECTARE OF DRAINAGE. DEPTH TO BE CALCULATED FROM TOP OF CATCH BASIN TO BOTTOM OF TRAP (DIMENSION 'B')
2. MINIMUM DEPTH FROM TOP OF CATCHBASIN TO BOTTOM OF TRAP SHALL BE 600mm, MAXIMUM DEPTH SHALL BE 1000mm.
3. SEDIMENT TRAP TO BE CLEANED AS DEEMED NECESSARY BUT AS A MINIMUM WHEN THE DEPTH FROM UNDERSIDE OF FRAME TO TOP OF SILT IS REDUCED TO 300mm.
4. UPON REMOVAL OF TRAP, CATCHBASIN CONNECTION HOLES TO BE PARGED WITH CONCREETE.

TOWN OF CALEDON						
CATCH BASIN SEDIMENT TRAP					APRD: C.C.	DATE: APRIL 00
					DRAWN: BJM	SCALE: NTS
	NO.	REVISION	APRD	DATE	STANDARD No. 302	
	1	STANDARD No. 320.01 NOW 302		JUNE 08		



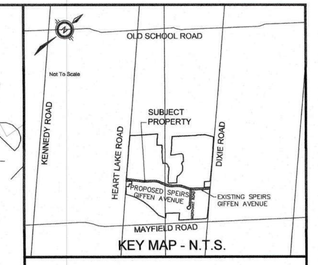
SURPLUS FILL DISPOSAL AREA

SCALE: 1:1250



CONSTRUCTION ENTRANCE "MUD MAT"

N.T.S.



KEY MAP - N.T.S.

Town of Caledon
APPROVED
AS NOTED
This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.
Date: Sept 19/19
Approved By:
Print Name:

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
9	08/29/19	J.P.	REVISED PER TRCA COMMENTS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com

TOWN OF CALEDON

Region of Peel
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RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

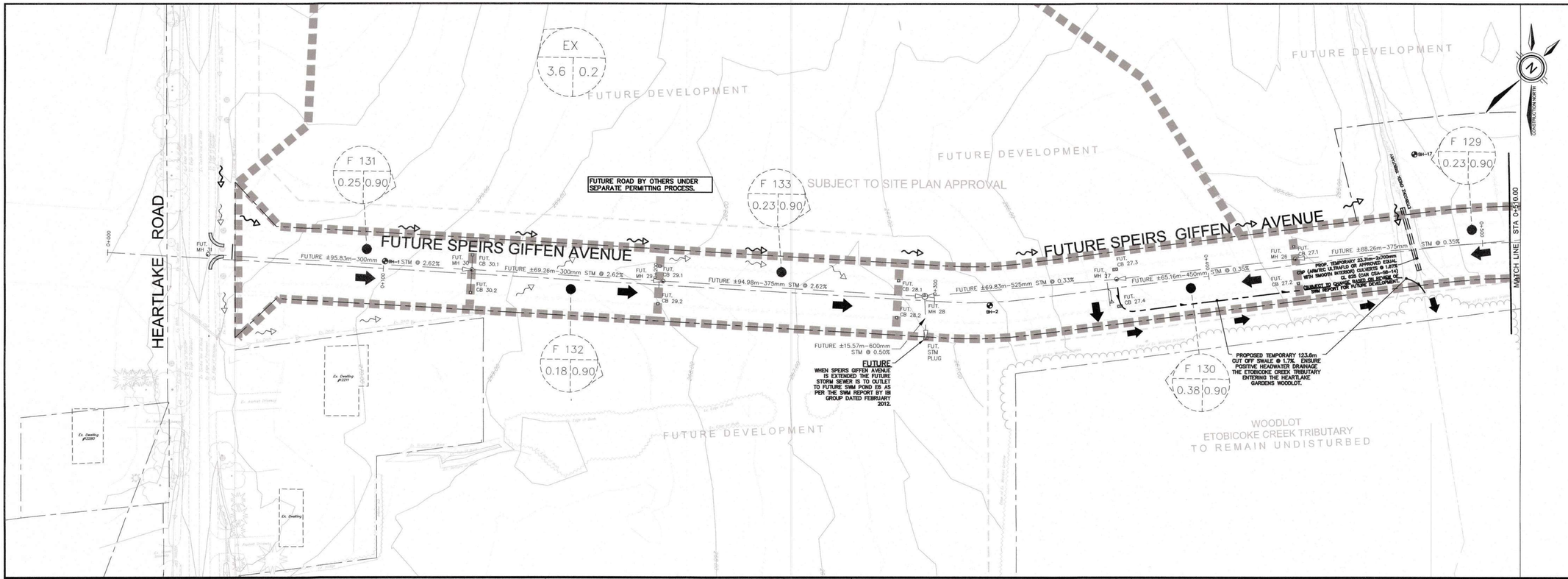
LICENSED PROFESSIONAL ENGINEER
AUG. 29, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

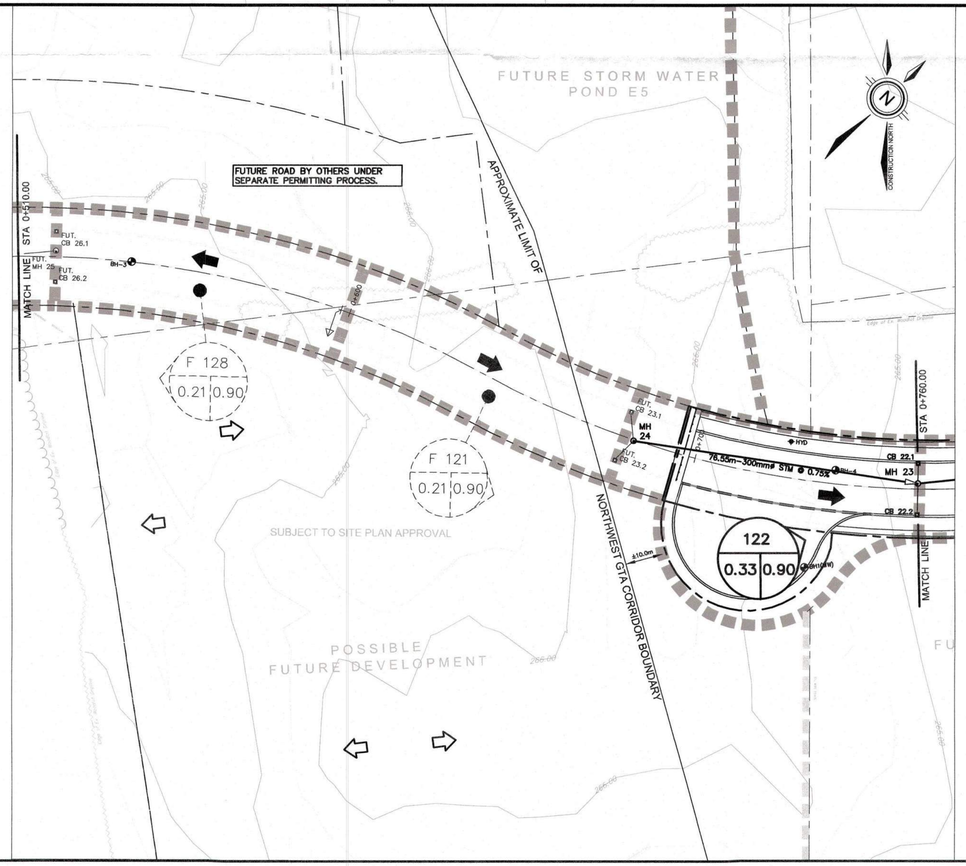
TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

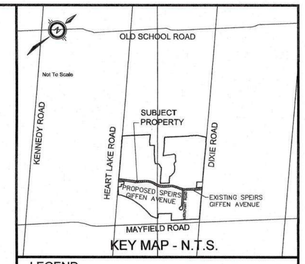
ESC NOTES AND DETAILS

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	AS NOTED	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO	C-06-302
2 of 35		DWG NO.	116965-ESC2

FILE:S:\116965_AbbotsideWay\5.0 Drawings\50civil\layouts\b116965-ESC1.dwg, LAYOUT ESC2
LAST SAVED BY:John.iezzi, Thursday, August 29, 2019 12:15:46 PM PLOTTED BY:Michael Bucci Thursday, August 29, 2019 12:27:44 PM







KEY MAP - N.T.S.

LEGEND

- MH1 – PROPOSED STORM MANHOLE
- AD – PROPOSED AREA DRAIN
- CB – PROPOSED CATCH BASIN
- CBMH – PROPOSED CB MANHOLE
- PROPOSED STORM SEWER
- DI – EXISTING DITCH INLET
- CB – EXISTING CATCH BASIN
- DCB – EXISTING DOUBLE CATCH BASIN
- ST–MH – EXISTING STORM MANHOLE
- CBMH – EXISTING CB MANHOLE
- DCBMH – EXISTING DCB MANHOLE
- EXISTING STORM FLOW DIRECTION
- MH1A – PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY SEWER
- S–MH – EXISTING SANITARY MANHOLE
- EXISTING SANITARY FLOW DIRECTION
- FUTURE HIGH POINT / DRAINAGE DIVIDE
- FUTURE LOW POINT
- STORM DRAINAGE AREA BOUNDARY
- HEAD WATER FEATURE DRAINAGE ROUTE RELOCATION AS PER RECOMMENDATIONS IN MAYFIELD WEST ENVIRONMENTAL IMPACT STATEMENT
- APPROX. LOCATION OF EXISTING HEAD WATER FEATURE DRAINAGE ROUTE
- EXISTING CHANNEL / SWALE FLOW DIRECTION
- ROCK FLOW CHECK DAM AS PER OPSD 219.210 (SEE DETAIL SHEET 2)

PROPOSED DRAINAGE AREA: FLOW DIRECTION; CATCHMENT AREA NUMBER (115); AREA (Hectares) (0.26); RUN–OFF CO–EFFICIENT (0.84)

EXISTING DRAINAGE AREA: FLOW DIRECTION; CATCHMENT AREA NUMBER (9.2); AREA (Hectares) (3.42); RUN–OFF CO–EFFICIENT (0.85)

FUTURE DRAINAGE AREA: FLOW DIRECTION; CATCHMENT AREA NUMBER (F 121); AREA (Hectares) (0.21); RUN–OFF CO–EFFICIENT (0.90)

Town of Caledon
APPROVED
AS NOTED
This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.
Date: Oct 16/19
Approved By: Nick Hughes
Print Name: Nick Hughes

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
10	09/27/19	J.P.	REVISED PER TRCA COMMENTS
9	09/18/19	J.P.	REVISED PER TRCA COMMENTS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS

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Hamilton ON L8L 1H5 Canada
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TOWN OF CALEDON

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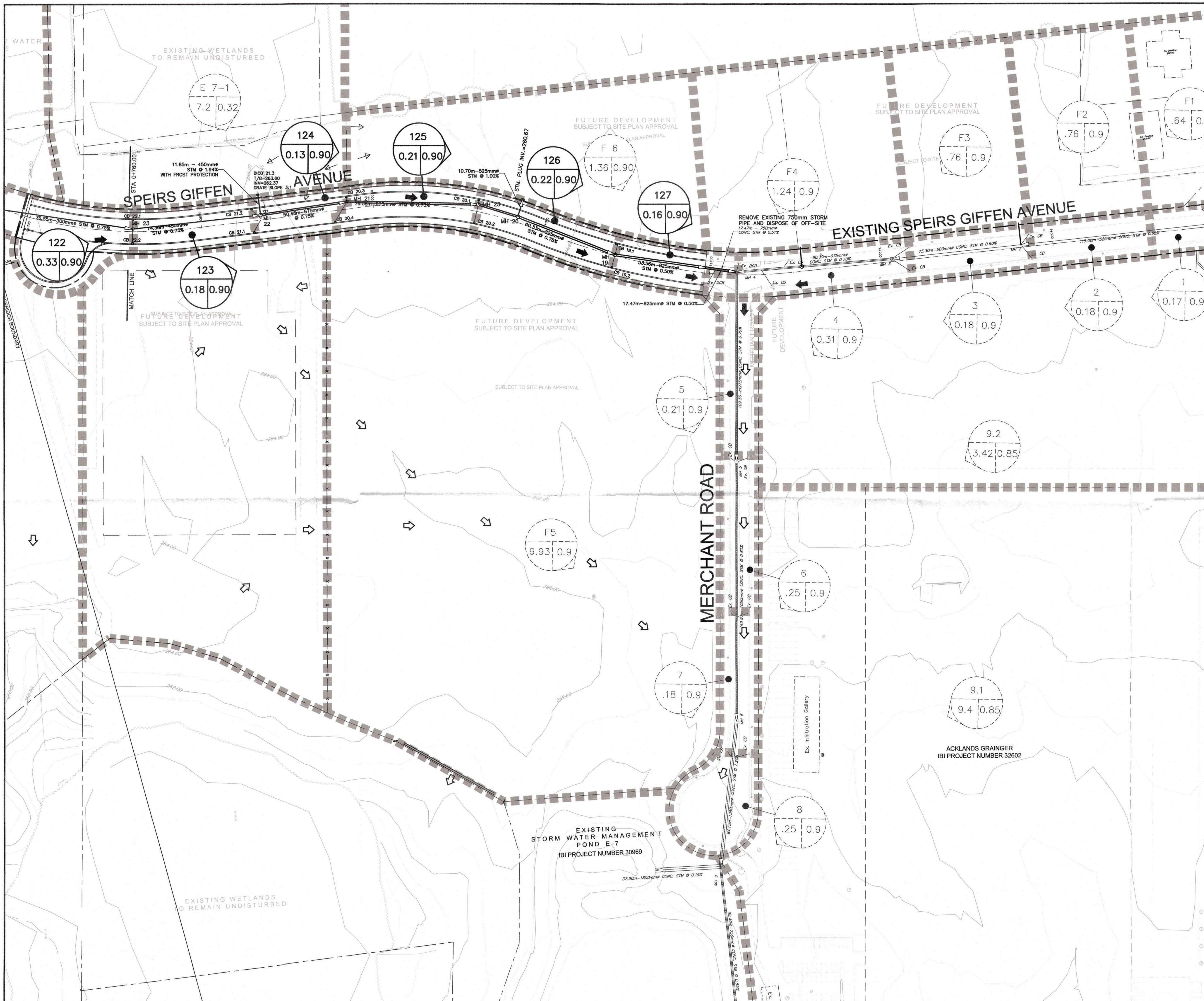
LICENSED PROFESSIONAL ENGINEER
SEPT. 27, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

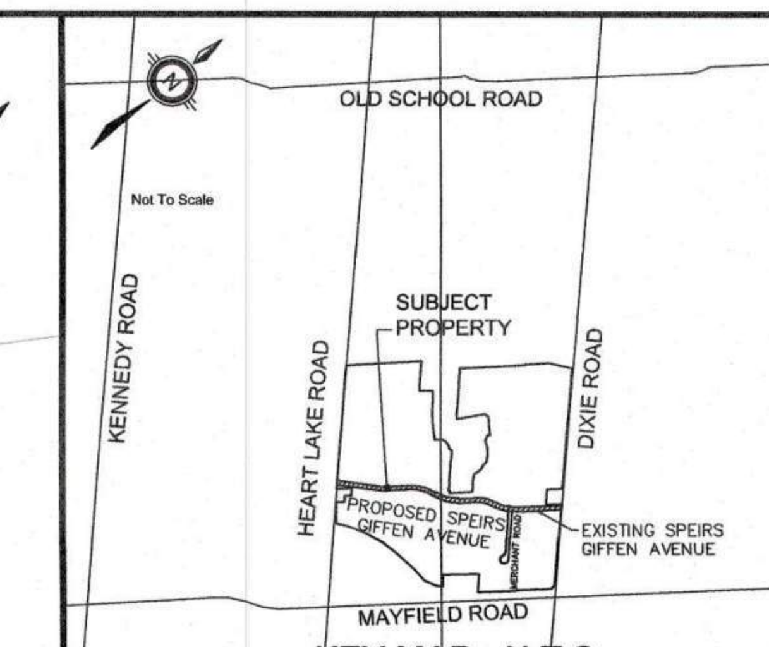
TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

STORM AREA DRAINAGE PLAN
(0+000.00 - 0+760.00)

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	1:750	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
3 of 35		DWG NO.	116965-STM1

FILE:\\canwest.ibigroup.com\Uk\M\116965_AbbotsideWay\5.9 Drawings\05civil\layouts\116965-STM-0-760.dwg LAYOUT:STM-AREA-0-760
LAST SAVED BY:John.Iezzi, Friday, September 27, 2019 3:23:45 PM PLOTTED BY:Michael Bucci Friday, September 27, 2019 4:01:15 PM





KEY MAP - N.T.S.

LEGEND

- MH1 – PROPOSED STORM MANHOLE
- AD – PROPOSED AREA DRAIN
- CB – PROPOSED CATCH BASIN
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- MH1A – PROPOSED SANITARY MANHOLE
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- S-MH – EXISTING SANITARY MANHOLE
- – EXISTING SANITARY FLOW DIRECTION
- – FUTURE HIGH POINT / DRAINAGE DIVIDE
- – STORM DRAINAGE AREA BOUNDARY
- – SHEET FLOW DIRECTION
- – PROP. MAJOR OVERLAND FLOW ROUTE
- – EX. MAJOR OVERLAND FLOW ROUTE

PROPOSED DRAINAGE AREA: FLOW DIRECTION; 115 CATCHMENT AREA NUMBER; 0.26 AREA (Hectares); 0.84 RUN-OFF CO-EFFICIENT

EXISTING DRAINAGE AREA: FLOW DIRECTION; 9.2 CATCHMENT AREA NUMBER; 3.42 AREA (Hectares); 0.85 RUN-OFF CO-EFFICIENT

FUTURE DRAINAGE AREA: FLOW DIRECTION; F 121 CATCHMENT AREA NUMBER; 0.21 AREA (Hectares); 0.90 RUN-OFF CO-EFFICIENT

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

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200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
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TOWN OF CALEDON

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SEP 19 2019
PLANNING DEPARTMENT

LICENSED PROFESSIONAL ENGINEER
AUG 15, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.

This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Sept 19/19
Approved By: Rob Hughes
Print Name: Rob Hughes

TITLE:
SPEIRS GIFFEN AVENUE - PH 2 MAYFIELD WEST INDUSTRIAL LANDS
STORM AREA DRAINAGE PLAN (0+760.00 - 1+430.00)

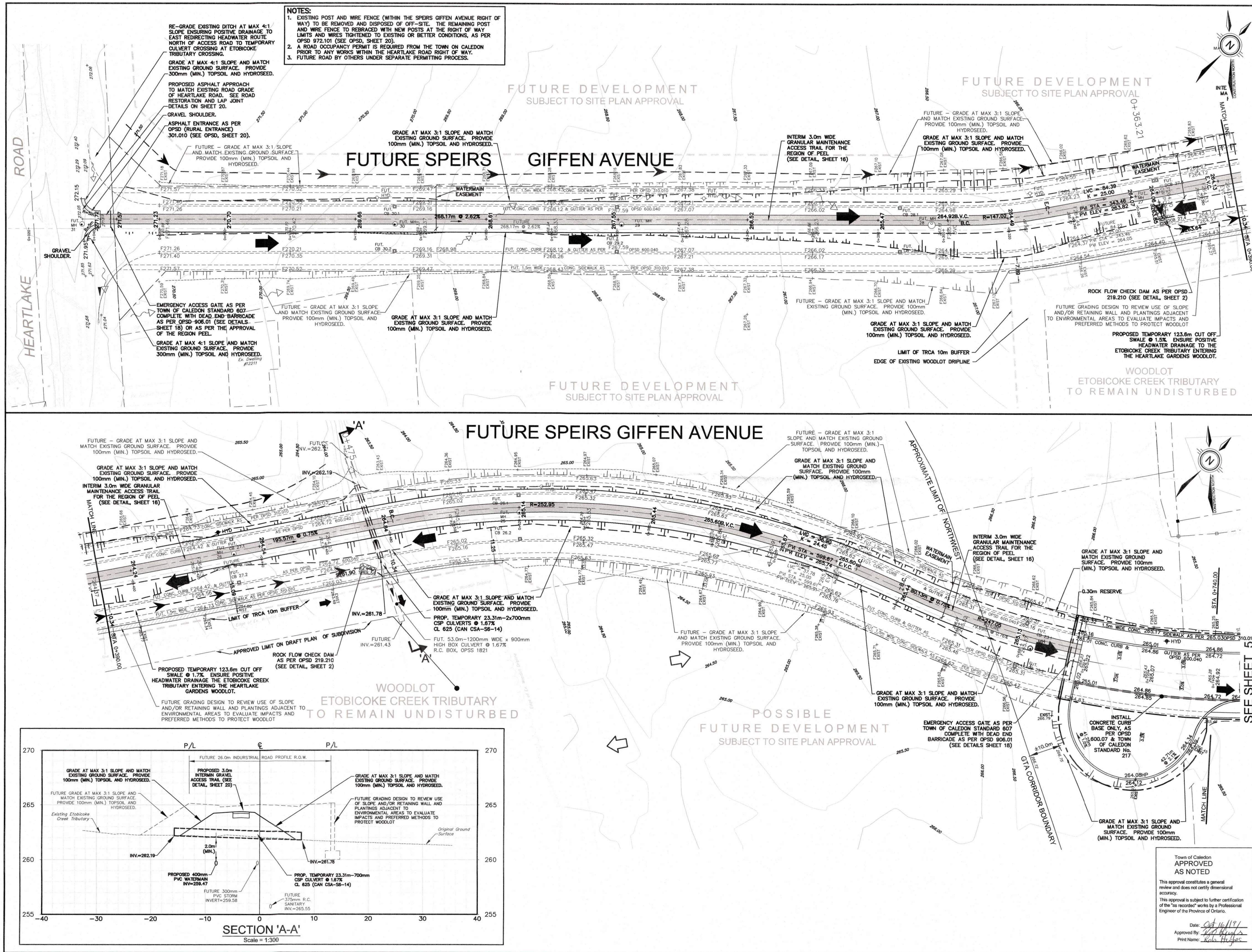
DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	1:1000	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
4 of 35		DWG NO.	116965-STM2

FILE:J:\116965_AbbotsideWay\5.9 Drawings\59civil\layouts\116965-STM-760-1430.dwg LAYOUT:STM-AREA-760-1430
LAST SAVED BY:Thomas.watkins, Thursday, July 25, 2019 10:57:42 AM PLOTTED BY:Chloe Cao Thursday, August 15, 2019 10:39:20 AM

FUTURE SPEIRS GIFFEN AVENUE

NOTES:

1. EXISTING POST AND WIRE FENCE (WITHIN THE SPEIRS GIFFEN AVENUE RIGHT OF WAY) TO BE REMOVED AND DISPOSED OF OFF-SITE. THE REMAINING POST AND WIRE FENCE TO REBRACED WITH NEW POSTS AT THE RIGHT OF WAY LIMITS AND WIRES TIGHTENED TO EXISTING OR BETTER CONDITIONS, AS PER OPSD 972.101 (SEE OPSD, SHEET 20).
2. A ROAD OCCUPANCY PERMIT IS REQUIRED FROM THE TOWN ON CALEDON PRIOR TO ANY WORKS WITHIN THE HEARTLAKE ROAD RIGHT OF WAY.
3. FUTURE ROAD BY OTHERS UNDER SEPARATE PERMITTING PROCESS.



KEY MAP - N.T.S.

LEGEND

- 78.22 – PROPOSED ELEVATION
- F78.12 – FUTURE ELEVATION BY OTHERS
- 78.12 EXIST – MATCH EXISTING ELEVATION
- 78.22 – EXISTING ELEVATION
- 2.0% – PROPOSED SLOPE
- EXISTING DIRECTION OF FLOW
- PROPOSED LIMIT OF RIGHT OF WAY
- EXISTING PROPERTY BOUNDARY
- Ex. CB – EXISTING CATCH BASIN
- Ex. MH 1 – EXISTING STORM MANHOLE
- Ex. DCB – EXISTING DOUBLE CATCH BASIN
- Ex. DICB – EXISTING DITCH INLET CATCH BASIN
- Ex. MH 1A – EXISTING SANITARY MANHOLE
- Ex. HYD – EXISTING HYDRANT
- Ex. WV – EXISTING WATER VALVE
- Ex. VC – EXISTING VALVE CHAMBER
- EXISTING BELL BOX
- EXISTING CABLE TV BOX
- LIMITS OF ROAD RESTORATION
- FUTURE LOW GRADE
- FUTURE HIGH GRADE
- INTERIM 3.0m WIDE GRAVEL ACCESS TRAIL
- HEAD WATER DRAINAGE ROUTE CHANNEL RELOCATION AS PER RECOMMENDATIONS IN MAYFIELD WEST ENVIRONMENTAL IMPACT STATEMENT
- ROCK FLOW CHECK DAM AS PER OPSD 219.210 (SEE DETAIL SHEET 2)
- EXISTING CHANNEL / SWALE FLOW DIRECTION
- APPROX. LOCATION OF EXISTING HEAD WATER FEATURE DRAINAGE ROUTE

FOR CONSTRUCTION

BENCHMARK

J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV.#	DATE	BY	REVISIONS
10	09/27/19	J.P.	REVISED PER TRCA COMMENTS
9	09/18/19	J.P.	REVISED PER TRCA COMMENTS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS

IBI GROUP
200 East Wing-360 James Street North
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TOWN OF CALEDON

Region of Peel
working with you

LICENSED PROFESSIONAL ENGINEER
SEPT. 27, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

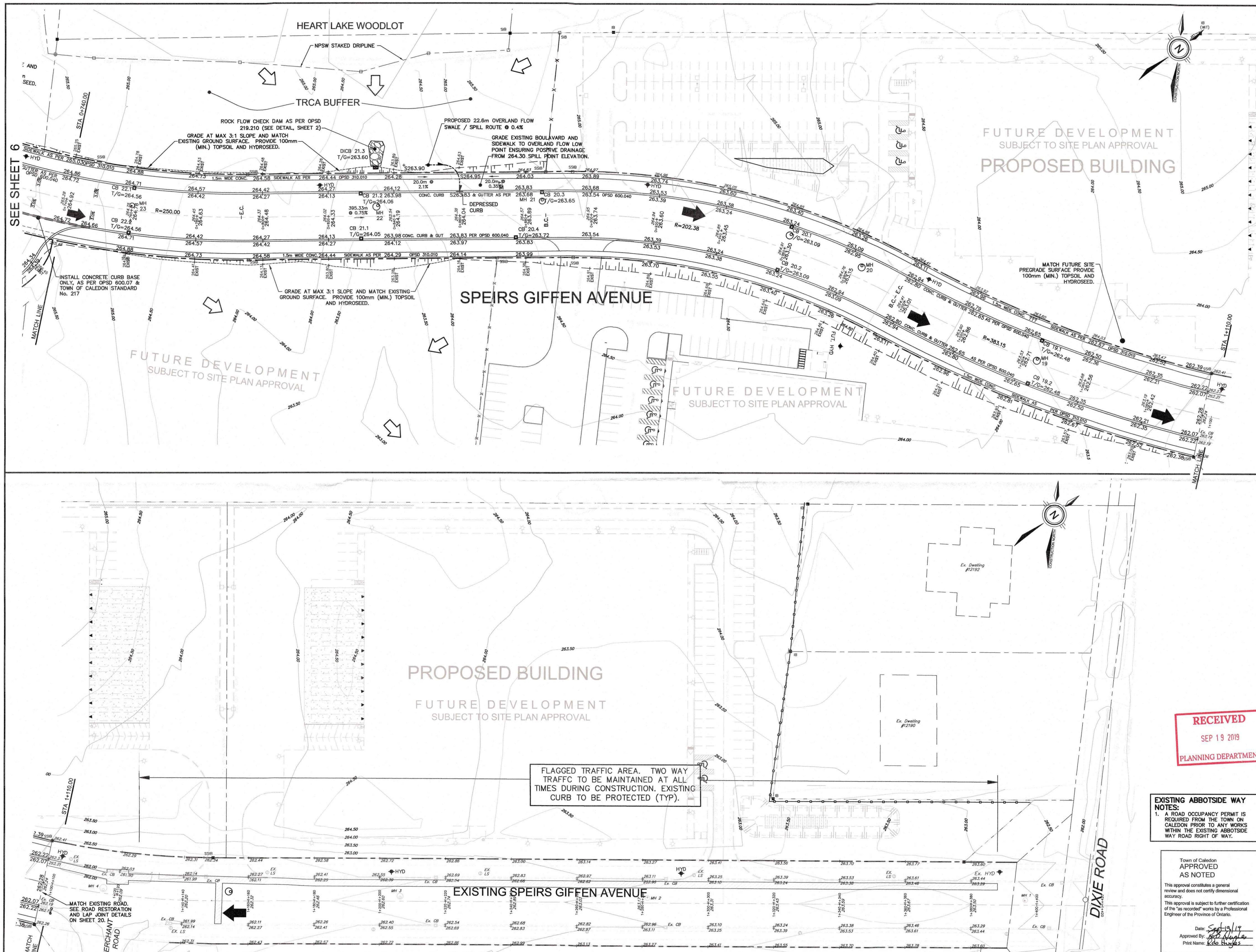
Town of Caledon
APPROVED
AS NOTED
This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.
Date: Oct 16/19
Approved By:
Print Name: Rob Hughes

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

GRADING PLAN
(0+000.00 - 0+740.00)

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
		DRAWN BY:	M.E.S.
SCALE:	1:500	CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
5 of 35		DWG NO.	116965-GRD1

LAST SAVED BY: John Iezzi, Friday, September 27, 2019 3:35:27 PM PLOTTED BY Michael Bucci Friday, September 27, 2019 4:10:47 PM



OLD SCHOOL ROAD
Not To Scale
KENNEDY ROAD
HEART LAKE ROAD
SUBJECT PROPERTY
DIXIE ROAD
PROPOSED SPEIRS GIFFEN AVENUE
EXISTING SPEIRS GIFFEN AVENUE
MAYFIELD ROAD
KEY MAP - N.T.S.

LEGEND

- ×78.22 – PROPOSED ELEVATION
- ×F78.12 – FUTURE ELEVATION BY OTHERS
- ×78.12 EXIST – MATCH EXISTING ELEVATION
- ×78.22 – EXISTING ELEVATION
- 2.0% – PROPOSED SLOPE
- EXISTING DIRECTION OF FLOW
- PROPOSED LIMIT OF RIGHT OF WAY
- EXISTING PROPERTY BOUNDARY
- Ex. CB – EXISTING CATCH BASIN
- Ex. MH 1 – EXISTING STORM MANHOLE
- Ex. DCB – EXISTING DOUBLE CATCH BASIN
- Ex. DICB – EXISTING DITCH INLET CATCH BASIN
- Ex. MH 1A – EXISTING SANITARY MANHOLE
- Ex. HYD – EXISTING HYDRANT
- Ex. WV – EXISTING WATER VALVE
- Ex. VC – EXISTING VALVE CHAMBER
- EXISTING BELL BOX
- EXISTING CABLE TV BOX
- LIMITS OF ROAD RESTORATION
- ROCK FLOW CHECK DAM AS PER OPSD 219.210 (SEE DETAIL SHEET 2)
- EXISTING CHANNEL / SWALE FLOW DIRECTION

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

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TOWN OF CALEDON

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PLANNING DEPARTMENT

EXISTING ABBOTSIDE WAY NOTES:
1. A ROAD OCCUPANCY PERMIT IS REQUIRED FROM THE TOWN ON CALEDON PRIOR TO ANY WORKS WITHIN THE EXISTING ABBOTSIDE WAY ROAD RIGHT OF WAY.

Town of Caledon
APPROVED
AS NOTED
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This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.
Date: Sept 19/19
Approved By:
Print Name: Rob Hughes

LICENSED PROFESSIONAL ENGINEER
AUG 15, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

GRADING PLAN
(0+740.00 - 1+430.00)

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	1:500	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
6 of 35		DWG NO.	116965-GRD2

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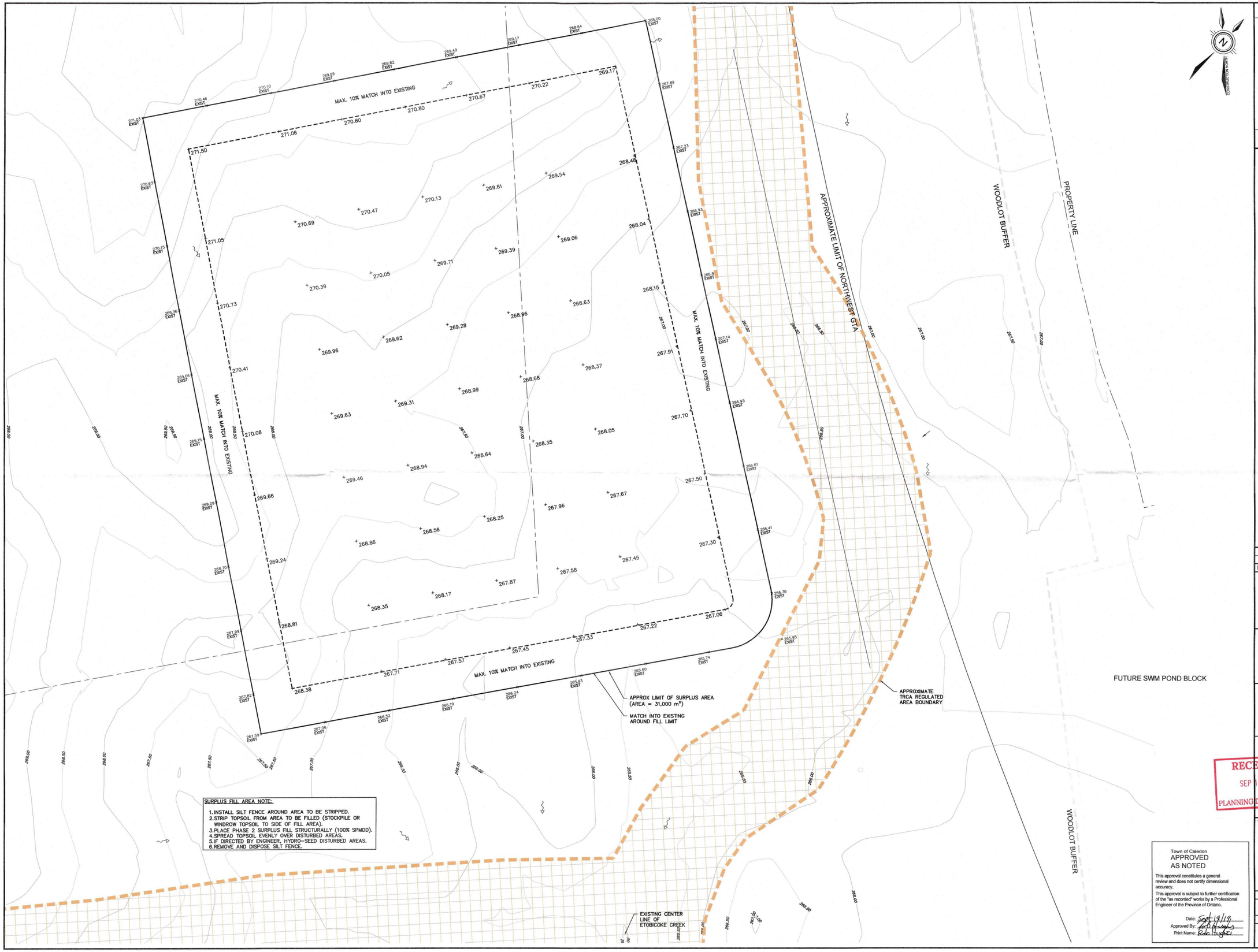
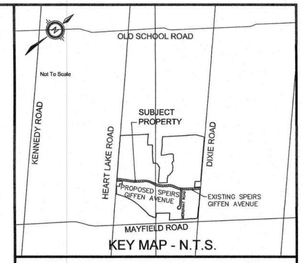


SURPLUS FILL AREA NOTE:

1. INSTALL SILT FENCE AROUND AREA TO BE STRIPPED.
2. STRIP TOPSOIL FROM AREA TO BE FILLED (STOCKPILE OR WINDROW TOPSOIL TO SIDE OF FILL AREA).
3. PLACE PHASE 2 SURPLUS FILL STRUCTURALLY (100% SPMDD).
4. SPREAD TOPSOIL EVENLY OVER DISTURBED AREAS.
5. IF DIRECTED BY ENGINEER, HYDRO-SEED DISTURBED AREAS.
6. REMOVE AND DISPOSE SILT FENCE.



KEY MAP - N.T.S.

LEGEND

- × 78.22 – PROPOSED ELEVATION
- ×F78.12 – FUTURE ELEVATION BY OTHERS
- × 78.12 EXIST – MATCH EXISTING ELEVATION
- × 78.27 – EXISTING ELEVATION
- 2.0% – PROPOSED SLOPE
- – EXISTING DIRECTION OF FLOW
- – PROPOSED LIMIT OF RIGHT OF WAY
- – EXISTING PROPERTY BOUNDARY
- – APPROX. LOCATION OF EXISTING HEAD WATER FEATURE DRAINAGE ROUTE
- – TRCA REGULATED AERA (TRCA REGULATED AREA MAPPING 2019)

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

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TOWN OF CALEDON

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RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

LICENSED PROFESSIONAL ENGINEER
AUG 15, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO

SEAL

Town of Caledon
APPROVED
AS NOTED

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This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Sept 19/19
Approved By: [signature]
Print Name: Rob Hughes

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

GRADING PLAN
SURPLUS FILL DISPOSAL AREA

DATE:	2018-06-08	DESIGNED BY:	C.C.
SCALE:	1:500	DRAWN BY:	C.C.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
7 of 35		DWG NO.	116965-GRD3

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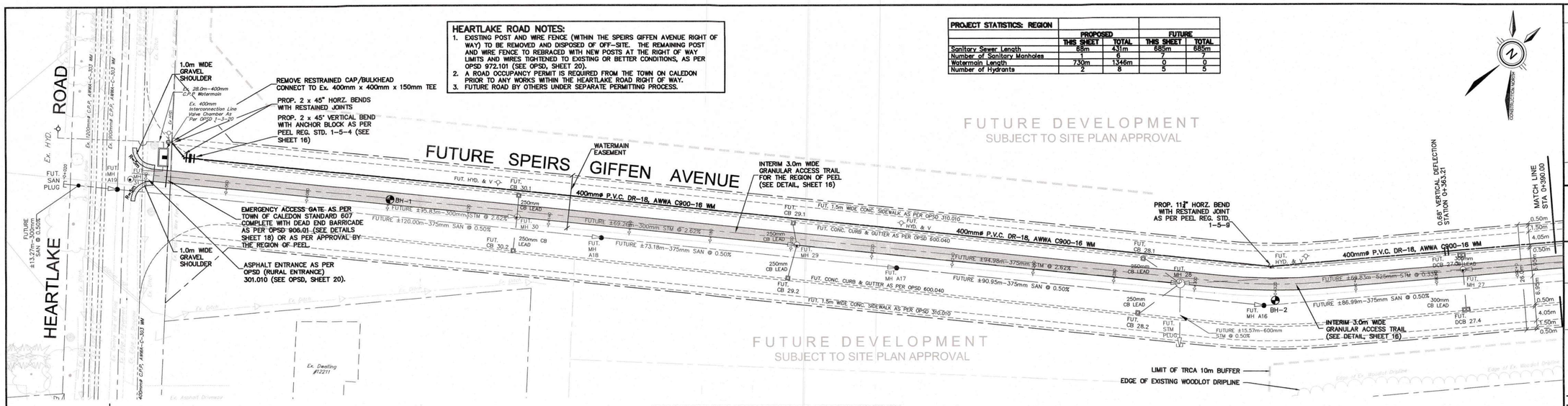
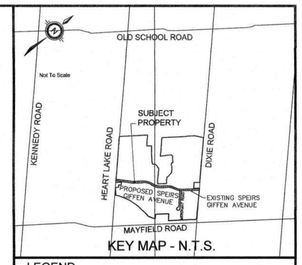
LAST SAVED BY:Chloe.cao, Wednesday, August 14, 2019 3:53:23 PM PLOTTED BY:Chloe Cao Thursday, August 15, 2019 10:32:24 AM

HEARTLAKE ROAD NOTES:

1. EXISTING POST AND WIRE FENCE (WITHIN THE SPEIRS GIFFEN AVENUE RIGHT OF WAY) TO BE REMOVED AND DISPOSED OF OFF-SITE. THE REMAINING POST AND WIRE FENCE TO REBRACED WITH NEW POSTS AT THE RIGHT OF WAY LIMITS AND WIRES TIGHTENED TO EXISTING OR BETTER CONDITIONS, AS PER OPSD 972.101 (SEE OPSD, SHEET 20).
2. A ROAD OCCUPANCY PERMIT IS REQUIRED FROM THE TOWN ON CALEDON PRIOR TO ANY WORKS WITHIN THE HEARTLAKE ROAD RIGHT OF WAY.
3. FUTURE ROAD BY OTHERS UNDER SEPARATE PERMITTING PROCESS.

PROJECT STATISTICS: REGION	PROPOSED		FUTURE	
	THIS SHEET	TOTAL	THIS SHEET	TOTAL
Sanitary Sewer Length	88m	431m	685m	685m
Number of Sanitary Manholes	1	6	7	7
Watermain Length	730m	1346m	0	0
Number of Hydrants	2	8	5	5





KEY MAP - N.T.S.

LEGEND

- MH1 – PROPOSED STORM MANHOLE
- DICB – PROPOSED DITCH INLET CATCH BASIN
- CB – PROPOSED CATCH BASIN
- CBMH – PROPOSED CB MANHOLE
- PROPOSED STORM SEWER
- Ex. CB – EXISTING CATCH BASIN
- Ex. DCB – EXISTING DOUBLE CATCH BASIN
- Ex. 1 – EXISTING STORM MANHOLE
- EX STORM SEWER WITH FLOW DIRECTION
- MH 1A – PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY SEWER
- Ex. MH A1 – EXISTING SANITARY MANHOLE
- EX SANITARY SEWER WITH FLOW DIRECTION
- HYD – PROPOSED FIRE HYDRANT
- WV – PROPOSED WATER VALVE
- PROPOSED WATERMAIN TEE
- PROPOSED 45° BEND
- PROPOSED 11 ¼° BEND
- PROPOSED WATERMAIN
- PROPOSED WATERMAIN VERTICAL BEND
- HYD – EXISTING HYDRANT
- WV – EXISTING WATER VALVE
- VC – EXISTING VALVE CHAMBER
- CS – EXISTING CURB STOP
- EXISTING WATERMAIN
- EXISTING HYDRO TRANSFORMER
- EXISTING GAS VALVE
- HYDRO TRANSFORMER
- FUTURE WATER METER
- FUTURE DETECTOR CHECK VALVE
- FUTURE BACK FLOW PREVENTOR
- EXISTING BURIED GAS LINE
- EXISTING BURIED UTILITY CORRIDOR
- EXISTING BURIED HYDRO ONE CORRIDOR
- PROPOSED FROST PROTECTION
- INTERIM 3.0m WIDE GRAVEL ACCESS TRAIL
- PROPOSED LIMIT OF RIGHT OF WAY
- EXISTING PROPERTY BOUNDARY

FOR CONSTRUCTION

BENCHMARK

J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
10	09/27/19	J.P.	REVISED PER TRCA COMMENTS
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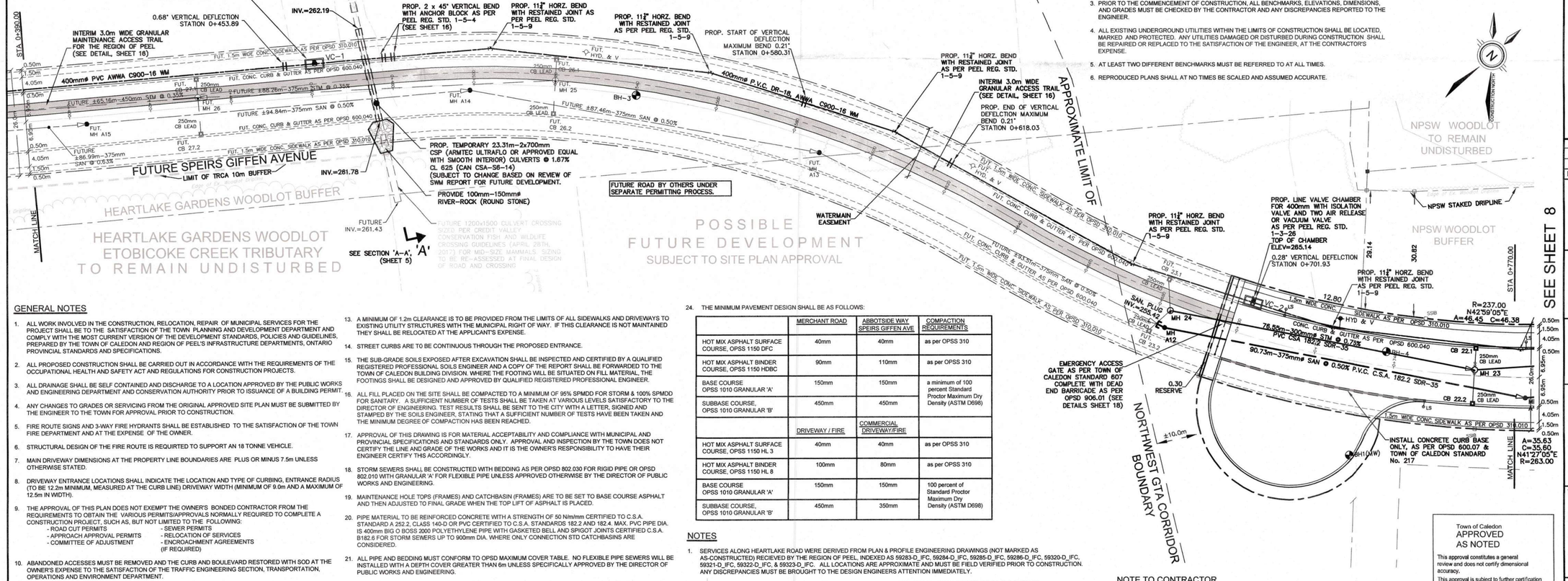
LICENSED PROFESSIONAL ENGINEER
SEPT. 27, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

SERVICING PLAN
(0+000.00 - 0+770.00)

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	1:500	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
8 of 35		DWG NO.	116965-SER1



GENERAL NOTES

1. ALL WORK INVOLVED IN THE CONSTRUCTION, RELOCATION, REPAIR OF MUNICIPAL SERVICES FOR THE PROJECT SHALL BE TO THE SATISFACTION OF THE TOWN PLANNING AND DEVELOPMENT DEPARTMENT AND COMPLY WITH THE MOST CURRENT VERSION OF THE DEVELOPMENT STANDARDS, POLICIES AND GUIDELINES, PREPARED BY THE TOWN OF CALEDON AND REGION OF PEEL'S INFRASTRUCTURE DEPARTMENTS, ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS.
2. ALL PROPOSED CONSTRUCTION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
3. ALL DRAINAGE SHALL BE SELF CONTAINED AND DISCHARGE TO A LOCATION APPROVED BY THE PUBLIC WORKS AND ENGINEERING DEPARTMENT AND CONSERVATION AUTHORITY PRIOR TO ISSUANCE OF A BUILDING PERMIT.
4. ANY CHANGES TO GRADES OR SERVICING FROM THE ORIGINAL APPROVED SITE PLAN MUST BE SUBMITTED BY THE ENGINEER TO THE TOWN FOR APPROVAL PRIOR TO CONSTRUCTION.
5. FIRE ROUTE SIGNS AND 3-WAY FIRE HYDRANTS SHALL BE ESTABLISHED TO THE SATISFACTION OF THE TOWN FIRE DEPARTMENT AND AT THE EXPENSE OF THE OWNER.
6. STRUCTURAL DESIGN OF THE FIRE ROUTE IS REQUIRED TO SUPPORT AN 18 TONNE VEHICLE.
7. MAIN DRIVEWAY DIMENSIONS AT THE PROPERTY LINE BOUNDARIES ARE PLUS OR MINUS 7.5m UNLESS OTHERWISE STATED.
8. DRIVEWAY ENTRANCE LOCATIONS SHALL INDICATE THE LOCATION AND TYPE OF CURBING, ENTRANCE RADIUS (TO BE 12.2m MINIMUM, MEASURED AT THE CURB LINE) DRIVEWAY WIDTH (MINIMUM OF 9.0m AND A MAXIMUM OF 12.5m IN WIDTH).
9. THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE OWNER'S BONDED CONTRACTOR FROM THE REQUIREMENTS TO OBTAIN THE VARIOUS PERMITS/APPROVALS NORMALLY REQUIRED TO COMPLETE A CONSTRUCTION PROJECT, SUCH AS, BUT NOT LIMITED TO THE FOLLOWING:
   - ROAD CUT PERMITS
   - APPROACH APPROVAL PERMITS
   - COMMITTEE OF ADJUSTMENT
   - SEWER PERMITS
   - RELOCATION OF SERVICES
   - ENCROACHMENT AGREEMENTS (IF REQUIRED)
10. ABANDONED ACCESSES MUST BE REMOVED AND THE CURB AND BOULEVARD RESTORED WITH SOD AT THE OWNER'S EXPENSE TO THE SATISFACTION OF THE TRAFFIC ENGINEERING SECTION, TRANSPORTATION, OPERATIONS AND ENVIRONMENT DEPARTMENT.
11. 3 METRE BY 3 METRE VISIBILITY TRIANGLES IN WHICH THE MAXIMUM HEIGHT OF ANY OBJECTS OR MATURE VEGETATION IS NOT TO EXCEED A HEIGHT OF 0.60 METRES ABOVE THE CORRESPONDING PERPENDICULAR CENTRELINE ELEVATION OF THE ADJACENT STREET.
12. SEDIMENT CONTROL DEVICES AND MEASURES TO BE INSTALLED PRIOR TO ANY CONSTRUCTION ON THE SITE AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD TO THE SATISFACTION OF THE TOWN AND APPLICABLE CONSERVATION AUTHORITIES.
13. A MINIMUM OF 1.2m CLEARANCE IS TO BE PROVIDED FROM THE LIMITS OF ALL SIDEWALKS AND DRIVEWAYS TO EXISTING UTILITY STRUCTURES WITH THE MUNICIPAL RIGHT OF WAY. IF THIS CLEARANCE IS NOT MAINTAINED THEY SHALL BE RELOCATED AT THE APPLICANT'S EXPENSE.
14. STREET CURBS ARE TO BE CONTINUOUS THROUGH THE PROPOSED ENTRANCE.
15. THE SUB-GRADE SOILS EXPOSED AFTER EXCAVATION SHALL BE INSPECTED AND CERTIFIED BY A QUALIFIED REGISTERED PROFESSIONAL SOILS ENGINEER AND A COPY OF THE REPORT SHALL BE FORWARDED TO THE TOWN OF CALEDON BUILDING DIVISION. WHERE THE FOOTING WILL BE SITUATED ON FILL MATERIAL, THE FOOTINGS SHALL BE DESIGNED AND APPROVED BY QUALIFIED REGISTERED PROFESSIONAL ENGINEER.
16. ALL FILL PLACED ON THE SITE SHALL BE COMPACTED TO A MINIMUM OF 95% SPMDD FOR STORM & 100% SPMDD FOR SANITARY. A SUFFICIENT NUMBER OF TESTS SHALL BE TAKEN AT VARIOUS LEVELS SATISFACTORY TO THE DIRECTOR OF ENGINEERING. TEST RESULTS SHALL BE SENT TO THE CITY WITH A LETTER, SIGNED AND STAMPED BY THE SOILS ENGINEER, STATING THAT A SUFFICIENT NUMBER OF TESTS HAVE BEEN TAKEN AND THE MINIMUM DEGREE OF COMPACTION HAS BEEN REACHED.
17. APPROVAL OF THIS DRAWING IS FOR MATERIAL ACCEPTABILITY AND COMPLIANCE WITH MUNICIPAL AND PROVINCIAL SPECIFICATIONS AND STANDARDS ONLY. APPROVAL AND INSPECTION BY THE TOWN DOES NOT CERTIFY THE LINE AND GRADE OF THE WORKS AND IT IS THE OWNER'S RESPONSIBILITY TO HAVE THEIR ENGINEER CERTIFY THIS ACCORDINGLY.
18. STORM SEWERS SHALL BE CONSTRUCTED WITH BEDDING AS PER OPSD 802.030 FOR RIGID PIPE OR OPSD 802.010 WITH GRANULAR 'A' FOR FLEXIBLE PIPE UNLESS APPROVED OTHERWISE BY THE DIRECTOR OF PUBLIC WORKS AND ENGINEERING.
19. MAINTENANCE HOLE TOPS (FRAMES) AND CATCHBASIN (FRAMES) ARE TO BE SET TO BASE COURSE ASPHALT AND THEN ADJUSTED TO FINAL GRADE WHEN THE TOP LIFT OF ASPHALT IS PLACED.
20. PIPE MATERIAL TO BE REINFORCED CONCRETE WITH A STRENGTH OF 50 N/m/mm CERTIFIED TO C.S.A. STANDARD A 252.2, CLASS 140-D OR PVC CERTIFIED TO C.S.A. STANDARDS 182.2 AND 182.4. MAX. PVC PIPE DIA. IS 400mm BIG O BOSS 2000 POLYETHYLENE PIPE WITH GASKETED BELL AND SP/GOT JOINTS CERTIFIED C.S.A. B182.6 FOR STORM SEWERS UP TO 900mm DIA. WHERE ONLY CONNECTION STD CATCHBASINS ARE CONSIDERED.
21. ALL PIPE AND BEDDING MUST CONFORM TO OPSD MAXIMUM COVER TABLE. NO FLEXIBLE PIPE SEWERS WILL BE INSTALLED WITH A DEPTH COVER GREATER THAN 6m UNLESS SPECIFICALLY APPROVED BY THE DIRECTOR OF PUBLIC WORKS AND ENGINEERING.
22. ALL PIPE HANDLING INSTRUCTIONS MUST BE IN STRICT COMPLIANCE WITH MANUFACTURERS INSTALLATION GUIDES AND THE OCPA OR UNIBELL GUIDELINES.
23. ALL BOULEVARDS TO BE RESTORED WITH 300mm MINIMUM OF TOPSOIL AND SOD.
24. THE MINIMUM PAVEMENT DESIGN SHALL BE AS FOLLOWS:

	MERCHANT ROAD	ABBOTSIDE WAY SPEIRS GIFFEN AVE	COMPACTION REQUIREMENTS
HOT MIX ASPHALT SURFACE COURSE, OPSS 1150 DFC	40mm	40mm	as per OPSS 310
HOT MIX ASPHALT BINDER COURSE, OPSS 1150 HDBC	90mm	110mm	as per OPSS 310
BASE COURSE OPSS 1010 GRANULAR 'A'	150mm	150mm	a minimum of 100 percent Standard Proctor Maximum Dry Density (ASTM D698)
SUBBASE COURSE, OPSS 1010 GRANULAR 'B'	450mm	450mm	
	DRIVEWAY / FIRE	COMMERCIAL DRIVEWAY/FIRE	
HOT MIX ASPHALT SURFACE COURSE, OPSS 1150 HL 3	40mm	40mm	as per OPSS 310
HOT MIX ASPHALT BINDER COURSE, OPSS 1150 HL 8	100mm	80mm	as per OPSS 310
BASE COURSE OPSS 1010 GRANULAR 'A'	150mm	150mm	100 percent of Standard Proctor Maximum Dry Density (ASTM D698)
SUBBASE COURSE, OPSS 1010 GRANULAR 'B'	450mm	350mm	

NOTES

1. SERVICES ALONG HEARTLAKE ROAD WERE DERIVED FROM PLAN & PROFILE ENGINEERING DRAWINGS (NOT MARKED AS AS-CONSTRUCTED) RECIEVED BY THE REGION OF PEEL, INDEXED AS 59283-D_IFC, 59284-D_IFC, 59285-D_IFC, 59320-D_IFC, 59321-D_IFC, 59322-D_IFC, & 59323-D_IFC. ALL LOCATIONS ARE APPROXIMATE AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. ANY DISCREPANCIES MUST BE BROUGHT TO THE DESIGN ENGINEERS ATTENTION IMMEDIATELY.
2. EXISTING SERVICES ALONG MERCHANT ROAD AND ABBOTSIDE WAY WERE DERIVED FROM IBI GROUP'S PLAN & PROFILE AS-CONSTRUCTED ENGINEERING DRAWINGS INDEXED AS 30969-PP1 TO 30969-PP5 (INCLUSIVE). ALL LOCATIONS ARE APPROXIMATE AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. ANY DISCREPANCIES MUST BE BROUGHT TO THE DESIGN ENGINEERS ATTENTION IMMEDIATELY.
3. SERVICES ALONG DIXIE ROAD WERE DERIVED FROM PLAN & PROFILE ENGINEERING DRAWINGS (NOT MARKED AS AS-CONSTRUCTED) RECEIVED BY THE REGION OF PEEL, INDEXED AS 58322-D_WMN_SMN_INSP, 62161-D_IFC, AND 20551-D. ALL LOCATIONS ARE APPROXIMATE AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. ANY DISCREPANCIES MUST BE BROUGHT TO THE DESIGN ENGINEERS ATTENTION IMMEDIATELY.

BEFORE STARTING WORK

1. THE CONTRACTOR SHALL NOTIFY THE TOWN OF CALEDON AND IBI GROUP AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION WITHIN THE MUNICIPALITY RIGHT OF WAY. THE CONTRACTOR MUST CONTACT THE FOLLOWING:
   - THE TOWN OF CALEDON FINANCE & INFRASTRUCTURE (905)-584-2272
   - THE REGION OF PEEL
   - HYDRO ONE
   - ROGERS CABLE
   - EMBRIDGE CONSUMERS GAS
   - BELL CANADA
   - FIRE AND EMERGENCY SERVICES.
2. THE POSITION OF THE POLE LINES, CONDUITS, WATERMAINS, SEWERS, AND OTHER UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.
3. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, ALL BENCHMARKS, ELEVATIONS, DIMENSIONS, AND GRADES MUST BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES REPORTED TO THE ENGINEER.
4. ALL EXISTING UNDERGROUND UTILITIES WITHIN THE LIMITS OF CONSTRUCTION SHALL BE LOCATED, MARKED AND PROTECTED. ANY UTILITIES DAMAGED OR DISTURBED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
5. AT LEAST TWO DIFFERENT BENCHMARKS MUST BE REFERRED TO AT ALL TIMES.
6. REPRODUCED PLANS SHALL AT NO TIMES BE SCALED AND ASSUMED ACCURATE.

FUTURE SERVICES NOTE:

FUTURE SERVICES ARE APPROXIMATE AND SUBJECT TO CHANGE IN THE FINAL DETAIL DESIGN OF THE WEST HALF OF SPEIRS GIFFEN AVENUE.

ROAD CROSS SECTION:

FOR TOWN OF CALEDON STANDARD ROAD CROSS SECTION DETAIL, PLEASE REFER TO TOWN OF CALEDON STANDARD No. 211 ON SHEETS 8 AND 9.

NOTE TO CONTRACTOR

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

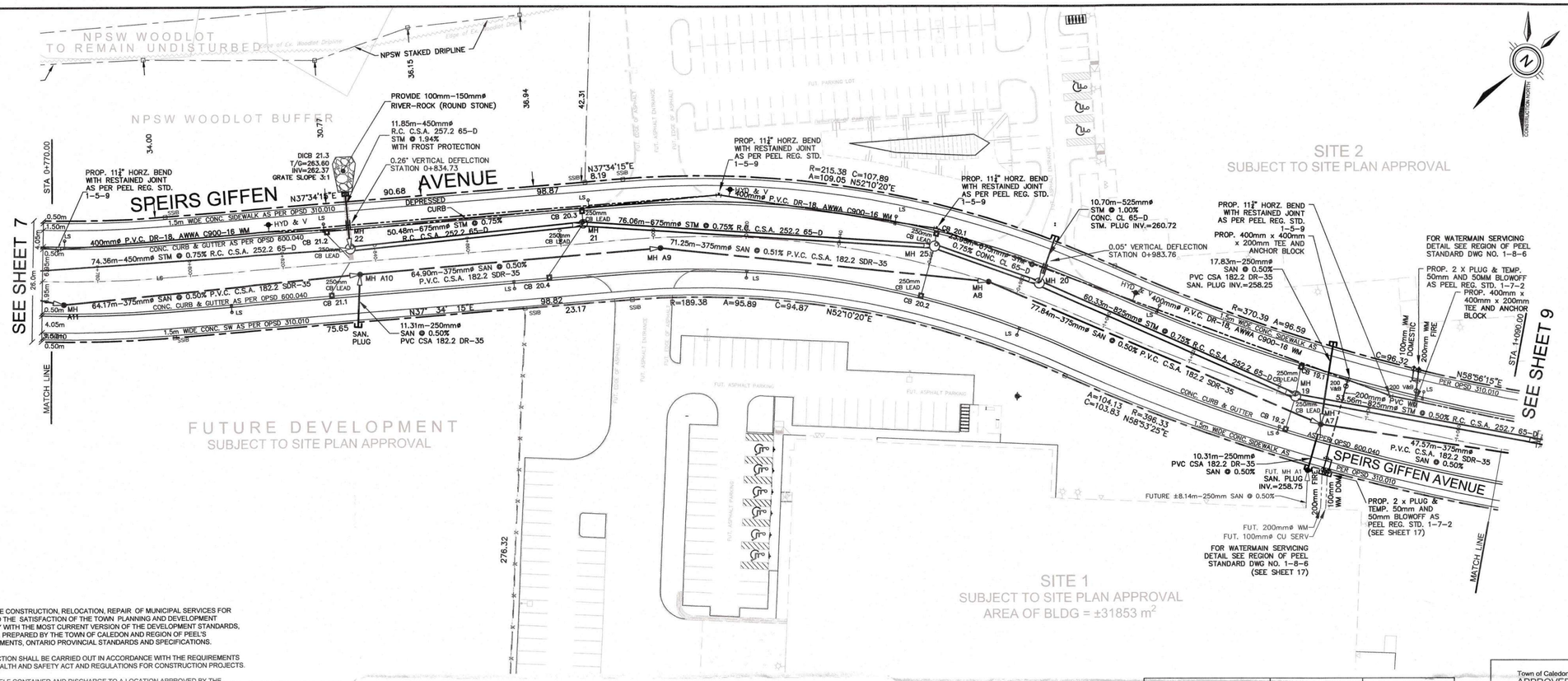
Town of Caledon
APPROVED AS NOTED

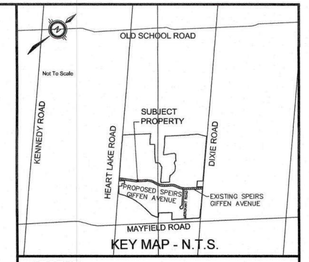
This approval constitutes a general review and does not certify dimensional accuracy.

This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Oct 16/19
Approved By:
Print Name: Rob Hughes

FILE:\\caneast.ibigroup.com\JH\MH\116965_Abbotside\Way\6.9 Drawings\06civil\current\6116965-Nerk.dwg, LAYOUT:SERV-7
LAST SAVED BY:John.Iezzi, Friday, September 27, 2019 3:37:08 PM PLOTTED BY:Michael Bucci Friday, September 27, 2019 4:05:28 PM





KEY MAP - N.T.S.

LEGEND

- MH1 – PROPOSED STORM MANHOLE
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- WV – PROPOSED WATER VALVE
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- EXISTING BURIED GAS LINE
- LIMITS OF ROAD RESTORATION
- EXISTING BURIED UTILITY CORRIDOR
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- PROPOSED FROST PROTECTION
- LS – PROPOSED STREET LIGHT LOCATION
- EX. LS – EXISTING STREET LIGHT LOCATION
- PROPOSED LIMIT OF RIGHT OF WAY
- EXISTING PROPERTY BOUNDARY

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11. 3 METRE BY 3 METRE VISIBILITY TRIANGLES IN WHICH THE MAXIMUM HEIGHT OF ANY OBJECTS OR MATURE VEGETATION IS NOT TO EXCEED A HEIGHT OF 0.60 METRES ABOVE THE CORRESPONDING PERPENDICULAR CENTRELINE ELEVATION OF THE ADJACENT STREET.
12. SEDIMENT CONTROL DEVICES AND MEASURES TO BE INSTALLED PRIOR TO ANY CONSTRUCTION ON THE SITE AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD TO THE SATISFACTION OF THE TOWN AND APPLICABLE CONSERVATION AUTHORITIES.
13. A MINIMUM OF 1.2m CLEARANCE IS TO BE PROVIDED FROM THE LIMITS OF ALL SIDEWALKS AND DRIVEWAYS TO EXISTING UTILITY STRUCTURES WITH THE MUNICIPAL RIGHT OF WAY. IF THIS CLEARANCE IS NOT MAINTAINED THEY SHALL BE RELOCATED AT THE APPLICANT'S EXPENSE.
14. STREET CURBS ARE TO BE CONTINUOUS THROUGH THE PROPOSED ENTRANCE.
15. THE SUB-GRADE SOILS EXPOSED AFTER EXCAVATION SHALL BE INSPECTED AND CERTIFIED BY A QUALIFIED REGISTERED PROFESSIONAL SOILS ENGINEER AND A COPY OF THE REPORT SHALL BE FORWARDED TO THE TOWN OF CALEDON BUILDING DIVISION. WHERE THE FOOTING WILL BE SITUATED ON FILL MATERIAL, THE FOOTINGS SHALL BE DESIGNED AND APPROVED BY QUALIFIED REGISTERED PROFESSIONAL ENGINEER.
16. ALL FILL PLACED ON THE SITE SHALL BE COMPACTED TO A MINIMUM OF 95% SPMDD FOR STORM & 100% SPMDD FOR SANITARY. A SUFFICIENT NUMBER OF TESTS SHALL BE TAKEN AT VARIOUS LEVELS SATISFACTORY TO THE DIRECTOR OF ENGINEERING. TEST RESULTS SHALL BE SENT TO THE CITY WITH A LETTER, SIGNED AND STAMPED BY THE SOILS ENGINEER, STATING THAT A SUFFICIENT NUMBER OF TESTS HAVE BEEN TAKEN AND THE MINIMUM DEGREE OF COMPACTION HAS BEEN REACHED.
17. APPROVAL OF THIS DRAWING IS FOR MATERIAL ACCEPTABILITY AND COMPLIANCE WITH MUNICIPAL AND PROVINCIAL SPECIFICATIONS AND STANDARDS ONLY. APPROVAL AND INSPECTION BY THE TOWN DOES NOT CERTIFY THE LINE AND GRADE OF THE WORKS AND IT IS THE OWNER'S RESPONSIBILITY TO HAVE THEIR ENGINEER CERTIFY THIS ACCORDINGLY.
18. STORM SEWERS SHALL BE CONSTRUCTED WITH BEDDING AS PER OPSD 802.030 FOR RIGID PIPE OR OPSD 802.010 WITH GRANULAR 'A' FOR FLEXIBLE PIPE UNLESS APPROVED OTHERWISE BY THE DIRECTOR OF PUBLIC WORKS AND ENGINEERING.
19. MAINTENANCE HOLE TOPS (FRAMES) AND CATCHBASIN (FRAMES) ARE TO BE SET TO BASE COURSE ASPHALT AND THEN ADJUSTED TO FINAL GRADE WHEN THE TOP LIFT OF ASPHALT IS PLACED.
20. PIPE MATERIAL TO BE REINFORCED CONCRETE WITH A STRENGTH OF 50 N/m/mm CERTIFIED TO C.S.A. STANDARD A 252.2, CLASS 140-D OR PVC CERTIFIED TO C.S.A. STANDARDS 182.2 AND 182.4. MAX. PVC PIPE DIA. IS 400mm BIG O BOSS 2000 POLYETHYLENE PIPE WITH GASKETED BELL AND SPIGOT JOINTS CERTIFIED C.S.A. B182.6 FOR STORM SEWERS UP TO 900mm DIA. WHERE ONLY CONNECTION STD CATCHBASINS ARE CONSIDERED.
21. ALL PIPE AND BEDDING MUST CONFORM TO OPSD MAXIMUM COVER TABLE. NO FLEXIBLE PIPE SEWERS WILL BE INSTALLED WITH A DEPTH COVER GREATER THAN 6m UNLESS SPECIFICALLY APPROVED BY THE DIRECTOR OF PUBLIC WORKS AND ENGINEERING.
22. ALL PIPE HANDLING INSTRUCTIONS MUST BE IN STRICT COMPLIANCE WITH MANUFACTURERS INSTALLATION GUIDES AND THE OCPA OR UNIBELL GUIDELINES.
23. ALL BOULEVARDS TO BE RESTORED WITH 300mm MINIMUM OF TOPSOIL AND SOD.
24. THE MINIMUM PAVEMENT DESIGN SHALL BE AS FOLLOWS:

	MERCHANT ROAD	ABBOTSIDE WAY SPEIRS GIFFEN AVE	COMPACTION REQUIREMENTS
HOT MIX ASPHALT SURFACE COURSE, OPSS 1150 DFC	40mm	40mm	as per OPSS 310
HOT MIX ASPHALT BINDER COURSE, OPSS 1150 HDBC	90mm	110mm	as per OPSS 310
BASE COURSE OPSS 1010 GRANULAR 'A'	150mm	150mm	a minimum of 100 percent Standard Proctor Maximum Dry Density (ASTM D698)
SUBBASE COURSE, OPSS 1010 GRANULAR 'B'	450mm	450mm	
	DRIVEWAY / FIRE	COMMERCIAL DRIVEWAY/FIRE	
HOT MIX ASPHALT SURFACE COURSE, OPSS 1150 HL 3	40mm	40mm	as per OPSS 310
HOT MIX ASPHALT BINDER COURSE, OPSS 1150 HL 8	100mm	80mm	as per OPSS 310
BASE COURSE OPSS 1010 GRANULAR 'A'	150mm	150mm	100 percent of Standard Proctor Maximum Dry Density (ASTM D698)
SUBBASE COURSE, OPSS 1010 GRANULAR 'B'	450mm	350mm	

BEFORE STARTING WORK

1. THE CONTRACTOR SHALL NOTIFY THE TOWN OF CALEDON AND IBI GROUP AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION WITHIN THE MUNICIPALITY RIGHT OF WAY. THE CONTRACTOR MUST CONTACT THE FOLLOWING:
   - THE TOWN OF CALEDON FINANCE & INFRASTRUCTURE (905)-584-2272
   - THE REGION OF PEEL
   - HYDRO ONE
   - ROGERS CABLE
   - ENBRIDGE CONSUMERS GAS
   - BELL CANADA
   - FIRE AND EMERGENCY SERVICES.
2. THE POSITION OF THE POLE LINES, CONDUITS, WATERMAINS, SEWERS, AND OTHER UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.
3. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, ALL BENCHMARKS, ELEVATIONS, DIMENSIONS, AND GRADES MUST BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES REPORTED TO THE ENGINEER.
4. ALL EXISTING UNDERGROUND UTILITIES WITHIN THE LIMITS OF CONSTRUCTION SHALL BE LOCATED, MARKED AND PROTECTED. ANY UTILITIES DAMAGED OR DISTURBED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
5. AT LEAST TWO DIFFERENT BENCHMARKS MUST BE REFERRED TO AT ALL TIMES.
6. REPRODUCED PLANS SHALL AT NO TIMES BE SCALED AND ASSUMED ACCURATE.

NOTES

1. SERVICES ALONG HEARTLAKE ROAD WERE DERIVED FROM PLAN & PROFILE ENGINEERING DRAWINGS (NOT MARKED AS AS-CONSTRUCTED) RECIEVED BY THE REGION OF PEEL, INDEXED AS 59283-D_IFC, 59284-D_IFC, 59285-D_IFC, 59286-D_IFC, 59320-D_IFC, 59321-D_IFC, 59322-D_IFC, & 59323-D_IFC. ALL LOCATIONS ARE APPROXIMATE AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. ANY DISCREPANCIES MUST BE BROUGHT TO THE DESIGN ENGINEERS ATTENTION IMMEDIATELY.
2. EXISTING SERVICES ALONG MERCHANT ROAD AND ABBOTSIDE WAY WERE DERIVED FROM IBI GROUP'S PLAN & PROFILE AS-CONSTRUCTED ENGINEERING DRAWINGS INDEXED AS 30969-PP1 TO 30969-PP5 (INCLUSIVE). ALL LOCATIONS ARE APPROXIMATE AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. ANY DISCREPANCIES MUST BE BROUGHT TO THE DESIGN ENGINEERS ATTENTION IMMEDIATELY.
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NOTE TO CONTRACTOR

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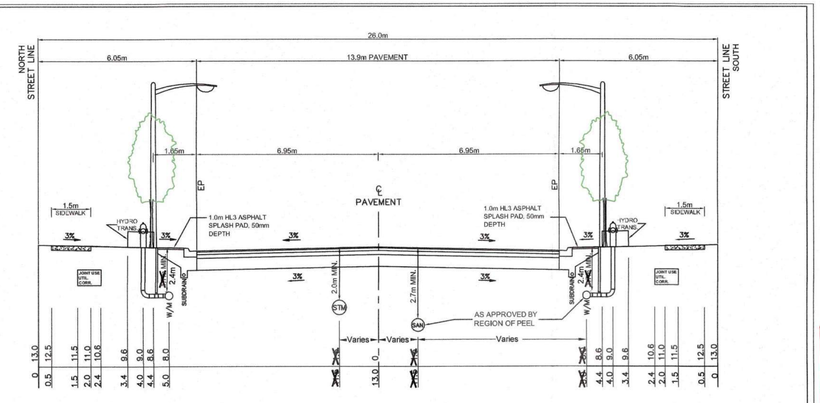
FUTURE SERVICES NOTE:
FUTURE SERVICES ARE APPROXIMATE AND SUBJECT TO CHANGE IN THE FINAL DETAIL DESIGN OF THE WEST HALF OF SPEIRS GIFFEN AVENUE.

PROJECT STATISTICS: REGION	PROPOSED		FUTURE	
	THIS SHEET	TOTAL	THIS SHEET	TOTAL
Sanitary Sewer Length	360m	431m	0	685m
Number of Sanitary Manholes	2	6	0	7
Watermain Length	322m	1346m	0	0
Number of Hydrants	3	8	0	5



NOTES
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3. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION
   - 40 mm DFC
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   - 150 mm GRANULAR "A"
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4. THE BOULEVARDS REQUIRE A MINIMUM OF 300mm OF TOPSOIL AND NURSERY SOD.
5. TREES TO BE PLACEDIN LOCATIONS PER APPROVED LANDSCAPE PLANS.
6. STREETLIGHT FIXTURE PER APPROVED TOWN OF CALEDON STANDARD.
7. FULL LENGTH MINIMUM 100 MM DIA.SUB-DRAINS C/W FILTERCLOTH SHALL BE INSTALLED, AS PER APPROVED TOWN STANDARD NO. 219.
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11. LONG DIMENSION OF TRANSFORMER TO BE PARALLEL TO STREETLINE.

NO.	REVISION	APR'D	DATE
3	DIMENSION AND TEXT REVISION		JAN. 09
2	DIMENSION AND LAYOUT REVISION		JULY 08
1	DIMENSION EDIT, STD No. 209 NOW 211		JUNE 08

TOWN OF CALEDON

26.0m INDUSTRIAL COLLECTOR
14.5m ROADWAY (13.9m PAVEMENT)

STANDARD No. 211

APR'D: C.C. DATE: JUNE 08
DRAWN: SCALE: N.T.S.

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.

This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Sept 19/19
Approved By:
Print Name: Rob Hughes

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com

TOWN OF CALEDON

Region of Peel
working with you

RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

LICENSED PROFESSIONAL ENGINEER
AUG 15, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

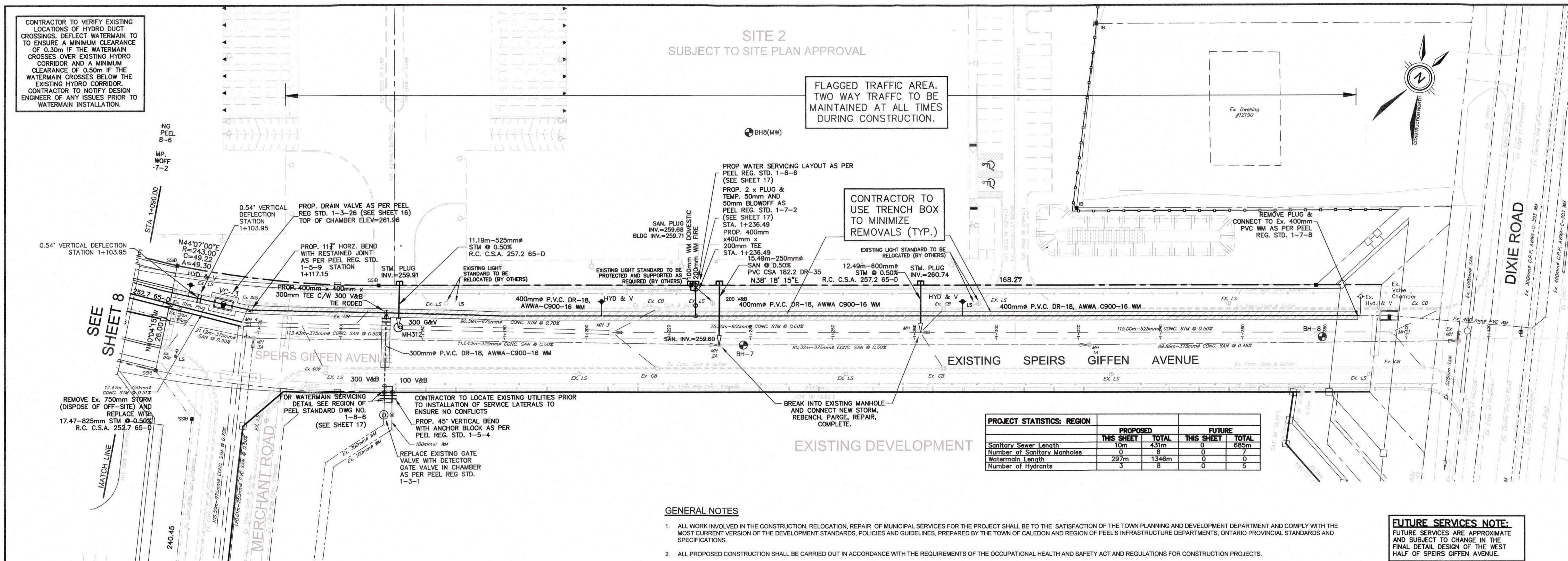
TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

SERVICING PLAN
(0+770.00 - 1+090.00)

DATE:	2018-06-08
SCALE:	1:500
FILE NO.	116965
DESIGNED BY:	M.E.S.
DRAWN BY:	M.E.S.
CHECKED BY:	J.P./D.R.
REG OF PEEL PROJECT NO.	C-06-302
DWG NO.	116965-SER2

9 of 35

FILE:J:\116965_AbbotsideWay\5.9 Drawings\90scl\current\116965-Nwrk.dwg LAYOUT:SERV-8
LAST SAVED BY:Chloe.cao, Wednesday, August 14, 2019 4:14:02 PM PLOTTED BY:Chloe Cao Thursday, August 15, 2019 10:53:02 AM



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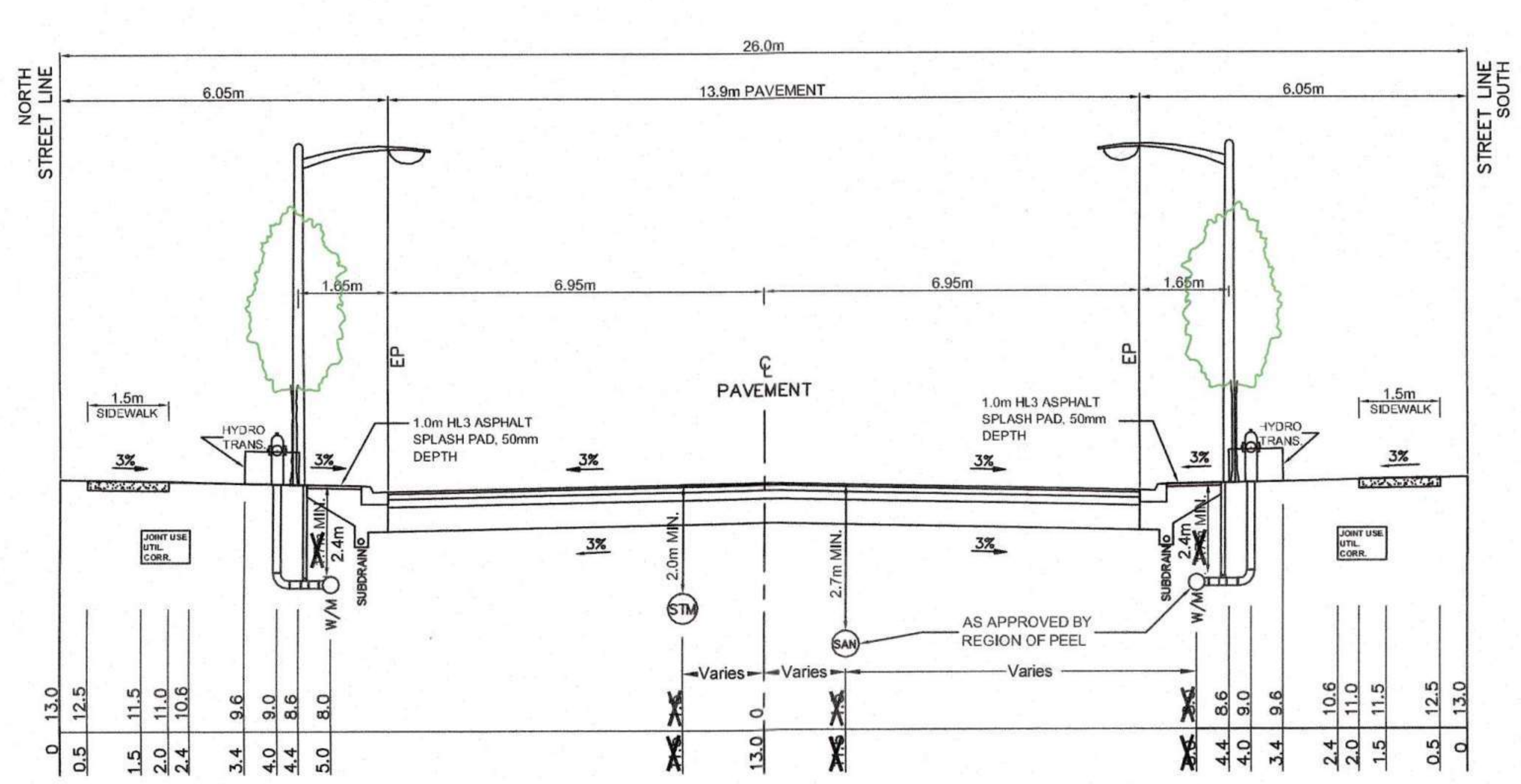

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   - ENCROACHMENT AGREEMENTS (IF REQUIRED)
10. ABANDONED ACCESSES MUST BE REMOVED AND THE CURB AND BOULEVARD RESTORED WITH SOD AT THE OWNER'S EXPENSE TO THE SATISFACTION OF THE TOWN.
11. 3 METRE BY 3 METRE VISIBILITY TRIANGLES IN WHICH THE MAXIMUM HEIGHT OF ANY OBJECTS OR MATURE VEGETATION IS NOT TO EXCEED A HEIGHT OF 0.60 METRES ABOVE THE CORRESPONDING PERPENDICULAR CENTRELINE ELEVATION OF THE ADJACENT STREET.
12. SEDIMENT CONTROL DEVICES AND MEASURES TO BE INSTALLED PRIOR TO ANY CONSTRUCTION ON THE SITE AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD TO THE SATISFACTION OF THE TOWN AND APPLICABLE CONSERVATION AUTHORITIES.
13. A MINIMUM OF 1.2m CLEARANCE IS TO BE PROVIDED FROM THE LIMITS OF ALL SIDEWALKS AND DRIVEWAYS TO EXISTING UTILITY STRUCTURES WITH THE MUNICIPAL RIGHT OF WAY. IF THIS CLEARANCE IS NOT MAINTAINED THEY SHALL BE RELOCATED AT THE APPLICANT'S EXPENSE.
14. STREET CURBS ARE TO BE CONTINUOUS THROUGH THE PROPOSED ENTRANCE.
15. THE SUB-GRADE SOILS EXPOSED AFTER EXCAVATION SHALL BE INSPECTED AND CERTIFIED BY A QUALIFIED REGISTERED PROFESSIONAL SOILS ENGINEER AND A COPY OF THE REPORT SHALL BE FORWARDED TO THE TOWN OF CALEDON BUILDING DIVISION. WHERE THE FOOTING WILL BE SITUATED ON FILL MATERIAL, THE FOOTINGS SHALL BE DESIGNED AND APPROVED BY QUALIFIED REGISTERED PROFESSIONAL ENGINEER.
16. ALL FILL PLACED ON THE SITE SHALL BE COMPACTED TO A MINIMUM OF 95% SPMDD FOR STORM & 100% SPMDD FOR SANITARY. A SUFFICIENT NUMBER OF TESTS SHALL BE TAKEN AT VARIOUS LEVELS SATISFACTORY TO THE DIRECTOR OF ENGINEERING. TEST RESULTS SHALL BE SENT TO THE TOWN WITH A LETTER, SIGNED AND STAMPED BY THE SOILS ENGINEER, STATING THAT A SUFFICIENT NUMBER OF TESTS HAVE BEEN TAKEN AND THE MINIMUM DEGREE OF COMPACTION HAS BEEN REACHED.
17. APPROVAL OF THIS DRAWING IS FOR MATERIAL ACCEPTABILITY AND COMPLIANCE WITH MUNICIPAL AND PROVINCIAL SPECIFICATIONS AND STANDARDS ONLY. APPROVAL AND INSPECTION BY THE TOWN DOES NOT CERTIFY THE LINE AND GRADE OF THE WORKS AND IT IS THE OWNER'S RESPONSIBILITY TO HAVE THEIR ENGINEER CERTIFY THIS ACCORDINGLY.
18. STORM SEWERS SHALL BE CONSTRUCTED WITH BEDDING AS PER OPSD 802.030 FOR RIGID PIPE OR OPSD 802.010 WITH GRANULAR 'A' FOR FLEXIBLE PIPE UNLESS APPROVED OTHERWISE BY THE DIRECTOR OF PUBLIC WORKS AND ENGINEERING.
19. MAINTENANCE HOLE TOPS (FRAMES) AND CATCHBASIN (FRAMES) ARE TO BE SET TO BASE COURSE ASPHALT AND THEN ADJUSTED TO FINAL GRADE WHEN THE TOP LIFT OF ASPHALT IS PLACED.
20. PIPE MATERIAL TO BE REINFORCED CONCRETE WITH A STRENGTH OF 50 N/m/mm CERTIFIED TO C.S.A. STANDARD A 252.2, CLASS 140-D OR PVC CERTIFIED TO C.S.A. STANDARDS 182.2 AND 182.4. MAX. PVC PIPE DIA. IS 400mm BIG O BOSS 2000 POLYETHYLENE PIPE WITH GASKETED BELL AND SPIGOT JOINTS CERTIFIED C.S.A. B182.6 FOR STORM SEWERS UP TO 900mm DIA. WHERE ONLY CONNECTION STD CATCHBASINS ARE CONSIDERED.
21. ALL PIPE AND BEDDING MUST CONFORM TO OPSD MAXIMUM COVER TABLE. NO FLEXIBLE PIPE SEWERS WILL BE INSTALLED WITH A DEPTH COVER GREATER THAN 6m UNLESS SPECIFICALLY APPROVED BY THE DIRECTOR OF PUBLIC WORKS AND ENGINEERING.
22. ALL PIPE HANDLING INSTRUCTIONS MUST BE IN STRICT COMPLIANCE WITH MANUFACTURERS INSTALLATION GUIDES AND THE OCPA OR UNIBELL GUIDELINES.
23. ALL BOULEVARDS TO BE RESTORED WITH 300mm MINIMUM OF TOPSOIL AND SOD.
24. THE MINIMUM PAVEMENT DESIGN SHALL BE AS FOLLOWS:

	MERCHANT ROAD	SPEIRS GIFFEN AVE	COMPACTION REQUIREMENTS
HOT MIX ASPHALT SURFACE COURSE, OPSS 1150 DFC	40mm	40mm	as per OPSS 310
HOT MIX ASPHALT BINDER COURSE, OPSS 1150 HDBC	90mm	110mm	as per OPSS 310
BASE COURSE OPSS 1010 GRANULAR 'A'	150mm	150mm	a minimum of 100 percent Standard Proctor Maximum Dry Density (ASTM D698)
SUBBASE COURSE, OPSS 1010 GRANULAR 'B'	450mm	450mm	
	DRIVEWAY / FIRE	COMMERCIAL DRIVEWAY/FIRE	
HOT MIX ASPHALT SURFACE COURSE, OPSS 1150 HL 3	40mm	40mm	as per OPSS 310
HOT MIX ASPHALT BINDER COURSE, OPSS 1150 HL 8	100mm	80mm	as per OPSS 310
BASE COURSE OPSS 1010 GRANULAR 'A'	150mm	150mm	100 percent of Standard Proctor Maximum Dry Density (ASTM D698)
SUBBASE COURSE, OPSS 1010 GRANULAR 'B'	450mm	350mm	

BEFORE STARTING WORK

1. THE CONTRACTOR SHALL NOTIFY THE TOWN OF CALEDON AND IBI GROUP AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION WITHIN THE MUNICIPALITY RIGHT OF WAY. THE CONTRACTOR MUST CONTACT THE FOLLOWING:
   - THE TOWN OF CALEDON FINANCE & INFRASTRUCTURE (905)-584-2272
   - THE REGION OF PEEL
   - HYDRO ONE
   - ROGERS CABLE
   - ENBRIDGE CONSUMERS GAS
   - BELL CANADA
   - FIRE AND EMERGENCY SERVICES.
2. THE POSITION OF THE POLE LINES, CONDUITS, WATERMAINS, SEWERS, AND OTHER UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.
3. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, ALL BENCHMARKS, ELEVATIONS, DIMENSIONS, AND GRADES MUST BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES REPORTED TO THE ENGINEER.
4. ALL EXISTING UNDERGROUND UTILITIES WITHIN THE LIMITS OF CONSTRUCTION SHALL BE LOCATED, MARKED AND PROTECTED. ANY UTILITIES DAMAGED OR DISTURBED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
5. AT LEAST TWO DIFFERENT BENCHMARKS MUST BE REFERRED TO AT ALL TIMES.
6. REPRODUCED PLANS SHALL AT NO TIMES BE SCALED AND ASSUMED ACCURATE.

FUTURE SERVICES NOTE:
FUTURE SERVICES ARE APPROXIMATE AND SUBJECT TO CHANGE IN THE FINAL DETAIL DESIGN OF THE WEST HALF OF SPEIRS GIFFEN AVENUE.

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.

This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Sept 19/19
Approved By: [signature]
Print Name: Rob Hughes

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
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TOWN OF CALEDON

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SEP 19 2019
PLANNING DEPARTMENT

LICENSED PROFESSIONAL ENGINEER
AUG 15, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

SERVICING PLAN
(1+090.00 - 1+430.00)

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	1:500	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
10 of 35		DWG NO.	116965-SER3

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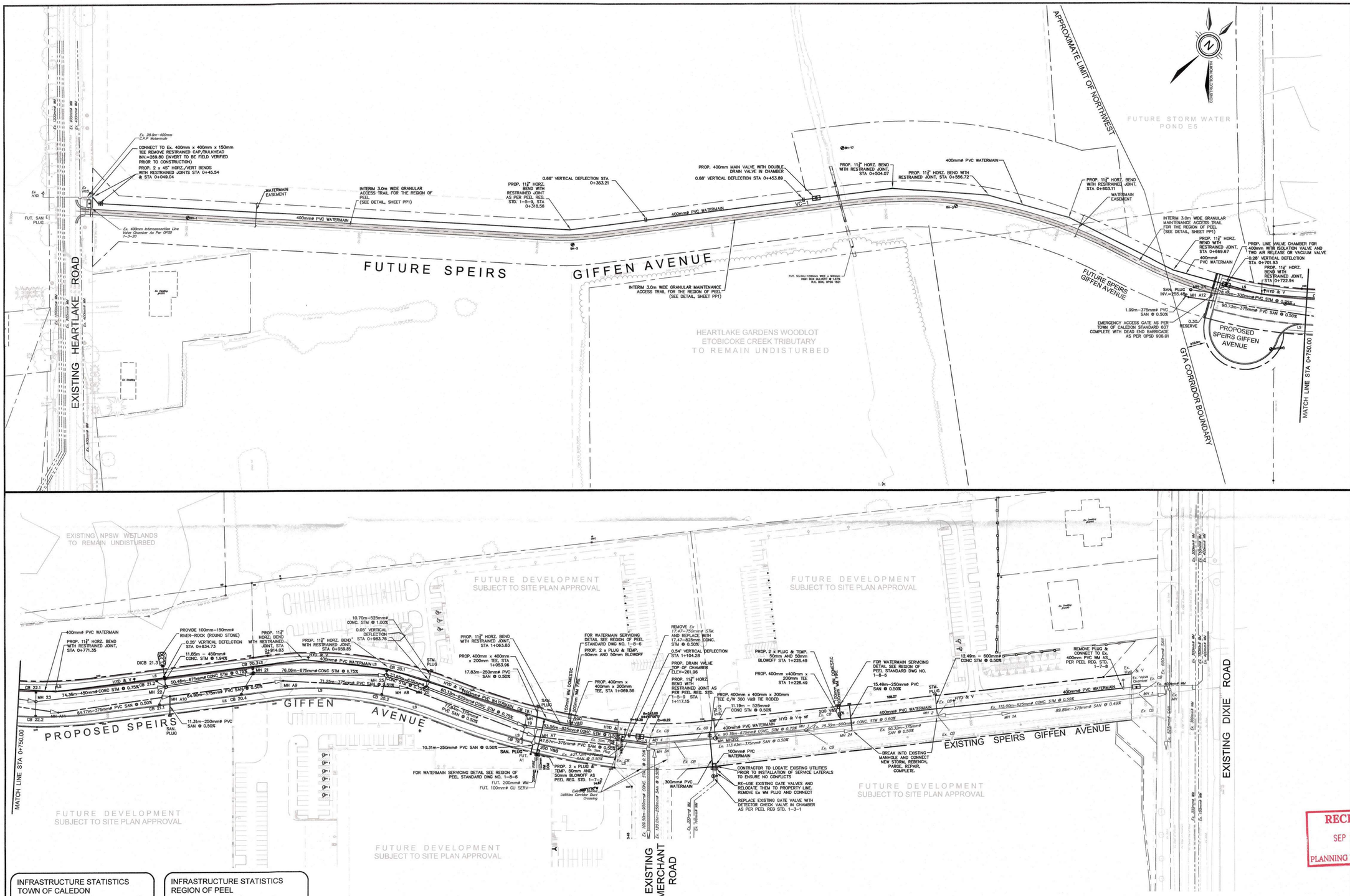

KEY MAP - N.T.S.

LEGEND

○MH1	– PROPOSED STORM MANHOLE
■DICB	– PROPOSED DITCH INLET CATCH BASIN
■CB	– PROPOSED CATCH BASIN
◉CBMH	– PROPOSED CB MANHOLE
——▶——	– PROPOSED STORM SEWER
■ Ex. CB	– EXISTING CATCH BASIN
■■ Ex. DCB	– EXISTING DOUBLE CATCH BASIN
○ Ex. 1	– EXISTING STORM MANHOLE
——▶	– EX STORM SEWER WITH FLOW DIRECTION
●MH 1A	– PROPOSED SANITARY MANHOLE
——▶——	– PROPOSED SANITARY SEWER
● Ex. MH A1	– EXISTING SANITARY MANHOLE
— — —▶	– EX SANITARY SEWER WITH FLOW DIRECTION
HYD	– PROPOSED FIRE HYDRANT
WV	– PROPOSED WATER VALVE
	– PROPOSED WATERMAIN TEE
	– PROPOSED 45° BEND
	– PROPOSED 11 ¼° BEND
——-——	– PROPOSED WATERMAIN
‡——‡	– PROPOSED WATERMAIN VERTICAL BEND
HYD	– EXISTING HYDRANT
⊗WV	– EXISTING WATER VALVE
⊗ VC	– EXISTING VALVE CHAMBER
⊗ CS	– EXISTING CURB STOP
——-——	– EXISTING WATERMAIN
▲	– EXISTING HYDRO TRANSFORMER
GV	– EXISTING GAS VALVE
▲	– HYDRO TRANSFORMER
(M)	– FUTURE WATER METER
(D)	– FUTURE DETECTOR CHECK VALVE
(BP)	– FUTURE BACK FLOW PREVENTOR
—GAS—	– EXISTING BURIED GAS LINE
▨	– LIMITS OF ROAD RESTORATION
—U—	– EXISTING BURIED UTILITY CORRIDOR
—H—	– EXISTING BURIED HYDRO ONE CORRIDOR
▨	– PROPOSED FROST PROTECTION
LS	– PROPOSED STREET LIGHT LOCATION
EX. LS	– EXISTING STREET LIGHT LOCATION
—— — ——	– PROPOSED LIMIT OF RIGHT OF WAY
—— — ——	– EXISTING PROPERTY BOUNDARY

FOR CONSTRUCTION

BENCHMARK

J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

IBI GROUP
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TOWN OF CALEDON

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AUG 15, 2019
J. R. R. PERKS

SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

OVERALL UNDERGROUND SERVICING PLAN

DATE:	2019-01-25	DESIGNED BY:	M.E.S.
SCALE:	1:1000	DRAWN BY:	C.C./M.E.S.
		CHECKED BY:	M.E.S./J.P.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
11 of 35		DWG NO.	116965-SER4

INFRASTRUCTURE STATISTICS TOWN OF CALEDON	
STORM SEWER PIPE LENGTH -	557.4m
NUMBER OF STORM MANHOLES -	8
NUMBER OF CATCH BASINS -	10
NUMBER OF DITCH INLET CB's -	1
ROAD LENGTH -	400.0m
SIDEWALK LENGTH -	754.7m
NUMBER OF STREET POLES -	14
TOTAL SUBDIVISION AREA (R.O.W.)-	1.14ha

INFRASTRUCTURE STATISTICS REGION OF PEEL	
SAN SEWER PIPE LENGTH -	406.2m
NUMBER OF SAN MANHOLES -	6
WATERMAIN PIPE LENGTH	1355m
NUMBER OF HYDRANTS-	7
NUMBER OF VALVE CHAMBERS-	3
LENGTH OF ACCESS TRAIL-	657.0m
TOTAL EASMENT AREA (R.O.W.)-	8573 m2

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.

This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Sept 19/19
Approved By:
Print Name: Rob Hughes

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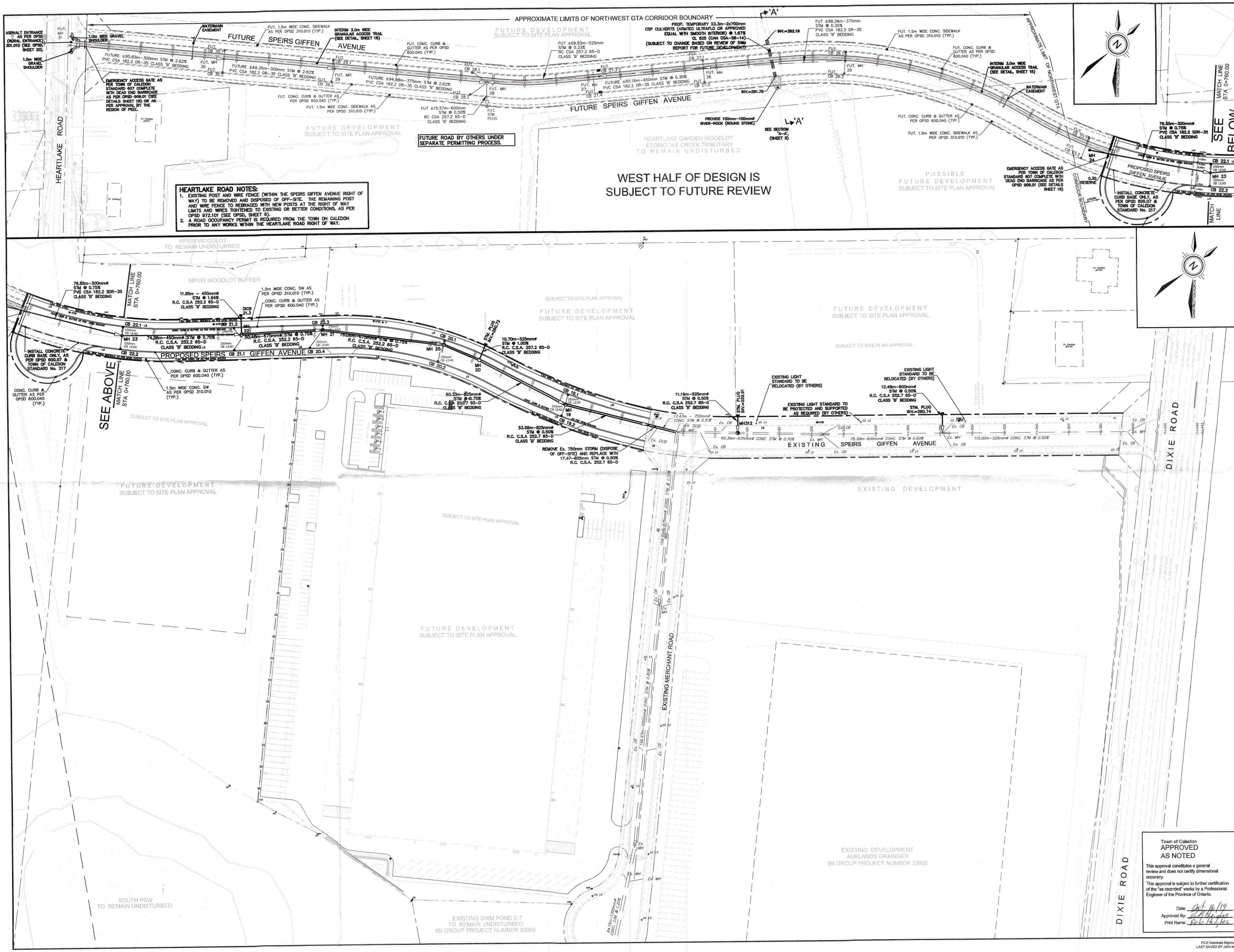

LEGEND

- MH1 – PROPOSED STORM MANHOLE
- DICB – PROPOSED DITCH INLET CATCH BASIN
- CB – PROPOSED CATCH BASIN
- CBMH – PROPOSED CB MANHOLE
- – PROPOSED STORM SEWER
- Ex. CB – EXISTING CATCH BASIN
- Ex. DCB – EXISTING DOUBLE CATCH BASIN
- Ex. 1 – EXISTING STORM MANHOLE
- – EXISTING STORM FLOW DIRECTION
- MH 1A – PROPOSED SANITARY MANHOLE
- – PROPOSED SANITARY SEWER
- Ex. MH A1 – EXISTING SANITARY MANHOLE
- – EXISTING SANITARY FLOW DIRECTION
- HYD – PROPOSED FIRE HYDRANT
- WV – PROPOSED WATER VALVE
- – PROPOSED WATERMAIN TEE
- – PROPOSED 45° BEND
- – PROPOSED 11 ¼° BEND
- – PROPOSED WATERMAIN
- HYD – EXISTING HYDRANT
- WV – EXISTING WATER VALVE
- VC – EXISTING VALVE CHAMBER
- CS – EXISTING CURB STOP
- – EXISTING WATERMAIN
- – EXISTING HYDRO TRANSFORMER
- – EXISTING GAS VALVE
- – HYDRO TRANSFORMER
- – FUTURE WATER METER
- – FUTURE DETECTOR CHECK VALVE
- – FUTURE BACK FLOW PREVENTOR
- – EXISTING BURIED GAS LINE
- – INTERIM 3.0m WIDE GRAVEL ACCESS TRAIL
- – PROPOSED FROST PROTECTION
- LS – PROPOSED STREET LIGHT LOCATION
- EX. LS – EXISTING STREET LIGHT LOCATION

FOR CONSTRUCTION

BENCHMARK

J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV.#	DATE	BY	REVISIONS
10	09/27/19	J.P.	REVISED PER TRCA COMMENTS
9	09/18/19	J.P.	REVISED PER TRCA COMMENTS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS

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TOWN OF CALEDON

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LICENSED PROFESSIONAL ENGINEER
SEPT. 27, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.

This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Oct 16/19
Approved By:
Print Name:

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

TOWN ASSET PLAN

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
		DRAWN BY:	M.E.S.
SCALE:	1:1000	CHECKED BY:	J.P.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
12 of 35		DWG NO.	116965-TA1

FILE:\\caneast.ibigroup.com\J\HM\116965_AbbotsideWay\5.9 Drawings\59civil\layouts\116965-Town-Asset-Plan.dwg LAYOUT:ASSET-1
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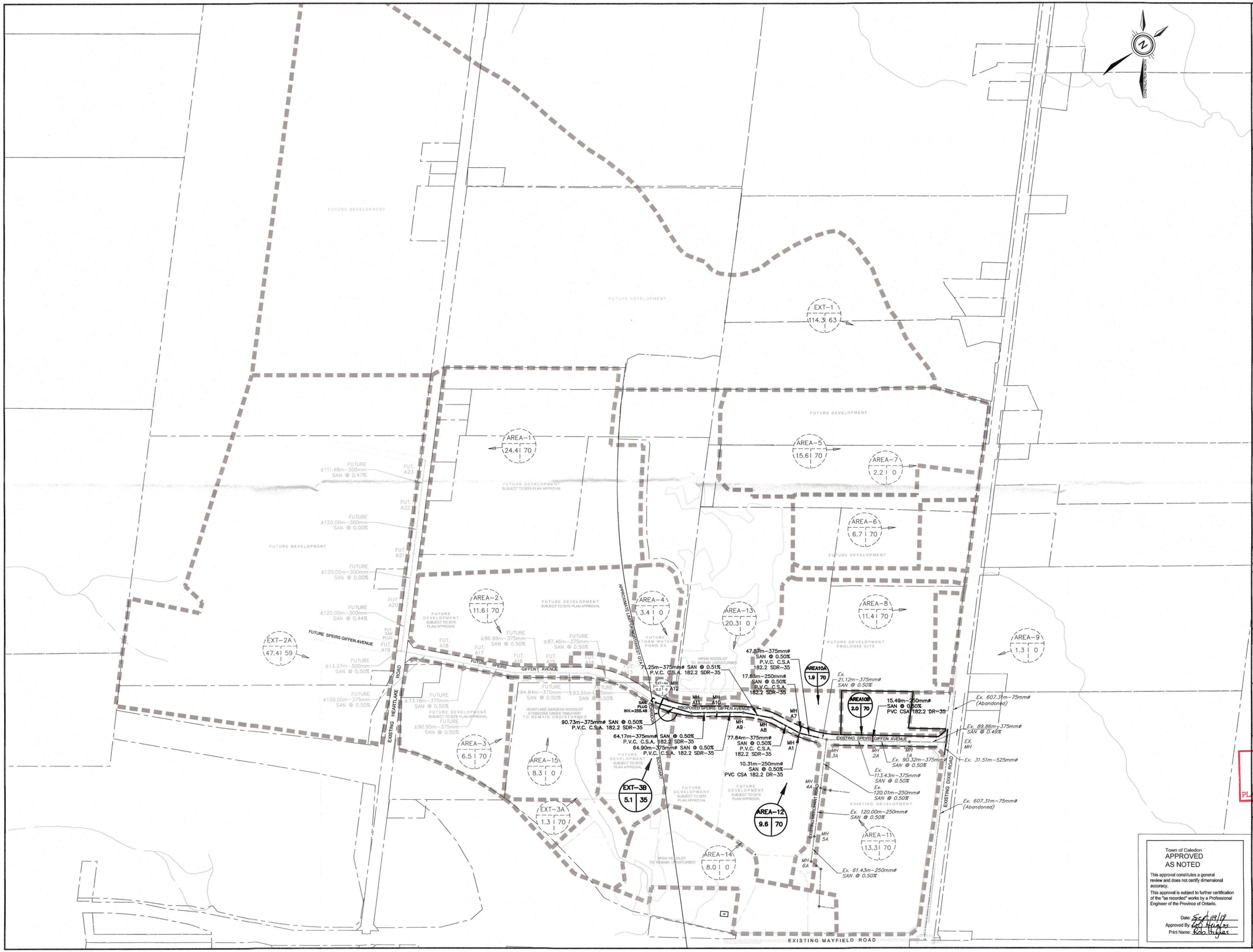

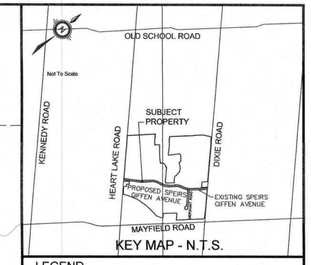

LEGEND

- MH1A – PROPOSED SANITARY MANHOLE
- – PROPOSED SANITARY SEWER
- S–MH – EXISTING SANITARY MANHOLE
- – EXISTING SANITARY FLOW DIRECTION

PROPOSED SANITARY DRAINAGE AREA: 115 (AREA NUMBER); 0.26 (AREA (Hectares)); 0.84 (POPULATION DENSITY)

EXISTING/FUTURE SANITARY DRAINAGE AREA: 9.2 (AREA NUMBER); 3.42 (AREA (Hectares)); 0.85 (POPULATION DENSITY)

– SANITARY DRAINAGE AREA BOUNDARY

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

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TOWN OF CALEDON

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SEP 19 2019
PLANNING DEPARTMENT

LICENSED PROFESSIONAL ENGINEER
AUG 15, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

Town of Caledon
APPROVED AS NOTED
This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.
Date: Sept 19/19
Approved By:
Print Name: Ron Hyles

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS
ULTIMATE SANITARY AREA DRAINAGE PLAN

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	1:4000	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
13 of 35		DWG NO.	116965-SAN1

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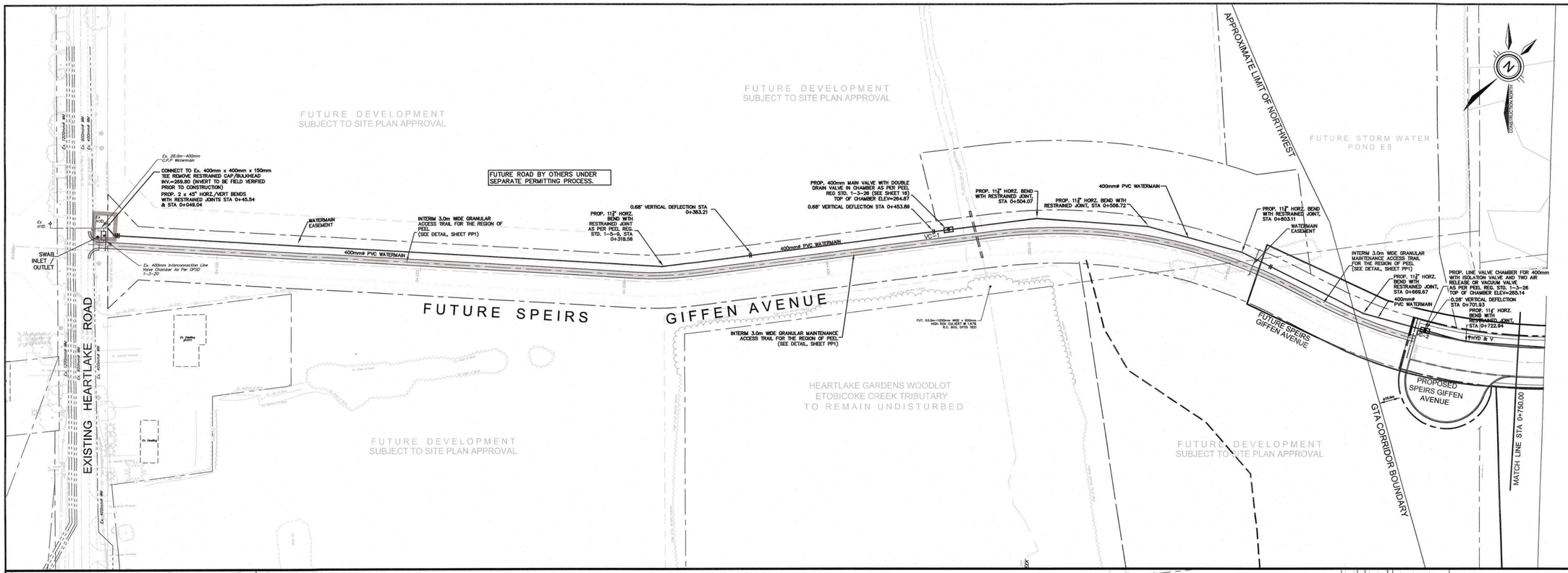

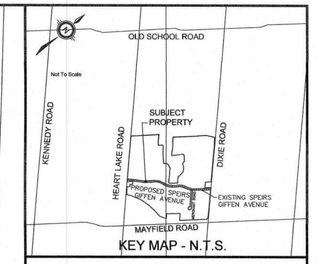

LEGEND

- HYD – PROPOSED FIRE HYDRANT
- WV – PROPOSED WATER VALVE
- PROPOSED WATERMAIN TEE
- PROPOSED 45° BEND
- PROPOSED 11 ¼° BEND
- PROPOSED WATERMAIN
- HYD – EXISTING HYDRANT
- WV – EXISTING WATER VALVE
- VC – EXISTING VALVE CHAMBER
- CS – EXISTING CURB STOP
- EXISTING WATERMAIN
- M – FUTURE WATER METER
- D – FUTURE DETECTOR CHECK VALVE
- BP – FUTURE BACK FLOW PREVENTOR
- SWAB INLET / OULET LOCATION

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

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TOWN OF CALEDON

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SEP 19 2019
PLANNING DEPARTMENT

Town of Caledon
APPROVED
AS NOTED
This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.
Date: Sept 19/19
Approved By: Rob Hughes
Print Name: Rob Hughes

LICENSED PROFESSIONAL ENGINEER
AUG 15, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

WATER DISTRIBUTION & COMMISSIONING PLAN

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	1:1000	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P.
FILE NO.	116965	REG OF PEEL PROJECT NO	C-06-302
14 of 35		DWG NO.	116965-WAT1

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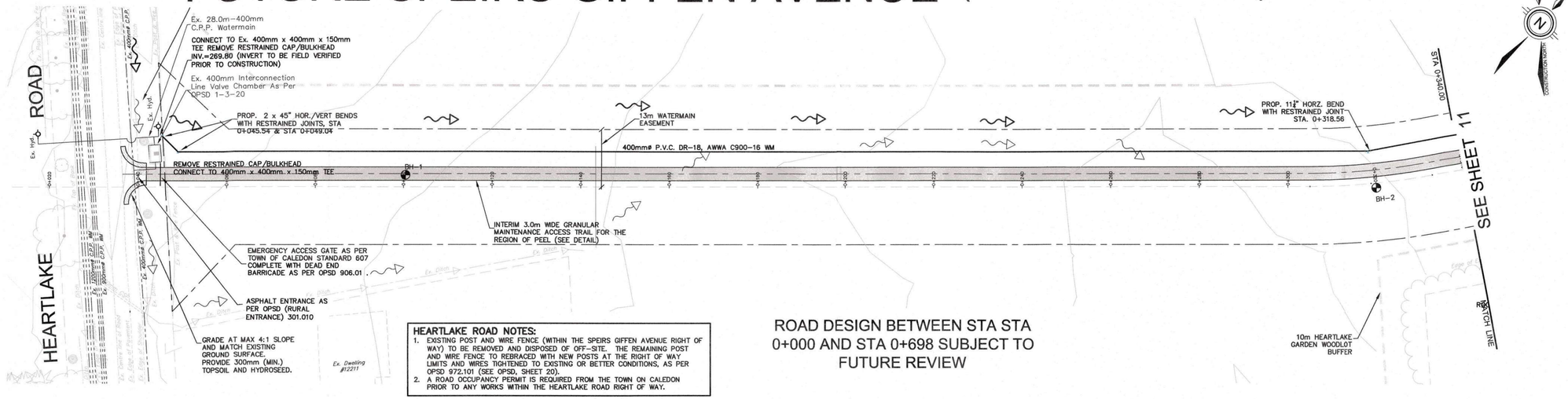

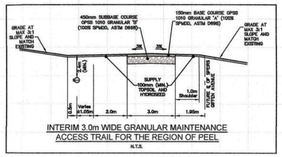

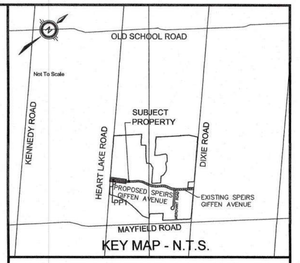

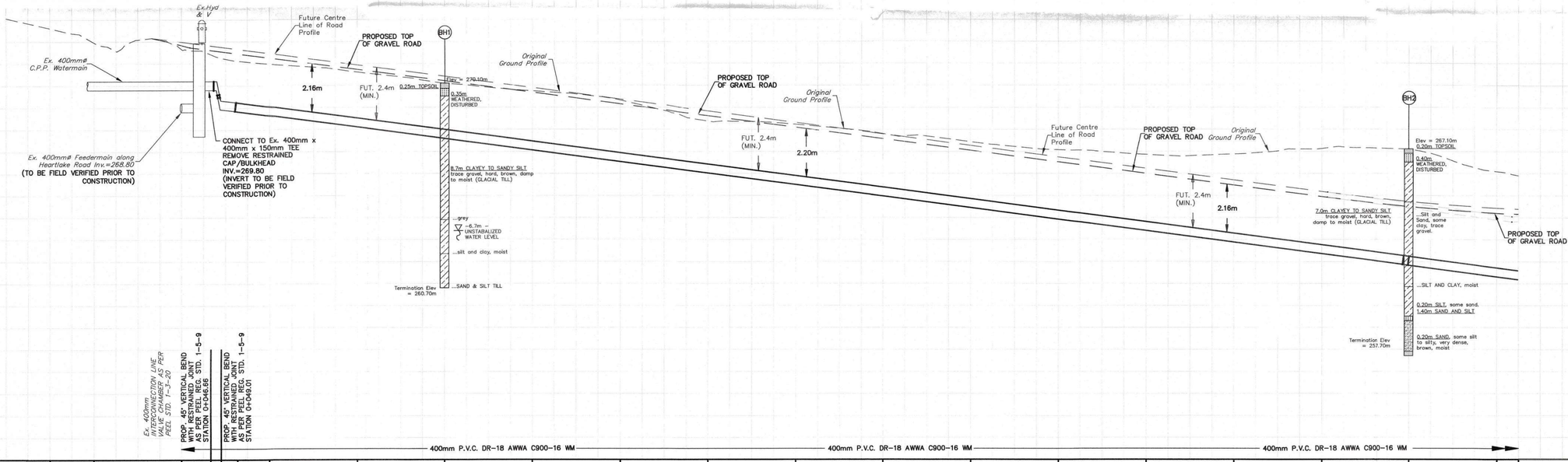

FUTURE SPEIRS GIFFEN AVENUE (0+000.00 - 0+340.00)

HEARTLAKE ROAD NOTES:

1. EXISTING POST AND WIRE FENCE (WITHIN THE SPEIRS GIFFEN AVENUE RIGHT OF WAY) TO BE REMOVED AND DISPOSED OF OFF-SITE. THE REMAINING POST AND WIRE FENCE TO REBRACED WITH NEW POSTS AT THE RIGHT OF WAY LIMITS AND WIRES TIGHTENED TO EXISTING OR BETTER CONDITIONS, AS PER OPSD 972.101 (SEE OPSD, SHEET 20).
2. A ROAD OCCUPANCY PERMIT IS REQUIRED FROM THE TOWN ON CALEDON PRIOR TO ANY WORKS WITHIN THE HEARTLAKE ROAD RIGHT OF WAY.

ROAD DESIGN BETWEEN STA STA
0+000 AND STA 0+698 SUBJECT TO
FUTURE REVIEW

KEY MAP - N.T.S.

NOTES

1. SERVICES ALONG HEARTLAKE ROAD WERE DERIVED FROM PLAN & PROFILE ENGINEERING DRAWINGS (NOT MARKED AS AS-CONSTRUCTED) RECIEVED BY THE REGION OF PEEL, INDEXED AS 59283-D_IFC, 59284-D_IFC, 59285-D_IFC, 59286-D_IFC, 59320-D_IFC, 59321-D_IFC, 59322-D_IFC, & 59323-D_IFC. ALL LOCATIONS ARE APPROXIMATE AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. ANY DISCREPANCIES MUST BE BROUGHT TO THE DESIGN ENGINEERS ATTENTION IMMEDIATELY.
2. ALL BENDS, VALVES etc, TO BE RESTRAINED AS PER REGION OF PEEL STANDARD DRAWING NO:1-5-9.
3. CLAY CUT OFF COLLARS TO BE INSTALLED AS DIRECTED BY THE GEOTECHNICAL ENGINEER (SEE ANTI-SEEP COLLAR DETAIL SHEET 20).
4. WATERMAIN DEFLECTIONS AS PER REG. OF PEEL PUBLIC WORKS WATERMAIN DESIGN CRITERIA SECTION 2.4, PAGE 5.

	0+020	0+040		0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340
WATERMAIN			±269.80 269.80 268.68	268.63	268.11	267.59	267.07	266.55	266.02	265.50	264.98	264.46	263.93	263.41	262.89	262.36	261.84	261.32
STORM SEWER																		
SANITARY SEWER																		
GROUND ELEV. ℄ ACCESS TRAIL = 000.00 Fut. ℄ of Road= 000.00 Ex. Groung Elev=Ex000.00	Ex271.96	Ex271.65 271.83		Ex270.98 271.26	Ex270.61 270.73	Ex270.10 270.21	Ex269.74 269.68	Ex269.33 269.16	Ex268.39 268.63	Ex268.24 268.11	Ex267.81 267.58	Ex267.45 267.06	Ex267.09 266.53	Ex266.86 266.01	Ex266.89 265.48	Ex267.13 264.96	Ex267.12 264.50	Ex266.10 264.21

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.

This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Sept 19/19
Approved By: Rob Hughes
Print Name: Rob Hughes

FOR CONSTRUCTION

BENCHMARK

J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
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TOWN OF CALEDON

Region of Peel
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RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

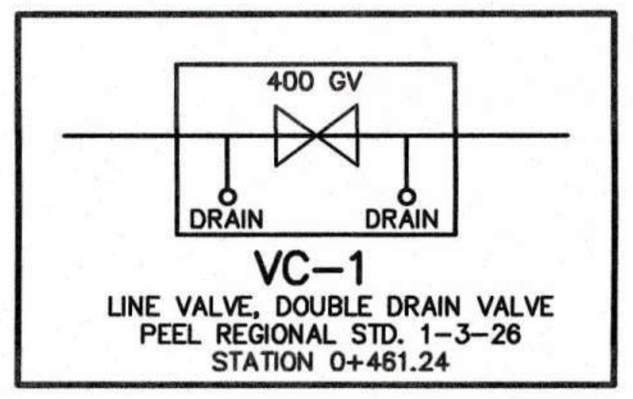
AUG 15, 2019
J. R. R. PERKS
SEAL

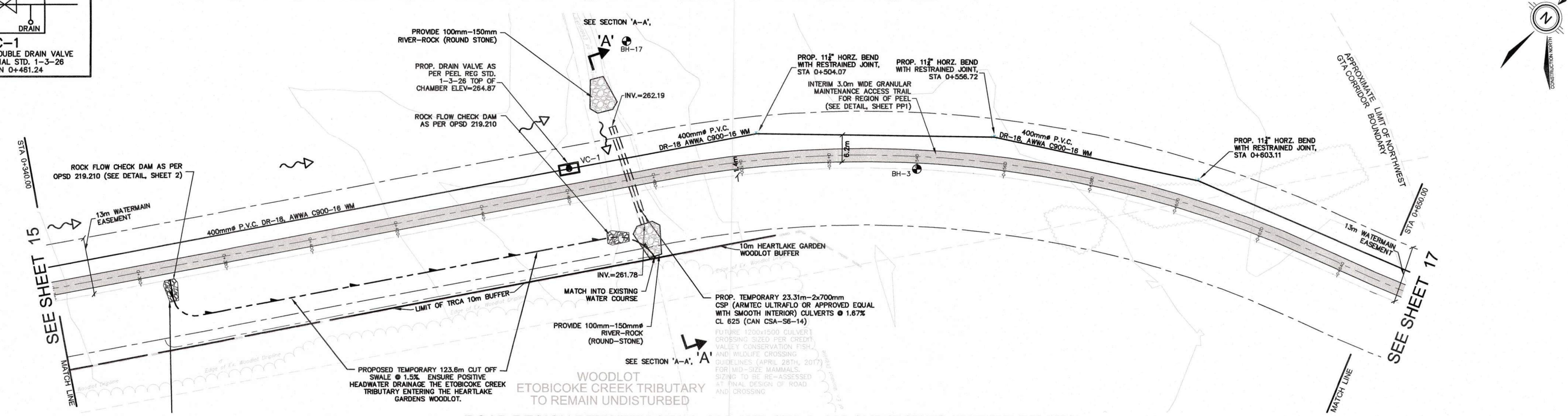
TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

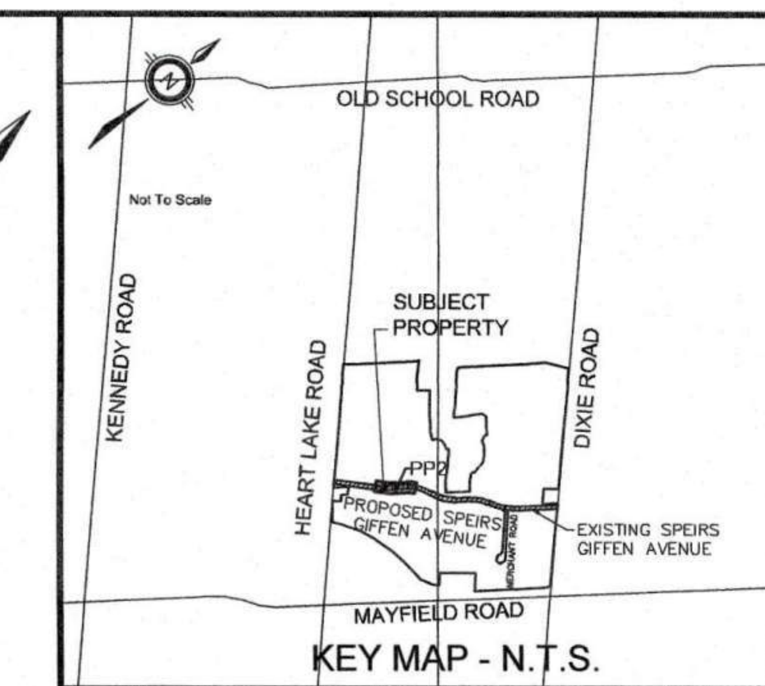
400mm WATERMAIN
(0+000.00 - 0+340.00)

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	HORZ: 1:500 VERT: 1:100	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
15 of 35		DWG NO.	116965-PP1

FUTURE SPEIRS GIFFEN AVENUE (0+340.00 - 0+650.00)



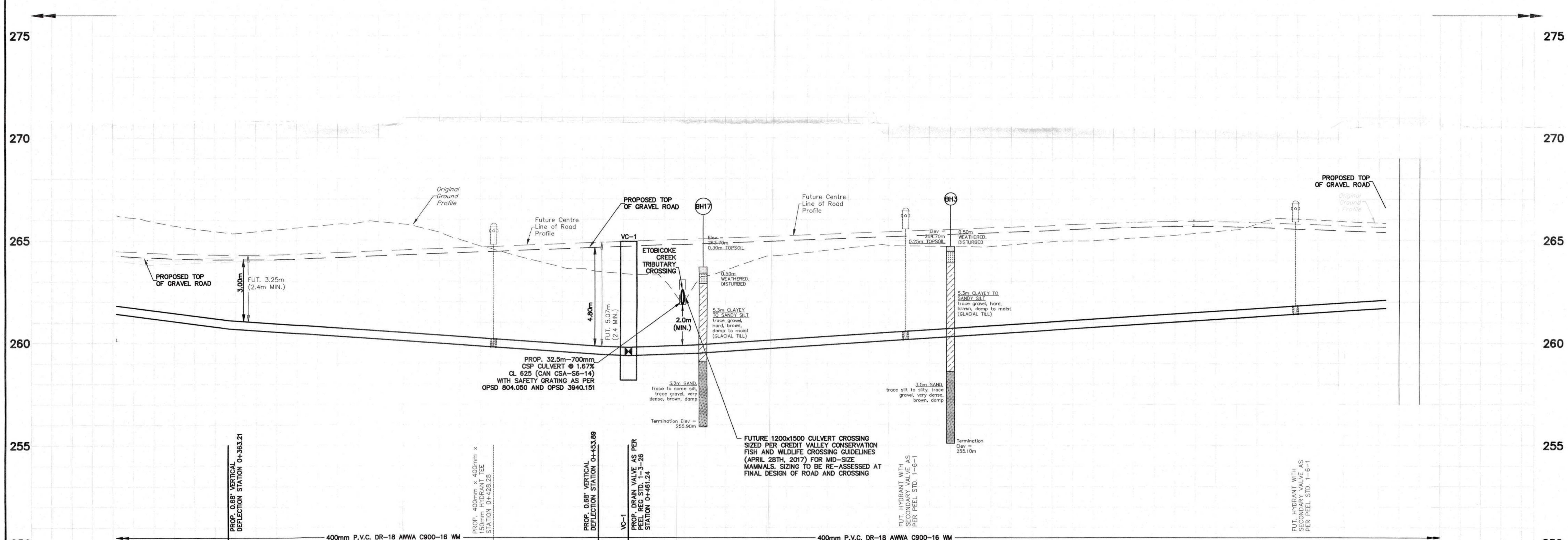




NOTES

1. ALL BENDS, VALVES etc. TO BE RESTRAINED AS PER REGION OF PEEL STANDARD DRAWING NO:1-5-9.
2. CLAY CUT OFF COLLARS TO BE INSTALLED AS DIRECTED BY THE GEOTECHNICAL ENGINEER (SEE ANTI-SEEP COLLAR DETAIL SHEET 20).
3. WATERMAIN DEFLECTIONS AS PER REG. OF PEEL PUBLIC WORKS WATERMAIN DESIGN CRITERIA SECTION 2.4, PAGE 5.
4. ALL BENDS, VALVES etc. TO BE RESTRAINED AS PER REGION OF PEEL STANDARD DRAWING NO:1-5-9.

ROAD DESIGN BETWEEN STA 0+000 AND STA 0+698 SUBJECT TO FUTURE REVIEW



WATERMAIN																				
	261.32	260.79	260.71	260.47	260.19	259.91	259.79	259.62	259.43	259.38	259.37	259.52	259.78	260.04	260.30	260.56	260.82	261.08	261.34	261.60

STORM SEWER

SANITARY SEWER

Station	Ex. Ground Elev	℄ Access Trail	Fut. ℄ of Road
0+340	Ex266.10	264.21	264.44
0+360	Ex265.44	264.07	264.31
0+380	Ex265.62	264.10	264.33
0+400	Ex265.89	264.24	264.48
0+420	Ex265.02	264.39	264.63
0+440	Ex263.93	264.54	264.78
0+460	Ex263.37	264.69	264.93
0+480	Ex263.25	264.84	265.08
0+500	Ex264.30	264.99	265.23
0+520	Ex264.73	265.14	265.38
0+540	Ex264.70	265.29	265.53
0+560	Ex264.87	265.44	265.68
0+580	Ex265.04	265.59	265.83
0+600	Ex265.33	265.67	265.91
0+620	Ex266.06	265.59	265.83
0+640	Ex265.88	265.43	265.67

GROUND ELEV.
℄ ACCESS TRAIL = 000.00
Fut. ℄ of Road= 000.00
Ex. Ground Elev = Ex000.00

Town of Caledon
APPROVED
AS NOTED
This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.
Date: Oct 16/19
Approved By:
Print Name:

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
10	09/27/19	J.P.	REVISED PER TRCA COMMENTS
9	09/18/19	J.P.	REVISED PER TRCA COMMENTS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS

IBI GROUP
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Hamilton ON L8L 1H5 Canada
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ibigroup.com

TOWN OF CALEDON

Region of Peel
working with you

LICENSED PROFESSIONAL ENGINEER
SEPT. 27, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

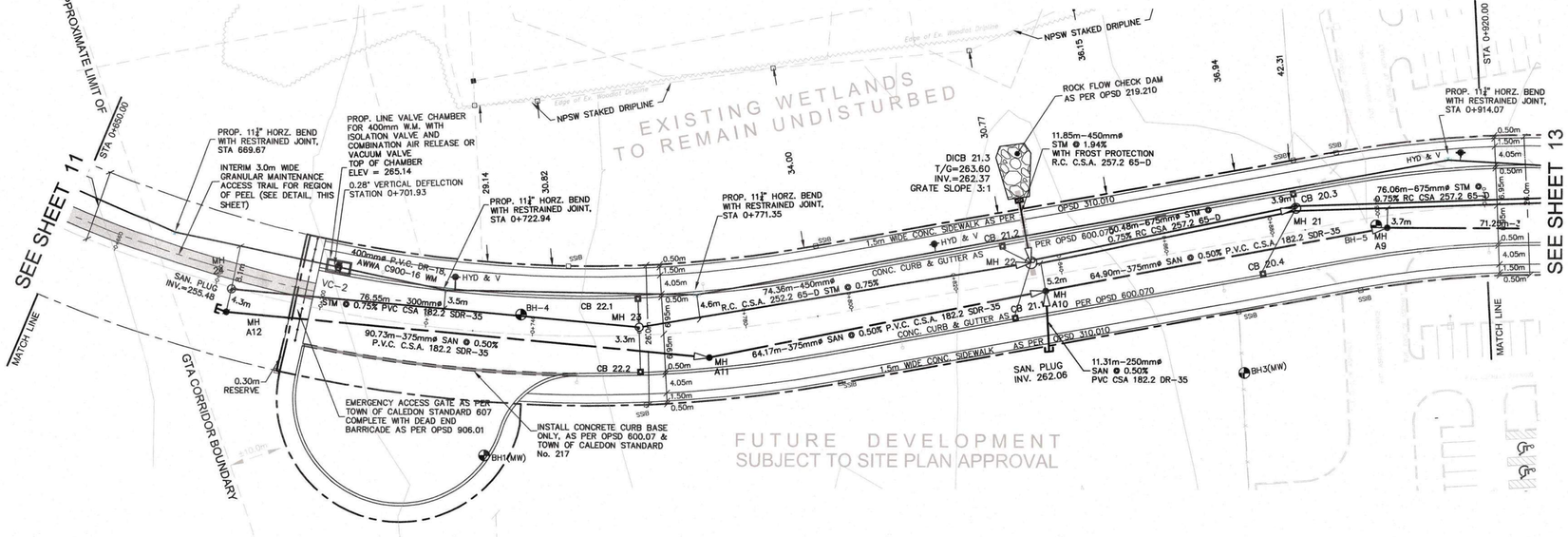
400mm WATERMAIN
(0+340.00 - 0+650.00)

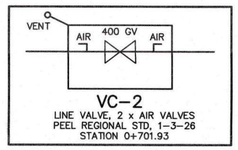
DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	HORZ: 1:500 VERT: 1:100	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
16 of 35		DWG NO.	116965-PP2

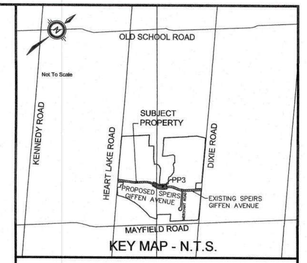
FILE:\\caneast.ibigroup.com\J\HM\116965_AbbotsideWay\5.9 Drawings\59civil\layouts\116965-PP.dwg LAYOUT:PP2
LAST SAVED BY:Michael.bucci, Wednesday, September 18, 2019 4:34:13 PM PLOTTED BY:Michael Bucci Friday, September 27, 2019 4:14:37 PM

FUTURE SPEIRS GIFFEN AVENUE (0+650.00 - 0+920.00)

ROAD DESIGN
BETWEEN STA 0+000
AND STA 0+698
SUBJECT TO FUTURE
REVIEW



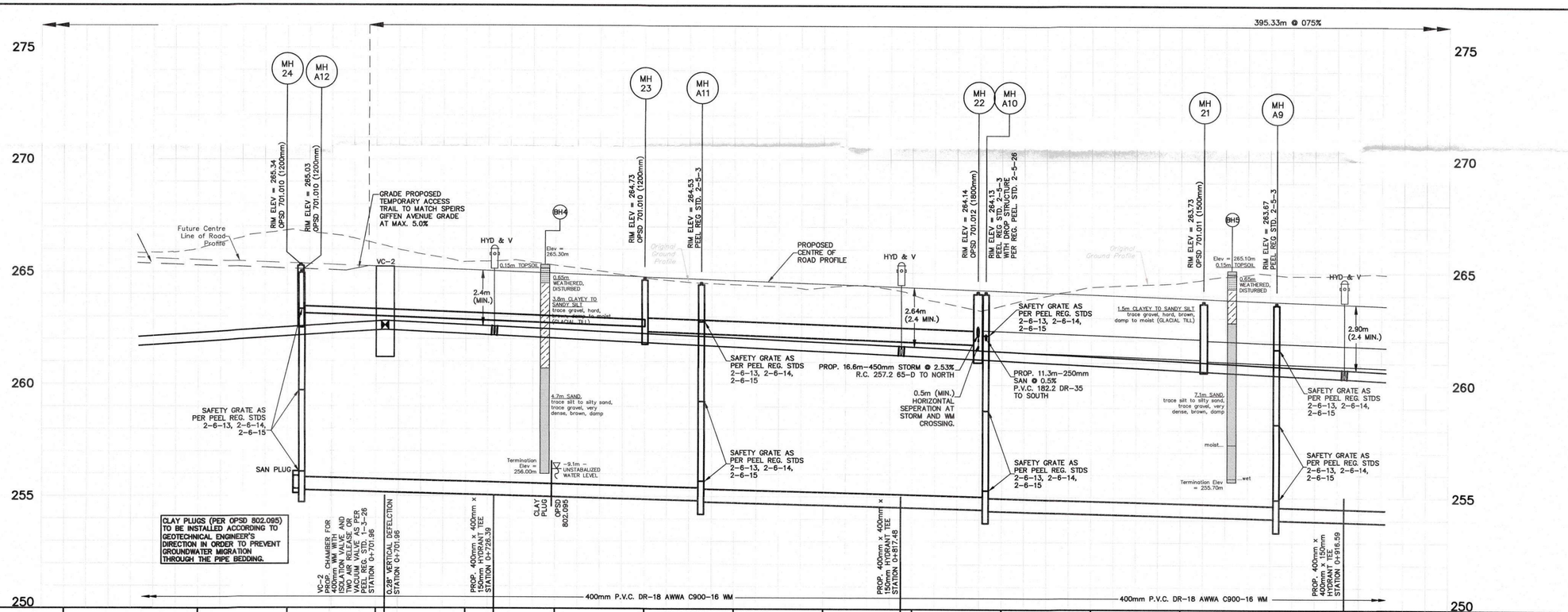




KEY MAP - N.T.S.

NOTES

1. ALL BENDS, VALVES etc, TO BE RESTRAINED AS PER REGION OF PEEL STANDARD DRAWING NO:1-5-9.
2. CLAY CUT OFF COLLARS TO BE INSTALLED AS DIRECTED BY THE GEOTECHNICAL ENGINEER (SEE ANTI-SEEP COLLAR DETAIL SHEET 20).
3. WATERMAIN DEFLECTIONS AS PER REG. OF PEEL PUBLIC WORKS WATERMAIN DESIGN CRITERIA SECTION 2.4, PAGE 5.
4. ALL BENDS, VALVES etc, TO BE RESTRAINED AS PER REGION OF PEEL STANDARD DRAWING NO:1-5-9.



	0+660	0+680	0+700	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	
WATERMAIN	261.86	262.12	262.38 262.41	262.24	262.18	262.04	261.85	261.66	261.47	261.31	261.28	261.09	260.88	260.68	260.47	260.30 260.27	WATERMAIN
STORM SEWER	1.99m-375mmø SANITARY @ 0.50% P.V.C. C.S.A. 182.2 DR-35 CLASS 'B' BEDDING	263.15 255.42 255.41	76.55m-300mmø STORM @ 0.75% PVC CSA 182.2 SDR-35 CLASS 'B' BEDDING			W 262.58 E 262.42	74.36m-450mmø STORM @ 0.75% CSA 257.2, 65-D CLASS 'B' BEDDING			262.14 W 261.87 E 261.64	50.48m-675mmø STORM @ 0.75% CSA 257.2, 65-D CLASS 'B' BEDDING			W 261.26 E 261.21	76.06m-67 STORM @ (CSA 257.2, CLASS 'B' B		STORM SEWER
SANITARY SEWER	E 255.36	90.73m-375mmø SANITARY @ 0.50% P.V.C. C.S.A. 182.2 SDR-35 CLASS 'B' BEDDING			W 254.91 E 254.86	64.17m-375mmø SANITARY @ 0.50% P.V.C. C.S.A. 182.2 SDR-35 CLASS 'B' BEDDING			W 254.54 E 254.49 E S 252.00	64.90m-375mmø SANITARY @ 0.50% P.V.C. C.S.A. 182.2 SDR-35 CLASS 'B' BEDDING			W 254.16 E 254.10			SANITARY SEWER
GROUND ELEV. ℄ ACCESS TRAIL = 000.00 Fut. ℄ of Road= 000.00 *Ex. Ground Elev = Ex000.00*	Ex266.01 265.56 265.28	Ex266.83 265.31 265.13	Ex266.23 265.22	Ex265.43 265.07	Ex265.28 264.92	Ex264.75 264.78	Ex264.45 264.63	Ex264.33 264.48	Ex264.02 264.33	Ex263.54 264.19	Ex264.38 264.04	Ex264.57 263.89	Ex264.95 263.74	Ex264.94 263.80			GROUND ELEV. ℄ ACCESS TRAIL = 000.00 Fut. ℄ of Road= 000.00 *Ex. Ground Elev = Ex000.00*

Town of Caledon
APPROVED
AS NOTED

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Date: Sept 19/19
Approved By:
Print Name: Rob Hughes

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

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ibigroup.com

TOWN OF CALEDON

Region of Peel
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RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

LICENSED PROFESSIONAL ENGINEER
AUG 15, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO

SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS
375mm SAN, 600mm STORM
400mm WATERMAIN
(0+650.00 - 0+920.00)

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	HORZ: 1:500 VERT: 1:100	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
17 of 35		DWG NO.	116965-PP3

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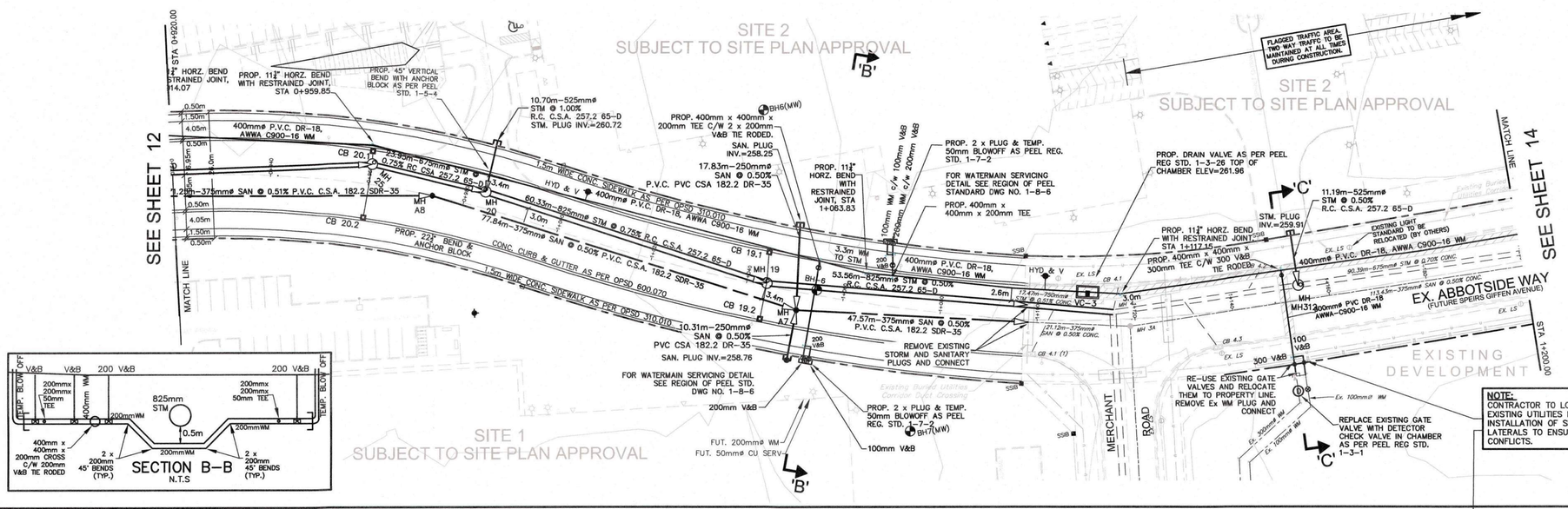

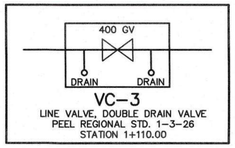

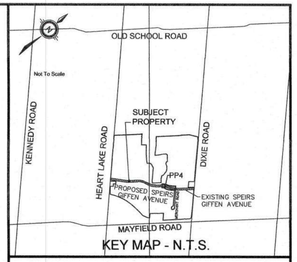

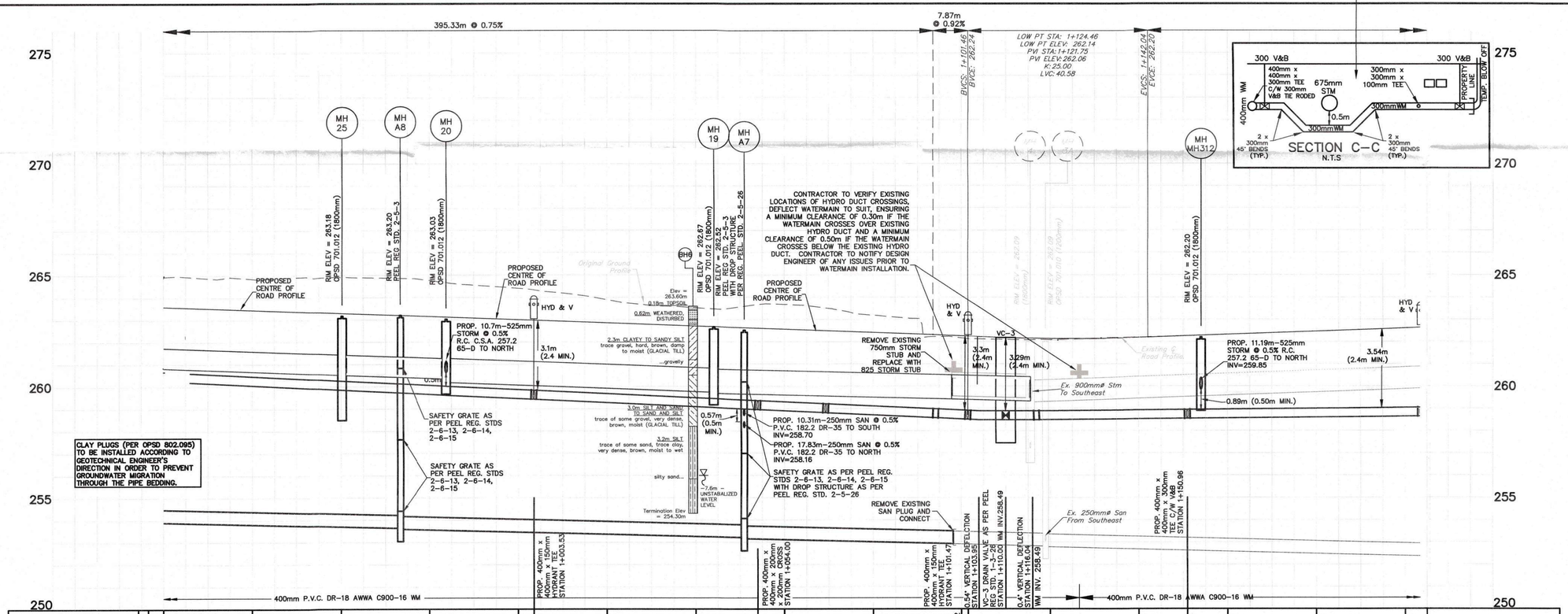

FUTURE SPEIRS GIFFEN AVENUE (0+920.00 - 1+200.00)

NOTE:
CONTRACTOR TO LOCATE EXISTING UTILITIES PRIOR TO INSTALLATION OF SERVICE LATERALS TO ENSURE NO CONFLICTS.

CONTRACTOR TO VERIFY EXISTING LOCATIONS OF HYDRO DUCT CROSSINGS. DEFLECT WATERMAIN TO TO ENSURE A MINIMUM CLEARANCE OF 0.30m IF THE WATERMAIN CROSSES OVER EXISTING HYDRO CORRIDOR AND A MINIMUM CLEARANCE OF 0.50m IF THE WATERMAIN CROSSES BELOW THE EXISTING HYDRO CORRIDOR. CONTRACTOR TO NOTIFY DESIGN ENGINEER OF ANY ISSUES PRIOR TO WATERMAIN INSTALLATION.

VC-3
LINE VALVE, DOUBLE DRAIN VALVE
PEEL REGIONAL STD. 1-3-26
STATION 1+110.00

KEY MAP - N.T.S.

NOTES

1. EXISTING SERVICES ALONG MERCHANT ROAD AND ABBOTSIDE WAY WERE DERIVED FROM IBI GROUP'S PLAN & PROFILE AS-CONSTRUCTED ENGINEERING DRAWINGS INDEXED AS 30969-PP1 TO 30969-PP5 (INCLUSIVE). ALL LOCATIONS ARE APPROXIMATE AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. ANY DISCREPANCIES MUST BE BROUGHT TO THE DESIGN ENGINEERS ATTENTION IMMEDIATELY.
2. ALL BENDS, VALVES etc, TO BE RESTRAINED AS PER REGION OF PEEL STANDARD DRAWING NO:1-5-9.
3. CLAY CUT OFF COLLARS TO BE INSTALLED AS DIRECTED BY THE GEOTECHNICAL ENGINEER (SEE ANTI-SEEP COLLAR DETAIL SHEET 20).
4. WATERMAIN DEFLECTIONS AS PER REG. OF PEEL PUBLIC WORKS WATERMAIN DESIGN CRITERIA SECTION 2.4, PAGE 5.

Town of Caledon
APPROVED
AS NOTED

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Date: Sept 19/19
Approved By: Rob Hughes
Print Name: Rob Hughes

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

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TOWN OF CALEDON

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RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

AUG 15, 2019
J. R. R. PERKS

SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS
375mm SAN, 825mm STORM
400mm WATERMAIN
(0+920.00 - 1+200.00)

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	HORZ: 1:500 VERT: 1:100	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
18 of 35		DWG NO.	116965-PP4

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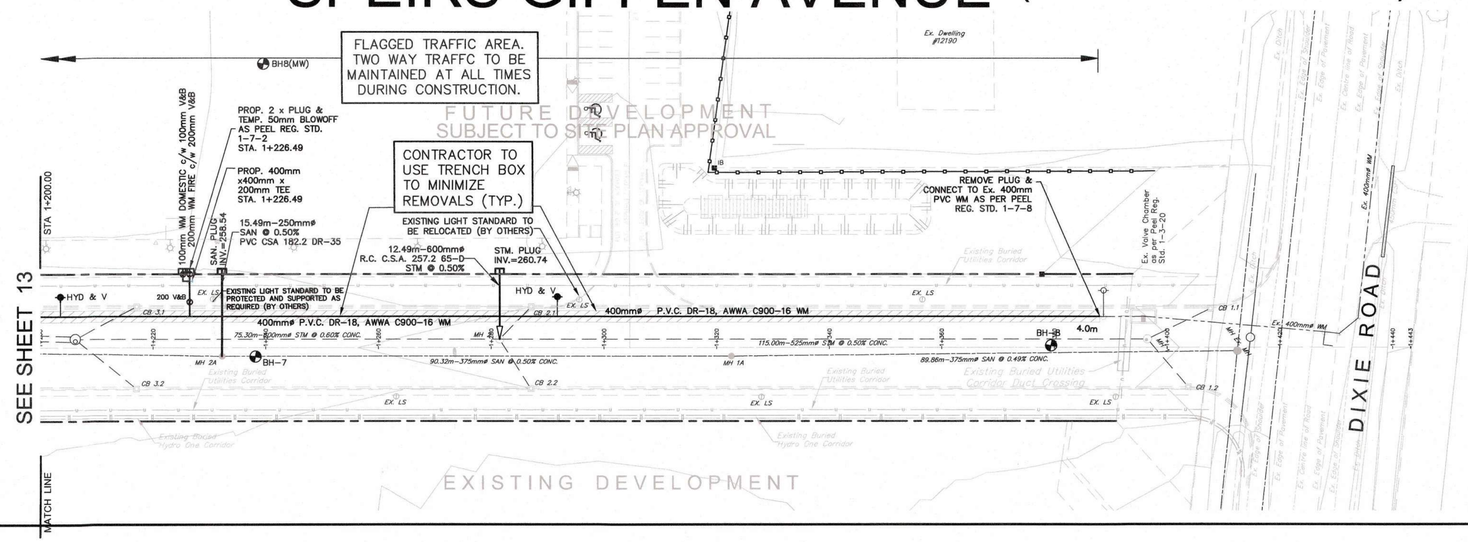

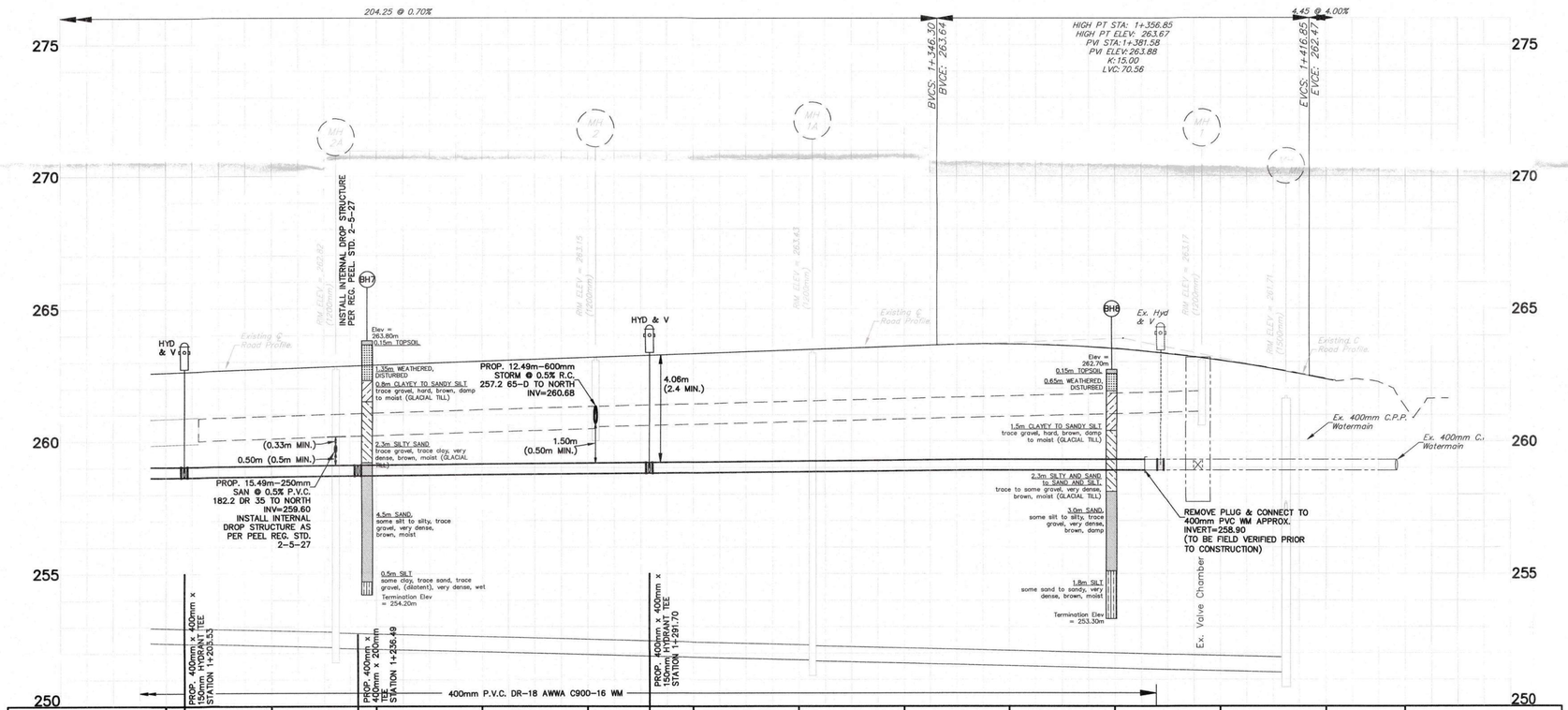

SPEIRS GIFFEN AVENUE (1+200.00 - 1+420.00)

WATERMAIN	258.64 258.64 258.67 258.70 258.71 258.74 258.78 258.80 258.81 258.85 258.88 258.90 258.90
STORM SEWER	W260.07 E260.15 75.30m–600mmø STORM @ 0.60% CONC. N260.68 W260.60 E260.67 115.00m–525mmø STORM @ 0.50% CONC. W261.25
SANITARY SEWER	N258.46 W252.32 E252.29 90.32m–375mmø SANITARY @ 0.50% CONC. W251.84 E251.81 89.86m–375mmø SANITARY @ 0.49% CONC. W251.37
GROUND ELEV. ℄ ACCESS TRAIL = 000.00 Fut. ℄ of Road= 000.00 Ex. Ground Elev = Ex000.00	Ex262.60 262.61 Ex262.74 262.75 Ex262.89 262.89 Ex263.03 263.03 Ex263.17 263.17 Ex263.31 263.31 Ex263.45 263.45 Ex263.59 263.59 Ex263.67 263.67 Ex263.50 263.49 Ex263.06 263.05 Ex262.36 262.35
	1+200 1+220 1+240 1+260 1+280 1+300 1+320 1+340 1+360 1+380 1+400 1+420

KEY MAP - N.T.S.

NOTES

1. SERVICES ALONG DIXIE ROAD WERE DERIVED FROM PLAN & PROFILE ENGINEERING DRAWINGS (NOT MARKED AS AS-CONSTRUCTED) RECIEVED BY THE REGION OF PEEL, INDEXED AS 58322-D_WMN_SMN_INSP, 62161-D_IFC, AND 20551-D. ALL LOCATIONS ARE APPROXIMATE AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. ANY DISCREPANCIES MUST BE BROUGHT TO THE DESIGN ENGINEERS ATTENTION IMMEDIATELY.
2. EXISTING SERVICES ALONG MERCHANT ROAD AND ABBOTSIDE WAY WERE DERIVED FROM IBI GROUP'S PLAN & PROFILE AS-CONSTRUCTED ENGINEERING DRAWINGS INDEXED AS 30969-PP1 TO 30969-PP5 (INCLUSIVE). ALL LOCATIONS ARE APPROXIMATE AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. ANY DISCREPANCIES MUST BE BROUGHT TO THE DESIGN ENGINEERS ATTENTION IMMEDIATELY.
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Town of Caledon
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AS NOTED

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Date: Sept 19/19
Approved By: Rob Hughes
Print Name: Rob Hughes

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

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TOWN OF CALEDON

Region of Peel
working with you

RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

AUG 15, 2019
J. R. R. PERKS

SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

400mm WATERMAIN
(1+200.00 - 1+420.00)

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	HORZ: 1:500 VERT: 1:100	DRAWN BY: CHECKED BY:	M.E.S. J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
19 of 35		DWG NO.	116965-PP5

FILE:J:\116965_AbbotsideWay\5.9 Drawings\59civil\layouts\116965-PP.dwg LAYOUT:PP5
LAST SAVED BY:Chloe.cao, Wednesday, August 14, 2019 4:12:29 PM PLOTTED BY:Chloe Cao Thursday, August 15, 2019 11:04:47 AM

FUTURE DEVELOPMENT
SUBJECT TO SITE PLAN APPROVAL

PHASE 2 - SURPLUS
FILL DISPOSAL AREA

FUTURE DEVELOPMENT
SUBJECT TO SITE PLAN APPROVAL

FUTURE
DEVELOPMENT
SUBJECT TO SITE
PLAN APPROVAL

FUT.
SAN
PLUG

APPROXIMATE LIMIT OF NORTHWEST GTA

FUTURE
STORM WATER
POND E5

FUTURE DEVELOPMENT

FUTURE DEVELOPMENT
PROLOGIS SITE

NPSW WOODLOT
TO REMAIN UNDISTURBED

PHASE 2 -
PROPOSED
EASEMENT AND
400mm WATERMAIN

PHASE 2 - PROPOSED SPEIRS
GIFFEN AVENUE (ROAD
EXTENSION: 400mm
WATERMAIN, 375mm SANITARY
AND STORM)

ROAD

FUTURE SPEIRS GIFFEN
AVENUE (FUTURE STORM AND
SANITARY)

EXISTING HEARTLAKE

FUTURE DEVELOPMENT
SUBJECT TO SITE PLAN APPROVAL

HEARTLAKE GARDENS WOODLOT
ETOBICOKE CREEK TRIBUTARY
TO REMAIN UNDISTURBED

CORRIDOR

BOUNDARY

FUTURE
DEVELOPMENT
SUBJECT TO SITE
PLAN APPROVAL

PHASE 2
STOCK
PILE

FUTURE PHASE

FUTURE
DEVELOPMENT
SUBJECT TO SITE
PLAN APPROVAL

PHASE 2 - SITE 2

FUTURE DEVELOPMENT
SUBJECT TO SITE PLAN APPROVAL

EXISTING SPEIRS GIFFEN AVENUE

PHASE 2 - EXISTING SPEIRS
GIFFEN AVENUE (PROPOSED
400mm WATERMAIN
INSTALLATION)

PHASE 2 - SITE 1

FUTURE
DEVELOPMENT
SUBJECT TO SITE
PLAN APPROVAL

EXISTING MERCHANT ROAD

EXISTING DIXIE ROAD

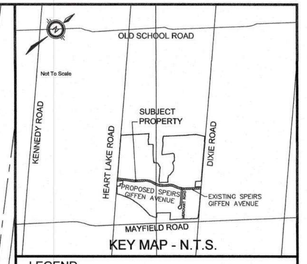
EXISTING DEVELOPMENT
ACKLANDS GRAINGER BUILDING
PHASE 1 - COMPLETE

PHASE 2 - SWM POND
E7 MODIFICATIONS

EXISTING
SWM POND E7

SPSW WOODLOT
TO REMAIN UNDISTURBED

CONSTRUCTION NORTH



KEY MAP - N.T.S.

LEGEND

- MH1A – PROPOSED SANITARY MANHOLE
- – PROPOSED SANITARY SEWER
- S–MH – EXISTING SANITARY MANHOLE
- – EXISTING SANITARY FLOW DIRECTION

- PHASE 1 – EXISTING DEVELOPMENT ACKLANDS GRAINGER BUILDING & SWM POND E7 – COMPLETED
- PHASE 2 – PROPOSED WATERMAIN INSTALLATION ALONG EXISTING ABBOTSIDE WAY (TO BE RENAMED SPEIRS GIFFEN AVENUE)
- PHASE 2 – PROPOSED ROAD EXTENSION TO BE NAMED SPEIRS GIFFEN AVENUE, PROPOSED SANITARY, STORM AND WATERMAIN INSTALLATION, ALONG WITH LIGHTING AND UTILITIES
- PHASE 2 – PROPOSED EASEMENT AND WATERMAIN INSTALLATION
- PHASE 2 – FUTURE SITE PLAN DEVELOPMENT (SUBJECT TO SITE PLAN APPROVAL) (WAREHOUSING AND OFFICE SPACE)
- PHASE 2 – FUTURE SITE PLAN DEVELOPMENT (SUBJECT TO SITE PLAN APPROVAL) (WAREHOUSING AND OFFICE SPACE)
- FUTURE ROAD EXTENSION TO BE NAMED SPEIRS GIFFEN AVENUE, PROPOSED SANITARY, AND STORM INSTALLATION, ALONG WITH LIGHTING AND UTILITIES

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

IBI GROUP
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TOWN OF CALEDON

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RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

LICENSED PROFESSIONAL ENGINEER
JULY 24 2019
J. R. R. PERKS
PROVINCE OF ONTARIO

SEAL

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Sept 19/19
Approved By:
Print Name: Rob Hughes

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

LOCATION AND PHASING PLAN

DATE:	DESIGNED BY:
SCALE: 1:2000	DRAWN BY:
	CHECKED BY:
FILE NO. 116965	REG OF PEEL PROJECT NO. C-06-302
20 of 35	DWG NO. 116965-PH1

FILE:J:\116965_AbbotsideWay\5.9 Drawings\05civil\layouts\116965-Phase Map.dwg LAYOUT:PHASING
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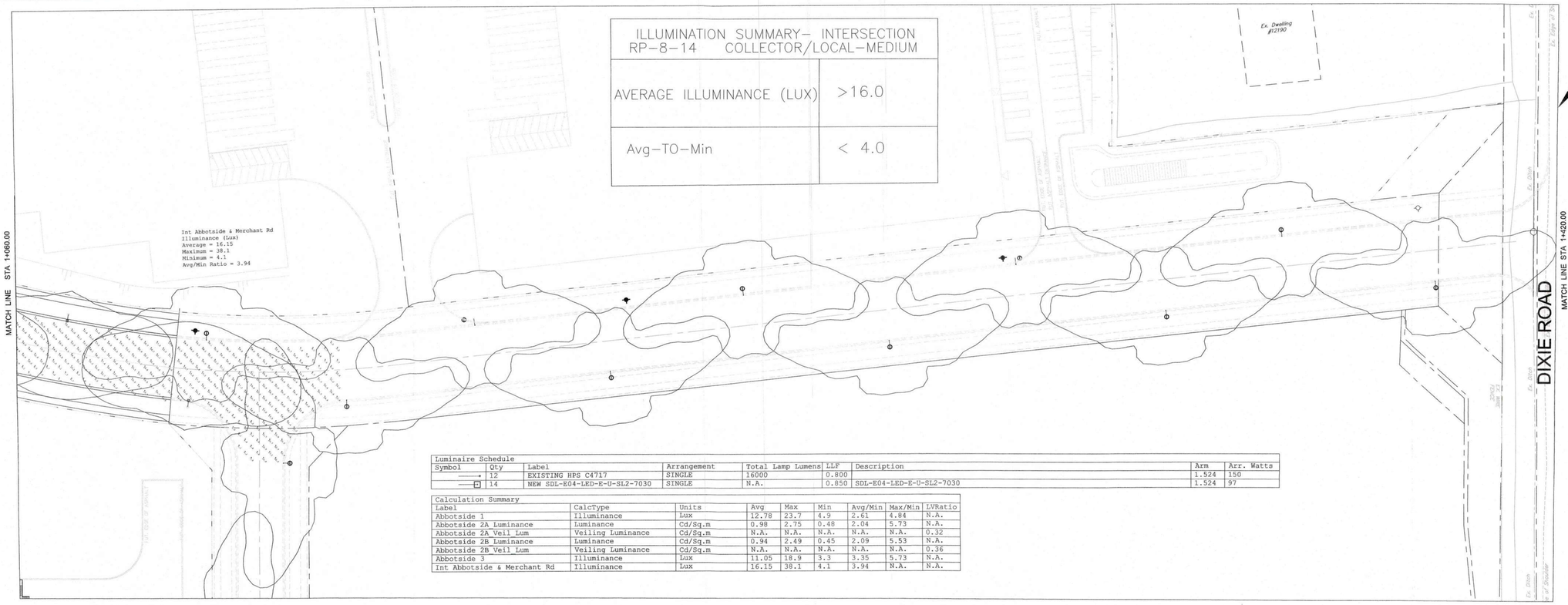

ILLUMINATION SUMMARY- INTERSECTION RP-8-14 COLLECTOR/LOCAL-MEDIUM	
AVERAGE ILLUMINANCE (LUX)	>16.0
Avg-TO-Min	< 4.0

Int Abbotside & Merchant Rd
Illuminance (Lux)
Average = 16.15
Maximum = 38.1
Minimum = 4.1
Avg/Min Ratio = 3.94

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description	Arm	Arr. Watts
——▪	12	EXISTING HPS C4717	SINGLE	16000	0.800		1.524	150
——⊡	14	NEW SDL-E04-LED-E-U-SL2-7030	SINGLE	N.A.	0.850	SDL-E04-LED-E-U-SL2-7030	1.524	97

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	LVRatio
Abbotside 1	Illuminance	Lux	12.78	23.7	4.9	2.61	4.84	N.A.
Abbotside 2A_Luminance	Luminance	Cd/Sq.m	0.98	2.75	0.48	2.04	5.73	N.A.
Abbotside 2A_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.32
Abbotside 2B_Luminance	Luminance	Cd/Sq.m	0.94	2.49	0.45	2.09	5.53	N.A.
Abbotside 2B_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.36
Abbotside 3	Illuminance	Lux	11.05	18.9	3.3	3.35	5.73	N.A.
Int Abbotside & Merchant Rd	Illuminance	Lux	16.15	38.1	4.1	3.94	N.A.	N.A.

Abbotside 2A_Luminance
Luminance (Cd/SqM)
IES RP-8-14
Average = 0.98
Maximum = 2.75
Minimum = 0.48
Avg/Min Ratio = 2.04
Max/Min Ratio = 5.73
Max/Avg Ratio = 2.81

Abbotside 2B_Luminance
Luminance (Cd/SqM)
IES RP-8-14
Average = 0.94
Maximum = 2.49
Minimum = 0.45
Avg/Min Ratio = 2.09
Max/Min Ratio = 5.53
Max/Avg Ratio = 2.65

Abbotside 3
Illuminance (Lux)
Average = 11.05
Maximum = 18.9
Minimum = 3.3
Avg/Min Ratio = 3.35
Max/Min Ratio = 5.73
Max/Avg Ratio = 1.71

Abbotside 1
Illuminance (Lux)
Average = 12.78
Maximum = 23.7
Minimum = 4.9
Avg/Min Ratio = 2.61
Max/Min Ratio = 4.84
Max/Avg Ratio = 1.85

ILLUMINATION SUMMARY - ROADWAY RP-8-14 COLLECTOR/MEDIUM	
Average Luminance (cd/m2)	>0.6
Avg-To-Min Uniformity Ratio	<3.5
Max-To-Min Uniformity Ratio	<6.0

KEY MAP - N.T.S.

LEGEND

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
3	04/10/19	RW	ISSUED FOR APPROVAL
2	11/06/19	CC	ISSUED FOR APPROVAL
1	13/05/19	RW	ISSUED FOR 90% REVIEW

IBI GROUP
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ibigroup.com

TOWN OF CALEDON

Region of Peel
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O. ANIELLO
100010038
OCT.04,2019

SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

PHOTOMETRIC LAYOUT
(1+420.00 - 0+700.00)

DATE:	DESIGNED BY:
SCALE: 1:500	DRAWN BY:
	CHECKED BY:
FILE NO. 116965	REG OF PEEL PROJECT NO. C-06-302
21 of 35	DWG NO. 116965-EL1

Town of Caledon
APPROVED
AS NOTED
This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as constructed" works by a registered Professional Engineer/Landscape Architect (as appropriate) of the Province of Ontario.
Date: Oct 16/19
Approved By:
Director of Public Works & Engineering

FILE:\\caneast.ibigroup.com\J\HM\116965_AbbotsideWay\5.9 Drawings\59electrical\layouts\ELECTRICAL LAYOUT.dwg LAYOUT:E1
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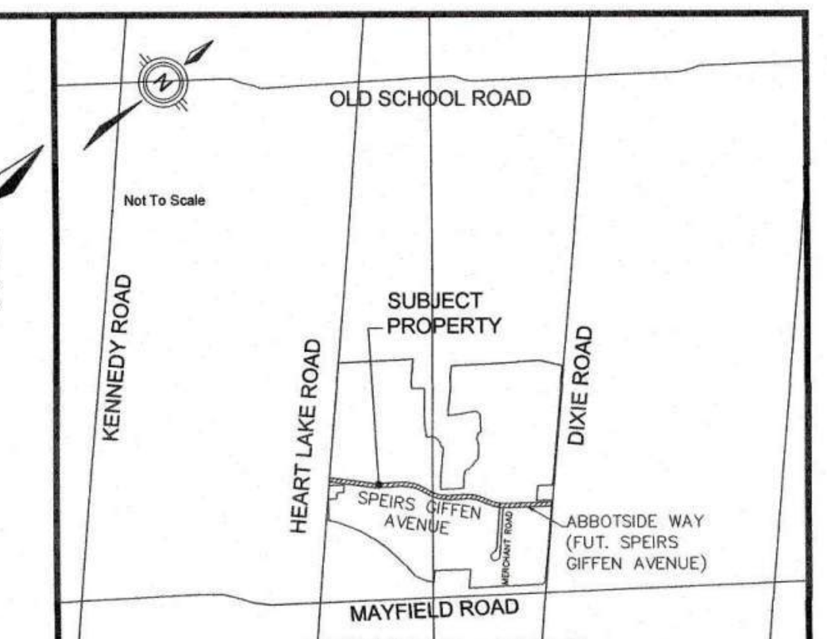
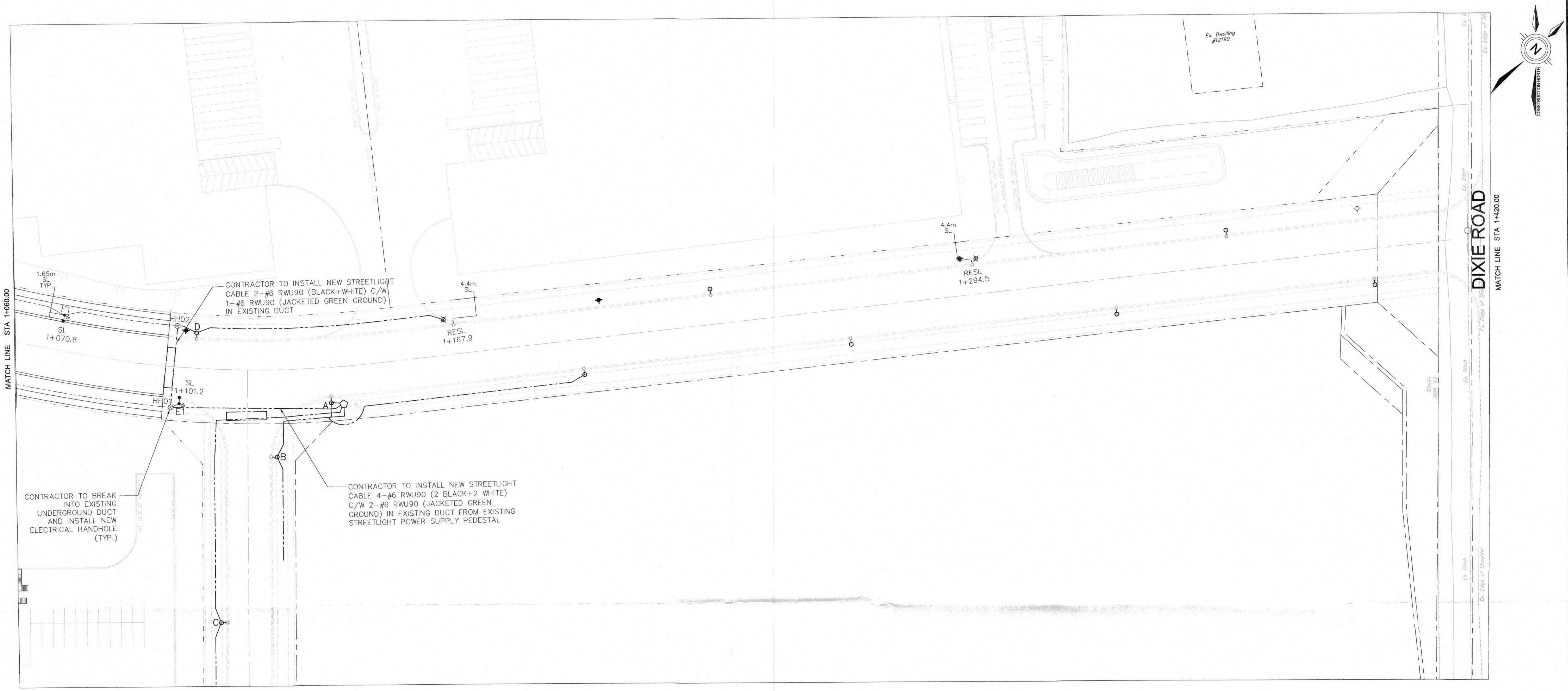
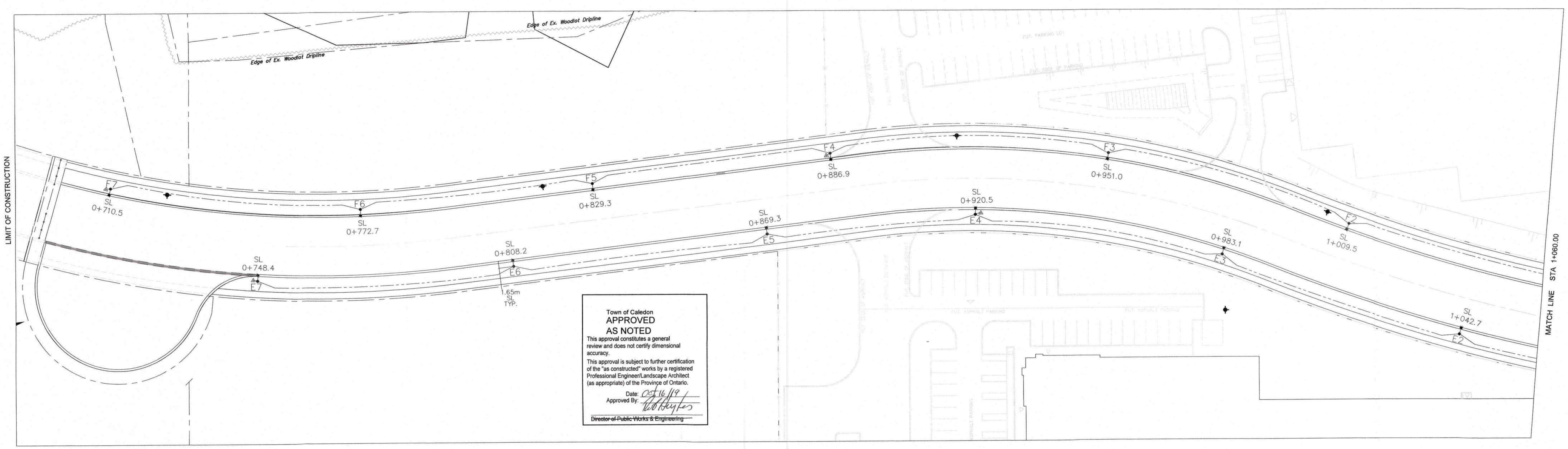


KEY MAP - N.T.S.





LEGEND

- SL – STREETLIGHT POLE: 9.9m OCTAGONAL CONCRETE PRESTRESSED AND REINFORCED, BY STRESS-CRETE CAT.# E325-BPO-G-CSA STYLE 170 C/W TOP CAP AND FINISHED IN POLISHED MIDNIGHT LACE CAT.# S-10

  LUMINAIRE: 97W 120V LED "SPRINGDALE" STYLE BY EATON-LIGHTING CAT.# SDL-E04-LED-E-U-SL2-4N7-7030 C/W PHOTO CONTROL RECEPTACLE, MOUNTED ON A 1.524m . SCROLL ARM NOTE: LUMINAIRE AND ARM TO BE FACTORY FINISHED POWDER COAT BLACK.

  IES FILE: SDL-E04-LED-E-U-SL2-7030
  LLF: 0.85
  MOUNTING HEIGHT: 8.4m
  ARM LENGTH: 1.524m

- STREETLIGHT CABLE: 2-#6 RWU90 (BLACK + WHITE) C/W 1-#6 RWU90 (JACKETED GREEN GROUND) INSTALLED IN 50mm PVC TYPE 2 DIRECT BURIED DUCT IN COMPLETE ACCORDANCE WITH E.S.A. STANDARDS AND SPECIFICATIONS
- GROUND ROD TO BE INSTALLED PER E.S.A AND TOWN OF CALEDON STANDARDS AND SPECIFICATIONS.
- HHxx – ELECTRICAL HANDHOLE AS PER OPSD 2112.010
- RESL – RELOCATED EXISTING STREETLIGHT
- EXISTING STREETLIGHT TO BE RELOCATED
- EXISTING HYDRO ONE TRANSFORMER
- EXISTING STREETLIGHT POWER SUPPLY PEDESTAL
- EXISTING STREETLIGHT
- EXISTING ROAD CROSSING
- EXISTING STREETLIGHT CABLE

BENCHMARK

J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
3	04/10/19	RW	ISSUED FOR APPROVAL
2	11/06/19	CC	ISSUED FOR APPROVAL
1	13/05/19	RW	ISSUED FOR 90% REVIEW

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TOWN OF CALEDON

Region of Peel
working with you

LICENSED PROFESSIONAL ENGINEER
O. ANIELLO
100010038
OCT.04,2019
PROVINCE OF ONTARIO

SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

STREET LIGHTING LAYOUT (1+420.00 - 0+700.00)

DATE:		DESIGNED BY:	
SCALE:	1:500	DRAWN BY:	
		CHECKED BY:	
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
22 of 35		DWG NO.	116965-EL2

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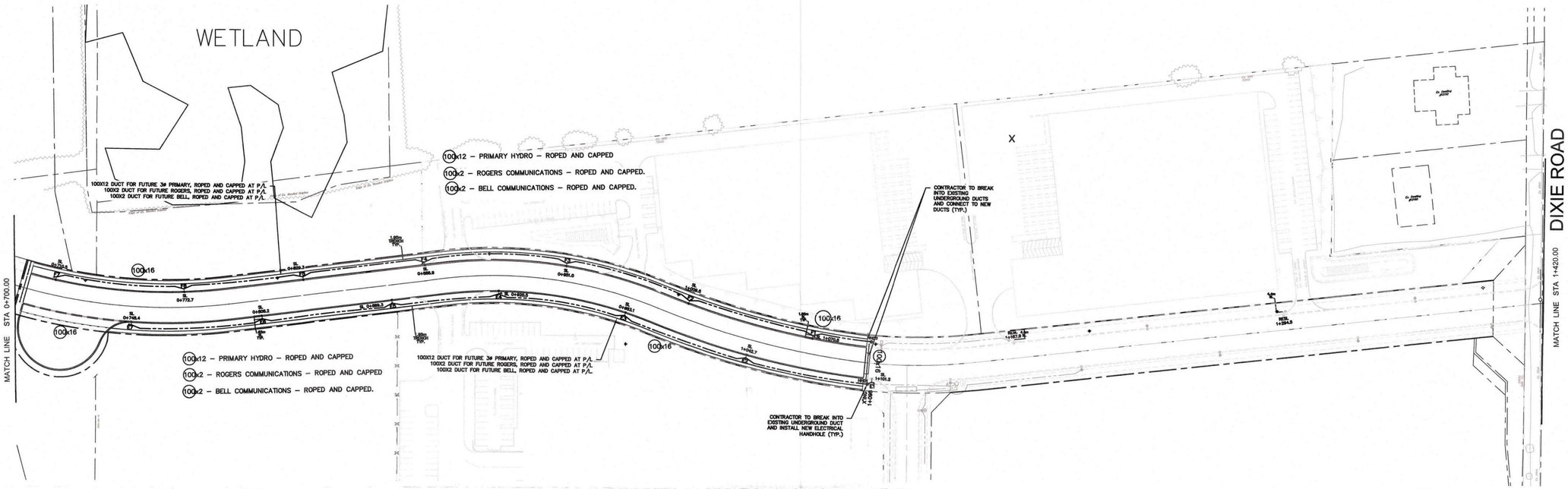

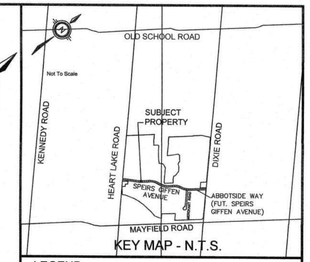

KEY MAP - N.T.S.

LEGEND

- 1 O/H PRIMARY DISTRIBUTION
- 1 U/G PRIMARY DISTRIBUTION
- SECONDARY DISTRIBUTION
- PROPOSED ROADWAY CROSSING, TYPE AND CONDUIT QUANTITY AS INDICATED
- NUMBER OF 100mm TYPE 2 PVC BURIED HYDRO DUCTS
- EXISTING HYDRO ONE TRANSFORMER
- INDICATES QUANTITY OF 100mm PVC TYPE DB2/ES2 CONCRETE ENCASED PRIMARY DUCTS
- GROUND ROD TO BE INSTALLED PER E.S.A AND TOWN OF CALEDON STANDARDS AND SPECIFICATIONS.
- ELECTRICAL HANDHOLE AS PER OPSD 2112.010
- STREETLIGHT POLE: 9.9m OCTAGONAL CONCRETE PRESTRESSED AND REINFORCED, BY STREESS-CRETE CAT.# E325-BPO-G-CSA STYLE 170 C/W TOP CAP AND FINISHED IN POLISHED MIDNIGHT LACE CAT.# S-10
- EXISTING STREETLIGHT POWER SUPPLY PEDESTAL
- EXISTING STREETLIGHT
- EXISTING ROAD CROSSING
- EXISTING STREETLIGHT CABLE

BENCHMARK

J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
3	04/10/19	RW	ISSUED FOR APPROVAL
2	11/06/19	CC	ISSUED FOR APPROVAL
1	13/05/19	RW	ISSUED FOR 90% REVIEW

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TOWN OF CALEDON

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LEGEND

- MH1 – PROPOSED STORM MANHOLE
- DICB – PROPOSED DITCH INLET CATCH BASIN
- CB – PROPOSED CATCH BASIN
- CBMH – PROPOSED CB MANHOLE
- – PROPOSED STORM SEWER
- Ex. CB – EXISTING CATCH BASIN
- Ex. DCB – EXISTING DOUBLE CATCH BASIN
- Ex. 1 – EXISTING STORM MANHOLE
- – EX STORM SEWER WITH FLOW DIRECTION
- MH 1A – PROPOSED SANITARY MANHOLE
- – PROPOSED SANITARY SEWER
- Ex. MH A1 – EXISTING SANITARY MANHOLE
- – EX SANITARY SEWER WITH FLOW DIRECTION
- HYD – PROPOSED FIRE HYDRANT
- WV – PROPOSED WATER VALVE
- – PROPOSED WATERMAIN TEE
- – PROPOSED 45° BEND
- – PROPOSED 11 ¼° BEND
- – PROPOSED WATERMAIN
- – PROPOSED WATERMAIN VERTICAL BEND
- HYD – EXISTING HYDRANT
- WV – EXISTING WATER VALVE
- VC – EXISTING VALVE CHAMBER
- CS – EXISTING CURB STOP
- – EXISTING WATERMAIN

Town of Caledon
APPROVED
AS NOTED
This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as constructed" works by a registered Professional Engineer/Landscape Architect (as appropriate) of the Province of Ontario.
Date: OCT/16/19
Approved By:
Director of Public Works & Engineering

LICENSED PROFESSIONAL ENGINEER
ROBERTO WONG
100010038
OCT.04.2019
PROVINCE OF ONTARIO

SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

COMPOSITE UTILITY PLAN

DATE:	DESIGNED BY:
SCALE: 1:1000	DRAWN BY:
	CHECKED BY:
FILE NO. 116965	REG OF PEEL PROJECT NO. C-06-302
23 of 35	DWG NO. 116965-CU1

FILE:\\caneast.ibigroup.com\JH\M\116965_AbbotsideWay\5.0 Drawings\50electrical\layouts\dll\electrical\116965-CUP.dwg LAYOUT:CU1
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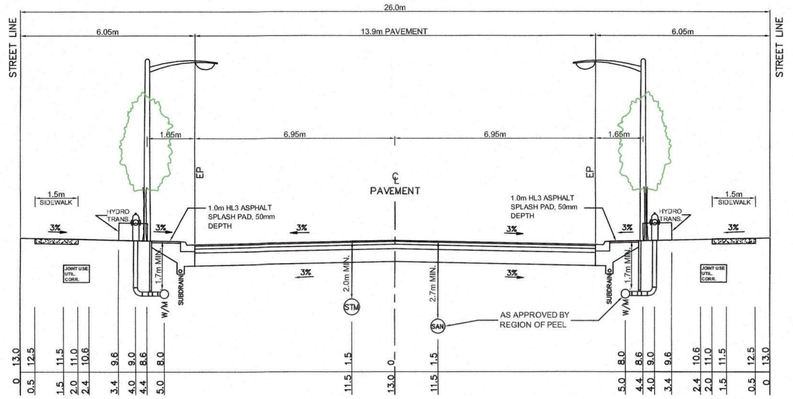
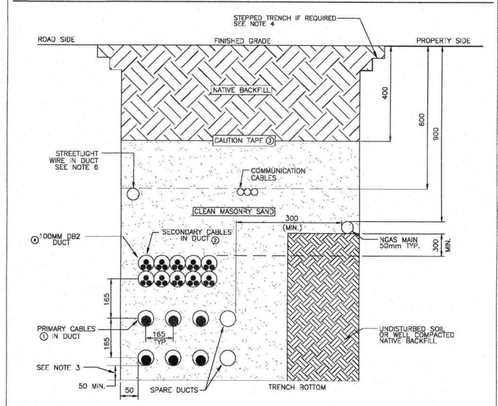


NOTES
1. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9 m.
2. WATERMAIN TO HAVE A MINIMUM COVER OF 1.7 m.
3. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION
   40 mm DFC
   110 mm HDBC
   150 mm GRANULAR "A"
   450 mm GRANULAR "B"
4. THE BOULEVARDS REQUIRE A MINIMUM OF 300mm OF TOPSOIL AND NURSERY SOD.
5. TREES TO BE PLACEDIN LOCATIONS PER APPROVED LANDSCAPE PLANS.
6. STREETLIGHT FIXTURE PER APPROVED TOWN OF CALEDON STANDARD.
7. FULL LENGTH MINIMUM 100 MM DIA.SUB-DRAINS C/W FILTERCLOTH SHALL BE INSTALLED, AS PER APPROVED TOWN STANDARD NO. 219.
8. SUB-GRADE SHALL BE COMPACTED TO A MINIMUM 95% OF S.P.D. AT OPTIMUM MOISTURE CONTENT.
9. WHERE POSSIBLE MANHOLE LIDS TO BELOCATED OUT OF TIRE LANE OF TRAFFIC.
10. 1.0 m SPLASH PAD TO BE PATTERNED CONCRETE AS PER APPROVED TOWN OF CALEDON STANDARD NO. 218.
11. LONG DIMENSION OF TRANSFORMER TO BE PARALLEL TO STREETLINE.

TOWN OF CALEDON	NO.	REVISION	APR'D	DATE
	3	DIMENSION AND TEXT REVISION		JAN. 09
	2	DIMENSION AND LAYOUT REVISION		JULY 08
	1	DIMENSION EDIT, STD No. 209 NOW 211		JUNE 08
26.0m INDUSTRIAL COLLECTOR 14.5m ROADWAY (13.9m PAVEMENT)		STANDARD No. 211		

APRD: C.C. DATE: JUNE 08
DRAWN: SCALE: N.T.S.

UNDERGROUND DISTRIBUTION STANDARDS - INTERIM — SINGLE-PHASE DISTRIBUTION



NOTES:
1. ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE.
2. ALL SEPARATIONS AND DEPTHS OF BURIAL ARE MINIMUM.
3. IN THE PRESENCE OF SHARP ROCK, DEBRIS OR RUBBLE, INCREASE SAND PADDING TO 100mm.
4. CONSTRUCTION, STEPPING AND/OR SUPPORTING OF THE TRENCH WALL TO CONFORM TO THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT.
5. NON-REQUIRED CIRCUITS OR JOINT USE COMPONENTS MAY BE OMITTED PROVIDED THAT CLEARANCES AND SEPARATIONS ARE MAINTAINED, EXPRESS: PRIMARY CABLES (IF PRESENT) MUST OCCUPY LOWEST POSITION IN THE DUCT BANK. SECONDARY CABLES MAY BE INSTALLED IN THE LOWER (PRIMARY) POSITIONS IF REQUIRED. SUPPLY CABLES OF ALL VOLTAGES MUST HAVE 900mm MIN. COVER.
6. STREETLIGHT WIRE MAY BE INSTALLED ADJACENT TO A SECONDARY CABLE DUCT SO LONG AS IT IS INSTALLED IN ITS OWN DISTINCUISHABLE DUCT (EG. 50mm PVC/HDPE DUCT AS OPPOSED TO 100mm DB2).

PART #	MASTER MATERIAL #	DESCRIPTION	QTY
①	30010134 30006080	CABLE PRIMARY, 28kV, UGROUND, 3/0 AWG, AL CABLE PRIMARY, 28kV, UGROUND, 3/0 AWG, AL	A/R
②	30005908 30005915 30005959	SERVICE CABLE, UGROUND, 3/0AWG, 3 COND, AL SERVICE CABLE, UGROUND, 250MCMX, 3 COND, AL SERVICE CABLE, UGROUND, 500MCMX, 3 COND, AL	A/R
③	20002181	CAUTION TAPE	A/R
④	30007710	DUCT, PVC, 100MM, DB2	A/R

A/R – AS REQUIRED

REFERENCES:
SECTION 1 – DEFINITIONS
SECTION 3C – CONSTRUCTION DUDT
SECTION 16 – MATERIALS

Rev. No.	Issue Date	Revision	Drwn	Approved By Date
00	*	*		

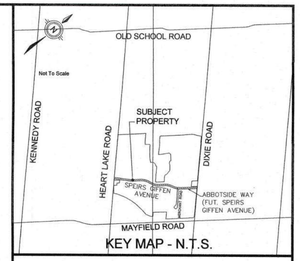
hydro one — Hydro One Networks Inc.

Drawn: PC | Approved: | Date: DEC.2012

JOINT TRENCH - POWER, COMMUNICATION & GAS, STREETLIGHT - ALL IN DUCT - TYPICAL

Dwg. No. DU-03-206.2 | Rev. 00

350-xxxx.dwg 2011/11/30



KEY MAP - N.T.S.

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
3	04/10/19	RW	ISSUED FOR APPROVAL
2	11/06/19	CC	ISSUED FOR APPROVAL
1	13/05/19	RW	ISSUED FOR 90% REVIEW

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com

TOWN OF CALEDON

Region of Peel working with you

LICENSED PROFESSIONAL ENGINEER ROBERTO WONG 100010038 OCT.04.2019 PROVINCE OF ONTARIO

SEAL

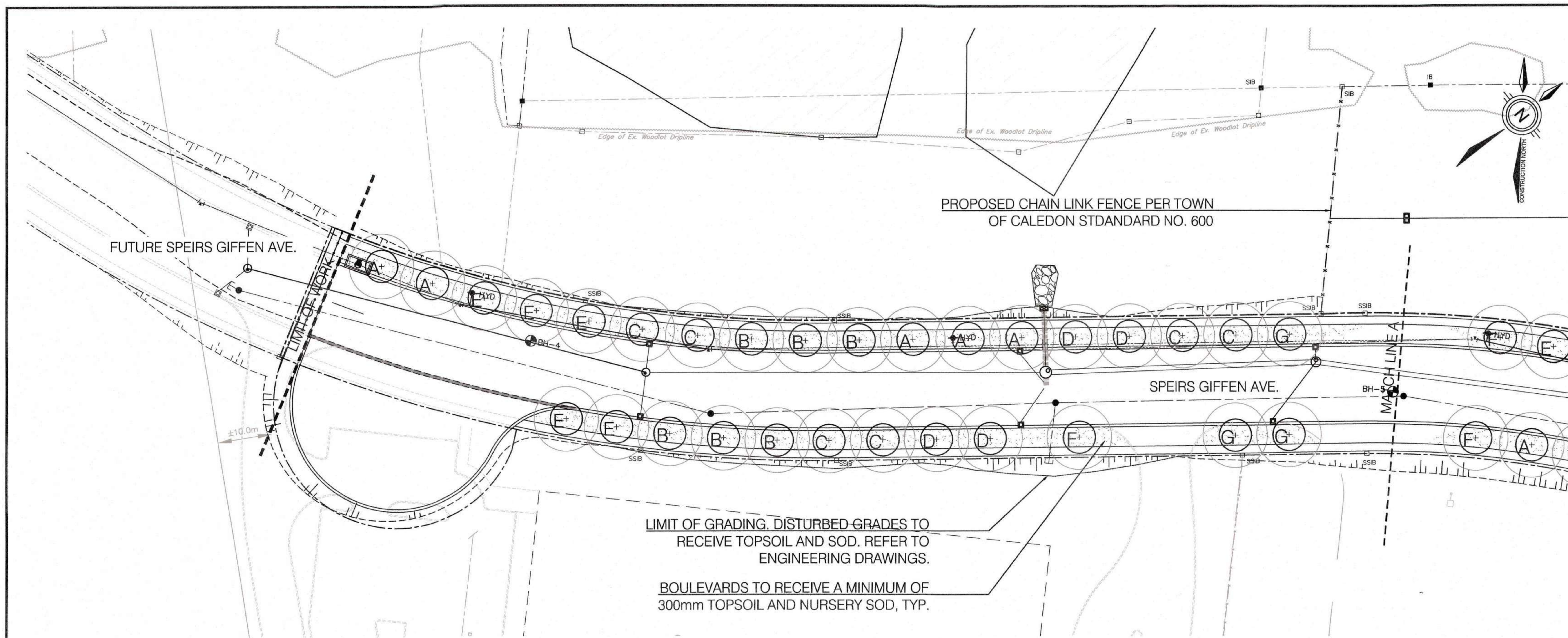
TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

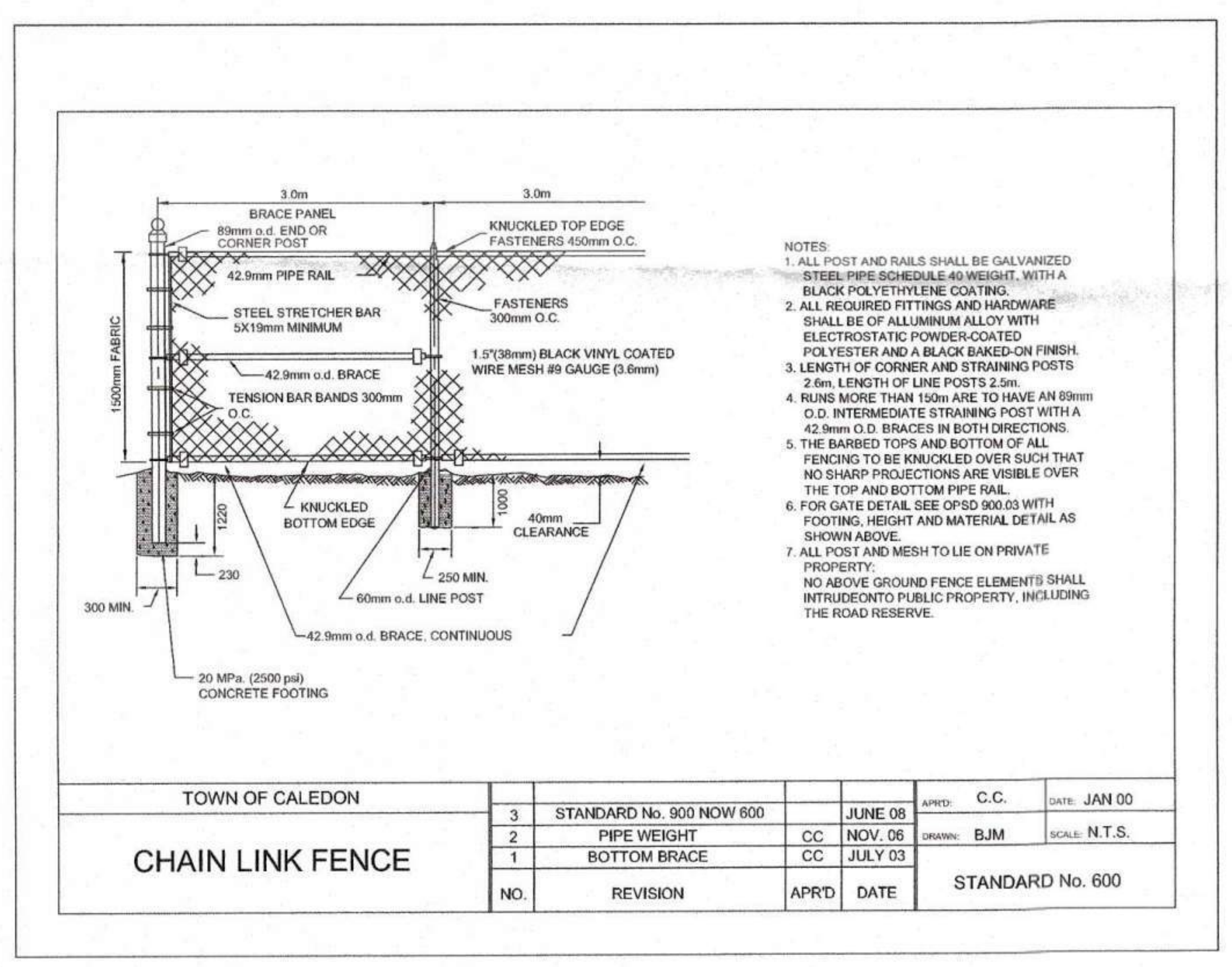
STREET LIGHTING DETAILS

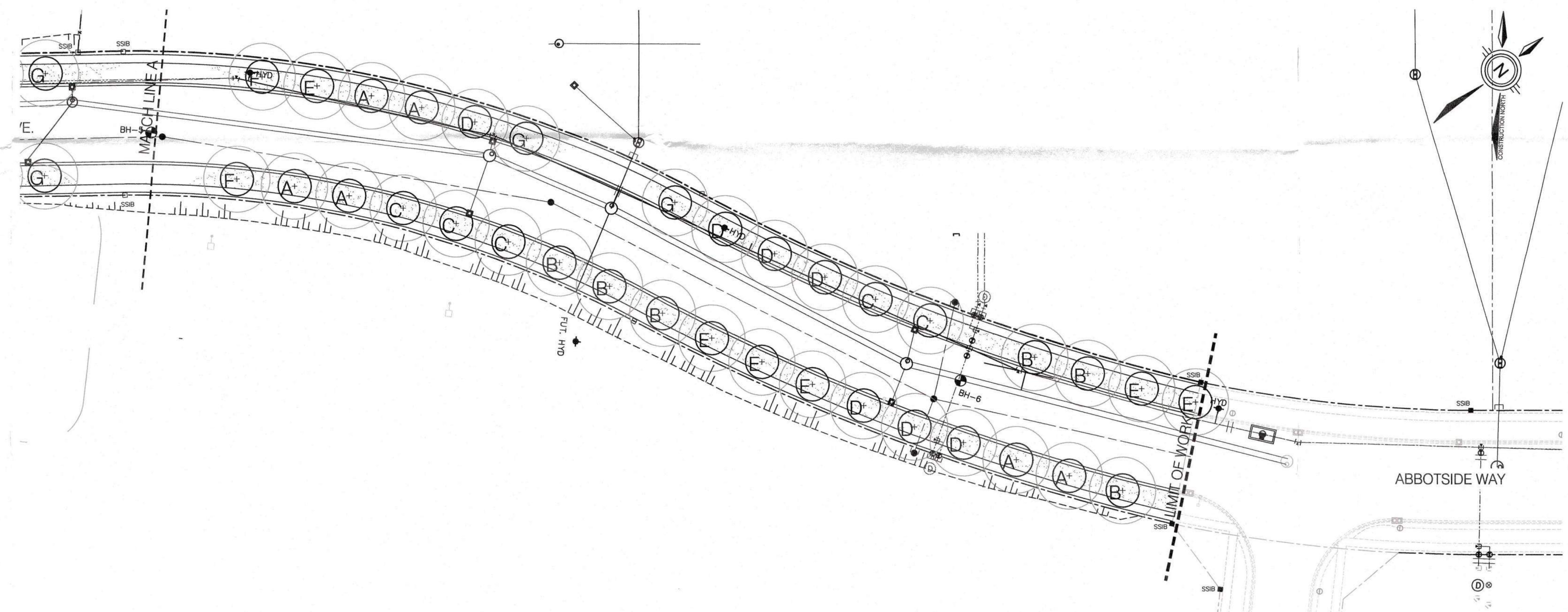
DATE:	DESIGNED BY:
SCALE: N/A	DRAWN BY:
	CHECKED BY:
FILE NO. 116965	REG OF PEEL PROJECT NO. C-06-302
24 of 35	DWG NO. 116965-EL3

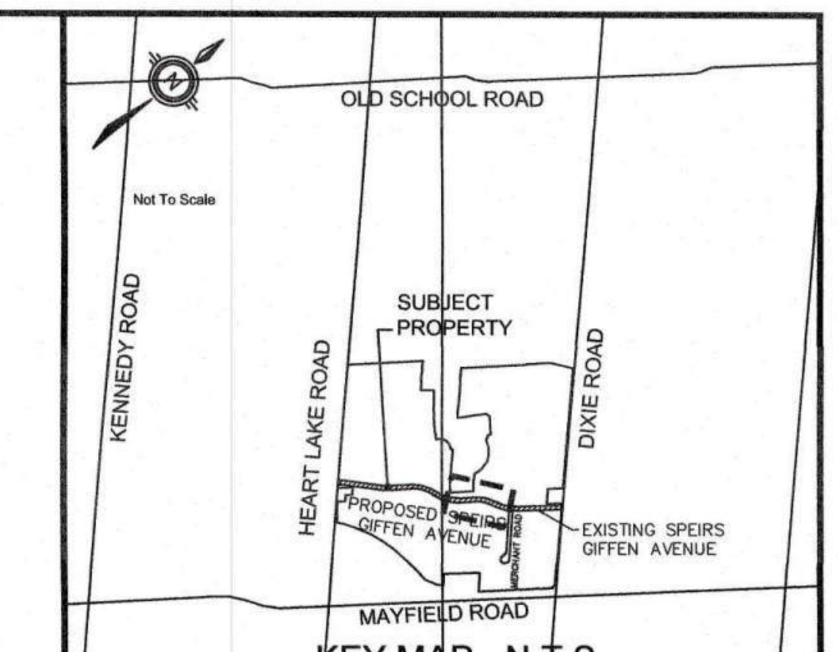
Town of Caledon
APPROVED
AS NOTED
This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as constructed" works by a registered Professional Engineer/Landscape Architect (as appropriate) of the Province of Ontario.
Date: Oct 16/19
Approved By:
Director of Public Works & Engineering

FILE:\\caneast.ibigroup.com\JH\M\116965_AbbotsideWay\5.0 Drawings\09electrical\layouts\ELECTRICAL LAYOUT.dwg LAYOUT:E3
LAST SAVED BY:Roberto.wong, Thursday, July 25, 2019 11:42:14 AM PLOTTED BY:Roberto Wong Friday, October 04, 2019 9:44:35 AM









KEY MAP - N.T.S.

LEGEND

- TOPSOIL AND SOD AS SPECIFIED MINIMUM 300mm TOPSOIL DEPTH
- PROPOSED DECIDUOUS STREET TREE
- PROPERTY LINE
- CHAIN LINK FENCE
- LIMIT OF WORK
- HYD — PROPOSED FIRE HYDRANT
- MH1 — PROPOSED STORM MANHOLE
- DICB — PROPOSED DITCH INLET CATCH BASIN
- CB — PROPOSED CATCH BASIN
- CBMH — PROPOSED CB MANHOLE
- PROPOSED STORM SEWER
- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED HYDRO TRANSFORMER

BENCHMARK

J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
2	2019-08-01	TO	REVISED PER TRCA COMMENTS
1	2019-07-25	TO	FOR CONSTRUCTION

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com

TOWN OF CALEDON

Region of Peel
working with you

RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS
TIM O'BRIEN
OALA
MEMBER

SEAL

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.

This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Sept 19/19
Approved By: [signature]
Print Name: Rob Hughes

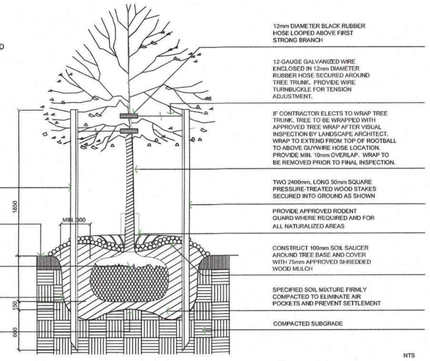
PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	CAL.	SIZE	COND	MATURE HEIGHT (m)	MATURE SPREAD (m)	O.C. SPACING (m)	QNTY.	%
	DECIDUOUS TREES									
A	Acer rubrum	Red Maple	70mm		W.B.	15.0	12.0	10.0	11	17
B	Celtis occidentalis	Hackberry	70mm		W.B.	18.0	16.0	10.0	12	19
C	Gleditsia triacanthos var. inermis 'Halka'	Halka Honeylocust	60mm		W.B.	15.0	14.0	10.0	11	17
D	Quercus macrocarpa	Bur Oak	70mm		W.B.	18.0	13.0	10.0	11	17
E	Tilia x euchlora	Crimean Linden	70mm		W.B.	17.0	10.0	10.0	11	17
F	Quercus rubra	Red Oak	70mm		W.B.	16.0	15.0	10.0	3	5
G	Ulmus x homestead	Homestead Elm	70mm		W.B.	18.0	12.0	10.0	5	8
								Total:	64	100%

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS
LANDSCAPE PLAN

DATE:	2018-02-11	DESIGNED BY:	TO
SCALE:	1:500	DRAWN BY:	TO
		CHECKED BY:	JM
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
25 of 35		DWG NO.	116965-L1

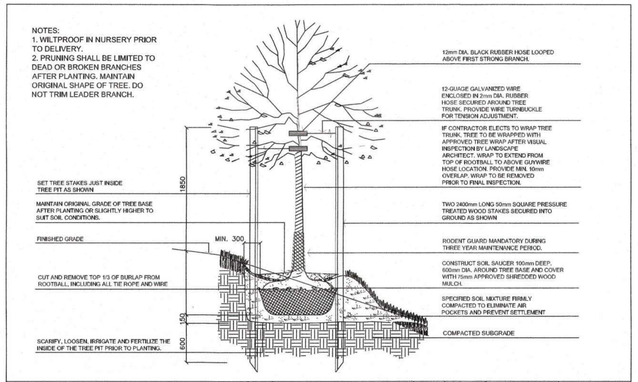
NOTES:
1. WILTPROOF IN NURSERY PRIOR TO DELIVERY.
2. PRUNING SHALL BE LIMITED TO DEAD OR BROKEN BRANCHES AFTER PLANTING. MAINTAIN ORIGINAL SHAPE OF THE TREE. DO NOT TRIM LEADER BRANCH.
3. SET TREE 75-100mm HIGHER THAN ADJACENT FINISHED GRADE TO ALLOW FOR SETTLEMENT.



NTS

TOWN OF CALEDON					APR'D: C.C.	DATE: JUNE 08
					DRAWN: abal	SCALE: NTS
DECIDUOUS TREE PLANTING (80mmØ OR LESS)	1	STANDARD No. 1100 NOW 700		JUNE 08	STANDARD No. 700	
	NO.	REVISION	APR'D	DATE		

NOTES:
1. WILTPROOF IN NURSERY PRIOR TO DELIVERY.
2. PRUNING SHALL BE LIMITED TO DEAD OR BROKEN BRANCHES AFTER PLANTING. MAINTAIN ORIGINAL SHAPE OF TREE. DO NOT TRIM LEADER BRANCH.



TOWN OF CALEDON					APR'D: C.C.	DATE: JUNE 08
					DRAWN: abal	SCALE: NTS
DECIDUOUS TREE ON SLOPE PLANTING (80mm & LESS)	1	STANDARD No. 1120 NOW 704		JUNE 08	STANDARD No. 704	
	NO.	REVISION	APR'D	DATE		

GENERAL NOTES - LANDSCAPING

NOTE 1
DEPICTED ON THIS PLAN ARE THE SPECIES AND THE APPROXIMATE LOCATION OF STREET TREE. ONCE DRIVEWAYS, UTILITIES AND LIGHT STANDARDS HAVE BEEN INSTALLED, THE EXACT LOCATION OF STREET TREES WILL BE DETERMINED ON SITE BY THE LANDSCAPE ARCHITECT AND APPROVED BY THE MUNICIPALITY PRIOR TO PLANTING.

NOTE 2
MINIMUM CLEARANCES FOR STREET TREES (WHEN TREES ARE PLANTED 1.5M FROM THE CURB):
- *2M FROM WATER HYDRANTS
- *2M FROM DRIVEWAYS
- *2M FROM NEIGHBOURHOOD MAILBOXES
- 3M FROM HYDRO TRANSFORMERS
- 5M FROM STREETLIGHTS
- 15M MINIMUM FROM STREET LINE (STREET INTERSECTION AS MEASURED FROM BACK OF CURB) AND BEHIND THE DAYLIGHT TRIANGLE AS PER THE GEOMETRIC DESIGN STANDARDS FOR ONTARIO HIGHWAYS
- 18M FROM FACE OF ALL WARNING AND REGULATORY SIGNS

WHEN THE MINIMUM DISTANCES NOTED ABOVE ARE NOT ACHIEVABLE, TREES MAY BE PLANTED IN AN ALTERNATE LOCATION, 0.5M FROM THE PROPERTY LINE (60CM BEHIND THE SIDEWALK) AND ADJACENT TO ANY FENCES, OR JUST INSIDE THE STREET LINE ON PRIVATE PROPERTY, AS MIGHT BE THE CASE IN A CUL-DE-SAC. IF A TREE IS PLANTED IN AN ALTERNATE LOCATION, THE DISTANCES MARKED WITH AN ASTERISK MUST STILL BE MAINTAINED.

NOTE 3
THE TREE PITS AND PLANTING BEDS FOR ALL TREES AND SHRUBS LOCATED WITHIN 1 METRE OF UNDERGROUND UTILITIES ARE TO BE HAND DUG.

NOTE 4
MINIMUM CLEARANCE FOR FENCES:
1M FROM FIRE HYDRANTS

TOWN OF CALEDON					APR'D: C.C.	DATE: APRIL 2000
					DRAWN: BJM	SCALE: NTS
GENERAL NOTES LANDSCAPING	1	STANDARD No. 130 NOW 103		JUNE 08	STANDARD No. 103	
	NO.	REVISION	APR'D	DATE		

SPECIFICATIONS

A. GENERAL

i) These Specifications are to be read in conjunction with the General Conditions of the contract, as prepared by and available at the offices of IBI GROUP .

ii) Prior to commencing work, the Contractor shall:
1. Become familiar with the plans, details, and specifications of this project,
2. Visit the site to ascertain and take account of existing conditions and any deviations from the plans in work by others, and
3. Finalize all design alternatives in consultation with the Landscape Architect.

iii) Prior to excavating, the Contractor shall verify the location of all underground utilities. In the event of a conflict between a proposed tree location and an underground service, the exact location of the tree shall be determined on site by the landscape architect and/or the Town's representative.

iv) The Contractor shall, at his or her own expense, repair any damage to existing utilities, structures, facilities, etc. done in the performance of his work.

v) All site work shall conform to the *Canadian National Master Construction Specifications*, a copy of which can be obtained from Construction Specifications Canada, 100 Lombard St., Suite 200, Toronto, Ontario M5C 1M3; Tel. (416) 777-2198; Fax (416) 777-2197. It is the responsibility of the Contractor to be thoroughly familiar with these specifications and their implications for this project.

B. PLANT MATERIAL

i) All plants shall be installed true to specified names, sizes, grades, etc., and shall conform to the standards of the Canadian Nursery Landscapes Association.

ii) All plants shall be nursery grown in a hardiness zone appropriate to site conditions, as published by Agriculture Canada, titled 'Map of Plant Hardiness Zones in Canada'.

iii) In the event of a discrepancy in plant quantity between the Planting Plan and the Plant List, the Planting Plan shall govern.

iv) The Contractor shall make plants available for inspection by the Landscape Architect and/or the Town's representative prior to shipping to the site. This does not limit the right of the Landscape Architect and/or the Town's representative to later reject plant material that is of poor quality, damaged during shipping or installation, performing poorly while the guarantee period is still in effect, or otherwise does not conform to the specifications.

v) Plant substitutions must be approved in writing by the Town and the Landscape Architect prior to delivery of the material to the site.

vi) The Contractor shall use standard industry methods for planting trees and shrubs. Trees shall be turned to give the best appearance; they shall also be guyed or staked immediately after planting and as detailed on the drawings.

specifications continued on next panel . . .

TOWN OF CALEDON					APR'D: C.C.	DATE: JUNE 08
					DRAWN: abal	SCALE: NTS
STREETSCAPE SPECIFICATIONS STANDARD NOTES PART 1	2	STANDARD No. 1170.01 NOW 712		JUNE 08	STANDARD No. 712	
	1	CHANGES TO NOTES VI & VII.		MARCH 08		
	NO.	REVISION	APR'D	DATE		

SPECIFICATIONS continued from previous panel

C. BED PREPARATION

i) The Contractor shall scarify the sides and bottom of excavated tree pits and shrub beds prior to backfilling. Due to the heavy clay soil in the Bolton area, tree and planting beds shall be backfilled to the specified depths with:

2 Parts "triple mix," delivered to the site, to be well-mixed with . . .
1 Part local topsoil (viz., subdivision topsoil that has been removed and stockpiled.) If topsoil is unavailable, topsoil with clay content shall be imported and mixed with triple mix.

ii) Tree pits shall be constructed with saucers and mulch as detailed.

D. PRELIMINARY ACCEPTANCE

i) When landscaping is completed, the Landscpe Architect shall submit a Certificate of Completion to the Town of Caledon certifying that all landscape works have been completed in accordance with the approved plans.

ii) The Landscape Architect shall prepare a Summary Chart, indicating the plant species, quantity, location, planting date(s), and any other relevant information requested by the Municipality,

iii) Upon receipt of the Certificate of Completion, the Planning Department will conduct a preliminary inspection of the site and, provided that the works are in satisfactory condition, will grant preliminary acceptance of the landscaping.

E. GUARANTEE

i) All streetscape landscaping shall carry a guarantee/maintenance of **TWO** (2) years, commencing from the date that written preliminary acceptance is granted by the Town of Caledon. In each of the next two years, the Landscape Architect shall conduct an inspection and prepare a report, recommending the replacements and/or works needed to achieve the intent of the approved landscape plan. All replacements shall be recorded in the inspection Summary Chart. The Landscape Architect shall file a copy of the report and/or Summary Chart with the Municipality.

ii) Replacement plant material and repaired work shall be guaranteed for a minimum **TWO** (2) years from the date of replacement, and will not be granted final acceptance until the guarantee has expired or as otherwise determined by the Planning Department.

iii) All other landscape work performed under this contract shall be fully guaranteed for **TWO** (2) years.

F. MAINTENANCE

i) The maintenance of all landscape installations throughout the guarantee period shall include:

1) proper irrigation to ensure optimum growth of trees and shrubs,
2) cultivation and weeding of tree pits and planting beds,
3) insect and disease control, and
4) pruning and fertilizing, as required or as directed by the Municipality or Landscape Architect.

specifications continue on next panel . . .

TOWN OF CALEDON					APR'D: C.C.	DATE: JUNE 08
					DRAWN: abal	SCALE: NTS
STREETSCAPE SPECIFICATIONS STANDARD NOTES PART 2	1	STANDARD No. 1170.02 NOW 713		JUNE 08	STANDARD No. 713	
	NO.	REVISION	APR'D	DATE		

SPECIFICATIONS continued from previous panel

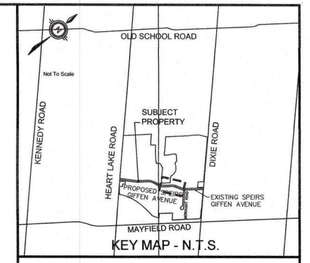
G. CERTIFICATE OF ASSUMPTION

i) At the end of the guarantee period, the Contractor shall remove all tree stakes, and bark wrap, and shall add extra mulch where necessary.

ii) When these final tasks have been completed, the Landscape Architect will provide the Town with a Certificate of Completion. All landscape work will then be inspected by the Municipality and, if satisfied that all work has been completed in accordance with the approved landscape plans, will issue a Certificate of Assumption and release any outstanding funds.

end of specifications

TOWN OF CALEDON					APR'D: C.C.	DATE: JUNE 08
					DRAWN: abal	SCALE: NTS
STREETSCAPE SPECIFICATIONS STANDARD NOTES PART 3	1	STANDARD No. 1170.03 NOW 714		JUNE 08	STANDARD No. 714	
	NO.	REVISION	APR'D	DATE		



KEY MAP - N.T.S.

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
2	2019-08-01	TO	REVISED PER TRCA COMMENTS
1	2019-07-25	TO	FOR CONSTRUCTION

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com

TOWN OF CALEDON

Region of Peel working with you

RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS TIM O'BRIEN MEMBER

SEAL

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.

This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

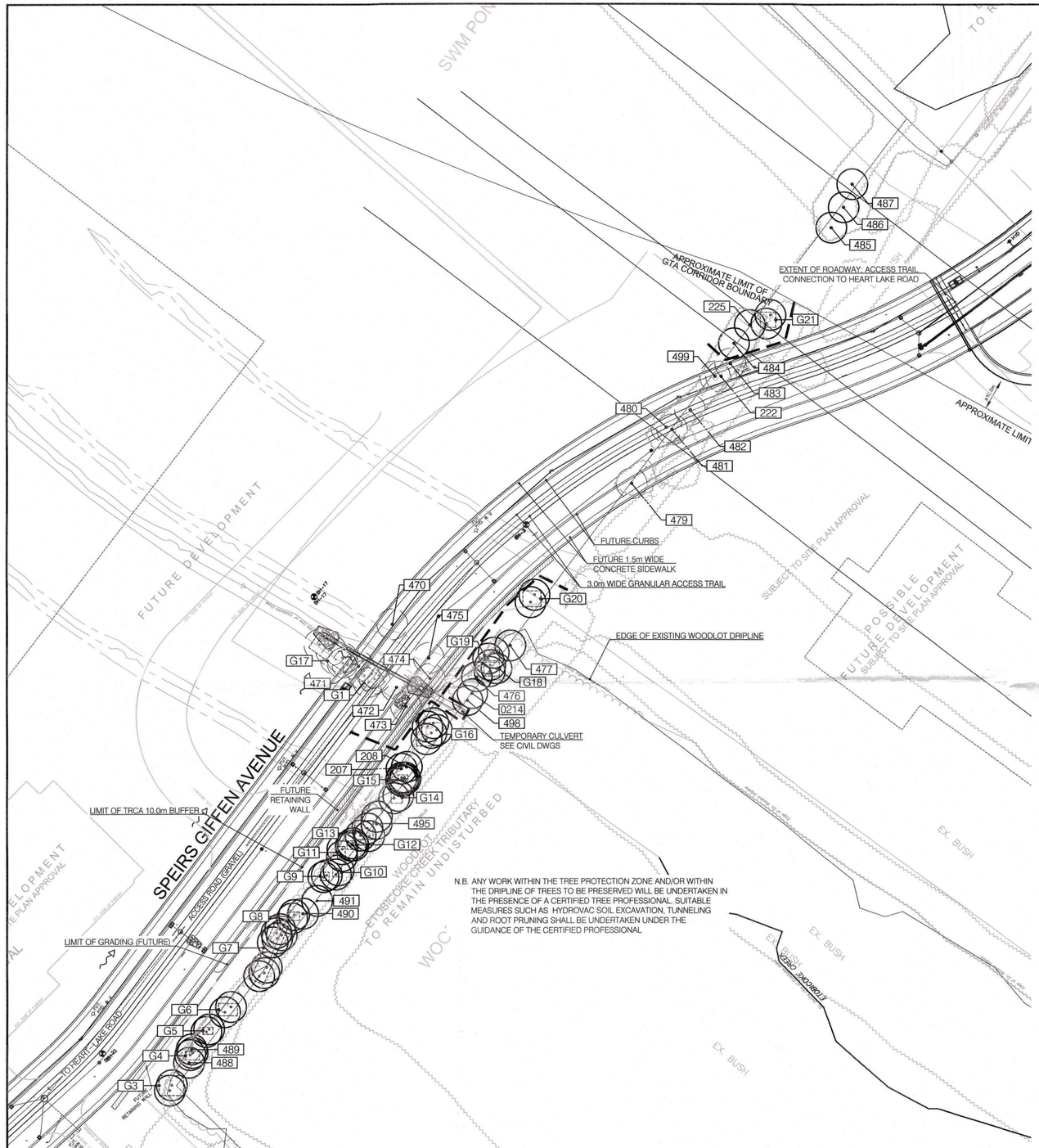
Date: Sept 19/19
Approved By: Rob Hughes
Print Name: Rob Hughes

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

LANDSCAPE DETAILS

DATE:	2018-02-11	DESIGNED BY:	TO
SCALE:	AS SHOWN	DRAWN BY:	TO
		CHECKED BY:	JM
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
26 of 35		DWG NO.	116965-L2

FILE:J:\116965_Abbotside\Way\5.0 Drawings\05tech\current\116965Lr.dwg LAYOUT:L2 - DETAILS
LAST SAVED BY:Tim.obrien, Thursday, August 01, 2019 1:10:32 PM PLOTTED BY:Tim O'Brien Thursday, August 01, 2019 1:12:29 PM



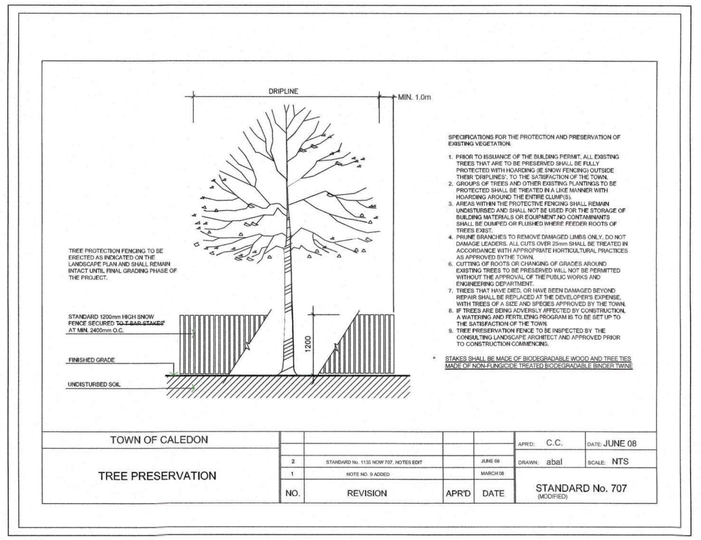
EXISTING TREE IDENTIFICATION TABLE

TREE NO.	BOTANICAL NAME	COMMON NAME	DBH (cm)	CONDITION (2)	COMMENTS (3)	IMPACTS OF DEVELOPMENT (4)	RECOMMENDATION (5)
470	ACER NEGUNDO	MANITOBA MAPLE	30	F		IMPACTED: ACCESS TRAIL	REMOVE
471	ACER NEGUNDO	MANITOBA MAPLE	25	F		IMPACTED: PIPE CROSSING & GRADING	REMOVE
G1	ACER NEGUNDO	MANITOBA MAPLE	85	F	4 UNITS	IMPACTED: ACCESS TRAIL	REMOVE
472	ACER NEGUNDO	MANITOBA MAPLE	20	F		IMPACTED: GRADING	REMOVE
473	JUGLANS NIGRA	BLACK WALKNUT	45	F		IMPACTED: FUTURE SIDEWALK	REMOVE
474	ACER NEGUNDO	MANITOBA MAPLE	50	F		IMPACTED: PIPE CROSSING & GRADING	REMOVE
475	ACER NEGUNDO	MANITOBA MAPLE	35	P		IMPACTED: FUTURE ROADWAY	REMOVE
476	ACER NEGUNDO	MANITOBA MAPLE	30	F		NONE	PRESERVE
477	JUGLANS NIGRA	BLACK WALNUT	35	F		NONE	PRESERVE
479	PRUNUS SEROTINA	BLACK CHERRY	45	F		IMPACTED: FUTURE GRADING	REMOVE
480	CARYA CORDIFORMIS	BITTERNUT HICKORY	70	F		IMPACTED: ACCESS TRAIL	REMOVE
481	MALUS SPP.	CRABAPPLE TREE	30	F		IMPACTED: ACCESS TRAIL	REMOVE
482	OSTRYA VIRGINIANA	IRONWOOD	30	F		IMPACTED: ACCESS TRAIL	REMOVE
222	ACER SACCHARUM	SUGAR MAPLE	65	P		IMPACTED: ACCESS TRAIL & GRADING	REMOVE
483	TILIA AMERICANA	BASSWOOD	60	F		IMPACTED: GRADING	REMOVE
484	FRAXINUS PENNSYLVANICA	GREEN ASH	35	P		NONE; SELECTIVE PRUNING MAY BE REQUIRED	PRESERVE
225	TILIA AMERICANA	BASSWOOD	90	P		NONE; SELECTIVE PRUNING MAY BE REQUIRED	PRESERVE
485	TILIA AMERICANA	BASSWOOD	45	F		NONE	PRESERVE
486	TILIA AMERICANA	BASSWOOD	45	F		NONE	PRESERVE
487	FRAXINUS PENNSYLVANICA	GREEN ASH	85	P		NONE	PRESERVE
G2	ACER NEGUNDO	MANITOBA MAPLE	15	G	3 UNITS	NONE	PRESERVE
G3	RHAMNUS CATHARTICA	COMMON BUCKTHORN	10	G	3 UNITS; INVASIVE	NONE	PRESERVE
488	OSTRYA VIRGINIANA	HOP HORNBEAM	30	F		NONE	PRESERVE
G4	ACER SACCHARUM	SUGAR MAPLE	10	G	2 UNITS	NONE	PRESERVE
489	ACER NEGUNDO	MANITOBA MAPLE	15	F	3 UNITS	NONE	PRESERVE
G5	ACER SACCHARINUM	SUGAR MAPLE	15	G	2 UNITS	NONE	PRESERVE
G6	FRAXINUS PENNSYLVANICA	GREEN ASH	40	D	2 UNITS	NONE	PRESERVE
G7	RHAMNUS CATHARTICA	COMMON BUCKTHORN	25	F	8 UNITS; INVASIVE	NONE	PRESERVE
G8	BETULA SPP.	BIRCH TREE	10	D	2 UNITS	NONE	PRESERVE
490	JUGLANS NIGRA	BLACK WALNUT	25	F		NONE	PRESERVE
491	ACER SACCHARUM	SUGAR MAPLE	15	F		NONE	PRESERVE
G9	ACER SACCHARUM	SUGAR MAPLE	20	G	3 UNITS	NONE	PRESERVE
G10	BETULA SPP.	BIRCH TREE	15	P	2 UNITS	NONE	PRESERVE
G11	FAGUS GRANDIFOLIA	AMERICAN BEECH	20	G	2 UNITS	NONE	PRESERVE
G12	JUGLANS NIGRA	BLACK WALNUT	70	G	3 UNITS	NONE	PRESERVE
G13	FAGUS GRANDIFOLIA	AMERICAN BEECH	30	G	4 UNITS; (0206)	NONE	PRESERVE
495	ACER SACCHARUM	SUGAR MAPLE	20	G		NONE	PRESERVE
G14	BETULA SPP.	BIRCH TREE	15	D	2 UNITS	NONE	PRESERVE
G15	RHAMNUS CATHARTICA	COMMON BUCKTHORN	40	F	MULTISTEM; INVASIVE	NONE	PRESERVE
207	OSTRYA VIRGINIANA	IRONWOOD	30	G		NONE	PRESERVE
208	CARYA CORDIFORMIS	BITTERNUT HICKORY	20	F		NONE	PRESERVE
G16	ACER NEGUNDO	MANITOBA MAPLE	15	F	5 UNITS	NONE	PRESERVE
G17	RHUS TYPHINA	STAGHORN SUMAC	10	G	6 UNITS	IMPACTED: ROADWAY, CULVERT	REMOVE
498	RHAMNUS CATHARTICA	COMMON BUCKTHORN	10	F	INVASIVE	LIMITED: CULVERT	PRESERVE
0214	PRUNUS SEROTINA	BLACK CHERRY	30	G		NONE	PRESERVE
G18	ACER NEGUNDO	MANITOBA MAPLE	20	F		NONE	PRESERVE
G19	ACER NEGUNDO	MANITOBA MAPLE	20	G	2 UNITS	NONE	PRESERVE
G20	ACER NEGUNDO	MANITOBA MAPLE	15	F	2 UNITS; (478)	NONE	PRESERVE
499	BETULA SPP.	BIRCH TREE	25	P		IMPACTED: ROADWAY	REMOVE
G21	TILIA AMERICANA	BASSWOOD	15	F	2 UNITS	NONE	PRESERVE

(1) Trees recommended for PRESERVING in SHADED BOXES
(2) Condition: Good (G) - dead branches less than 10%; signs of good compartmentalization on any wounds; no structural defects
Fair (F) -10-30% dead branches; size or occurrence of wounds present some concerns; minor structural defects
Poor (P) - more than 30% dead branches; weak compartmentalization; early leaf drop; presence of insects or disease; major structural defects
Dead (D) - tree shows no signs of life
(3) Comments: additional information on specimen
(4) Impacts: NONE - no construction activity occurs at or within the dripline of a tree.
LIMITED: XXX - construction activity occurs at or within the dripline of a tree, but is not likely to lead to tree death in the short term (5-10 years) if precautionary measures are taken; this may require root and/or canopy pruning.
IMPACTED: XXX - construction activity (XXX = structures, fencing, trenching, grading, etc) which requires the direct removal of a tree or occurs within a significant portion of the canopy/root zone, such that the activity will significantly affect tree health leading to death in the short term.
(5) Recommendation: Preserve, Remove, Transplant
(6) Any trees located on the property line or on the adjacent property that are proposed to be removed or pruned, will require written consent from the adjacent landowner. All correspondence is to be forwarded to the Town prior to any removals.
(7) 2:1 tree compensation will be required for all tree removals. Tree compensation planting is in addition to the standard required planting. In the event that tree compensation cannot be accommodated for in the planting design, financial compensation shall be collected at a rate (per tree) as determined by the Town.
(8) Removals should occur outside of the breeding bird season (April 1- August 1). If this is not possible, clearance with an ecologist should occur prior to construction to ensure no loss of bird nest, egg or unfledged young.

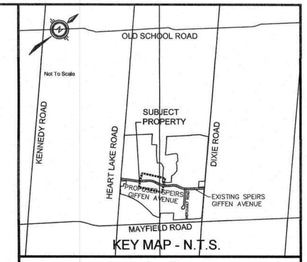
TREE PRESERVATION NOTES:

1. ANY TREES LOCATED ON THE PROPERTY LINE OR ON THE ADJACENT PROPERTY THAT ARE PROPOSED TO BE REMOVED OR PRUNED WILL REQUIRE WRITTEN CONSENT FROM THE ADJACENT LANDOWNER. ALL CORRESPONDENCE IS TO BE FORWARDED TO THE TOWN PRIOR TO ANY REMOVALS.
2. 2:1 TREE COMPENSATION WILL BE REQUIRED FOR ALL TREE REMOVALS. TREE COMPENSATION PLANTING IS IN ADDITION TO THE STANDARD REQUIRED PLANTING. IN THE EVENT THAT TREE COMPENSATION CANNOT BE ACCOMMODATED FOR IN THE PLANTING DESIGN, FINANCIAL COMPENSATION SHALL BE COLLECTED AT A RATE (PER TREE) AS DETERMINED BY THE TOWN.
3. REMOVALS SHOULD OCCUR OUTSIDE OF THE BREEDING BIRD SEASON (APRIL1-AUGUST1). IF THIS IS NOT POSSIBLE, CLEARANCE WITH AN ECOLOGIST SHOULD OCCUR PRIOR TO CONSTRUCTION TO ENSURE NO LOSS OF BIRD NEST, EGG OR UNFLEDGED YOUNG.



TOWN OF CALEDON					APP'D: C.C.	DATE: JUNE 08
TREE PRESERVATION	2	STANDARD No. 1135 NOW 707. NOTES EDIT		JUNE 08	DRAWN: abal	SCALE: NTS
	1	NOTE NO. 9 ADDED		MARCH 08		
	NO.	REVISION	APP'D	DATE	STANDARD No. 707 (MODIFIED)	

1 / L-1 TREE PRESERVATION
N.T.S



KEY MAP - N.T.S.

LEGEND

- EX. DECIDUOUS TREE TO REMAIN
- EX. DECIDUOUS TREE TO BE REMOVED
- TEMPORARY TREE PROTECTION FENCING D1
- 001 TREE TAG / IDENTIFICATION

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
1	2019-08-01	ZB	RE-ISSUED FOR TRCA PERMIT APPLICATION
0	2019-07-25	ZB	ISSUED FOR CONSTRUCTION

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TOWN OF CALEDON

Region of Peel working with you

RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

CERTIFIED ARBORIST ISA
ZARA BROWN
DATE OF SITE VISIT: JANUARY 30, 2019 & MAY 21, 2019

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS
ZARAA BROWN
OALA MEMBER

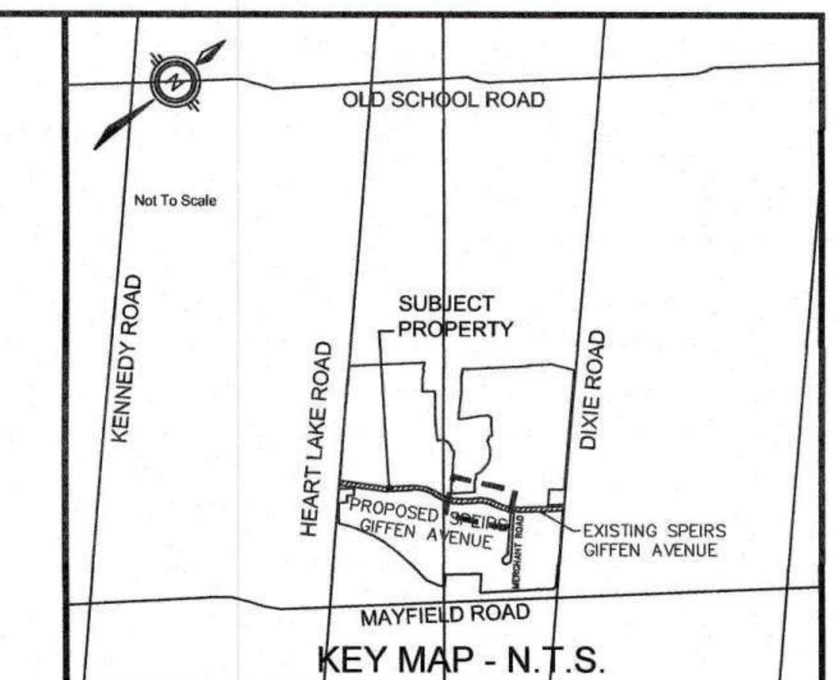
SEAL

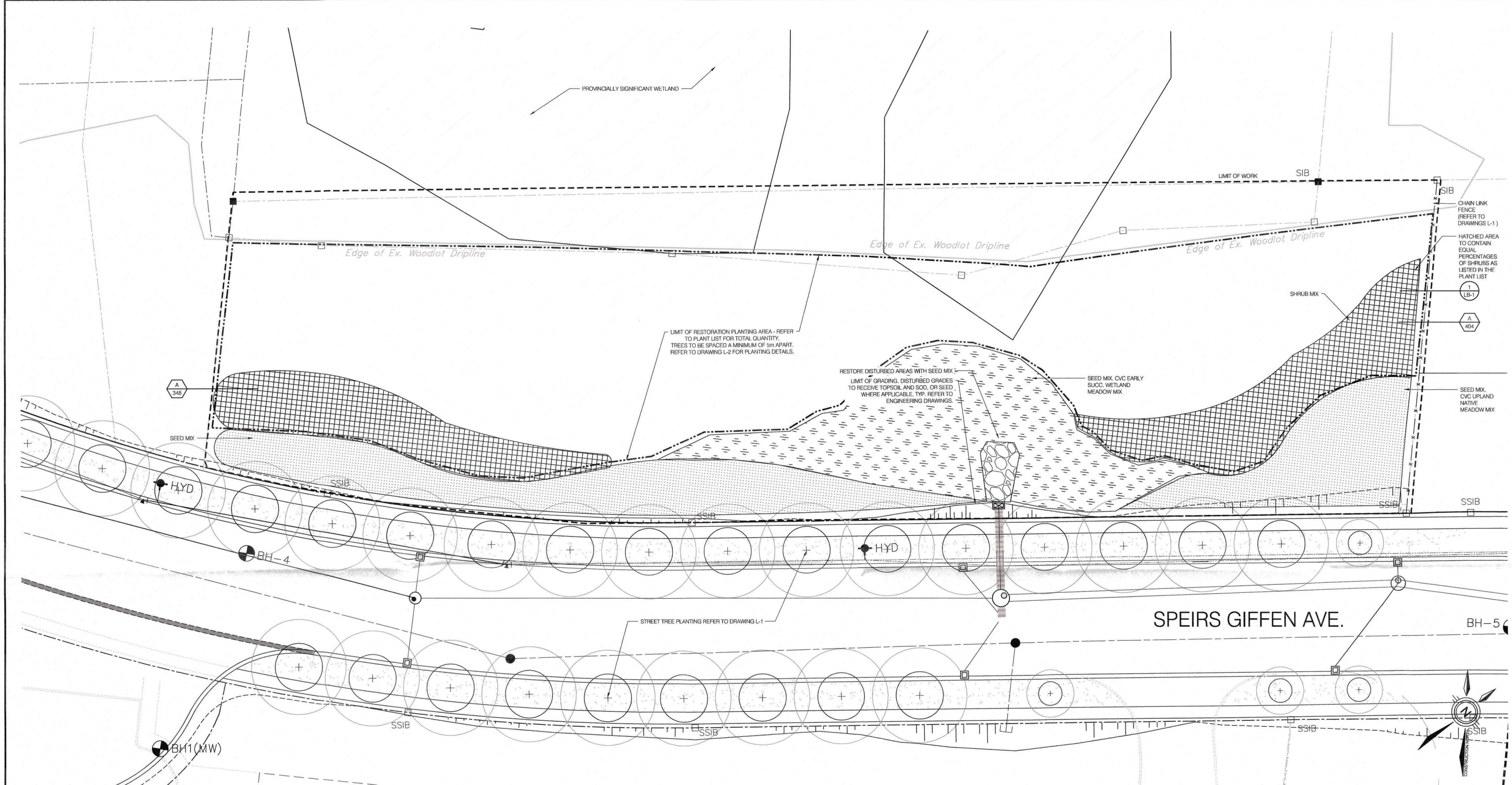
TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

TREE PRESERVATION PLAN

DATE:	2019-02-08	DESIGNED BY:	
SCALE:	1:750	DRAWN BY:	ZB
		CHECKED BY:	
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
27 of 35		DWG NO.	116965-TPP

FILE:J:\116965_AbbotsideWay\10.0 Reports\Arborist Report\dwg\Layout\116965TPP.dwg LAYOUT:TPP-TREE PRESERVATION PLAN
LAST SAVED BY:Zara.brown, Tuesday, July 30, 2019 5:06:01 PM PLOTTED BY:Zara Brown Thursday, August 01, 2019 5:22:49 PM





LEGEND

— — —	LIMIT OF WORK
HYD	PROPOSED FIRE HYDRANT
MH1	PROPOSED STORM MANHOLE
DICB	PROPOSED DITCH INLET CATCH BASIN
CB	PROPOSED CATCH BASIN
CBMH	PROPOSED CB MANHOLE
	CHAIN LINK FENCE
	PROPOSED STORM SEWER
	PROPOSED WATERMAIN
	PROPOSED SANITARY SEWER
	PROPOSED HYDRO TRANSFORMER
	RESTORATION PLANTING AREA. REFER TO DRAWING L-2 FOR PLANTING DETAILS.
	PROPOSED SHRUB MIX
	PROPOSED SEED MIX - CVC 7 UPLAND NATIVE MEADOW MIX
	PROPOSED SEED MIX - CVC 6 EARLY SUCCESSION WET MEADOW MIX
Xx / 0	PLANT SPECIES / QUANTITY
XX / L-600	DETAIL NUMBER / SHEET NUMBER

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Sept 19/19
Approved By: Rob Hughes
Print Name: Rob Hughes

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
3	2019-08-29	TO	REVISED PER TRCA COMMENTS
2	2019-08-01	TO	REVISED PER TRCA COMMENTS
1	2019-07-25	TO	FOR CONSTRUCTION

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TOWN OF CALEDON

Region of Peel
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RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS — TIM O'BRIEN — OALA

SEAL

LANDSCAPE NOTES:

A. GENERAL

i) THESE SPECIFICATIONS ARE TO BE READ IN CONJUNCTION WITH THE GENERAL CONDITIONS OF THE CONTRACT.

ii) PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL:
1. BECOME FAMILIAR WITH THE PLANS, DETAILS, AND SPECIFICATIONS OF THIS PROJECT;
2. VISIT THE SITE TO ASCERTAIN AND TAKE ACCOUNT OF EXISTING CONDITIONS AND ANY DEVIATIONS FROM THE PLANS IN WORK BY OTHERS, AND
3. FINALIZE ALL DESIGN ALTERNATIVES IN CONSULTATION WITH THE LANDSCAPE ARCHITECT.

iii) PRIOR TO EXCAVATING, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES. IN THE EVENT OF A CONFLICT BETWEEN A PROPOSED TREE LOCATION AND AN UNDERGROUND SERVICE, THE EXACT LOCATION OF THE TREE SHALL BE DETERMINED ON SITE BY THE LANDSCAPE ARCHITECT AND/OR THE TOWN'S REPRESENTATIVE.

iv) THE CONTRACTOR SHALL, AT HIS OR HER OWN EXPENSE, REPAIR ANY DAMAGE TO EXISTING UTILITIES, STRUCTURES, FACILITIES, ETC. DONE IN THE PERFORMANCE OF HIS WORK.

v) ALL SITE WORK SHALL CONFORM TO THE *CANADIAN NATIONAL MASTER CONSTRUCTION SPECIFICATIONS*, A COPY OF WHICH CAN BE OBTAINED FROM CONSTRUCTION SPECIFICATIONS CANADA, 100 LOMBARD ST., SUITE 200, TORONTO, ONTARIO M5C 1M3; TEL. (416) 777-2198; FAX (416) 777-2197. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE THOROUGHLY FAMILIAR WITH THESE SPECIFICATIONS AND THEIR IMPLICATIONS FOR THE PROJECT.

B. PLANT MATERIAL

i) ALL PLANTS SHALL BE INSTALLED TRUE TO SPECIFIED NAMES, SIZES, GRADES, ETC., AND SHALL CONFORM TO THE STANDARDS OF THE CANADIAN NURSERY LANDSCAPE ASSOCIATION.

ii) ALL PLANTS SHALL BE NURSERY GROWN IN HARDINESS ZONE APPROPRIATE TO SITE CONDITIONS, AS PUBLISHED BY AGRICULTURE CANADA, TITLED 'MAP OF PLANT HARDINESS ZONES OF CANADA'.

iii) IN THE EVENT OF A DISCREPANCY IN PLANT QUANTITY BETWEEN THE PLANTING PLAN AND PLAN LIST, THE PLANTING PLAN SHALL GOVERN.

iv) THE CONTRACTOR SHALL MAKE PLANTS AVAILABLE FOR INSPECTION BY THE LANDSCAPE ARCHITECT AND/OR THE TOWN'S REPRESENTATIVE PRIOR TO SHIPPING TO THE SITE. THIS DOES NOT LIMIT THE RIGHT OF THE LANDSCAPE ARCHITECT AND/OR THE TOWN'S REPRESENTATIVE TO LATER REJECT PLANT MATERIAL THAT IS OF POOR QUALITY, DAMAGED DURING SHIPPING OR INSTALLATION, PERFORMING POORLY WHILE THE GUARANTEE PERIOD IS STILL IN EFFECT, OR OTHERWISE DOES NOT CONFORM TO THE SPECIFICATIONS.

v) PLANT SUBSTITUTIONS MUST BE APPROVED IN WRITING BY THE TOWN AND THE LANDSCAPE ARCHITECT PRIOR TO DELIVERY OF THE MATERIAL TO THE SITE.

vi) THE CONTRACTOR SHALL USE STANDARD INDUSTRY METHODS FOR PLANTING TREES AND SHRUBS. TREES SHALL BE TURNED TO GIVE THE BEST APPEARANCE; THEY SHALL ALSO BE GUYED OR STAKED IMMEDIATELY AFTER PLANTING AND AS DETAILED ON THE DRAWINGS.

C. BED PREPARATION

i) THE CONTRACTOR SHALL SCARIFY THE SIDES AND BOTTOM OF EXCAVATED TREE PITS AND SHRUB BEDS PRIOR TO BACKFILLING. DUE TO THE HEAVY CLAY SOIL IN THE BOLTON AREA, TREE AND PLANTING BEDS SHALL BE BACKFILLED TO THE SPECIFIED DEPTHS WITH:

2 PARTS "TRIPLE MIX," DELIVERED TO THE SITE, TO BE WELL-MIXED WITH ....
1 PART LOCAL TOPSOIL (VIS., SUBDIVISION TOPSOIL THAT HAS BEEN REMOVED AND STOCKPILED.) IF TOPSOIL IS UNAVAILABLE, TOPSOIL WITH CLAY CONTENT SHALL BE IMPORTED AND MIXED WITH TRIPLE MIX.

ii) TREE PITS SHALL BE CONSTRUCTED WITH SAUCERS AND MULCH AS DETAILED.

D. PRELIMINARY ACCEPTANCE

i) WHEN LANDSCAPING IS COMPLETED, THE LANDSCAPE ARCHITECT SHALL SUBMIT A CERTIFICATE OF COMPLETION TO THE TOWN OF CALEDON CERTIFYING THAT ALL LANDSCAPE WORKS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS.

ii) THE LANDSCAPE ARCHITECT SHALL PREPARE A SUMMERY CHART, INDICATING THE PLANT SPECIES, QUANTITY, LOCATION, PLANTING DATE(S), AND ANY OTHER RELEVANT INFORMATION REQUESTED BY THE MUNICIPALITY.

iii) UPON RECEIPT OF THE CERTIFICATE OF COMPLETION, THE PLANNING DEPARTMENT WILL CONDUCT A PRELIMINARY INSPECTION OF THE SITE AND, PROVIDED THAT THE WORKS ARE IN SATISFACTORY CONDITION, WILL GRANT PRELIMINARY ACCEPTANCE OF THE LANDSCAPING.

E. GUARANTEE

i) ALL STREETSCAPE LANDSCAPING SHALL CARRY A GUARANTEE/MAINTENANCE OF **TWO** (2) YEARS, COMMENCING FROM THE DATE THAT WRITTEN PRELIMINARY ACCEPTANCE IS GRANTED BY THE TOWN OF CALEDON. IN EACH OF THE NEXT TWO YEARS , THE LANDSCAPE ARCHITECT SHALL CONDUCT AN INSPECTION AND PREPARE A REPORT, RECOMMENDING THE REPLACEMENTS AND/OR WORK NEEDED TO ACHIEVE THE INTENT OF THE APPROVED LANDSCAPED PLAN. ALL REPLACEMENTS SHALL BE RECORDED IN THE INSPECTION SUMMERY CHART. THE LANDSCAPE ARCHITECT SHALL FILE A COPY OF THE REPORT AND/OR SUMMARY CHART WITH THE MUNICIPALITY.

ii) REPLACEMENT PLANT MATERIAL AND REPAIRED WORK SHALL BE GUARANTEED FOR A MINIMUM TWO (2) YEARS FROM THE DATE OF REPLACEMENT, AND WILL NOT BE GRANTED FINAL ACCEPTANCE UNTIL THE GUARANTEE HAS EXPIRED OR AS OTHERWISE DETERMINED BY THE PLANNING DEPARTMENT.

iii) ALL OTHER LANDSCAPE WORK PERFORMED UNDER THIS CONTRACT SHALL BE FULLY GUARANTEED FOR TWO (2) YEARS.

F. MAINTENANCE

i) THE MAINTENANCE OF ALL LANDSCAPE INSTALLATIONS THROUGHOUT THE GUARANTEE PERIOD SHALL INCLUDE:

G. CERTIFICATE OF ASSUMPTION

i) AT THE END OF THE GUARANTEE PERIOD, THE CONTRACTOR SHALL REMOVE ALL TREE STAKES, BARK WRAP, AND SHALL ADD EXTRA MULCH WHERE NECESSARY.

ii) WHEN THESE FINAL TASKS HAVE BEEN COMPLETED, THE LANDSCAPE ARCHITECT WILL PROVIDE THE TOWN WITH A CERTIFICATE OF COMPLETION. ALL LANDSCAPE WORK WILL THEN BE INSPECTED BY THE MUNICIPALITY AND, IF SATISFIED THAT ALL THE WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED LANDSCAPE PLANS, WILL ISSUE A CERTIFICATE OF ASSUMPTION AND RELEASE ANY OUTSTANDING FUNDS.

SEED MIX

CONTRACTOR TO SOW NURSE CROP AVENA SATIVA OVER ENTIRE AREA;
TO BE SEEDED AT A RATE OF 22kg/ HECTARE.

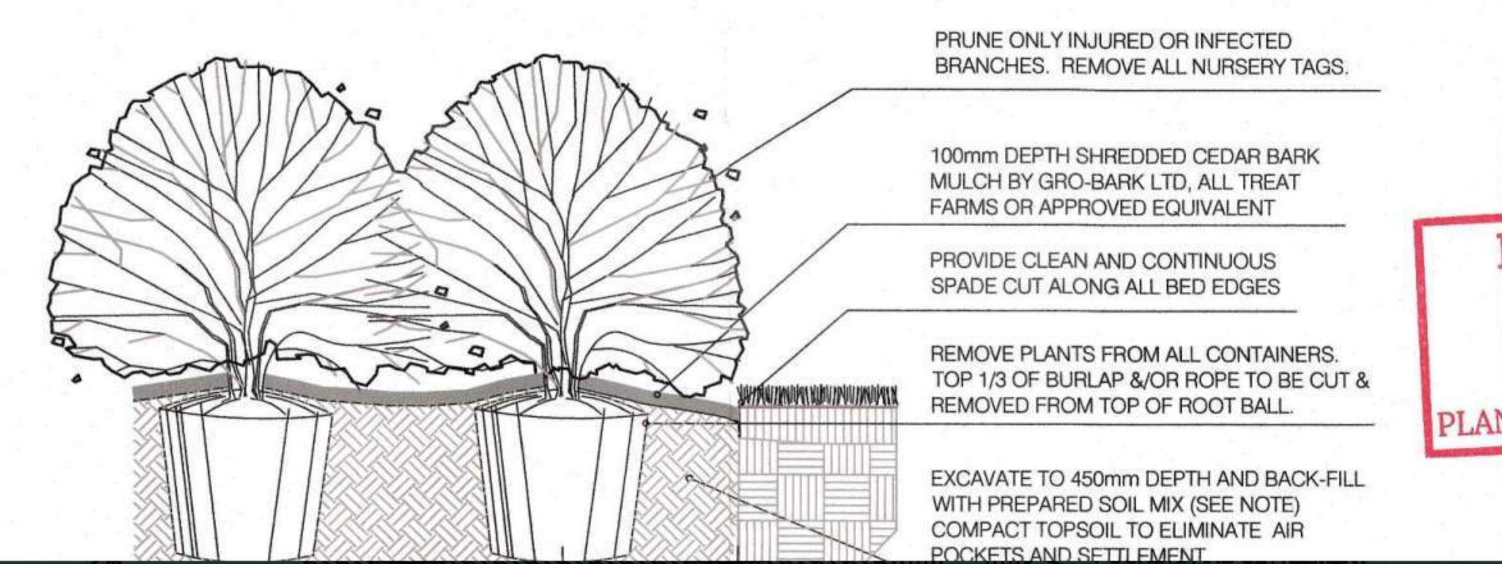
CVC 7 - UPLAND NATIVE MEADOW MIX TO INCLUDE:

Riverbank Wild Rye *Elymus riparius*	40%
Evening Primrose *Oenethera biennis*	25%
Meadow/Open Field Sedge *Carex granularis*	15%
Black Eyed Susan *Rudbeckia hirta*	10%
Canada Goldenrod *Solidago canadensis*	2%
Common Milkweed *Asclepias syriaca*	2%
Canada Anemone *Anemone canadensis*	1%
Blue Wood (Heart Leaved Aster) *Aster cordifolius*	1%
Grass Leaved Goldenrod *Euthamia graminifolia*	1%
New England Aster *Aster novae-angliae*	1%
Virgins Bower *Clematis virginiana*	1%
Wild Bergamot M*narda fistulosa*	1%

CVC 6 - EARLY SUCCESSION WET MEADOW MIX TO INCLUDE:

Virginia Wild Rye *Elymus virginicus*	25%
Fowl Bluegrass *Poa palustris*	25%
Fox Sedge *Carex vulpinoidea*	25%
Soft Rush *Juncus effusus*	5%
Bebb's Sedge *Carex bebbii*	5%
Stalk-grain Sedge *Carex stipata*	4%
Path Rush *Juncus tenuis*	3%
Tall Manna Grass *Glyceria grandis*	2%
Canada Goldenrod *Solidago canadensis*	2%
Purple Stemmed Aster *Aster puniceus*	1%
Great Blue Lobelia *Lobelia siphilitica*	1%
New England Aster *Aster novae-angliae*	1%
Wild Bergamot *Monarda fistulosa*	1%

CREDIT VALLEY CONSERVATION SEED MIXES OR APPROVED EQUIVALENT. APPLY AT A RATE OF 22-25kg/ HECTARE. NATIVE SEED MIXES DO BEST WHEN PLANTED IN THE FALL, BETWEEN OCTOBER 15TH AND NOVEMBER 15TH. LATE FALL SOWINGS ADDITIONALLY STRATIFY THE SEED. AN EARLY SPRING SOWING IN APRIL WILL WORK BUT NOT AS EFFECTIVELY. IF IDEAL GROWING SEASONS ARE UNAVAILABLE, THE SEED MAY GO DORMANT AND NOT GERMINATE UNTIL SPRING THE FOLLOWING YEAR.



NOTES:
1. SOIL MIXTURE: 2 PARTS "TRIPLE MIX," WITH 1 PART LOCAL TOPSOIL.
2. SAUCER SHALL BE SOAKED WITH WATER AND MULCHED IMMEDIATELY FOLLOWING PLANTING.
3. ALL DIMENSIONS ARE IN mm.
4. IN POORLY DRAINED SOILS PLANT SHRUB SLIGHTLY HIGHER THAN ADJACENT GRADE.
5. ALL PLANTS TO BE STRAIGHT AND PLANTED VERTICALLY REGARDLESS OF SLOPE.

1 BALLED AND BURLAPPED/POTTED SHRUB

PLANT LIST

	BOTANICAL NAME	COMMON NAME	CAL.	SIZE	COND	MATURE HEIGHT (m)	MATURE SPREAD (m)	O.C. SPACING (m)	QNTY.	%
RESTORATION PLANTING TREES										
A	Acer rubrum	Red Maple		SAPLING		15.0	12.0	>5.0	23	33
B	Celtis occidentalis	Hackberry		SAPLING		18.0	16.0	>5.0	23	33
C	Quercus palustris	Pin Oak		SAPLING		22.0	16.0	>5.0	24	34
								Total:	70	100%
SHRUB MIX 'A'										
	Cornus sericea	Red Osier Dogwood			#1 cont	2.5	3.0	1.0	188	25
	Rhus typhina	Staghorn Sumac			#1 cont	2.5	3.0	1.0	188	25

TITLE:

SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

LANDSCAPE BUFFER PLAN

DATE:	2018-02-11	DESIGNED BY:	CM
SCALE:	1:250	DRAWN BY:	CM
		CHECKED BY:	TO

GENERAL NOTES:

1. ALL WORK INVOLVED IN THE CONSTRUCTION, RELOCATION, REPAIR OF MUNICIPAL SERVICES FOR THE PROJECT SHALL BE TO THE SATISFACTION OF THE TOWN.
2. THE APPLICANT, APPLICANT'S REPRESENTATIVE, CONSULTANT, CONTRACTOR AND SUB CONTRACTORS ARE RESPONSIBLE TO ENSURE THAT THEIR DESIGN MATERIALS AND CONSTRUCTION PRACTICES CONFORM TO THE LATEST REGION, TOWN, MINISTRY OF ENVIRONMENT, TORONTO REGIONAL CONSERVATION AUTHORITY'S DEVELOPMENT STANDARDS, POLICIES, SPECIFICATIONS, MATERIALS, DESIGN CRITERIA AND GUIDELINES AS POSTED ON THEIR RESPECTIVE WEBSITES. IN THE ABSENSE OF REGION AND OR TOWN SPECIFICATIONS, THE ONTARIO PROVINCIAL STANDARD SPECIFICATIONS (OPSS) SHALL APPLY.
3. ALL WORKS SHALL BE COMPLETED IN ACCORDANCE WITH THE "OCCUPATIONAL HEALTH AND SAFETY ACT". THE GENERAL CONTRACTOR SHALL BE DEEMED TO BE THE CONSTRUCTOR AS DEEMED IN THE ACT.
4. THE LOCATION, DIMENSION AND ELEVATION OF ALL EXISTING SERVICES AND UTILITIES ARE TO BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION, BY THE CONTRACTOR, AT THEIR EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION AND THE REPAIR OF EXISTING UTILITIES DISTRUBED DURING CONSTRUCTION. ALL AREA'S BEYOND THE PLAN OF SUBDIVISION THAT ARE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE REGION OF PEEL AT THE CONTRACTOR'S EXPENSE.
5. ALL DIMENSIONS ARE IN METERS UNLESS SPECIFIED OTHERWISE.
6. ALL BOREHOLES SHOWN ON THE DRAWING ARE FOR INFORMATION ONLY. REFER TO THE GEOTECHNICAL REPORT.
7. ALL SUPPORT OF ALL UTILITIES SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION INCLUDING THE DECOMMISSIONING AND RECOMMISSIONING OF THE EXISTING LIGHT STANDARDS ALONG EXISTING SPEIRS GIFFEN AVENUE.
8. ALL BACKFILL FOR SEWERS, WATERMAINS AND UTILITIES ON THE ROAD ALLOWANCE MUST BE MECHANICALLY COMPACTED.
9. FIRE ROUTE SIGNS AND 3-WAY FIRE HYDRANTS SHALL BE ESTABLISHED TO THE SATISFACTION OF THE TOWN FIRE DEPARTMENT AND AT THE EXPENSE OF THE OWNER.
10. DRIVEWAY ENTRANCES AND DROP CURBS SHALL BE IN ACCORDANCE WITH THE TOWN OF CALEDON STANDARD DRAWING 402 AND THE MOST RECENT DRAWING STANDARD DRAWINGS FOR THIS PURPOSE (SEE SHEET 19).
11. BOULEVARD DRIVEWAY SLOPES SHOULD BE A MAXIMUM OF 6.0% AND A MINIMUM OF 2.0% WHEREVER POSSIBLE.
12. A MINIMUM CLEAR DISTANCE OF 1.5m IS REQUIRED BETWEEN THE EDGE OF THE DRIVEWAY AND A UTILITY STRUCTURE OR HYDRANT.
13. THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE OWNER'S BONDED CONTRACTOR FROM THE REQUIREMENTS TO OBTAIN THE VARIOUS PERMITS/APPROVALS NORMALLY REQUIRED TO COMPLETE A CONSTRUCTION PROJECT, SUCH AS, BUT NOT LIMITED TO THE FOLLOWING::
    - ROAD CUT PERMITS
    - APPROACH APPROVAL PERMITS
    - COMMITTEE OF ADJUSTMENT
    - SEWER PERMITS
    - RELOCATION OF SERVICES
    - ENCROACHMENT AGREEMENTS (IF REQUIRED)
14. 3 METER BY 3 METER VISIBILITY TRIANGLES IN WHICH THE MAXIMUM HEIGHT OF ANY OBJECTS OR MATURE VEGETATION IS NOT TO EXCEED A HEIGHT OF 0.60 METERS ABOVE THE CORRESPONDING PERPENDICULAR CENTERLINE ELEVATION OF THE ADJACENT STREET.
15. SILTATION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO WORKS COMMENCING ON THE SITE AND SHALL BE MAINTAINED FOR THE DURATION OF CONSTRUCTION, TO THE SATISFACTION OF THE TOWN.
16. THE SUB-GRADE SOILS EXPOSED AFTER EXCAVATION SHALL BE INSPECTED AND CERTIFIED BY A QUALIFIED REGISTERED PROFESSIONAL SOILS ENGINEER AND A COPY OF THE REPORT SHALL BE FORWARDED TO THE TOWN OF CALEDON BUILDING DIVISION. WHERE THE FOOTING WILL BE SITUATED ON FILL MATERIAL, THE FOOTINGS SHALL BE DESIGNED AND APPROVED BY QUALIFIED REGISTERED PROFESSIONAL ENGINEER.
17. ALL PROPOSED SEWERS, THROUGHOUT THEIR LENGTH FROM THE MAIN SEWER TO THE BUILDING OR PLACE TO BE DRAINED IS TO BE LAID, AS NEARLY AS PRACTICAL, IN A STRAIGHT LINE IN A TRENCH AT A RIGHT ANGLE TO THE MAIN SEWER.

REGIONAL ROAD (DIXIE ROAD):

1. ALL CONSTRUCTION SIGNAGE MUST CONFORM TO MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
2. ASPHALT PRESERVATIVE SEALER SUCH AS RE-CLIMATEA OR APPROVED EQUIVALENT SHALL BE APPLIED AFTER THE ONE-YEAR MAINTENANCE PERIOD FOR THE TOP COARSE ASPHALT.
3. ALL TEMPORARY SIGNAGE AND TRAFFIC CONTROL MEASURES SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF ONTARIO TRAFFIC MANUAL, BOOK 7 TEMPORARY CONDITION.
4. ACCESS TO EXISTING ENTRANCES AND SIDE STREETS SHALL BE MAINTAINED.
5. WORK OPERATIONS THAT REQUIRE DIVERTING TRAFFIC TO ONE LANE SUBJECT TO TIME RESTRICTIONS AND/OR NIGHT TIME OPERATIONS AS SPECIFIED IN ROAD OCCUPANCY PERMIT.
6. LOCATION OF EXISTING UTILITIES TO BE ESTABLISHED BY CONTRACTOR, ALL EXISTING UTILITY ELEVATIONS (SEWERS AND WATERMAIN) INCLUDING CENTRE LINE OF THE ROAD ELEVATIONS HAVE TO BE VERIFIED BY CONTRACTOR PRIOR TO COMMENCING ANY WORK ON SITE. ANY DISCREPANCIES SHALL BE REPORTED TO THE DESIGN ENGINEER AND THE REGION IMMEDIATELY.
7. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR LOCATING, SUPPORTING AND PROTECTING ALL UNDERGROUND AND OVERHEAD UTILITIES AND STRUCTURES EXISTING AT THE TIME OF CONSTRUCTION IN THE AREA OF HIS WORK, WHETHER SHOWN ON THE PLANS OR NOT, AND FOR ALL REPAIRS AND CONSEQUENCES RESULTING FROM DAMAGE TO SAME.
8. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE TO GIVE 72 HOURS WRITTEN NOTICE TO UTILITY AUTHORITY PRIOR TO CROSSING SUCH UTILITIES FOR THE PURPOSE OF INSPECTION. THIS INSPECTION WILL BE FOR THE DURATION OF CONSTRUCTION WITH THE CONTRACTOR RESPONSIBLE FOR ALL COSTS ARISING FROM SUCH INSPECTIONS.
9. THE CONTRACTOR SHALL NOTIFY IN ADVANCE, AS REQUIRED, THE APPROPRIATE AUTHORITY HAVING JURISDICTION FOR THE ROAD PRIOR TO COMMENCING ANY WORK AND SHALL ACQUIRE AND SATISFY THE REQUIREMENTS OF APPROPRIATE PERMITS (FEES, INSPECTIONS, SIGNAGE, TRAFFIC, MAINTENANCE, DIVERSION, ETC.)
10. ALL EXISTING PAVEMENTS, CURBS, SIDEWALKS, AND BOULEVARDS AND OTHER AREAS DISTURBED BY THE WORK, TO BE REINSTATED EQUAL OR BETTER TO EXISTING AND TO THE SATISFACTION OF APPLICABLE AUTHORITY HAVING JURISDICTION OVER THE ROAD ALLOWANCE. EXISTING PAVEMENTS AND CURBS TO BE SAW-CUT TO PROVIDE A SMOOTH JOINT.
11. DIXIE ROAD, ROAD BASE SHALL BE AS PER REGION OF PEEL STD. DWG. 5-1-1 AND 5-1-2.

ROADWORKS:

1. GENERAL

1.1. CONSTRUCTION OF ROADWAYS & RELATED WORKS SHALL BE IN ACCORDANCE WITH TOWN OF CALEDON STANDARDS AND SPECIFICATIONS (LATEST EDITION).

1.2. FOLLOWING THE INSTALLATION OF SEWERS, ALL ROADWAYS SHALL BE ROUCH GRADED TO A SUBGRADE FOR THE INSTALLATION OF WATERMAINS AND UTILITIES.

2. PRELIMINARY ROADS

2.1. SPEIRS GIFFEN AVENUE EXTENSION FROM THE CUL-DE-SAC TO HEARTLAKE ROAD SHALL BE CONSIDERED A PRELIMINARY ROAD AND STILL SUBJECT TO FUTURE MUNICIPAL REVIEW.

2.2. THE PRELIMINARY ROAD RIGHT OF WAY (GRAVEL ROAD, FROM THE CUL-DE-SAC TO THE APPROACH ON HEARTLAKE ROAD) SHALL BE GRADED TO BASE COURSE ELEVATIONS (SEE INTERIM GRAVEL ACCESS ROAD DETAIL, SHEET 16)

3. CATCH BASINS

3.1. CATCH BASIN CONNECTIONS TO BE 250mm DIA. PVC PIPE, CSA 182.2, SDR-35 UNLESS OTHERWISE NOTED.

3.2. SINGLE / DOUBLE STREET CATCH BASINS AS PER OPSD 705.010 / 705.020 RESPECTIVELY WITH GOSS TRAPS.

STREET CB GRATES AS PER OPSD 400.100

4. FINAL ROADWAYS

4.1. ROAD DESIGN TO ADHERE TO TOWN OF CALEDON STANDARD No: 211 (SEE DETAIL SEE DETAIL, SHEET 16) FOR A 26.0m INDUSTRIAL COLLECTOR (14.5m ROADWAY, 13.9m PAVEMENT).

4.2. MANHOLES AND CATCH BASINS SHALL BE INSTALLED FLUSH WITH THE BINDER COURSE ASPHALT (HL8).

4.3. MANHOLES TO BE ADJUSTED TO MATCH FINAL LIFT OF ASPHALT.

5. SIDEWALKS

5.1. CONCRETE CURB AND GUTTER AS PER OPSD 600.040 (SEE SHEET 20), Min. 30 MPa STRENGTH. A 50 mm KEY IS REQUIRED FOR ALL LOCATIONS.

5.2. 1.5m WIDE CONCRETE SIDEWALK AS PER OPSD 310.010 (SEE SHEET 20) (125mm THICKNESS, Min. 30 MPa STRENGTH WITH GRANULAR 'A' BASE AS REQUIRED TO PROVIDE A LEVELING COURSE FOR THE CONCRETE. AT DRIVEWAYS, CONCRETE DEPTH TO BE Min. 175mm.

5.3. WHEELCHAIR RAMPS REQUIRED AT ALL INTERSECTIONS AS PER OPSD 310.030 (SEE SHEET 20).

5.4. WHEELCHAIR ACCESS SHALL BE PROVIDED AT ALL DRIVEWAY INTERSECTIONS.

5.5. ASPHALT RAMPING SHALL BE PLACED TO SUIT THE WHEELCHAIR RAMPS IF SURFACE COURSE ASPHALT IS NOT INSTALLED AT THE SAME TIME. THESE RAMPS ARE TO BE REMOVED JUST PRIOR TO PLACEMENT OF SURFACE COURSE ASHPALT.

6. ROAD SUBDRAINS

6.1. 100mm FILTER WRAPPED CORRUGATED SLOTTED P.E. PLASTIC PIPE SUBDRAINS TO BE INSTALLED CONTINUOUSLY BELOW THE CURB AND GUTTER AND CONNECTED TO THE CB's. AS PER TOWN OF CALEDON STANDARD No. 219 (SEE STANDARD SHEET 19).

7. AS PER THE GEOTECHNICAL REPORT, THE MINIMUM PAVEMENT DESIGN SHALL BE AS FOLLOWS:

	MERCHANT ROAD	SPEIRS GIFFEN AVE	COMPACTION REQUIREMENTS
HOT MIX ASPHALT SURFACE COURSE, OPSS 1150 DFC	40mm	40mm	as per OPSS 310
HOT MIX ASPHALT BINDER COURSE, OPSS 1150 HDBC	90mm	110mm	as per OPSS 310
BASE COURSE OPSS 1010 GRANULAR 'A'	150mm	150mm	a minimum of 100 percent Standard Proctor Maximum Dry Density (ASTM D698)
SUBBASE COURSE, OPSS 1010 GRANULAR 'B'	450mm	450mm	
	DRIVEWAY / FIRE	COMMERCIAL DRIVEWAY/FIRE	
HOT MIX ASPHALT SURFACE COURSE, OPSS 1150 HL 3	40mm	40mm	as per OPSS 310
HOT MIX ASPHALT BINDER COURSE, OPSS 1150 HL 8	100mm	80mm	as per OPSS 310
BASE COURSE OPSS 1010 GRANULAR 'A'	150mm	150mm	100 percent of Standard Proctor Maximum Dry Density (ASTM D698)
SUBBASE COURSE, OPSS 1010 GRANULAR 'B'	450mm	350mm	

INTERIM 3.0m WIDE GRANULAR ACCESS MAINTENANCE TRAIL:

1. AS PER THE REGION OF PEELS RECOMMENDATIONS:

	DEPTH	COMPACTION REQUIREMENTS
50mm CRUSHER LIMESTONE ON TOP OF TENSAR GEOGRID AND TERAFIX FILTER CLOTH TYPE 270R OR APPROVED EQUAL.	350mm	"IN THIN LIFTS" COMPACTED TO 100% SPD.

COMPACTION REQUIREMENTS

1. ALL COMPACTION REQUIREMENTS TO MEET THE REQUIREMENTS AS OUTLINED IN THE GEOTECHNICAL REPORT.
2. ALL BEDDING AND BACKFILL MATERIAL, ROAD SUB-GRADES AND GENERALLY ALL MATERIALS USED FOR LOT GRADING AND FILL SECTIONS, ETC., SHALL BE COMPACTED TO MIN. 95% SPMDD, WHILE THE UPPER ZONE (WITHIN 1.2m OF THE DESIGN SUBGRADE) SHOULD BE COMPACTED TO A MINIMUM OF 98% SPMDD.
3. THE PAVEMENT SUBGRADE SHOULD BE PROOF-ROLLED WITH A HEAVY RUBBER TIRE VEHICLE (SUCH AS A GRADER) AND ANY LOOSE, SOFT, WET OR UNSTABLE AREAS SHOULD BE SUB-EXCAVATED, AND BACKFILLED WITH CLEAN EARTH FILL MATERIAL PLACED IN 150mm LIFTS (OR LESS) AND COMPACTED TO A MINIMUM OF 100% SPMDD.
4. APSHALT MATERIALS SHALL BE ROLLED AND COMPACTED AS PER OPSS 310.
5. THE GRANULAR AND ASPHALT PAVEMENT MATERIALS AND THEIR PLACEMENT SHOULD CONFORM TO OPSS FORMS 310, 501, 1010, AND 1150 AND THE TOWN / REGION SPECIFICATIONS.
6. FOR ALL SEWERS AND WATERMAINS IN FILL SECTIONS, THE COMPACTION SHALL BE CERTIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO LAYING OF PIPE.
7. WHERE DEWATERING MEASURES ARE TO BE IMPLEMENTED IN SECTIONS OF SEWER INSTALLATION, CLAY PLUGS SHOULD BE INSTALLED WITHIN GRANULAR BEDDING AND THE GRANULAR ZONES OF BACKFILL MATERIAL TO HELP PREVENT MIGRATION OF GROUND WATER ALONG THE RELATIVELY FREE DRAINING BEDDING MATERIAL.
8. CLAY PLUGS SHOULD BE PLACED IN TRENCHES AT 50m INTERVALS (OR LESS) ALONG THE FULL LENGTH OF THE WATER TRENCH, WHERE THE INVERT OF THE TRENCH IS BELOW THE WATER TABLE. THE PLUG SHOULD BE AT LEAST 1.0m THICK (MEASURED ALONG THE PIPE) AND SHOULD SHOULD COMPLETELY REPLACE THE BEDDING AND RELATIVELY PERVIOUS BACKFILL. THE CLAY PLUGS MUST BE COMPACTED TO A MINIMUM OF 95% SPMDD.

WATERMAINS:

1. GENERAL

1.1. CONSTRUCTION OF WATERMAINS AND PRIVATE SERVICES SHALL BE IN ACCORDANCE WITH THE REGION OF PEEL PUBLIC WORKS DESIGN, SPECIFICATIONS AND PROCEDURES MANUAL (LATEST EDITION) AND MINISTRY OF ENVIRONMENT (MOE) GUIDELINES (LATEST EDITION).

1.2. WHERE NON-METALLIC PIPE (PVC, CONCRETE PRESSURE PIPE) IS INSTALLED, A 12-GAUGE TWU STRANDED COPPER, LIGHT COLOURED PLASTIC COATED TRACER WIRE MUST BE INSTALLED WITH AND ALONG THE PIPE AND BROUGHT TO THE SURFACE AT EACH VALVE BOX/CHAMBER AND HYDRANT (AROUND PORT). TRACER WIRE IS TO BE ATTACHED TO THE PIPE AND OUTSIDE OF EACH VALVE BOX BY MEANS OF TAPE.

1.3. ALL FITTINGS SHALL BE RESTRAINED WHERE REQUIRED BY THE DESIGN OR BY THE REGION.

1.4. STAINLESS STEEL BOLTS AND NUTS ARE TO BE USED ON ALL FITTINGS AND JOINT RESTRAINTS.

1.5. CATHODIC PROTECTION IS REQUIRED ON ALL METALLIC FITTINGS, VALVES AND JOINT RESTRAINTS MUST BE WRAPPED END TO END WITH AN APPROVED CORROSION PROTECTION SYSTEM THAT INCLUDES PETROLATUM PRIMER (PASTE), PETROLATUM MOULDING, AND LOW TEMPERATURE PETROLATUM TAPE.

1.6. ALL SYSTEM COMPONENTS ARE TO BE EITHER TO THE REGION OF PEEL STANDARDS OR ONTARIO PROVINCIAL STANDARD DRAWING (OPSD). WHERE A REGION STANDARD EXISTS, IT SHALL BE USED IN PLACE OF THE OPSD STANDARD.

1.7. ALL LIVE TAPPING AND OPERATION OF EXISTING REGIONAL WATER VALVES SHALL BE ARRANGED THROUGH THE REGIONAL INSPECTOR ASSIGNED OR BY CONTACTING THE WATER DIVISION.

1.8. THE NEW WATERMAIN MUST BE ISOLATED FROM THE EXISTING WATERMAIN TO MAINTAIN PRESSURE IN THE NEW MAIN DURING INSTALLATION OF SERVICES. PROPER SIZE BY-PASS WITH THE APPROVED DIFFERENTIAL BACKFLOW PREVENTER TO BE INSTALLED AROUND THE CLOSED OPERATING VALVE.

1.9. ANY JOINT DEFLECTION SHALL BE 50% OF MANUFACTURER'S SPECIFICATIONS. PIPER BARREL DEFLECTION IS PROHIBITED WHEN USING PVC PIPE.

2. LOCATIONS

2.1. MINIMUM HORIZONTAL SEPARATION BETWEEN SEWERS AND WATERMAINS SHALL BE IN ACCORDANCE WITH TOWN OF CALEDON STANDARD No. 211 (SEE DETAIL, SHEET 16) AND HAVE A MINIMUM HORIZONTAL SEPERATION OF 2.5m, AS PER THE REGION OF PEEL. VERTICAL CLEARANCE BETWEEN SEWERS AND WATERMAINS THAT CROSS TO BE 500mm BETWEEN THE OUTSIDE OF THE WATERMAIN AND OUTSIDE OF THE SEWER AS PER MOE DESIGN CRITERIA.

2.2. THE MINIMUM LATERAL DISTANCE BETWEEN WATER SERVICES AND OTHER UTILITIES SHALL BE 1.2m.

3. DEPTH

3.1. ALL WATER SERVICES TO BE INSTALLED WITH A MINIMUM OF 2.4m COVER.

3.2. REFER TO STD DWG 1-5-8 FOR INSULATION REQUIREMENTS.

4. CROSSINGS

4.1. WHERE WATERMAINS CROSS UNDER A CREEK, THE MINIMUM COVER OVER THE WATERMAIN BELOW THE CREEK BOTTOM SHALL BE AS PER MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT AND CONSERVATION AUTHORITIES REQUIREMENTS. GENERALLY, WHERE WATERMAINS CROSS OVER UTILITIES, A 0.3m MINIMUM CLEARANCE SHALL BE PROVIDED. WHERE WATERMAINS CROSS UNDER UTILITIES, THE MINIMUM CLEARANCE SHALL BE 0.5m.

4.2. FOR A WATERMAIN CROSSING A SANITARY SEWER, WATERMAIN JOINTS ARE TO BE OFFSET A MINIMUM OF 2.5m HORIZONTALLY FROM THE CENTERLINE OF THE SANITARY SEWER.

5. CONSTRUCTION IN FILL AREAS

5.1. "NO WATERMAIN SHALL BE LAID ON FILL UNTIL DENSITY TEST REPORTS HAVE BEEN SUBMITTED TO AND APPROVED BY THE CONSULTANT OR REGION. FILL SHALL BE PLACED TO 0.6m MINIMUM ABOVE THE TOP OF WATERMAIN GRADES AND COMPACTED TO THE MINIMUM OF 100% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD) IN 0.3m LIFTS. TESTS SHALL BE TAKEN ALONG THE CENTERLINE OF THE PROPOSED WATERMAIN. ALL FITTINGS AND BRANCH VALVES IN FILL AREAS SHALL BE TIED WITH TIE RODS IN ADDITION TO CONCRETE BLOCKING ACCORDING TO THE FOLLOWING:

THRUST BLOCKING

CONCRETE THRUST BLOCKS SHALL BE INSTALLED AT ALL TEES, HORIZONTAL BENDS, HYDRANTS END OF MAINS AND CONNECTIONS 100mm TO 300mm DIAMETER AS PER REGIONAL STANDARDS. ALL 400mm DIAMETER WATERMAINS AND LARGER SHALL HAVE RESTAINED JOINTS. CALCULATIONS WILL BE REQUIRED FROM THE CONSULTANT TO DETERMINE THE M NUMBER OF JOINTS TO BE RESTRAINED BEYOND THE BEND.

ALL THRUST BLOCK LOCATIONS, WHERE COMPACTED FILL RATHER THAN UNDISTURBED GROUND EXISTS BEHIND THE THRUST BLOCK, THE FOLLOWING ADDITIONAL PROCEDURE SHALL BE FOLLOWED:

ALL SEGMENTS OF THE FITTING AND THE WATERMAIN AT THE THRUST BLOCK LOCATION SHALL BE TIED USING APPROVED RESTRAINING DEVIES INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS (TIE RODS AND CLAMPS SHALL BE PROTECTED USING CATHODIC PROTECTION AND CORROSION PREVENTION TAPE).

IMPORTED GRANULAR FILL (OPS GRANULAR "B" OR EQUIVALENT) IS TO BE USED BEHIND THE THRUST BLOCK AND FOR A MINIMUM DISTANCE OF 2m EACH SIDE OF THE THRUST BLOCK. THIS IMPORTED GRANULAR FILL SHALL BE COMPACTED TO A MINIMUM OS 100% STANDARD PROCTOR DENSITY. PRIOR TO CONSTURCTING THE THRUST BLOCKS, THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR BACKFILL FROM A LICENSDED GEOTECHNICAL ENGINEER."

6. LINE VALVES

6.1. ALL VALVE BOXES TO BE SET TO SURFACE GRADE.

6.2. CORROSION PROTECTION TAPE AND ZINC ANODE CAPS SHALL BE APPLIED TO ALL VALVES LOCATED WITHIN CHAMBERS.

6.3. ALL VALVES 300mm AND SMALLER SHALL BE EQUIPPED WITH VALVE BOXES AND RESTRAINED.

6.4. A 12-GAUGE TWU STRANDED COPPER, LIGHT COLOURED PLASTIC COATED TRACER WIRE MUST BE INSTALLED WITH AND ALONG THE PIPE AND BROUGHT TO THE SURFACE AT EACH VALVE BOX/CHAMBER. TRACER WIRE IS TO BE ATTACHED TO THE PIPE OUTSIDE OF EACH VALVE BOX BY MEANS OF TAPE.

6.5. TRACER WIRE IS TO BE LOOPED THROUGH A HOLE IN THE SIDE OF THE VALVE BOX AS PER STD DWG 1-3-11 (SEE DETAIL SHEET 20).

6.6. ALL VALVE BOXES AND HYDRANTS ARE TO BE PROTECTED DURING CONSTRUCTION.

6.7. WATERTIGHT BOLT DOWN COVERS SHALL BE PROVIDED ON ALL CHAMBERS THAT ARE SUSCEPTIBLE TO FLOODING OR VANDALISM.

6.8. EACH CHAMBER WILL REQUIRE EXTENDED VENTS. THE ELEVATIONS OF THE VENTS SHALL BE ABOVE REGIONAL FLOOD LINES AS DETERMINED BY THE APPROPRIATE CONSERVATION AUTHORITY.

7. SERVICES

7.1. WATERMAIN SERVICES ARE TO BE INSTALLED PERPENDICULAR TO THE PROPOSED WATERMAIN AND STRAIGHT INTO THE BUILDING.

7.2. ALL SERVICES SHALL HAVE CURB STOPS AND BOXES INSTALLED AT THE STREET LINE, BE FLUSH WITH GRADE AND ACCESSIBLE AT ALL TIMES. REDUCING CURB STOPS SHALL NOT BE USED.

7.3. ALL WATER SERVICES SHALL HAVE THE SAME SIZE MAINSTOP AS THE SERVICE PIPE. MAINSTOPS ARE NOT REQUIRED ON WATER SERVICES OFF 50mm DIAMETER COPPER WATERMAINS.

7.4. SERVICE CONNECTIONS SHALL BE AS PER STD. DWG 1-8-6 (SEE DETAIL SHEET 17).

7.5. 50mm DIAMETER BLOW-OFFS ARE TO BE INSTALLED AT THE STREET LINE FOR ALL DEAD-ENDED LONG (GREATER THAN 10m) INDUSTRIAL WATER SERVICES, UNLESS OTHER METHODS ARE AVAILABLE FOR BLEEDING OFF, CHARGING AND FLUSHING OF THE SERVICE

7.6. ALL CONNECTIONS TO PVC PIPES TO BE MADE USING AN APPROVED WIDE BRANCH SERVICE SADDLE. DIRECT TAPPING IS NOT ALLOWED TO PVC WATERMAINS. TRACER WIRE TO BE INSTALLED AS PER STD. DWG. 1-7-1.

8. HYDRANTS

8.1. FIRE HYDRANTS TO BE INSTALLED AS PER REGION STD. DWG 1-6-1 (SEE SHEET 17) AND 1-6-2 WITH FLANGE SET BETWEEN 50mm AND 150mm ABOVE FINISHED GRADE.

8.2. ALL HYDRANTS SHALL HAVE 150mm BRANCH VALVES AND BOXES. HYDRANT BRANCH TEES FROM BE AS PER STD. DWG. 1-6-1 (SEE SHEET 17) AND 1-6-2.

8.3. ALL HYDRANTS SHALL HAVE MINIMUM 1.2m MINIMUM HORIZONTAL CLEARANCE FROM ALL UTILITIES AND STRUCTURES MEASURED FROM THE NEAREST POINT OF THE STRUCTURE. HYDRANTS NEAR DRIVEWAYS SHALL BE LOCATED A MINIMUM OF 1.25m CLEAR FROM THE PROJECTED GARAGE OR EDGE OF DRIVEWAY, WHICHEVER IS GREATER.

8.4. THE HYDRANT SAFETY BREAKAWAY FLANGE MUST BE LOCATED 50mm TO 150mm ABOVE THE FINISHED GRADE AND FIELD ADJUSTED IF REQUIRED.

9. THRUST BLOCKS

9.1. THRUST BLOCKING OF WATERMAIN TO BE INSTALLED AS PER STD. 1-5-4 (SEE SHEET 16), 1-5-5 (SEE SHEET 16), AND 1-5-7 (SEE SHEET 17).

10. AIR VALVES AND DRAIN VALVES

10.1. FOR WATERMAINS 400mm DIAMETER AND LARGER, PROVISION FOR AIR RELEASE AND DRAINAGE IS REQUIRED AT THE HIGH AND LOW POINTS RESPECTIVELY. THIS PROVISION MAY BE INCORPORATED WITH THE LINE VALVE CHAMBER OR IN SEPERATE CHAMBERS. REFER TO STD. DWG 1-3-5 (AIR VALVE)

11. BEDDING

11.1. BEDDING FOR WATERMAINS SHALL BE PER REGION STD. DWG. 1-5-1 (SEE SHEET 16) AND 1-5-2.

SANITARY SEWERS:

1. GENERAL

1.1. ALL SYSTEM COMPONENTS ARE TO BE EITHER TO THE REGION OF PEEL STANDARDS OR ONTARIO PROVINCIAL STANDARD DRAWING (OPSD). WHERE A REGION STANDARD EXISTS, IT SHALL BE USED IN PLACE OF THE OPSD STANDARD.

1.2. SANITARY SEWERS IN FILL SECTIONS, THE COMPACTION SHALL BE CERTIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO LAYING OF PIPE.

1.3. PROPOSED SANITARY MAINLINE SEWER'S SHALL BE REINFORCED CONCRETE, CSA 257.2, 140-D.

1.4. FLOW VELOCITIES SHALL BE DETERMINED IN ACCORDANCE WITH GUIDELINES OUTLINED IN THE REGION OF PEEL PUBLIC WORKS DESIGN CRITERIA MANUAL.

1.5. DEFORMATION GAUGE TEST (PIG) IS REQUIRED ON ALL PIPE WORKS PRIOR TO MAINTENANCE AND ACCEPTANCE. ALL PIPE WORKS SHALL HAVE A VIDEO TAPING COMPLETE AS PART OF THE PRELIMINARY AND ASSUMPTION INSPECTIONS.

2. MAINTENANCE HOLES

2.1. FRAME AND COVERS SHALL BE AS PER REGION STD. DWG. 2-5-13 (SEE SHEET 17).

2.2. DROP MAINTENANCE HOLES SHALL BE PROVIDED WHERE THE DIFFERENCE IN INVERT ELEVATION IS GREATER THAN 0.90m. THE DROP PIPE SHALL BE ONE SIZE SMALLER THEN THE SEWER LINE (MINIMUM 250mm). (SEE STANDARD 2-5-26, SHEET 18).

2.3. ALL MAINTENANCE HOLES SHALL CONFORM TO THE CURRENT MANUFACTURER'S APPROVED PRODUCTS LIST, SANITARY SEWER AND APPERTENANCES, REGION OF PEEL STANDARD DRAWING 2-5-3, 2-5-4 (REFER TO STANDARDS ON SHEET 17).

2.3. WHERE DEPTH FROM INVERT TO TOP OF A MAINTENANCE HOLE EXCEEDS 5.0m, A SAFETY PLATFORM IS TO BE PROVIDED AS PER PEEL REGIONAL STANDARD 2-6-13 TO 2-6-15 (SEE STANDARD ON SHEET 18).

2.4. MAXIMUM SPACING OF MAINTENANCE HOLES SHALL BE 120m FOR SANITARY SEWERS UP TO 600mm IN SIZE. FOR SANITARY SEWERS GREATER THAN 600mm IN SIZE, THE MAXIMUM SPACING SHALL BE 170m.

3. SIZING

3.3. MAINLINE SANITARY SEWER PIPE SIZE SHALL BE MINIMUM 375mm DIAMETER.

3.4. MINIMUM HORIZONTAL SEPARATION BETWEEN SANITARY SEWERS AND STORM SEWERS SHALL BE 2.0m IF BOTH SEWERS ARE AT THE SAME RELATIVE ELEVATION. IF THE SEWER INVERTS VARY MORE THAN 1.0m, A MINIMUM HORIZONTAL SEPARATION OF 3.0m SHALL BE MAINTAINED.

3.5. MINIMUM HORIZONTAL SEPARATION BETWEEN SEWERS AND WATERMAINS SHALL BE 2.5m. VERTICAL CLEARANCE BETWEEN SEWERS AND WATERMAINS THAT CROSS TO BE 500mm BETWEEN THE OUTSIDE OF THE WATERMAIN AND OUTSIDE OF THE SEWER. THE LENGTH OF WATER PIPE SHOULD BE CENTERED AT THE POINT OF CROSSING SUCH THAT JOINTS IN THE WATERMAIN WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER, CROSSING PERPENDICULAR IF POSSIBLE.

4. DEPTH

4.1. THE OBVERT OF THE SANITARY SEWER SHALL BE A MINIMUM OF 2.5m BELOW THE CENTRELINE OF ROAD.

4.2. IN ALL CASES, THE PROPOSED SANITARY SEWER SHALL BE INSTALLED AT SUFFICIENT DEPTH TO SERVICE LANDS EXTERNAL TO THE SITE AS DETERMINED BY THE REGION OF PEEL.

5. CREEK CROSSINGS

5.1. IN VALLEYS , THE SANITARY SEWER SHALL BE A MINIMUM 1.4m BELOW THE CREEK BOTTOM.

5.2. A PERMIT FROM THE TORONTO REGIONAL CONSERVATION AUTHORITY IS REQUIRED FOR A CREEK CROSSING.

6. SPECIAL DESIGN CONSIDERATIONS

6.1. SPECIAL CONSIDERATIONS FOR WATER TIGHT JOINTS IS TO BE APPLIED WHEN PIPE IS BURIED TO A DEPTH WHERE SIGNIFICANT HYDROSTATIC PRESSURES ARE ANTICIPATED.

6.2. WHERE SIGNIFICANT SECTIONS OF SANITARY SEWERS ARE PROVIDED WITH WATERTIGHT COVERS, EXTENDED VENTS WILL BE REQUIRED AT EVERY THIRD MAINTENANCE HOLE AS PER PEEL REGIONAL STANDARD DRAWING 2-5-22, SEE STANDARD, SHEET 18).

7. BEDDING AND COMPACTION

7.1. ALL SANITARY SEWER BEDDING AS PER REGION STD. DWG. 2-3-1 (REFER TO STANDARD ON SHEET 18).

7.2. GRANULAR BEDDING MATERIAL SHOULD CONSIST OF WELL GRADED, FREE DRAINING SOIL, SUCH AS OPSS GRANULAR 'A' OR 19mm CRUSHER RUN LIMESTONE OR ITS EQUIVALENT AS PER THE PERTINENT TOWN / REGION SPECIFICATIONS.

7.3. THE BEDDING MATERIALS SHOULD BE PLACED IN 150mm LIFTS AND COMPACTED TO A MINIMUM OF 100% SPMDD, SEE REGION OF PEEL STANDARD 2-3-1 (REFER TO STANDARD ON SHEET 18).

8. SANITARY SERVICES

8.1. IN INDUSTRIAL AREAS, THE MINIMUM SIZE OF SANITARY LATERALS SHALL BE 150mm, INSTALLED WITH A MINIMUM GRADE OF 1% AND A MAXIMUM GRADE OF 2%.

8.2. THE MINIMUM AND MAXIMUM COVER OF SANITARY LATERALS SHALL BE 2.00m AND 2.75m RESPECTIVELY, UNLESS CIRCUMSTANCES REQUIRE OTHERWISE.

8.3. THE MAXIMUM DROP ACROSS A PROPERTY LINE SHALL BE 0.03m.

8.4. A MAINTENANCE HOLE IS REQUIRED IF THE LATERAL DIAMETER IS EQUAL TO OR GREATER THAN HALF THE DIAMETER OF THE MAIN SEWER LINE. EXCEPT FOR A 150mm DIAMETER PIPE CONNECTING TO A 250mm DIAMETER MAINLINE OR A 200mm DIAMETER PIPE CONNECTING TO A 375mm MAINLINE.

STORM SEWERS:

1. GENERAL

1.1. STORM SEWER TO BE CONSTRUCTED IN ACCORDANCE WITH THE MOST RECENT REQUIREMENTS AND SPECIFICATIONS OF THE TOWN OF CALEDON.

1.2. STORM SEWERS SHALL BE PROVIDED ON ALL ROADS WITH CURB AND GUTTER.

1.3. RADIUS PIPE SHALL BE ALLOWED FOR STORM SEWERS 975mm IN DIAMTER AND LARGER PROVIDED THAT A MANHOLE IS LOCATED AT THE BEGINNING OR AT THE END OF THE RADIAL SECTION.

1.4. NO DECREASE OF PIPE SIZE FROM A LARGER UPSTREAM TO A SMALLER DOWNSTREAM WILL BE ALLOWED REGARDLESS OF THE INCREASE IN GRADE.

1.5. DEFORMATION GAUGE TEST (PIG) IS REQUIRED ON ALL PIPE WORKS PRIOR TO MAINTENANCE AND ACCEPTANCE. ALL PIPE WORKS SHALL HAVE A VIDEO TAPING COMPLETE AS PART OF THE PRELIMINARY AND ASSUMPTION INSPECTIONS. ALL SEWERS WILL BE FLUSHED PRIOR TO VIDEO INSPECTION.

1.6. MAINTENANCE HOLE TOPS (FRAMES) AND CATCHBASIN (FRAMES) ARE TO BE SET TO BASE COURSE ASPHALT AND THEN ADJUSTED FINAL GRADE WHEN THE TOP OF ASPHALT IS PLACED.

1.7. ALL CONNECTIONS TO THE STORM MAIN SHALL BE MADE WITH A STORM MANHOLE OR APPROVED FACTORY TEE CONNECTION AS PER OPSD 708.01 OR 708.03.

1.8. ALL PIPE HANDLING INSTRUCTIONS MUST BE IN STRICT COMPLIANCE WITH MANUFACTURERS INSTALLATION GUIDES.

1.9. THE MAXIMUM ALLOWABLE FLOW VELOCITY FOR CIRCULAR STORM SEWERS SHALL BE 4.0m/sec AND THE MINIMUM ALLOWABLE VELOCITY SHALL BE 0.75m/Sec.

1.10. STORM SEWERS TO HAVE A MINIMUM COVER OF 2.0m AS PER TOWN OF CALEDON STANDARD DRAWING No: 211.

2. SIZING

2.1. STORM SEWERS TO BE MINIMUM 300mm DIAMETER WITH JOINTS CONFORMING TO C.S.A. STANDARD A 257.3.

2.2. THE STORM SEWERS SHALL BE LOCATED AS SHOWN ON THE TOWN OF CALEDON STANDARD INDUSTRIAL ROAD CROSS SECTION NO 211 (SEE STANDARD ON SEE DETAIL, SHEET 16). THE STANDARD LOCATION IS GENERALLY 1.5m METERS FROM THE CENTER LINE OF ROAD.

3. DEPTH

3.1. MINIMUM HORIZONTAL SEPARATION BETWEEN SEWERS AND WATERMAINS SHALL BE 2.5m. VERTICAL CLEARANCE BETWEEN SEWERS AND WATERMAINS THAT CROSS TO BE 500mm BETWEEN THE OUTSIDE OF THE WATERMAIN AND OUTSIDE OF THE SEWER. THE LENGTH OF WATER PIPE SHOULD BE CENTERED AT THE POINT OF CROSSING SUCH THAT JOINTS IN THE WATERMAIN WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER, CROSSING PERPENDICULAR IF POSSIBLE.

4. PIPE CLASSIFICATION, BEDDING AND COMPACTION

4.1. ALL STORM SEWER PIPES SHALL CONFORM TO THE REQUIREMENTS OF THE CANADIAN STANDARDS ASSOCIATIOIN (CSA).

4.2. GRANULAR BEDDING MATERIAL SHOULD CONSIST OF WELL GRADED, FREE DRAINING SOIL, SUCH AS OPSS GRANULAR 'A' OR 19mm CRUSHER RUN LIMESTONE OR ITS EQUIVALENT AS PER THE PERTINENT TOWN / REGION SPECIFICATIONS.

4.2. THE BEDDING MATERIALS SHOULD BE PLACED IN 150mm LIFTS AND COMPACTED TO A MINIMUM OF 95% SPMDD.

4.3. FOR ALL SEWERS AND WATERMAINS IN FILL SECTIONS, THE COMPACTION SHALL BE CERTIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO LAYING OF PIPE.

4.4. STORM SEWERS SHALL BE CONSTRUCTED WITH BEDDING AS PER OPSD 802.030 FOR RIGID PIPE OR OPSD 802.010 WITH GRANULAR 'A' FOR FLEXIBLE PIPE UNLESS APPROVED OTHERWISE BY THE DIRECTOR.

4.5. PIPE MATERIAL TO BE REINFORCED CONCRETE SHALL BE CERTIFIED TO C.S.A. STANDARD A247.2-1982, CLASS 65-D OR PVC CERTIFIED C.S.A. STANDARDS 182.2 AND 182.4 MAX.

4.6. ALL PIPE BEDDING MUST CONFORM TO OPSD MAXIMUM COVER TABLE OPSD 807.010. NO FLEXIBLE PIPE SEWERS WILL BE INSTALLED WITH A DEPTH COVER GREATER THAN 6m UNLESS SPECIFICALLY APPROVED BY THE DIRECTOR.

4.7. SEWER BEDDING, COVER AND BACKFILL FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010 WITH GRANULAR "A" FOR BOTH THE BEDDING AND COVER. REFERENCE HOWEVER SHOULD BE MADE TO THE OPSD STANDARDS FOR ALTERNATE BEDDING AND BACKFILL SPECIFICATIONS AS DETERMINED BY THE PROPOSED PIPE MATERIAL AND EXCAVATION CONDITIONS.

5. MAINTENANCE HOLES

5.1. MANHOLES MAY BE EITHER PRECAST OR POURED IN PLACE AND SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE MOST RECENT ONTARIO PROVINCIAL STANDARD DRAWINGS SPECIFICATIONS.

5.2. MANHOLES SHALL BE LOCATED AT EACH CHANGE IN ALIGNMENT, GRADE OR PIPE MATERIAL, AT ALL PIPE JUNCTIONS, AT THE BEGINNING AND END OF RADIUS PIPE SELECTIONS AND AT INTERVALS ALONG THE PIPE TO PERMIT ENTRY FOR MAINTENANCE TO THE SEWER.

5.3. MAXIMUM SPACING OF MANHOLES SHALL BE 120m FOR SEWERS 600mm OR LEASS IN DIAMETER AND 150m FOR SEWERS 675mm OR GREATER IN DIAMETER.

5.4. MAINTENANCE HOLES SHALL BE 1200mm DIA. AND 1500mm DIA. AS PER OPSD 701.010 AND OPSD 701.011 (RESPECTIVELY). (SEE OPSD'S SHEET 19).

5.5. MANHOLE CHAMBER OPENINGS SHALL BE LOCATED ON THE SIDE OF THE MANHOLE PARALLEL TO THE FLOW FOR STRAIGHT RUN MANHOLES, OR ON THE UPSTREAM SIDE OF THE MANHOLE AT ALL JUNCTIONS.

5.6. CHANGE IN DIRECTION OF FLOW IN ANY MANHOLES SHALL NOT BE GREATER THAN 90 DEGREES PERPENDICULAR TO THE FLOW.

5.7. SAFETY GRATINGS SHALL BE PROVIDED IN ALL MANHOLES WHEN THE DEPTH OF THE MANHOLE EXCEEDS 5.0m. THE MAXIMUM SPACING BETWEEN SAFETY GRATINGS SHALL NOT EXCEED 4.5m, AS PER OPSD 404.020, (SEE OPSD, SHEET 19).

5.8. THE OBVERTS ON THE UPSTREAM SIDE OF THE MANHOLES SHALL NOT BE LOWER THAN THE OBVERT OF THE OUTLET PIPE.

5.9. WHERE THE DIFFERENCE IN ELEVATION BETWEEN THE OBVERT OF THE INLET AND OUTLET PIPES EXCEED 1.2m, A DROP PIPE AS INDICTATED ON OPSD 1003.010 SHALL BE PLACED ON THE INLET PIPE, (SEE OPSD, SHEET 18).

5.10. STORM SEWER MANHOLES SHALL BE BENCHED TO THE OBVERT OF THE OUTLET PIPE ON THE VERTICAL PROJECTION FROM THE SPRING LINE OF THE SEWER.

5.11. MANHOLES SHALL BE LOCATED, WHEREVER POSSIBLE, A MINIMUM OF 1.5m AWAY FROM THE FACE OF THE CURB AND/OR ANY OTHER SERVICE.

5.12. THE MINIMUM DROPS ACROSS MANHOLES SHALL BE AS FOLLOWS,

CHANGE IN DIRECTION	MINIMUM DROP (mm)
0°	30
1° TO 45°	50
45° TO 90°	80

6. CATCH BASINS

6.1. CATCH BASINS MAY BE EITHER PRECAST OR POURED AND SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE MOST RECENT OPSD AND OPSS REQUIREMENTS.

6.2. ROADWAY CATCH BASIN COVERS SHALL BE "BICYCLE PROOF" AS PER OPSD 400.010. CATCH BASINS WITH THE TRAVELLED PORTION OF A ROADWAY, SHALL HAVE THE FRAME ELEVATION FLUSH WITH THE SURFACE OF THE BASE COURSE ASPHALT. THE ADJUSTMENT AND SETTING OF THE FRAME AND COVER SHALL BE COMPLETED IN ACCORDANCE WITH THE DETAILS PROVIDED IN THE OPSD STANDARDS.

6.3. CATCH BASINS SHALL BE AS PER OPSD 701.010 (SEE OPSD, SHEET 19).

6.4. DUAL CATCH BASINS SHALL BE AS PER OPSD 705.020 (SEE OPSD, SHEET 19).

6.5. DITCH INLET CATCH SHALL BE AS PER OPSD 705.040 (SEE OPSD, SHEET 19).

6.6. ALL CATCH BASIN LATERALS SHALL BE PLACED AT 2% GRADE UNLESS OTHERWISE NOTED. PIPE SIZE MINIMUM 250mm DIAMETER SINGLE, 300mm DIAMETER DOUBLE.

6.7. MAXIMUM SPACING FOR CATCHBASINS SHALL BE AS FOLLOWS:

ROAD GRADE @ 0.75%	- 70 m
ROAD GRADE @ 0.75% to 3.0%	- 90 m
ROAD GRADE GREATER THAN 3%	- 70 m

KEY MAP - N.T.S.

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.

This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Sept 19/19
Approved By: Rob Hughes
Print Name: Rob Hughes

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

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TOWN OF CALEDON

Region of Peel
working with you

RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

AUG 15, 2019
J. R. R. PERKS

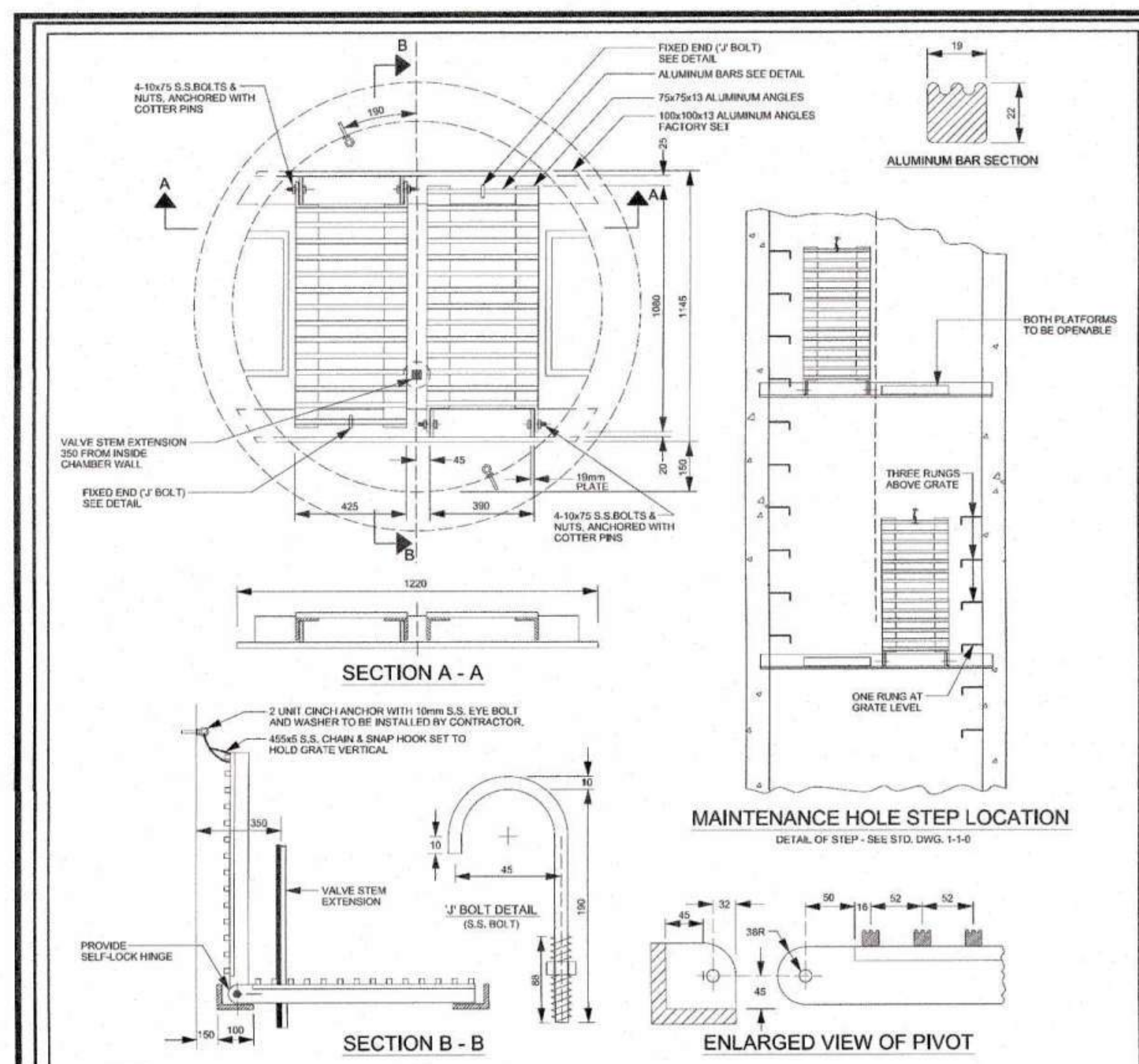
SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

NOTES AND DETAILS #1

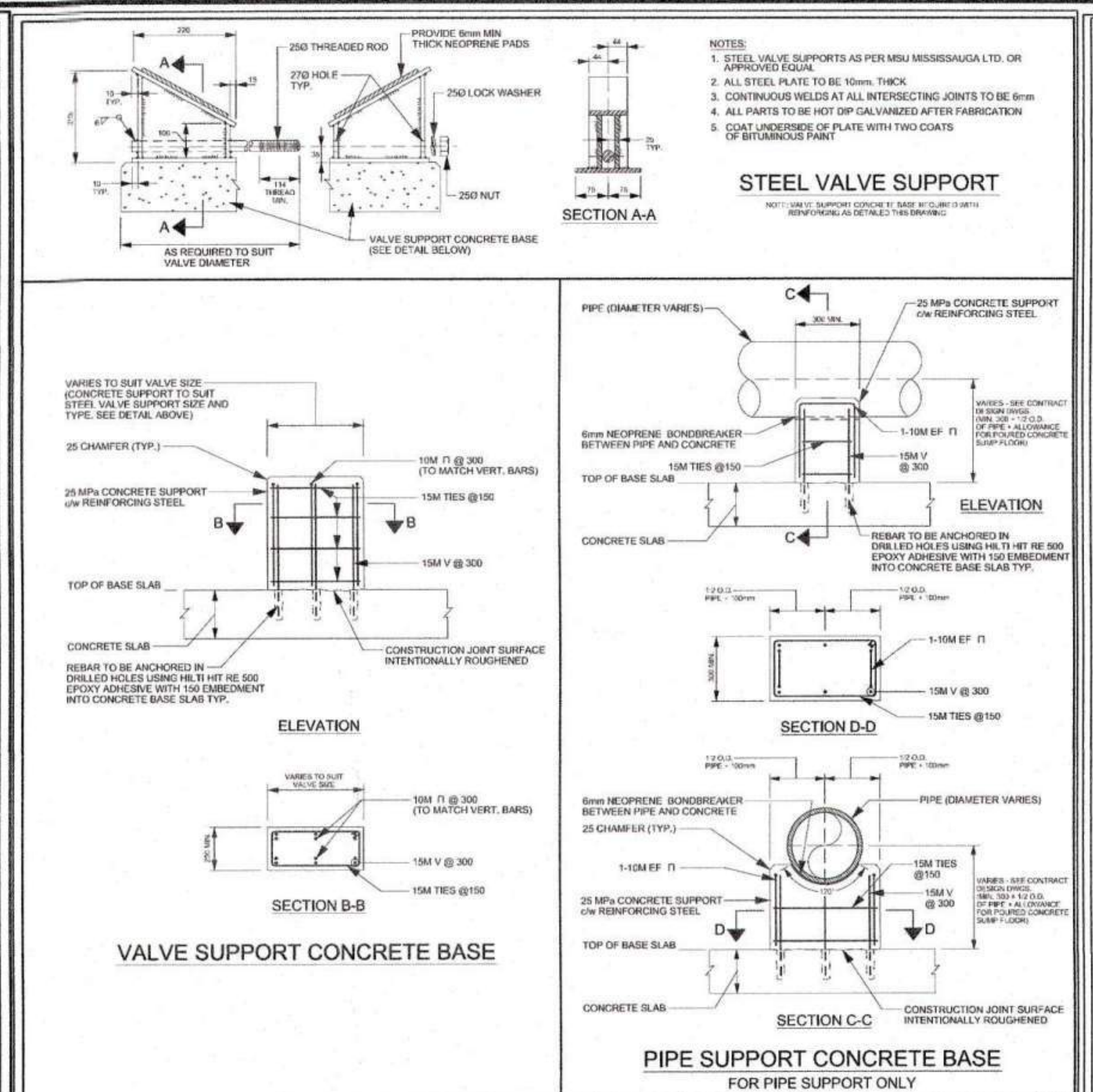
DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	N / A	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
29 of 35		DWG NO.	116965-NDP1

FILE:J:\116965_AbbotsideWay\5.9 Drawings\59civil\layouts\116965-DNP.dwg LAYOUT:NDP1
LAST SAVED BY:Chloe.cao, Wednesday, August 14, 2019 4:00:39 PM PLOTTED BY:Chloe Cao Thursday, August 15, 2019 11:12:37 AM



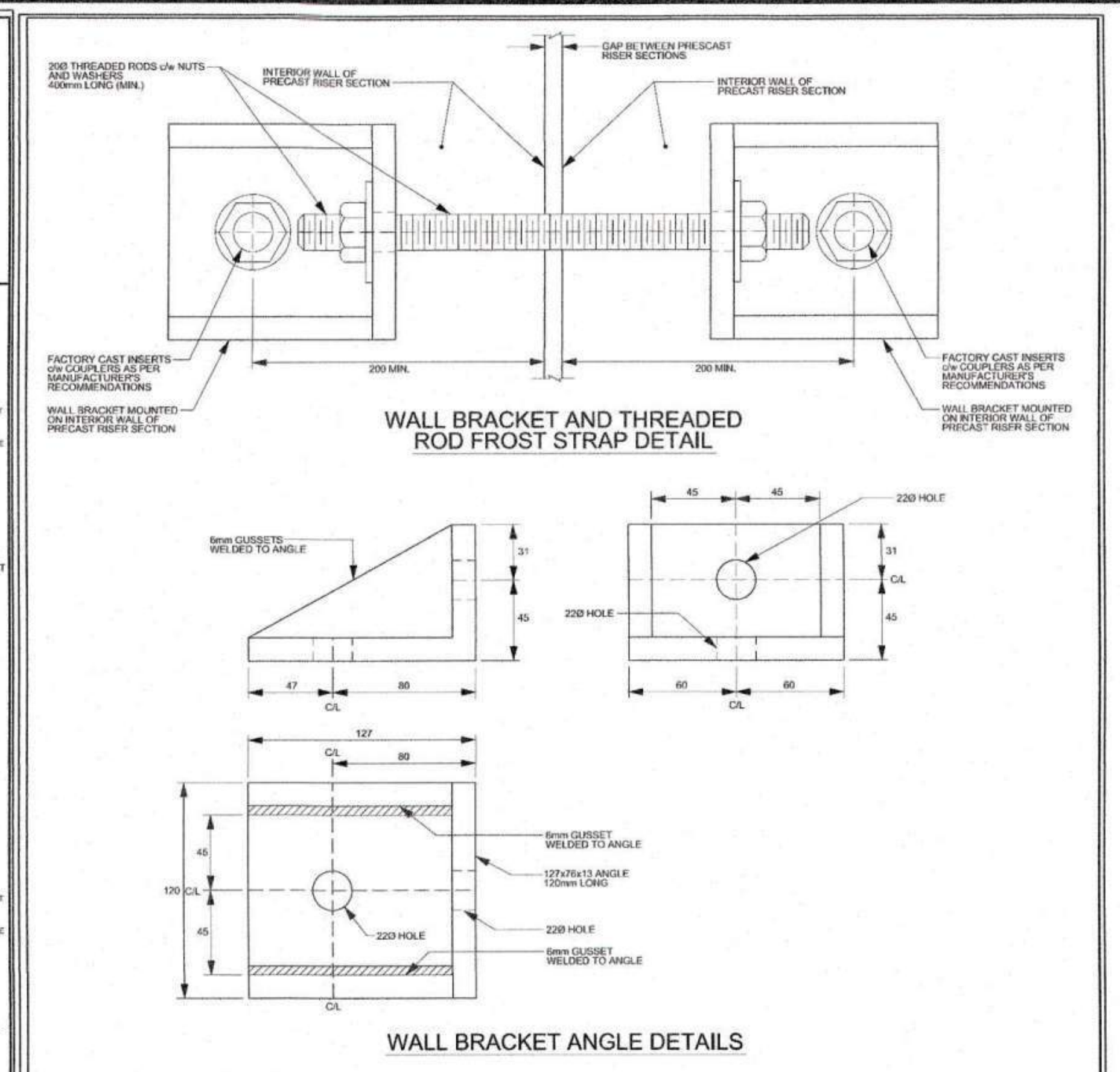
NOTE
1. THIS DRAWING SUPPLEMENTAL TO OPSD 404.020 AND 404.022
2. ALUMINUM TO BE OF APPROVED ALLOY. AT ALL POINTS WHERE ALUMINUM AND CONCRETE COME INTO CONTACT (ENDS OF ANGLES) ALUMINUM SURFACES TO BE COATED WITH ZINC CHROMATE OR TWO COATS OF STATIC ASPHALT PAINT.
3. PLATFORMS MUST BE USED FOR MAINTENANCE HOLE DEPTHS GREATER THAN 5m. FOR MAINTENANCE HOLE DEPTH BETWEEN 5m AND 10m, PLATFORM TO BE PLACED AT MIDPOINT. FOR MAINTENANCE HOLE DEPTH BETWEEN 10m AND 15m, PLATFORMS TO BE PLACED AT THIRD POINTS.
4. ALTERNATE TO CHAIN IS SELF LOCKING GATE.
5. WHERE PLATFORMS ARE REQUIRED, INSIDE DIAMETER OF CHAMBER TO BE MIN. 1500mm

Region of Peel working with you | PUBLIC WORKS STANDARD DRAWING | REV. DATE: NOVEMBER 2011
SAFETY PLATFORM FOR 1500mm DIAMETER PRECAST MAINTENANCE HOLE | STD. DWG. NUMBER 1-2-1 | SCALE N.T.S.



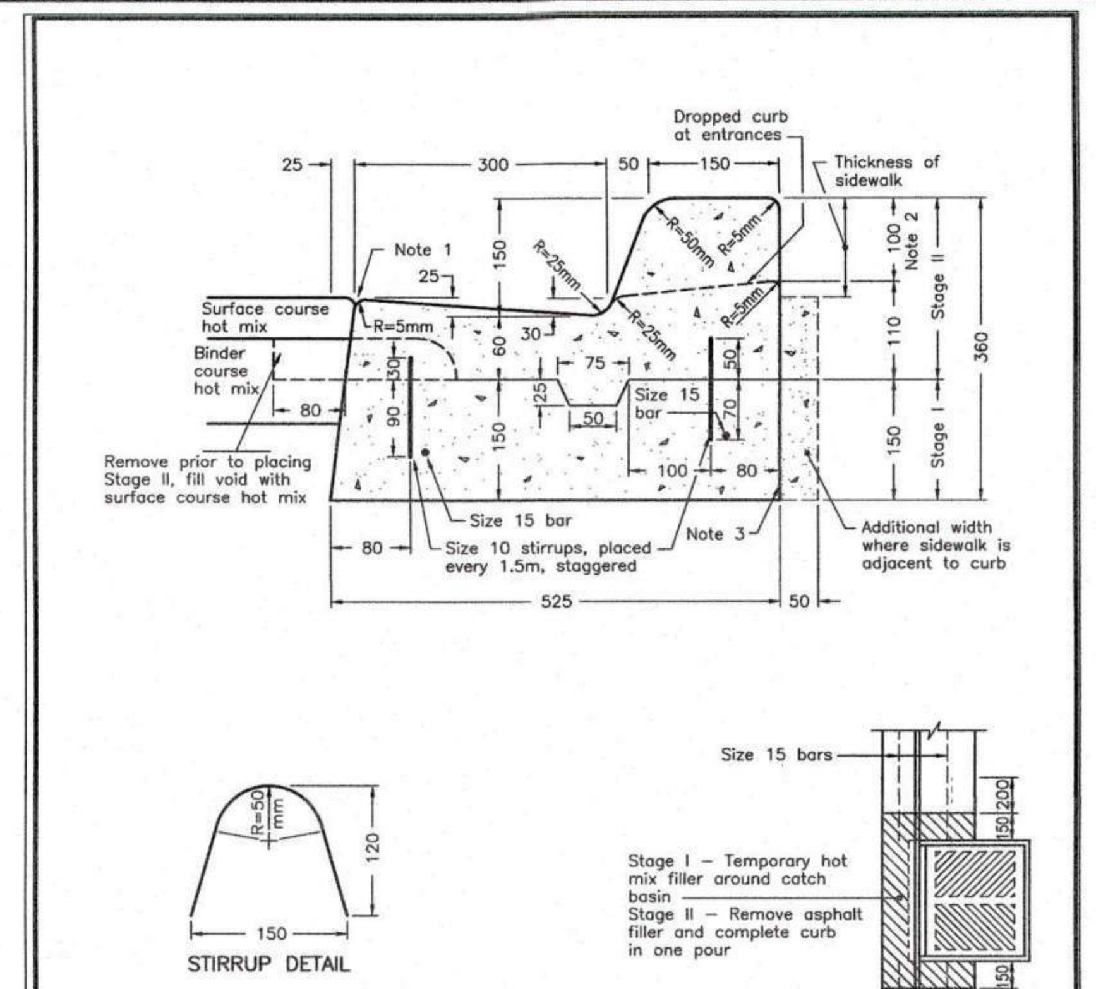
NOTE
1. PROVIDE 6mm NEOPRENE BOND BREAKER AT ALL CONTACT POINTS BETWEEN PIPES, VALVES AND CONCRETE SUPPORTS
2. COVER TO REINFORCING STEEL = 50mm +/- 15mm

Region of Peel working with you | PUBLIC WORKS STANDARD DRAWING | REV. DATE: NOVEMBER 2011
TYPICAL VALVE AND PIPE SUPPORT DETAILS | STD. DWG. NUMBER 1-2-6 | SCALE N.T.S.



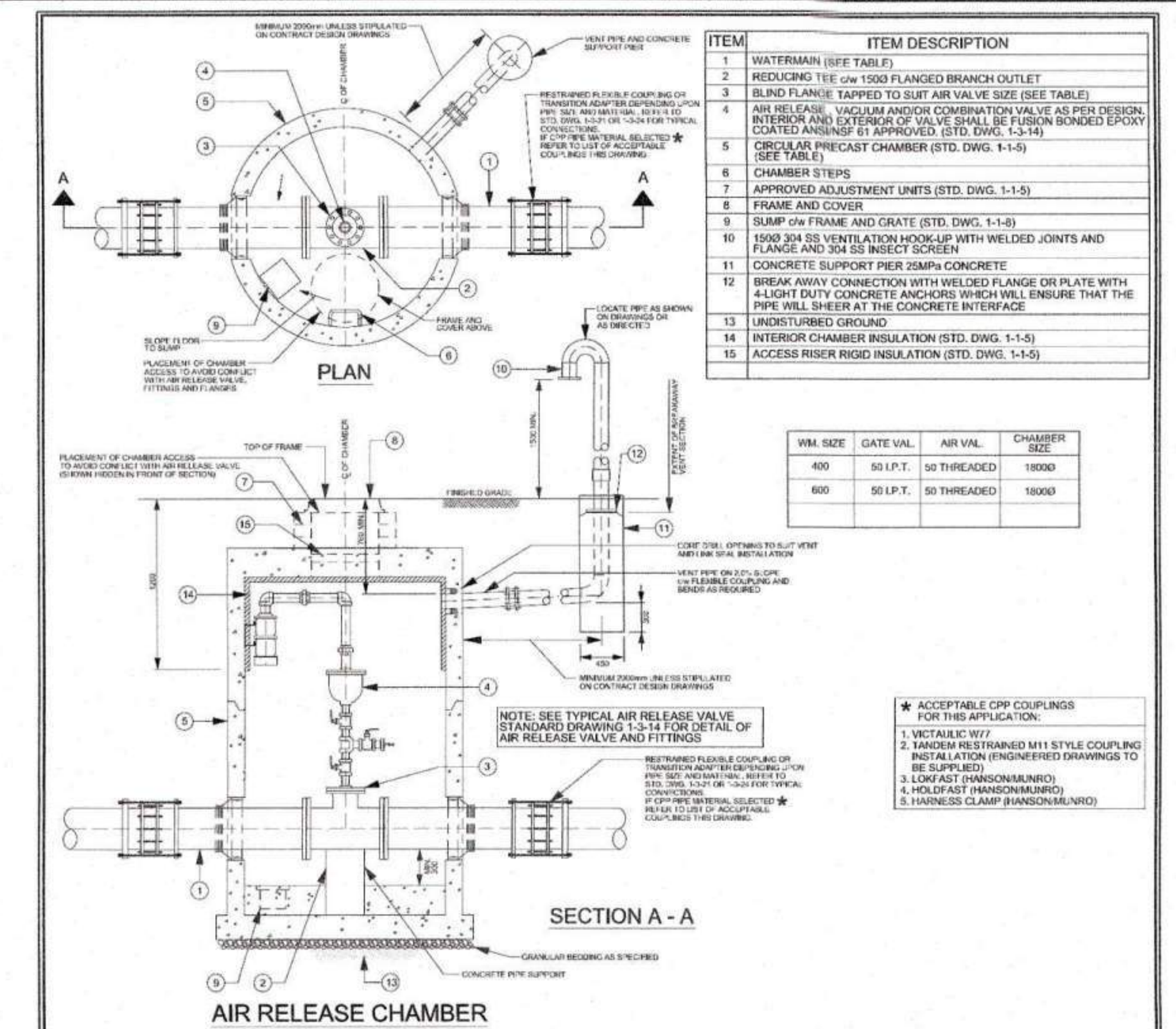
NOTE
1. ALL MATERIALS TO BE 304 STAINLESS STEEL.
2. CONTINUOUS WELDS AT ALL INTERSECTING JOINTS TO BE 6mm.

Region of Peel working with you | PUBLIC WORKS STANDARD DRAWING | REV. DATE: APRIL 2014
TYPICAL FROST STRAP DETAILS | STD. DWG. NUMBER 1-2-7 | SCALE N.T.S.

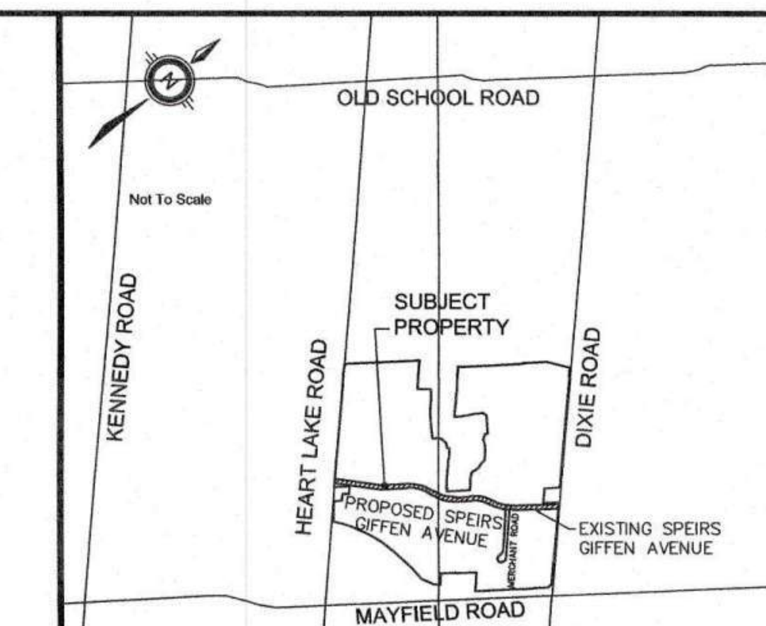


NOTES:
1 Flexible and composite pavement shall be 5mm above the adjacent edge of gutter.
2 Where sidewalk is continuously adjacent, reduce the dropped curb at entrances to 75mm.
3 For slipforming procedure, a 5% batter is acceptable.
A Treatment at entrances shall conform with OPSD–351.01.
B Outlet treatment shall conform with OPSD–610 Series.
C The length of transition from one curb type to another shall be 3.0m, except in conjunction with guide rail, it shall conform to OPSD–900 Series.
D All dimensions are in millimetres unless otherwise shown.

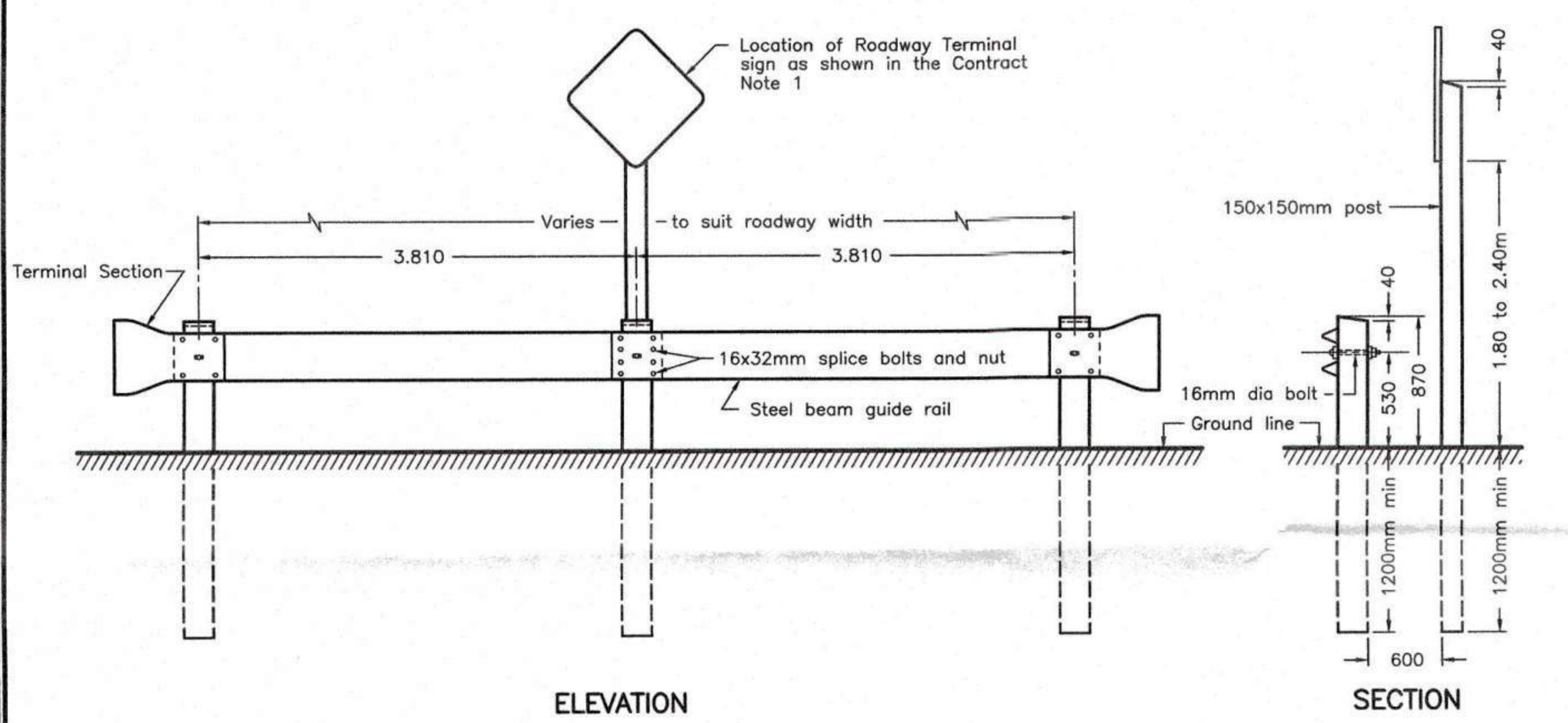
ONTARIO PROVINCIAL STANDARD DRAWING | Date 1990 09 14 | Rev
CONCRETE BARRIER CURB WITH STANDARD GUTTER
TWO STAGE CONSTRUCTION
OPSD – 600.07



Region of Peel working with you | PUBLIC WORKS STANDARD DRAWING | REV. DATE: APRIL 2014
AIR RELEASE VALVE AND CHAMBER FOR WATERMAIN SIZE LESS THAN 750 DIAMETER | STD. DWG. NUMBER 1-3-12 | SCALE N.T.S.

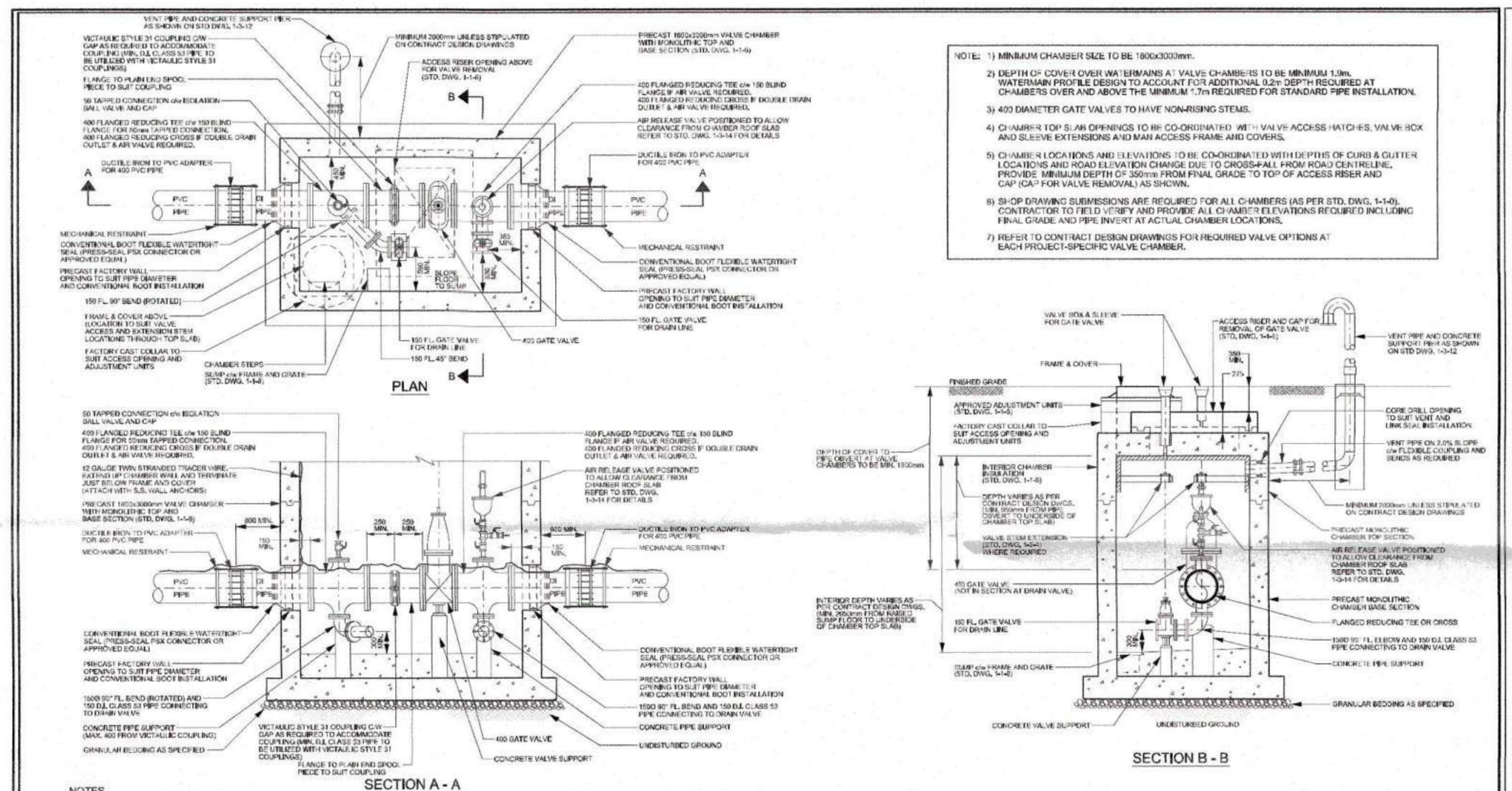


KEY MAP - N.T.S.

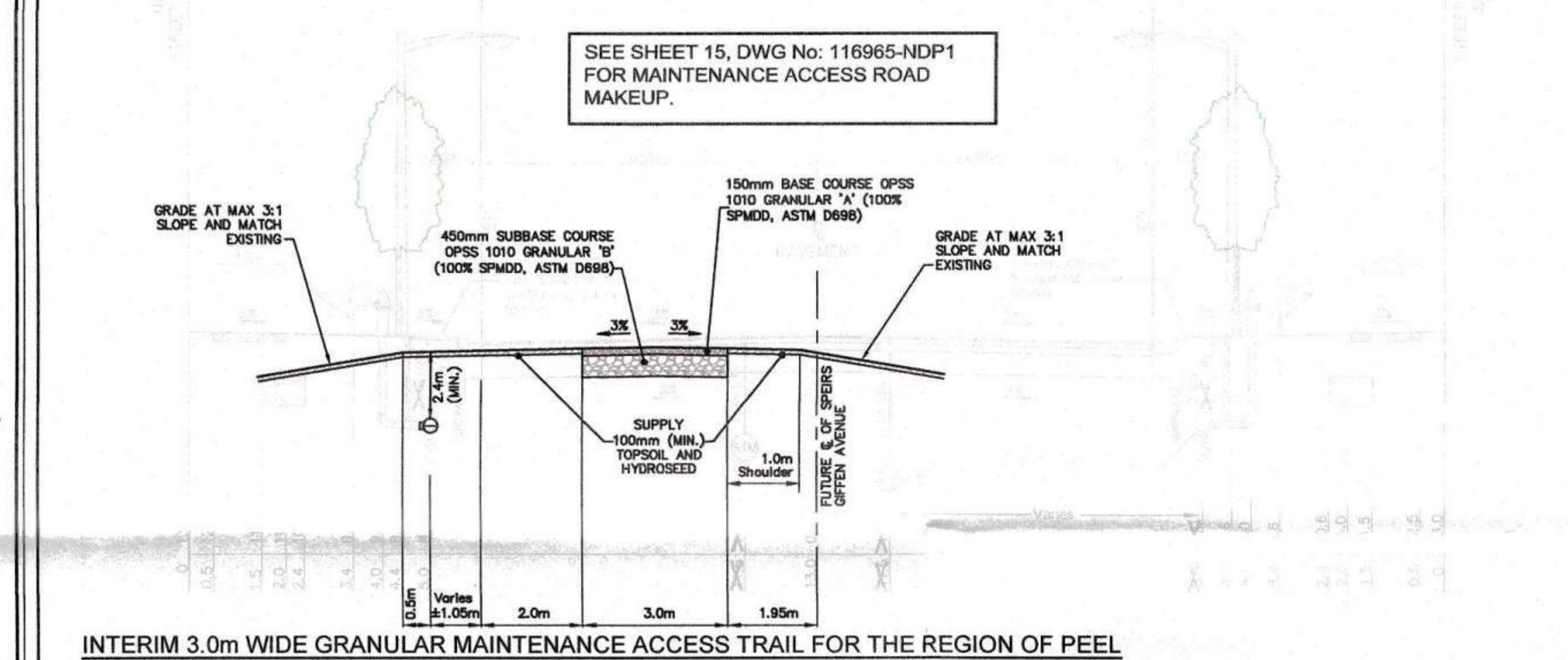


NOTES:
1 Roadway Terminal sign as specified in the manual of Uniform Traffic Control Devices in Ontario.
A Posts: Size 200x200mm nominal, 190x190mm ±1.5mm dressed, tops to have 25mm chamfer.
B All dimensions are in millimetres or metres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING | Date 1988 12 01 | Rev 2
DEAD END BARRICADE
OPSD – 906.01



Region of Peel working with you | PUBLIC WORKS STANDARD DRAWING | REV. DATE: APRIL 2014
TYPICAL LINE VALVE CHAMBER FOR 400mm PVC PIPE WITH ISOLATION VALVE, DOUBLE DRAIN VALVE AND COMBINATION AIR RELEASE OR VACUUM VALVE | STD. DWG. NUMBER 1-3-26 | SCALE N.T.S.



INTERIM 3.0m WIDE GRANULAR MAINTENANCE ACCESS TRAIL FOR THE REGION OF PEEL
N.T.S.

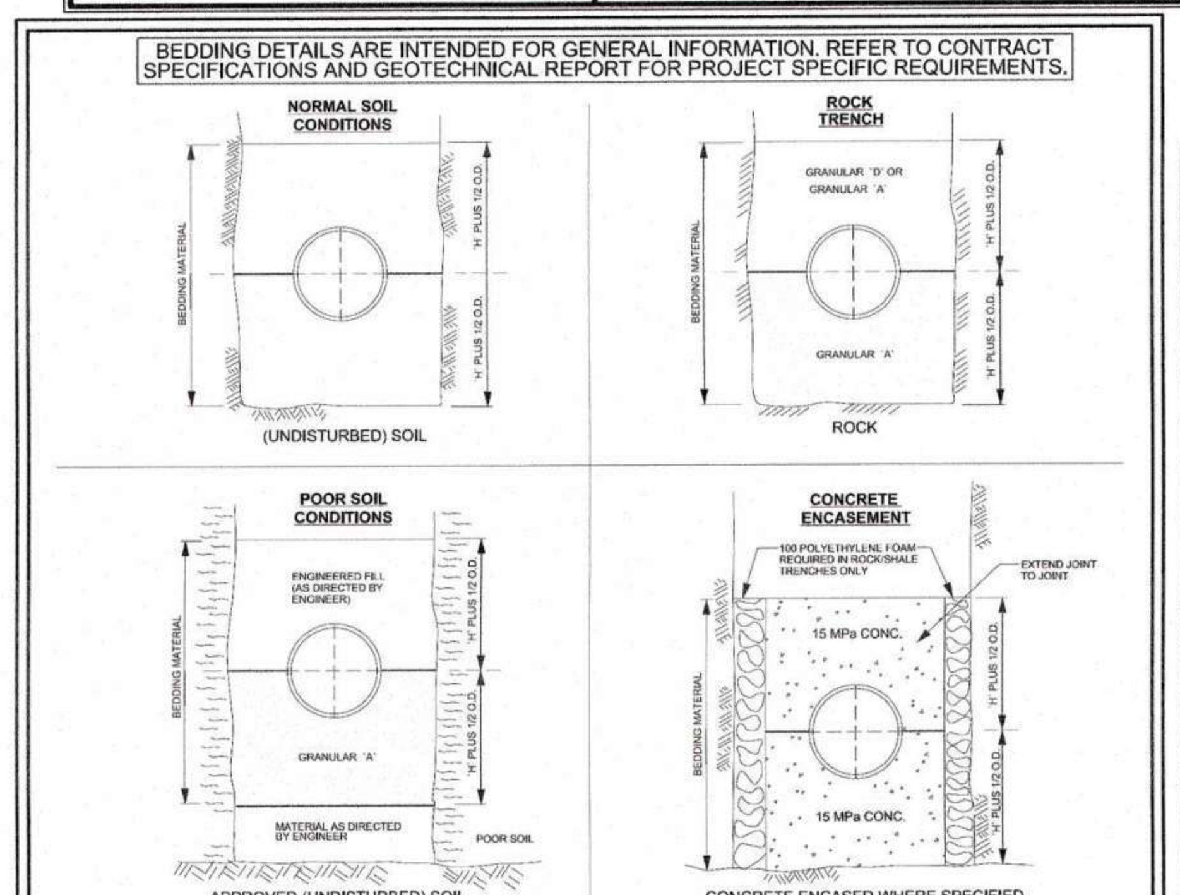
Town of Caledon
APPROVED AS NOTED
This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.
Date: Sept 19/19
Approved By:
Print Name: Rob Hughes

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

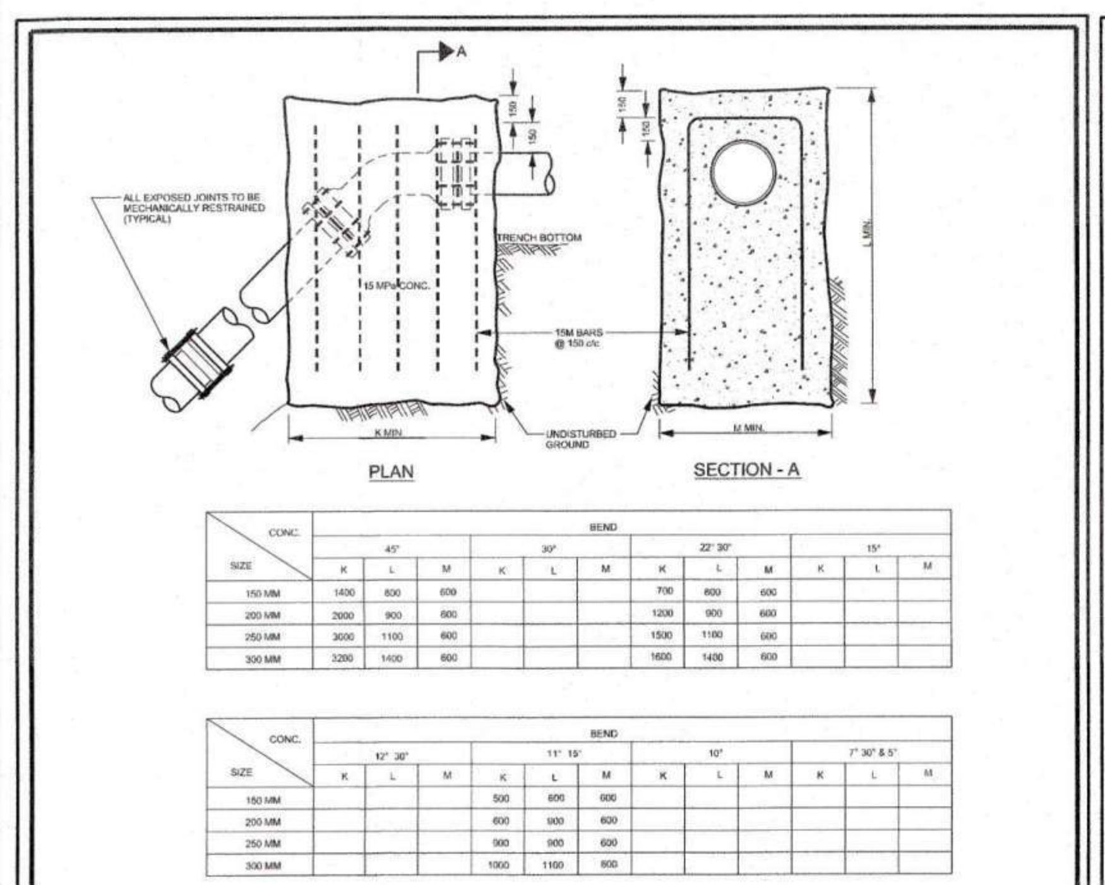
REV#	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com



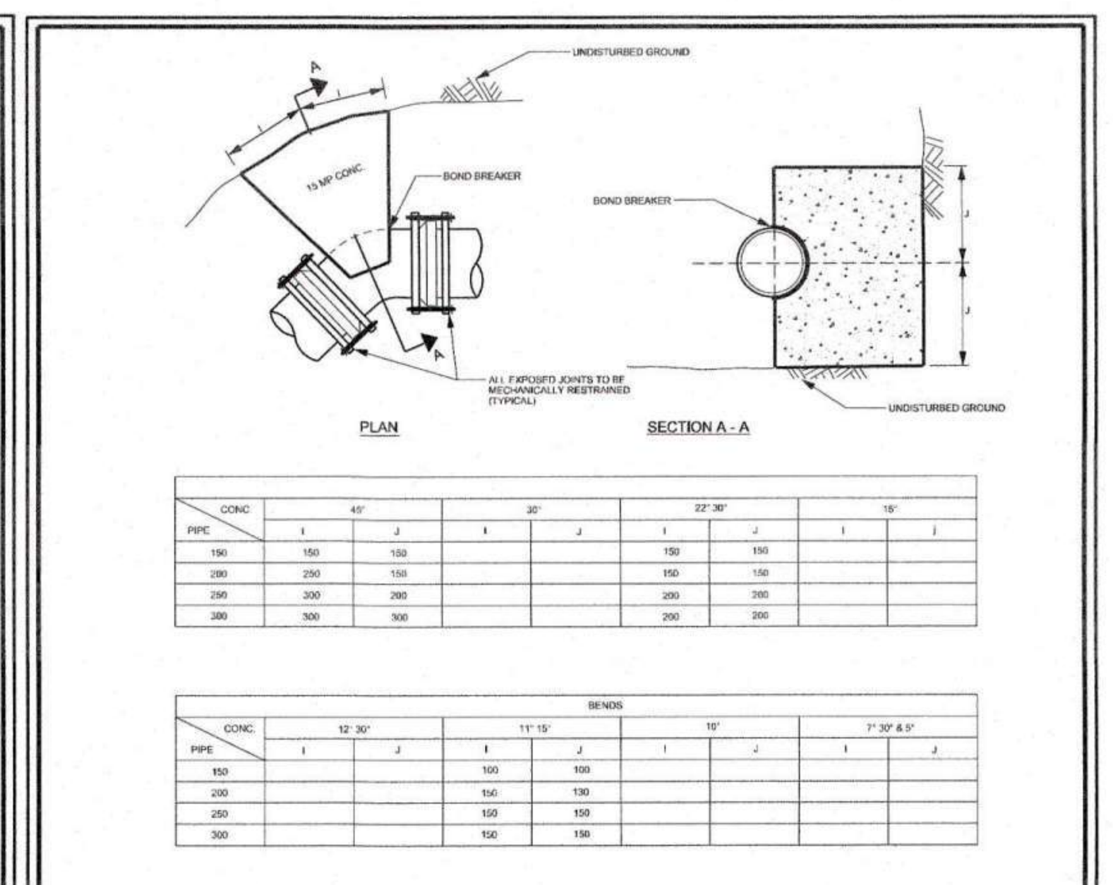
NOTE
1. FOR P.V.C. AND DUCTILE IRON PIPE, BEDDING MATERIAL TO BE GRANULAR D (LIMESTONE SCREENING COLOUR TO BE BETWEEN LIGHT GREY TO WHITE) 150mm ABOVE THE TOP OF PIPE.
2. MATERIAL TO BE PLACED IN TRENCH IN 150mm LAYERS AND COMPACTED TO 100% STANDARD PROCTOR DENSITY.
3. IN CASE OF OVER-EXCAVATION TRENCH TO BE FILLED TO BOTTOM OF PIPE WITH APPROVED MATERIALS IN 150mm LAYERS AND COMPACTED TO 100% STANDARD PROCTOR DENSITY.
4. IN POOR SOILS ENGINEER MAY VARY PIPE FOUNDATION TO SUIT.
5. BACKFILL ABOVE BEDDING AS APPROVED BY PROJECT MANAGER.
6. GRANULAR MATERIAL AS PER OPS SPECIFICATIONS AND REGION OF PEEL CAPITAL WORKS VOLUME 2 SPECIFICATIONS.
7. "H"=150 OR DIA./4 OF WATERMAIN WHICH EVER IS GREATER.
8. MIN. TRENCH WIDTH TO BE O.D. PLUS 600mm MAX. TRENCH WIDTH TO BE O.D. PLUS 750mm, UNLESS PROJECT SPECIFIC BEDDING STATES OTHERWISE.
9. COVER MATERIAL, NO STONES GREATER THAN 25mm WILL BE PERMITTED.
10. APPROVED SOIL AS PER GEOTECHNICAL REPORT RECOMMENDATIONS.
11. TO ADDRESS TIME DEPENDANT DEFORMATION IN ROCK OR SHALE TRENCH CONDITIONS, INSTALL 100mm THICK POLYETHYLENE FOAM FOR ALL CONCRETE ENCASED WATERMAIN INSTALLATIONS. REFER TO PROJECT SPECIFIC REQUIREMENTS. POLYETHYLENE FOAM TO BE EITHER DOW ETHAFOAM 400 OR NORDIC VOID 400 OR APPROVED EQUAL.

Region of Peel Working for you | PUBLIC WORKS STANDARD DRAWING | REV. DATE: APRIL 2014
WATERMAIN BEDDING | STD. DWG. NUMBER 1-5-1 | SCALE N.T.S.



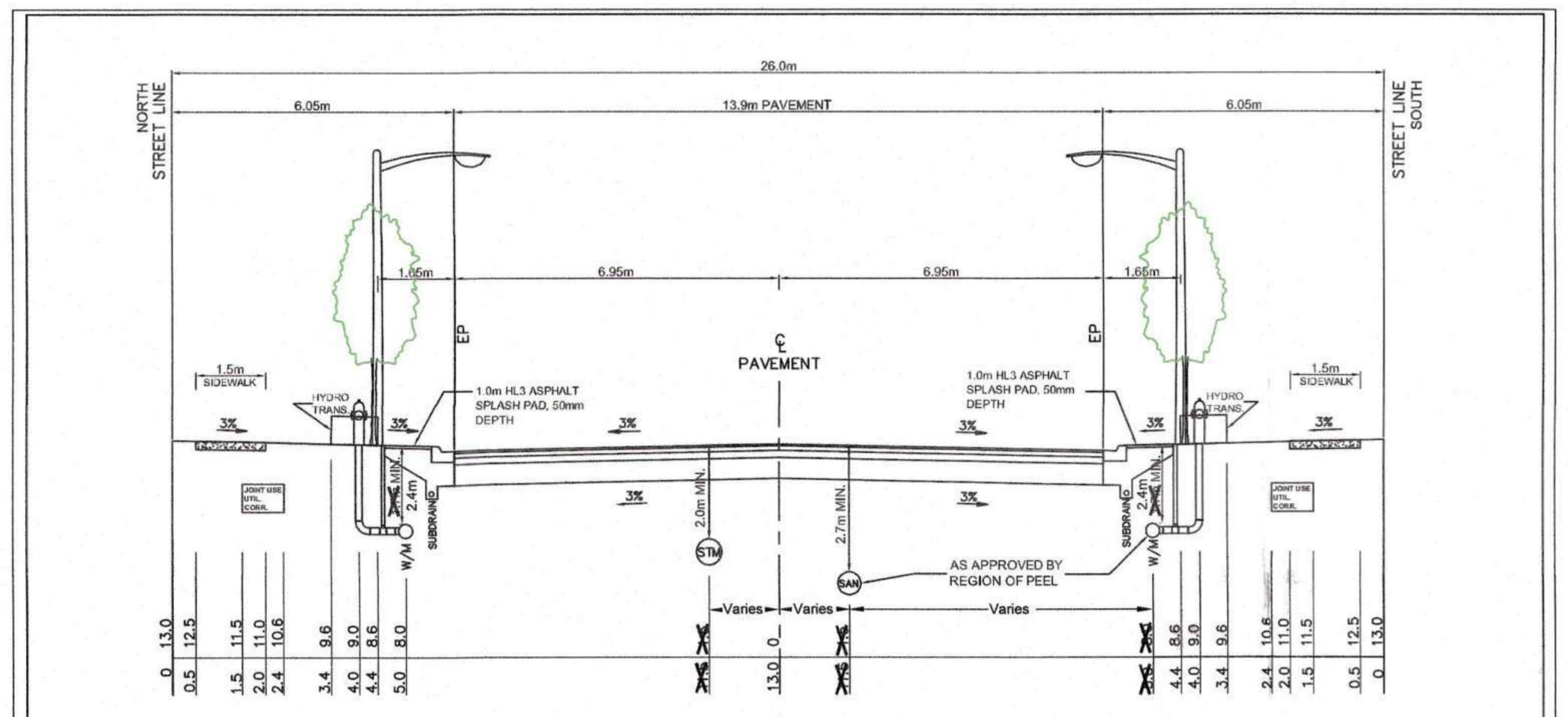
NOTE
1. BLOCKING IS NOT PERMITTED ON NEW INSTALLATIONS.
2. PIPE GREATER THAN 300mm REQUIRES MECHANICAL RESTRAINTS WITH SHOP DRAWING SUBMISSION.
3. ALL CONCRETE TO BE 15MPa.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. SPECIAL BLOCKING MAY BE REQUIRED FOR POOR SOIL CONDITIONS.
6. BASED ON WATER TEST PRESSURE OF 1000kPa.

Region of Peel Working for you | PUBLIC WORKS STANDARD DRAWING | REV. DATE: NOVEMBER 2011
VERTICAL BLOCKING 5 DEGREE TO 45 DEGREE BENDS FOR CONNECTION TO EXISTING WATERMAIN ONLY | STD. DWG. NUMBER 1-5-4 | SCALE N.T.S.



NOTE
1. BLOCKING IS NOT PERMITTED ON NEW INSTALLATIONS.
2. PIPE GREATER THAN 300mm REQUIRES MECHANICAL RESTRAINTS WITH SHOP DRAWING SUBMISSION.
3. ASSUME BEARING AT 100kPa (CLEAN DRY SAND, FAIRLY DRY ETC.).
4. FOR POOR CONDITIONS (SOFT CLAY) LARGER BLOCKING MAY BE REQUIRED.
5. ALL CONCRETE TO BE 15MPa.
6. BASED ON WATER TEST PRESSURE OF 1000 kPa.
7. ALL DIMENSIONS ARE IN MILLIMETRES.

Region of Peel Working for you | PUBLIC WORKS STANDARD DRAWING | REV. DATE: NOVEMBER 2011
HORIZONTAL BLOCKING 5 DEGREE TO 45 DEGREE BENDS FOR CONNECTION TO EXISTING WATERMAIN ONLY | STD. DWG. NUMBER 1-5-5 | SCALE N.T.S.



NOTES
1. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9 m.
2. WATERMAIN TO HAVE A MINIMUM COVER OF 1.7 m.
3. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION
40 mm OFC
110 mm HDBC
150 mm GRANULAR "A"
450 mm GRANULAR "B"
4. THE BOULEVARDS REQUIRE A MINIMUM OF 300mm OF TOPSOIL AND NURSERY SOD.
5. TREES TO BE PLACED IN LOCATIONS PER APPROVED LANDSCAPE PLANS.
6. STREETLIGHT FIXTURE PER APPROVED TOWN OF CALEDON STANDARD.
7. FULL LENGTH MINIMUM 100 MM DIA SUB-DRAINS C/W FILTERCLOTH SHALL BE INSTALLED, AS PER APPROVED TOWN STANDARD NO. 219.
8. SUB-GRADE SHALL BE COMPACTED TO A MINIMUM 95% OF S.P.D. AT OPTIMUM MOISTURE CONTENT.
9. WHERE POSSIBLE MANHOLE LIDS TO BE LOCATED OUT OF TIRE LANE OF TRAFFIC.
10. 1.0 m SPLASH PAD TO BE PATTERNED CONCRETE AS PER APPROVED TOWN OF CALEDON STANDARD NO. 216.
11. LONG DIMENSION OF TRANSFORMER TO BE PARALLEL TO STREETLINE.

TOWN OF CALEDON
26.0m INDUSTRIAL COLLECTOR 14.5m ROADWAY (13.9m PAVEMENT)

NO.	REVISION	APP'D	DATE
3	DIMENSION AND TEXT REVISION		JAN. 09
2	DIMENSION AND LAYOUT REVISION		JULY 08
1	DIMENSION EDIT, STD No. 209 NOW 211		JUNE 08

APPR'D: C.C. | DATE: JUNE 08 | DRAWN: | SCALE: N.T.S.
STANDARD No. 211

TOWN OF CALEDON

Region of Peel working with you

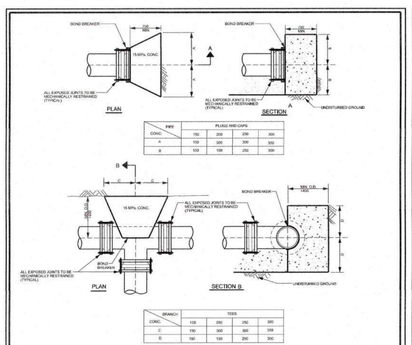
RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

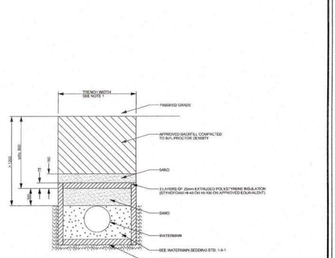
LICENSED PROFESSIONAL ENGINEER
AUG 15, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

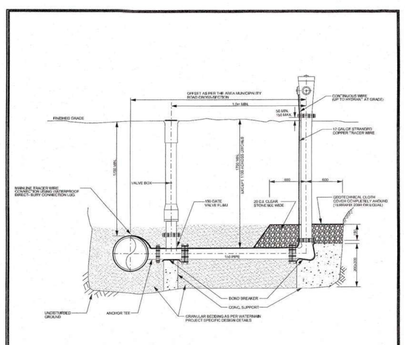
TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

DETAILS #2

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	N/A	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
30 of 35		DWG NO.	116965-NDP2







PIPE / CONC.	PLUGS AND CAPS			
	150	200	250	300
A	150	300	300	350
B	150	150	250	300

BRANCH / CONC.	TEES			
	150	200	250	300
C	150	300	300	350
D	150	150	250	300

NOTE
1. BLOCKING IS NOT PERMITTED ON NEW INSTALLATIONS.
2. PIPE GREATER THAN 300mm REQUIRES MECHANICAL RESTRAINTS WITH SHOP DRAWING SUBMISSION.
3. ASSUME BEARING AT 19kPa (CLEAN DRY SAND, FAIRLY DRY ETC.).
4. FOR POOR CONDITIONS (SOFT CLAY) LARGER BLOCKING MY BE REQUIRED.
5. ALL CONCRETE TO BE 15MPa.
6. BASED ON WATER TEST PRESSURE OF 1000kPa.
7. ALL DIMENSIONS ARE IN MILLIMETRES.

Region of Peel Working for you
PUBLIC WORKS STANDARD DRAWING
REV. DATE: NOVEMBER 2011
APPROVED BY A.P.
DRAWN BY AINLEY GROUP
HORIZONTAL BLOCKING PLUGS, CAPS AND TEES FOR CONNECTION TO EXISTING WATERMAIN ONLY
STD. DWG. NUMBER 1-5-7
SCALE N.T.S.

NOTE
1. MINIMUM TRENCH WIDTH TO BE O.D. PLUS 600mm. MAX TRENCH WIDTH TO BE O.D. PLUS 750mm.
2. INSULATING THE BOTTOM OF THE TRENCH MAY BE REQUIRED UNDER CERTAIN CIRCUMSTANCES (i.e. OVER A CULVERT).

Region of Peel Working for you
PUBLIC WORKS STANDARD DRAWING
REV. DATE: NOVEMBER 2011
APPROVED BY A.P.
DRAWN BY AINLEY GROUP
WATERMAIN INSULATION DETAILS
STD. DWG. NUMBER 1-5-8
SCALE N.T.S.

NOTE
1. IF THE WATERMAIN IS NOT AT THE STANDARD OFFSET, THE LOCATION OF THE HYDRANT TO BE AS PER CONSTRUCTION DRAWINGS.
2. BACKFILL TRENCH WITH GRANULAR 'B' COMPACTED TO 100% STD. PROCTOR DENSITY.
3. MECHANICAL RESTRAINTS REQUIRED ON ALL PVC HYDRANT LATERALS INCLUDING VALVES AND FITTINGS AS PER REGION STANDARD DRAWING 1-5-9.
4. ALL PIPING, FITTINGS, VALVES, APPURTENANCES AND MECHANICAL RESTRAINTS TO BE PROTECTED WITH 3 PART CORROSION PREVENTION SYSTEM, APPLIED TO MANUFACTURER'S RECOMMENDATIONS.

Region of Peel working with you
PUBLIC WORKS STANDARD DRAWING
REV. DATE: MARCH 2018
APPROVED BY E.O.
DRAWN BY AINLEY GROUP
HYDRANT SETTING FOR D.I. OR P.V.C. PIPE
STD. DWG. NUMBER 1-6-1
SCALE N.T.S.

BLOW-OFF SIZE TO MATCH THE SIZE OF THE FEED BASED ON STANDARD DRAWINGS 1-7-7 AND 1-7-8. WHERE A 100mm FEED IS REQUIRED CONTRACTOR TO PROVIDE AN INSTALLATION, INCLUDING ALL NECESSARY MATERIALS, TO RESPECT THE DESIGN CONCEPTS OF THIS STANDARD DRAWING.

NOTE
1. VALVE BOX AND SERVICE BOX TO BE SET TO FINISHED GRADE.

Region of Peel Working for you
PUBLIC WORKS STANDARD DRAWING
REV. DATE: APRIL 2014
APPROVED BY A.P.
DRAWN BY AINLEY GROUP
50mm BLOW-OFF FOR 100mm AND LARGER WATERMAIN
STD. DWG. NUMBER 1-7-2
SCALE N.T.S.

NOTE
1. ALL VALVES TO BE RESILIENT SEAT TO AWWA C509, FUSION BONDED EPOXY (FBE) SHOP COAT FINISH ON INTERIOR AND EXTERIOR OF VALVE TO AWWA C550. INTERIOR COATING TO BE FBE ANSI/NSF 61 APPROVED.
2. INTERIOR OF ALL STEEL (NOT STAINLESS STEEL) PIPE SHALL BE LIQUID EPOXY COATED TO AWWA C210 AND BE ANSI/NSF 61 APPROVED. ALL EXTERIOR SURFACES SHALL BE LIQUID EPOXY COATED TO AWWA C210.
3. INTERIOR OF ALL DUCTILE IRON PIPE AND FITTINGS IN CONTACT WITH POTABLE WATER SHALL BE CEMENT MORTAR LINED TO AWWA C104.
4. IF THE BASE OF ANY CHAMBER IS GREATER THAN 10.0m IN DEPTH THE CONTRACTOR SHALL SUPPLY A SHOP DRAWING, STAMPED BY P. ENG. LICENSED TO PRACTISE IN THE PROVINCE OF ONTARIO, FOR REVIEW OF THE BASE SLAB AND MANHOLE SECTIONS PRIOR TO FABRICATION.
5. VALVE STEM EXTENSION SUPPORT BRACKETS SHALL SUPPORT TOTAL WEIGHT OF THE EXTENSION STEM. NO FORCES SHALL BE TRANSMITTED TO THE VALVE OR GEARBOX.
7. ALL NUTS, BOLTS AND WASHERS TO BE STAINLESS STEEL UNLESS OTHERWISE NOTED.
8. ALL PIPING, FITTINGS, VALVES, APPURTENANCES AND MECHANICAL RESTRAINTS TO BE c/w DENSO PASTE, DENSO MASTIC AND DENSO TAPE OR APPROVED EQUAL. APPLIED TO MANUFACTURER'S RECOMMENDATIONS.

Region of Peel working with you
PUBLIC WORKS STANDARD DRAWING
REV. DATE: APRIL 2014
APPROVED BY A.P.
DRAWN BY AINLEY GROUP
TYPICAL SINGLE DRAIN CHAMBER DETAILS FOR 400 DIAMETER PVC PIPE
STD. DWG. NUMBER 1-3-29
SCALE N.T.S.

NOTE
1. REFER TO STD. DWG. 1-3-8 FOR TRACER WIRE INSTALLATION AT VALVE BOXES AND STD. DWGS. 1-6-1, 1-6-2 FOR TRACER WIRE INSTALLATION AT HYDRANTS.
2. ALL PIPING, FITTINGS, VALVES, APPURTENANCES AND MECHANICAL RESTRAINTS TO BE PROTECTED WITH 3 PART CORROSION PREVENTION SYSTEM, APPLIED TO MANUFACTURER'S RECOMMENDATIONS.
3. TRACER WIRE TO BE SECURED TO THE TOP OF THE PIPE AT NO MORE THAN 2.0m INTERVALS.

Region of Peel working with you
PUBLIC WORKS STANDARD DRAWING
REV. DATE: MARCH 2018
APPROVED BY E.O.
DRAWN BY AINLEY GROUP
TYPICAL TRACER WIRE INSTALLATION FOR WATERMAIN VALVES, HYDRANTS AND TEES
STD. DWG. NUMBER 1-7-10
SCALE N.T.S.

LEGEND

⋈ VALVE & BOX	FIRE HYDRANT C/W VALVE & BOX DIRECTION OF PUMPER NOZZLE
Ⓓ DETECTOR CHECK VALVE IN CHAMBER	Ⓜ METER IN CHAMBER
Ⓩ CHECK VALVE IN CHAMBER	M METER
TAPPING SLEEVE & VALVE & BOX	Ⓢ SAMPLING SANITARY MAINTENANCE HOLE
TEE	

Region of Peel Working for you
PUBLIC WORKS STANDARD DRAWING
REV. DATE: NOVEMBER 2011
APPROVED BY A.P.
DRAWN BY AINLEY GROUP
SERVICING FOR INDUSTRIAL BUILDINGS
STD. DWG. NUMBER 1-8-6
SCALE N.T.S.

GENERAL REFERENCES FOR DRAWINGS:

REGION OF PEEL STANDARD DRAWINGS DELETED - MARCH 2017 REVISION:

	DRAWING NUMBER	DRAWING TITLE	ORIGINAL DATE	REPLACED WITH NEW REGION OF PEEL STANDARD DRAWING	REPLACED WITH OPSD
SECTION 2-1	2-1-1	PRECAST MAINTENANCE HOLE 1200mm DIAMETER	MAY 2014	2-5-3	
	2-1-2	PRECAST MAINTENANCE HOLE 1500mm AND 1800mm DIAMETER	MAY 2014	2-5-4, 2-5-5	
	2-1-3	PRECAST MAINTENANCE HOLE TEES	MAY 2014	2-7-6, 2-7-7, 2-7-8	
	2-1-4	MAINTENANCE HOLE BENCHING DETAILS	MAY 2009	2-5-20	
	2-1-5	MAINTENANCE HOLE DROP STRUCTURE EXTERNAL ASSEMBLY	MAY 2009	2-5-26	
	2-1-6	MAINTENANCE HOLE DROP STRUCTURE INTERNAL ASSEMBLY	SEPT. 2006	2-5-27	
	2-1-7	MAINTENANCE HOLE VENTING DETAILS	MAY 2009	2-5-22	
SECTION 2-2	2-2-1	SAFETY PLATFORM FOR 1200mm DIAMETER PRECAST M.H.	DEC. 2013	2-6-13, 2-6-14	
	2-2-2	STANDARD HEAVY DUTY FRAME AND COVER	MAY 2009	2-6-1, 2-6-2, 2-6-3, 2-6-4	
	2-2-3A	DETAIL OF ANCHORING METHOD FOR WATER TIGHT M.H.	MAY 2009	2-6-8	
	2-2-3B	DETAIL OF ANCHORING METHOD FOR WATER TIGHT M.H.	MAY 2009	2-6-7	
	2-2-4	STANDARD MAINTENANCE HOLE STEPS ALUMINUM	MAY 2009	2-6-11	

ONTARIO PROVINCIAL STANDARD DRAWING REFERENCES TO BE READ IN CONJUNCTION WITH REGION OF PEEL STANDARD DRAWINGS - MARCH 2017 REVISION

DRAWING NUMBER	DRAWING TITLE
404.020	ALUMINUM SAFETY PLATFORM FOR CIRCULAR MAINTENANCE HOLES
404.022	ALUMINUM SAFETY PLATFORM FOR 1800mm CIRCULAR MAINTENANCE HOLES WITH DROP PIPE
405.020	MAINTENANCE HOLE STEPS SOLID
406.010	ALUMINUM LADDER FOR MAINTENANCE HOLES
701.021	MAINTENANCE HOLE BENCHING AND PIPE OPENING ALTERNATIVES
1003.010	CAST-IN-PLACE MAINTENANCE HOLE DROP STRUCTURE TEE
1003.020	CAST-IN-PLACE MAINTENANCE HOLE DROP STRUCTURE WYE
1003.030	INTERNAL DROP STRUCTURE FOR EXISTING MAINTENANCE HOLES

NOTE: THIS LIST INCLUDES OPSD REFERENCES THAT APPLY DIRECTLY TO THE NEW AND REVISED REGION OF PEEL STANDARD DRAWINGS, BUT IT DOES NOT PRECLUDE THE APPROVED USE OF ANY APPLICABLE OPSD REFERENCES NOT LISTED ABOVE.

GENERAL NOTES FOR PRECAST CONCRETE MAINTENANCE HOLES AND CHAMBERS:

1. ALL PRECAST CHAMBERS TO BE SUPPLIED BY A MANUFACTURER CERTIFIED UNDER THE OCPA PLANT PREQUALIFICATION PROGRAM.
2. SUBMIT SHOP DRAWINGS TO THE CONTRACT ADMINISTRATOR FOR INFORMATION. ALL DRAWINGS SHALL BEAR THE SIGNATURE AND SEAL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTISE IN ONTARIO.
3. THE MANUFACTURER SHALL PROVIDE LETTERS SIGNED BY A PROFESSIONAL ENGINEER CERTIFYING THE FOLLOWING:
   i) THAT THE DESIGN OF THE PRECAST UNITS MEETS THE REQUIREMENTS OF THE SPECIFICATIONS
   ii) THAT THE PRECAST UNITS HAVE BEEN MANUFACTURED AS PER DESIGN AND INSPECTED IN ACCORDANCE WITH THE PLANT PREQUALIFICATION PROGRAM
4. PROVIDE CONCRETE WITH MINIMUM STRENGTH OF 35 MPa UNLESS A HIGHER STRENGTH IS REQUIRED BY THE MANUFACTURER OR DESIGNER.
5. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CSA G30.18 WITH A MINIMUM YIELD STRENGTH OF Fy=400 MPa.
6. IF CHAMBER (PRE-EXISTING) IS ANY OTHER CONFIGURATION OTHER THAN ROUND, THE CONTRACTOR SHALL FIRST CAST-IN-PLACE SQUARE TO ROUND TRANSITION TO MATCH SPECIFICATIONS AND REQUIREMENTS OF REHABILITATION PRODUCTS BEING UTILIZED. CAST-IN-PLACE TRANSITION MUST BE ENGINEERED AND STAMPED AND PROVIDED WITH A WATERTIGHT CONNECTION BETWEEN EXISTING AND NEW SECTION.
7. REFER TO STANDARD DRAWINGS IN SECTIONS 2-5 AND 2-6, AND ONTARIO PROVINCIAL STANDARD DRAWINGS FOR CHAMBER DETAILS PERTAINING TO WATERPROOFING, JOINT SEALING, ADJUSTMENT UNITS, FRAME & COVERS, CHAMBER STEPS AND LADDERS AND FROST STRAPS.
8. ALL PRECAST COMPONENTS SHALL BE DESIGNED AND MANUFACTURED TO CSA STANDARD A23.3 AND CSA STANDARD A23.4. FURTHER, ALL PRECAST CHAMBER COMPONENTS, INCLUDING TOP SLABS, SHALL ALSO MEET THE REQUIREMENTS OF CSA STANDARD S6 (CANADIAN HIGHWAY BRIDGE CODE).

GENERAL NOTES FOR PIPING:

1. SUBMIT CONCRETE PRESSURE PIPE SHOP DRAWINGS TO THE CONTRACT ADMINISTRATOR FOR INFORMATION. ALL DRAWINGS SHALL BEAR THE SIGNATURE AND SEAL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTISE IN ONTARIO.
2. REFER TO STANDARD DRAWING 2-5-21 FOR MAXIMUM PIPE SIZES IN PRECAST MAINTENANCE HOLES OR CHAMBERS.

Region of Peel Working for you
PUBLIC WORKS STANDARD DRAWING
REV. DATE: MARCH 2017
APPROVED BY A.P.
DRAWN BY AINLEY GROUP
GENERAL NOTES AND REFERENCES
STD. DWG. NUMBER 2-0-1
SCALE N.T.S.

GENERAL NOTES FOR PRECAST CIRCULAR OR RECTANGULAR MAINTENANCE HOLES:

1. PRECAST MAINTENANCE HOLES TO BE SUPPLIED BY A MANUFACTURER CERTIFIED UNDER THE OCPA PLANT PREQUALIFICATION PROGRAM (STD. DWG. 2-0-1)
2. PROVIDE MONOLITHIC BASE SECTIONS FOR ALL MAINTANANCE HOLES UNLESS ALTERNATE APPROVED AND SPECIFIED ON PROJECT SPECIFIC REQUIREMENTS.
3. USE ALTERNATIVE BASE, TOP, PIPE SUPPORT OR CONNECTOR, STEPS, FRAME AND COVER AND/OR BENCHING ONLY WHERE APPROVED AND SPECIFIED ON PROJECT SPECIFIC REQUIREMENTS.
4. PROVIDE BASE EXTENSIONS FOR UPLIFT PREVENTION ON PRECAST MAINTENANCE HOLES 1200mm DIAMETER OR GREATER WHERE REQUIRED. REFER TO CONTRACT DRAWINGS AND SPECIFICATIONS AND GEOTECHNICAL REPORT FOR PROJECT SPECIFIC REQUIREMENTS.
5. SPECIAL BASE DESIGN REQUIRED FOR DEPTHS GREATER THAN 9.0 m.
6. FOR 1500mm DIAMETER AND LARGER SEWERS, PRECAST MAINTENANCE HOLE TEES ARE ACCEPTABLE (STD. DWGS. SECTION 2-7).
7. APPROVED ADJUSTMENT UNITS AND APPROVED FRAME AND COVER SYSTEMS TO BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS (STD. DWGS. SECTION 2-6).
8. FILL LIFTING HOLES WITH 1:3 NON SHRINK MORTAR MIX.
9. FROST STRAPS SHALL BE INSTALLED AT ALL RISER, TOP AND BASE SECTION JOINTS ON ALL PRECAST MAINTENANCE HOLES TO A MAXIMUM DEPTH OF 3.0m FROM FINISHED GRADE. INTERNAL FROST STRAP TO BE TYPICAL (STD. DWG. 2-5-23). EXTERNAL FROST STRAPS PERMITTED WITH APPROVAL FROM PROJECT ENGINEER. ADDITIONAL CORROSION PROTECTION REQUIRED AS PER MANUFACTURER'S RECOMMENDATIONS.
10. VENT PIPES SHALL BE REQUIRED AT EVERY THIRD MAINTENANCE HOLE ON SECTIONS OF SANITARY SEWERS WITH WATERTIGHT COVERS IN EASEMENTS, INSTALLATIONS WITHIN FLOOD PLAINS OR AREAS WITH HIGH LEVELS OF HYDROGEN SULFIDE. REFER TO PROJECT SPECIFIC REQUIREMENTS (STD. DWG. 2-5-22).
11. WATERPROOF MEMBRANE SHALL BE APPLIED EXTERNALLY AROUND ALL RISER, GRADE ADJUSTMENT UNITS,TOP AND BASE SECTION JOINTS ON ALL MAINTENANCE HOLES. WATERPROOF MEMBRANE TO BE "MEL-ROL" BY W.R. MEADOWS OF MILTON ONTARIO OR APPROVED EQUAL. EXTEND COMPLETELY AROUND ALL RISER SECTION JOINTS WITH A MINIMUM 300mm WIDE STRIP. WATERPROOF ABOVE GRADE SURFACES WITH "CEM-KOTE FLEX ST" BY W.R. MEADOWS OF MILTON ONTARIO OR APPROVED EQUAL (STD. DWG. 2-5-2, 2-5-25). APPLY DETAIL STRIP ON ALL INSIDE OR OUTSIDE CORNER JOINTS BENEATH WATERPROOF MEMBRANE, C/W PRIMER AND SURFACE PREPARATION AS PER MANUFACTURER'S SPECIFICATIONS. DETAIL STRIP TO BE "MEL-ROL DETAIL STRIP" BY W.R. MEADOWS OF MILTON ONTARIO OR APPROVED EQUAL (STD. DWG. 2-5-25).
12. FRP SAFETY PLATFORMS BY ACCESS INDUSTRIAL OF MISSISSAUGA ONTARIO, OR ALUMINUM SAFETY PLATFORMS, WHERE REQUIRED, TO BE INSTALLED IN MAINTENANCE HOLES 1200mm DIAMETER OR GREATER (STD DWGS. SECTION 2-6). PLATFORMS TO BE ANCHORED USING 316 SS HILTI KWIK BOLTS OR ENGINEER APPROVED EQUAL.
13. FRP LADDERS BY ACCESS INDUSTRIAL OF MISSISSAUGA ONTARIO, OR ALUMINUM LADDERS, TO BE INSTALLED IN ALL MAINTENANCE HOLES 1200mm DIAMETER OR GREATER (STD DWGS. SECTION 2-6). LADDERS TO BE ANCHORED USING 316 SS HILTI KWIK BOLTS OR ENGINEER APPROVED EQUAL.
14. BENCHING TO BE CONSTRUCTED TO THE OBVERT OF THE PIPE IN ALL CASES. 15MPa CONCRETE UNLESS OTHERWISE INDICATED (STD DWG. 2-5-20). BENCHING AS PER OPSS PROV 1350, MATERIAL SPECIFICATION FOR CONCRETE MATERIALS AND PRODUCTION.
15. FOR PVC PIPE (SEE NOTE 19), USE A FLEXIBLE WATERTIGHT CONNECTOR WITH GRANULAR BEDDING (STD. DWG. 2-5-15).
16. FOR RIGID PIPE (SEE NOTE 19), SUPPORT FROM MAINTENANCE HOLE TO FIRST JOINT WITH MIN. 20 MPa. CONCRETE CRADLE (STD. DWG 2-5-16).
17. IF MONOLITHIC RISER OR PRECAST RISER SECTIONS ARE USED, THEN THE LADDER (OR FIRST STEP) CAN BE ANCHORED INTO THE SECTION TO MEET THE MAX. 300mm DISTANCE FROM SURFACE. IF COMPOSITE SECTIONS ARE USED, THEN FRP LADDER MUST ANCHOR INTO TOP OF CONE OR TOP OF BARREL SECTION AND EXTEND TO WITHIN 300mm OF SURFACE.
18. ALL CHAMBERS LOCATED OUTSIDE OF R.O.W. OR WITHIN PARK SETTINGS MUST HAVE A 1500mm HIGH SANITARY CHAMBER MARKING POST (GREEN IN COLOUR), WITHIN 600mm OF CHAMBER COVER (STD. DWG. 2-5-24). MARKERS SHALL NOT BE INSTALLED IF ERECTION RESULTS IN AN IMPEDIMENT TO PEDESTRIAN OR VEHICULAR TRAFFIC, NOT INCLUSIVE OF MAINTENANCE EQUIPMENT.
19. FOR CONNECTION OF FLEXIBLE OR RIGID PIPE TO SANITARY CHAMBERS, A FLEXIBLE WATERIGHT RUBBER CONNECTOR SHALL BE USED. THE CONNECTOR DESIGN TO MATCH SPECIFIC PIPE MATERIAL AND DIAMETER. CONNECTOR SHALL BE FACTORY CAST WHERE POSSIBLE. CONNECTOR MAY BE INSTALLED IN A FACTORY PRODUCED OPENING THAT MEETS CONNECTOR MANUFACTURER'S SPECIFICATIONS. PVC CONNECTION ADAPTERS WITH SANDED ENDS WILL BE USED IN CONJUNCTION WITH FLEXIBLE RUBBER BOOT TO FACILITATE GROUTING OF ANNULAR SPACE INSIDE OF CHAMBER (STD. DWG. 2-5-15, 2-5-16, 2-5-17)
20. ALL INTERNAL HORIZONTAL SURFACES ON UNDERSIDE OF PRECAST FLAT CAPS OR TRANSITION SECTIONS TO BE PROVIDED WITH MIC PROTECTION (CEM-KOTE FLEX CR OR APPROVED EQUAL).
21. ALL CHAMBERS LOCATED OUTSIDE OF R.O.W. OR WITHIN PARK SETTINGS SHALL BE CONSTRUCTED SO THAT COVER SURFACE IS 150mm (MIN.) ABOVE FINISHED GRADE UNLESS OTHERWISE APPROVED BY PROJECT ENGINEER, OR IF THIS CREATES AN IMPEDIMENT TO PEDESTRIAN OR VEHICULAR TRAFFIC, NOT INCLUSIVE OF MAINTENANCE EQUIPMENT.

NOTE
1. GENERAL NOTES TO BE READ IN CONJUNCTION WITH ALL STANDARD DRAWINGS PERTAINING TO PRECAST CIRCULAR MAINTENANCE HOLES.

Region of Peel Working for you
PUBLIC WORKS STANDARD DRAWING
REV. DATE: MARCH 2017
APPROVED BY A.P.
DRAWN BY AINLEY GROUP
NEW SANITARY SEWER CONSTRUCTION
GENERAL NOTES FOR PRECAST MAINTENANCE HOLES
STD. DWG. NUMBER 2-5-1
SCALE N.T.S.

NOTE
1. REFER TO STANDARD DRAWING 2-5-1 FOR GENERAL NOTES PERTAINING TO PRECAST MAINTENANCE HOLES.

Region of Peel Working for you
PUBLIC WORKS STANDARD DRAWING
REV. DATE: MARCH 2017
APPROVED BY A.P.
DRAWN BY AINLEY GROUP
NEW SANITARY SEWER CONSTRUCTION
TYPICAL PRECAST CIRCULAR MAINTENANCE HOLE DETAILS (1200mm - 3000mm)
STD. DWG. NUMBER 2-5-2
SCALE N.T.S.

MAXIMUM PIPE SIZE
600mm STRAIGHT THROUGH, 450mm FOR RIGHT ANGLE
(STD. DWG. 2-5-21)

NOTE
1. REFER TO STANDARD DRAWING 2-5-1 FOR GENERAL NOTES PERTAINING TO PRECAST MAINTENANCE HOLES.
2. REFER TO STANDARD DRAWING 2-5-2 FOR TYPICAL INSTALLATION OPTIONS AND REQUIREMENTS.

Region of Peel Working for you
PUBLIC WORKS STANDARD DRAWING
REV. DATE: MARCH 2017
APPROVED BY A.P.
DRAWN BY AINLEY GROUP
NEW SANITARY SEWER CONSTRUCTION
TYPICAL 1200mm DIAMETER PRECAST CIRCULAR MAINTENANCE HOLE DETAILS
STD. DWG. NUMBER 2-5-3
SCALE N.T.S.

MAXIMUM PIPE SIZE
825mm STRAIGHT THROUGH, 600mm FOR RIGHT ANGLE
(STD. DWG. 2-5-21)

PROVIDE LADDER RECESS IN BENCHING FOR MAINTENANCE HOLES WITH PIPE GREATER THAN 600mm DIAMETER

NOTE
1. REFER TO STANDARD DRAWING 2-5-1 FOR GENERAL NOTES PERTAINING TO PRECAST MAINTENANCE HOLES.
2. REFER TO STANDARD DRAWING 2-5-2 FOR TYPICAL INSTALLATION OPTIONS AND REQUIREMENTS.
3. FOR PIPES GREATER THAN 600mm DIAMETER LADDER RECESS SHALL BE PROVIDED (STD. DWG. 2-5-10, 2-5-11)

Region of Peel Working for you
PUBLIC WORKS STANDARD DRAWING
REV. DATE: MARCH 2017
APPROVED BY A.P.
DRAWN BY AINLEY GROUP
NEW SANITARY SEWER CONSTRUCTION
TYPICAL 1500mm DIAMETER PRECAST CIRCULAR MAINTENANCE HOLE DETAILS
STD. DWG. NUMBER 2-5-4
SCALE N.T.S.

NOTE
1. REFER TO STANDARD DRAWING 2-5-1 FOR GENERAL NOTES PERTAINING TO PRECAST MAINTENANCE HOLES.
2. REFER TO STANDARD DRAWING 2-5-2, 2-5-9 FOR TYPICAL INSTALLATION OPTIONS AND REQUIREMENTS.

Region of Peel Working for you
PUBLIC WORKS STANDARD DRAWING
REV. DATE: MARCH 2017
APPROVED BY A.P.
DRAWN BY AINLEY GROUP
NEW SANITARY SEWER CONSTRUCTION
STANDARD FRAME AND COVER SYSTEM DETAILS
STD. DWG. NUMBER 2-5-13
SCALE N.T.S.

KEY MAP - N.T.S.

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.

This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Sept 19/19
Approved By: Rob Hughes
Print Name: Rob Hughes

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com

TOWN OF CALEDON

Region of Peel
working with you

RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

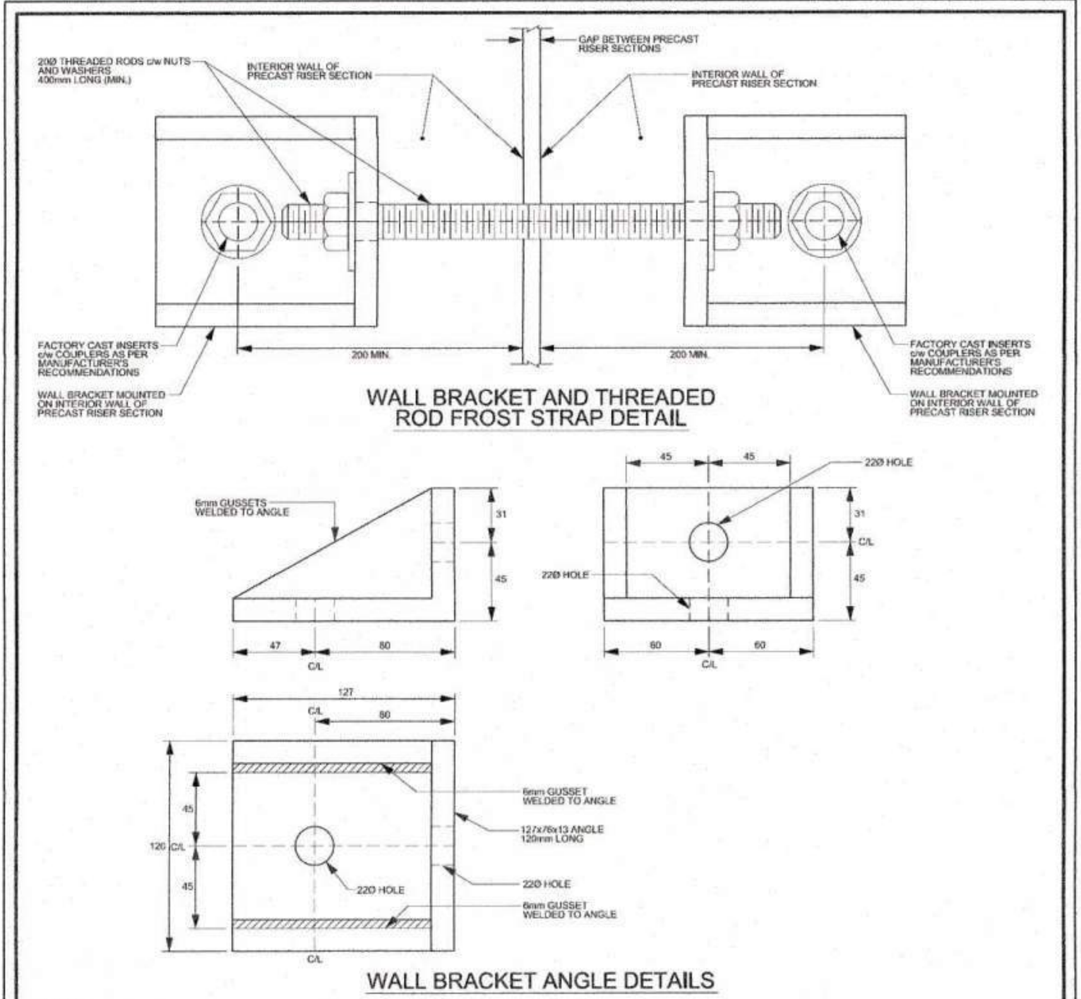
AUG 15, 2019
J. R. R. PERKS
SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

DETAILS #3

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	N / A	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
31 of 35		DWG NO.	116965-NDP3

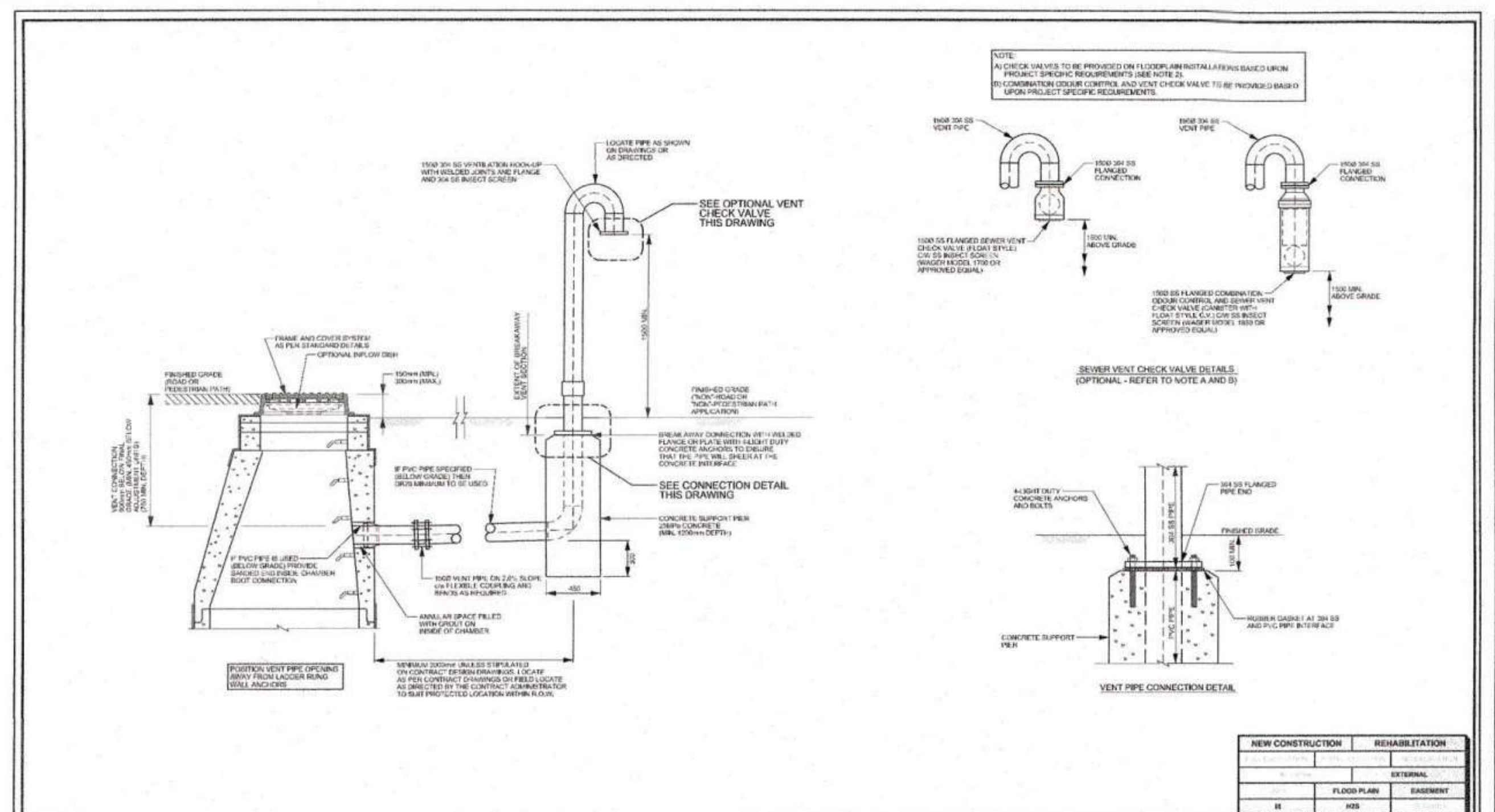
FILE:J:\116965_AbbotsideWay\5.9 Drawings\59civil\layouts\116965-DNP.dwg LAYOUT:NDP3
LAST SAVED BY:Chloe.cao, Wednesday, August 14, 2019 4:00:39 PM PLOTTED BY:Chloe Cao Thursday, August 15, 2019 11:13:16 AM



Region of Peel — PUBLIC WORKS STANDARD DRAWING — REV. DATE: MARCH 2017

NEW SANITARY SEWER CONSTRUCTION
TYPICAL FROST STRAP DETAILS

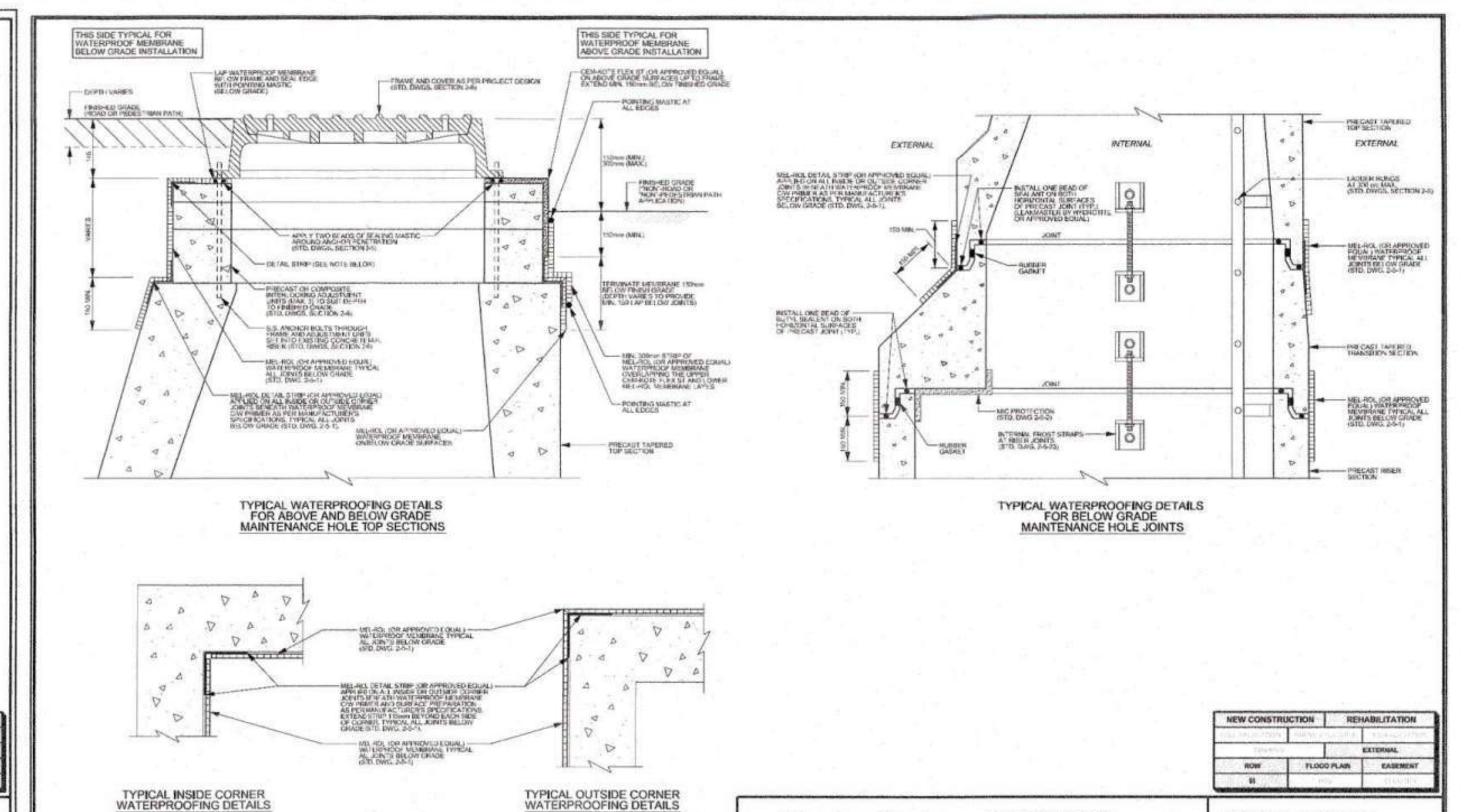
STD. DWG. NUMBER 2-5-23 — SCALE N.T.S. — DRAWN BY AINLEY GROUP



Region of Peel — PUBLIC WORKS STANDARD DRAWING — REV. DATE: MARCH 2017

NEW SANITARY SEWER CONSTRUCTION
MAINTENANCE HOLE VENTING DETAILS

2-5-22 — N.T.S.

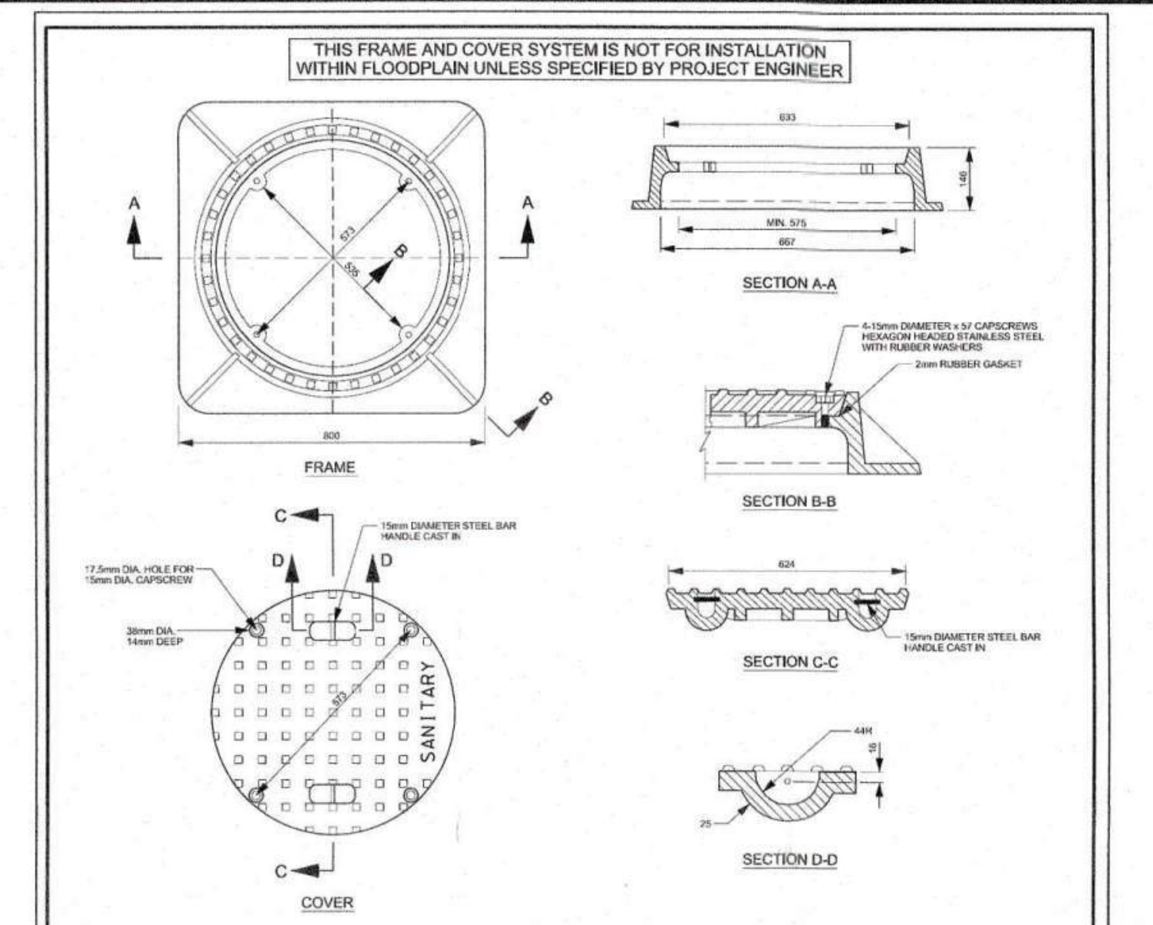


Region of Peel — PUBLIC WORKS STANDARD DRAWING — REV. DATE: MARCH 2017

NEW SANITARY SEWER CONSTRUCTION
WATERPROOF MEMBRANE DETAILS

2-5-25 — N.T.S.

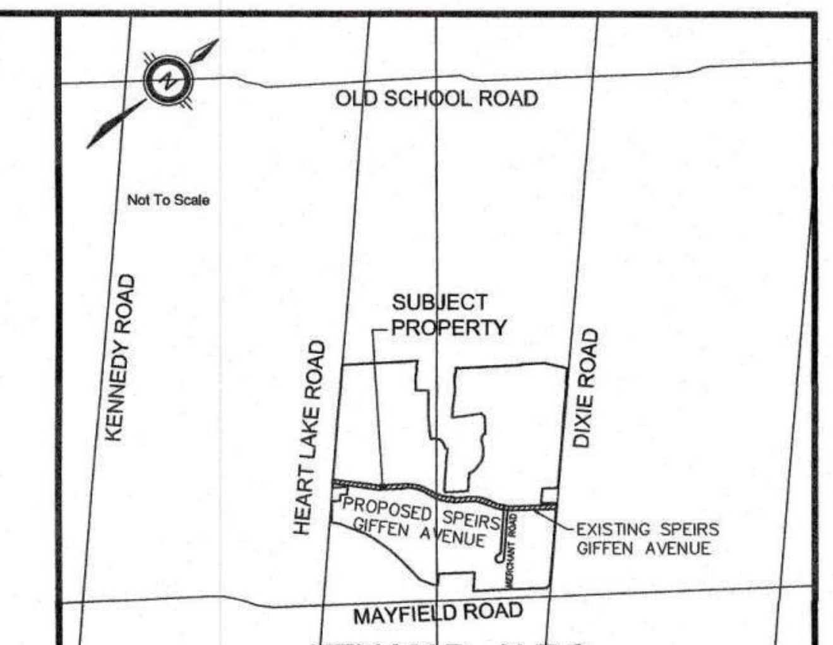
THIS FRAME AND COVER SYSTEM IS NOT FOR INSTALLATION WITHIN FLOODPLAIN UNLESS SPECIFIED BY PROJECT ENGINEER



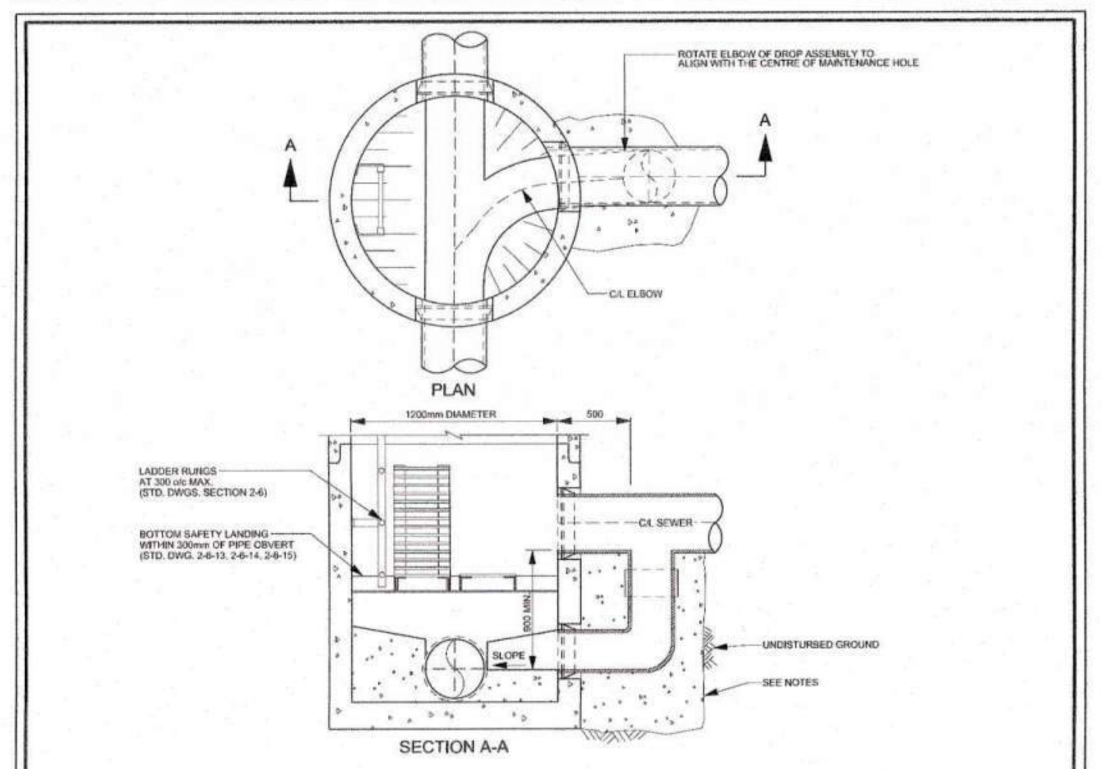
Region of Peel — PUBLIC WORKS STANDARD DRAWING — REV. DATE: MARCH 2017

MAINTENANCE HOLE APPURTENANCES
HEAVY DUTY WATER TIGHT FRAME AND COVER

2-6-4 — N.T.S.



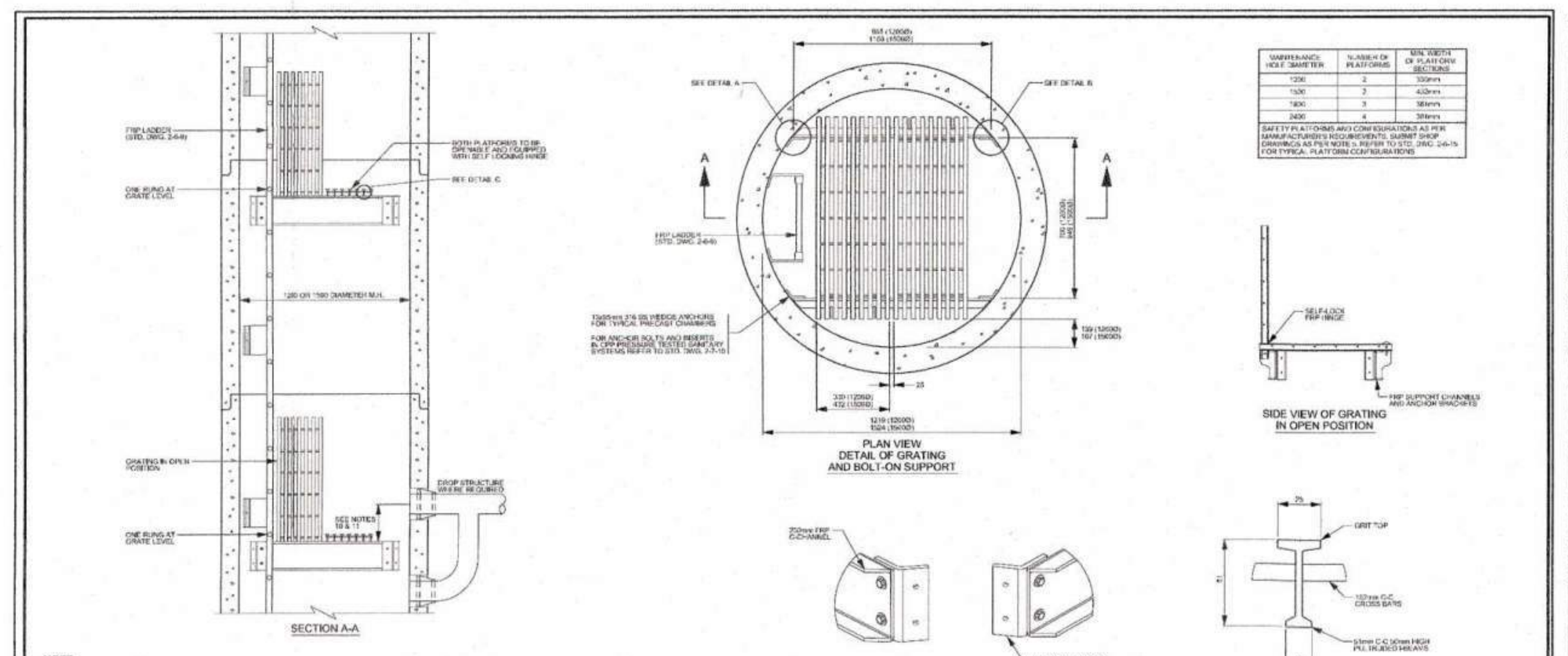
KEY MAP - N.T.S.



Region of Peel — PUBLIC WORKS STANDARD DRAWING — REV. DATE: MARCH 2017

NEW SANITARY SEWER CONSTRUCTION
MAINTENANCE HOLE DROP STRUCTURE
EXTERNAL ASSEMBLY

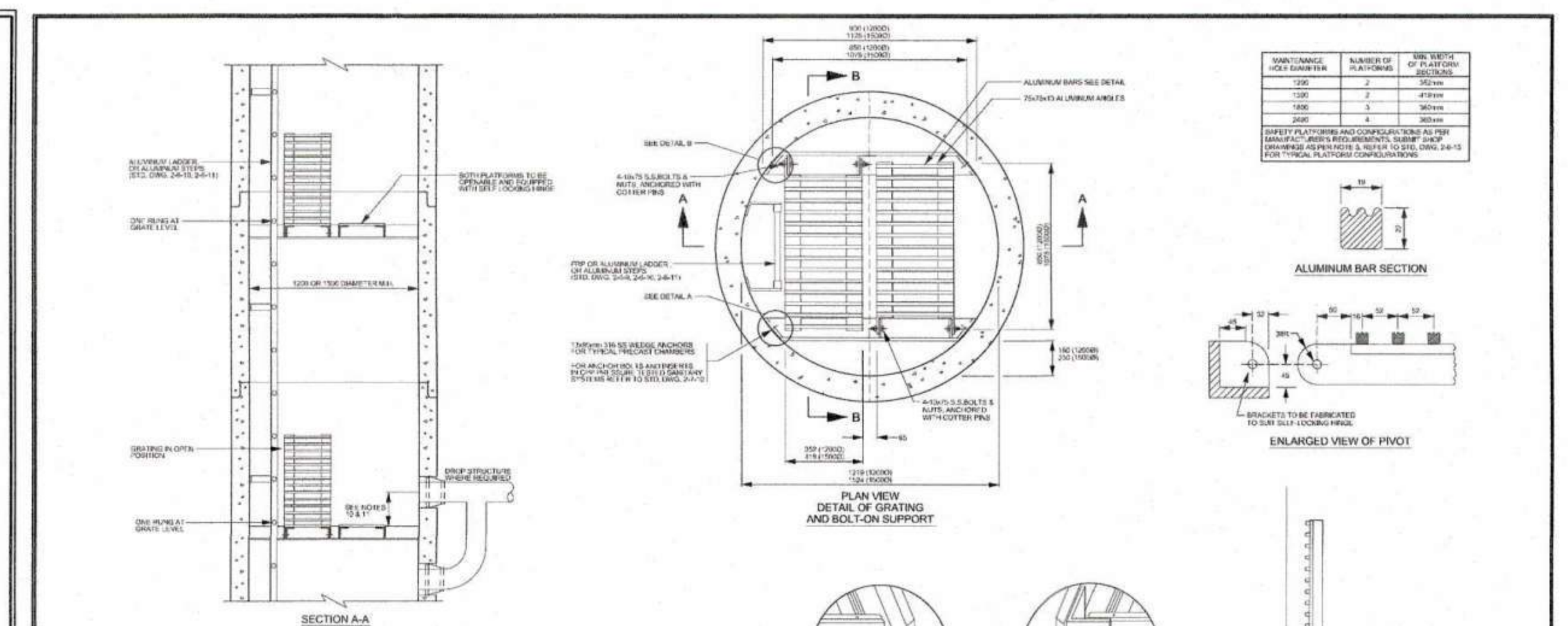
2-5-26 — N.T.S.



Region of Peel — PUBLIC WORKS STANDARD DRAWING — REV. DATE: MARCH 2017

MAINTENANCE HOLE APPURTENANCES
TYPICAL 1200 OR 1500 DIAMETER
FRP SAFETY LANDING DETAILS

2-6-13 — N.T.S.

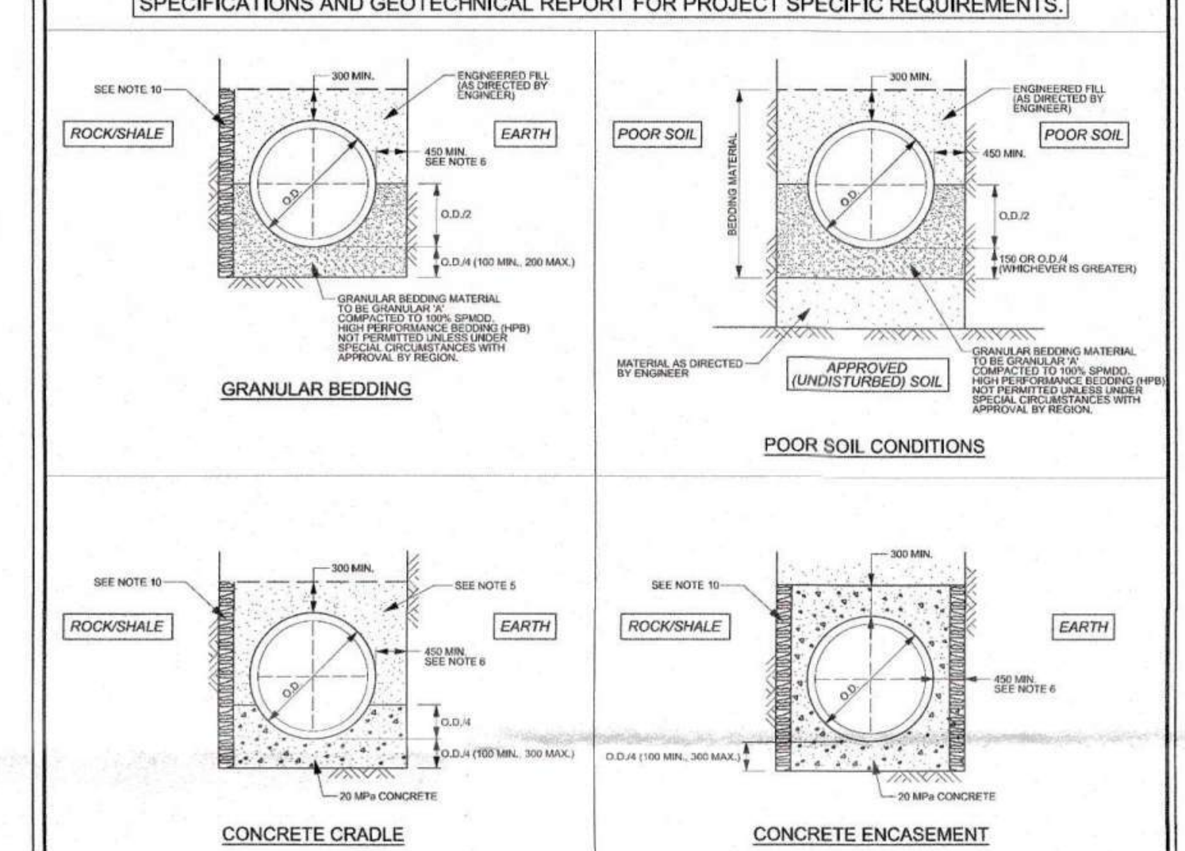


Region of Peel — PUBLIC WORKS STANDARD DRAWING — REV. DATE: MARCH 2017

MAINTENANCE HOLE APPURTENANCES
TYPICAL 1200 OR 1500 DIAMETER
ALUMINUM SAFETY LANDING DETAILS

2-6-14 — N.T.S.

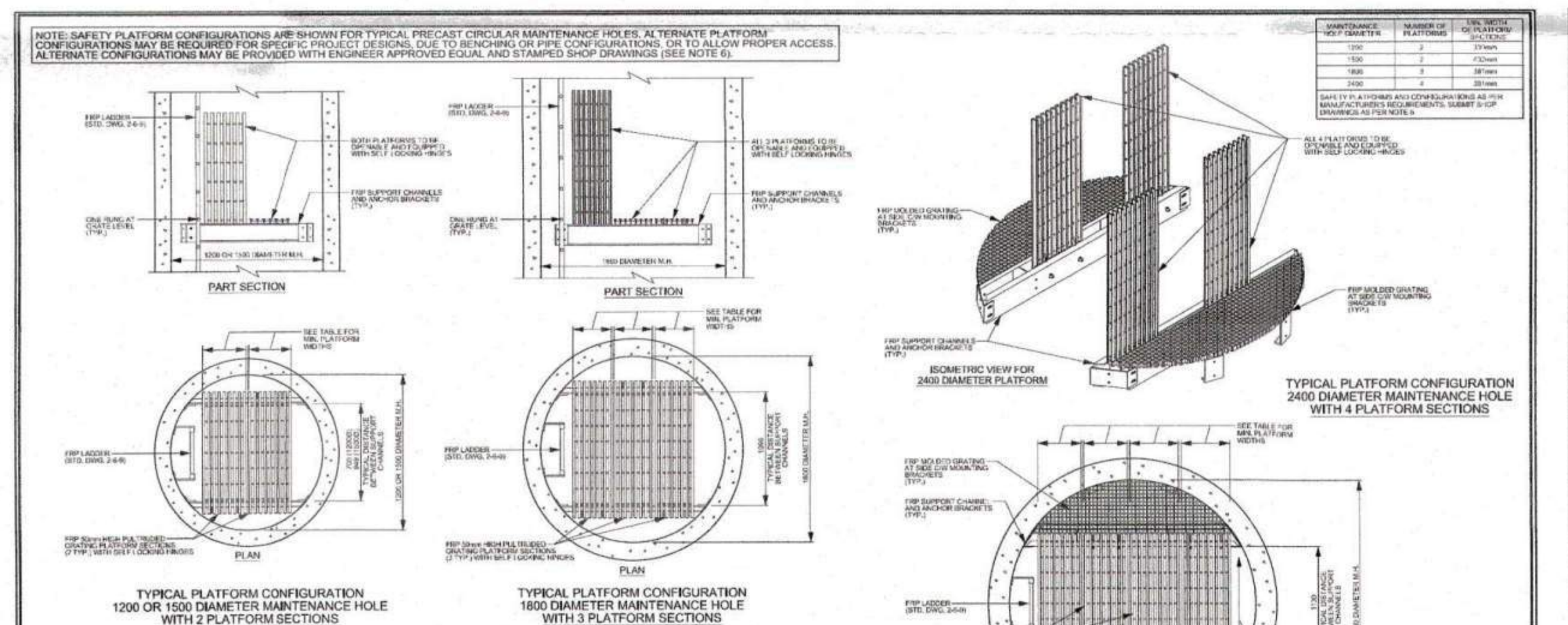
BEDDING DETAILS ARE INTENDED FOR GENERAL INFORMATION. REFER TO CONTRACT SPECIFICATIONS AND GEOTECHNICAL REPORT FOR PROJECT SPECIFIC REQUIREMENTS.



Region of Peel — PUBLIC WORKS STANDARD DRAWING — REV. DATE: MARCH 2017

BEDDING DETAILS FOR SEWERS

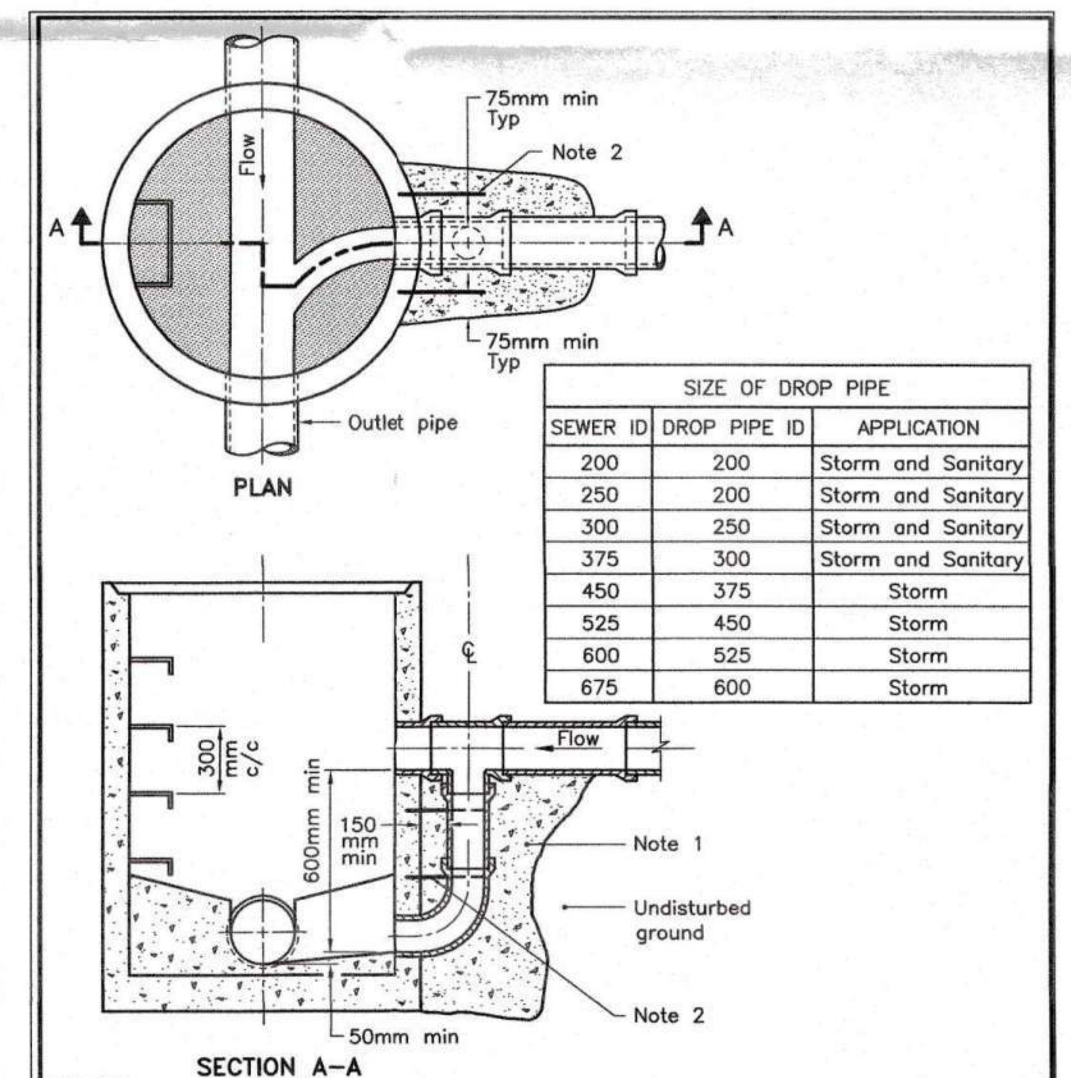
2-3-1 — N.T.S.



Region of Peel — PUBLIC WORKS STANDARD DRAWING — REV. DATE: MARCH 2017

MAINTENANCE HOLE APPURTENANCES
TYPICAL SAFETY LANDING
PLATFORM CONFIGURATIONS

2-6-15 — N.T.S.



SIZE OF DROP PIPE		
SEWER ID	DROP PIPE ID	APPLICATION
200	200	Storm and Sanitary
250	200	Storm and Sanitary
300	250	Storm and Sanitary
375	300	Storm and Sanitary
450	375	Storm
525	450	Storm
600	525	Storm
675	600	Storm

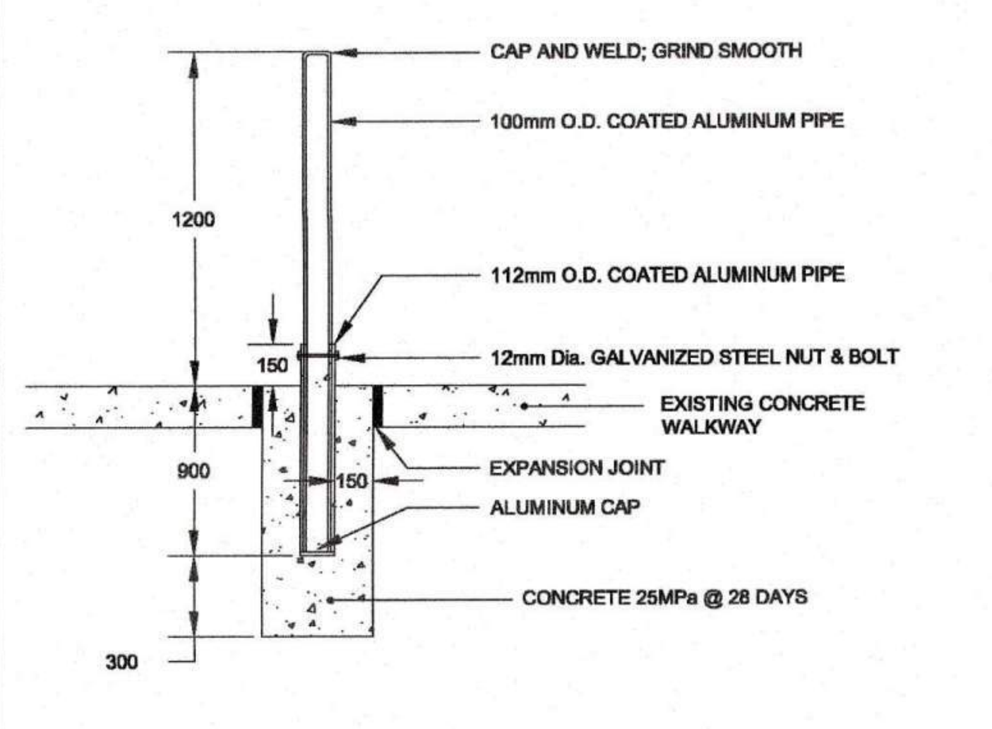
NOTES:

1 Concrete shall be placed to undisturbed ground and the outside face of the maintenance hole, but there shall be a minimum of 150mm of 15MPa concrete around the drop pipe.
2 Concrete shall be secured to the maintenance hole with 450mm long, 13mm diameter threaded rods and drilled expansion anchors down either side of the drop pipe at 300mm centres.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2016 — Rev 3

CAST-IN-PLACE
MAINTENANCE HOLE DROP STRUCTURE TEE

OPSD 1003.010



NOTE:

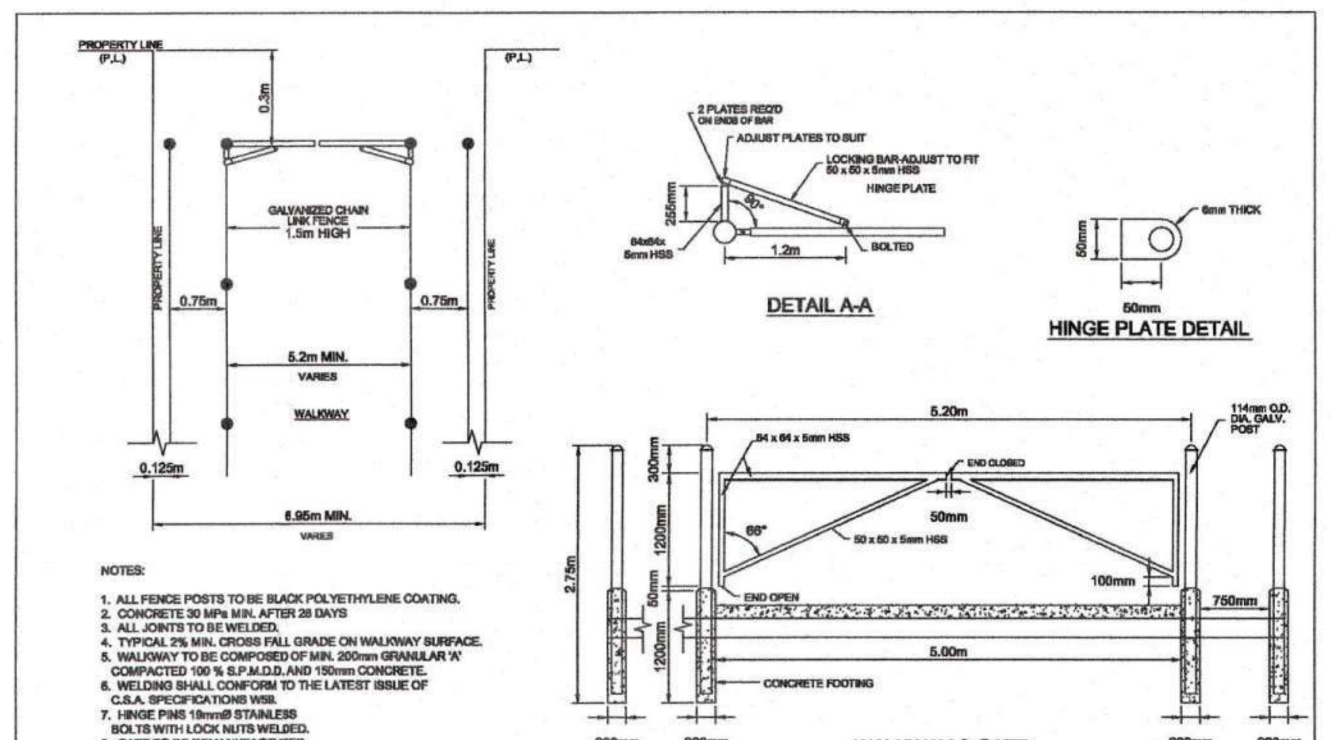
1. POST TO BE CENTERED IN MAJOR WALKWAYS.

NO.	REVISION	APR'D	DATE
1	STANDARD No. 625 NOW 608		JUNE 08

TOWN OF CALEDON — APPD. C.C. — DATE JAN 00 — DRAWN B.J.M. — SCALE N.T.S.

REMOVABLE BOLLARD

STANDARD No. 608



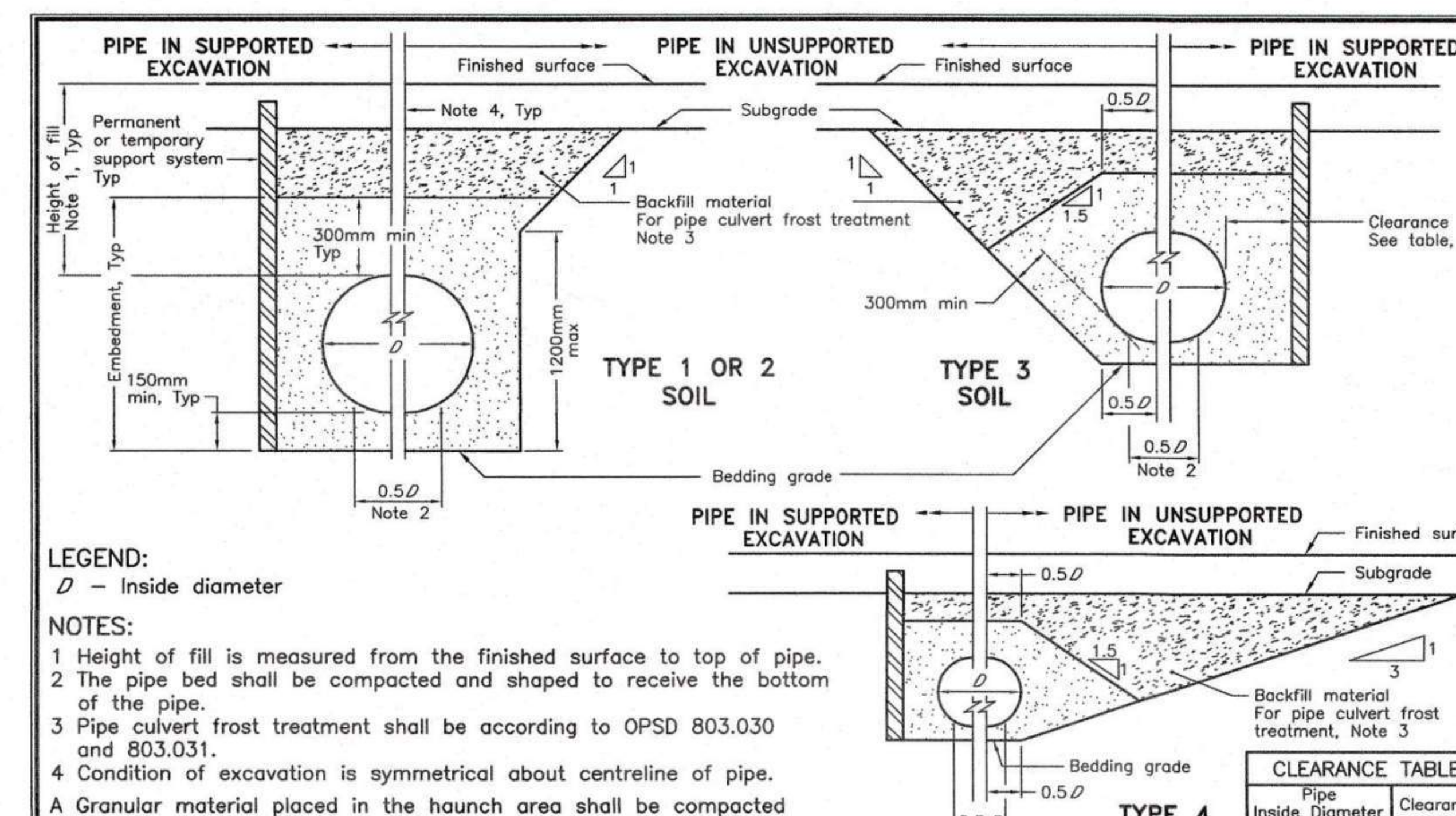
TOWN OF CALEDON

EMERGENCY ACCESS AND WALKWAY GATE

NO.	REVISION	APR'D	DATE
1	STANDARD No. 920 NOW 607		JUNE 08

APPD. C.C. — DRAWN CTB — SCALE N.T.S.

STANDARD No. 607



CLEARANCE TABLE	
Pipe Inside Diameter mm	Clearance mm
900 or less	300
Over 900	500

LEGEND:

D – Inside diameter

NOTES:

1 Height of fill is measured from the finished surface to top of pipe.
2 The pipe bed shall be compacted and shaped to receive the bottom of the pipe.
3 Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.
4 Condition of excavation is symmetrical about centreline of pipe.
A Granular material placed in the haunch area shall be compacted prior to placing and compacting the remainder of the embedment material.
B Soil types as defined in the Occupational Health and Safety Act and Regulations for Construction Projects.
C All dimensions are in metres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2014 — Rev 3

FLEXIBLE PIPE
EMBEDMENT AND BACKFILL
EARTH EXCAVATION

OPSD 802.010

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Sept 19/19
Approved By: Rob Hughes
Print Name: Rob Hughes

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com

TOWN OF CALEDON

Region of Peel
working with you

RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

LICENSED PROFESSIONAL ENGINEER — AUG 15, 2019 — J. R. R. PERKS — PROVINCE OF ONTARIO

SEAL

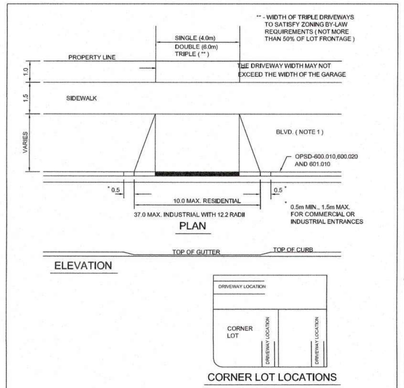
TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

DETAILS #4

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	N/A	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302

DWG NO. 116965-NDP4

FILE:J:\116965_AbbotsideWay\5.9 Drawings\59civil\layouts\116965-DNP.dwg LAYOUT:NDP4
LAST SAVED BY:Chloe.cao, Wednesday, August 14, 2019 4:00:39 PM PLOTTED BY:Chloe Cao Thursday, August 15, 2019 11:13:36 AM



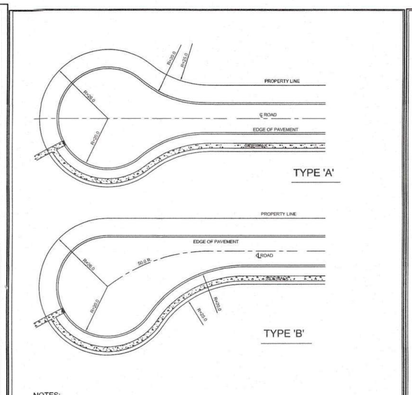
NOTES:
1. DRIVEWAY SHALL NOT BE MORE THAN 50% OF LOT FRONTAGE.
2. CROSSFALL OF SIDEWALK 2% UNLESS OTHERWISE APPROVED.
3. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SHOWN.

NO.	REVISION	APR'D	DATE
1	STANDARD No. 410 NOW 402		JUNE 08

TOWN OF CALEDON — APR'D: C.C. — DATE: 15/12/01

DRIVEWAY ENTRANCE DETAIL — DRAWN: BJM — SCALE: N.T.S.

STANDARD No. 402



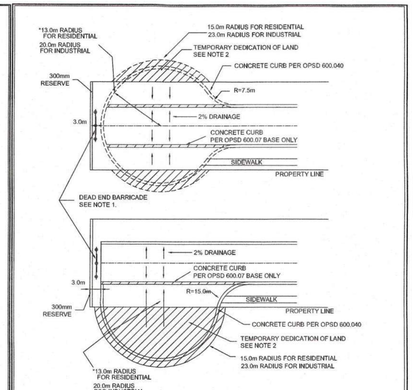
NOTES:
1. ALL DIMENSIONS ARE IN METRES, UNLESS OTHERWISE SHOWN
2. MINIMUM GUTTER GRADE 0.75%
3. AT THE CURB, THERE SHALL BE A MIN. 1.0M BARRIER CURB BETWEEN EVERY DRIVEWAY AROUND THE BULB OF THE CUL-DE-SAC.

NO.	REVISION	APR'D	DATE
3	NOTE 3 EDIT, STANDARD No. 209 NOW 215		JUNE 08
2	ROADWAY DIMENSIONS REMOVED, NOTE 3 ADDED, CURB TERMINATED		MARCH 08
1	RADII DIMENSIONING CORRECTED		MAY 04

TOWN OF CALEDON — APR'D: C.C. — DATE: 19/01/09

INDUSTRIAL CUL-DE-SAC — DRAWN: — SCALE: N.T.S.

STANDARD No.215



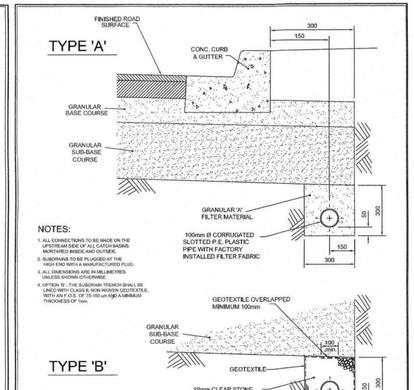
NOTES:
1. DEAD END BARRICADE PER OPSD 900.01 COMPLETE WITH ADDITIONAL 500mm X 500mm BLACK ON WHITE SIGN NOTING "TEMPORARY ONLY -LOCATION OF FUTURE ROAD. SEE NOTE 2
2. TEMPORARY LAND DEDICATION VIA BLOCK ON PLAN.
3. "IF SCHOOL BUS SERVICE IS REQUIRED THE MINIMUM RADIUS SHALL BE 14.5m.

NO.	REVISION	APR'D	DATE
3	STANDARD No. 252 NOW 217		JUNE 08
2	CURB MATERIAL AND OPSD NUMBER CORRECTION		MARCH 08
1	INDUSTRIAL RADII ADDED		JUNE 04

TOWN OF CALEDON — APR'D: — DATE: 29/11/99

TEMPORARY CUL-DE-SAC — DRAWN: BJM — SCALE: N.T.S.

STANDARD No. 217



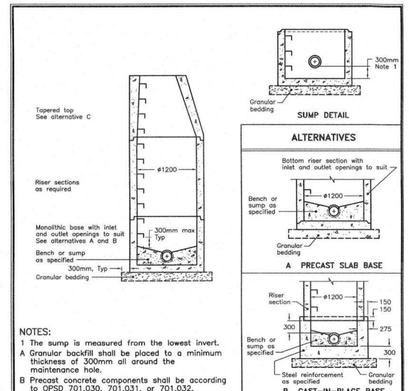
NOTES:
1. ALL CONNECTIONS TO BE MADE ON THE UPSTREAM SIDE OF ALL CATCH BASINS, MORTARED INSIDE AND OUTSIDE.
2. SUBDRAINS TO BE PLUGGED AT THE HIGH END WITH A MANUFACTURED PLUG.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
4. OPTION 'B' - THE SUBDRAIN TRENCH SHALL BE LINED WITH CLASS B, NON-WOVEN GEOTEXTILE, WITH AEF O.S. OF 75-150 um AND A MINIMUM THICKNESS OF 1mm.

NO.	REVISION	APR'D	DATE
1	STANDARD No. 240 NOW 219		JUNE 08

TOWN OF CALEDON — APR'D: C.C. — DATE: 29/11/99

TYPICAL 100mm SUBDRAIN DETAIL — DRAWN: BJM — SCALE: N.T.S.

STANDARD No. 219

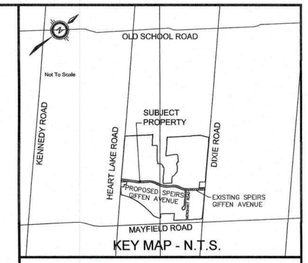


NOTES:
1 The sump is measured from the lowest invert.
A Granular backfill shall be placed to a minimum thickness of 300mm all around the maintenance hole.
B Precast concrete components shall be according to OPSD 701.030, 701.031, or 701.032.
C Structure exceeding 5.0m in depth shall include safety platform according to OPSD 404.020.
D Pipe support according to OPSD 708.020.
E For benching and pipe opening details, see OPSD 701.021.
F For adjustment unit and frame installation, see OPSD 704.010.
G All dimensions are nominal.
H All dimensions are in millimetres unless otherwise shown.

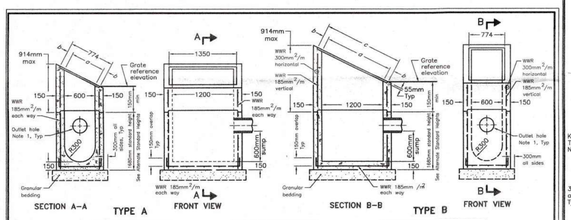
ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2014 — Rev 5

PRECAST CONCRETE MAINTENANCE HOLE 1200mm DIAMETER

OPSD 701.010



KEY MAP - N.T.S.



Opening Dimensions			
Grate Type	Slope	a	b
B	2H:1V	670	52
	3H:1V	632	71
	4H:1V	618	78
	HOR	600	87

Alternate Standard Heights	
Alternate	Dimension
A	1980
B	1520
C	1380

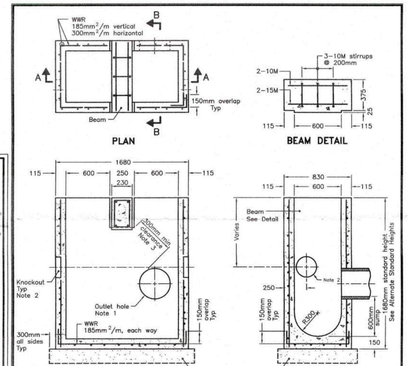
Opening Dimensions				
Grate Type	Slope	a	b	c
C	2H:1V	1341	66	1473
	3H:1V	1265	104	1473
	4H:1V	1237	118	1473
B	6H:1V	1216	65	1346
	HOR	1200	73	1346

NOTES:
1 Outlet hole size 525mm max diameter.
A Where inlet is placed across ditch and is accessible to vehicular traffic, grating slope shall be 6H:1V or flatter.
B Center reinforcing in wall and base slab ø25mm.
C Lap riser horizontal wires 300mm. Laps shall be placed at corners.
D Granular backfill shall be placed to a minimum thickness of 300mm all around the ditch inlet.
E Grating shall be according to OPSD 403.010.
F Pipe support shall be according to OPSD 708.020.
G All dimensions are nominal.
H All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2014 — Rev 3

PRECAST CONCRETE DITCH INLETS 600 x 1200mm

OPSD 705.040



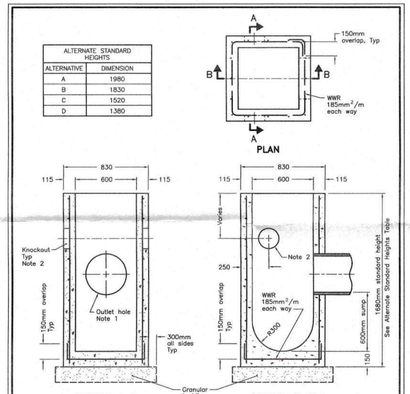
NOTES:
1 Outlet hole size 525mm diameter maximum, location as required.
2 200mm diameter knockout to accommodate subdrain. Knockout shall be 60mm deep.
3 Minimum clearance between beam recess and hole for pipe shall be 300mm or minimum clearance can be 150mm with addition of two 15M size rebar on 45 degree diagonal.
A Centre reinforcing in base slab and walls ±20mm.
B Granular backfill shall be placed to a minimum thickness of 300mm all around the catch basin.
C Frame, grate, and adjustment units shall be installed according to OPSD 704.010.
D Pipe support shall be according to OPSD 708.020.
E All dimensions are nominal.
F All dimensions are in millimetres unless otherwise shown.

ALTERNATE STANDARD HEIGHTS	
ALTERNATIVE	DIMENSION
A	1980
B	1830
C	1680

ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2014 — Rev 3

PRECAST CONCRETE TWIN INLET CATCH BASIN 600 x 1450mm

OPSD 705.020

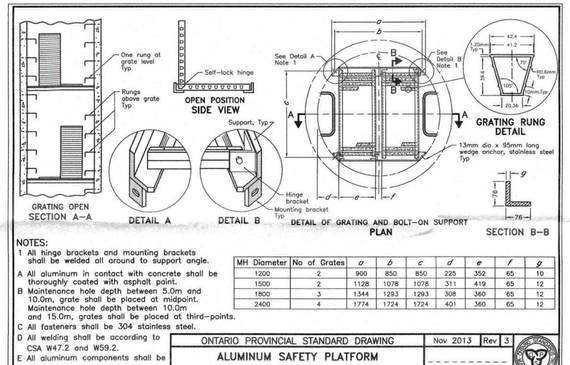


NOTES:
1 Outlet hole size 525mm diameter maximum, location as required.
2 200mm diameter knockout to accommodate subdrain. Knockout shall be 60mm deep.
A Centre reinforcing in base slab and walls ±20mm.
B Granular backfill shall be placed to a minimum thickness of 300mm all around the catch basin.
C Frame, grate, and adjustment units shall be installed according to OPSD 704.010.
D Pipe support shall be according to OPSD 708.020.
E All dimensions are nominal.
F All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2014 — Rev 3

PRECAST CONCRETE CATCH BASIN 600x600mm

OPSD 705.010



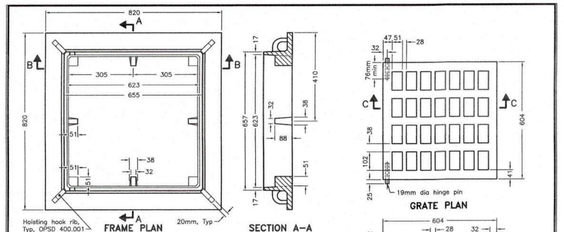
NOTES:
1 All hinge brackets and mounting brackets shall be welded all around to support angle.
A All aluminum in contact with concrete shall be thoroughly coated with asphalt paint.
B Maintenance hole depth between 5.0m and 10.0m, grate shall be placed at midpoint. Maintenance hole depth between 10.0m and 15.0m, grates shall be placed at third–points.
C All fasteners shall be 304 stainless steel.
D All welding shall be according to CSA W47.2 and W59.2.
E All aluminum components shall be 6000 series structural aluminum.
F All dimensions are in millimetres unless otherwise shown.

MH Diameter	No of Grates	a	b	c	d	e	f	g
1200	2	900	850	850	225	352	65	10
1500	2	1128	1078	1078	311	419	65	12
1800	3	1344	1293	1293	308	360	65	12
2400	4	1774	1724	1724	401	360	65	12

ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2013 — Rev 3

ALUMINUM SAFETY PLATFORM FOR CIRCULAR MAINTENANCE HOLES

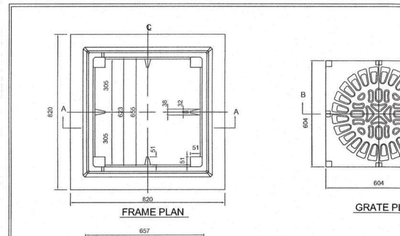
OPSD 404.020



ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2013 — Rev 2

CAST IRON, SQUARE FRAME WITH SQUARE FLAT GRATE FOR CATCH BASINS, PERFORATED OPENINGS

OPSD 400.100

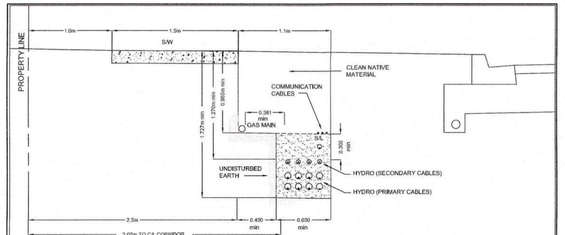


TOWN OF CALEDON — APR'D: — DATE: DEC 1999

BEEHIVE CATCHBASIN, CAST IRON FRAME AND FLAT SQUARE GRATE — DRAWN: BJM — SCALE: NTS

NO.	REVISION	APR'D	DATE
1	STANDARD NO. 710 NOW 503		JAN. 09

STANDARD No. 503



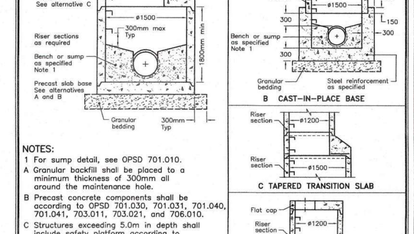
NOTES:
1. CENTRELINE OF TRENCH TO BE LOCATED 3.05m FROM PROPERTY LINE AS PER MUNICIPAL SPECIFICATIONS.
2. BASE OF TRENCH TO BE LINED WITH 100mm OF CLEAN MASON SAND.
3. 100mm OF CABLE SAND FROM EDGE OF TRENCH AND CABLES. 150mm OF CABLE SAND BETWEEN PRIMARY AND SECONDARY.
4. BACKFILL TO CONSIST OF ADDITIONAL 150mm OF CLEAR MASON SAND, COMPACTED. CLEAN NATIVE MATERIAL COMPACTED TO TOP OF TRENCH.
5. WARNING TAPE TO BE PLACED PRIOR TO PLACING THE FINAL 150mm OF SAND BACKFILL.
6. ALL SEPARATIONS AND DEPTHS OF BURIAL ARE MINIMUM.
7. A MINIMUM OF 50mm OF CLEAN MASON SAND IS REQUIRED AROUND ALL CABLES.

TOWN OF CALEDON — APR'D: C.C. — DATE: FEB. 05

JOINT USE UTILITY CORRIDOR — DRAWN: A.P. — SCALE: NTS

NO.	REVISION	APR'D	DATE
1	STANDARD No. 600 NOW 220		JUNE 08

STANDARD No. 220



NOTES:
1 For sump detail, see OPSD 701.010.
A Granular backfill shall be placed to a minimum thickness of 300mm all around the maintenance hole.
B Precast concrete components shall be according to OPSD 701.030, 701.031, 701.040, 701.041, 703.011, 703.021, and 706.010.
C Structures exceeding 5.0m in depth shall include safety platform according to OPSD 404.020 or 404.021.
D Pipe support shall be according to OPSD 708.020.
E For benching and pipe opening details, see OPSD 701.021.
F For adjustment unit and frame installation, see OPSD 704.010.
G All dimensions are nominal.
H All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2014 — Rev 5

PRECAST CONCRETE MAINTENANCE HOLE 1500mm DIAMETER

OPSD 701.011

Town of Caledon
APPROVED AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.

This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Sept 19/19
Approved By: Rob Hughes
Print Name: Rob Hughes

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com

TOWN OF CALEDON

Region of Peel working with you

RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

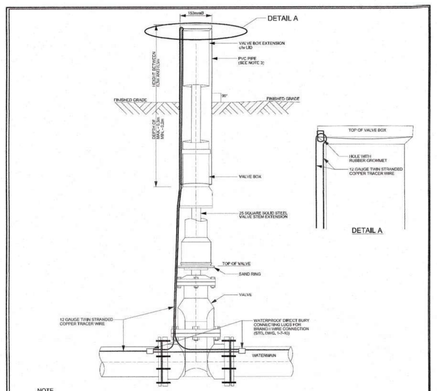
LICENSED PROFESSIONAL ENGINEER
AUG 15, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

DETAILS #5

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	N/A	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
33 of 35		DWG NO.	116965-NDP5

FILE:J:\116965_AbbotsideWay\3.9 Drawings\09civil\layouts\116965-DNP.dwg LAYOUT:NDP5
LAST SAVED BY:Chloe.cao, Wednesday, August 14, 2019 4:00:39 PM PLOTTED BY:Chloe Cao Thursday, August 15, 2019 11:13:58 AM

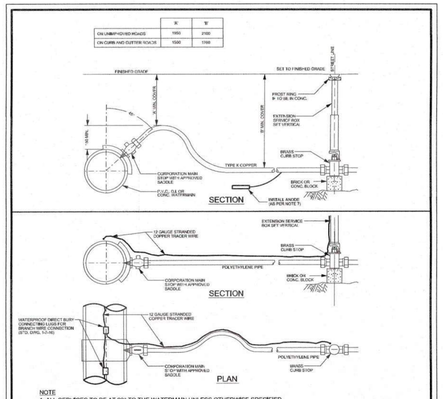


NOTE
1. ALL VALVE BOX PROTECTION IS TO REMAIN IN PLACE DURING CONSTRUCTION UNTIL AT LEAST 10 DAYS AFTER SODDING AND MUST BE COMPLETELY REMOVED AT FINAL APPROVAL WITH LID ADJUSTED TO GRADE LEVEL (GL).
2. PROTECTION TO BE APPLIED TO BOTH LINE VALVE BOXES AND HYDRANT BRANCH VALVES.
3. PROTECTION TO BE 150mmØ P.V.C. PIPE, BLUE IN COLOUR.
4. TRACER WIRE TO BE INCLUDED.
5. VALVE TO BE RESTRAINED AS SHOWN IN STD. 1-5-6.
6. ALL FITTING, FITTINGS, VALVES, APPURTENANCES AND MECHANICAL RESTRAINTS TO BE c/w DENSO PASTE, DENSO MASTIC AND DENSO TAPE OR APPROVED EQUAL, APPLIED TO MANUFACTURER'S RECOMMENDATIONS.

Region of Peel working with you | PUBLIC WORKS STANDARD DRAWING | REV. DATE: APRIL 2014

VALVE BOX PROTECTION (DURING CONSTRUCTION)

APPROVED BY	DRAWN BY
A.P.	ABLEY GROUP
STD. DWG. NUMBER: 1-3-11	SCALE: N.T.S.



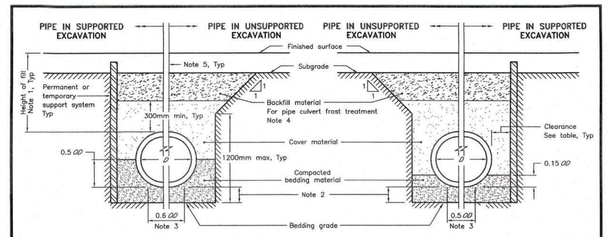
	X	Y
ON UNIMPROVED ROADS	1650	2100
ON CURB AND GUTTER ROADS	1500	1700

NOTE
1. ALL SERVICES TO BE AT 90° TO THE WATERMAIN UNLESS OTHERWISE SPECIFIED.
2. WATER SERVICE TO BE A MIN. OF 1100mm UNDER THE BOTTOM OF DITCH.
3. SERVICE BOX TO BE SET TO FINISH GRADE.
4. NO DIRECT TAPPING OF PVC WATERMAINS. ALL CONNECTIONS TO PVC PIPE TO BE MADE USING AN APPROVED WEIR-WAND SERVICE SADDLE.
5. TRACER WIRE TO BE INSTALLED AS PER REGION STANDARDS.
6. ALL WATER SERVICE MATERIALS SHALL BE STORED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. ZINC ANODE TO BE INSTALLED 1000mm FROM CURB STOP AS PER OPSS 442.

Region of Peel working with you | PUBLIC WORKS STANDARD DRAWING | REV. DATE: MAR. 2018

WATER SERVICE CONNECTION

APPROVED BY	DRAWN BY
E.G.	ABLEY GROUP
STD. DWG. NUMBER: 4-7-4	SCALE: N.T.S.



NOTES:
1 Height of fill is measured from the finished surface to top of pipe.
2 The minimum bedding depth below the pipe shall be 0.15Ø in no case shall this dimension be less than 150mm or greater than 300mm.
3 The pipe bed shall be compacted and shaped to receive the bottom of the pipe.
4 Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.
5 Condition of excavation is symmetrical about centreline of pipe.
A Soil types as defined in the Occupational Health and Safety Act and Regulations for Construction Projects.
B All dimensions are in metres unless otherwise shown.

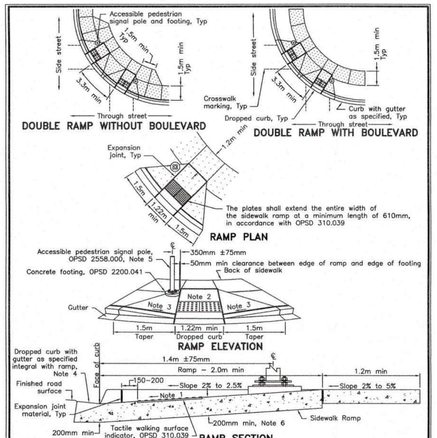
LEGEND:
D – Inside diameter
OD – Outside diameter

CLEARANCE TABLE	
Pipe Inside Diameter mm	Clearance mm
900 or less	300
Over 900	500

ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2015 | Rev 3

RIGID PIPE BEDDING, COVER, AND BACKFILL TYPE 1 OR 2 SOIL – EARTH EXCAVATION

OPSD 802.030

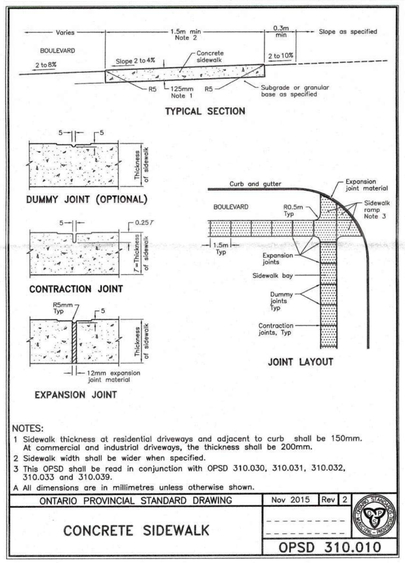


NOTES:
1 Slope of ramp shall not exceed 8%.
2 Cross slope of ramp shall not exceed 2% in either direction.
3 Cross slope of flared side of ramp shall not exceed 8%.
4 Dropped curb at ramp shall be modified to eliminate 30 mm step at gutter.
5 Accessible pedestrian signal to have tactile arrow that aligns with direction of crosswalk.
6 Minimum thickness of ramp is 200mm. Minimum thickness of sidewalk and flared sides adjacent to ramp is 150mm.
A Where only one crosswalk is present at an intersection, only one curb ramp is required.
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2015 | Rev 1

CONCRETE SIDEWALK RAMPS AT SIGNALIZED INTERSECTIONS

OPSD 310.030

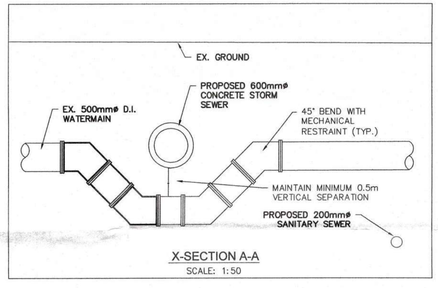


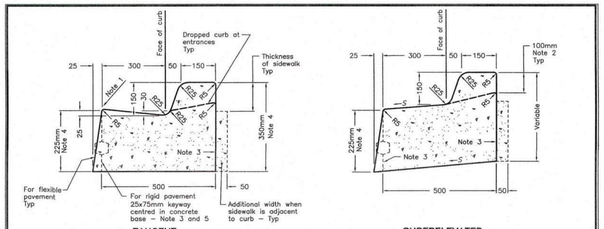
NOTES:
1 Sidewalk thickness at residential driveways and adjacent to curb shall be 150mm. At commercial and industrial driveways, the thickness shall be 200mm.
2 Sidewalk width shall be wider when specified.
3 This OPSD shall be read in conjunction with OPSD 310.030, 310.031, 310.032, 310.033 and 310.039.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2015 | Rev 2

CONCRETE SIDEWALK

OPSD 310.010





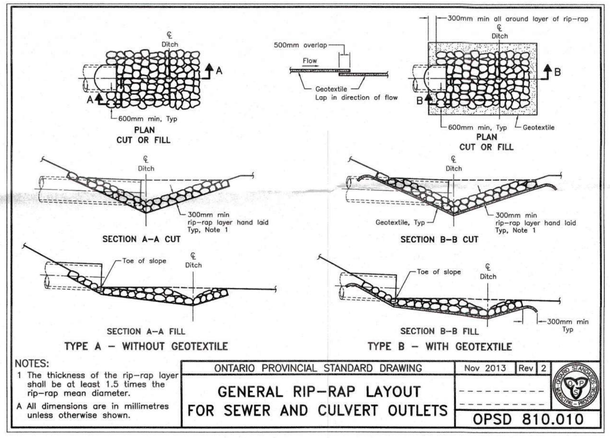
LEGEND:
S – Rate of pavement superelevation in percent, %.

NOTES:
1 Flexible and composite pavement shall be placed 5mm above the adjacent edge of gutter.
2 When sidewalk is continuously adjacent, the dropped curb at entrances shall be reduced to 75mm.
3 For slipforming procedure a 5% batter is acceptable.
4 For composite pavement the depth of concrete curb shall be adjusted to depth of concrete pavement.
5 When tie bars are specified, refer to OPSD 552.010 and 552.020 for details.
A Treatment at entrances shall be according to OPSD 351.010.
B Outlet treatment shall be according to the OPSD 610 Series.
C The transition from one curb type to another shall be a minimum length of 3.0m, except in conjunction with guide rail where it shall be according to the OPSD 900 Series.
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2012 | Rev 2

CONCRETE BARRIER CURB WITH STANDARD GUTTER

OPSD 600.040

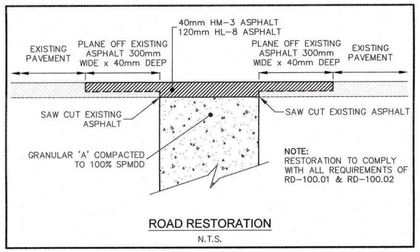


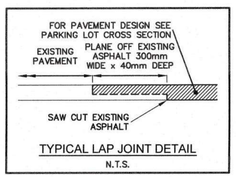
NOTES:
1 The thickness of the rip–rap layer shall be at least 1.5 times the rip–rap mean diameter.
A All dimensions are in millimetres unless otherwise shown.

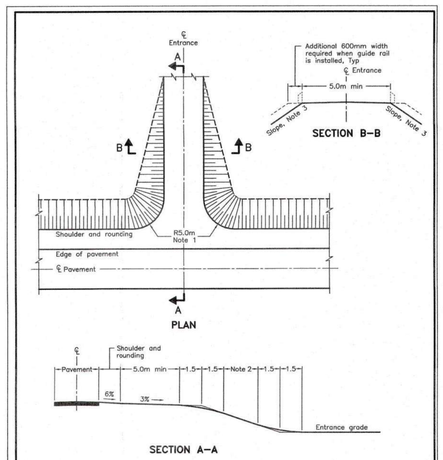
ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2013 | Rev 2

GENERAL RIP–RAP LAYOUT FOR SEWER AND CULVERT OUTLETS

OPSD 810.010





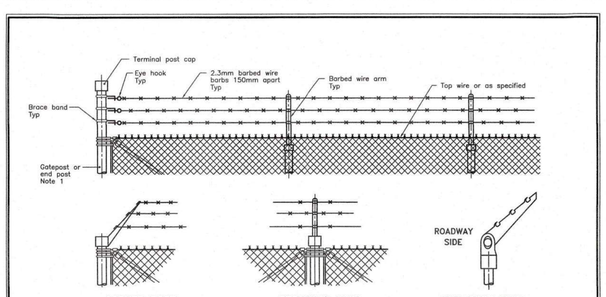


NOTES:
1 Radius shall be 8.0m when entrance is used for farm equipment.
2 Maximum gradient: 6% for residential entrances and 10% for farm and field entrances.
3 Slope shall be 3H:1V or flatter when specified.
A All dimensions are in metres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2010 | Rev 2

RURAL ENTRANCES TO ROADS ON FILL

OPSD 301.010

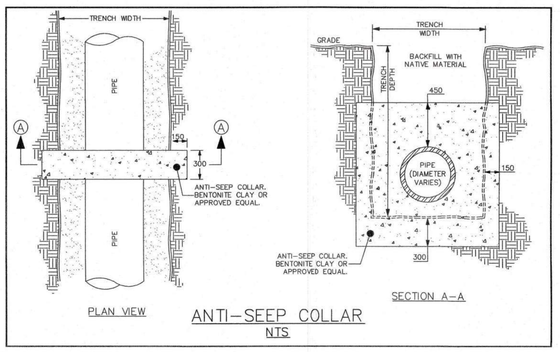


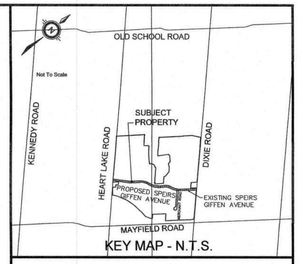
NOTES:
1 Terminal post shall be lengthened when barbed wire is specified, except when barbed wire arms are used.
A Installation as viewed from the roadway.
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2012 | Rev 2

FENCE, CHAIN–LINK COMPONENT – BARBED WIRE

OPSD 972.101





Town of Caledon
APPROVED
AS NOTED
This approval constitutes a general review and does not certify dimensional accuracy.
This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.
Date: Sept. 19/19
Approved By:
Print Name:

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV #	DATE	BY	REVISIONS
8	08/15/19	J.P.	REVISED PER TRCA COMMENTS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com

TOWN OF CALEDON

Region of Peel working with you

RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

LICENSED PROFESSIONAL ENGINEER
AUG 15, 2019
J. R. R. PERKS
PROVINCE OF ONTARIO
SEAL

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

DETAILS #6
INCLUDING
ESC NOTES AND DETAILS

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	N/A	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
34 of 35		DWG. NO.	116965-NDP6

FILE:J:\116965_AbbotsideWay\5.0 Drawings\5dcvl\layouts\116965-DNP.dwg, LAYOUT:NDP6
LAST SAVED BY:Chloe.cao, Wednesday, August 14, 2019 4:00:39 PM PLOTTED BY:Chloe Cao Thursday, August 15, 2019 11:14:15 AM

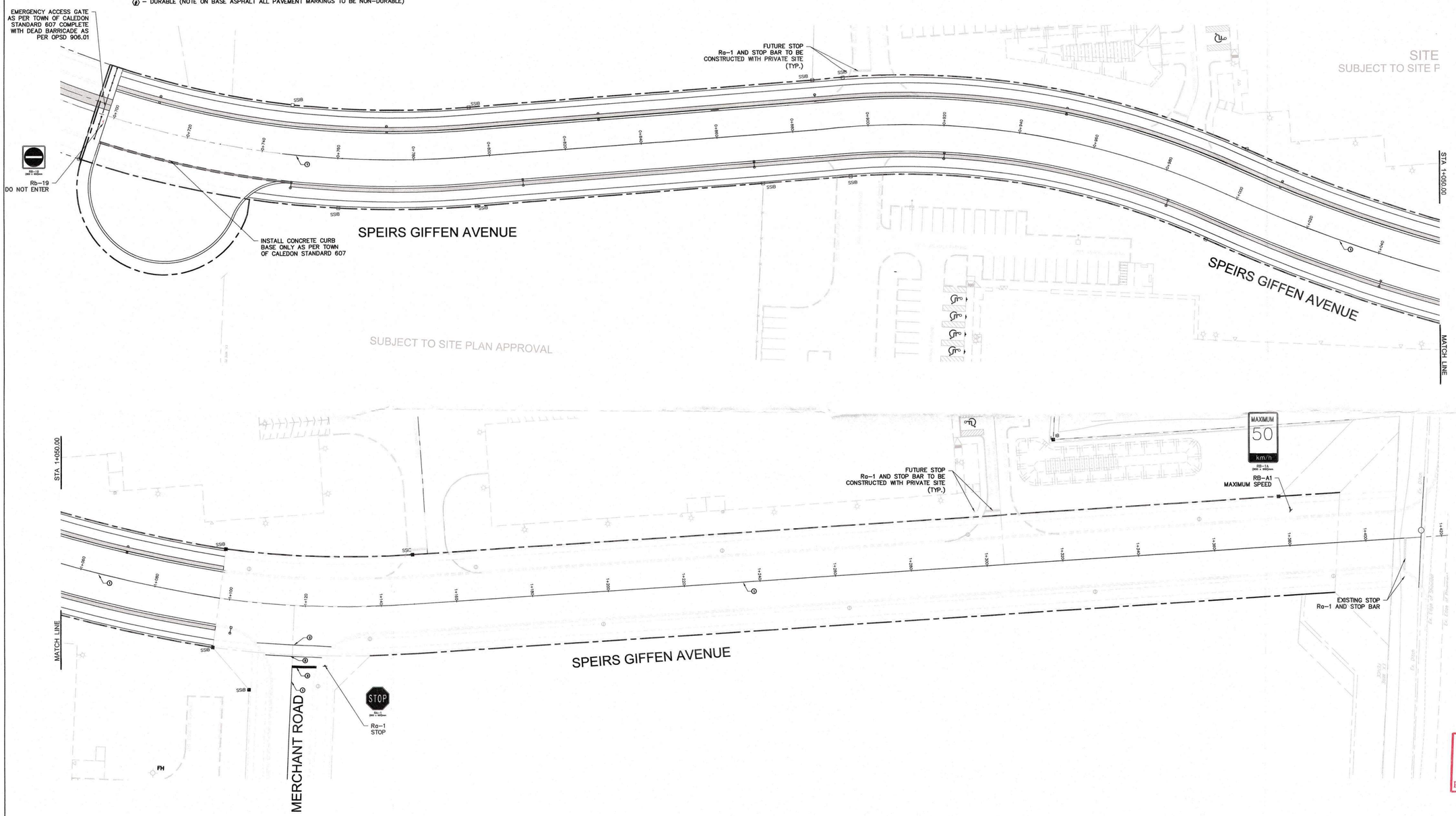
NOTES

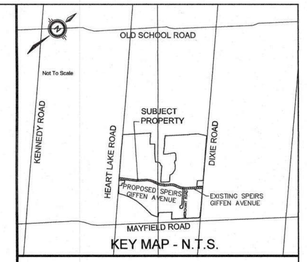
1. STOP SIGNS AND ALL OTHER REGULATORY AND WARNING SIGNS TO BE PLACED AS PER THE ONTARIO TRAFFIC MANUAL.
2. ALL STREET NAME SIGNS TO BE PLACED 1.0m-1.5m FROM BACK OF CURB AS PER TOWN STANDARDS.
3. "NO PARKING" SIGNS TO BE INSTALLED ON LAMP POSTS WHERE POSSIBLE.
4. PARKING PROHIBITIONS MAY BE REQUIRED IN THE AREA OF INTERSECTIONS LOCATION TO BE CONFIRMED WITH TOWN PRIOR TO INSTALLATION.

PAVEMENT MARKING LEGEND			
IDENTIFICATION	TYPE	COLOUR	WIDTH (cm)
1	SOLID	YELLOW	10
2	SOLID	WHITE	10
3	SOLID	WHITE	60

(P) – NON–DURABLE

(P) – DURABLE (NOTE ON BASE ASPHALT ALL PAVEMENT MARKINGS TO BE NON–DURABLE)





KEY MAP - N.T.S.

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.

This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

Date: Sept 19/19
Approved By:
Print Name: Rob Hughes

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com

TOWN OF CALEDON

Region of Peel
working with you

RECEIVED
SEP 19 2019
PLANNING DEPARTMENT

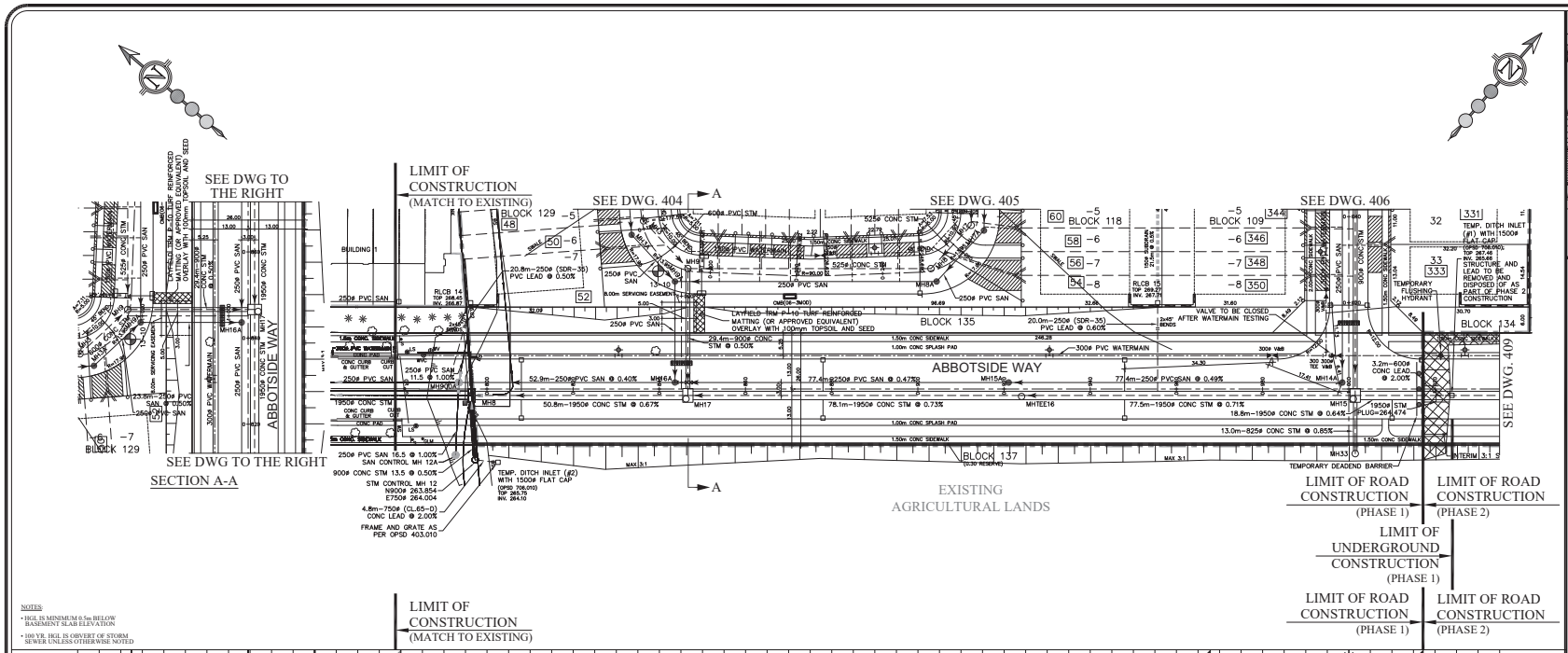
LICENSED PROFESSIONAL ENGINEER
JULY 24 2019
J. R. R. PERKS
PROVINCE OF ONTARIO

SEAL

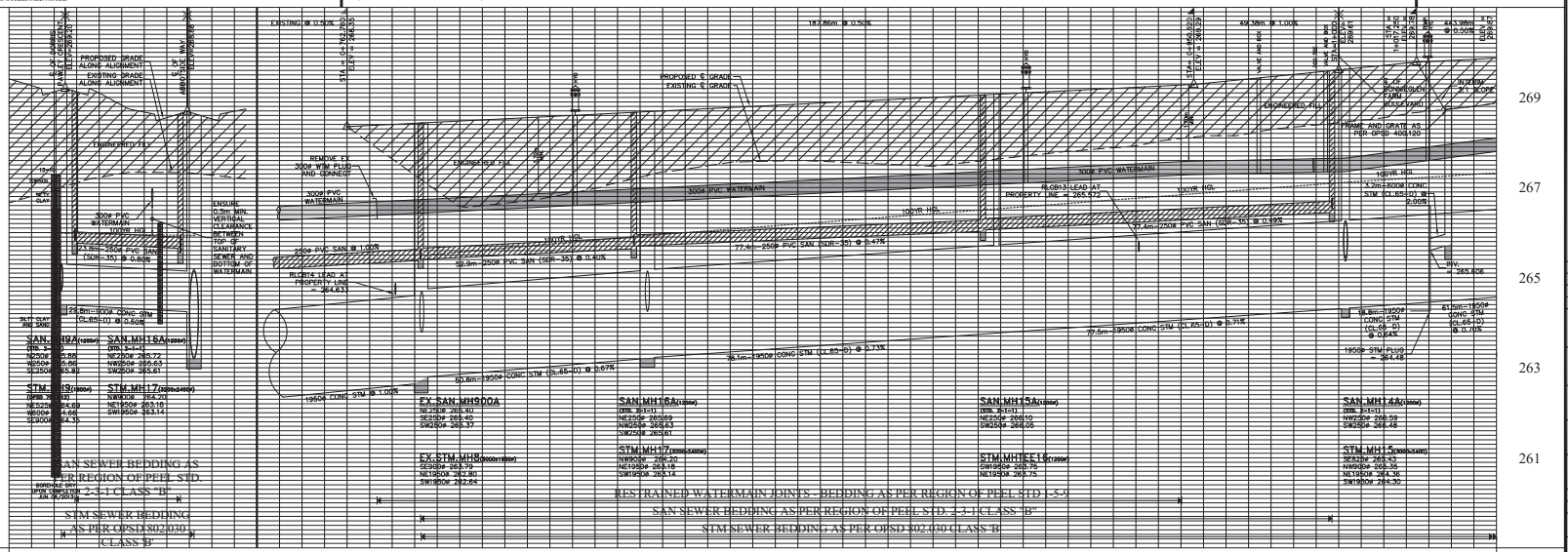
TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

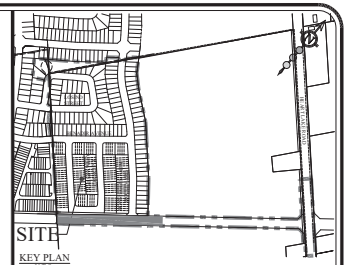
PAVEMENT MARKING PLAN
(STA 0+700 TO STA 1+420)

DATE:		DESIGNED BY:	Z.P.
SCALE:	1:500	DRAWN BY:	C.C.
		CHECKED BY:	J.P./D.R.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
35 of 35		DWG NO.	116965-PM



NOTES:
- HGL IS MINIMUM 0.5m BELOW BASEMENT SLAB ELEVATION
- 100 YR. HGL IS OBVERT OF STORM SEWER UNLESS OTHERWISE NOTED





SITE
KEY PLAN N.T.S.

BENCHMARK: ELEV. 264.941

ON THE NORTH FACE AT THE EAST CORNER OF A GREY BRICK BUNGALOW LOCATED ON THE SOUTH SIDE OF SEVENTEENTH SIDEROAD (REGION ROAD #14) APPROX. 122m EAST OF SECOND LINE EAST.

LEGEND:

- LIMIT OF PROPERTY
- SANITARY SEWER/MANHOLE
- STORM SEWER/MANHOLE
- STORM SEWER/MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING STORM MANHOLE
- SINGLE CATCHBASIN WITH 19.8L/S INLET CONTROL DEVICE (ICD)
- DOUBLE CATCHBASIN WITH 19.8L/S INLET CONTROL DEVICE (ICD)
- EXISTING SINGLE CATCHBASIN
- EXISTING DOUBLE CATCHBASIN
- HYDRANT AND VALVE
- EXISTING HYDRANT AND VALVE
- VALVE AND BOX
- EXISTING VALVE AND BOX
- EXISTING HYDRO POLE/LAMP STANDARDS
- EXISTING WATERMAIN REDUCER
- LOT NUMBER
- MUNICIPAL ADDRESS
- FUTURE / EXISTING LOT NUMBER
- EXISTING WATER SERVICE BOX LOCATION
- WATER SERVICE BOX LOCATION (WATER SERVICE AT 90° TO WATERMAIN UNLESS OTHERWISE SHOWN)
- INFILTRATION TRENCH (SEE DWG 901 FOR DETAIL)
- FROST COLLAR INSTALLED ON WATER SERVICE BOX
- EXISTING TREES
- EXISTING OVERHEAD WIRES
- TYPICAL DUAL SERVICE CONNECTION INCLUDES ONE DOUBLE STORM CONNECTION AND ONE SINGLE SANITARY CONNECTIONS AT 90° TO SEWERS AS PER REGION OF PEEL STANDARD DWG 2-4-4 (UNLESS OTHERWISE SHOWN)
- SINGLE STORM AND SINGLE SANITARY CONNECTIONS
- COMMUNITY MAILBOX PAD, SEE DETAILS ON 900 SERIES DRAWINGS
- CANADA POST SPEC. E10IX-ENG-## NUMBER OF MODULES
- EXISTING COMMUNITY MAILBOX PAD
- DRIVEWAY LOCATION
- EXISTING DRIVEWAY LOCATION
- 4:1 SLOPE EMBANKMENT (UNLESS OTHERWISE NOTED)
- TOPSOIL BERM
- 1.8m HIGH NOISE FENCE (SEE DRAWING 901 FOR DETAIL)
- EXISTING PRIVACY FENCE
- ANTI-SEEPAGE COLLAR (SEE DRAWING 901)
- PROPOSED PAVEMENT WIDENING
- INFRASTRUCTURE TO BE MAINTAINED
- INFRASTRUCTURE TO BE REMOVED
- INFRASTRUCTURE TO BE RELOCATED
- TREES TO BE PRESERVED

AS-CONSTRUCTED

TOPOGRAPHIC SURVEY PROVIDED BY HOLDING JONES VANDERVEEN INC., JULY 2014

REVISIONS

No.	DESCRIPTION	DATE	BY	APPROVED
1	AS-CONSTRUCTED SUBMISSION	OCT/18	D.W.	-
2	REVISED AS-CONSTRUCTED SUBMISSION	MAY/19	D.W.	-

SCS consulting group ltd
30 CENTURIAN DRIVE, SUITE 100
MARKHAM, ONTARIO L3R 8B8
TEL: (905) 475-1900
FAX: (905) 475-8335

TOWN OF CALEDON
6311 OLD CHURCH ROAD
CALEDON, ONTARIO L7C 1J6
TEL: (905) 584-2272
FAX: (905) 584-4325

DIGRAM DEVELOPMENTS CALEDON INC.
LIVINGSTON ESTATES - PHASE 1 (T-13001C)
ABBOTSIDE WAY STA. 0+800 TO 1+035

DATE:	MAY 2019	DESIGNED BY:	S.W.L/D.W.
CHECKED BY:	M.R.C./S.M.S.	SCALE:	H 1:500 V 1:50
DRAWN BY:	M.J.O./J.Y.L.	CHECKED BY:	P.A.S.

5 0 10 20 30 40 HORIZONTAL

APPROVED FOR CONSTRUCTION

THIS APPROVAL CONSTITUTES A GENERAL REVIEW AND DOES NOT CERTIFY DIMENSIONAL ACCURACY.

THIS APPROVAL IS SUBJECT TO THE FURTHER CERTIFICATION OF THE "AS-CONSTRUCTED" WORKS BY A REGISTERED PROFESSIONAL ENGINEER OF THE PROVINCE OF ONTARIO

DATE: _____ APPROVED BY: _____

PROJECT No: 1551

DRAWING No: 408

File: P:\1551 Livingston Estates\Drawings\Phase 1\As-builts\Prp\1551AB-PROF-408.dwg – Revised by <TMCNEIL> : Mon, Oct 04 2021 – 11:10am

Appendix B – Groundwater

Excerpt Hydrogeological Investigation (EXP)

12304 Heart Lake Road, Caledon, Ontario

L7C 2J2

Updated Hydrogeological Investigation and Water Balance Assessment Report

Client:
Broccolini Limited Partnership No. 6
2680 Skymark Avenue, Suite 800, Mississauga, Ontario L4W 5L6

Attention: Mr. Ben Wilson

Type of Document:
Final

Project Name:
12304 Heart Lake Road, Caledon, Ontario

Project Number:
BRM-21004344-D0

EXP Services Inc.
1595 Clark Boulevard
Brampton, ON, L6T 4V1
t: 905.793.9800
f: 905.793.0641

Date Submitted:
2022-03-16

Table of Contents

One (1) map was created for the Site to show groundwater contours of the overburden water-bearing zone (Figure 6). Accordingly, the groundwater flow directions in overburden interpreted to be southeast and southwest of the Site.

Groundwater levels are expected to show seasonal fluctuations and vary in response to prevailing climate conditions. This may also affect the direction and rate of flow. It is recommended to conduct seasonal groundwater level measurements to provide more information on seasonal groundwater level fluctuations.

3.3 Hydraulic Conductivity Testing

Four (4) Single Well Response Tests (SWRT's) were completed on monitoring wells BH/MW 1, BH/MW 9, BH/MW 16, and BH/MW 25 on October 7 and 12, 2021. The tests were completed to estimate the saturated hydraulic conductivity (K) of the soils at the well screen depths. Please note that SWRT was not possible to conduct for BH/MW 30 since the well was dry during the monitoring period.

The static water level within each monitoring well was measured prior to the start of testing. In advance of performing SWRTs, each monitoring well underwent development to remove fines introduced into the screens following construction. The development process involved purging of the monitoring wells to induce the flow of fresh formation water through the screen. Each monitoring well was permitted to fully recover prior to performing SWRTs.

Hydraulic conductivity values were calculated from the SWRT and constant rate test data as per Hvorslev's solution included in the Aqtesolv Pro. V.4.5 software package. The semi-log plots for normalized drawdown versus time are included in Appendix C.

A summary of the hydraulic conductivities (K-values) estimated from the SWRTs are provided in Table 3-2.

Table 3-2: Summary of Hydraulic Conductivity Testing

Monitoring Well	Well Depth (mbgs)	Screen Interval (mbgs)		Soil Formation Screened	Estimated Hydraulic Conductivity (m/s)
		from	to		
BH/MW 1	7.60	4.60	7.60	Clayey Silt Till and Sandy Silt Till	3.1E-06
BH/MW 9	7.57	4.57	7.57	Clayey Silt Till and Sandy Silt Till	4.0E-07
BH/MW 16	7.49	4.49	7.49	Clayey Silt Till	3.3E-07
BH/MW 25	7.55	4.55	7.55	Clayey Silt Till	3.9E-07
				Highest Estimated K Value	3.1E-06
				Geometric Mean of Estimated K values	6.3E-07

SWRTs provide K-estimates of the geological formation surrounding the well screens and may not be representative of bulk formation hydraulic conductivity. As shown in Table 3-2, the highest K-value of the tested water-bearing zone is 3.1E-06 m/s, and the geometric mean of the K-values is 6.3E-07 m/s.

3.4 Groundwater Quality

To assess the suitability for discharging pumped groundwater into the sewers owned by the Regional Municipality of Peel / City of Mississauga during dewatering activities, one (1) groundwater sample was collected from monitoring well BH/MW 1 on October 12, 2021, using a peristaltic pump.

Prior to collecting the noted water sample, approximately three (3) standing well volumes of groundwater were purged from the referred well. The samples were collected unfiltered and placed into pre-cleaned laboratory-supplied vials and/or bottles provided with analytical test group specific preservatives, as required. Dedicated nitrile gloves were used during sample handling. The groundwater samples were submitted for analysis to Bureau Veritas Laboratory, a CALA certified independent laboratory in Mississauga, Ontario. Analytical results are provided in Appendix D.

Table 3-3 summarizes exceedance(s) of the Sanitary (Table 1) and Storm (Table 2) Sewer Use By-Law parameters.

When comparing the chemistry of the collected groundwater samples to the Regional Municipality of Peel Sanitary and Combined Sewer Discharge Criteria (By-Law Number 53-2010, Table 1), there were no parameter exceedances to be reported.

When comparing the chemistry of the collected groundwater samples to the Regional Municipality of Peel Storm Sewer Discharge Criteria (By-Law Number 53-2010, Table 2) the following parameters reported an exceedance: Total manganese and Chloroform

Reporting detection limits (RDLs) were below the Sewer Use By-Law parameter criteria of Tables 1 and 2.

Table 3-3: Summary of Analytical Results

Parameter	Units	City of Mississauga / Regional Municipality of Peel Sanitary and Combined Sewer Discharge Limit (Table 1)	City of Mississauga / Regional Municipality of Peel Storm Sewer Discharge Limit (Table 2)	Concentration BH/MW 1 12-Oct-21
Total Manganese (Mn)	µg/L	5,000	50	**78**
Chloroform	µg/L	40	2	**2.8**

Bold – Exceeds City of Mississauga / Regional Municipality of Peel Storm Sewer Discharge Limit (Table 2).

For the short-term dewatering system (construction phase), it is anticipated that TSS levels and some other parameters (for example, Total Metals) in the pumped groundwater may become elevated and exceed both, Sanitary and Storm Sewer Use By-Law limits. To control the concentration of TSS and associated metals, it is recommended that a suitable treatment method be implemented (filtration or decantation facilities and/ or any other applicable treatment system) during construction dewatering activities to discharge to the applicable sewer system. The specifications of the treatment system will need to be adjusted to the reported water quality results by the treatment contractor/process engineer.

The water quality results presented in this report may not be representative of the long-term condition of groundwater quality onsite. As such, regular water quality monitoring is recommended for the post-construction phase, as required by the City.

An agreement to discharge into the sewers owned by the City of Mississauga / Regional Municipality of Peel will be required prior to releasing dewatering effluent.

The Environmental Site Assessment Report(s) shall be reviewed for more information on the groundwater quality conditions at the Site.

3.5 Infiltration Testing

EXP completed four (4) infiltration rate tests (INF 1, INF 9, INF 25 and INF 30) within the Site area on October 7 and 12, 2021. These tests were conducted in proximity of selected monitoring wells: September 7, 2021, at BH/MW 1 (INF 1), BH/MW 9 (INF 9), BH/MW 30 (INF 30) and BH/MW 25 (INF 25).

Infiltration tests were conducted at depths ranged from 0.6 mbgs to 0.9 mbgs. The reported water levels at these monitoring wells are; 4.24 mbgs (BH/MW 1), 5.92 mbgs (BH/MW 9), and <7.58 (BH/MW 30) on October 7, 2021, and 6.66 mbgs (BH/MW 25) on October 12 15, 2021 (Table 3.2).

The stratigraphy of the shallow subsurface comprises a silt/sand with some pebbles. Table 3.5 below shows a summary of field saturated hydraulic conductivity (Kfs) testing and design infiltration rates, as per the Low Impact Development (LID) Stormwater Management Planning and Design Guide, CVC – TRCA, 2010, Appendix G. The estimated field saturated hydraulic conductivities were correlated to infiltration rates based on the relationship provided in Appendix D of the guideline.

Infiltration rate testing locations are shown on Figure 4 and infiltration rate analysis is provided in Appendix E.

Table 3.4: Summary of Infiltration Testing Results

Infiltration Test Location/ MW ID	Depth of Hole (mbgs)	Formation tested	Field Saturated Hydraulic Conductivity, Kfs (cm/s)	Infiltration Rate (mm/hr)
INF 1 (BH/MW 1)	0.60	Clayey Silt Till	3.4×10^{-6}	19
INF 9 (BH/MW 9)	0.75	Clayey Silt Till	3.5×10^{-6}	19
INF 25 (BH/MW 25)	0.90	Clayey Silt Till	2.7×10^{-6}	18
INF 30 (BH/MW 30)	0.70	Clayey Silt to Sandy Silt (Fill)	9.0×10^{-6}	24
		Geometric Mean	4.12×10^{-6}	20
			Design Infiltration Rate*	8 (20/2.5)

Notes:
*Safety Factor of 2.5 was applied to calculate the design infiltration rate (Low Impact Development (LID) Stormwater Management Planning and Design Guide, CVC – TRCA, 2010, Appendix D).

The estimated design infiltration rate based on percolation rate testing for the Site is 8 mm/hr.

A 15 mm precipitation event was utilized for estimating the stormwater volume. The calculation of the stormwater volume is included in Appendix G.

The estimate of the stormwater volume only accounts for direct precipitation into the excavation. The dimensions of the excavation are considered in the dewatering calculations. Runoff from outside of the excavation's footprint is excluded and it should be directed away from the excavation.

During precipitation events greater than 15 mm (ex: 100-year storm), measures should be taken by the contractor to retain stormwater onsite in a safe manner to not exceed the allowable water taking and discharge limits, as necessary. A two (2) and a one hundred (100) year storm events over a 24-hour period are 57.3 and 125.2 mm, respectively, which would produce 2,419 and 5,286 L of water within Building 1 footprint area.

5.4 Results of Dewatering Rate Estimates

5.4.1 Construction Dewatering Rate Estimate

For this assessment, it was assumed that the proposed construction plans include an excavation without shoring system. EXP should be retained to review the assumptions outlined in this section, should a shoring system be included.

Short-term (construction) dewatering calculations are presented in Appendix G.

Based on the assumptions provided in this report, the results of the dewatering rate estimate can be summarized as follows:

Table 4-2 Summary of Construction Dewatering Rate (Without Basement)

Description	Building 1 (Phase 1) (L/day)	Building 2 (Phase 2) (L/day)	Total (L/day)
Estimated Short Term Dewatering Rate (without safety factor or precipitation)	39,000	22,000	61,000
With Factor of Safety of 1.5 (excluding precipitation) for permit	**58,000**	**33,000**	**91,000**
From Precipitation Event of 15 mm in one day for whole building footprint	630,000	450,000	1,080,000
With Factor of Safety of 2.0 (including precipitation) for designs, and budgeting	688,000	483,000	1,171,000
Radius of Influence from sides of excavation (m)	24	25	

It should be noted that the construction dewatering is required mainly to remove rainwater from the excavation after rainfall events. The MECP regulates the groundwater taking and since the estimated flow rate is less than 50,000 L/day then no MECP water taking permit (EASR or PTTW) is required.

The peak dewatering flow rates does not account for flow from utility beddings and variations in hydrogeological properties beyond those encountered during this investigation. Local dewatering may be required for pits (elevator pits, sump pits, raft) and for localized areas with permeable, soft, or wet soil conditions. Local dewatering is not considered to be part of this assessment, but contractor should be ready to install additional system to manage such conditions. Dewatering estimates should be reviewed once the pit dimensions are available.

All grading around the perimeter of the excavation should be graded away from the excavation and ramp/site access to redirect runoff away from excavation.

The contractor is responsible for the design of the dewatering system to ensure that dry conditions are always maintained within the excavation at all costs.

As shown on Table 4.2, more than 90% of the dewatering volume is expected to be required after rainfall events. As such it is suggested to revise the construction plan to reduce the area of excavation kept open at any given point of time.

5.4.2 Post-Construction Dewatering Rate Estimate

As per preliminary Site drawings, it is our present understanding that the proposed Buildings 1 and 2 will be constructed without basements. Therefore, no long-term dewatering requirements are anticipated for the proposed Building 1.

5.5 MECP Water Taking Permits

5.5.1 Short-Term Discharge Rate (Construction Phase)

In accordance with the Ontario Water Resources Act, if the water taking for the construction dewatering is more than 50,000 L/day but less than 400,000 L/day, then an online registration in the Environmental Activity and Sector Registry (EASR) with the MECP will be required. If groundwater dewatering rates onsite exceed 400,000 L/day, a Category 3 Permit to Take Water (PTTW) will be required from the MECP.

As of July 1, 2021, an amendment of O. Reg. 63/16 has come into effect and replaced the former subsection 7 (5) such that the water taking limit of 400,000 L/day would apply to groundwater takings of each dewatered work area only, excluding stormwater.

The dewatering estimates including a safety factor and excluding precipitation is stated below. The MECP construction dewatering rate excludes the precipitation amount and is the rate used for the permit application.

Table 4-4: MECP Construction Dewatering Flow Rate

Scenario	Flow Rate Building 1 (Phase 1) (L/day)	Flow Rate Building 2 (Phase 2) (L/day)	Total Flow Rate Buildings 1 & 2 (L/day)
MECP Construction Dewatering Flow Rate with Safety Factor of 1.5 (excluding rainwater collection)	58,000	33,000	91,000

Based on the estimated construction dewatering rates, an EASR from the MECP will be required to facilitate the construction dewatering program of the Site.

A Discharge Plan (dewatering sketch, sewer discharge agreement) must be developed and applied for any discharges from the Site. Monitoring of both water quantity and water quality must be carried out for the entire duration of the construction dewatering phase. During this phase, the Discharge Plan and the daily water taking records must be available onsite.

The EASR, Discharge Plan, hydrogeological investigation report, and geotechnical assessment of settlements must also be available at the construction Site during the entire construction dewatering. EXP should be notified immediately about any changes to the construction dewatering schedule or design, since the EASR will need to be updated to reflect these

Appendix C – Sanitary Analysis

Excerpt Mayfield West Functional Servicing Study
Speirs Giffen Avenue Ultimate Sanitary Area Drainage Plan
Livingston Estates Sanitary Drainage Area Plan
Sanitary Demand Calculations

FUNCTIONAL SERVICING AND STORMWATER MANAGEMENT STUDY

FOR

MAYFIELD WEST COMMUNITY

IN THE

TOWN OF CALEDON

NOVEMBER 2007

TABLE OF CONTENTS

3.0 WASTEWATER SERVICING

3.1 Background Information

Town of Caledon commissioned various studies in order to define the servicing requirements for Mayfield West. The following studies were used to define the preliminary wastewater servicing requirements:

- Mayfield West Community Development Plan Study, Existing Water Supply and Sanitary Sewage System, CG&S, November 1996 (Background Studies)
- Mayfield West Community Development Plan Study, Water Supply and Sanitary Sewage System Function Servicing, CG&S, February 1997 (Background Studies)
- Region of Peel Sewer and Watermain Maps
- Region of Peel Design Criteria, October 2000

The Background Studies commissioned by Town of Caledon for water and wastewater are included in ***Appendix A.***

The above documents form the basis of this report.

3.2 Existing Wastewater Services

An existing 525 mm diameter sanitary sewer is located at the intersection of Mayfield Road and Inder Heights Drive. The Background Studies determined that the sewer is able to accommodate sanitary flows from 10,000 people.

An existing 750 mm diameter sanitary sewer is located on Dixie Road, terminating approximately 1,800 metres south of Mayfield Road. Discussions with Region of Peel have confirmed that the capacity of the existing sewer is not a constraint to the development of this community.

The location of the existing sanitary sewers is illustrated in ***Figure 3.***

3.3 Population Assumptions

Residential

In accordance with population projections provided by Town of Caledon, the following residential population is currently being considered:

Mayfield West ➢ 8,500 people
Snells Hollow ➢ 2,000 people

Employment

As of this writing, employment populations have not been finalized. As such, an assumption of 70 people per hectare has been applied in accordance with Region of Peel Design Criteria.

3.4 Proposed Sanitary Servicing

Region of Peel has included an allowance for the ultimate development of Mayfield West in the planning of the existing infrastructure. Accordingly, existing sewer pipes have been sized to convey the predicted Mayfield West flows. Furthermore, major infrastructure such as treatment plants and pump stations has sufficient existing and planned capacity to accommodate the development of the new community.

The Mayfield West community will be serviced by a network of new gravity sewers designed in accordance with Region of Peel design criteria. Two sanitary outlets will be used to service the Mayfield West Community, as follows:

Inder Heights Drive

An existing 525 mm diameter sanitary sewer is located at the intersection of Mayfield Road and Inder Heights Drive. The Background Studies determined that the sewer is able to accommodate sanitary flows from 10,000 people.

It is proposed that the entire residential population in Mayfield West will be directed to the Inder Heights sewer. The total population contribution to Inder Heights is calculated as follows:

Table 1
Population Assumptions

Community	Population
Snells Hollow	1,400
Mayfield Residential	8,500
Mayfield Employment	600
Total	**10,500**

It should be noted that the total Snells Hollow population of 2,000 people has been split between the Inder Heights and Dixie sewers in accordance with the Background Studies. The split has been estimated as 1,400 / 600 (Inder Heights / Dixie).

It should also be noted that since the time of the Background Studies per capita flow generation rates have been reduced, due in large part to recent Building Code amendments which require water conservation fixtures in all new residential construction. As such, it is expected that the additional population can be

accommodated in the Inder Heights sewer. It is recommended that sanitary flows be monitored during buildout of the community to ensure that the capacity of the receiving sewers in not exceeded.

Consideration should also be included for the potential future extension of the Mayfield West urban boundary up to Old School Road. Assuming the same residential land use and population density as the existing community, there is the potential for approximately 25.8 hectares of residential development which will drain to the Inder Heights sewer. This corresponds to 258 units and an additional population of 902. As stated previously, flow monitoring is recommended to ensure that the capacity of the receiving sewers in not exceeded.

Dixie Road

An existing 750 mm diameter sanitary sewer is located on Dixie Road, terminating approximately 1,800 metres south of Mayfield Road. Discussions with Region of Peel have confirmed that the capacity of the existing sewer is not a constraint to the development of this community.

The employment lands and the research campus will be directed to the Dixie Road sewer.

Consideration should also be included for the potential future extension of the Mayfield West urban boundary up to Old School Road. Assuming the same residential and employment land use and population density as the existing community, there is the potential for approximately 18.0 hectares of residential development and 90.6 hectares of employment development which will drain to the Dixie sewer. For the residential component, this corresponds to 180 residential units and an additional residential population of 630. For the employment component, this corresponds to an additional residential population of 4,530.

The conceptual sanitary sewer plan is illustrated in ***Figure 3***. The conceptual sanitary profiles are illustrated in ***Appendix B.***

3.5 Permanent Sanitary Pump Station

A permanent pump station is required in order to convey sanitary flows from approximately 65.7 hectares originating in the north-west portion of the residential lands (between Kennedy Road and Hwy 10). A gravity sewer cannot provide service to this area for the following reasons:

- The elevation of Etobicoke Creek precludes a gravity crossing on Hwy 10 to the west, as the valley is several metres lower than the lowest possible sewer invert.

- The low grades in this area cannot be serviced to the new internal trunk sewer to the east.

The peak sanitary flow generated from this area is estimated as 43 l/s.

The pump station will discharge by forcemain to the new internal trunk sewers located to the east.

As mentioned previously, the sewer design has regard for the possible expansion of Mayfield West up to Old School Road. If the Inder Heights sewer is found to be constrained by the expansion population, it is recommended that the pump station flows be redirected to Hwy 10 via a new forcemain. The flows will be pumped under Etobicoke Creek and drained by a new gravity sewer ultimately connecting to the Valleywood Subdivision. The redirection of flows would be a requirement of the future expansion area, and would only be triggered by a limitation in downstream capacity as identified through flow monitoring.

4.0 WATER SERVICING

4.1 Background Information

Town of Caledon commissioned various studies in order to define the servicing requirements for Mayfield West. The following studies were used to define the preliminary water servicing requirements:

- Mayfield West Community Development Plan Study, Existing Water Supply and Sanitary Sewage System, CG&S, November 1996 (Background Studies)
- Mayfield West Community Development Plan Study, Water Supply and Sanitary Sewage System Function Servicing, CG&S, February 1997 (Background Studies)
- The Region of Peel, Development Charges, March 27, 2007 (Background Studies)
- Region of Peel Sewer and Watermain Maps
- Region of Peel Design Criteria

The above documents form the basis of this report.

4.2 Existing Watermains

Existing watermains are currently available in the vicinity of Mayfield West as shown in ***Figure 4.***

The Region of Peel will be constructing the Mayfield West elevated tank at the corner of Kennedy Road and King Street, located to the north of the study area. The project will also include the construction of a new 600 mm transmission main and a new 400 mm distribution main on Kennedy Road.

OLD SCHOOL ROAD

TRIBUTARY TO ETOBICOKE CREEK (E1)

KENNEDY ROAD

26.5Ha 35 928

18.0Ha 35 630

TO DIXIE ROAD

WEST HUMBER RIVER TRIBUTARY H3

21.0Ha 35 735

44.4Ha 35 1554

250mm

PUMP STATION

300mm

35.6Ha 35 1246

5.7Ha 47 268

18.3Ha 47 861

250mm

300mm

5.3Ha 47 280

375mm

525mm

ETOBICOKE CREEK

43.7Ha 47 2054

HEART LAKE ROAD

90.6Ha 70 6342

DIXIE ROAD

EXISTING VALLEYWOOD SUBDIVISION

KENNEDY ROAD

45.9Ha 35 1607

525mm

96.7Ha 70 6769

300mm

450mm

MAIN STREET (HWY 10)

PROPOSED HWY 410

9.7Ha 50 488

MAYFIELD WEST

SNELL'S HOLLOW

ETOBICOKE CREEK

20.5Ha 50 1025

PROPOSED HWY 410

18.4Ha 70 1288

375mm

525mm

525mm

PROPOSED FERNBROOK HOMES DEVELOPMENT

525mm

TOWN OF CALEDON

17.9Ha 70 1253

5.7Ha 35 200

24.9Ha 35 872

1.4Ha 70 98

EXISTING SANITARY PLUG

MAYFIELD ROAD

EXISTING 525mm SANITARY TRUNK

MAYFIELD ROAD

CITY OF BRAMPTON

INDER HEIGHTS DRIVE

EXISTING 750mm SANITARY TRUNK

EXISTING SANITARY PLUG (±1805m SOUTH OF MAYFIELD ROAD)

LEGEND

- TRUNK 1
- LOCAL SEWER FOR EXISTING KENNEDY ROAD RESIDENTIAL
- TRUNK 2
- TRUNK 3
- TRUNK 4
- EXISTING SANITARY TRUNKS
- SANITARY FORCEMAIN
- PROPOSED PUMP STATION
- 12.0Ha / 50 / 600 — DRAINAGE AREA, POPULATION PER HA, POPULATION
- DRAINAGE AREA
- DRAINAGE DIVIDE BETWEEN INDER HEIGHTS AND DIXIE SEWERS
- ESTIMATED ENVIRONMENTAL DEVELOPMENT LIMIT
- MAYFIELD WEST COMMUNITY LIMIT
- LIMIT OF SEWERSHED
- FUTURE POTENTIAL GROWTH AREA

NOTE:
PIPES 375mm DIAMETER OR LARGER ARE DC FUNDED.

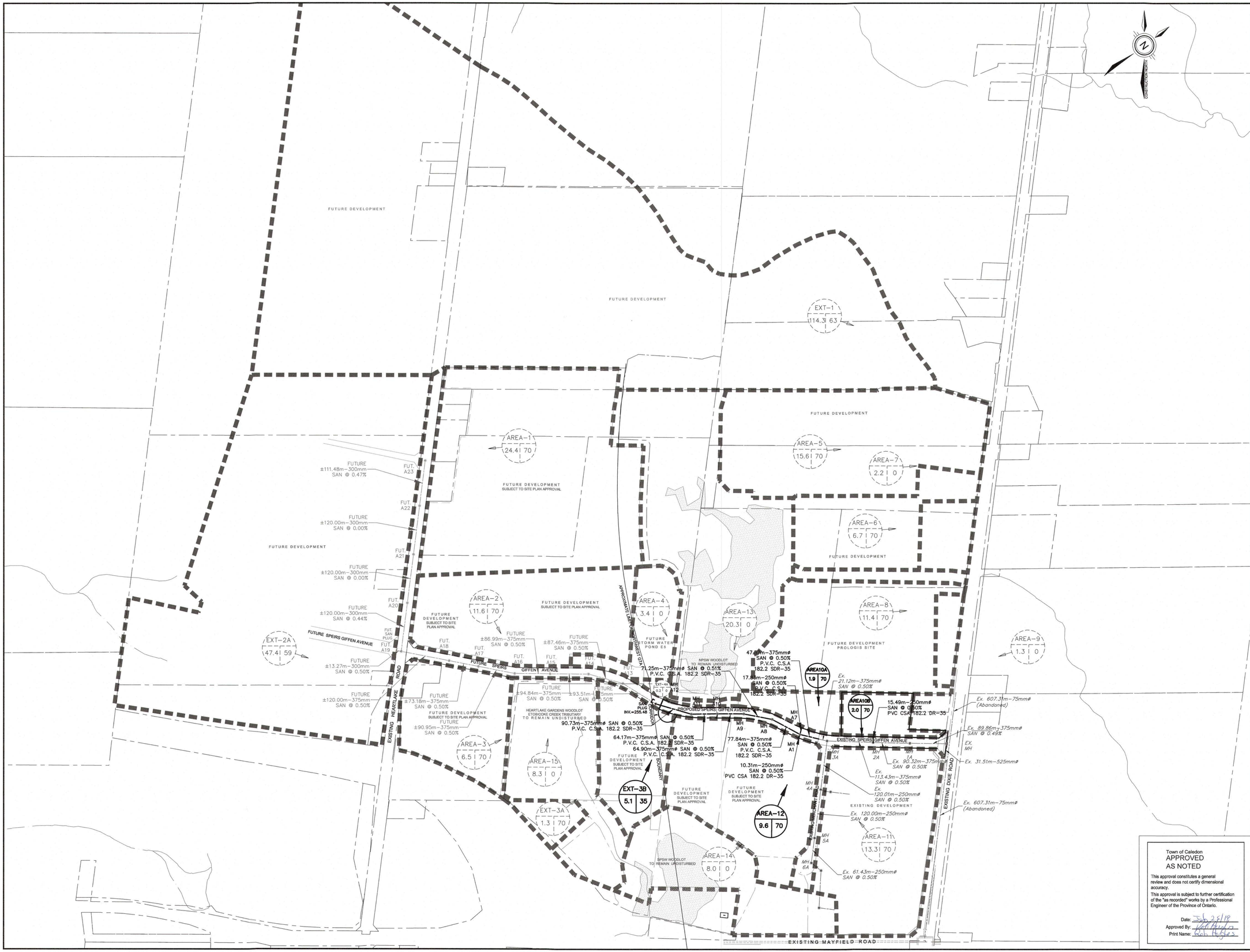
COSCORP Master Builder

Monarch by Taylor Woodrow

DAVID SCHAEFFER ENGINEERING LTD.
600 ALDEN ROAD., SUITE 500
MARKHAM, ONTARIO., L3R 0E7
(905) 475-3080

MAYFIELD WEST COMMUNITY
CONCEPTUAL SANITARY SERVICING
TOWN OF CALEDON

DATE: AUGUST 2006
SCALE: 1:15000
PROJECT No.: 05-266
FIGURE 3



KEY MAP - N.T.S.

LEGEND

● MH1A – PROPOSED SANITARY MANHOLE
→ – PROPOSED SANITARY SEWER
● S-MH – EXISTING SANITARY MANHOLE
→ – EXISTING SANITARY FLOW DIRECTION

PROPOSED SANITARY DRAINAGE AREA
115 – AREA NUMBER
0.26 – AREA (Hectares)
0.84 – POPULATION DENSITY

EXISTING/FUTURE SANITARY DRAINAGE AREA
9.2 – AREA NUMBER
3.42 – AREA (Hectares)
0.85 – POPULATION DENSITY

■ ■ ■ – SANITARY DRAINAGE AREA BOUNDARY

FOR CONSTRUCTION

BENCHMARK
J1-313, 252.147M, SOUTH FACE OF CONCRETE PORCH DECK ON WHITE SIDE BUNGALOW, NO. 11575 DIXIE ROAD, BEING 0.55KM SOUTH OF MAYFIELD ROAD.

REV#	DATE	BY	REVISIONS
7	07/24/19	J.P.	ISSUED FOR CONSTRUCTION

IBI GROUP
200 East Wing-360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com

TOWN OF CALEDON

Region of Peel
working with you

JULY 24 2019
J. R. R. PERKS

SEAL

Town of Caledon
APPROVED
AS NOTED

This approval constitutes a general review and does not certify dimensional accuracy.

This approval is subject to further certification of the "as recorded" works by a Professional Engineer of the Province of Ontario.

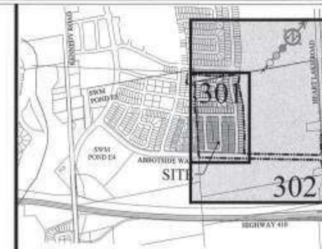
Date: July 25/19
Approved By: Rob Hughes
Print Name: Rob Hughes

TITLE:
SPEIRS GIFFEN AVENUE - PH 2
MAYFIELD WEST INDUSTRIAL LANDS

ULTIMATE SANITARY AREA
DRAINAGE PLAN

DATE:	2018-06-08	DESIGNED BY:	M.E.S.
SCALE:	1:4000	DRAWN BY:	M.E.S.
		CHECKED BY:	J.P.
FILE NO.	116965	REG OF PEEL PROJECT NO.	C-06-302
13 of 35		DWG NO.	116965-SAN1

FILE:J:\116965_AbbotsideWay\5.9 Drawings\59civil\layouts\116965-SAN.dwg LAYOUT:SAN1
LAST SAVED BY:Thomas.watkins, Wednesday, July 24, 2019 3:55:55 PM PLOTTED BY:Thomas Watkins Thursday, July 25, 2019 10:27:50 AM



KEY PLAN
N.T.S.

BENCHMARK: ELEV. 264.941

ON THE NORTH FACE AT THE EAST CORNER OF A GREY BRICK BUNGALOW LOCATED ON THE SOUTH SIDE OF SEVENTEENTH SIDEROAD (REGION ROAD #14) APPROX. 122m EAST OF SECOND LINE EAST.

LEGEND:

- SANITARY MANHOLE
- EXISTING SANITARY MANHOLE
- SINGLE SERVICE CONNECTION
- DUAL SERVICE CONNECTIONS
- LOT/BLOCK NUMBER
- FUTURE / EXISTING LOT NUMBER
- LIMIT OF PROPERTY
- SANITARY DRAINAGE BOUNDARY
- EXISTING SANITARY DRAINAGE BOUNDARY
- CATCHMENT AREA (HECTARES) / NUMBER OF PERSONS PER HECTARE
- EXISTING CATCHMENT AREA (HECTARES) / NUMBER OF UNITS / NUMBER OF PERSONS
- EXISTING CATCHMENT AREA (HECTARES) / NUMBER OF PERSONS PER HECTARE / NUMBER OF PERSONS
- SANITARY FLOW DIRECTION

TOPOGRAPHIC SURVEY PROVIDED BY HOLDING JONES VANDERVEEN INC., JULY 2014

REVISIONS

No.	DESCRIPTION	DATE	BY	APPROVED
-	ISSUED FOR CONSTRUCTION	AUG/16	D.W.	-

SCS consulting group ltd
30 CENTURIAN DRIVE, SUITE 100
MARKHAM, ONTARIO L3R 8B8
TEL: (905) 475-1900
FAX: (905) 475-8335

TOWN OF CALEDON
6311 OLD CHURCH ROAD
CALEDON, ONTARIO L7C 1J6
TEL: (905) 584-2272
FAX: (905) 584-4325

DIGRAM DEVELOPMENTS CALEDON INC.

LIVINGSTON ESTATES - PHASE 1 & 2 (T-13001C)

EXTERNAL SANITARY DRAINAGE PLAN

LICENSED PROFESSIONAL ENGINEER
D. WOO
100079880
PROVINCE OF ONTARIO

DATE: JUNE 2016	DESIGNED BY: S.W.L./D.W.	CHECKED BY: M.R.C./S.M.S.
SCALE: 1:2000	DRAWN BY: M.J.G./J.Y.L.	CHECKED BY: P.A.S.

10 5 0 10 20 30 40 50 60 70 80

APPROVED FOR CONSTRUCTION
THIS APPROVAL CONSTITUTES A GENERAL REVIEW AND DOES NOT CERTIFY DIMENSIONAL ACCURACY.

THIS APPROVAL IS SUBJECT TO THE FURTHER CERTIFICATION OF THE "AS-CONSTRUCTED" WORKS BY A REGISTERED PROFESSIONAL ENGINEER OF THE PROVINCE OF ONTARIO

DATE: ______ APPROVED BY: ______

PROJECT No: 1551

DRAWING No: 302

12304 Heart Lake Road - PH2

Industrial Development

IBI

Sanitary Sewer Design Sheet

Peel Region Design Criteria for Sanitary Sewers

Domestic Flow =	302.8	L/cap/day
Population Density =	70	pp/ha
Infiltration=	0.20	L/s/ha
Mannings=	0.013	
Minimum Velocity =	0.75	m/s
Maximum Velocity =	3.50	m/s

Industrial

For light industrial areas, use an equivalent population of 70 persons per hectare. Refer to Standard Drawing ~~2-5-2~~ ~~2-9-2~~ for sanitary sewage flows. Individual studies are to be made for special industries and major industrial areas.

Project Name: 12304 Heart Lake Road - PH2
Project Number: 135636
Date: 29-Mar-22
Designed By: Nicolas Di Stefano, P.Eng.

	From	To	DESIGN FLOW CALCULATIONS											SEWER DESIGN & ANALYSIS							Notes
			Area (ha)	Density (pp/ha)	Population	Cumulative Area (ha)	Cumulative Population	Peaking Factor	Sewage Flow (L/s) *(1)*	Infiltration Flow (L/s) *(2)*	Comm. Flow (L/s) *(3)*	Ground Water (L/s) *(4)*	Total Flow, Qd (L/s) *(1) thru (4)*	Nominal Diameter (mm)	Pipe Slope (%)	Pipe Length (m)	Full Flow Capacity, Qf (L/s)	Full Flow Velocity (m/s)	Actual Velocity (m/s)	Percent of Full Flow (%)	
Phase 2	**Services**																				
Building 2	CTRL. MH3A	MH28A	6.53	70	457	6.5	457	3.99	13.0	1.3	0.0	0.0	**14.3**	300	1.0%	15.3	100.9	1.38	0.98	14%	San. Service

Appendix D – Water Analysis

Excerpt Mayfield West Functional Servicing Study
Heart Lake Road - Capital Works Projects (Region of Peel)
Watermain Plan and Profile Drawings (Region of Peel)
Water Demand Calculations

FUNCTIONAL SERVICING AND STORMWATER MANAGEMENT STUDY

FOR

MAYFIELD WEST COMMUNITY

IN THE

TOWN OF CALEDON

NOVEMBER 2007

The peak sanitary flow generated from this area is estimated as 43 l/s.

The pump station will discharge by forcemain to the new internal trunk sewers located to the east.

As mentioned previously, the sewer design has regard for the possible expansion of Mayfield West up to Old School Road. If the Inder Heights sewer is found to be constrained by the expansion population, it is recommended that the pump station flows be redirected to Hwy 10 via a new forcemain. The flows will be pumped under Etobicoke Creek and drained by a new gravity sewer ultimately connecting to the Valleywood Subdivision. The redirection of flows would be a requirement of the future expansion area, and would only be triggered by a limitation in downstream capacity as identified through flow monitoring.

4.0 WATER SERVICING

4.1 Background Information

Town of Caledon commissioned various studies in order to define the servicing requirements for Mayfield West. The following studies were used to define the preliminary water servicing requirements:

- Mayfield West Community Development Plan Study, Existing Water Supply and Sanitary Sewage System, CG&S, November 1996 (Background Studies)
- Mayfield West Community Development Plan Study, Water Supply and Sanitary Sewage System Function Servicing, CG&S, February 1997 (Background Studies)
- The Region of Peel, Development Charges, March 27, 2007 (Background Studies)
- Region of Peel Sewer and Watermain Maps
- Region of Peel Design Criteria

The above documents form the basis of this report.

4.2 Existing Watermains

Existing watermains are currently available in the vicinity of Mayfield West as shown in ***Figure 4.***

The Region of Peel will be constructing the Mayfield West elevated tank at the corner of Kennedy Road and King Street, located to the north of the study area. The project will also include the construction of a new 600 mm transmission main and a new 400 mm distribution main on Kennedy Road.

Construction of the elevated tank and Zone 7 watermains is scheduled for fall of 2007.

4.3 Proposed Water Servicing

The Mayfield West community will be serviced by a network of new watermains designed in accordance with Town of Caledon design criteria and M.O.E. guidelines.

The conceptual watermain requirements were defined through the Background Studies.

The primary water distribution network will be comprised primarily of 300 mm mains, with the exception of the following 400 mm watermains:

- East / west industrial collector from the north / south industrial collector to Dixie Road.
- North / south industrial collector
- Dixie Road from Mayfield Road to East / west industrial collector
- East/ west residential collector from Main Street (Hwy 10) to Kennedy Road

The water distribution requirements were verified through watermain modeling for Mayfield West based on the proposed Secondary Plan. The watermain analysis conducted by MacViro Consultants in included in ***Appendix C***.

The conceptual watermain plan is illustrated in ***Figure 4***.

Final watermain sizing will be completed at the detailed design stage based on the actual development characteristics. Furthermore, the water distribution should be looped in order to provide system security.

4.4 Mayfield West Elevated Tank and Associated Watermains

It is noted that the proposed Secondary Plan requires the realignment of Kennedy Road from it current location to a new corridor located to the east. Based on the Region's construction schedule of the Kennedy Road watermains for fall of 2007, the watermains may be placed in their final location along the Mayfield West community's realignment of Kennedy Road.

In the event that the Region's elevated tank and watermain proceed in advance of the community approvals and construction, portions of the new Kennedy Road watermains will have to be relocated to conform with the new road alignment. Satisfactory construction and financial arrangement would be made between the owners' and Region of Peel for the relocation of the watermains. Furthermore, there would be limited development in the area prior to triggering the need to relocate the Kennedy Road watermains. As such, opportunities to reduce the size of the watermains during

the initial construction should be explored such that the throw-away costs are minimized. Further analysis and discussions with the Region are required to implement an interim design solution.

5.0 STORM DRAINAGE

5.1 Background Information

The following studies were used to define the preliminary drainage and stormwater management requirements:

- **"DRAFT" Etobicoke Creek Headwaters Subwatershed Background Report, Surface Water Quality,** December 2004, Toronto and Region Conservation Authority
- **A Report Card on the Health of the Humber River Watershed**, July 2000, Toronto and Region Conservation Authority
- **2003 Humber Watershed Progress Report**, Toronto and Region Conservation Authority
- **Greening our Watersheds: Revitalization Strategies for Etobicoke and Mimico Creeks**, May 2002, Toronto and Region Conservation Authority
- **Etobicoke Creek Flood Control Study, Watershed Management Strategy, Final Report**, May 1995, Revised September 1996, Fred Schaeffer & Associates Ltd. (***Etobicoke Creek Study***)
- **West Humber River Subwatershed Study,** February 1996, Aquafor Beech Limited (***West Humber Study***)
- **Stormwater Management Planning and Design Manual,** March 2003, Ministry of Environment ***(SWMP Design Manual)***
- **Town of Caledon Development Standards, Policies and Guidelines, Ver. 3,** January 2005

The above documents form the basis of this report.

5.2 Existing Features and Drainage Patterns

The Mayfield West community is largely defined by the major drainage features which frame the community. To the south west, the main branch of Etobicoke Creek forms a well defined development limit. An unnamed tributary of Etobicoke Creek creates the north-west limit of the community. The H3 tributary of the West Humber River creates

TO PROP. MAYFIELD WEST ELEVATED TANK (ADJACENT TO KING STREET).

OLD SCHOOL ROAD

TRIBUTARY TO ETOBICOKE CREEK (E1)

600mm WATERMAIN (ZONE 7)

400mm WATERMAIN (ZONE 7)

WEST HUMBER RIVER TRIBUTARY H3

400mm WATERMAIN

300mm WATERMAIN

600mm WATERMAIN

300mm WATERMAIN

ETOBICOKE CREEK

600mm WATERMAIN

300mm WATERMAIN

HEART LAKE ROAD

DIXIE ROAD

KENNEDY ROAD

EXISTING VALLEYWOOD SUBDIVISION

MAIN STREET (HWY 10)

300mm WATERMAIN

300mm WATERMAIN

300mm WATERMAIN

300mm WATERMAIN

300mm WATERMAIN

300mm WATERMAIN

ZONE 7

ZONE 6

Ex. PUMP STATION

400mm WATERMAIN

PROPOSED HWY 410

FINAL LOCATION OF CROSSING WITH HWY 410 TO THE SATISFACTION OF THE REGION OF PEEL

Ex. 300mm WATERMAIN

ETOBICOKE CREEK

600mm WATERMAIN

300mm WATERMAIN

400mm WATERMAIN (ZONE 7)

Ex. 300mm WATERMAIN (ZONE 6)

PROPOSED FERNBROOK HOMES DEVELOPMENT

TOWN OF CALEDON

Ex. 750mm FEEDERMAIN (ZONE 6)

750mm FEEDMAIN (ZONE 6)

600mm WATERMAIN (ZONE 7)

Ex. 750mm FEEDERMAIN (ZONE 6)

600mm WATERMAIN (ZONE 7)

Ex. 750mm FEEDERMAIN (ZONE 6)

MAYFIELD ROAD

Ex. 300mm WATERMAIN

Ex. 300mm WATERMAIN

Ex. 300mm WATERMAIN

Ex. 400mm WATERMAIN (ZONE 7)

Ex. 150mm WATERMAIN

MAYFIELD ROAD

CITY OF BRAMPTON

NORTH BRAMPTON RESERVOIR & PUMPING STATION

LEGEND

- 300mm WATERMAIN (MAYFIELD WEST)
- 400mm WATERMAIN (MAYFIELD WEST) (DC FUNDED)
- 600mm WATERMAIN (MAYFIELD WEST) (DC FUNDED)
- ALTERNATE WATERMAIN
- EX. WATERMAIN
- BOUNDARY FOR PRESSURE ZONE 6/7
- ESTIMATED ENVIRONMENTAL DEVELOPMENT LIMIT
- MAYFIELD WEST COMMUNITY LIMIT
- FUTURE POTENTIAL GROWTH AREA

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Monarch by Taylor Woodrow

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600 ALDEN ROAD., SUITE 500
MARKHAM, ONTARIO., L3R 0E7
(905) 475-3080

MAYFIELD WEST COMMUNITY
CONCEPTUAL WATER DISTRIBUTION PLAN
TOWN OF CALEDON

DATE: AUGUST 2006

SCALE: 1:15000

PROJECT No.: 05-266

FIGURE 4

LEGEND

PROP. 1200mm SUB-TRANSMISSION MAIN

PROP. 900mm FEEDERMAIN

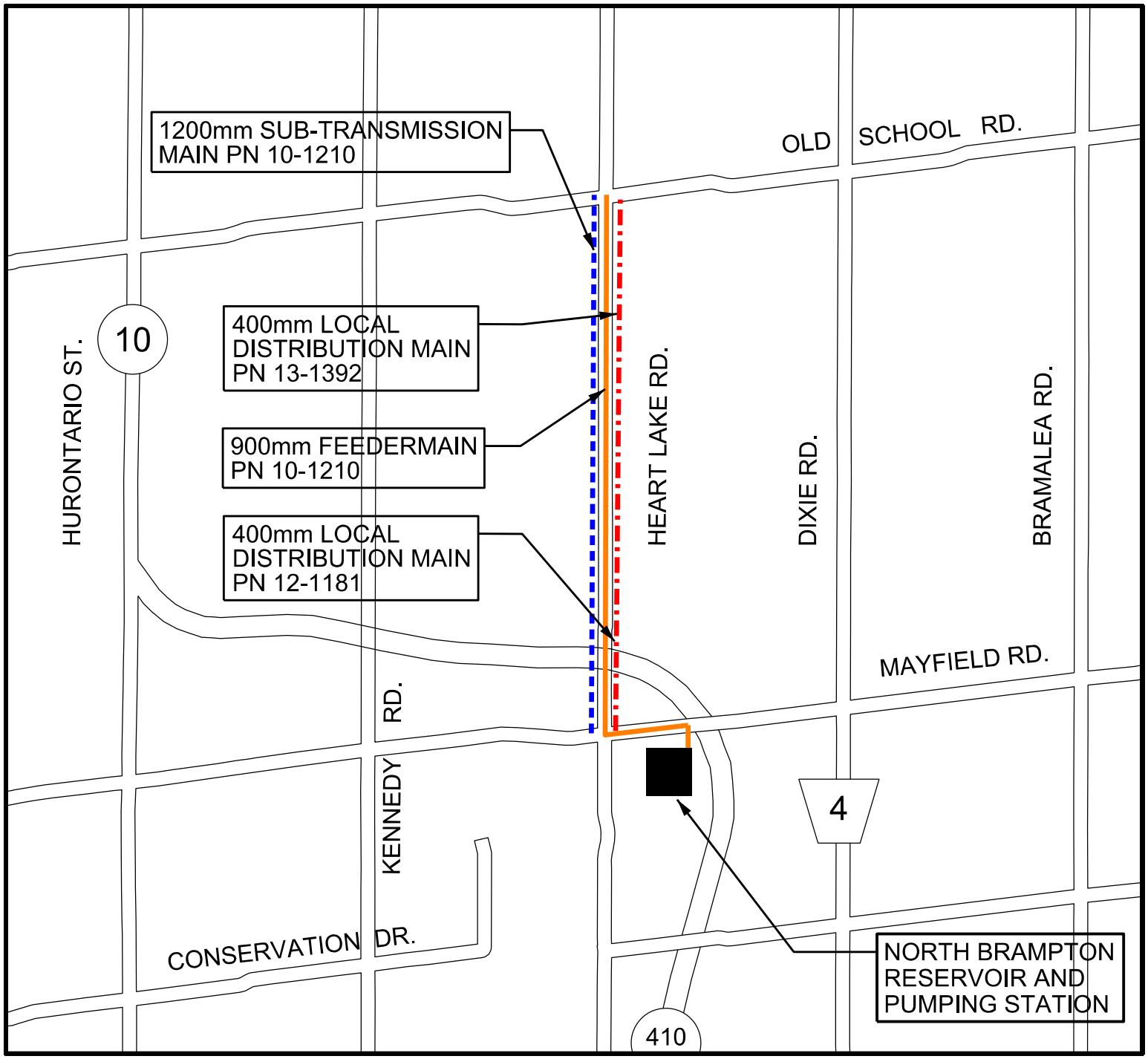
PROP. LOCAL DISTRIBUTION WATERMAINS

Region of Peel
working with you

PROJECTS 10-1210, 12-1181, 13-1392

HEART LAKE ROAD - VCTORIA FEEDERMAIN CONTRACT 2
FROM MAYFIELD ROAD TO OLD SCHOOL ROAD

PROJECT MANAGER:JAIME ACOSTA x-7922
COUNCILLOR:J. DOWNEY, G. MCCLURE
CONTRACTOR:PACHINO CONSTRUCTION
INSPECTOR:JIMMY ARMSTRONG x-3246



PUBLIC WORKS
10 PEEL CENTRE DRIVE - SUITE B, 4th FLOOR, BRAMPTON ON L6T 4B9 (905) 791-7800

DISCLAIMER

These records are based upon available and unverified information and may prove inaccurate.
The Region of Peel disclaims any responsibility should these records be relied upon to the detriment of any person.

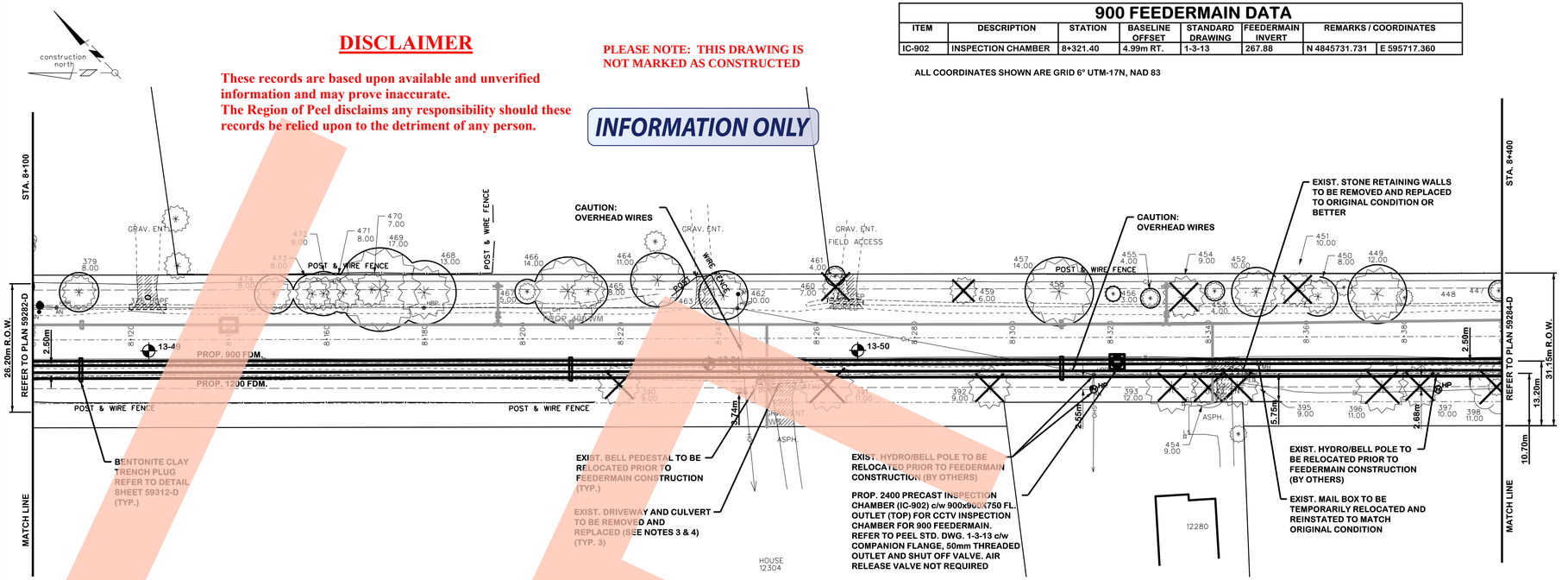
PLEASE NOTE: THIS DRAWING IS NOT MARKED AS CONSTRUCTED

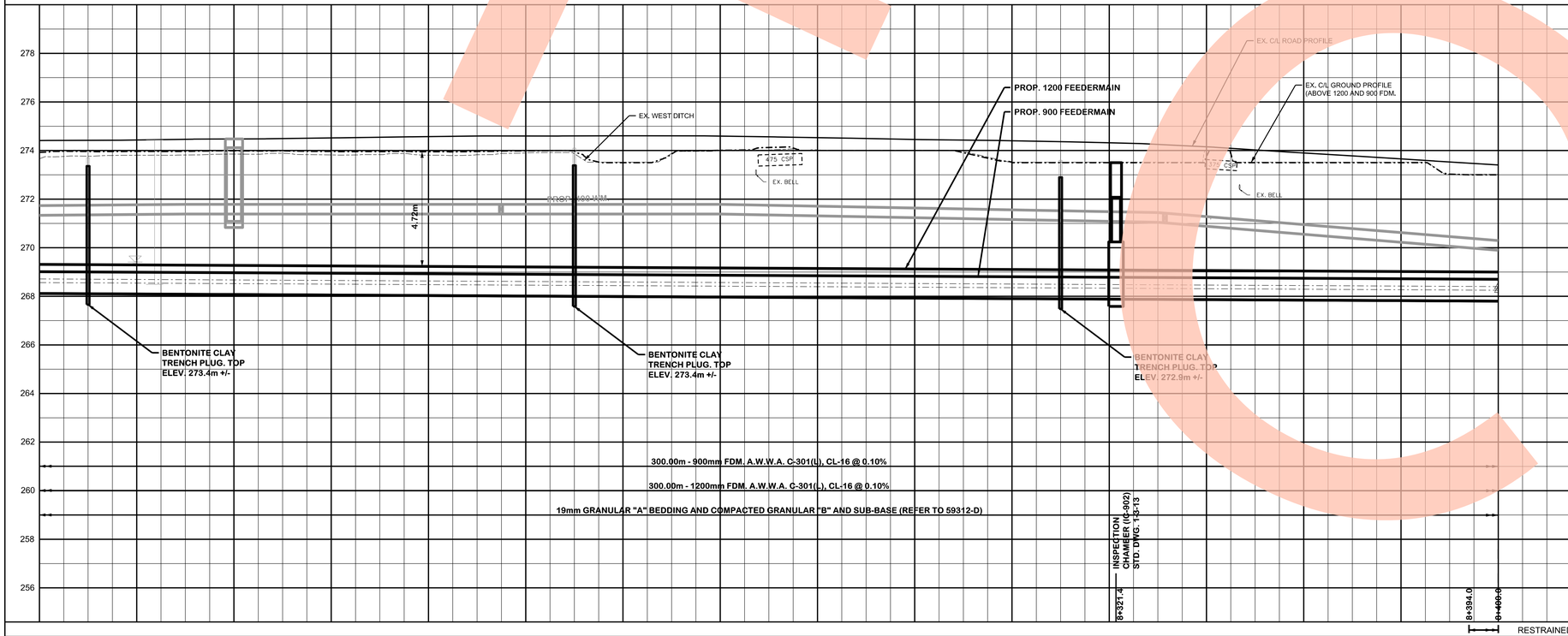
INFORMATION ONLY

900 FEEDERMAIN DATA

ITEM	DESCRIPTION	STATION	BASELINE OFFSET	STANDARD DRAWING	FEEDERMAIN INVERT	REMARKS / COORDINATES	
IC-902	INSPECTION CHAMBER	8+321.40	4.99m RT.	1-3-13	267.88	N 4845731.731	E 595717.360

ALL COORDINATES SHOWN ARE GRID 6° UTM-17N, NAD 83





268.11																267.80	INV. EL. 900 FDM.
268.11																267.80	INV. EL. 1200 FDM.
274.41	274.43	274.48	274.52	274.57	274.60	274.61	274.59	274.53	274.45	274.40	274.32	274.15	273.90	273.65		273.41	EX. ROAD ELEV.
8+100	8+120	8+140	8+160	8+180	8+200	8+220	8+240	8+260	8+280	8+300	8+320	8+340	8+360	8+380		8+400	ROAD CHAINAGE

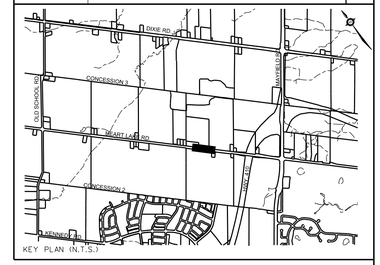
RESTRAINED JOINTS

SERVICE DATA

SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN SEWERS			GAS MAINS	03.22.2017	A.F.
STORM SEWERS			BELL U/G CABLE	-	-
WATERMAINS			HYDRO U/G CABLE	-	-
TRANSIT			HYDRO ONE	11.18.2016	A.F.
PARKS & REC.			CTV	12.20.2016	A.F.
ONT. CLEAN WATER			COMMUNIC. CABLES	11.29.2016	A.F.

REVISIONS

DATE	DETAILS	INIT.
MAY 3/2017	ISSUED FOR TENDER	N.L.
SEP. 14/2017	ISSUED FOR CONSTRUCTION	N.L.



NOTES:

1. FOR GENERAL NOTES, SEE PLAN 59272-D.
2. EXISTING UTILITIES TO BE LOCATED VIA DAYLIGHTING AT ALL PROPOSED WATER SERVICE LOCATIONS PRIOR TO CONSTRUCTION.
3. EXISTING DRIVEWAY CULVERTS TO BE REMOVED AND REPLACED WITH MINIMUM OF 375mm INTERNAL DIAMETER, OR WITH SAME INTERNAL DIAMETER IF THE EXISTING SIZE IS LARGER THAN 375mm INTERNAL DIAMETER, HDPE SMOOTH WALL (BOSS 2000) PIPE TO MATCH EXISTING INVERTS, GRADE AND WITH A MINIMUM LENGTH OF 7.0m, AS PER TOWN OF CALEDON REQUIREMENTS.
4. ALL DRIVEWAYS ARE TO BE RESTORED TO EXISTING CONDITION OR BETTER, WITH MATCHING MATERIAL (I.E. ASPHALT FOR ASPHALT, GRAVEL FOR GRAVEL), TO THE PROPERTY LINE. EXISTING DRIVEWAY RETAINING WALLS TO BE REMOVED AND REPLACED TO MATCH EXISTING CONDITIONS OR BETTER.

HATCH

General Notes

All Driveways Are ASPHALT Unless Otherwise Noted
All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field
All Horizontal And Vertical Bends Are In Degrees
All Pipes Size In mm
20C Existing Water Service, Size In mm
WS20 Proposed Water Service, Size In mm
B.M. No. Elev.
Description
Location
The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

LICENSED PROFESSIONAL ENGINEER N. L. J. LISCIO 100181711 2017-09-14 PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER M. MUDASSAR 100055238 2017-09-14 PROVINCE OF ONTARIO

Chkd.

NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL:
CITY OF MISSISSAUGA WORKS DEPT.
CITY OF BRAMPTON WORKS DEPT.
TOWN OF CALEDON WORKS DEPT.
BELL CANADA
ENBRIDGE INCORPORATED-GAS DISTRIBUTION
ONTARIO MINISTRY OF TRANSPORTATION
ONTARIO CLEAN WATER AGENCY
HYDRO ONE NETWORKS
ENERSOURCE, HYDRO MISSISSAUGA
HYDRO ONE BRAMPTON

CABLE TELEVISION/FIBREOPTIC PROVIDERS:
BELL CANADA
ENERSOURCE TELECOM
HYDRO ONE TELECOM
ROGERS CABLE
ALLSTREAM
PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)

1:500 0 5 10 15 20m HORIZONTAL SCALE
1:100 0 1 2 3 4m VERTICAL SCALE

Region of Peel
Working for you

HEART LAKE ROAD

(FROM OLD SCHOOL RD. TO NORTH BRAMPTON P.S.)

VICTORIA FEEDERMAIN - CONTRACT 2
PROP. 1200MM AND 900MM FEEDERMAIN

STA. 8+100 TO STA. 8+400

CAD Area	-	Area	C-06/C-07
Checked by	N.L./M.M.	Drawn by	A.F.
Date	SEPTEMBER 2017	Sheet	13 of 143

Project No. 10-1210, 13-1392
Plan No. **59283-D**

SERVICE CONNECTION DATA

ROLL NUMBER	NAME	STATION	ADDRESS	SERVICE CONNECTION				LENGTH TO PROPERTY LINE (M)				COORDINATES @ P/L	
				19mm	25mm	50mm	150mm	19mm	25mm	50mm	150mm		
-	-	8+250.00	12304			1				20.65		N 4845772.610	E 595657.220
-	-	8+340.85	12280		1				15.75			N 4845712.201	E 595725.448

400 WATERMAIN DATA

ITEM	DESCRIPTION	STATION	BASELINE OFFSET	STANDARD DRAWING	WATERMAIN INVERT	REMARKS / COORDINATES	
PVI-416	0°06' VERT. DEFL.	8+130.00	3.01m LT.	-	271.40	N 4845871.685	E 595586.586
LVC-407	LINE VALVE CHAMBER	8+140.00	3.00m LT.	1-3-19	271.40	N 4845864.655	E 595593.703
PVI-417	0°13' VERT. DEFL.	8+240.00	2.84m LT.	-	271.40	N 4845794.383	E 595664.846
PVI-418	0°44' VERT. DEFL.	8+330.00	2.67m LT.	-	271.05	N 4845731.137	E 595728.876

ALL COORDINATES SHOWN ARE GRID 6° UTM-17N, NAD 83

construction north

INFORMATION ONLY

EXIST. DRIVEWAY AND CULVERT TO BE REMOVED AND REPLACED (SEE NOTED 3 & 4)

PROP. LINE VALVE CHAMBER (LVC-407) AS PER PEEL STD. DWG. 1-3-19

PROVIDE MIN. 1m HORIZ. CLEARANCE BETWEEN EX. GAS MAIN AND PROP. HYD

TEMPORARILY SUPPORT EXIST. HYDR/BELL POLE DURING CONSTRUCTION, INCLUDING GUY WIRE REPLACEMENT (TYPICAL FOR ALL HP'S ON EAST SIDE OF HEART LAKE ROAD STA 8+100 TO STA 8+400)

PLEASE NOTE: THIS DRAWING IS NOT MARKED AS CONSTRUCTED

PROVIDE MIN. 1m HORIZ. CLEARANCE BETWEEN EX. GAS MAIN AND PROP. HYD

STA. 8+100 — STA. 8+400

REFER TO PLAN 59319-D — REFER TO PLAN 59321-D

31.15m R.O.W. — 31.15m R.O.W.

MATCH LINE — MATCH LINE

3.55m — 10.20m — 3.50m — 3.32m

GRAV. ENT. — GRAV. ENT. — GRAV. ENT. FIELD ACCESS

POST & WIRE FENCE — POST & WIRE FENCE — POST & WIRE FENCE — POST & WIRE FENCE

PROP. 400 WM

PROP. 900 FDM

PROP. 1200 FDM

13-49 — 13-50

R.O.W. — R.O.W.

BENTONITE CLAY TRENCH PLUG. REFER TO DETAIL SHEET 59312-D (TYP.)

PROP. 50 WATER SERVICE CONNECTION AS PER REGION OF PEEL STD. DWG. 1-7-1

PROP. 25 WATER SERVICE CONNECTION AS PER REGION OF PEEL STD. DWG. 1-7-1

12280

HOUSE 12304

HEART LAKE ROAD

DISCLAIMER

These records are based upon available and unverified information and may prove inaccurate. The Region of Peel disclaims any responsibility should these records be relied upon to the detriment of any person.

LVC-407

400 WM.

IPT (TYP.)

400 GV

1800 x 3000 LINE VALVE CHAMBER REFER TO PEEL STD. DWG. 1-3-19

EX. C/L ROAD PROFILE

EX. C/L GROUND PROFILE (ABOVE 400 WM)

EX. EAST DITCH

2.70m

WATER SERVICE CONNECTION (TYP.)

PROP. 400 WATERMAIN

BENTONITE CLAY TRENCH PLUG. TOP ELEV. 273.7m +/-

BENTONITE CLAY TRENCH PLUG. TOP ELEV. 274.1m +/-

BENTONITE CLAY TRENCH PLUG. TOP ELEV. 273.6m +/-

10.00m FULL DEPTH UNSHRINKABLE BACKFILL

30.00m - 400mm WM. A.W.W.A. C-303, CL-16 @ 0.18%

110.00m - 400mm WM. A.W.W.A. C-303, CL-16 @ 0.00%

90.00m - 400mm WM. A.W.W.A. C-303, CL-16 @ 0.38%

70.00m - 400mm WM. A.W.W.A. C-303, CL-16 @ 1.65%

19mm GRANULAR "A" BEDDING AND COMPACTED FULL DEPTH GRANULAR 'B' (REFER TO 59312-D)

19mm GRANULAR "A" BEDDING AND COMPACTED FULL DEPTH GRANULAR 'B' (REFER TO 59312-D)

PROP. 1200 AND 900 FDM

0°06' VERT. DEFL. — LINE VALVE CHAMBER (LVC-407) AS PER PEEL STD. DWG. 1-3-19 — 400x150 TEE C/W 150 V&B

0°13' VERT. DEFL. — 400x150 TEE C/W 150 V&B

0°44' VERT. DEFL. — 400x150 TEE C/W 150 V&B

8+124.0 — 8+130.0 — 8+140.0 — 8+153.0 — 8+182.0 — 8+195.0 — 8+208.0 — 8+234.0 — 8+240.0 — 8+246.0 — 8+318.0 — 8+330.0 — 8+345.0

RESTRAINED JOINTS

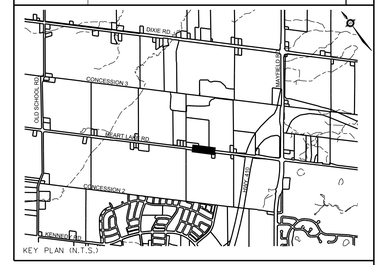
271.33	271.37	271.40	271.40	271.40	271.40	271.40	271.40	271.31	271.24	271.16	271.08	270.88	270.55	270.22	269.90	BOT. EL. OF WM.
274.41	274.43	274.48	274.52	274.57	274.60	274.61	274.59	274.53	274.45	274.40	274.32	274.15	273.90	273.65	273.41	EX. ROAD ELEV.
8+100	8+120	8+140	8+160	8+180	8+200	8+220	8+240	8+260	8+280	8+300	8+320	8+340	8+360	8+380	8+400	ROAD CHAINAGE

SERVICE DATA

SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN SEWERS			GAS MAINS	03.22.2017	A.F.
STORM SEWERS			BELL U/G CABLE	-	-
WATERMAINS			HYDRO U/G CABLE	-	-
TRANSIT			HYDRO ONE	11.18.2016	A.F.
PARKS & REC.			CTV	12.20.2016	A.F.
ONT. CLEAN WATER			COMMUNIC. CABLES	11.29.2016	A.F.

REVISIONS

DATE	DETAILS	INIT.
MAY 3/2017	ISSUED FOR TENDER	N.L.
SEP. 14/2017	ISSUED FOR CONSTRUCTION	N.L.



NOTES:

1. FOR GENERAL NOTES, SEE PLAN 59272-D.
2. EXISTING UTILITIES TO BE LOCATED VIA DAYLIGHTING AT ALL PROPOSED WATER SERVICE LOCATIONS PRIOR TO CONSTRUCTION.
3. EXISTING DRIVEWAY CULVERTS TO BE REMOVED AND REPLACED WITH MINIMUM OF 375mm INTERNAL DIAMETER, OR WITH SAME INTERNAL DIAMETER IF THE EXISTING SIZE IS LARGER THAN 375mm INTERNAL DIAMETER. HDPE SMOOTH WALL (BOSS 2000) PIPE TO MATCH EXISTING INVERTS AND GRADE.
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HYDRO ONE NETWORKS	
ENERSOURCE, HYDRO MISSISSAUGA	
HYDRO ONE BRAMPTON	

1:500 — 0 5 10 15 20m — HORIZONTAL SCALE

1:100 — 0 1 2 3 4m — VERTICAL SCALE

Region of Peel
Working for you

HEART LAKE ROAD

(FROM OLD SCHOOL RD. TO NORTH BRAMPTON P.S.)

VICTORIA FEEDERMAIN - CONTRACT 2
PROP. 400MM WATERMAIN

STA. 8+100 TO STA. 8+400

CAD Area	-	Area	C-06/C-07
Checked by	N.L./M.M.	Drawn by	A.F.
Date	SEPTEMBER 2017	Sheet	50 of 143

Project No. 10-1210, 13-1392

Plan No. **59320-D**

HYDRANT FLOW TESTING

NOTE:Hydrants tested according to NFPA 291: Recommended Practice for Fire Flow Testing and Marking of Hydrants

GENERAL INFORMATION

General Information

Date of Testing	18-Nov-21
Project Number:	135636
Site Location / Address:	12304 Heart Lake
Region / Municipality	Peel Region
Hydrants Opened By:	Peel Region
Tested by:	Daniel S Val V

HYDRANT TEST INFORMATION

Hydrant Test Location - Residual Hydrant=R, Flow Hydrant=F (North at Top)

Test Data

Time of Test	8:14 AM
Pipe Size (mm)	300
Flow Hydrant Test Location (description)	101 Abbotside Way and Learmont Ave
Residual Hydrant Test Location (description)	First hydrant east of 101 Abbotside Way and Learmont Ave
Static Pressure(PSIG)	81

Q1 Test Data (1 Orifice)

# OUTLETS	ORIFICE SIZE(IN)	PITOT PRESSURE(PSIG)	FLOW(USGPM)	RESIDUAL PRESSURE(PSIG)
1	2.5	45	1126	74

QT Test Data (2 Orifices)

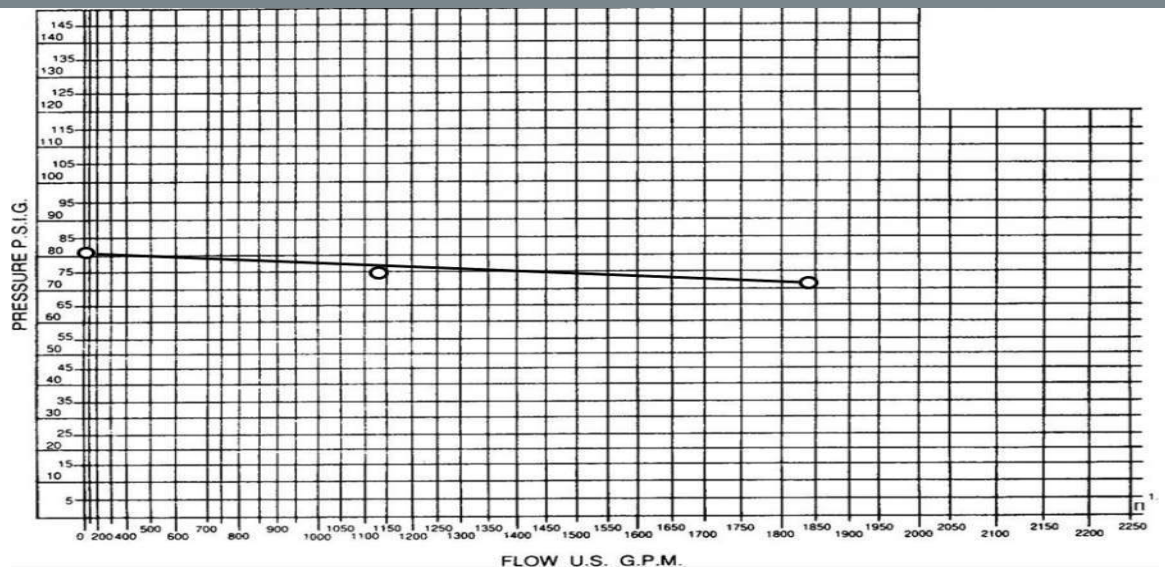
# OUTLETS	ORIFICE SIZE(IN)	PITOT PRESSURE(PSIG)	FLOW(USGPM)	RESIDUAL PRESSURE(PSIG)
2	2.5	30	1838	73

Calculations

FORMULA: Q= 29.83 cd^2√p.....Where: c- coefficient of discharge (1 in smooth pipe)
..... d- pipe diameter (inches)
.....p- pitot reading (psig)

Q1 - 1 Orifice(s)	Q1= (29.83)(0.9)(2.5)^2 √45=1126
QT - 2 Orifice(s)	QT= 2(29.83)(0.9)(2.5)^2 √30=1838
Static Pressure(PSIG)	81

Test Results - Plot



12304 Heart Lake Road - PH2

Industrial Development

IBI

DOMESTIC WATER DEMAND CALCULATIONS

Project Name: 12304 Heart Lake Road - PH2
Project Number: 135636
Date: 18-Mar-22
Designed By: Nicolas Di Stefano, P.Eng.

1. ADD = 300 L/cap/day per Region of Peel standards
2. Population Densities per Region of Peel standards
3. Peaking factors per Region of Peel standards

Peaking Factors		
Land Use	Peak Hour	Maximum Day
ICI	3.00	1.40

					(ADDxP.F.)	*(ADDxP.F.)*
	Units / Area	Density	Population	ADD (L/s)	PHD (L/s)	MDD (L/s)
Building 2	6.53 ha	70 pp/ha	458	1.6	4.8	2.2
		Totals	**458**	**1.6**	**4.8**	**2.2**

12304 Heart Lake Road - PH2

Industrial Development

FIRE FLOW DEMAND CALCULATIONS

Project Name: 12304 Heart Lake Road - PH2
Project Number: 135636
Date: 18-Mar-22
Designed By: Nicolas Di Stefano, P.Eng.

Based on the Water Supply for Public Fire Protecetion Manual, 1999 by the Fire Underwriters Survey

Step 1: Calculate Fire Flow (based on area)

$$F = 220C\sqrt{A}$$

Construction Coefficient =	0.6	
Largest Floor Area =	29,830	m2
Floor Above =	0	m2
Floor Below =	0	m2
Area =	29,830	m2
Fire Flow (F) =	**23,000**	L/min

F = required fire flow (L/min)
C = coefficient related to type of construction
- 0.6 for fire resistive (fully protected, 3-hr ratings)
- 0.8 for non combustable (i.e. unprotected metal buildings)
- 1.0 for ordinary construction
- 1.5 for wood frame construction

A = total floor area excluding basements 50% below grade

** If vertical openings are inadequately protected, consider two largest two largest adjoining floors plus 50% of each of any floors above up to eight floors.*
** If vertical openings are adequately protected (one hour rating), consider largest floor area + 25% of two immediately floors.*

Step 2: Adjustment for Building Occupancy (shall not be less than 2000 L/s)

Occupancy Adjustment =	-0.15				
F_1 = Fire Flow x Adjustment =	**19,550**	L/min	Non-Combust.	-25%	Free Burning	15%
			Limited Comb.	-15%	Rapid Burning	25%
			Combustable	No change		

Step 3: Adjust F1 for Fire Supression System

Sprinkler Adjustment =	30%		
F_2 = F_1 x Adjustment =	**5,865**	L/min	Automatic Sprinklers (monitored) -50%
			Adequatly Designed System -30%

Step 4: Adjust F1 for Exposure / Proximity (shall not exceed 75%)

Proximity Adjustment =	15%	(max 75%)
F_3 = F_1 x Factor =	**2,933**	L/min

Separation	Adjustment	Separation	Adjustment
0m to 3m	25%	20.1m to 30m	10%
3.1m to 10m	20%	30.1m to 45m	5%
10.1m to 20m	15%		

Step 5: Calculate Adjusted Fire Flow (shall not be less than 2000 L/min or greater than 45,000 L/min)

$$\text{Fire Flow} = F_1 - F_2 + F_3$$

F_1 =	19,550	L/min
- F_2 =	5,865	L/min
+ F3 =	2,933	L/min
Fire Flow =	17,000	L/min
Fire Flow =	**283.3**	L/s
Total Demand (Fire Flow + MDD) =	**285.6**	L/s

Checks:
Fire Flow greater than 2000 L/min
Fire Flow less than 45,000 L/min

12304 Heart Lake Road - PH2

Industrial Development

IBI

HEAD LOSS CALCULATIONS

Project Name: 12304 Heart Lake Road - PH2
Project Number: 135636
Date: 18-Mar-22
Designed By: Nicolas Di Stefano, P.Eng.

Hydrant Flow Test - Abbotside Way

Flow (gpm)	Flow (L/s)	Flow (L/min)	Pressure (psi)	Pressure (kPa)
0	0.0	0	81	**558**
1,126	71.0	4,262	74	**510**
1,838	116.0	6,958	73	**503**

Residual Pressure at Main

Source: Walski, Thomas M. (2007): Advanced Water Distribution Modeling and Management

$$Q_R = Q_F \times \frac{hr^{0.54}}{hf^{0.54}}$$

where: Q_R = flow predicted at desired residual pressure
Q_F = total flow measured during test
h_r = pressure drop to desired residual pressure
h_f = pressure drop to measured during test

	Flow (gpm)	Flow (L/s)	Flow (L/min)	Residual Pressure @ Main (psi)	Residual Pressure @ Main (kPa)	
Domestic (PHD)	76	4.8	286	**81**	**558**	
Fire Flow (Fire+MDD)	4,527	285.6	17,134	**39**	**266**	Projecting Curve to Fire Flow
To 20 psi	5,505	347.3	20,839	**20**	**138**	Projecting Curve to 20 psi

(1 gal = 3.785 L) *(Goal Seek)*

Residual Pressure at Building

$$h_L = \frac{10.675 * L * Q^{1.85}}{C^{1.85} * D^{4.8655}}$$

where: h_L = Pressure Drop (m)
L = Length of Service (m)
Q = Flow Rate (m^3/s)
D = Pipe Diameter (m)
C = Roughness Coefficient

PHD Conditions

	Domestic	
L=	40.0	m
Q=	0.005	m^3/s
D=	150	mm
C=	100	
h_L=	**0.0**	m
h_L=	**1.7**	in
h_L=	**0.1**	psi
h_L=	**0.4**	kPa

Fire + MDD Conditions

	Fire Service	
L=	55.0	m
Q=	0.286	m^3/s
D=	300	mm
C=	120	
h_L=	**2.9**	m
h_L=	**113.4**	in
h_L=	**4.1**	psi
h_L=	**28.2**	kPa

	Flow (gpm)	Flow (L/s)	Flow (L/min)	Residual Pressure @ Bldg. (psi)	Residual Pressure @ Bldg. (kPa)
Domestic	76	4.8	286	**81**	**558**
Fire	4,527	285.6	17,134	**34**	**238**

Residual Pressure (DOMESTIC) at building is greater than 40 psi (275 kPa).

Residual Pressure (FIRE) at building is greater than 20 psi (140 kPa).