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January 18, 202549462

MTE File No.: 49999-200

Development Services  
City of London  
300 Dufferin Avenue  
London, ON N6A 4L9

Attention: Development Services

**RE: PRELIMINARY SITE SERVICING AND STORMWATER MANAGEMENT BRIEF  
COMMERCIAL DEVELOPMENT  
4452 WELLINGTON ROAD SOUTH**

This report has been prepared to outline site servicing and Stormwater Management (SWM) strategies based on City of London (City) requirements and existing infrastructure in the vicinity of the subject lands at 4452 Wellington Road South.

## **1.0 Introduction**

MTE was retained by 2858637 Ontario Inc. (c/o Navdeep Singh) to complete a preliminary Site Servicing Brief in support of a Zoning By-law Amendment (ZBA) of the above noted property. The total size of the property located at 4452 Wellington Road South is approximately 7.94 ha. The bigger portion of the property (approximately 5.09 ha) is proposed to be a truck transport terminal and is currently in the process of site plan approval. Therefore, this brief is proposed to support the development of the western portion of the lands for service/retail commercial uses.

The lands subject to the future ZBA application (the 'Site') measures approximately 2.85 ha. The existing site is currently vacant and is bounded by agricultural land to the east (future truck transport terminal), Dingman Drive to the south, existing commercial to the North and Wellington Road South to the west.

A total of 2.85 ha of land within the western portion of the Site is to be retained for future commercial uses. The Conceptual Development Plan (for illustrative purposes) prepared by MHBC proposes three retail units, combined drive aisles and surface parking and one common street access to Wellington Road South. The commercial buildings conceptualized in this plan yield a total commercial gross floor area of 6,462 m<sup>2</sup>. The conceptual development plan (by MHBC) is attached to this brief.

## **2.0 Water Distribution**

Water supply for the site is available via the municipal 300mm watermain on Wellington Road South. Based on the design HGL for the area (301.8masl) and the range of existing elevations across the site (~263.25masl), the expected static pressure for the site will be approximately around 55psi which falls within the City's preferred operating range for domestic uses (40-80psi).

## **2.1 Domestic Water**

There are no conceptual layouts for the proposed developments at this time so the City's typical population estimate for commercial and industrial sites (100 persons/ha) were used for the purposes of this analysis, typical daily consumption rate of 255L/person/day (0.003 L/s/person), and peak hour demand factor (7.8), a maximum flow rate of  $2.91 \text{ ha} \times 100 \text{ persons/ha} \times 0.003 \text{ L/s/person} \times 7.8 = 6.81 \text{ L/s}$  was calculated for the development lands.

## **2.2 Water Quality**

Detailed modeling of the proposed internal watermain will be required at the site plan approval stage to determine if there are any water quality concerns.

## **2.3 Fire Flow**

There is an existing fire hydrant on Wellington Road South in front of the existing 'Trek Bicycle' (City Hydrant No. 14079) and existing hydrant No.2949, approximately 203 m to the north from Hydrant 14079. These hydrants are located on the west side of the Wellington Road South (opposite side of the road from proposed development). Therefore, we believe that these hydrants cannot be used for fire protection of proposed commercial buildings. In addition, our review of the preliminary commercial buildings locations indicates that the existing 2 hydrant on Wellington Road South are more than 90 m away from the entire building footprints (only portion of buildings that face Wellington Road South are within the 90 meters from the existing hydrants).

In addition, very preliminary modeling was completed to confirm that adequate firefighting can be provided for the proposed development considering onsite fire hydrant. Simple modeling was performed considering onsite fire hydrant, a HGL of 301.8m and the Ontario Building Code's(OBC) largest fire flow requirement of 150L/s. Preliminary modeling results confirm that is feasible to provide onsite fire fighting for each proposed building while residual pressure exceeds required minimum residual pressure of 20psi and velocity is below City's maximum allowable fire flow velocity of 2.4m/s. Note that sprinkler system may be proposed for commercial building so fire flow requirements will be much lower than 150L/s, conservatively considered for this preliminary assessment.

Therefore, no concerns with meeting fire flow demands for the proposed development are anticipated. However, firefighting requirements will be further discussed with City. Detailed modeling results including modeling schematic and proposed water distribution system layout will be provided during the detailed design.

## **3.0 Sanitary Servicing**

### **3.1 Existing Sanitary Servicing**

It was noted in the Pre-Application Consultation comments that the closest sanitary sewer available is on Wellington Road South just north of the site. This sewer has been analyzed to determine if capacity exists to accept the proposed development lands.

### **3.2 Existing Sanitary Sewer Contribution**

An analysis of the existing 200mm sanitary sewer up to the existing 450mm trunk sewer which runs west through the existing commercial plaza on the southwest corner of Wellington Road South and Roxburgh Road is presented below.

City of London Standards and the Ontario Building Code (OBC) Table 8.2.1.3B were used to determine population and demand requirements for the existing lands contributing to the 200mm sanitary sewer. Table 1 below and the attached figure shows the populations estimated for each contributing development. The City as-constructed plans did not provide enough information to determine if the 'Value Village' Plaza and "Trek Bicycle" Building are contributing to the existing sewer so they have been included in this analysis to ensure a conservative approach has been taken.

**Table 1 – Existing Population**

Description	Site Area (Hectares)	Floor Area (m <sup>2</sup> )	Sewage Design Flow		Daily Flow (L/day)	Equivalent Pop. (Based on CoL. flow 230 L/cap/day)
			Reference	Rate		
Existing Fast-food restaurant (EX1)	-	464	OBC 8.2.1.3.B - Food Service Operation	60L/day/seat (estimated 150)	9000	39
Existing Store (EX2)	-	1019	OBC 8.2.1.3.B - stores	5L/day/1.0m <sup>2</sup> of floor area	5095	22
Existing vacant commercial (EX3)	1.9	-	C.O.L. Design Specifications	100p/hectare		190
Existing commercial plaza (EX4)	-	11687	OBC 8.2.1.3.B - stores	5L/day/1.0m <sup>2</sup> of floor area	58435	254
Existing commercial plaza (EX5)	-	1413	OBC 8.2.1.3.B - stores	5L/day/1.0m <sup>2</sup> of floor area	7065	31
					<b>Total:</b>	<b>505</b>

Using the populations listed above and estimating contributing areas from available parcel fabric, the existing contributing capacity is determined to be 6.64L/s. See **Table 2** for details.

**Table 2 – Existing Sanitary Contribution to 200mm Sanitary Sewer**

Hectares	Total Population	Peking Factor	Infiltration (L/s)	Sewage (L/s)	Total (L/s)
7.70	505	3.97	0.77	5.87	6.64

### 3.3 Proposed Sanitary Sewer Contribution

The proposed development consists of 2.85 ha commercial development. Using the City of London standards of 100 people per hectare a population of 285 people has been estimated for the proposed lands.

In terms of addressing municipal sewer capacity, the current City of London standard per capita flow of 230L/day was used to determine total flow from existing and proposed developments

flowing into the existing 200mm sanitary sewer. Total proposed flows entering the 200mm sewer are shown in **Table 3** below.

**Table 3 – Proposed Sanitary Contribution to 200mm Sanitary Sewer**

Hectares	Total Population	Peking Factor	Infiltration (L/s)	Sewage (L/s)	Total (L/s)
10.55	790	3.86	1.06	8.93	9.99

From **Table 2 & 3** above, the proposed contribution capacity increases the existing conditions by 3.35L/s.

### 3.4 Downstream Sanitary Sewer Capacity Review

Based on the as-built drawings provided by the City (drawing 12,796 (2-2)), the current 200mm sanitary sewer on Wellington Road has a slope of 0.44% at the run prior to entering the 450mm existing trunk sewer. This calculates to a capacity of 21.76L/s.

**Table 4 – Existing Sanitary Sewer Capacity**

Pipe Size (mm)	Manning Coefficient	Slope (%)	Capacity (L/s)	Velocity (L/s)
200	0.13	0.44	21.76	0.69

As shown in **Table 4**, the existing 200mm sanitary sewer north of the proposed development has adequate capacity (21.76L/s) to receive flows from the proposed development as well as the existing developments that it services (9.99L/s).

Proposed sanitary servicing is shown on **Figure 1** and **Figure 2**.

## 4.0 Stormwater Management and Storm Servicing

The preliminary Stormwater Management (SWM) strategy prepared in support of the proposed ZBA applications is presented below. More detailed information will be prepared during the detailed design stage of the site plan approval process.

### 4.1 Site SWM Criteria

The subject land preliminary SWM criteria for the proposed development was determined based on the following:

- Preliminary SWM criteria for entire property of approximately 7.94ha at 4452 Wellington Road South (including truck transfer development [east portion of the property] and proposed commercial development [west portion of the property]): Attenuation of the post-development peak flows for the 2-year through 100-year to the allowable flow rate of 296L/s as per the storm sewer design sheet accepted by City of London (Dingman Drive Improvements Project – Project No. 60656496).
- The “Proposed Truck Transfer Site Development Stormwater Management Report” by MTE, dated January 10, 2023.

- City of London Design Specifications and Requirements Manual, March 2022 (DS & RM).

### **Water Quality Treatment**

Provide Enhanced Level of Water Quality Treatment, to provide 80% of TSS removal from the post-development site runoff as required by City and in accordance with the Stormwater Management Planning and Design Manual (SMPDM) MECP, 2003.

### **Water Quantity Control**

- Control the post-development peak runoff from the proposed commercial development (2.845ha) for all design events up to and including the 100-year storm to the allowable flow of **245L/s**. The peak flow for commercial development was determined as follows: **296L/s** (total allowable storm flows for truck transfer development [east portion of the property] + proposed commercial development [west portion of the property]) – **51L/s** (total controlled + uncontrolled flow from truck transfer development) = **245L/s** (allowable storm flows from commercial development [west portion of the property]).
- For more details about stormwater quantity control (allowable storm flow rate) refer to City of London Dingman Drive Improvements Project (Project No. 60656496) and “Proposed Truck Transfer Site Development Stormwater Management Report” by MTE (dated January 10, 2024), currently under the review by City of London.
- Safely convey 250-year storm as outlined in the DS & RM.

## **4.2 Existing Conditions**

Presently, the majority of 2.845ha comprised of agricultural land and wooded area.

The “Proposed Truck Transfer Site Development Stormwater Management Report” by MTE, dated January 10, 2024, and relevant MTE Grading, Servicing and Erosion Control Plan (Drawing C2.1), dated January 10, 2024 are currently under the review by City of London. As presented in these 2 documents, the west portion of the site (future commercial development of 2.845ha) corresponds to storm Catchment 203. Based on the existing conditions, the storm flows from Catchment 203 drains to the existing ditch inlet catchbasin (located in the vicinity of southwest corner of the site) and ultimately is conveyed to the existing 900mm storm sewer on Wellington Road

## **4.3 Proposed Conditions**

A total of 2.845ha of land within the western portion of the Site is to be retained for future commercial uses. The Conceptual Development Plan (for illustrative purposes) prepared by MHBC proposes three retail units, combined drive aisles and surface parking, one common street access to Wellington Road South as well as landscaped areas. The commercial buildings conceptualized in this plan yield a total commercial gross floor area of 6,462m<sup>2</sup>. The conceptual development plan (by MHBC) is attached to this brief. Based on MTE’s review of the proposed preliminary commercial development, the total imperviousness is estimated to be 85% (conservatively assumed).

### **Preliminary SWM Strategy**

The preliminary SWM strategy was considered to mitigate negative impacts (increased storm runoff and amount of total suspended solids) caused by proposed development. Based on the City of London Dingman Drive Improvements Project (Project No. 60656496) and “Proposed Truck Transfer Site Development Stormwater Management Report” by MTE, dated January 10, 2024, the future commercial site development (2.845ha) is to be controlled for all design events (including the 100-year storm) to the allowable flow of 245L/s.

The preliminary SWM strategy is as following: Runoff from minor storm events will be collected by proposed local storm sewers, conveyed for quantity control (5-year to 100-year storm events to be controlled to 245L/s) and conveyed to oil/grit separators (for quality SWM control) prior to outletting to the 600mm Dingman Drive storm sewer. The controlled storm flow will be ultimately conveyed to Wellington Rd 900mm storm sewer.

As shown on **Figure 3**, two outlet options were considered for the preliminary SWM strategy assessment.

As per **Option 1**, the controlled flows from the site is to be conveyed to the west to the existing inspection MH at the truck transport terminal site. The storm flows are further conveyed via existing 450mm storm sewer (constructed for the truck transport terminal site) to the MH18A on Dingman Drive and further to the 600mm storm sewer. The existing 450mm storm sewer at 2.13% slope has sufficient capacity to conveyed total controlled storm flows of 296L/s (from truck transport terminal site [east side of the property] and commercial development site [west side of the property] to the Dingman Drive storm Sewer).

As per **Option 2**, the controlled flow from the subject is to be conveyed to the south to the existing 600mm storm sewer on Dingman Drive. This option would require cut at Dingman Drive and additional manhole.

Our preliminary assessment indicates that both options are feasible. However, the site outlet will be further discussed with the City and detailed information will be provided during the SPA process.

The surface outflow from the proposed SWM pond is not expected during the 100-year storm. The 250-year storm flows (if any) will be safely conveyed to Dingman Creek via Wellington Rd. S. R.O.W.

The presented preliminary storm servicing schematic on **Figure 2 and Figure 3** was prepared for general presentation purpose. Detailed storm servicing drawings and calculations will be provided during the detailed design (SPA process).

### **SWM Quantity Control**

It was assumed for proposed conditions (preliminary) that the post-development Catchment 203 (commercial development of 2.845ha) will be developed as per Conceptual Development Plan prepared by MHBC, having approximately 85% (conservative approach) of impervious area. The preliminary storage assessment was computed using hydrologic modelling software VO6. Based on MTE conceptual modelling, approximately 1,000 m<sup>3</sup> of storage is required to control storm flows from the proposed development to the required outflow rate of 245 L/s (or below). The required storage will be provided as a surface storage, underground storage (structures, pipes and SWM Chambers) and building roofs (if roofs are flat).

Detailed SWM strategy and modeling will be provided during the SPA process for the commercial area (west portion of the property). In addition, entire subject site (commercial

development [west portion of the site] and truck transfer development [east portion of the site]) will be remodelled during SPA process to confirm the total control from the subject site to the Dingman Rd. / Wellington Rd. storm sewer system will be less than allowable flow of 296L/s.

### **SWM Quality Control**

As mentioned above, the required 'Enhanced Level' quality control (80% of TSS removal) will be provided by an OGS.

The storm flows from the subject will be conveyed to the proposed CDS Stormwater Treatment Unit Model PMSU 2020\_5 oil/grit separator (or equivalent) prior to discharging to the Wellington St. storm sewer. The preliminary information provided by Echelon Environmental Inc. show that this model provides 83.3% TSS removal, which exceeds the required 'Enhanced Level' (80% TSS removal) of stormwater quality control and treats around 97% of annual rainfall.

The detailed OGS sizing calculations and drawings will be provided during the detailed design.

### **Infiltration, Low Impact Development (LID) and Water Balance Consideration**

The Geotechnical Report completed by MTE for the truck transfer development to the east states the following: "It is our opinion that at-source infiltration of stormwater runoff is not feasible for this development due to the high silt and clay content of the native soils and saturated granular soils. In-situ infiltration testing should be performed in the exact areas of LID measures for accurate infiltration rates." Therefore, it is not expected that west portion of the site will have soils suitable for infiltration. However, geotechnical investigation for the west portion of the site will be provided during SPA process. Assessment of potential LID features application will be discussed in the future when this information is available (during the SPA process) for the commercial area development.

The Water Balance Calculation will be updated during commercial area SPA, including water balance mitigation measures.

## 5.0 Conclusions

Based on the preliminary information and analysis, it is feasible to provide water, sanitary and stormwater servicing for the proposed development in accordance with City of London, UTRCA and MECP requirements. In addition, preliminary SWM analysis indicates that is feasible to provide required quantity and quality SWM for the proposed development.

Please contact us should you have any comments or questions,

Yours Truly,  
**MTE Consultants Inc.**

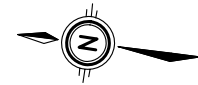
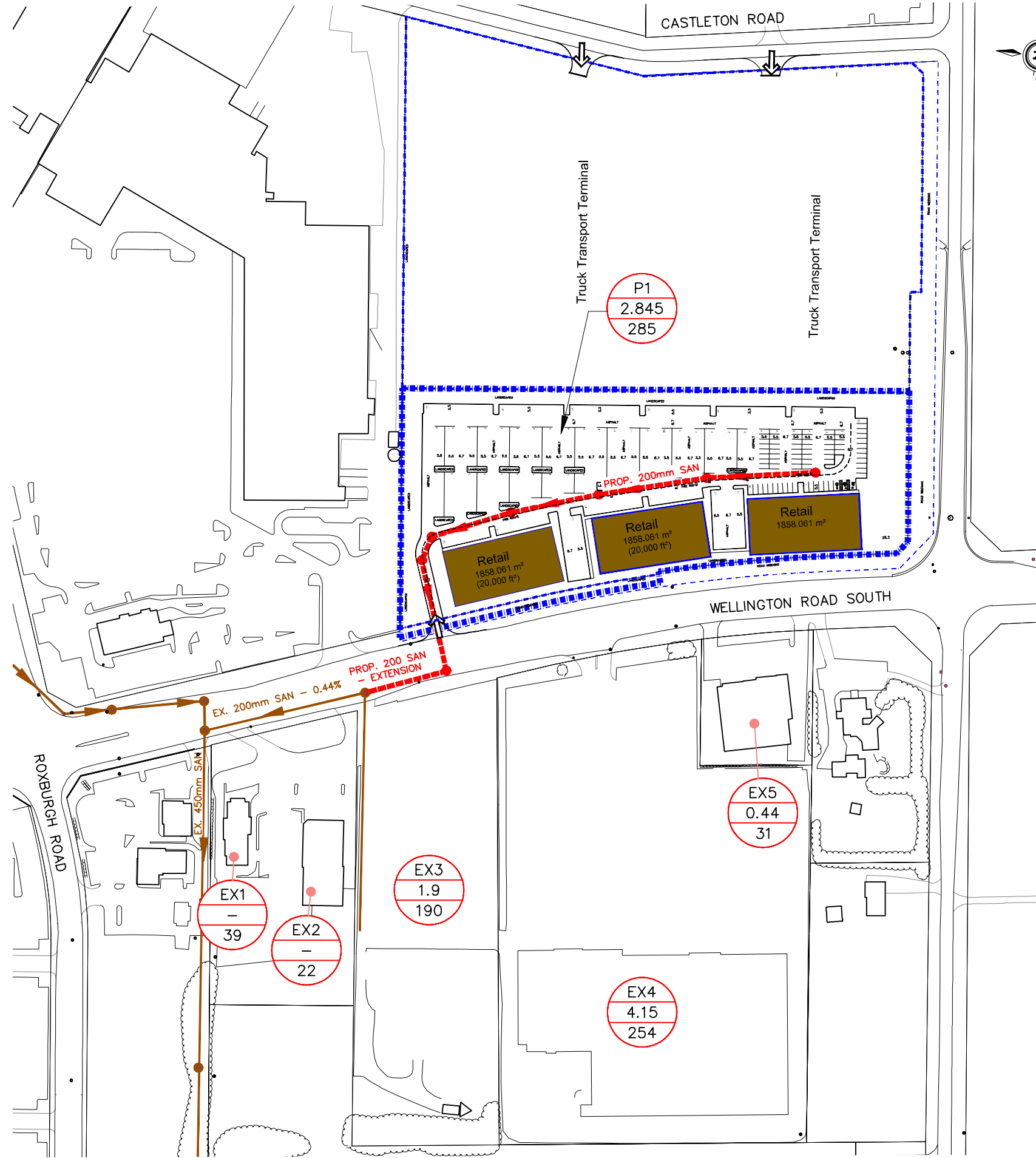


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# LEGEND

- - - - - SITE SANITARY DRAINAGE AREA
- — — — — EXISTING SANITARY SEWER
- - - - - CONCEPTUAL PROPOSED SANITARY SEWER EXTENSION

P1	—	ID No.
2.845	—	AREA (Ha)
285	—	POPULATION

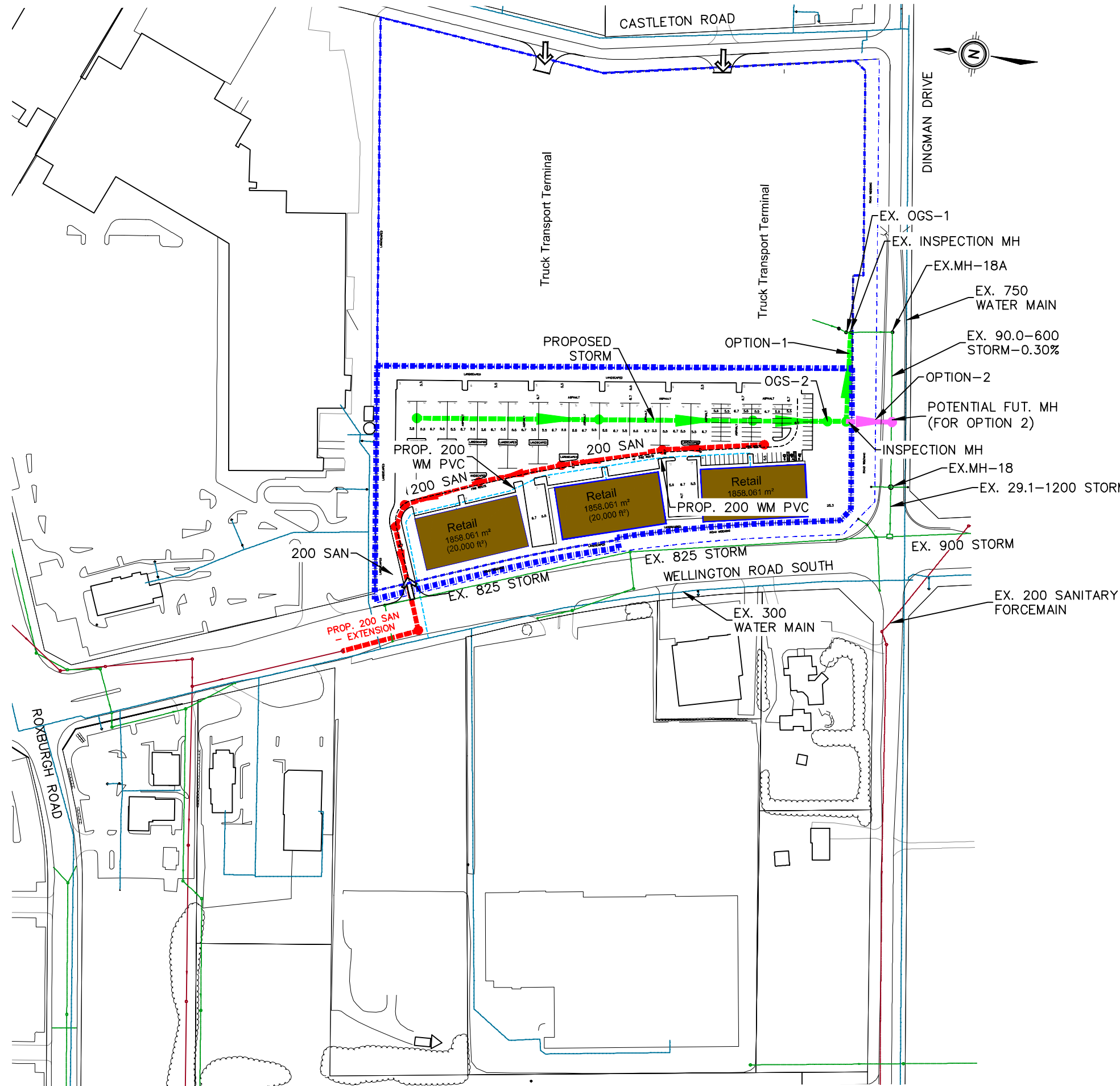


**MTE**  
Engineers, Scientists, Surveyors

PROJECT  
**4452 WELLINGTON RD. S. COMMERCIAL DEVELOPMENT**


TITLE  
**SANITARY CAPACITY ANALYSIS FIGURE**

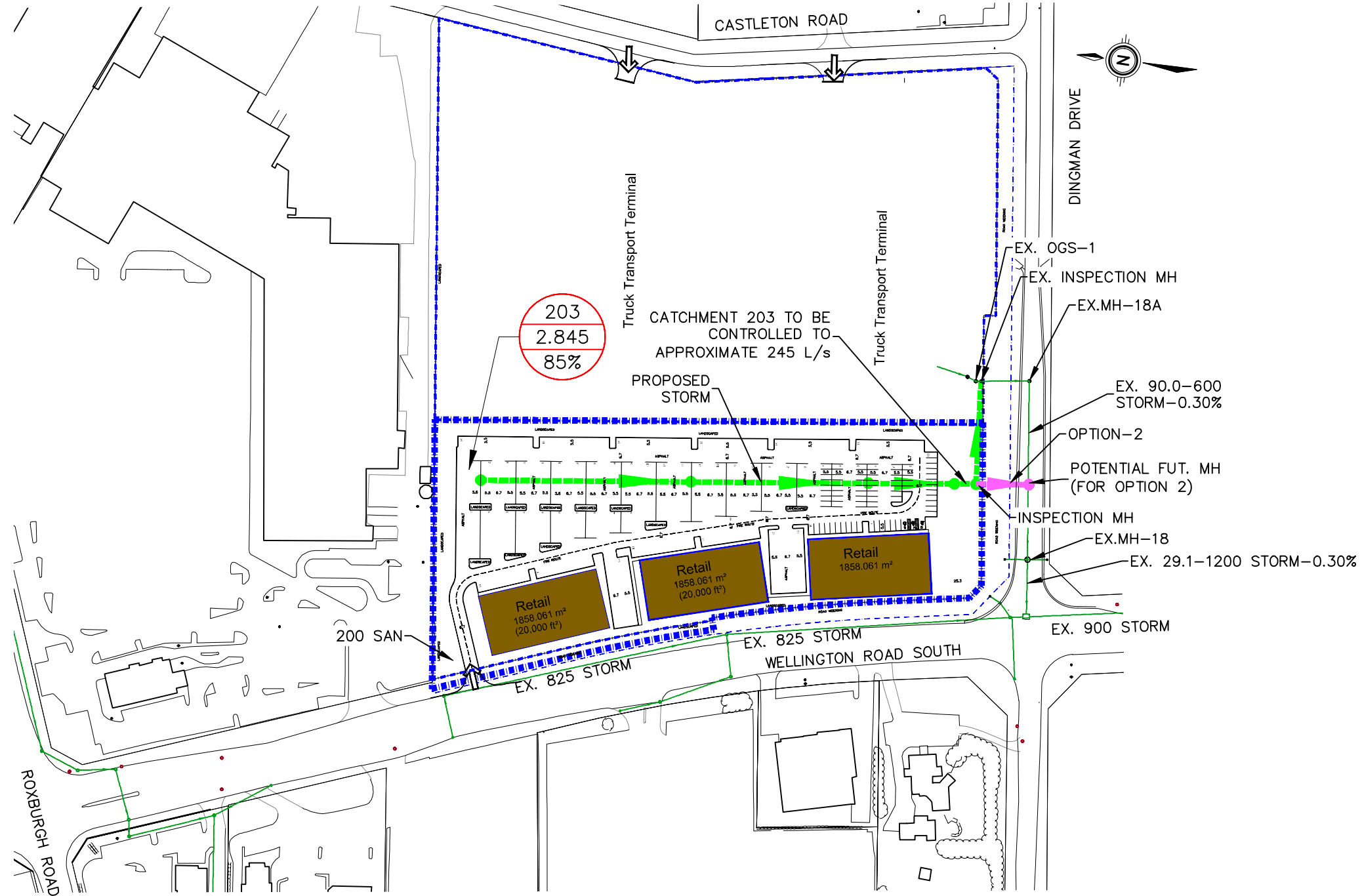
Drawn	JAC	Scale	1:2500	<b>FIG.1</b>
Checked	DS	Project No.	49999-200	
Date	2024-1-17	Rev No.	0	



### LEGEND

- - - - - SITE AREA
- EXISTING SANITARY SEWER
- - - - - PROPOSED SANITARY SEWER EXTENSION
- - - - - PROPOSED STORM SEWERS (OPTION 1)
- - - - - PROPOSED WATER MAIN
- EXISTING SANITARY
- EXISTING WATER MAIN
- - - - - EXISTING STORM SEWER
- - - - - PROPOSED STORM SEWERS (OPTION 2)

 Engineers, Scientists, Surveyors		
PROJECT <b>4452 WELLINGTON RD. S. COMMERCIAL DEVELOPMENT</b>		
TITLE <b>PROPOSED AND EXISTING SERVICING</b>		
Drawn JAC	Scale 1:2500	Figure
Checked DS	Project No. 49999-200	FIG.2
Date 2024-1-17	Rev No. 0	



203  
2.845  
85%

203  
2.912  
85%

### LEGEND

- ▬▬▬▬▬▬ SITE STORM DRAINAGE AREA
- ▬▬▬▬▬▬ PROPOSED STORM SEWERS
- - - - - EXISTING STORM SEWER
- ▬▬▬▬▬▬ PROPOSED STORM SEWERS (OPTION 2)

- 203 — SUB-CATCHMENT No.
- 2.912 — AREA (Ha)
- 85% — IMPERVIOUS AREA (%)



PROJECT  
**4452 WELLINGTON RD. S.  
COMMERCIAL DEVELOPMENT**  
TITLE  
**PRELIMINARY SWM AND  
STORM SERVICING**

Drawn	JAC	Scale	1:2500	Figure
Checked	DS	Project No.	49999-200	
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**FIG.3**