PLANNING JUSTIFICATION REPORT

Proposed Zoning By-law Amendment
Residential Conversion
1408 Ernest Avenue
London, ON

June 2, 2021

Prepared for:

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1. INTRODUCTION

1.1 Purpose

Monteith Brown Planning Consultants (MBPC) has been retained by Paner House III Inc. (c/o Wagdy Botros) to provide professional land use planning services associated with the proposed re-zoning of 1408 Ernest Avenue ("the subject lands"), under their ownership, to permit the conversion of the existing two-storey commercial building on site into a residential condominium along Ernest Avenue.

As identified through the Pre-Consultation process, an application for a Zoning By-Law Amendment is being sought to facilitate the proposed development.

The purpose of this Land Use Planning Rationale is to evaluate the merit of the proposed planning approvals, having regard for the Provincial Policy Statement 2020, the City of London Official Plan, The London Plan, and the City of London Zoning By-Law.

1.2 Pre-Application Consultation

Two formal Pre-Consultation meetings for the Site were held on November 4th, 2020 and February 3rd, 2021 with City of London Staff to discuss two different proposed developments on the subject lands. The purpose of this meeting was to review the proposed development on the site and to receive input and comments on the requirements for the submission of complete applications.

The first Pre-Application Consultation Meeting was for a proposed development in the form of a mixed-use residential condominium with a pharmacy on ground-level for the existing building along Ernest Avenue, with townhouses to the rear of the site. Following discussion with the City at the first Pre-Application Consultation meeting, the client had advised that the pharmacy no longer occupied the building and to revise their proposal to remove the pharmacy from the existing commercial building and to replace the proposal for townhomes with an apartment building to maximize development potential on the site.

The second Pre-Application Consultation Meeting was to present the revised proposed development to permit the commercial building conversion to residential, with a four-storey apartment building at the rear of the site, supported through bonus zoning. However, following discussion with the City at the second Pre-Application Consultation

meeting and the process of obtaining bonus density, the client has decided to revise the second proposal to move forward with the conversion of the existing commercial building to residential only, as to gain access to the regeneration of the existing building resources.

The Record of Pre-Application Consultation noted that an amendment to the Zoning By-law will be requisite to recognize and permit the proposed conversion.

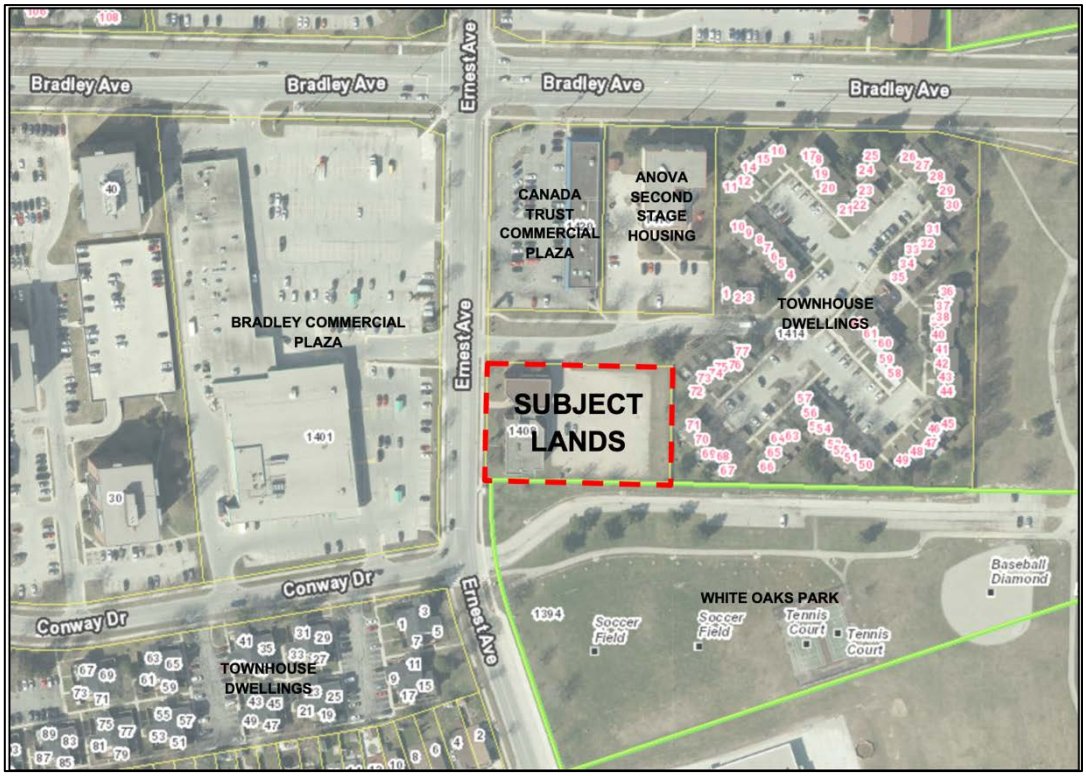
1.3 Subject Lands

The subject lands are located within the White Oaks neighbourhood in an established residential community and neighbourhood commercial node just west of White Oaks Mall. The site has an area of approximately 1.029 acres (0.41 Ha), with approximately 50.6 metres of frontage on Ernest Avenue and a depth of approximately 81.3 metres.

A two-storey commercial building currently occupies the property, with approximately 581 square metres of rentable commercial space on the first floor and 622 square metres of rentable commercial space on the second floor. The building is currently vacant; Ernest Pharmacy, which previously occupied the space on the first floor during the pre-application consultation process, no longer occupies the space.

The subject lands are adjacent to and accessed by a shared private access laneway to the north. A 64-space parking lot occupies the rear portion of the site.

Figure 1: Aerial Photograph of Subject Lands



Source: London City Map, aerial dated 2020

2. LAND USE CONTEXT

2.1 Adjacent Land Uses

North

The subject lands are adjacent to and accessed by a shared private access laneway to the north, providing vehicular access to Ernest Avenue for the subject lands, ANOVA Second Stage Housing and Whiteoak Heritage Housing Co-operative Inc. townhouse complex. Further north is Canada Tire Commercial Plaza, currently occupied by a number of neighbourhood convenience commercial uses and ANOVA Second Stage Housing, a rent-geared-to-income 25 dwelling unit apartment complex for woman and children.

Figure 2: View Looking South from Bradley Avenue at Canada Trust Commercial Plaza and ANOVA Second Stage Housing

Source: Google Maps, captured July 2019

East

Whiteoak Heritage Housing Co-operative Inc., providing 77 townhouse residential dwelling units, is located adjacent east of the subject lands. These townhouses range from two, three, and four bedroom units. South London Community Indoor Pool is located further east.

Figure 3: View looking south from Bradley Avenue at Whiteoak Heritage Housing Co-operative Inc.

Source: Google Maps, captured July 2019

South

Directly south of the subject lands is White Oaks Park. The park provides a number of outdoor recreational facilities including soccer fields, tennis courts, baseball diamonds, basketball courts, and swing sets. Directly adjacent south to White Oaks Park is St. Anthony French Immersion Catholic Elementary School.

Figure 4: View Looking East from Ernest Avenue at White Oaks Park and St. Anthony French Immersion Catholic Elementary School

Source: Google Maps, captured July 2019

West

Directly west of the subject lands and Ernest Avenue is Bradley Shopping Centre, a commercial plaza currently occupied by a number of neighbourhood convenience commercial uses including Food Basics as the anchor tenant to the plaza.

Figure 5: View Looking west from Ernest Avenue at Bradley Shopping Centre

Source: Google Maps, captured July 2019

3. PROPOSED DEVELOPMENT

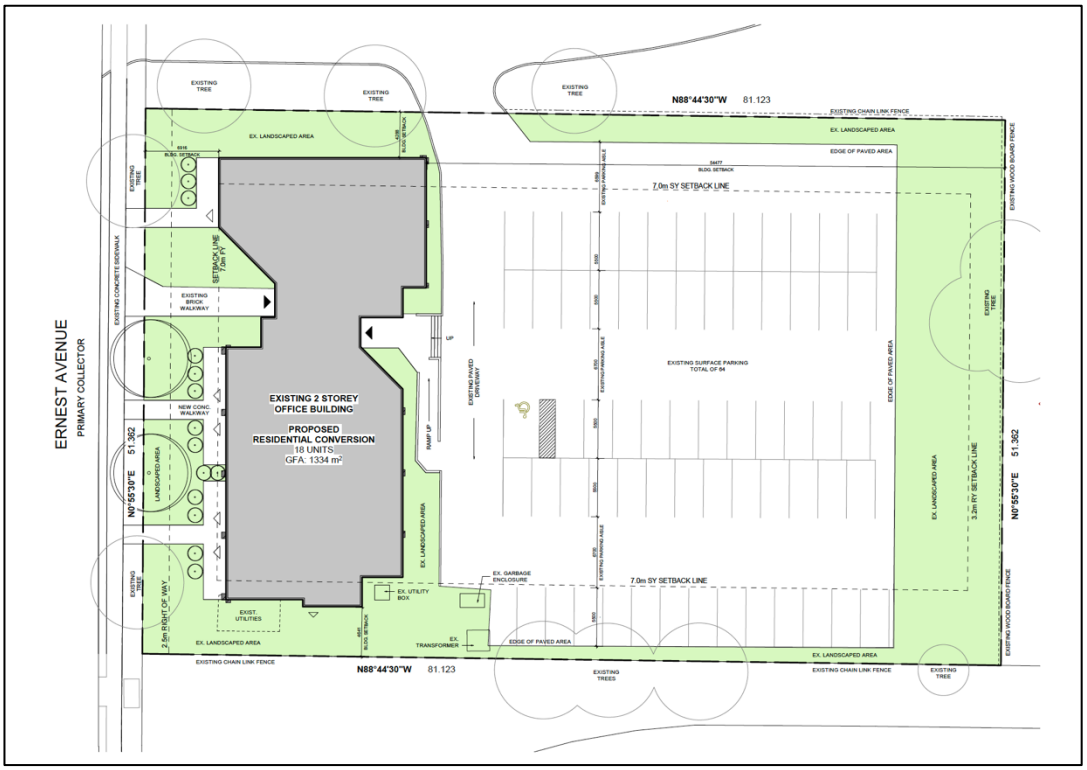
Our client is proposing to redevelop the site by converting the existing two-storey commercial building fronting Ernest Avenue into a residential apartment building. A conceptual site plan and Rendering has been submitted as Appendix 'A' in this Report and are also shown on the next page (See Figure 6 and 7).

The converted two-storey condominium fronting Ernest Avenue (building 'A'), with a gross floor area of 1334m2, is anticipated to accommodate 18 residential dwelling units – approximately 9 dwelling units on each floor. The proposed apartment building conversion anticipates a mix of 1 bedroom, 1 bedroom plus den, and 2 bedroom units. Front and Rear Building entrances to the building will be maintained with access to each unit provided internally. It is proposed that individual units on the first floor facing Ernest Avenue will have doors facing the street with walkways proposed to connect to the existing municipal sidewalk along Ernest Avenue.

Vehicular parking for the converted building will be provided behind the building in the existing parking lot to maintain a pedestrian-oriented street corridor along Ernest Avenue. Parking will be accommodated by the approximately 64 parking spaces that currently exist on the site.

Access to the site will be maintained via the existing private shared access laneway.

Figure 6: Conceptual Site Plan



Source: Masri O Inc. Architects, 2021

Figure 7: Conceptual Rendering

Source: Masri O Inc. Architects, 2021

4. TECHNICAL STUDIES

4.1 Site Servicing Brief

Development Engineering (London) Limited was retained by MBPC to provide Civil Engineering consultation for the proposed development. A functional servicing brief was prepared to identify the constraints related to storm, sanitary, and water servicing, and to provide site-level design solutions to meet the requirements of the proposed development and the City of London in support of the Zoning By-law Amendment.

Following investigation, Development Engineering concluded that there are existing municipal watermain, storm sewers and sanitary sewers available to service the subject site development and that no on-site stormwater management or quality private permanent controls are anticipates as the change in development is minimal. The investigation also concluded that the development represents approximately 26.4% of the original design peak outflow, showing adequate capacity in the tributary sanitary sewer and that the existing municipal water main infrastructure is anticipated to provide adequate domestic flow and fire protection to support the development.

The Site Servicing Brief prepared by Development Engineering (London) Limited in support of the proposed zoning by-law amendment application is attached as Appendix 'B' to this Planning Justification Report.

5. PLANNING ANALYSIS

5.1 Provincial Policy Statement

The Provincial Policy Statement 2020 ("PPS") provides policy direction on matters of provincial interest related to land use planning and development. Any decision by a planning authority that requires approval under the Planning Act, "shall be consistent with" policy statements issued under the Section 3 of the Act.

The proposed commercial to residential building conversion directs new housing development to an area within the City of London Urban Settlement Area in a manner that is compact in urban form on full municipal services, consistent with the PPS policies which seek to:

- Direct growth and development to existing settlement areas (Policy 1.1.3.1);
- Provide for land use patterns within settlement areas that are based on densities and a mix of land uses which:
    - Efficiently use land and resources,
    - Are appropriate for, and efficiently use, the infrastructure and public service facilities which are planned or available, and avoid the need for their unjustified and/or uneconomical expansion; and,
    - Support active transportation (Policy 1.1.3.2);
- Promote appropriate development standards which facilitate intensification, redevelopment and compact form, while avoiding or mitigating public health and safety risks (Policy 1.1.3.4)
- Contribute to the achievement of intensification and redevelopment targets (Policy 1.1.3.5).

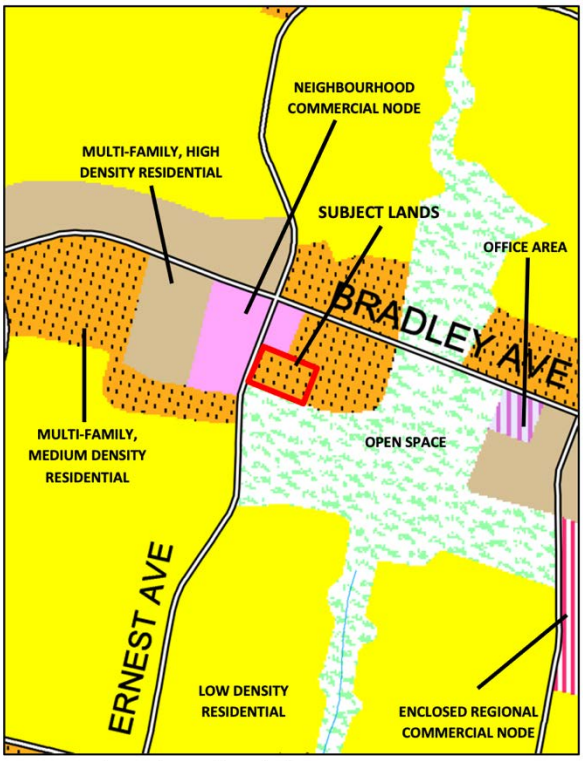
The proposed conservation development is supported by PPS Policy's 1.4.1 and 1.4.3 which calls on planning authorities to provide for an appropriate range and mix of housing options and densities to meet projected market-based requirements of current and future residents of the regional market area. The proposed conversion will contribute to the mix of low-, medium-, and high-density residential forms surrounding the subject lands.

Based on this analysis, the proposed development is consistent with the PPS.

5.2 City of London Official Plan

Schedule 'A' of the 1989 Official Plan designates the subject lands as 'Multi-Family, Medium Density Residential', which are intended to provide multi-unit residential developments having a low-rise profile, including row houses, cluster houses, low-rise apartment buildings, and certain specialized residential facilities such as small-scale nursing homes, homes for the aged and rest homes (s.s. 3.3).

Figure 8: Excerpt from Schedule 'A' Land Use, 1989 Official Plan



Source: Schedule 'A' Land Use, City of London Official Plan

In general, Multi-Family, Medium Density Residential uses are supported at locations which enhance the character and amenity of a residential area, and where there is safe and convenient access to public transit, shopping, public open space, recreation facilities and other urban amenities (s.s. 3.1.3i)). The conversion of the existing building into residential will provide residents with convenience to neighbouring commercial and recreational opportunities.

The proposed conversion promotes Residential intensification through the conversion of an existing commercial building for residential use (s.s. 3.2.3). The Official Plan encourages

residential development through intensification on lands and buildings appropriately located and serviced (2.4.1xvii)).

With regard for scale of Development, lands designated Multi-Family, Medium Density Residential shall have a low-rise form and site coverage and density that could serve as a transition between low density residential and more intensive forms of development, such as high density residential (s.s. 3.3.3). The proposed conversion will be appropriate and in keeping with the medium-density two-storey townhouse forms adjacent east and in proximity southwest of the subject lands. The proposed conversion will remain at a height of two-storeys, in keeping with the height limitations of Official Plan Policy 3.3.3i), which states that development shall be subject to height limitations in the Zoning By-law, but normally the height limitation under this designation will not exceed four storeys.

The proposed development is also in keeping with the density limitations in Section 3.3.3(i) of the Official Plan, which allows for an approximate net density of 75 units per hectare (30 units per acre). The proposed conversion will provide 18 units per acre.

The proposed development will have regard for the urban design principles set out in Section 11 of the Official Plan by:

- Promoting a high standard of design for the proposed converted low-rise apartment building;
- Maintaining a massing and conceptual design that promotes continuity and harmony in architectural style with adjacent residential uses; and,
- Maintaining street-oriented design through reduced front yard setbacks to enhance the pedestrian environment and create a sense of enclosure.

Based on this analysis, the proposed conversion development conforms to the policies of the City of London Official Plan.

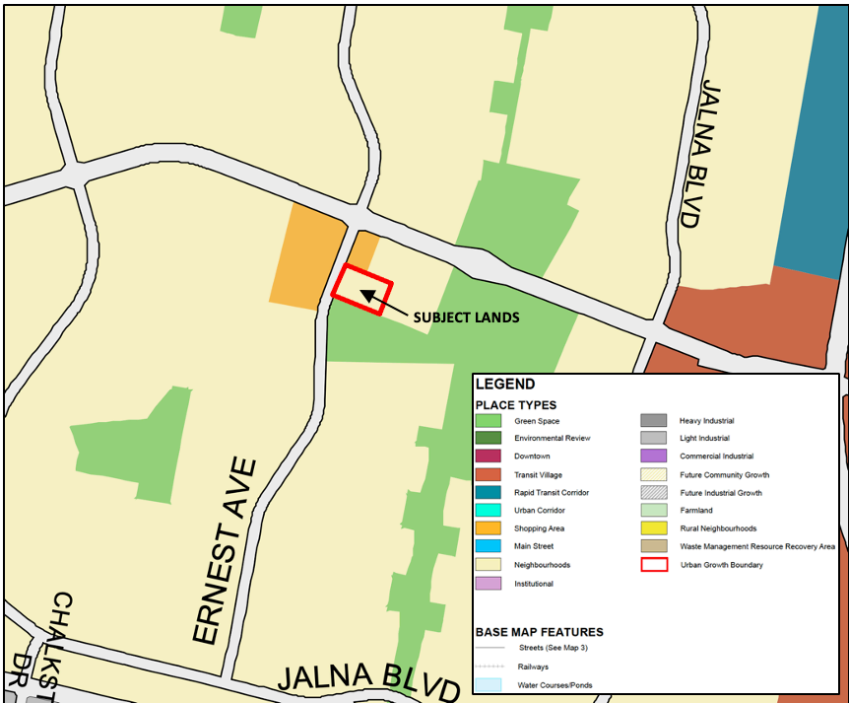
5.3 The London Plan

The property is situated within the 'Neighbourhoods' Place Type on Map 1 of the approved but appealed and partially in-force London Plan (Figure 7). Permitted uses for specific properties within the 'Neighbourhoods' place type typically depend on the classification of the higher-order street on which the property has frontage (Policy 920_4.). Ernest Avenue is considered a 'Neighbourhood Connector' on Map 3 – Street Classifications (Figure 8). The London Plan permits single detached, semi-detached, townhouses and secondary suites, as per Neighbourhood Street plus tri-plexes and small-scale community facilities (Figure 10).

Buildings with a minimum height of one storey and a maximum height of 2.5 storeys may be permitted along Neighbourhood Streets (Table 11).

The proposed development will contribute to the housing choice of the neighbourhood, allowing for residents to remain in the neighbourhood as they age if they choose to do so. This is one of the key elements for the vision of the Neighbourhoods Place Type (Policy 916_3). Another key element of the London Plan's vision for the Neighbourhoods Place Type is to provide easy access to daily goods and services within walking distance. The property is adjacent to commercial and recreational opportunities.

Figure 9 – Excerpt from Map 1 – Place Types, the London Plan



Source: Map 1 – Place Types, the London Plan

With regard to intensification, the London Plan places an emphasis on growing "inward and upward" to achieve a compact form of development and, as such, encourages and supports growth within existing built-up area of the city (Policy 79). Residential intensification will play a large role in achieving "inward and upward" growth, and is thus supported (Policy 80). Additionally, adaptive re-use of non-residential buildings, to accommodate new residential dwelling units such as the proposed development, is considered a form of intensification and may be permitted within the Neighbourhoods Place Type (Policy 939, Policy 946).

With respect to urban Design, the proposed conversion will have regard for the City Design Policies in the London Plan by:

- Maintaining a site layout that responds to the context of the existing and planned character of the surrounding area, and minimizes impacts on adjacent properties (Policy 252; Policy 253);
- Maintaining a site layout that promotes connectivity and safe movement between, and within, sites for pedestrians, cyclists, and motorists (Policy 255);
- Building configuration that maintains and reinforces the prevailing street wall or street line of existing buildings, and of which are sited with minimal setbacks from public right-of-way to create a street edge, establish a sense of enclosure and comfortable pedestrian environment (Policy 256; Policy 259);
- Maintaining surface parking in the rear or interior side yards to minimize the visual impact of parking areas on the public realm (Policies 272);

Based on this analysis, the proposed development conforms to the policies of the London Plan.

5.4 City of London Zoning By-Law Z.-1

The City of London Zoning By-law Z.-1 zones the subject lands as 'Restricted Office Zone Variation 2' ('RO2')(Figure 13). The general purpose of the RO zone is to provide for new offices uses outside of the Downtown area in small-scale office buildings primarily in areas designated 'Multi-Family, Medium Density' Residential or 'Multi-Family, High Density' Residential (s.s. 18.1). The RO2 zone permits clinics, medical and dental offices, medical and dental laboratories, and offices.

To permit the proposed conversion, a Zoning By-law Amendment is necessary. The proposed Zoning By-law Amendment seeks to re-zone the subject lands from 'Restricted Office Zone Variation 2' TO 'Residential R8 Zone Variation 4 Special Provision Zone' ('R8-4(*)').

The proposed amendment would have the effect of recognizing the conversion of the two-storey commercial building into a residential apartment building only, as no changes are being proposed to the existing building form or parking layout. The special provision requested will allow for the zoning to recognize the existing building setbacks as well (See Table 1).

Table 1: Proposed R8-4(*) Zone Regulations

Land Use Provision	Zone R8-4	Proposed R8-4(*)
Permitted Uses	APARTMENT BUILDINGS, STACKED TOWNHOUSES, LODGING HOUSES, SPECIAL POPULATION'S ACCOMODATIONS	APARTMENT BUILDINGS, STACKED TOWNHOUSES, LODGING HOUSES, SPECIAL POPULATION'S ACCOMODATIONS, CONVERTED APARTMENT DWELLINGS
Lot Area (m2) (minimum)	1000m^2	1000m^2
Lot Frontage (m) (minimum)	30 metres	30 metres
Front & Exterior Yard Depth (Collector & Local) (m) (minimum)	7 metres	4.0 metres (existing condition to road widening)
Rear Yard & Interior Side Yard Depth (m) (minimum)	1.2m / 3m BUILDING HEIGHT – NO LESS THEN 4.5m	4.0 m North Side Yard (existing)
Landscape Open Space (minimum)	30%	30%
Lot Coverage (maximum)	40%	40%
Building Height (maximum)	13 metres	13 metres
Density (maximum)	75 units/ha	75 units/ha

The proposed Zoning By-law Amendment to recognize the proposed conversion to an apartment building as a permitted use will provide opportunity for adaptive re-use of a non-residential building to accommodate an appropriate range and mix of housing options and densities in a predominantly residential and commercial area of the City. The proposed conversion will also promote and encourage residential intensification, which is encouraged by the 1989 Official Plan and the London Plan.

The reduced front yard and side yard setbacks are to recognize the existing setbacks for the building. The proposed front yard setback also allows for the existing building to maintain an active street edge along the Ernest Avenue frontage.

Based on this, the proposed development maintains the general intent and purpose of the City of London Zoning By-law.

6. CONCLUSION

As contemplated through the Zoning By-law Amendment, our client is seeking to redevelop the site by converting the existing commercial building on the site into a residential building. The proposed conversion will provide for an appropriate range and mix of housing options and densities to meet projected market-based requirements of current and future residents of the City and provides for the efficient use of land and municipal services.

Based on the analysis, the proposed conversion is consistent with the Provincial Policy Statement, conforms to the 1989 Official Plan and is in keeping with the London Plan, and maintains the general intent and purpose of the City of London Zoning By-Law. It is the recommendation of this Land Use Planning Rationale that the proposed Zoning By-Law Amendment applications be approved.

MONTEITH BROWN PLANNING CONSULTANTS

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Planner
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Jay McGuffin, MCIP, RPP
Vice President, Principal Planner
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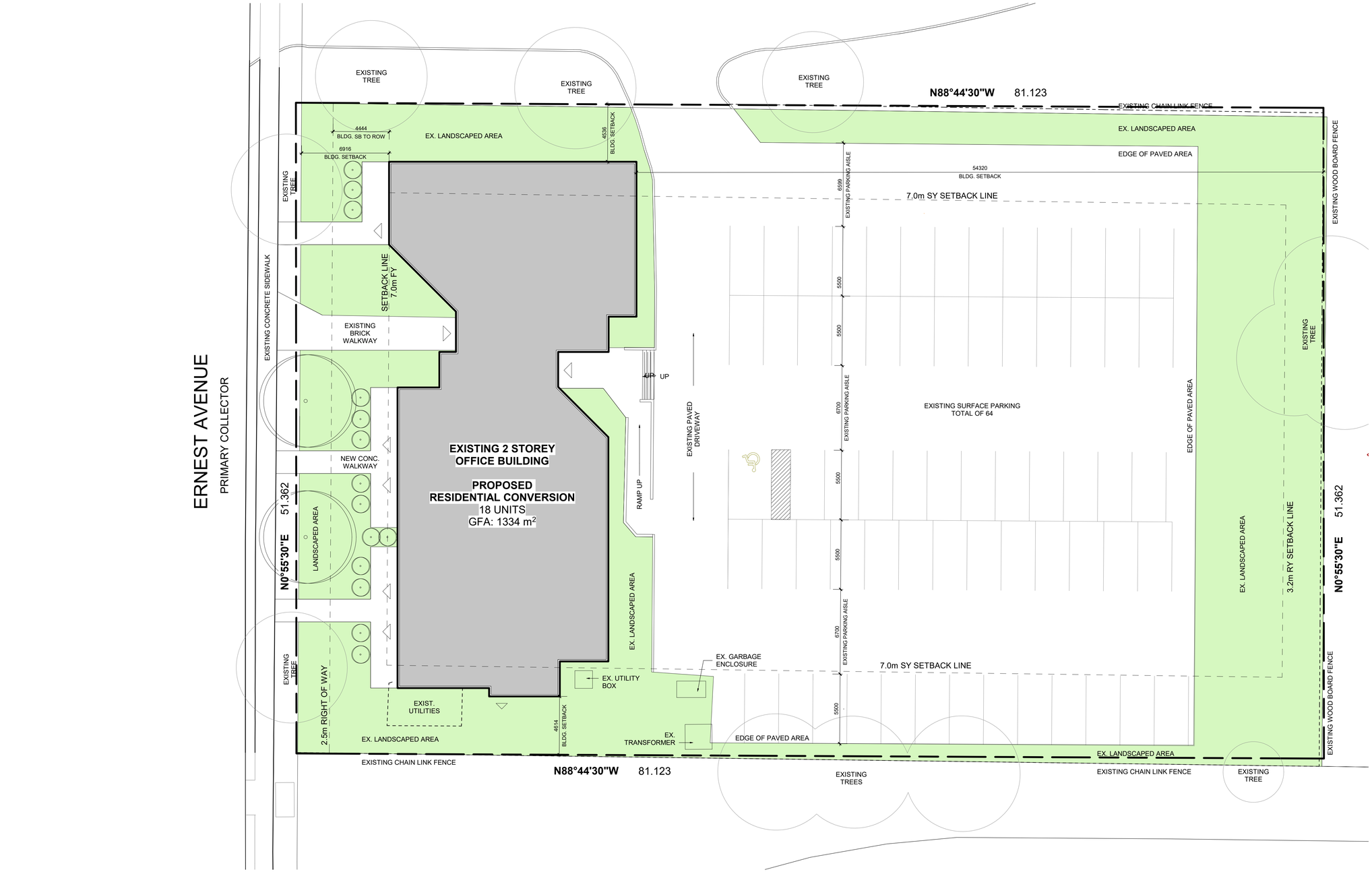
APPENDIX A

CONCEPTUAL SITE PLAN



1 A01.1 **SITE PLAN**
SCALE: 1 : 150

DETAILS OF DEVELOPMENT

DATA		REQUIRED	PROVIDED
ZONING		R8-4	
GROSS LOT AREA (m²)		4162.2 (0.4162 ha.)	
AREA OF ROW & DLT (m²)		128.4	
BUILDING AREA (m²)		667.4	
BUILDING COVERAGE(%)		16	
SETBACKS	FY (m)	7.0	7.0
	RY (m)	3.2	54.4
	N. SY (m)	7.0	4.3
	S. SY (m)	7.0	4.6
SETBACK FROM ROW (m)			4.4
MIN. FRONTAGE (m)		30	51.3
NUMBER OF STOREYS		N/A	2 (EXISTING)
BUILDING HEIGHT (m)		13	7.3 +/-
DENSITY CALCULATION		75 Units / ha. = 75 x 0.4162 ha. = 32 Units	
NUMBER OF UNITS		32	18
UNITS/ha (maximum)		75	44
NUMBER OF BEDROOMS		N/A	26
LANDSCAPE AREA (m²)		1248	1284
LANDSCAPE AREA (%)		30	30.8
PARKING REQUIRED 1 SPACE / DWELLING UNIT		18	64 EXISTING
RECOMMENDED No. OF BARRIER FREE SPACES 4% OF TOTAL		1	1 - TYPE A
GARBAGE ENCLOSURE		OUTDOOR	

APARTMENT BUILDING CONVERSION

1408 ERNEST AVENUE,
LONDON, ON

PANER HOUSE INC.

SITE PLAN

MASRI O Inc.
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101-609 KUMPF DRIVE
WATERLOO, ON, N2V 1K8
PH. 519.579.0072
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MASRI O
ARCHITECTS

APPENDIX B

Site Servicing Brief by Development Engineering (London) Inc.

development engineering (London) Limited

CONSULTING CIVIL ENGINEERS

April 26, 2021 Project.: DEL21-037

City of London
Development Services, Planning
300 Dufferin Avenue – 6th Floor
P.O. Box 5035
London, Ontario, N6A 4L9

Attention: Mustafa Almusawi, Development Services

Re: Site Servicing Brief
1408 Ernest Avenue, London

Mr. Almusawi,

Development Engineering (London) Limited (DevEng) was retained by Monteith Brown Planning Consultants on behalf of Paner House Inc. to provide Civil Engineering consultation for a two-storey, 18-unit residential apartment development on the site municipally known as 1408 Ernest Avenue in London, Ontario. The current site area is approximately 0.42 ha and the current land use is commercial office space.

This functional servicing brief has been prepared to identify the design constraints related to storm, sanitary, and water servicing, and provide site-level design solutions to meet the requirements of the proposed development and the City of London, herein referred to as the City, in support of a Zoning Bylaw amendment to change the zoning of the site from RO2 (Restricted Office) to R8-4 (high density residential) zoning.

BACKGROUND

The 0.42 ha subject site is bound by residential properties to the east, Ernest Avenue to the west, commercial property to the north, and White Oaks Park to the South. The subject site is currently developed and contains one (1) office building containing various offices and a permitted pharmacy with an associated parking lot and landscaped areas, with an existing runoff coefficient of approximately C=0.65 (64.3% imperviousness).

As-built plan and profile drawings were acquired from the City of London for Ernest Avenue to confirm the existing services available. Refer to Appendix A for a graphical representation of the existing municipal civil services presently serving the subject site.

Planning and related background documents referenced in this report include the following:

- Design Specifications & Requirements Manual (City of London, August 2019);
- Record of Pre-Application Consultation, (City of London, February 23, 2021);
- Ernest Avenue Site Plan, (Masri O Inc. Architects, 2018); and,
- City of London Record Drawings #'s 6035, 6036, 6229, 17569, and 22799.

STORM SEWERS & DRAINAGE

The fronting right-of-way, Ernest Avenue, has an urban profile in the vicinity of the subject site. Drainage from Ernest Avenue is conveyed via curbs to catchbasins connected to the municipal storm sewer system. The municipal storm sewer on Ernest Avenue is 1650 mm diameter and conveys storm runoff from adjacent properties and the road allowance and outlets to the Marr Drain via a 1950 mm diameter storm sewer and the existing Murray-Marr Stormwater Management Facility (SWMF) before ultimately discharging into Dingman Creek. According to City Record Drawing 6035 the subject site is within the multi-family block 'O' which was allotted a maximum runoff coefficient of C=0.65 (64% imperviousness) within the downstream municipal storm sewers (and presumedly the SWMF). Any significant increase in runoff coefficient over this value would necessitate the implementation of on-site private permanent controls (PPS) for stormwater management.

Storm run-off from most of the proposed development is collected in a series of on-site private storm sewers located in the existing parking lot and outlets to the municipal storm sewer on Ernest Avenue via an existing private 625 mm storm-sewer. Part of the subject site fronting Ernest Avenue sheets uncontrolled to the municipal right-of-way and enters the municipal storm network via catchbasins located within Ernest Avenue.

The proposed site plan outlines a small increase of impervious area through the introduction of three (3) new concrete sidewalks fronting Ernest Avenue. This increase changes the runoff coefficient from C=0.65 to approximately C=0.67 for the site. The minor increase in impervious area is deemed negligible and is located in an uncontrollable area discharging directly to Ernest Avenue. Due to the uncontrollable location of the proposed side walks as well as the increase in flow being minor no on-site PPS quantity control is anticipated. The increased runoff is also deemed clean as the runoff is from walkways and most of the walkways run onto grassed areas; therefore, no on-site PPS quality control is proposed.

SANITARY SEWERS

There is an existing 600 mm sanitary sewer located on Ernest Avenue which conveys wastewater to Jalna Boulevard and the Dingman Creek pumping station which ultimately outlets into the Greenway Pollution Control Plant. According to the City's record drawing 6036 (Sanitary Drainage Areas, November 1973), the subject site is within the multi-family Block 'O' which has a designated population of 1494 and a tributary area of 8.30 acres (approximately 3.36 ha). This equates to an approximate population density of 444 people/ha.

The following sanitary sewer design criteria are understood to apply to the proposed development based on section 3.8 of the City 'Design Specifications & Requirements Manual (Aug. 2019) and the proposed Site Plan:

- Medium Density Residential = 2.4 people/unit;
- Per Capita Flow = 230 litres/capita/day;
- Peaking Factor = Harmon; and,
- Infiltration = 8640 litres/hectare/day (0.100 L/s/ha).

Based on the original designed population density of 444 people/ha, the site being 0.42 ha, 230 L/person/day design flow, a Harmon peaking Factor and a 0.1 L/ha infiltration rate, the anticipated designed peak flow for the existing pipe network is anticipated to be **2.08 L/s**. Refer to Appendix A for the Sanitary Design Sheet and Appendix B for design tables.

The proposed development consists of a 2-storey, 18-unit medium density residential apartment. Based on the assumed 2.4 persons per unit for medium density as well as the design flow of 230 L/person/day, a Harmon peaking factor and a 0.100 L/s/ha infiltration, the anticipated peak flow for the proposed development is anticipated to be **0.55 L/s**. The anticipated peak flow rate assuming the maximum 75 units/ha per the R8-4 zoning is anticipated to be **0.90 L/s**. Refer to Appendix B for sanitary design tables.

Given that the proposed development represents approximately 26.4% of the originally designed peak flow (43.3% under the maximum density for the proposed zoning), it is determined that the municipal sanitary sewer from the subject site has more than adequate capacity to service the proposed development.

WATERMAIN

Based on the total population calculated in the sanitary analysis (44 people) for the proposed development and applying the City of London per capita water usage rate of 255 L/per/day, an anticipated daily water usage of 11,220 L/day will be required.

There is an existing 300mm diameter municipal watermain located within the right-of-way of Ernest Avenue. According to correspondence with a representative from the City of London's Water Operations division, the existing building is serviced by a 25mm diameter water service for domestic water demands. The existing service and watermain are part of the City of London's Low-Pressure Zone with a hydraulic grade line of HGL= 301.80m. A 25mm diameter water service is traditionally reserved for single detached homes and likely would be under-sized for domestic or fire flow demands related to the proposed development. It is anticipated an upgrade of the service would be required as part of the proposed development, with sizing and turnover calculations being conducted at Permit stage. If upgraded, the existing 25mm diameter water service would need to be disconnected at the municipal main in accordance with City of London requirements.

CONCLUSION

Based on the preceding information, the following conclusion can be made about the servicing of 1408 Ernest Avenue in London, ON.

- There are existing municipal watermain, storm sewers and sanitary sewers available to service the subject site development;
- No on-site SWM attenuation or quality PPS control is anticipated as the change in development is minimal and the increased runoff is uncontrolled, clean sheet flow to the tributary right-of-way;
- The development represents approximately 26.4% of the original designed peak outflow (43.3% under the maximum density per the zoning), showing adequate capacity in the tributary sanitary sewer; and,
- The existing municipal watermain infrastructure surrounding the proposed development is anticipated to provides adequate domestic flow and fire protection to support the development. However, the existing water service is anticipated to be under-sized for the proposed use and will require upgrading. Detailed sizing and turnover calculations are to be conducted at the Permit Stage.

This Site Servicing Brief outlines the anticipated storm sewer, sanitary sewer and water service design that will ultimately be utilized to support a Building Permit Application, such that the review and agency approvals may advance towards a building permit.

We trust the information provided herein adequately outlines a design strategy that would satisfy the requirements of the City of London. It is our opinion, based upon review of the background information and supported by the design provided herein, that adequate servicing to the 1408 Ernest Avenue site is feasible to support the proposed Zoning Bylaw Amendment.

Prepared and submitted by:

DEVELOPMENT ENGINEERING (LONDON) LIMITED

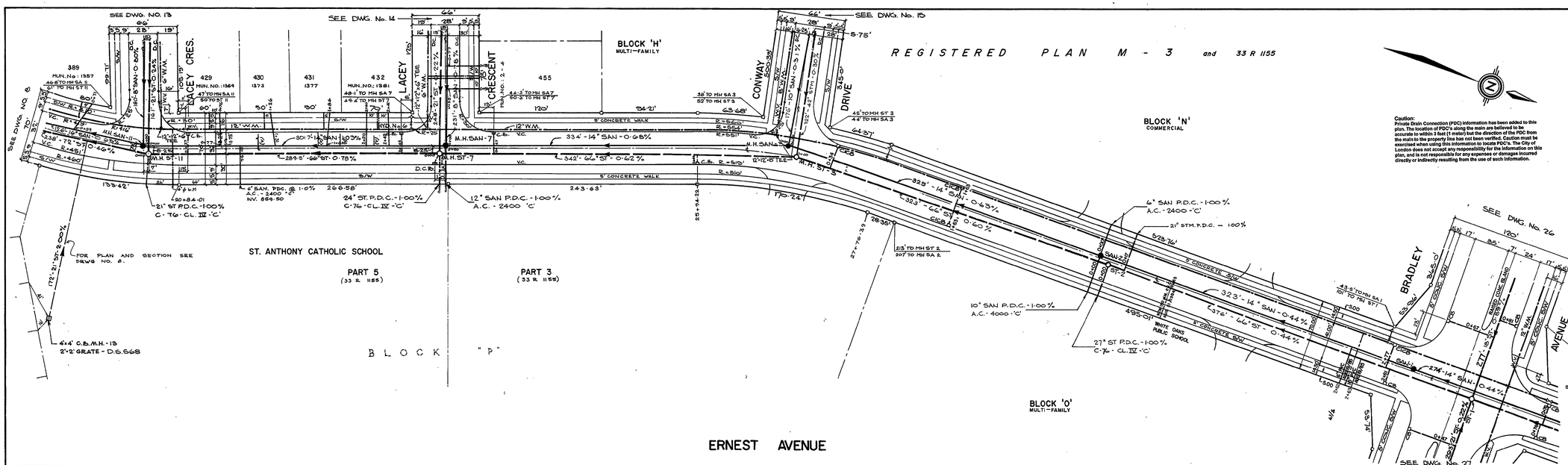
Kyle Zehr, E.I.T.
Designer

Derek Hoevenaars, P.Eng
Senior Project Engineer

Attached: Appendix A – Site and Civil Engineering Plans; and,
Appendix B – Sanitary Service Calculations.

APPENDIX A:

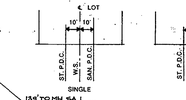
Site and Civil Engineering Plans



NOTE:
48" ALUMINUM SAFETY LANDINGS ARE INSTALLED IN MANHOLES SAN-2 & SAN-11 AND ARE OF THE TYPE USED BY J. D. OAKS & SON LTD. FOR PRE-CAST MANHOLES OR AN APPROVED EQUAL.

(V) CONNECTION AS SHOWN ON VIDEO REPORT

Caution:
Private Drain Connection (PDC) information has been added to this plan. The location of PDC's along the main are believed to be accurate to within 3 feet (1 meter) but the direction of the PDC from the main to the property line has not been verified. Caution must be exercised when using this information to locate PDC's. The City of London does not accept any responsibility for the information on this plan, and is not responsible for any expenses or damages incurred directly or indirectly resulting from the use of such information.

NOTES:
1. COVER OVER WATERMAIN TOP OF MAIN TO ROAD CENTRELINE IS 5'-6" TO 6'-0" UNLESS OTHERWISE NOTED.
2. ALL CURB AND GUTTER RADII 25' UNLESS OTHERWISE NOTED.
3. CATCH BASINS AT INTERSECTIONS ARE LOCATED 2 FT. FROM B.H.C. OR E.H.C. CURVES UNLESS OTHERWISE SHOWN.
4. FOR NOTES AND DETAILS APPLICABLE TO THIS DRAWING SEE DRAWING No. 36 T 42.
5. STRUCTURAL DESIGN OF THE SEWERS ARE BASED ON THE TRANSITION WIDTH UNLESS OTHERWISE NOTED ON THE PROFILE.
6. ELEVATIONS : CITY OF LONDON B.M. No. C.P.-7, ELEVATION 861.397. - BRONZE TABLET SET IN A CONCRETE MONUMENT THAT IS APPROXIMATELY 50 FEET SOUTH OF THE SOUTH EDGE OF THE TRAVELLED PORTION OF EXETER ROAD (HWY. 135) AND APPROXIMATELY 38 FEET WEST OF THE TRAFFIC CONTROL POLE IMMEDIATELY WEST OF WELLINGTON ROAD.
AND CITY OF LONDON B.M. No. C.P.-8, ELEVATION 851.432. - BRONZE TABLET SET IN THE TOP OF THE NORTH-EAST CORNER OF THE CONCRETE CULVERT THAT PASSES UNDER EXETER ROAD (HWY 135) APPROXIMATELY 2450 FEET WEST OF HOLIDAY AVENUE AT ITS INTERSECTION WITH EXETER ROAD.
7. 

8.

	SIZE	STRENGTH	MATL	JOINT	BEDDING	MANUFACTURER
SAN. P.D.C.s	4"	1500	A.C.	R.G.	C	JOHNS MANVILLE
ST. P.D.C.s	4"	1500	A.C.	R.G.	C	JOHNS MANVILLE
C.B. CONNECTIONS	8"	E.S.	CONC.	R.G.	C.	J.D.OAKS
PRE-CAST CONC. M.H.s	48"	3000	CONC.	R.G.	N/A	J.D.OAKS

9.

SERVICES	COMPLETION	CONTRACTOR
SANITARY SEWERS P.D.C.'s & M.H.'s	JUNE 1975	MATTHEWS GROUP
STORM SEWERS, P.D.C.'s, M.H.'s & C.B.'s	JUNE 1975	MATTHEWS GROUP
WATERMAINS & WATER SERVICES	JULY 1975	MATTHEWS GROUP
GRANULAR ROAD BASE	OCTOBER 1975	MATTHEWS GROUP
CURB & GUTTER	SEPTEMBER 1975	MATTHEWS GROUP
SIDEWALKS	SEPTEMBER 1975	BUCKLAND CONSTR
PAVING	OCTOBER 1976	STEBBINS PAV.

10. ⊄ RAMP BETWEEN GUTTER AND SIDEWALK.
11. CURB AND GUTTER ON ERNEST AVENUE IS ⊄STANDARD CITY NO ⊄STD 3.
12. STANDARD STRUCTURE REFER TO CITY OF LONDON STD NO 1006 TO 1009.
13. TYPE OF SUBSOIL IN THIS AREA IS MOSTLY CLAY.
14. DEGREE OF COMPACTION IN THE TRANCH BACKFILL 90% STANDARD PROCTOR.
15. DEGREE OF COMPACTION IN THE TRANCH BACKFILL BY SHEEPSFOOT ROLLER.
16. BLOCK "P" COVER BY PLAN 33 R 1155 AS PART 3 AND PART 5.

ENTRANCE IMPROVEMENTS (BLOCK 'N', 33M-3) & ROAD WIDENING		
SERVICES	COMPLETION	CONTRACTOR
GRANULAR ROAD BASE	OCTOBER, 1991	ROBUCK
CURB & GUTTER	OCTOBER, 1991	ROBUCK
PAVING	OCTOBER, 1991	DELCO

NO.	REVISIONS	DATE	BY
5	AS CONSTRUCTED (CONWAY DR. TO BRADLEY AVE.)	APR., 1992	S.S.
4	AS BUILT DRAWINGS	30 SEP 77	H.K.
3	BUS BAY DETAIL ERASED	21 SEP 77	H.K.
2	BUS BAY DETAIL ADDED	7 JUNE 76	K.W.H.
1	SAN SPACING ALTERED FOR COMMON TRENCH.	AUG. /74	S.A.S.

REGISTERED PROFESSIONAL ENGINEERS S. A. STINSON PROVINCE OF ONTARIO

CITY OF LONDON
REGISTERED PLAN M - 3
WHITE OAKS SUBDIVISION - PHASE I
MATTHEWS GROUP LTD. LONDON, ONT.

ERNEST AVENUE
FROM BRADLEY AVENUE TO LACEY CRESCENT (SOUTH LEG)

DESIGN BY : K.W. HODGES
DRAWN BY : H.F. VAN DOREN
CHECKED BY : S.A. STINSON
FIELD BOOK : 7-163-00
SCALE : HORIZ. 1" = 40', VERT. 1" = 4'
DATE : NOVEMBER 1973

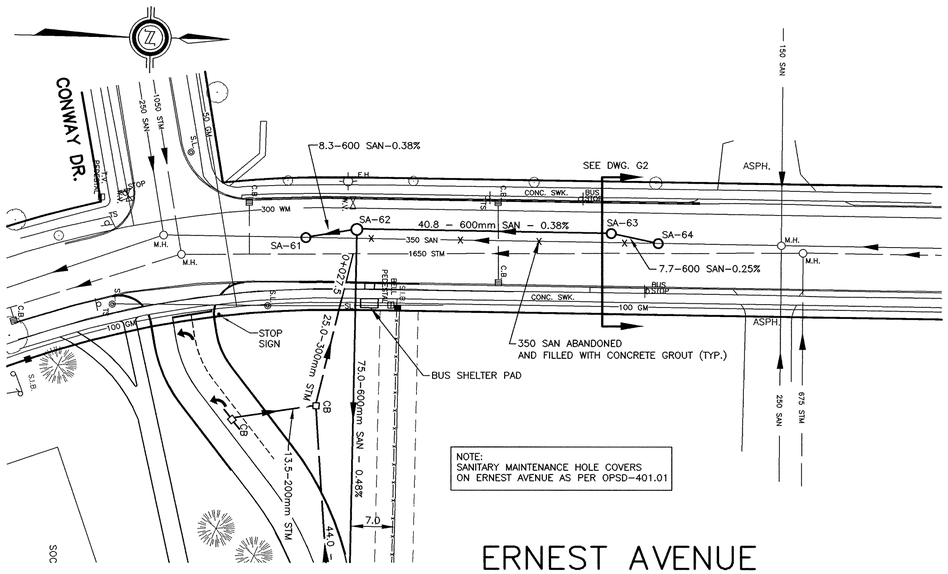
De Leuw Cather consulting engineers and planners
PROJECT No. : 7-163-00
DRAWING No. : 9

APPROVED BY :
SECTION HEAD
CITY ENGINEER

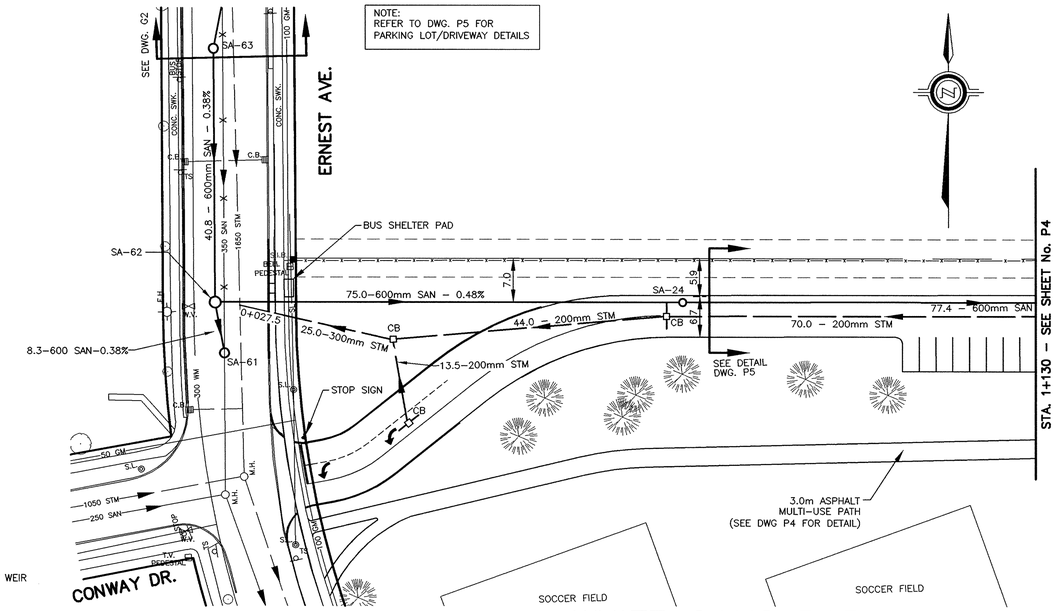
CITY ENGINEER'S DEPARTMENT
PROJECT No.:
DRAWING No.: 6229

6229

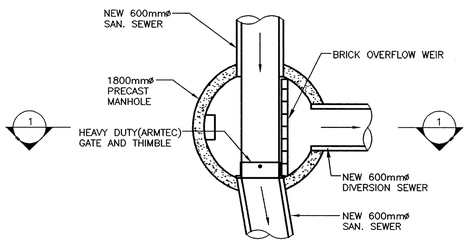
Drawing: 6229 Plotted For: Jim House on 4/30/2014 at 8:21 AM



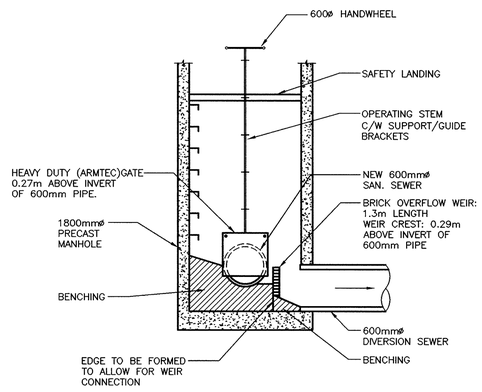
ERNEST AVENUE



WHITE OAKS PARK

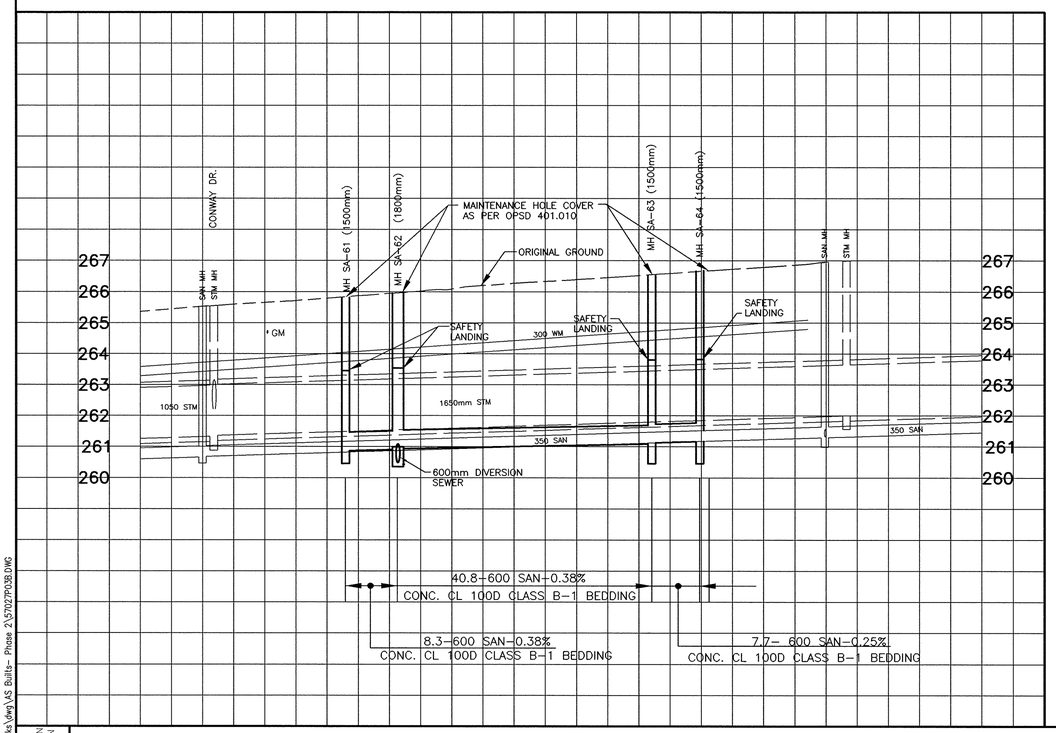


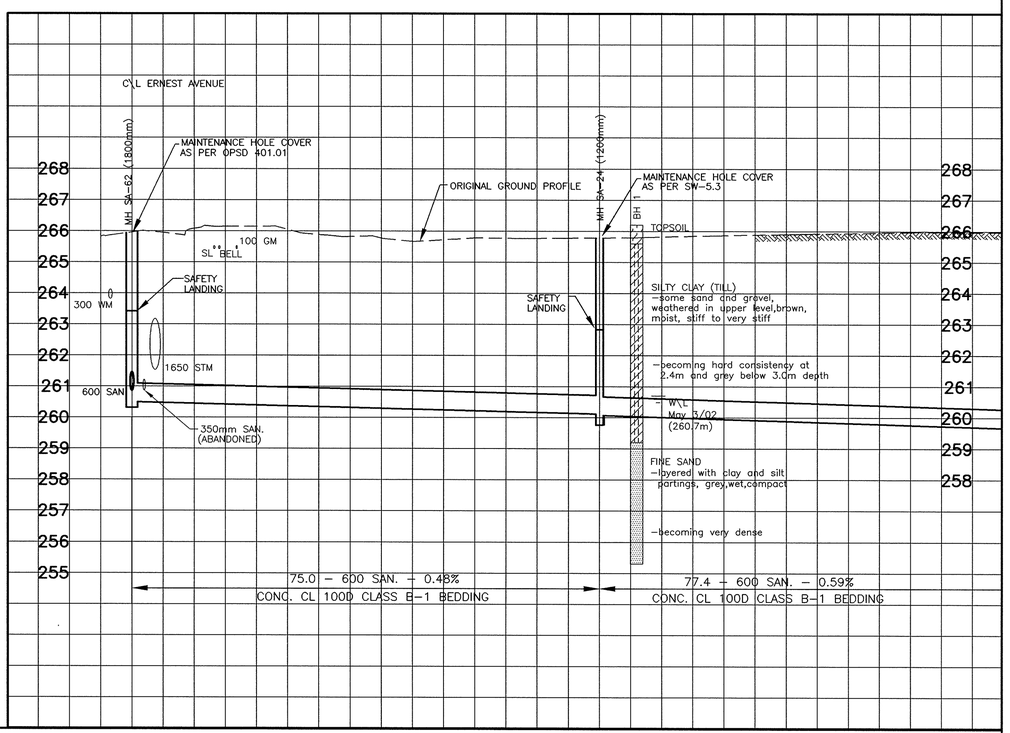
PLAN
SCALE 1:50



SECTION 1

INLET CONFIGURATION/CONTROL
(ERNEST AVE.)
SCALE 1:50





STATION	SANITARY SEWER INVERT	STORM SEWER INVERT	C/L WATERMAIN ELEVATION
1+000.00	260.845W 260.795S		
1+010.00			
1+020.00	260.792S		
1+031.2	260.860N		
1+030.00	260.891S		
1+031.2	260.964N		
	260.449E		
1+040.00			
1+050.00			
1+060.00			
1+070.00	261.117S		
1+071.2	261.117N		
1+080.10	261.136S		
1+081.1	261.219N		
1+090.00			
1+099.5	261.396N		
	261.542E		
	261.576W		
1+110.00			
1+000.00	260.891S		
	260.964N		
	260.449E		
1+010.00			
1+020.00			
1+028.41			
1+030.00			
1+040.00			
1+050.00			
1+060.00			
1+070.00			
1+075.00	260.086W		
1+080.00	260.056E		
1+090.00			
1+100.00			
1+110.00			
1+120.00			
1+130.00			

AS CONSTRUCTED NOTES

1. SEE DRAWING No. FOR FURTHER DETAILS
2. SEWER DESIGN: WIDTH OR AS NOTED
3. REFERENCE B.M. No V91–49 ELEVATION 260.097m

AS CONSTRUCTED SERVICES	COMPLETION
450/600 SANITARY SEWER (PHASE 1)	DEC/02
ASPHALT PATHWAYS (PHASE 1)	MAY/03
2550 SAN/600 SAN DIVERSION (PHASE 2)	NOV/03
STORM SEWERS AND CBS (PHASE 2)	NOV/03
CURB & GUTTER/PARKING LOT (PHASE 2)	NOV/03
ASPHALT PATHWAY (PHASE 2)	MAY/04

DESIGN	PDC
DRAWN	SJD
CHECKED	DCC
APPROVED	JHH
DATE	MAR./03

No.	REVISIONS	DATE	BY
A	ISSUED FOR REVIEW	09/16/02	PDC
B	ISSUED FOR FINAL REVIEW	02/19/03	DCC
0	ISSUED FOR TENDER	03/12/03	DCC
1	ISSUED FOR CONSTRUCTION	04/17/03	DCC
2	AS CONSTRUCTED	01/29/04	ER

CONSULTANT OR DIVISION

EARTH TECH

Earth Tech (Canada) Inc. London, Ontario 519.673.0510

PROJECT ENGINEER

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER D.C. CARTER FEB/7/04 PROVINCE OF ONTARIO

CORPORATION OF THE CITY OF LONDON
London CANADA

SCALE
SCALE – 1 : 500
5.0m 0 10m
HORZ
SCALE – 1 : 100
1.0 0 2.0m
VERT

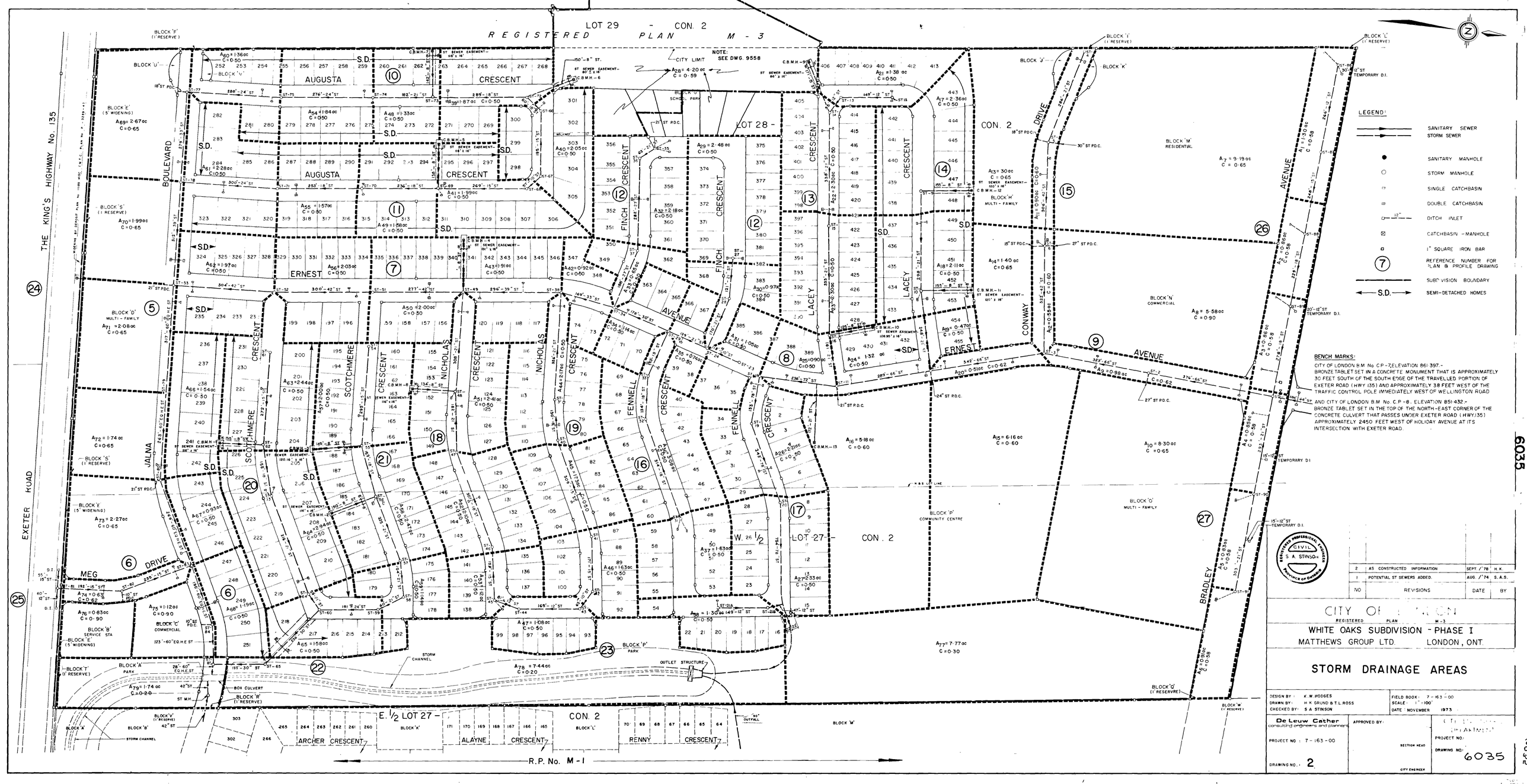
TITLE
WHITE OAKS SANITARY DIVERSION SEWER AND STORAGE FACILITY – PHASE 1 & 2

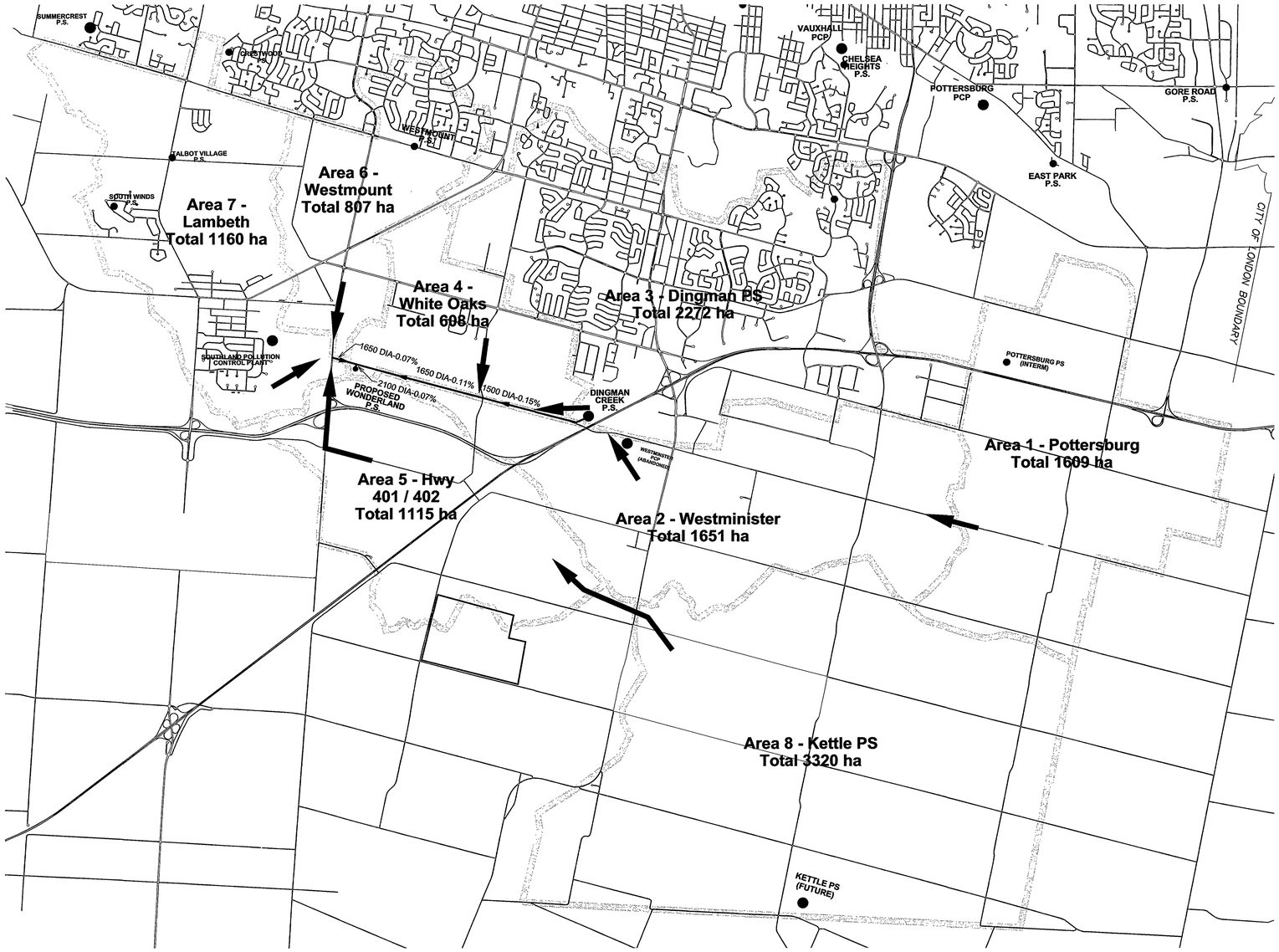
600mmø DIVERSION SEWER

FROM: CONWAY DRIVE TO: 100m NORTH OF CONWAY DRIVE
FROM: ERNEST AVENUE TO: 120m EAST OF ERNEST AVENUE (WHITE OAKS PARK)

PROJECT No. 610/W/84
SHEET No. P3
PLAN FILE No. 17,569

Drawing File: P:\PROJECTS\57027 White Oaks\dwg\AS Builts– Phase 2\57027P03B.DWG
Time: 2:52 P.M.
Date: FEB 16/2004


LOT 29 - CON. 2
REGISTERED PLAN M - 3
THE KING'S HIGHWAY No. 135
EXETER ROAD
BOULEVARD
AUGUSTA
CRESCENT
ERNEST
AVENUE
DRIVE
MEG
JALNA
SCOTCHMERE
NICHOLAS
FENNELL
FINCH
LACEY
CONWAY
BRADLEY
LOT 28 - CON. 2
LOT 27 - CON. 2
W. 26 1/2
E. 1/2 LOT 27 - CON. 2
R.P. No. M-1
CITY LIMIT
NOTE: SEE DWG. 9558
BLOCK 'A' PARK
BLOCK 'B' SERVICE STA
BLOCK 'C' COMMERCIAL
BLOCK 'D' MULTI-FAMILY
BLOCK 'E' (5' WIDENING)
BLOCK 'F' (1' RESERVE)
BLOCK 'G' SCHOOL PARK
BLOCK 'H' MULTI-FAMILY
BLOCK 'I' (1' RESERVE)
BLOCK 'J'
BLOCK 'K'
BLOCK 'L' (1' RESERVE)
BLOCK 'M' RESIDENTIAL
BLOCK 'N' COMMERCIAL
BLOCK 'O' MULTI-FAMILY
BLOCK 'P' COMMUNITY CENTRE
BLOCK 'Q' (1' RESERVE)
BLOCK 'R' (1' RESERVE)
BLOCK 'S' (1' RESERVE)
BLOCK 'T' (1' RESERVE)
BLOCK 'U'
BLOCK 'V' (1' RESERVE)
BLOCK 'W' (1' RESERVE)
STORM CHANNEL
BOX CULVERT
OUTLET STRUCTURE
ARCHER CRESCENT
ALAYNE CRESCENT
RENNY CRESCENT
LEGEND:
SANITARY SEWER
STORM SEWER
SANITARY MANHOLE
STORM MANHOLE
SINGLE CATCHBASIN
DOUBLE CATCHBASIN
DITCH INLET
CATCHBASIN - MANHOLE
1" SQUARE IRON BAR
REFERENCE NUMBER FOR PLAN & PROFILE DRAWING
SUBDIVISION BOUNDARY
S.D. SEMI-DETACHED HOMES
BENCH MARKS:
CITY OF LONDON B.M. No. C.P.-7, ELEVATION 861.397 - BRONZE TABLET SET IN A CONCRETE MONUMENT THAT IS APPROXIMATELY 30 FEET SOUTH OF THE SOUTH EDGE OF THE TRAVELLED PORTION OF EXETER ROAD (HWY 135) AND APPROXIMATELY 38 FEET WEST OF THE TRAFFIC CONTROL POLE IMMEDIATELY WEST OF WELLINGTON ROAD
AND CITY OF LONDON B.M. No. C.P.-8, ELEVATION 851.432 - BRONZE TABLET SET IN THE TOP OF THE NORTH-EAST CORNER OF THE CONCRETE CULVERT THAT PASSES UNDER EXETER ROAD (HWY 135) APPROXIMATELY 2450 FEET WEST OF HOLIDAY AVENUE AT ITS INTERSECTION WITH EXETER ROAD.
REGISTERED PROFESSIONAL ENGINEERS PROVINCE OF ONTARIO
CIVIL
S. A. STINSON
2 AS CONSTRUCTED INFORMATION SEPT./'78 H.K.
1 POTENTIAL ST SEWERS ADDED. AUG./'74 S.A.S.
NO REVISIONS DATE BY
CITY OF LONDON
REGISTERED PLAN M-3
WHITE OAKS SUBDIVISION - PHASE I
MATTHEWS GROUP LTD. LONDON, ONT.
STORM DRAINAGE AREAS
DESIGN BY: K.W. HODGES
DRAWN BY: H.K. GRUND & T.L. ROSS
CHECKED BY: S.A. STINSON
FIELD BOOK: 7-163-00
SCALE: 1"=100'
DATE: NOVEMBER 1973
De Leuw Cather consulting engineers and planners
PROJECT NO: 7-163-00
DRAWING NO.: 2
APPROVED BY:
SECTION HEAD
CITY ENGINEER
PROJECT NO:
DRAWING NO: 6035
6035



SANITARY SEWER DESIGN SHEET
CITY OF LONDON

RESIDENTIAL COMMERCIAL AND INSTITUTIONAL POPULATION DENSITIES

THE FOLLOWING POPULATION ALLOWANCES WILL APPLY WHEN DESIGNING SANITARY SEWERS:

LOW DENSITY (SINGLE-FAMILY / SEMI-DETACHED)	= 30 UNITS / HECTARE @ 3 PEOPLE / UNIT
MEDIUM DENSITY (MULTI-FAMILY / TOWNHOUSE / ROWHOUSE)	= 75 UNITS / HECTARE @ 2.4 PEOPLE / UNIT
HIGH DENSITY (APARTMENTS)	= 150 - 300 UNIT / HECTARE @ 1.6 PEOPLE / UNIT
COMMERCIAL / INSTITUTIONAL	= 100 PEOPLE / HECTARE
RESIDENTIAL DENSITY (>200ha)	55 PEOPLE / ha
SECONDARY SCHOOL	= 1500 PEOPLE
ELEMENTARY SCHOOL	= 400 PEOPLE
HEAVY INDUSTRIAL	30,000 l/ha/day

DESIGN CRITERIA		
SEWAGE =	250	LITRE / CAPITA / DAY
INFILTRATION =	8640	LITRES / HECTARE / DAY
PEAKING FACTOR:	$= \frac{1 + 14}{4 + P^{0.5}}$	

PROJECT NAME: Wonderland PS and Dingman Drive Trunk Sanitary Sewer Drainage Areas

LOCATION				AREA			POPULATION						SEWAGE FLOWS			SEWER DESIGN					
AREA No.	STREET	FROM MANHOLE	TO MANHOLE	GROSS AREA	DELTA AREA	TOTAL HECTARES	PER HECTARE	PER LOT	NO. OF LOTS	DELTA POP.	TOTAL POP. EQ.	PEAKING FACTOR	INFILT L / s	SEWAGE L / s	TOTAL L / s	PIPE SIZE mm	n	SLOPE %	CAP L / s	Flow / Capacity	VELOCITY m / s
1	Pottersburg			1609	1609	1609				193,080	193,080	1.43	161	797	958						
2	Westminister			1651	1651	3260				198,120	391,200	1.27	326	1439	1765						
3	Dingman PS			2272	2272	5532				124,960	516,160	1.29	553	1931	2484						
	Dingman Drive	Dingman PS	White Oak Road												2484	1500	0.013	0.13	2549	97%	1.44
4	White Oak Road			608	608	608				72,960	72,960	2.42	61	510	571						
	Dingman Drive	White Oak Road	Wonderland PS			6140					589,120	1.26	614	2147	2761	1650	0.013	0.10	2882	96%	1.35
AREA No.	STREET	FROM MANHOLE	TO MANHOLE	GROSS AREA	DELTA AREA	TOTAL HECTARES	PER HECTARE	PER LOT	NO. OF LOTS	DELTA POP.	TOTAL POP. EQ.	PEAKING FACTOR	INFILT L / s	SEWAGE L / s	TOTAL L / s	PIPE SIZE mm	n	SLOPE %	CAP L / s		VELOCITY m / s
8	Kettle PS			3320	3320	3320				182,600	182,600	1.44	332	761	1093						
5	Hwy 401 / 402			1115	1115	4435				61,325	243,925	1.37	444	968	1411						
7	Lambeth			1160	1160	5595				63,800	307,725	1.32	560	1175	1735	1200	0.013	0.20	1743	99%	1.54
6	Westmount			807	807	5242				44,385	44,385	3.15	524	405	929	900	0.013	0.20	810	115%	1.27
	Dingman Drive	Wonderland Road	Wonderland PS			10837					352,110	1.41	1084	1433	2517	1650	0.013	0.10	2882	87%	1.35
TOTAL	Wonderland PS	Dingman Drive	Wonderland PS			16977				941,230		1.16	1698	3160	4858	2100	0.011	0.07	5421	90%	1.32

Dingman Drive / Wonderland PS Trunk Sanitary Sewer

The design of the Dingman Drive / Wonderland PS trunk sanitary sewer was developed on the basis of the ultimate growth design period. Design sanitary sewage flows were derived from a combination of the application of the current City of London design criteria and the drainage tributary areas identified in the City of London Sanitary Sewerage Servicing Plan Update 2003. The City design criteria were applied to the sanitary drainage tributary areas for the Dingman Drive / Wonderland PS trunk sanitary sewer as follows:

Dingman Drive East of Wonderland PS

- Area tributary to the existing Dingman PS – residential contribution based on 55 persons per gross hectare and 250 l/c/d with Harmon peaking factor and 0.1 l/ha/s infiltration allowance; and
- Undeveloped future tributary areas adjacent to Dingman Drive – industrial contribution based on 30,000 l/ha/d, Harmon peaking factor (80%) based on population equivalent and 0.1 l/ha/s infiltration allowance.

Dingman Drive West of Wonderland PS

- Sanitary flows based on 55 persons per gross hectare and 250 l/c/d with Harmon peaking factor and 0.1 l/ha/s infiltration allowance.

W:\1655\00473 Wonderland PS, FM and Sewers\design\drawing\WORZ-Working\473-Sanitary DSS.dwg
2010-05-13 09:03AM By: dmcmillan

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	R.H.
DRAWN BY	G.B.
CHECKED	R.H.
APPROVED	R.H.
DATE	MAR/06
1655 00473	

No.	REVISIONS	DATE	CONSULTANT
1	AS-BUILT DRAWING	11.06.06	

CONSULTANT OR DIVISION

Stantec
Stantec Consulting Ltd.
171 Queens Avenue
London ON Canada
N6A 5J7
Tel. 519.645.2007
Fax. 519.645.6575
www.stantec.com
JOB NO. 1655-00473

ENGINEER'S STAMP

R. E. HUGHES — LICENSED PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO

CORPORATION OF THE CITY OF LONDON

London CANADA

SCALE

300 0 600m

TITLE

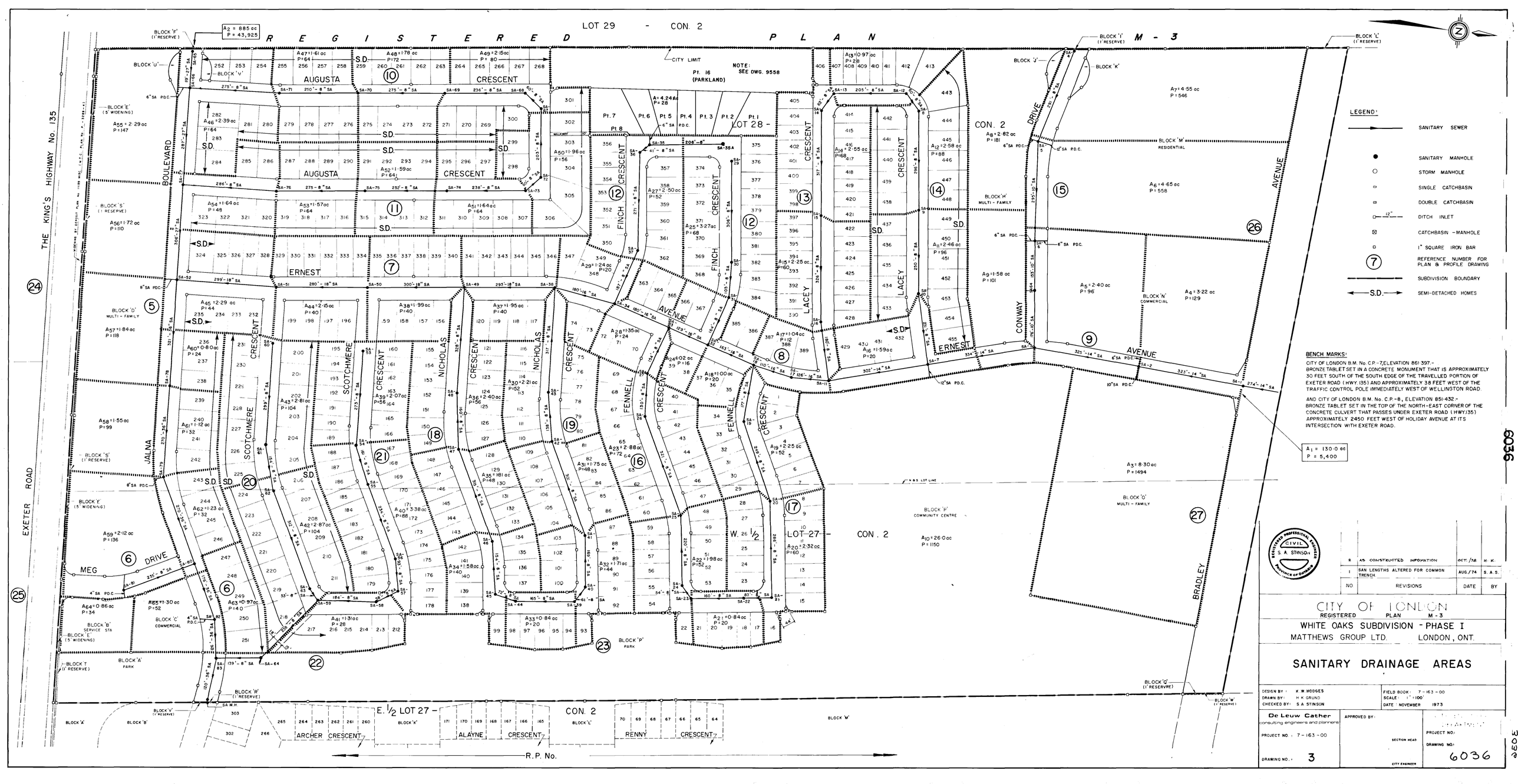
WONDERLAND PUMPING STATION

SANITARY SEWER DRAINAGE AREA PLAN

PROJECT No. ES 5249

SHEET No. S1

PLAN FILE No. 22799


LOT 29 - CON. 2
REGISTERED PLAN M - 3
THE KING'S HIGHWAY No. 135
EXETER ROAD
AUGUSTA CRESCENT
ERNEST AVENUE
FINCH CRESCENT
LACEY CRESCENT
CONWAY DRIVE
SCOTCHMERE CRESCENT
NICHOLAS CRESCENT
FENNELL CRESCENT
JALNA BOULEVARD
MEG DRIVE
BRADLEY AVENUE
CITY LIMIT
NOTE: SEE DWG. 9558
Pt. 16 (PARKLAND)
LOT 28
LOT 27
CON. 2
W. 1/2 LOT 27
E. 1/2 LOT 27
BLOCK 'A' PARK
BLOCK 'B' SERVICE STA
BLOCK 'C' COMMERCIAL
BLOCK 'D' MULTI - FAMILY
BLOCK 'E' (5' WIDENING)
BLOCK 'F' (1' RESERVE)
BLOCK 'G' (1' RESERVE)
BLOCK 'H' MULTI - FAMILY
BLOCK 'I' (1' RESERVE)
BLOCK 'J'
BLOCK 'K'
BLOCK 'L' (1' RESERVE)
BLOCK 'M' RESIDENTIAL
BLOCK 'N' COMMERCIAL
BLOCK 'O' MULTI - FAMILY
BLOCK 'P' COMMUNITY CENTRE
BLOCK 'P' PARK
BLOCK 'Q' (1' RESERVE)
BLOCK 'R' (1' RESERVE)
BLOCK 'S' (1' RESERVE)
BLOCK 'T' (1' RESERVE)
BLOCK 'U'
BLOCK 'V' (1' RESERVE)
BLOCK 'W' (1' RESERVE)
ARCHER CRESCENT
ALAYNE CRESCENT
RENNY CRESCENT
R.P. No.
A1 = 130.0 ac P = 5,400
A2 = 885 ac P = 43,925
A3 = 8.30 ac P = 1494
A4 = 3.22 ac P = 129
A5 = 2.40 ac P = 96
A6 = 4.65 ac P = 558
A7 = 4.55 ac P = 546
A8 = 2.82 ac P = 181
A9 = 1.58 ac P = 101
A10 = 26.0 ac P = 1150
A11 = 2.46 ac P = 96
A12 = 2.58 ac P = 88
A13 = 10.97 ac P = 28
A14 = 4.02 ac P = 16
A15 = 2.25 ac P = 60
A16 = 1.59 ac P = 20
A17 = 1.04 ac P = 12
A18 = 1.00 ac P = 20
A19 = 2.25 ac P = 52
A20 = 2.32 ac P = 60
A21 = 0.84 ac P = 20
A22 = 1.98 ac P = 52
A23 = 2.88 ac P = 72
A24 = 2.02 ac P = 16
A25 = 3.27 ac P = 68
A26 = 2.55 ac P = 68
A27 = 2.50 ac P = 52
A28 = 1.35 ac P = 24
A29 = 1.24 ac P = 20
A30 = 2.21 ac P = 52
A31 = 1.75 ac P = 48
A32 = 1.71 ac P = 44
A33 = 0.84 ac P = 20
A34 = 1.58 ac P = 40
A35 = 1.81 ac P = 48
A36 = 2.40 ac P = 56
A37 = 1.95 ac P = 40
A38 = 1.99 ac P = 40
A39 = 2.07 ac P = 56
A40 = 3.38 ac P = 88
A41 = 1.31 ac P = 28
A42 = 2.87 ac P = 104
A43 = 2.81 ac P = 104
A44 = 2.15 ac P = 40
A45 = 2.29 ac P = 44
A46 = 2.39 ac P = 64
A47 = 1.61 ac P = 64
A48 = 1.78 ac P = 72
A49 = 2.15 ac P = 80
A50 = 1.96 ac P = 56
A51 = 1.64 ac P = 64
A52 = 1.59 ac P = 64
A53 = 1.57 ac P = 64
A54 = 1.64 ac P = 48
A55 = 2.29 ac P = 147
A56 = 1.72 ac P = 110
A57 = 1.84 ac P = 118
A58 = 1.55 ac P = 99
A59 = 2.12 ac P = 136
A60 = 0.80 ac P = 24
A61 = 1.12 ac P = 32
A62 = 1.23 ac P = 32
A63 = 0.97 ac P = 40
A64 = 0.86 ac P = 34
A65 = 1.30 ac P = 52
LEGEND:
SANITARY SEWER
SANITARY MANHOLE
STORM MANHOLE
SINGLE CATCHBASIN
DOUBLE CATCHBASIN
DITCH INLET
CATCHBASIN - MANHOLE
1" SQUARE IRON BAR
REFERENCE NUMBER FOR PLAN & PROFILE DRAWING
SUBDIVISION BOUNDARY
SEMI-DETACHED HOMES
BENCH MARKS:
CITY OF LONDON B.M. No. C.P.-7 ELEVATION 861.397 - BRONZE TABLET SET IN A CONCRETE MONUMENT THAT IS APPROXIMATELY 30 FEET SOUTH OF THE SOUTH EDGE OF THE TRAVELLED PORTION OF EXETER ROAD (HWY. 135) AND APPROXIMATELY 38 FEET WEST OF THE TRAFFIC CONTROL POLE IMMEDIATELY WEST OF WELLINGTON ROAD.
AND CITY OF LONDON B.M. No. C.P.-8, ELEVATION 851.432 - BRONZE TABLET SET IN THE TOP OF THE NORTH-EAST CORNER OF THE CONCRETE CULVERT THAT PASSES UNDER EXETER ROAD (HWY.135) APPROXIMATELY 2450 FEET WEST OF HOLIDAY AVENUE AT ITS INTERSECTION WITH EXETER ROAD.
REGISTERED PROFESSIONAL ENGINEERS CIVIL S. A. STINSON PROVINCE OF ONTARIO
2 AS CONSTRUCTED INFOMATION OCT./76 H. K.
1 SAN LENGTHS ALTERED FOR COMMON TRENCH AUG./74 S. A. S.
NO. REVISIONS DATE BY
CITY OF LONDON
REGISTERED PLAN M-3
WHITE OAKS SUBDIVISION - PHASE I
MATTHEWS GROUP LTD. LONDON, ONT.
SANITARY DRAINAGE AREAS
DESIGN BY: K.W. HODGES
DRAWN BY: H.K. GRUND
CHECKED BY: S.A. STINSON
FIELD BOOK: 7-163-00
SCALE: 1" = 100'
DATE: NOVEMBER 1973
De Leuw Cather consulting engineers and planners
PROJECT NO.: 7-163-00
DRAWING NO.: 3
APPROVED BY:
SECTION HEAD
CITY ENGINEER
PROJECT NO.:
DRAWING NO.: 6036
6036

APPENDIX B:

Sanitary Service Calculations

Project #: DEL21-037
Project Name **1408 Ernest Ave., London**
Date: April 26, 2021
By: KZ/DH

development engineering (London) Limited
CONSULTING CIVIL ENGINEERS
41 Adelaide Street North, Unit 71
London, Ontario, N6B 3P4
Tel: (519) 672-8310 Fax: (519) 672-4182
e-mail:deveng@deveng.net
website: www.deveng.net

PRELIMINARY SANITARY FLOW CALCULATION

Proposed Medium Density Residential Site		
Population (assumed medium density residential):	44	persons
Dry Weather Design Flow:	0.12	L/s
Peaking Factor (Harmon):	4.3	
Infiltration Allowance:	0.04	L/s
Design Flow:	**0.55**	L/s

Area
Medium Density Residential Site: 0.416 ha

Design Sheet - Block O		
Block Area:	3.36	ha
Design Population:	1494	persons
Population Density:	444	per/ha
Subject Site Population:	184	persons
Peaking Factor (Harmon):	4.2	
Dry Weather Design Flow:	0.49	L/s
Infiltration Allowance:	0.04	L/s
Design Flow:	**2.08**	**L/s**

Assumptions

Number of Proposed Units:	18	units
Maximum Residential PPU(Assumed Medium Density):	2.4	persons/unit[1]
Residential Dry Weather Design Flow:	230	L/cap/day[1]
Peaking Factor (residential Harmon)[1]:	M=1+(14/(4+P$^{0.5}$))	
Infiltration Allowance:	0.100	L/s/ha[1]

Maximum Allowable Site Outlfow		
Population (assumed medium density residential):	75	persons
Dry Weather Design Flow:	0.20	L/s
Peaking Factor (Harmon):	4.3	
Infiltration Allowance:	0.04	L/s
Design Flow:	**0.90**	L/s

Assumptions

Number of Maximum Allowable Units (75 Units/ha):	31	units
Maximum Residential PPU(Assumed Medium Density):	2.4	persons/unit[1]
Residential Dry Weather Design Flow:	230	L/cap/day[1]
Peaking Factor (residential Harmon)[1]:	M=1+(14/(4+P$^{0.5}$))	
Infiltration Allowance:	0.100	L/s/ha[1]

References:
(1) Taken from City of London Design Specifications & Requirements Manual - Section 3, Dated August, 2019