

MEMO

DATE	July 20, 2021 Updated July 23, 2021
PROJECT NO.	2103-5995
RE	External Sanitary Sewer Analysis for 1503 Hyde Park Road, City of London
TO	Paul Di Losa, C.Tech Senior Technologist Development Services City of London
FROM	Daniel Doherty, P.Eng. C.F. Crozier & Associates Inc.
CC	Bridgel Patel Business Network Associates

This memorandum has been prepared in support of the Zoning By-law Amendment Application [DD1] for the Site located at 1503 Hyde Park Road, in City of London from the perspective of external sanitary sewer capacity. The purpose of this memo is to present the available information about the capacity of the existing municipal sanitary sewer in Coronation Drive including the existing constraints, required updates, and available capacity for the proposed development at 1503 Hyde Park Road, City of London (the Site).

1.0 Background

C.F. Crozier & Associates Inc. (Crozier) was retained by Business Network Associates to prepare an external sanitary analysis to analyze the impact of the proposed development on the capacity of the existing external sanitary sewer network. The Site is approximately 0.9 ha and is in a mixed residential and commercial area. It is bounded by a commercial property to the north and south, an existing residential development to the east, and Hyde Park Road to the west. The elements envisioned for this development include one 8-storey apartment building with ground-floor retail and 128 residential units, according to the Site Plan provided by Aci Wright Architects Inc., dated December 2020.

2.0 Existing Sanitary Sewer Condition

According to the Sanitary Drainage Area Plan (Plan No. 29547) provided by MTE Consultants, dated [June 2020][DD2], the Site is within the sanitary drainage catchment as a part of External Catchment 2, contributing to the existing 250 mm diameter sanitary sewer along Coronation Drive. External Catchment 2 consists of four properties, 1020, 1030, and 1040 Coronation Drive, and 1503 Hyde Park Road (the Site) that convey sanitary flows east towards the existing municipal sanitary sewer on Coronation Drive. A total area of 3.633 ha is assigned to the External Catchment 2 with assigned population of 1,075[NS3] (Sanitary Drainage Area Plan, Plan No. 29547, MTE Consultants, June 2020).

According to Storm and Sanitary Sewer Design Sheet (Plan No. 29549) prepared by MTE Consultants dated June 2020[NS4], there is an existing 200 mm diameter sanitary sewer that conveys the External Catchment 2 to the existing 250 mm diameter sanitary sewer along Coronation Drive.

According to the approved 1040 Coronation Drive Site Servicing Plan (Stantec, September 22, 2014), 1040 Coronation Drive is serviced with internal private 200 mm diameter sanitary sewers, extending from the existing 200 mm diameter as mentioned above. In addition, there is an existing 200 mm diameter sanitary stub located at southeast corner of the Site, in favour of servicing the proposed development at 1503 Hyde Park Road, City of London.

3.0 Proposed Sanitary Condition

The proposed development consists of one 8-storey apartment building with ground-floor retail and 128 residential units, according to the Site Plan provided by Aci Wright Architects Inc., dated December 2020.

An equivalent population estimate was determined using population per unit (PPU) densities, in accordance with the 2021 Development Charges Background Study Update (City of London, June 2020). Based on the development concept illustrated in the following drawing, the equivalent population estimates for 1020, 1030, and 1040 Coronation Drive were determined.

- 1020 Coronation Drive: Approved Servicing Plan, prepared by Stantec dated December 18, 2018.
- 1030 Coronation Drive: Approved Site Plan, prepared by Whitney Engineering Inc. dated June 2009.
- 1040 Coronation Drive: Approved Servicing Plan, prepared by Stantec dated September 22, 2014.

Table 1 summarizes the equivalent population estimates for all the properties in External Catchment 2 which is tributary to the existing 250 mm diameter sanitary sewer on Coronation Drive. Detailed calculations are provided in the enclosed document.

Table 1: Equivalent Population Estimates

Proposed Condition for External Catchment 2	Number of Units	Population per Unit	Population Equivalent
1020 Coronation Drive (Existing)	59	1.87	110
1030 Coronation Drive (Existing)	182	1.87	340
1040 Coronation Drive (Existing)	39	3.12	122
1503 Hyde Park Road (Site)	128	1.87	239
Total Population Equivalent			812
Maximum Assigned Population			1,075

As shown in Table 1, the total equivalent population estimate including the proposed development and the existing developments in External Catchment 2 is less than the maximum assigned population for External Catchment 2 of 1,075 (Sanitary Drainage Area Plan, Plan No. 29547, MTE Consultants, June 2020). Therefore, the sanitary flows from The Site were accounted for in the design of the existing 250 mm diameter sanitary sewer on Coronation Drive. As the Site has already been accounted for in the external sanitary sewer network, no further capacity analysis is required.

4.0 Conclusion

There is an existing 200 mm sanitary stub located in the private laneway east of The Site, in favour of servicing the proposed development. There is an existing 250 mm diameter sanitary sewer along Coronation Drive, which is designed to convey sanitary flows from External Catchment 2 which includes the properties located at 1020, 1030, and 1040 Coronation Drive and the Site. External Catchment 2 accounts for a development area of 3.633 ha and a population of 1075 persons.

The proposed development on The Site consists of one 8-storey apartment with 128 units, having an equivalent population of 239 persons. With consideration for proposed development, External Catchment 2 has a total population of 812, which is less than the maximum assigned population of 1,075. Therefore, the proposed development was accounted for in the design of existing 250 mm diameter sanitary sewer on Coronation Drive (Sanitary Drainage Area Plan, Plan No. 29547, MTE Consultants, June 2020) and no further analysis is required.

Sincerely,

C.F. CROZIER & ASSOCIATES INC.



Shiying (Heaven) Lin, E.I.T.
Land Development

HL/kb

- Encl. 1. Population Comparison
2. 1020 Coronation Drive Servicing Plan
3. 1030 Coronation Drive Site Plan
4. 1040 Coronation Drive Servicing Plan
5. Sanitary Drainage Area Plan

I:\2100\2103- Business Network Associates\5995- 1503 Hyde Park\Memos\2021.07.20_Sewer Analysis Memo.docx

C.F. CROZIER & ASSOCIATES INC.



Daniel Doherty, P.Eng.
Land Development



Project: 1503 Hyde Park Rd
Project No.: 2103-5993
Created: 2021-06-15

Created By: HL
Checked By: DD/NRS
Revised: 2021-06-25

External Sanitary Analysis - Population Comparison

External Catchment 2

Assigned Area: 3.633 ha
Assigned Population: 1075 Persons

Proposed Condition for External Catchment 2	Number of Units	Population per Unit	Population Equivalent
1020 Coronation Drive (Existing)	59	1.87	110
1030 Coronation Drive (Existing)	182	1.87	340
1040 Coronation Drive (Existing)	39	3.12	122
1503 Hyde Park Road (Site)	128	1.87	239
Total Population Equivalent			812

- Note: 1. Assigned area and population for External Catchment 2 per Drawing No. 29547 provided by City of London, dated June 2020.
2. Number of units for 1020 Coronation Drive per approved Servicing Plan, prepared by Stantec dated December 18, 2018. (Assume units are 2-bedroom apartments.)
3. Number of units for 1030 Coronation Drive per approved Site Plan, prepared by Whitney Engineering Inc. dated June 2009. (Assume units are 2-bedroom apartments.)
4. Number of units for 1040 Coronation Drive per approved Servicing Plan, prepared by Stantec dated September 22, 2014. (Assume units are single family dwelling.)
5. Population per units are based on 2021 Development Charges Background Study Update, provided by City of London, dated June 2020.
- Single Family Dwelling: 3.12
 - Multiple Unit Dwelling: 2.11
 - Apartment 1-Bedroom: 1.38
 - Apartment 2-Bedroom: 1.87

Code	Description	Area	Volume	Weight	Value
1	Concrete	1000	2.5	2500	10000
2	Rebar	1000	0.5	500	2000
3	Formwork	1000	1.0	1000	4000
4	Excavation	1000	0.5	500	2000
5	Backfill	1000	1.0	1000	4000
6	Gravel	1000	0.5	500	2000
7	Asphalt	1000	0.5	500	2000
8	Paint	1000	0.1	100	400
9	Other	1000	0.1	100	400
10	Total	1000	7.2	7200	28800

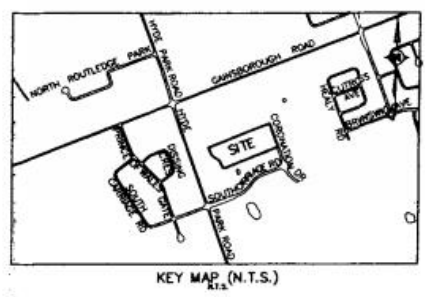
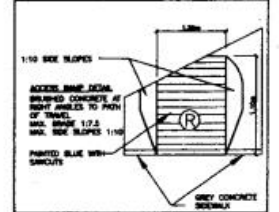
ITEM	PROPOSED	REQUIRED
LOT AREA	2.80 Ha	0.0 Ha MIN.
LOT FRONTAGE	100m	30.0m MIN.
FRONT YARD SETBACK	58.8m	10.2m MIN.
REAR YARD SETBACK	18.85m	18.0m MIN.
SIDE YARD SETBACK	18.0m	18.0m MIN.
No OF RESIDENTIAL UNITS	364	N/A
DENSITY	130 U/HA	100 U/HA MAX.
LOT COVERAGE (C) - TOWER PORTIONS	±15%	30% MAX.
LANDSCAPED OPEN SPACE (K)	±53%	30% MIN.
No. OF TOTAL PARKING SPACES (REQUIRED=1.25 PER UNIT)	534 (SEE RP0)	455
No. OF HANDICAPPED SPACES	6	6
No. OF BICYCLE SPACES (REQUIRED=0.75 PER UNIT)	273	273
BUILDING HEIGHT (m) - TOWERS	44.5m	45.0m MAX.
ZONING	R9-7	R9-7

PARKING INFORMATION
 UNDERGROUND PARKING
 412 STALLS (206 EACH TOWER)
 122 STALLS
 534 STALLS
 TOTAL

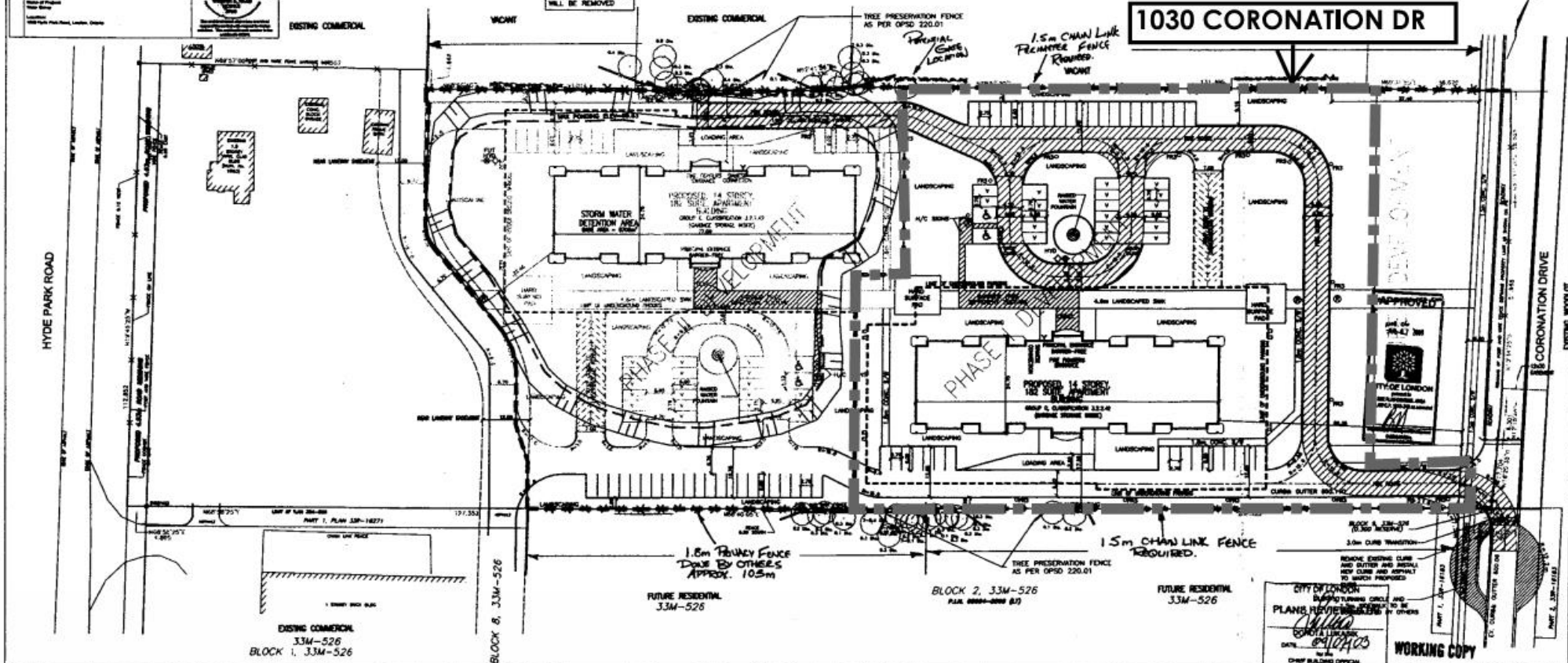
N/C UNDERGROUND PARKING
 2 STALLS
 6 STALLS
 8 STALLS
 TOTAL

VISITOR PARKING (1 PER 10 UNITS) 40 STALLS

NOTES: BICYCLE PARKING TO BE PROVIDED
 REFER TO SITE ENGINEERING PLAN FOR LOCATION OF FIRE HYDRANTS
 SITE AREA INCLUDES 0.10 Ha CORONATION DRIVE DEDICATION
 FOLLOWS TO BE DRAWN DURING THE WINTER MONTHS
 DETAILS TO BE PROVIDED ON MECHANICAL PLANS



1503 HYDE PARK ROAD
 LOT 24, CONDESNON 3
 (GEOGRAPHIC TOWNSHIP OF LONDON)
 IN THE
 CITY OF LONDON
 COUNTY OF MIDDLESEX



<p>Whitney Engineering Inc.</p> <p>1503 HYDE PARK ROAD TRICAR GROUP</p>	<p>CORPORATION OF THE CITY OF LONDON</p> <p>1503 HYDE PARK ROAD TRICAR GROUP</p>	<p>FILE# SP 07 022767 SITE PLAN</p>
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Drawing Title: Site Plan
 Drawing Author: Whitney Engineering Inc.
 Drawing Number: 1
 Date of Drawing: February, 2009
 Drawing Latest Revision Date: June, 2009
 Items Amended by Hand: Perimeter fence 1.5m chain link
 Date Amended by Hand: July 15, 2009
 Municipal Address: 1503 Hyde Park Road
 Drawing Sealed by: D.J. Whitney, P. Eng.
 City File Number: SP 07-022767

RECEIVED
 JUN 13 2009
 BUILDING DIVISION

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Consultants

Legend

	EX. WATERMAIN
	WATERMAIN OFFSET
	EX. STORM SEWER
	PROPOSED STORM SEWER
	EX. SANITARY SEWER
	PROPOSED SANITARY SEWER
	PROPOSED STORM MANHOLE
	PROPOSED STORM CATCH BASIN MANHOLE
	EX. STORM MANHOLE
	EX. SANITARY MANHOLE
	PROPOSED CATCH BASIN
	EX. CATCH BASIN
	EX. GAS VALVE
	EX. WATER VALVE
	EX. HYDRANT
	PROPOSED WATER METER
	PROPOSED 3-WAY FIRE HYDRANT C/W STORZ CONNECTION
	EX. TREE
	DEVELOPMENT BOUNDARY

Notes

(I.M.R.) EXISTING INFRASTRUCTURE TO BE REMOVED

Revision

Revision	By	Appd.	YYMMDD
3	PER COL 2nd SUBMISSION COMMENTS	BH	CH 14/09/22
2	PER COL COMMENTS	JH	CH 14/07/20
1	Issued for Site Plan Approval	AH	CH 14/02/16

Issued

File Name:	161403394_C-UG.dwg	AH	CH	AH	13/12/22
		Dwn.	Crtd.	Dgns.	YYMMDD

Permit/Seal



Client/Project

TOWN & COUNTRY DEVELOPMENT

1040 CORONATION DRIVE
SP14-014332
LONDON

RECEIVED BY

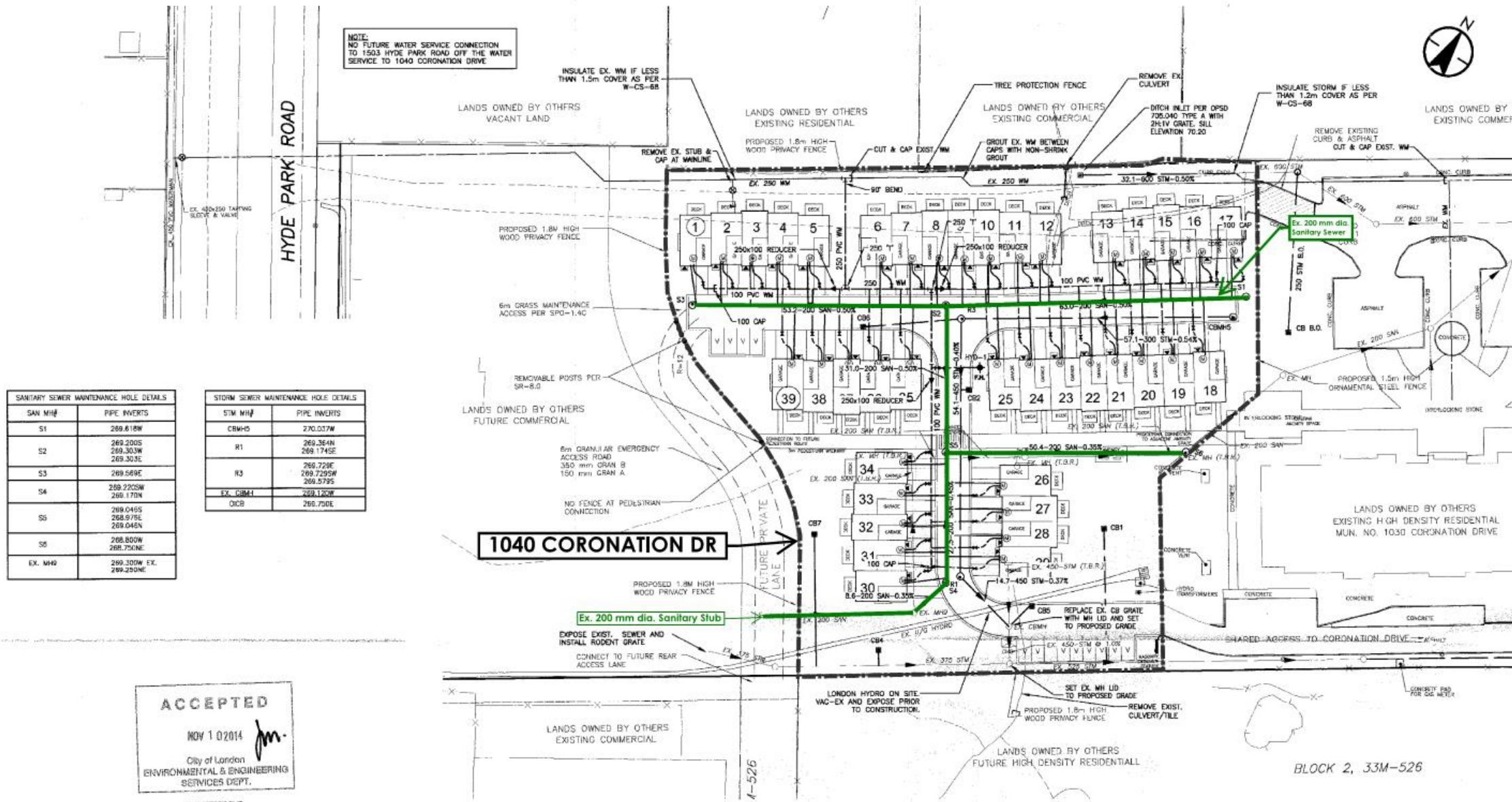
SERVICING PLAN

SEP 23 2014
CITY OF LONDON
DEVELOPMENT SERVICES

Project No. 161403394 Scale 1:500

Drawing No. 1 of 2

Revision 2



MANHOLE	PIPE INVERTS
S1	289.618W
S2	289.200S 289.303W 289.303E
S3	289.569E
S4	289.220SW 289.170N
S5	289.045S 288.979E 288.045N
S6	288.800W 288.750NE
EX. MH2	289.330W EX. 289.250NE

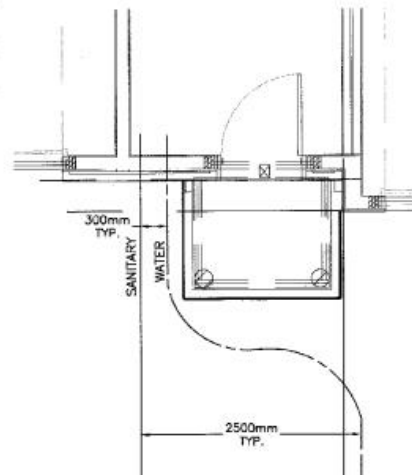
STM MH#	PIPE INVERTS
CBMH5	270.037W
R1	269.364N 269.174SE
R3	269.729E 269.729SW 269.579S
EX. CBMH1	269.120W
OCB	269.750E



SUBJECT TO THE ISSUANCE OF THE ENVIRONMENTAL COMPLIANCE APPROVAL FROM THE MINISTRY OF ENVIRONMENT

ALL PLUMBING SHALL COMPLY WITH THE OBC, PART 7

CITY OF LONDON Building Building PLANS REVIEWED BY DRAGO MACAR for the CHIEF BUILDING OFFICIAL



TYPICAL UNIT SERVICING

SEWER AND ROAD NOTES

- All sanitary sewer installation shall be in accordance to current City of London Standards and Specifications and the Plumbing Code.
- The following DPSS Engineering Standards shall be used on this project:
 - OPSS-401.010 MANHOLE FRAME AND COVER
 - OPSS-405.010 MANHOLE STEPS
 - OPSS-600.100 CONCRETE MOUNTABLE CURB & NARROW GUTTER
 - OPSS-701.010 1200 DIA. PRECAST MANHOLE
 - OPSS-701.021 MAINTENANCE HOLE BENCHING AND PIPE OPENING ALTERNATIVES
 - OPSS-704.010 MANHOLE AND CATCHBASIN, PRECAST CONCRETE ADJUSTMENT UNITS

City of London Standards:

- DWG SW-1.0 BEDDING STANDARD FOR GRAVITY AND PRESSURE PIPE
 - DWG SW-2.0 MANHOLE DROP STRUCTURE
 - DWG SW-4.0 PRIVATE DRAIN CONNECTION
 - DWG W-CS-1 STANDARD HYDRANT AND VALVE INSTALLATION
 - DWG W-CS-8 STANDARD INSTALLATION OF 20mm and 25mm WATER SERVICE
 - DWG W-CS-12 MECHANICAL JOINT WATERMAIN OFFSET
 - DWG W-CS-60 STERILIZING MAINS
- All sewers with depths up to 4.5m to be PVC SDR 35 Type 1 bedding or approved equivalent. Sewers with depths exceeding 4.5m to be PVC SDR 35 Type 2 bedding or approved equivalent.
 - All manholes to be precast concrete with frame & curb unless otherwise noted. Maximum distance between finished grade and first ladder rung to be 600mm.
 - Remove all branch water when pipe laying is in progress.
 - Put the "PVC" through the P.V.C. sewers in the presence of the Engineer.
 - All sanitary pdc's shall be installed at 2% (min.) grade from sewer to 1.5m outside building wall.
 - All sanitary PDC's shall be connected to the mainline sewer with a 'Y' connection and long sweep bend.
 - Recommended Pavement Structure:
 - 40mm HL3 surface asphalt compacted to 97% Marshall
 - 50mm HL3 base asphalt compacted to 97% Marshall
 - 150mm Granular 'A' base compacted to 100% SPWD
 - 350mm granular 'B' subbase compacted to 100% SPWD
 - all fill material from native subgrade to road subbase shall be select native material or imported 3/4" max material compacted to 95% SPWD
 - All curb to be OPSS-600.100, mountable curb with narrow gutter. All curb to be tangent installation. At low points on the high side of the road, the gutter line is to be super-elevated over 3m (centered at the low point) to ensure positive drainage.
 - The minimum depth of a storm sewer shall be 1.5 m from the finished ground elevation to the invert of the pipe. Where minimum depths cannot be achieved and therefore frost protection is warranted, insulation is required as per City of London W-CS-68.
 - All catchbasin leads to be 250mm diameter at a minimum grade of 1% unless otherwise noted.

WATERMAIN NOTES

- ALL WATERMAIN PIPE OVER 300mm DIA. TO BE POLYVINYL CHLORIDE (PVC) DSDS, CLASS 165, DR25. ALL WATERMAIN PIPE UP TO AND INCLUDING 300mm DIA. TO BE POLYVINYL CHLORIDE (PVC) C900, CLASS 150 DR18. DUCTILE IRON (D.I.) CL51 AND RESPECTIVELY CLASS C/W POLYETHYLENE WRAP MAY BE USED IF APPROVED BY THE CITY OF LONDON SEWER, DRAINAGE AND WATER DEPT.
- ALL WATERMAIN TO HAVE 1.7m to 1.9m COVER.
- WHERE COVER TO WATER SERVICES IS LESS THAN 1.5m, THE SERVICE SHALL BE ADEQUATELY INSULATED OVER THE AFFECTED LENGTH OF SERVICE AS PER CITY Dwg. No. W-CS-68.
- WHERE ANY WATER SERVICE CONNECTION IS REQUIRED TO BE MADE FOLLOWING THE CONSTRUCTION OF CURB, GUTTER, CONCRETE SIDEWALKS AND/OR WEARING SURFACE COAT OF ASPHALT ON ANY STREET IN A NEW SUBDIVISION, SUCH WATER SERVICE CONNECTION SHALL NOT BE MADE USING "OPEN CUT" METHODS BUT SHALL BE MADE USING DRILLING OR BORING TECHNIQUES AND IN SUCH A MANNER AS TO ELIMINATE THE POSSIBILITY OF SETTLEMENT OF SUCH CURB, GUTTER, CONCRETE SIDEWALK OR WEARING SURFACE COAT OF ASPHALT; IT BEING UNDERSTOOD THAT THIS POLICY SHALL APPLY EXCEPT WHERE, IN THE OPINION OF THE CITY ENGINEER, GROUND CONDITIONS ARE SUCH THAT THE USE OF DRILLING OR BORING METHODS BECOME UNREASONABLE OR UNECONOMICAL.
- ALL WATERMAIN MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE CURRENT CITY OF LONDON STANDARDS FOR SEWER AND WATER.
- ALL SERVICE CONNECTIONS TO BE 25mm DIAMETER HEX UNLESS NOTED OTHERWISE. GROUNDING ROD TO BE INSTALLED AT WATER METER IF CROSS-LINKED POLYETHYLENE IS USED.
- THRUST RESTRAINTS SHALL BE PROVIDED AT ALL FITTINGS, BENDS, TEES, VALVES, HYDRANTS, REDUCERS, AND FLUGGED OR CAPPED DEAD ENDS IN ACCORDANCE WITH SECTION 441.07.23 - THRUST RESTRAINTS, OF THE CITY OF LONDON SUPPLEMENTAL STANDARDS FOR SEWER AND WATER (LATEST REVISION, CURRENT EDITION AT THE TIME OF THIS PRINTING IS DATED NOVEMBER 14, 2011). FOR WATERMAIN LARGER THAN 300mm OR INSTALLATION SITUATIONS NOT INCLUDED IN SECTION 441.07.23, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH RESTRAINT AS RECOMMENDED BY THE PIPE MANUFACTURER FOR THE REVIEW AND APPROVAL OF THE CITY OF LONDON.
- ALL FIRE HYDRANTS SHALL BE 3-WAY HYDRANTS WITH STORZ CONNECTION OPENING COUNTERSIDE.
- ALL WATERMAIN VALVES SHALL BE GATE VALVES MANUFACTURED TO ANWA C500 AND EPOXY COATED TO ANWA C-950. ALL VALVES TO OPEN COUNTERSIDE.
- INSTALLATION, HYDROSTATIC TESTING, SWABING, FLUSHING AND DISINFECTION SHALL BE DONE IN ACCORDANCE WITH THE CITY OF LONDON GENERAL SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEMS.
- FOR WATERMAIN CROSSING OVER SEWERS AND PDC'S, 0.15m MINIMUM CLEARANCE IS REQUIRED TO ALLOW FOR PROPER BEDDING AND SUPPORT. FOR WATERMAIN CROSSING UNDER SEWERS AND PDC'S, 0.5m MINIMUM CLEARANCE IS REQUIRED BETWEEN THE INVERT OF THE SEWER OR PDC AND THE CROWN OF THE WATERMAIN.

NOTES TO CONTRACTOR

- Contractor to verify location of all existing utilities prior to construction.
- Contractor to notify Stantec Consulting and The City of London 48 hours before commencing construction within the existing road allowances.
- Within the limits of the existing road allowance, the contractor shall remove all concrete, asphalt, unused and unworkable material as required and dispose offsite.
- On excavations in which existing curbs are affected, Granular 'B' shall extend 300mm behind back of curbs as part of restoration.
- All manholes are to be set at base asphalt elevation.
- All drainage from abutting lands must not be adversely affected during or after construction.
- The Contractor shall control all sediment from leaving the site to the satisfaction of the Engineer.
- The accuracy of the surface and subsurface details shown on the drawings are not guaranteed. The Contractor shall investigate and verify for himself whether the information is correct and complete.
- Existing sewer and watermain information shown is based on design, not as-constructed information. Contractor to verify inverts prior to construction and notify Stantec Consulting of significant differences.
- Existing curb and gutter within the limits of this site are to be removed and disposed off site.
- Existing granular material within the limits of this site are to be revised in accordance with Geotechnical recommendations.