

FUNCTIONAL SERVICING REPORT

Water, Sanitary, and Stormwater Management

PROPOSED MIXED-USE CONDOMINIUM TOWERS DISTRIKT MIDTOWN

157-165 CROSS AVENUE
TOWN OF OAKVILLE

OUR FILE: 1827

PREPARED FOR DISTRIKT DEVELOPMENTS INC.

OCTOBER 2024

REVISION HISTORY

DATE	REVISION	SUBMISSION
February 28, 2024	1	Issued for Rezoning/OPA Application
October 2024	2	TOC Development Submission

TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
1.1	Scope of Functional Servicing Report	1
1.2	Site Location and Description	2
1.3	Proposed Development	2
1.4	Easements.....	3
2.0	MUNICIPAL ROAD NETWORK.....	3
2.1	Street 'A' (20.0 m Local Road).....	3
2.2	Street 'B' (26.0 m Local Road).....	4
2.3	Conceptual Municipal Road Network Stormwater Management.....	4
2.3.1	Stormwater Quantity Control (Peak Flow Control).....	5
2.3.2	Stormwater Runoff Volume Reduction (Water Balance)	6
2.3.3	Stormwater Quality Control.....	6
3.0	MUNICIPAL WATER	6
3.1	Existing Municipal Water.....	7
3.1.1	Existing Linear Infrastructure.....	7
3.1.2	Existing Water Demands	7
3.2	Proposed Municipal Water	7
3.2.1	Proposed Linear Infrastructure.....	7
3.2.2	Proposed Water Demands	8
4.0	MUNICIPAL WASTEWATER.....	9
4.1	Existing Municipal Wastewater.....	9
4.1.1	Existing Linear Infrastructure.....	9
4.1.2	Existing Wastewater Demands.....	9
4.2	Proposed Municipal Wastewater.....	10
4.2.1	Proposed Linear Infrastructure.....	10
4.2.2	Proposed Wastewater Demands.....	11
5.0	STORM DRAINAGE AND STORMWATER MANAGEMENT	11
5.1	Existing Storm Drainage	11
5.2	Proposed Storm Drainage	12
5.2.1	Proposed Municipal Storm Sewer	12
5.2.2	Proposed Storm Sewer Service Connection.....	12
5.3	Stormwater Management.....	12
5.3.1	Stormwater Quantity Control (Peak Flow Control).....	13

5.3.2	Stormwater Runoff Volume Reduction	14
5.3.3	Stormwater Quality Control.....	15
6.0	GROUNDWATER.....	15
7.0	OVERLAND SPILL CONDITION.....	15
8.0	SITE GRADING.....	16
9.0	EROSION AND SEDIMENT CONTROL.....	16
10.0	CONCLUSION.....	17

TABLES AND FIGURES

Table 1: Existing Water Demands (L/min)	7
Table 2: Estimated Water Demands (L/min)	8
Table 3: Estimated Existing Wastewater Flow (L/s)	10
Table 4: Estimated Proposed Wastewater Flow (L/s)	11
Table 5: Stormwater Flows	14

APPENDICES

- APPENDIX 'A' - Site Plan, Teeple Architects Inc.
 - Site Statistics, Teeple Architects Inc.
 - Topographic Survey, J.D. Barnes Limited.

- APPENDIX 'B' - Growth Area Schedule L3, Liveable Oakville Plan
 - Typical Road Cross-Sections

- APPENDIX 'C' - Estimated Existing Water Demand
 - Estimated Proposed Water Demand

- APPENDIX 'D' - Existing Estimated Sanitary Flow
 - Proposed Estimated Sanitary Flow
 - Figure 1, Sanitary Drainage Plan
 - Sanitary Sewer Design Sheet

- APPENDIX 'E' - Composite Runoff Coefficient
 - Rational Method Flows
 - Modified Rational Method Storage
 - Water Balance
 - Figure 2, Storm Drainage Plan
 - Storm Sewer Design Sheet

- APPENDIX 'F' - Record Drawings

- APPENDIX 'G' - Preliminary Servicing Plan (Interim), Dwg. S1
 - Preliminary Servicing Plan (Ultimate), Dwg. S2
 - Preliminary Grading Plan (Interim), Dwg. G1
 - Preliminary Grading Plan (Ultimate), Dwg. G2
 - Intersection Grading Detail, Dwg. D1
 - General Notes, Dwg. N1
 - Plan and Profile, Street A, 0+083.49 to 0+400, Dwg. P1

- APPENDIX 'H' - Instruments and Reference Plans

- APPENDIX 'I' - Urbantech Report

1.0 INTRODUCTION

1.1 Scope of Functional Servicing Report

This report has been prepared in support of the Rezoning (ZBA) and Official Plan Amendment (OPA), to permit the construction of a two-tower mixed-use condominium located at 157-165 Cross Avenue in the Town of Oakville (a copy of the Preliminary Site Plan and site statistics are included in Appendix 'A'). This report discusses how the proposed site can be serviced by the existing and future infrastructure for water, wastewater, storm drainage/stormwater management, site grading, and erosion and sediment control. This report may be updated and refined as the project moves through the planning process to support the subdivision design.

We are aware that the Town of Oakville is currently undertaking an Official Plan review for the Midtown area. In order to prepare the servicing design, we have followed the ongoing progression of the OPA review and where appropriate have reached out to Town and Regional staff to prepare this report based on the most up to date information available.

Information provided in this report is based on our general knowledge of the area as well as information/drawings obtained from the Town of Oakville and the Region of Halton. Additionally, the following documents have been reviewed in support of this application:

- Water and Wastewater Area Servicing Plan for Midtown Oakville, Final Report, Blue Plan Engineering, September 28, 2017 (ASP)
- Stormwater Management Report, Oakville Part III Midtown EA, Town of Oakville, Cole Engineering, June 2014 (Midtown EA)
- Addendum to the Water and Wastewater Area Servicing Plan (ASP) for Midtown Oakville, Blue Plan Engineering, December 2020 (ASP Addendum)
- Draft Proposed Midtown Oakville OPA, released April 2, 2024 for review and discussion.

Future studies initiated by Town of Oakville staff for the Midtown Area may impact some of the assumptions in this report. This report has been prepared based on the most current information made available to us however we acknowledge that continued coordination with Town staff is required.

Trafalgar Engineering recognizes that the re-development of the Midtown node will continue beyond 2051 involving many privately owned parcels, and more importantly requires the re-development of those parcels to complete the full build-out of the Midtown road network. Trafalgar Engineering has prepared designs demonstrating that the development of the site is feasible independent to the development of adjacent parcels ("interim condition") as well as the scenario where the full build-out of the Midtown road network is complete ("ultimate condition"). The interim roads will be privately owned and maintained whilst the ultimate roads

will be public highways. The timing of the full build-out will be dependent on the re-development of the adjacent privately owned parcels and to be completed by others. The precise mechanisms for land transfers (to municipal ownership) will be determined as planning applications progress (i.e., draft plan/subdivision stages).

For the purposes of this report, north is defined as running perpendicular to Cross Avenue.

1.2 Site Location and Description

The subject lands consist of 157/165 Cross Avenue in the Town of Oakville, having an area of approximately 0.96 ha. The site currently consists of two commercial/retail building and associated parking. It is bounded to the north by 166 South Service Road E, 177 Cross Avenue to the east, Cross Avenue to the south, and 117-125 Cross Avenue (Trafalgar Village Mall) to the west. A copy of the topographic survey is provided in Appendix 'A' for reference.

There is an existing 4.6 m wide easement described as Part 9 Plan 20R-5913 subject to a right-of-way as in instrument no. 534539 that runs north-south along the western property line of the site. The easement contains a 150 mm diameter sanitary lateral and cast-iron water service (sizing to be confirmed) that connect into Cross Ave.

There is also an existing 10.0 m wide easement described as Part 9 Plan 20R-22099 subject to a right-of-way as in instrument no. 589005 that runs north-south in the middle of the site. The easement was created as a servicing easement by Distrikt Developments Inc. for 166 South Service Road to the north to allow a storm service connection through the site and connect to Cross Ave.

Further discussion on the use of the existing easements can be found in Section 1.4 Easements.

1.3 Proposed Development

The development proposal is for two mixed use condominium towers consisting of 1222 residential units and approximately 2507 m² of retail and 1175 m² of office space. The building is to be constructed over eight levels of underground parking which extend essentially to the property line. A copy of the architect's site statistics is included in Appendix 'A' for detail.

There is a new north-south road (identified herein as Street 'A'), a new east-west road (identified herein as Street 'B'), and a Cross Avenue Right-Of-Way (ROW) widening that will decrease the total developable area to 0.60 ha. Driveway access is provided from the proposed Street 'A' at the northeast corner of the property and from the proposed Street 'B' at the northwest corner of the property.

The existing 4.6 m wide servicing easement will be removed along with the existing services that are located within the easement (per Halton Region Standards).

The development at 157/165 Cross Avenue is referred to as Distrikt Phase 2.

1.4 Easements

The two existing easements on the site which provide storm, water and sanitary servicing for 166 South Service Road will be removed and replaced with a new proposed easement over the blocks that contain Street 'A' and Street 'B' on the site of 157/165 Cross Ave. The easement over Street 'A' and Street 'B' will be in favour of both Town and Region. A draft reference plan can be prepared if the draft plan of subdivision application timing does not align with the rezoning and site plan applications.

2.0 MUNICIPAL ROAD NETWORK

The Midtown Oakville Class EA (approved 2014) and the Liveable Oakville Plan OPA 14 (adopted 2017) identify the local road network for the Midtown growth area. Growth Area Schedule L3 (refer to Appendix 'B') of the Liveable Oakville Plan illustrates the approximate alignments and road allowance widths of various future roads in the Midtown Oakville transportation network. Further, the 2024 Draft OP provided an updated road network configuration and widths.

We understand based on discussions with Town staff that the exact locations of the future roads are flexible and can be fixed through the planning process; however, the proposed locations must meet the intent of both the Midtown EA, OPA 14, 2024 Draft OP and be justified from a traffic and engineering perspective.

This development is impacted by a new 20.0 m north-south road to the east of the property (Street 'A'), and a new 26.0 m east-south road local road to the north of the property (Street 'B').

2.1 Street 'A' (20.0 m Local Road)

The location of the future north-south local road depicted on Schedule L3 has been refined in the context of providing adequate interim vehicular access to the site. The centreline of the proposed road has been set parallel to the existing property line and with sufficient offset to permit the interim construction of a typical 20.0 m (Town std. 7-23) boulevard (5.75 m to back of curb) and 8.0 m pavement (measured face of curb to face of curb). A 0.15 m buffer is included from the back of curb on the east side of the interim road to the existing property line to allow for construction tolerance and the potential for interim fencing. A temporary working easement will be required over the lands to the east to permit construction staging and daylighting to existing grade, although the impact of this work is minimal. The remaining future road allowance will be built out by others as part of the future development of adjacent lands.

A preliminary road profile has been established that connects the existing South Service Road through to existing Cross Avenue. The proposed Street 'A' profile is compatible with the preliminary design profile of the relocated South Service Road provided in Appendix 'K' of the Midtown EA. Refer to the Preliminary Plan and Profile drawings provided in Appendix 'G' for detail.

Some future municipal services are proposed within Street 'A' and are discussed sections 3.2.1.1 and 5.2.1.

2.2 Street 'B' (26.0 m Local Road)

The Midtown Oakville EA identifies a 26.0 m wide local road along the north boundary of the subject property, connecting to Street 'A'.

The preliminary location of Street 'B' as set out by the EA includes mostly boulevard and sidewalk over the subject lands. The proposed alignment of Street 'B' is shifted parallel to the northern boundary but entirely over the site. The alignment of Street 'B' has been reviewed by the traffic consultant more carefully in the context of neighbouring developments (specifically Figure 15.369.1 of Special Provision 369, Zoning Bylaw 2014-014, 177–185 Cross Avenue and 580 Argus Road) and there does not appear to be an impact on the development potential as a result of shifting Street 'B' south. The connection to Argus Road was also evaluated.

2.3 Conceptual Municipal Road Network Stormwater Management

Stormwater management (quantity and quality) controls for both the 19.0 m and 24.0 m local roads (Streets 'A' and 'B') will be provided within Street 'A' via an oversized pipe and orifice control. The Town of Oakville requirement for Stormwater management are set out in the Midtown Oakville EA Study (June 2014).

The applicable criteria are as follows:

1. Stormwater Quantity Control (Peak Flow Control)

Utilize the Midtown Oakville EA Study hydrology model to demonstrate that the target flows are met for each subwatershed. Per the midtown EA, the proposed road is to drain to Sixteen Mile Creek (Figure DAP-2). As there are no existing flood concerns for Sixteen Mile Creek in the study area, peak runoff rates from the development are to be controlled to existing rates. In addition to meeting the flows, a minimum storage requirement is 68.2 m³/ha.

2. Stormwater Runoff Volume Reduction (Water Balance)

Retain stormwater onsite to achieve an equivalent annual volume of infiltration as per-development conditions, as per Section 3.2 of the MOE Stormwater Management Planning and Design Manual (March 2003); or,

Provide retention of 25 mm over the entire area of the proposed development in accordance with the Town's Stormwater Master Plan.

3. Stormwater Quality Control

Achieve Enhanced Level 1 Protection, as per the Ministry of Environment's Stormwater Management Planning and Design Manual (March 2003).

The stormwater management criteria must meet the objectives of the Midtown EA (Appendix J-Stormwater Management Report) as well as any updated Town of Oakville Stormwater Management Requirements.

Any required stormwater management controls are to be designed and constructed by the Town of Oakville as capital works projects. Stormwater management may consist of a series of Low Impact Developments (bioretention swales, infiltration galleries), OGS units, linear underground chambers, and permeable paving. The location of any stormwater management features must be coordinated with the public utility providers within the right-of-way to ensure adequate clearances are met. Trafalgar Engineering understands that Town staff will initiate those conversations; we recommend that this process be initiated forthwith. The specific details will be coordinated with Town staff at the draft plan/subdivision stage.

2.3.1 Stormwater Quantity Control (Peak Flow Control)

Using the minimum storage unit rate of 68.2 m³/ha for Sixteen Mile Creek, approximately 27.3 m³ of storage is required for the sections of Street 'A' and Street 'B' which immediately abut the subject lands. It is anticipated that as other sites develop along these roads, additional controls will be required; however, this should be reviewed and refined as part of the Town's Midtown Study.

Approximately 92.2 m of 750 mm diameter storm sewer is provided within Street 'A' to manage both 5-year conveyance and volumetric control. An orifice control plate sized to discharge the 5-year event while flowing full (to provide the required quantity control) is proposed at the downstream end of Street 'A' adjacent to the subject land.

2.3.2 Stormwater Runoff Volume Reduction (Water Balance)

The Town requires 25 mm water balance (retention) for new development based on their updated guidelines. The location of any Low Impact Developments must be coordinated with the public utility providers within the right-of-way to ensure adequate clearances are met. Trafalgar Engineering understands that Town staff will initiate those conversations; we recommend that this process be initiated forthwith.

2.3.3 Stormwater Quality Control

Catch basins on the proposed municipal roads are to be fitted with CB Shields. This provides (conservatively) 50% removal of long term TSS. As part of a treatment train approach, the CB Shields are combined with a downstream Stormceptor EFO6 providing 60% removal of long term TSS. Our design is based on information obtained from the NJDEP Stormwater BMP Manual wherein it provides a simplified equation for the TSS removal rate for two BMP's in a series:

$$\begin{aligned} R &= A + B - [(A \times B) / 100] \\ &= 50\% + 60\% - [(50\% \times 60\%) / 100] \\ &= 110\% - 30\% \\ &= 80\% \end{aligned}$$

Where:

R = Total TSS Removal Rate

A = TSS Removal Rate of the First or Upstream BMP

B = TSS Removal Rate of the Second or Downstream BMP

The treatment train provides 80% long term TSS removal, meeting the requirements of MECP Enhanced treatment.

3.0 MUNICIPAL WATER

The subject property will be serviced for water through the local water infrastructure on the adjacent roads. The ASP prepared by GM BluePlan in 2020 notes there is sufficient water supply for the 2031 growth scenario, therefore, no major infrastructure is required to support development in this timeframe.

A review of the area's water servicing is being undertaken by Urbantech and their report will be provided under separate cover.

3.1 Existing Municipal Water

3.1.1 Existing Linear Infrastructure

There is an existing 300 mm diameter PVC watermain along the north side of Cross Avenue within Pressure Zone 2. There is also a 900 mm diameter CPP (Concrete Pressure Pipe) trunk watermain along the south side of Cross Avenue.

Record drawings (see Appendix 'F') indicate that there is a water service connection that runs through a servicing easement at the southeast corner of the site which connects to the 300 mm diameter PVC watermain.

A fire hydrant is available on Cross Avenue southwest of the site's frontage. A flow test will be arranged to confirm the capacity of the existing system, and this report will be updated with the results when they are made available.

3.1.2 Existing Water Demands

Using the development area and Region of Halton design criteria (90 persons per ha for commercial), the existing domestic water usage is estimated and summarized below (see Appendix 'C' for supporting calculations).

Table 1: Existing Water Demands (L/min)

Average Daily Demand	5
Minimum Hourly Demand	5
Maximum Hourly Demand	11
Maximum Daily Demand	11

3.2 Proposed Municipal Water

All proposed services must be in accordance with the Ontario Building Code, Town of Oakville, and Region of Halton standards and requirements. A copy of the Interim and Ultimate Preliminary Servicing Plans (S1 and S2) are included in Appendix 'G' and should be read in conjunction with this report.

3.2.1 Proposed Linear Infrastructure

3.2.1.1 Proposed Municipal Infrastructure

A 300 mm diameter municipal watermain is proposed along the west side of Street 'A' (refer to S1 and S2 provided in Appendix 'G' for detail). The watermain will connect to the 500 mm diameter CPP watermain on South Service Road (with Pressure Zone 2), at the north end, and run south connecting into the existing 300 mm diameter waterman on Cross Ave (tapping sleeves to a valve chamber) to form a 'loop system'. The entire length of the proposed municipal watermain will be built under Distrikt Phase 2.

The proposed 300 mm diameter watermain serves to provide fire protection and additional domestic water services, as required, for the proposed development as well as any potential development of the adjacent lands. Approval of the watermain will be sought as part of the detailed engineering submissions and development agreements required to support the creation of Street 'A'.

3.2.1.2 Proposed Services Connections

In both interim and ultimate conditions, a 200 mm diameter fire service, 150 mm diameter domestic (residential) service, and 100 mm diameter domestic (retail) service are proposed for each tower. The number and sizing of connections may be subject to change through further detailed design coordination with mechanical through Site Plan and Building Permit stages. Service connections to Region of Halton infrastructure will require a service permit from the Region.

A municipal fire hydrant is proposed at the midpoint of the site's eastern property line. There is also an existing municipal fire hydrant within 45 m of the southwest corner of the site. The proposed location of the fire department connection (siamese connection) for the buildings will need to be located within 45 m of a municipal fire hydrant. Fire hydrant spacing is subject to detailed engineering design at the subdivision stage but will meet Region of Halton spacing criteria.

3.2.2 Proposed Water Demands

Using the unit count and type together with Table A-4 of the Region of Halton's 2022 Development Charges Background Study population density guidelines for residential dwellings (1.356 persons/unit for less than two bedrooms, and 1.831 persons/unit for two or more bedroom units) the residential population is estimated to be 1957 persons. The commercial population is estimated using Page A-21 of the Region of Halton 2022 DC Study population density for commercial developments (403 ft²/employee) resulting in a commercial population of 104 persons. The domestic water usage is estimated and summarized below (see Appendix 'C' for supporting calculations). The fire flow is estimated for demand purposes only using the Fire Underwriter's Survey methodology and should be confirmed by a sprinkler consultant at the building permit stage.

Table 2: Estimated Water Demands (L/min)

Average Daily Demand	374
Minimum Hourly Demand	374
Maximum Hourly Demand	1,460
Maximum Daily Demand	841
Estimated Fire Demand (FUS 1999)	6,000
Maximum Daily Plus Fire Demand	6,841

4.0 MUNICIPAL WASTEWATER

The subject property will be serviced for wastewater through the local wastewater infrastructure on Cross Avenue. The ASP notes capacity concerns for the 2031 growth scenario, and potentially some required downstream infrastructure upgrades. It is anticipated that the servicing capacity issues will be addressed in the new ASP. The planned downstream sewer upgrades would have to be constructed and in operation prior to the proposed development proceeding to the Building Permit Phase for the above ground works. The planned downstream sewer upgrades would have to be constructed and in operation prior to the proposed development proceeding to the Building Permit phase for above ground works. Based on latest conversations with Region staff, the construction of the downstream sanitary sewer upgrades on Trafalgar Road is currently on track for construction in 2025.

In support of this application, Urbantech has completed a Downstream Sanitary Sewer Capacity Assessment (see Appendix 'I') to identify the downstream constraints and potential solutions. That study is intended to be read in conjunction with the design presented in this report and aid in discussions with Region staff on how to move forward on the downstream upgrades. Further discussions are required with respect to design, timing, and funding of these works. The study will be updated in future submissions to address changes from the 2024 Draft OP and any changes in the development proposals as further details are provided.

4.1 Existing Municipal Wastewater

4.1.1 Existing Linear Infrastructure

The existing building on the site is serviced by the existing 300 mm diameter PVC sanitary sewer located on Cross Avenue. The sewer drains in an easterly direction to the 525 mm diameter concrete sanitary sewer that's crosses under the Oakville GO station.

There is an existing 150 mm diameter sanitary lateral that is located within a servicing easement and services the site to north at 166 South Service Road. This servicing easement will be removed along with the sanitary lateral per Halton Region Standards.

4.1.2 Existing Wastewater Demands

Using the development area and Region of Halton design criteria for commercial lands (90 persons per hectare), the estimated existing sanitary discharge is determined with 26 persons and 275 m³/cap. day (see Appendix 'D' for supporting calculations).

Table 3: Estimated Existing Wastewater Flow (L/s)

Average Daily Dry Weather Flow	0.3
Modified Harmon Peaking Factor	-
Infiltration Allowance (0.29 L/s-ha)	0.1
Peak Flow	0.4

4.2 Proposed Municipal Wastewater

All proposed services must be in accordance with the Ontario Building Code, Town of Oakville and Region of Halton standards and requirements. A copy of the Interim and Ultimate Servicing Plans (S1 and S2) are included in Appendix 'G' and should be read in conjunction with this report.

4.2.1 Proposed Linear Infrastructure

4.2.1.1 Proposed Municipal Infrastructure

A 300 mm diameter municipal sanitary sewer is proposed near the centreline of Street 'A' (refer to S1 and S2 provided in Appendix 'G' for detail). The municipal sanitary sewer will start at the north end of Street 'A' and convey flows south, connecting into the existing 300 mm diameter sanitary sewer on Cross Ave.

The proposed 300 mm diameter sanitary sewer will service the developments towers and additional domestic sanitary laterals, as required, for the proposed development as well as any potential development of the adjacent lands. Approval of the sanitary sewer will be sought as part of the detailed engineering submission and development agreements required to support the creating of Street 'A'.

The capacity of the proposed sanitary sewer has been analyzed for the proposed sanitary flows from the development and adjacent lands, using a Sanitary Sewer Design Sheet and the Region of Halton Development Charges Background Study. The sanitary sewer was analyzed to the manhole where the proposed sewer connects into the existing sewer on Cross Ave. Refer to the associated design sheet in Appendix 'D' for detail.

Our analysis indicates that the proposed municipal sanitary sewer is flowing approximately 49% full at the downstream end for the proposed Distrikt developments. Therefore, there is adequate capacity in the sewer to service the developments

Urbantech's analysis of the system (provided under separate cover) indicates that there is sufficient downstream capacity to service the site once the Region of Halton completes their upgrades. See Appendix 'I' for more details on Urbantech's analysis.

4.2.1.2 Proposed Service Connections

In both interim and ultimate conditions, two new 300 mm diameter PVC sanitary laterals, one for each tower are proposed to service the development. The laterals will be connected from 1200 mm x 1200 mm cast-in-place property line inspection manholes to the proposed 300 mm diameter municipal sanitary sewer in Street 'A'. The number of connections may be subject to change through further detailed design coordination with mechanical through Site Plan and Building Permit stages. Service connections to Region of Halton infrastructure will require a service permit from the Region.

4.2.2 Proposed Wastewater Demands

Using the unit count and type together with Table A-4 of the Region of Halton's 2022 Development Charges Background Study population density guidelines for residential dwellings (1.356 persons/unit for less than two bedrooms and 1.831 persons/unit for two or more bedroom units) the residential population is estimated to be 1,957. The commercial population is estimated using page A-21 of the Region of Halton 2022 DC Study population density for commercial developments (403 ft²/employee) resulting in a commercial population of 104. The estimated wastewater flows are summarized in the table below (see Appendix 'D' for supporting calculations).

Table 4: Estimated Proposed Wastewater Flow (L/s)

Average Daily Dry Weather Flow	6.2
Modified Harmon Peaking Factor	3.61
Infiltration Allowance (0.286 L/s-ha)	0.17
Peak Flow	21.8

5.0 STORM DRAINAGE AND STORMWATER MANAGEMENT

5.1 Existing Storm Drainage

The site generally sheet flows in a southerly direction towards Cross Avenue. As mentioned earlier, the site is currently occupied by two commercial/retail buildings and paved parking lot, all of which will be removed as part of the development. There is no external drainage through the site under existing conditions. The existing parking lot drains using a series of catchbasins, it is unclear where the flow into the catchbasins is conveyed.

The drainage from the subject site is tributary to Sixteen Mile Creek and must continue in a southerly direction to avoid changing the receiving watershed.

There is an existing 1050 mm diameter storm sewer along the south side of Cross Avenue, however, the site does not appear to have any existing storm connections.

5.2 Proposed Storm Drainage

5.2.1 Proposed Municipal Storm Sewer

A municipal storm sewer is proposed along Street 'A' that abuts the site and will convey drainage from the future municipal road allowance and provide the minimum required storage for sections of Street 'A' and Street 'B'. The storm sewer will consist of 600 mm dia. concrete pipe down to STM MH 204, where the diameter will increase to 750 mm dia. concrete pipe. A 250 mm diameter orifice will be placed at the downstream end of STM MH 203 to control the flow to the 5-year storm event. From STM MH 203 the diameter is reduced to 600 mm and connects to the existing 1050 mm diameter storm sewer in Cross Avenue which flows west and discharges in Sixteen Mile Creek. Refer to the Plan and Profile drawings (P1) included in Appendix 'G' for detail. There is some opportunity to size the storm sewer to accommodate additional lands, but this discussion should be undertaken with the Town in conjunction with the planning submissions for the lands to the south (i.e., the extension to Cross Avenue).

5.2.2 Proposed Storm Sewer Service Connection

A 450 mm diameter storm connection along with property line inspection manhole will connect to the proposed 600 mm diameter municipal storm sewer in Street 'A'.

5.3 Stormwater Management

The Town of Oakville requirements for stormwater management are set out in the Midtown Oakville EA Study (June 2014).

The applicable criteria are as follows:

1. **Stormwater Quantity Control (Peak Flow Control)**

Utilize the Midtown Oakville EA Study hydrology model to demonstrate that the target flows are met for each subwatershed. Per the Midtown EA, the proposed development is to drain to Sixteen Mile Creek (Figure DAP-2). As there are no existing flood concerns for Sixteen Mile Creek in the study area, peak runoff rates from the development are to be controlled to existing rates. In addition to meeting the flows, a minimum storage requirement is 68.2 m³/ha.

2. **Stormwater Runoff Volume Reduction (Water Balance)**

Retain stormwater onsite to achieve an equivalent annual volume of infiltration as per-development conditions, as per Section 3.2 of the MOE Stormwater Management Planning and Design Manual (March 2003); or,

Provide retention of 25 mm over the entire area of the proposed development in accordance with the Town's Stormwater Master Plan.

3. Stormwater Quality Control

Achieve Enhanced Level 1 Protection, as per the Ministry of Environment's Stormwater Management Planning and Design Manual (March 2003).

5.3.1 Stormwater Quantity Control (Peak Flow Control)

Pre-development flow rates are calculated using the Town of Oakville IDF curves, a runoff coefficient of $C=0.88$ (assuming $C=0.25$ for pervious area and $C=0.90$ for impervious area), and a development area of 0.96 ha. Post-development flow rates are calculated using the same IDF data, runoff coefficient of $C=0.9$ and the same area. In the determination of the post-development runoff coefficient, we have not accounted for any landscaping in the interior courtyard, or rooftop amenity space to remain conservative, although this will be refined as detailed design progresses. A conservative value of post-development runoff coefficient ensures adequate sizing of the stormwater management tank during the preliminary design stage.

Although we acknowledge the Town does not permit uncontrolled discharge of groundwater to the Town's storm sewer, we propose to over control the site's storm runoff such that the total combined storm and groundwater discharge is less than or equal to the allowable storm discharge rate. The groundwater flow from the site will by-pass the stormwater tank and be directed to the property line storm manhole (after being treated) and flow uncontrolled to the storm sewer in Street 'A'. The treatment process will be detailed (by others) at the detailed design stage but discharge must comply with Town By-Law 2009-031. The long-term sub-drain flow (groundwater flow) of 72,000 L/day (0.83 L/s) was determined in the Hydrogeological Investigation prepared by B.I.G Consulting Inc. (BIGC-ENV-623A) dated October 2023 and is discussed in further detail in Section 6.0.

To control stormwater runoff from the site, an underground stormwater tank system is proposed. The proposed stormwater management tank system will pump stormwater to the proposed storm lateral connecting into the storm sewer in Street 'A'. The maximum release rate is the 2-year pre-development peak flow, however, in coordination discussions with mechanical consultants the preferred pump release rate is 63 L/s (1000 gpm) which is significantly less than the maximum allowable 2-year flow. Therefore, the required storage volumes are based on the preferred pump release rate.

The table below summarizes the required storage volumes when the post-development flows are controlled to the preferred pump release rate of 63 L/s.

Table 5: Stormwater Flows

Return	Pre-Dev Total (L/s)	Post-Dev Controlled (L/s)	Post-Dev Uncontrolled (L/s)	Ground-water Flow (L/s)	Total Post-Dev Site Flow (L/s)	Storage Required (m ³)
2-yr	128	63	15	0.83	75	35.7
5-yr	178	63	21	0.83	84	72.3
10-yr	210	63	25	0.83	88	96.7
25-yr	278	63	33	0.83	96	150.4
50-yr	324	63	37	0.83	100	181.1
100-yr	358	63	41	0.83	104	208.2

Using the pre-development site area, the minimum storage requirement per the Midtown Oakville EA is 88.0 m³. Controlling the post-development flows to the preferred pump release rate, the storage requirements yield a higher storage requirement and therefore governs.

The runoff coefficient and associated tank sizing may be refined as detailed design progresses.

Runoff from the site will be collected through the roof drains, trench drains, and surface area drains. The runoff will be conveyed through internal plumbing and underground parking structure (designed per OBC by others) to the stormwater tank located on P1 to P3 and must be sized to capture and convey the 100-year event. An emergency overland flow route is provided through the site to Cross Ave. An emergency overflow from the tank must be designed in coordination with the mechanical consultant at the detailed design stage but will likely discharge to grade in the general vicinity of the tank.

5.3.2 Stormwater Runoff Volume Reduction

A retention of 5 mm is required as per the Midtown EA hydrology study. However, in discussions with the Town, staff have recommended utilizing a retention of 25 mm (refer to correspondence in Appendix 'G'). Accordingly, we have estimated a 25 mm retention volume of 151.1 m³ which must be re-used.

The stormwater management tank has been sized to store this volume in addition to the volume required for peak flow control. Due to the built form of the site, there are limited opportunities for infiltration, so the re-use water will be used for onsite irrigation or other acceptable best efforts. Additional details will be provided through detailed design.

In addition to on-site irrigation, rainwater reuse may be used for items such as car wash stations within the underground parking garage, and grey water reuse (for flushing toilets) in common amenity areas or residential units. These systems will be designed at permit stage with appropriate water treatment as required.

5.3.3 Stormwater Quality Control

The Town of Oakville requires that the development meet MECP Enhanced protection (80% long-term removal of TSS). A Stormceptor Jellyfish (or approved equivalent) is proposed to treat TSS loaded areas from the vehicular and at-grade pedestrian areas only. Clean roof drainage is to bypass the filtration system. The Jellyfish is to be located upstream of the stormwater management tank and is provided with an outlet pipe and an overflow weir, both directed to the tank. An adequately maintained filtration system provides 80% long-term removal of TSS. Sizing of the Jellyfish will be undertaken as the detailed design progresses but will be provided prior to final approval.

6.0 GROUNDWATER

A Hydrogeological Investigation was performed by B.I.G. Consulting Inc. (dated October 2023) assessing the short-term (construction) and long-term groundwater de-watering needs. Any construction de-watering will be addressed at the Building Permit stage and discharge must comply with Town By-Law 2009-031.

The long-term peak groundwater flow rate into the parking garage sub drains after initial dewatering stages was estimated to be 72,000 L/day (0.83 L/s). These flows will be treated as required (to be designed by others at the detailed design stage) and will by-pass the stormwater management tank system in the underground parking garage before being discharged using the proposed stormwater lateral. The groundwater discharge must be in compliance with Town By-Law 2009-031.

In the event the Town does not support over-controlling the storm discharge, the proposed building may be designed and supported by “tanked” water-proofed continuous raft foundation without permanent dewatering.

Refer for Hydrogeological Investigation prepared by B.I.G. Consulting (BIGC-ENV-623A) dated October 2023 for details.

7.0 OVERLAND SPILL CONDITION

In 2022, the “Flood Risk Mapping and Spill Quantification - Morrison-Wedgewood Diversion Channel” (dated 2020) report was adopted formally identifying a spill condition that potentially impacts the subject lands; Trafalgar Engineering has obtained a copy of the report and associated models and is undertaking a high-level assessment of the spill condition to estimate the order-of-magnitude of flooding in the vicinity of Distrikt’s lands. Our assessment will be made available in a subsequent submission. The development of the site shall not increase the flood risk on adjacent sites.

We understand that ongoing studies by others are reviewing the same. Trafalgar will review and incorporate findings of said studies at such time as they are available; however, for the purpose of this submission it is acknowledged that further review of this condition is required.

8.0 SITE GRADING

The proposed grading must ensure that drainage from the 100-year event is collected by the buildings mechanical system and conveyed to the stormwater management tank. All building air intake and exhaust shafts must be protected from overland flow by being set a minimum of 0.2 m above the spill elevation.

The proposed property line elevations adjacent to Street 'A' have been set in conjunction with a preliminary road design prepared as part of this submission. When the adjacent lands develop, the full road cross-section can be constructed to its ultimate condition. A temporary working easement is required on the adjacent lands to facilitate the construction of the road.

The proposed property line elevations adjacent to Street 'B' have been set in conjunction with a preliminary road design prepared as part of this submission. The property line elevations have been set to maintain positive drainage towards the roadway. The full build-out (completion of boulevard works) of Street 'B' will be completed as the adjacent site develops (Distrikt Phase 3).

The emergency overland flow route through the site generally flows from north to south along Street 'A'. Within the Privately Owned Public Space (POPS) area runoff also generally flows from north to south. The POPS emergency overland flow route is conveyed to the south-east corner of the site at the low point of 102.28, which is lower than the proposed finished floor elevations.

A copy of the Interim and Ultimate Preliminary Grading Plan (G1 and G2) are provided in Appendix 'G' and should be read in conjunction with this report.

9.0 EROSION AND SEDIMENT CONTROL

Erosion and sediment controls must be installed prior to the commencement of any construction. The erosion and sediment control devices should follow the Erosion and Sediment Control Guidelines for Urban Construction as set out by the Greater Golden Horseshoe Conservation Authority. Erosion and sediment control measures may be implemented as follows:

- Double wrapped catch basins: The proposed storm sewer catch basins and catch basin manholes located within the subject site and adjacent municipal roads shall be double wrapped in a woven geotextile material. Woven geotextile material is to be replaced periodically when accumulated sediments interfere with drainage. The abutting streets should be monitored and if required, swept to mitigate the accumulation of tracked

material on the roads on a routine basis in keeping with good construction housekeeping practices.

- Gravel Access Pad: A gravel access (mud) mat will be installed at the entrance to the construction zone to prevent mud tracking from the site to the municipal roads.
- Silt Fencing: Silt fence will be installed along the property line to intercept sheet flow.

10.0 CONCLUSION

The information presented in this Functional Servicing Report demonstrates that the proposed development can be serviced by the existing and future adjacent infrastructure for water, wastewater, stormwater in the interim and ultimate condition and can meet the Town of Oakville stormwater management criteria.

The following is a summary of the report findings:

- As part of the Midtown Oakville EA there are road dedications required to service the property: Street 'A' (20.0 m local road) to the east of the site and Street 'B' (26.0 m local road) to the north.
- There is an existing 300 mm diameter municipal water infrastructure adjacent to the site on Cross Ave. The proposed average daily water demand for the site is 374 L/min with an estimated maximum daily plus fire demand of 6,841 L/min.
- There is existing 300 mm diameter municipal wastewater infrastructure servicing the site on Cross Ave. The estimated peak wastewater flow based on Region of Halton criteria is 21.8 L/s for the entire site. Per the Urbantech analysis, there is sufficient downstream capacity to accommodate the development once the Region's capital works project is complete.
- Stormwater quantity controls will be provided by controlling post development peak flows to the preferred pump release rate. Storage will be provided in a stormwater tank located in the underground parking structure. Stormwater will be pumped to the preferred release rate of 63 L/s to a proposed 450 mm diameter storm connection connecting into the proposed municipal storm sewer in Street 'A'. The required storage volume is 208.2 m³.
- Groundwater will be collected, treated if required, and discharged uncontrolled to the municipal storm sewer in Street 'A' using the 450 mm diameter storm sewer connection. The groundwater uncontrolled flow is equivalent to 0.83 L/s. The site's allowable storm discharge rate has been reduced to reflect the addition of groundwater flow.

- The water balance criteria of 25 mm is equivalent to 151.1 m³ of storage. This water will also be stored in the underground stormwater tank and will be re-used for irrigation and other best efforts to be determined at the detailed design stage.
- Water quality criteria is met by means of a stormwater filtration system (Jellyfish unit), placed upstream of the stormwater tank.
- Grading of the site is designed to ensure runoff from the 100-year event is captured, and there is an emergency overland flow route.
- Erosion and sediment controls will be implemented during construction in accordance with the Erosion and Sediment Control Guidelines for Urban Construction as set out by the Greater Golden Horseshoe Conservation Authority.

Based on the above, we support the proposed development from a civil engineering perspective for rezoning and Official Plan Amendment.

PREPARED BY TRAFALGAR ENGINEERING LTD.



Andy Prejs, MSc, EIT
Intermediate Designer

J.T. Nelson, P.Eng.
Principal, Design Services



APPENDIX 'A'

SHEET LIST

- A000 - PROJECT INFORMATION**
 A001 SHEET LIST, ZONING REQUIREMENTS
 A101 SITE SURVEY
 A111 SITE PLAN @ ROOF LEVEL
 A112 LOADING PLAN
 A113 WASTE MANAGEMENT PLAN

A200 - FLOOR PLANS

- A201 LEVEL P6 PLAN
 A202 LEVEL P7 PLAN
 A203 LEVEL P8 PLAN
 A204 LEVEL P5 PLAN
 A205 LEVEL P4 PLAN
 A206 LEVEL P3 PLAN
 A207 LEVEL P2 PLAN
 A208 LEVEL P1 PLAN
 A211 LEVEL 1 PLAN
 A212 LEVEL MEZZ PLAN
 A214 LEVEL 3 PLAN
 A215 LEVEL 4 PLAN
 A216 LEVEL 5 PLAN
 A217 L06, L07 & L05, L06 (A) & L47, L48 (B)
 A218 L08, L09 & L53, L54 (A) & L45, L46 (B)
 A220 L10, L11 & L51, L52 (A) & L43, L44 (B)
 A221 L12, L13 & L49, L50 (TOWER A)
 A222 LEVEL 14 (TYP TOWER)
 A223 L49, L50 (TOWER B)
 A224 L57, L58 (TOWER A)
 A225 LEVEL MPH
 A226 LEVEL MPH ROOF
 A227 ROOF PLAN

A400 - ELEVATIONS

- A401 NORTH & SOUTH ELEVATIONS
 A402 EAST & WEST ELEVATIONS

A500 - SECTIONS

- A501 BUILDING SECTIONS

A700 - RENDERINGS

- A701 PERSPECTIVES
 A702 PERSPECTIVES

A800 - MATERIAL BOARD

- A801 MATERIAL BOARD

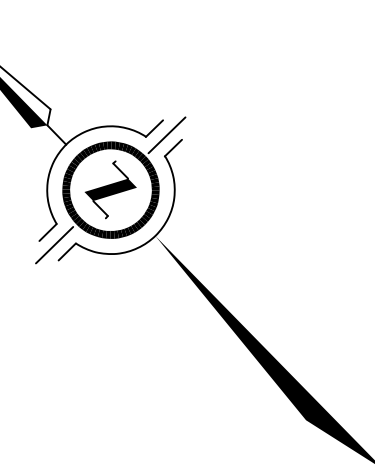
BUILDING STATISTICS - OVERALL

AREA SUMMARY GCA/GFA (BELOW GRADE)					
LEVELS	GCA		DEDUCTION		GFA
	(m ²)	(SF)	(m ²)	(SF)	(m ²)
LEVEL P6	5,603.07 m ²	60,311 SF	5,323.26 m ²	57,299 SF	279.80 m ²
LEVEL P7	5,603.07 m ²	60,311 SF	5,323.26 m ²	57,299 SF	279.80 m ²
LEVEL P8	5,603.07 m ²	60,311 SF	5,323.26 m ²	57,299 SF	279.80 m ²
LEVEL P5	5,603.07 m ²	60,311 SF	5,323.26 m ²	57,299 SF	279.80 m ²
LEVEL P4	5,603.07 m ²	60,311 SF	5,323.26 m ²	57,299 SF	279.80 m ²
LEVEL P3	5,603.07 m ²	60,311 SF	5,323.26 m ²	57,299 SF	279.80 m ²
LEVEL P2	5,603.07 m ²	60,311 SF	5,323.26 m ²	57,299 SF	279.80 m ²
LEVEL P1	5,603.07 m ²	60,311 SF	5,323.26 m ²	57,299 SF	279.80 m ²
TOTAL	44,824.53 m²	482,487 SF	41,783.90 m²	449,788 SF	3,040.62 m²

AREA SUMMARY GCA/GFA (ABOVE GRADE)					
LEVELS	GCA		DEDUCTION		GFA
	(m ²)	(SF)	(m ²)	(SF)	(m ²)
LEVEL 01	4,339.79 m ²	46,713 SF	0.00 m ²	0 SF	4,339.79 m ²
LEVEL MEZZANINE	4,376.64 m ²	47,110 SF	1,326.73 m ²	14,302 SF	3,049.91 m ²
LEVEL 02	3,765.56 m ²	40,532 SF	663.24 m ²	7,139 SF	3,102.32 m ²
LEVEL 03	3,050.54 m ²	32,836 SF	0.00 m ²	0 SF	3,050.54 m ²
LEVEL 04	1,935.06 m ²	20,829 SF	0.00 m ²	0 SF	1,935.06 m ²
LEVEL 05	1,802.04 m ²	19,397 SF	0.00 m ²	0 SF	1,802.04 m ²
TYP 1A: L06, L07 & L05, L06 (B) - L0K107, L47, L48 (B)	6,743.60 m ²	72,588 SF	0.00 m ²	0 SF	6,743.60 m ²
TYP 1A: L09, L10 & L53, L54 (B) - L0K109, L49, L50 (B)	6,778.27 m ²	72,961 SF	0.00 m ²	0 SF	6,778.27 m ²
TYP 1A: L11, L12 & L49, L50 (B) - L0K111, L43, L44 (B)	3,396.50 m ²	36,560 SF	0.00 m ²	0 SF	3,396.50 m ²
TYP 1A: L14 TO L48 (B) - L10, L11, L43, L44 (B)	56,114.39 m ²	604,010 SF	0.00 m ²	0 SF	56,114.39 m ²
TYP 1A: L14 TO L48 (B) - L10 TO L42	1,670.25 m ²	17,978 SF	0.00 m ²	0 SF	1,670.25 m ²
LEVEL MPH	835.13 m ²	8,989 SF	753.66 m ²	8,112 SF	81.47 m ²
UPPER ROOF	173.20 m ²	1,864 SF	100.59 m ²	1,083 SF	72.61 m ²
TYP L57, L58	1,660.88 m ²	17,878 SF	0.00 m ²	0 SF	1,660.88 m ²
TOTAL	103,344.17 m²	1,112,387 SF	2,846.22 m²	30,637 SF	100,497.94 m²

UNIT SUMMARY 1					
UNIT CATEGORY	SIZE RANGE	MINIMUM	MAXIMUM	COUNT	%
		(SF)	(SF)		
1B	485 SF	652 SF	866 SF	811	66.4%
2B	616 SF	866 SF	1,065 SF	308	25.2%
3B	749 SF	1,065 SF	1,388 SF	103	8.4%
TOTAL				1222	

UNIT SUMMARY (PER LEVEL)					
LEVEL	UNIT CATEGORY	MINIMUM (SF)	MAXIMUM (SF)	COUNT	
LEVEL 04	1B	485 SF	866 SF	11	
LEVEL 04	2B	616 SF	866 SF	7	
LEVEL 04	3B	749 SF	1,065 SF	23	
LEVEL 05	1B	485 SF	866 SF	11	
LEVEL 05	2B	616 SF	866 SF	7	
LEVEL 05	3B	749 SF	1,065 SF	23	
LEVEL 06	1B	485 SF	866 SF	11	
LEVEL 06	2B	616 SF	866 SF	7	
LEVEL 06	3B	749 SF	1,065 SF	23	
LEVEL 07	1B	485 SF	866 SF	11	
LEVEL 07	2B	616 SF	866 SF	7	
LEVEL 07	3B	749 SF	1,065 SF	23	
LEVEL 08	1B	485 SF	866 SF	11	
LEVEL 08	2B	616 SF	866 SF	7	
LEVEL 08	3B	749 SF	1,065 SF	23	
LEVEL 09	1B	485 SF	866 SF	11	
LEVEL 09	2B	616 SF	866 SF	7	
LEVEL 09	3B	749 SF	1,065 SF	23	
LEVEL 10	1B	485 SF	866 SF	11	
LEVEL 10	2B	616 SF	866 SF	7	
LEVEL 10	3B	749 SF	1,065 SF	23	
LEVEL 11	1B	485 SF	866 SF	11	
LEVEL 11	2B	616 SF	866 SF	7	
LEVEL 11	3B	749 SF	1,065 SF	23	
LEVEL 12	1B	485 SF	866 SF	11	
LEVEL 12	2B	616 SF	866 SF	7	
LEVEL 12	3B	749 SF	1,065 SF	23	
LEVEL 13	1B	485 SF	866 SF	11	
LEVEL 13	2B	616 SF	866 SF	7	
LEVEL 13	3B	749 SF	1,065 SF	23	
LEVEL 14	1B	485 SF	866 SF	11	
LEVEL 14	2B	616 SF	866 SF	7	
LEVEL 14	3B	749 SF	1,065 SF	23	
LEVEL 15	1B	485 SF	866 SF	11	
LEVEL 15	2B	616 SF	866 SF	7	
LEVEL 15	3B	749 SF	1,065 SF	23	
LEVEL 16	1B	485 SF	866 SF	11	
LEVEL 16	2B	616 SF	866 SF	7	
LEVEL 16	3B	749 SF	1,065 SF	23	
LEVEL 17	1B	485 SF	866 SF	11	
LEVEL 17	2B	616 SF	866 SF	7	
LEVEL 17	3B	749 SF	1,065 SF	23	
LEVEL 18	1B	485 SF	866 SF	11	
LEVEL 18	2B	616 SF	866 SF	7	
LEVEL 18	3B	749 SF	1,065 SF	23	
LEVEL 19	1B	485 SF	866 SF	11	
LEVEL 19	2B	616 SF	866 SF	7	
LEVEL 19	3B	749 SF	1,065 SF	23	
LEVEL 20	1B	485 SF	866 SF	11	
LEVEL 20	2B	616 SF	866 SF	7	
LEVEL 20	3B	749 SF	1,065 SF	23	
LEVEL 21	1B	485 SF	866 SF	11	
LEVEL 21	2B	616 SF	866 SF	7	
LEVEL 21	3B	749 SF	1,065 SF	23	
LEVEL 22	1B	485 SF	866 SF	11	
LEVEL 22	2B	616 SF	866 SF	7	
LEVEL 22	3B	749 SF	1,065 SF	23	
LEVEL 23	1B	485 SF	866 SF	11	
LEVEL 23	2B	616 SF	866 SF	7	
LEVEL 23	3B	749 SF	1,065 SF	23	
LEVEL 24	1B	485 SF	866 SF	11	
LEVEL 24	2B	616 SF	866 SF	7	
LEVEL 24	3B	749 SF	1,065 SF	23	
LEVEL 25	1B	485 SF	866 SF	11	
LEVEL 25	2B	616 SF	866 SF	7	
LEVEL 25	3B	749 SF	1,065 SF	23	
LEVEL 26	1B	485 SF	866 SF	11	
LEVEL 26	2B	616 SF	866 SF	7	
LEVEL 26	3B	749 SF	1,065 SF	23	
LEVEL 27	1B	485 SF	866 SF	11	
LEVEL 27	2B	616 SF	866 SF	7	
LEVEL 27	3B	749 SF	1,065 SF	23	
LEVEL 28	1B	485 SF	866 SF	11	
LEVEL 28	2B	616 SF	866 SF	7	
LEVEL 28	3B	749 SF	1,065 SF	23	
LEVEL 29	1B	485 SF	866 SF	11	
LEVEL 29	2B	616 SF	866 SF	7	
LEVEL 29	3B	749 SF	1,065 SF	23	
LEVEL 30	1B	485 SF	866 SF	11	
LEVEL 30	2B	616 SF	866 SF	7	
LEVEL 30	3B	749 SF	1,065 SF	23	
LEVEL 31	1B	485 SF	866 SF	11	
LEVEL 31	2B	616 SF	866 SF	7	
LEVEL 31	3B	749 SF	1,065 SF	23	
LEVEL 32	1B	485 SF	866 SF	11	
LEVEL 32	2B	616 SF	866 SF	7	
LEVEL 32	3B	749 SF	1,065 SF	23	
LEVEL 33	1B	485 SF	866 SF	11	
LEVEL 33	2B	616 SF	866 SF	7	
LEVEL 33	3B	749 SF	1,065 SF	23	
LEVEL 34	1B	485 SF	866 SF	11	
LEVEL 34	2B	616 SF	866 SF	7	
LEVEL 34	3B	749 SF	1,065 SF	23	
LEVEL 35	1B	485 SF	866 SF	11	
LEVEL 35	2B	616 SF	866 SF	7	
LEVEL 35	3B	749 SF	1,065 SF	23	
LEVEL 36	1B	485 SF	866 SF	11	
LEVEL 36	2B	616 SF	866 SF	7	
LEVEL 36	3B	749 SF	1,065 SF	23	
LEVEL 37	1B	485 SF	866 SF	11	
LEVEL 37	2B	616 SF	866 SF	7	
LEVEL 37	3B	749 SF	1,065 SF	23	
LEVEL 38	1B	485 SF	866 SF	11	
LEVEL 38	2B	616 SF	866 SF	7	
LEVEL 38	3B	749 SF	1,065 SF	23	
LEVEL 39	1B	485 SF	866 SF	11	
LEVEL 39	2B	616 SF	866 SF	7	
LEVEL 39	3B	749 SF	1,065 SF	23	
LEVEL 40	1B	485 SF	866 SF	11	
LEVEL 40	2B	616 SF	866 SF	7	
LEVEL 40	3B	749 SF	1,065 SF	23	
LEVEL 41	1B	485 SF	866 SF	11	
LEVEL 41	2B	616 SF	866 SF	7	
LEVEL 41	3B	749 SF	1,065 SF	23	
LEVEL 42	1B	485 SF	866 SF	11	
LEVEL 42	2B	616 SF	866 SF	7	
LEVEL 42	3B	749 SF	1,065 SF	23	
LEVEL 43	1B	485 SF	866 SF	11	
LEVEL 43	2B	616 SF	866 SF	7	
LEVEL 43	3B	749 SF	1,065 SF	23	
LEVEL 44	1B	485 SF	866 SF	11	
LEVEL 44	2B	616 SF	866 SF	7	
LEVEL 44	3B	749 SF	1,065 SF	23	
LEVEL 45	1B	485 SF	866 SF	11	
LEVEL 45	2B	616 SF	866 SF	7	
LEVEL 45	3B	749 SF	1,065 SF	23	
LEVEL 46	1B	485 SF	866 SF	11	
LEVEL 46	2B	616 SF	866 SF	7	
LEVEL 46	3B	749 SF	1,065 SF	23	
LEVEL 47	1B	485 SF	866 SF	11	
LEVEL 47	2B	616 SF	866 SF	7	
LEVEL 47	3B	749 SF	1,065 SF	23	
LEVEL 48	1B	485 SF	866 SF	11	
LEVEL 48	2B	616 SF	866 SF	7	
LEVEL 48	3B	749 SF	1,065 SF	23	
LEVEL 49	1B	485 SF	866 SF	11	
LEVEL 49	2B	616 SF	866 SF	7	
LEVEL 49	3B	749 SF	1,065 SF	23	
LEVEL 50	1B	485 SF	866 SF	11	
LEVEL 50	2B	616 SF	866 SF	7	
LEVEL 50	3B	749 SF	1,065 SF	23	
LEVEL 51	1B	485 SF	866 SF	11	
LEVEL 51	2B	616 SF	866 SF	7	
LEVEL 51	3B	749 SF	1,065 SF	23	
LEVEL 52	1B	485 SF	866 SF	11	
LEVEL 52	2B	616 SF	866 SF	7	
LEVEL 52	3B	749 SF	1,065 SF	23	
LEVEL 53	1B	485 SF	866 SF	11	
LEVEL 53	2B	616 SF	866 SF	7	
LEVEL 53	3B	749 SF	1,065 SF	23	
LEVEL 54	1B	485 SF	866 SF	11	
LEVEL 54	2B	616 SF	866 SF	7	
LEVEL 54	3B	749 SF	1,065 SF	23	
LEVEL 55	1B	485 SF	866 SF	11	
LEVEL 55	2B</				



NOTES

BEARINGS ARE UTM GRID, DERIVED FROM REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17, NAD83 (CSRS) (2010.0).
DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999727.
FOR BEARING COMPARISONS, A ROTATION OF 0°56'20" COUNTER-CLOCKWISE WAS APPLIED TO BEARINGS ON P1 AND P2.

INTEGRATION DATA		
OBSERVED REFERENCE POINTS (ORPs):	UTM ZONE 17, NAD83 (CSRS) (2010.0).	
COORDINATES TO AN URBAN ACCURACY PER SECTION 14 (2) OF O.R.G. 216/10.		
POINT ID	EASTING	NORTHING
ORP (A)	606 320.94	4 812 349.18
ORP (B)	606 411.30	4 812 261.17

COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

PART 2 - SURVEY REPORT

DESCRIPTION
PART OF LOT 14, CONCESSION 3, SOUTH OF DUNDAS STREET, FORMERLY IN THE TOWNSHIP OF TRAFALGAR, NOW IN THE TOWN OF OAKVILLE, REGIONAL MUNICIPALITY OF HALTON, DESCRIBED AS PARTS 1, 2, 3, 4, 5 AND 6, PLAN 20R-5913, SAVE AND EXCEPT PARTS 1, 2 AND 3, PLAN 20R-10193, BEING PIN 24816-0047 (LT).

REGISTERED EASEMENTS AND/OR RIGHTS-OF-WAY
SUBJECT TO AN EASEMENT AS IN INSTRUMENT No. 589004.
SUBJECT TO AN EASEMENT AS IN INSTRUMENT No. 582527.

BOUNDARY FEATURES
FENCES FOUND AS SHOWN ON FACE OF PLAN.

ZONING COMPLIANCE
COMPLIANCE WITH ONTARIO BUILDING CODE SETBACK REQUIREMENTS ARE NOT VERIFIED BY THIS SURVEY.

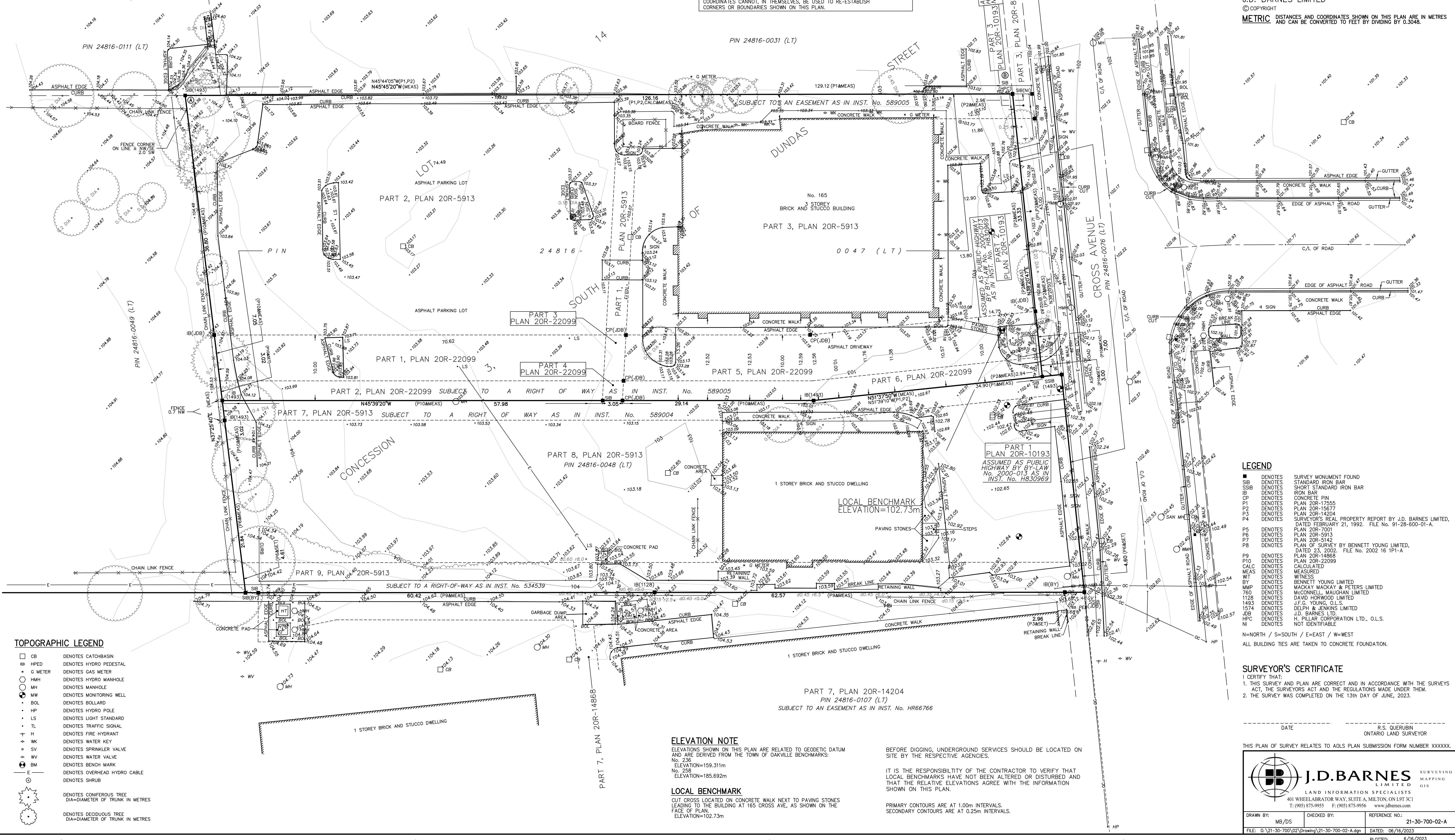
ADDITIONAL REMARKS
PREPARED FOR DISTRICT CAPITAL

SURVEYOR'S REAL PROPERTY REPORT ILLUSTRATING TOPOGRAPHY

PART 1 - PLAN OF SURVEY OF PART OF LOT 14 CONCESSION 3 SOUTH OF DUNDAS STREET (GEOGRAPHIC TOWNSHIP OF TRAFALGAR) TOWN OF OAKVILLE REGIONAL MUNICIPALITY OF HALTON

SCALE 1 : 250

J.D. BARNES LIMITED
© COPYRIGHT
METRIC DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.



TOPOGRAPHIC LEGEND

	CB DENOTES CATCHBASIN
	HPED DENOTES HYDRO PEDESTAL
	G METER DENOTES GAS METER
	HMH DENOTES HYDRO MANHOLE
	MH DENOTES MANHOLE
	MW DENOTES MONITORING WELL
	BOL DENOTES BOLLARD
	HP DENOTES HYDRO POLE
	LS DENOTES LIGHT STANDARD
	TL DENOTES TRAFFIC SIGNAL
	H DENOTES FIRE HYDRANT
	WK DENOTES WATER KEY
	SV DENOTES SPRINKLER VALVE
	WV DENOTES WATER VALVE
	BM DENOTES BENCH MARK
	E DENOTES OVERHEAD HYDRO CABLE
	SHRUB DENOTES SHRUB
	DT DENOTES DECIDUOUS TREE DIA=DIAMETER OF TRUNK IN METRES
	CT DENOTES CONIFEROUS TREE DIA=DIAMETER OF TRUNK IN METRES

ELEVATION NOTE

ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE TOWN OF OAKVILLE BENCHMARKS:
No. 236 ELEVATION=159.311m
No. 258 ELEVATION=185.692m

LOCAL BENCHMARK

CUT CROSS LOCATED ON CONCRETE WALK NEXT TO PAVING STONES LEADING TO THE BUILDING AT 165 CROSS AVE, AS SHOWN ON THE FACE OF PLAN.
ELEVATION=102.73m

BEFORE DIGGING, UNDERGROUND SERVICES SHOULD BE LOCATED ON SITE BY THE RESPECTIVE AGENCIES.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT LOCAL BENCHMARKS HAVE NOT BEEN ALTERED OR DISTURBED AND THAT THE RELATIVE ELEVATIONS AGREE WITH THE INFORMATION SHOWN ON THIS PLAN.

PRIMARY CONTOURS ARE AT 1.00m INTERVALS.
SECONDARY CONTOURS ARE AT 0.25m INTERVALS.

LEGEND

	SM DENOTES SURVEY MONUMENT FOUND
	SIB DENOTES STANDARD IRON BAR
	SSIB DENOTES SHORT STANDARD IRON BAR
	IB DENOTES IRON BAR
	CP DENOTES CONCRETE PIN
	P1 DENOTES PLAN 20R-17555
	P2 DENOTES PLAN 20R-15677
	P3 DENOTES PLAN 20R-14204
	P4 DENOTES PLAN OF SURVEY BY J.D. BARNES LIMITED, DATED FEBRUARY 21, 1992. FILE No. 91-28-600-01-A.
	P5 DENOTES PLAN 20R-7001
	P6 DENOTES PLAN 20R-5913
	P7 DENOTES PLAN 20R-5142
	P8 DENOTES PLAN OF SURVEY BY BENNETT YOUNG LIMITED, DATED 23, 2002. FILE No. 2002 16 1P1-A.
	P9 DENOTES PLAN 20R-14868
	P10 DENOTES PLAN 20R-22099
	CALC DENOTES CALCULATED
	MEAS DENOTES MEASURED
	WIT DENOTES WITNESS
	BY DENOTES BENNETT YOUNG LIMITED
	MMP DENOTES MACKAY MACKAY & PETERS LIMITED
	760 DENOTES MCCONNELL MAUGHAN LIMITED
	1128 DENOTES DAVID HORWOOD LIMITED
	1493 DENOTES J.F.G. YOUNG, O.L.S.
	1574 DENOTES DELPH & JENKINS LIMITED
	1493 DENOTES J.D. BARNES LTD.
	HPC DENOTES PILLAR CORPORATION LTD., O.L.S.
	NI DENOTES NOT IDENTIFIABLE

N=North / S=South / E=East / W=West
ALL BUILDING TIES ARE TAKEN TO CONCRETE FOUNDATION.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 13th DAY OF JUNE, 2023.

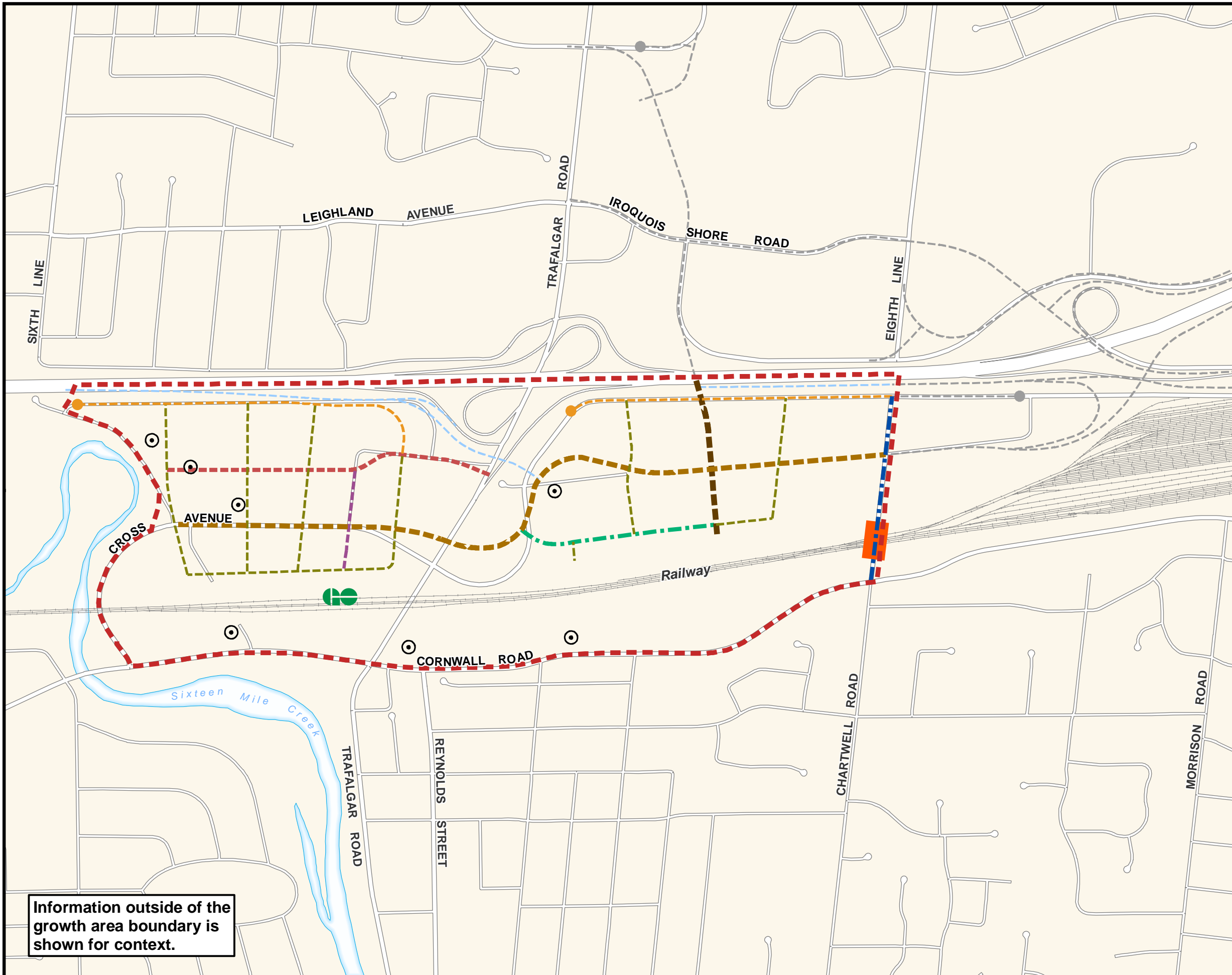
DATE: _____ R.S. QUERUBIN
ONTARIO LAND SURVEYOR

THIS PLAN OF SURVEY RELATES TO AOLS PLAN SUBMISSION FORM NUMBER XXXXXX.

J.D. BARNES LIMITED
LAND INFORMATION SPECIALISTS
401 WHEELABORATOR WAY, SUITE A, MILTON, ON L9T 5C1
T: (905) 875-9955 F: (905) 875-9956 www.jdbarnes.com

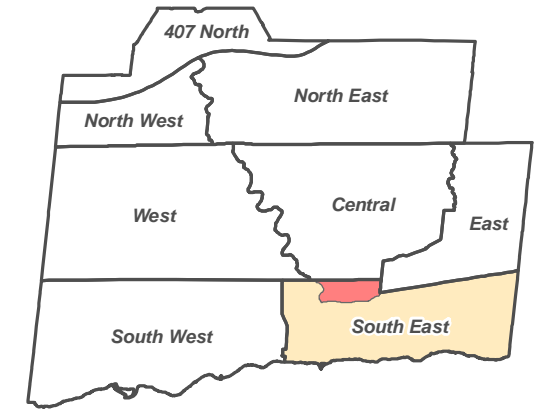
DRAWN BY: MB/DS CHECKED BY: _____ REFERENCE NO.: 21-30-700-02-A
FILE: G:\21-30-700\02\Drawing\21-30-700-02-A.dgn DATED: 06/16/2023
PLOTTED: 6/16/2023

APPENDIX 'B'



Information outside of the growth area boundary is shown for context.

SCHEDULE L3 MIDTOWN OAKVILLE TRANSPORTATION NETWORK

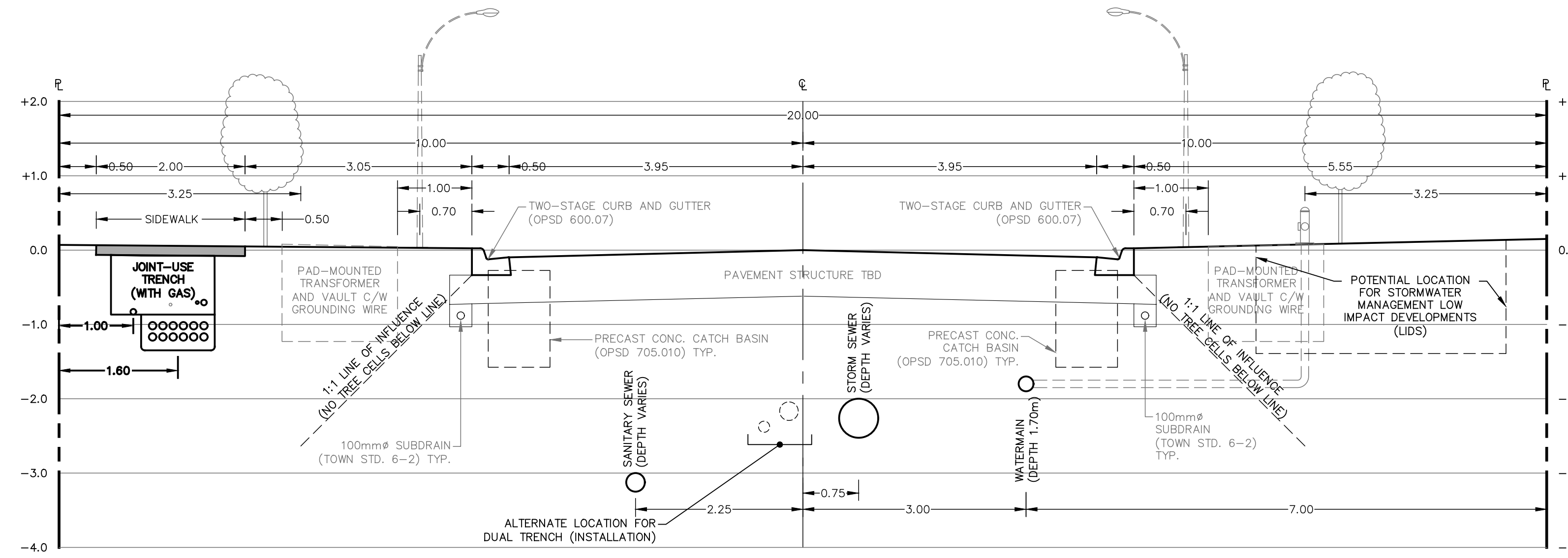


- Growth Area Boundary
- Existing Road Network
- Future 32 m Multi-Purpose Arterial Road (North-South Crossing)
- Future 28 m Minor Arterial Road (Cross Avenue)
- Future 26 m Local Road (Station Road)
- Future 24 m Minor Arterial Road (Chartwell Road)
- Future 22 m Local Road
- Future 20 m Local Road
- Future 19 m Local Road
- Future 18 m Local Road
- Future Ramp
- Future Cul-de-sac
- Future Railway Grade Separation
- Railway
- Major Transit Station
- Refer to Part E, Midtown Oakville, for Growth Area Policies
- Refer to Part E, Midtown Oakville Exceptions

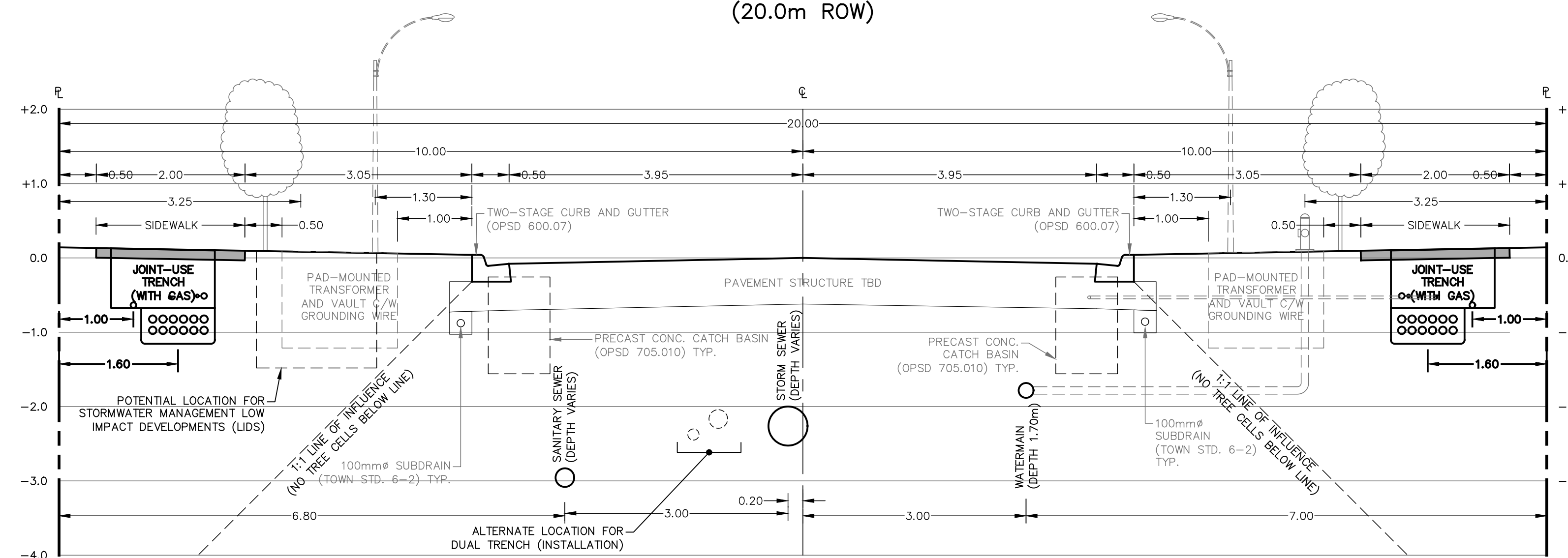


1:9,000

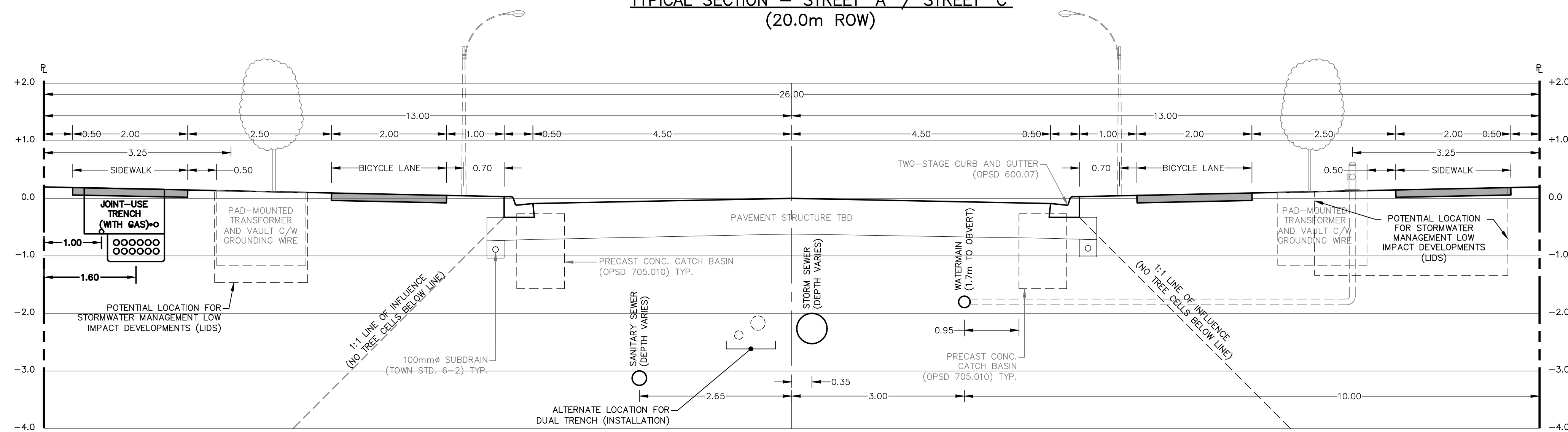
August 31, 2021



TYPICAL SECTION - SOUTH SERVICE ROAD
(20.0m ROW)



TYPICAL SECTION - STREET 'A' / STREET 'C'
(20.0m ROW)




TYPICAL SECTION - STREET 'B' / ARGUS
(26.0m ROW)

NOTE:
THESE SECTIONS ARE PRELIMINARY AND
ARE SUBJECT TO COORDINATION WITH THE
VARIOUS STAKEHOLDERS, INCLUDING
UTILITY COMPANIES TO ENSURE ADEQUATE
CLEARANCES ARE MET.

FILENAME: P:\1768 - Design\Midtown ASP\Drawings\DWG\1768-ROAD.dwg
PLOTDATE: Sep 20, 2024 12:10pm

PROJECT TITLE	MIDTOWN CORE TOWN OF OAKVILLE		
DRAWING TITLE	TYPICAL ROAD CROSS-SECTIONS		

 #1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6 www.trafalgareng.com		DESIGN BY	NS	SCALE	N.T.S.	DRAWING No.	FIG. 1
DRAWN BY	GL	DATE	2024/09/20				

APPENDIX 'C'

TRAFALGAR ENGINEERING LTD.

ESTIMATED EXISTING WATER DEMAND

Project: 157/165 Cross Avenue
Desc: TOC Development Submission

Project No.: 1827
Prepared By: AJP
Checked By: JN

Land Use / Occupancy Type	Occupancy Data					Peaking Factors			Demand Flow		
	GFA (ha)	Population Density (pers/ha)	Eq. Population (cap.)	Per Cap. Demand (L/cap. Day)	Average Daily Demand (L/min)	Min. Hour	Peak Hour	Max. Daily	Min. Hour Demand (L/min)	Max. Hour Demand (L/min)	Max. Daily Demand (L/min)
Light Commercial Area	0.2900	90.0	26	275	5	1.00	2.25	2.25	5	11	11
TOTAL	0		26		5				5	11	11

Fire Flow

Using Fire Underwriters Survey Methodology:

Average Daily Demand: 5 (L/min)
Minimum Hourly Demand: 5 (L/min)
Maximum Hourly Demand: 11 (L/min)
Maximum Daily Demand: 11 (L/min)
Max. Daily Plus Fire: 0

1. An estimate of the fire flow is given by the formula $F = 220C\sqrt{A}$
 Where:
 F = The required fire flow in litres per minute
 C = Coefficient related to the type of construction
 A = The total floor area in square metres (including all storeys but excluding basements at least 50% below grade)

Type of Construction: Coefficient: 1.00 Total Floor Area: (m²)
 F = **9000 (L/min)** Adequately Protected Vertical Openings:

Area Note: For fire resistive buildings, consider the two largest adjoining floors plus 50% of the remaining floors up to eight, when openings are inadequately protected. For adequately protected vertical openings consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

2. Adjust the value in No. 1 for occupancy surcharge/reduction
 Occupancy Contents: Factor: -15%
 F = **7650 (L/min)**

3. Adjust the value in No. 2 for sprinkler
- | | | | |
|-----------------------------|----------------------------------|---------------------|----------------------------------|
| NFPA 13 Sprinkler: | <input type="text" value="Yes"/> | Reduction: | <input type="text" value="20%"/> |
| Standard Water Supply: | <input type="text" value="Yes"/> | Reduction: | <input type="text" value="10%"/> |
| Fully Supervised: | <input type="text" value="Yes"/> | Reduction: | <input type="text" value="10%"/> |
| Total Reduction: | | 40% | |
| Sprinkler Reduction: | | 3060 (L/min) | |

4. Adjust the value in No. 2 for exposure
- | | | |
|-------------------------|---------------------------------|---------------------|
| | Separation (m) | Charge |
| North | <input type="text" value="0"/> | 25% |
| East | <input type="text" value="0"/> | 25% |
| South | <input type="text" value="18"/> | 15% |
| West | <input type="text" value="60"/> | 0% |
| Total Charge: | | 65% |
| Exposure Charge: | | 4973 (L/min) |

5. Estimated Fire Flow is value in No. 2 less *Sprinkler Reduction* plus *Exposure Charge*, rounded to the nearest 1000
 F = **10000 (L/min)**

TRAFALGAR ENGINEERING LTD.

ESTIMATED PROPOSED WATER DEMAND

Project: 157/165 Cross Avenue
Desc: TOC Development Submission

Project No.: 1827
Prepared By: AJP
Checked By: JN

Land Use / Occupancy Type	Occupancy Data					Peaking Factors			Demand Flow		
	Unit Count/ GFA (ha)	Population Density (pers/ha)	Eq. Population (cap.)	Per Cap. Demand (L/cap. Day)	Average Daily Demand (L/min)	Min. Hour	Peak Hour	Max. Daily	Min. Hour Demand (L/min)	Max. Hour Demand (L/min)	Max. Daily Demand (L/min)
1 Bedroom	811	1.356	1100	275	210	1.00	4.00	2.25	210	840	473
2 Bedroom	411	1.831	753	275	144	1.00	4.00	2.25	144	575	323
Commercial (Retail/Office)*	3866	0.0270	104	275	20	1.00	2.25	2.25	20	45	45
*Per Cap Demand based on 2022 DC Study population density for commercial developments (403 ft2/employee)											
TOTAL	5088		1957		374				374	1460	841

Fire Flow

Using Fire Underwriters Survey Methodology:

Average Daily Demand: 374 (L/min)
Minimum Hourly Demand: 374 (L/min)
Maximum Hourly Demand: 1460 (L/min)
Maximum Daily Demand: 841 (L/min)
Max. Daily Plus Fire: 6841 (L/min)

1. **An estimate of the fire flow is given by the formula** $F = 220C\sqrt{A}$
 Where:
 F = The required fire flow in litres per minute
 C = Coefficient related to the type of construction
 A = The total floor area in square metres (including all storeys but excluding basements at least 50% below grade)

Type of Construction: **Fire-Resistive** Coefficient: 0.60 Total Floor Area: **2972** (m²)
 F = **7000** (L/min) Adequately Protected Vertical Openings: **Yes**

Area Note: For fire resistive buildings, consider the two largest adjoining floors plus 50% of the remaining floors up to eight, when openings are inadequately protected. For adequately protected vertical openings consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

2. **Adjust the value in No. 1 for occupancy surcharge/reduction**

Occupancy Contents: **Combustible** Factor: 0%
 F = **7000** (L/min)

3. **Adjust the value in No. 2 for sprinkler**

NFPA 13 Sprinkler:	Yes	Reduction:	20%
Standard Water Supply:	Yes	Reduction:	10%
Fully Supervised:	Yes	Reduction:	10%
Total Reduction:			40%
Sprinkler Reduction:			2800 (L/min)

4. **Adjust the value in No. 2 for exposure**

	Separation (m)	Charge
North	50	0%
East	25	10%
South	50	0%
West	25	10%
Total Charge:		20%
Exposure Charge:		1400 (L/min)

5. **Estimated Fire Flow is value in No. 2 less Sprinkler Reduction plus Exposure Charge, rounded to the nearest 1000**

F = **6000** (L/min)

APPENDIX 'D'

TRAFALGAR ENGINEERING LTD.

ESTIMATED EXISTING SANITARY FLOW

Project: 157/165 Cross Avenue
Desc: TOC Development Submission

Project No.: 1827
Prepared By: AJP
Checked By: JN

Residential

Land Use / Occupancy Type	Unit Count	Population Density (pers/unit)	Eq. Population (cap.)	Per Cap. Demand (L/cap. Day)	Average Daily Dry Weather Flow (L/s)
TOTAL	0		0		0.0

Industrial / Commercial / Institutional

Land Use / Occupancy Type	GFA (ha)	Population Density (pers/ha)	Eq. Population (cap.)	Per Cap. Demand (L/Ha. Day)	Average Daily Dry Weather Flow (L/s)
Light Commercial Area	0.96	90.0	86	275	0.3
TOTAL	0.96		86		0.3

Residential Peaking Factor:	4.50
ICI Peaking Factor:	4.26
Include ICI Peaking?	No
Tributary Area:	0.29 (ha)
Infiltration Allowance:	0.286 (L/s ha)
Foundation Drain Allowance:	0.00 (L/s ha)

Residential Average Flow:	0.1 (L/s)
ICI Average Flow:	0.3 (L/s)
Groundwater Discharge:	0.0 (L/s)
Total Average Flow:	0.4 (L/s)

Residential Peak Flow:	0.1 (L/s)
ICI Peak Flow:	0.3 (L/s)
Groundwater Discharge:	0.0 (L/s)
Total Peak Flow:	0.4 (L/s)

TRAFALGAR ENGINEERING LTD.

ESTIMATED PROPOSED SANITARY FLOW

Project: 157/165 Cross Avenue
Desc: TOC Development Submission

Project No.: 1827
Prepared By: AJP
Checked By: JN

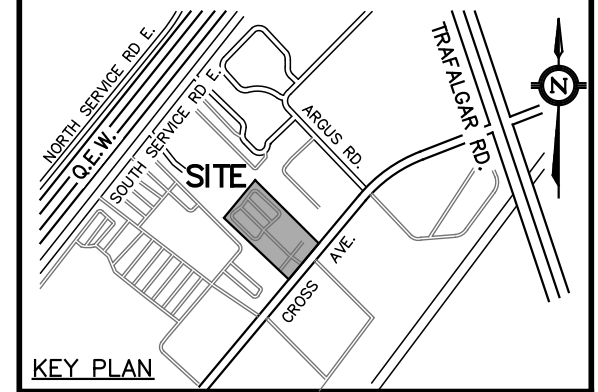
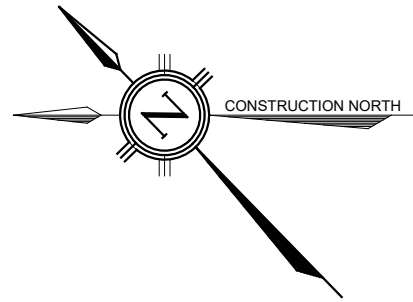
Residential

Land Use / Occupancy Type	Unit Count	Persons/ Unit	Eq. Population (cap.)	Per Cap. Demand (L/cap. Day)	Average Daily Dry Weather Flow (L/s)
1 Bedroom	811	1.356	1100	275	3.5
2/3 Bedroom	411	1.831	753	275	2.4
TOTAL	1222		1852		5.9




Industrial / Commercial / Institutional

Land Use / Occupancy Type	GFA (m2)	Population Density (pers/m2)	Eq. Population (cap.)	Per Cap. Demand (L/cap. Day)	Average Daily Dry Weather Flow (L/s)
Retail/Office	3866	0.0270	104	275	0.3
TOTAL	3866		104		0.3

Residential Peaking Factor:	3.61
ICI Peaking Factor:	4.24
Include ICI Peaking?	No
Tributary Area:	0.60 (ha)
Infiltration Allowance:	0.286 (L/s ha)
Foundation Drain Allowance:	0.00 (L/s ha)
Residential Average Flow:	6.1 (L/s)
ICI Average Flow:	0.3 (L/s)
Groundwater Discharge:	0.0 (L/s)
Total Average Flow:	6.4 (L/s)
Residential Peak Flow:	21.5 (L/s)
ICI Peak Flow:	0.3 (L/s)
Groundwater Discharge:	0.0 (L/s)
Total Peak Flow:	21.8 (L/s)



LEGEND

- 
 PRE DEVELOPMENT SANITARY AREA IN HECTARES
- 
 POST DEVELOPMENT SANITARY AREA IN HECTARES
- 
 PRE DEVELOPMENT SANITARY DRAINAGE AREA BOUNDARY
- 
 POST DEVELOPMENT SANITARY DRAINAGE AREA BOUNDARY

PROJECT TITLE
157/165 CROSS AVENUE
OAKVILLE, ONTARIO
 DISTRIKT DEVELOPMENTS

DRAWING TITLE
SANITARY DRAINAGE PLAN



DESIGN BY	AJP	SCALE	1:750	DRAWING No. FIG. 1
DRAWN BY	ZI	DATE	2023/03/28	

SANITARY SEWER DESIGN SHEET
Regional Municipality of Halton

Prepared By: AJP
Checked By: JN
Project No. :

Project Name :
Municipal Number :
Date: 2024-02-16
Sheet: 1 of 1

LOCATION	FROM MH	TO MH	TRIBUTARY AND FLOW DATA														PIPE DATA															
			Tributary Area				Population Tributary			Average Demand			Peaking Factor				Peak Q, Q _P (L/s)	Infiltr. (L/s)	Design Flow, Q _D (L/s)	Length, L (m)	Pipe Dia., D (mm)	Slope, s (%)	Manning's Coeff., n	Full Flow Capacity, Q _F (L/s)	Velocity		Flow Depth, d (mm)	d/D	Percent Full (%)	Type	Class	
			Unit Count/ Area (ha)	Persons/ Unit* Density (pers/m ²)	Area (m ²)	Density (pers/m ²)*	Total (ha)	Res (pers.)	ICI (pers.)	Total (pers.)	Res (L/cap. Day)	ICI (L/cap. Day)	Incr. Avg. Q (L/s)	Total Avg. Q (L/s)	K _{avg}	M _{avg}									Full (m/s)	Actual (m/s)						
			Residential	ICI																												
178 South Service Road ** Future Development			0.41	3700		0.41	1517		1517																							
166 South Service Road*** 1 Bedroom Units			1224	1.356			1660		3177																							
2/3 Bedroom Units	MH206A	MH205A	629	1.831	6266	0.027	1.58	2812	169	6158	275	275	9.5	9.5	0.9	2.84	27.0	0.5	27.4	29.9	300	0.8	0.013	90.2	1.24	1.12	113	0.37	0.30	PVC	DR-35	
	MH205A	MH204A																		27.4	57.0	300	0.9	0.013	95.7	1.31	1.16	110	0.36	0.29	PVC	DR-35
	MH204A	MH203A																		27.4	76.1	300	0.9	0.013	95.7	1.31	1.16	110	0.36	0.29	PVC	DR-35
177 Cross Avenue** Future Development			0.44	3700		2.02	4440																									
157/165 Cross Avenue*** 1 Bedroom Units			811	1.356			5540																									
2/3 Bedroom Units	MH203A	MH202A	411	1.831	3866	0.027	3.00	6293	273	6566	275	275	20.9	20.9	0.9	2.82	58.9	0.9	59.8	4.5	300	1.5	0.013	123.6	1.69	1.68	149	0.49	0.48	PVC	DR-35	
	MH202A	MH200A																		59.8	85.1	300	1.5	0.013	123.6	1.69	1.68	149	0.49	0.48	PVC	DR-35
TRIBUTARY AREA TOTAL			3076	10132		7.01	6293	273	6566																							

Notes:
1) Pipe diameter is nominal
2) Capacity and velocity are based on Imperial I.D. (Nom. Dia x 25.4/25)

*Population Densities taken from Region of Halton 2022 Development Charges Background Study
**Populations are preliminary estimates
***Unit counts and Commercial Area are preliminary estimates

Peaking Factor $M = K_{avg} \times (1 + 14 / (4 + P^{1/4}))$ Full Flow Capacity (Manning's Equation), $Q_F = (1/n) \times A \times R^{2/3} \times s^{1/2}$
Where P is Total population in thousands
 $K_{avg} = (A_R + 0.8 \times A_{ICI}) / (A_{Total})$ = (1/n) x 311.7 x D^{8/3} x s^{1/2}
Infiltration = 0.286 L/ha/s

APPENDIX 'E'

TRAFALGAR ENGINEERING LTD.

COMPOSITE RUNOFF COEFFICIENT

Project: Distrikt Midtown 157/165 Cross
Desc: TOC Development Submission

Project No.: 1827
Prepared By: AJP
Checked By: JN

Pre-Development Composite Runoff Coefficient

Surface	'A' (m ²)	'C'	'AC'	% Imp	'AI'
Existing building and parking	8562	0.90	7706	100%	8562
Existing landscaping	1071	0.25	268	0%	-
(Less Road Dedications)	-3224	0.73	-2354	74%	-2386
			-		-
			-		-
Totals	6409		5620		6176

C = 'AC'/'A' = 0.88 %I = 'AI'/'A' = 96%

External Drainage Area Composite Runoff Coefficient

Surface	'A' (m ²)	'C'	'AC'	% Imp	'AI'
			-		-
			-		-
			-		-
			-		-
Totals	-		-		-

C = 'AC'/'A' = - %I = 'AI'/'A' = -

Post-Development Controlled Area Composite Runoff Coefficient

Surface	'A' (m ²)	'C'	'AC'	% Imp	'AI'
Preliminary Estimate	5673	0.90	5106	100%	5673
			-		-
			-		-
			-		-
			-		-
Totals	5673		5106		5673

C = 'AC'/'A' = 0.90 %I = 'AI'/'A' = 100%

Post-Development Uncontrolled Area Composite Runoff Coefficient

Surface	'A' (m ²)	'C'	'AC'	% Imp	'AI'
Preliminary Estimate	734	0.90	661	100%	734
			-		-
			-		-
			-		-
			-		-
Totals	734		661		734

C = 'AC'/'A' = 0.90 %I = 'AI'/'A' = 100%

TRAFALGAR ENGINEERING LTD.

RATIONAL METHOD FLOWS

Based on Town of Oakville IDF Data

Project: Distrikt Midtown 157/165 Cross

Desc: TOC Development Submission

Project No.: 1827

Prepared By: AJP

Checked By: JN

Pre-Development Parameters

	Site	External	Total
'C'	0.877	0.000	0.877
'A' (ha)	0.641	0.000	0.641
'AC'	0.562	0.000	0.562

Pre-Development Flow

Return	Intensity (mm/hr)	Site Flow (L/s)	External Flow (L/s)	Total Flow (L/s)
2-yr	82.2	128	0	128
5-yr	114.2	178	0	178
10-yr	134.8	210	0	210
25-yr	162.2	278	0	278
50-yr	182.1	324	0	324
100-yr	200.8	358	0	358

Flows have been adjusted using 25-, 50-, and 100-yr factors of 1.1, 1.2, and 1.25 (To a maximum C of 1.0)

Post-Development Parameters

	Controlled	Uncontrolled	External	Total
'C'	0.900	0.900	0.000	0.900
'A' (ha)	0.567	0.073	0.000	0.641
'AC'	0.511	0.066	0.000	0.577

Post-Development Flow

Return	Intensity (mm/hr)	Uncontrolled Peak Inflow (L/s)	Uncontrolled Flow (L/s)	Peak Rooftop Flow (L/s)	External Flow (L/s)	Total Flow (L/s)
2-yr	82.2	117	15	0	0	132
5-yr	114.2	162	21	0	0	183
10-yr	134.8	191	25	0	0	216
25-yr	162.2	253	33	0	0	286
50-yr	182.1	287	37	0	0	324
100-yr	200.8	316	41	0	0	357

Flows have been adjusted using 25-, 50-, and 100-yr factors of 1.1, 1.2, and 1.25 (To a maximum C of 1.0)

Post-to-Pre Comparison*

Return	Pre-Dev Total (L/s)	Post-Dev Total (L/s)	Percent Change
2-yr	128	132	3%
5-yr	178	183	3%
10-yr	210	216	3%
25-yr	278	286	3%
50-yr	324	324	0%
100-yr	358	357	0%

*Storage may be required, refer to Modified Rational Method Storage Calculation and Summary sheets if applicable

TRAFALGAR ENGINEERING LTD.

MODIFIED RATIONAL METHOD STORAGE

Based on Town of Oakville IDF Data

Project: Distrikt Midtown 157/165 Cross
Desc: TOC Development Submission

Project No.: 1827
Prepared By: AJP
Checked By: JN

Pre-Development

Catchment Area (ha) 0.6409
 Runoff Coefficient 0.88
 TC (min) 10
 Control Level 5-Yr

Pre-Development Peak Intensity: 114.2 mm/hr
Pre-Development Peak Discharge: 0.178 (cms)

Post-Development Uncontrolled

Catchment Area (ha) 0.0734
 Runoff Coefficient 1.00
 TC (min) 10
 Control Level 100-Yr

Uncontrolled Peak Discharge: 0.041 (cms)

External Drainage

Catchment Area (ha) 0
 Runoff Coefficient 0.00
 TC (min) 10
 Control Level **100-Yr**

External Peak Discharge: 0 (cms)

Post-Development Controlled

Catchment Area (ha) 0.5673
 Runoff Coefficient 1.00 (1.25 Adj. Factor)
 Time of Concentration 10
 Control Level 100-Yr

Post-Development Peak Intensity: 200.8 mm/hr
Post-Development Peak Discharge: 0.316 (cms)
Allowable Release Rate: 0.063 (cms)

Storm Duration T_D (min)	Intensity $i = A \times T_D^{-C}$ (mm/hr)	Inflow Rate $Q_P = CiA/360$ (m ³ /s)	Average Roof Discharge (m ³ /s)	Max. Release Rate $Q_A = Ci_{2YR}A$ (m ³ /s)	Inflow Volume $V_I = 60Q_P T_D$ (m ³)	Outflow Volume $V_O = 30Q_A(T_D + T_C)$ (m ³)	Storage $S = V_I - V_O$ (m ³)
10	200.80	0.316	0.000	0.063	189.9	37.8	152.1
15	158.27	0.249	0.000	0.063	224.5	47.3	177.2
20	131.37	0.207	0.000	0.063	248.4	56.7	191.7
25	112.72	0.178	0.000	0.063	266.4	66.2	200.3
30	98.99	0.156	0.000	0.063	280.8	75.6	205.2
35	88.43	0.139	0.000	0.063	292.6	85.1	207.6
40	80.03	0.126	0.000	0.063	302.7	94.5	208.2
45	73.19	0.115	0.000	0.063	311.4	104.0	207.4
50	67.49	0.106	0.000	0.063	319.1	113.4	205.7
55	62.68	0.099	0.000	0.063	325.9	122.9	203.1
60	58.55	0.092	0.000	0.063	332.1	132.3	199.8
90	42.35	0.067	0.000	0.063	360.4	189.0	171.4
120	33.49	0.053	0.000	0.063	380.0	245.7	134.3
150	27.85	0.044	0.000	0.063	395.0	302.4	92.6
180	23.93	0.038	0.000	0.063	407.3	359.1	48.2
210	21.04	0.033	0.000	0.063	417.7	415.8	1.9
240	18.81	0.030	0.000	0.063	426.7	472.5	0

TRAFALGAR ENGINEERING LTD.

WATER BALANCE AND WATER QUALITY

Project: Distrikt Midtown 157/165 Cross
Desc: TOC Development Submission

Project No.: 1827
Prepared By: AJP
Checked By: JN

Water Balance

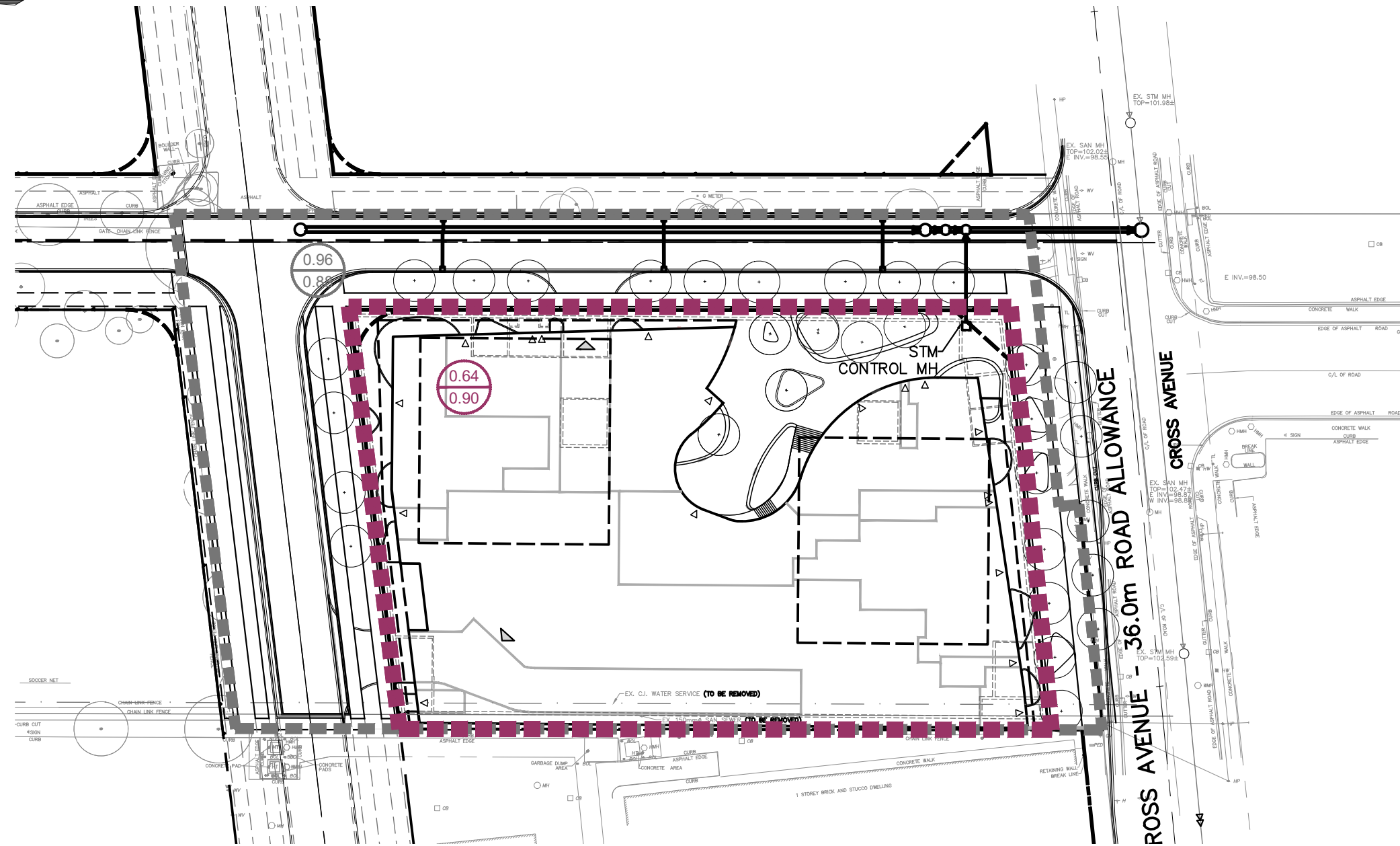
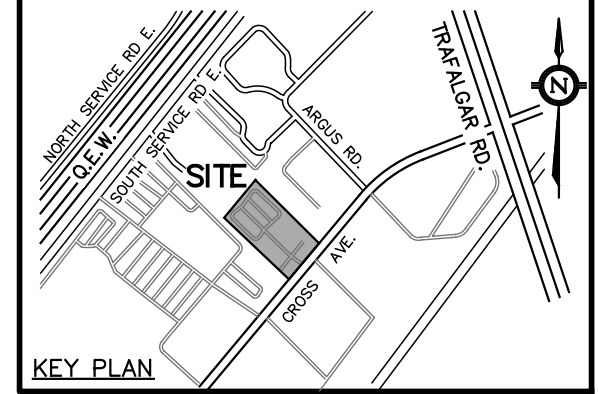
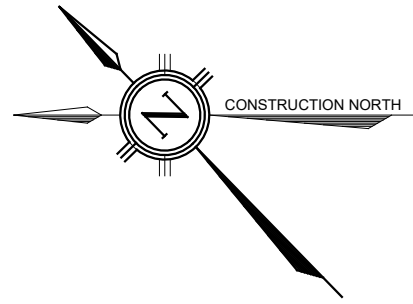
Surface	'A' (m ²)	%Total A	IA (mm)	%Total x IA
Site Area	6044	100%	0.0	0.0

Totals	6044	Total Retention:	0.0 (mm)
		Target Retention:	25.0 (mm)
		Balance:	25.0 (mm)
		Volume Required:	151.1 (m³)




Total Suspended Solids

Surface	'A' (m ²)	Removal Rate, 'R'	A x R
Imbrium Jellyfish	6044	80%	4835

Totals	6044	Effective Removal:	4835
			80%



LEGEND

-  PRE DEVELOPMENT STORM AREA IN HECTARES
PRE DEVELOPMENT STORM RUN-OFF COEFFICIENT
-  POST DEVELOPMENT STORM AREA IN HECTARES
POST DEVELOPMENT STORM RUN-OFF COEFFICIENT
-  PRE & POST DEVELOPMENT STORM DRAINAGE AREA BOUNDARY

PROJECT TITLE	157/165 CROSS AVENUE OAKVILLE, ONTARIO DISTRİKT DEVELOPMENTS		
DRAWING TITLE	STORM DRAINAGE PLAN		



DESIGN BY	AJP	SCALE	1:750	DRAWING No.	FIG. 2
DRAWN BY	ZI	DATE	2023/03/28		

STORM SEWER DESIGN SHEET

Town of Oakville
5-Year Storm

Project Name : Distrikt Developments

Municipal Number:

Date: 2024-02-16

Sheet: 1 of 1

Prepared By: AJP
Checked By: JN
Project No. :

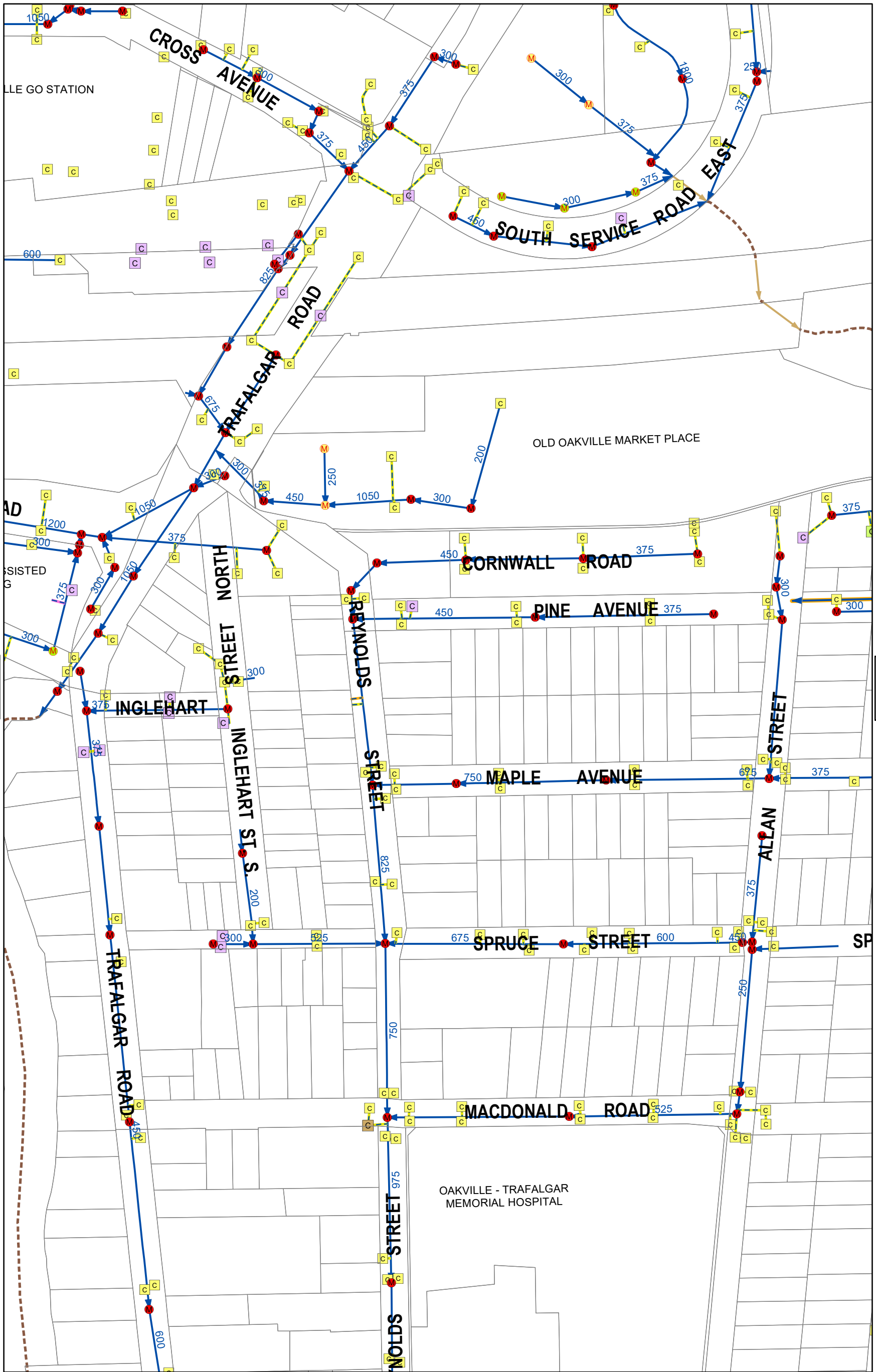
LOCATION	FROM MH	TO MH	DRAINAGE AREA				FLOW			SEWER DESIGN				PIPE HYDRAULICS					
			Area, A (ha)	Runoff Coeff., C	A x C (ha)	Accum. A x C (ha)	Time of Conc., T _c (min)	Intensity, I (mm/h)	Expected Flow, Q (L/s)	Length, L (m)	Gradient, s (%)	Pipe Dia., D (mm)	Manning's Coeff., n	Full Flow Capacity, Q _F (L/s)	Full Flow Velocity, V _F (m/s)	d/D	Actual Velocity, V (m/s)	Time of Flow (min)	Q/Q _F
Street 'A' Storm Sewer																			
Future South Service Road	CB	MH208	0.17	0.90	0.153	0.153	10.00	114.21	49	11.0	1.0	250	0.013	62	1.22	0.66	1.37	0.13	0.78
	MH208	MH207	0.00	0.90	0.000	0.153	10.13	113.4	48	100.0	0.8	600	0.013	573	1.96	0.19	1.25	1.34	0.08
	MH207	MH206	0.00	0.90	0.000	0.153	11.47	106.0	45	29.8	0.8	600	0.013	573	1.96	0.18	1.26	0.39	0.08
178 SSR Controlled Flow (Future Development)									108										
166 SSR Controlled Flow*	MH206	MH205	0.00	0.90	0.000	0.153	11.86	104.0	171	3.0	1.0	600	0.013	641	2.19	0.35	1.88	0.03	0.27
Street 'A' + Street 'B'	MH205	MH204	0.25	0.90	0.225	0.378	11.89	103.8	235	22.2	1.0	600	0.013	641	2.19	0.41	2.09	0.18	0.37
				0.90															
Street 'A'	MH204	MH203	0.13	0.90	0.117	0.495	12.07	103.0	268	92.2	0.8	750	0.013	1039	2.28	0.34	1.96	0.79	0.26
	MH203	MH202							268	3.0	1.0	600	0.013	641	2.19	0.45	2.10	0.02	0.42
177 Cross Avenue Controlled Flow (Future Developm																			
157/165 Cross Ave																			
	MH202	MH201							394	3.0	1.0	600	0.013	641	2.19	0.56	2.34	0.02	0.61
	MH201	MH200							394	25.9	2.0	600	0.013	906	3.10	0.46	3.00	0.14	0.00

- Notes:
- 1) Pipe diameter is nominal
 - 2) Capacity and velocity are based on Imperial I.D. (Nom. Dia x 25.4/25)
 - 3) Time of Flow is based on Actual Velocity

Intensity, I = $A / (T_c + B)^C$ where:
 A= 1170
 B= 5.8
 C= 0.843
 t_c= Time of Concentration in minutes

Expected Flow, Q = $2.778 \times C \times I \times A / 1000$
 Full Flow Capacity (Manning's Equation), Q_F
 $Q_F = (1/n) \times A \times R^{2/3} \times s^{1/2}$
 $= (1/n) \times 311.7 \times D^{8/3} \times s^{1/2}$

APPENDIX 'F'



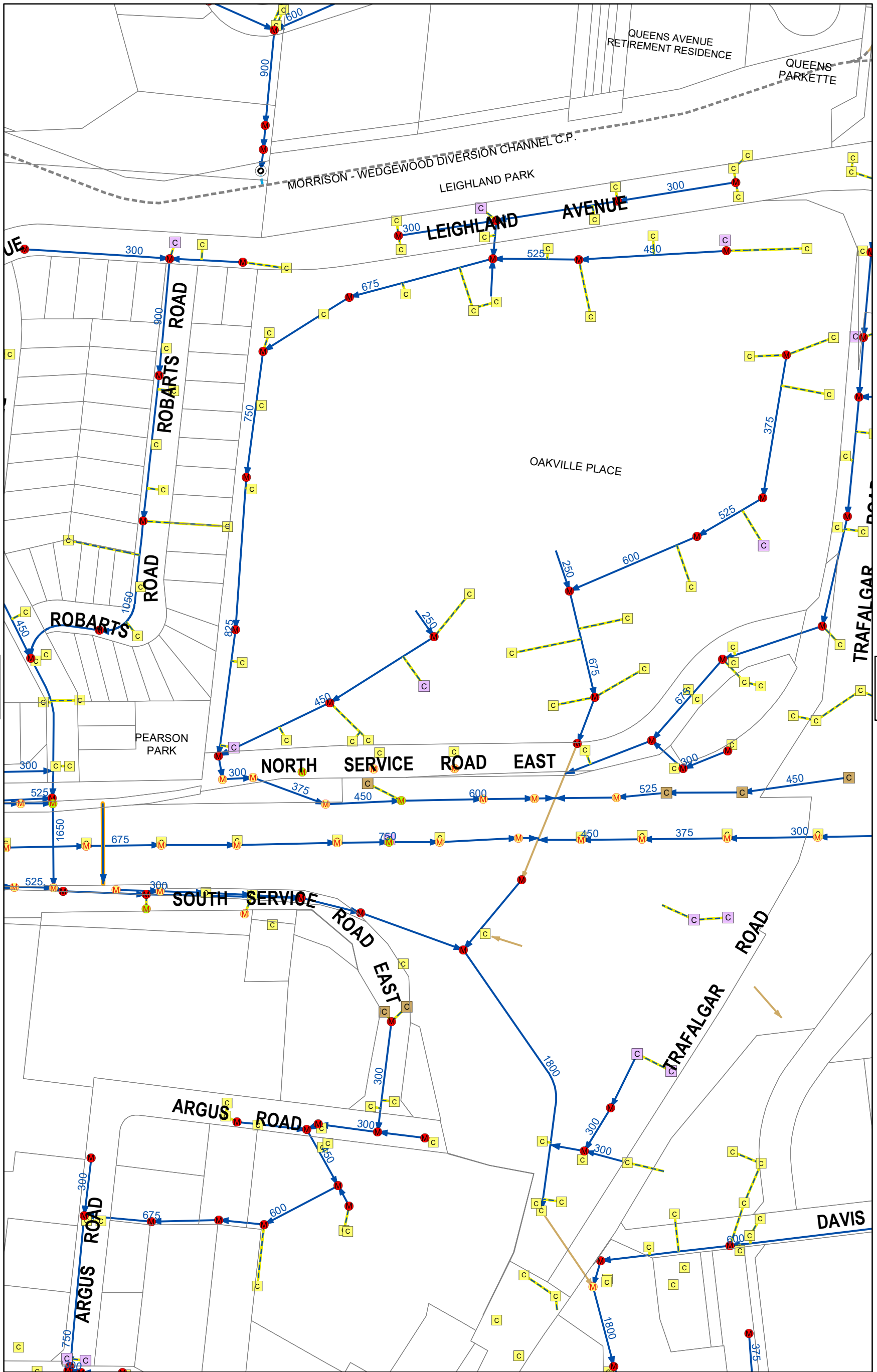
PAGE 82

PAGE 84

Town of Oakville
Engineering &
Construction
1225 Trafalgar Road
Oakville, Ontario

STORM SEWER INFORMATION
MAR, 2020
PAGE 83

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> → Storm Sewers → Culvert → Foundation Drain → Catch Basin Lead → Private Drain Connection → Lateral --- Channel - ConcreteLined --- Channel - Ditch --- Channel - GrassLined --- Natural Channel | <ul style="list-style-type: none"> C Ditch Inlet C Double Catch Basin C Pup Inlet C Side Entry CB C Single Catch Basin C Connection I Inlet O Outlet | <ul style="list-style-type: none"> M Maintenance Hole M Catch Basin MH M Double Catch Basin MH M Foundation Drain MH Abandoned Pipe → Storm Main → Culvert → Foundation Drain → Lateral |
|---|--|---|



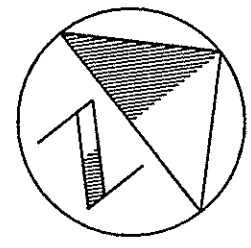
PAGE 109

PAGE 111

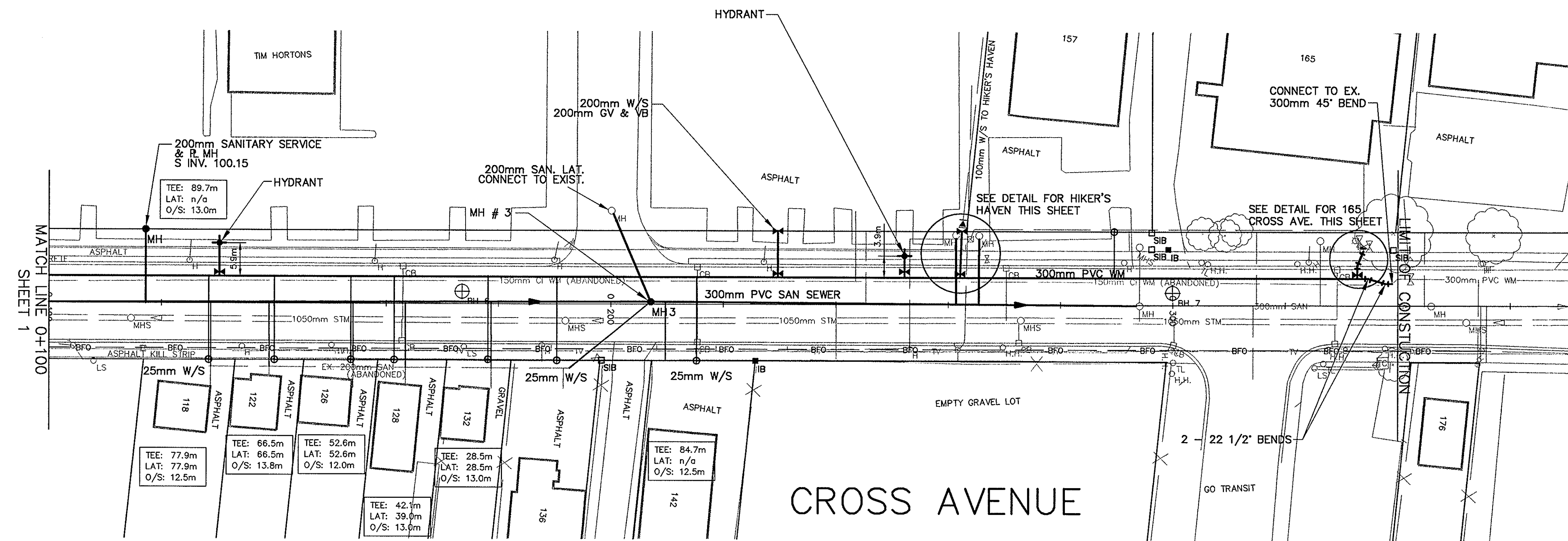
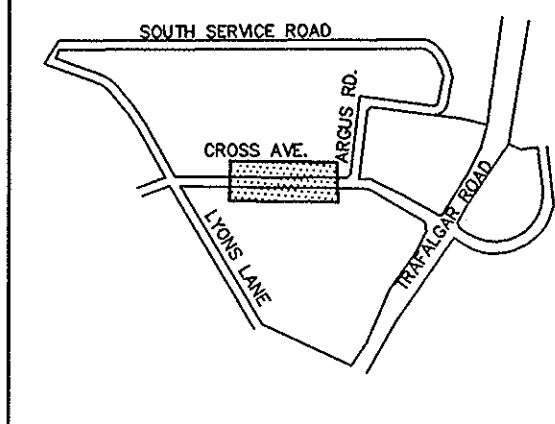


STORM SEWER INFORMATION
MAR, 2020
PAGE 110

- | | | |
|--------------------------|--------------------|-----------------------|
| Storm Sewers | Ditch Inlet | Maintenance Hole |
| Culvert | Double Catch Basin | Catch Basin MH |
| Foundation Drain | Pup Inlet | Double Catch Basin MH |
| Catch Basin Lead | Side Entry CB | Foundation Drain MH |
| Private Drain Connection | Single Catch Basin | Abandoned Pipe |
| Lateral | Connection | Storm Main |
| Channel - ConcreteLined | Inlet | Culvert |
| Channel - Ditch | Outlet | Foundation Drain |
| Channel - GrassLined | | Lateral |
| Natural Channel | | |

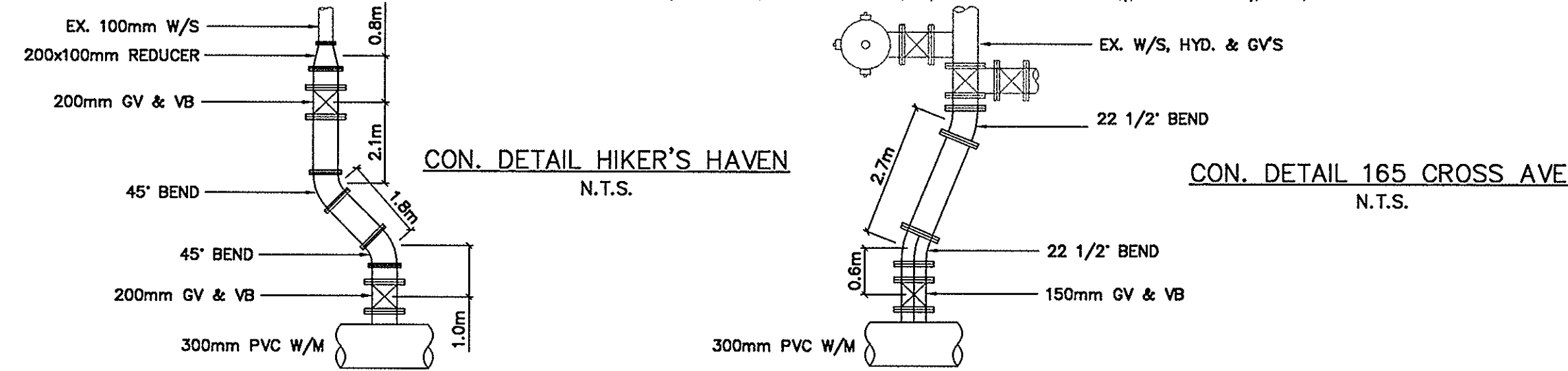


REGIONAL MUNICIPALITY OF HALTON,
ITS EMPLOYEES, OFFICERS AND AGENTS
ARE NOT RESPONSIBLE FOR ANY ERRORS,
OMISSIONS OR INACCURACIES, WHETHER
DUE TO THEIR NEGLIGENCE OR OTHERWISE.
ALL INFORMATION SHOULD BE VERIFIED.

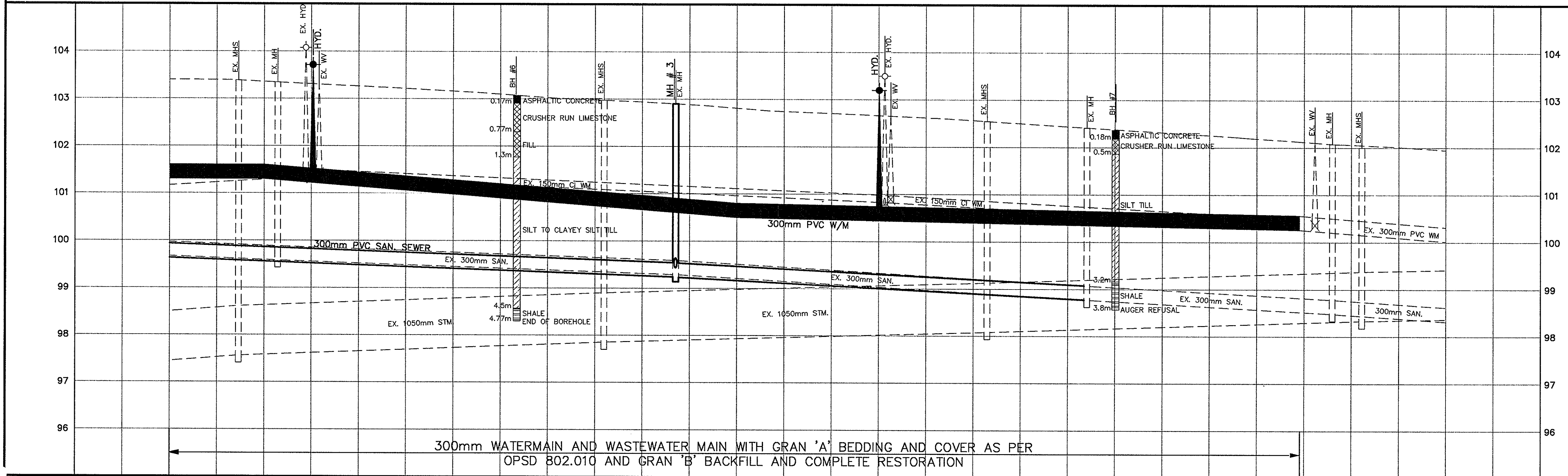


RESTRAINED LENGTHS FOR ALL WATERMAIN							
PIPE SIZE	90° H. BEND	11 1/4° H. BEND	22 1/2° H. BEND	45° H. BEND	SIZE ON SIZE TEE	VALVE, HYD., DEAD END	45° V. OFFSET* / 22 1/2° V. OFFSET*
150mm	3.71m	-	-	-	-	-	-
300mm	-	0.67m	1.37m	2.83m	BR. ONLY	28.92m	11.97m / 1.61m / 5.78m / 0.79m

200x150mm REDUCING TEE: BRANCH ONLY, ASSUMING 3m MIN. ATTACHED RUN LENGTH
 300x150mm REDUCING TEE: BRANCH ONLY, ASSUMING 3m MIN. ATTACHED RUN LENGTH
 300x200mm REDUCING TEE: BRANCH ONLY, ASSUMING 3m MIN. ATTACHED RUN LENGTH
 *FIRST NUMBER REPRESENTS THE DOWN BEND
 SECOND NUMBER REPRESENTS THE UP BEND



- GENERAL NOTES
- ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
 - ALL WATERMAIN AND SANITARY SEWER INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS) AS AMENDED BY THE REGIONAL MUNICIPALITY OF HALTON.
 - THE LOCATION OF ALL EXISTING WATERMAIN, SANITARY SEWER, UTILITIES AND SERVICES ARE APPROXIMATE. THE CONTRACTOR MUST VERIFY THE LOCATION, VERIFY SIZE AND ELEVATION IN THE FIELD PRIOR TO CONSTRUCTION.
 - DRIVEWAY MATERIAL IS ASPHALT UNLESS OTHERWISE SPECIFIED.
 - UNLESS OTHERWISE NOTED, ALL NEW SANITARY SEWERS ARE TO BE PVC SDR 35 ASTM D3034 WITH GRANULAR 'A' BEDDING AND COVER AS PER OPSD 802.010 WITH GRANULAR 'B' BACKFILL.
 - UNLESS OTHERWISE NOTED, ALL EXISTING SANITARY LATERALS ARE TO BE REPLACED WITH PVC SDR28, 125mm DIA. CONNECTIONS FOR SINGLE FAMILY AND SEMI-DETACHED DWELLINGS AND 150mm DIA. CONNECTIONS FOR ALL OTHERS, AND ARE TO BE REPLACED FROM THE NEW SEWER MAIN TO EXISTING LATERALS AT THE PROPERTY LINE.
 - UNLESS OTHERWISE NOTED, ALL THE EXISTING SANITARY MANHOLES ARE TO BE EITHER REMOVED OR BROKEN DOWN 1.0m BELOW ROAD GRADE AND BACKFILLED WITH GRANULAR 'B' WITH COMPLETE RESTORATION. FRAMES AND COVERS ARE TO BE SALVAGED AND RETURNED TO THE REGIONAL STORES, 2316 SOUTH SERVICE ROAD, OAKVILLE.
 - WATERMAIN MATERIAL IS TO BE EITHER DUCTILE IRON PRESSURE CLASS 350 AS PER AWWA C-150 OR PVC SDR-18 CL-150 AS PER AWWA C-900.
 - UNLESS OTHERWISE NOTED, ALL EXISTING WATER SERVICES ARE TO BE REPLACED WITH A MIN. 19mm DIA. COPPER FOR RESIDENTIAL DWELLINGS AND 25mm DIA. COPPER FOR INDUSTRIAL AND COMMERCIAL PREMISES AS PER OPSD 1104.010. UNLESS OTHERWISE NOTED, SERVICES ARE TO BE REPLACED FROM THE MAIN TO THE PROPERTY LINE WITH A NEW CURB STOP AND SERVICE BOX AT THE PROPERTY LINE.
 - THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY CAPS, PLUGS AND BLOW OFFS REQUIRED FOR TESTING THE NEW WATERMAIN.
 - MAXIMUM ALLOWABLE PIPE JOINT DEFLECTION OF THE WATERMAIN SHALL BE 70% OF THE MANUFACTURER'S SPECIFICATIONS. PIPE BARREL DEFLECTION IS STRICTLY PROHIBITED.
 - CORROSION PROTECTION IS REQUIRED FOR ALL METALLIC PIPE, VALVES, FITTINGS SERVICES AND HYDRANTS. CATHODIC PROTECTION (ZINC ANODE) AS PER THE DETAILS IN THE REGIONAL DESIGN SPECIFICATIONS OR 8 MIL MEDIUM DENSITY POLYETHYLENE ENCASEMENT AS PER AWWA C-105 SHALL BE USED.
 - AFTER REMOVING VALVE BOXES AND HYDRANTS, BACKFILL WITH COMPACTED GRANULAR 'A'. WHERE EXISTING VALVE CHAMBERS ARE TO BE ABANDONED ALL VALVES WITHIN THE CHAMBER ARE TO BE LEFT IN PLACE AND THE CHAMBER IS TO BE BROKEN DOWN TO 1.0m BELOW FINAL GRADE AND BACKFILLED WITH NON-SHRINK BACKFILL SUBGRADE. THE AFFECTED AREA SHALL BE COMPLETELY RESTORED. ALL HYDRANTS SHOWN FOR REMOVAL SHALL BE RETURNED TO REGIONAL STORES AT 2316 SOUTH SERVICE ROAD, OAKVILLE, UNLESS OTHERWISE NOTED. ALL VALVES WHICH ARE SHOWN FOR REMOVAL SHALL BE DISPOSED OF BY CONTRACTOR.
 - EXISTING WATERMAIN IS TO BE EITHER REMOVED OR PLUGGED AND ABANDONED AS REQUIRED.
 - HYDRANTS ARE TO BE INSTALLED SUCH THAT THE LOWER ROD/STEM LENGTH SHALL NOT EXCEED 1.7m MEASURED FROM THE BREAK-OFF FLANGE.
 - REGIONAL MUNICIPALITY OF HALTON APPROVED MECHANICAL RESTRAINTS ARE TO BE USED ON ALL STANDARD BENDS, VALVES, FITTINGS AND HYDRANTS. REFER TO TABLE.



ELEVATIONS	103.40	103.40	103.36	103.31	103.26	103.22	103.16	103.10	103.03	102.98	102.94	102.88	102.81	102.74	102.70	102.66	102.62	102.56	102.50	102.44	102.38	102.32	102.26	102.20	102.14	102.08	102.02	101.96	ELEVATIONS	
WATERMAIN INVERTS																														WATERMAIN INVERTS
SANITARY INVERTS																														SANITARY INVERTS
CHAINAGE	0+100	0+120	0+140	0+160	0+180	0+200	0+207.09	0+220	0+240	0+260	0+280	0+294	0+300	0+320	0+339	0+360													CHAINAGE	

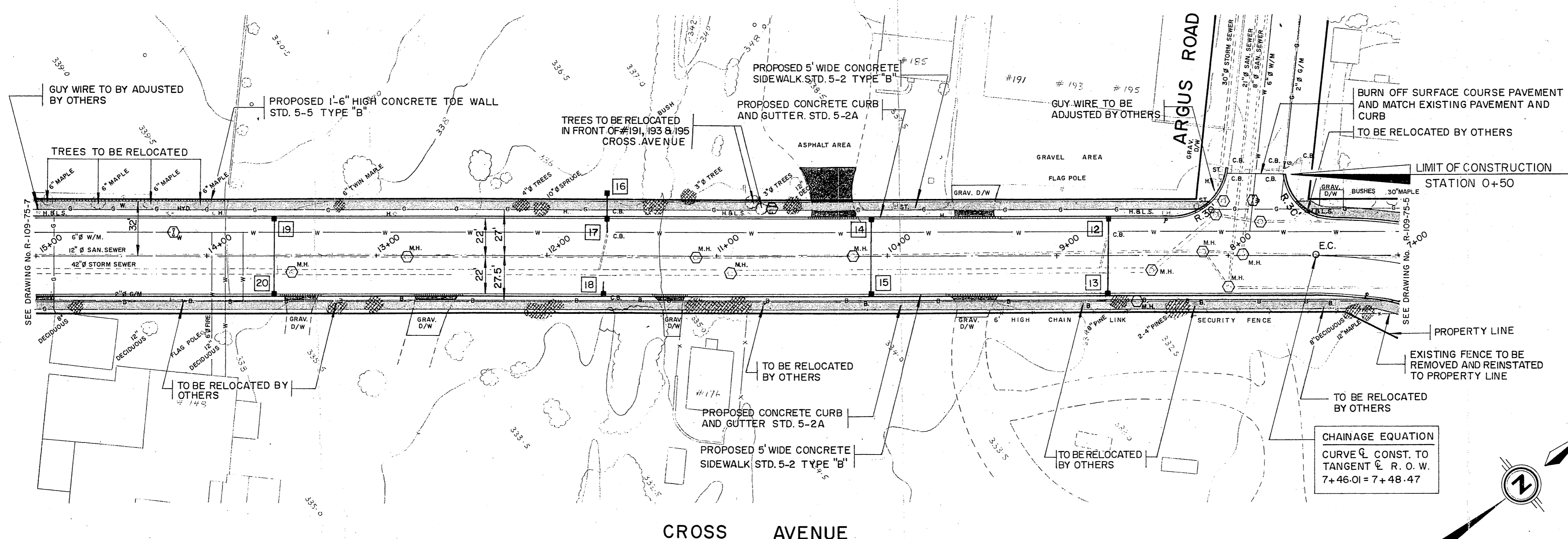
JULY/05 D.C. AS CONSTRUCTED - PLAN ONLY	
No	Date By REVISIONS MANU CAD
Design	BK Ch'kd Date
Drawn	DC Ch'kd SEPTEMBER 2001
Scale: Horiz. 1:500 Vert. 1:50	
APPROVALS	
Municipal	Field Notes
Regional	Stamp
Director, Engineering Services	
Manager, Design Services	

Halton

WATERMAIN AND WASTEWATER MAIN REPLACEMENT ON CROSS AVENUE OAKVILLE FROM 60m± E. OF LYONS LN. TO 45m± W. OF ARGUS ROAD

Consultant File No: R O- 13130

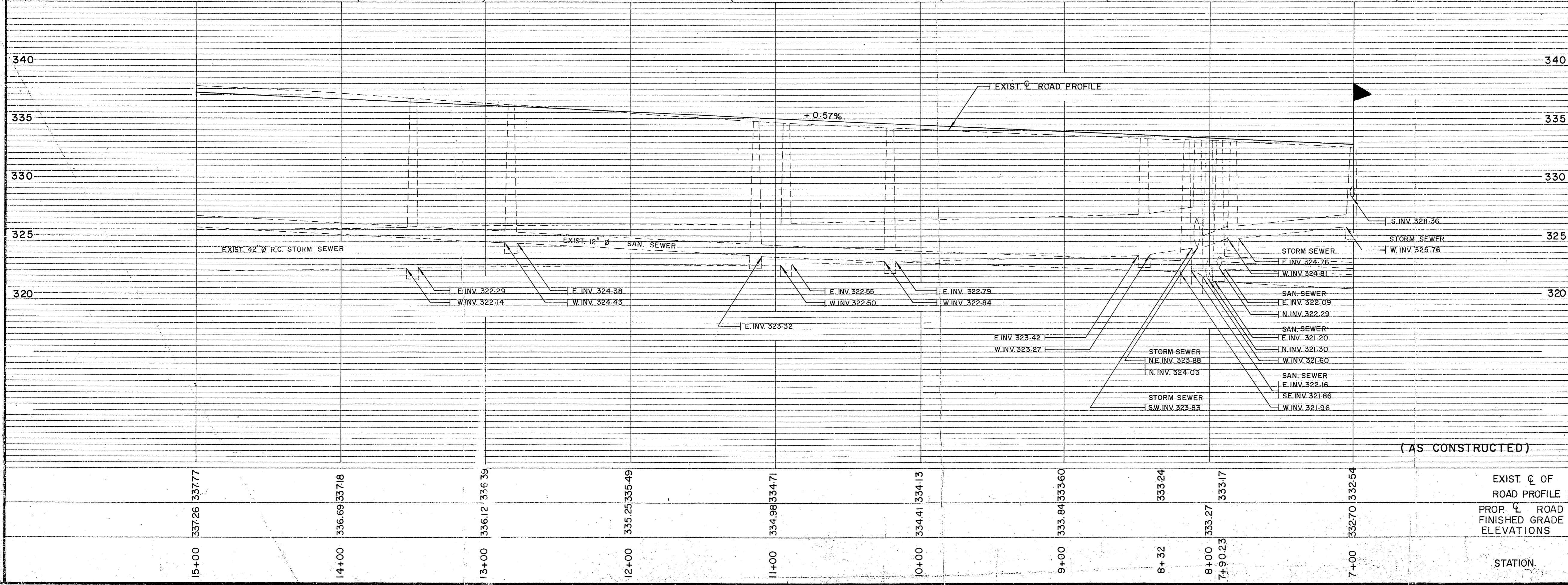
CONTRACT No: WS-1782B-01 Drawing No: SHEET 2 OF 2



CATCHBASIN DATA - SYMBOL <input type="checkbox"/>					
NUMBER	STATION	OFFSET FROM ϕ	STRUCTURE	COVER	COMMENTS
12	8+71	IN CURB	2-1B	2-5B	
13	8+71	IN CURB	2-1B	2-5B	
14	10+10	IN CURB	2-1B	2-5B	
15	10+10	IN CURB	2-1B	2-5B	
16	11+65	36' RIGHT	2-1B	2-5	ϕ DITCH
17	11+65	IN CURB	2-1B	2-5B	
18	11+67	IN CURB	2-1B	2-5B	
19	13+60	IN CURB	2-1B	2-5B	
20	13+60	IN CURB	2-1B	2-5B	

- LEGEND**
- PROPOSED GRAVEL FOR DRIVEWAYS AND PARKING AREAS.
 - PROPOSED PAVEMENT FOR DRIVEWAYS, BOULEVARDS AND PARKING AREAS.
 - CONCRETE CURB ... WITH DROP CURB.
 - PROPOSED CONCRETE SIDEWALK.

- NOTES:**
- 1) ALL C.B. LEADS TO BE 12" ϕ E.S. CONCRETE PIPE AT 1% SLOPE UNLESS OTHERWISE SHOWN.
 - 2) C.B.M. - S.W. CORNER CONCRETE PAD AT FRONT ENTRANCE TO DUNCAN'S INDUSTRIAL HARDWARE - ELEV. 337.04.
 - 3) CATCHBASIN OFFSETS ARE TO TOP OF BACK OF GRATE.
 - 4) ADJUST EXISTING M.H. FRAME AND COVERS AND WATER VALVES TO SUIT FINISHED GRADE - SYMBOL



GENERAL NOTES

- ALL DRIVEWAYS GRAVEL UNLESS OTHERWISE NOTED.
- ALL SERVICE LOCATIONS ARE APPROXIMATE AND MUST BE LOCATED ACCURATELY IN THE FIELD.
- GAS AS SHOWN
- WATER AS SHOWN
- BELL U/G AS SHOWN

LEGEND

- DENOTES BENCH MARK ELEVATION
- STORM SEWER & MANHOLE
- SANITARY SEWER & MANHOLE
- WATERMAIN & VALVE
- GASMAIN & VALVE
- BELL TELEPHONE BURIED CABLE
- HYDRO POLE & GUY ANCHOR
- HYDRANT

TOWN OF OAKVILLE
DEPARTMENT OF PUBLIC WORKS

PROPOSED RECONSTRUCTION ON
CROSS AVENUE
FROM STATION 7+00
TO STATION 15+00

FLD. BK. No. J.A. - I

DATE: JULY 1975

DRAWN BY: D.A.

CH'KD BY: L.D. McL.

FILE NO: R-109-75

HOR: 1" = 40'

VERT: 1" = 5'

DESIGN BY: R.G.H.

SURVEY BY: J.A./T.Q.

INSPECTOR:

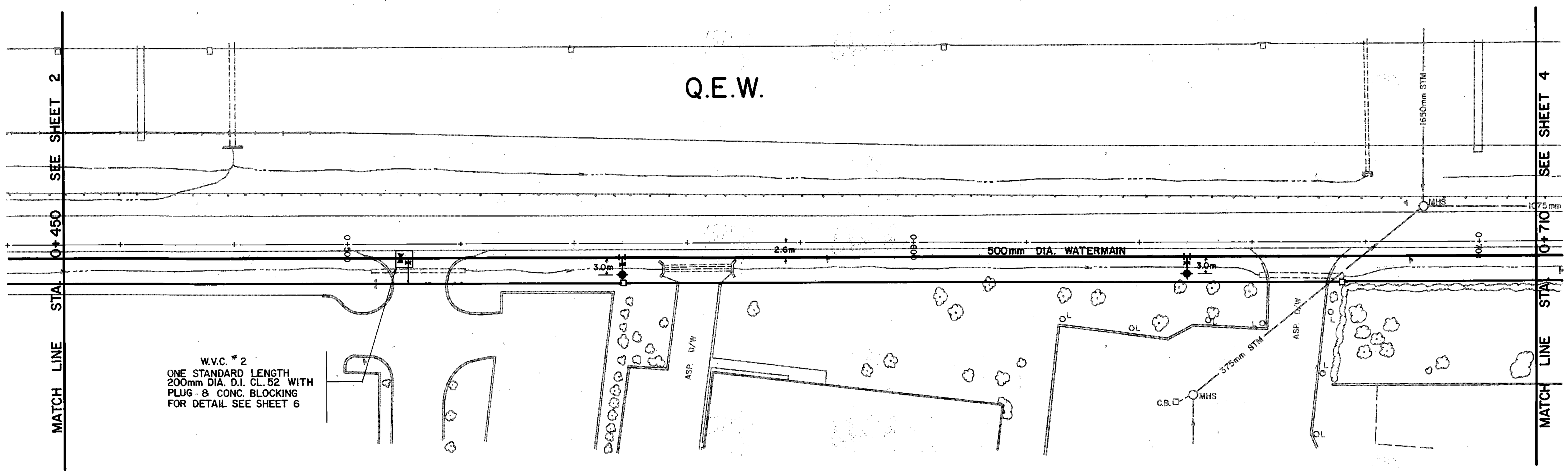
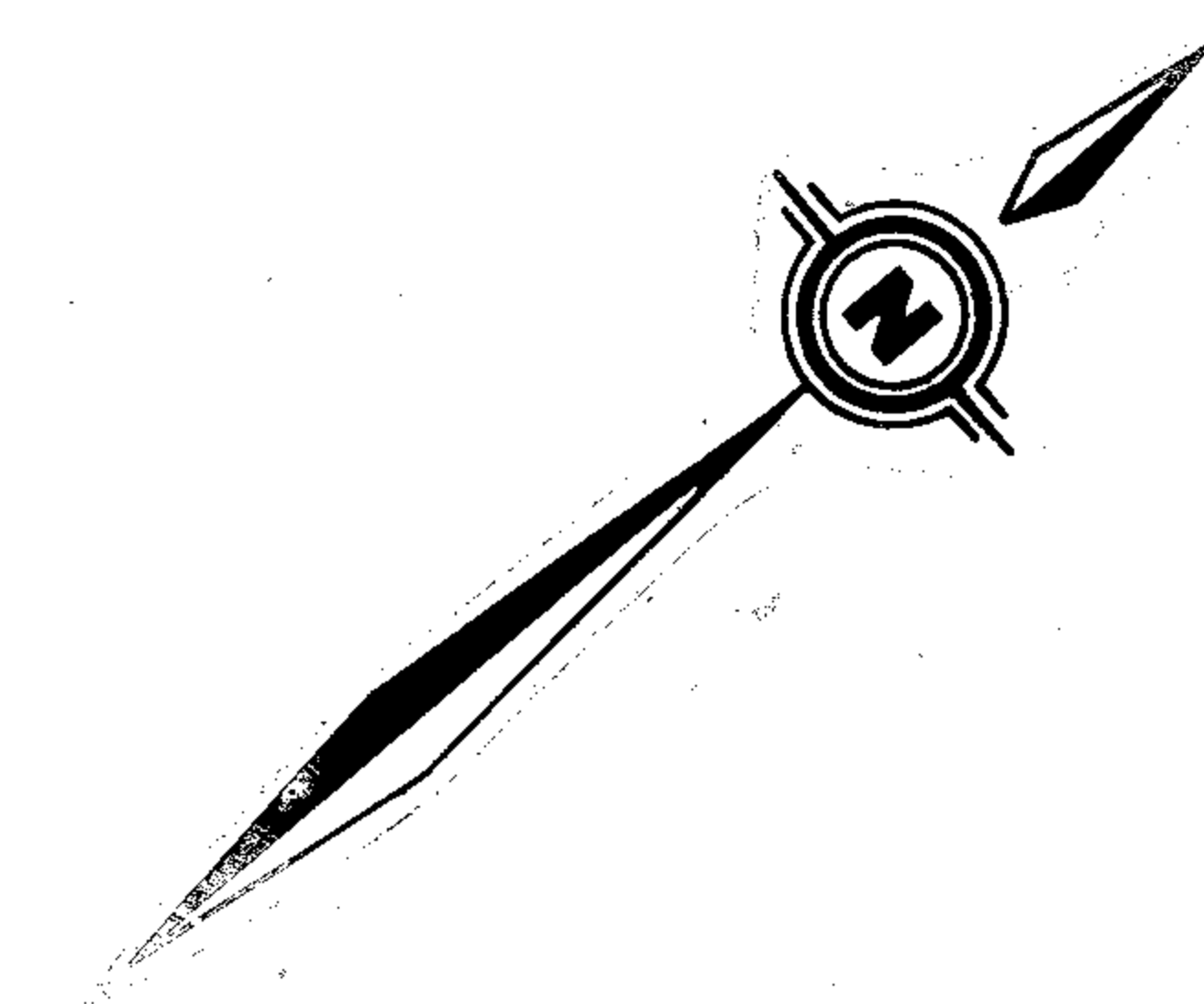
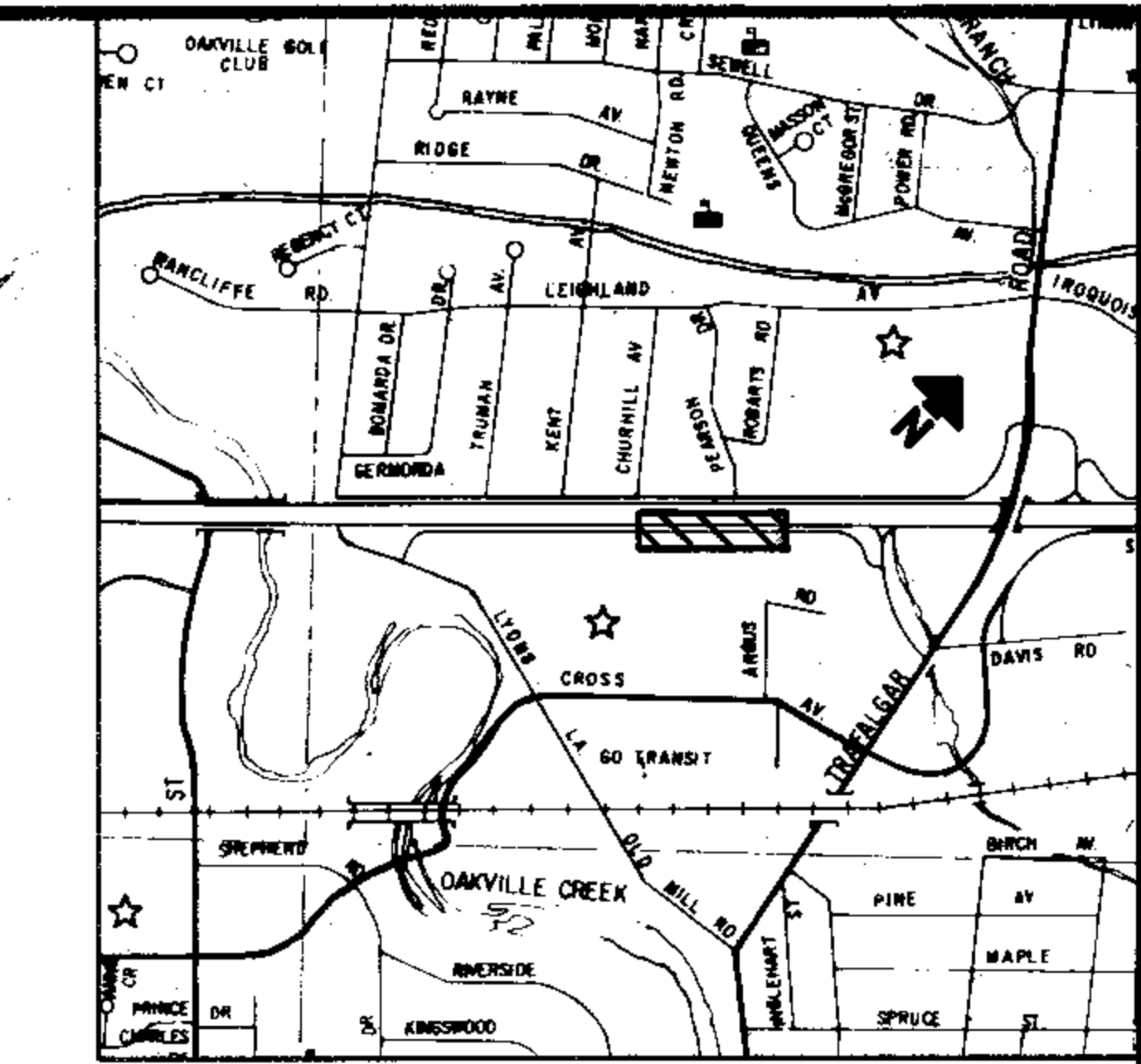
CONTRACTOR:

PLAN No. R-109-75-6

SHEET 6 OF 17

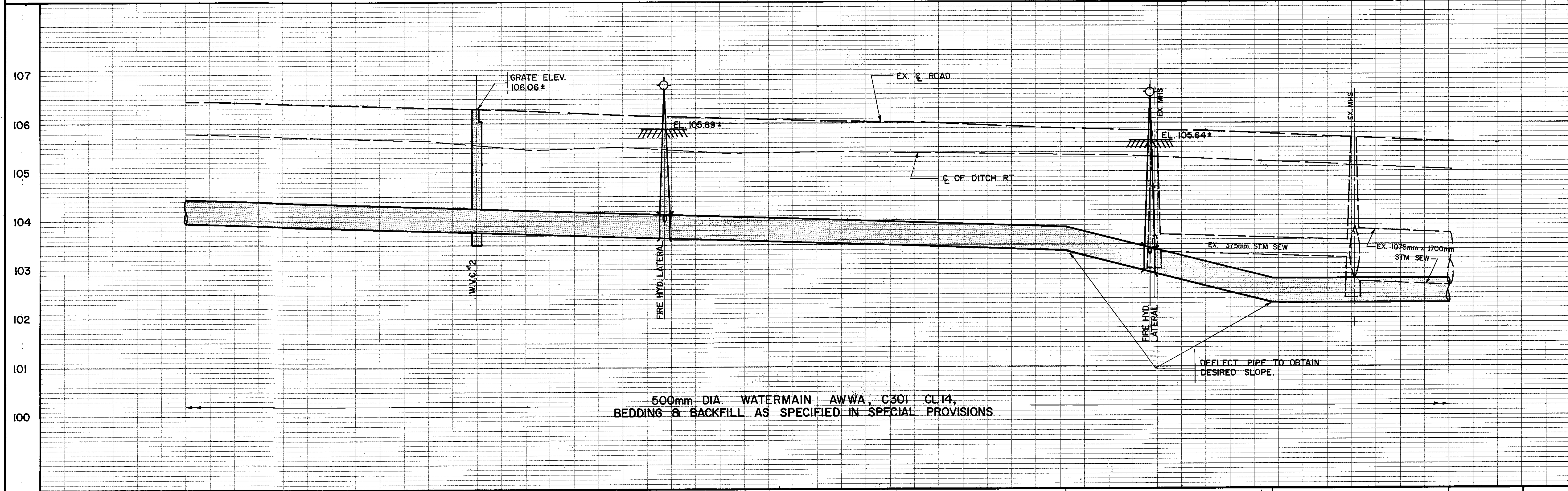
DATE	REVISIONS	BY
SEPT. 26, 1975	RELOCATE TREES IN FRONT #191, 193 & 195 CROSS AVENUE.	R. G. H.
OCT. 23, 1975	REVISED SIDEWALK LOCATION ON SOUTH SIDE OF CROSS AVENUE.	R. G. H.

CROSS AVE



SOUTH SERVICE ROAD

WATERMAIN DATA				
ITEM	STATION	CONSTR. OFFSET	INVERT ELEV.	REMARKS
W.V.C. #2	0+510.522	2.6m RT	103.763	FOR DETAIL SEE SHEET 6
FIRE HYD. & SEC. G.V.	0+548.334	2.6m RT	103.640	BRANCH TANGENT TOP
FIRE HYD. & SEC. G.V.	0+648.333	2.6m RT	102.944	BRANCH TANGENT TOP



REVISIONS			
No	Date	M.P.S. By	AS CONSTRUCTED
1	22/02/82	M.P.S.	AS CONSTRUCTED

APPROVALS			
Municipal	Regional	Director of Public Works	Manager of Design
		<i>[Signature]</i> 81-01-26	<i>[Signature]</i> 81-01-23

STATION	CHAINAGE	WATERMAIN INVERTS
0+450	183.100m @ -0.34%	
0+460		
0+480		
0+500		
0+508.342		
0+512.536		
0+520		
0+540		
0+560	120.732m @ -0.33%	
0+580		
0+600		
0+620		
0+633.267		
0+640		
0+660	43.944m @ -2.43%	
0+677.198		
0+680		
0+700	164.188m @ 0.00%	
0+710		

MUNICIPALITY

Halton

THE REGIONAL MUNICIPALITY OF

PUBLIC WORKS DEPARTMENT

TITLE

500mm DIA. WATERMAIN
SOUTH SERVICE ROAD
TOWN OF OAKVILLE
STA. 0+450 TO STA. 0+710

MUNICIPAL DRAWING NO

REGIONAL DRAWING NO

0-4220

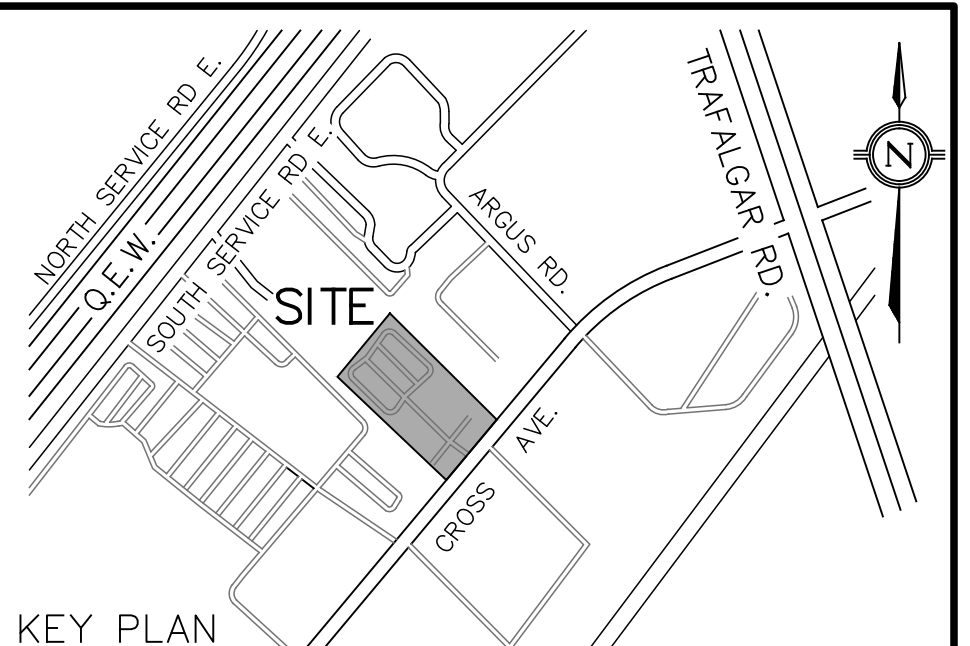
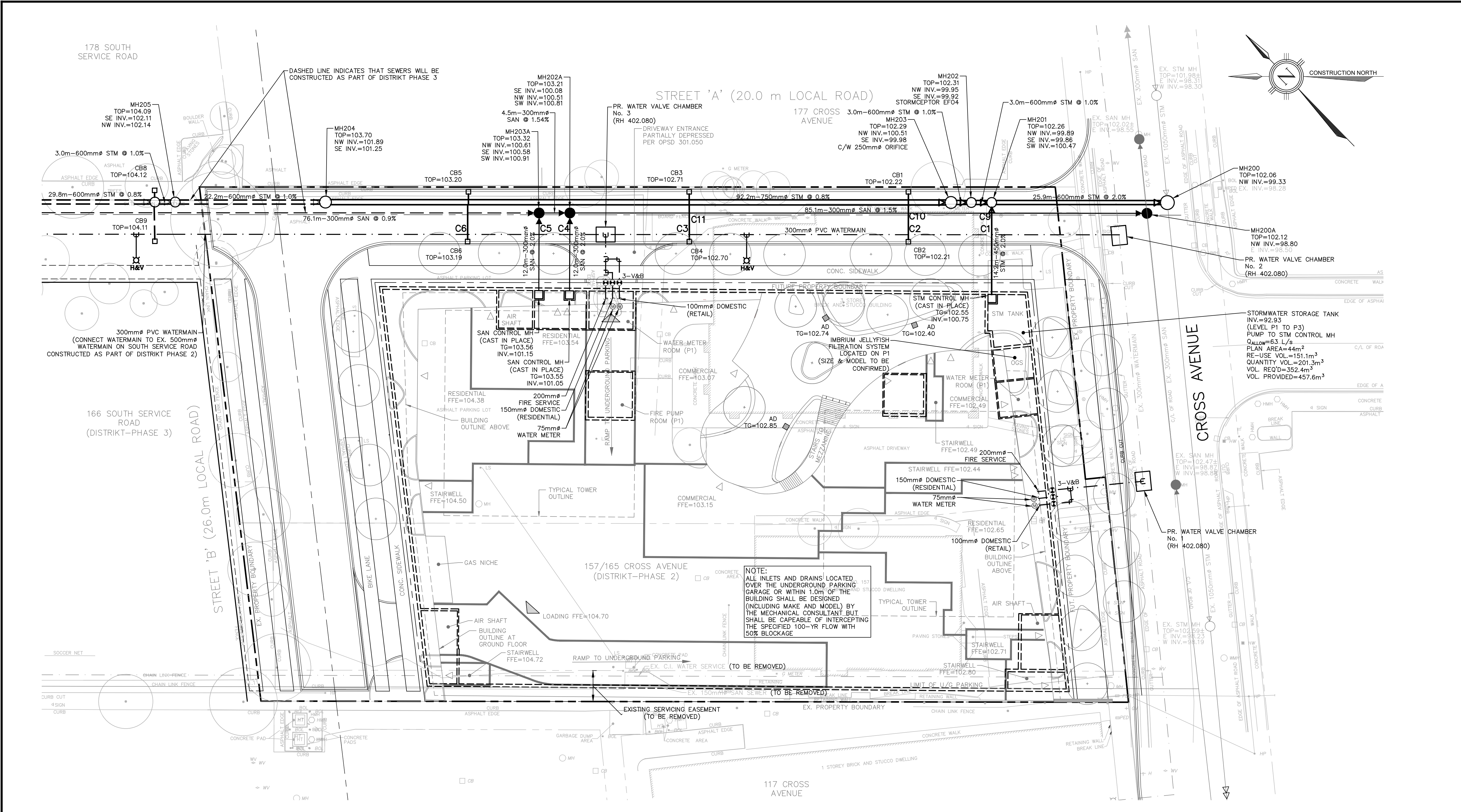
CONTRACT NO

W-570-81

SHEET 3 OF 6

0-4220

APPENDIX 'G'



LEGEND

- PROPOSED STORM MANHOLE
- PROPOSED STORM CATCHBASIN
- PROPOSED SANITARY MANHOLE
- ⊕ PROPOSED FIRE HYDRANT
- ⊕ PROPOSED VALVE & BOX
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- - - PROPERTY BOUNDARY
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATERMAIN
- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- PROPOSED AREA DRAIN (300mm x 300mm)
- ⊕ CATCHBASIN WITH CB SHIELD
- ⊕ PROPOSED WATER METER

2	2024/10/04	AJP	TOC DEVELOPMENT SUBMISSION
1	2024/02/28	AJP/ZI	ISSUED FOR ZBA/OBA
NO.	DATE	BY/DRAWN	REVISIONS

BENCHMARK
 ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE TOWN OF OAKVILLE BENCHMARKS: No. 236 ELEVATION=159.311m No. 258 ELEVATION=185.692m

LOCAL BENCHMARK
 CUT CROSS LOCATED ON CONCRETE WALK NEXT TO PAVING STONES LEADING TO THE BUILDING AT 165 CROSS AVE, AS SHOWN ON THE FACE OF PLAN. ELEVATION=102.73m

NOTE
 THE SURVEY WAS COMPLETED ON THE 13TH DAY OF JUNE, 2023 BY J.D. BARNES LIMITED, ONTARIO LAND SURVEYORS, REFERENCE No.: 21-30-700-02-A.

NOTE: REFER TO DWG. N1 FOR STANDARD NOTES

DESIGNED BY

APPROVED BY

CONSULTANT

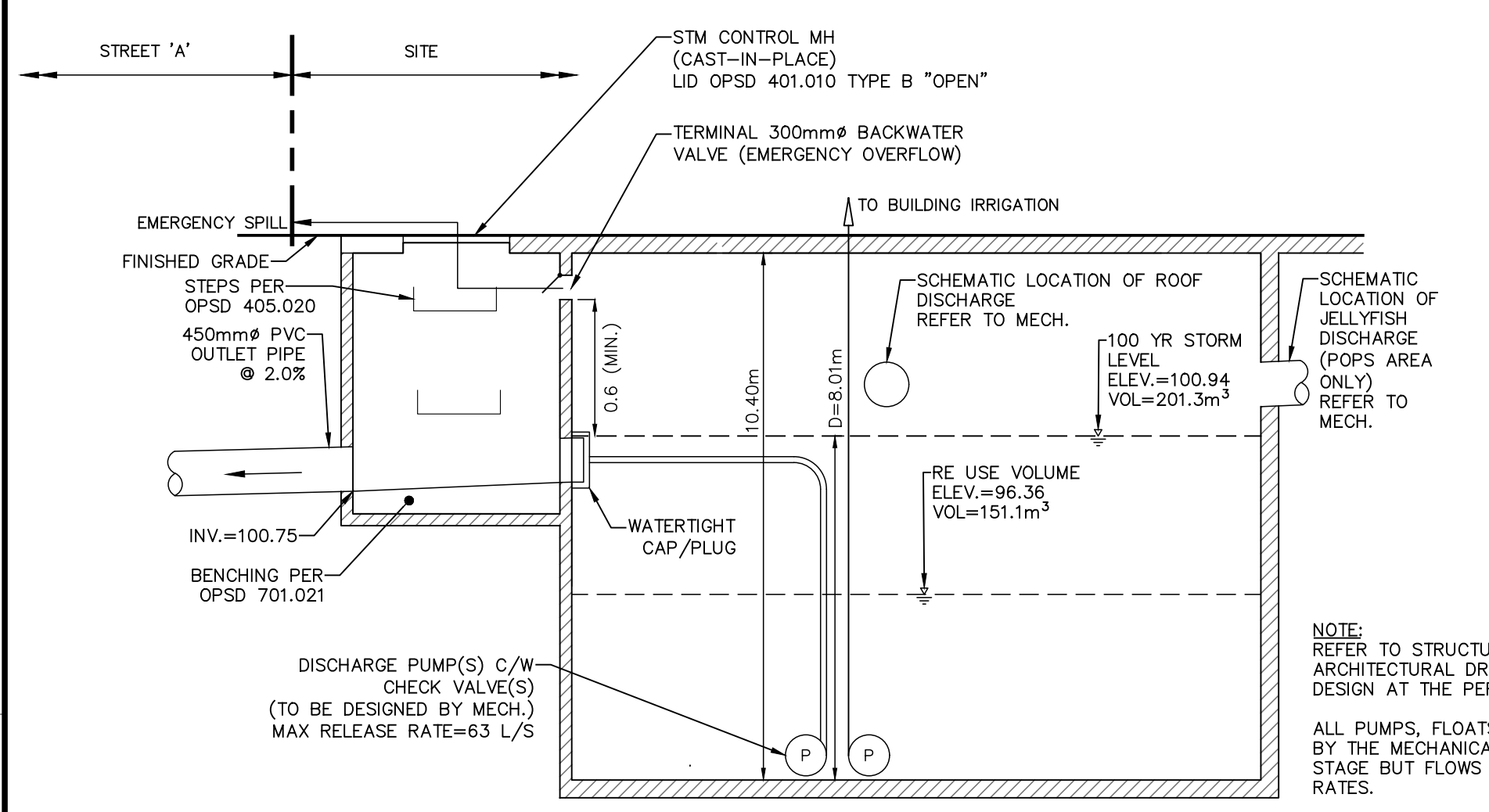
#1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
 www.trafalgareng.com

PROJECT TITLE
**DISTRIKT MDTOWN
 PROPOSED RESIDENTIAL CONDOMINIUM
 DEVELOPMENT
 DISTRIKT DEVELOPMENTS**

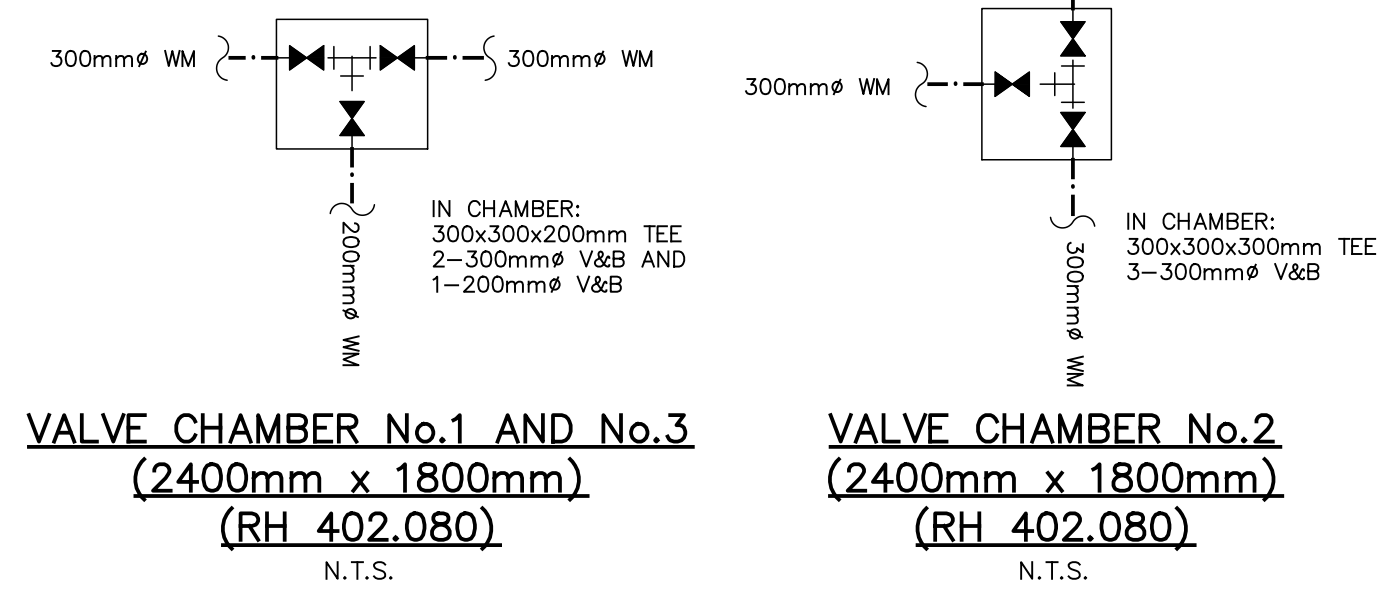
LOCATION
**157/165 CROSS AVENUE
 OAKVILLE, ONTARIO**

DRAWING TITLE
**PRELIMINARY SITE
 SERVICING PLAN
 (INTERIM)**

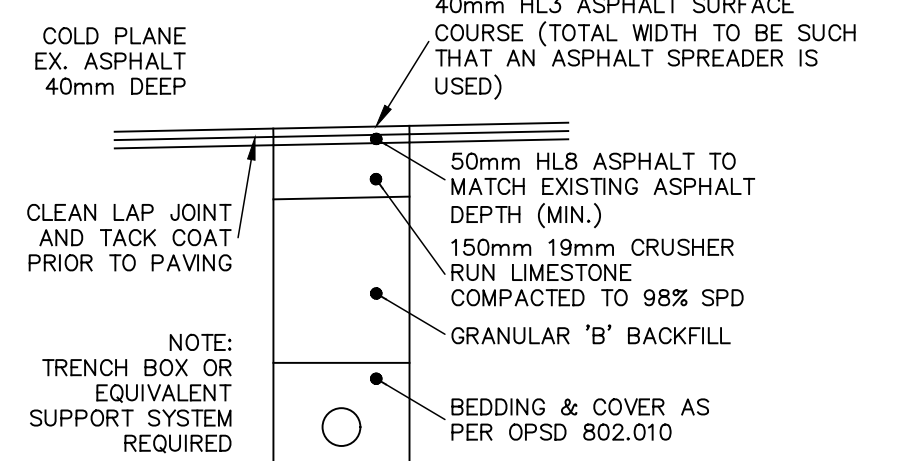
SCALE	1:300	DESIGN BY	AJP	PROJECT No.	1827
DRAWN BY	GL	CHECKED BY	JN	PLAN No.	S1
DATE	2023/09/20	SHEET	1 OF 1		



STORMWATER MANAGEMENT TANK SCHEMATIC
 N.T.S.



VALVE CHAMBER No.1 AND No.3 (2400mm x 1800mm) (RH 402.080) N.T.S.
VALVE CHAMBER No.2 (2400mm x 1800mm) (RH 402.080) N.T.S.

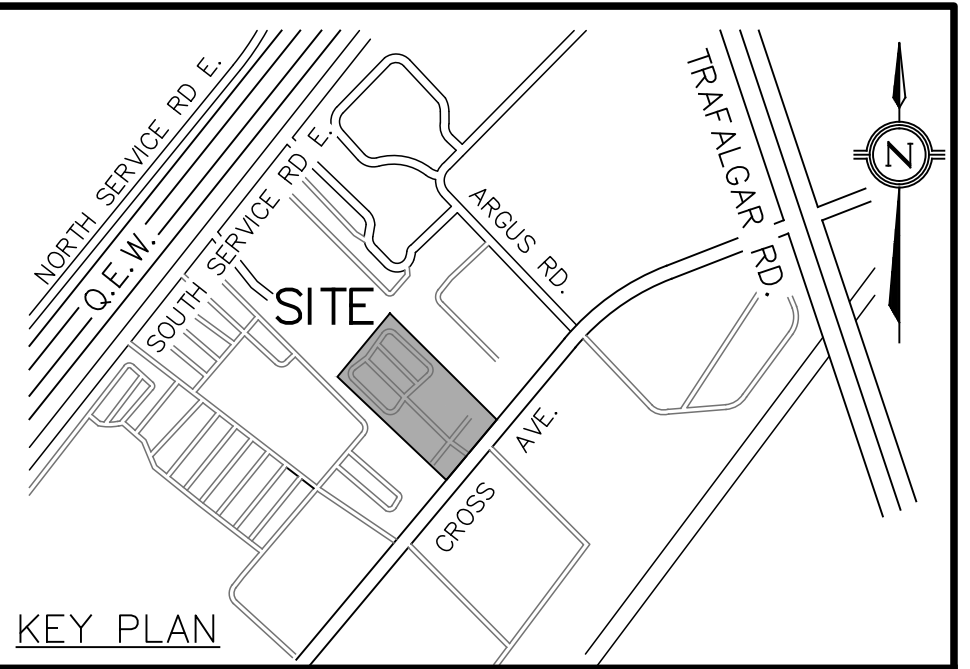
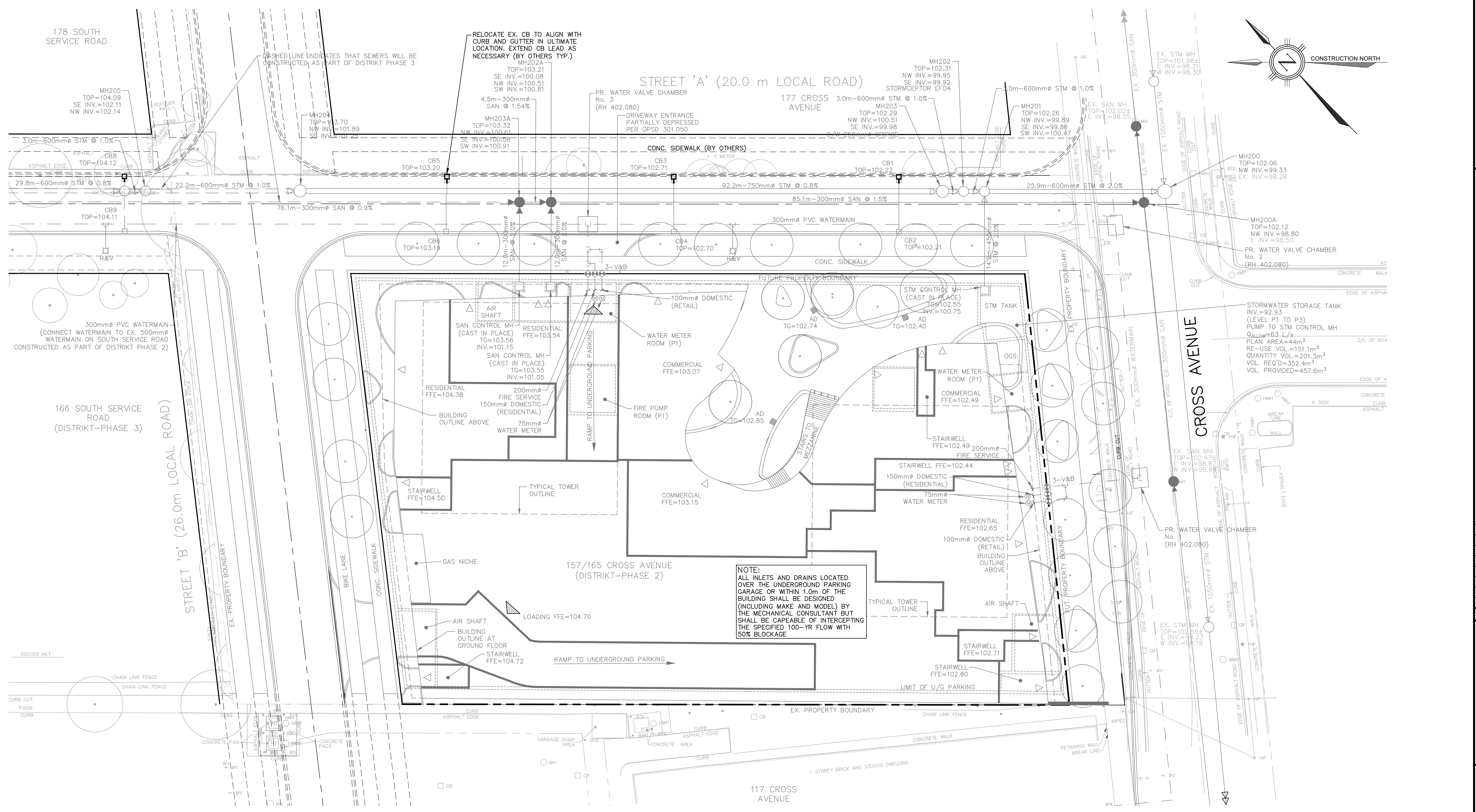


TYPICAL TRENCH RESTORATION
 N.T.S.

- NOTE:**
- PLACE HLB ASPHALT TO MATCH EX SURFACE.
 - IN FOLLOWING CONSTRUCTION SEASON GRIND ASPHALT 40mm DEEP AND PLACE 40mm HL3 ASPHALT.

CROSSING	
C1	STM INV.=100.57 WM OBV.=100.07 Δ =0.50m
C2	CB LEAD INV.=100.96 SAN OBV.=100.46 Δ =0.50m
C3	CB LEAD INV.=101.22 SAN OBV.=100.72 Δ =0.50m
C4	SAN INV.=100.88 WM OBV.=100.38 Δ =0.50m
C5	SAN INV.=100.98 WM OBV.=100.48 Δ =0.50m
C6	CB LEAD INV.=101.48 WM OBV.=100.98 Δ =0.50m
C7	STM INV.=100.49 SAN OBV.=99.38 Δ =1.11m

FILENAME: P:\1827 Distrikt Midtown 157 Cross\04-CAD\03-Site Plan\1827GS.dwg
 PLOT DATE: Oct 04, 2024 3:12pm



- LEGEND**
- PROPOSED STORM MANHOLE
 - PROPOSED STORM CATCHBASIN
 - ⊙ PROPOSED SANITARY MANHOLE
 - ⊗ PROPOSED FIRE HYDRANT
 - ⊕ PROPOSED VALVE & BOX
 - PROPOSED STORM SEWER
 - PROPOSED SANITARY SEWER
 - PROPOSED WATERMAIN
 - - - PROPERTY BOUNDARY
 - EXISTING STORM SEWER
 - EXISTING SANITARY SEWER
 - EXISTING WATERMAIN
 - EXISTING STORM MANHOLE
 - ⊙ EXISTING SANITARY MANHOLE
 - ▣ PROPOSED AREA DRAIN (300mm x 300mm)
 - CATCHBASIN WITH CB SHIELD
 - ⊕ PROPOSED WATER METER

2	2024/10/04	AJP	TOC DEVELOPMENT SUBMISSION
1	2024/02/28	AJP/ZI	ISSUED FOR ZBA/OBA
NO.	DATE	BY/DRAWN	REVISIONS
CAD FILE: 1827GS.dwg PLOT SCALE: 1:1 PLOT DATE: Oct 04, 2024			

BENCHMARK
 ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE TOWN OF OAKVILLE BENCHMARKS: No. 236 ELEVATION=159.311m, No. 258 ELEVATION=185.692m

LOCAL BENCHMARK
 CUT CROSS LOCATED ON CONCRETE WALK NEXT TO PAVING STONES LEADING TO THE BUILDING AT 165 CROSS AVE, AS SHOWN ON THE FACE OF PLAN. ELEVATION=102.73m

NOTE
 THE SURVEY WAS COMPLETED ON THE 13TH DAY OF JUNE, 2023 BY J.D. BARNES LIMITED, ONTARIO LAND SURVEYORS, REFERENCE No.: 21-30-700-02-A.

NOTE: REFER TO DWG. N1 FOR STANDARD NOTES

DESIGNED BY

APPROVED BY

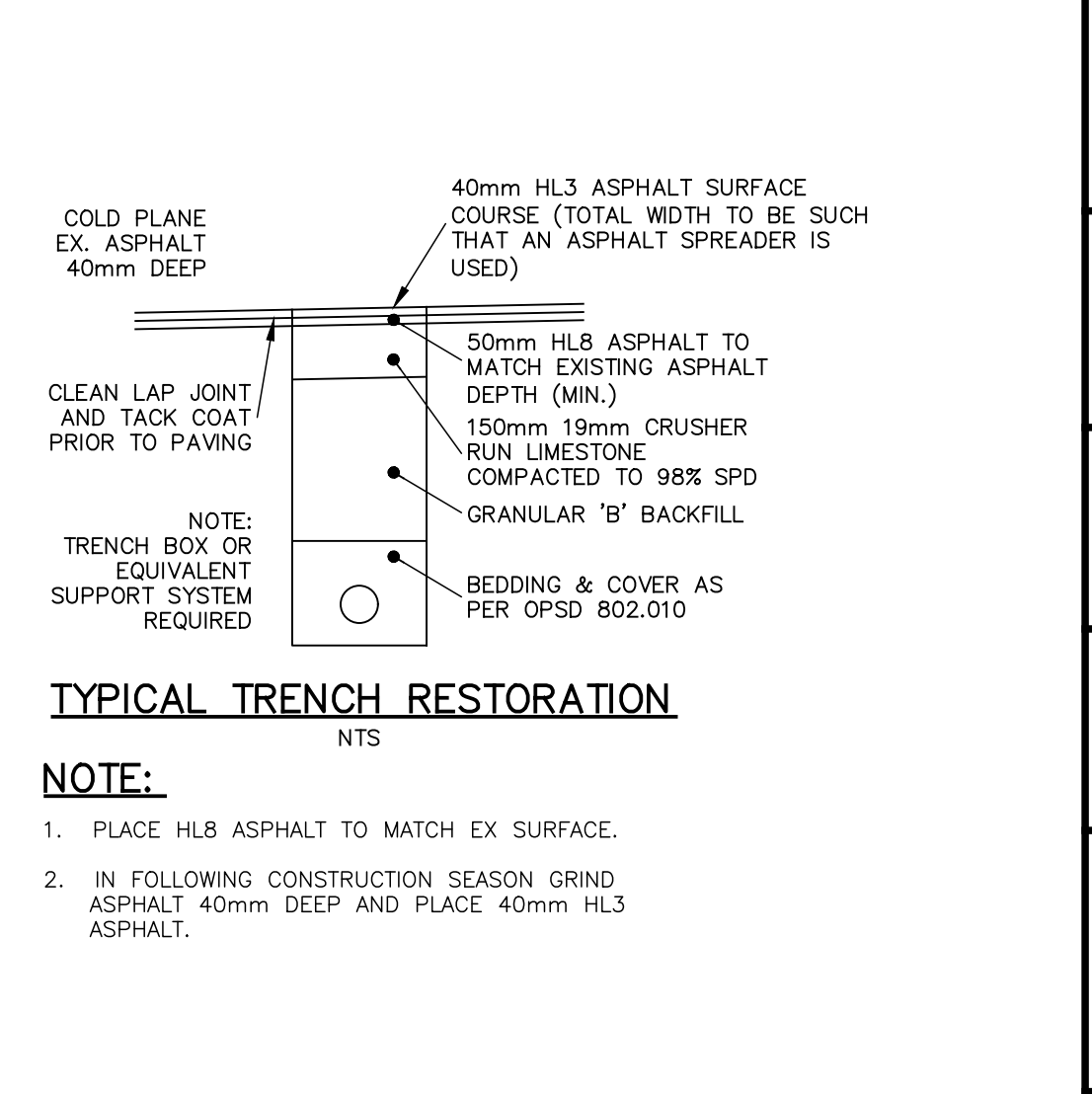
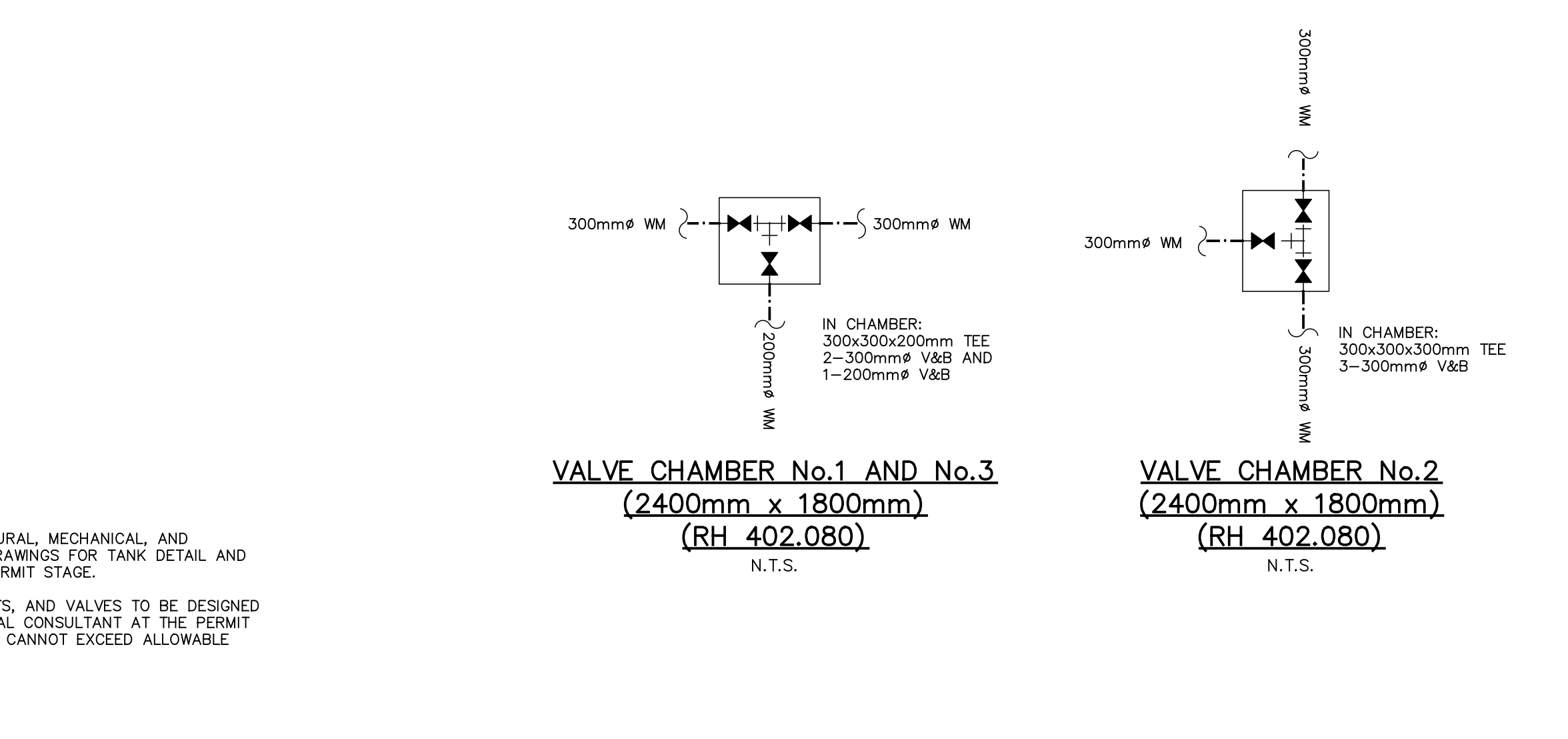
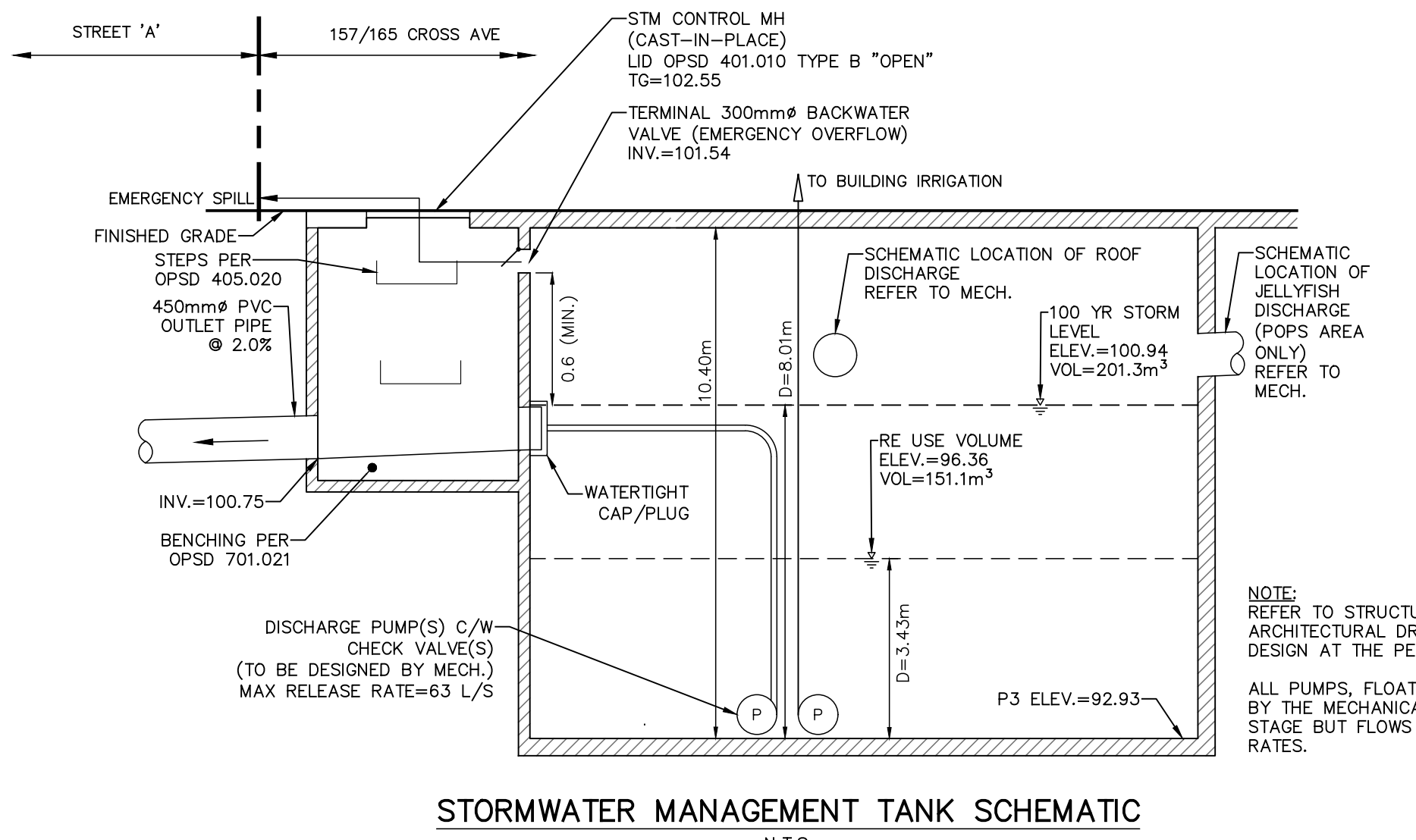
CONSULTANT

PROJECT TITLE: DISTRIKT MIDTOWN PROPOSED RESIDENTIAL CONDOMINIUM DEVELOPMENT DISTRIKT DEVELOPMENTS

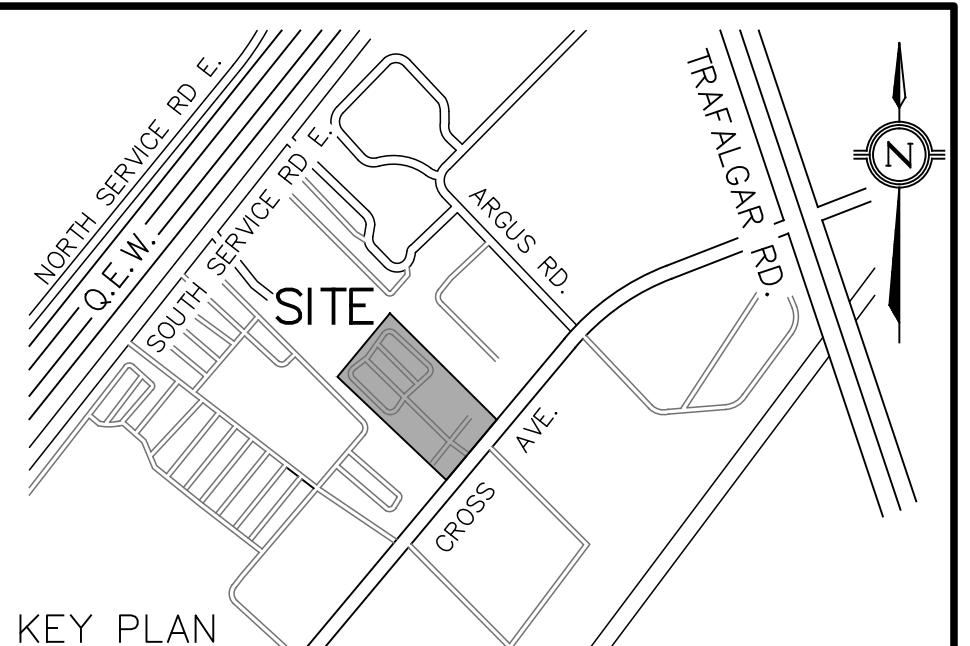
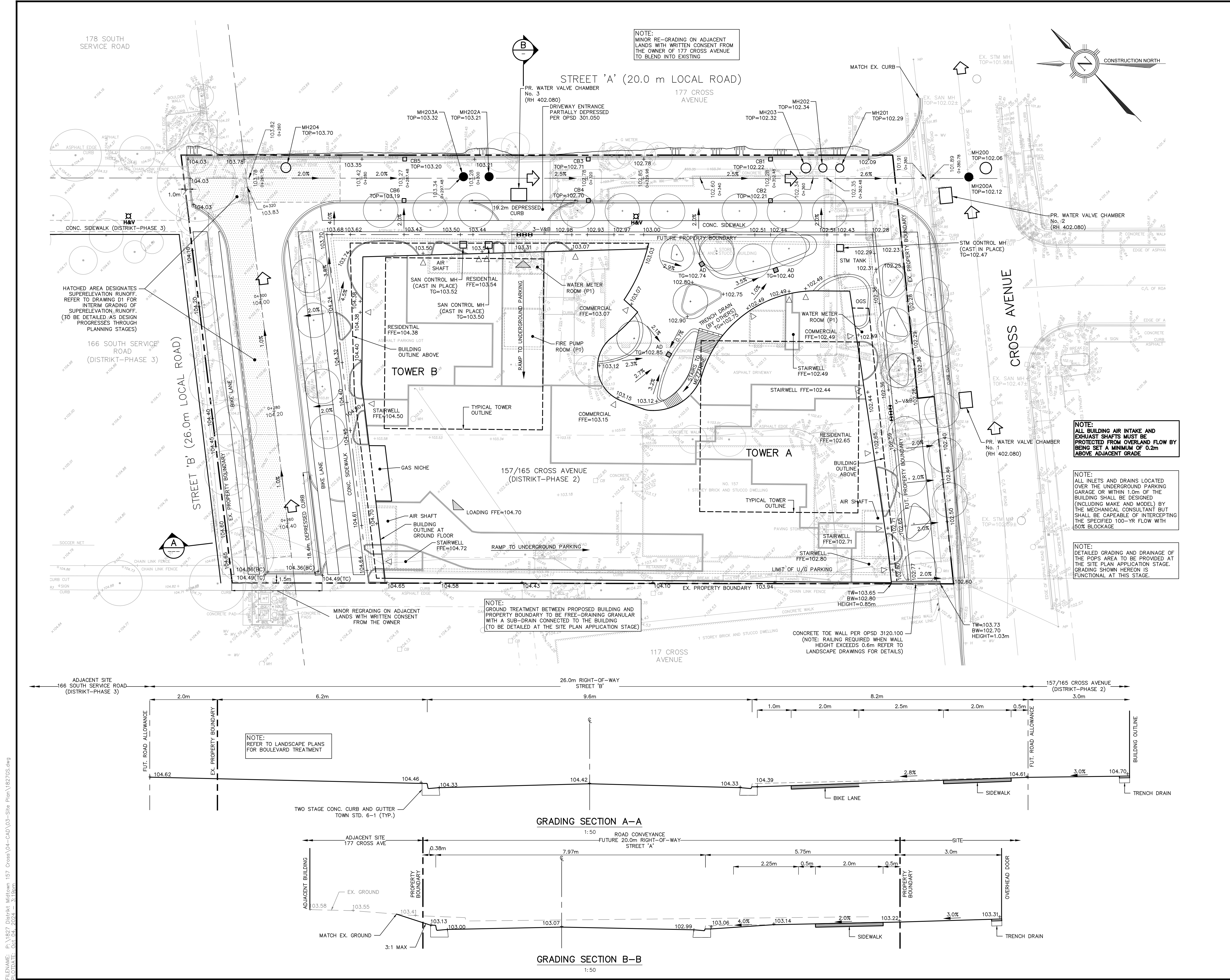
LOCATION: 157/165 CROSS AVENUE OAKVILLE, ONTARIO

DRAWING TITLE: PRELIMINARY SITE SERVICING PLAN (ULTIMATE)

SCALE	1:300	DESIGN BY	JN	PROJECT No.	1827
DRAWN BY	GL	CHECKED BY	JN	PLAN No.	
DATE	2023/09/20	SHEET	1 OF 1		S2



FILENAME: P:\1827 Distrikt Midtown 157 Cross\04-CAD\03-Site Plan\1827GS.dwg
 PLOT DATE: Oct 04, 2024 3:18pm



LEGEND

- ▣ PROPOSED AREA DRAIN (300mm x 300mm)
- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- ▣ PROPOSED STORM CATCHBASIN
- ▣ CATCHBASIN WITH CB SHIELD
- ⊕ PROPOSED FIRE HYDRANT
- ⊕ PROPOSED VALVE & BOX
- PROPERTY BOUNDARY
- +103.75 EXISTING ELEVATION
- +104.57 EXISTING ELEVATION TO REMAIN
- +104.57 PROPOSED FINISHED ELEVATION
- 2% PROPOSED DRAINAGE DIRECTION/SLOPE
- ➔ PROPOSED SWALE DRAINAGE DIRECTION/SLOPE
- ➔ PROPOSED OVERLAND FLOW DIRECTION
- ▲ PROPOSED SLOPE (MAX 3:1)
- ▲ PROPOSED BUILDING ENTRANCE
- ▲ PROPOSED OVERHEAD DOOR

2	2024/10/04	AJP	TOC DEVELOPMENT SUBMISSION
1	2024/02/28	AJP/ZI	ISSUED FOR ZBA/OBA
NO.	DATE	BY/DRAWN	REVISIONS

CAD FILE: 1827GS.dwg | PLOT SCALE: 1:1 | PLOT DATE: Oct 04, 2024

BENCHMARK
ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE TOWN OF OAKVILLE BENCHMARKS: No. 236 ELEVATION=159.311m No. 258 ELEVATION=185.692m

LOCAL BENCHMARK
CUT CROSS LOCATED ON CONCRETE WALK NEXT TO PAVING STONES LEADING TO THE BUILDING AT 165 CROSS AVE, AS SHOWN ON THE FACE OF PLAN. ELEVATION=102.73m

NOTE
THE SURVEY WAS COMPLETED ON THE 13TH DAY OF JUNE, 2023 BY J.D. BARNES LIMITED, ONTARIO LAND SURVEYORS, REFERENCE No.: 21-30-700-02-A.

DESIGNED BY

APPROVED BY

TRAFALGAR ENGINEERING
#1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
www.trafalgareng.com

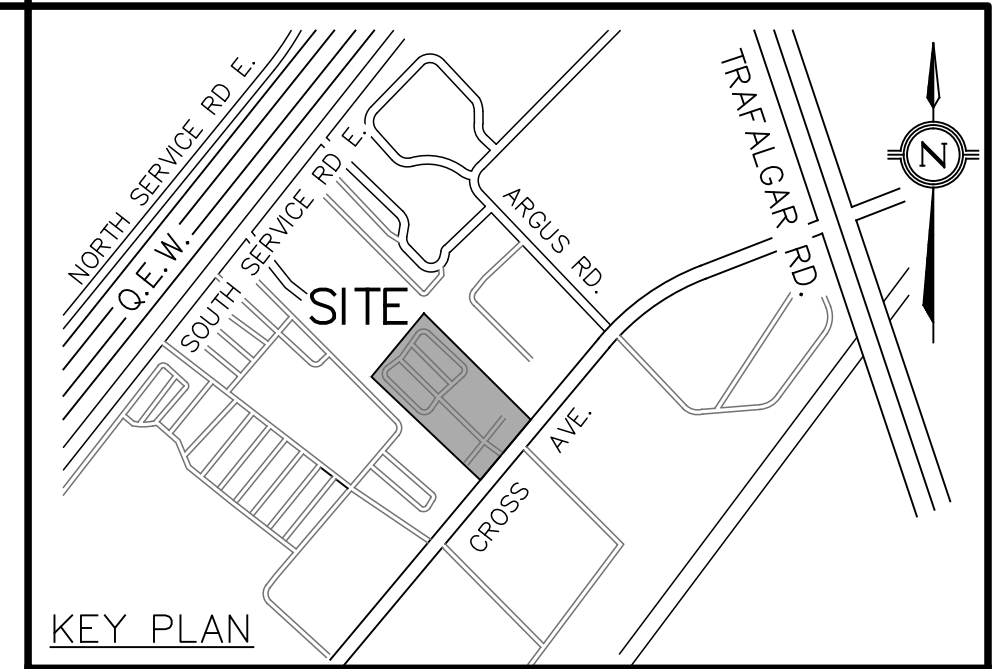
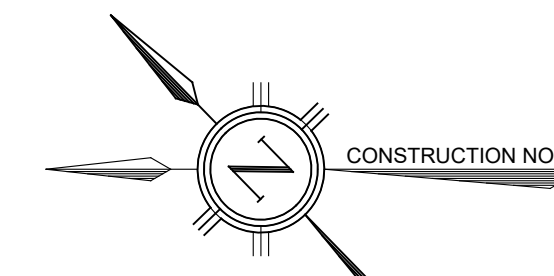
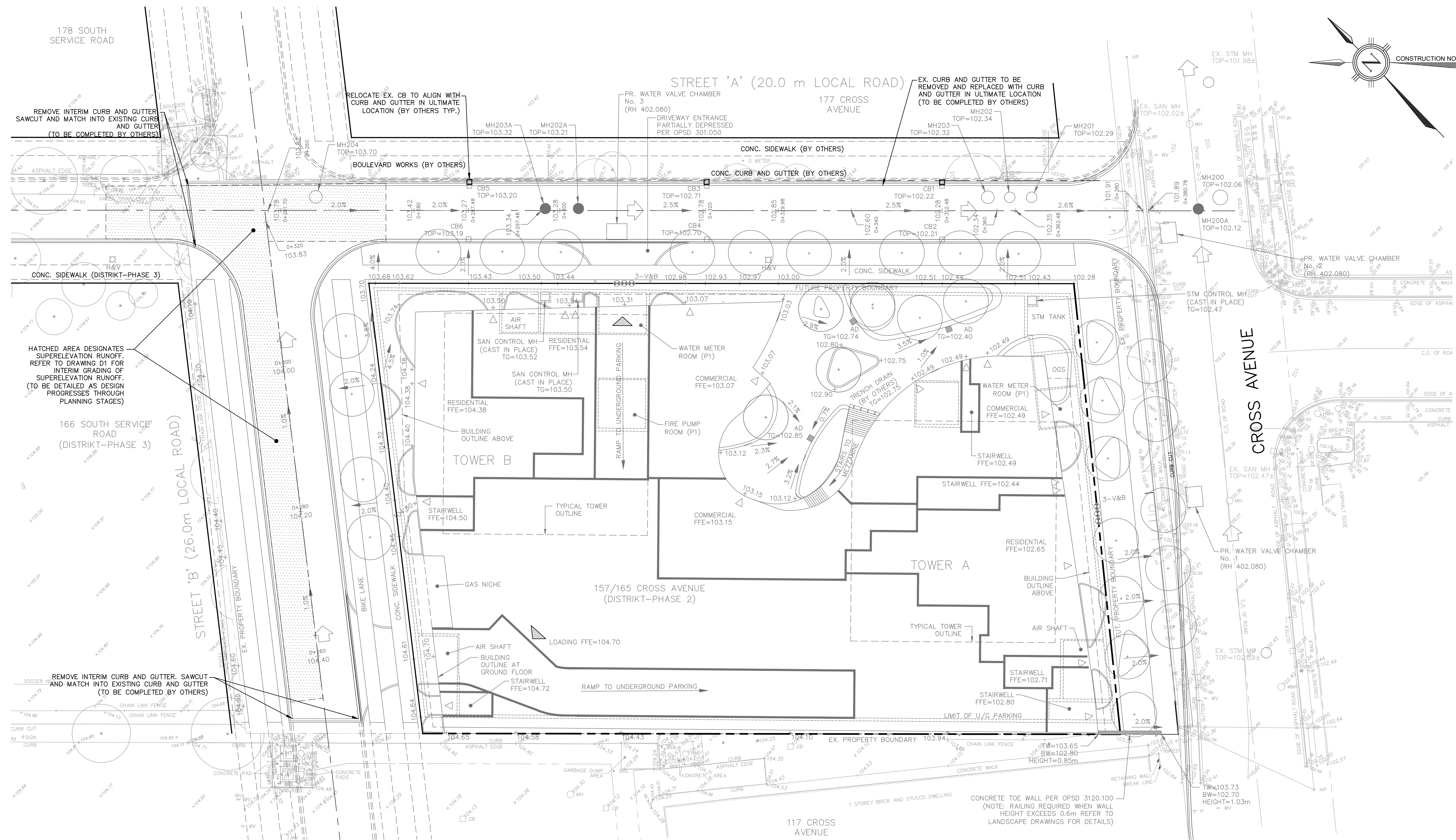
PROJECT TITLE
DISTRIKT MIDTOWN
PROPOSED RESIDENTIAL CONDOMINIUM
DEVELOPMENT
DISTRIKT DEVELOPMENTS

LOCATION
157/165 CROSS AVENUE
OAKVILLE, ONTARIO

DRAWING TITLE
PRELIMINARY
GRADING PLAN
(INTERIM)

SCALE	1:300	DESIGN BY	AJP	PROJECT No.	1827
DRAWN BY	ZI	CHECKED BY	JN	PLAN No.	G1
DATE	2023/09/20	SHEET	1 OF 1		

FILENAME: P:\1827 Distrikt Midtown 157 Cross\04-CAD\03-Site Plan\1827GS.dwg
PLOT DATE: Oct 04, 2024 3:15pm



LEGEND

- PROPOSED AREA DRAIN (300mm x 300mm)
- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- ▣ PROPOSED STORM CATCHBASIN
- CB* CATCHBASIN WITH CB SHIELD
- ⊕ PROPOSED FIRE HYDRANT
- ⊕ PROPOSED VALVE & BOX
- PROPERTY BOUNDARY
- +103.75 EXISTING ELEVATION
- +103.75 EXISTING ELEVATION TO REMAIN
- PROPOSED FINISHED ELEVATION
- ADJACENT DEVELOPMENT FINISHED ELEVATION
- 2% PROPOSED DRAINAGE DIRECTION/SLOPE
- PROPOSED SWALE DRAINAGE DIRECTION/SLOPE
- ➔ PROPOSED OVERLAND FLOW DIRECTION
- ||| PROPOSED SLOPE (MAX 3:1)

NO.	DATE	BY/DRAWN	REVISIONS
2	2024/10/04	AJP	TOC DEVELOPMENT SUBMISSION
1	2024/02/28	AJP/ZI	ISSUED FOR ZBA/OBA

CAD FILE: 1827GS.dwg | PLOT SCALE: 1:1 | PLOT DATE: Oct 04, 2024

BENCHMARK
ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE TOWN OF OAKVILLE BENCHMARKS: No. 236 ELEVATION=159.311m No. 258 ELEVATION=185.692m

LOCAL BENCHMARK
CUT CROSS LOCATED ON CONCRETE WALK NEXT TO PAVING STONES LEADING TO THE BUILDING AT 165 CROSS AVE, AS SHOWN ON THE FACE OF PLAN. ELEVATION=102.73m

NOTE
THE SURVEY WAS COMPLETED ON THE 13TH DAY OF JUNE, 2023 BY J.D. BARNES LIMITED, ONTARIO LAND SURVEYORS, REFERENCE No.: 21-30-700-02-A.

NOTE: REFER TO DWG. N1 FOR STANDARD NOTES

DESIGNED BY

APPROVED BY

CONSULTANT

#1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
www.trafalgareng.com

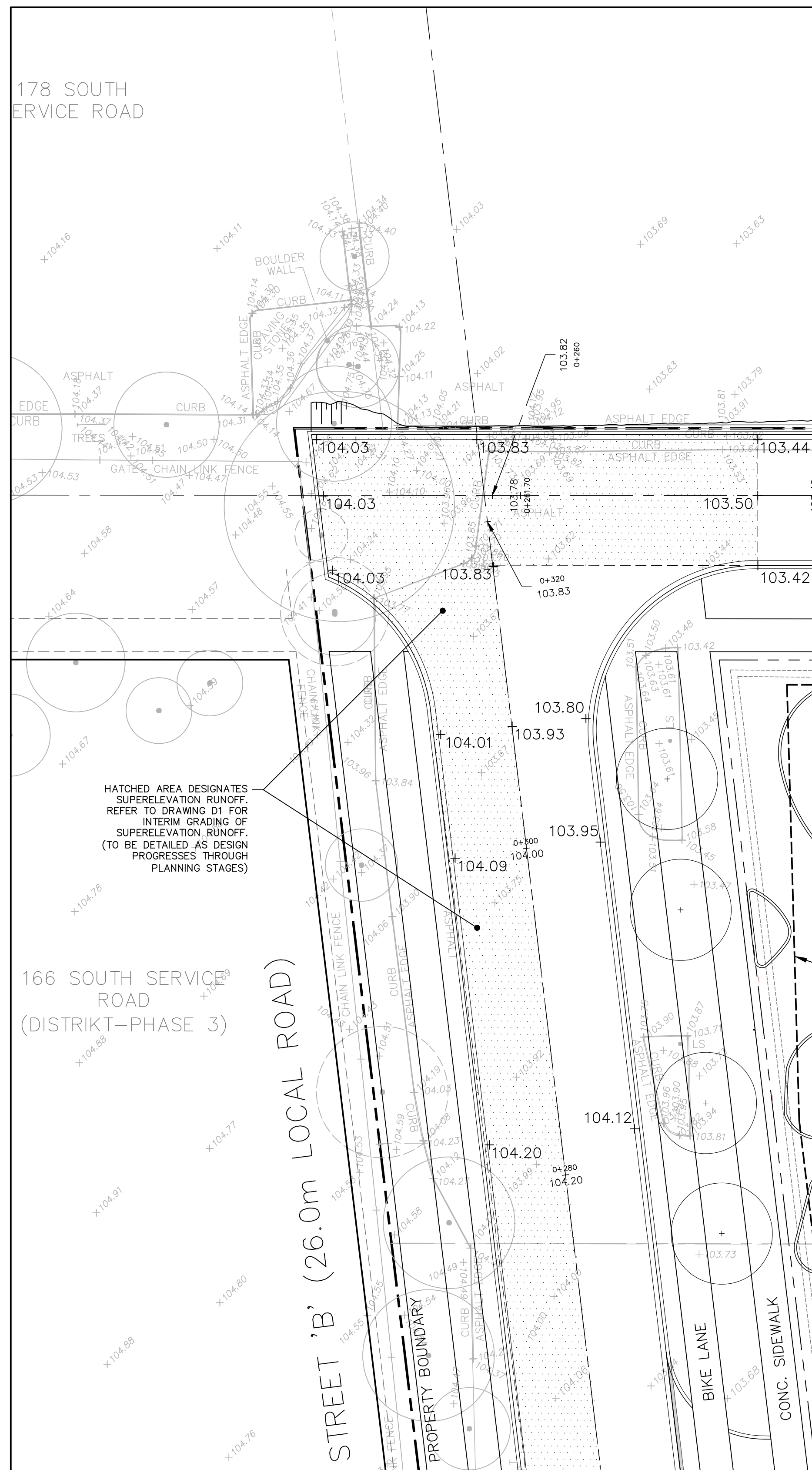
PROJECT TITLE
**DISTRIKT MIDTOWN
PROPOSED RESIDENTIAL CONDOMINIUM
DEVELOPMENT
DISTRIKT DEVELOPMENTS**

LOCATION
**157/165 CROSS AVENUE
OAKVILLE, ONTARIO**

DRAWING TITLE
**PRELIMINARY
GRADING PLAN
(ULTIMATE)**

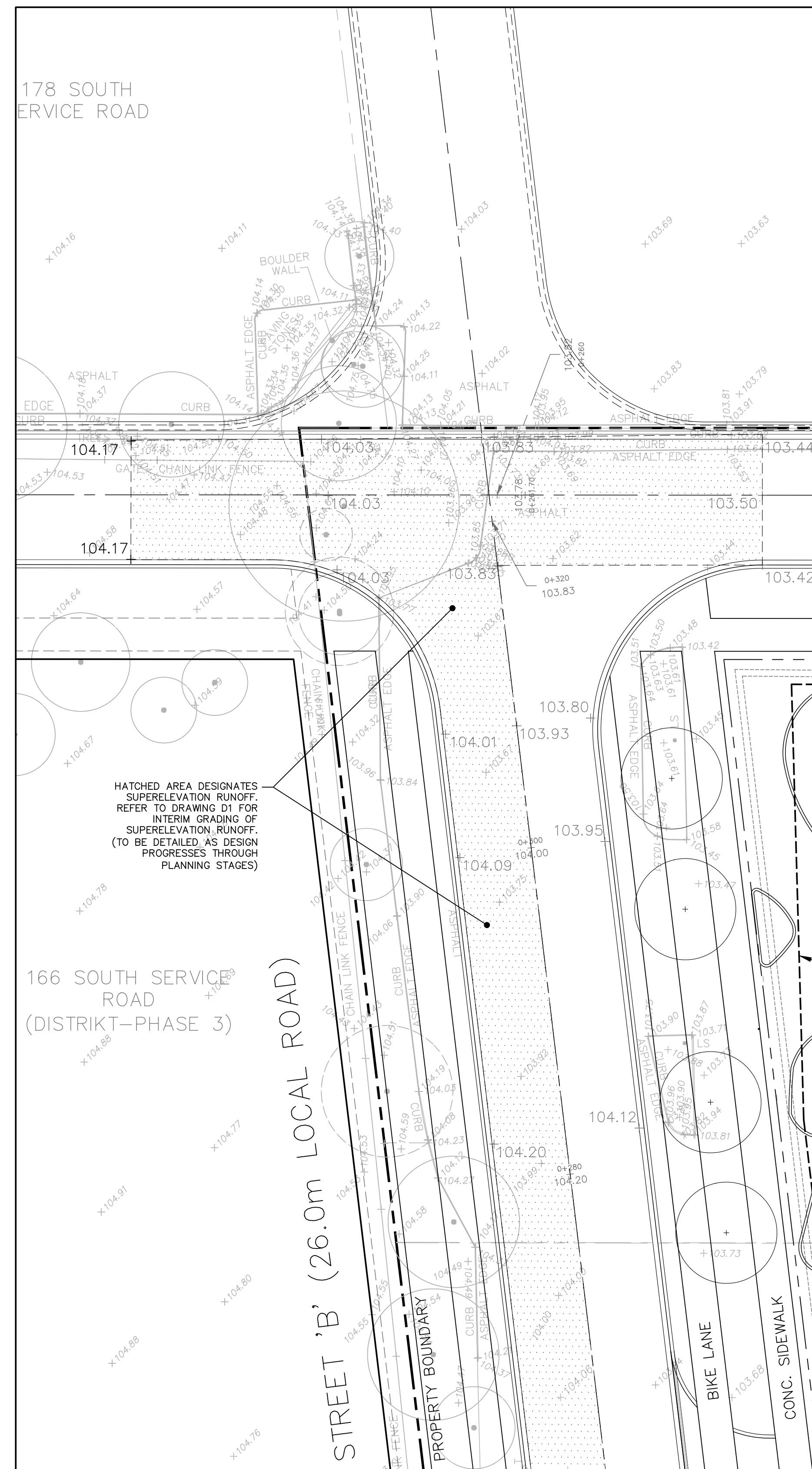
SCALE	1:300	DESIGN BY	AJP	PROJECT No.	1827
DRAWN BY	ZI	CHECKED BY	JN	PLAN No.	G2
DATE	2023/09/20	SHEET	1 OF 1		

FILENAME: P:\1827 Distrikt Midtown 157 Cross\04-CAD\03-Site Plan\1827GS.dwg
PLOT DATE: Oct 04, 2024 5:20pm



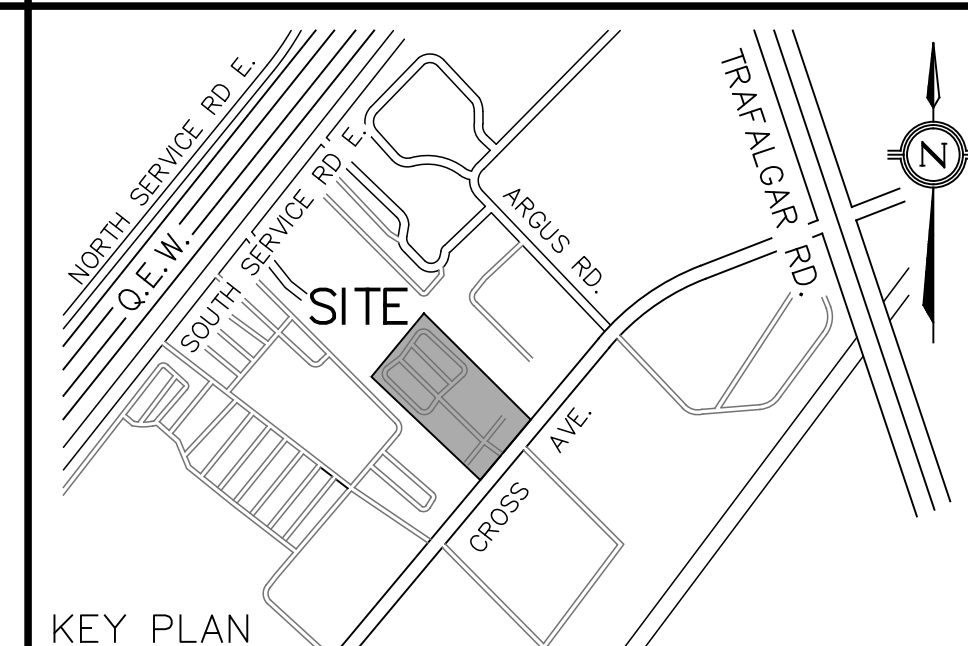
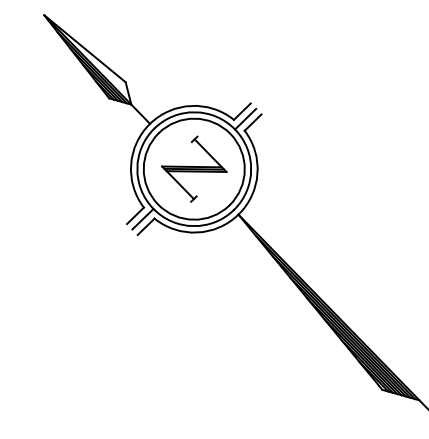
STREET A/STREET B PRELIMINARY INTERSECTION GRADING – INTERIM CONDITION

1:200



STREET A/STREET B PRELIMINARY INTERSECTION GRADING – ULTIMATE CONDITION

1:200



LEGEND

- PROPOSED AREA DRAIN (300mm x 300mm)
- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED STORM CATCHBASIN
- CB* CATCHBASIN WITH CB SHIELD
- ⊕ PROPOSED FIRE HYDRANT
- ⊕ PROPOSED VALVE & BOX
- PROPERTY BOUNDARY
- +103.75 EXISTING ELEVATION
- +104.57 EXISTING ELEVATION TO REMAIN
- +104.57 PROPOSED FINISHED ELEVATION
- 2% PROPOSED DRAINAGE DIRECTION/SLOPE
- PROPOSED SWALE DRAINAGE DIRECTION/SLOPE
- ⇨ PROPOSED OVERLAND FLOW DIRECTION
- ▨ PROPOSED SLOPE (MAX 3:1)
- △ PROPOSED BUILDING ENTRANCE
- ▴ PROPOSED OVERHEAD DOOR

NO.	DATE	BY/DRAWN	REVISIONS
2	2024/10/04	AJP	TOC DEVELOPMENT SUBMISSION
1	2024/02/28	AJP/ZI	ISSUED FOR ZBA/OBA

CAD FILE: 1827GS.dwg | PLOT SCALE: 1:1 | PLOT DATE: Oct 04, 2024

BENCHMARK
ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE TOWN OF OAKVILLE BENCHMARKS: No. 236 ELEVATION=159.311m No. 258 ELEVATION=185.692m

LOCAL BENCHMARK
CUT CROSS LOCATED ON CONCRETE WALK NEXT TO PAVING STONES LEADING TO THE BUILDING AT 165 CROSS AVE, AS SHOWN ON THE FACE OF PLAN. ELEVATION=102.73m

NOTE
THE SURVEY WAS COMPLETED ON THE 13TH DAY OF JUNE, 2023 BY J.D. BARNES LIMITED, ONTARIO LAND SURVEYORS, REFERENCE No.: 21-30-700-02-A.

NOTE: REFER TO DWG. N1 FOR STANDARD NOTES

DESIGNED BY

APPROVED BY

CONSULTANT

#1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
www.trafalgareng.com

PROJECT TITLE
**DISTRIKT MIDTOWN
PROPOSED RESIDENTIAL CONDOMINIUM
DEVELOPMENT
DISTRIKT DEVELOPMENTS**

LOCATION
**157/165 CROSS AVENUE
OAKVILLE, ONTARIO**

DRAWING TITLE
**INTERSECTION
GRADING DETAIL**

SCALE	1:300	DESIGN BY	AJP	PROJECT No.	1827
DRAWN BY	ZI	CHECKED BY	JN	PLAN No.	D1
DATE	2023/09/20	SHEET	1 OF 1		

GENERAL NOTES

- 1. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS OF THE REGIONAL MUNICIPALITY OF HALTON, TOWN OF OAKVILLE AND THE ONTARIO BUILDING CODE (PART 7), ONTARIO PROVINCIAL STANDARD SPECIFICATIONS AND DRAWINGS (OPSS & OPSD) SHALL BE USED IN ABSENCE OF LOCAL STANDARDS.
- 2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL, MECHANICAL AND LANDSCAPE DRAWINGS.
- 3. ALL INFORMATION SHOWN REGARDING THE LOCATION AND SIZE OF EXISTING UTILITIES AND/OR SERVICES HAS NOT BEEN VERIFIED. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATION OF UTILITIES PRIOR TO CONSTRUCTION AND PROTECTING AND MAINTAINING DURING CONSTRUCTION.
- 4. THE CONTRACTOR SHALL CHECK AND VERIFY ALL GIVEN GRADES AND ELEVATIONS PRIOR TO CONSTRUCTION AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
- 5. ALL GRADING CHANGES SHALL BE APPROVED BY THE ENGINEER AND TOWN OF OAKVILLE PRIOR TO IMPLEMENTATION.
- 6. CONTRACTOR TO REFER TO GEOTECHNICAL REPORT FOR PAVEMENT CONSTRUCTION AND DEWATERING DETAILS.
- 7. ALL DIMENSIONS AND ELEVATIONS TO BE VERIFIED PRIOR TO CONSTRUCTION AND ANY DISCREPANCIES FOUND PRIOR TO OR DURING CONSTRUCTION SHALL BE CLARIFIED WITH THE ENGINEER.
- 8. PAVEMENT STRUCTURE DETAILS WILL BE PROVIDED AT THE SITE PLAN APPLICATION STAGE.

WATERMAINS

- 1. ALL WATERMAINS 100mm AND LARGER SHALL BE PVC, C-900, CLASS 150, SDR18 C/W MECHANICAL RESTRAINTS & TRACER WIRE PER REGION REQUIREMENTS.
- 2. WATER SERVICE CONNECTION LESS THAN 50mm TO BE COPPER, TYPE "K" SOFT COPPER TUBING.
- 3. BEDDING ON WATER SERVICE SHALL BE PER OPSD 802.010*.
- 4. * INDICATES O.P.S.D. CAN BE USED AS MODIFIED BY REGION OF HALTON.
- 5. VALVE AND BOX FOR 100mm TO 300mm WATER SERVICE PER REGION STDS.
- 6. COVER SHALL BE 1.7m MIN. UNLESS OTHERWISE NOTED.
- 7. CONNECTION TO EXISTING WATERMAIN SHALL BE PER REGION OF HALTON STD RH 409.010.
- 8. WATER SYSTEM SHALL BE TESTED AND DISINFECTED TO MEET REGIONAL REQUIREMENTS.
- 9. HYDRANTS SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA C502 AND SHALL HAVE STEAMER PORTS AS PER REGION STANDARD SPECIFICATIONS (SEE NOTE 12). ALL HYDRANTS SHALL BE INSTALLED AS PER OPSD 1105.010*. IF HYDRANT BARREL DEPTH EXCEEDS 1.7m A HYDRANT THAT CAN BE RAISED FROM THE BOTTOM WITHOUT INCREASING ROD LENGTH IS TO BE USED.
- 10. MINIMUM LATERAL SEPARATION FROM OTHER UTILITIES IS 2.5m.
- 11. WATERMAINS MUST HAVE A MINIMUM VERTICAL CLEARNACE OF 0.30m (12 INCHES) OVER, 0.50m (20 INCHES) UNDER SEWERS AND ALL OTHER UTILITIES.
- 12. STORZ PUMPER CONNECTION FOR HYDRANTS AS FOLLOWS:
- 13. TWO (2) 63.5mm (2 1/2") WITH CSA STANDARD THREAD, 63.5mm I.D., 5 THREADS PER 25mm, 31.75mm SQUARE OPERATING NUT; AND STORZ CAP PAINTED GLOSS BLACK.

SANITARY SEWERS

- 1. ALL SANITARY SEWERS SHALL BE PVC SDR28, BEDDING PER OPSD 802.010*.
- 2. SANITARY MANHOLE SHALL BE AS PER OPSD 701.010* c/w COVER PER OPSD 401.010*, STEPS PER OPSD 405.010.
- 3. * INDICATES O.P.S.D. CAN BE USED MODIFIED BY REGION OF HALTON.
- 4. BENCHING IN MANHOLES SHALL BE UP TO THE OVERT OF THE PIPE.

STORM SEWERS

- 1. ALL STORM SEWERS 600 mm AND SMALLER SHALL BE PVC SDR35 WITH BEDDING PER OPSD 802.010 UNLESS OTHERWISE NOTED
- 2. ALL STORM SEWERS 675 mm AND LARGER SHALL BE REINFORCED CONCRETE PIPE CLASS 65-D CSA A257.2 COMPLETE WITH BEDDING PER OPSD 802.030.
- 3. CATCHBASIN SHALL BE PER OPSD 705.010, DOUBLE CATCHBASIN PER OPSD 705.020 C/W GRATE PER OPSD 400.020
- 4. CATCHBASINS IN LANDSCAPED AREAS SHALL BE SUMPLESS AND C/W BEEHIVE TOP AS PER TOWN STD.5-2
- 5. ALL CATCHBASINS IN LANDSCAPED AREAS SHALL BE INSTALLED WITH A SUB-DRAIN. SUB-DRAIN TO BE 100mm DIA. PERFORATED PIPE C/W FILTER SOCK SURROUNDED BY 13mm CLEAR STONE AS PER SUB-DRAIN DETAIL
- 6. ALL CATCHBASIN LEAD SHALL 250mm DIA. AT 2.0% MIN. UNLESS OTHERWISE NOTED.
- 7. ALL CATCHBASIN MANHOLES SHALL BE BENCHED.
- 8. ALL STORM MANHOLES SHALL BE 1200mm DIA PER OPSD 701.010 c/w COVER PER OPSD 401.010, UNLESS OTHERWISE NOTED.
- 9. ALL CATCHBASIN AND CATCHBASIN MANHOLES IN PAVED AREAS SHALL BE INSTALLED WITH 3.0m - 100mmØ PERFORATED PIPE C/W FILTER SOCK EXTENDING OUT FROM THE CATCHBASIN AND LOCATED BELOW THE SUBGRADE SURROUNDED BY 50mm GRANULAR 'A'

GRADING NOTES

- 1. ALL TOPSOIL SHALL BE STRIPPED PRIOR TO GRADING.
- 2. ALL FILL PLACEMENT SHALL BE DONE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERS RECOMMENDATIONS.
- 3. RETAINING WALLS WITH A HEIGHT GREATER THAN 0.6m ARE TO BE DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER.
- 4. ALL DISTURBED AREAS TO BE RESTORED WITH 200mm TOPSOIL AND SEED.
- 5. ALL DISTURBED AREAS WITHIN THE PUBLIC RIGHT-OF-WAY TO BE RESTORED WITH 200mm TOPSOIL AND SOD.
- 1. ALL WORKS WITHIN THE PUBLIC ROADWAY TO RESTORED TO THE SATISFACTION OF THE MUNICIPALITY.
- 6. ALL CURBING SHALL BE 150mm HIGH BARRIER CURB PER OPSD 600.110, UNLESS OTHERWISE NOTED

SERVICING NOTES

- 1. UNLESS NOTED OTHERWISE, ALL UTILITIES SHALL BE BACKFILLED WITH GRANULAR BACKFILL COMPACTED TO 98% S.P.M.D.D. NATIVE BACKFILL MAY BE USED WITH THE PERMISSION OF THE GEOTECHNICAL CONSULTANT. BEDDING AND COVER MATERIAL SHALL BE PER THE GEOTECHNICAL CONSULTANTS' RECOMMENDATIONS.
- 2. BACKFILLING AND RESTORATION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE TOWN OF OAKVILLE ROAD CUT PERMIT AND TO THE SATISFACTION OF THE ENGINEERING & CONSTRUCTION DEPARTMENT.
- 3. SURROUND ALL MANHOLES WITH A MINIMUM OF 1.0m COMPACTED GRANULAR 'C' BACKFILL.
- 4. ALL ENDS OF SERVICE CONNECTIONS SHALL BE MARKED WITH 50x100 LUMBER PLACED FROM INVERT OF SERVICE TO 1.0m ABOVE GRADE.
- 5. ALL SEWERS SHALL BE FLUSHED AND CCTV INSPECTED AT COMPLETION.
- 6. ALL REMOVED OR DAMAGED CURBS, SIDEWALK, GRANULARS, ASPHALT AND SOD RESULTING FROM SERVICE INSTALLATION SHALL BE REINSTATED BY THE CONTRACTOR TO THE SATISFACTION OF THE MUNICIPALITY.

EROSION AND SEDIMENT CONTROL NOTES

- 1. THE CONTRACTOR IS RESPONSIBLE TO CLEAN ALL MUD TRACKED ON TO ADJACENT ROADWAYS.
- 2. THE MEASURES AS PROPOSED MAY BE MODIFIED AT THE DISCRETION OF THE ENGINEER TO SUIT THE PROPOSED CONSTRUCTION PROGRAMS. THE GENERAL INTENT OF THE PROPOSED EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES.
- 3. ANY DISTURBED AREA NOT SCHEDULED FOR FURTHER CONSTRUCTION WITHIN 30 DAYS SHALL BE PROVIDED WITH A TEMPORARY SEED.
- 4. INSTALL CATCHBASIN SEDIMENT CONTROL ON EXISTING CATCHBASINS PRIOR TO START OF CONSTRUCTION.
- 5. INSTALL CATCHBASIN SEDIMENT CONTROL ON NEW CATCHBASINS AT TIME OF INSTALLATION.
- 6. ALL EROSION AND SEDIMENT CONTROLS ARE TO BE INSTALLED ACCORDING TO THE APPROVED PLANS PRIOR TO COMMENCEMENT OF ANY EARTH MOVING WORK ON THE SITE AND SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED WITH THE INTENDED GROUND COVER.
- 7. EROSION AND SEDIMENT CONTROLS SHALL BE INSPECTED BY THE BUILDER/DEVELOPER:
 - WEEKLY
 - BEFORE AND AFTER ANY PREDICTED RAINFALL EVENT
 - FOLLOWING AN UNPREDICTED RAINFALL EVENT
 - DAILY, DURING EXTENDED DURATION RAINFALL EVENTS
 - AFTER SIGNIFICANT SNOW MELT EVENTS
- 8. EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED IN PROPER WORKING ORDER AT ALL TIMES. DAMAGED OR CLOGGED DEVICES SHALL BE REPAIRED WITHIN 48 HOURS.

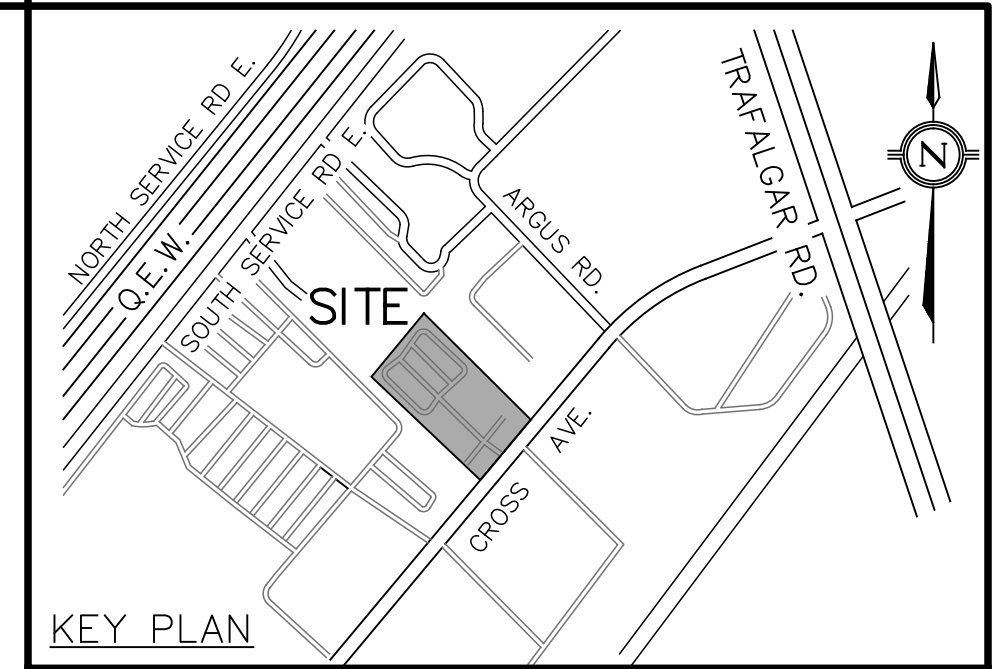
- 9. WHERE A SITE REQUIRES DEWATERING AND WHERE THE EXPULLED WATER CAN BE FREELY RELEASED TO A SUITABLE RECEIVER, THE EXPULLED WATER SHALL BE TREATED TO CAPTURE SUSPENDED PARTICLES GREATER THAN 40 MICRON IN SIZE. THE CAPTURED SEDIMENT SHALL BE DISPOSED OF PROPERLY PER MOECC GUIDELINES. THE CLEAN EXPULLED WATER SHALL FREELY RELEASE TO A SUITABLE RECEIVER THAT DOES NOT CREATE DOWNSTREAM ISSUES INCLUDING BUT NOT LIMITED TO EROSION, FLOODING - NUISANCE OR OTHERWISE, INTERFERENCE ISSUES, ETC.
- 10. EXISTING STORM SEWER AND DRAINAGE DITCHES ADJACENT TO THE WORKS SHALL BE PROTECTED AT ALL TIMES FROM THE ENTRY OF SEDIMENT/SILT THAT MAY MIGRATE FROM THE SITE. FOR STORM SEWERS: ALL INLETS (REAR LOT CATCHBASINS, ROAD CATCHBASINS, PIPE INLETS, ETC.) MUST BE SECURED/FITTED WITH SILTATION CONTROL MEASURES. FOR DRAINAGE DITCHES: THE INSTALLATION OF ROCK CHECK DAMS, SILTATION FENCE, SEDIMENT CONTAINMENT DEVICES MUST BE INSTALLED TO TRAP AND CONTAIN SEDIMENT. THESE SILTATION CONTROL DEVICES SHALL BE INSPECTED AND MAINTAINED PER ABOVE.
- 11. IN THE EVENT OF A SPILL (RELEASE OF DELETERIOUS MATERIAL) ON OR EMANATING FROM THE SITE, THE OWNER OR OWNERS AGENT SHALL IMMEDIATELY NOTIFY THE MOECC AND FOLLOW ANY PRESCRIBED CLEAN UP PROCEDURE. THE OWNER OF OWNERS AGENT WILL ADDITIONALLY IMMEDIATELY NOTIFY THE TOWN.

CONSTRUCTION NOTES

- 1. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY TRAFFIC CONTROLS, PER MTO BOOK 7.
- 2. CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT, WITH CONTROL BARS PROVIDED BY THE OWNER. PROTECTION OF CONTROL BARS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- 3. CONTRACTOR IS RESPONSIBLE TO VERIFY THE SIZE AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION, INCLUDING VAC TRUCK AND RESTORATION AS REQUIRED.
- 4. CONTRACTOR SHALL PROVIDE THIRD-PARTY DIGITAL AS-BUILTS IN CAD. TO INCLUDE ALL NEW SITE SERVICING INCLUDING TOPS AND INVERTS, AND FINISHED GRADES, INCLUDING PAVED AREAS, SWALES, CURBS, SIDEWALKS AND RETAINING WALLS, TO THE SATISFACTION OF THE ENGINEER.
- 5. CONTRACTOR SHALL FLUSH AND VIDEO ALL EXISTING SEWERS PRIOR TO AND AFTER CONNECTION, AND NEW AND DISTURBED SEWERS UPON INSTALLATION AND LATER UPON COMPLETION OF TOP WORKS AND LANDSCAPING, PER OPSS 409. VIDEOS TO BE PROVIDED TO THE ENGINEER FOR REVIEW AND APPROVAL.

TREE PROTECTION NOTES

- 1. TREE PROTECTION BARRIERS SHALL BE PLACED AS PER TOWN OF OAKVILLE STANDARD.
- 2. ADDITIONAL TREE PROTECTION LOCATIONS MAY BE REQUIRED AS DETERMINED BY THE TOWN OF OAKVILLE AND/OR THE ENGINEER.



LEGEND

Table with 4 columns: NO., DATE, BY/DRAWN, REVISIONS

Table with 4 columns: NO., DATE, BY/DRAWN, REVISIONS

CAD FILE: 1827GS.dwg | PLOT SCALE: 1:1 | PLOT DATE: Oct 04, 2024

BENCHMARK
ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE TOWN OF OAKVILLE BENCHMARKS: No. 236 ELEVATION=159.311m No. 258 ELEVATION=185.692m

LOCAL BENCHMARK
CUT CROSS LOCATED ON CONCRETE WALK NEXT TO PAVING STONES LEADING TO THE BUILDING AT 165 CROSS AVE, AS SHOWN ON THE FACE OF PLAN. ELEVATION=102.73m

NOTE
THE SURVEY WAS COMPLETED ON THE 13TH DAY OF JUNE, 2023 BY J.D. BARNES LIMITED, ONTARIO LAND SURVEYORS, REFERENCE No.: 21-30-700-02-A.

NOTE: REFER TO DWG. N1 FOR STANDARD NOTES

Professional Engineer seal for J. T. NELSON, 100198369, Province of Ontario, dated Oct 2024. Includes DESIGNED BY and APPROVED BY fields.

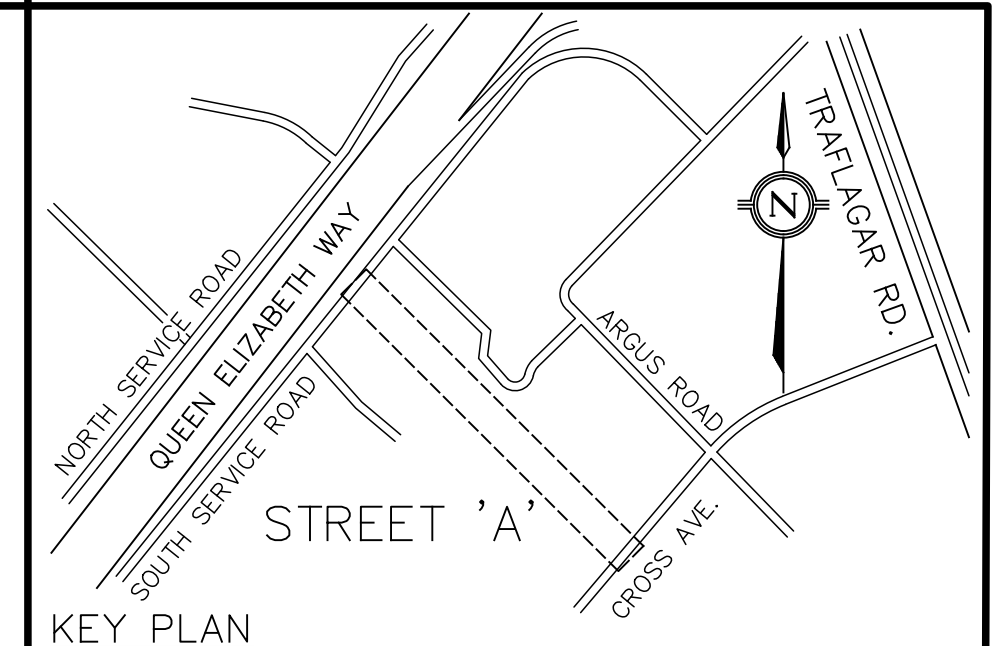
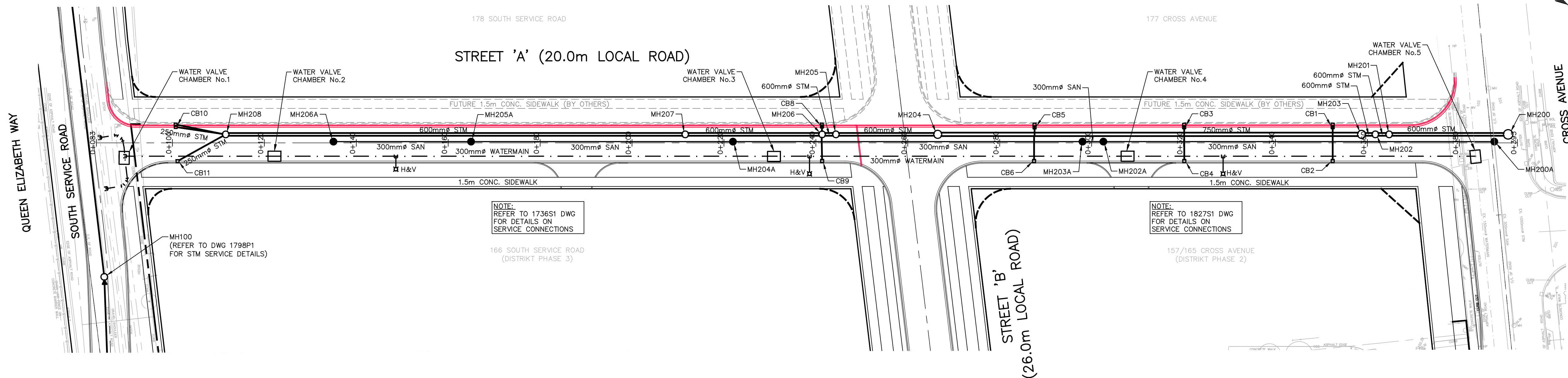
CONSULTANT: TRAFALGAR ENGINEERING, #1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6, www.trafalgareng.com

PROJECT TITLE: DISTRIKT MIDTOWN PROPOSED RESIDENTIAL CONDOMINIUM DEVELOPMENT DISTRIKT DEVELOPMENTS

LOCATION: 157/165 CROSS AVENUE OAKVILLE, ONTARIO

DRAWING TITLE: GENERAL NOTES

Table with 4 columns: SCALE, DESIGN BY, CHECKED BY, PROJECT No. and 4 columns: DRAWN BY, DATE, SHEET, OF



- LEGEND**
- PROPOSED STORM MANHOLE
 - PROPOSED STORM MANHOLE
 - PROPOSED SANITARY MANHOLE
 - ⊗ PROPOSED FIRE HYDRANT
 - ⊕ PROPOSED VALVE & BOX
 - PROPOSED STORM SEWER
 - PROPOSED SANITARY SEWER
 - - - PROPOSED WATERMAIN
 - - - PROPERTY BOUNDARY
 - EXISTING STORM SEWER
 - EXISTING SANITARY SEWER
 - - - EXISTING WATERMAIN
 - EXISTING STORM MANHOLE
 - EXISTING SANITARY MANHOLE
 - RED LINE DENOTES INTERIM CONDITION CONCRETE CURB, GUTTER AND ASPHALT EDGE LOCATION

ELEVATION NOTE
 ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE TOWN OF OAKVILLE BENCHMARKS:
 No. 236 ELEVATION=159.311m
 No. 258 ELEVATION=185.692m

LOCAL BENCHMARK
 CUT CROSS ON CURB LOCATED APPROXIMATELY 4.5m SOUTHWEST AND 4.3m SOUTHEAST OF THE MOST WESTERN CORNER OF SUBJECT PROPERTY, AS SHOWN ON THE FACE OF THE PLAN.
 ELEVATION=106.09m

THE TOPOGRAPHIC DETAIL SHOWN HEREON WAS ACQUIRED ON APRIL 21, 2021, BY J.D.BARNES LTD, LAND INFORMATION SPECIALISTS

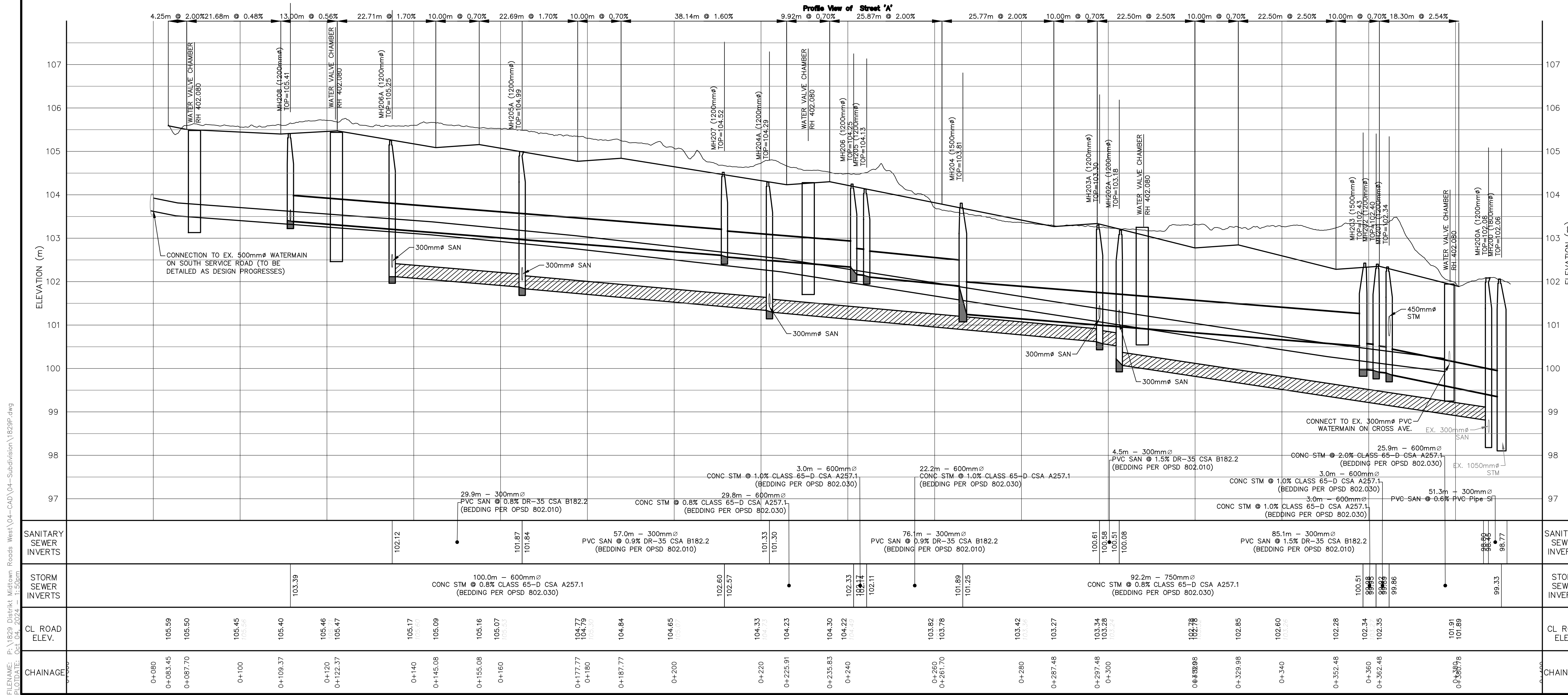
2	04/10/2024	AJP/GL	TOC DEVELOPMENT SUBMISSION
1	28/02/2024	AJP/ZI	ISSUED FOR SITE ZBA/OPA
REVISIONS			
Design	AJP	Chk'd	JN
Drawn	GL	Chk'd	JN
Scale	HOR 0 5 10 15 20 25 1:500		VER 0.5 1 2 2.5 1:50
APPROVALS			
Municipal	APPROVED IN PRINCIPLE SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.		
Regional Approval	DESIGN OF WATER &/OR WASTEWATER SERVICES APPROVED SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS & SPECIFICATIONS & LOCATION APPROVAL FROM AREA MUNICIPALITY.		

TRAFALGAR ENGINEERING
 #1-481 MORDEEN ROAD, OAKVILLE, ON, L6K 3W6
 www.trafalgareng.com

OAKVILLE Halton REGION

DISTRIKT DEVELOPMENTS
 CONCEPTUAL STREET 'A'
 PLAN AND PROFILE
 STA 0+083.49 TO 0+400

Municipal No. _____ Regional No. _____
 Contract No. _____ Consultant No. 1829
 Sheet P1



FILENAME: P:\1829 Distrikt Midtown Roads West\04-CAD\04-Subdivision\1829P.dwg
 DATE: 04-04-2024 1:50pm

APPENDIX 'H'

PLAN 20R-5913
RECEIVED AND DEPOSITED

DATE: 28 Sept 1982

John F. Young
JOHN F. YOUNG B.Sc., O.L.S.
ONTARIO LAND SURVEYOR

DEPT. LAND REGISTRAR FOR THE
REGISTRY DIVISION OF HALTON
(# 20)

CAUTION: THIS PLAN IS NOT A PLAN OF SUBDIVISION WITHIN
THE MEANING OF THE PLANNING ACT.

PLAN OF SURVEY OF
PART OF LOT 14, CONCESSION 3, SOUTH OF DUNDAS STREET
TOWN OF OAKVILLE
REGIONAL MUNICIPALITY OF HALTON
(Formerly the Township of Trafalgar, County of Halton)

SCALE: 1:500

JOHN F.G. YOUNG B.Sc., O.L.S. - 1982

PART NO	LOT NO	CONCESSION	INST. NO	AREA
1	14	3 S. D. S.	491914	272 m ²
2	"	"	"	412 m ²
3	"	"	"	242 m ²
4	"	"	"	175 m ²
5	"	"	"	5 m ²
6	"	"	"	201 m ²
7	"	"	"	384 m ²
8	"	"	"	285 m ²
9	"	"	"	585 m ²

NOTES:
BEARINGS SHOWN HEREON ARE ASTRONOMIC AND ARE REFERRED TO THE
N39°17'10"E OF THE NORTHWEST LIMIT OF CROSS AVENUE AS SHOWN ON
DEPOSITED PLAN 20R-4877

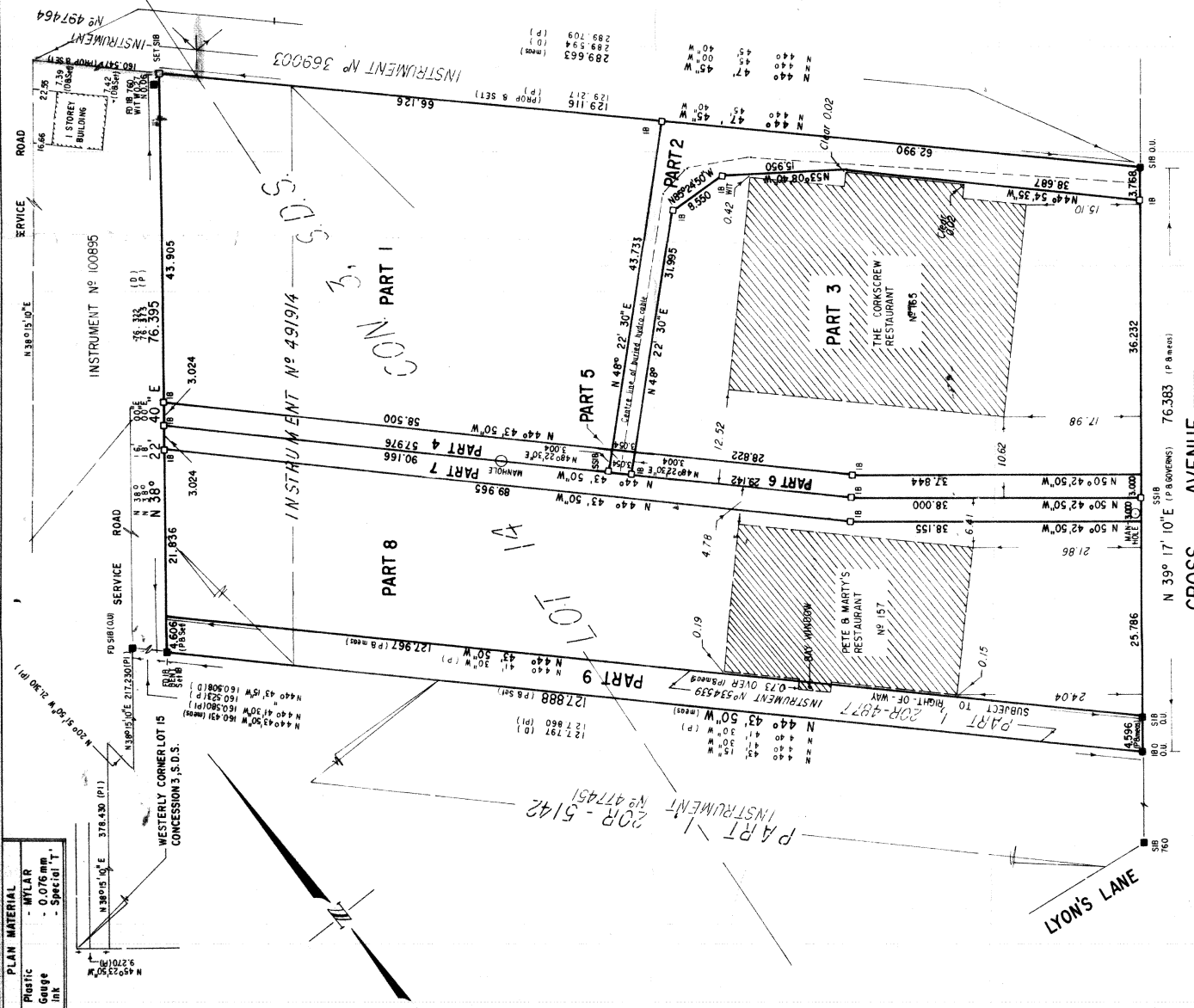
- DENOTES SURVEY MONUMENT SET
- SURVEY MONUMENT FOUND
- IB IRON BAR (.016 x .016 x .610 m)
- SIB STANDARD IRON BAR (.025 x .025 x 1.219 m)
- SSIB SHORT STANDARD IRON BAR (.025 x .025 x .610 m)
- FD FOUND
- WIT WITNESS
- O.U. ORIGIN UNKNOWN
- MEAS. MEASURED
- (P) DEPOSITED PLAN 20R-4877
- (PI) DEPOSITED PLAN 20R-5142
- (O) DEED INSTRUMENT #P60895. PLAN ATTACHED
- (P60895) PROPORTION
- 760 K.H. MCCONNELL O.L.S.

SURVEYOR'S CERTIFICATE:

I CERTIFY THAT,
1) THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH
THE SURVEYS ACT AND THE REGISTRY ACT AND THE REGULATIONS
MADE THEREUNDER,
2) THE SURVEY WAS COMPLETED ON the 2nd day of September 1982

September 3, 1982
John F. Young
JOHN F.G. YOUNG, B.Sc., O.L.S.
ONTARIO LAND SURVEYOR

JOHN F.G. YOUNG-ONTARIO LAND SURVEYOR
R.R. #1 BOLTON ONTARIO LOP 1A0
BUS. (416) 857-2484 RES. (519) 941-7382
DRAWN BY: J.F.G.Y. PROJECT NO 82-204



PLAN MATERIAL
- MYLAR
Gauge - 0.016 mm
Ink - Spectral 1

METRIC: DISTANCES ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

GRANT OF EASEMENT

582527

THIS INDENTURE made in duplicate the 2nd day of August, 1983.

B E T W E E N :

ROSHORN LIMITED,
A Company incorporated under the laws
of the Province of Ontario

hereinafter called "the Grantor"

OF THE FIRST PART

- and -

THE CORPORATION OF THE TOWN OF OAKVILLE,

hereinafter called "the Grantee"

OF THE SECOND PART

Whereas the hereinafter described property is registered in the name of D.L. Fowles Developments Limited. Whereas Articles of Amalgamation dated the 30th of March, 1982 were registered in the Land Registry Office for the Registry Division of Halton #20 as Instrument 557358.

WITNESSES that in consideration of the sum of TWO-----
----- (\$2.00)-----DOLLARS

of lawful money of Canada now paid by the Grantee to the Grantor (the receipt whereof is hereby by him acknowledged), the Grantor grants to the Grantee, its successors and assigns, the right, liberty and privilege appurtenant to its undertaking as a Municipal Corporation to construct, operate, maintain, replace and repair and to permit others to construct, operate, maintain, replace and repair underground sewers, drains, pipes, conduits, wires and services generally with such above ground accesses, manholes, catch basins, hydrants, service boxes and other appurtenances as it desires, at its expense and for so long as it desires, upon, across, along and under the lands described in Schedule "A" hereto, and for every such purpose the Grantee and those claiming under it, shall have access to the said lands at all times but reserving to the Grantor the right to use the surface of the said lands for any purpose which does not conflict with the Grantee's rights hereunder, and specifically excluding the planting of any trees and the erection of any building or structure.

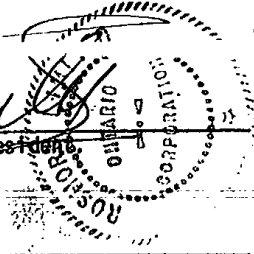
The Grantee will, every time it enters upon the land in pursuance of its rights hereunder, as quickly as conveniently possible, after it has completed its operations thereon for the time being, restore the surface of the said land and everything which the Grantor is by the terms of this grant permitted to maintain thereon, to, nearly as practicable their condition immediately prior to the time when entry was made.

IN WITNESS WHEREOF the said parties hereto have hereunto set their hands and seals.

WITNESSES AND ATTORNEYS
in the presence of:

ROSHORN LIMITED.

D. L. Fowles
D. L. Fowles, President



SCHEDULE "A"

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the Town of Oakville, Regional Municipality of Halton and being composed of Part of Lot 14, Concession 3, South of Dundas Street more particularly described as Part 2 on 20-R-5913.

Form 1 - Land Transfer Tax Act

AFFIDAVIT OF RESIDENCE AND OF VALUE OF THE CONSIDERATION

THE MATTER OF THE CONVEYANCE OF (insert brief description of land) IN THE TOWN OF OAKVILLE
REGIONAL MUNICIPALITY OF HALTON BEING PART OF LOT 14 CON 3 SDS
DESIGNATED AS PART 2 ON 20-R-5913

BY (print names of all transferors in full) ROSHORN LIMITED

TO (see instruction 1 and print names of all transferees in full) THE CORPORATION OF THE TOWN OF OAKVILLE

I, (see instruction 2 and print name(s) in full) LOIS E. PAYNE

MAKE OATH AND SAY THAT:

1. I am (place a clear mark within the square opposite that one of the following paragraphs that describes the capacity of the deponent(s)): (see instruction 2)

- (a) A person in trust for whom the land conveyed in the above-described conveyance is being conveyed;
- (b) A trustee named in the above-described conveyance to whom the land is being conveyed;
- (c) A transferee named in the above-described conveyance;
- (d) The authorized agent or solicitor acting in this transaction for (insert name(s) of principle(s)) THE CORPORATION OF THE TOWN OF OAKVILLE described in paragraph(s) (a), (b), (c) above; (strike out references to inapplicable paragraphs)
- (e) The President, Vice-President, Manager, Secretary, Director, or Treasurer authorized to act for (insert name(s) of corporation(s)) described in paragraph(s) (a), (b), (c) above; (strike out references to inapplicable paragraphs)
- (f) A transferee described in paragraph () (insert only one of paragraph (a), (b) or (c) above, as applicable) and am making this affidavit on my own behalf and on behalf of (insert name of spouse) who is my spouse described in paragraph () (insert only one of paragraph (a), (b) or (c) above, as applicable)

and as such, I have personal knowledge of the facts herein deposed to.

2. I have read and considered the definitions of "non-resident corporation" and "non-resident person" set out respectively in clauses 1 (1)(f) and (g) of the Act. (see instruction 3).

3. The following persons to whom or in trust for whom the land conveyed in the above-described conveyance is being conveyed are non-resident persons within the meaning of the Act. (see instruction 4) NONE

4. THE TOTAL CONSIDERATION FOR THIS TRANSACTION IS ALLOCATED AS FOLLOWS:

(a) Monies paid or to be paid in cash	\$	NIL	
(b) Mortgages (i) Assumed (show principal and interest to be credited against purchase price)	\$	NIL	
(ii) Given back to vendor	\$	NIL	
(c) Property transferred in exchange (detail below)	\$	NIL	
(d) Securities transferred to the value of (detail below)	\$	NIL	
(e) Liens, legacies, annuities and maintenance charges to which transfer is subject	\$	NIL	
(f) Other valuable consideration subject to land transfer tax (detail below)	\$	NIL	
(g) VALUE OF LAND, BUILDING, FIXTURES AND GOODWILL SUBJECT TO LAND TRANSFER TAX (TOTAL OF (a) to (f))	\$	NIL	\$ NIL
(h) VALUE OF ALL CHATTELS - Items of tangible personal property (Retail Sales Tax is payable on the value of all chattels unless exempt under the provisions of the "Retail Sales Tax Act", R.S.O. 1980, c.454, as amended)			\$ NIL
(i) Other consideration for transaction not included in (g) or (h) above			\$ NIL
(j) TOTAL CONSIDERATION			\$ NIL

ALL BLANKS
MUST BE
FILLED IN.
INSERT "NIL"
WHERE
APPLICABLE.

5. If consideration is nominal, describe relationship between transferor and transferee and state purpose of conveyance. (see instruction 5)

6. If the consideration is nominal, is the land subject to any encumbrance?

7. Other remarks and explanations, if necessary. THE VALUE OF THE CONSIDERATION (AS DEFINED IN SECTION 1(1)(p) OF THE LAND TRANSFER TAX ACT, 1980) FOR THIS CONVEYANCE IS NIL.
GRANT OF EASEMENT PURSUANT TO LAND DIVISION CONSENT B131/82

SWORN before me at the TOWN OF OAKVILLE
in the REGIONAL MUNICIPALITY OF HALTON
this 4th day of August 1983
PATRICIA MARY DOOLE, a Commissioner,
Notary Public for Ontario, in and for the Corporation of
the Town of Oakville

Lois E. Payne
signature(s)

PROPERTY INFORMATION RECORD

- A. Describe nature of instrument: GRANT OF EASEMENT
- B. (i) Address of property being conveyed (if available): 165 CROSS AVENUE OAKVILLE
- (ii) Assessment Roll No. (if available): 03001002600
- C. Mailing address(es) for future Notices of Assessment under the Assessment Act for property being conveyed (see instruction 6): OAKVILLE HYDRO 2350 TRAFALGAR ROAD, OAKVILLE
- D. (i) Registration number for last conveyance of property being conveyed (if available) N/A.
- (ii) Legal description of property conveyed: Same as in D.(i) above. Yes No Not Known
- E. Name(s) and address(es) of each transferee's solicitor: LOIS E. PAYNE ASSISTANT SOLICITOR TOWN OF OAKVILLE 1225 TRAFALGAR ROAD OAKVILLE L6J 5A6

For Land Registry Office use only	
REGISTRATION NO.	
Land Registry Office No.	
Registration Date	

582527

REGISTRY DIVISION
MAY BE USED TO CERTIFY
MAY BE USED TO CERTIFY
MAY BE USED TO CERTIFY

AUG 5 3 37 AM '83

REGISTERED
14-388

DATED August 2nd, 1983.

ROSHORN LIMITED

- and -

THE CORPORATION OF THE TOWN OF
OAKVILLE

1225 TRAFALGAR RD.
OAKVILLE, ONT

LAND REGISTRY
APPLICATION (NO. 20)

ABSTR.	
BY-LAW.	
GR.	
14-388	

GRANT OF EASEMENT

14-388

REGISTRATION FEE	15.00
LAND TAX	
TR. SECURITY	
RETIRE	
SALES TAX	

Lois E. Payne,
Assistant Solicitor,
Town of Oakville,
1225 Trafalgar Road,
Oakville, Ontario.

15

THIS INDENTURE made in duplicate this 27th day of July, 1983.

IN PURSUANCE OF THE SHORT FORMS OF CONVEYANCE ACT:

BETWEEN:

ROSHORN LIMITED, a corporation incorporated under the laws of the Province of Ontario,

hereinafter called the "GRANTOR"

OF THE FIRST PART

-and-

MARLENE A. BEER, of the City of Toronto, in the Municipality of Metropolitan Toronto,

hereinafter called the "GRANTEE"

OF THE SECOND PART

WHEREAS the title to the property described herein is held in the name of D. L. FOWLES DEVELOPMENTS LIMITED;

AND WHEREAS the said D.L. FOWLES DEVELOPMENTS LIMITED amalgamated with ROSHORN LIMITED, an Ontario corporation, the amalgamated corporation being named ROSHORN LIMITED, by Articles of Amalgamation dated March 30, 1982 and registered in the Registry Office for the Registry Division of Halton (No. 20) as Instrument No. 557358.

WITNESSETH that in consideration of other good and valuable and the sum of TWO-----(\$2.00)-----DOLLARS now paid by the said Grantee to the said Grantor, the receipt whereof is hereby by him acknowledged, he the said Grantor DOTH GRANT unto the said Grantee in fee simple

THOSE lands and premises located in the following municipality, namely, in the Town of Oakville, in the Regional Municipality of Halton, and being composed of

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the Town of Oakville, in the Regional Municipality of Halton and being composed of part of Township Lot 14 in Concession 3 South of Dundas Street of the Township of Trafalgar, now in the Town of Oakville, and being more particularly composed of all of Parts 7, 8 and 9 on a Plan registered in the Registry Office for the Registry Division of Halton (No. 20) as No. 20R-5913;

TOGETHER WITH a right-of-way for the purposes of ingress and egress for persons and vehicles over, along and upon that certain parcel or tract of land situate, lying and being in the said Lot 14, Concession 3 South of Dundas Street, and being composed of all of Parts 4, 5, and 6 on the said Plan 20R-5913;

The Planning Act
Certificate of Secretary-Treasurer

Pursuant to Section 52(21) of the Planning Act, I certify that the consent of the LAND DIVISION COMMITTEE of the Region of HALTON was given on 5th August, 1983, to the transaction to which the within instrument relates.

Acting Secretary-Treasurer Betty Roberts

Dated this 5th day of August, 1983

AND TOGETHER WITH a right-of-way in the nature of an easement to allow for the maintenance and repair of buried utility service lines over, along, upon and beneath the surface of that certain parcel or tract of land situate, lying and being in the said Lot 14, Concession 3, South of Dundas Street, and being composed of all of Part 2 on the said Plan 20R-5913;

AND SUBJECT to a right-of-way for the purposes of ingress and egress for persons and vehicles over, along and upon that certain parcel or tract of land situate, lying and being all of Part 7 on the said Plan 20R-5913, for the benefit of that land abutting to the west of the land herein and being all of Parts 1, 2, 3, 4, 5 and 6 on the said Plan 20R-5913, and the owners and occupants thereof;

AND SUBJECT to an easement in favour of the lands adjacent to the north for the purposes of the installation and maintenance of hydro, water, sanitary sewers and drains and communication services over the westerly 15 feet of the property, being all of Part 9 on the said Plan 20R-5913.

TO HAVE AND TO HOLD unto the said Grantee, his heirs, executors, administrators, successors and assigns to and for their sole and only use forever;
SUBJECT NEVERTHELESS to the reservations, limitations, provisos and conditions expressed in the original grant thereof from the Crown.

The said Grantor COVENANTS with the said Grantee that he has the right to convey the said lands to the said Grantee notwithstanding any act of the said Grantor.

AND that the said Grantee shall have quiet possession of the said lands free from all encumbrances.

AND the said Grantor COVENANTS with the said Grantee that he will execute such further assurances of the said lands as may be requisite.

AND the said Grantor COVENANTS with the said Grantee that he has done no act to encumber the said lands.

AND the said Grantor RELEASES to the said Grantee ALL his claims upon the said lands.

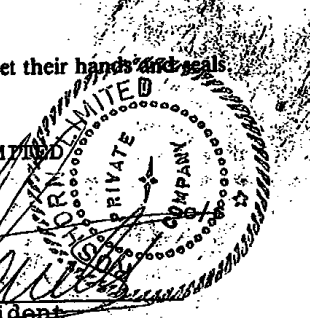
PROVIDED that in construing these presents the words "Grantor" and "Grantee" and the pronouns "he", "his" or "him" relating thereto and used therewith shall be read and construed as "Grantor" or "Grantors", "Grantee" or "Grantees", and "he", "she", "it" or "they", "his", "her", "its" or "their", or "him", "her", "it" or "them", respectively, as the number and gender of the party or parties referred to in each case require, and the number of the verb agreeing therewith shall be construed as agreeing with the said word or pronoun so substituted.

IN WITNESS WHEREOF the said parties hereto have hereunto set their hands and seals.

SIGNED, SEALED AND DELIVERED
In the Presence of

ROSHORN LIMITED

by  President



AFFIDAVIT OF RESIDENCE AND OF VALUE OF THE CONSIDERATION

IN THE MATTER OF THE CONVEYANCE OF (insert brief description of land) Part of Township Lot 14, in Concession 3 South of Dundas Street of the Township of Trafalgar, now in the Town of Oakville, and being more particularly composed of all of Parts 7, 8 and 9 on a Plan registered in the Registry BY (print names of all transferors in full) ROSHORN LIMITED (Office for the Registry Division of Halton (No. 20) as No. 20R-5913

TO (see instruction 1 and print names of all transferees in full) MARLENE A. BEER

I, (see instruction 2 and print name(s) in full) MARLENE A. BEER

MAKE OATH AND SAY THAT:

- 1. I am (place a clear mark within the square opposite that one of the following paragraphs that describes the capacity of the deponent(s); (see instruction 2)
 - (a) A person in trust for whom the land conveyed in the above-described conveyance is being conveyed;
 - (b) A trustee named in the above-described conveyance to whom the land is being conveyed;
 - (c) A transferee named in the above-described conveyance;
 - (d) The authorized agent or solicitor acting in this transaction for (insert name(s) of principal(s))
- described in paragraph(s) (a), (b), (c) above; (strike out references to inapplicable paragraphs)
- (e) The President, Vice-President, Manager, Secretary, Director, or Treasurer authorized to act for (insert name(s) of corporation(s))
- described in paragraph(s) (a), (b), (c) above; (strike out references to inapplicable paragraphs)
- (f) A transferee described in paragraph () (insert only one of paragraph (a), (b) or (c) above, as applicable) and am making this affidavit on my own behalf and on behalf of (insert name of spouse) who is my spouse described in paragraph () (insert only one of paragraph (a), (b) or (c) above, as applicable)

- and as such, I have personal knowledge of the facts herein deposed to.
- 2. I have read and considered the definitions of "non-resident corporation" and "non-resident person" set out respectively in clauses 1 (1)(f) and (g) of the Act. (see instruction 3).
- 3. The following persons to whom or in trust for whom the land conveyed in the above-described conveyance is being conveyed are non-resident persons within the meaning of the Act. (see instruction 4)
none

4. THE TOTAL CONSIDERATION FOR THIS TRANSACTION IS ALLOCATED AS FOLLOWS:

(a) Monies paid or to be paid in cash	\$ 220,000.00	
(b) Mortgages (i) Assumed (show principal and interest to be credited against purchase price)	\$ 663,000.00	
(ii) Given back to vendor	\$ nil	
(c) Property transferred in exchange (detail below)	\$ nil	
(d) Securities transferred to the value of (detail below)	\$ nil	
(e) Liens, legacies, annuities and maintenance charges to which transfer is subject	\$ nil	
(f) Other valuable consideration subject to land transfer tax (detail below)	\$ nil	
(g) VALUE OF LAND, BUILDING, FIXTURES AND GOODWILL SUBJECT TO LAND TRANSFER TAX (TOTAL OF (a) to (f))	\$ 883,000.00	\$ 883,000.00
(h) VALUE OF ALL CHATTELS - Items of tangible personal property (Retail Sales Tax is payable on the value of all chattels unless exempt under the provisions of the "Retail Sales Tax Act", R.S.O. 1980, c.454, as amended)		\$ nil
(i) Other consideration for transaction not included in (g) or (h) above		\$ nil
(j) TOTAL CONSIDERATION		\$ 883,000.00

ALL BLANKS
MUST BE
FILLED IN.
INSERT "NIL"
WHERE
APPLICABLE.

- 5. If consideration is nominal, describe relationship between transferor and transferee and state purpose of conveyance. (see instruction 5)
nil
- 6. If the consideration is nominal, is the land subject to any encumbrance? nil
- 7. Other remarks and explanations, if necessary
none

SWORN before me at the City of Toronto
in the Municipality of Metropolitan Toronto
this 22nd day of September 19 83

A Commissioner for taking Affidavits, etc.

Marlene Beer
MARLENE A. BEER signature(s)

PROPERTY INFORMATION RECORD

- A. Describe nature of instrument: Deed
- B. (i) Address of property being conveyed (if available) 157 Cross Avenue, Oakville
- (ii) Assessment Roll No. (if available) not available
- C. Mailing address(es) for future Notices of Assessment under the Assessment Act for property being conveyed (see instruction 6) 55 Harbour Square Apt. 3311, Toronto, Ontario M5J 2L1
- D. (i) Registration number for last conveyance of property being conveyed (if available) not available
- (ii) Legal description of property conveyed: Same as in D.(i) above. Yes No Not Known
- E. Name(s) and address(es) of each transferee's solicitor

ENFIELD, HEMMERICK & WOOD
372 Bay Street, Ste. 1800
Toronto, Ontario M5H 2W9

For Land Registry Office use only	
REGISTRATION NO.	
Land Registry Office No.	
Registration Date	

AFFIDAVIT OF SUBSCRIBING WITNESS

I,
of the
in the

make oath and say:

I am a subscribing witness to the attached instrument and I was present and saw it executed

at _____ by _____

*See footnote

*See footnote

I verily believe that each person whose signature I witnessed is the party of the same name referred to in the instrument.

SWORN before me at the _____

this _____ day of _____ 19 _____

A COMMISSIONER FOR TAKING AFFIDAVITS, ETC.

* Where a party is unable to read the instrument or where a party signs by making his mark or in foreign characters add "after the instrument had been read to him and he appeared fully to understand it". Where executed under a power of attorney insert "(name of attorney) as attorney for (name of party)"; and for next clause substitute "I verily believe that the person whose signature I witnessed was authorized to execute the instrument as attorney for (name)".

Dated July 27, 19 83

ROSHORN LIMITED

TO

MARLENE W. BEER

Address: 55 Harbour Square
Suite 3311, Toronto

Deed of Land

SITUATE

14-3505

DYE & BURHAM CO. LIMITED

ASSESSMENT ROLL NO.

ADDRESS OF PROPERTY:

157 CROSS AVENUE, Oakville

ENFIELD, HEMMERICK & WOOD
Barristers and Solicitors
372 Bay Street
Suite 1800
Toronto, Ontario M5H 2W9

589004

REGISTRY DIVISION
HALTON NO. 20 I CERTIFY
THAT THIS INSTRUMENT IS
REGISTERED / ENREGISTRÉ

Nov 3 4 04 PM '83

LAND REGISTRY OFFICE
AT HALTON, ONTARIO
John [Signature]

REGISTRY
NO. 589004
HS [Signature]
LOT 14-3505

REGISTRATION FEE	15-
LAND TRANSFER TAX	6884-
RETAIL SALES TAX	

THIS INDENTURE made in duplicate this 27th day of July, 1983.

IN PURSUANCE OF THE SHORT FORMS OF CONVEYANCE ACT:

BETWEEN:

ROSHORN LIMITED, a corporation incorporated
under the laws of the Province of Ontario,

hereinafter called the "GRANTOR"

OF THE FIRST PART

-and-

DOUGLAS W. BEER, of the City of Toronto,
in the Municipality of Metropolitan Toronto,

hereinafter called the "GRANTEE"

OF THE SECOND PART

WHEREAS the title to the property described herein is held in the
name of D. L. FOWLES DEVELOPMENTS LIMITED;

AND WHEREAS the said D.L. FOWLES DEVELOPMENTS LIMITED amalgamated
with ROSHORN LIMITED, an Ontario corporation, the amalgamated
corporation being named ROSHORN LIMITED, by Articles of
Amalgamation dated March 30, 1982 and registered in the Registry
Office for the Registry Division of Halton (No. 20) as
Instrument No. 557358.

WITNESSETH that in consideration of other good and valuable
and the sum of TWO-----(\$2.00)-----DOLLARS
now paid by the said Grantee to the said Grantor, the receipt
whereof is hereby by him acknowledged, he the said Grantor
DOTH GRANT unto the said Grantee in fee simple

THOSE lands and premises located in the following municipality,
namely, in the Town of Oakville, in the Regional Municipality of
Halton, and being composed of

ALL AND SINGULAR that certain parcel or tract of land and premises
situate, lying and being in the Town of Oakville, in the Regional
Municipality of Halton and being composed of part of Township Lot
14 in Concession 3 South of Dundas Street of the Township of
Trafalgar, now in the Town of Oakville, and being more particularly
composed of all of Parts 1, 2, 3, 4, 5 and 6 on a Plan registered in
the Registry Office for the Registry Division of Halton (No. 20) as
No. 20R-5913;

TOGETHER WITH a right-of-way for the purposes of ingress and egress
for persons and vehicles over, along and upon that certain parcel or
tract of land situate, lying and being in the said Lot 14, Concession
3 South of Dundas Street, and being composed of all of Part 7 on the
said Plan 20R-5913;

AND SUBJECT to a right-of-way for the purposes of ingress and egress for persons and vehicles over, along and upon that certain parcel or tract of land situate, lying and being all of Parts 4, 5 and 6 on the said Plan 20R-5913, for the benefit of that land abutting to the west of the land herein and being all of Parts 7, 8 and 9 on the said Plan 20R-5913, and the owners and occupants thereof;

AND SUBJECT TO a right-of-way in the nature of an easement to allow for the maintenance and repair of buried utility service lines for the benefit of the land abutting the west of the land herein and being all of parts 7, 8 and 9 on the said Plan 20R-5913, over, along, upon and beneath the surface of that certain parcel or tract of land situate, lying and being in the said Lot 14, Concession 3, South of Dundas Street, and being composed of all of Part 2 on the said Plan 20R-5913.

TO HAVE AND TO HOLD unto the said Grantee, his heirs, executors, administrators, successors and assigns to and for their sole and only use forever;
SUBJECT NEVERTHELESS to the reservations, limitations, provisos and conditions expressed in the original grant thereof from the Crown.

The said Grantor COVENANTS with the said Grantee that he has the right to convey the said lands to the said Grantee notwithstanding any act of the said Grantor.

AND that the said Grantee shall have quiet possession of the said lands free from all encumbrances.

AND the said Grantor COVENANTS with the said Grantee that he will execute such further assurances of the said lands as may be requisite.

AND the said Grantor COVENANTS with the said Grantee that he has done no act to encumber the said lands.

AND the said Grantor RELEASES to the said Grantee ALL his claims upon the said lands.

PROVIDED that in construing these presents the words "Grantor" and "Grantee" and the pronouns "he", "his" or "him" relating thereto and used therewith shall be read and construed as "Grantor" or "Grantors", "Grantee" or "Grantees", and "he", "she", "it" or "they", "his", "her", "its" or "their", or "him", "her", "it" or "them", respectively, as the number and gender of the party or parties referred to in each case require, and the number of the verb agreeing therewith shall be construed as agreeing with the said word or pronoun so substituted.

IN WITNESS WHEREOF the said parties hereto have hereunto set their hands and seals.

SIGNED, SEALED AND DELIVERED
In the Presence of

ROSHORN LIMITED

by: 
President



PLANNING ACT AFFIDAVIT

IN THE MATTER OF THE PLANNING ACT (as amended)

AND IN THE MATTER OF THE TITLE TO part of Township Lot 14 in
Concession 3 South of Dundas Street of the Township of
Trafalgar, now in the Town of Oakville, and being more
particularly composed of all of Parts 1, 2, 3, 4, 5 and 6 on a Plan
registered in the Registry Office for the Registry Division of
Halton (No. 20) as No. 20R-5913

Deed, Transfer,
Mortgage, Charge,
etc.

AND IN THE MATTER OF A Deed

THEREOF, FROM ROSHORN LIMITED

TO DOUGLAS W. BEER

DATED July 27, 19 83.

I, Douglas L. Fowles
of the City of Mississauga in the
Regional Municipality of Peel

MAKE OATH AND SAY AS FOLLOWS:

1. I am the President of ROSHORN LIMITED, the Grantor,
named in the above mentioned Instrument, and have knowledge of the matters hereinafter sworn.

To be made by
one of the parties
or by his solicitor

2. A consent under section ⁴³29 of the Planning Act, as amended, in respect of the said Instrument
is not required because

Delete (a)
if not applicable

(a) *the person conveying or otherwise dealing with land in the said Instrument does not retain the
fee or the equity of redemption in, or a power or right to grant, assign or exercise a power of
appointment with respect to any land abutting the land that is being conveyed or otherwise
dealt with.*

State other
reason if any

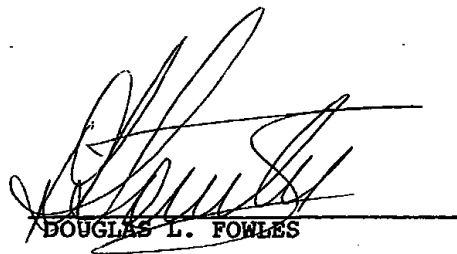
SWORN before me City of Toronto

~~at the~~ in the Municipality of

~~in the~~ Metropolitan Toronto

this 27th

day of July 19 83.



DOUGLAS L. FOWLES

AFFIDAVIT OF RESIDENCE AND OF VALUE OF THE CONSIDERATION

THE MATTER OF THE CONVEYANCE OF (insert brief description of land) Part of Township Lot 14, in Concession 3
south of Dundas Street of the Township of Trafalgar, now in the Town of Oakville, and being
more particularly composed of all of Parts 1,2,3,4,5 and 6 on a Plan registered in the
BY (print names of all transferors in full) ROSHORN LIMITED (Registry Office for the Registry Division
of Halton (No.20) as No. 20R-5913.

TO (see instruction 1 and print names of all transferees in full) DOUGLAS W. BEER

I, (see instruction 2 and print name(s) in full) DOUGLAS W. BEER

MAKE OATH AND SAY THAT:

- 1. I am (place a clear mark within the square opposite that one of the following paragraphs that describes the capacity of the deponent(s): (see instruction 2)
(a) A person in trust for whom the land conveyed in the above-described conveyance is being conveyed;
(b) A trustee named in the above-described conveyance to whom the land is being conveyed;
(c) A transferee named in the above-described conveyance;
(d) The authorized agent or solicitor acting in this transaction for (insert name(s) of principal(s))
(e) The President, Vice-President, Manager, Secretary, Director, or Treasurer authorized to act for (insert name(s) of corporation(s))
(f) A transferee described in paragraph () (insert only one of paragraph (a), (b) or (c) above, as applicable) and am making this affidavit on my own behalf and on behalf of (insert name of spouse) who is my spouse described in paragraph () (insert only one of paragraph (a), (b) or (c) above, as applicable)

- 2. I have read and considered the definitions of "non-resident corporation" and "non-resident person" set out respectively in clauses 1 (1)(f) and (g) of the Act. (see instruction 3).
3. The following persons to whom or in trust for whom the land conveyed in the above-described conveyance is being conveyed are non-resident persons within the meaning of the Act. (see instruction 4) NONE

4. THE TOTAL CONSIDERATION FOR THIS TRANSACTION IS ALLOCATED AS FOLLOWS:
(a) Monies paid or to be paid in cash \$ 380,000.00
(b) Mortgages (i) Assumed (show principal and interest to be credited against purchase price) \$ 1,037,000.00
(ii) Given back to vendor \$ nil
(c) Property transferred in exchange (detail below) \$ nil
(d) Securities transferred to the value of (detail below) \$ nil
(e) Liens, legacies, annuities and maintenance charges to which transfer is subject \$ nil
(f) Other valuable consideration subject to land transfer tax (detail below) \$ nil
(g) VALUE OF LAND, BUILDING, FIXTURES AND GOODWILL SUBJECT TO LAND TRANSFER TAX (TOTAL OF (a) to (f)) \$ 1,417,000.00 \$ 1,417,000.00
(h) VALUE OF ALL CHATTELS - Items of tangible personal property (Retail Sales Tax is payable on the value of all chattels unless exempt under the provisions of the "Retail Sales Tax Act", R.S.O. 1980, c.434, as amended) \$ nil
(i) Other consideration for transaction not included in (g) or (h) above \$ nil
(j) TOTAL CONSIDERATION \$ 1,417,000.00

ALL BLANKS MUST BE FILLED IN. INSERT "NIL" WHERE APPLICABLE.

- 5. If consideration is nominal, describe relationship between transferor and transferee and state purpose of conveyance. (see instruction 5) nil
6. If the consideration is nominal, is the land subject to any encumbrance? nil
7. Other remarks and explanations, if necessary none

SWORN before me at the City of Toronto in the Municipality of Metropolitan Toronto this 22nd day of September 19 83

A Commissioner for taking Affidavits, etc.

DOUGLAS W. BEER signature(s)

PROPERTY INFORMATION RECORD

- A. Describe nature of instrument: DEED
B. (i) Address of property being conveyed (if available) 165 Cross Avenue, Oakville, Ontario
(ii) Assessment Roll No. (if available) not available
C. Mailing address(es) for future Notices of Assessment under the Assessment Act for property being conveyed (see instruction 6) 55 Harbour Square Apt. 3311, Toronto, Ontario M5J 2L1
D. (i) Registration number for last conveyance of property being conveyed (if available) not available
(ii) Legal description of property conveyed: Same as in D.(i) above. Yes [] No [] Not Known [x]

E. Name(s) and address(es) of each transferee's solicitor ENFIELD, HEMMERICK & WOOD 372 Bay Street, Suite 1800 Toronto, Ontario M5H 2W9

For Land Registry Office use only
REGISTRATION NO.
Land Registry Office No.
Registration Date

AFFIDAVIT OF SUBSCRIBING WITNESS

I, _____

of the _____

in, the _____

make oath and say:

I am a subscribing witness to the attached instrument and I was present and saw it executed

at _____ by _____

*See footnote

*See footnote

I verily believe that each person whose signature I witnessed is the party of the same name referred to in the instrument.

SWORN before me at the _____

this _____ day of _____ 19 _____

A COMMISSIONER FOR TAKING AFFIDAVITS, ETC.

* Where a party is unable to read the instrument or where a party signs by making his mark or in foreign characters add "after the instrument had been read to him and he appeared fully to understand it". Where executed under a power of attorney insert "(name of attorney) as attorney for (name of party)"; and for next clause substitute "I verily believe that the person whose signature I witnessed was authorized to execute the instrument as attorney for (name)".

Dated July 27 ¹⁹⁸³

ROSHORN LIMITED

TO

DOUGLAS W. BEER

Address: 55 Harbour Square
Suite 3311, Toronto

Deed of Land

SITUATE

Part of Township Lot 14,
Concession 3, S.D.S., Town
of Oakville

DYE & DURHAM CO. LIMITED

ASSESSMENT ROLL NO. _____

ADDRESS OF PROPERTY:

165 Cross Avenue, Oakville

ENFIELD, HEMMERICK & WOOD
Barristers and Solicitors
372 Bay Street
Suite 1800
Toronto, Ontario M5H 2W9

589005

REGISTRY DISTRICT
HALTON NO. 20 I CERTIFY
THAT THIS INSTRUMENT IS
REGISTERED / RECORDED AS OF

NOV 3 4 04 PM '83

LAND REGISTRY OFFICE
AT HALTON, ONTARIO
John Howard

EXHIBIT	15-11
GR.	LOT 14 CON 3 S D S

REGISTRATION FEE	15-
LAND TRANSFER TAX	11,156-
RETAIL SALES TAX	

Properties

PIN 24816 - 0047 LT Interest/Estate Easement Add Easement
 Description SERVIENT LANDS: PT LT 14, CON 3 TRAF SDS, PTS 1-6 20R22099; TOWN OF OAKVILLE
 DOMINANT LANDS: PT LT 14, CON 3 TRAFALGAR, SOUTH OF DUNDAS STREET , AS IN
 811940 EXCEPT PT 1 20R7001 ; OAKVILLE/TRAFALGAR (PIN 24816-0049)
 Address OAKVILLE

Consideration

Consideration \$2.00

Transferor(s)

The transferor(s) hereby transfers the easement to the transferee(s).

Name 165 CROSS INC.
 Address for Service 90 Wingold Avenue, Suite 1
 Toronto, Ontario M6B1P5

A person or persons with authority to bind the corporation has/have consented to the registration of this document.
 This document is not authorized under Power of Attorney by this party.

Transferee(s)

Capacity

Share

Name 166 SOUTH SERVICE INC.
 Address for Service 90 Wingold Avenue, Suite 1
 Toronto, Ontario M6B1P5

Statements

Schedule: See Schedules

Signed By

Anthony Francesco Salandra Box 48 Suite 5300, TD Bank Tower acting for Signed 2022 05 06
 Toronto Transfereor(s)
 M5K 1E6

Tel 416-362-1812

Fax 416-868-0673

I have the authority to sign and register the document on behalf of all parties to the document.

Anthony Francesco Salandra Box 48 Suite 5300, TD Bank Tower acting for Signed 2022 05 06
 Toronto Transferee(s)
 M5K 1E6

Tel 416-362-1812

Fax 416-868-0673

I have the authority to sign and register the document on behalf of all parties to the document.

Submitted By

MCCARTHY TETRAULT LLP Box 48 Suite 5300, TD Bank Tower 2022 05 06
 Toronto
 M5K 1E6

Tel 416-362-1812

Fax 416-868-0673

Fees/Taxes/Payment

Statutory Registration Fee \$66.30
 Provincial Land Transfer Tax \$0.00
 Total Paid \$66.30

File Number

Transferor Client File Number : 224884-547197

LAND TRANSFER TAX STATEMENTS

In the matter of the conveyance of: 24816 - 0047 SERVIENT LANDS: PT LT 14, CON 3 TRAF SDS, PTS 1-6 20R22099; TOWN OF OAKVILLE

DOMINANT LANDS: PT LT 14, CON 3 TRAFALGAR, SOUTH OF DUNDAS STREET, AS IN 811940 EXCEPT PT 1 20R7001; OAKVILLE/TRAFALGAR (PIN 24816-0049)

BY: 165 CROSS INC.

TO: 166 SOUTH SERVICE INC.

1. EMIL TOMA

I am

- (a) A person in trust for whom the land conveyed in the above-described conveyance is being conveyed;
- (b) A trustee named in the above-described conveyance to whom the land is being conveyed;
- (c) A transferee named in the above-described conveyance;
- (d) The authorized agent or solicitor acting in this transaction for _____ described in paragraph(s) () above.
- (e) The President, Vice-President, Manager, Secretary, Director, or Treasurer authorized to act for 166 SOUTH SERVICE INC. described in paragraph(s) (c) above.
- (f) A transferee described in paragraph () and am making these statements on my own behalf and on behalf of _____ who is my spouse described in paragraph () and as such, I have personal knowledge of the facts herein deposited to.
-

3. The total consideration for this transaction is allocated as follows:

(a) Monies paid or to be paid in cash	\$2.00
(b) Mortgages (i) assumed (show principal and interest to be credited against purchase price)	\$0.00
(ii) Given Back to Vendor	\$0.00
(c) Property transferred in exchange (detail below)	\$0.00
(d) Fair market value of the land(s)	\$0.00
(e) Liens, legacies, annuities and maintenance charges to which transfer is subject	\$0.00
(f) Other valuable consideration subject to land transfer tax (detail below)	\$0.00
(g) Value of land, building, fixtures and goodwill subject to land transfer tax (total of (a) to (f))	\$2.00
(h) VALUE OF ALL CHATTELS -items of tangible personal property	\$0.00
(i) Other considerations for transaction not included in (g) or (h) above	\$0.00
(j) Total consideration	\$2.00

4.

Explanation for nominal considerations:

- o) Transfer of easement or right of way for no consideration.
-

5. The land is subject to encumbrance

6. Other remarks and explanations, if necessary.

- The information prescribed for purposes of section 5.0.1 of the Land Transfer Tax Act is not required to be provided for this conveyance.
 - The transferee(s) has read and considered the definitions of "designated land", "foreign corporation", "foreign entity", "foreign national", "Greater Golden Horseshoe Region", "specified region", "spouse" and "taxable trustee" as set out in subsection 1(1) of the Land Transfer Tax Act and O. Reg 182/17. The transferee(s) declare that this conveyance is not subject to additional tax as set out in subsection 2(2.1) of the Act because:
 - (b) This is not a conveyance of "designated land".
 - The transferee(s) declare that they will keep at their place of residence in Ontario (or at their principal place of business in Ontario) such documents, records and accounts in such form and containing such information as will enable an accurate determination of the taxes payable under the Land Transfer Tax Act for a period of at least seven years.
 - The transferee(s) agree that they or the designated custodian will provide such documents, records and accounts in such form and containing such information as will enable an accurate determination of the taxes payable under the Land Transfer Tax Act, to the Ministry of Finance upon request.
-

PROPERTY Information Record

A. Nature of Instrument: Transfer Easement
LRO 20 Registration No. HR1889581 Date: 2022/05/06

B. Property(s): PIN 24816 - 0047 Address OAKVILLE Assessment -
Roll No

C. Address for Service: 90 Wingold Avenue, Suite 1
Toronto, Ontario M6B1P5

D. (i) Last Conveyance(s): PIN 24816 - 0047 Registration No. HR1851959
(ii) Legal Description for Property Conveyed: Same as in last conveyance? Yes No Not known

E. Tax Statements Prepared By: Anthony Francesco Salandra
Box 48 Suite 5300, TD Bank Tower
Toronto M5K 1E6

OPERATION EASEMENT AGREEMENT

THIS AGREEMENT made as of the 6th day of May, 2022 (the “**Agreement**”)

BETWEEN:

165 CROSS INC.
(the “**Transferor**”)

- and -

166 SOUTH SERVICE INC.
(the “**Transferee**”)

WHEREAS:

- A. The Transferor is the owner of certain lands described in Schedule A to this Agreement and all current improvements thereon (the “**165 Lands**”);
- B. The Transferee is the owner of certain landed described in Schedule B to this Agreement and all current improvements thereon (the “**Dominant Lands**”);
- C. Located on those portions of the 165 Lands described in Schedule C to this Agreement, are access points for the operation, installation and maintenance of hydro, water, sanitary, sewers, drains and communication services for the benefit of the Dominant Lands (the “**Easement Lands**”); and
- D. The Transferor and Transferee (each a “**Party**” and collectively the “**Parties**”) wishes to evidence and document the certain easement rights in connection with the Easement Lands and has agreed to grant to the Transferee as an appurtenance to and for the benefit of the Dominant Lands, easements over the Easement Lands in accordance with this Agreement.

NOW THEREFORE this Agreement witnesseth that in consideration of the sum of ten (\$10.00) dollars and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by the parties hereto, the parties agree as follows:

- 1. **Grant:** The Transferor hereby irrevocably grants, transfers and conveys to the Transferee, its successors and assigns the following rights (the “**Easement**”):
 - (a) A free uninterrupted and non-exclusive easement or right in the nature of the easement in, on, over, along, upon, under and through the Easement Lands for the purpose of operating, installing and maintaining hydro, water, sanitary, sewers, drains and communication services for the benefit of the Dominant Lands (the “**Works**”);
 - (b) The Easement (i) is granted as and from the date hereof subject to Section 13 hereof, in perpetuity or until a date which is the date on which the Transferee executes and delivers a full and complete surrender and release of all rights and easements granted hereunder with respect to all the Easement Lands; and (ii) may be used by the Transferee’s servants, employees, contractors, consultants and agents and other permitted users (“**Transferee Parties**”).

2. **Run With the Lands:** The burden of the easements or rights in the nature of easements granted above shall run with the Easement Lands and each and every part thereof and the benefit thereof shall run with and be appurtenant to the Dominant Lands and each and every part thereof and shall bind and enure to the benefit of the parties hereto and their successors and assigns. The parties expressly declare their intention and agreement that the principles of benefit and burden shall apply to their relationship and that, they respectively, agree to assume the burden of and be bound by, each and every of the covenants entered into by them in this Agreement.

3. **Easement Rights and General Condition**

- (a) The Transferor's interests and use of the 165 Lands, including the Easement Lands, shall be unrestricted by this Agreement, provided that, the Transferor shall not unreasonably interfere with the Transferee's exercise and enjoyment of the easements hereby granted. The Easement is granted in common with the rights of others entitled thereto.
- (b) In exercising its rights hereunder, the Transferee and all Transferee Parties shall at all times comply with all of the Transferor's reasonable health, safety, environmental and construction rules and standards communicated to the Transferee from time to time, provided that such compliance does not result in a breach of any Applicable Laws (as defined below).
- (c) The Transferor reserves the right to remove any person from the Easement Lands and/or stop any works thereon without notice: (a) the Transferor has reasonable concerns that such person and/or works constitute a threat to the health and safety of others and/or threat to the physical integrity of property and/or environment; and (b) the Transferor has communicated such concerns to the Transferee and the Transferee has failed to immediately take reasonable action to eliminate such threat, to the satisfaction of Transferor acting reasonably.
- (d) In the event of an incident involving fire or explosion, or a spill, leak or emission of any hazardous substance into the environment, or any other unusual and dangerous circumstance, which arises on the Easement Lands or the 165 Lands as a result of Transferee's exercise of any rights granted herein (an "**Incident**"), Transferee shall provide any and all necessary emergency response and cleanup in compliance with Applicable Laws (as defined below) and as approved by the Transferor acting reasonably. Whichever Party first becomes aware of an Incident shall immediately notify the other Party by telephone and e-mail and subsequently forthwith follow-up that notification with a written notification to the other Party.

4. **Indemnity and Release:**

- (a) For the purpose of this Agreement "**Claims**" means all past, present and future claims, suits, proceedings, liabilities, obligations, losses, damages, penalties, judgements, costs, expenses, fines, disbursements, legal fees (on a substantial indemnity basis) and other professional fees and disbursements, interest.
- (b) Transferee shall at all times be responsible for the safety of its employees, contractors and agents on the Easement Lands and shall be the constructor and employer in respect of all activities, including all works, conducted by Transferee, its employees, contractors and agents on the Easement Lands, for the purpose of all applicable health and safety

legislation, including the *Occupational Health and Safety Act*, (Ontario), regulations thereunder and the *Workplace Safety and Insurance Act*, (Ontario).

- (c) Transferee and all Transferee Parties shall use the Easement Lands at their own risk, cost and expense and Transferor shall not be liable for any Claims, loss, damage, injury to it or any property or person, except as caused by the gross negligence or willful act of Transferor, and Transferee hereby releases Transferor, subject to the aforementioned terms, from all Claims in respect of any such Claims, loss, damage or injury, and Transferee shall not make any Claim against the Transferor in connection with the foregoing.
- (d) Transferee acknowledges that it accepts the Easement Lands on an “as is” “where is” basis. Transferee acknowledges that the Transferor has made no representations or warranties as to the condition of the Easement Lands and/or the purposes to which they can be put to use.
- (e) Transferee shall fully indemnify Transferor for, and hold Transferor harmless from, any damages and losses and Claims suffered by Transferor resulting from Transferee’s exercise of any of its easements rights hereunder including, the Transferee and/or any Transferee Party’s presence, access, and use of the Easement Lands, except as caused by the gross negligence or wilful act of Transferor. Without limiting the generality of the foregoing, Transferee shall be responsible for, and shall indemnify Transferor, its affiliates and subsidiaries and each of its officers, directors, employees and agents (collectively the “**Indemnified Parties**”), and hold the Indemnified Parties harmless from and against all Claims, that any Indemnified Party may incur or suffer as a result of or in connection with Transferee’s and/or any Transferee Party’s entry upon, access to, and activities on the Easement Lands and/or Transferor at the 165 Lands , except as caused by the gross negligence or wilful act of Transferor. Without limiting the generality of the foregoing Transferee further covenants and agrees to be responsible for, and to indemnify the Indemnified Parties as a result of or in connection with:
 - (i) the discovery of any pollutant, contaminant, or hazardous substance, which has escaped, seeped, leaked, spilled, discharged, or released on, in or under the Easement Lands and its surrounding environment to the extent arising from and/or consequent to Transferee’s use or enjoyment of the Easement Lands following the date hereof; and
 - (ii) the imposition of any remedial order affecting the Easement Lands as a result of Transferee’s acts or omissions or a non-compliance with environmental laws or environmental approvals to the extent arising from Transferee or any Transferee Party’s use or enjoyment of the Easement Lands following the date hereof.

This Section 5 shall survive the termination of this Agreement.

5. **Transferee Work:**

- (a) At least 30 days prior to commencement of any installation, maintenance, repair or replacement of the Works, the Transferee shall submit to the Transferor for its approval, plans and specifications for such work, together with a schedule for completion, for approval of Transferor in its sole discretion.

- (b) Any installation, maintenance, repair, and/or replacement of the Works shall be completed to the reasonable satisfaction of the Transferor. The Transferee agrees to perform or cause to be performed such work in accordance with the approved plans and specifications noted in Section 6(a) and provide evidence to the Transferor of such completion, such evidence to include delivery of as-built plans where applicable. If there is any material variation from the approved plans and specifications, delivered pursuant to Section 6(a), the Transferee agrees to obtain the approval of the Transferor to such variations. The reasonable third party out of pocket costs incurred by the Transferor for the reasonable review of the plans and specifications under Section 6 will be paid for by the Transferee and the Transferor agrees to provide evidence of such costs on request of the Transferee. The Transferor and the Transferee agree to act co-operatively during this process of review and approval.
- (c) On completion of any maintenance, repair or replacement of the Works, the Easement Lands and the 165 Lands shall be restored to materially the same condition existing immediately prior to commencement of such work, all to the satisfaction of the Transferor.
- (d) The Transferee shall be responsible for its costs and expenses of examining, repairing, renewing, using and maintaining the Works and shall be responsible for obtaining all approvals, consents and permits required by Applicable Laws (as defined below) for such purposes. The Transferor shall perform or cause to be performed its permitted work and activities on the Easement Lands at its sole cost, expense and risk, and diligently, expeditiously and without unreasonable delay, and in accordance with prudent industry practices having regard for all existing structures and improvements, in such manner as may be requested and required by the Transferor, acting reasonably. The Transferee shall permit representatives of the Transferor to review and inspect such work and activities at any time during business hours and from time to time.

6. Compliance with Laws:

The Transferee acknowledges and agrees that:

- (a) while this Agreement is in effect, it will at its sole cost and expense comply with all applicable laws, by-laws, rules, regulations, policies and orders of governmental authorities (“**Applicable Laws**”) and obtain all required permits, authorizations and other approvals of applicable authorities, to the extent the same relate to the Works or to the use and enjoyment of the Easement Lands by the Transferee and/or any Transferee Party; and
- (b) It will, except as otherwise permitted under this Agreement, not do or suffer any waste, damage, disfiguration or injury to the Easement Lands or the 165 Lands.

7. Ownership of Works

Notwithstanding any rule of law or equity, the Works shall be the property of the Transferee and its successors and assigns even though the same may now or hereafter be annexed or affixed to the Easement

Lands. The Transferor hereby quitclaim and release all of its right, title and interest in and to any current or future Works, if any.

9. Insurance

- (a) Transferee shall ensure that it has secured and maintained full insurance coverage pursuant to the requirements of the *Workplace Safety and Insurance Act, 1997*, S.O. 1997, c. 16, Sched. A and that all assessments for same are paid in relation to any work constructed on the Easement Lands.
- (b) Transferee shall maintain at all times while this Agreement is in effect, at its expense:
 - (i) a comprehensive general liability and excess liability insurance policy that in total are in an amount not less than \$5,000,000.00 per occurrence; and
 - (ii) an owned and non-owned automobile insurance policy in an amount of not less than \$2,000,000.00 per occurrence,

covering Transferor and Transferee with respect to Claims, and all liability which may be imposed by law for loss of life, personal injury or damage to property arising or resulting from Transferee's and/or any Transferee Party, access to and/or use of the Easement Lands and/or 165 Lands. Transferee shall effect such insurance policies with an reputable insurer licensed to operate in Canada and shall include Transferor's as an additional insured on such policy(ies). Transferee shall provide a true copy of the certificates evidencing the insurances required herein and deposit same with Transferor.

10. Arbitration

In the event of a dispute between the parties under this Agreement, such dispute shall be promptly referred to a member of senior management of each of Transferor and Transferee who shall attempt to resolve such dispute. If such members of senior management are unable to resolve such dispute within twenty (20) days after referral to them, then Transferor and Transferee shall resolve such dispute in accordance with the remaining provisions of this Section 10. Such dispute under this Agreement shall be referred to and be finally resolved by arbitration pursuant to the National Arbitration Rules of the ADR Institute of Canada, Inc. in effect at the time of commencement of the arbitration. Unless Transferor and Transferee otherwise agree, the place of arbitration shall be Toronto, Ontario. The language of the arbitration shall be English.

11. Construction Liens

- (a) Transferee covenants that it shall pay all accounts for services and materials supplied to the Easement Lands at the request of or on behalf of or with the privity or consent of or for the benefit of Transferee in a timely manner in order that no lien certificate of pending litigation and/or registration under the *Construction Act (Ontario)* (herein a "Lien") shall be registered against title to all or any part of the 165 Lands by reason of, Transferee's failure to pay and/or any other matter or thing relating to Transferee and/or any Transferee Party.
- (b) If any Lien or is registered against title to any part of 165 Lands as a result of any matter set out in Section 11(a) above or any other act or omission of Transferee and/or any Transferee Party, Transferee shall take all steps necessary to cause such Lien to be discharged or vacated, as the case may be, within ten days of receiving notice thereof. If

Transferee does not remove any Lien or in accordance with paragraph 11(a) above, Transferor may, but shall not be obligated to, secure the removal of such Lien by paying the amount claimed into court (but not to the lien claimant directly), and any amount paid by Transferor in doing so, together with all costs and expenses of Transferor, shall be payable by Transferee to Transferor upon demand. Nothing herein shall imply any consent or agreement or request on the part of Transferor to subject Transferor's estate or interest in the Easement Lands or any part thereof or in any other part of 165 Lands to any Lien. Notice is hereby given that Transferor expressly refuses and denies any consent or agreement or request to permit Transferor's estate or interest in 165 Lands, including the Easement Lands, to be subject to any Lien. Transferee hereby agrees to indemnify and save harmless Transferor from and against all Claims resulting from or in connection with any Liens filed against title to all or any part of the 165 Lands relating to any matter set out in Section 11(a).

12. **Restoration.** In the event: (a) the Transferee wishes to abandon the Easement granted hereunder; (b) any Works and/or the Easement have been abandoned and/or have not been used by Transferee on a *bona fide* basis for a period of 5 years; or (c) this Agreement is otherwise terminated for any reason, at the election of Transferee in case of item (a) or (c), the applicable party may so notify the other, and the Transferee and the Transferor shall forthwith enter into an agreement in registrable form which terminates the Easement, in connection with any Works on such abandoned and/or terminated Easement (collectively with all contents located therein the “**Abandoned Works**”). The Transferee shall at its own cost and expense repair any damage caused to the 165 Lands by the Abandoned Work.
13. **Planning Act:** This Agreement, the Easements and the rights, obligations and liabilities created hereby are granted in perpetuity to the extent permitted by Applicable Laws and subject to this Section 13. This Agreement is subject to the express condition that the provisions of section 50 of the *Planning Act* (Ontario) are complied with. In the sole discretion of the Transferee, it may take all necessary steps required to obtain the requisite consents required pursuant to the provisions of the *Planning Act* (Ontario) to ensure the easements granted hereby may be granted in perpetuity (the “**Consent**”). Unless and until the required Consent is obtained (including without limitation completion of all conditions thereunder and the expiry of any appeal or approval thereunder), notwithstanding anything to the contrary contained in this Agreement, the term of this Agreement shall expire twenty one (21) years less one (1) day from the date hereof.
14. **Registration:** Transferee or Transferor intended that this Agreements shall be registered on title to the Easement Lands by no later than 10 days following the execution thereof. The cost to register this Agreement on title to the Easement Lands (including any land transfer tax) shall be borne by the Transferee at its sole cost and expense. The Transferee shall not register any other document, notice, certificate, or other instrument in in connection with this Agreement on title to all or any part of the 165 Lands (including the Easement Lands).
15. **Default:** The Transferee or Transferor (as applicable the “**Defaulting Party**”) acknowledges and agrees that should it at any time fail to comply with any term and/or condition of this Agreement, it shall within 5 days from the giving of a written notice of such non-compliance by the other party (as applicable the “**Non Defaulting Party**”), remedy such non-compliance (or if such non-compliance cannot be reasonably remedied within such 5 day period, the Defaulting Party commences to remedy such non-compliance in such 5 day period or thereafter proceeds to diligently remedy such non-compliance), failing which, without prejudice to any other rights of the Non Defaulting Party at law, the Non Defaulting Party may: (a) take whatever action it may deem necessary or fit to remedy or attempt to remedy the non-compliance, at the Defaulting Party's sole

expense plus a fifteen percent (15%) administration fee; and (b) where such default has a material and adverse effect on the Non Defaulting or any part of the 165 Lands that cannot be remedied by financial compensation, suspend the Defaulting Party's right to use the Easement Lands and Works in whole or as to any particular part or parts until such time as the non-compliance is cured; and all expenses of the Non Defaulting Party in remedying or attempting to remedy non-compliance shall constitute a debt owing by the Defaulting Party to the Non Defaulting Party payable upon demand together with interest at a rate equal to 7% above the commercial prime lending rate of the Toronto Dominion Bank, from the date such cost was incurred by the Non Defaulting Party until repaid by the Defaulting Party, plus an administration fee of fifteen (15%), and the Non Defaulting Party shall not be liable for any costs, expenses or damages incurred by the Defaulting Party. This Section 16 shall survive the termination of this Agreement.

16. Miscellaneous:

- (a) This Agreement shall be registered on title to the Dominant Lands and the 165 Lands as soon as reasonably possible following the execution and delivery of this Agreement.
- (b) In exercising their rights under this Agreement, each Party shall act reasonably and reasonably promptly in the circumstances, and in good faith.
- (c) No Party shall in any way or for any purpose be a partner of any other in the conduct of its business, or otherwise, or a joint venturer or a member of a joint enterprise with another Party by reason of the entry into of this Agreement or the performance of its obligations or enjoyment of its rights hereunder.
- (d) If and to the extent that any of the parties hereto shall be prevented or delayed by reason of Force Majeure in the performance of any obligation hereunder, it shall not be in default and the period for the fulfilment of such obligation shall be extended accordingly. For the purposes of this Agreement "**Force Majeure**" shall mean a delay resulting from an event or events the occurrence of which cannot be prevented by the exercise of reasonable best efforts by a Party, provided that the Party that purports to rely on the occurrence of a Force Majeure in excusing its failure to perform an obligation under this Agreement when required to do so has made reasonable best efforts in the circumstances to anticipate and minimize the adverse effect of the Force Majeure on the subject matter of this Agreement; without limiting the generality of the foregoing, "Force Majeure" includes delays resulting from strike, lock out, riots, insurrection, war, fire, tempest, flood, abnormal weather conditions, abnormal subsurface conditions, any other Act of God, shortage of material, but shall expressly exclude, without limitation, any delay caused by any economic matter;
- (e) Any notice to be given in connection with this Agreement shall be in writing and shall be given either by personal delivery, by registered prepaid post or by email addressed to the Transferee and Transferor in the address for service set out in the registration instrument of this Agreement on title, or such other municipal address, email address or individual as may be designated by notice by either Party to the other. Any communication given by personal delivery will be conclusively deemed to have been given on the day of actual delivery thereof or, if given by registered mail, on the fifth business day following the deposit thereof in the mail. If the Party giving any communication knows or ought reasonably to know of any difficulties with the postal system that might affect the delivery of mail, any such communication must not be mailed but must be given by personal delivery or by email. If given by email, the email will be deemed to have been given on the day of transmittal thereof if given during the normal business hours of the recipient and on

the business day during which normal business hours next occur if not given during such hours on any day.


- (f) Time shall be of the essence of this Agreement.
- (g) No waiver by any Party of any breach by any other Party of any of its covenants, obligations and agreements under this Agreement shall be a waiver of any subsequent breach or of any other covenant, obligation or agreement, nor shall any forbearance to seek a remedy for any breach be a waiver of any rights and remedies with respect to such or any subsequent breach.
- (h) If any covenant, obligation or agreement in this Agreement, or the application thereof to any person or circumstances shall, to any extent, be invalid or unenforceable, the remainder of this Agreement, or the application of such covenant, obligation or agreement to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby, and each covenant, obligation and agreement in this Agreement shall be separately valid and enforceable to the fullest extent permitted.
- (i) The article and section headings in this Agreement have been inserted for convenience of reference only, and shall not be referred to in the interpretation of this Agreement. This Agreement shall be read with all changes of gender and number required by the context.
- (j) In this Agreement: (i) the words “including”, “includes” and “include” mean “including (or includes or include), without limitation”; (ii) the phrase “the total aggregate of”, “the total of” or a phrase of similar meaning means “the aggregate (or total), without duplication, of”; (iii) unless otherwise specified, the words “Article” and “Section” followed by a number mean and refer to the specified Article or Section of this Agreement; (iv) in the computation of periods of time from a specified date to a later specified date, unless otherwise expressly stated, the word “from” means “from and including” and the word “until” means “to and including”; (v) unless otherwise expressly stated, the phrase “sole discretion” means “sole, absolute and unfettered discretion” and will not be subject to any restriction, limitation, challenge or review of any kind whatsoever at any time by the other Party, any court or any other third party; (vi) except as otherwise provided in this Agreement any reference in this Agreement to a statute refers to such statute and all rules and regulations made under it, as it or they may have been or may from time to time be amended or re-enacted; and (vii) whenever payments are to be made, an action is to be taken on a day which is not a business day, then such payment shall be made, such action shall be taken and such date will be deemed to fall on the next succeeding business day.
- (k) This Agreement shall be construed and enforced in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein from time to time, and shall be treated in all respects as an Ontario agreement.
- (l) Each Party agrees to give such further assurances as may be reasonably required from time to time by any other Party to more fully implement the true intent of this Agreement.
- (m) This Agreement shall enure to the benefit of and be binding upon the parties hereto and their respective successors and assigns including successors in title from time to time of the Easement Lands and the Dominant Lands.

- (n) This Agreement may be executed in one or more counterparts, each of which so executed shall constitute an original and all of which together shall constitute one and the same agreement.

[SIGNATURE PAGE TO FOLLOW]

IN WITNESS WHEREOF, the parties hereto, intending to be legally bound by the terms hereof, have hereunto set their hands, as of the date first above written.

165 CROSS INC.


Per: 

Name: Emil Toma
Title: A.S.O.

Per: _____
Name:
Title:

I/We have the authority to bind the Corporation.

166 SOUTH SERVICE INC.

Per: 

Name: Emil Toma
Title: A.S.O.

Per: _____
Name:
Title:

I/We have the authority to bind the Corporation.

SCHEDULE A
165 LANDS

PIN 24816-0047 (LT)

PT LT 14, CON 3 TRAF SDS, PTS 1-6 20R5913 EXCEPT PTS 1-3 20R10193 S/T & T/W 589005. S/T
582527. T/W 755151; TOWN OF OAKVILLE

Municipal Address: 165 Cross Avenue, Oakville, Ontario

**SCHEDULE B
DOMINANT LANDS**

PIN 24816-0049 (LT)

PT LT 14, CON 3 TRAFALGAR, SOUTH OF DUNDAS STREET, AS IN 811940 EXCEPT PT 1
20R7001 ; OAKVILLE/TRAFALGAR

Municipal Address: 166 South Service Road East, Oakville, Ontario

**SCHEDULE C
EASEMENT LANDS**

PART OF PIN 24816-0047 (LT)

PT LT 14, CON 3 TRAF SDS, PTS 1-6 20R22099; TOWN OF OAKVILLE

APPENDIX 'I'

Memorandum



URBANTECH®

To: Sasha Lauzon
Senior Director of Planning & Development
Distrikt

Date: February 26, 2024

From: Kate Connell
Senior Project Manager
Urbantech Consulting

Project #: 22-282W

Re: Midtown Oakville Wastewater Capacity Analysis (Existing and Future Conditions)

This memo has been prepared by Urbantech to support on-going development applications for Distrikt properties in Midtown Oakville.

The sections that follow describe the capacity available in the Midtown wastewater pipe network, under both existing and future conditions, using a first-principles approach. The analysis was completed to:

- Confirm existing capacity constraints, prior to the Region's planned trunk sewer upgrades (on-going capital project).
- Evaluate capacity available in the future system (with trunk sewer upgrades complete), under a variety of development scenarios.
- Identify additional upgrades that may be required in the local sanitary system to support development.

Results of the analysis indicate that the future system will be able to accommodate all of the Distrikt developments (plus additional growth) with only minor upgrades to the local network.

1. Midtown Oakville Existing Wastewater System

Figure 1 shows the existing Midtown Oakville wastewater network. The main trunk sewer (West Trunk) that services Midtown Oakville (west of Trafalgar Road) also provides sanitary capacity for approximately 260 ha north of the QEW. This trunk sewer runs south along Argus Road, through the GO Station parking lot and along Trafalgar Road to Cornwall.

A second, smaller sub-trunk sewer (East Trunk) provides sanitary capacity for Midtown east of Trafalgar Road (as well as a small area west of Trafalgar Road, north of Cross Avenue). This sub-trunk runs west along Davis Road and south on Trafalgar to Cornwall.

The two trunk sewers combine south of Cornwall and drain to the Rebecca Trunk sewer, terminating at the Oakville Southwest Wastewater Treatment Plant.

The Region has noted existing capacity constraints in both the West Trunk and East Trunk. They have initiated a capital project to upgrade the sewer extents as shown in **Figure 1** (blue and orange). The Region intends to have the upgrades completed in the 2026 timeframe.

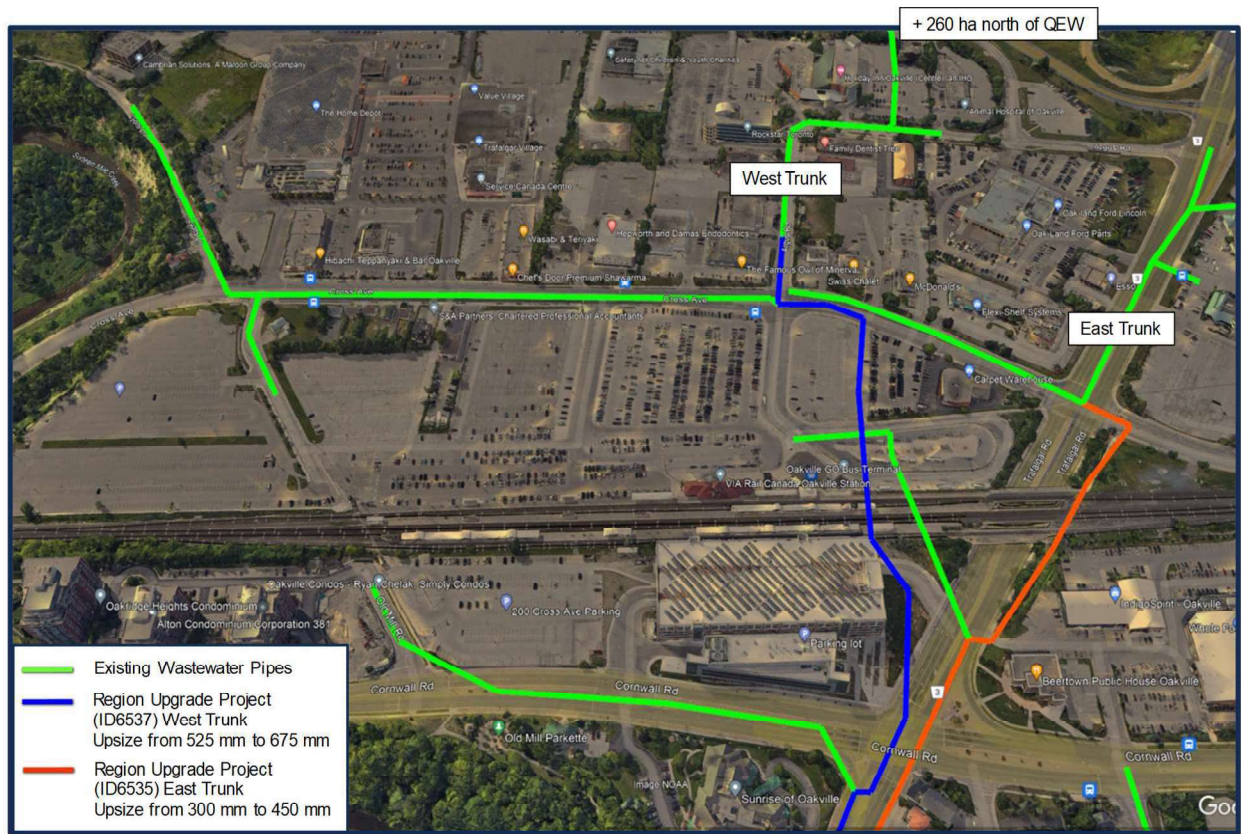


Figure 1: Midtown Oakville Wastewater Network (Existing)

2. Existing Wastewater Capacity Analysis

A first-principles wastewater analysis was undertaken to evaluate capacity in the existing sanitary network. This approach uses current land use, typical population densities and per-capita flow generation rates (in accordance with Region of Halton standards) to calculate pipe flow at the individual component level. This allows a pipe-by-pipe assessment of both trunk and local sewers.

Figure 2 shows the results of the existing conditions analysis for the Midtown sewer system. Lighter coloured pipes have more capacity and darker are more constrained. The limiting pipe segments for each trunk are identified. Results confirm an existing constraint in the West Trunk, through the GO Station parking lot. The East Trunk shows limited residual existing capacity.

Full details are available in **Attachment 1**, including associated drawings, drainage areas, key assumptions, and sanitary design sheets. It is noted that the West Trunk assessment includes calculations for the 260 ha north of the QEW which drain through Midtown. All flows are calculated using the Harmon peaking factor and inflow / infiltration in accordance with the Region’s Linear Design Manual (2019).



Figure 2: Midtown Oakville Existing Conditions – Pipe Capacity Analysis Results

3. Future Wastewater Capacity Analysis

The future wastewater capacity analysis for Midtown uses the same approach as outlined in Section 2 but augments the sanitary design sheet to upsize pipe components associated with the Region's upgrade project as shown in **Figure 1** (i.e., 525 mm updated to 675 mm, and 300 mm updated to 450 mm). The alignment and slopes of the existing pipe network are kept the same. These may change as the Region progresses their design, but minor changes are not anticipated to impact the results of this analysis.

Four (4) future scenarios were run to assess the impact of development on the Midtown Oakville wastewater system:

Scenario 1 (Base Case):

- Region trunk sewer upgrades complete.
- No new development added to the system (existing conditions).

Scenario 2A:

- Region trunk sewer upgrades complete.
- Population and employment projections for Distrikt planned developments added to the sewer network at appropriate nodes (all new wastewater flow directed to the West Trunk).

Scenario 2B:

- Region trunk sewer upgrades complete.
- Population and employment projections for Distrikt planned developments added to the sewer network at appropriate nodes (wastewater flow is split between the West and East Trunks)

Scenario 3:

- Region trunk sewer upgrades complete.
- Population and employment projections for all near-term development in Midtown Oakville (including Distrikt developments) added to the system at appropriate nodes. This includes 627 Lyons Lane, 349 Davis Road and 177 Cross Avenue.

Attachment 2 includes mapping, a summary of results, and detailed design sheets for the four (4) future scenarios. Population estimates for Distrikt developments are based on current engineering design (population and employment estimates) as provided by Trafalgar Engineering.

In general, results show that:

- The Region's planned trunk sewer upgrades resolve the existing capacity constraints in the Midtown system. The trunk sewer upgrades (as proposed) provide sufficient downstream capacity under all scenarios tested.
- The local 300 mm sanitary sewer on Cross Avenue (running east/west from Argus Road to Lyons Lane) has existing capacity to accommodate full build-out of Distrikt's 157/165 Cross Avenue site. Any additional development connecting to the Cross Avenue sewer will trigger an upsize from 300 mm to 450 mm diameter for a short section (approximately 140 m total, from Argus Road to 140 m west of Argus Road). The 450 mm diameter size is sufficient to support new growth under all scenarios tested (including Scenario 3 which adds 166 South Service Road, 627 Lyons Lane and 177 Cross Avenue future developments to the Cross Avenue local sewer).
- There are no other local capacity constraints in any of the future scenarios considered. Further infrastructure planning will be required to identify ultimate (i.e., 2041, 2051) servicing needs. The analysis herein, however, confirms that the system can support near-term development (currently in the pipeline) with only minor modifications.

4. Conclusions

The wastewater system in Midtown Oakville provides opportunities for near-term development. The first-principles analysis of system capacity shows that:

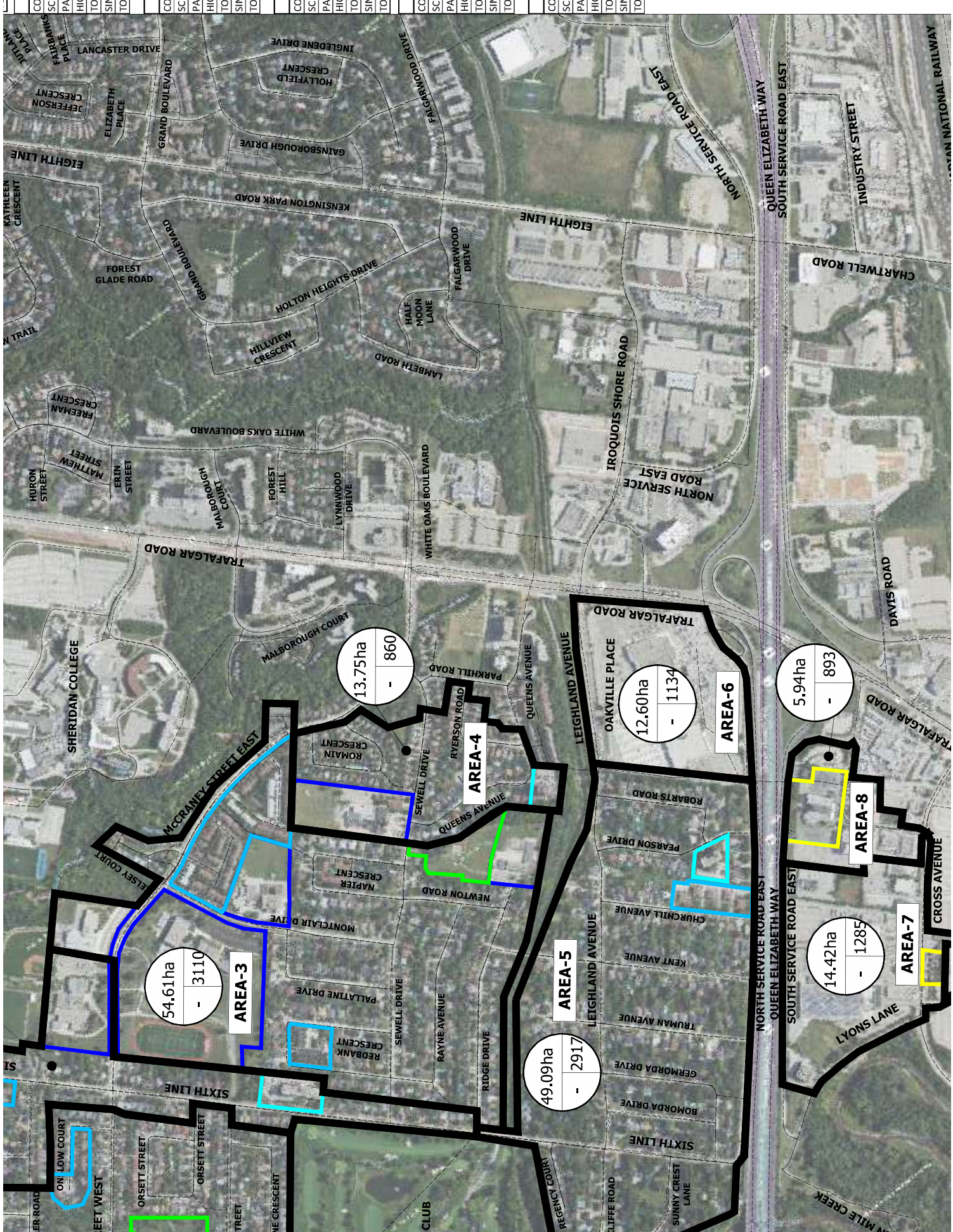
- The Region's planned trunk sewer upgrades alleviate the existing capacity constraints in the trunk sewer system.
- Once the trunk sewers are upgraded, there is capacity in the West Trunk and East Trunk to support all development currently in the pipeline (including all Distrikt developments), with spare capacity for other landowners.
- The local sanitary system has sufficient capacity to accommodate all near-term growth, with the exception of a short (140 m) section of the existing Cross Avenue sewer (from Argus Road to 140 m west of Argus Road). This sewer can accommodate full build-out of the 157/165 Cross Avenue site but would need to be upgraded from a 300 mm diameter sewer to a 450 mm diameter sewer to facilitate additional development.

Report Prepared By:

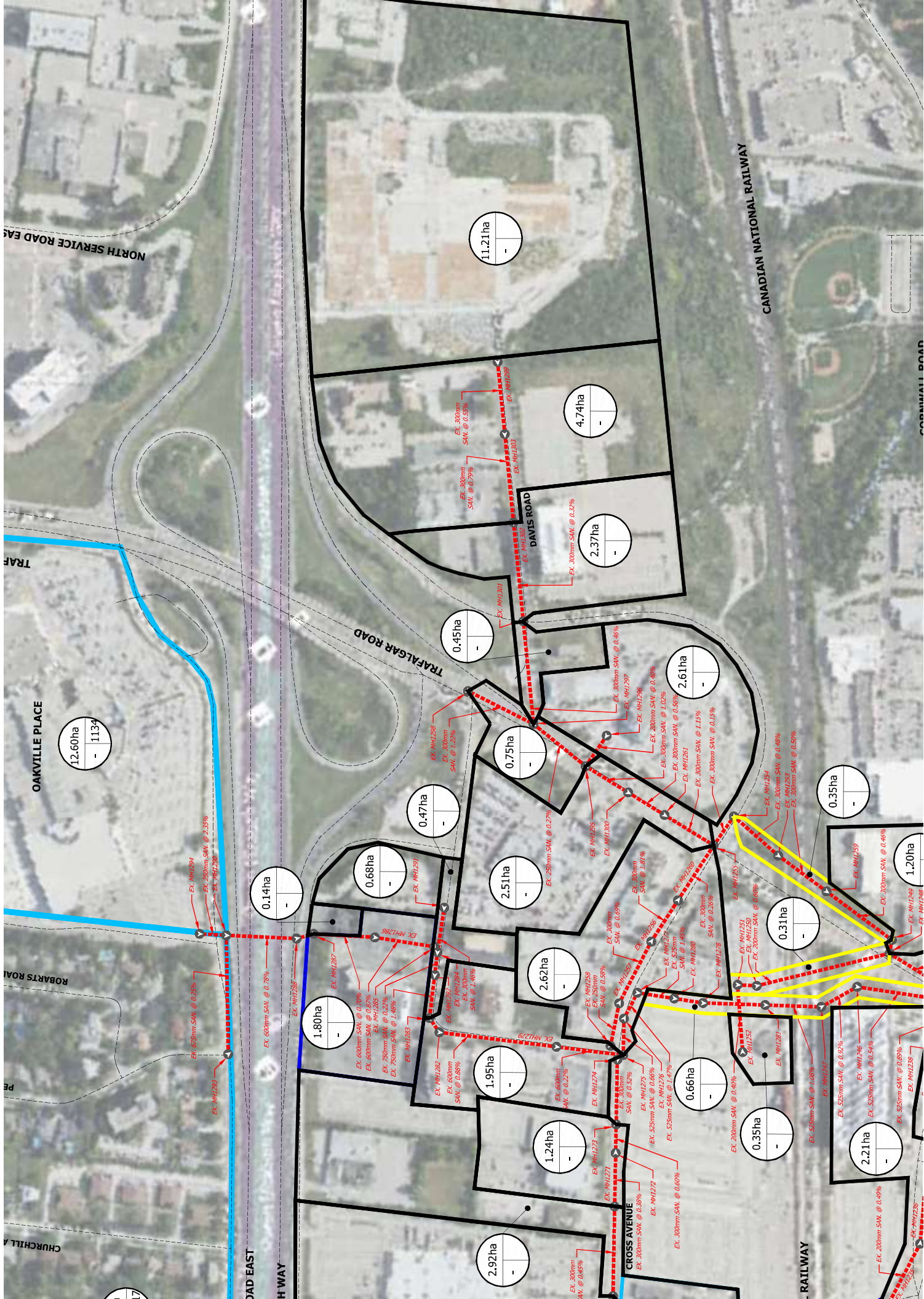


Kate Connell, P.Eng.
Senior Project Manager
Urbantech

ATTACHMENT 1:
Existing System Capacity Analysis



AREA-4	AREA-5	AREA-6	AREA-7	AREA-8
COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL
SCHOOL	SCHOOL	SCHOOL	SCHOOL	SCHOOL
PARK	PARK	PARK	PARK	PARK
HIGHRISE	HIGHRISE	HIGHRISE	HIGHRISE	HIGHRISE
TOWNHOUSE	TOWNHOUSE	TOWNHOUSE	TOWNHOUSE	TOWNHOUSE
SINGLE FAMILY	SINGLE FAMILY	SINGLE FAMILY	SINGLE FAMILY	SINGLE FAMILY
TOTAL	TOTAL	TOTAL	TOTAL	TOTAL





SANITARY SEWER DESIGN SHEET (EXISTING)

Midtown - Existing Conditions
TOWN OF OAKVILLE
 REGIONAL MUNICIPALITY OF HALTON

PROJECT DETAILS

Project No: 22-282
 Date: 12-Jan-24
 Designed by: J.P.O
 Checked by: KC

DESIGN CRITERIA

Min Diameter = 200 mm
 Manning's 'n' = 0.013
 Min. Velocity = 0.60 m/s
 Max. Velocity = 3.00 m/s
 Avg. Domestic Flow = 275.0 l/c/d
 Infiltration = 0.286 l/s/ha
 Max. Peaking Factor = 4.00
 Min. Peaking Factor = 2.00

NOMINAL PIPE SIZE USED

STREET	FROM MH	TO MH	RESIDENTIAL							COMMERCIAL/INDUSTRIAL/INSTITUTIONAL							FLOW CALCULATIONS				PIPE DATA			
			AREA (sq. ft.)	DENSITY (lb./sq. ft.)	UNITS (#)	ACC. AREA (sq. ft.)	ACCUM. RES. POP.	DENSITY (lb./sq. ft.)	AREA (sq. ft.)	EQUIV. POP.	FLOW RATE (l/s/ft.)	ACCUM. EQUIV. POP.	ACCUM. INFILTRATION POP.	TOTAL ACCUM. POP.	PEAKING FACTOR	RES. FLOW (l/s)	COMM. FLOW (l/s)	ACCU. COMM. FLOW (l/s)	TOTAL FLOW (l/s)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (l/s)	FULL FLOW VELOCITY (m/s)	PERCENT FULL (%)
			(m)	(#)	(#)	(sq. ft.)	(#)	(sq. ft.)	(#)	(l/s/ft.)	(#)	(l/s)	(l/s)	(#)	(#)	(l/s)	(l/s)	(l/s)	(l/s)	(%)	(mm)	(l/s)	(m/s)	(%)
Area-1		Area-2	99.09			99.09	5352		99.09	28.3	5352	3.22	54.8				83.1	0.85	200	200				
Area-2		Area-3	30.00			129.09	7718		129.09	36.9	7718	3.07	75.3				112.2	0.85	200	200				
Area-3		Area-4	13.75			142.84	860		142.84	3.9	860	3.84	10.5				14.4	0.85	200	200				
Area-4		Area-5	54.61			197.45	3110		197.45	56.5	11688	10.74	28.9				163.9	0.25	675	420.3	1.17	1.13	48%	
Area-5		Area-6	49.09			246.54	3110		246.54	70.5	14605	2.79	129.7				200.2	0.25	675	420.3	1.17	1.13	48%	
Area-6		MH1290	12.60			259.14	1134		259.14	3.6	1134	3.76	13.6				17.2	0.25	675	420.3	1.17	1.13	19%	
		MH1288	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1286	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1284	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1282	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1280	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1278	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1276	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1274	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1272	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1270	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1268	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1266	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1264	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1262	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1260	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1258	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1256	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1254	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1252	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1250	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1248	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1246	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1244	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1242	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1240	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1238	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1236	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1234	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1232	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1230	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1228	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1226	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1224	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1222	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1220	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1218	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1216	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1214	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1212	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1210	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1208	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1206	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1204	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1202	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1200	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1198	2591.4			2591.4	15739		2591.4	74.1	14605	2.76	138.1				212.4	0.28	600	542.3	1.92	1.73	39%	
		MH1196	2591.4			2591.4																		



SANITARY SEWER DESIGN SHEET (EXISTING)

Midtown - Existing Conditions
TOWN OF OAKVILLE
 REGIONAL MUNICIPALITY OF HALTON

PROJECT DETAILS

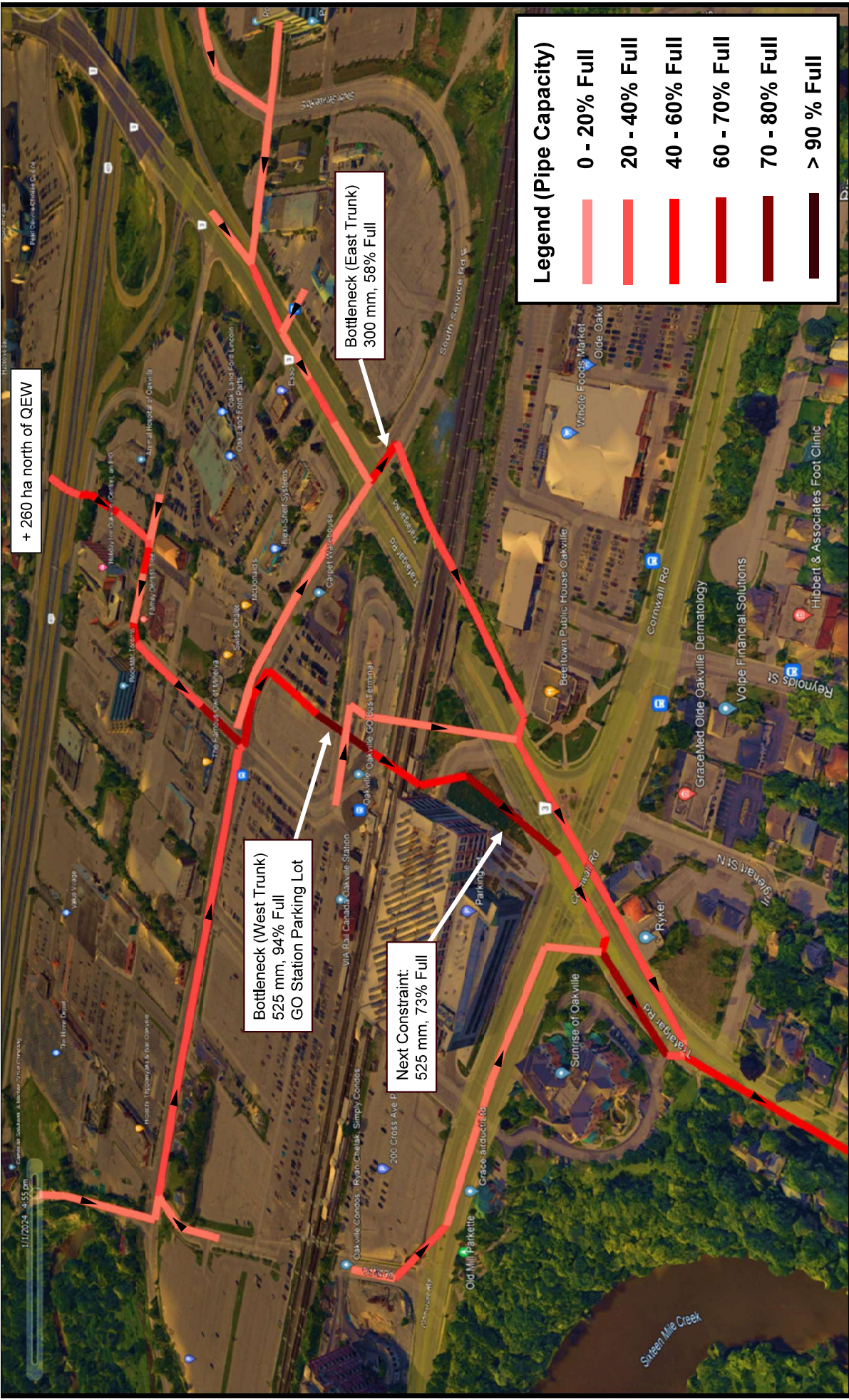
Project No: 22-282
 Date: 12-Jan-24
 Designed by: J.P.O
 Checked by: KC

DESIGN CRITERIA

Min Diameter = 200 mm
 Manning's 'n' = 0.013
 Min. Velocity = 0.60 m/s
 Max. Velocity = 3.00 m/s
 Avg. Domestic Flow = 275.0 l/c/d
 Infiltration = 0.286 l/s/ha
 Max. Peaking Factor = 4.00
 Min. Peaking Factor = 2.00

NOMINAL PIPE SIZE USED

STREET	FROM MH	TO MH	LENGTH (m)	RESIDENTIAL			COMMERCIAL/INDUSTRIAL/INSTITUTIONAL			FLOW CALCULATIONS			PIPE DATA			PERCENT FULL (%)							
				ACC. AREA (ha)	UNITS (#)	DENSITY (#/ha)	ACCUM. RES. POP.	ACC. AREA (ha)	EQUIV. POP. (#/ha)	FLOW RATE (l/s/ha)	TOTAL ACCUM. POP.	PEAKING FACTOR	RES. FLOW (l/s)	COMM. FLOW (l/s)	ACCU. COMM. FLOW (l/s)		TOTAL FLOW (l/s)	SLOPE (%)	PIPE DIAMETER (mm)	FULL CAPACITY (l/s)	FULL FLOW VELOCITY (m/s)	ACTUAL FLOW VELOCITY (m/s)	
				2594.14			15739	26.51				18130	2.70	155.5		237.2	1.02	600	620.1	2.19	1.97	38%	
MH1241	MH1242																						
MH1298	MH1297							0.75	90	68	68	4.00	4.00	0.9	1.1	1.22	300	106.8	1.51	0.39	1%		
MH1299	MH1303							4.74	90	427	427	4.00	4.00	1.4	6.8	0.55	300	71.7	1.91	0.65	9%		
MH1305	MH1302							4.74	90	427	427	4.00	4.00	1.4	6.8	0.79	300	83.9	1.22	0.72	8%		
MH1302	MH1301							7.11	90	681	681	3.92	3.92	1.4	10.0	0.32	300	67.7	0.71	0.58	18%		
MH1301	MH1306							0.45	90	41	41	4.00	4.00	0.8	11.6	0.48	300	65.6	0.73	0.56	18%		
MH1306	MH1305							2.61	90	235	235	4.00	4.00	1.4	11.7	0.40	200	20.7	0.66	0.57	28%		
MH1305	MH1300							2.61	90	235	235	4.00	4.00	1.4	11.7	0.40	200	20.7	0.66	0.57	28%		
MH1300	MH1261							13.43	90	226	1211	3.74	3.74	14.4	18.3	1.02	300	97.7	1.38	1.05	19%		
MH1261	MH1255							13.43	90	1211	1211	3.74	3.74	14.4	18.3	1.15	300	103.7	1.47	1.10	18%		
MH1258	MH1257							2.62	90	236	236	4.00	4.00	3.0	3.8	0.58	250	45.3	0.92	0.54	8%		
MH1257	MH1256							2.62	90	236	236	4.00	4.00	3.0	3.8	0.69	300	80.3	1.14	0.56	5%		
MH1256	MH1260							2.62	90	236	236	4.00	4.00	3.0	3.8	1.81	300	130.1	1.84	0.77	3%		
MH1260	MH1255							2.62	90	236	236	4.00	4.00	3.0	3.8	0.26	300	46.3	0.70	0.41	8%		
MH1255	MH1254							16.05	90	1447	1447	3.69	3.69	17.0	21.6	0.15	300	37.5	0.53	0.54	59%		
MH1254	MH1253							0.35	90	32	1479	4.7	1479	3.68	17.3	0.48	300	67.0	0.95	0.82	33%		
MH1253	MH1249							16.40	90	1479	1479	4.7	1479	3.68	17.3	0.46	300	68.4	0.97	0.84	32%		
MH1249	MH1248							1.20	90	108	1587	5.0	1587	3.66	18.5	0.50	300	65.6	0.93	0.84	36%		
MH1248	MH1251							17.60	90	1587	1587	5.0	1587	3.66	18.5	0.53	300	70.4	1.00	0.87	33%		
MH1251	MH1250							0.35	90	32	32	4.00	4.00	0.4	0.5	0.40	200	20.7	0.66	0.26	2%		
MH1250	MH1248							0.31	90	28	60	4.00	4.00	0.8	1.0	2.56	200	52.5	1.67	0.58	2%		
MH1248	MH1244							18.26	90	60	60	4.00	4.00	0.8	1.0	0.60	200	25.4	0.81	0.36	4%		
MH1244	MH1243							18.26	90	1647	1647	3.65	3.65	19.1	24.4	0.62	300	76.1	1.08	0.94	32%		
MH1243	MH1242							18.26	90	1647	1647	3.65	3.65	19.1	24.4	0.44	300	64.1	0.91	0.82	38%		
MH1242	MHX							44.77	90	4038	19777	2.56	167.3	19.1	254.2	2.39	300	149.5	2.11	1.54	16%		
MHX																							52%



+ 260 ha north of QEW

Bottleneck (West Trunk)
525 mm, 94% Full
GO Station Parking Lot

Bottleneck (East Trunk)
300 mm, 58% Full

Next Constraint:
525 mm, 73% Full

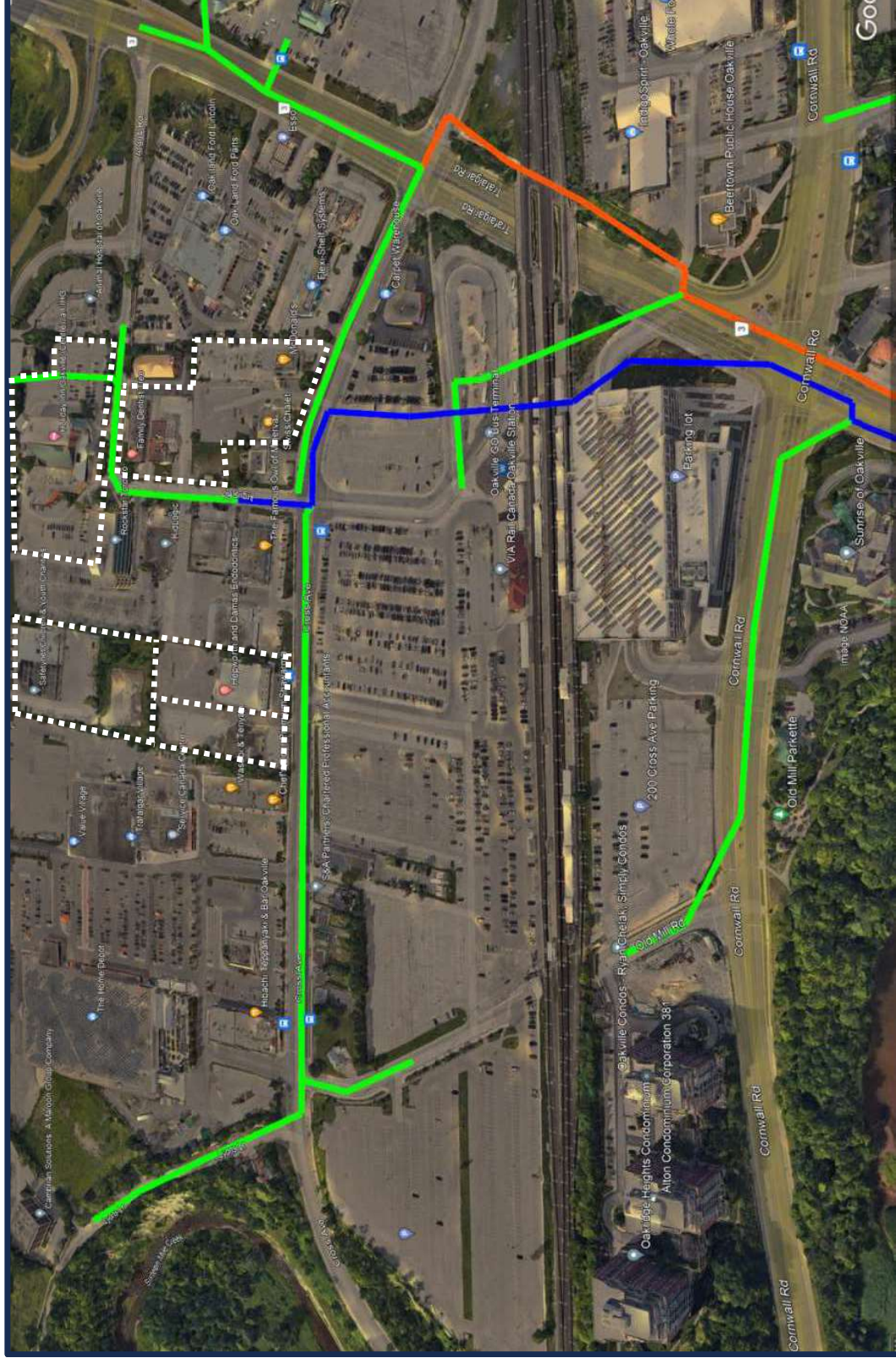
Legend (Pipe Capacity)

Lightest Red	0 - 20% Full
Light Red	20 - 40% Full
Medium Red	40 - 60% Full
Dark Red	60 - 70% Full
Very Dark Red	70 - 80% Full
Black	> 90 % Full

Midtown Wastewater Capacity Analysis

ATTACHMENT 2:
Future System Capacity Analysis

Scenario 1: Trunk Sewer Upgrades Complete, No New Development



- Distrikt Developments
- Existing Wastewater Pipes
- Region Upgrade Project (ID6537) West Trunk Upsize from 525 mm to 675 mm
- Region Upgrade Project (ID6535) East Trunk Upsize from 300 mm to 450 mm

Results:

Existing system bottlenecks within the Midtown Area are resolved with planned sewer upgrades.

No sewer component exceeds 55% full (this assumes existing conditions – no new development).



SANITARY SEWER DESIGN SHEET (Midtown)
SCENARIO 1
TOWN OF OAKVILLE
REGIONAL MUNICIPALITY OF HALTON

PROJECT DETAILS
Project No: 22-282
Date: 25-Feb-24
Designed by: J.P.O
Checked by: K.C

DESIGN CRITERIA
Avg. Domestic Flow = 275.0 l/c/d
Infiltration = 0.286 l/s/ha
Max. Peaking Factor = 4.00
Min. Peaking Factor = 2.00
Min Diameter = 200 mm
Mannings 'n' = 0.013
Min. Velocity = 0.60 m/s
Max. Velocity = 3.00 m/s

RESIDENTIAL										COMMERCIAL/INDUSTRIAL/INSTITUTIONAL				FLOW CALCULATIONS				PIPE DATA						
STREET	FROM MH	TO MH	LENGTH (m)	AREA (sq. ft.)	ACC. AREA (sq. ft.)	DENSITY (P/UNIT)	DENSITY (P/UNIT)	POP.	ACCUM. RES. POP.	ACCUM. EQUIV. POP.	FLOW RATE (l/s/ft)	ACCUM. EQUIV. POP.	INFILTRATION (l/s)	TOTAL ACCUM. POP.	PEAKING FACTOR	RES. FLOW (l/s)	COMM. FLOW (l/s)	ACCU. COMM. FLOW (l/s)	TOTAL FLOW (l/s)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (l/s)	FULL FLOW VELOCITY (m/s)	PERCENT FULL (%)
Area-1	Area-1	Area-2	99.09	30.00	99.09	5352	5352	28.3	5352	3.22	54.8	28.3	0.013	28.3	3.22	54.8		28.3	83.1	0.25	200	200	1.17	48%
Area-2	Area-2	Area-3	13.75	13.75	132.09	2366	7718	36.9	7718	3.07	75.3	36.9	0.013	75.3	3.07	75.3		75.3	112.2	0.25	200	200	1.17	19%
Area-3	Area-3	Area-4	54.61	197.45	197.45	860	860	3.9	860	3.89	10.5	3.9	0.013	860	3.89	10.5		860	14.4	0.25	200	200	1.17	39%
Area-4	Area-4	Area-5	49.09	246.54	246.54	310	11688	56.5	11688	2.99	107.4	56.5	0.013	11688	2.99	107.4		11688	153.9	0.25	200	200	1.17	45%
Area-5	Area-5	Area-6	12.60	12.60	12.60	2917	14605	70.5	14605	2.79	129.7	70.5	0.013	14605	2.79	129.7		14605	212.4	0.25	200	200	1.17	37%
Area-6	Area-6	Area-7	2594.14	2594.14	2594.14	1134	1134	3.6	1134	3.76	13.6	3.6	0.013	1134	3.76	13.6		1134	212.4	0.25	200	200	1.17	42%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	37%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15739	74.1	15739	2.76	138.2	74.1	0.013	15739	2.76	138.2		15739	212.4	0.25	200	200	1.17	38%
			2594.14	2594.14	2594.14	15739	15																	



SANITARY SEWER DESIGN SHEET (Midtown)

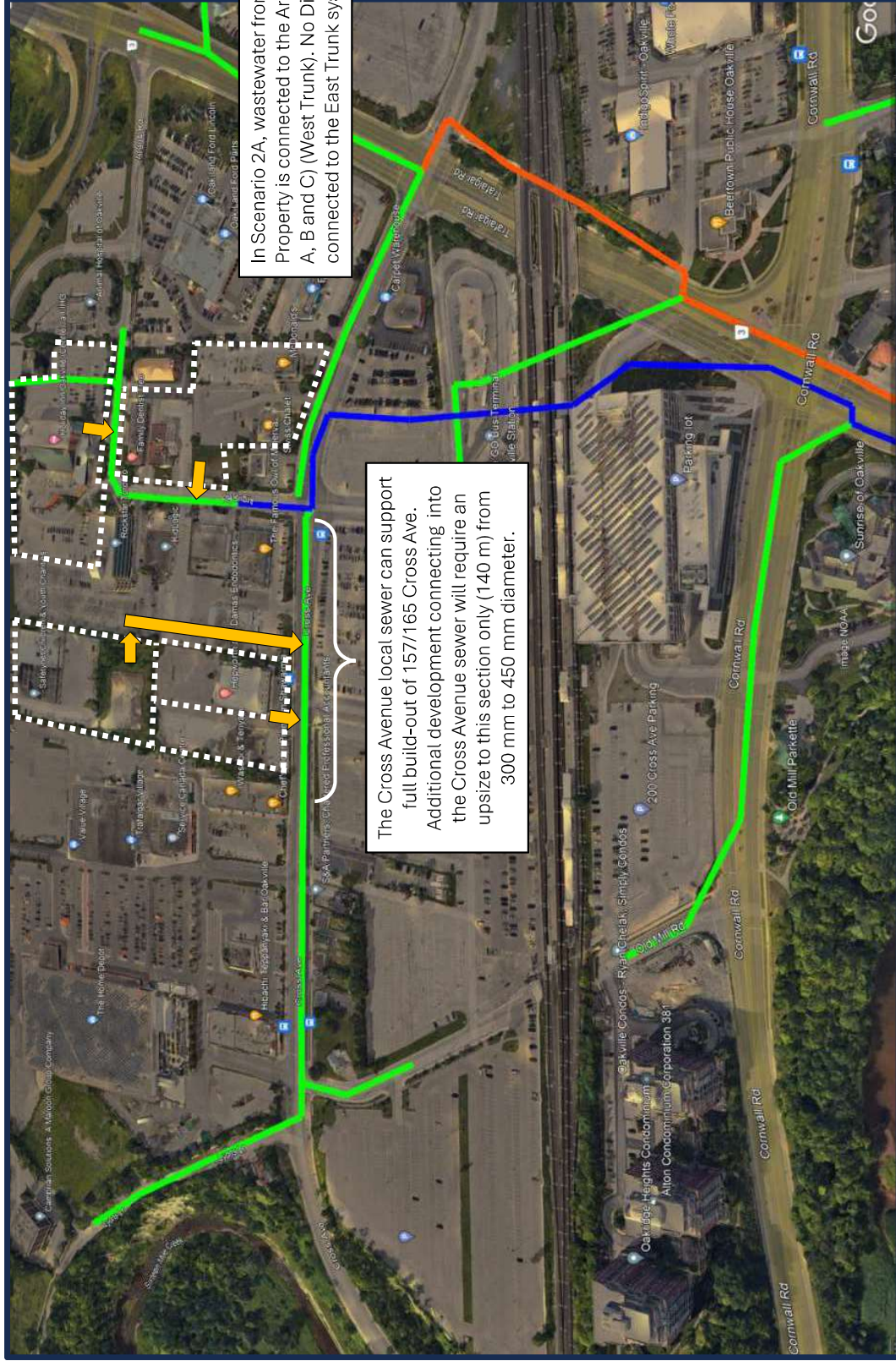
SCENARIO 1
TOWN OF OAKVILLE
REGIONAL MUNICIPALITY OF HALTON

PROJECT DETAILS
 Project No: 22-282
 Date: 25-Feb-24
 Designed by: J.P.O
 Checked by: K.C

DESIGN CRITERIA
 Min Diameter = 200 mm
 Manning's 'n' = 0.013
 Min. Velocity = 0.60 m/s
 Max. Velocity = 3.00 m/s
 Avg. Domestic Flow = 275.0 l/c/d
 Infiltration = 0.286 l/s/ha
 Max. Peaking Factor = 4.00
 Min. Peaking Factor = 2.00

STREET	FROM MH	TO MH	LENGTH (m)	RESIDENTIAL		COMMERCIAL/INDUSTRIAL/INSTITUTIONAL		FLOW CALCULATIONS					PIPE DATA			PERCENT FULL (%)							
				ACC. AREA (ha)	UNITS (#)	DENSITY (#/ha)	ACCUM. RES. POP.	ACC. AREA (ha)	EQUIV. POP.	FLOW RATE (l/s/ha)	ACCUM. EQUIV. POP.	INFILTRATION (l/s)	TOTAL ACCUM. POP.	PEAKING FACTOR	RES. FLOW (l/s)		COMM. FLOW (l/s)	ACCUM. FLOW (l/s)	TOTAL FLOW (l/s)	SLOPE (%)	PIPE DIAMETER (mm)	FULL CAPACITY (l/s)	FULL FLOW VELOCITY (m/s)
	MH1241	MH1242			2594.14		15739	26.51			2391	81.7	18130	2.70	155.5		237.2	1.02	675	896.0	2.37	2.02	28%
MH1298	MH1297	MH1298	0.75	90	0.75	68	68	0.75	90	68	68	0.2	68	4.00	0.9	1.1	1.22	300	106.8	1.51	0.39	1%	
MH1299	MH1303	MH1299	4.74	90	4.74	427	427	4.74	90	427	427	1.4	427	4.00	3.4	6.8	0.55	300	71.7	1.91	0.65	9%	
MH1300	MH1302	MH1300	2.37	90	2.37	214	214	2.37	90	214	214	0.9	214	4.00	1.4	10.0	0.79	300	83.9	1.22	0.72	8%	
MH1301	MH1307	MH1301	0.45	90	0.45	41	41	0.45	90	41	41	2.4	41	3.62	8.5	11.6	0.48	300	54.7	0.71	0.58	18%	
MH1302	MH1305	MH1302	2.61	90	2.61	235	235	2.61	90	235	235	0.7	235	4.00	3.0	11.9	0.40	250	30.9	0.65	0.57	28%	
MH1303	MH1306	MH1303	2.51	90	2.51	226	226	2.51	90	226	226	3.8	226	4.00	1.4	18.3	1.02	300	97.7	1.38	1.05	19%	
MH1304	MH1300	MH1304	13.43	90	13.43	1211	1211	13.43	90	1211	1211	3.8	1211	3.74	14.4	18.3	0.56	300	72.4	1.02	0.83	25%	
MH1305	MH1251	MH1305	13.43	90	13.43	1211	1211	13.43	90	1211	1211	3.8	1211	3.74	14.4	18.3	1.15	300	103.7	1.47	1.10	18%	
MH1258	MH1257	MH1258	2.62	90	2.62	236	236	2.62	90	236	236	0.7	236	4.00	3.0	3.8	0.58	250	45.3	0.92	0.54	8%	
MH1257	MH1256	MH1257	2.62	90	2.62	236	236	2.62	90	236	236	0.7	236	4.00	3.0	3.8	0.69	300	80.3	1.14	0.56	5%	
MH1256	MH1260	MH1256	2.62	90	2.62	236	236	2.62	90	236	236	0.7	236	4.00	3.0	3.8	1.81	300	130.1	1.84	0.77	3%	
MH1255	MH1254	MH1255	16.05	90	16.05	1447	1447	16.05	90	1447	1447	4.6	1447	17.0	17.0	21.6	0.15	450	110.4	0.69	0.41	8%	
MH1254	MH1253	MH1254	0.35	90	0.35	32	32	0.35	90	32	32	4.7	32	14.79	17.3	22.0	0.48	450	197.5	1.24	0.82	20%	
MH1253	MH1259	MH1253	16.40	90	16.40	1479	1479	16.40	90	1479	1479	4.7	1479	17.3	17.3	22.0	0.50	450	201.6	1.27	0.84	11%	
MH1259	MH1249	MH1259	1.20	90	1.20	108	108	1.20	90	108	108	5.0	108	3.66	18.5	23.5	0.46	450	193.4	1.22	0.81	12%	
MH1249	MH1248	MH1249	17.60	90	17.60	1587	1587	17.60	90	1587	1587	5.0	1587	3.66	18.5	23.5	0.53	450	207.6	1.31	0.86	11%	
MH1251	MH1251	MH1251	0.35	90	0.35	32	32	0.35	90	32	32	0.1	32	4.00	0.4	0.5	0.40	200	20.7	0.66	0.26	2%	
MH1250	MH1248	MH1250	0.31	90	0.31	28	28	0.31	90	28	28	0.2	28	4.00	0.8	1.0	0.60	200	25.4	0.81	0.36	4%	
MH1244	MH1244	MH1244	18.26	90	18.26	1647	1647	18.26	90	1647	1647	5.2	1647	3.65	19.1	24.4	0.62	450	224.5	1.41	0.93	11%	
MH1243	MH1243	MH1243	18.26	90	18.26	1647	1647	18.26	90	1647	1647	5.2	1647	3.65	19.1	24.4	0.44	450	189.1	1.19	0.82	13%	
MH1242	MH1242	MH1242	44.77	90	44.77	4038	4038	44.77	90	4038	4038	86.9	4038	2.66	167.3	254.2	2.39	450	440.8	2.77	1.50	6%	
MH1242	MH1242	MH1242	44.77	90	44.77	4038	4038	44.77	90	4038	4038	86.9	4038	2.66	167.3	254.2	0.64	675	672.5	1.88	1.69	38%	

Scenario 2A: Trunk Sewer Upgrades Complete, All Distrikt Developments Connected (Option 1)



- Distrikt Developments
- Existing Wastewater Pipes
- Region Upgrade Project (ID6537) West Trunk Upsize from 525 mm to 675 mm
- Region Upgrade Project (ID6535) East Trunk Upsize from 300 mm to 450 mm

In Scenario 2A, wastewater from the 587 Argus Property is connected to the Argus Road sewer (Tower A, B and C) (West Trunk). No Distrikt developments are connected to the East Trunk system.

The Cross Avenue local sewer can support full build-out of 157/165 Cross Ave. Additional development connecting into the Cross Avenue sewer will require an upsize to this section only (140 m) from 300 mm to 450 mm diameter.

Results:

In this Scenario, all Distrikt developments connect to the GO Station Trunk system (West Trunk). Once the trunk sewer is upgraded to 675 mm in diameter, there are no capacity constraints identified, except for the existing local 300 mm pipe on Cross Ave (west of Argus, as noted).

Excluding the 300 mm pipe, no sewer component exceeds 72% full.



SANITARY SEWER DESIGN SHEET (Midtown)

SCENARIO 2A

TOWN OF OAKVILLE

REGIONAL MUNICIPALITY OF HALTON

Project No: 22-282
Date: 25-Feb-24
Designed by: J.P.O
Checked by: K.C

PROJECT DETAILS

Min Diameter = 200 mm
Mannings 'n' = 0.013
Min. Velocity = 0.60 m/s
Max. Velocity = 3.00 m/s

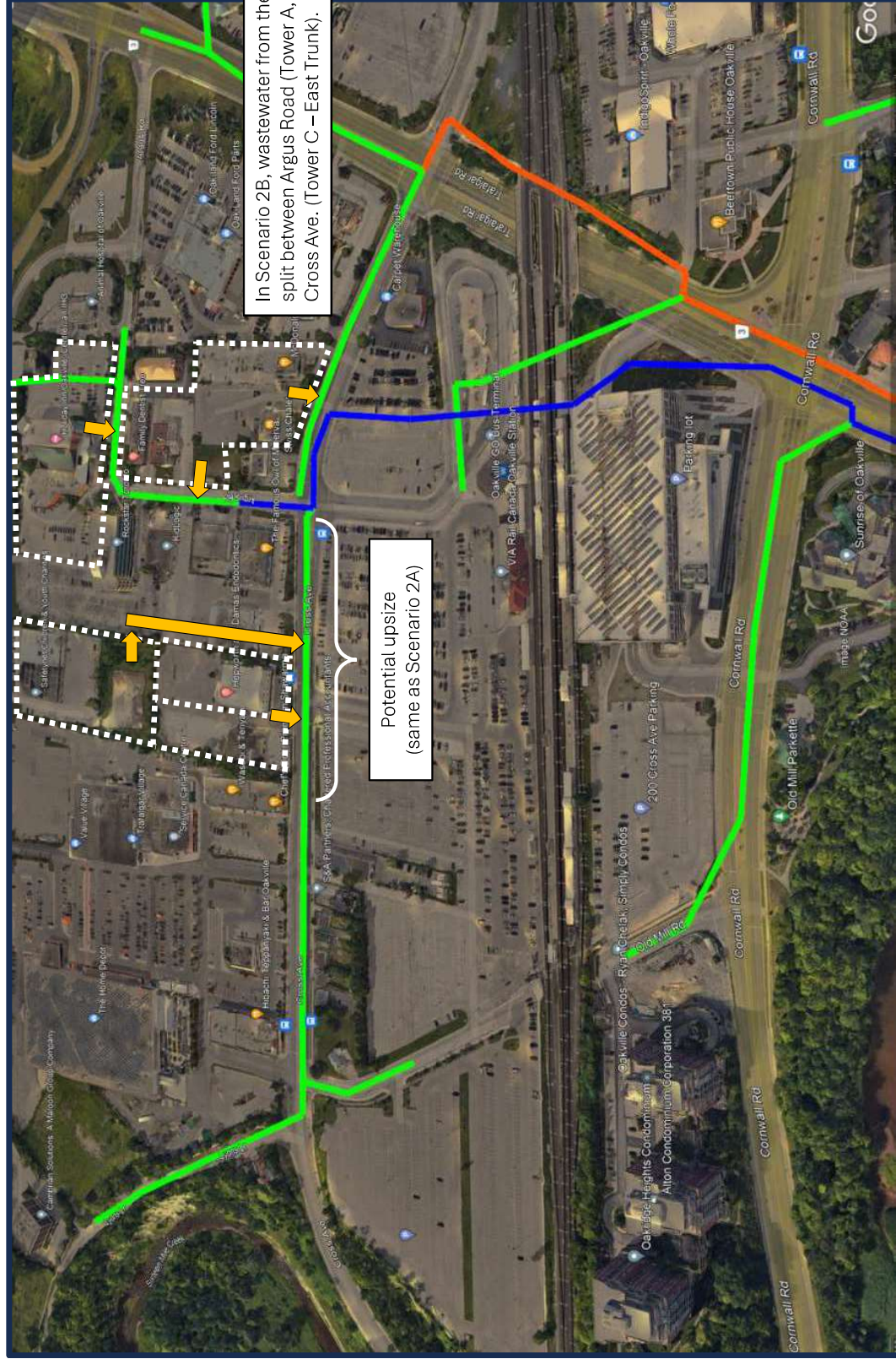
DESIGN CRITERIA

Avg. Domestic Flow = 275.0 l/c/d
Infiltration = 0.286 l/s/ha
Max. Peaking Factor = 4.00
Min. Peaking Factor = 2.00

NOMINAL PIPE SIZE USED

STREET	FROM MH	TO MH	LENGTH (m)	RESIDENTIAL			COMMERCIAL/INDUSTRIAL/INSTITUTIONAL			FLOW CALCULATIONS				PIPE DATA				PERCENT FULL (%)										
				ACC. AREA (ha)	UNITS (#)	DENSITY (#/ha)	ACC. AREA (ha)	EQUIV. POP. (#/ha)	FLOW RATE (l/s/ha)	ACCUM. EQUIV. POP. (#)	INFILTRATION POP. (l/s)	TOTAL ACCUM. POP. (l/s)	PEAKING FACTOR	RES. FLOW (l/s)	COMM. FLOW (l/s)	ACCUM. COMM. FLOW (l/s)	TOTAL FLOW (l/s)		SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (l/s)	FULL FLOW VELOCITY (m/s)	ACTUAL FLOW VELOCITY (m/s)					
				2594.14						29091	26.51	90		2391	81.7	31482	2.46	246.2		327.9	1.02	675	896.0	2.37	2.14	39%		
MH1241	MH1242																											
MH1298	MH1297																											
MH1299	MH1303																											
MH1305	MH1302																											
MH1302	MH1301																											
MH1301	MH1306																											
MH1306	MH1305																											
MH1305	MH1300																											
MH1300	MH1261																											
MH1261	MH1255																											
MH1258	MH1257																											
MH1257	MH1256																											
MH1256	MH1260																											
MH1260	MH1260																											
MH1260	MH1254																											
MH1254	MH1253																											
MH1253	MH1259																											
MH1259	MH1249																											
MH1249	MH1248																											
MH1248	MH1251																											
MH1251	MH1250																											
MH1250	MH1248																											
MH1248	MH1244																											
MH1244	MH1243																											
MH1243	MH1242																											
MH1242	MHX																											
				2594.14						29091																		

Scenario 2B: Trunk Sewer Upgrades Complete, All Distrikt Developments Connected (Option 2)



Results:

In this Scenario, all Distrikt developments connect to the GO Station Trunk system (West Trunk), except for Tower C on the 587 Argus Road property, which connects into the Cross Ave sewer (east of Argus) and the Trafalgar Road trunk (East Trunk).

Similar to Scenario 2A, there are no trunk sewer capacity constraints identified.

Excluding the 300 mm pipe, no sewer component exceeds 70% full.



SANITARY SEWER DESIGN SHEET (Midtown)
SCENARIO 2B
TOWN OF OAKVILLE
REGIONAL MUNICIPALITY OF HALTON

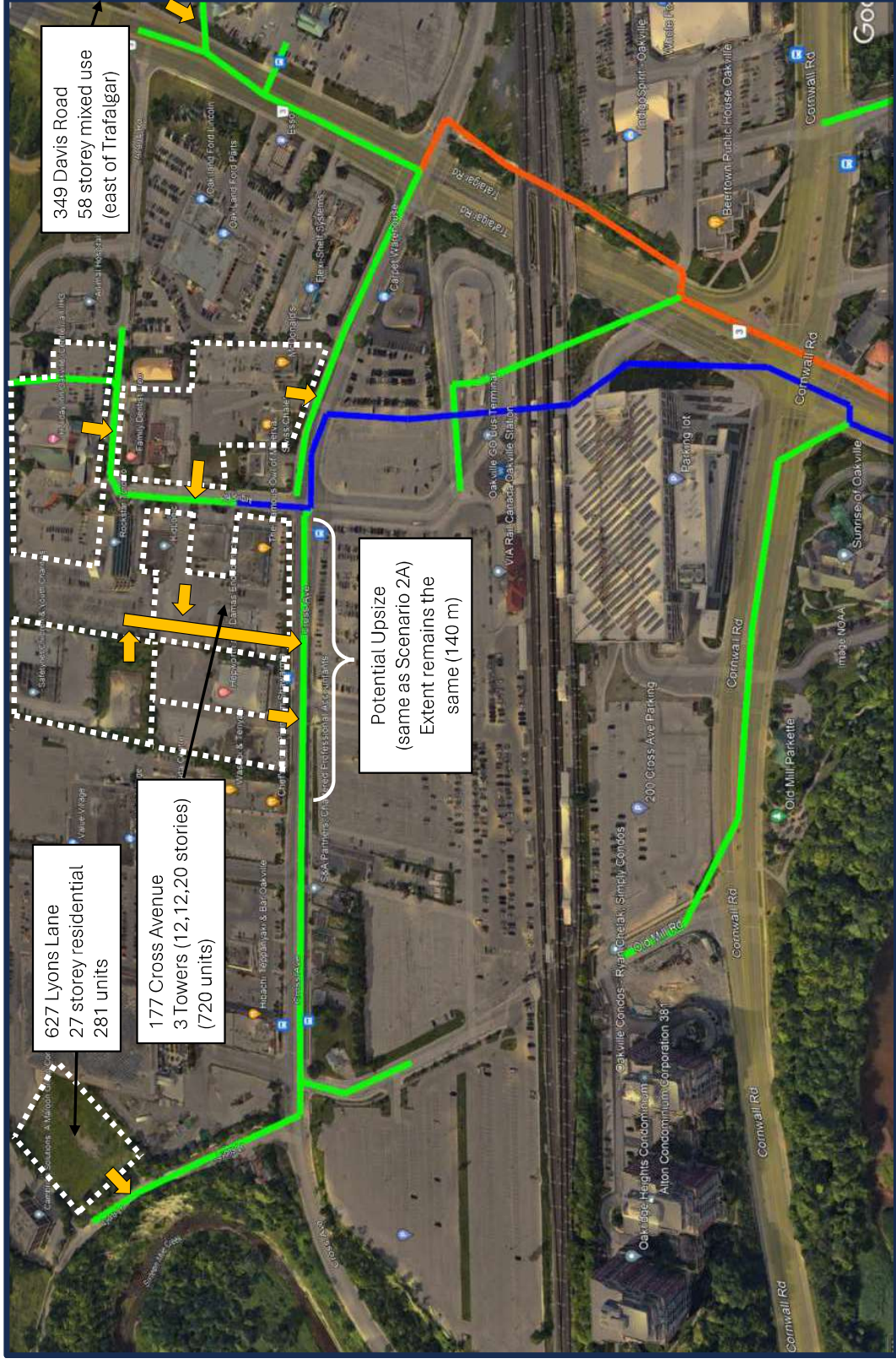
PROJECT DETAILS
 Project No: 22-282
 Date: 25-Feb-24
 Designed by: J.P.O
 Checked by: K.C

DESIGN CRITERIA
 Avg. Domestic Flow = 275.0 l/c/d
 Infiltration = 0.286 l/s/ha
 Max. Peaking Factor = 4.00
 Min. Peaking Factor = 2.00

NOMINAL PIPE SIZE USED
 Min Diameter = 200 mm
 Manholes n' = 0.013
 Min. Velocity = 0.60 m/s
 Max. Velocity = 3.00 m/s

STREET	FROM MH	TO MH	RESIDENTIAL		COMMERCIAL/INDUSTRIAL/INSTITUTIONAL		FLOW CALCULATIONS					PIPE DATA								
			ACC. AREA (ha)	DENSITY (P/ha)	ACC. AREA (ha)	EQUIV. POP. (E/ha)	FLOW RATE (l/s/ha)	ACQU. EQUIV. POP. (E/ha)	INFILTRATION (l/s)	TOTAL ACCUM. POP. (E/ha)	PEAKING FACTOR	RES. FLOW (l/s)	COMM. FLOW (l/s)	ACQU. FLOW (l/s)	TOTAL FLOW (l/s)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (l/s)	FULL FLOW VELOCITY (m/s)	PERCENT FULL (%)
Area-1	Area-1	Area-2	99.09	3.00	3439	19178	0.14	90	13	13	15729	2.76	138.2	238.9	0.70	600	513.7	1.82	1.74	47%
	Area-2	Area-3	30.00	124.09	2366	7718	1.80	154	90	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-2	Area-3	Area-4	13.25	13.25	860	860	0.44	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-4	Area-5	54.61	197.45	3110	11688	0.14	90	13	13	15729	2.76	138.2	238.9	0.87	600	566.1	2.00	1.86	42%
Area-3	Area-5	Area-6	49.09	246.54	2917	14605	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-6		12.60	12.60	1134	1134	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-4	Area-2	Area-3	30.00	124.09	2366	7718	1.80	154	90	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-3	Area-4	13.25	13.25	860	860	0.44	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-5	Area-4	Area-5	54.61	197.45	3110	11688	0.14	90	13	13	15729	2.76	138.2	238.9	0.87	600	566.1	2.00	1.86	42%
	Area-5	Area-6	49.09	246.54	2917	14605	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-6	Area-6		12.60	12.60	1134	1134	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-1	Area-1	Area-2	99.09	3.00	3439	19178	0.14	90	13	13	15729	2.76	138.2	238.9	0.70	600	513.7	1.82	1.74	47%
	Area-2	Area-3	30.00	124.09	2366	7718	1.80	154	90	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-2	Area-3	Area-4	13.25	13.25	860	860	0.44	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-4	Area-5	54.61	197.45	3110	11688	0.14	90	13	13	15729	2.76	138.2	238.9	0.87	600	566.1	2.00	1.86	42%
Area-3	Area-5	Area-6	49.09	246.54	2917	14605	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-6		12.60	12.60	1134	1134	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-4	Area-2	Area-3	30.00	124.09	2366	7718	1.80	154	90	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-3	Area-4	13.25	13.25	860	860	0.44	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-5	Area-4	Area-5	54.61	197.45	3110	11688	0.14	90	13	13	15729	2.76	138.2	238.9	0.87	600	566.1	2.00	1.86	42%
	Area-5	Area-6	49.09	246.54	2917	14605	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-6	Area-6		12.60	12.60	1134	1134	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-1	Area-1	Area-2	99.09	3.00	3439	19178	0.14	90	13	13	15729	2.76	138.2	238.9	0.70	600	513.7	1.82	1.74	47%
	Area-2	Area-3	30.00	124.09	2366	7718	1.80	154	90	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-2	Area-3	Area-4	13.25	13.25	860	860	0.44	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-4	Area-5	54.61	197.45	3110	11688	0.14	90	13	13	15729	2.76	138.2	238.9	0.87	600	566.1	2.00	1.86	42%
Area-3	Area-5	Area-6	49.09	246.54	2917	14605	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-6		12.60	12.60	1134	1134	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-4	Area-2	Area-3	30.00	124.09	2366	7718	1.80	154	90	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-3	Area-4	13.25	13.25	860	860	0.44	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-5	Area-4	Area-5	54.61	197.45	3110	11688	0.14	90	13	13	15729	2.76	138.2	238.9	0.87	600	566.1	2.00	1.86	42%
	Area-5	Area-6	49.09	246.54	2917	14605	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-6	Area-6		12.60	12.60	1134	1134	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-1	Area-1	Area-2	99.09	3.00	3439	19178	0.14	90	13	13	15729	2.76	138.2	238.9	0.70	600	513.7	1.82	1.74	47%
	Area-2	Area-3	30.00	124.09	2366	7718	1.80	154	90	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-2	Area-3	Area-4	13.25	13.25	860	860	0.44	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-4	Area-5	54.61	197.45	3110	11688	0.14	90	13	13	15729	2.76	138.2	238.9	0.87	600	566.1	2.00	1.86	42%
Area-3	Area-5	Area-6	49.09	246.54	2917	14605	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-6		12.60	12.60	1134	1134	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-4	Area-2	Area-3	30.00	124.09	2366	7718	1.80	154	90	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-3	Area-4	13.25	13.25	860	860	0.44	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-5	Area-4	Area-5	54.61	197.45	3110	11688	0.14	90	13	13	15729	2.76	138.2	238.9	0.87	600	566.1	2.00	1.86	42%
	Area-5	Area-6	49.09	246.54	2917	14605	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-6	Area-6		12.60	12.60	1134	1134	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-1	Area-1	Area-2	99.09	3.00	3439	19178	0.14	90	13	13	15729	2.76	138.2	238.9	0.70	600	513.7	1.82	1.74	47%
	Area-2	Area-3	30.00	124.09	2366	7718	1.80	154	90	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-2	Area-3	Area-4	13.25	13.25	860	860	0.44	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-4	Area-5	54.61	197.45	3110	11688	0.14	90	13	13	15729	2.76	138.2	238.9	0.87	600	566.1	2.00	1.86	42%
Area-3	Area-5	Area-6	49.09	246.54	2917	14605	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-6		12.60	12.60	1134	1134	0.14	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-4	Area-2	Area-3	30.00	124.09	2366	7718	1.80	154	90	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
	Area-3	Area-4	13.25	13.25	860	860	0.44	90	154	154	19178	2.66	165.0	240.0	0.22	750	522.2	1.18	1.13	46%
Area-5	Area-4	Area-5	54.61	197.45	3110	11688	0.14	90	13	13	15729	2.76	138.2	238.9	0.87	600	566.1	2.00	1.86	

Scenario 3: Trunk Sewer Upgrades Complete, All Current Midtown Development Applications Connected



- All Near-Term Developments
- Existing Wastewater Pipes
- Region Upgrade Project (ID6537) West Trunk
- Region Upgrade Project (ID6535) East Trunk
- Upsize from 525 mm to 675 mm
- Upsize from 300 mm to 450 mm

Results:

In this Scenario, wastewater flows from current Midtown Development Applications are added to the system.

There are no trunk sewer capacity constraints noted in the upgraded pipes. Excluding the 300 mm pipe on Cross Ave., no sewer component exceeds 73% full.



SANITARY SEWER DESIGN SHEET (Midtown)

SCENARIO 3
TOWN OF OAKVILLE
 REGIONAL MUNICIPALITY OF HALTON

PROJECT DETAILS
 Project No: 22-282
 Date: 25-Feb-24
 Designed by: J.P.O
 Checked by: K.C

DESIGN CRITERIA
 Min Diameter = 200 mm
 Mannings 'n' = 0.013
 Min. Velocity = 0.60 m/s
 Max. Velocity = 3.00 m/s
 Avg. Domestic Flow = 275.0 l/c/d
 Infiltration = 0.286 l/s/ha
 Max. Peaking Factor = 4.00
 Min. Peaking Factor = 2.00

NOMINAL PIPE SIZE USED

STREET	FROM MH	TO MH	RESIDENTIAL			COMMERCIAL/INDUSTRIAL/INSTITUTIONAL			FLOW CALCULATIONS				PIPE DATA											
			ACC. AREA (ha)	UNITS (#)	DENSITY (#/ha)	ACC. AREA (ha)	EQUIV. POP. (#/ha)	FLOW RATE (l/s/ha)	ACCUM. EQUIV. POP. (#)	INFILTRATION POP. (l/s)	TOTAL ACCUM. POP. (l/s)	PEAKING FACTOR	RES. FLOW (l/s)	COMM. FLOW (l/s)	ACCUM. FLOW (l/s)	TOTAL FLOW (l/s)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (l/s)	FULL FLOW VELOCITY (m/s)	PERCENT FULL (%)			
	MH1241	MH1242		2594.14				29238		26.51		2391	81.7	31629	2.45	247.1		329.8	1.02	675	896.0	2.37	2.14	39%
MH1298					0.75				68	0.75		68	0.2	68	4.00	0.9		1.1	1.22	300	106.8	1.51	0.39	1%
MH1299					4.74				427	4.74		427	1.4	427	4.00	5.4		6.8	0.55	300	71.7	1.91	0.63	9%
MH1305					4.74				427	4.74		427	1.4	427	4.00	5.4		6.8	0.79	300	83.9	1.22	0.72	8%
MH1302					7.11				641	7.11		641	2.0	641	3.52	8.6		18.0	0.32	300	87.7	0.71	0.58	13%
MH1301					2.37				193	2.37		193	0.6	193	3.20	2.4		18.7	0.48	300	67.6	0.73	0.45	28%
MH1306					0.45				41	0.45		41	1.2	41	4.00	1.2		19.7	0.27	250	30.9	0.65	0.45	18%
MH1307					7.20				632	7.20		632	1.9	632	3.20	17.2		19.7	0.40	300	92.7	1.38	1.15	27%
MH1308					2.61				235	2.61		235	0.7	235	4.00	3.7		3.7	1.02	300	72.4	1.02	0.93	26%
MH1309					2.51				226	2.51		226	0.8	226	3.60	2.1		26.0	0.56	300	72.4	1.02	0.93	26%
MH1300					13.43				1031	13.43		1031	3.8	1031	3.60	22.1		26.0	1.15	300	103.7	1.47	1.19	25%
MH1261					13.43				1031	13.43		1031	3.8	1031	3.60	22.1		26.0	1.15	300	103.7	1.47	1.19	25%
MH1258					2.62				236	2.62		236	0.7	236	3.60	21.8		22.6	0.58	250	45.3	0.92	0.91	50%
MH1257					16.68				1994	16.68		1994	0.7	1994	3.60	21.8		22.6	0.69	300	80.3	1.14	0.97	28%
MH1256					16.68				1994	16.68		1994	0.7	1994	3.60	21.8		22.6	1.81	300	130.1	1.84	1.36	17%
MH1260					16.68				1994	16.68		1994	0.7	1994	3.60	21.8		22.6	0.26	300	46.3	0.70	0.67	46%
MH1255					2.62				236	2.62		236	0.7	236	3.60	21.8		22.6	0.26	300	46.3	0.70	0.67	46%
MH1254					16.05				1447	16.05		1447	4.6	1447	3.35	40.9		45.5	0.15	450	110.4	0.69	0.65	41%
MH1253					0.35				32	0.35		32	1479	32	4.7	41.2		45.9	0.48	450	197.5	1.24	0.98	23%
MH1259					16.40				1479	16.40		1479	4.7	1479	3.35	41.2		45.9	0.50	450	201.6	1.27	1.00	24%
MH1249					1.20				108	1.20		108	5.0	397.5	3.34	42.2		47.2	0.46	450	193.4	1.22	0.98	24%
MH1248					17.60				1587	17.60		1587	5.0	397.5	3.34	42.2		47.2	0.53	450	207.6	1.31	1.03	23%
MH1251					0.35				32	0.35		32	0.1	32	4.00	0.4		0.5	0.40	200	20.7	0.66	0.26	2%
MH1250					0.31				28	0.31		28	0.2	28	4.00	0.8		1.0	0.60	200	52.5	1.67	0.58	2%
MH1248					18.26				1647	18.26		1647	5.2	4035	3.33	42.8		48.0	0.62	200	25.4	0.81	0.36	4%
MH1244					18.26				1647	18.26		1647	5.2	4035	3.33	42.8		48.0	0.44	450	224.5	1.41	1.09	21%
MH1243					18.26				1647	18.26		1647	5.2	4035	3.33	42.8		48.0	2.39	450	189.1	1.19	0.96	25%
MH1242					44.77				4038	44.77		4038	86.9	35664	2.40	272.9		359.8	0.64	675	672.5	1.88	1.86	54%

F:\Projects\22-282\DWG\DWG\DWG-Closed\Compensation\Forms\22-282-SAM Design Sheet - Scenario 2549