



October 26, 2023

MTE File No.: 51932-300

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

Attention: Paul Di Losa

RE: 900 Jalna Boulevard Functional Servicing Brief

Introduction

This brief has been prepared to support the zoning bylaw amendment application for 900 Jalna Boulevard.

Pre-Development Conditions

The subject lands are located within the 'Dingman Creek - Thames River' watershed. Subject land drains south towards Jalna Boulevard. The existing property is made up of at grade parking and a commercial building.

Post Development Conditions

The Site plan is approximately 0.81 ha in size. The site plan consists of a medium density residential units, a private laneway and landscaped areas. Land under proposed conditions to drain south toward Jalna Boulevard.

Existing Servicing Infrastructure

Water

There are two (2) watermains fronting the proposed site, an existing 200mmØ ductile iron watermain on the north side of Jalna Boulevard and an existing 300mmØ ductile iron watermain on the south side of Southdale Road East. There are existing fire hydrants to the east and west of the site on Jalna Boulevard.

Sanitary

There is an existing 200mmØ sanitary sewer stub located on the south property line on Jalna Boulevard servicing the existing site. Based on City as-built information (File No. 6502 attached).

Storm

There is an existing 600mmØ storm sewer with a 450mmØ stub located on the south property line on Jalna Boulevard servicing the existing site. Based on City as-built information (File No. 6502 attached).

Water Supply Servicing

A water service will be provided to service the proposed medium density residential townhouse units. The existing fire hydrant adjacent to the development site are not located close enough to

supply fire protection for the proposed development therefore, fire hydrant(s) will be required on the private site to provide fire protection.

The proposed watermain should connect to the existing 200mmØ ductile iron watermain on Jalna Boulevard.

The proposed development consists of 78 medium density townhouse units. The total population is 188 people using current City of London standards (2.4p/unit).

Sanitary Servicing

As per the as-constructed Jalna Boulevard, City of London File No. 6502, the proposed development has an existing 200mm sanitary sewer stub servicing the existing site.

The proposed sewer should connect to the existing 200mmØ sanitary sewer stub on Jalna Boulevard. The existing sanitary sewer was designed in 1978 (reference City of London DWG File No.6486S1) and has a population of 211 assigned to the subject lands.

The proposed development consists of 78 medium density townhouse units. The total population is 188 people using current City of London standards (2.4p/unit).

Based on the population of the proposed site being lower than the designed population, the existing sewers are designed with sufficient capacity to convey the expected flow from the proposed development.

Stormwater Management Considerations

Criteria

The stormwater management design criteria for the subject site, as established by the City of London are as follows:

- Ensure on-site controls are designed to reduce/match existing peak flows from the 5-year through 100-year return period storms.
- Implementation of water balance controls per Dingman Creek Stormwater Servicing Study.
- Implementation of water quality controls per Dingman Creek Stormwater Servicing Study.

Methodology

To successfully complete the stormwater management design for this site, the following specific tasks were undertaken:

- Calculated the allowable release rates using Rational Method based on the 5-year predevelopment conditions.
- Determine the Site's runoff coefficient.
- Calculated post-development runoff using Rational Method.
- Determine pre to post pervious area to determine if water balance is required.

Quantity Controls

The site is a tributary of an existing storm sewer in White Oaks Subdivision – Phase 2 with a runoff coefficient of 0.65 per City of London as-constructed drawing No. 6485S1. MTE completed area take off measurements based on the proposed site plan. Surfaces and cumulative areas are summarized as follows:

Impervious Area:	6888.99 m ²
Pervious Area:	1200.30m ²
Total:	8089.29 m ²

Applying a runoff coefficient of 0.2 for pervious surfaces and 0.9 for the impervious surfaces, a weighted runoff coefficient of 0.80 was calculated for the site.

The proposed development composite C factor calculated as 0.80 is higher than the accepted runoff coefficient for the site; therefore, onsite SWM quantity controls are required. Based on preliminary calculations the allowable release rate for 5-year event is 103.71 L/s. It is suggested the flow rate to be controlled through an orifice plate installed on the outlet of the most downstream storm maintenance holes on site. The existing 450mm storm sewer stub, currently servicing the existing development, should be used to service the proposed development.

As the proposed coefficient exceeds the design, on-site storage will be required to attenuate flow from the 5 through 100-year events to design levels. A preliminary extended rational analysis method was used to determine the maximum storage volume which would be required to attenuate runoff to the target release rate. The analysis showed approximately 148.82m³ of storage volume will be required. Grading shall be designed to safely convey runoff from the storm event exceeding the 100-year storm to the designated overland flow route south of the site to Jalna Boulevard.

Water Balance

A review of the pre-development vs the post-development conditions shows a reduction of 794m² to the pervious area. Additional infiltration is recommended as per the Dingman Creek Stormwater Servicing Study. Although, based on the Geotechnical Investigation, dated October 22, 2023, by MTE Consultants, the subject site soils are clay and silt till with low infiltration potential, which is not recommended for LID application. Therefore, there is insufficient opportunities to capture run-off and provide active infiltration (to increase post-development infiltration volumes) in LID features to mitigate post-development infiltration deficiencies. It is recommended that passive infiltration measures such as increased topsoil thickness and directing runoff to grassed areas be utilized to decrease runoff and promote infiltration in the post-development condition.

Quality Controls

Quality controls are required for the proposed development as per section 7.1.1 – Water Quality Targets of the ‘Dingman Creek Stormwater Servicing Study’ and City of London Design Standards. Since the site is not compatible with LID infiltration controls to provide quality controls, a mixture between passive controls, as described in the ‘Water Balance’ sections, and a conventional OGS in line with the storm sewer outlet are recommended for the proposed development and should be sized as part of the detailed design for the site.

Erosion and Sediment Controls

In order to minimize the effects of erosion during the grading of the site, sediment control fencing should be installed. Silt sacks are recommended to be installed in the proposed and existing surrounding catch basins during construction. Any sediment that is tracked onto the roadway during construction should be cleaned, a mud mat is recommended to minimize sediment tracking off site by construction equipment.

Conclusion

Based on the foregoing analysis, it is concluded that:

- i. There is adequate existing infrastructure in the vicinity of the development to provide fire protection and domestic water supply.
- ii. The existing downstream sanitary sewer is adequately designed to service the proposed development.
- iii. Passive infiltration measures are recommended to minimize water balance changes.
- iv. Quality controls are recommended to be achieved through a mixture of passive infiltration and a conventional OGS.

Should you have questions or comments, please do not hesitate to contact the undersigned.

Respectfully Submitted,

Yours truly,

MTE Consultants Inc.



Derrick Rice, P.Eng.

Project Manager

519-204-6510 ext. 2265

drice@mte85.com

Attach:

Rational Method Calculations

Existing White Oak's Subdivision – Phase 2 Sanitary Area Plan (No. 6486S1)

Existing White Oak's Subdivision – Phase 2 Storm Area Plan (No. 6485S1)

Existing White Oak's Subdivision – Phase 2 Jalna Boulevard (No. 6502)

Site Concept Plan



SWM Calculations

DATE:	October 25, 2023
JOB NO.:	51932-300
Project:	900 Jalna Boulevard
Location:	London, ON

DESIGN CONDITIONS

TOTAL DESIGN AREA (A1)

	Area (m ²)
Total Site Area:	8089.290
Building Area:	-
Concrete/Asphalt:	-
Landscaped/Open:	-
Totals:	8089.29
C _{eq} = Sum(A*C)/Sum(A) =	0.65

5 Year Design Flows

C =	0.65	
**Time to concentration t _c =	12.50	min
Intensity, i (@ t _c) =	70.95	mm/hr
Post Development Flow, Q _r = 2.78*C*i*A =	103.71	l/s

100 Year Design Flows

C =	0.65	
**Time to concentration t _c =	12.50	min
Intensity, i (@ t _c) =	163.84	mm/hr
Post Development Flow, Q _r = 2.78*C*i*A =	239.50	l/s

POST-DEVELOPMENT CONDITIONS

POST-DEVELOPMENT CONTROLLED CATCHMENT A1

	Area (m ²)	C	A*C
Total Site Area:	8089.290		
Impervious	6888.99	0.9	6200.091
Pervious	1200.30	0.2	240.06
Totals:	8089.29		6440.151
C _{eq} = Sum(A*C)/Sum(A) =	0.80		

CITY OF LONDON - 3 HOUR CHICAGO RAINFALL DISTRIBUTION PARAMETERS*

Return Period (years)	A,B,C Parameters		
	A	B	C
25mm	538.850	6.331	0.809
2	754.360	6.011	0.810
5	1183.740	7.641	0.838
10	1574.382	9.025	0.860
25	2019.372	9.824	0.875
50	2270.665	9.984	0.876
100	2619.363	10.500	0.884
250	3048.220	10.030	0.888

*Intensity i=A/(t+B)^C (mm/hr)

* Refer to the City of London Design Specification & Requirements Manual (DS&RM), Section 6.

RAINFALL DATA

Rainfall Data - London Rainfall Intensity Duration
 2YR Storm Event

Duration (min.)	Intensity "i" (mm/hr)
5	108.07
10	79.80
15	64.03
30	41.39
60	25.33
120	15.01
180	10.95

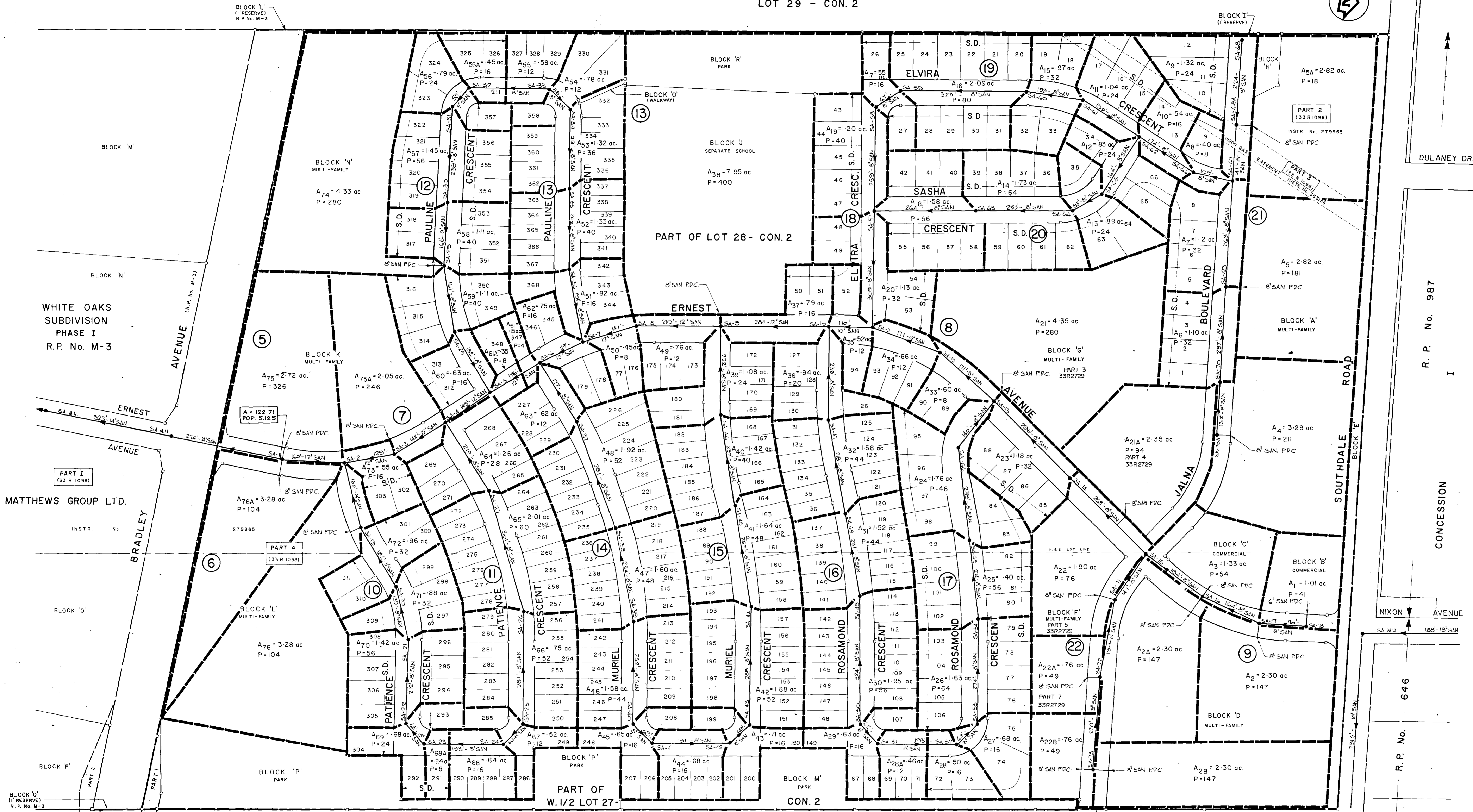
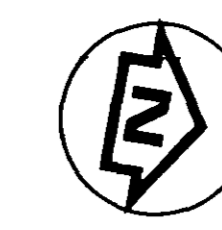
100 Yr Stm Event

Duration (min.)	Intensity "i" (mm/hr)
5	232.24
10	181.39
15	149.56
30	99.36
60	60.87
120	35.32
180	25.28

STORAGE CALCULATIONS

Inflow, Q_i $2.78 \cdot C \cdot i \cdot A$ (l/s)	Volume In $Q_i \cdot t \cdot 60 / 1000$ (m^3)	Orifice Restrictor Outflow, Q_o (l/s)	Surface Outflow Q_o (l/s)	Allowable Release, Q_o (l/s)	Volume Out $Q_o \cdot t \cdot 60 / 1000$ (m^3)	Difference/ Storage (m^3)
194.42	58.33	103.71	0.00	103.71	31.11	27.21
143.56	86.14	103.71	0.00	103.71	62.23	23.91
115.20	103.68	103.71	0.00	103.71	93.34	10.34
74.46	134.02	103.71	0.00	103.71	186.68	-52.66
45.58	164.07	103.71	0.00	103.71	373.36	-209.29
27.00	194.37	103.71	0.00	103.71	746.73	-552.36
19.69	212.68	103.71	0.00	103.71	1120.09	-907.41
Max. Storage Volume (m^3) =						27.21

Inflow, Q_i $2.78 \cdot C \cdot i \cdot A$ (l/s)	Volume In $Q_i \cdot t \cdot 60 / 1000$ (m^3)	Orifice Restrictor Outflow, Q_o (l/s)	Surface Outflow Q_o (l/s)	Allowable Release, Q_o (l/s)	Volume Out $Q_o \cdot t \cdot 60 / 1000$ (m^3)	Difference/ Storage (m^3)
417.82	125.35	103.71	0.00	103.71	31.11	94.23
326.33	195.80	103.71	0.00	103.71	62.23	133.57
269.07	242.16	103.71	0.00	103.71	93.34	148.82
178.75	321.75	103.71	0.00	103.71	186.68	135.07
109.51	394.23	103.71	0.00	103.71	373.36	20.86
63.54	457.48	103.71	0.00	103.71	746.73	-289.24
45.48	491.18	103.71	0.00	103.71	1120.09	-628.91
Max. Storage Volume (m^3) =						148.82



- LEGEND:**
- SANITARY SEWER
 - STORM SEWER
 - SANITARY MANHOLE
 - STORM MANHOLE
 - SINGLE CATCHBASIN
 - DOUBLE CATCHBASIN
 - DITCH INLET & LEAD
 - 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-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 130) APPROXIMATELY 2450 FEET WEST OF HOLIDAY AVENUE AT ITS INTERSECTION WITH EXETER ROAD

AND CITY OF LONDON B.M. No. S-110, ELEVATION 899.956 - ON TOP OF THE SOUTH BONNET BOLT OF THE FIRE HYDRANT OPPOSITE THE GLENDALE UNITED CHURCH ON THE NORTH SIDE OF SOUTHDALE ROAD

NOTE:

ALL THE P.D.C.'S WERE CONSTRUCTED AT THE SAME TIME OF CONSTRUCTION AS THE SEWERS, AT LEAST UP TO THE BACK OF THE CURB LINE ON BOTH SIDES WHEN THE COMMON TRENCH METHOD WAS USED FOR THE INSTALLATION OF SEWERS.

THESE DETAILS APPLY TO DRWG. NUMBERS:

AS CONSTRUCTED INFORMATION	DEC '78	DEP
REVISIONS	DATE	HY



CITY OF LONDON
REGISTERED PLAN M-14
WHITE OAKS SUBDIVISION - PHASE II
MATTHEWS GROUP LTD. LONDON, ONT.

SANITARY DRAINAGE AREAS

LET. IN BY: K.W. HODGES DRAWN BY: W.D.R. MAGUIRE CHECKED BY: H.K. GRUND & L.G. BANGS De Leuw Cather PROJECT No. 7-238 DRAWING No. 3	FIELD BOOK: 7-238 SCALE: 1" = 100' DATE: MARCH 1976 APPROVED BY: CITY ENGINEER'S DEPARTMENT PROJECT No. 7-238 SECTION HEAD: DRAINS No. 6486 (1-4) CITY ENGINEER
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WIMPEY HOMES LTD.
PART OF E. 1/2 LOT 27 - CON. 2
DEPOSIT PLAN No. 32 R 82

WHITE OAKS SUBDIVISION PHASE I R.P. No. M-3

MATTHEWS GROUP LTD.

BLOCK 'O' (1' RESERVE) R.P. No. M-3
BLOCK 'W' (1' RESERVE) R.P. No. M-1

DEPOSIT PLAN No. 33-R-1 FOR PARTS 1, 2, 6 & 7

DULANEY DRIVE

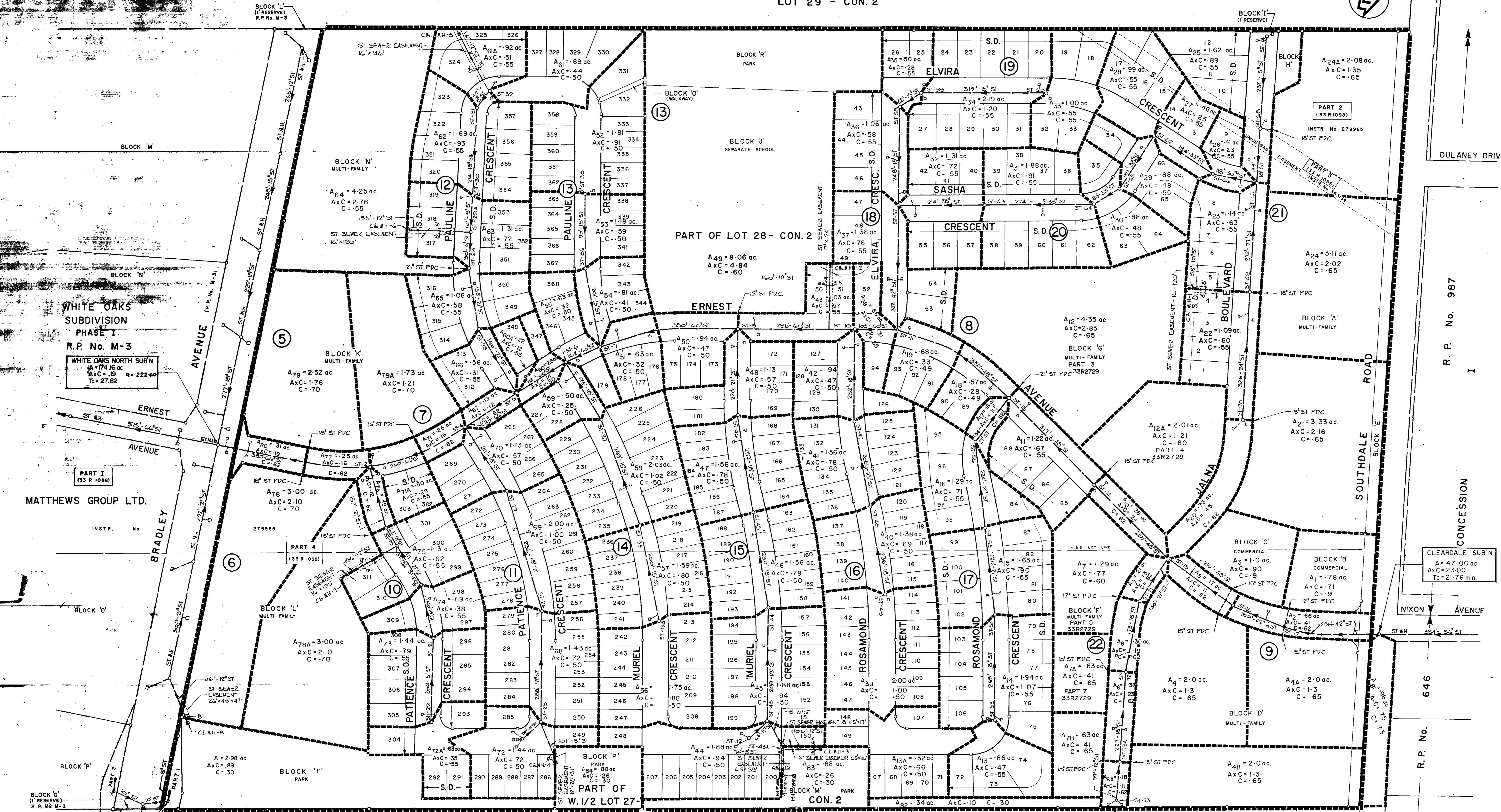
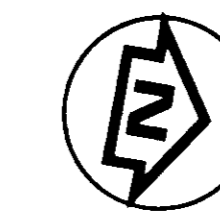
R.P. No. 987

CONCESSION

NIXON AVENUE

R.P. No. 646

0430 (1-4)



- LEGEND:**
- SANITARY SEWER
 - STORM SEWER
 - SANITARY MANHOLE
 - STORM MANHOLE
 - SINGLE CATCHBASIN
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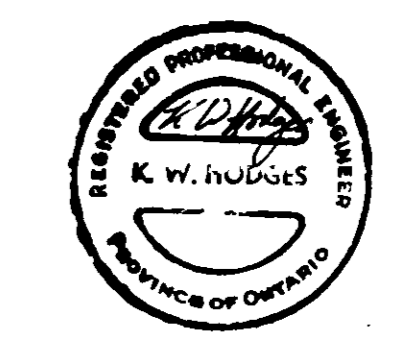
AND CITY OF LONDON B.M. No. S-10, ELEVATION 899.956 - ON TOP OF THE SOUTH BONNET BOLT OF THE FIRE HYDRANT OPPOSITE THE GLENDALE UNITED CHURCH ON THE NORTH SIDE OF SOUTHDALIE ROAD

NOTE:

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THESE DETAILS APPLY TO DRAWING NUMBERS:

NO.	AS CONSTRUCTED INFORMATION	DATE
1	AS CONSTRUCTED INFORMATION	DEC 78
N	REVISIONS	DATE



CITY OF LONDON
REGISTERED PLAN M-14
WHITE OAKS SUBDIVISION - PHASE II
MATTHEWS GROUP LTD. LONDON, ONT.

STORM DRAINAGE AREAS

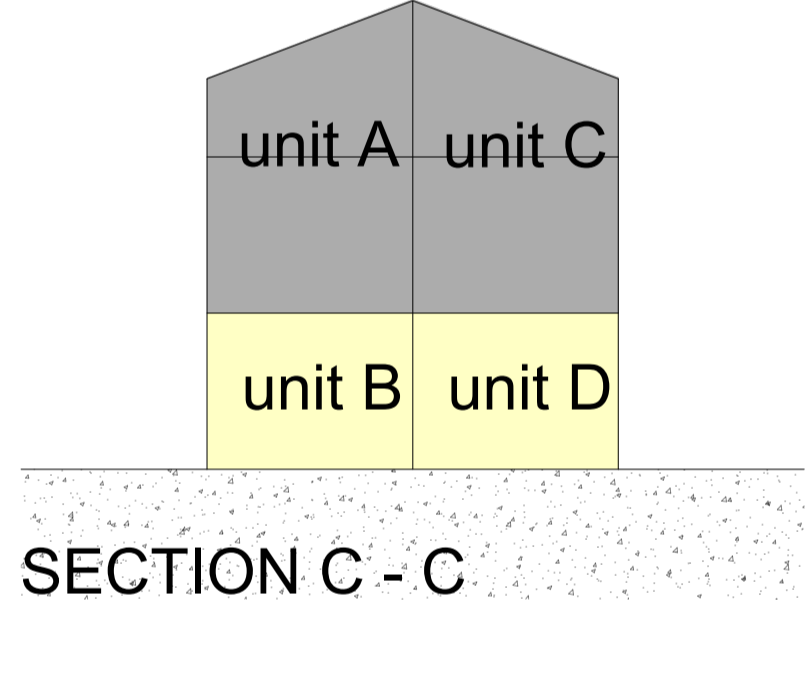
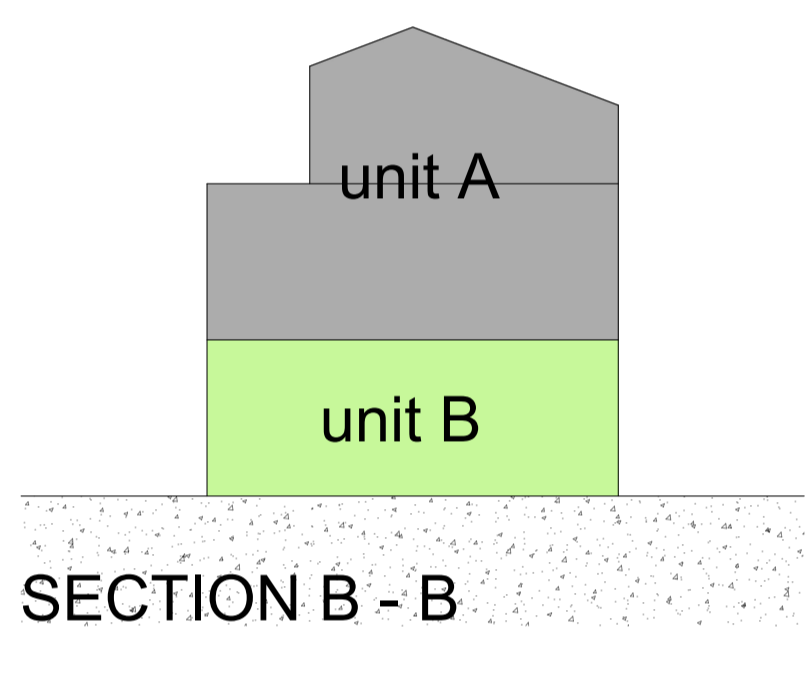
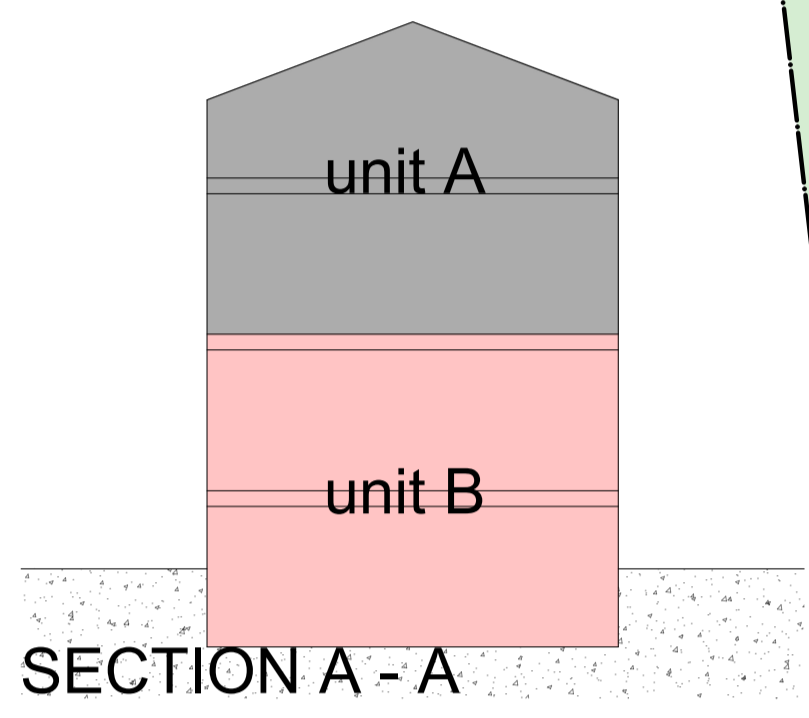
LET BY: K.W. HODGES FIELD BOOK: 7-238
 DRAWN BY: W.D.R. MAGUIRE SCALE: 1" = 100'
 CHECKED BY: H.K. GRUND & L.G. BANGS DATE: MARCH 1976

De Leuw Cather APPROVED BY: CITY ENGINEER'S DEPARTMENT
 CONSULTING ENGINEERS AND PLANNERS
 PROJECT No: 7-238 SECTION HEAD
 DRAWING No: 2 DRAWING No: 6485 (1-5)

6485 (1-5)

WIMPEY HOMES LTD.
 PART OF E. 1/2 LOT 27 - CON. 2
 DEPOSIT PLAN No. 32 R 82

SOUTHDALE ROAD EAST
 (BY BY-LAW No. 5-3847-B, REGISTERED AS INSTRUMENT No. LT415919)
 (ROAD ALLOWANCE BETWEEN CONCESSIONS 1 AND 2)
 (WIDTH VARIES)
 P.I.N. 08465 - 0152

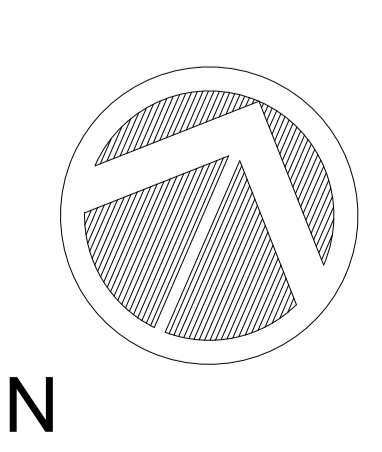
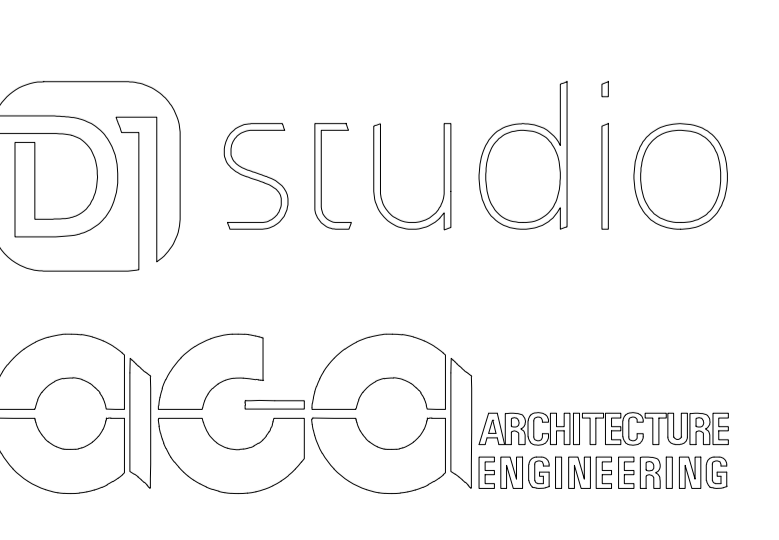


LOT 01-11	1,136.7 sq.f	22 UNIT
LOT 12-25	627.5 sq.f	14 UNIT
	1,255 sq.f	14 UNIT
LOT 26-39	620.8 sq.f	14 UNIT
	1,241.5 sq.f	14 UNIT
TOTAL		78 UNIT

PARKING	89
78 x 1.15 = 89.7	
PROPOSED AMENITY	466 m ²
78 x 5 = 390	

206.599 (MEAS)
 (N73°36'10"W P)
 N6°35'5"W (MEAS)
 2.123 (MEAS)
 (2.134 P)

JALNA BOULEVARD
 (ESTABLISHED BY PLAN M-14)
 (21.336 WIDE)
 P.I.N. 08498 - 0192



PROJECT NAME:	900 JALNA BOULAVARD	REVISION NO.:	[1]	DRAWN:	
DRAWING TITLE:	SITE PLAN	SC:	1:200	DWG NO.:	A-01
		SHEET SIZE:	A0		
		DATE:	JUNE 2023		