

FUNCTIONAL SERVICING REPORT

Water, Sanitary, and Stormwater Management

PROPOSED MIXED-USE CONDOMINIUM TOWERS DISTRIKT MIDTOWN

166 SOUTH SERVICE ROAD EAST
TOWN OF OAKVILLE

OUR FILE: 1736

PREPARED FOR DISTRIKT DEVELOPMENTS INC.

OCTOBER 2024

REVISION HISTORY

| DATE | REVISION | SUBMISSION |
|----------------|-----------------|-------------------------------------|
| May 19, 2022 | 1 | Issued for Rezoning/OPA Application |
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1.0 INTRODUCTION

1.1 Scope of Functional Servicing Report

This report has been prepared in support of the TOC Submission for Rezoning (ZBA) and Official Plan Amendment (OPA), to permit the construction of a three-tower mixed-use condominium located at 166 South Service Road East 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 South Service Road.

1.2 Site Location and Description

The subject lands consist of 166 South Service Road East in the Town of Oakville, having an area of approximately 1.19 ha. The site currently consists of a single storey commercial/retail building and associated parking. It is bounded to the north by QEW and South Service Road E, 178 South Service Road E to the east, 157 and 165 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. As this site is adjacent to an MTO corridor, a setback is required. For the purpose of this submission, the 14.0 m MTO setback is depicted from the future property boundary.

The existing site is serviced using 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 to the south at 157 Cross Avenue. The easement contains a 150 mm dia. sanitary lateral and cast-iron water service (sizing to be confirmed) that connect into Cross Avenue.

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 589005 that runs north-south in the middle of the site to the south at 157/165 Cross Avenue. The easement was created as a servicing easement by Distrikt Developments Inc. for the site 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 three mixed-use condominium towers consisting of 1853 residential units and approximately 1231 m² of retail and 5063 m² of commercial space. The building is to be constructed over seven 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 proposed road realignment to South Service Road and there is a new north-south road (identified herein as Street 'A') that will decrease the total developable area to 0.95 ha. Driveway access is provided from the realigned South Service Road at the northwest corner of the property and from the proposed Street 'A' at the southeast corner of the property.

The development at 166 South Service Road is referred to as Distrikt Phase 3.

1.4 Easements

The two existing easements on the site to the south at 157/165 Cross Avenue 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 Avenue. 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 the realignment of South Service Road (20.0 m road allowance) to the north, a new 20.0 m north-south local road to the east (Street 'A'), and a new 26.0 m east-west local road (identified herein as Street 'B') to the south of the property.

2.1 South Service Road (20.0 m Local Road)

South Service Road is to be shifted in a southerly direction and curve south to meet Argus Road at the future intersection location of Street 'C'. The conceptual alignment and road width was provided through the 2024 Draft OP. Trafalgar Engineering along with BA prepared the conceptual design to establish the future vertical and horizontal alignments. Supporting analysis and justification is provided in the Traffic Impact Study prepared by BA Group (under separate cover).

Proposed centreline of road elevations were designed in order to establish the new property line grades for the proposed development using typical urban road design. This demonstrates feasibility of the subject lands to develop in an interim condition until such time that the external roads are built. The proposed South Service Road realignment requires land takings over non-participating landowners, and so the full build-out of is recommended to be completed by the

Town in the future. Interim grading, servicing, and landscape designs are provided to demonstrate the feasibility of an interim design, as well as conceptual future design.

As discussed in the Midtown Oakville EA, future development, or transportation improvements within the study area, are to meet the required stormwater management criteria. Therefore, stormwater quantity, quality and water balance requirements apply to the realignment of South Service Road.

2.2 Street 'A' (20.0 m Local Road)

The location of the future north-south local road 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. Refer to the Preliminary Plan and Profile drawing (P1) 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.

2.3 Street 'B' (26.0 m Local Road)

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

The preliminary location of Street 'B' 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 southerly boundary. 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.

2.4 Conceptual Municipal Road Network Stormwater Management

Stormwater management (quantity and quality) controls for both the 20.0 m local road (Street 'A') and abutting portion of South Service Road will be provided within Street 'A' via an oversized pipe and orifice control. 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 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.

2.4.1 Stormwater Quantity Control (Peak Flow Control)

Using the minimum storage unit rate of 68.2 m³/ha for Sixteen Mile Creek, approximately 27 m³ of storage is required for the sections of South Service Road and Street 'A' 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 100 m of 600 mm dia. 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.

2.4.2 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.

2.4.3 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 500 mm dia. trunk CPP (Concrete Pressure Pipe) along the south side of South Service Road within Pressure Zone 2. Operating maps and record drawings do not indicate the presence of a smaller, local watermain on South Service Road in the vicinity of the site.

Record drawings (see Appendix 'F') indicate two possible water service connection locations for the property, one from South Service Road and the other from Cross Avenue:

- Operating maps and GIS data from the Region of Halton indicate a tapping sleeve on the 500 mm CPP with service connection from South Service Road. The topographic survey and field visit have both confirmed the presence of a valve in the road (presumably the tapping sleeve and valve) and a curb box in the vicinity of the site.
- Older record drawings (O-3439, ca. 1969) indicate a 32 mm (1¼") water service—within an easement over 157 Cross Avenue—from a 150 mm watermain on Cross Avenue (which has since been abandoned).
- Newer record drawings (O-13130, ca. 2005) indicate a 200 mm dia. connection to a 300 mm watermain on Cross Avenue with 200x100 mm reducer to an "existing" 100 mm water service to "Hiker's Haven" (the subject lands).

It is possible that both connections exist, and that domestic water is from South Service Road while a separate fire service is provided from Cross Avenue. Locates must be undertaken to confirm the presence and status of each connection prior to detailed design. Both connections will be removed and abandoned per Halton Region standards.

A fire hydrant is available on South Service Road in front of the site. A flow test was undertaken (May 13, 2022) using the base hydrant in front of "Hiker's Haven". Updated flow tests may be required at the building permit stage. The results of the flow test are included in Appendix 'C' and are summarized as follows:

Table 1: Base Hydrant at 166 South Service Road

| | |
|-------------------------------------------------|------------------|
| Static Pressure | 87 psig |
| Flow 1 445 usgpm (91 L/s) | 84 psig |
| Flow 2 328 usgpm (147 L/s) | 81 psig |
| Theoretical Flow 8 568 usgpm (541 L/s) | residual 20 psig |
| Estimated Max. Daily Plus Fire Service Pressure | 82 psig |

3.1.2 Existing Water Demands

Using the development area and Region of Halton design criteria (90 persons per ha for commercial), the resulting population is 107 persons. The existing domestic water usage is estimated and summarized below (see Appendix 'C' for supporting calculations).

Table 2: Existing Water Demands (L/min)

| | |
|-----------------------|----|
| Average Daily Demand | 20 |
| Minimum Hourly Demand | 20 |
| Maximum Hourly Demand | 46 |
| Maximum Daily Demand | 46 |

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 Preliminary Servicing Plan is 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 dia. municipal watermain is proposed along the west side of Street 'A' (refer to the S1 and S2 provided in Appendix 'G' for detail) that will be built as part of Distrikt Phase 2 (see FSR for 157/165 Cross Avenue). The watermain will connect to the 500 mm dia. CPP on South Service Road (tapping sleeves to an offline valve chamber), at the north end, and run south connecting into the existing 300 mm dia. watermain on Cross Avenue, also in Pressure Zone 2, (tapping sleeves to a valve chamber) to form a loop.

The proposed 300 mm dia. 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 Service Connections

In both interim and ultimate conditions, a 200 mm dia. fire service, 150 mm dia. domestic (residential) service, and 100 mm dia. 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.

Municipal fire hydrants are also proposed within 45 m of each tower's siamese fire connection. See Fire Hydrant Figure in Appendix 'C'. 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 (DC 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 2,981 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 168 persons. 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. The domestic water usage is estimated and summarized below (see Appendix 'C' for supporting calculations).

Table 3: Estimated Water Demands (L/min)

| | |
|----------------------------------|-------|
| Average Daily Demand | 569 |
| Minimum Hourly Demand | 569 |
| Maximum Hourly Demand | 2,220 |
| Maximum Daily Demand | 1,281 |
| Estimated Fire Demand (FUS 1999) | 7,000 |
| Maximum Daily Plus Fire Demand | 8,281 |

4.0 MUNICIPAL WASTEWATER

The subject property will be serviced for wastewater through the local wastewater infrastructure on Cross Avenue. The current ASP notes capacity concerns for the 2031 growth scenario, and potentially some required downstream infrastructure upgrades. The Region of Halton has approved a capital works project in July of 2023 (PW-26-23) that will address the downstream

infrastructure upgrades, that includes upgrading the existing 525 mm dia. trunk wastewater main to a 675 mm dia. trunk wastewater main. The extent of the upgrade is from Argus Road south to Spruce Street. 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.

4.1 Existing Municipal Wastewater

4.1.1 Existing Linear Infrastructure

There is no sanitary sewer on any roads adjacent to and in the vicinity of the site.

Record drawings (see Appendix 'F') indicate that the site is currently serviced for sanitary drainage from Cross Avenue by a 150 mm dia. Cast Iron sanitary through an easement over 157 Cross Avenue (see Appendix 'H'). The service connection is to a 300 mm dia. sanitary sewer on Cross Avenue that drains in an easterly direction to a 525 mm trunk sewer which runs south through the Oakville GO station. The existing connection will be removed and abandoned 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 107 persons and 275 L/cap. day (see Appendix 'D' for supporting calculations).

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

| | |
|--------------------------------------|-----|
| Average Daily Dry Weather Flow | 0.3 |
| Modified Harmon Peaking Factor | - |
| Infiltration Allowance (0.26 L/s-ha) | 0.3 |
| Peak Flow | 0.6 |

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 Preliminary Servicing Plan

(Interim and Ultimate) is 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 dia. municipal sanitary sewer is proposed near the centreline of the Street 'A' (refer to S1 and S2 provided in Appendix 'G' for detail). The sanitary sewer will connect to the existing 300 mm dia. sanitary sewer on Cross Avenue.

The proposed 300 mm dia. 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 creation 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 Avenue. 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 development and possible addition of adjacent lands. Therefore, there is adequate capacity in the sewer to service the development.

Urbantech's analysis of the system (provided under separate cover) indicates that there is insufficient downstream capacity to service the site once the Region of Halton completes their upgrades. The existing local 300 mm dia. sanitary sewer on Cross Avenue does not have capacity to accommodate flows from 166 South Service Road and will need to be upgraded to a 450 mm dia. sewer. See Appendix 'I' for more details on Urbantech's analysis. 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.

4.2.1.2 Proposed Service Connections

In both interim and ultimate conditions, three new 300 mm dia. 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

dia. municipal sanitary sewer in Street 'A'. The new laterals will replace the existing 150 mm dia. sanitary lateral on the west side of the development – which will be abandoned per Region of Halton standards. 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 (DC 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 2,981 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 158 persons. Using the densities proposed in the DC Study provides a larger population for the site resulting in a higher sanitary discharge, thus providing a more conservative value. The estimated wastewater flows are summarized in the table below (see Appendix 'D' for supporting calculations).

Table 5: Estimated Proposed Wastewater Flow (L/s)

| | |
|--------------------------------------|------|
| Average Daily Dry Weather Flow | 9.8 |
| Modified Harmon Peaking Factor | 3.47 |
| Infiltration Allowance (0.26 L/s-ha) | 0.34 |
| Peak Flow | 31.9 |

5.0 STORM DRAINAGE AND STORMWATER MANAGEMENT

5.1 Existing Storm Drainage

The site does not appear to have any existing storm connections and there are no storm sewers on adjacent roads in the vicinity of the site. South Service Road has a shallow ditch draining in an easterly direction, to a ditch inlet and storm sewer located further east. A very small portion of the site frontage sheet flows to the South Service Road ditch while the vast majority drains in a southerly direction, over the adjacent lands to the south, to Cross Avenue.

South Service Road drainage is tributary to the Lower Morrison Creek while drainage to the south is tributary to Sixteen Mile Creek. Drainage must continue in a southerly direction to avoid changing the receiving watershed. Refer to Figure 5 in Appendix 'E' for pre-development drainage patterns.

5.2 Proposed Storm Drainage

5.2.1 Proposed Municipal Storm Sewer

A 600 mm dia. storm sewer is proposed on the portion of 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 South Service Road and Street 'A'. A 240 mm dia. orifice will be placed at the downstream end of MH206 to control the flow to the 5-year storm event. The proposed storm sewer connects to the existing 1050 mm dia. storm sewer in Cross Avenue which flows west and discharges in Sixteen Mile Creek. Refer to the Plan and Profile drawing 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

The proposed underground parking structure is to be constructed in two phases with one stormwater management tank per phase. As a result, two 300mm dia. storm sewer connections along with property line inspection manholes will connect to the proposed 600 mm dia. 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 $C=0.63$, and a development area of 0.90 ha (we have excluded the road dedications). 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 48,000 L/day (0.56 L/s) was determined in the Hydrogeological Investigation prepared by B.I.G Consulting Inc. (BIGC-ENV-554A) dated August 2022 and is discussed in further detail in Section 6.0.

To control stormwater runoff from the site, an underground stormwater tank system is proposed. Since the development is proposing two phases for the underground, a stormwater management tank is proposed for each phase. Detailed design of the stormwater management tanks will be part of a subsequent submission but subject to change with underground phasing. The proposed tanks system will pump stormwater to the proposed storm laterals connecting into the storm sewer in Street 'A' which conveys flows to the existing storm sewer in Cross Avenue. 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 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 6: 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 | 140 | 63 | 14 | 0.56 | 77 | 87.9 |
| 5-yr | 195 | 63 | 20 | 0.56 | 83 | 152.1 |
| 10-yr | 230 | 63 | 23 | 0.56 | 86 | 194.1 |
| 25-yr | 304 | 63 | 31 | 0.56 | 94 | 285.8 |
| 50-yr | 373 | 63 | 35 | 0.56 | 98 | 337.4 |
| 100-yr | 428 | 63 | 38 | 0.56 | 101 | 382.9 |

The minimum storage requirement per the Midtown Oakville EA is 69.6 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 catch basins. The runoff will be conveyed through internal plumbing and the underground parking structure (designed per OBC by others) to the stormwater tank located on P1 to P6 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 225 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 August 2022) 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 48,000 L/day (0.56 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 to the Hydrogeological Investigation prepared by B.I.G. Consulting Inc. (BIGC-ENV-554A) dated August 2022 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 South Service Road have been set considering the preliminary future road centerline elevations as set out in the Midtown Oakville EA. These property line elevations provide positive drainage to the existing South Service Road alignment if the proposed development proceeds in advance of the South Service Road realignment.

Proposed grades along the south limit of the property have been set in conjunction with a preliminary road design – that is not part of this submission. The design for Street 'B' will be presented under a separate cover for the site to the south prepared by this office. The full build-out (completion of boulevard works) of Street 'B' will be completed as the subject site develops.

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-west corner of the site at the low point of 104.56, which is lower than the proposed finished floor elevations.

A copy of the Preliminary Interim and Ultimate Grading Plans (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 realignments and dedications required to service the property: South Service Road realignment, Street 'A' (20.0 m local road) to the east of the site, and Street 'B' (26.0 m local road) to the south.
- There is existing municipal water infrastructure adjacent to the site that can readily service the site. A municipal watermain will be placed on Street 'A' to service the site. The proposed average daily water demand for the site is 569 L/min with an estimated maximum daily plus fire demand of 8,281 L/min.
- There is existing wastewater infrastructure servicing the site through an easement over the lands to the south (157 Cross Avenue) that will be abandoned. A municipal wastewater sewer will be placed on Street 'A' to service the site. The estimated peak wastewater flow based on Region of Halton criteria is 31.9 L/s for the entire site. Per the Urbantech analysis, there is insufficient downstream capacity to accommodate the development once the Region's capital works project is complete. The existing 300 mm dia. wastewater main on Cross Avenue will need to be upgraded to a 450 mm dia. wastewater main.
- 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 300 mm dia. storm lateral connecting into the proposed municipal storm sewer in Street 'B'. The required storage volume is 382.9 m³.

- Groundwater will be collected, treated if required, and discharged uncontrolled to the municipal storm sewer using the 450 mm dia. storm lateral. The groundwater uncontrolled flow is equivalent to 0.56 L/s. The site's allowable storm discharge rate has been reduced to reflect the additional of groundwater flow.
- The water balance criteria of 25 mm is equivalent to 225 m³. 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'

GR PLAN NOTES

| Note Number | Note Text |
|-------------|---------------------------------------------|
| 1 | WEIGHT CAPACITY OF LOADING AREA (35,000 KG) |
| 2 | LOADING AREA HAS +/- 2% GRADE |

DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

This drawing shall not be used for construction purposes until signed by the consultant responsible. This drawing, as an instrument of service, is provided by and is the property of Sweeny & Co. Architects.

ISSUED

2024-03-26 ISSUED FOR ZBA
2024-07-19 PROGRESS SET



SITE SYMBOL LEGEND:

- RESIDENTIAL ENTRANCE (TOWER)
- EXISTING OFFICE ENTRANCES
- SERVICE ENTRANCE
- AMENITY ENTRANCE
- PRIVATE TERRACE
- OUTDOOR AMENITY
- GREEN ROOF
- CANOPY
- EXISTING GRADES
- PROPOSED GRADES
- PROPOSED FIRE HYDRANT
- FIRE DEPARTMENT CONNECTION
- PROPERTY LINE
- E-BIKES

- GARBAGE BIN
- RECYCLING BIN
- ORGANIC BIN
- BULKY WASTE STORAGE (MIN. 10HP)
- JANITOR CLOSET
- COMMERCIAL ELEVATOR
- MOVING ELEVATOR / MOVING ROOM
- SERVICE ELEVATOR
- SHUTTLE ELEVATOR
- VESTIBULE

Sweeny&Co Architects

134 PETER STREET | SUITE 1601
TORONTO, ONTARIO | M5V 2H2 | CANADA
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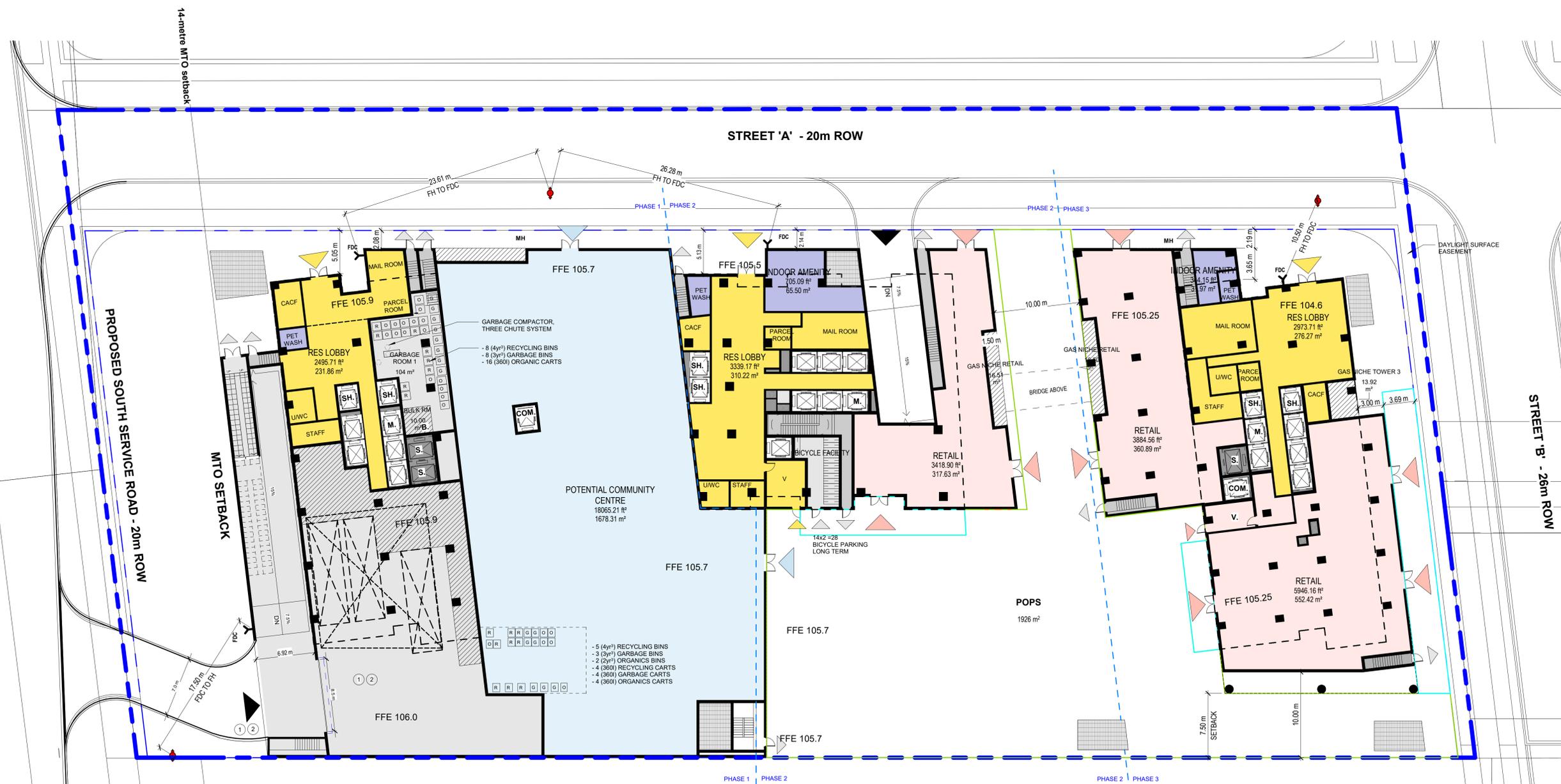
PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Level 1 - Ground Floor Plan

DATE: 2024-09-06
SCALE: 1:250
DRAWN:
CHECKED: AG
PROJ. No.: 2128

DWG No.
AZ108



C:\Users\lma\Documents\2128_Colville Transit Hub_Central_New_lmaFRMNN1.rvt 2024-09-06 5:10:50 PM

PROJECT & ZONING INFO

| ZONING REQUIREMENTS | | | | | |
|-----------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------|----------------------------|-----------|-----------|
| SITE | | | | | |
| TYPE | NOTES | PROVIDED | PROVIDED (%) | | |
| GROSS SITE AREA | | 11,887 m ² | 100.00% | | |
| ROAD CONVEYANCE | (NOT DEDUCTED FROM NET SITE AREA) | 2,899 m ² | 24.43% | | |
| POPS | | 1,926 m ² | 16.23% | | |
| GFA | | | | | |
| TYPE | NOTES | PROVIDED | | | |
| TOTAL RES GFA | | 128,299.84 m ² | 99.34% | | |
| TOTAL RETAIL GFA | | 1,230.93 m ² | 0.91% | | |
| TOTAL COMMERCIAL GFA | | 5,043.24 m ² | 3.75% | | |
| TOTAL GFA | ENTIRE PROJECT | 134,574.01 m ² | 100.00% | | |
| FSI | | | | | |
| FLOOR SPACE INDEX (GROSS) | | 11.32 | | | |
| FLOOR SPACE INDEX (NET) | | 14.4 | | | |
| RESIDENTIAL AMENITY | | | | | |
| TYPE | | PROVIDED (m ²) | PROVIDED (m ²) | | |
| INDOOR | 1,853 units | 2,700 m ² | 3,710 m ² | | |
| OUTDOOR | 1,853 units | 1,330 m ² | 2,455 m ² | | |
| TOTAL RES. AMENITY | | 3,333 m ² | 6,165 m ² | | |
| VEHICULAR PARKING | | | | | |
| TYPE | REQUIRED | PROVIDED | PROVIDED | | |
| Residential | 1,853 units | 0.50 spaces/unit | 927 | 938 | |
| Residential Visitor | 1,853 units | 0.15 spaces/unit | 278 | 278 | |
| Comm./Retail/Office | 5,271.17 m ² | 1.08 per 100.00 m ² | 0 | 0 | |
| TOTAL PARKING | 0.24 (RES) | | 1204 | 1208 | |
| LEVEL BREAKDOWN | | | | | |
| LEVEL | RESIDENTIAL | VISITOR | COMMERCIAL | BF* | LVL TOTAL |
| P1 | 0 | 0 | 0 | 0 | 0 |
| P2 | 200 | 0 | 0 | 0 | 200 |
| P3 | 200 | 0 | 0 | 0 | 200 |
| P4 | 200 | 0 | 0 | 0 | 200 |
| P5 | 200 | 0 | 0 | 0 | 200 |
| P6 | 200 | 0 | 0 | 0 | 200 |
| P7 | 199 | 0 | 0 | 0 | 199 |
| P8 | 0 | 152 | 0 | 0 | 152 |
| TOTAL PARKING | 830 | 278 | 0 | 30 | 1208 |
| *SF SPOTS TO BE PART OF EITHER COMMERCIAL, VISITOR, OR RES. RES. SPOTS DEPENDENT ON LEVEL SEE PLANS | | | | | |
| BICYCLE PARKING | | | | | |
| TYPE | REQUIRED | PROVIDED | PROVIDED | | |
| Res LONG TERM | 1,853 units | 0.75 spaces/unit | 1390 | 1534 | |
| Res SHORT TERM | 1,853 units | 0.25 spaces/unit | 464 | 482 | |
| Comm./Retail/Office | 5,271.17 m ² | 1.00 per 100.00 m ² | 7 | 7 | |
| TOTAL BICYCLES | | | 1861 | 2023 | |
| TOTAL LONG TERM | | | 1397 | 1541 | |
| TOTAL SHORT TERM | | | 464 | 482 | |
| LEVEL BREAKDOWN | | | | | |
| LEVEL | RES. LT. | RES. ST. | RETAIL | LVL TOTAL | |
| P1 | 0 | 0 | 0 | 0 | |
| Level 1 (Interior + Exterior) | 28 | 110 | 7 | 145 | |
| Level 2 | 122 | 0 | 0 | 122 | |
| TOTAL BICYCLES | 154 | 482 | 7 | 2023 | |
| LOADING & STAGING | | | | | |
| TYPE | | PROVIDED | | | |
| Loading (Moving "Type C") | | 1 | | | |
| Loading (Retail "Type C") | | 1 | | | |
| Loading (Res Garbage "Type G") | | 1 | | | |
| Loading (Res Garbage "Type G") | | 1 | | | |
| GARBAGE ROOM | | | | | |
| Refer to Waste Management Report by R.J. Burrows & Associates Limited | | | | | |

CONTEXT PLAN



REFER TO BA GROUP'S FEBRUARY, 2024 TRAFFIC IMPACT STUDY (TIS) REPORT FOR DISCUSSION RELATED TO REQUIRED/PERMITTED PARKING RATES VS. PROPOSED PARKING RATES INDICATED ON THIS SHEET

PROJECT STATISTICS

| UNDERGROUND | TFA | | GFA (Town of Oakville Zoning By-law 2014-814) | | | | | | | | INDOOR AMENITY | | OUTDOOR AMENITY | |
|--------------------------|---------------------------|--------------|-----------------------------------------------|--------------|-------------------------|-----------|-------------------------|---------------------|--------------------------|---------------------|-------------------------|-----------|-------------------------|-----------|
| | Area m ² | Area SF | RESIDENTIAL | RETAIL | COMMERCIAL | GFA TOTAL | | Area m ² | Area SF | Area m ² | Area SF | | | |
| PARKING | | | | | | | | | | | | | | |
| Level -7 | 2,743.28 m ² | 29,528 SF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Level -6 | 8,380.32 m ² | 90,205 SF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Level -5 | 8,380.32 m ² | 90,205 SF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Level -4 | 8,380.32 m ² | 90,205 SF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Level -3 | 8,380.32 m ² | 90,205 SF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Level -2 | 8,380.20 m ² | 90,204 SF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Level -1 | 8,380.06 m ² | 90,202 SF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| PARKING TOTAL | 53,024.52 m ² | 570,754 SF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| UNDERGROUND TOTAL | 53,024.82 m ² | 570,754 SF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| PODIUM | | | | | | | | | | | | | | |
| Level 01 | 5,599.39 m ² | 59,841 SF | 2,650.15 m ² | 28,526 SF | 1,230.93 m ² | 13,250 SF | 1,678.31 m ² | 18,065 SF | 5,559.39 m ² | 59,841 SF | 1,118.89 m ² | 1,278 SF | -- | -- |
| Level 02 | 4,303.54 m ² | 46,323 SF | 3,458.95 m ² | 37,232 SF | -- | -- | 844.60 m ² | 9,091 SF | 4,303.54 m ² | 46,323 SF | 1,468.92 m ² | 15,811 SF | 160.56 m ² | 1,728 SF |
| Level 03 | 4,973.34 m ² | 53,533 SF | 4,973.34 m ² | 53,533 SF | -- | -- | 2,540.37 m ² | 27,344 SF | 4,973.34 m ² | 53,533 SF | -- | -- | -- | -- |
| Level 04 | 1,292.73 m ² | 13,915 SF | 1,292.73 m ² | 13,915 SF | -- | -- | -- | -- | 1,292.73 m ² | 13,915 SF | -- | -- | -- | -- |
| Level 05 | 3,197.61 m ² | 34,419 SF | 3,197.61 m ² | 34,419 SF | -- | -- | -- | -- | 3,197.61 m ² | 34,419 SF | -- | -- | -- | -- |
| Level 06 | 2,861.93 m ² | 30,806 SF | 2,861.93 m ² | 30,806 SF | -- | -- | -- | -- | 2,861.93 m ² | 30,806 SF | -- | -- | -- | -- |
| Level 07 | 2,861.93 m ² | 30,806 SF | 2,861.93 m ² | 30,806 SF | -- | -- | -- | -- | 2,861.93 m ² | 30,806 SF | -- | -- | -- | -- |
| SUBTOTAL | 25,050.47 m ² | 266,641 SF | 18,756.26 m ² | 201,891 SF | 1,230.93 m ² | 13,250 SF | 5,063.28 m ² | 54,501 SF | 25,050.47 m ² | 266,641 SF | 3,710.32 m ² | 39,938 SF | 2,455.23 m ² | 26,428 SF |
| TOWER (Tower 1) | | | | | | | | | | | | | | |
| Level 08 | 820.83 m ² | 8,835 SF | 820.83 m ² | 8,835 SF | -- | -- | -- | -- | 820.83 m ² | 8,835 SF | -- | -- | -- | -- |
| Level 09 | 805.06 m ² | 8,666 SF | 805.06 m ² | 8,666 SF | -- | -- | -- | -- | 805.06 m ² | 8,666 SF | -- | -- | -- | -- |
| Level 10 to 29 | 16,701.18 m ² | 173,312 SF | 16,701.18 m ² | 173,312 SF | -- | -- | -- | -- | 16,701.18 m ² | 173,312 SF | -- | -- | -- | -- |
| Level 30 | 805.06 m ² | 8,666 SF | 805.06 m ² | 8,666 SF | -- | -- | -- | -- | 805.06 m ² | 8,666 SF | -- | -- | -- | -- |
| Level 31 | 805.06 m ² | 8,666 SF | 805.06 m ² | 8,666 SF | -- | -- | -- | -- | 805.06 m ² | 8,666 SF | -- | -- | -- | -- |
| Level 32 | 805.06 m ² | 8,666 SF | 805.06 m ² | 8,666 SF | -- | -- | -- | -- | 805.06 m ² | 8,666 SF | -- | -- | -- | -- |
| Level 33 to 37 | 4,025.29 m ² | 43,328 SF | 4,025.29 m ² | 43,328 SF | -- | -- | -- | -- | 4,025.29 m ² | 43,328 SF | -- | -- | -- | -- |
| Level 38 | 799.88 m ² | 8,610 SF | 799.88 m ² | 8,610 SF | -- | -- | -- | -- | 799.88 m ² | 8,610 SF | -- | -- | -- | -- |
| Level 39 to 51 | 10,398.41 m ² | 111,928 SF | 10,398.41 m ² | 111,928 SF | -- | -- | -- | -- | 10,398.41 m ² | 111,928 SF | -- | -- | -- | -- |
| Mech. Penthouse | 799.88 m ² | 8,610 SF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SUBTOTAL | 36,165.71 m ² | 389,284 SF | 35,365.83 m ² | 380,675 SF | -- | -- | -- | -- | 35,365.83 m ² | 380,675 SF | -- | -- | -- | -- |
| TOWER (Tower 2) | | | | | | | | | | | | | | |
| Level 08 | 852.08 m ² | 9,172 SF | 852.08 m ² | 9,172 SF | -- | -- | -- | -- | 852.08 m ² | 9,172 SF | -- | -- | -- | -- |
| Level 9 to 28 | 17,041.38 m ² | 183,434 SF | 17,041.38 m ² | 183,434 SF | -- | -- | -- | -- | 17,041.38 m ² | 183,434 SF | -- | -- | -- | -- |
| Level 29 | 841.40 m ² | 9,057 SF | 841.40 m ² | 9,057 SF | -- | -- | -- | -- | 841.40 m ² | 9,057 SF | -- | -- | -- | -- |
| Level 30 | 841.39 m ² | 9,057 SF | 841.39 m ² | 9,057 SF | -- | -- | -- | -- | 841.39 m ² | 9,057 SF | -- | -- | -- | -- |
| Level 31 | 841.39 m ² | 9,057 SF | 841.39 m ² | 9,057 SF | -- | -- | -- | -- | 841.39 m ² | 9,057 SF | -- | -- | -- | -- |
| Level 32 | 841.40 m ² | 9,057 SF | 841.40 m ² | 9,057 SF | -- | -- | -- | -- | 841.40 m ² | 9,057 SF | -- | -- | -- | -- |
| Level 33 to 34 | 1,682.81 m ² | 18,114 SF | 1,682.81 m ² | 18,114 SF | -- | -- | -- | -- | 1,682.81 m ² | 18,114 SF | -- | -- | -- | -- |
| Level 35 | 830.76 m ² | 8,942 SF | 830.76 m ² | 8,942 SF | -- | -- | -- | -- | 830.76 m ² | 8,942 SF | -- | -- | -- | -- |
| Level 36 to 43 | 6,646.10 m ² | 71,538 SF | 6,646.10 m ² | 71,538 SF | -- | -- | -- | -- | 6,646.10 m ² | 71,538 SF | -- | -- | -- | -- |
| Level 44 | 825.45 m ² | 8,865 SF | 825.45 m ² | 8,865 SF | -- | -- | -- | -- | 825.45 m ² | 8,865 SF | -- | -- | -- | -- |
| Level 45 to 49 | 4,127.39 m ² | 44,427 SF | 4,127.39 m ² | 44,427 SF | -- | -- | -- | -- | 4,127.39 m ² | 44,427 SF | -- | -- | -- | -- |
| Level 50 | 820.10 m ² | 8,828 SF | 820.10 m ² | 8,828 SF | -- | -- | -- | -- | 820.10 m ² | 8,828 SF | -- | -- | -- | -- |
| Level 51 to 55 | 4,700.52 m ² | 50,438 SF | 4,700.52 m ² | 50,438 SF | -- | -- | -- | -- | 4,700.52 m ² | 50,438 SF | -- | -- | -- | -- |
| Mech. Penthouse | 799.79 m ² | 8,609 SF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SUBTOTAL | 41,077.42 m ² | 442,154 SF | 40,292.42 m ² | 433,704 SF | -- | -- | -- | -- | 40,292.42 m ² | 433,704 SF | -- | -- | -- | -- |
| TOWER (Tower 3) | | | | | | | | | | | | | | |
| Level 08 | 819.95 m ² | 8,826 SF | 819.95 m ² | 8,826 SF | -- | -- | -- | -- | 819.95 m ² | 8,826 SF | -- | -- | -- | -- |
| Level 9 to 18 | 8,199.47 m ² | 88,258 SF | 8,199.47 m ² | 88,258 SF | -- | -- | -- | -- | 8,199.47 m ² | 88,258 SF | -- | -- | -- | -- |
| Level 19 | 804.61 m ² | 8,661 SF | 804.61 m ² | 8,661 SF | -- | -- | -- | -- | 804.61 m ² | 8,661 SF | -- | -- | -- | -- |
| Level 20 to 29 | 8,046.14 m ² | 86,608 SF | 8,046.14 m ² | 86,608 SF | -- | -- | -- | -- | 8,046.14 m ² | 86,608 SF | -- | -- | -- | -- |
| Level 30 | 804.61 m ² | 8,661 SF | 804.61 m ² | 8,661 SF | -- | -- | -- | -- | 804.61 m ² | 8,661 SF | -- | -- | -- | -- |
| Level 31 | 804.61 m ² | 8,661 SF | 804.61 m ² | 8,661 SF | -- | -- | -- | -- | 804.61 m ² | 8,661 SF | -- | -- | -- | -- |
| Level 32 to 33 | 1,609.23 m ² | 17,322 SF | 1,609.23 m ² | 17,322 SF | -- | -- | -- | -- | 1,609.23 m ² | 17,322 SF | -- | -- | -- | -- |
| Level 34 | 799.79 m ² | 8,609 SF | 799.79 m ² | 8,609 SF | -- | -- | -- | -- | 799.79 m ² | 8,609 SF | -- | -- | -- | -- |
| Level 35 to 49 | 11,996.91 m ² | 129,134 SF | 11,996.91 m ² | 129,134 SF | -- | -- | -- | -- | 11,996.91 m ² | 129,134 SF | -- | -- | -- | -- |
| Mech. Penthouse | 799.79 m ² | 8,609 SF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SUBTOTAL | 34,665.12 m ² | 373,349 SF | 33,865.33 m ² | 364,739 SF | -- | -- | -- | -- | 33,865.33 m ² | 364,739 SF | -- | -- | -- | -- |
| ABOVE GRADE TOTAL | | | | | | | | | | | | | | |
| | 136,978.71 m ² | 1,474,427 SF | 128,299.84 m ² | 1,387,000 SF | 1,230.93 m ² | 13,250 | | | | | | | | |

SURVEYOR'S REAL PROPERTY REPORT
ILLUSTRATING TOPOGRAPHY
PART 1 - PLAN OF SURVEY OF
LOT 14, CONCESSION 3
SOUTH OF DUNDAS STREET
 (GEOGRAPHIC TOWNSHIP OF TRAFALGAR)
TOWN OF OAKVILLE
 REGIONAL MUNICIPALITY OF PEEL
 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.

PART 2 - SURVEY REPORT
 - DESCRIPTION
 PART OF LOT 14, CONCESSION 3, SOUTH OF DUNDAS STREET, AS DESCRIBED IN INSTRUMENT No. 815140, EXCEPT PART 1 ON PLAN 20R-7001.
 - REGISTERED EASEMENTS AND/OR RIGHTS-OF-WAY
 NONE REGISTERED.
 - ZONING COMPLIANCE
 COMPLIANCE WITH ONTARIO BUILDING CODE SETBACK REQUIREMENTS ARE NOT VERIFIED BY THIS SURVEY.
 - ADDITIONAL REMARKS
 PLAN PREPARED FOR DISTRIKT CAPITAL.

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 WEST AND 4.3m SOUTHWEST OF THE MOST WESTERN CORNER OF SUBJECT PROPERTY, AS SHOWN ON THE FACE OF THE PLAN.
 ELEVATION=106.09m



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 0.9997221.
 FOR BEARING COMPARISONS, A ROTATION OF 0°54'50" COUNTER-CLOCKWISE WAS APPLIED TO BEARINGS ON P1, P2, P3, P4, P5, P6, P7 AND P8.

LEGEND

| | |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| ■ DENOTES SURVEY MONUMENT FOUND | • GM DENOTES GAS METER |
| □ DENOTES STANDARD IRON BAR | • SP DENOTES STAND PIPE |
| — DENOTES IRON BAR | ○ HMH DENOTES HYDRO MANHOLE |
| P1 DENOTES PLAN 20R-17555 | ○ MH DENOTES MANHOLE |
| P2 DENOTES PLAN 20R-15677 | • BOL DENOTES BOLLARD |
| P3 DENOTES PLAN 20R-14204 | • HP DENOTES HYDRO POLE |
| P4 DENOTES SURVEYOR'S REAL PROPERTY REPORT BY J.D. BARNES LIMITED, DATED FEBRUARY 21, 1992. FILE No. 91-28-600-01-A. PLAN 20R-1001 | • LS DENOTES LIGHT STANDARD |
| P5 DENOTES PLAN 20R-1001 | • H DENOTES FIRE HYDRANT |
| P6 DENOTES PLAN 20R-5913 | • WK DENOTES WATER KEY |
| P7 DENOTES PLAN 20R-5142 | • SV DENOTES SPRINKLER VALVE |
| P8 DENOTES PLAN OF SURVEY BY BENNETT YOUNG LIMITED, DATED 23, 2002. FILE No. 2002 16 1P1-A. PLAN 20R-14868 | • WV DENOTES WATER VALVE |
| P9 DENOTES MEASURED | — DENOTES OVERHEAD HYDRO CABLE |
| MEAS DENOTES BENNETT YOUNG LIMITED | ○ T DENOTES CONFEROUS TREE |
| BY DENOTES MACKAY MACKAY & PETERS LIMITED | ○ D DENOTES DECIDUOUS TREE |
| MPP DENOTES MCCONNELL, MAUGHAN LIMITED | |
| 760 DENOTES DAVID HORWOOD LIMITED | |
| 1128 DENOTES J.F. & YOUNG O.L.S. | |
| 1483 DENOTES DELPH & JENKINS LIMITED | |
| 1574 DENOTES | |

N=NORTH / S=SOUTH / E=EAST / W=WEST
 PRIMARY CONTOURS ARE AT 1.00m INTERVALS.
 SECONDARY CONTOURS ARE AT 0.25m INTERVALS.

TOPOGRAPHIC LEGEND

CONCRETE
 FINISHED FLOOR=105.95
 FINISHED FLOOR=105.99
 FINISHED FLOOR=105.97

ASPHALT
 CHAIN LINK FENCE
 GATE
 STORAGE CONTAINER
 SOCCER NET
 CONCRETE PADS

PART 7, PLAN 20R-14204
 PIN 24816-0107 (LT)
 SUBJECT TO AN EASEMENT AS IN INST. No. HR66766

PART 4, PLAN 20R-5913
 SUBJECT TO A RIGHT-OF-WAY AS IN INST. No. 589005

PART 7, PLAN 20R-5913
 SUBJECT TO A RIGHT-OF-WAY AS IN INST. No. 589004

PART 8, PLAN 20R-5913
 PIN 24816-0048 (LT)

PART 9
 PLAN 20R-5913
 SUBJECT TO A RIGHT-OF-WAY AS IN INST. No. 534539

PART 7
 PLAN 20R-14868

ASSOCIATION OF ONTARIO LAND SURVEYORS
 PLAN SUBMISSION FORM
 2159589

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 17TH DAY OF APRIL, 2021.

APRIL 30, 2021
 DATE

R.S. QUERUBIN
 ONTARIO LAND SURVEYOR

J.D. BARNES SURVEYING MAPPING LIMITED GIS
 LAND INFORMATION SPECIALISTS
 401 WHEELABRATOR WAY, SUITE A, MILTON, ON L9T 3C1
 T: (905) 875-9955 F: (905) 875-9956 www.jdbarnes.com

DRAWN BY: AP CHECKED BY: RSQ REFERENCE NO.: 21-30-671-00-A
 FILE: C:\21-30-671\001\Drawings\21-30-671-A.dwg DATED: APRIL 30th, 2021
 PLOTTED: 4/30/2021

APPENDIX 'B'

SCHEDULE L3 MIDTOWN OAKVILLE TRANSPORTATION NETWORK

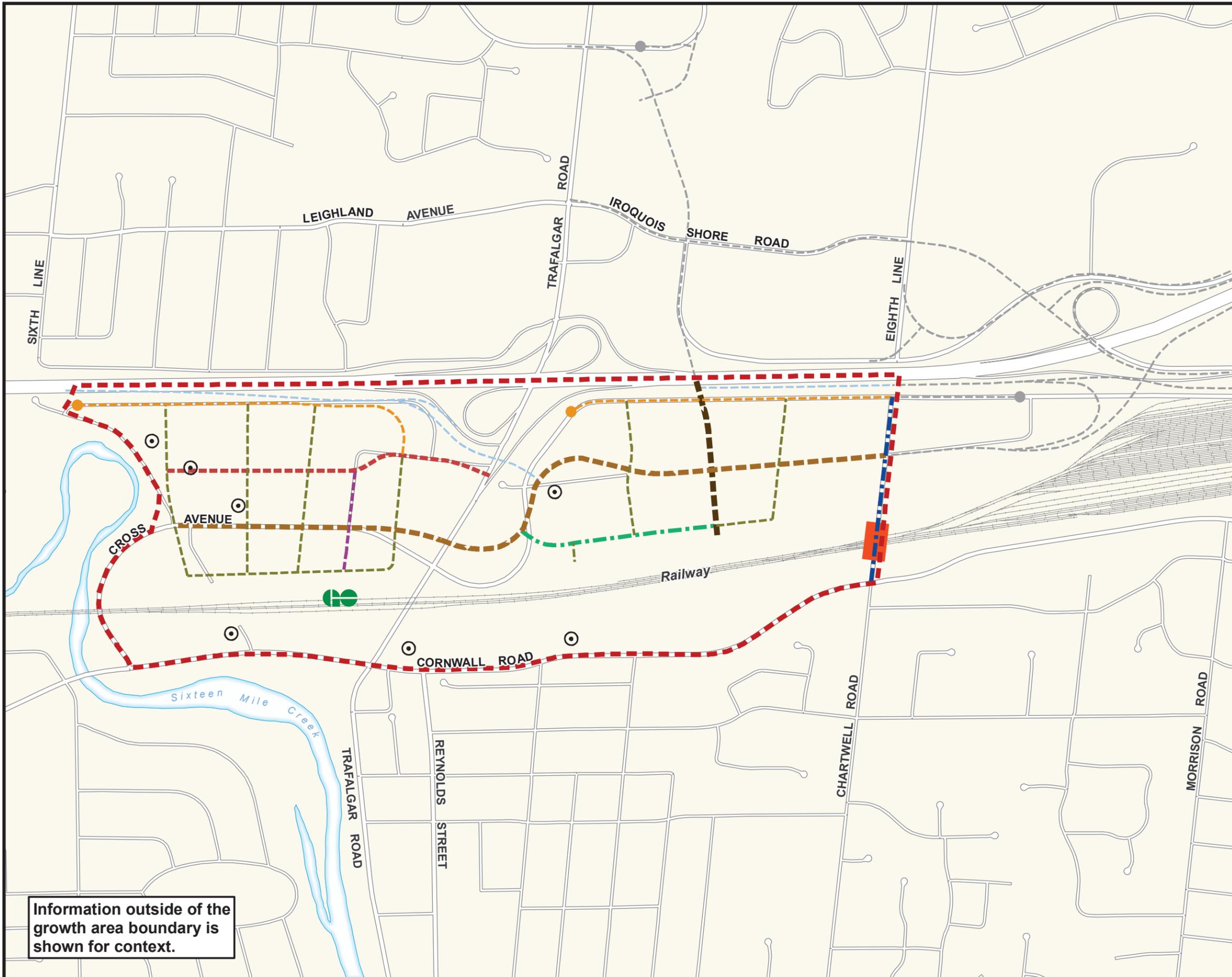


-  Growth Area Boundary
 -  Existing Road Network
 -  Future 32 m Multi-Purpose Arterial Road (North-South Crossing)
 -  Future 28 m Minor Arterial Road (Cross Avenue)
 -  Future 26 m Local Road (Station Road)
 -  Future 24 m Minor Arterial Road (Chartwell Road)
 -  Future 22 m Local Road
 -  Future 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

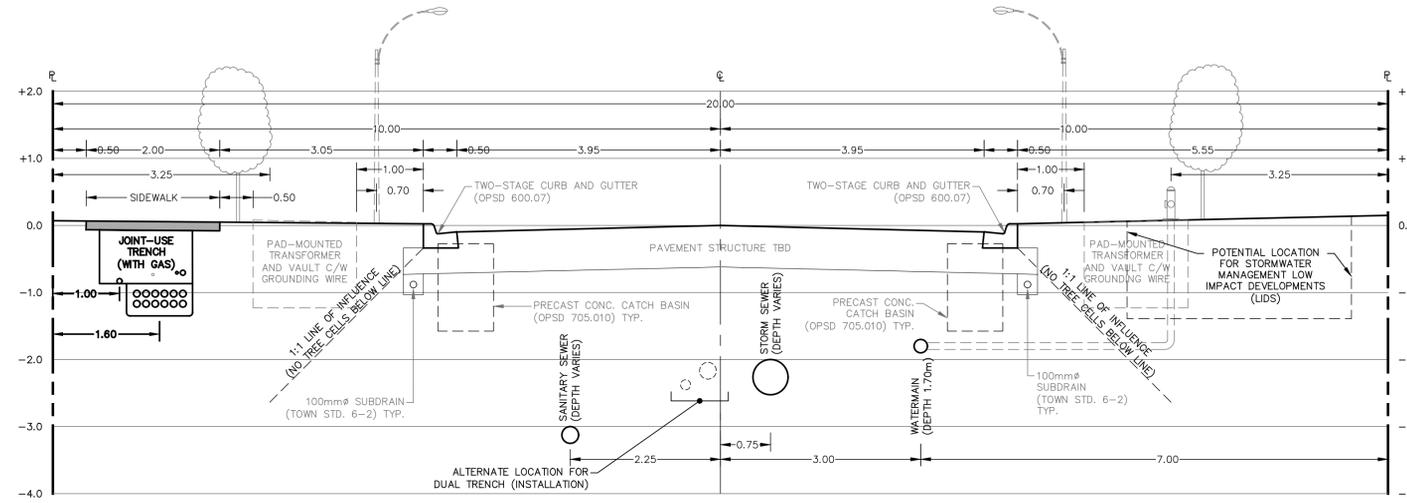


1:9,000

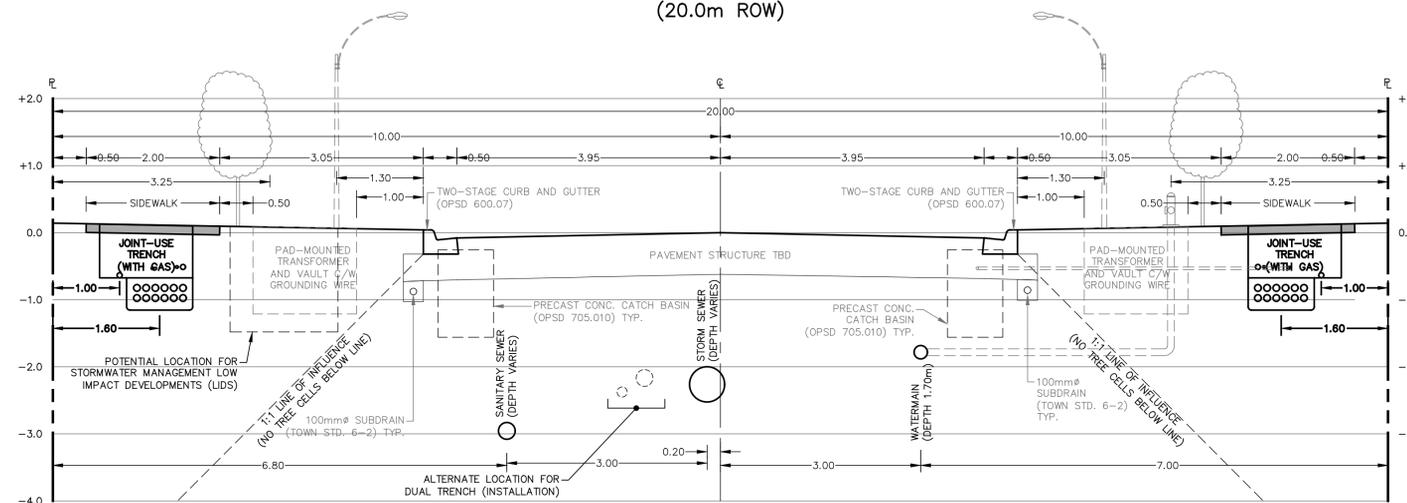
August 31, 2021



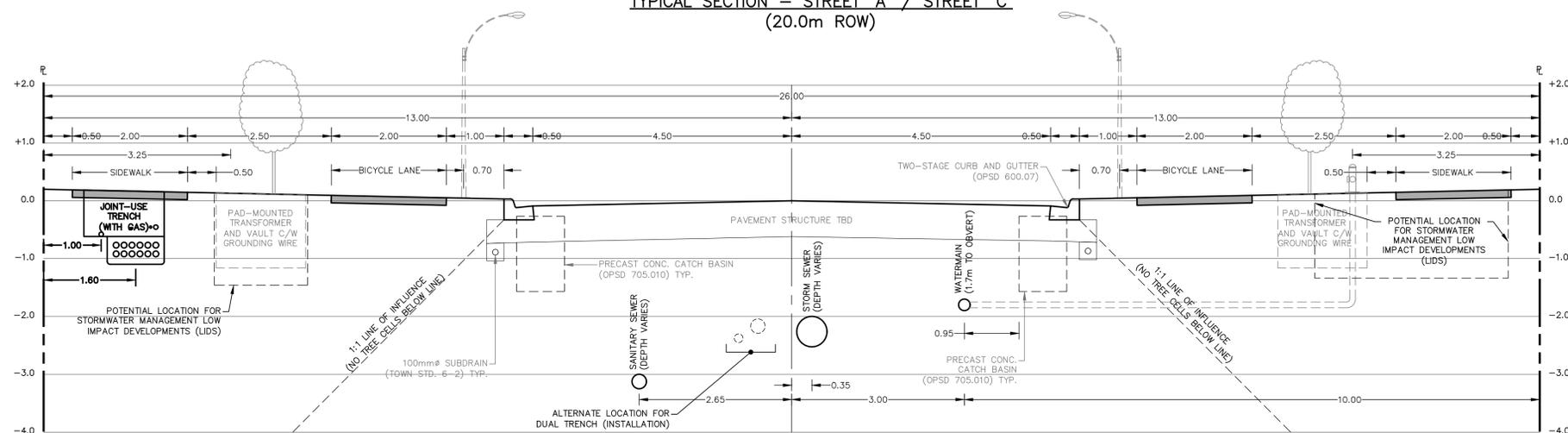
Information outside of the growth area boundary is shown for context.



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 - District 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. |
| DRAWN BY | GL | DATE | 2024/09/20 |
| DRAWING No. | | | FIG. 1 |

APPENDIX 'C'

TRAFALGAR ENGINEERING LTD.

ESTIMATED EXISTING WATER DEMAND

Project: 166 South Service Road
Desc: TOC Development Submission

Project No.: 1736
Prepared By: AJP
Checked By: JN

| Land Use / Occupancy Type | Occupancy Data | | | | | Peaking Factors | | | Demand Flow | | |
|-----------------------------------------------------------------------------------|----------------|------------------------------|-----------------------|------------------------------|------------------------------|-----------------|-----------|------------|--------------------------|--------------------------|---------------------------|
| | Area (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 | 1.19 | 90 | 107 | 275 | 20 | 1.00 | 2.25 | 2.25 | 20 | 46 | 46 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| *Per Cap. Demand based on O.B.C. Table 8.2.1.3.B. -- 5 L/1.0m ² Stores | | | | | | | | | | | |
| TOTAL | 1.19 | | 107 | | 20 | | | | 20 | 46 | 46 |

Fire Flow

Using Fire Underwriters Survey Methodology:

Average Daily Demand: 20 (L/min)
Minimum Hourly Demand: 20 (L/min)
Maximum Hourly Demand: 46 (L/min)
Maximum Daily Demand: 46 (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 = 10000 (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: 0%
 F = 10000 (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: | | 4000 (L/min) | |

4. Adjust the value in No. 2 for exposure
- | | | |
|-------------------------|----------------------------------|------------------|
| | Separation (m) | Charge |
| North | <input type="text" value="100"/> | 0% |
| East | <input type="text" value="50"/> | 0% |
| South | <input type="text" value="75"/> | 0% |
| West | <input type="text" value="50"/> | 0% |
| Total Charge: | | 0% |
| Exposure Charge: | | 0 (L/min) |

5. Estimated Fire Flow is value in No. 2 less Sprinkler Reduction plus Exposure Charge, rounded to the nearest 1000
 F = 0 (L/min)

TRAFALGAR ENGINEERING LTD.

ESTIMATED PROPOSED WATER DEMAND

*Persons/Units Rates taken from: Modified Preferred Growth Concept Land Needs Assessment for the Region of Halton (2022)

Project: 166 South Service Road
Desc: TOC Development Submission

Project No.: 1736
Prepared By: AJP
Checked By: JN

| Land Use / Occupancy Type | Occupancy Data | | | Peaking Factors | | | Demand Flow | | | | |
|-----------------------------|-------------------------|--------------------------------------|-----------------------------|------------------------------------|---------------------------------|-----------|-------------|------------|--------------------------------|--------------------------------|---------------------------------|
| | Unit Count /GFA (ha) | Population Density (pers/unit) | 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) |
| Residential (1 Bedroom) | 1224 | 1.356 | 1660 | 275 | 317 | 1.00 | 4.00 | 2.25 | 317 | 1268 | 713 |
| Residential (2/3 Bedroom) | 629 | 1.831 | 1152 | 275 | 220 | 1.00 | 4.00 | 2.25 | 220 | 880 | 495 |
| Commercial (Retail/Office)* | 6266 | 0.027 | 169 | 275 | 32 | 1.00 | 2.25 | 2.25 | 32 | 73 | 73 |
| TOTAL | 8119 | | 2981 | | 569 | | | | 569 | 2220 | 1281 |

*Per Cap Demand based on 2022 DC Study population density for commercial developments (403 ft2/employee)

Fire Flow

Using Fire Underwriters Survey Methodology:

Average Daily Demand: 569 (L/min)
Minimum Hourly Demand: 569 (L/min)
Maximum Hourly Demand: 2220 (L/min)
Maximum Daily Demand: 1281 (L/min)
Max. Daily Plus Fire: 8281 (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: **3780** (m²)
 F = **8000** (L/min) Adequately Protected Vertical Openings: **Yes**

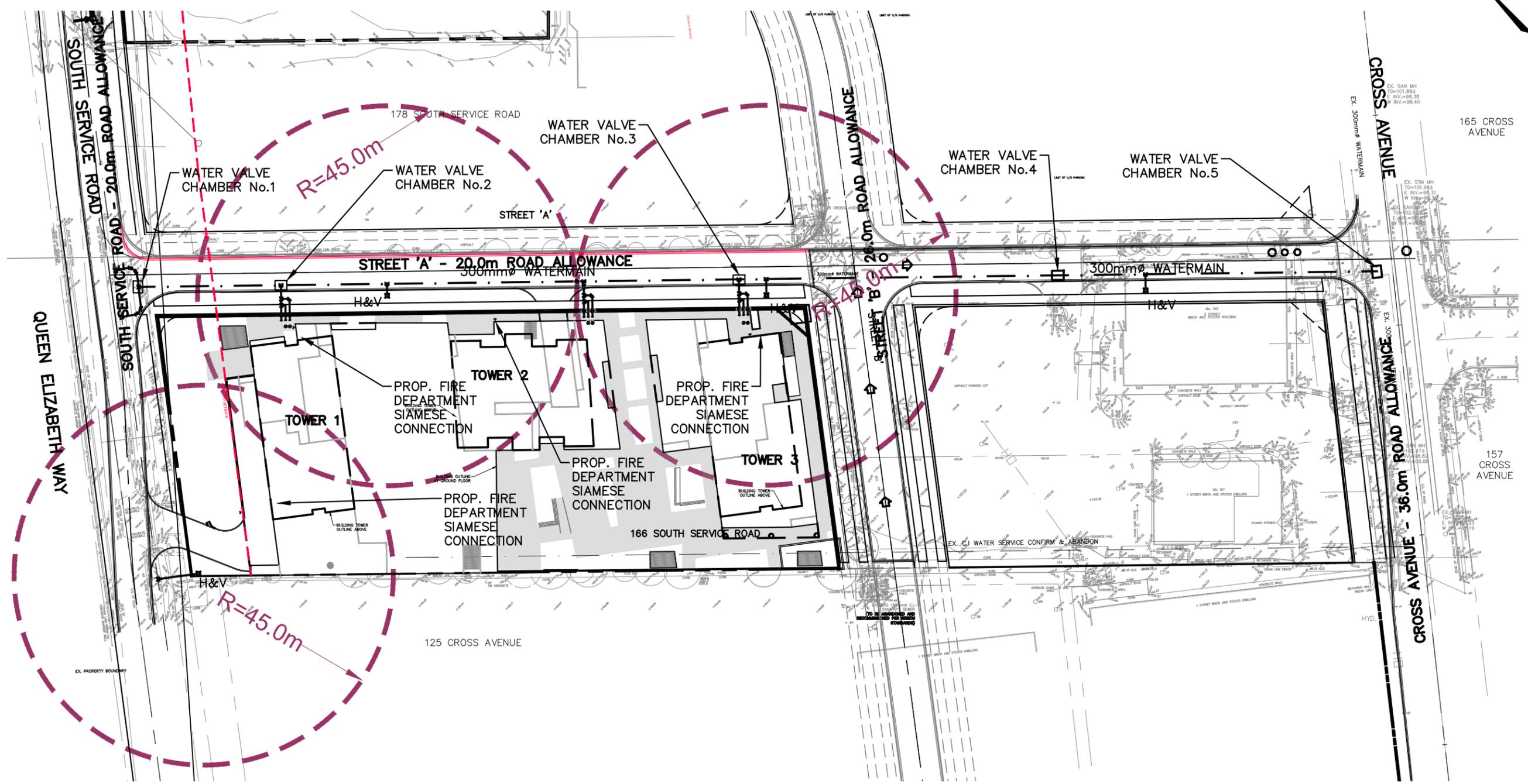
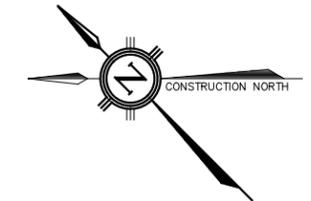
Area Note: For fire resistive buildings, consider the two largest adjoining floors plus 50% of the remaining floors up to eight, when openings are inadequately protected. For adequately protected vertical openings consider only the area of the largest floor plus 25% of each of the two immediately adjoining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

2. Adjust the value in No. 1 for occupancy surcharge/reduction
 Occupancy Contents: **Combustible** Factor: 0%
 F = **8000** (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: | | 3200 (L/min) | |

4. Adjust the value in No. 2 for exposure
- | | | |
|-------------------------|----------------|---------------------|
| | Separation (m) | Charge |
| North | 100 | 0% |
| East | 20 | 10% |
| South | 30 | 5% |
| West | 15 | 15% |
| Total Charge: | | 30% |
| Exposure Charge: | | 2400 (L/min) |

5. Estimated Fire Flow is value in No. 2 less *Sprinkler Reduction* plus *Exposure Charge*, rounded to the nearest 1000
 F = **7000** (L/min)



FILENAME: P:\1736 166 South Service Road\04-CAD\04-Resizing_OPA\1736GS-figures.dwg
 PLOTDATE: Sep 20, 2024 - 10:42am

| | | | |
|---------------|----------------------------------------------------------------------------|--|--|
| PROJECT TITLE | DISTRIKT MIDTOWN 166 SOUTH SERVICE ROAD EAST TOWN OF OAKVILLE | | |
| DRAWING TITLE | FIRE HYDRANT PLAN | | |

| | | | |
|-------------|----|-------------------------------------------------------------------------------------------------------------|--------------|
| | | #1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6 www.trafalgareng.com | |
| DESIGN BY | JN | SCALE | 1:1000 |
| DRAWN BY | GL | DATE | 2023/10/24 |
| DRAWING No. | | | FIG 1 |

APPENDIX 'D'

TRAFALGAR ENGINEERING LTD.

EXISTING ESTIMATED SANITARY FLOW

Project: 166 South Service Road
Desc: TOC Development Submission

Project No.: 1736
Prepared By: JN
Checked By: JN

Residential

| Land Use / Occupancy Type | Area (ha) | 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 | Area (ha) | Population Density (pers/ha) | Eq. Population (cap.) | Per Cap. Demand (L/Cap. Day) | Average Daily Dry Weather Flow (L/s) |
|---------------------------|-----------|------------------------------|-----------------------|------------------------------|--------------------------------------|
| Light Commercial | 1.19 | 90.0 | 107 | 275 | 0.3 |
| | | | | | |
| | | | | | |
| | | | | | |
| TOTAL | 1 | | 107 | | 0.3 |

| | |
|-----------------------------|----------------|
| Residential Peaking Factor: | 4.50 |
| ICI Peaking Factor: | 4.24 |
| Include ICI Peaking? | No |
| Tributary Area: | 1.19 (ha) |
| Infiltration Allowance: | 0.286 (L/s ha) |
| Foundation Drain Allowance: | 0.00 (L/s ha) |

| | |
|--------------------------------------|------------------|
| Residential + Infiltration Avg Flow: | 0.3 (L/s) |
| ICI Average Flow: | 0.3 (L/s) |
| Groundwater Discharge: | (L/s) |
| Total Average Flow: | 0.7 (L/s) |

| | |
|-------------------------|------------------|
| Residential Peak Flow: | 0.3 (L/s) |
| ICI Peak Flow: | 0.3 (L/s) |
| Groundwater Discharge: | (L/s) |
| Total Peak Flow: | 0.6 (L/s) |

TRAFALGAR ENGINEERING LTD.

PROPOSED ESTIMATED SANITARY FLOW

Using Region of Halton 2022 Development Charges Background Study

Project: 166 South Service Road
Desc: TOC Development Submission

Project No.: 1736
Prepared By: JN
Checked By: JN

Residential

| Land Use / Occupancy Type | Unit Count /GFA | Population Density (pers/unit) | Eq. Population (cap.) | Per Cap. Demand (L/Cap. Day) | Average Daily Dry Weather Flow (L/s) |
|---------------------------|-----------------|--------------------------------|-----------------------|------------------------------|--------------------------------------|
| 1 Bedroom | 1224 | 1.356 | 1660 | 275 | 5.3 |
| 2/3 Bedroom | 629 | 1.831 | 1152 | 275 | 3.7 |

| | | | | | |
|--------------|-------------|--|-------------|--|------------|
| TOTAL | 1853 | | 2811 | | 8.9 |
|--------------|-------------|--|-------------|--|------------|

Industrial / Commercial / Institutional

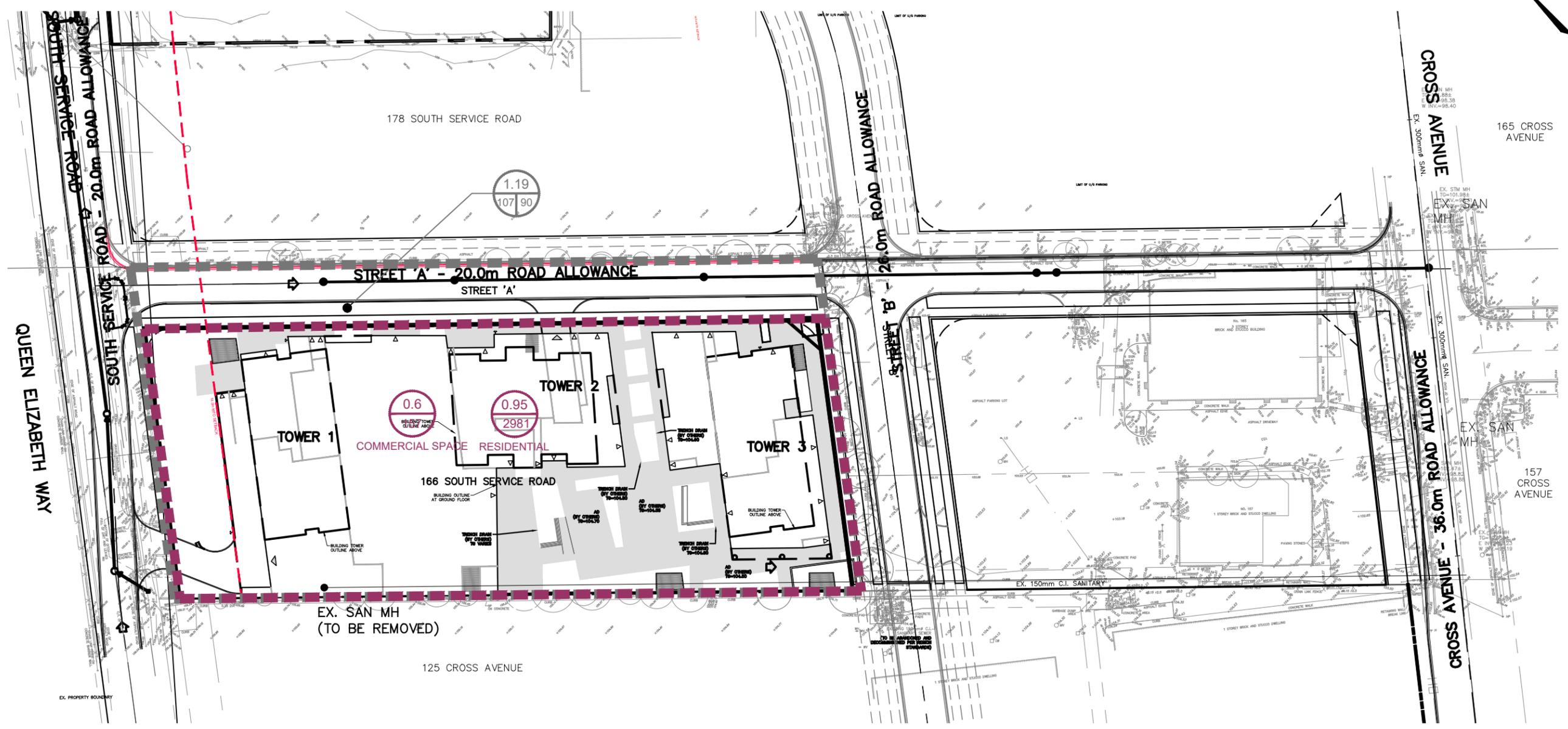
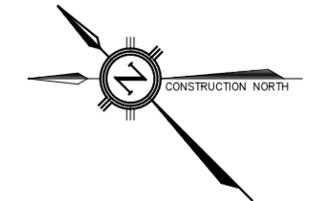
| Land Use / Occupancy Type | GFA (m ²) | Population Density (m ² /pers) | Eq. Population (cap.) | Per Cap. Demand (L/Cap. Day) | Average Daily Dry Weather Flow (L/s) |
|---------------------------|-----------------------|-------------------------------------------|-----------------------|------------------------------|--------------------------------------|
| Retail/Office | 6266 | 37.4 | 168 | 275 | 0.53 |

| | | | | | |
|--------------|-------------|--|------------|--|-------------|
| TOTAL | 6266 | | 168 | | 0.53 |
|--------------|-------------|--|------------|--|-------------|

| | |
|-----------------------------|---------------------------------------------------|
| Residential Peaking Factor: | 3.47 |
| ICI Peaking Factor: | 4.18 |
| Include ICI Peaking? | No |
| Tributary Area: | 1.19 (ha) (Includes portion of future Street 'A') |
| Infiltration Allowance: | 0.286 (L/s ha) |
| Foundation Drain Allowance: | 0.00 (L/s ha) |

| | |
|--------------------------------------|------------------|
| Residential + Infiltration Avg Flow: | 9.3 (L/s) |
| ICI Average Flow: | 0.5 (L/s) |
| Groundwater Discharge: | (L/s) |
| Total Average Flow: | 9.8 (L/s) |

| | |
|-------------------------|-------------------|
| Residential Peak Flow: | 31.4 (L/s) |
| ICI Peak Flow: | 0.5 (L/s) |
| Groundwater Discharge: | (L/s) |
| Total Peak Flow: | 31.9 (L/s) |



LEGEND

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

| | | | |
|---------------|----------------------------------------------------------------------------|--|--|
| PROJECT TITLE | DISTRIKT MIDTOWN 166 SOUTH SERVICE ROAD EAST TOWN OF OAKVILLE | | |
| DRAWING TITLE | SITE SANITARY DRAINAGE PLAN | | |

| | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------|----|-------|------------|-------------|--------------|
|  #1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6 www.trafalgareng.com | | DESIGN BY | JN | SCALE | 1:1000 | DRAWING No. | FIG 2 |
| | | DRAWN BY | GL | DATE | 2023/10/24 | | |

FILENAME: P:\1736 166 South Service Road\04-CAD\04-Resoning_OPA\1736GS-figures.dwg
 PLOTDATE: Sep 20, 2024 - 10:43am

APPENDIX 'E'

TRAFALGAR ENGINEERING LTD.

COMPOSITE RUNOFF COEFFICIENT

Project: 166 South Service Road
Desc: TOC Development Submission

Project No.: 1736
Prepared By: JN
Checked By: JN

Pre-Development Composite Runoff Coefficient

| Surface | 'A' (m ²) | 'C' | 'AC' | % Imp | 'AI' |
|-------------------------------------------------|-----------------------|--------------|---------------|-----------|-------------|
| Existing building and parking | 7000 | 0.90 | 6300 | 100% | 7000 |
| Existing landscaping (Less Road Dedications) | 4900 -2200 | 0.25 0.63 | 1225 -1386 | 0% 59% | - -1298 |
| | | | - | | - |
| | | | - | | - |
| Totals | 9700 | | 6139 | | 5702 |

C = 'AC'/'A' = 0.63 %I = 'AI'/'A' = 59%

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 | 8800 | 0.90 | 7920 | 80% | 7040 |
| | | | - | | - |
| | | | - | | - |
| | | | - | | - |
| Totals | 8800 | | 7920 | | 7040 |

C = 'AC'/'A' = 0.90 %I = 'AI'/'A' = 80%

Post-Development Uncontrolled Area Composite Runoff Coefficient

| Surface | 'A' (m ²) | 'C' | 'AC' | % Imp | 'AI' |
|----------------|-----------------------|------|------------|-------|------------|
| Drains to Blvd | 687 | 0.90 | 618 | 80% | 550 |
| | | | - | | - |
| | | | - | | - |
| | | | - | | - |
| Totals | 687 | | 618 | | 550 |

C = 'AC'/'A' = 0.90 %I = 'AI'/'A' = 80%

TRAFALGAR ENGINEERING LTD.

RATIONAL METHOD FLOWS

Based on Town of Oakville IDF Data

Project: 166 South Service Road
Desc: TOC Development Submission

Project No.: 1736
Prepared By: JN
Checked By: JN

Pre-Development Parameters

| | Site | External | Total |
|----------|-------|----------|-------|
| 'C' | 0.633 | 0.000 | 0.633 |
| 'A' (ha) | 0.970 | 0.000 | 0.970 |
| 'AC' | 0.614 | 0.000 | 0.614 |

Pre-Development Flow

| Return | Intensity (mm/hr) | Site Flow (L/s) | External Flow (L/s) | Total Flow (L/s) |
|--------|-------------------|-----------------|---------------------|------------------|
| 2-yr | 82.2 | 140 | 0 | 140 |
| 5-yr | 114.2 | 195 | 0 | 195 |
| 10-yr | 134.8 | 230 | 0 | 230 |
| 25-yr | 162.2 | 304 | 0 | 304 |
| 50-yr | 182.1 | 373 | 0 | 373 |
| 100-yr | 200.8 | 428 | 0 | 428 |

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) | 0.880 | 0.069 | 0.000 | 0.949 |
| 'AC' | 0.792 | 0.062 | 0.000 | 0.854 |

Post-Development Flow

| Return | Intensity (mm/hr) | Uncontrolled Flow (L/s) | Peak Rooftop Flow (L/s) | External Flow (L/s) | Total Flow (L/s) |
|--------|-------------------|-------------------------|-------------------------|---------------------|------------------|
| 2-yr | 82.2 | 181 | 14 | 0 | 195 |
| 5-yr | 114.2 | 251 | 20 | 0 | 271 |
| 10-yr | 134.8 | 297 | 23 | 0 | 320 |
| 25-yr | 162.2 | 392 | 31 | 0 | 423 |
| 50-yr | 182.1 | 445 | 35 | 0 | 480 |
| 100-yr | 200.8 | 491 | 38 | 0 | 529 |

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 | 140 | 195 | 39% |
| 5-yr | 195 | 271 | 39% |
| 10-yr | 230 | 320 | 39% |
| 25-yr | 304 | 423 | 39% |
| 50-yr | 373 | 480 | 29% |
| 100-yr | 428 | 529 | 24% |

*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: 166 South Service Road
Desc: TOC Development Submission

Project No.: 1736
Prepared By: JN
Checked By: JN

Pre-Development

Catchment Area (ha) 0.9700
 Runoff Coefficient 0.63
 TC (min) 10
 Control Level 5-Yr

Pre-Development Peak Intensity: 114.2 mm/hr
Pre-Development Peak Discharge: 0.195 (cms)

Post-Development Uncontrolled

Catchment Area (ha) 0.0687
 Runoff Coefficient 1.00
 TC (min) 10
 Control Level 100-Yr

Uncontrolled Peak Discharge: 0.038 (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) 0.8800
 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: 0.491 (cms)
Allowable Release Rate: 0.063 (cms)

| Storm Duration T_D (min) | Intensity $i = A \times T_D^{-C}$ (mm/hr) | Inflow Rate $Q_P = C_i A / 360$ (m ³ /s) | Average Roof Discharge (m ³ /s) | Max. Release Rate $Q_A = C_{i2YR} A$ (m ³ /s) | Inflow Volume $V_1 = 60 Q_P T_D$ (m ³) | Outflow Volume $V_0 = 30 Q_A (T_D + T_C)$ (m ³) | Storage $S = V_1 - V_0$ (m ³) |
|----------------------------------|-------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------|
| 10 | 200.80 | 0.491 | 0.000 | 0.063 | 294.5 | 37.8 | 256.7 |
| 15 | 158.27 | 0.387 | 0.000 | 0.063 | 348.2 | 47.3 | 300.9 |
| 20 | 131.37 | 0.321 | 0.000 | 0.063 | 385.3 | 56.7 | 328.6 |
| 25 | 112.72 | 0.276 | 0.000 | 0.063 | 413.3 | 66.2 | 347.2 |
| 30 | 98.99 | 0.242 | 0.000 | 0.063 | 435.6 | 75.6 | 360.0 |
| 35 | 88.43 | 0.216 | 0.000 | 0.063 | 453.9 | 85.1 | 368.9 |
| 40 | 80.03 | 0.196 | 0.000 | 0.063 | 469.5 | 94.5 | 375.0 |
| 45 | 73.19 | 0.179 | 0.000 | 0.063 | 483.0 | 104.0 | 379.1 |
| 50 | 67.49 | 0.165 | 0.000 | 0.063 | 494.9 | 113.4 | 381.5 |
| 55 | 62.68 | 0.153 | 0.000 | 0.063 | 505.6 | 122.9 | 382.8 |
| 60 | 58.55 | 0.143 | 0.000 | 0.063 | 515.2 | 132.3 | 382.9 |
| 90 | 42.35 | 0.104 | 0.000 | 0.063 | 559.0 | 189.0 | 370.0 |
| 120 | 33.49 | 0.082 | 0.000 | 0.063 | 589.4 | 245.7 | 343.7 |
| 150 | 27.85 | 0.068 | 0.000 | 0.063 | 612.8 | 302.4 | 310.4 |
| 180 | 23.93 | 0.059 | 0.000 | 0.063 | 631.8 | 359.1 | 272.7 |
| 210 | 21.04 | 0.051 | 0.000 | 0.063 | 648.0 | 415.8 | 232.2 |
| 240 | 18.81 | 0.046 | 0.000 | 0.063 | 662.0 | 472.5 | 189.5 |
| 270 | 17.03 | 0.042 | 0.000 | 0.063 | 674.4 | 529.2 | 145.2 |
| 360 | 13.35 | 0.033 | 0.000 | 0.063 | 705.1 | 699.3 | 5.8 |
| 720 | 7.40 | 0.018 | 0.000 | 0.063 | 781.6 | 1379.7 | 0 |

TRAFALGAR ENGINEERING LTD.

WATER BALANCE AND WATER QUALITY

Project: 166 South Service Road
Desc: TOC Development Submission

Project No.: 1736
Prepared By: JN
Checked By: JN

Water Balance

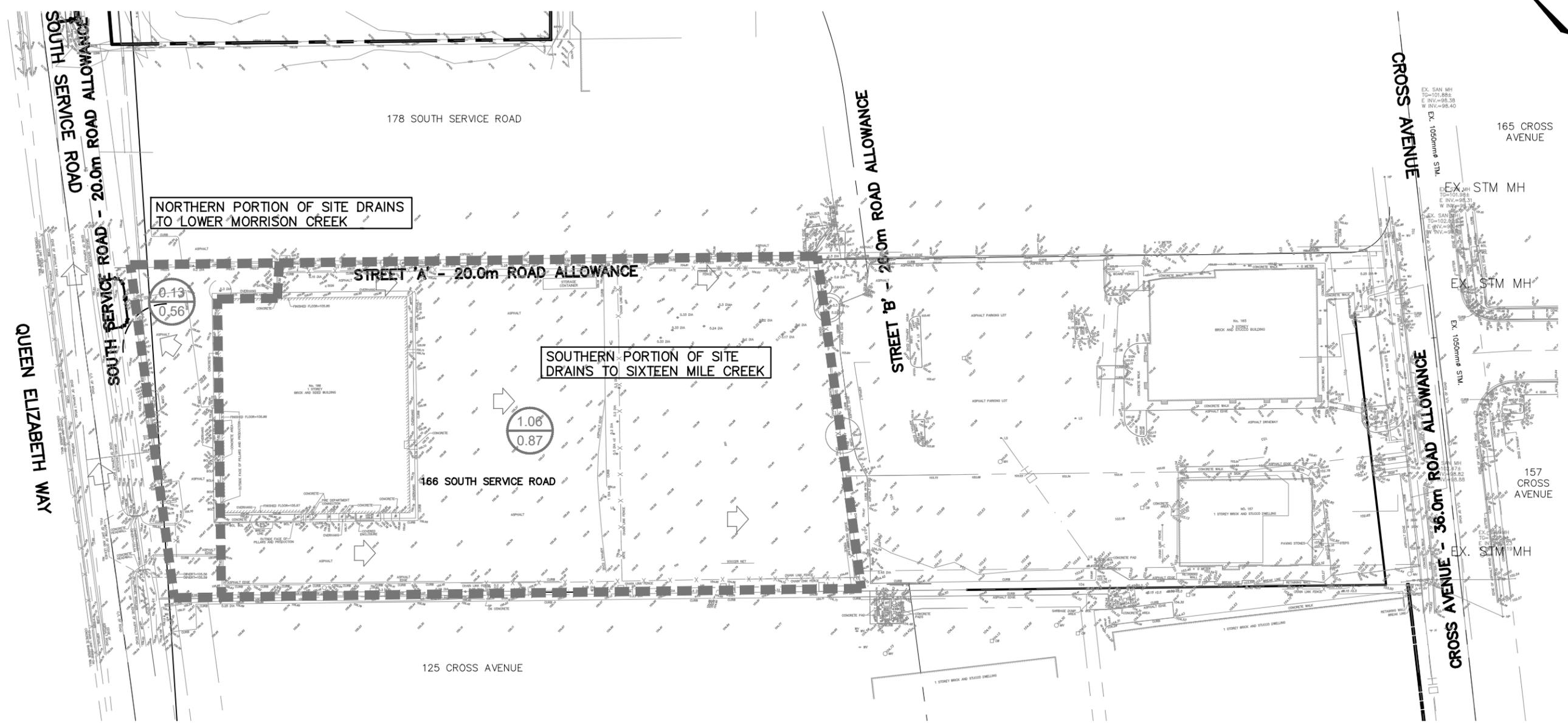
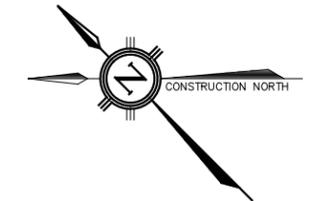
| Surface | 'A' (m ²) | %Total A | IA (mm) | %Total x IA |
|-----------|-----------------------|----------|---------|-------------|
| Site Area | 9500 | 100% | 0.0 | 0.0 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| | | | |
|---------------|-------------|-------------------------|------------------------------|
| Totals | 9500 | Total Retention: | 0.0 (mm) |
| | | Target Retention: | 25.0 (mm) |
| | | Balance: | 25.0 (mm) |
| | | Volume Required: | 237.5 (m³) |

Total Suspended Solids

| Surface | 'A' (m ²) | Removal Rate, 'R' | A x R |
|-------------------|-----------------------|-------------------|-------|
| Imbrium Jellyfish | 9500 | 80% | 7600 |
| | | | |
| | | | |
| | | | |
| | | | |

| | | | |
|---------------|-------------|---------------------------|-------------|
| Totals | 9500 | Effective Removal: | 7600 |
| | | | 80% |



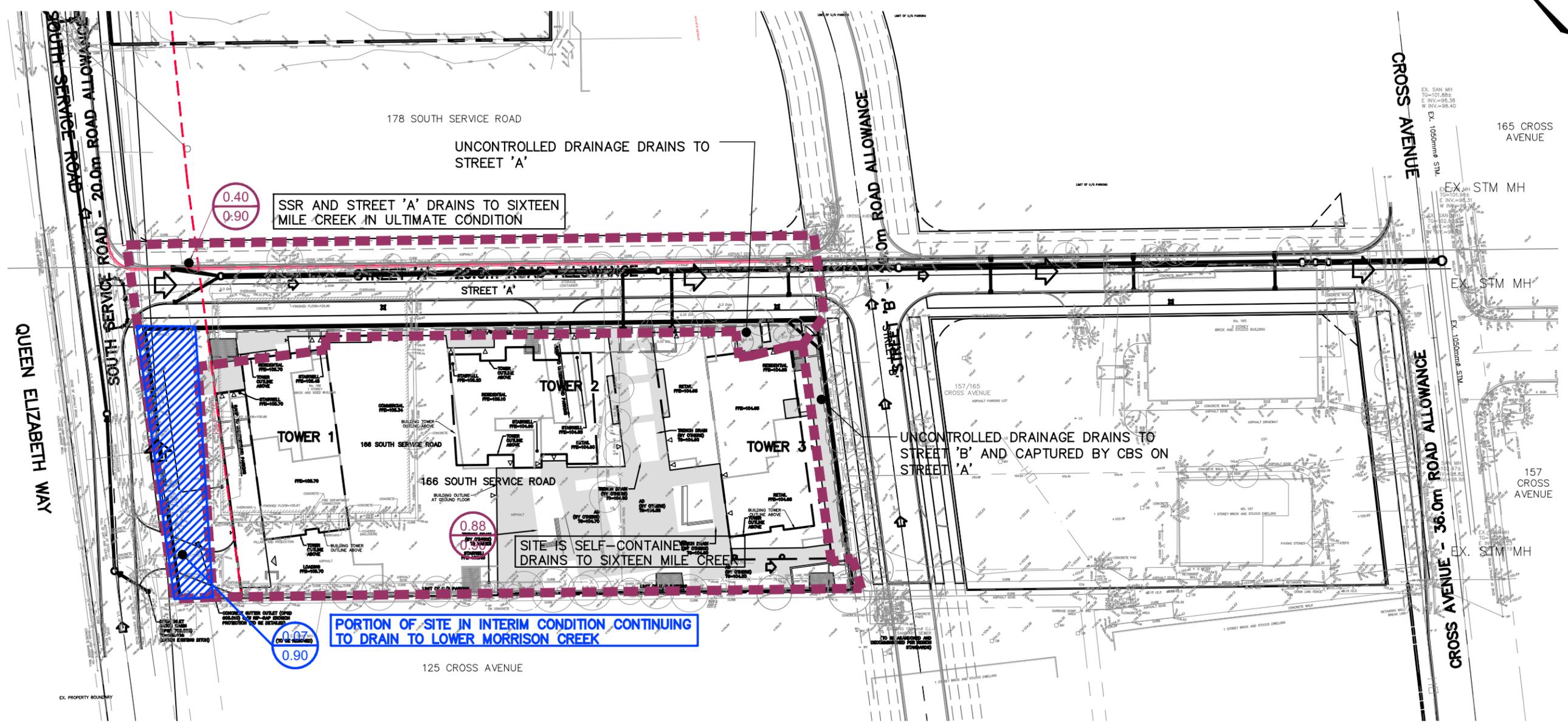
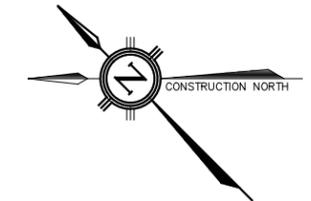
LEGEND

-  PRE DEVELOPMENT STORM AREA IN HECTARES
PRE DEVELOPMENT STORM RUN-OFF COEFFICIENT
-  PRE DEVELOPMENT STORM DRAINAGE AREA BOUNDARY
-  EXISTING OVERLAND FLOW DIRECTION

| | | | |
|---------------|----------------------------------------------------------------------------|--|--|
| PROJECT TITLE | DISTRIKT MIDTOWN 166 SOUTH SERVICE ROAD EAST TOWN OF OAKVILLE | | |
| DRAWING TITLE | PRE-DEVELOPMENT STORM DRAINAGE PLAN | | |

| | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------|----|-------|------------|-------------|--------------|
|  #1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6 www.trafalgareng.com | | DESIGN BY | JN | SCALE | 1:1000 | DRAWING No. | FIG 3 |
| | | DRAWN BY | GL | DATE | 2022/05/09 | | |

FILENAME: P:\1736 166 South Service Road\04-CAD\04-Resoning_OPA\1736GS-figures.dwg
 PLOTDATE: Sep 20, 2024 - 10:51am



LEGEND

- 0.90
0.90 POST DEVELOPMENT STORM AREA IN HECTARES
- 0.90 POST DEVELOPMENT STORM RUN-OFF COEFFICIENT
- POST DEVELOPMENT STORM DRAINAGE AREA BOUNDARY
- ➔ PROPOSED OVERLAND FLOW DIRECTION

| | | | |
|---------------|----------------------------------------------------------------------------|--|--|
| PROJECT TITLE | DISTRIKT MIDTOWN 166 SOUTH SERVICE ROAD EAST TOWN OF OAKVILLE | | |
| DRAWING TITLE | POST DEVELOPMENT STORM DRAINAGE PLAN | | |

| | | | |
|---------------------------------------------------------------------------------------------------|----|-------|--------------|
| TRAFALGAR ENGINEERING #1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6 www.trafalgareng.com | | | |
| DESIGN BY | JN | SCALE | 1:1000 |
| DRAWN BY | GL | DATE | 2022/05/09 |
| DRAWING No. | | | FIG 4 |

FILENAME: P:\1736 166 South Service Road\04-CAD\04-Resoning_OPA\1736GS-figures.dwg
 PLOTDATE: Sep 20, 2024 - 10:59am

James Nelson

From: Kristina Parker <kristina.parker@oakville.ca>
Sent: April 7, 2022 4:14 PM
To: James Nelson
Cc: George Golding; Nicole Sylvester
Subject: RE: Midtown SWM Requirements clarification

Hi again,

The groundwater discharge has never been permitted perpetually to the storm, typically hasn't been shown on storm sewer design sheets or pond design so there should not be any discharges. We have been actively advising prospective or current proponents of active files too. i.e. this criteria is already in effect.

With respect to volumetric controls, the recommendation came out of the Stormwater Master Plan (2019), so we have been including this requirement in general for all applications, and have had varied success with implementing to date. As part of the town's consideration of climate change resiliency and in support of the work done in the Master Plan, we do currently require that the proponent consider the requirement, demonstrate feasibility, consider a variety of opportunities and work cooperatively to determine the best plan forward. In short, this criteria is currently in effect.

Hope that helps.

Thanks,

From: James Nelson <jnelson@trafalgareng.com>
Sent: Thursday, April 7, 2022 3:42 PM
To: Kristina Parker <kristina.parker@oakville.ca>
Cc: George Golding <george.golding@oakville.ca>; Nicole Sylvester <nsylvester@trafalgareng.com>
Subject: RE: Midtown SWM Requirements clarification

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Amazing, thank you Kristina!

I was also hoping to get further clarification from you on timing of the larger water retention balance (27mm) and the groundwater discharge not being permitted to storm sewers. Will these criteria apply to applications that come in imminently or are these targets for down the road? Appreciate you may not have firm answers on timing of implementation but definitely want to know whether they're on our radar for an upcoming submission.

Hope all is well,

James

From: Kristina Parker <kristina.parker@oakville.ca>
Sent: April 7, 2022 12:21 PM
To: James Nelson <jnelson@trafalgareng.com>
Cc: George Golding <george.golding@oakville.ca>; Nicole Sylvester <nsylvester@trafalgareng.com>
Subject: RE: Midtown SWM Requirements clarification

Hi James,

We received some updates from WOOD for the midtown criteria. I'm trying to pull these updates from the draft report just received. I'll get back to you shortly.

Thanks,

Kristina Parker, M.A.Sc., P.Eng.
Acting Manager Development Services
Transportation and Engineering

Town of Oakville | 905-845-6601, ext.3889 | f: 905-338-4414 | www.oakville.ca

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Kristina Parker, M.A.Sc., P.Eng.
Acting Manager Development Services
Transportation and Engineering

Town of Oakville | 905-845-6601, ext.3889 | f: 905-338-4414 | www.oakville.ca

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From: James Nelson <jnelson@trafalgareng.com>

Sent: Tuesday, April 5, 2022 1:42 PM

To: Kristina Parker <kristina.parker@oakville.ca>

Cc: George Golding <george.golding@oakville.ca>; Nicole Sylvester <nsylvester@trafalgareng.com>

Subject: Midtown SWM Requirements clarification

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Hi Kristina,

I hope you're keeping well! I wonder if you have a few minutes to clarify a couple of questions we have about the Midtown SWM requirements.

James



www.trafalgareng.com/

James Nelson, P.Eng.

Principal

Design Services

#1 - 481 Morden Road

Oakville, Ontario, L6K 3W6

O: (905) 338-3366 ext. 136

E: jnelson@trafalgareng.com

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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. :

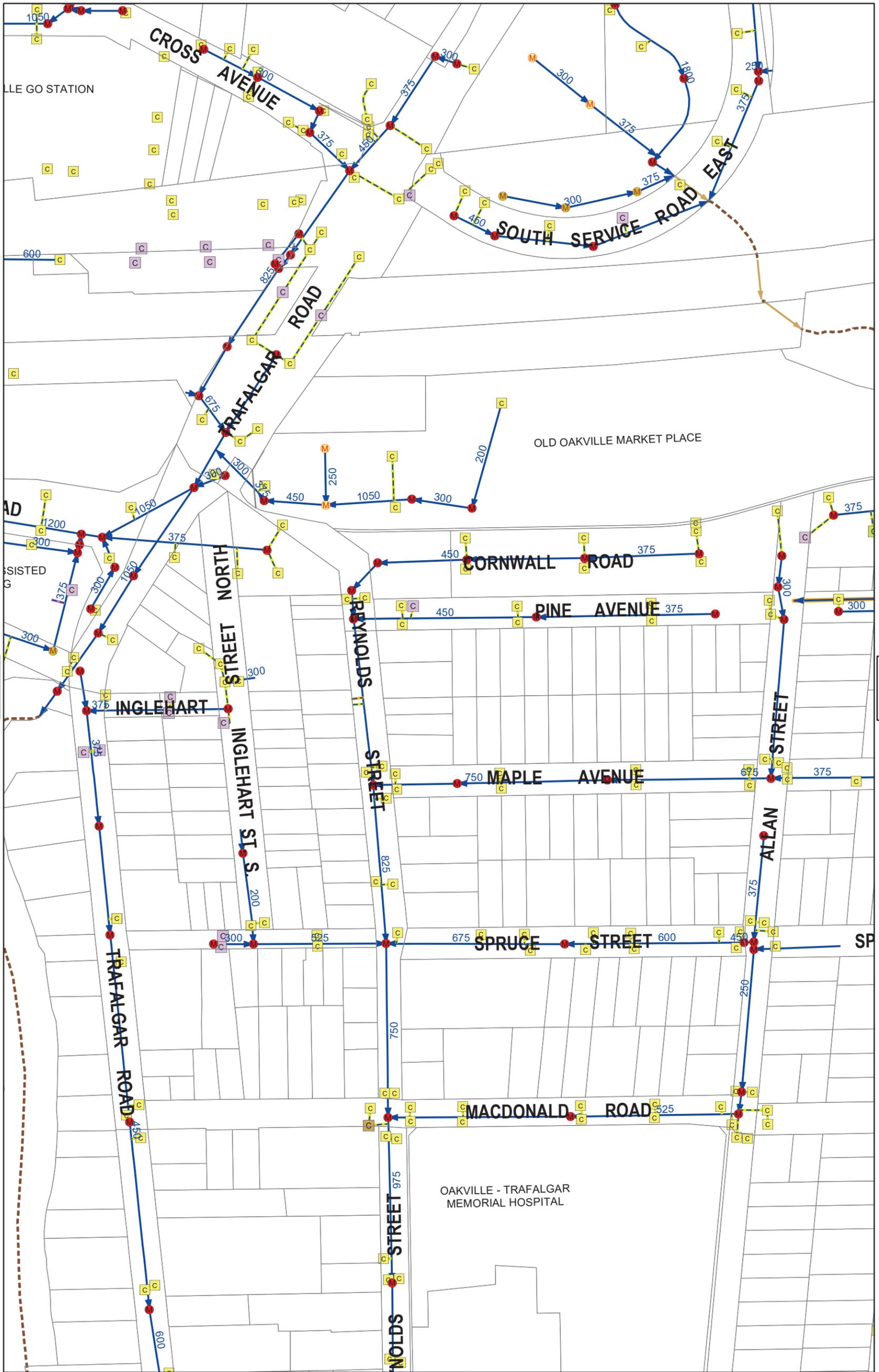
| LOCATION | FROM MH | TO MH | DRAINAGE AREA | | | | FLOW | | | SEWER DESIGN | | | | PIPE HYDRAULICS | | | | | |
|---------------------------------------------------|---------|-------|---------------|------------------|------------|-------------------|-------------------------------------|---------------------|------------------------|---------------|-----------------|-------------------|---------------------|------------------------------------------|------------------------------------------|------|--------------------------|--------------------|------------------|
| | | | 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 x C x I x A / 1000
 Full Flow Capacity (Manning's Equation), Q_F
 Q_F= (1/n) x A x R^{2/3} x s^{-1/2}
 = (1/n) x 311.7 x D^{8/3} x s^{-1/2}

APPENDIX 'F'



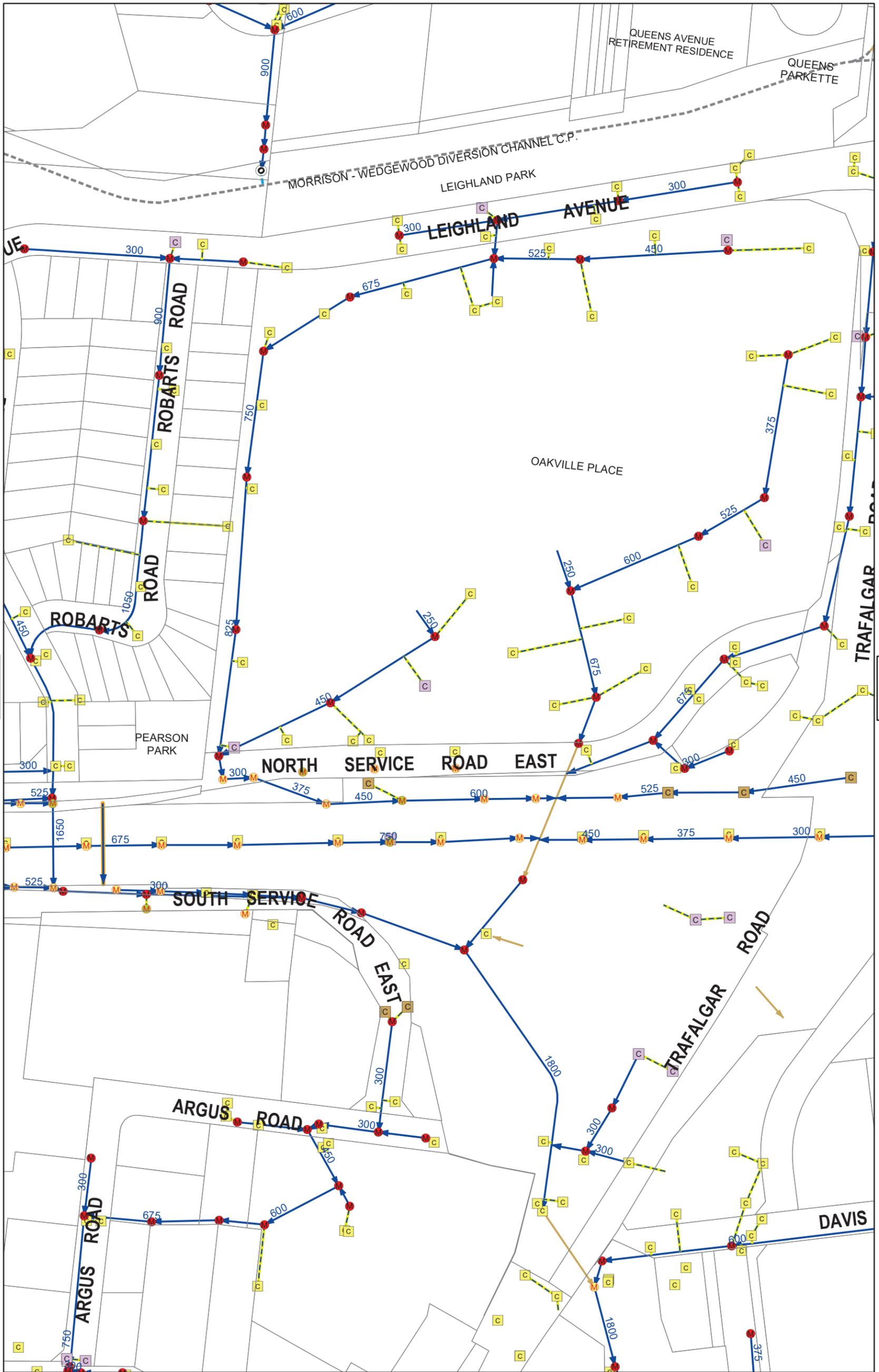
PAGE 82

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

STORM SEWER INFORMATION
MAR, 2020
PAGE 83

- | | | |
|--------------------------|--------------------|-----------------------|
| 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 | | |



PAGE 109

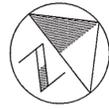
PAGE 111



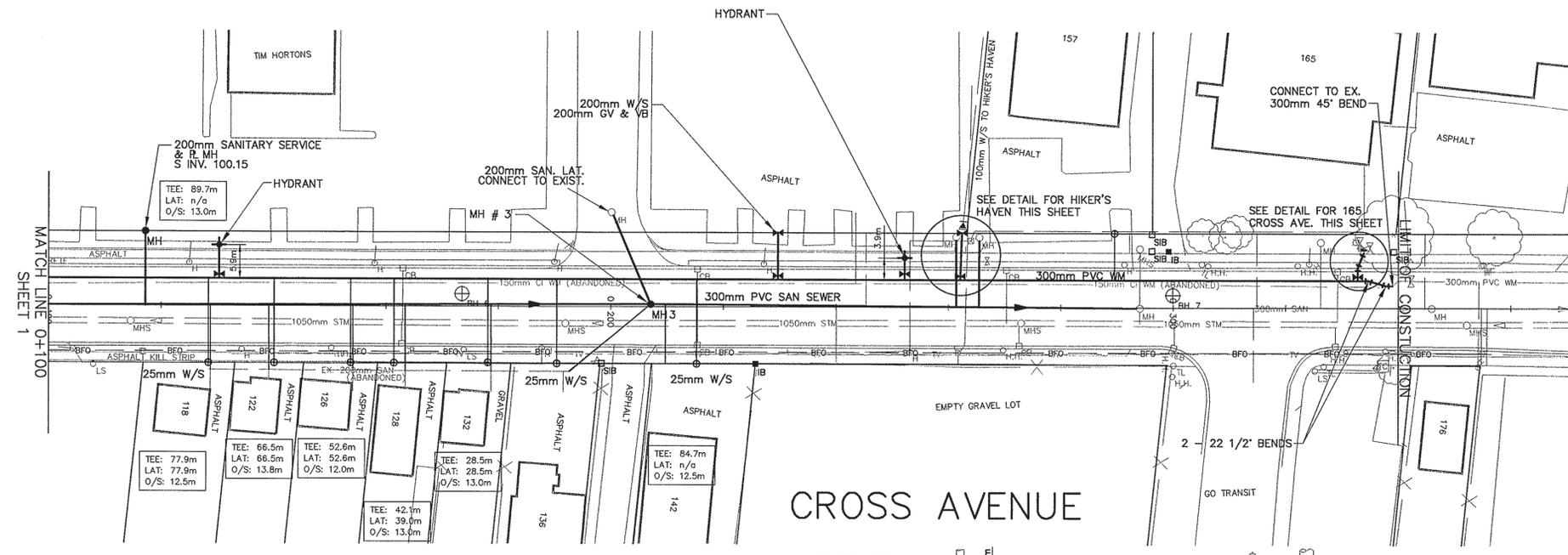
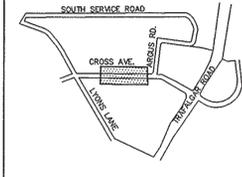
 Town of Oakville
 Engineering &
 Construction
 1225 Trafalgar Road
 Oakville, Ontario

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 | | |

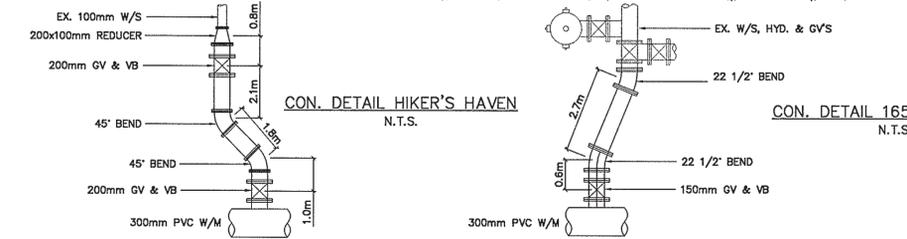


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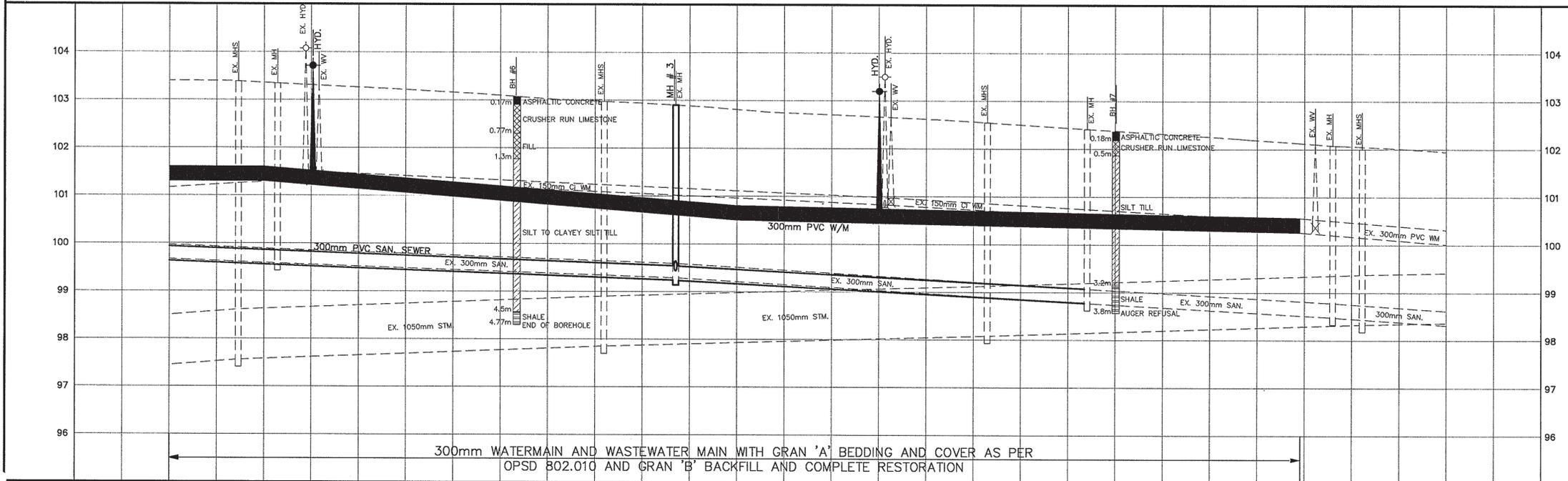


| RESTRAINED LENGTHS FOR ALL WATERMAIN | | | | | | | |
|--------------------------------------|-------------|-----------------|-----------------|-------------|------------------|-----------------------|----------------|
| PIPE SIZE | 90° H. BEND | 11 1/4° H. BEND | 22 1/2° H. BEND | 45° H. BEND | SIZE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

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

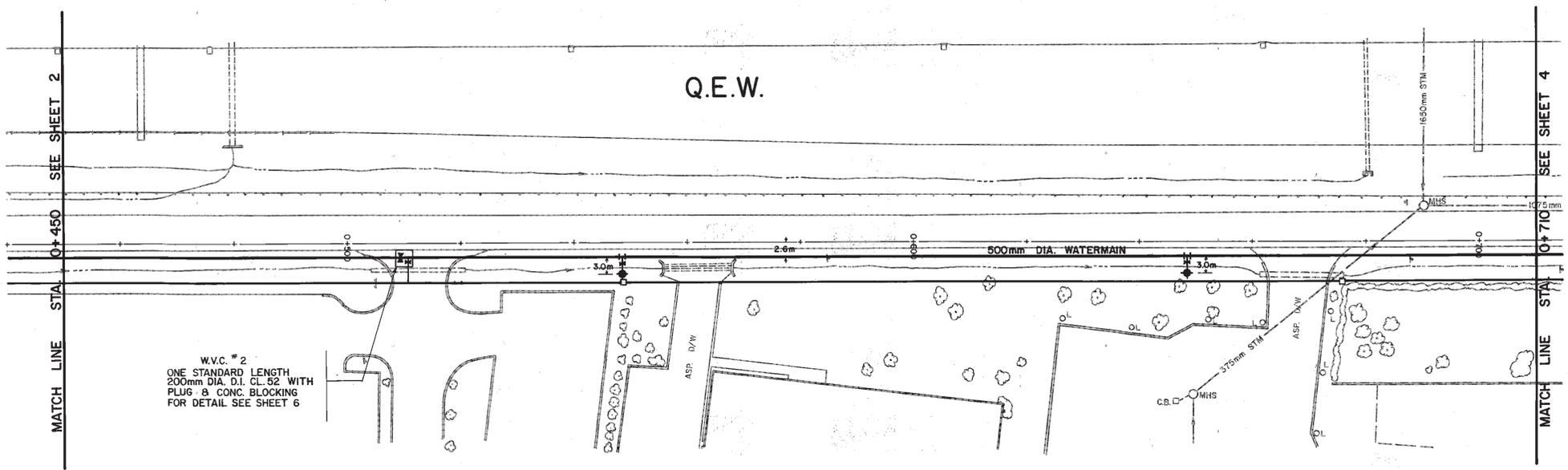
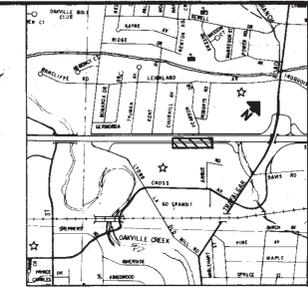


- GENERAL NOTES
- ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
 - ALL WATERMAIN AND SANITARY SEWER INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS) AS AMENDED BY THE REGIONAL MUNICIPALITY OF HALTON.
 - THE LOCATION 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.



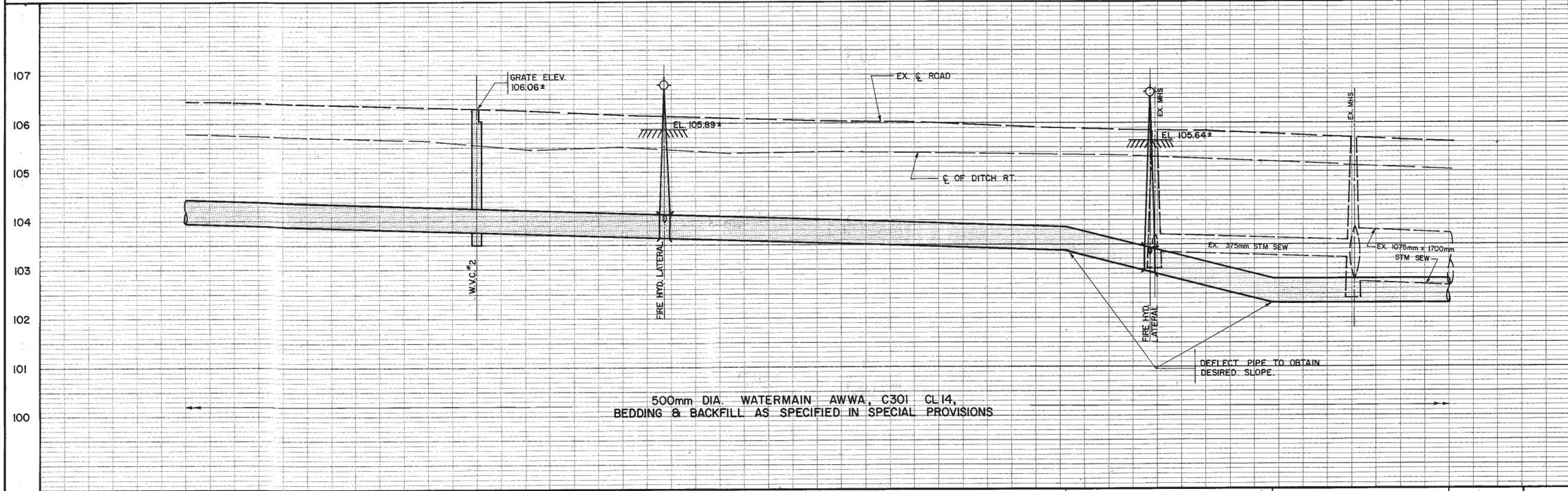
| CHAINAGE | ELEVATIONS | CHAINAGE | ELEVATIONS |
|----------|------------|----------|------------|
| 0+100 | 103.40 | 0+220 | 102.88 |
| 0+120 | 103.40 | 0+240 | 102.81 |
| 0+140 | 103.36 | 0+260 | 102.74 |
| 0+160 | 103.31 | 0+280 | 102.70 |
| 0+180 | 103.28 | 0+300 | 102.66 |
| 0+200 | 103.22 | 0+320 | 102.60 |
| 0+220 | 103.16 | 0+340 | 102.56 |
| 0+240 | 103.10 | 0+360 | 102.50 |
| 0+260 | 103.03 | | |
| 0+280 | 102.98 | | |
| 0+300 | 102.94 | | |
| 0+320 | 102.88 | | |
| 0+340 | 102.81 | | |
| 0+360 | 102.74 | | |

| | |
|--------------------------------------------------------------------|----------------|
| JULY/05 D.C. AS CONSTRUCTED - PLAN ONLY | |
| No | Date |
| Design | BK |
| Drawn | DC |
| REVISIONS | |
| Ch'kd | Date |
| 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 |



SOUTH SERVICE ROAD

| WATERMAIN DATA | | | | REMARKS | |
|-----------------------|-----------|----------------|------|--------------|------------------------|
| ITEM | STATION | CONSTR. OFFSET | STD. | INVERT ELEV. | |
| 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 | 441 | 103.640 | BRANCH TANGENT TOP |
| FIRE HYD. & SEC. G.V. | 0+648.333 | 2.6m RT | 441 | 102.944 | BRANCH TANGENT TOP |



| | | | |
|-----|---------------------------------------------------------------------------------------------------------|-------------------------------|----------------|
| 107 | 22/02/82 | M.P.S. | AS CONSTRUCTED |
| 106 | REVISIONS | | |
| 106 | Design | G.E.R. | Checked |
| 106 | Drawn | M.P.S. | Checked |
| 105 | Scale | HORIZ. 10 5 0 10 VERT. 0 0 | |
| 105 | APPROVALS | | |
| 104 | Municipal | FIELD NOTES | |
| 103 | Regional | STAMP | |
| 102 | Director of Public Works: <i>[Signature]</i> 81-01-26 Manager of Design: <i>[Signature]</i> 81-01-23 | | |

| | | | | | | | | | | | | | | | | | | | |
|-------|--------------------|--------------------|-------------------|-------------------|-------------------|-------|-------|-------|-------|-------|-------|-----------|-------|-------|-----------|-------|-------|-------|----------|
| 107 | 183.100 m @ -0.34% | 120.732 m @ -0.33% | 43.944 m @ -2.43% | 164.188 m @ 0.00% | WATERMAIN INVERTS | | | | | | | | | | | | | | |
| 106 | 4.193 m @ -0.00% | | | | | | | | | | | | | | | | | | |
| 105 | | | | | | | | | | | | | | | | | | | |
| 104 | | | | | | | | | | | | | | | | | | | |
| 103 | | | | | | | | | | | | | | | | | | | |
| 102 | | | | | | | | | | | | | | | | | | | |
| 101 | | | | | | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | | | | | | |
| 0+450 | 0+460 | 0+480 | 0+500 | 0+508.342 | 0+512.536 | 0+520 | 0+540 | 0+560 | 0+580 | 0+600 | 0+620 | 0+633.267 | 0+640 | 0+660 | 0+677.198 | 0+680 | 0+700 | 0+710 | CHAINAGE |

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

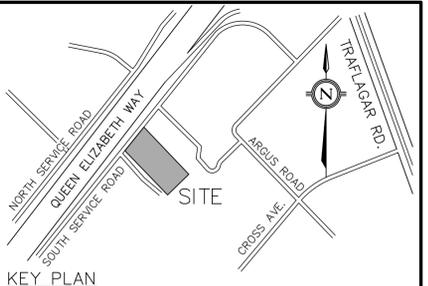
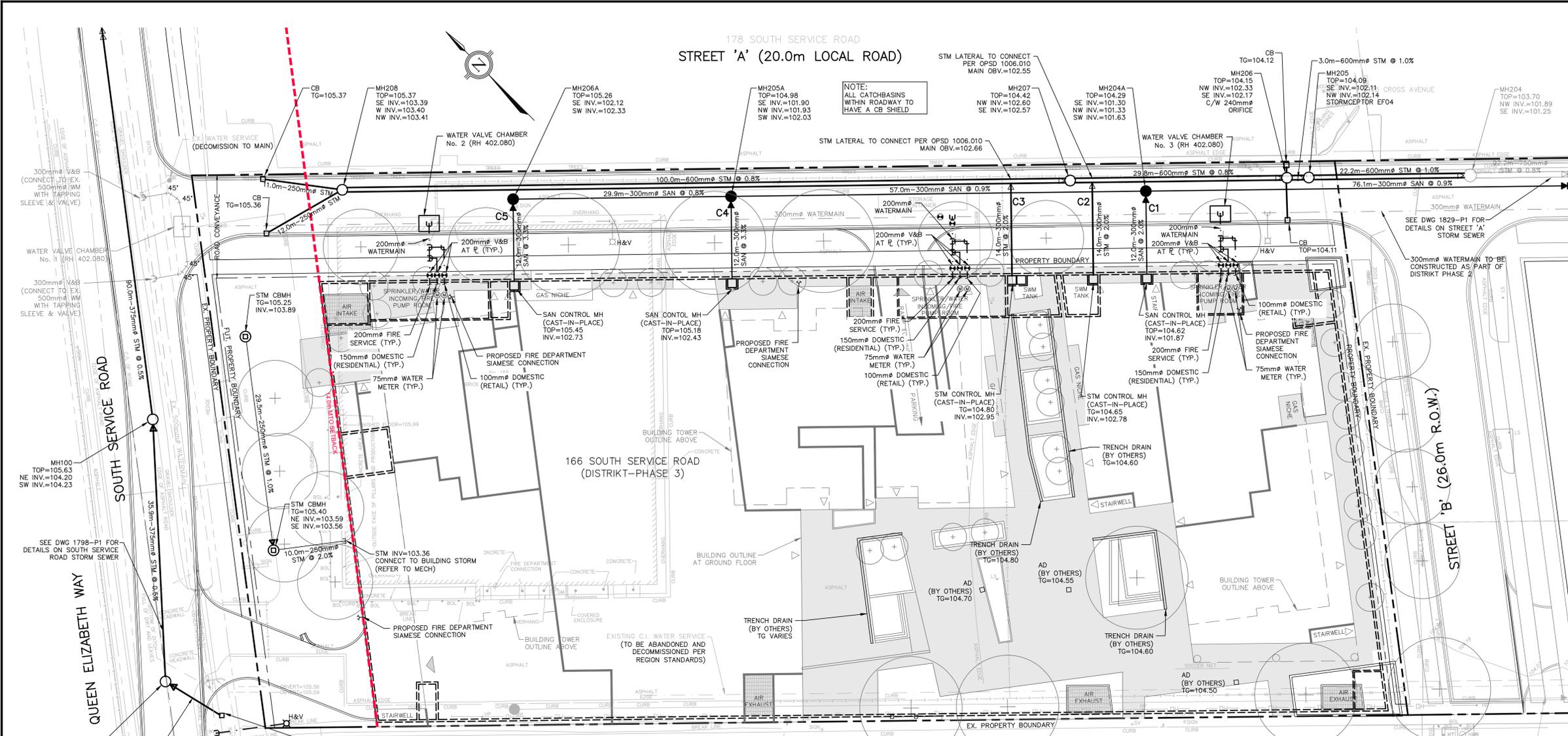
CONTRACT NO

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 FIRE DEPT. SIAMESE CONNECTION
 - PROPOSED STORM SEWER
 - PROPOSED SANITARY SEWER
 - PROPOSED WATERMAIN
 - PROPERTY BOUNDARY

| NO. | DATE | BY/DRAWN | REVISIONS |
|-----|------------|----------|----------------------------|
| 3 | 04/10/2024 | AJP/GL | TOC DEVELOPMENT SUBMISSION |
| 2 | 25/03/2024 | JN/GL | RE-ISSUED FOR ZBA/OPA |
| 1 | 09/05/2022 | JN/GL | ISSUED FOR ZBA/OPA |

CAD FILE: 1736GS.dwg | PLOT SCALE: 1:1 | PLOT DATE: Oct 04, 2024

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

NOTE: REFER TO DWG. N1 FOR STANDARD NOTES

NOTE:
 THE UNDERGROUND PARKING STRUCTURE IS TO BE CONSTRUCTED IN TWO PHASES WITH ONE TANK PER PHASE. DETAILED DESIGN OF THE PHASED SWM TANKS WILL TAKE PLACE AS THE PLANNING PROCESS PROGRESSES.

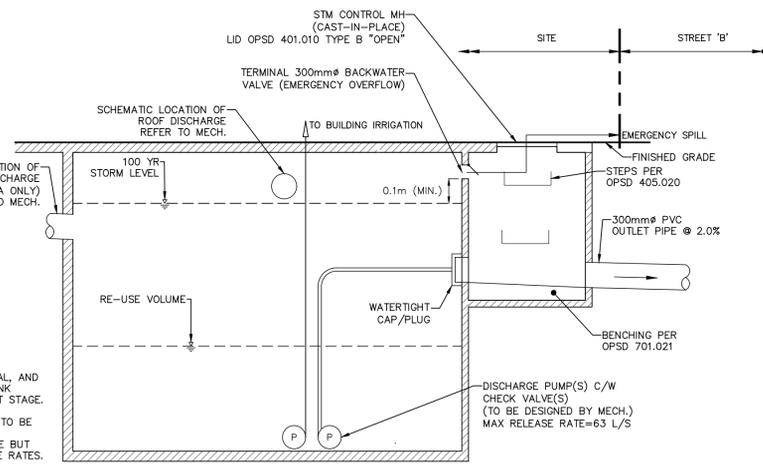
NOTE:
 ALL TRENCH AND AREA DRAINS ARE BY OTHERS, BUT SHALL BE CAPABLE OF INTERCEPTING THE 100-YEAR TOWN OF OAKVILLE EVENT

NOTE:
 ALL WATER AND SANITARY MAIN TAPS ARE TO BE PERFORMED BY REGION OF HALTON FORCES ONLY

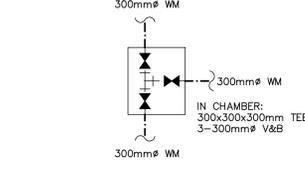
NOTE:
 LOCATION OF EXISTING UTILITIES AND SERVICES IS APPROXIMATE.

COMPLETE RESTORATION OF ALL DISTURBED AREAS (INCLUDING PAVEMENT STRUCTURE) WITHIN R.O.W. REQUIRED TO TOWN OF OAKVILLE STANDARDS AND THE SATISFACTION OF ENGINEERING AND CONSTRUCTION

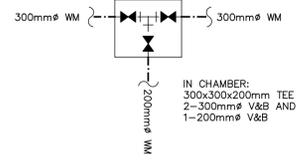
| CROSSING | |
|----------|----------------------------------------------|
| C1 | WM INV.=102.33 SAN OBV.=101.83 Δ=0.5m |
| C2 | STM INV.=102.60 WM OBV.=102.04 Δ=0.56m |
| C3 | STM INV.=102.77 WM OBV.=102.04 Δ=0.73m |
| C4 | WM INV.=103.00 SAN OBV.=102.43 Δ=0.57 |
| C5 | WM INV.=103.20 SAN OBV.=102.73 Δ=0.53m |



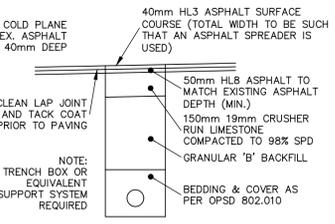
TYPICAL STORMWATER MANAGEMENT TANK SCHEMATIC
 SCALE N.T.S.



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



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



TYPICAL TRENCH RESTORATION
 SCALE N.T.S.

NOTE:
 1. PLACE HLB ASPHALT TO MATCH EX SURFACE.
 2. IN FOLLOWING CONSTRUCTION SEASON GRIND ASPHALT 40mm DEEP AND PLACE 40mm HLB ASPHALT.

DESIGNED BY: APPROVED BY:

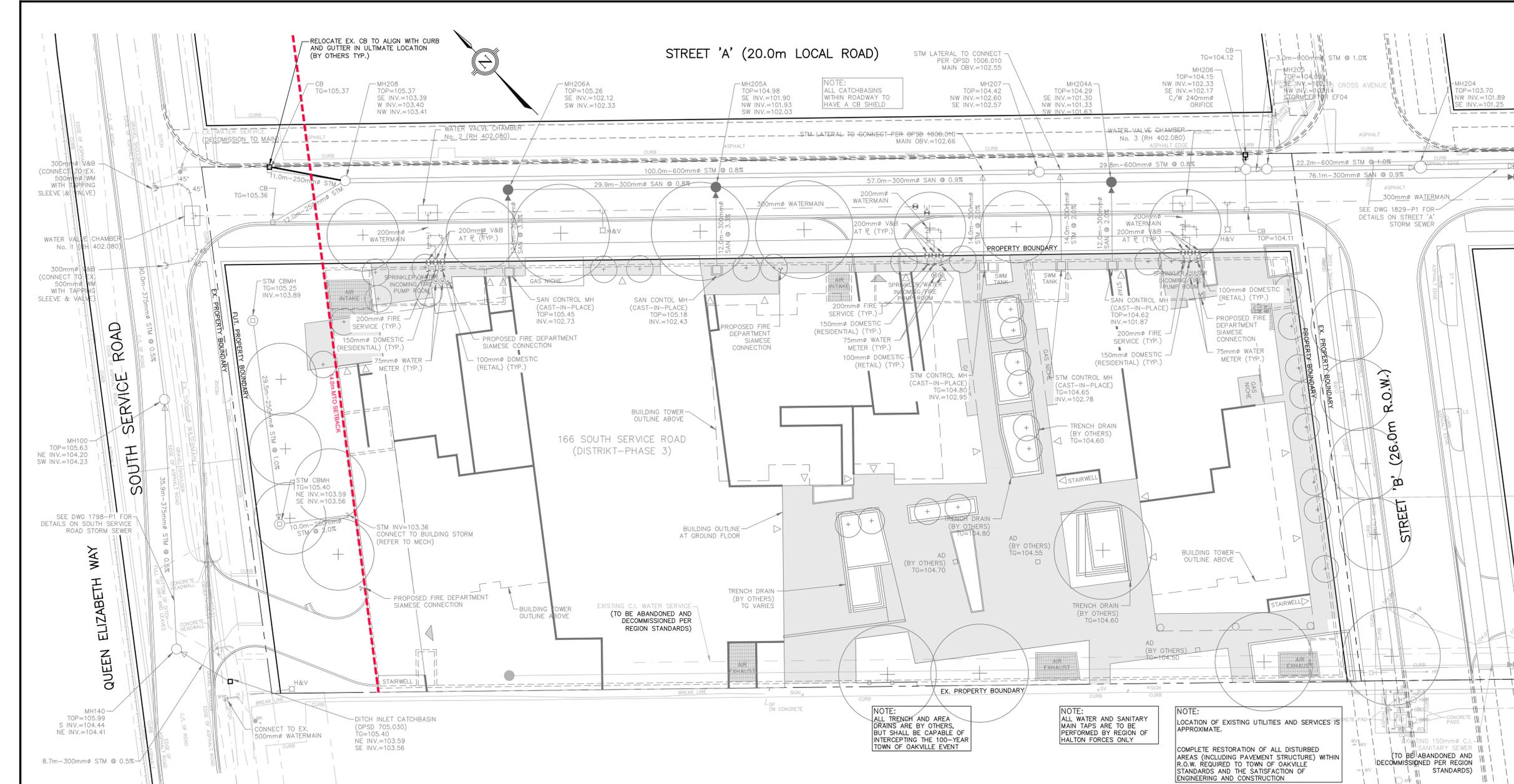
CONSULTANT: **TRAFALGAR ENGINEERING**
 #1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
 www.trafalgareng.com

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

LOCATION: **166 SOUTH SERVICE ROAD EAST OAKVILLE, ONTARIO**

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

| | | |
|------------------|----------------|-------------------|
| SCALE: 1:300 | DESIGN BY: JN | PROJECT No.: 1736 |
| DRAWN BY: GL | CHECKED BY: JN | PLAN No.: |
| DATE: 2022/04/29 | SHEET: 1 OF 1 | S1 |



LEGEND

- PROPOSED STORM MANHOLE
- PROPOSED STORM CATCHBASIN
- PROPOSED SANITARY MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED VALVE & BOX
- PROPOSED FIRE DEPT. SIAMESE CONNECTION
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPERTY BOUNDARY

| NO. | DATE | BY/DRAWN | REVISIONS |
|-----|------------|----------|----------------------------|
| 3 | 04/10/2024 | AJP/GL | TOC DEVELOPMENT SUBMISSION |
| 2 | 25/03/2024 | JN/GL | RE-ISSUED FOR ZBA/GPA |
| 1 | 09/05/2022 | JN/GL | ISSUED FOR ZBA/GPA |

CAD FILE: 1736GS.dwg | PLOT SCALE: 1:1 | PLOT DATE: Oct 04, 2024

ELEVATION NOTE
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 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

NOTE: REFER TO DWG. N1 FOR STANDARD NOTES

DESIGNED BY

APPROVED BY

CONSULTANT

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

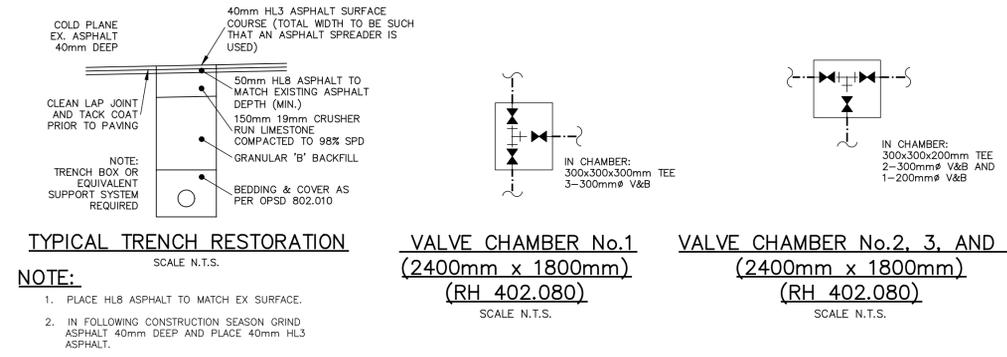
PROJECT TITLE: DISTRIKT MIDTOWN PROPOSED RESIDENTIAL CONDOMINIUM DEVELOPMENT DISTRIKT DEVELOPMENTS

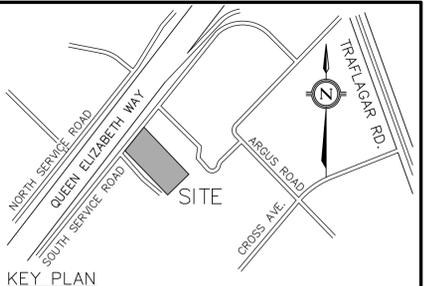
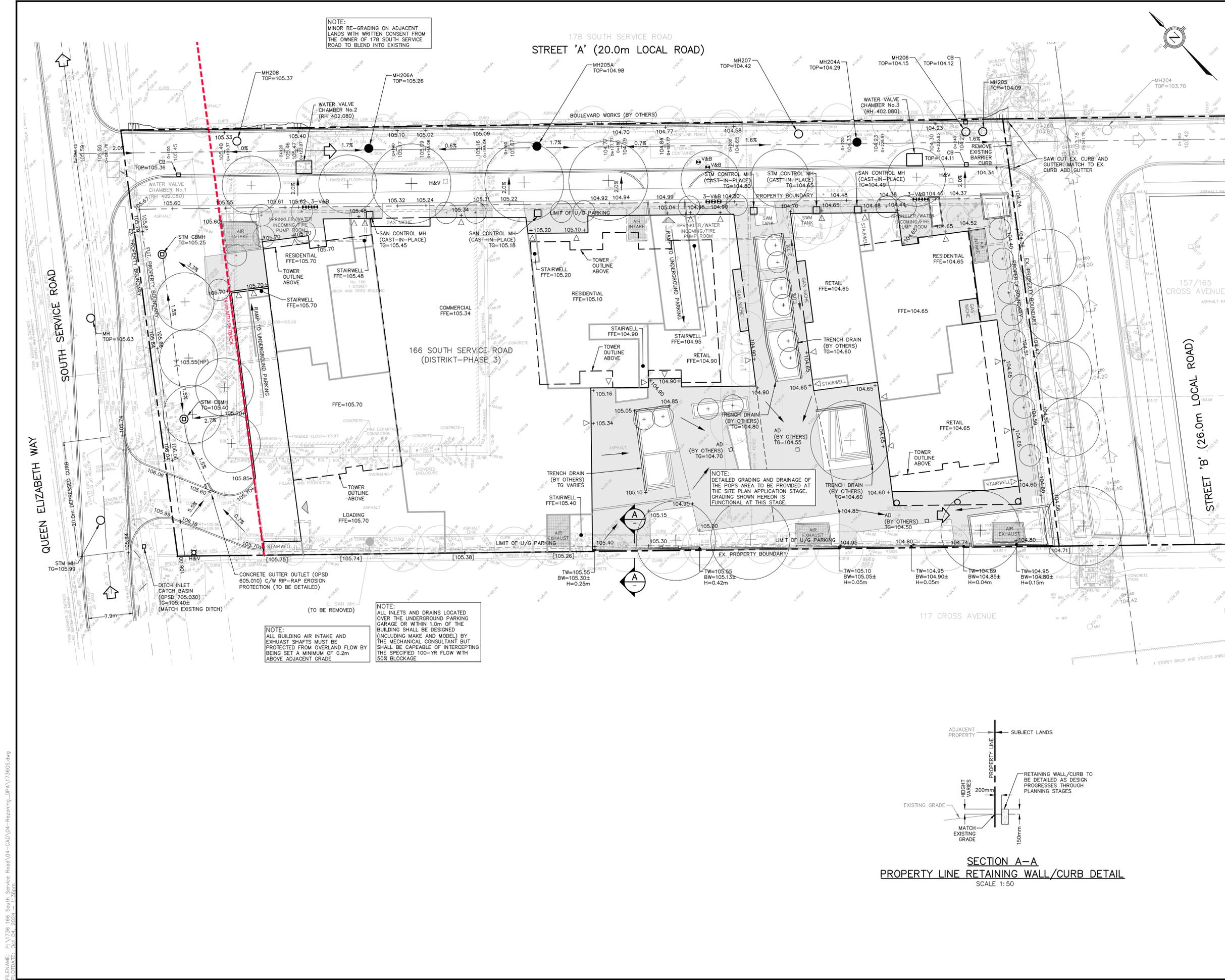
LOCATION: 166 SOUTH SERVICE ROAD EAST OAKVILLE, ONTARIO

DRAWING TITLE: PRELIMINARY SERVICING PLAN (ULTIMATE)

| | | |
|------------------|----------------|-------------------|
| SCALE: 1:300 | DESIGN BY: JN | PROJECT No.: 1736 |
| DRAWN BY: GL | CHECKED BY: JN | PLAN No.: |
| DATE: 2022/04/29 | SHEET: 1 OF 1 | S2 |

FILENAME: P:\1736 166 South Service Road\04-CAD\04-Rezoning_OPA\1736GS.dwg
 PLOT DATE: Oct 04, 2024 11:28am





LEGEND

- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- ⊙ PROPOSED FIRE HYDRANT
- ⊕ PROPOSED VALVE & BOX
- ⊕ PROPOSED FIRE DEPT. SIAMESE CONNECTION
- PROPERTY BOUNDARY
- 105.75 EXISTING ELEVATION
- 105.75 EXISTING ELEVATION TO REMAIN
- + [104.57] INTERPOLATED EXISTING GRADE (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 RETAINING WALL
- ▴ BUILDING ENTRANCE
- ▾ BUILDING ENTRANCE (OVERHEAD DOOR)
- 14.0m MTO SETBACK

| NO. | DATE | BY/DRAWN | REVISIONS |
|-----|------------|----------|----------------------------|
| 3 | 04/10/2024 | AJP/GL | TOC DEVELOPMENT SUBMISSION |
| 2 | 25/03/2024 | JN/GL | RE-ISSUED FOR ZBA/OPA |
| 1 | 09/05/2022 | JN/GL | ISSUED FOR ZBA/OPA |

CAD FILE: 17366GS.dwg | PLOT SCALE: 1:1 | PLOT DATE: Oct 04, 2024

ELEVATION NOTE
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 No. 236 ELEVATION=159.311m
 No. 258 ELEVATION=185.692m

LOCAL BENCHMARK
 CUT CROSS ON CURB LOCATED APPROXIMATELY 4.5m WEST AND 4.3m SOUTHWEST 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

NOTE: REFER TO DWG. N1 FOR STANDARD NOTES

DESIGNED BY

APPROVED BY

CONSULTANT

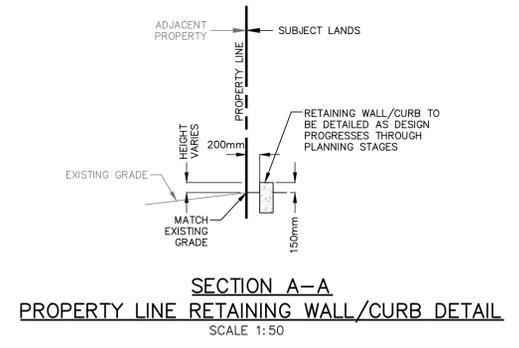
#1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
 www.trafalgareng.com

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

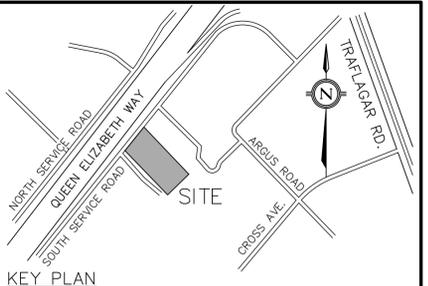
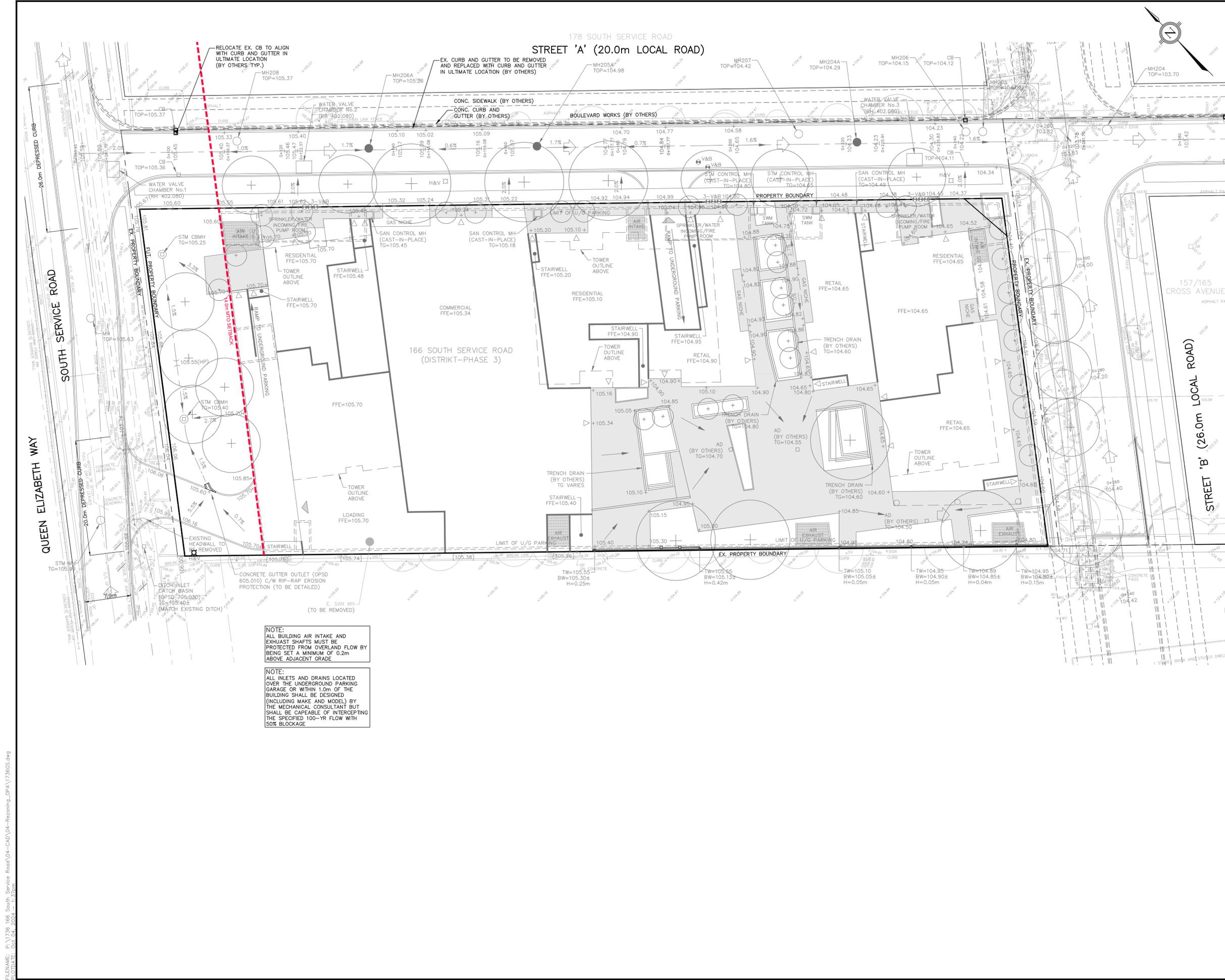
LOCATION
**166 SOUTH SERVICE ROAD EAST
 OAKVILLE, ONTARIO**

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

| | | | | | |
|----------|------------|------------|--------|-------------|------|
| SCALE | 1:300 | DESIGN BY | JN | PROJECT No. | 1736 |
| DRAWN BY | GL | CHECKED BY | JN | PLAN No. | G1 |
| DATE | 2022/04/29 | SHEET | 1 OF 1 | | |



FILENAME: P:\1736 166 South Service Road\04-CAD\04-Reasoning_OPA\17366GS.dwg
 PLOT DATE: Oct 04, 2024 11:30am



LEGEND

- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- ⊙ PROPOSED FIRE HYDRANT
- ⊕ PROPOSED VALVE & BOX
- ⊕ PROPOSED FIRE DEPT. SIAMESE CONNECTION
- PROPERTY BOUNDARY
- 105.75 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 RETAINING WALL
- △ BUILDING ENTRANCE
- ▽ BUILDING ENTRANCE (OVERHEAD DOOR)
- 14.0m MTO SETBACK

| | | | |
|--------------------------------------------------------------|------------|----------|----------------------------|
| NO. | DATE | BY/DRAWN | REVISIONS |
| 3 | 04/10/2024 | AJP/GL | TOC DEVELOPMENT SUBMISSION |
| 2 | 25/03/2024 | JN/GL | RE-ISSUED FOR ZBA/OPA |
| 1 | 09/05/2022 | JN/GL | ISSUED FOR ZBA/OPA |
| NO. DATE BY/DRAWN REVISIONS | | | |
| CAD FILE: 1736GS.dwg PLOT SCALE: 1:1 PLOT DATE: Oct 04, 2024 | | | |

ELEVATION NOTE
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ELEVATION=106.09m

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

NOTE: REFER TO DWG. N1 FOR STANDARD NOTES

DESIGNED BY

APPROVED BY

CONSULTANT

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

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

LOCATION
**166 SOUTH SERVICE ROAD EAST
OAKVILLE, ONTARIO**

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

SCALE 1:300 DESIGN BY JN PROJECT No. 1736
DRAWN BY GL CHECKED BY JN PLAN No. G2
DATE 2022/04/29 SHEET 1 OF 1

GENERAL NOTES

- 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.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL, MECHANICAL AND LANDSCAPE DRAWINGS.
- 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.
- THE CONTRACTOR SHALL CHECK AND VERIFY ALL GIVEN GRADES AND ELEVATIONS PRIOR TO CONSTRUCTION AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
- ALL GRADING CHANGES SHALL BE APPROVED BY THE ENGINEER AND TOWN OF OAKVILLE PRIOR TO IMPLEMENTATION.
- CONTRACTOR TO REFER TO GEOTECHNICAL REPORT FOR PAVEMENT CONSTRUCTION AND DEWATERING DETAILS.
- 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.

WATERMAINS

- ALL WATERMAINS 100mm AND LARGER SHALL BE PVC, C-900, CLASS 150, SDR18 C/W MECHANICAL RESTRAINTS & TRACER WIRE PER REGION REQUIREMENTS.
- WATER SERVICE CONNECTION LESS THAN 50mm TO BE COPPER, TYPE "K" SOFT COPPER TUBING.
- BEDDING ON WATER SERVICE SHALL BE PER OPSD 802.010*.
- * INDICATES O.P.S.D. CAN BE USED AS MODIFIED BY REGION OF HALTON.
- VALVE AND BOX FOR 100mm TO 300mm WATER SERVICE PER REGION STDS.
- COVER SHALL BE 1.7m MIN. UNLESS OTHERWISE NOTED.
- CONNECTION TO EXISTING WATERMAIN SHALL BE PER REGION OF HALTON STD RH 409.010.
- WATER SYSTEM SHALL BE TESTED AND DISINFECTED TO MEET REGIONAL REQUIREMENTS.
- 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.
- MINIMUM LATERAL SEPARATION FROM OTHER UTILITIES IS 2.5m.
- WATERMAINS MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.30m (12 INCHES) OVER, 0.50m (20 INCHES) UNDER SEWERS AND ALL OTHER UTILITIES.
- STORZ PUMPER CONNECTION FOR HYDRANTS AS FOLLOWS:
 - 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

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

STORM SEWERS

- ALL STORM SEWERS 600 mm AND SMALLER SHALL BE PVC SDR35 WITH BEDDING PER OPSD 802.010 UNLESS OTHERWISE NOTED
- 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.
- CATCHBASIN SHALL BE PER OPSD 705.010, DOUBLE CATCHBASIN PER OPSD 705.020 C/W GRATE PER OPSD 400.020
- CATCHBASINS IN LANDSCAPED AREAS SHALL BE SUMPLESS AND C/W BEEHIVE TOP AS PER TOWN STD.S-2
- 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
- ALL CATCHBASIN LEAD SHALL 250mm DIA. AT 2.0% MIN. UNLESS OTHERWISE NOTED.
- ALL CATCHBASIN MANHOLES SHALL BE BENCHED.
- ALL STORM MANHOLES SHALL BE 1200mm DIA PER OPSD 701.010 c/w COVER PER OPSD 401.010, UNLESS OTHERWISE NOTED.
- 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

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

SERVICING NOTES

- 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.
- 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.
- SURROUND ALL MANHOLES WITH A MINIMUM OF 1.0m COMPACTED GRANULAR 'C' BACKFILL.
- ALL ENDS OF SERVICE CONNECTIONS SHALL BE MARKED WITH 50x100 LUMBER PLACED FROM INVERT OF SERVICE TO 1.0m ABOVE GRADE.
- ALL SEWERS SHALL BE FLUSHED AND CCTV INSPECTED AT COMPLETION.
- 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

- THE CONTRACTOR IS RESPONSIBLE TO CLEAN ALL MUD TRACKED ON TO ADJACENT ROADWAYS.
- 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.
- ANY DISTURBED AREA NOT SCHEDULED FOR FURTHER CONSTRUCTION WITHIN 30 DAYS SHALL BE PROVIDED WITH A TEMPORARY SEED.
- INSTALL CATCHBASIN SEDIMENT CONTROL ON EXISTING CATCHBASINS PRIOR TO START OF CONSTRUCTION.
- INSTALL CATCHBASIN SEDIMENT CONTROL ON NEW CATCHBASINS AT TIME OF INSTALLATION.
- 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.
- 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

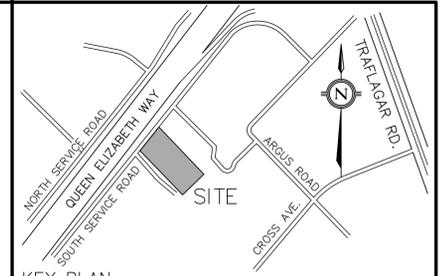
- WHERE A SITE REQUIRES DEWATERING AND WHERE THE EXPULLED WATER CAN BE FREELY RELEASED TO A SUITABLE RECEIVER, THE EXPULLED WATER SHALL BE TREATED TO CAPTURE SUSPENDED PARTICLES GREATER THAN 40 MICRON IN SIZE. THE CAPTURED SEDIMENT SHALL BE DISPOSED OF PROPERLY PER MOECC GUIDELINES. THE CLEAN EXPULLED 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.
- 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.
- 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

- CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY TRAFFIC CONTROLS, PER MTO BOOK 7.
- CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT, WITH CONTROL BARS PROVIDED BY THE OWNER. PROTECTION OF CONTROL BARS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR IS RESPONSIBLE TO VERIFY THE SIZE AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION, INCLUDING VAC TRUCK AND RESTORATION AS REQUIRED.
- CONTRACTOR SHALL PROVIDE THIRD-PARTY DIGITAL AS-BUILTS IN CAD. TO INCLUDE ALL NEW SITE SERVING INCLUDING TOPS AND INVERTS, AND FINISHED GRADES, INCLUDING PAVED AREAS, SWALES, CURBS, SIDEWALKS AND RETAINING WALLS, TO THE SATISFACTION OF THE ENGINEER.
- 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

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



KEY PLAN

LEGEND

| NO. | DATE | BY/DRAWN | REVISIONS |
|-----|------------|----------|----------------------------|
| 3 | 04/10/2024 | AJP/GL | TOC DEVELOPMENT SUBMISSION |
| 2 | 25/03/2024 | JN/GL | RE-ISSUED FOR ZBA/OPA |
| 1 | 09/05/2022 | JN/GL | ISSUED FOR ZBA/OPA |

CAD FILE: 1736GS.dwg | PLOT SCALE: 1:1 | PLOT DATE: Oct 04, 2024

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

NOTE: REFER TO DWG. N1 FOR STANDARD NOTES

DESIGNED BY

APPROVED BY

CONSULTANT

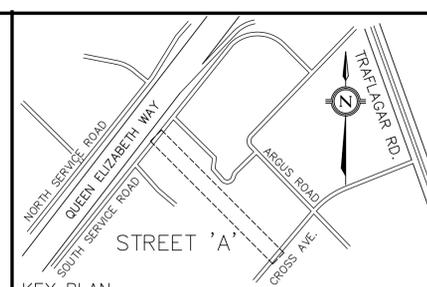
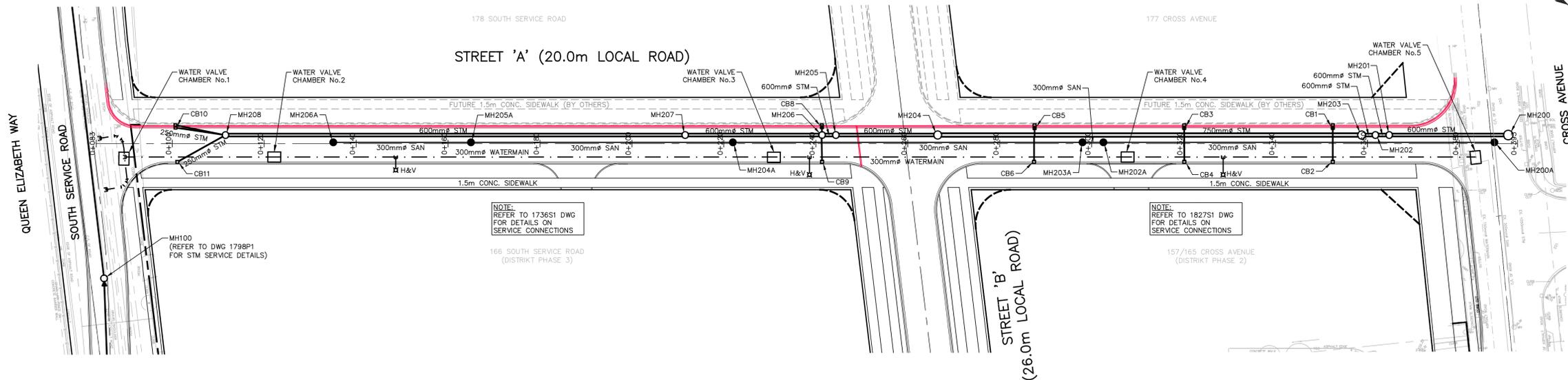
#1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
 www.trafalgreng.com

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

LOCATION
**166 SOUTH SERVICE ROAD EAST
 OAKVILLE, ONTARIO**

DRAWING TITLE
GENERAL NOTES

| | | | | | |
|----------|------------|------------|--------|-------------|------|
| SCALE | - | DESIGN BY | JN | PROJECT No. | 1736 |
| DRAWN BY | GL | CHECKED BY | JN | PLAN No. | N1 |
| DATE | 2022/04/29 | SHEET | 1 OF 1 | | |



- 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
 - 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
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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 |
| No. | DD/MM/YY | By/DRN | REVISIONS |
| Design | AJP | Chk'd JN | File 1829P.dwg |
| Drawn | GL | Chk'd JN | Plot Date 10/04/24 |
| Scale | HOR 0 5 10 15 20 25 1:500 | | References |
| VER 0.5 1 2 2.5 1:50 | | | |
| APPROVALS | | | Field Notes |
| Municipal | APPROVED IN PRINCIPLE SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS. | | Bell <input type="checkbox"/> Hydro <input type="checkbox"/> |
| Regional Approval | Date: _____ | | Gas <input type="checkbox"/> Cable <input type="checkbox"/> |
| Manager of Development Engineering | Date: _____ | | Traf. <input type="checkbox"/> Water <input type="checkbox"/> |
| 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

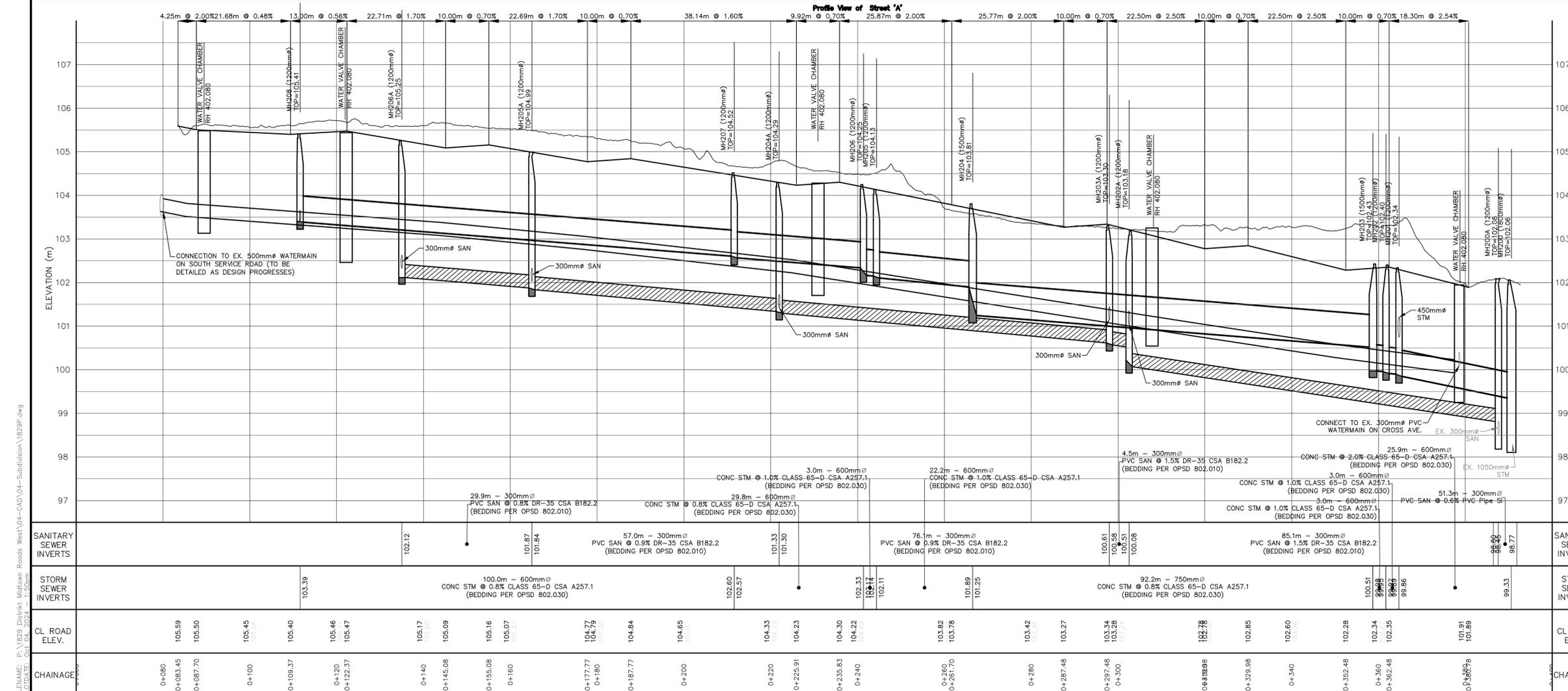
OAKVILLE Halton REGION

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-Subdivision\1829P.dwg
 DATE: 04-04-2024 1:50pm

APPENDIX 'H'

PLAN 20R-5913
RECEIVED AND DEPOSITED

DATE: 22 Sept 1982

JOHN F. GYOUNG
ONARIO LAND SURVEYOR

I REQUIRE THIS PLAN TO BE
DEPOSITED UNDER THE REGISTRY
ACT.

DATE: September 2, 1982

JOHN F. GYOUNG B.Sc., O.L.S.
ONARIO LAND SURVEYOR

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



| PART NO | LOT NO | CONCESSION | INST. NO | AREA |
|---------|--------|------------|----------|----------|
| 1 | 14 | 3 S.D.S. | 4919.4 | 272 sq m |
| 2 | " | " | " | 412 sq m |
| 3 | " | " | " | 242 sq m |
| 4 | " | " | " | 175 sq m |
| 5 | " | " | " | 9 sq m |
| 6 | " | " | " | 201 sq m |
| 7 | " | " | " | 284 sq m |
| 8 | " | " | " | 235 sq m |
| 9 | " | " | " | 585 sq m |

NOTES:
BEARINGS SHOWN HEREON ARE ASTRONOMIC AND ARE REFERRED TO THE
N39°17'0"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) REED INSTRUMENT NO 60895 - PLAN ATTACHED
- (PROP) PROPORTION
- 760 K.H. MCCONNELL O.L.S.

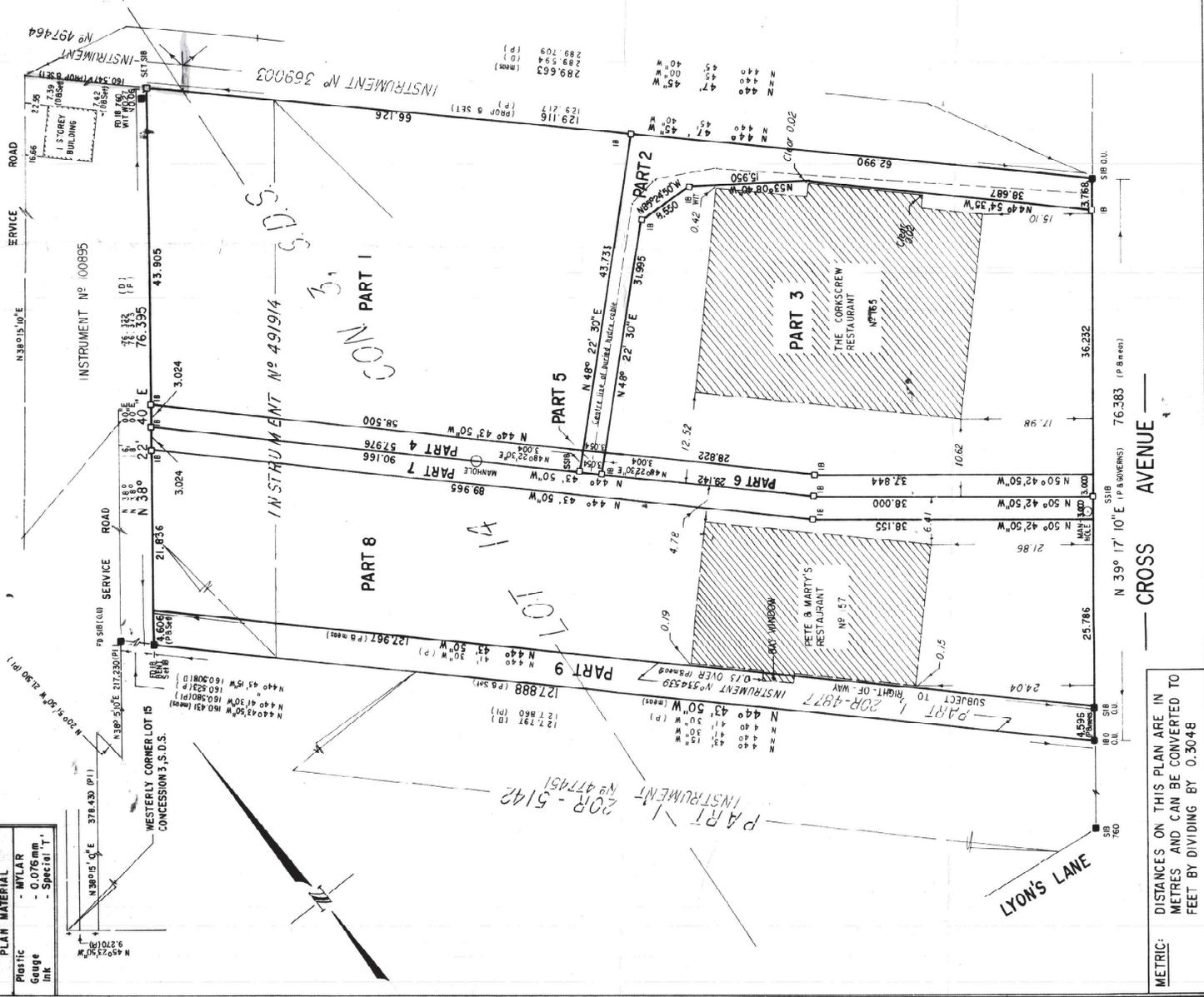
SURVEYOR'S CERTIFICATE:

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

DATE: September 3, 1982
JOHN F. GYOUNG, B.Sc., O.L.S.
ONARIO LAND SURVEYOR

JOHN F. GYOUNG-ONTARIO LAND SURVEYOR
R.R. NO. 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 - 0.076 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

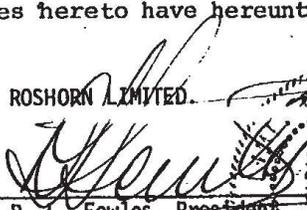
of lawful money of Canada now paid by the Grantee to the Grantor (the receipt whereof is hereby by him acknowledged), the Grantor grants to the Grantee, its successors and assigns, the right, liberty and privilege appurtenant to its undertaking as a Municipal Corporation to construct, operate, maintain, 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.

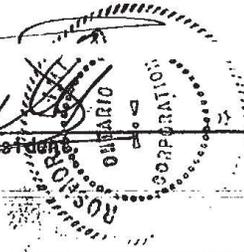
The Grantee will, every time it enters upon the land in pursuance of its rights hereunder, as quickly as conveniently possible, after it has completed its operations thereon for the time being, restore the surface of the said land and everything which the Grantor is by the terms of this grant permitted 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, TESTES AND DELIVERED
in the presence of:

ROSHORN LIMITED.


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 principal(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 |
| (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,
Judicial District of Halton, 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 | |

583527

REGISTRY DIVISION
MAY BE USED TO CERTIFY
THAT THIS INSTRUMENT IS
A VALID INSTRUMENT

AUG 5 3 37 PM '83

DATED August 2nd, 1983.

ROSHORN LIMITED

- and -

THE CORPORATION OF THE TOWN OF
OAKVILLE

1225 TRAFALGAR RD.
OAKVILLE, ONT

REGISTRY DIVISION (NO. 20)

| | |
|---------|--|
| ABSTR. | |
| BY-LAW. | |
| GR. | |
| 14-388 | |
| 14-388 | |

GRANT OF EASEMENT

| | |
|------------------|-------|
| REGISTRATION FEE | 15.00 |
| L.A.O. | |
| TOWN SECURITY | |
| RETIRE | |
| SALES TAX | |

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

15

2

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.

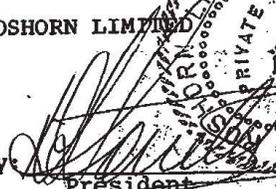
AND the said Grantor RELEASES to the said Grantee ALL his claims upon the said lands.

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:

- 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)*

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

- 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)*.
- 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 <i>(show principal and interest to be credited against purchase price)</i> | \$ 663,000.00 | |
| (ii) Given back to vendor | \$ nil | |
| (c) Property transferred in exchange <i>(detail below)</i> | \$ nil | |
| (d) Securities transferred to the value of <i>(detail below)</i> | \$ nil | |
| (e) Liens, legacies, annuities and maintenance charges to which transfer is subject | \$ nil | |
| (f) Other valuable consideration subject to land transfer tax <i>(detail below)</i> | \$ 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 <i>(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)</i> | | \$ 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.

- If consideration is nominal, describe relationship between transferor and transferee and state purpose of conveyance. *(see instruction 5)*
nil
- If the consideration is nominal, is the land subject to any encumbrance? nil
- 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

- Describe nature of instrument: Deed
- (i) Address of property being conveyed *(if available)* 157 Cross Avenue, Oakville
- (ii) Assessment Roll No. *(if available)* not available
- 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
- (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

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

14-35DS

DYE & BURMAN 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 EN

Nov 3 4 04 PM '83

LAND REGISTRY OFFICE
AT HALTON, ONTARIO
John [Signature]

REGISTRY
NO. 589004
H.S. [Signature]
LOT 14-35DS

| | |
|-------------------|-------|
| 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.

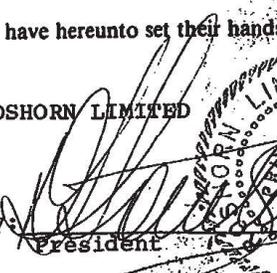
AND the said Grantor RELEASES to the said Grantee ALL his claims upon the said lands.

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

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

Delete (a)
if not applicable

State other
reason if any

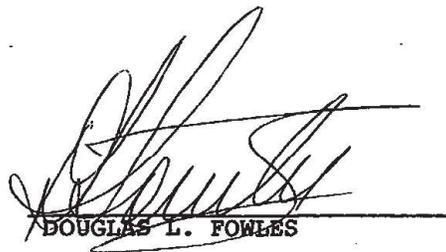
SWORN before me City of Toronto

~~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)
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 \$ 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.454, 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 OFFICER
DALTON H. COE I CERTIFY
THAT THIS INSTRUMENT IS
RECORDED / RECORDED AS OF

NOV 3 4 04 PM '83

LAND REGISTRY OFFICE
AT NELSON, ONTARIO
John Hymand

| | | | |
|---------------------|----|--|--|
| EX-101 | HS | | |
| GR. | | | |
| LOT 14 CONCESSION 3 | | | |

| | |
|-------------------|---------|
| 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.

1. 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.
 2. 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:
 3. (b) This is not a conveyance of "designated land".
 4. 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.
 5. 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.

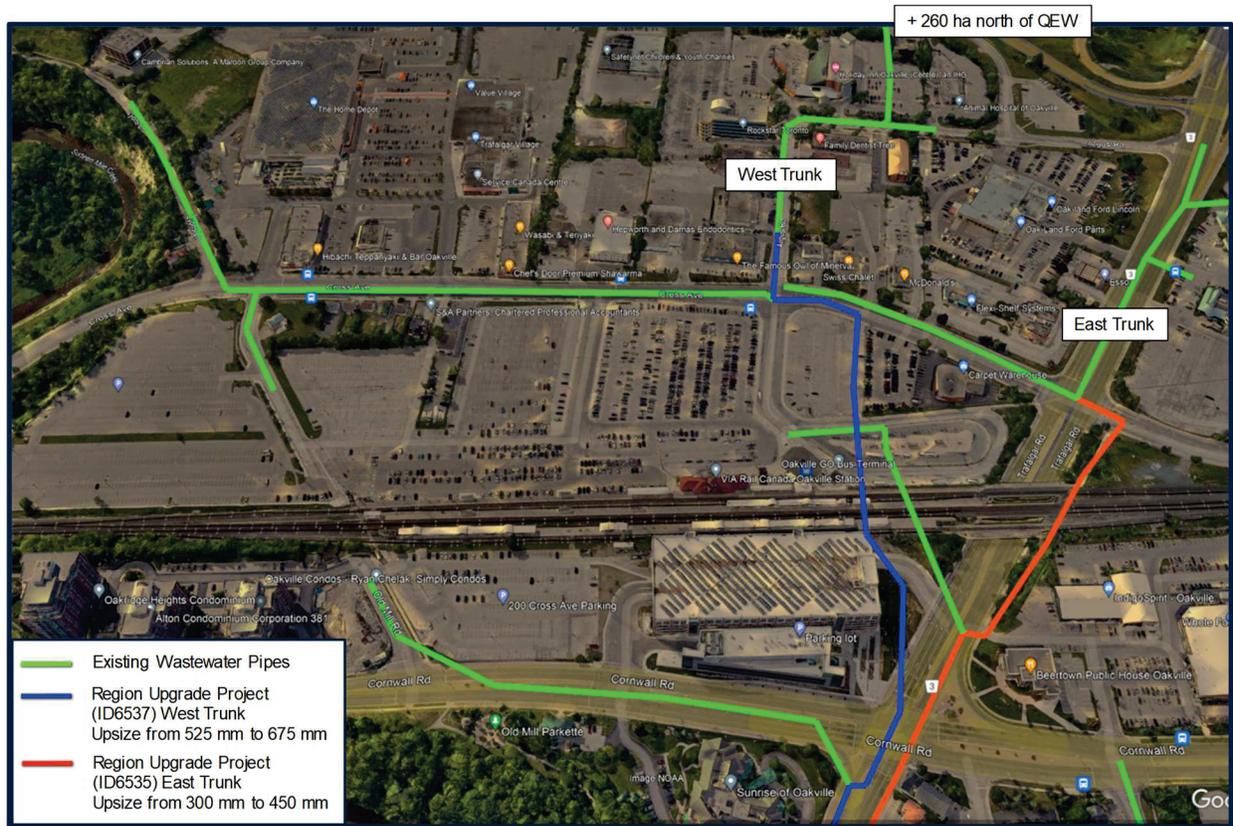


Figure 1: Midtown Oakville Wastewater Network (Existing)

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).

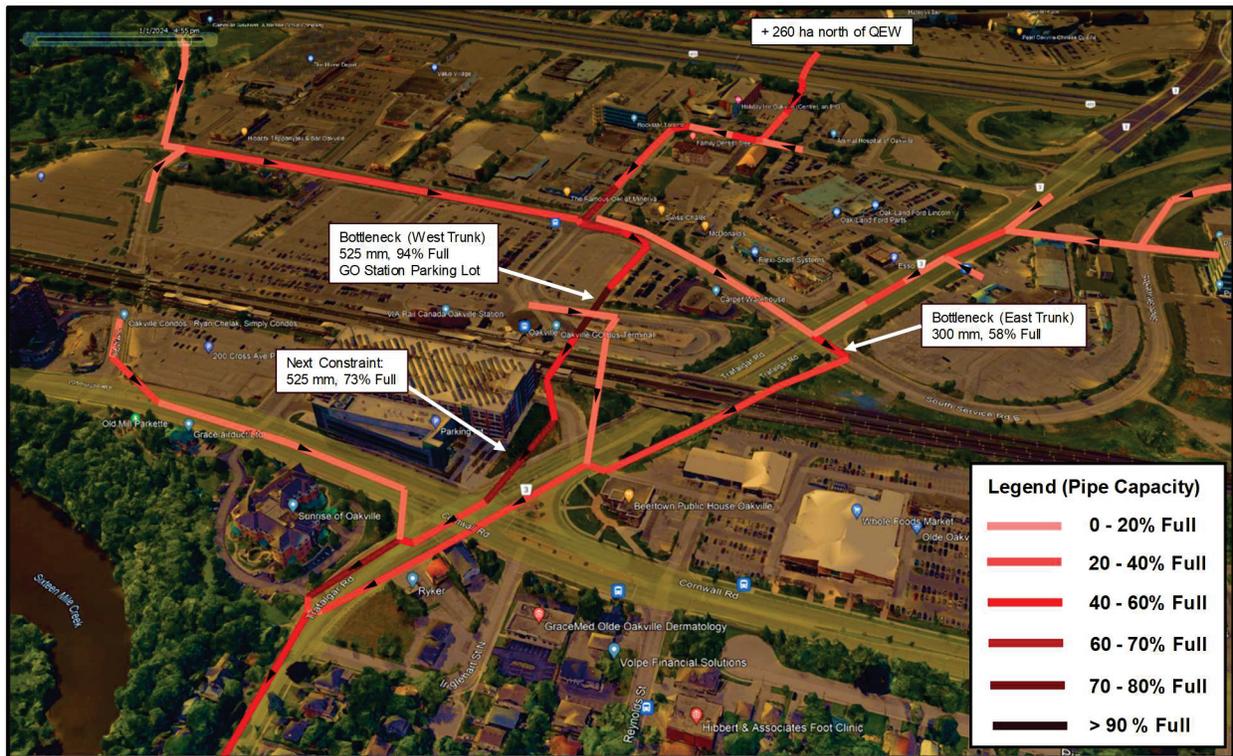


Figure 2: Midtown Oakville Existing Conditions – Pipe Capacity Analysis Results

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:

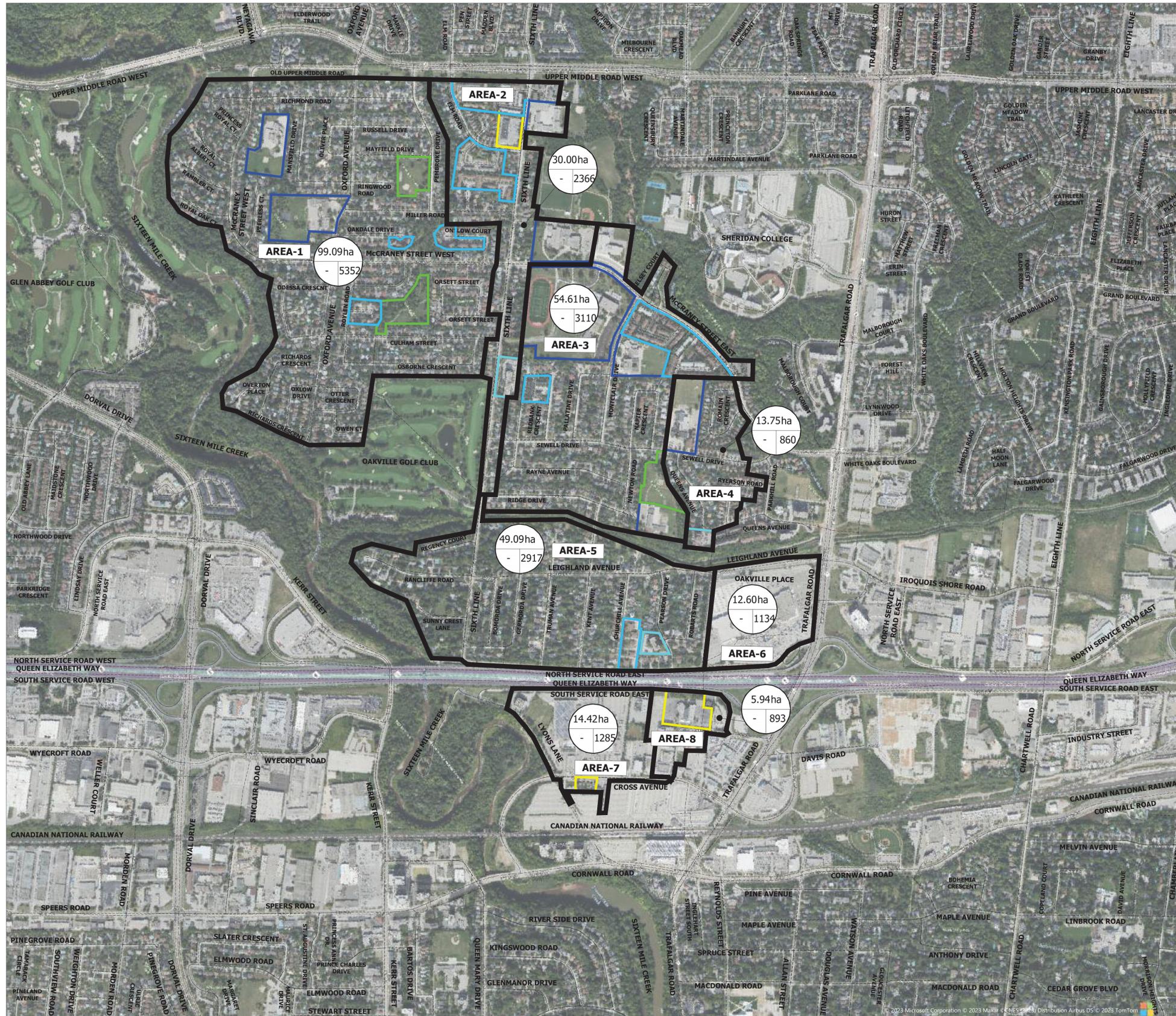
- The Region's planned trunk sewer upgrades alleviate the existing capacity constraints in the trunk sewer system.
- Once the trunk sewers are upgraded, there is capacity in the West Trunk and East Trunk to support all development currently in the pipeline (including all Distrikt developments), with 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-1 | AREA (ha) | EQUIVALENT POPULATION DENSITY (P/ha) | POPULATION |
|---------------|-----------|--------------------------------------|------------|
| COMMERCIAL | 0.00 | 90.00 | 0 |
| SCHOOL | 5.76 | 40.00 | 230 |
| PARK | 3.31 | 0.00 | 0 |
| HIGHRISE | 0.00 | 285.00 | 0 |
| TOWNHOUSE | 2.13 | 135.00 | 288 |
| SINGLE FAMILY | 87.90 | 55.00 | 4834 |
| TOTAL | 99.09 | | 5352 |

| AREA-2 | AREA (ha) | EQUIVALENT POPULATION DENSITY (P/ha) | POPULATION |
|---------------|-----------|--------------------------------------|------------|
| COMMERCIAL | 0.93 | 90.00 | 84 |
| SCHOOL | 4.51 | 40.00 | 180 |
| PARK | 0.00 | 0.00 | 0 |
| HIGHRISE | 1.02 | 285.00 | 290 |
| TOWNHOUSE | 6.46 | 135.00 | 872 |
| SINGLE FAMILY | 17.08 | 55.00 | 940 |
| TOTAL | 30.00 | | 2366 |

| AREA-3 | AREA (ha) | EQUIVALENT POPULATION DENSITY (P/ha) | POPULATION |
|---------------|-----------|--------------------------------------|------------|
| COMMERCIAL | 0.00 | 90.00 | 0 |
| SCHOOL | 16.02 | 40.00 | 641 |
| PARK | 1.57 | 0.00 | 0 |
| HIGHRISE | 0.00 | 285.00 | 0 |
| TOWNHOUSE | 5.41 | 135.00 | 730 |
| SINGLE FAMILY | 31.61 | 55.00 | 1739 |
| TOTAL | 54.61 | | 3110 |

| AREA-4 | AREA (ha) | EQUIVALENT POPULATION DENSITY (P/ha) | POPULATION |
|---------------|-----------|--------------------------------------|------------|
| COMMERCIAL | 0.00 | 90.00 | 0 |
| SCHOOL | 2.75 | 40.00 | 110 |
| PARK | 0.00 | 0.00 | 0 |
| HIGHRISE | 0.63 | 285.00 | 180 |
| TOWNHOUSE | 0.00 | 135.00 | 0 |
| SINGLE FAMILY | 10.37 | 55.00 | 570 |
| TOTAL | 13.75 | | 860 |

| AREA-5 | AREA (ha) | EQUIVALENT POPULATION DENSITY (P/ha) | POPULATION |
|---------------|-----------|--------------------------------------|------------|
| COMMERCIAL | 0.00 | 90.00 | 0 |
| SCHOOL | 0.00 | 40.00 | 0 |
| PARK | 0.00 | 0.00 | 0 |
| HIGHRISE | 0.57 | 285.00 | 162 |
| TOWNHOUSE | 1.07 | 135.00 | 144 |
| SINGLE FAMILY | 47.45 | 55.00 | 2610 |
| TOTAL | 49.09 | | 2917 |

| AREA-6 | AREA (ha) | EQUIVALENT POPULATION DENSITY (P/ha) | POPULATION |
|---------------|-----------|--------------------------------------|------------|
| COMMERCIAL | 12.60 | 90.00 | 1134 |
| SCHOOL | 0.00 | 40.00 | 0 |
| PARK | 0.00 | 0.00 | 0 |
| HIGHRISE | 0.00 | 285.00 | 0 |
| TOWNHOUSE | 0.00 | 135.00 | 0 |
| SINGLE FAMILY | 0.00 | 55.00 | 0 |
| TOTAL | 12.60 | | 1134 |

| AREA-7 | AREA (ha) | EQUIVALENT POPULATION DENSITY (P/ha) | POPULATION |
|---------------|-----------|--------------------------------------|------------|
| COMMERCIAL | 14.06 | 90.00 | 1265 |
| SCHOOL | 0.00 | 40.00 | 0 |
| PARK | 0.00 | 0.00 | 0 |
| HIGHRISE | 0.00 | 285.00 | 0 |
| TOWNHOUSE | 0.00 | 135.00 | 0 |
| SINGLE FAMILY | 0.36 | 55.00 | 20 |
| TOTAL | 14.42 | | 1285 |

| AREA-8 | AREA (ha) | EQUIVALENT POPULATION DENSITY (P/ha) | POPULATION |
|---------------|-----------|--------------------------------------|------------|
| COMMERCIAL | 4.08 | 90.00 | 367 |
| SCHOOL | 0.00 | 40.00 | 0 |
| PARK | 0.00 | 0.00 | 0 |
| HIGHRISE | 1.84 | 285.00 | 524 |
| TOWNHOUSE | 0.00 | 135.00 | 0 |
| SINGLE FAMILY | 0.02 | 55.00 | 1 |
| TOTAL | 5.94 | | 893 |

TOTAL POPULATION: 17916

LEGEND:

- EXISTING DRAINAGE
- AREA BOUNDARY
- EXISTING HIGH-RISE BUILDING
- EXISTING PARK AREA
- EXISTING COMMERCIAL AREA
- EXISTING SCHOOL AREA
- EXISTING TOWNHOUSE

EXISTING DRAINAGE AREA (ha)

EXISTING POPULATION

EXISTING DENSITY (P/ha)

| No. | REVISION | DATE | BY |
|-----|----------|------|----|
| | | | |
| | | | |

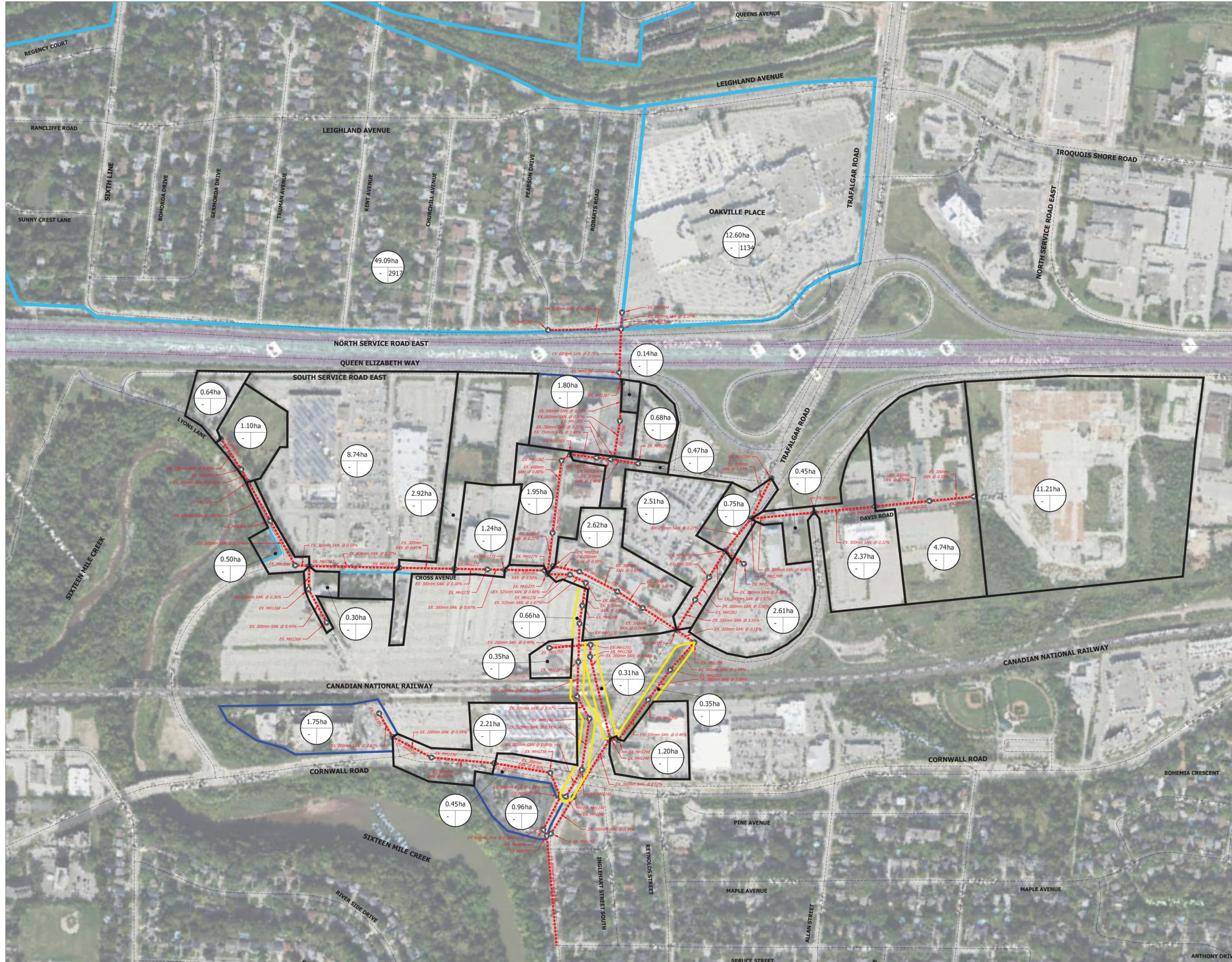
OAKVILLE MID-TOWN (DISTRITK OAKVILLE)



TOWN FILE No. XXXX REGION FILE No. XXXX

URBANTECH Consulting
 A Division of Leighton-Zec West Ltd.
 2030 Bristol Circle, Suite 105
 Oakville, ON, L6H 0H2
 TEL: 905.829.8818 • urbanotech.com

| | | | | |
|-----------|----------|-------|---------------|--------------|
| DESIGNED: | CHECKED: | B.M. | PROJECT No.: | 22-282 |
| DRAWN: | X.S. | DATE: | DECEMBER 2023 | SHEET No.: |
| SCALE: | 1:7000 | | | DRAWING No.: |



| | area(ha) | EQUIVALENT POPULATION DENSITY(P/ha) | POPULATION |
|---------------|--------------|-------------------------------------|-------------|
| COMMERCIAL | 49.10 | 90 | 4419 |
| HIGH-RISE | 4.51 | 285 | 1285 |
| SINGLE FAMILY | 0.15 | 55 | 8 |
| ROAD | 1.77 | - | - |
| TOTAL | 53.76 | | 5713 |

LEGEND:

- EXISTING DRAINAGE AREA BOUNDARY (COMMERCIAL)
- EXISTING DRAINAGE AREA BOUNDARY (HIGH-RISE BUILDING)
- EXISTING DRAINAGE AREA BOUNDARY (SINGLE FAMILY BUILDING)
- EXISTING DRAINAGE AREA BOUNDARY (ROAD)

0.45ha EXISTING DRAINAGE AREA (ha)
0 0 EXISTING POPULATION
- EXISTING DENSITY (P/ha)

| No. | REVISION | DATE | BY |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------|---------------------|
| | | | |
| OAKVILLE MID-TOWN (DISTRIKT OAKVILLE) | | | |
| | | | |
| TOWN FILE No. XXXX | | REGION FILE No. XXXXX | |
| Urbantech® Consulting A Division of Leighton-Zec West Ltd. 2030 Bristol Circle, Suite 105 Oakville, ON, L6H 0H2 TEL. 905.829.8818 • urbantech.com | | | |
| DESIGNED: | CHECKED: | B.M. | PROJECT No.: 22-282 |
| DRAWN: | X.S. | DATE: | DECEMBER 2023 |
| SCALE: | 1:3000 | | DRAWING No.: |



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

NOMINAL PIPE SIZE USED

| STREET | FROM MH | TO MH | LENGTH (m) | RESIDENTIAL | | | | | COMMERCIAL/INDUSTRIAL/INSTITUTIONAL | | | | | FLOW CALCULATIONS | | | | | PIPE DATA | | | | | | | | | | | | |
|--------|---------|--------|------------|-------------|----------------|-----------|----------------|------------------|-------------------------------------|------------------|-----------|----------------|--------------------|--------------------|-------------|--------------------|--------------------|-------------------|----------------|-----------------|------------------|-------------------------|------------------|-----------|--------------------|--------------------------|--------------------------|-----------------------|------------------|-----|--|
| | | | | AREA (ha) | ACC. AREA (ha) | UNITS (#) | DENSITY (P/ha) | DENSITY (P/Unit) | POP | ACCUM. RES. POP. | AREA (ha) | ACC. AREA (ha) | EQUIV. POP. (P/ha) | FLOW RATE (l/s/ha) | EQUIV. POP. | ACCUM. EQUIV. POP. | INFILTRATION (l/s) | TOTAL ACCUM. POP. | 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 VELOCITY (m/s) | PERCENT FULL (%) | | |
| Area-1 | Area-1 | Area-2 | | 99.09 | 99.09 | | | | | | 5352 | 5352 | | | | | | 28.3 | 5352 | 3.22 | 54.8 | | | 83.1 | | 200 | | | | | |
| Area-2 | Area-2 | Area-3 | | 30.00 | 129.09 | | | | | | 2366 | 7718 | | | | | | 36.9 | 7718 | 3.07 | 75.3 | | | 112.2 | | 200 | | | | | |
| Area-4 | Area-4 | Area-3 | | 13.75 | 13.75 | | | | | | 860 | 860 | | | | | | 3.9 | 860 | 3.84 | 10.5 | | | 14.4 | | 200 | | | | | |
| Area-3 | Area-3 | MH1293 | | 54.61 | 197.45 | | | | | | 3110 | 11688 | | | | | | 56.5 | 11688 | 2.89 | 107.4 | | | 163.9 | | 200 | | | | | |
| Area-5 | MH1293 | MH1290 | | 49.09 | 246.54 | | | | | | 2917 | 14605 | | | | | | 70.5 | 14605 | 2.79 | 129.7 | | | 200.2 | 0.25 | 675 | 420.3 | 1.17 | 1.13 | 48% | |
| Area-6 | MH1294 | MH1290 | | 12.60 | 12.60 | | | | | | 1134 | 1134 | | | | | | 3.6 | 1134 | 3.76 | 13.6 | | | 17.2 | 2.35 | 250 | 91.2 | 1.86 | 1.41 | 19% | |
| | MH1290 | MH1288 | | | 259.14 | | | | | | | 15739 | | | | | | 74.1 | 15739 | 2.76 | 138.1 | | | 212.2 | 0.78 | 600 | 542.3 | 1.92 | 1.73 | 39% | |
| | MH1288 | MH1287 | | | 259.14 | | | | | | | 15739 | 0.14 | 0.14 | 90 | 13 | 13 | 74.2 | 15752 | 2.76 | 138.2 | | | 212.4 | 0.58 | 600 | 467.6 | 1.65 | 1.59 | 45% | |
| | MH1287 | MH1286 | | | 259.14 | | | | | | | 15739 | 1.80 | 1.94 | 90 | 162 | 175 | 74.7 | 15914 | 2.75 | 139.4 | | | 214.1 | 0.70 | 600 | 513.7 | 1.82 | 1.69 | 42% | |
| | MH1286 | MH1285 | | | 259.14 | | | | | | | 15739 | | 1.94 | | | 175 | 74.7 | 15914 | 2.75 | 139.4 | | | 214.1 | 0.87 | 600 | 572.7 | 2.03 | 1.82 | 37% | |
| | MH1285 | MH1284 | | | 259.14 | | | | | | | 15739 | | 1.94 | | | 175 | 74.7 | 15914 | 2.75 | 139.4 | | | 214.1 | 0.85 | 600 | 566.1 | 2.00 | 1.80 | 38% | |
| | MH1291 | MH1284 | | | | | | | | | | 1.15 | 1.15 | 90 | 104 | 104 | 0.3 | 104 | 4.00 | 1.3 | | | 1.7 | 1.46 | 300 | 116.8 | 1.65 | 0.51 | 1% | | |
| | MH1284 | MH1292 | | | 259.14 | | | | | | | 15739 | | 3.09 | | | 279 | 75.0 | 16018 | 2.75 | 140.2 | | | 215.2 | 0.22 | 750 | 522.2 | 1.18 | 1.10 | 41% | |
| | MH1292 | MH1283 | | | 259.14 | | | | | | | 15739 | | 3.09 | | | 279 | 75.0 | 16018 | 2.75 | 140.2 | | | 215.2 | 1.48 | 750 | 1354.4 | 3.07 | 2.24 | 16% | |
| | MH1283 | MH1282 | | | 259.14 | | | | | | | 15739 | 1.95 | 5.04 | 90 | 176 | 455 | 75.6 | 16194 | 2.74 | 141.5 | | | 217.0 | 0.77 | 600 | 538.8 | 1.91 | 1.77 | 40% | |
| | MH1282 | MH1279 | | | 259.14 | | | | | | | 15739 | | 5.04 | | | 455 | 75.6 | 16194 | 2.74 | 141.5 | | | 217.0 | 0.88 | 600 | 576.0 | 2.04 | 1.83 | 38% | |
| | MH1279 | MH1275 | | | 259.14 | | | | | | | 15739 | | 5.04 | | | 455 | 75.6 | 16194 | 2.74 | 141.5 | | | 217.0 | 0.22 | 600 | 288.0 | 1.02 | 1.11 | 75% | |
| | MH1262 | MH1263 | | | | | | | | | | 1.74 | 1.74 | 90 | 157 | 157 | 0.5 | 157 | 4.00 | 2.0 | | | 2.5 | 0.85 | 250 | 54.8 | 1.12 | 0.55 | 5% | | |
| | MH1263 | MH1265 | | | | | | | | | | | 1.74 | | | | 157 | 0.5 | 157 | 4.00 | 2.0 | | | 2.5 | 0.26 | 250 | 30.3 | 0.62 | 0.36 | 8% | |
| | MH1265 | MH1264 | | | | | | | | | | 0.50 | 2.24 | 90 | 45 | 202 | 0.6 | 202 | 4.00 | 2.6 | | | 3.2 | 1.00 | 250 | 59.5 | 1.21 | 0.63 | 5% | | |
| | MH1264 | MH1266 | | | | | | | | | | | 2.24 | | | | 202 | 0.6 | 202 | 4.00 | 2.6 | | | 3.2 | 0.56 | 300 | 72.4 | 1.02 | 0.50 | 4% | |
| | MH1266 | MH1267 | | | | | | | | | | | 2.24 | | | | 202 | 0.6 | 202 | 4.00 | 2.6 | | | 3.2 | 0.58 | 300 | 73.6 | 1.04 | 0.51 | 4% | |
| | MH1269 | MH1268 | | | | | | | | | | 0.30 | 0.30 | 90 | 27 | 27 | 0.1 | 27 | 4.00 | 0.3 | | | 0.4 | 0.44 | 300 | 64.1 | 0.91 | 0.24 | 1% | | |
| | MH1268 | MH1267 | | | | | | | | | | | 0.30 | | | | 27 | 0.1 | 27 | 4.00 | 0.3 | | | 0.4 | 0.36 | 250 | 35.7 | 0.73 | 0.19 | 1% | |
| | MH1267 | MH1270 | | | | | | | | | | 8.74 | 11.28 | 90 | 787 | 1016 | 3.2 | 1016 | 3.80 | 12.3 | | | 15.5 | 0.37 | 300 | 58.8 | 0.83 | 0.69 | 26% | | |
| | MH1270 | MH1271 | | | | | | | | | | 2.92 | 14.20 | 90 | 263 | 1279 | 4.1 | 1279 | 3.73 | 15.2 | | | 19.2 | 0.45 | 300 | 64.9 | 0.92 | 0.80 | 30% | | |
| | MH1271 | MH1272 | | | | | | | | | | 1.24 | 15.44 | 90 | 112 | 1391 | 4.4 | 1391 | 3.70 | 16.4 | | | 20.8 | 0.38 | 300 | 59.6 | 0.84 | 0.76 | 35% | | |
| | MH1272 | MH1273 | | | | | | | | | | | 15.44 | | | | 1391 | 4.4 | 1391 | 3.70 | 16.4 | | | 20.8 | 0.60 | 300 | 74.9 | 1.06 | 0.90 | 28% | |
| | MH1273 | MH1274 | | | | | | | | | | | 15.44 | | | | 1391 | 4.4 | 1391 | 3.70 | 16.4 | | | 20.8 | 0.52 | 300 | 69.7 | 0.99 | 0.86 | 30% | |
| | MH1274 | MH1275 | | | | | | | | | | | 15.44 | | | | 1391 | 4.4 | 1391 | 3.70 | 16.4 | | | 20.8 | 0.85 | 300 | 89.2 | 1.26 | 1.00 | 23% | |
| | MH1275 | MH1276 | | | 259.14 | | | | | | | 15739 | | 20.48 | | | 1846 | 80.0 | 17585 | 2.71 | 151.6 | | | 231.6 | 0.66 | 525 | 349.4 | 1.61 | 1.69 | 66% | |
| | MH1276 | MH1277 | | | 259.14 | | | | | | | 15739 | | 20.48 | | | 1846 | 80.0 | 17585 | 2.71 | 151.6 | | | 231.6 | 1.47 | 525 | 521.4 | 2.41 | 2.24 | 44% | |
| | MH1277 | MH1280 | | | 259.14 | | | | | | | 15739 | 0.66 | 21.14 | 90 | 60 | 1906 | 80.2 | 17645 | 2.71 | 152.0 | | | 232.2 | 1.45 | 525 | 517.9 | 2.39 | 2.30 | 45% | |
| | MH1280 | MH1278 | | | 259.14 | | | | | | | 15739 | | 21.14 | | | 1906 | 80.2 | 17645 | 2.71 | 152.0 | | | 232.2 | 1.67 | 525 | 555.8 | 2.57 | 2.39 | 42% | |
| | MH1278 | MH1281 | | | 259.14 | | | | | | | 15739 | | 21.14 | | | 1906 | 80.2 | 17645 | 2.71 | 152.0 | | | 232.2 | 0.33 | 525 | 247.1 | 1.14 | 1.29 | 94% | |
| | MH1281 | MH1247 | | | 259.14 | | | | | | | 15739 | | 21.14 | | | 1906 | 80.2 | 17645 | 2.71 | 152.0 | | | 232.2 | 1.08 | 525 | 446.9 | 2.06 | 2.04 | 52% | |
| | MH1247 | MH1246 | | | 259.14 | | | | | | | 15739 | | 21.14 | | | 1906 | 80.2 | 17645 | 2.71 | 152.0 | | | 232.2 | 0.92 | 525 | 412.5 | 1.91 | 1.92 | 56% | |
| | MH1246 | MH1245 | | | 259.14 | | | | | | | 15739 | | 21.14 | | | 1906 | 80.2 | 17645 | 2.71 | 152.0 | | | 232.2 | 0.54 | 525 | 316.0 | 1.46 | 1.56 | 73% | |
| | MH1245 | MH1240 | | | 259.14 | | | | | | | 15739 | | 21.14 | | | 1906 | 80.2 | 17645 | 2.71 | 152.0 | | | 232.2 | 6.53 | 525 | 1099.0 | 5.08 | 3.91 | 21% | |
| | MH1240 | MH1239 | | | 259.14 | | | | | | | 15739 | | 21.14 | | | 1906 | 80.2 | 17645 | 2.71 | 152.0 | | | 232.2 | 0.89 | 525 | 405.7 | 1.87 | 1.89 | 57% | |
| | MH1234 | MH1235 | | | | | | | | | | 1.75 | 1.75 | 90 | 158 | 158 | 0.5 | 158 | 4.00 | 2.0 | | | 2.5 | 2.02 | 200 | 46.6 | 1.48 | 0.77 | 5% | | |
| | MH1235 | MH1236 | | | | | | | | | | 2.21 | 3.96 | 90 | 199 | 357 | 1.1 | 357 | 4.00 | 4.5 | | | 5.7 | 0.49 | 200 | 23.0 | 0.73 | 0.59 | 25% | | |
| | MH1236 | MH1237 | | | | | | | | | | | 3.96 | | | | 357 | 1.1 | 357 | 4.00 | 4.5 | | | 5.7 | 0.47 | 250 | 40.8 | 0.83 | 0.58 | 14% | |
| | MH1237 | MH1238 | | | | | | | | | | 0.45 | 4.41 | 90 | 41 | 398 | 1.3 | 398 | 4.00 | 5.1 | | | 6.3 | 0.46 | 300 | 65.6 | 0.93 | 0.59 | 10% | | |
| | MH1238 | MH1239 | | | | | | | | | | | 4.41 | | | | 398 | 1.3 | 398 | 4.00 | 5.1 | | | 6.3 | 1.29 | 300 | 109.8 | 1.55 | 0.84 | 6% | |
| | MH1239 | MH1241 | | | 259.14 | | | | | | | 15739 | 0.96 | 26.51 | 90 | 87 | 2391 | 81.7 | 18130 | 2.70 | 155.5 | | | 237.2 | 0.29 | 600 | 330.7 | 1.17 | 1.25 | 72% | |



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

NOMINAL PIPE SIZE USED

| STREET | FROM MH | TO MH | LENGTH (m) | RESIDENTIAL | | | | | | COMMERCIAL/INDUSTRIAL/INSTITUTIONAL | | | | | | FLOW CALCULATIONS | | | | | | PIPE DATA | | | | | | | | | | | | | | |
|--------|---------|--------|------------|-------------|----------------|-----------|----------------|------------------|-----|-------------------------------------|-----------|----------------|--------------------|--------------------|-------------|--------------------|--------------------|-------------------|----------------|-----------------|------------------|-------------------------|------------------|-----------|--------------------|--------------------------|--------------------------|-----------------------|------------------|-------|------|-----|-------|------|------|-----|
| | | | | AREA (ha) | ACC. AREA (ha) | UNITS (#) | DENSITY (P/ha) | DENSITY (P/Unit) | POP | ACCUM. RES. POP. | AREA (ha) | ACC. AREA (ha) | EQUIV. POP. (P/ha) | FLOW RATE (l/s/ha) | EQUIV. POP. | ACCUM. EQUIV. POP. | INFILTRATION (l/s) | TOTAL ACCUM. POP. | 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 VELOCITY (m/s) | PERCENT FULL (%) | | | | | | | |
| | MH1241 | MH1242 | | | 259.14 | | | | | | | | | | 15739 | | 26.51 | | | | | | 2391 | 81.7 | 18130 | 2.70 | 155.5 | | | 237.2 | 1.02 | 600 | 620.1 | 2.19 | 1.97 | 38% |
| | MH1298 | MH1297 | | | | | | | | | | 0.75 | 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 | | | | | | | | | | 4.74 | 4.74 | 90 | | | 427 | 427 | 1.4 | 427 | 4.00 | 5.4 | | | 6.8 | 0.55 | 300 | 71.7 | 1.01 | 0.63 | 9% | | | | | |
| | MH1303 | MH1302 | | | | | | | | | | 4.74 | 4.74 | 90 | | | 427 | 427 | 1.4 | 427 | 4.00 | 5.4 | | | 6.8 | 0.79 | 300 | 85.9 | 1.22 | 0.72 | 8% | | | | | |
| | MH1302 | MH1301 | | | | | | | | | | 2.37 | 7.11 | 90 | | | 214 | 641 | 2.0 | 641 | 3.92 | 8.0 | | | 10.0 | 0.32 | 300 | 54.7 | 0.77 | 0.58 | 18% | | | | | |
| | MH1301 | MH1297 | | | | | | | | | | 0.45 | 7.56 | 90 | | | 41 | 682 | 2.2 | 682 | 3.90 | 8.5 | | | 10.6 | 0.46 | 300 | 65.6 | 0.93 | 0.68 | 16% | | | | | |
| | MH1297 | MH1295 | | | | | | | | | | | 8.31 | | | | 750 | 2.4 | 750 | 3.88 | 9.3 | | | 11.6 | 0.27 | 250 | 30.9 | 0.63 | 0.57 | 38% | | | | | | |
| | MH1296 | MH1295 | | | | | | | | | | 2.61 | 2.61 | 90 | | | 235 | 235 | 0.7 | 235 | 4.00 | 3.0 | | | 3.7 | 0.40 | 200 | 20.7 | 0.66 | 0.50 | 18% | | | | | |
| | MH1295 | MH1300 | | | | | | | | | | 2.51 | 13.43 | 90 | | | 226 | 1211 | 3.8 | 1211 | 3.74 | 14.4 | | | 18.3 | 1.02 | 300 | 97.7 | 1.38 | 1.05 | 19% | | | | | |
| | MH1300 | MH1261 | | | | | | | | | | | 13.43 | | | | 1211 | 3.8 | 1211 | 3.74 | 14.4 | | | 18.3 | 0.56 | 300 | 72.4 | 1.02 | 0.83 | 25% | | | | | | |
| | MH1261 | MH1255 | | | | | | | | | | | 13.43 | | | | 1211 | 3.8 | 1211 | 3.74 | 14.4 | | | 18.3 | 1.15 | 300 | 103.7 | 1.47 | 1.10 | 18% | | | | | | |
| | MH1258 | MH1257 | | | | | | | | | | 2.62 | 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 | | | | | | | | | | | 2.62 | | | | 236 | 0.7 | 236 | 4.00 | 3.0 | | | 3.8 | 0.69 | 300 | 80.3 | 1.14 | 0.56 | 5% | | | | | | |
| | MH1256 | MH1260 | | | | | | | | | | | 2.62 | | | | 236 | 0.7 | 236 | 4.00 | 3.0 | | | 3.8 | 1.81 | 300 | 130.1 | 1.84 | 0.77 | 3% | | | | | | |
| | MH1260 | MH1255 | | | | | | | | | | | 2.62 | | | | 236 | 0.7 | 236 | 4.00 | 3.0 | | | 3.8 | 0.26 | 300 | 49.3 | 0.70 | 0.41 | 8% | | | | | | |
| | MH1255 | MH1254 | | | | | | | | | | | 16.05 | | | | 1447 | 4.6 | 1447 | 3.69 | 17.0 | | | 21.6 | 0.15 | 300 | 37.5 | 0.53 | 0.54 | 58% | | | | | | |
| | MH1254 | MH1253 | | | | | | | | | | 0.35 | 16.40 | 90 | | | 32 | 1479 | 4.7 | 1479 | 3.68 | 17.3 | | | 22.0 | 0.48 | 300 | 67.0 | 0.95 | 0.82 | 33% | | | | | |
| | MH1253 | MH1259 | | | | | | | | | | | 16.40 | | | | 1479 | 4.7 | 1479 | 3.68 | 17.3 | | | 22.0 | 0.50 | 300 | 68.4 | 0.97 | 0.84 | 32% | | | | | | |
| | MH1259 | MH1249 | | | | | | | | | | 1.20 | 17.60 | 90 | | | 108 | 1587 | 5.0 | 1587 | 3.66 | 18.5 | | | 23.5 | 0.46 | 300 | 65.6 | 0.93 | 0.84 | 36% | | | | | |
| | MH1249 | MH1248 | | | | | | | | | | | 17.60 | | | | 1587 | 5.0 | 1587 | 3.66 | 18.5 | | | 23.5 | 0.53 | 300 | 70.4 | 1.00 | 0.87 | 33% | | | | | | |
| | MH1252 | MH1251 | | | | | | | | | | 0.35 | 0.35 | 90 | | | 32 | 32 | 0.1 | 32 | 4.00 | 0.4 | | | 0.5 | 0.40 | 200 | 20.7 | 0.66 | 0.26 | 2% | | | | | |
| | MH1251 | MH1250 | | | | | | | | | | 0.31 | 0.66 | 90 | | | 28 | 60 | 0.2 | 60 | 4.00 | 0.8 | | | 1.0 | 2.56 | 200 | 52.5 | 1.67 | 0.58 | 2% | | | | | |
| | MH1250 | MH1248 | | | | | | | | | | | 0.66 | | | | 60 | 0.2 | 60 | 4.00 | 0.8 | | | 1.0 | 0.60 | 200 | 25.4 | 0.81 | 0.36 | 4% | | | | | | |
| | MH1248 | MH1244 | | | | | | | | | | | 18.26 | | | | 1647 | 5.2 | 1647 | 3.65 | 19.1 | | | 24.4 | 0.62 | 300 | 76.1 | 1.08 | 0.94 | 32% | | | | | | |
| | MH1244 | MH1243 | | | | | | | | | | | 18.26 | | | | 1647 | 5.2 | 1647 | 3.65 | 19.1 | | | 24.4 | 0.44 | 300 | 64.1 | 0.91 | 0.82 | 38% | | | | | | |
| | MH1243 | MH1242 | | | | | | | | | | | 18.26 | | | | 1647 | 5.2 | 1647 | 3.65 | 19.1 | | | 24.4 | 2.39 | 300 | 149.5 | 2.11 | 1.54 | 16% | | | | | | |
| | MH1242 | MHX | | | 259.14 | | | | | | | | 44.77 | | | | 4038 | 86.9 | 19777 | 2.66 | 167.3 | | | 254.2 | 0.64 | 600 | 491.2 | 1.74 | 1.72 | 52% | | | | | | |

1/1/2024 4:55 pm

+ 260 ha north of QEW

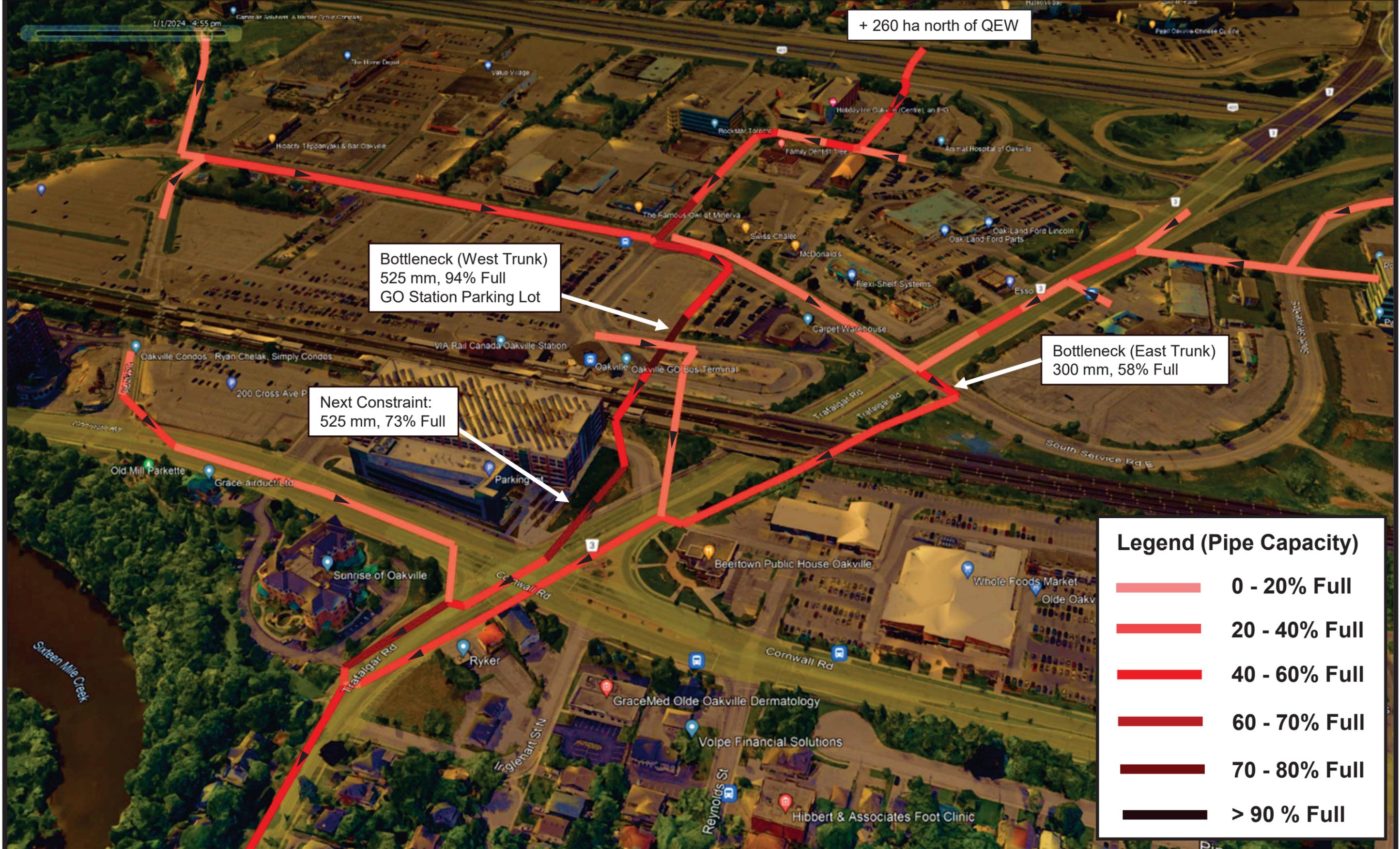
Bottleneck (West Trunk)
525 mm, 94% Full
GO Station Parking Lot

Bottleneck (East Trunk)
300 mm, 58% Full

Next Constraint:
525 mm, 73% Full

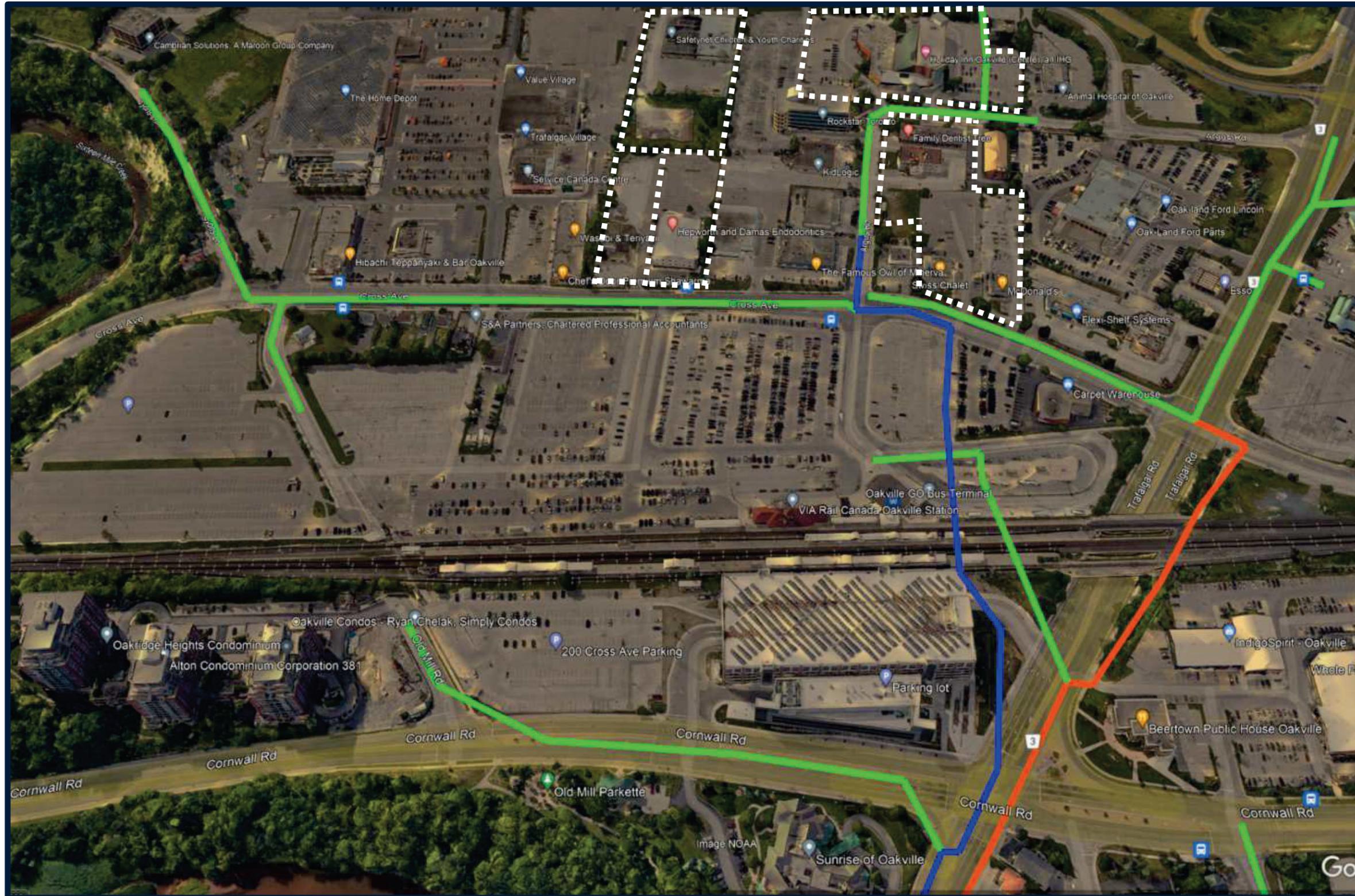
Legend (Pipe Capacity)

| | |
|--|---------------|
| | 0 - 20% Full |
| | 20 - 40% Full |
| | 40 - 60% Full |
| | 60 - 70% Full |
| | 70 - 80% Full |
| | > 90 % Full |



ATTACHMENT 2:
Future System Capacity Analysis

Scenario 1: Trunk Sewer Upgrades Complete, No New Development



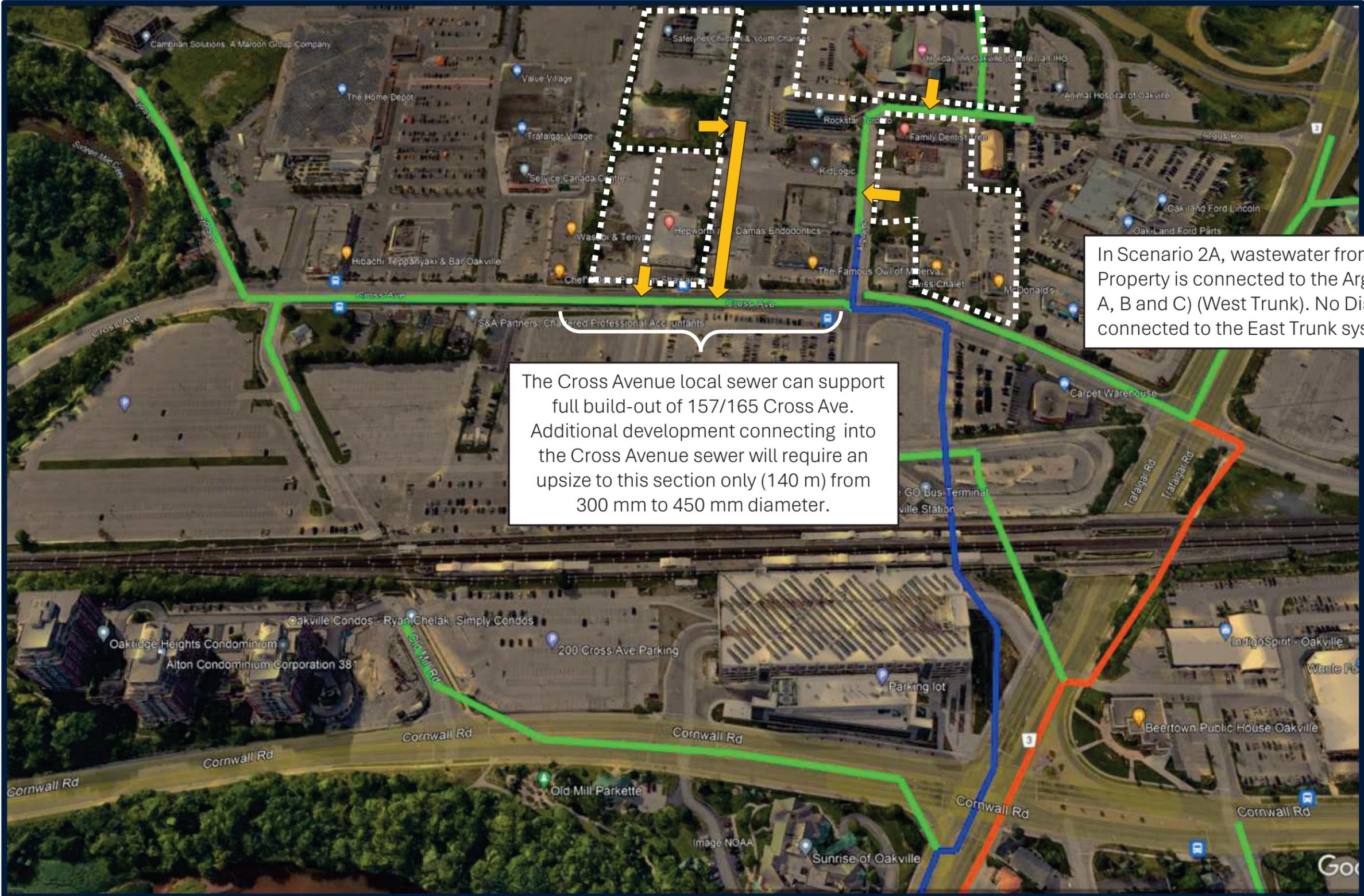
- Distrikt Developments
- Existing Wastewater Pipes
- Region Upgrade Project (ID6537) West Trunk
Upsize from 525 mm to 675 mm
- Region Upgrade Project (ID6535) East Trunk
Upsize from 300 mm to 450 mm

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).

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.

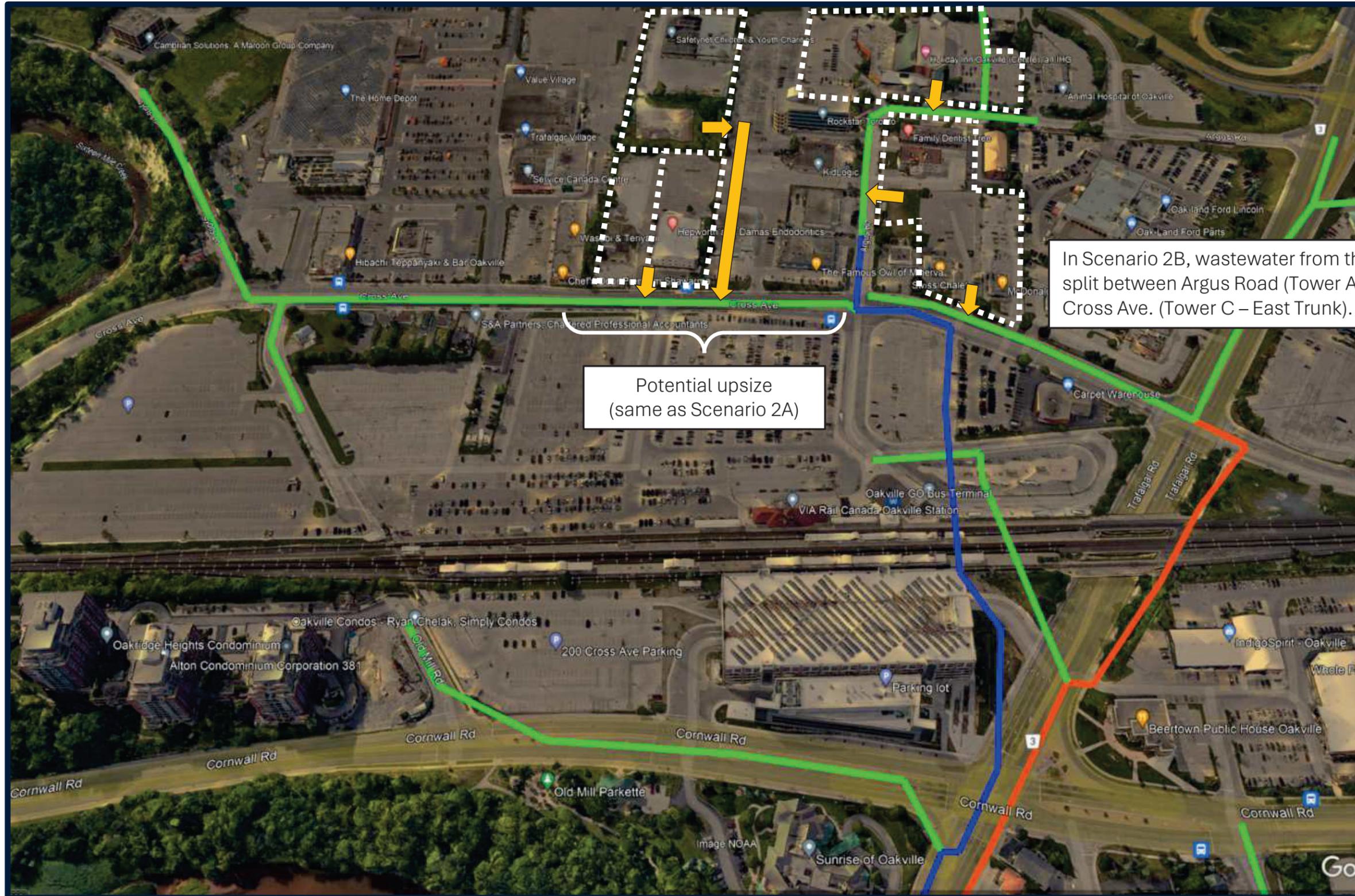
The Cross Avenue local sewer can support full build-out of 157/165 Cross Ave. Additional development connecting into the Cross Avenue sewer will require an upsize to this section only (140 m) from 300 mm to 450 mm diameter.

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.

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



- 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 2B, wastewater from the 587 Argus Property is split between Argus Road (Tower A, B – West Trunk) and Cross Ave. (Tower C – East Trunk).

Potential upsize
(same as Scenario 2A)

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

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

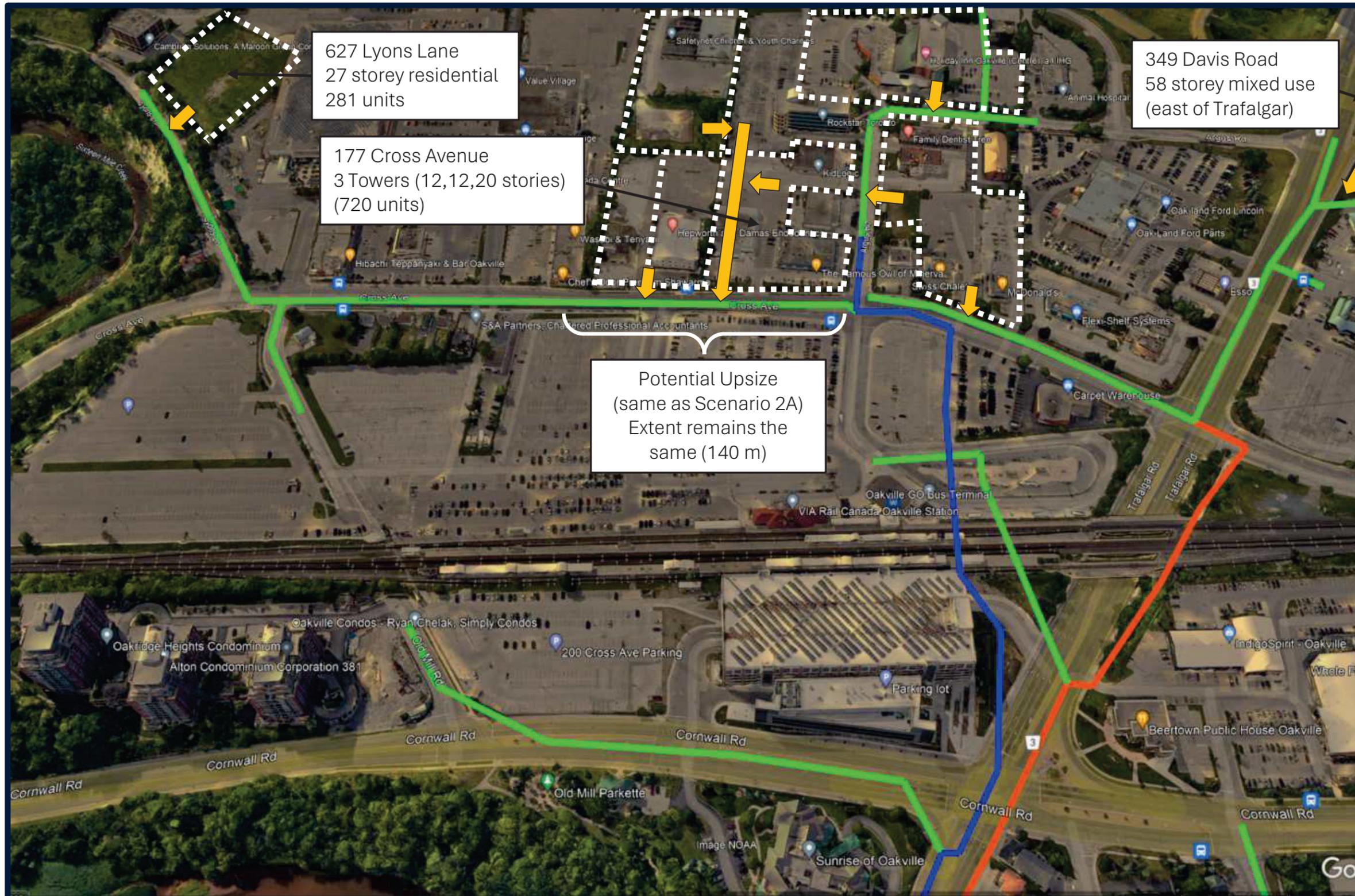
Max. Peaking Factor = 4.00

Min. Peaking Factor = 2.00

NOMINAL PIPE SIZE USED

| STREET | FROM MH | TO MH | LENGTH (m) | RESIDENTIAL | | | | | | COMMERCIAL/INDUSTRIAL/INSTITUTIONAL | | | | | | FLOW CALCULATIONS | | | | | | PIPE DATA | | | | | | | | | | | | | | |
|--------|---------|--------|------------|-------------|----------------|-----------|----------------|------------------|-----|-------------------------------------|-----------|----------------|--------------------|--------------------|-------------|--------------------|--------------------|-------------------|----------------|-----------------|------------------|-------------------------|------------------|-----------|--------------------|--------------------------|--------------------------|-----------------------|------------------|-------|------|-----|-------|------|------|-----|
| | | | | AREA (ha) | ACC. AREA (ha) | UNITS (#) | DENSITY (P/ha) | DENSITY (P/Unit) | POP | ACCUM. RES. POP. | AREA (ha) | ACC. AREA (ha) | EQUIV. POP. (P/ha) | FLOW RATE (l/s/ha) | EQUIV. POP. | ACCUM. EQUIV. POP. | INFILTRATION (l/s) | TOTAL ACCUM. POP. | 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 VELOCITY (m/s) | PERCENT FULL (%) | | | | | | | |
| | MH1241 | MH1242 | | | 259.14 | | | | | | | | | | 27423 | | 26.51 | | | | | | 2391 | 81.7 | 29814 | 2.48 | 235.3 | | | 317.0 | 1.02 | 675 | 849.0 | 2.37 | 2.14 | 37% |
| | MH1298 | MH1297 | | | | | | | | | | 0.75 | 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 | | | | | | | | | | 4.74 | 4.74 | 90 | | | 427 | 427 | 1.4 | 427 | 4.00 | 5.4 | | | 6.8 | 0.55 | 300 | 71.7 | 1.01 | 0.63 | 9% | | | | | |
| | MH1303 | MH1302 | | | | | | | | | | 4.74 | 4.74 | 90 | | | 427 | 427 | 1.4 | 427 | 4.00 | 5.4 | | | 6.8 | 0.79 | 300 | 85.9 | 1.22 | 0.72 | 8% | | | | | |
| | MH1302 | MH1301 | | | | | | | | | | 2.37 | 7.11 | 90 | | | 214 | 641 | 2.0 | 641 | 3.92 | 8.0 | | | 10.0 | 0.32 | 300 | 54.7 | 0.77 | 0.58 | 18% | | | | | |
| | MH1301 | MH1297 | | | | | | | | | | 0.45 | 7.56 | 90 | | | 41 | 682 | 2.2 | 682 | 3.90 | 8.5 | | | 10.6 | 0.46 | 300 | 65.6 | 0.93 | 0.68 | 16% | | | | | |
| | MH1297 | MH1295 | | | | | | | | | | | 8.31 | | | | 750 | 2.4 | 750 | 3.88 | 9.3 | | | 11.6 | 0.27 | 250 | 30.9 | 0.63 | 0.57 | 38% | | | | | | |
| | MH1296 | MH1295 | | | | | | | | | | 2.61 | 2.61 | 90 | | | 235 | 235 | 0.7 | 235 | 4.00 | 3.0 | | | 3.7 | 0.40 | 200 | 20.7 | 0.66 | 0.50 | 18% | | | | | |
| | MH1295 | MH1300 | | | | | | | | | | 2.51 | 13.43 | 90 | | | 226 | 1211 | 3.8 | 1211 | 3.74 | 14.4 | | | 18.3 | 1.02 | 300 | 97.7 | 1.38 | 1.05 | 19% | | | | | |
| | MH1300 | MH1261 | | | | | | | | | | | 13.43 | | | | 1211 | 3.8 | 1211 | 3.74 | 14.4 | | | 18.3 | 0.56 | 300 | 72.4 | 1.02 | 0.83 | 25% | | | | | | |
| | MH1261 | MH1255 | | | | | | | | | | | 13.43 | | | | 1211 | 3.8 | 1211 | 3.74 | 14.4 | | | 18.3 | 1.15 | 300 | 103.7 | 1.47 | 1.10 | 18% | | | | | | |
| | MH1258 | MH1257 | | | | | | | | | | | | 1668 | 1668 | 2.62 | 90 | 236 | 236 | 0.7 | 1904 | 3.60 | 21.8 | | | 22.6 | 0.58 | 250 | 45.3 | 0.92 | 0.91 | 50% | | | | |
| | MH1257 | MH1256 | | | | | | | | | | | | 1668 | 1668 | 2.62 | | 236 | 0.7 | 1904 | 3.60 | 21.8 | | | 22.6 | 0.69 | 300 | 80.3 | 1.14 | 0.97 | 28% | | | | | |
| | MH1256 | MH1260 | | | | | | | | | | | | 1668 | 1668 | 2.62 | | 236 | 0.7 | 1904 | 3.60 | 21.8 | | | 22.6 | 1.81 | 300 | 130.1 | 1.84 | 1.36 | 17% | | | | | |
| | MH1260 | MH1255 | | | | | | | | | | | | 1668 | 1668 | 2.62 | | 236 | 0.7 | 1904 | 3.60 | 21.8 | | | 22.6 | 0.26 | 300 | 49.3 | 0.70 | 0.67 | 46% | | | | | |
| | MH1255 | MH1254 | | | | | | | | | | | | 1668 | 1668 | 16.05 | | 1447 | 4.6 | 3115 | 3.43 | 34.0 | | | 38.6 | 0.15 | 450 | 110.4 | 0.69 | 0.62 | 35% | | | | | |
| | MH1254 | MH1253 | | | | | | | | | | | 0.35 | 16.40 | 90 | | 32 | 1479 | 4.7 | 3147 | 3.42 | 34.3 | | | 39.0 | 0.48 | 450 | 197.5 | 1.24 | 0.96 | 20% | | | | | |
| | MH1253 | MH1259 | | | | | | | | | | | | 1668 | 1668 | 16.40 | | 1479 | 4.7 | 3147 | 3.42 | 34.3 | | | 39.0 | 0.50 | 450 | 201.6 | 1.27 | 0.96 | 19% | | | | | |
| | MH1259 | MH1249 | | | | | | | | | | | | 1668 | 1668 | 17.60 | 90 | 108 | 1587 | 5.0 | 3255 | 3.41 | 35.3 | | | 40.4 | 0.46 | 450 | 193.4 | 1.22 | 0.94 | 21% | | | | |
| | MH1249 | MH1248 | | | | | | | | | | | | 1668 | 1668 | 17.60 | | 1587 | 5.0 | 3255 | 3.41 | 35.3 | | | 40.4 | 0.53 | 450 | 207.6 | 1.31 | 0.99 | 19% | | | | | |
| | MH1252 | MH1251 | | | | | | | | | | | | | 0.35 | 0.35 | 90 | 32 | 32 | 0.1 | 32 | 4.00 | 0.4 | | | 0.5 | 0.40 | 200 | 20.7 | 0.66 | 0.26 | 2% | | | | |
| | MH1251 | MH1250 | | | | | | | | | | | | | 0.31 | 0.66 | 90 | 28 | 60 | 0.2 | 60 | 4.00 | 0.8 | | | 1.0 | 2.56 | 200 | 52.5 | 1.67 | 0.58 | 2% | | | | |
| | MH1250 | MH1248 | | | | | | | | | | | | | | 0.66 | | 60 | 0.2 | 60 | 4.00 | 0.8 | | | 1.0 | 0.60 | 200 | 25.4 | 0.81 | 0.36 | 4% | | | | | |
| | MH1248 | MH1244 | | | | | | | | | | | | | | | | 1647 | 5.2 | 3315 | 3.41 | 35.9 | | | 41.2 | 0.62 | 450 | 224.5 | 1.41 | 1.06 | 18% | | | | | |
| | MH1244 | MH1243 | | | | | | | | | | | | | | | | 1647 | 5.2 | 3315 | 3.41 | 35.9 | | | 41.2 | 0.44 | 450 | 189.1 | 1.19 | 0.94 | 22% | | | | | |
| | MH1243 | MH1242 | | | | | | | | | | | | | | | | 1647 | 5.2 | 3315 | 3.41 | 35.9 | | | 41.2 | 2.39 | 450 | 440.8 | 2.77 | 1.72 | 9% | | | | | |
| | MH1242 | MHX | | | 259.14 | | | | | | | | | | 29091 | 44.77 | | | 4038 | 86.9 | 33129 | 2.44 | 256.8 | | | 343.7 | 0.64 | 675 | 672.5 | 1.88 | 1.86 | 51% | | | | |

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
Upsize from 525 mm to 675 mm
- Region Upgrade Project (ID6535) East Trunk
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 Avg. Domestic Flow = 275.0 l/c/d
 Mannings 'n' = 0.013 Infiltration = 0.286 l/s/ha
 Min. Velocity = 0.60 m/s Max. Peaking Factor = 4.00
 Max. Velocity = 3.00 m/s Min. Peaking Factor = 2.00

NOMINAL PIPE SIZE USED

| STREET | FROM MH | TO MH | LENGTH (m) | RESIDENTIAL | | | | | COMMERCIAL/INDUSTRIAL/INSTITUTIONAL | | | | | FLOW CALCULATIONS | | | | | PIPE DATA | | | | | | | | | | | | | |
|--------|---------|--------|------------|-------------|----------------|-----------|----------------|------------------|-------------------------------------|------------------|-----------|----------------|--------------------|--------------------|-------------|--------------------|--------------------|-------------------|----------------|-----------------|------------------|-------------------------|------------------|-----------|--------------------|--------------------------|--------------------------|-----------------------|------------------|------|--|--|
| | | | | AREA (ha) | ACC. AREA (ha) | UNITS (#) | DENSITY (P/ha) | DENSITY (P/Unit) | POP | ACCUM. RES. POP. | AREA (ha) | ACC. AREA (ha) | EQUIV. POP. (P/ha) | FLOW RATE (l/s/ha) | EQUIV. POP. | ACCUM. EQUIV. POP. | INFILTRATION (l/s) | TOTAL ACCUM. POP. | 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 VELOCITY (m/s) | PERCENT FULL (%) | | | |
| Area-1 | Area-1 | Area-2 | | 99.09 | 99.09 | | | | | | 5352 | 5352 | | | | | | 28.3 | 5352 | 3.22 | 54.8 | | | 83.1 | | 200 | | | | | | |
| Area-2 | Area-2 | Area-3 | | 30.00 | 129.09 | | | | | | 2366 | 7718 | | | | | | 36.9 | 7718 | 3.07 | 75.3 | | | 112.2 | | 200 | | | | | | |
| Area-4 | Area-4 | Area-3 | | 13.75 | 13.75 | | | | | | 860 | 860 | | | | | | 3.9 | 860 | 3.84 | 10.5 | | | 14.4 | | 200 | | | | | | |
| Area-3 | Area-3 | MH1293 | | 54.61 | 197.45 | | | | | | 3110 | 11688 | | | | | | 56.5 | 11688 | 2.89 | 107.4 | | | 163.9 | | 200 | | | | | | |
| Area-5 | MH1293 | MH1290 | | 49.09 | 246.54 | | | | | | 2917 | 14605 | | | | | | 70.5 | 14605 | 2.79 | 129.7 | | | 200.2 | 0.25 | 675 | 420.3 | 1.17 | 1.13 | 48% | | |
| Area-6 | MH1294 | MH1290 | | 12.60 | 12.60 | | | | | | 1134 | 1134 | | | | | | 3.6 | 1134 | 3.76 | 13.6 | | | 17.2 | 2.35 | 250 | 91.2 | 1.86 | 1.41 | 19% | | |
| | MH1290 | MH1288 | | | 259.14 | | | | | | | 15739 | | | | | | 74.1 | 15739 | 2.76 | 138.1 | | | 212.2 | 0.78 | 600 | 542.3 | 1.92 | 1.73 | 39% | | |
| | MH1288 | MH1287 | | | 259.14 | | | | | | | 15739 | 0.14 | 0.14 | 90 | 13 | 13 | 74.2 | 15752 | 2.76 | 138.2 | | | 212.4 | 0.58 | 600 | 467.6 | 1.65 | 1.59 | 45% | | |
| | MH1287 | MH1286 | | | 259.14 | | | | | | | 19178 | 1.80 | 1.94 | 90 | 162 | 175 | 74.7 | 19353 | 2.67 | 164.3 | | | 238.9 | 0.70 | 600 | 513.7 | 1.82 | 1.74 | 47% | | |
| | MH1286 | MH1285 | | | 259.14 | | | | | | | 19178 | | 1.94 | | | 175 | 74.7 | 19353 | 2.67 | 164.3 | | | 238.9 | 0.87 | 600 | 572.7 | 2.03 | 1.88 | 42% | | |
| | MH1285 | MH1284 | | | 259.14 | | | | | | | 19178 | | 1.94 | | | 175 | 74.7 | 19353 | 2.67 | 164.3 | | | 238.9 | 0.85 | 600 | 566.1 | 2.00 | 1.86 | 42% | | |
| | MH1291 | MH1284 | | | | | | | | | | 1.15 | 1.15 | 90 | 104 | 104 | 0.3 | 104 | 4.00 | 1.3 | | | 1.7 | 1.46 | 300 | 116.8 | 1.65 | 0.51 | 1% | | | |
| | MH1284 | MH1292 | | | 259.14 | | | | | | | 19178 | | 3.09 | | | 279 | 75.0 | 19457 | 2.66 | 165.0 | | | 240.0 | 0.22 | 750 | 522.2 | 1.18 | 1.13 | 46% | | |
| | MH1292 | MH1283 | | | 259.14 | | | | | | | 19178 | | 3.09 | | | 279 | 75.0 | 19457 | 2.66 | 165.0 | | | 240.0 | 1.48 | 750 | 1354.4 | 3.07 | 2.30 | 18% | | |
| | MH1283 | MH1282 | | | 259.14 | | | | | | | 19178 | 1.95 | 5.04 | 90 | 176 | 455 | 75.6 | 21622 | 2.62 | 180.2 | | | 255.8 | 0.77 | 600 | 538.8 | 1.91 | 1.83 | 47% | | |
| | MH1282 | MH1279 | | | 259.14 | | | | | | | 21167 | | 5.04 | | | 455 | 75.6 | 21622 | 2.62 | 180.2 | | | 255.8 | 0.88 | 600 | 576.0 | 2.04 | 1.89 | 44% | | |
| | MH1279 | MH1275 | | | 259.14 | | | | | | | 21167 | | 5.04 | | | 455 | 75.6 | 21622 | 2.62 | 180.2 | | | 255.8 | 0.22 | 675 | 394.3 | 1.10 | 1.16 | 65% | | |
| | MH1262 | MH1263 | | | | | | | | | | 1.74 | 1.74 | 90 | 157 | 157 | 0.5 | 157 | 4.00 | 2.0 | | | 2.5 | 0.85 | 250 | 54.8 | 1.12 | 0.55 | 5% | | | |
| | MH1263 | MH1265 | | | | | | | | | | 515 | 1.74 | | | | 157 | 0.5 | 672 | 3.90 | 8.4 | | | 8.8 | 0.26 | 250 | 30.3 | 0.62 | 0.53 | 29% | | |
| | MH1265 | MH1264 | | | | | | | | | | 515 | 2.24 | 90 | 45 | 202 | 0.6 | 717 | 3.89 | 8.9 | | | 9.5 | 1.00 | 250 | 59.5 | 1.21 | 0.88 | 16% | | | |
| | MH1264 | MH1266 | | | | | | | | | | 515 | 2.24 | | | 202 | 0.6 | 717 | 3.89 | 8.9 | | | 9.5 | 0.56 | 300 | 72.4 | 1.02 | 0.71 | 13% | | | |
| | MH1266 | MH1267 | | | | | | | | | | 515 | 2.24 | | | 202 | 0.6 | 717 | 3.89 | 8.9 | | | 9.5 | 0.58 | 300 | 73.6 | 1.04 | 0.72 | 13% | | | |
| | MH1269 | MH1268 | | | | | | | | | | 0.30 | 0.30 | 90 | 27 | 27 | 0.1 | 27 | 4.00 | 0.3 | | | 0.4 | 0.44 | 300 | 64.1 | 0.91 | 0.24 | 1% | | | |
| | MH1268 | MH1267 | | | | | | | | | | 0.30 | 0.30 | | | 27 | 0.1 | 27 | 4.00 | 0.3 | | | 0.4 | 0.36 | 250 | 35.7 | 0.73 | 0.19 | 1% | | | |
| | MH1267 | MH1270 | | | | | | | | | | 515 | 8.74 | 11.28 | 90 | 787 | 1016 | 3.2 | 1531 | 3.67 | 17.9 | | | 21.1 | 0.37 | 300 | 58.8 | 0.83 | 0.75 | 36% | | |
| | MH1270 | MH1271 | | | | | | | | | | 4055 | 2.92 | 14.20 | 90 | 263 | 1279 | 4.1 | 5334 | 3.22 | 54.6 | | | 58.7 | 0.45 | 300 | 64.9 | 0.92 | 1.04 | 91% | | |
| | MH1271 | MH1272 | | | | | | | | | | 6771 | 1.24 | 15.44 | 90 | 112 | 1391 | 4.4 | 8162 | 3.04 | 79.0 | | | 83.4 | 0.38 | 300 | 59.6 | 0.84 | 0.96 | 140% | | |
| | MH1272 | MH1273 | | | | | | | | | | 6771 | | 15.44 | | | 1391 | 4.4 | 8162 | 3.04 | 79.0 | | | 83.4 | 0.60 | 300 | 74.9 | 1.06 | 1.21 | 111% | | |
| | MH1273 | MH1274 | | | | | | | | | | 8071 | | 15.44 | | | 1391 | 4.4 | 9462 | 2.98 | 89.7 | | | 94.1 | 0.52 | 300 | 69.7 | 0.99 | 1.12 | 135% | | |
| | MH1274 | MH1275 | | | | | | | | | | 8071 | | 15.44 | | | 1391 | 4.4 | 9462 | 2.98 | 89.7 | | | 94.1 | 0.85 | 300 | 89.2 | 1.26 | 1.44 | 106% | | |
| | MH1275 | MH1276 | | | 259.14 | | | | | | | 29238 | | 20.48 | | | 1846 | 80.0 | 31084 | 2.46 | 243.6 | | | 323.6 | 0.66 | 675 | 682.9 | 1.91 | 1.83 | 47% | | |
| | MH1276 | MH1277 | | | 259.14 | | | | | | | 29238 | | 20.48 | | | 1846 | 80.0 | 31084 | 2.46 | 243.6 | | | 323.6 | 1.47 | 675 | 1019.2 | 2.85 | 2.48 | 32% | | |
| | MH1277 | MH1280 | | | 259.14 | | | | | | | 29238 | 0.66 | 21.14 | 90 | 60 | 1906 | 80.2 | 31144 | 2.46 | 244.0 | | | 324.1 | 1.45 | 675 | 1012.2 | 2.83 | 2.46 | 32% | | |
| | MH1280 | MH1278 | | | 259.14 | | | | | | | 29238 | | 21.14 | | | 1906 | 80.2 | 31144 | 2.46 | 244.0 | | | 324.1 | 1.67 | 675 | 1086.3 | 3.04 | 2.64 | 30% | | |
| | MH1278 | MH1281 | | | 259.14 | | | | | | | 29238 | | 21.14 | | | 1906 | 80.2 | 31144 | 2.46 | 244.0 | | | 324.1 | 0.33 | 675 | 482.9 | 1.35 | 1.42 | 67% | | |
| | MH1281 | MH1247 | | | 259.14 | | | | | | | 29238 | | 21.14 | | | 1906 | 80.2 | 31144 | 2.46 | 244.0 | | | 324.1 | 1.08 | 675 | 873.6 | 2.44 | 2.20 | 37% | | |
| | MH1247 | MH1246 | | | 259.14 | | | | | | | 29238 | | 21.14 | | | 1906 | 80.2 | 31144 | 2.46 | 244.0 | | | 324.1 | 0.92 | 675 | 806.3 | 2.25 | 2.10 | 40% | | |
| | MH1246 | MH1245 | | | 259.14 | | | | | | | 29238 | | 21.14 | | | 1906 | 80.2 | 31144 | 2.46 | 244.0 | | | 324.1 | 0.54 | 675 | 617.7 | 1.73 | 1.71 | 52% | | |
| | MH1245 | MH1240 | | | 259.14 | | | | | | | 29238 | | 21.14 | | | 1906 | 80.2 | 31144 | 2.46 | 244.0 | | | 324.1 | 6.53 | 675 | 2148.0 | 6.00 | 4.32 | 15% | | |
| | MH1240 | MH1239 | | | 259.14 | | | | | | | 29238 | | 21.14 | | | 1906 | 80.2 | 31144 | 2.46 | 244.0 | | | 324.1 | 0.89 | 675 | 793.0 | 2.22 | 2.06 | 41% | | |
| | MH1234 | MH1235 | | | | | | | | | | 1.75 | 1.75 | 90 | 158 | 158 | 0.5 | 158 | 4.00 | 2.0 | | | 2.5 | 2.02 | 200 | 46.6 | 1.48 | 0.77 | 5% | | | |
| | MH1235 | MH1236 | | | | | | | | | | 2.21 | 3.96 | 90 | 199 | 357 | 1.1 | 357 | 4.00 | 4.5 | | | 5.7 | 0.49 | 200 | 23.0 | 0.73 | 0.59 | 25% | | | |
| | MH1236 | MH1237 | | | | | | | | | | | 3.96 | | | | 357 | 1.1 | 357 | 4.00 | 4.5 | | | 5.7 | 0.47 | 250 | 40.8 | 0.83 | 0.58 | 14% | | |
| | MH1237 | MH1238 | | | | | | | | | | 0.45 | 4.41 | 90 | 41 | 398 | 1.3 | 398 | 4.00 | 5.1 | | | 6.3 | 0.46 | 300 | 65.6 | 0.93 | 0.59 | 10% | | | |
| | MH1238 | MH1239 | | | | | | | | | | | 4.41 | | | | 398 | 1.3 | 398 | 4.00 | 5.1 | | | 6.3 | 1.29 | 300 | 109.8 | 1.55 | 0.84 | 6% | | |
| | MH1239 | MH1241 | | | 259.14 | | | | | | | 29238 | 0.96 | 26.51 | 90 | 87 | 2391 | 81.7 | 31629 | 2.45 | 247.1 | | | 328.8 | 0.29 | 675 | 452.7 | 1.26 | 1.35 | | | |

