



**DeSantis (2489752 Ontario Inc.)
Proposed Mixed-Use Development
Functional Servicing Report**

**526 Bay Street
Midland ON
23-6998**

September 29, 2026

Submitted By:

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Hard Copies	PDF	Email	Organization Name
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0	1	Yes	HaNK Architecture + Interiors Inc.

Record of Revisions

Revision	Date	Description
1.0	December 2024	Initial Submission to Owner
2.0	July 2026	Submission to Owner (Residential Only)
3.0	September 2026	Submission to Owner (Mixed Use)
4.0	September 2026	Submission to Town for Site Plan Approval

Prepared By:

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Reviewed By:

David W. Lalonde, P. Eng.



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1.0 Introduction

Quantum Engineering Inc. (Quantum) has been retained by Louie DeSantis (2489752 Ontario Inc.) to provide civil engineering services in support of a proposed mixed-use development located at 526 Bay Street in the Town of Midland. The proposed development consists of a four-storey residential apartment building featuring ground-floor residential amenity space, commercial units, indoor parking, and fifteen (15) residential apartment units along with one (1) unit designated for the building manager across the upper floors.

This Functional Servicing Report (FSR) has been prepared to evaluate and summarize the potential impacts of the proposed development on existing municipal servicing infrastructure, including water distribution, sanitary sewers, and stormwater management systems. This report is submitted to the Town of Midland in support of a Site Plan Approval (SPA) application for the subject property.

2.0 Background

1. Existing Conditions and Site Description

The subject property comprises a 0.152-hectare (ha) parcel of land situated on the east side of First Street, bound between Bayshore Drive and Bay Street in the Town of Midland. The site is currently developed and operated as a paved surface parking lot.

Topographically, the subject lands display a relatively flat terrain with minimal elevation change across the site, exhibiting a total site relief of approximately 0.5 metres. The general site location and boundary context are shown on Figure 1.



Figure 1: Site Location

2. Proposed Development

The proposed development entails the construction of a four-storey mixed-use residential and commercial building configured as follows:

- Ground Floor: Approximately 343 m² of commercial space, 576 m² of interior parking, and 145 m² of shared residential common/amenity area.
- Second Floor: Approximately 715 m² of residential space comprising six (6) apartment units and one (1) building manager unit, alongside 135 m² of common/auxiliary space.
- Third Floor: Approximately 666 m² of residential space comprising six (6) apartment units, along with 185 m² of common/auxiliary space.
- Fourth Floor: Approximately 469 m² of residential space comprising three (3) apartment units, along with 159 m² of common/auxiliary space.

Vehicular ingress and egress to the internal ground-floor parking area will be provided via a two-way access driveway off First Street. Outdoor site amenities include a designated patio and landscaped grass area located adjacent to the ground-floor amenity space, with the remainder of the site allocated to pedestrian walkways, site access, and hardscaping. The overall layout and configuration of the site are depicted on the Site Plan (Drawing C1).

3.0 Site Access

Vehicular access to the 15 interior parking spaces (including 1 barrier-free stall) is provided via a two-way driveway off First Street. Per Sections 4.1.3 and 4.1.10.1 of the Town of Midland Zoning By-law, zero minimum parking or loading spaces are mandated within the Downtown Core (DC) zone; the proposed parking layout satisfies or exceeds all site operational requirements. Traffic impacts on surrounding roadways (First Street, Bay Street, Bayshore Drive) are expected to be negligible compared to the site's historic operation as a public surface parking lot.

4.0 Design Population

The proposed development consists of one (1) three-bedroom apartment unit, fourteen (14) two-bedroom apartment units, and one (1) bachelor apartment unit along with several common areas and an interior parking lot. A design population of two persons per sleeping room results in a design population of sixty-four (64) persons, which will be used for capacity calculations throughout this FSR.

5.0 Water Servicing

Municipal GIS data and as-built records from the King Street rejuvenation project confirm the presence of an existing 100 mm diameter Ductile Iron and 150 mm PVC watermain within the Bay Street right-of-way.

Domestic water servicing for the subject development is proposed via a new 50 mm diameter water service

lateral connected to the existing watermain stub on Bay Street. The size, location, and condition of the existing municipal stub should be field-verified prior to construction.

Per the Town of Midland Engineering Design Standards, domestic water demand parameters are defined as follows:

- Per Capita Average Daily Flow: 450 L/day/person
- Design Population Density: 2.0 persons per Apartment Unit (assumed per bedroom to be conservative)
- Maximum Daily Demand Factor: 2.0
- Peak Hourly Demand Factor: 4.5
- Commercial Area Flow: 5 L/day/m² (per OBC 8.2.1.3.B for store)

Summary of Water Demand Calculations:

- Residential Demand (64 Persons)
 - Average Daily Demand = 0.33 L/s
 - Maximum Daily Demand = 0.67 L/s
 - Peak Hourly Demand = 1.5 L/s
- Amenity/Commercial Space Demand (488 m²)
 - Average Daily Demand = 0.03 L/s
 - Maximum Daily Demand = 0.06 L/s
 - Peak Hourly Demand = 0.13 L/s
- Total Combined Site Demands:
 - Average Daily Demand = 0.36 L/s
 - Maximum Daily Demand = 0.72 L/s
 - Peak Hourly Demand = 1.63 L/s

The proposed 50 mm diameter domestic service lateral provides capacity in excess of the required 1.63 L/s peak hourly demand while maintaining internal flow velocities within the 0.6 – 1.5 m/s range specified in the Town's design standards.

1. Fire Flow Requirements

In accordance with the Town of Midland Engineering Design Standards, Fire Underwriters Survey (FUS) guidelines, and the Ontario Building Code (OBC), the municipal water distribution network must deliver the required fire flow under Maximum Daily Demand conditions while maintaining a minimum residual pressure of 20 psi (140 kPa). To enhance life safety and structural protection, the building will be fully equipped with an NFPA 13 automatic fire sprinkler system connected to the municipal supply line via a proposed 200 mm diameter fire service connection.

The inclusion of an NFPA 13 automatic fire suppression system permits a 30% reduction in the calculated required fire flow. Based on the building footprint, non-combustible building classification, and spatial separations, the target FUS fire flow demand is estimated to be 6,500 L/min (108 L/s).

Two fire hydrants are currently located along Bay Street near the subject property satisfying the Town's 45m maximum distance requirement from the primary Fire Department Connection (FDC) to a municipal hydrant.

Per Town standards, a formal boundary flow and pressure test will be conducted on adjacent hydrants during the detailed design phase to confirm that the Bay Street watermain can concurrently sustain the Maximum Daily Demand (0.72 L/s) plus the required FUS Fire Flow (108 L/s) at or above 20 psi residual pressure.

Given the multi-storey vertical profile of the proposed apartment building, a domestic booster pump may be required within the building's mechanical suite to ensure minimum operating pressures are maintained on the upper floors. In accordance with the Town of Midland's standards, the building's water service will include a water meter and a backflow preventer. The specific sizing and technical specifications for these components will be finalized during the detailed design phase.

Proposed water service configurations are detailed on Drawing C3.

6.0 Sanitary Servicing

Based on GIS data and as-built drawings of the King Street rejuvenation project, provided by the Town of Midland, it is our understanding that there is an existing 375mm diameter Clay sanitary sewer pipe on Bay Street. For the proposed development, we anticipate connecting into the existing sanitary sewer pipe on Bay Street via a 150mm diameter sanitary lateral.

Based on our assessment of the proposed building using the Town of Midland Engineering Design Standards (April 2024), the following design criteria and assumptions have been utilized to determine the peak sanitary design flow for the proposed development:

- Per Capita Average Daily Flow: 450 L/day/person
- Design Population Density: 2.0 persons per Apartment Unit (assumed per bedroom to be conservative)
- Commercial Area Flow Rate: 2.5 L/day/m² of Floor Area
- Wet Weather Infiltration Rate: 0.23 L/s/ha
- Maximum Harmon Peaking Factor: 4.0

Based on an estimated design population of 64 persons, the average daily residential sanitary flow is calculated at 0.33 L/s. Incorporating the 488 m² commercial and residential amenity area (0.03 L/s) and an extraneous

infiltration flow of 0.035 L/s across the 1,520.9 m² site, the total peak sanitary design flow for the proposed development is 1.45 L/s.

As per the Town of Midland Engineering Design Standards, a minimum sanitary service connection of 150mm diameter should be more than adequate to accommodate the peak design flow noted above. A minimum slope of 2.0% should be provided for the sanitary connection lateral to meet minimum velocity requirement of 0.6m/s.

The Town of Midland is requested to confirm adequate capacity within the existing sanitary collection and treatment system using the above-noted design criteria and flows for the subject property.

Details related to the proposed sanitary service have been provided on Drawing C3.

7.0 Stormwater Management

In general surface stormwater runoff will either discharge uncontrolled from the site to the adjacent Town municipal storm sewer system, or through a proposed catch basin located on-site, which will connect into the existing Town municipal storm sewer system on Bayshore Drive through an existing 450mm diameter stormwater pipe located on-site.

Because the post-development site layout results in a net reduction of total impervious surface compared to the pre-development asphalt parking lot condition, stormwater quantity controls are not required.

Where possible, water quality treatment will be achieved prior to off-site discharge through:

- Goss Traps installed within all proposed on-site catch basins.
- An internal Oil-Grit Separator (OGS) unit servicing the interior ground-floor parking area.

Complete details on the stormwater management design can be found in the Stormwater Management Report, prepared by our office and submitted concurrently with this FSR as part of this SPA application package.

8.0 Site Grading

The subject site displays a relatively flat existing relief with less than 0.5 m of total elevation change across the 0.152 ha footprint. The proposed site grading strategy has been designed to achieve the following civil design objectives:

- Match existing boundary elevations seamlessly along First Street, Bay Street, and Bayshore Drive.
- Maintain safe, positive overland drainage away from the proposed building envelope toward on-site catch basins and adjacent public rights-of-way.

- Ensure barrier-free pedestrian access routes and compliant slope gradients for the two-way vehicular entrance off First Street.

Detailed site grading specifications, top-of-grade elevations, and slope ratios are depicted on Drawing C2.

9.0 Erosion and Sediment Control

To prevent soil migration, sediment transport, and off-site turbidity during construction, an Erosion and Sediment Control (ESC) plan will be implemented in accordance with Town of Midland standards and provincial guidelines prior to ground disturbance.

Key ESC mitigation measures include:

- Installation of heavy-duty silt fencing along the entire perimeter of the subject site.
- Insertion of geotextile sediment traps/filter bags inside all adjacent municipal catch basins on First Street, Bay Street, and Bayshore Drive.
- Establishment of a stabilized gravel mud-mat construction entrance off First Street to minimize off-site tracking of soil onto municipal roadways.
- Prompt stabilization and re-vegetation or paving of exposed soil surfaces following rough grading work.

Refer to Drawing C4 for the complete sequence and layout of proposed ESC controls.

10.0 Utilities

Based on preliminary consultation with applicable utility companies, the following information has been determined related to the subject property:

- **Gas:** An existing 4" coated steel natural gas main is located along Bay Street adjacent to the property;
- **Telecommunication:** An existing Bell Canada conduit infrastructure exists on Bay Street parallel to Borsa Lane and terminates at the property line; and
- **Electrical:** Existing hydro infrastructure comprises overhead poles and wires bisecting the site. Newmarket-Tay Power Distribution Ltd. requires the removal of these overhead lines and the establishment of a new underground connection routing along First Street to Bay Street and Borsa Lane.

Therefore, it is anticipated that the applicable Enbridge Gas and Bell Canada services will be available for connection of the proposed development. An extensive amount of work will be required to relocate the existing hydro service and provide a new hydro service to the subject property. Consultation and coordination with Newmarket-Tay Power Distribution Ltd. is on-going for this property and will be finalized as part of the detailed design phase for the building. Refer to Drawing E101 and CM_COM_Y24_05-04 for details related to the status of the electrical servicing design for the subject property.

Preliminary consultation with all the applicable above-noted utility companies will need to be updated and confirmed as part of our detailed design of the proposed development.

11.0 Conclusions

Based on the engineering evaluation contained within this Functional Servicing Report, the proposed mixed-use development at 526 Bay Street is feasible from a civil servicing and site design perspective.

Our findings are summarized as follows:

- **Water Servicing:** Peak domestic demand (1.63 L/s) can be accommodated via a new 50 mm diameter lateral connected to the existing watermain on Bay Street. Fire flow requirements are proposed to be met with a 200mm diameter fire service connection. Hydrant flow testing is required to confirm that the Bay Street watermain can concurrently sustain the Maximum Daily Demand (0.72 L/s) plus the required Fire Flow (108 L/s) at or above 20 psi residual pressure.
- **Sanitary Servicing:** Peak sanitary discharge (1.45 L/s) can be adequately conveyed via a new 150 mm diameter lateral at a 2.0% slope to the existing 375 mm main on Bay Street.
- **Stormwater Management:** Peak post-development runoff rates do not exceed pre-development conditions; water quality objectives will be met using on-site Goss traps and an internal oil-grit separator.
- **Site Grading & ESC:** Proposed grading maintains positive drainage and matches boundary elevations. Comprehensive ESC measures will safeguard municipal infrastructure during construction.
- **Utilities:** Enbridge Gas and Bell Canada connections are readily available, while electrical distribution rerouting plans are being actively coordinated with Newmarket-Tay Power Distribution Ltd.

It is recommended that the Town of Midland approve the civil engineering aspects of this Site Plan Approval application, subject to final confirmation of municipal system capacities.

We trust this FSR meets the requirements of the Town of Midland. Should you have any questions, feel free to contact our office.

Appendix A – Drawings

Drawing C1 – Site Plan

Drawing C2 – Grading Plan

Drawing C3 – Servicing Plan

Drawing C4 – Erosion & Sediment Control Plan

Drawing C5 – Details

Drawing E101 – Site Plan – Electrical

Drawing CM_COM_Y24_05-04 – Commercial Service and Relocation

PART OF LOTS 1, 2, 3 AND 4
NORTH SIDE OF CLIFTON STREET
REGISTERED PLAN 306
PART OF LOT A
NORTH SIDE OF CLIFTON STREET
AND PART OF LANE (Closed By By-Law 1218, Inst. R013584)
REGISTERED PLAN 363
TOWN OF MIDLAND
COUNTY OF SIMCOE

ZONING INFORMATION:

CURRENT ZONING DESIGNATION:
DOWNTOWN CORE COMMERCIAL (DC)
PROPOSED CHANGE TO ZONING: AMENDMENT FOR 6.1.3.6
(ZBA-04-25)
CURRENT BUILDING CLASSIFICATION: N/A
PROPOSED BUILDING CLASSIFICATION(S): C/E
GROSS FLOOR AREA (GFA): PROPOSED 36,522 FT² (3393 M²)

ZONING MATRIX:

(AS PER TOWN OF MIDLAND DOWNTOWN CORE COMMERCIAL)

	REQUIRED	PROPOSED
MINIMUM LOT AREA:	0.0m ²	1520.9 M ²
MINIMUM LOT FRONTAGE:	0.0m	18.02m
MAXIMUM LOT COVERAGE:	N/A	70.0%
MINIMUM YARD SETBACKS:		
(A) FRONT:	1.5m	7.43m
(B) REAR:	0.0m	0.25m
(C) INTERIOR SIDE:	0.0m	0.0m
(D) EXTERIOR SIDE:	0.0m	0.0m
MAXIMUM YARD SETBACKS:		
(A) FRONT:	3.0m	7.43m
MAX. BUILDING HEIGHT:	17.0m	16.9m
PARKING:		
PARKING SPACES	N/A	14
BARRIER FREE	N/A	1
LOADING	N/A	0

SURFACE AREAS:

TOTAL SITE AREA: 1520.9 M²
BUILDING FOUNDATION FOOTPRINT: 1064 M²
TOTAL PAVED/CONCRETE AREA: 284 M²
TOTAL GRASSED AREA: 173 M²

NOTE: DISTANCES ON THIS PLAN ARE METRIC AND CAN BE
CONVERTED TO IMPERIAL BY **MULTIPLYING BY 3.28**

ELEVATIONS AND SERVICES ARE IN METRIC

GENERAL NOTES:

- CONTRACTOR TO CHECK ALL DIMENSIONS, SPECIFICATIONS, ETC., ON SITE AND IS RESPONSIBLE FOR REPORTING ANY DISCREPANCIES TO OUR OFFICE PRIOR TO CONSTRUCTION. CONTRACTOR TO DETERMINE & CONFIRM THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- ALL DRAWINGS, SPECIFICATIONS AND RELATED DOCUMENTS ARE THE COPYRIGHT PROPERTY OF QUANTUM ENGINEERING. THEY ARE TO REMAIN THE PROPERTY OF OUR OFFICE AND MUST BE RETURNED UPON REQUEST. THESE DRAWINGS ARE NOT TO BE USED IN ANY OTHER LOCATION WITHOUT THE WRITTEN APPROVAL FROM OUR OFFICE. REPRODUCTIONS OF THESE DOCUMENTS OR DRAWINGS IN WHOLE OR IN PART IS FORBIDDEN WITHOUT WRITTEN PERMISSION FROM OUR OFFICE.
- ALL CONSTRUCTION & INFRASTRUCTURE SHALL CONFORM TO THE MOST RECENT EDITIONS OF ALL APPLICABLE CODES IN EFFECT AT THE PROJECT LOCATION. ALL WORKS TO BE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE AS WELL AS TOWN OF MIDLAND SPECIFICATIONS.
- OFFICIAL COPIES MUST BEAR AN ORIGINAL SIGNATURE AND SHOW THE ENGINEERS STAMP IN RED.
- DO NOT SCALE DRAWINGS.

BARRIER FREE PATH OF TRAVEL:

- OBC 3.8.1.3.1 BARRIER FREE PATH OF TRAVEL SLOPE MAXIMUM 1:20; MINIMUM WIDTH 1.12m (3'-8")
- MAXIMUM BEVEL 1:2
- MAXIMUM 12m (40') CURB AT LEVEL CHANGES
- MINIMUM LANDING AT TOP AND BOTTOM OF SLOPED PORTION 1.67m (66") SQUARE

UTILITIES:

- BUILDING SERVICED WITH MUNICIPAL WATER & SEWER, AND 240V HYDRO. HYDRO SERVICE LOCATION AND INSTALLATION REQUIREMENTS TO BE CONFIRMED WITH LOCAL AUTHORITY (NEWMARKET-TAY POWER DISTRIBUTION LTD.).
- COMPACTION OF BACKFILL FOR UTILITY TRENCHES SHALL BE 95% SPDD, UNLESS OTHERWISE SPECIFIED BY LOCAL AUTHORITIES.
- CONTRACTOR RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

GARBAGE STORAGE:

- ALL GARBAGE TO BE STORED IN DUMPSTER LOCATED IN DESIGNATED AREA.

SNOW STORAGE:

- ALL SNOW TO BE STORED ON SITE WITHIN DESIGNATED SNOW STORAGE AREAS.
- SNOW NOT TO BE PUSHED ONTO OR STORED ON ADJACENT ROADS, DESIGNATED PARKING SPACES OR BARRIER FREE SPACES AND PATHS OF TRAVEL.

EXTERIOR LIGHTING:

- ALL SECURITY LIGHTING TO BE SHIELDED SO THAT LIGHT DOES NOT INFRINGE ON ADJACENT PROPERTIES & WILL BE DARK SKY FRIENDLY.
- EXTERIOR SCONCE LIGHTING TO BE PROVIDED AT ALL BUILDING ACCESSES / ENTRANCES.
- EXTERIOR LIGHTING TO BE AS PER PROPOSED ELECTRICAL SITE PLAN / PHOTOMETRIC PLAN

DRIVEWAY:

- PAVED AREA TO BE A MINIMUM OF 75MM HL3A ON A MINIMUM OF 250MM OF GRANULAR 'A' COMPACTED TO 98% SPDD.
- ASPHALT & GRANULAR COURSES SHALL CONFORM TO ALL APPLICABLE ONTARIO PROVINCIAL STANDARDS.

GRASSED AREA:

- ALL DISTURBED AREAS ARE TO BE RESTORED TO ORIGINAL CONDITION AS REQUIRED.
- GRASSED AREAS TO BE SOODED OVER A MINIMUM 150 MM OF TOPSOIL.

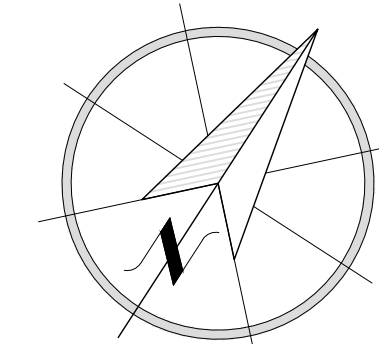
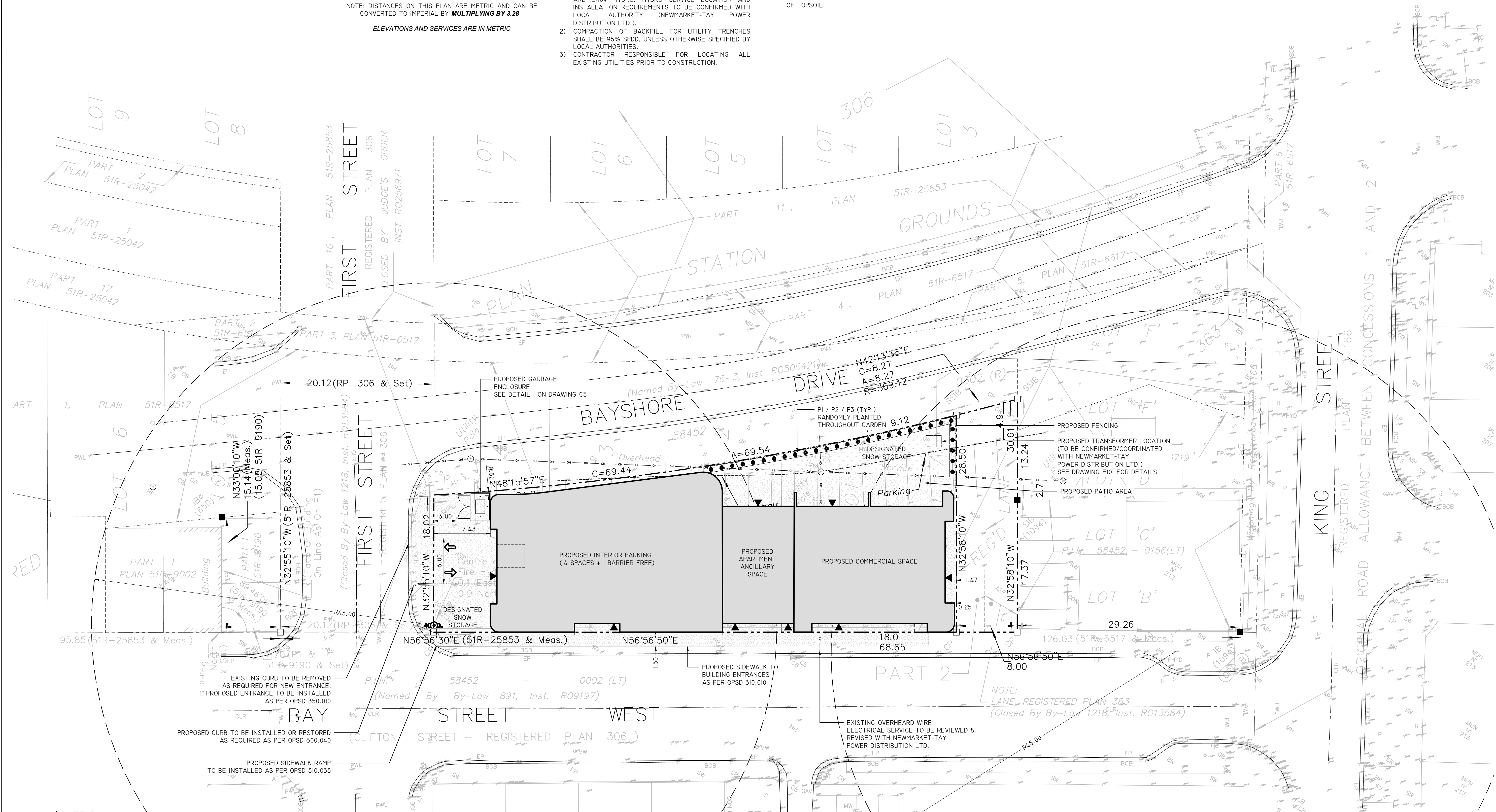
PARKING / LOADING:

- ALL PARKING SPACES MUST CONFORM WITH MOST RECENT EDITIONS OF TOWN OF MIDLAND ZONING BY-LAWS.
- NO MINIMUM PARKING SPACE REQUIRED FOR ALL THE PERMITTED USES OF DOWNTOWN CORE ZONE (DC) AS PER ZONING BY-LAW, SECTION 4.1.3.
- NO LOADING SPACE REQUIRED FOR DC ZONE AS PER ZONING BY-LAW, SECTION 4.1.10.1.
- PROPOSED PARKING FOR THE MIXED-USE RESIDENTIAL APARTMENT / COMMERCIAL DEVELOPMENT IS 14 INTERIOR PARKING SPACES AND 1 INTERIOR BARRIER FREE PARKING SPACE.

PLANTING SCHEDULE					
Label	Quantity	Common Name	Botanical Name	Size / Height	Form
P1	9	Silky / Gray or Red Osler Dogwood	Cornus amomum / racemosa / sericea	0.6m - 1.2m	Potted
P2	10	Day Lilies	Hemerocallis	0.3m - 0.8m	Potted
P3	10	Maiden Grass	Panicum virgatum 'Gracillimus'	0.6m - 1.2m	Potted

LEGEND:

- PROPOSED PRIVACY FENCE
- BUILDING ACCESS C/W EXTERIOR WALL SCONCE LIGHTING
- DIRECTION OF TRAFFIC
- UTILITY POLE
- FIRE HYDRANT C/W VALVE & BOX (AS PER OFSD 1105.010)
- GRASSED AREA
- PAVED AREA
- SIDEWALK / CONCRETE ACCESS
- SLOPED LANDSCAPE



PROJECT APARTMENT / COMMERCIAL BLDG
LOCATION 526 BAY STREET MIDLAND, ON
FOR LOUIE DESANTIS
DRAWING SITE PLAN

DATE DEC. 2023 PROJECT NO 6998 PAGE ID CI
DRAWN BY K.J.L.
SCALE SEE PLOT

TYPICAL SECTION

Varies
1.5m min
Note 2
0.3m min
Slope as specified
BOULEVARD
2 to 8%
Slope 2 to 4%
Concrete sidewalk
125mm Note 1
RS
Subgrade or granular base as specified
2 to 10%

DUMMY JOINT (OPTIONAL)

5
Thickness of sidewalk
5
0.257
Thickness of sidewalk

CONTRACTION JOINT

85mm Typ
5
Thickness of sidewalk
12mm expansion joint material

JOINT LAYOUT

Curb and gutter
Expansion joint material
Sidewalk ramp Note 3
80.5m Typ
BOULEVARD
1.5m Typ
Expansion joints
Sidewalk bay
Dummy joints Typ
Contraction joints, Typ

EXPANSION JOINT

NOTES:

1. Sidewalk thickness at residential driveways and adjacent to curb shall be 150mm. At commercial and industrial driveways, the thickness shall be 200mm.
2. Sidewalk width shall be wider when specified.
3. This OPSD shall be read in conjunction with OPSD 310.030, 310.031, 310.032, 310.033 and 310.039.
- A. All dimensions are in millimetres unless otherwise shown.

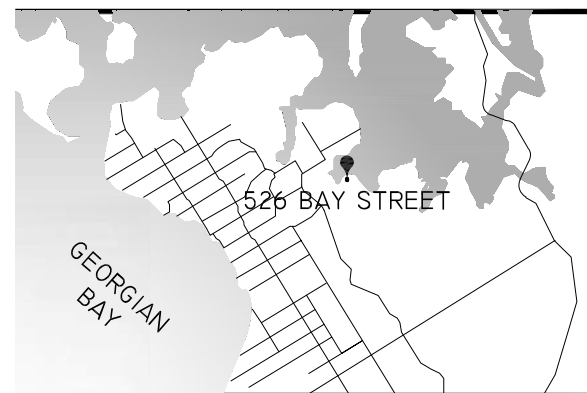
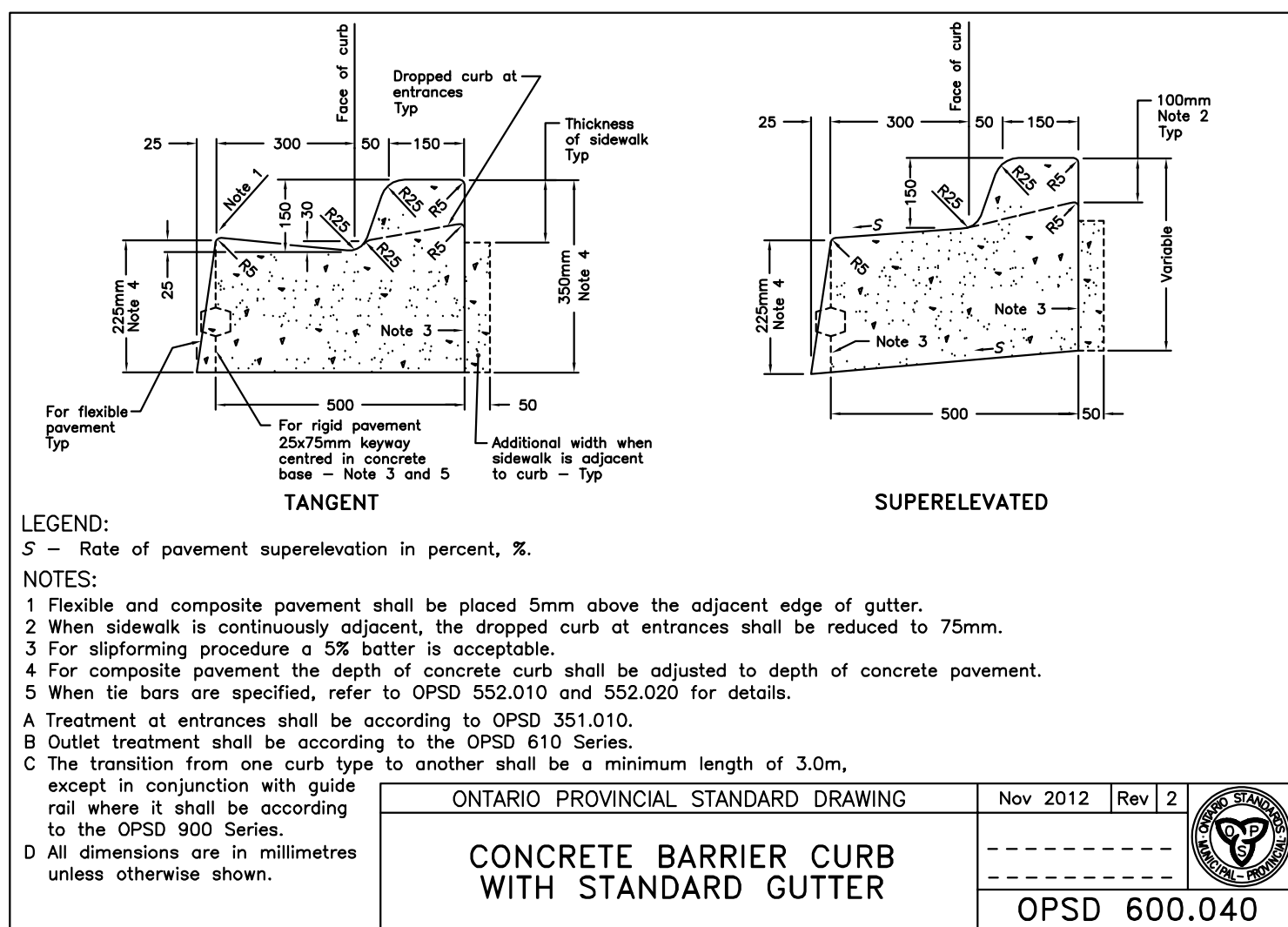
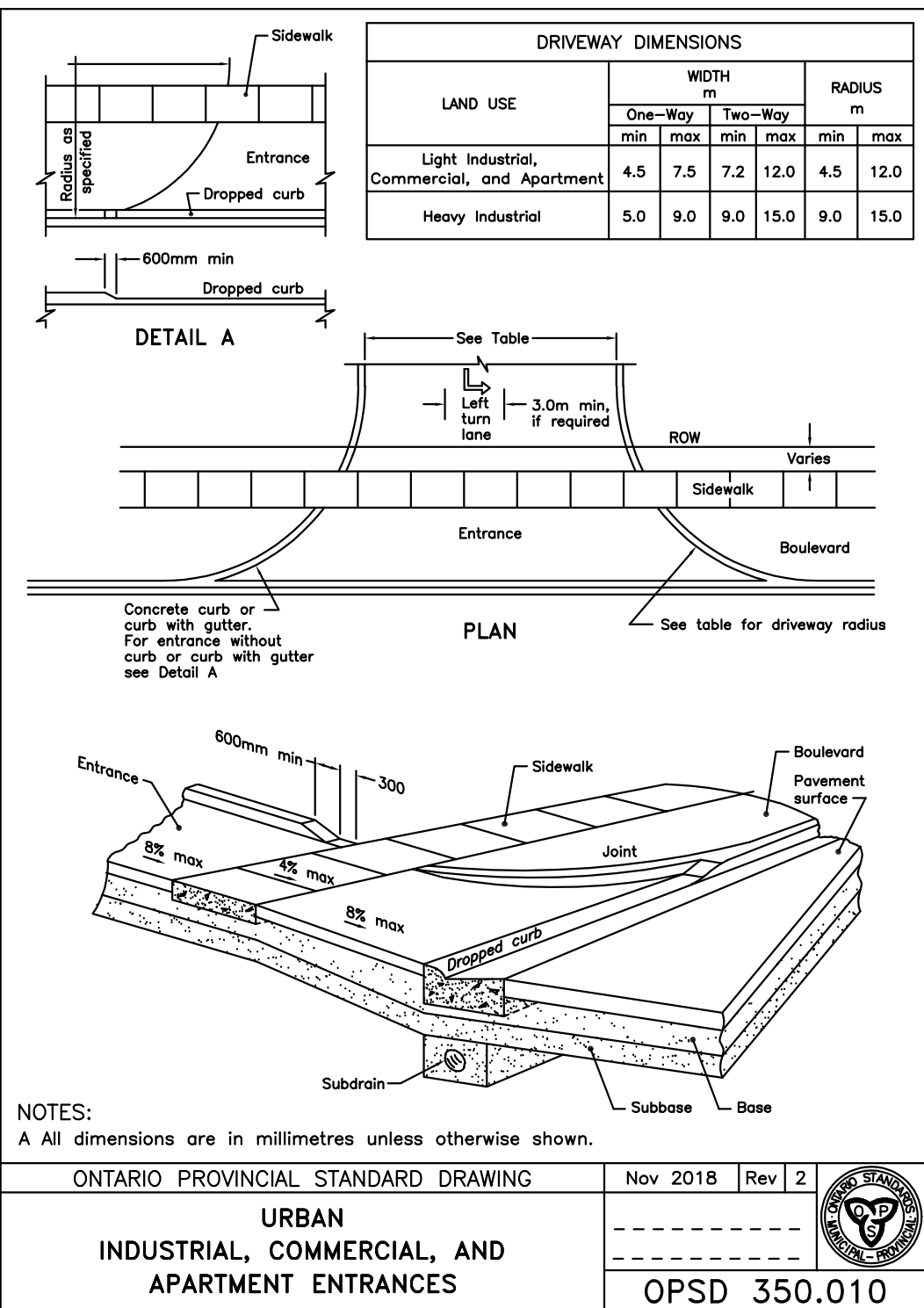
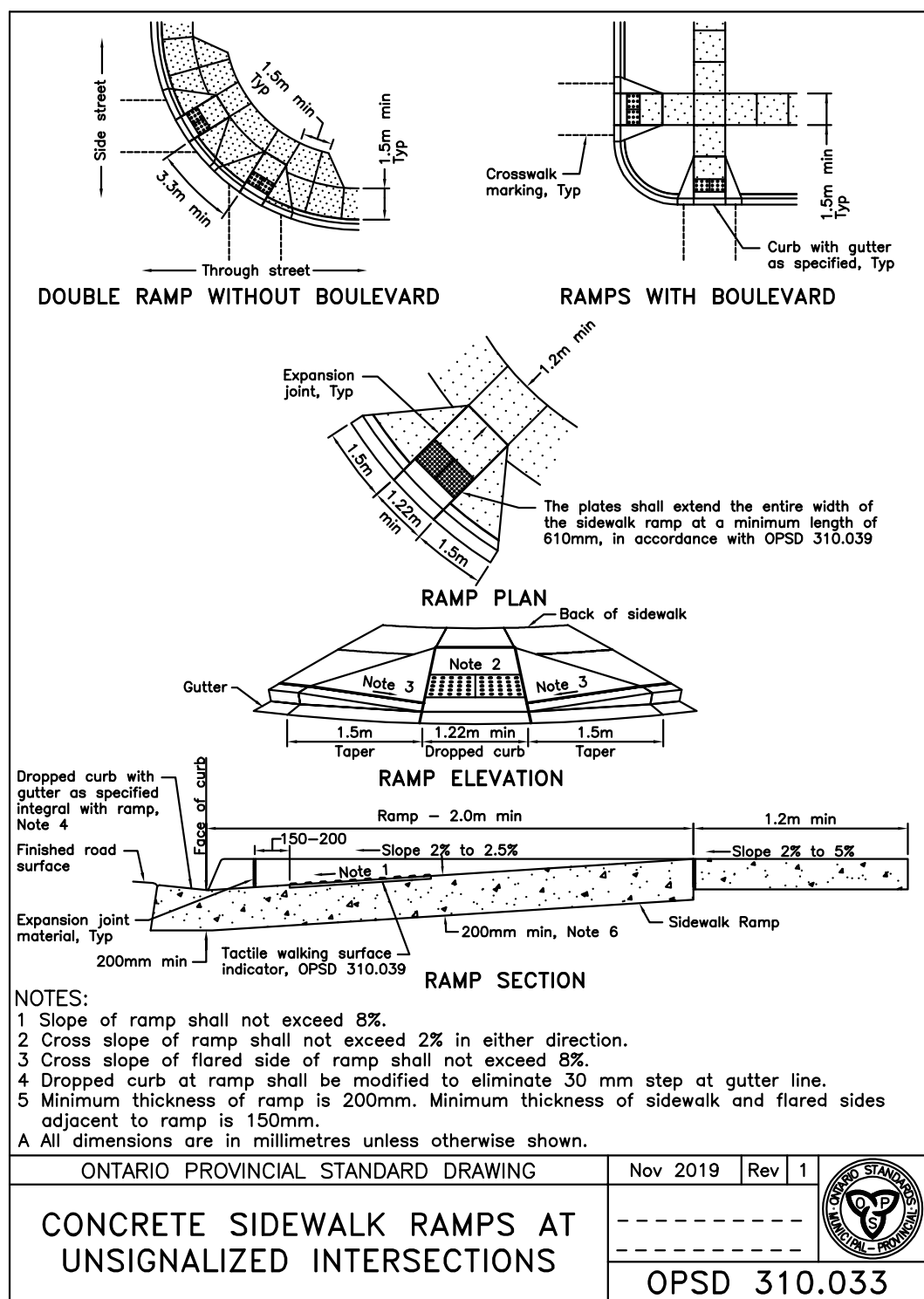
ONTARIO PROVINCIAL STANDARD DRAWING

Nov 2015 Rev 2

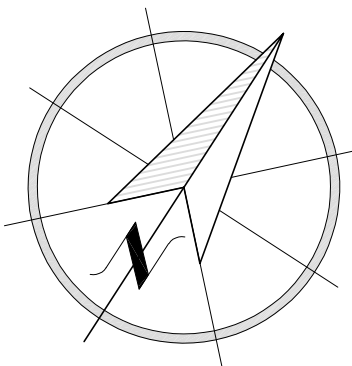
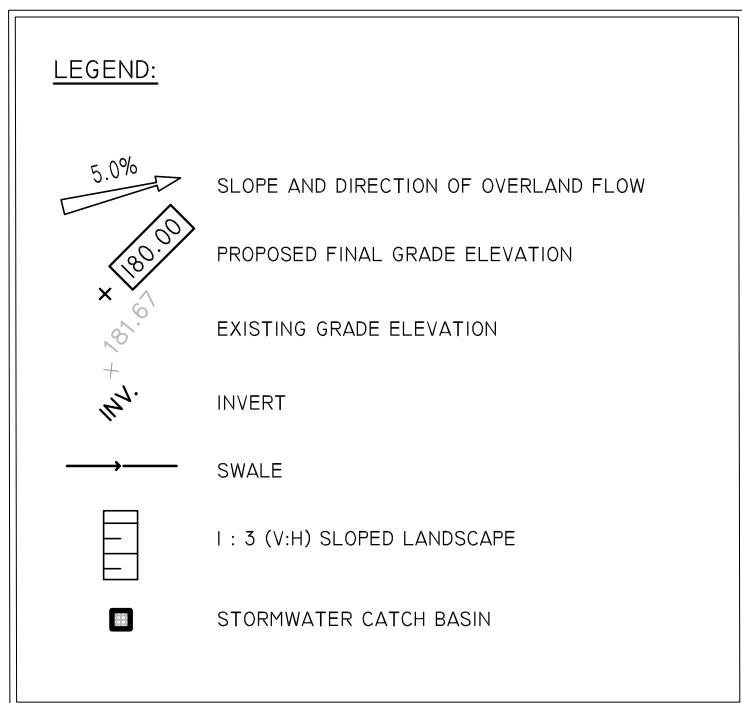
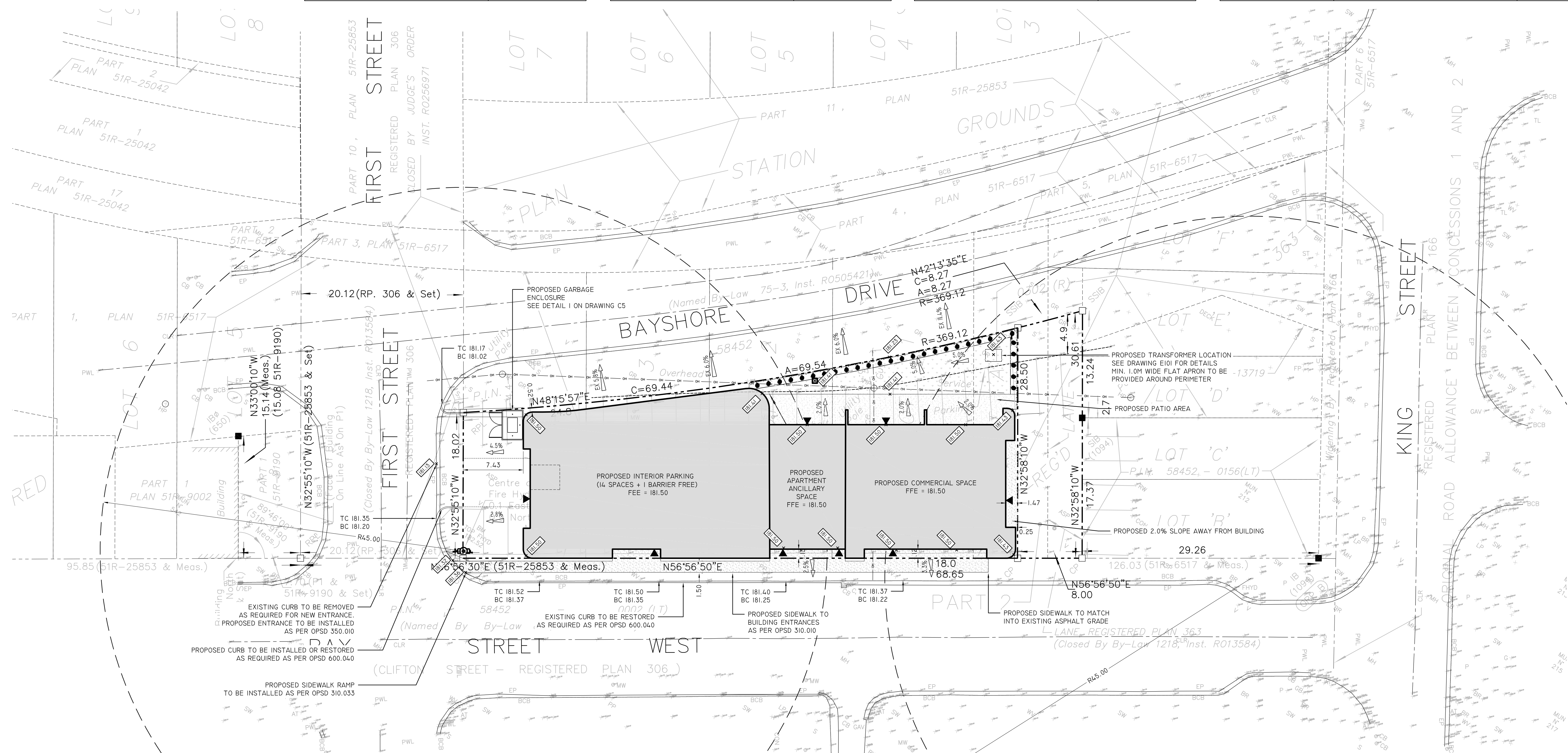
CONCRETE SIDEWALK

OPSD 310.010

OPSD 310.010



No.	DESCRIPTION	DATE
1		
2		
3		
4		
5		
6	FOR CLIENT REVIEW	JULY 29, 2026
7	FOR CLIENT REVIEW	SEPT 22, 2026
8	SITE PLAN APPROVAL	SEPT 29, 2026



QUANTUM
ENGINEERING

97 COPELAND CREEK DR
TINY ONTARIO L9M 0M2
PHONE: (705) 549-1791
FAX: (866) 516-9827
WWW.GENG.CA

PROJECT APARTMENT /
COMMERCIAL BLDG

LOCATION 526 BAY STREET
MIDLAND, ON

FOR LOUIE DESANTIS

DRAWING GRADING PLAN

DATE _____

DRAWN BY K. H.

PROJECT NO.

1000

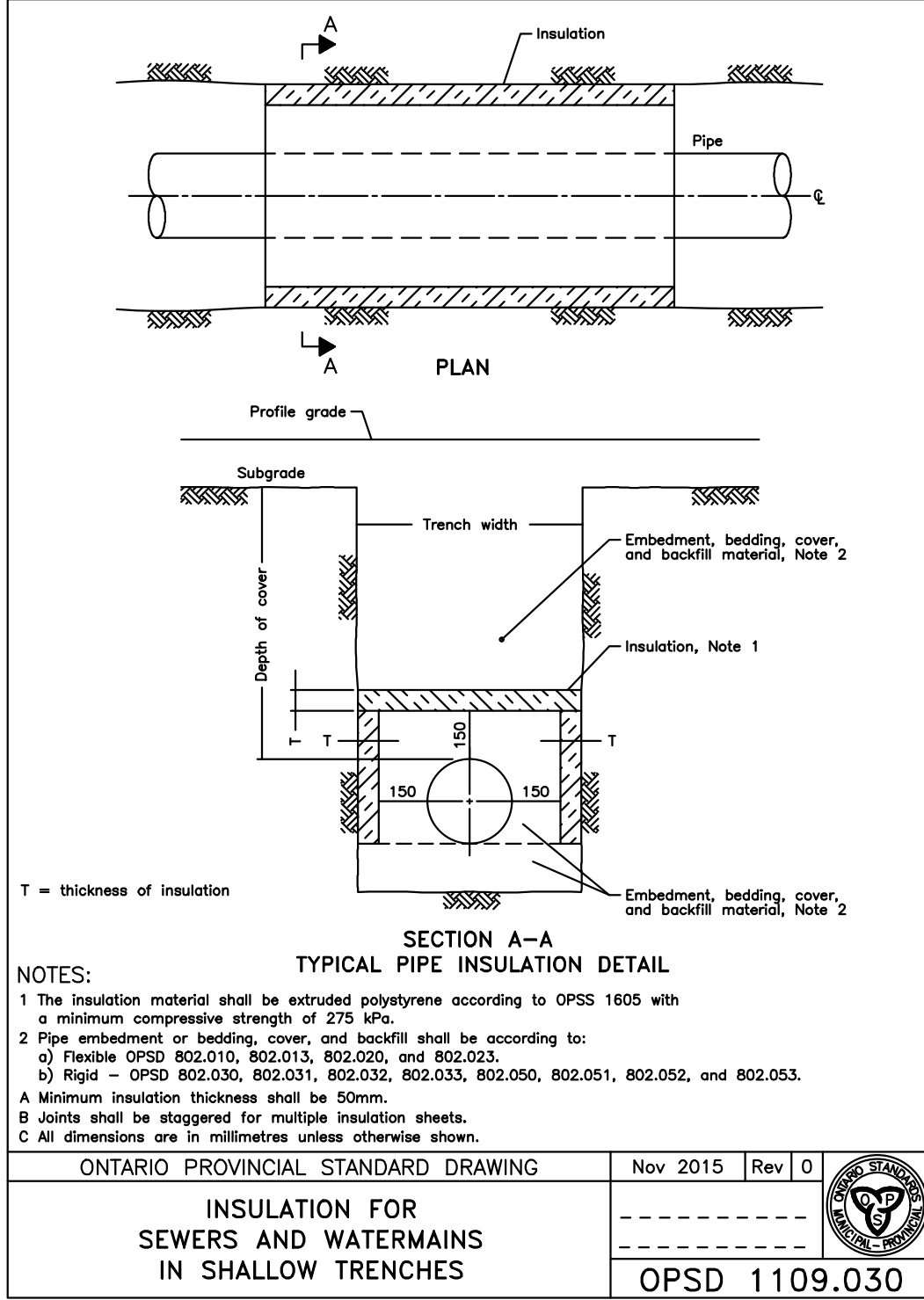
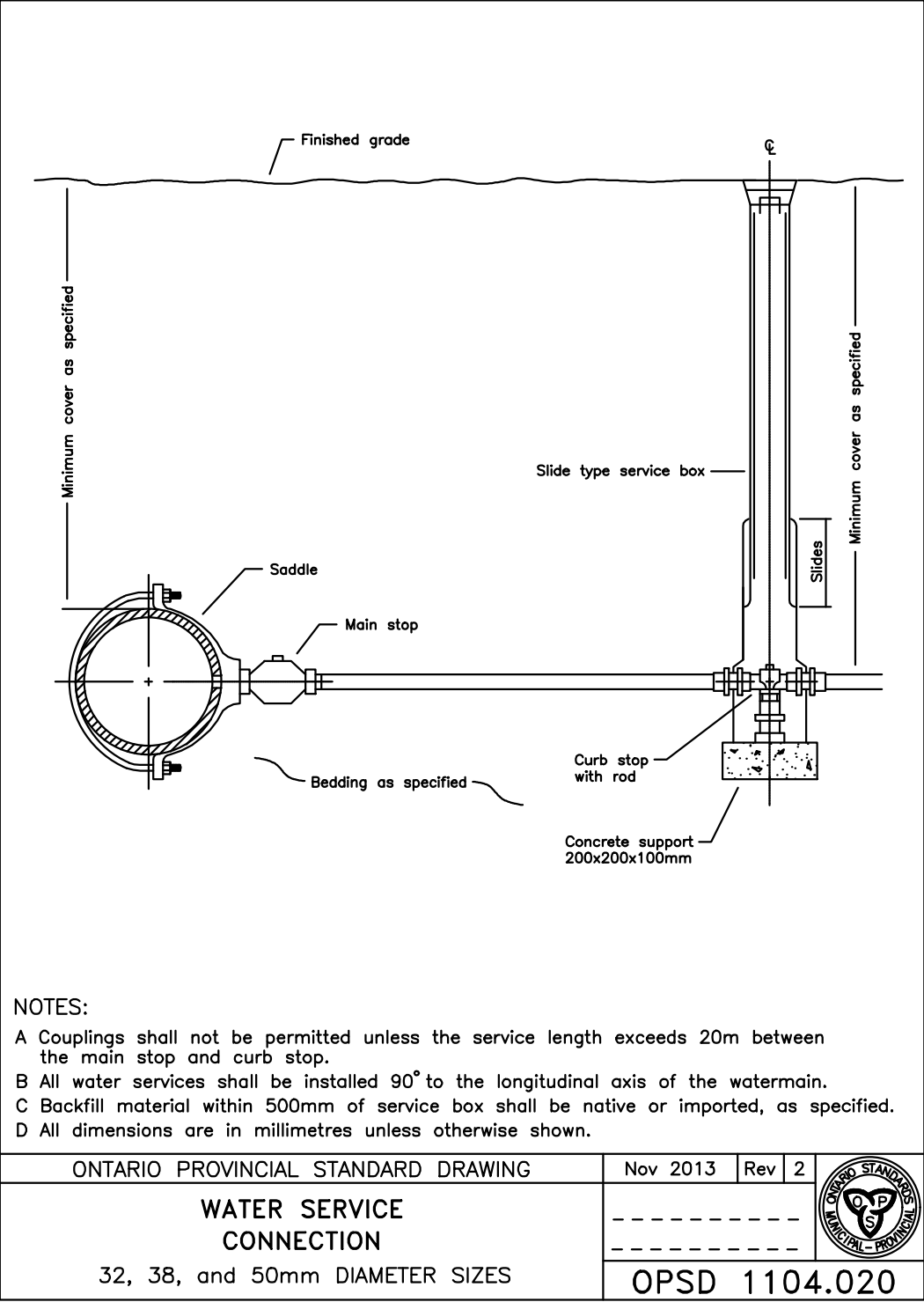
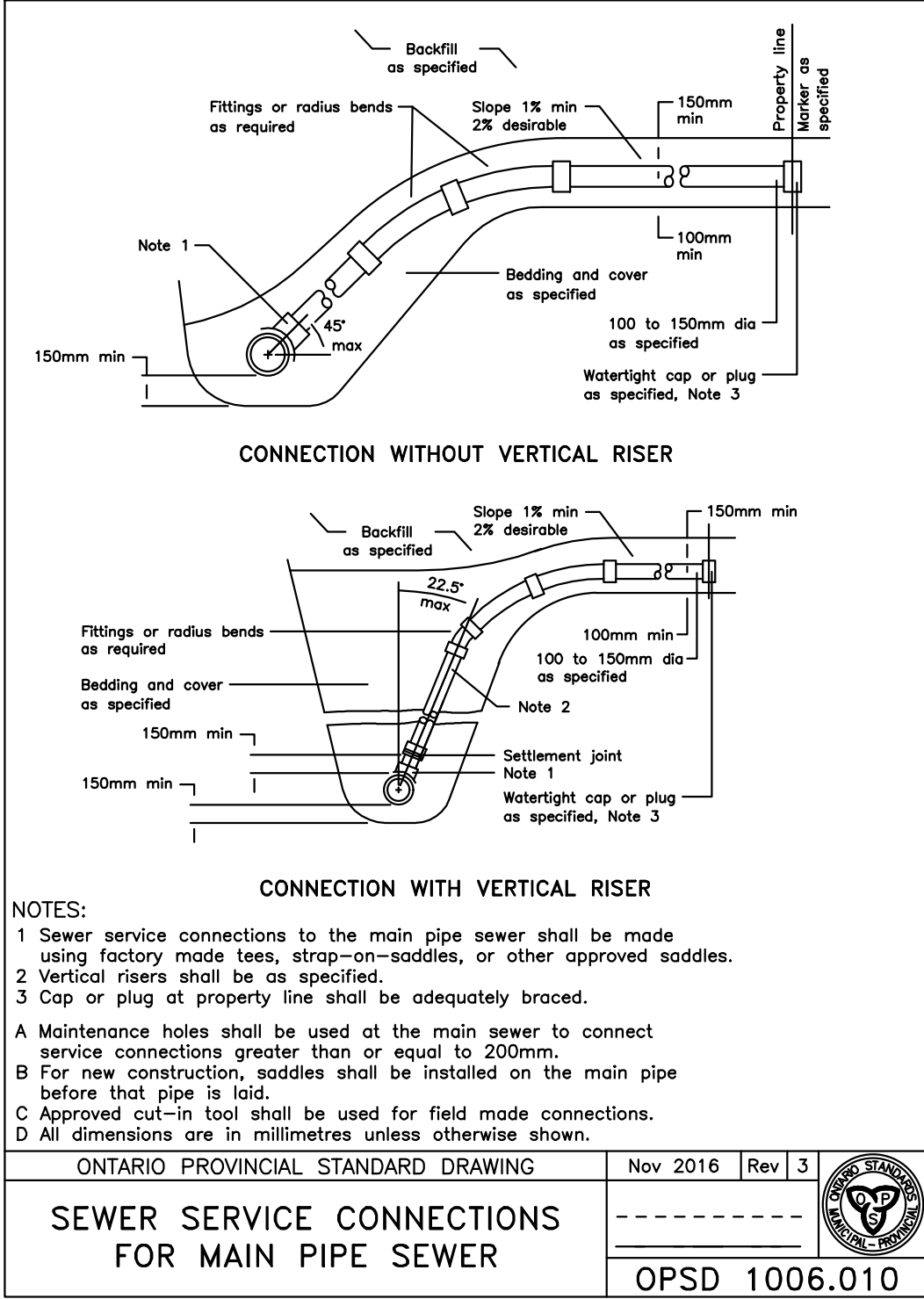
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62

C2

LOT GRADING PLAN

PART OF LOTS 1, 2, 3 AND 4
NORTH SIDE OF CLIFTON STREET
REGISTERED PLAN 306
PART OF LOT A
NORTH SIDE OF CLIFTON STREET
AND PART OF LANE (Closed By By-Law 1218, Inst. R013584)
REGISTERED PLAN 363
TOWN OF MIDLAND
COUNTY OF SIMCOE



- GENERAL NOTES:
- 1) CONTRACTOR TO CHECK ALL DIMENSIONS, SPECIFICATIONS, ETC., ON SITE AND IS RESPONSIBLE FOR REPORTING ANY DISCREPANCIES TO OUR OFFICE PRIOR TO CONSTRUCTION. CONTRACTOR TO DETERMINE & CONFIRM THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
 - 2) ALL DRAWINGS, SPECIFICATIONS AND RELATED DOCUMENTS ARE THE COPYRIGHT PROPERTY OF QUANTUM ENGINEERING. THEY ARE TO REMAIN THE PROPERTY OF OUR OFFICE AND MUST BE RETURNED UPON REQUEST. THESE DRAWINGS ARE NOT TO BE USED IN ANY OTHER LOCATION WITHOUT THE WRITTEN APPROVAL FROM OUR OFFICE. REPRODUCTIONS OF THESE DOCUMENTS OR DRAWINGS IN WHOLE OR IN PART IS FORBIDDEN WITHOUT WRITTEN PERMISSION FROM OUR OFFICE.
 - 3) ALL CONSTRUCTION & INFRASTRUCTURE SHALL CONFORM TO THE MOST RECENT EDITIONS OF ALL APPLICABLE CODES IN EFFECT AT THE PROJECT LOCATION. ALL WORKS TO BE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE AS WELL AS TOWN OF MIDLAND SPECIFICATIONS.
 - 4) OFFICIAL COPIES MUST BEAR AN ORIGINAL SIGNATURE AND SHOW THE ENGINEERS STAMP IN RED.
 - 5) DO NOT SCALE DRAWINGS.

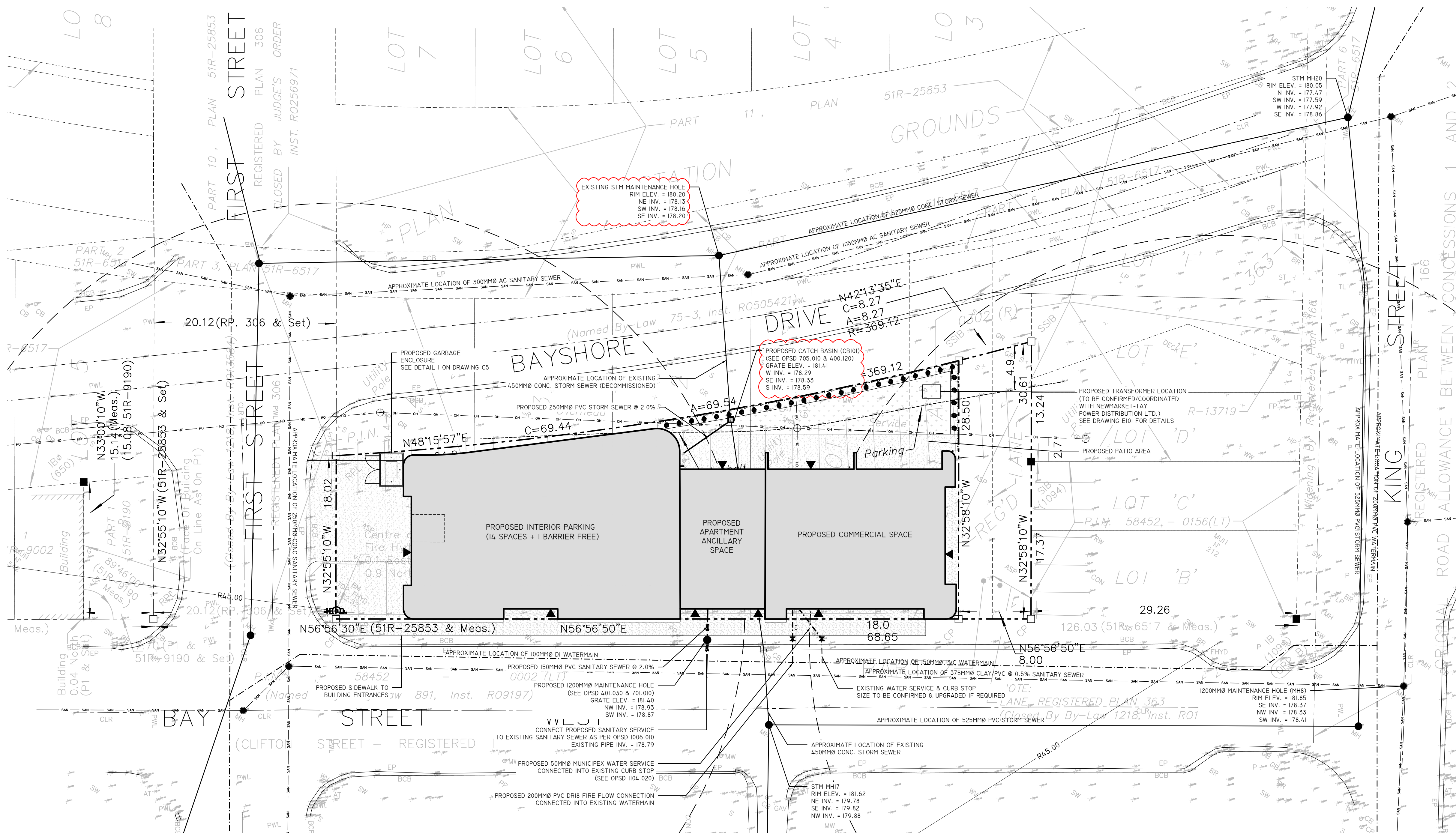
- SANITARY SERVICING NOTES:
- 1) MINIMUM COVER OF 2.8M TO BE MAINTAINED FOR ALL SANITARY SEWER AND SERVICES.
 - 2) WHERE PIPE COVER IS LESS THAN 2.8M, ADEQUATE INSULATION AS PER OPSD 1109.030 TO BE PROVIDED.
 - 3) A MINIMUM HORIZONTAL SEPARATION OF 2.5M (EDGE TO EDGE) AND A MINIMUM VERTICAL SEPARATION OF 0.5M (BOTTOM OF PIPE TO TOP OF PIPE) FROM ANY WATER SERVICE IS REQUIRED.
 - 4) ALL MAINTENANCE HOLES TO BE 1200MM UNLESS OTHERWISE NOTED WITH SOLID RECTANGULAR RUNGS AND FULL HEIGHT BENCHES. ALL OPSDs: ALL MAINTENANCE HOLE COVERS TO BE AS PER OPSD 401.010 TYPE 'A'. ALL MAINTENANCE HOLES SHALL BE COMPLETE WITH FROST STRAPS AS PER OPSD 701.100. MODULAR ADJUSTMENT UNITS TO BE PROVIDED AS PER OPSD 704.010 WITH A MAXIMUM THICKNESS OF 300MM.
 - 5) ALL SANITARY SEWERS (200 TO 375MM DIAMETER) TO BE PVC SDR-35 AND ALL SANITARY SERVICES TO BE PVC SDR-28.
 - 6) BEDDING TO BE IN ACCORDANCE WITH OPSD 802.010.
 - 7) SERVICE CONNECTIONS TO BE AS PER OPSD 1006.010.
 - 8) SANITARY SERVICE CONNECTIONS TO USE PRE-FABRICATED TEES (C/W SWEEPS) OR AS OTHERWISE APPROVED BY ENGINEER.
 - 9) SEWER BEDDING AND COMPACTION TO BE AS PER APPLICABLE OPSD MUNICIPAL STANDARDS.
 - 10) ALL SANITARY SERVICING MATERIALS AND MANUFACTURER'S TO BE AS PER THE TOWN OF MIDLAND PRODUCT LIST AS PER ENGINEERING DESIGN STANDARDS, APPENDIX B.
 - 11) ALL SANITARY SEWER IS REQUIRED TO BE TESTED FOR INFILTRATION/EXFILTRATION PER OPSD.MUNI 410 AND TESTING PER OPSD.MUNI 407. TYPE OF TESTING WILL DEPEND ON ELEVATION OF GROUNDWATER RELATIVE TO EACH SECTION OF PIPE.
 - 12) ALL NEW SANITARY SERVICING SHALL UNDERGO CCTV INSPECTION IN ACCORDANCE WITH OPSD.MUNI 409 W/ A DIGITAL COPY TO BE PROVIDED TO THE ENGINEER AND TOWN FOR REVIEW AND APPROVAL.

- WATER SERVICING NOTES:
- 1) IT IS THE CONTRACTORS RESPONSIBILITY TO PROTECT AND SUPPORT EXISTING UNDERGROUND/OVERHEAD UTILITIES, WHICH MAY BE ENCOUNTERED DURING WORK.
 - 2) ONLY MUNICIPAL WATER DEPARTMENT STAFF ARE PERMITTED TO OPERATE VALVES, HYDRANTS, AND OTHER EXISTING APPURTENANCES.
 - 3) ALL WATER SERVICING MATERIALS AND MANUFACTURERS ARE TO BE IN ACCORDANCE WITH TOWN OF MIDLAND ENGINEERING STANDARDS AND PRE-APPROVED BY THE PROJECT ENGINEER PRIOR TO CONSTRUCTION.
 - 4) MINIMUM COVER OF 1.8M TO BE MAINTAINED FOR ALL WATER MAIN AND SERVICES.
 - 5) WHERE PIPE COVER IS LESS THAN 1.8M, ADEQUATE INSULATION AS PER OPSD 1109.030 TO BE PROVIDED.
 - 6) WATER MAIN OR SERVICES CROSSING OVER A SEWER, JOINTS ARE TO BE OFFSET A MINIMUM OF 2.5M HORIZONTALLY FROM THE CENTRELINE OF THE SEWER. MAINTAIN 0.5M VERTICAL CLEAR SEPARATION AND INCLUDE 100MM THICK INSULATION PLACED BETWEEN THE SEWER AND MAIN/SERVICE FOR A DISTANCE EXTENDING 1.8M BEYOND THE LIMITS OF THE SEWER CROSSING.
 - 7) WATERMAIN BEDDING TO BE AS PER OPSD 802.010 OR AS OTHERWISE APPROVED BY THE MUNICIPALITY.
 - 8) SERVICE TAPPING SHALL BE PLACED A MINIMUM OF 1.0M FROM EACH OTHER AND A MINIMUM OF 0.6M FROM JOINTS.
 - 9) CONTINUOUS TRACER WIRE MUST BE INSTALLED WITH AND ALONG THE PIPE AND BROUGHT TO THE SURFACE AT EACH VALVE BOX AND HYDRANT (AROUND PORT) & ATTACHED BY MEANS OF TAPE AT INTERNALS NOT EXCEEDING 3M. TRACER WIRE CONNECTIONS TO BE ACHIEVED WITH A WATERPROOF AND CORROSION PROOF CONNECTOR. TRACER WIRE TO BE INSTALLED AS PER TOWN OF MIDLAND ENGINEERING STANDARDS AND PRODUCT LIST (APPENDIX C). A CONTINUITY TEST IS TO BE COMPLETED BY TOWN STAFF. SHOULD A PROBLEM BE ENCOUNTERED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND ASSOCIATED COST.
 - 10) ALL METALLIC FITTINGS, VALVES, JOINT RESTRAINTS, ETC. TO BE EPOXY COATED OR STAINLESS STEEL.
 - 11) FOR 100MM DIAMETER OR LARGER, RESTRAINED JOINTS ARE TO BE INSTALLED AT ALL TEES, BENDS, HYDRANTS, END OF MAINS AND CONNECTIONS FOR ALL MAINS IN ACCORDANCE WITH OPSD 1103.010 AND 1103.020.
 - 12) ALL WATERMAIN USED FOR FIRE PROTECTION MUST SATISFY THE REQUIREMENTS OF THE FIRE UNDERWRITERS SURVEY.
 - 13) ALL WATER SERVICING MATERIALS AND MANUFACTURER'S TO BE AS PER THE TOWN OF MIDLAND PRODUCT LIST AS PER ENGINEERING DESIGN STANDARDS, APPENDIX C.
 - 14) CONTRACTOR SHALL PRESSURE TEST, CHLORINATE AND FLUSH NEW WATERMAIN/SERVICES. ANY PRESSURE TESTING, CHLORINATING AND FLUSHING BEYOND THE INITIAL PROCEDURE WILL BE THE CONTRACTOR'S RESPONSIBILITY.
 - 15) TESTING AND DISINFECTION OF WATER SERVICES TO BE COMPLETED IN ACCORDANCE WITH TOWN OF MIDLAND ENGINEERING STANDARDS IN THE PRESENCE OF TOWN WATER DIVISION STAFF.



No.	DESCRIPTION	DATE
1		
2		
3		
4	FOR CLIENT REVIEW	MAR 21, 2025
5		
6	FOR CLIENT REVIEW	JULY 29, 2026
7	FOR CLIENT REVIEW	SEPT 22, 2026
8	SITE PLAN APPROVAL	SEPT 29, 2026

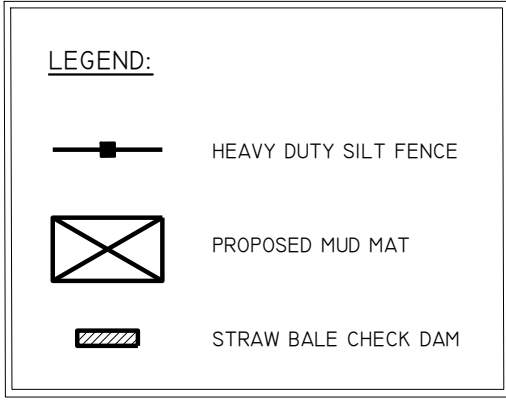
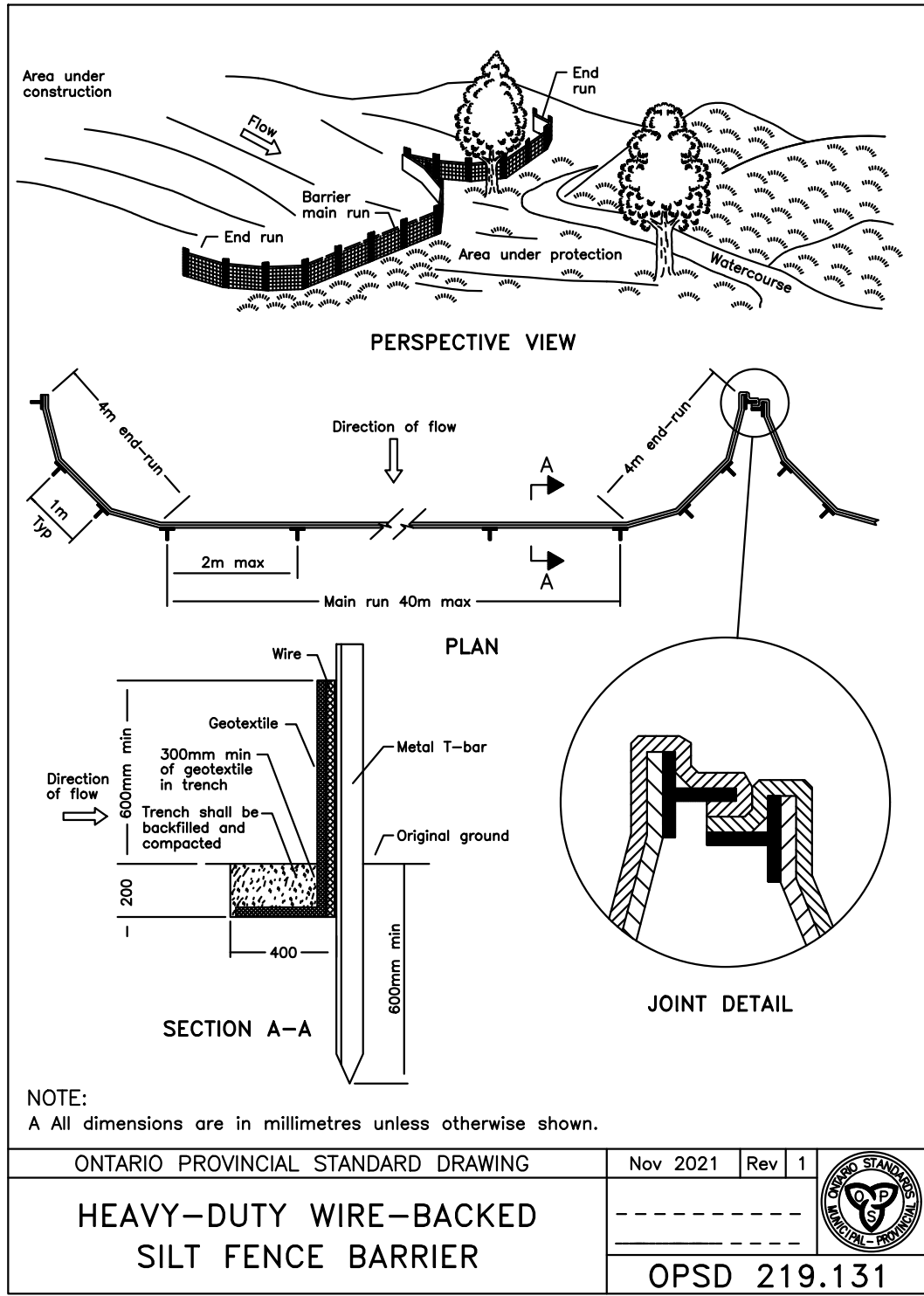
LEGEND:	
---	EXISTING WATERMAIN/SERVICE
---	PROPOSED WATER SERVICE
---	EXISTING SANITARY SEWER
---	PROPOSED SEWER SERVICE
---	EXISTING STORM SEWER
---	PROPOSED STORM SEWER
---	EXISTING GAS
---	PROPOSED GAS
---	EXISTING HYDRO
---	PROPOSED HYDRO
---	EXISTING BELL
---	PROPOSED BELL
○	MAINTENANCE HOLE
○ _{UP}	UTILITY POLE
■	VALVE & BOX



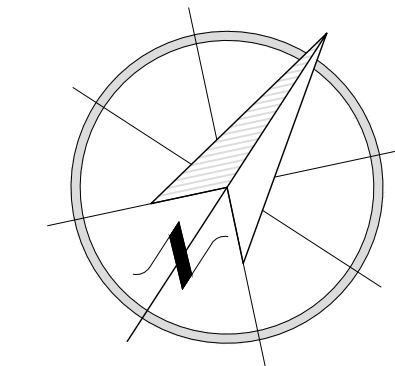
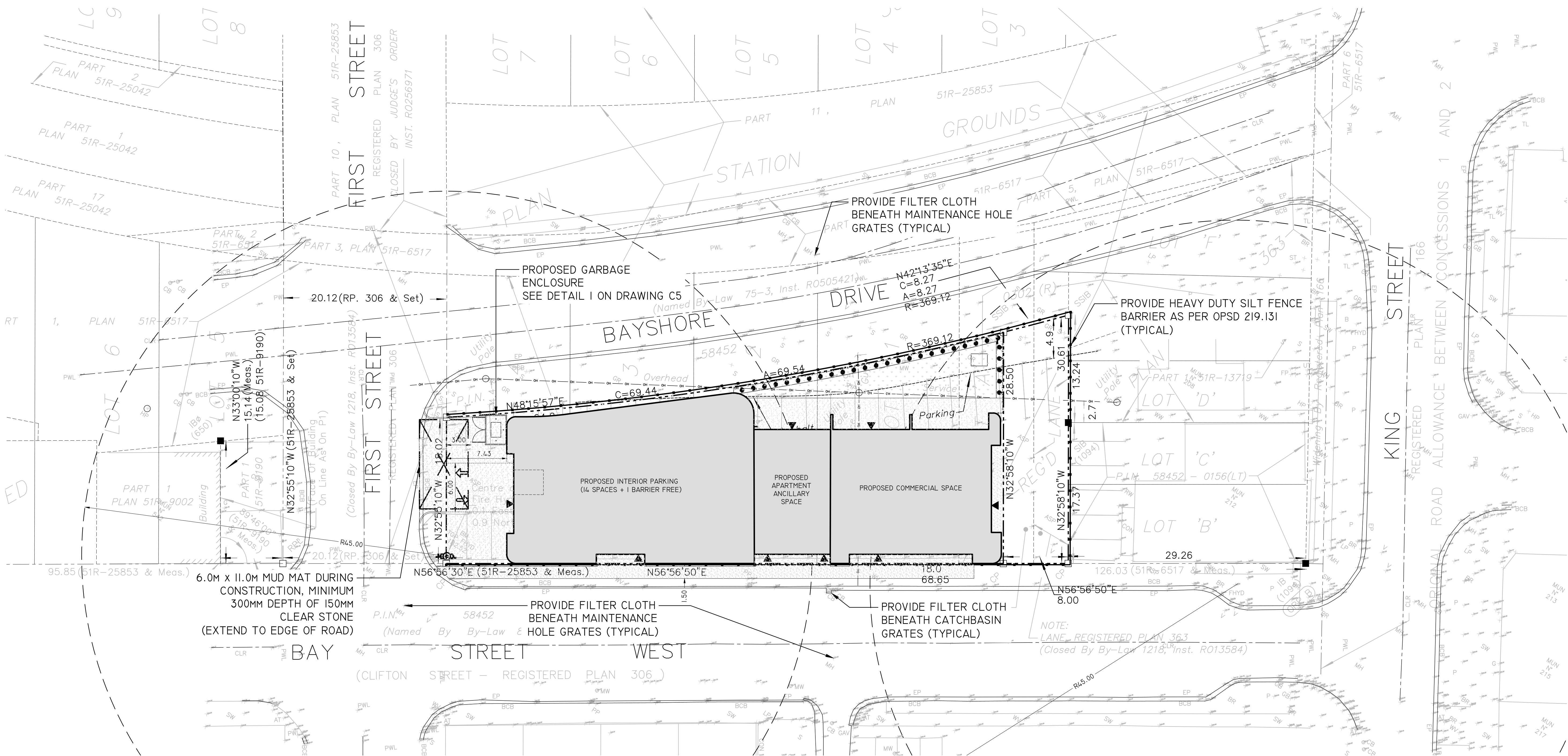
PART OF LOTS 1, 2, 3 AND 4
NORTH SIDE OF CLIFTON STREET
REGISTERED PLAN 306
PART OF LOT A
NORTH SIDE OF CLIFTON STREET
AND PART OF LANE (Closed By By-Law 1218, Inst. R013584)
REGISTERED PLAN 363
TOWN OF MIDLAND
COUNTY OF SIMCOE

- GENERAL NOTES:
- 1) CONTRACTOR TO CHECK ALL DIMENSIONS, SPECIFICATIONS, ETC., ON SITE AND IS RESPONSIBLE FOR REPORTING ANY DISCREPANCIES TO OUR OFFICE PRIOR TO CONSTRUCTION. CONTRACTOR TO DETERMINE & CONFIRM THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
 - 2) ALL DRAWINGS, SPECIFICATIONS AND RELATED DOCUMENTS ARE THE COPYRIGHT PROPERTY OF QUANTUM ENGINEERING. THEY ARE TO REMAIN THE PROPERTY OF OUR OFFICE AND MUST BE RETURNED UPON REQUEST. THESE DRAWINGS ARE NOT TO BE USED IN ANY OTHER LOCATION WITHOUT THE WRITTEN APPROVAL FROM OUR OFFICE. REPRODUCTIONS OF THESE DOCUMENTS OR DRAWINGS IN WHOLE OR IN PART IS FORBIDDEN WITHOUT WRITTEN PERMISSION FROM OUR OFFICE.
 - 3) ALL CONSTRUCTION & INFRASTRUCTURE SHALL CONFORM TO THE MOST RECENT EDITIONS OF ALL APPLICABLE CODES IN EFFECT AT THE PROJECT LOCATION. ALL WORKS TO BE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE AS WELL AS TOWN OF MIDLAND SPECIFICATIONS.
 - 4) OFFICIAL COPIES MUST BEAR AN ORIGINAL SIGNATURE AND SHOW THE ENGINEERS STAMP IN RED.
 - 5) DO NOT SCALE DRAWINGS.
 - 6) ALL CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH CURRENT MUNICIPAL STANDARDS AND THE MOST CURRENT ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS. MUNICIPAL STANDARDS ARE TO GOVERN IF A DISCREPANCY IS NOTED.
 - 7) ALL DIMENSIONS ARE IN METRES AND PIPE SIZES ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
 - 8) ALL LOCATIONS AND ELEVATIONS OF EXISTING SERVICES ARE TO BE CONFIRMED BY CONTRACTOR PRIOR TO CONSTRUCTION AND DESIGN ENGINEER NOTIFIED IF A DISCREPANCY IS OBSERVED.
 - 9) ALL TRENCHING TO BE COMPLETED IN ACCORDANCE WITH OCCUPATIONAL HEALTH AND SAFETY ACT.
 - 10) ALL TRAFFIC CONTROL AND SIGNAGE TO BE IN ACCORDANCE WITH MOST CURRENT MTO REGULATIONS.
 - 11) EXACT LOCATION OF PROPOSED UNDERGROUND WORKS TO BE VERIFIED IN THE FIELD AND RECORDED.

- EROSION AND SEDIMENT CONTROL (ESC) NOTES:
- 1) ALL EROSION AND SEDIMENT CONTROLS ARE TEMPORARY MEASURES CONSTRUCTED PRIOR TO ANY OTHER SITE WORKS AND TO BE MAINTAINED THROUGHOUT CONSTRUCTION PERIOD.
 - 2) SILT FENCING TO BE MAINTAINED DOWNSTREAM SIDE OF ALL STOCK PILES ON-SITE. SILT FENCING TO BE INSTALLED WHERE INDICATED ON DRAWING PRIOR TO COMMENCEMENT OF CONSTRUCTION.
 - 3) ALL TEMPORARY MEASURES SHALL BE REMOVED AND ANY DISTURBED AREAS STABILIZED AT THE COMPLETION OF CONSTRUCTION. REMOVAL OF ALL ESC MEASURES TO BE AS DIRECTED BY THE MUNICIPALITY OR DEVELOPER'S ENGINEER.
 - 4) ALL ESC MEASURES ARE TO BE INSPECTED BY THE CONTRACTOR WEEKLY AND FOLLOWING LARGE RAIN EVENTS AS REQUIRED BY THE MUNICIPALITY OR DEVELOPER'S ENGINEER.
 - 9) DEVELOPER AND/OR DEVELOPER'S ENGINEER ARE RESPONSIBLE FOR COMPLETING ROUTINE INSPECTIONS OF ALL ESC MEASURES.
 - 10) ESC MEASURES SHALL BE DESIGNED IN ACCORDANCE WITH PROVINCIAL GUIDELINES.
 - 11) CATCH BASINS ARE NOT TO BE INSTALLED PRIOR TO CONSTRUCTION OF THE PROPOSED BUILDINGS. IF CATCH BASINS ARE INSTALLED PRIOR TO CONSTRUCTION COMPLETION, THEY ARE TO BE PROTECTED AS REQUIRED TO ENSURE NO SEDIMENT IS COLLECTED WITHIN THE INFRASTRUCTURE.
 - 12) CATCH BASIN PROTECTION AND STRAW BALE CHECK DAMS TO BE INSTALLED IMMEDIATELY FOLLOWING CONSTRUCTION OF ASSOCIATED CATCH BASINS AND SWALES. ESC PROTECTION TO REMAIN IN PLACE UNTIL FINAL GRADING AND VEGETATION HAS BEEN ESTABLISHED.
 - 13) IF REQUIRED, CATCH BASINS SHALL BE CLEANED BY CONTRACTOR FOLLOWING CONSTRUCTION COMPLETION.



No.	DESCRIPTION	DATE
1		
2		
3		
4		
5		
6	FOR CLIENT REVIEW	JULY 29, 2026
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8	SITE PLAN APPROVAL	SEPT 29, 2026



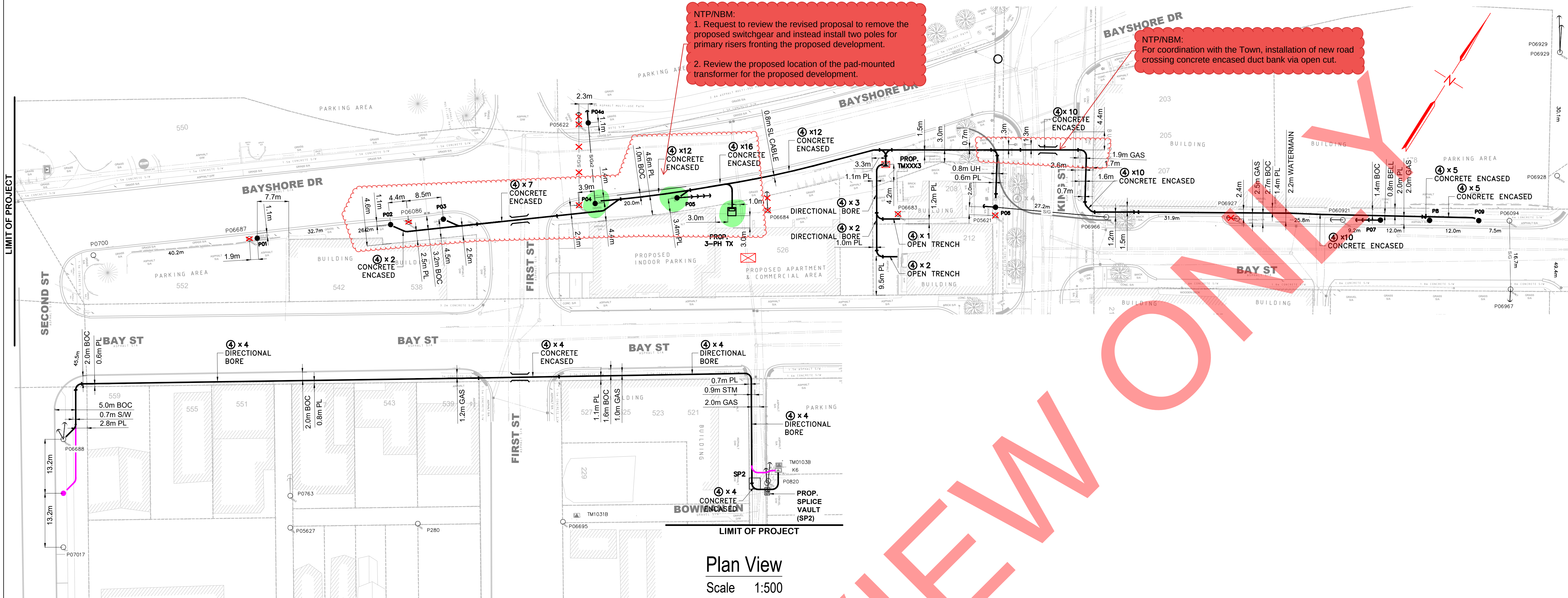
PROJECT	APARTMENT / COMMERCIAL BLDG
LOCATION	526 BAY STREET MIDLAND, ON
FOR	LOUIE DESANTIS
DRAWING	EROSION, SEDIMENT & CONTROL PLAN
DATE	APR. 2026
PROJECT NO	6998
PAGE ID	C4
DRAWN BY	K.J.L.
SCALE	SEE PLOT

91

2

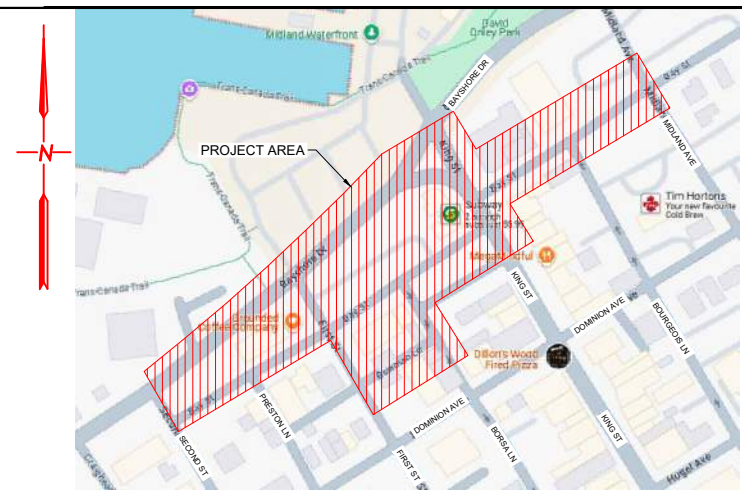
1.250

6009



NTP/NBM:
1. Request to review the revised proposal to remove the proposed switchgear and instead install two poles for primary risers fronting the proposed development.
2. Review the proposed location of the pad-mounted transformer for the proposed development.

NTP/NBM:
For coordination with the Town, installation of new road crossing concrete encased duct bank via open cut.



- LEGEND
- | SYMBOL | DESCRIPTION |
|--------|---|
| ● | PROPOSED POLE |
| ⊗ | POLE TO BE REMOVED |
| ○ | EXISTING POLE |
| → | ANCHOR TO BE REMOVED |
| → | PROPOSED ANCHOR |
| ▲ | EX. 1-PHASE PAD MOUNTED TRANSFORMER |
| ▲ | PROP. 1-PHASE PAD MOUNTED TRANSFORMER |
| ■ | EX. 3-PHASE PAD MOUNTED TRANSFORMER |
| ■ | PROP. 3-PHASE PAD MOUNTED TRANSFORMER |
| ⊞ | EX. PG UNIT (PME-9) OR AS INDICATED |
| ⊞ | PROP. PG UNIT (PME-9) OR AS INDICATED |
| ⊞ | PROPOSED PULLING PIT |
| ⊞ | ROAD CROSSING |
| — | EXISTING DUCT BANK |
| — | PROPOSED DUCT BANK |
| × | OBJECT TO BE REMOVED / ABANDONED |
| ④ x 3 | EXISTING DUCT FOR PRIMARY CABLE. x 3, DENOTES QUANTITY OF DUCTS |
| ④ x 3 | PROPOSED DUCT- 100mm (4") DIA., TYPE AS SPECIFIED FOR PRIMARY CABLE. x 3, DENOTES QUANTITY OF DUCTS |
- NOTES:
- ALL INSTALLATIONS AND EQUIPMENT MUST MEET NT POWER SPECIFICATIONS, BE INSPECTED, AND APPROVED BY NT POWER.
 - CHANGES TO ANY PORTION OF THE INSTALLATION OR EQUIPMENT USED MUST BE PRE AUTHORIZED BY NT POWER.
 - CAUTION TAPE MUST BE FULL LENGTH AND WIDTH OF TRENCH, AND INSTALLED AT ALL TRENCH LOCATIONS.
 - A CERTIFICATE OF COMPLETION MUST BE SUBMITTED TO NT POWER PRIOR TO ANY ENERGIZATION.
 - AS BUILT DRAWINGS MUST BE PROVIDED BY THE INSTALLER UPON COMPLETION OF THE PROJECT.
 - STREET LIGHT DISTRIBUTION MUST BE INSPECTED BY ESA.
 - ALL EQUIPMENT IS TO BE APPROVED PRIOR TO INSTALLATION.

Utility clearance should be in accordance to section G, page G3 of the Newmarket Engineering Design Criteria (Aug. 2019)

Condition/Utility	Gas Line	Hydro	Bell, Cable T.V.	Water/Sewer Lines
1 Minimum Vertical Distance	0.3m	0.3m	0.3m	1.2m
2 Minimum Horizontal Distance	0.9m	0.9m	0.3m	1.2m
3 Minimum Distance Below Ditch Inverts	0.6m	0.9m	0.3m	1.7m
4 Minimum Distance From Structure/Chambers	0.3m	0.3m	0.3m	0.6m
5 Minimum Distance from Hydrants	0.3m	1.0m	0.3m	0.6m

NOTE:
THIS DRAWING HAS BEEN PREPARED AS PART OF A FEASIBILITY ASSESSMENT REQUESTED BY NT POWER TO EVALUATE THE POTENTIAL FOR BURYING PRIMARY OVERHEAD DISTRIBUTION WIRES UNDERGROUND TO ACCOMMODATE SITE DEVELOPMENT. THE PROPOSED ELECTRICAL LAYOUT IS SUBJECT TO SITE CONDITIONS AND MAY REQUIRE ADJUSTMENT UPON FURTHER INVESTIGATION. INFORMATION USED IN THIS ASSESSMENT WAS PROVIDED BY NT POWER AT THE TIME OF THE STUDY AND MAY BE SUBJECT TO CHANGE.

CERTIFICATE OF APPROVAL
THIS WORK INSTRUCTION CONTAINS ONLY CERTIFIED CONSTRUCTION STANDARDS, SPECIFICATIONS AND APPROVED EQUIPMENT AND MEETS THE SAFETY REQUIREMENTS OF SECTION 4 OF ONTARIO REGULATION 22/04

NAME _____ DATE _____
SIGNATURE & PROFESSIONAL DESIGNATION _____

RECORD OF INSPECTION

☐ RECORD OF INSPECTION (APPLIES TO COMPLETED DRAWING)

☐ PROGRESSIVE RECORD OF INSPECTION (APPLIES TO HIGHLIGHTED AREA ONLY)

☐ NON-CONFORMANCE HAS BEEN IDENTIFIED REPORT ATTACHED

INITIALS _____ DATE _____

CERTIFICATE
THIS IS TO CERTIFY THAT THE CONSTRUCTION AS RECORDED IN THIS DRAWING IS CONSISTENT WITH THE APPROVED PLAN, STANDARD DESIGNS OR WORK INSTRUCTION AND THAT ONLY APPROVED EQUIPMENT HAS BEEN USED. ALL NON-CONFORMANCE ISSUES HAVE BEEN RECTIFIED.

NAME _____ POSITION _____
SIGNATURE _____ DATE _____

		NT POWER	
DESIGNED BY: P. GUILLERMO		NEWMARKET OFFICE: 200 Stearn Court, Newmarket, ON L3Y 6Z2 Tel: (905) 830-2309	
CHECKED BY: P. GUILLERMO		MIDLAND OFFICE: 16984 Hwy 12, Midland, ON L4R 4P4 Tel: (705) 526-0361	
DESIGN DATE: 10/23/2024		NBM PROJECT NUMBER: NBM-H24-0453-2	
		MUNICIPALITY: MIDLAND	
		SCALE: 1:500	
		DRAWING NO: CM_COM_Y24_05-04	
		SHEET NO: 4 OF 5	

Appendix B – Design Sheets

Water Service Calculations – MDD + Fire

Water Service Calculations – Peak

Sanitary Service Calculations



QUANTUM
ENGINEERING

Site Address 526 Bay Street, Midland
Project No. 23-6998
Date: September 2026

Water Service Calculations

Design Flow (MDD + Fire)	109.1	L/s
Diameter	200	mm
Pipe Design Coefficient (C)	150	
Pipe Material	PEX	
Velocity	3.47	m/s
Unit Friction Headloss	4.17	m/100m
Pipe Length	10	m
Friction Head Loss	0.42	m
Sum of Minor Loss Coefficients	1.6	
Minor Head Loss	0.98	m
Total Head Loss	1.40	m
Total Pressure Loss	1.99	psi
Pressure @ Watermain	55	psi
Pressure Head @ Watermain	38.68	m
Elevation @ Watermain	179.54	m
Total HGL @ Watermain	218.22	m
Elevation @ Building	181.5	m
Total HGL @ Building	216.82	m
Pressure Head @ Building	35.32	m
Pressure @ Building	50.22	psi

Fire Flow Calculations

Construction Coefficient (C)	0.8	Non-Combustible Construction
Total Effective Floor Area (A)	2688.5	
Required Fire Flow (RFF)	9126	L/min
	9200	L/min
Occupancy Contract Adjustment Factor	-15%	Limited as per FUS Table 3
	-1369	L/min
Automatic Sprinkler Protection	30%	Sprinklered
	2738	L/min
Exposure Adjustment Charge	15%	10.1m to 20m
	1369	L/min
Adjusted Required Fire Flow	6462	L/min
	6500	L/min
	108	L/s



Site Address 526 Bay Street, Midland
Project No. 23-6998
Date: September 2026

Water Service Calculations

Design Flow (Peak)	1.63	L/s
Diameter	50	mm
Pipe Design Coefficient (C)	150	
Pipe Material	PEX	
Velocity	0.83	m/s
Unit Friction Headloss	1.48	m/100m
Pipe Length	10	m
Friction Head Loss	0.15	m
Sum of Minor Loss Coefficients	1.6	
Minor Head Loss	0.06	m
Total Head Loss	0.20	m
Total Pressure Loss	0.29	psi
Pressure @ Watermain	55	psi
Pressure Head @ Watermain	38.68	m
Elevation @ Watermain	179.54	m
Total HGL @ Watermain	218.22	m
Elevation @ Building	181.5	m
Total HGL @ Building	218.01	m
Pressure Head @ Building	36.51	m
Pressure @ Building	51.92	psi



QUANTUM
ENGINEERING

Site Address 526 Bay Street, Midland
Project No. 23-6998
Date: September 2026

Sanitary Sewer Calculations

Average Sewage Flow	450	L/capita/day
Occupancy	2	Persons / Apartment Unit
Quantity of Units	32	Apartment Bedrooms
Average Apartment Flow	0.33	L/s
Average Flow (Commercial Area)	5	L/m ² /day
Quantity of Units	488	m ²
Average Commercial Area Flow	0.03	L/s
Total Average Design Flow	0.36	L/s
Property Area	0.152	ha
Minimum Peaking Factor	2.0	
Maximum Peaking Factor	4.0	
Peaking Factor	4.0	
Peak Flow	1.45	L/s
Extraneous Flow	0.23	L/s/ha
Peak Extraneous Flow	0.03	L/s
Total Peak Design Flow	1.48	L/s
Sanitary Service Length	15.0	m
Pipe Diameter	150	mm
Slope	2.0%	
Pipe Material	PVC	
Manning's	0.013	
Pipe Capacity	21.5	L/s
Full Flow Velocity	1.22	m/s
Actual Velocity	0.68	m/s
Percent Full	6.9%	