



2021-10-08

Mr. Malvinder Singh  
2317511 Ontario Ltd.  
70 Old Mill Road  
Oakville, Ontario L6J 7W3

**Subject: Servicing Rationale Update  
First Submission OPA/ZBA of Reconfigured Development  
70 Old Mill Road - WSP Canada Inc. Project No. 15M-00032-03  
Oakville, Ontario**

Dear Mr. Singh:

WSP Canada Inc. has been retained to prepare this Servicing Rationale Update in support of the Official Plan Amendment (OPA), Zoning By-Law Amendment (ZBA), and Site Plan Application (SPA) for the proposed development of a 12 storey (45m above established grade) residential condominium located at 70 Old Mill Road, Oakville. The previous proposal of 9-storeys and 30 units was SPA-approved, and construction had commenced including installation of the storm service connection.

The revised development proposal includes 154 units and a 6 storey underground parking structure. This letter report provides the servicing rationale for water distribution, sanitary sewage and storm drainage for this development. A Stormwater Management Report outlining the proposed quality and quantity controls for stormwater on this site has been prepared under a separate cover.

The site will be serviced by existing local municipal sewers and watermains within adjoining municipal rights-of-way. Service connections will be extended into the proposed site and coordinated with the building design team.

In preparing this report WSP Canada Inc. staff reviewed and secured available Town of Oakville and Region of Halton record drawings of the existing municipal services. Refer to **Appendix D** for the record drawings.

The Service Rationale has been updated to reflect the new proposed development. The proposed development includes additional storeys and density from the previous development including: +3 above-grade stories, +4 below-grade underground parking floors, +124 building units, and +6,748m<sup>2</sup> gross floor area (GFA). The previously approved Servicing Rationale dated March 10, 2016 has been included in **Appendix E** for reference.



## **SITE DESCRIPTION**

The site is a 0.15 ha parcel of vacant, undeveloped land located at the northwest corner of Old Mill Road and Cornwall Road in Oakville, Ontario. The surrounding properties include high-rise residential buildings to the south, a rail line to the west, a parking lot to service the Oakville Go Station to the north, and Cornwall Road and Sixteen Mile Creek to the east. The project involves a 12-storey (45m above established grade), 154 suite building with 6 additional levels of underground parking. The proposed gross floor area (GFA) for the building is 13,279 m<sup>2</sup> including both suite area and common area per the Site Plan (A300) prepared by Ava Janikowski Architect Inc..

### **1.0 EXISTING CONDITIONS**

A topographic survey was prepared by KRCMAR Surveyors Ltd. dated December 13, 2012. The survey indicates that the site falls approximately 2.0m from southwest to northeast, with a retaining wall ranging from 1-3 m in height along the north and east boundaries.

Based on information provided by the Owner, Town of Oakville and Region of Halton, within the streets adjacent to the proposed development are the following existing municipal services:

#### **1.1 WATER**

##### Cornwall Road

- ▶ A 300mm diameter water main located at approximately the centreline of the road;
- ▶ Existing 300mm fire and 150mm domestic service from Cornwall Road to the parking structure of the adjacent building, through a service easement.

##### Old Mill Road

- ▶ A 150mm diameter watermain located within the north side of the road;

The existing condominium development at 40, 50 and 60 Old Mill Road has a 200mm diameter water service loop. A servicing agreement is in place between 70 Old Mill and the condominium corporation to share water servicing. As such, a new 200mm diameter fire and 100mm diameter domestic service for the 70 Old Mill site will connect to the existing 200mm diameter loop, similar to the previously approved proposal.

#### **1.2 SANITARY SEWER**

##### Old Mill Road

- ▶ a 200mm diameter PVC municipal sanitary sewer located within the north side of the road with a 200mm diameter sanitary service running diagonally into the site and terminating at a stub approximately 3.0m into the site;



The 200mm diameter sanitary service for the adjacent residential complex runs immediately west of the west property line into the existing underground parking garage. This sanitary service will be protected during construction.

### **1.3 STORM SEWER**

#### Cornwall Road

- ▶ a 1200mm diameter municipal storm sewer located within the south portion of the road with a 375mm diameter service connection used to service the residential site to the south;

#### Old Mill Road

- ▶ a 375mm storm sewer on the south side of the road

The site currently drains to the southeast and ultimately overland to Cornwall Road. Refer to the Stormwater Management Report for existing and proposed drainage patterns.

### **2.0 PROPOSED CONDITIONS**

New water, sanitary and storm services will be required for the proposed development to the adjacent municipal services as outlined below.

#### **2.1 WATER SUPPLY AND APPURTENANCES**

A 200mm diameter PVC fire water service and 100mm diameter PVC domestic water service is proposed to connect to the 200mm private watermain, with tapping sleeve and valve, located within the existing Old Mill Road driveway entrance to the west of the site. This portion of the private watermain includes a 150mm x 200mm increaser within the travelled portion of Old Mill Road. The private watermain is looped internally within the site with a connection to the 150mm diameter municipal watermain along Old Mill Road and a connection to the 300mm diameter municipal watermain within Cornwall Road. The services will extend to the mechanical room at the northwest corner of the building. A water meter and backflow preventor is proposed within the mechanical room and will be designed by the Mechanical Consultant and will comply with Ontario Building Code (OBC) requirements.

The design of the new watermain within the site area will be completed in accordance with the Region of Halton Standards and Specifications, Town of Oakville Standards and Ontario Building Code.

The design of the new watermain within the building will be undertaken by the mechanical consultant.

The required fire flow calculation has been calculated as 5,000 L/min (83.33 L/s), included in **Appendix A**. The domestic water demand for the site has been calculated as 2.98 L/s maximum day and 5.30 L/s maximum hour. The water



demand calculations are shown in **Appendix B**. The total maximum hour plus fire flow is therefore  $83.33 \text{ L/s} + 5.30 \text{ L/s} = 88.63 \text{ L/s}$ .

A hydrant flow test may be required on a nearby municipal hydrant to verify that the total of the maximum day and fire flow is available at 20 psi. The nearby Town fire hydrant within Old Mill Road is colour coded in accordance with NFPA 291 "Fire Flow Testing and Marking of Fire Hydrants". Each side of the nozzle is colour coded light blue to visually identify the rated flow capacity of the hydrant. Light blue is Class AA which has the highest rating of 5,680 L/min (94.67 L/s) or greater. The minimum 94.67 L/s per the hydrant classification is greater than the 88.63 L/s maximum hour plus fire flow, therefore, we can conclude that the watermains adjacent to the site have adequate capacity to support the domestic and fire water demands of the proposed development.

The building is proposed to be sprinklered for fire protection. This will be detailed in the Mechanical Drawings for Building Permit.

Building code requirements stipulate that every sprinklered building be serviced by a fire hydrant which is located no more than 45m away from the building's Fire Department Connection. The proposed office's Fire Department Connection will be located near the main entry, within 45m of a hydrant.

The proposed watermain system is illustrated on the Site Servicing Plan (SS1). The Site Servicing Plan will be submitted in support of the Site Plan Application (SPA) submission and has not been identified as a required deliverable for OPA/ZBA on the pre-consultation request form that was reviewed with staff from the Town of Oakville.

## **2.2 SANITARY SERVICING**

The existing 200mm municipal sanitary service on the north portion of the site will be maintained and reused to service the proposed building. A manhole will be located at the property line and a small length of 200mm diameter PVC pipe will be installed to tie into the existing sanitary service, with a leader running from the manhole perpendicular to the building. The peak sanitary flow from the proposed development has been calculated as 5.36 L/s using the Region of Halton design criteria. This equates to 9% of the capacity of the existing 200mm diameter service at a slope of 3%. Refer to **Appendix C** for the sanitary design sheet. We understand the proposed development is within the sewershed area of the Capital Works project identified as Project 6537: *675mm wastewater main on Trafalgar Road between Spruce Street until 60 north of Cornwall Road where it follows the site road crossing the railway and through the GO Transit Station parking lot and heads due west and north up Argus Road for 60m*. While we understand the Developer will be required to pay Development Charges in relation to this sewer upgrade, the peak flow from the



site at 5.6 L/s is a negligible amount (1.2%) within this 675mm sewer @ 0.3% that has a capacity of 460 L/s.

The proposed sanitary servicing is illustrated on the Site Servicing Plan (SS1). The Site Servicing Plan will be submitted in support of the SPA submission as noted in **Section 2.1** above.

The design of the new sanitary sewer system within the site area will be completed in accordance with the Region of Halton standards and specifications, Town of Oakville standards and Ontario Building Code.

### **2.3 STORM DRAINAGE**

As the building footprint covers the majority of the site, the on-site storm drainage system will consist of a roof drainage system connecting to a new control manhole on the southeast side of the building and out to the existing 1200mm storm sewer on Cornwall Road. Runoff from the south side of the site will be captured in a swale and directed to a catchbasin and is proposed to tee into the new 300mm diameter storm service connection just downstream of the control manhole. Stormwater from the rooftop and site is controlled to allowable release rates through a storm cistern located on the P3 parking level, controlled with an orifice plate.

The 10-yr discharge from the cistern is 10.9 L/s which is less than the 12 L/s available capacity in the downstream storm sewer from previous correspondence with the Town of Oakville Engineering Department as described in the Stormwater Management Report. The total discharge from the site in the 100-yr storm event is 18.3 L/s which is less than the allowable peak discharge rate of 36 L/s. The detailed stormwater quantity and quality calculations are included in the Stormwater Management Report prepared by WSP Canada Inc. under separate cover. The Stormwater Management Report will be submitted in support of the SPA submission and has not been identified as a required deliverable for OPA/ZBA on the pre-consultation request form that was reviewed with staff from the Town of Oakville.

The proposed storm servicing is illustrated on the Site Servicing Plan (SS1). The Site Servicing Plan will be submitted in support of the SPA submission as noted in **Section 2.1** above.

The design of the new storm sewer system will be completed in accordance with the Town of Oakville and Ontario Building Code Standards.



### **3.0 CONCLUSIONS**

The site will be serviced by new water, sanitary and storm connections to the adjacent municipal infrastructure, designed per Town of Oakville, Halton Region and Conservation Halton requirements. Based on the above analysis, we have determined that the site can be fully serviced with available existing infrastructure.

We trust the above information will assist the Town with their Site Plan Application review. If you have any questions, please contact the undersigned.

Yours sincerely,  
WSP Canada Inc.

A handwritten signature in blue ink, appearing to read 'Jordan Strauss'.

Jordan Strauss, P.Eng., PMP  
Senior Project Engineer  
Land Development Ontario

A handwritten signature in blue ink, appearing to read 'Tara Chisholm'.

Tara Chisholm, P.Eng.  
Senior Project Manager  
Land Development Ontario

# APPENDIX

# A FIRE FLOW CALCULATIONS



## APPENDIX A FIRE FLOW CALCULATIONS

**Project:** 70 OLD MILL ROAD - APARTMENT BUILDING  
**Job No.:** 15M-00032

Fire flow required for a given area based on Fire Underwriters Survey (FUS) Water Supply for Public Fire Protection (1999)

$$F = 220 C \sqrt{A}$$

where

F = Fire flow in Litres per minute (Lpm)  
C = coefficient related to the type of construction  
A = total floor area in square metres

### Calculations per FUS

**1. Estimate of Fire Flow**

C = 0.6 for fire resistive construction

A = 1787 m<sup>2</sup> (largest GFA plus 25% of GFA for immediately adjoining floor)<sup>1</sup>

$$F = 6,000 \text{ Lpm}$$

**2. Occupancy Reduction**

25% reduction based on low hazard occupancy

$$25\% \text{ reduction of } 6000 \text{ Lpm} = 1,500 \text{ Lpm}$$

$$F = 6000 - 1500 = 4,500 \text{ Lpm}$$

**3. Sprinkler Reduction**

30% reduction for NFPA Sprinkler System<sup>2</sup>

$$30\% \text{ reduction of } 4500 \text{ Lpm} = 1,350 \text{ Lpm}$$

$$F = 4500 - 1350 = 3,150 \text{ Lpm}$$

**4. Separation Charge**

Face	Distance (m)	Charge
West Side	20	15%
East Side	110	0%
North Side	20	15%
South Side	12	15%
Total		45% of 4,500 = 2,025 Lpm

$$F = 3150 + 2025$$

$$F = 5,000 \text{ Lpm} \quad (2,000 \text{ Lpm} < F < 45,000 \text{ Lpm}; \text{ OK})$$

$$F = 1,321 \text{ US GPM}$$

**Notes**                      **F = 83.3 L/s                      5000 Lpm**

1. Assumed fire resistant construction where vertical openings and exterior vertical communications are property protected.
2. Assumed to have sprinkler protection for an adequately designed system conforming to NFPA 13 and other NFPA sprinkler standards.
3. Dwellings are considered as low hazard occupancy.



# APPENDIX

## **B** DOMESTIC WATER DEMAND CALCULATIONS

**APPENDIX B**

**THEORETICAL DOMESTIC WATER DEMAND CALCULATIONS**

Project Name: 70 Old Mill Road  
 Project Number: 15M-00032  
 Consultant: WSP Canada Inc.

Servicing Estimate: 0.275 m<sup>3</sup>/capita/day  
 Population Estimate: 2.7 persons/unit  
 Residential Peaking Factor: Maximum Day 2.25  
 Maximum Hour 4.00

**Existing and Future Domestic Water Demand**

Site	Building Type	Total Site Area (m <sup>2</sup> )	Population		Water Demand (L/s)	Maximum Day (L/s)	Maximum Hour (L/s)
			Units	Persons			
<b>Domestic Water Demand</b>							
70 Old Mill Road	Residential	1,528	154	416	1.32	2.98	5.30
<b>Total</b>			<b>154</b>	<b>416</b>	<b>1.32</b>	<b>2.98</b>	<b>5.30</b>

**Notes:**  
 1. 70 Old Mill Road = 154 units per Architectural Drawing (A300).

# APPENDIX

## C SANITARY DESIGN CALCULATIONS

**APPENDIX C**  
**THE REGIONAL MUNICIPALITY OF HALTON**  
**SANITARY DESIGN SHEET**

DEVELOPMENT 70 Old Mill Road  
CONSULTANT WSP Canada Inc.  
MAJOR DRAINAGE AREA \_\_\_\_\_

PROJECT NO.: 15M-00032  
DESIGNED BY: JLS  
CHECKED BY: TC

STREET	Manhole		Number of Units					Area (ha)					Tributary Population					Q Avg. L/s	K Avg.	Peaking Factor M	Q Peak Dry L/s	Total Infil- tration L/s	Q Total L/s	SEWER									
	From	To	(to calculate pop. for Residential)					(to calculate infiltration)					Increment											Size (mm)	Slope (%)	Q (L/s)	V (m/s)		Capacity (%)				
			S.F.	TH	Condo	Total	Acc. Tot.	Res.	Comm.	Inst.	Ind.	Other	Total	Acc. Tot.	Res.	Comm.	Inst.										Ind.	Other		Total	Acc. Tot.	Full Flow	Act. Flow
40, 50, 60 Old Mill <sup>1</sup>	EX. MH4	EX. MHR7			307	307	307	1.63					1.63	1.63	829					829	829	2.64	1.0	3.851	10.16	0.47	10.63	200	0.74	28.21	0.90	0.04	37.7%
70 Old Mill <sup>2</sup>	MH1A	EX. MHR7			154	154	154	0.15					0.15	0.15	416					416	416	1.32	1.0	4.014	5.31	0.04	5.36	200	3.00	56.81	1.81	0.09	9.4%
GO Station Tunnel <sup>3</sup>																					0.63			0.63		0.63							
Old Mill Road <sup>4</sup>	EX. MHR7	EX. MHR6												1.78						1245	4.59	1.0	3.737	15.44	0.51	15.95	200	3.20	58.67	1.87	1.55	27.2%	
Old Mill Road	EX. MHR6	EX. MHR5																		1245	4.59	1.0	3.737	15.44	0.51	15.95	200	0.42	21.26	0.68	0.03	75.0%	
Old Mill Road	EX. MHR5	EX. MH																		1245	4.59	1.0	3.737	15.44	0.51	15.95	250	0.42	38.54	0.79	0.74	41.4%	
Trafalgar Downstream Upgrade																											675	0.30	460.41	1.29	0.06		

INFLOW/INFILTRATION ALLOWANCE (m<sup>3</sup>/ha/s): 0.286  
POPULATION DENSITY (PERSONS / UNIT) : 2.7  
n= 0.013  
FLOWS (m<sup>3</sup>/cap/day): 0.275

- Notes:**
- 40 Old Mill = 113 units, 50 Old Mill = 102 units, 60 Old Mill = 92 units per Zoning By-Law extract.
  - 70 Old Mill = 154 units per Architectural Drawing (A-300)
  - Assume sanitary drainage is pumped tunnel drainage (negligible) at 10 USGPM = 0.63 L/s.
  - The Peaking Factor (M) has not been applied to the pumped tunnel drainage in the Peak Dry Flow (Q) calculation.
  - Existing pipe size and slopes on Cornwall per Record Drawing O-9372.
  - Trafalgar Road Sanitary Sewer Upgrade per Capital Works Project 6537, 675 mm WWM on Trafalgar Rd between Spruce Steet until 60 m north of Cornwall Rd where it follows the side road crossing the railway line and through the Go Transit Station parking lot and heads due west and north up Argus Rd for 60 m.
  - The peak flow from 70 Old Mill site (5.36 L/s) is a negligible amount (1.2%) within the downstream Trafalgar sanitary sewer upgrade to 675mm @ 0.3% which will have 460 L/s capacity.

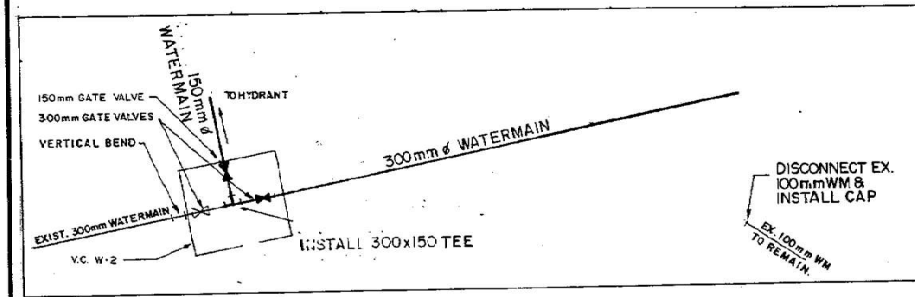
# APPENDIX

## D RECORD DRAWINGS

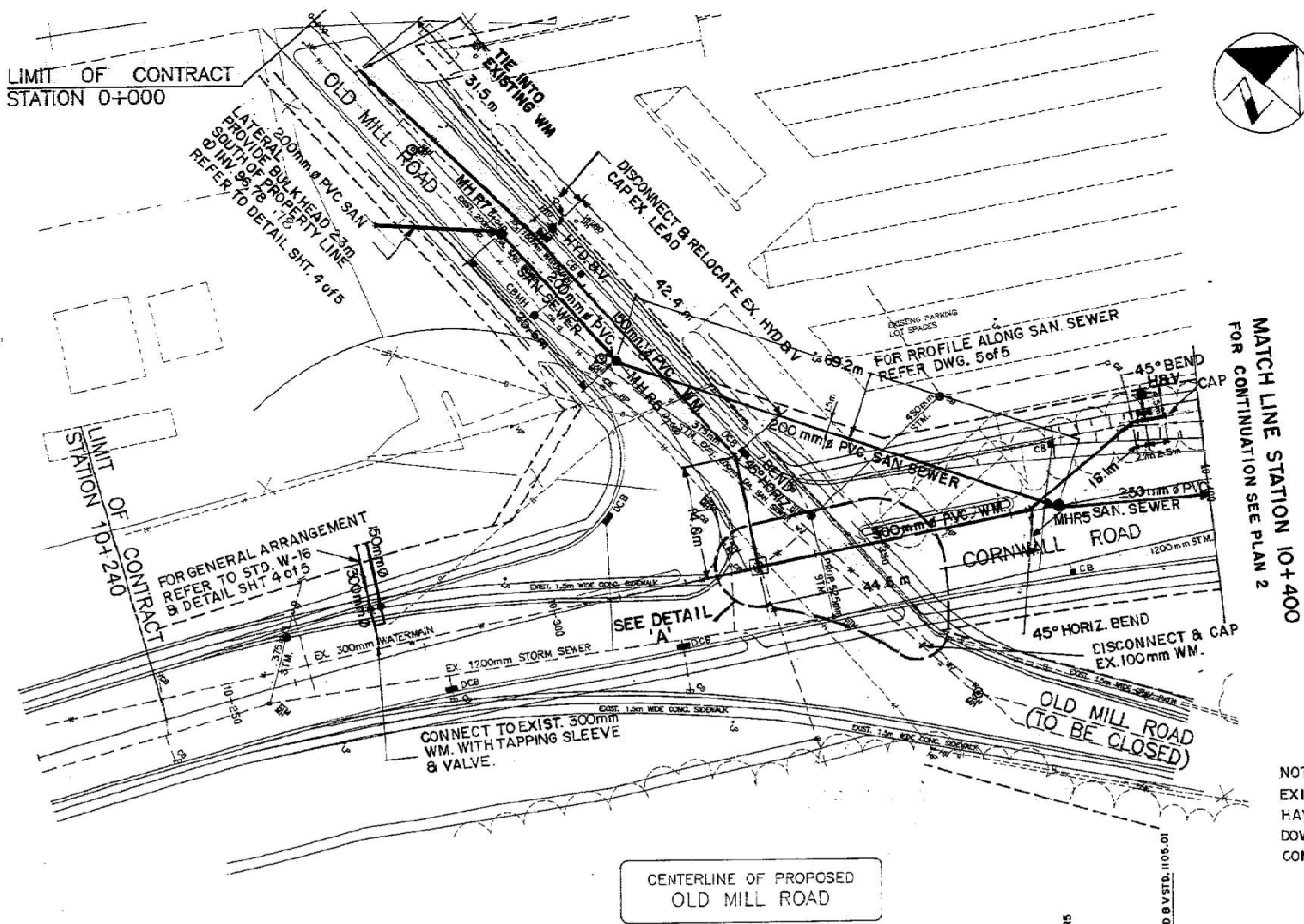
SANITARY SEWER MANHOLE SCHEDULE								
N.H.	STATION	OFFSET FROM E	OPSD STD.	COVER	INVERT IN	INVERT OUT	RIM ELEV.	REMARKS
R4	10+477.282	1.000m RT.	1001.01	401.01	94.51	94.46	98.66	
R5	10+577.282	ON E	1001.01	401.01	94.98	94.53	98.01	
R6	0+98.466	ON E	1001.01	401.01	95.33	95.27	97.15	
R7	0+043.000	ON E	1001.01	401.01	96.18	96.13	98.56	

WATERMAIN DATA					
ITEM	STATION	OFFSET FROM E	STD.	OUT	REMARKS
300 mm DI. SERVICE CONNECTION	10+274.000	1.466m LT.	W16	91.50	CONNECT WITH TAPPING SLEEVE
VC1	10+351.427	0.262m RT.	W2	BASE OF CHAMBER 94.05	SEE DETAIL 'A'
HYD	0+047.007	6.302m LT.	1105.01		RELOCATE HYDRANT FLANGE ELEV. 98.53
EX. HYD.	10+333.00	14.500 RT	1105.01		REMOVE HYD. & RETURN TO REGIONAL STORES
HYD. COMPLETE WITH ANCHOR TIES	10+392.000	14.0m LT.	1105.01		FLANGE ELEV. 98.32



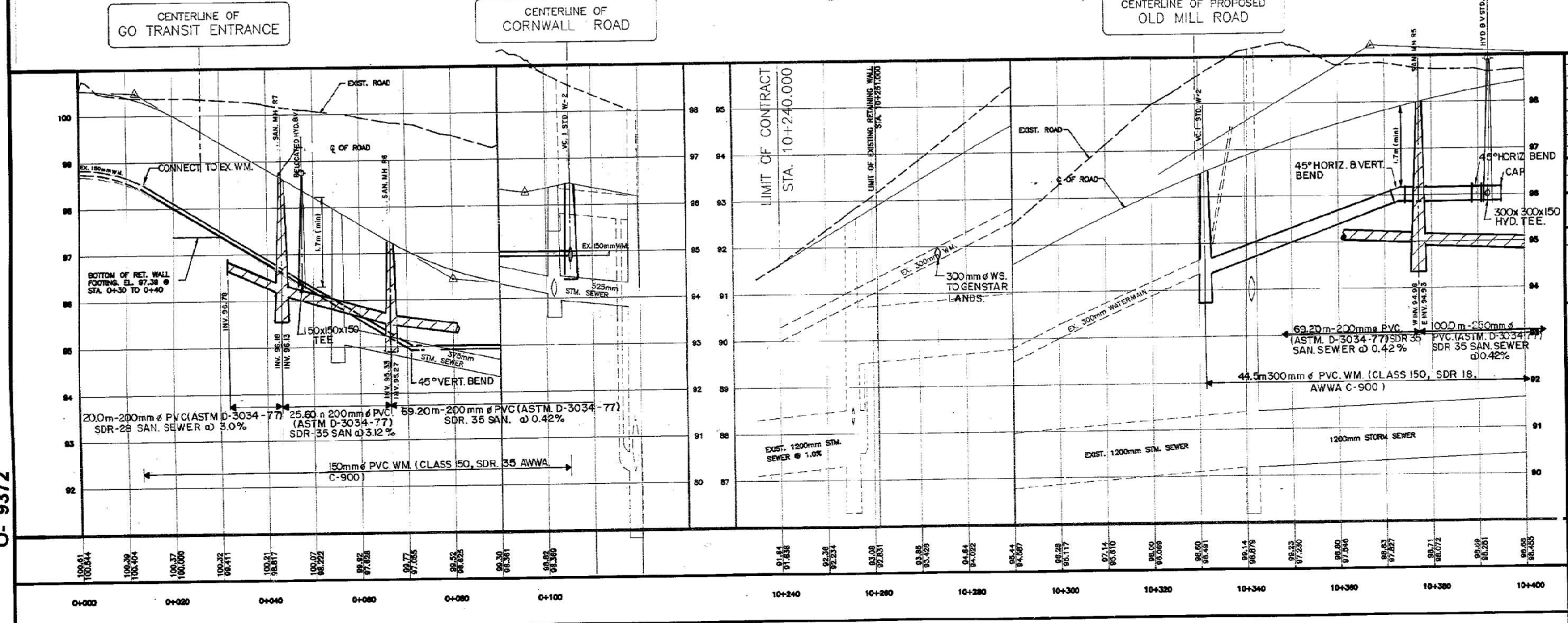
CONNECTION AT OLD MILL ROAD  
DETAIL A



FOR GENERAL NOTES SEE SHT. 1

REGIONAL MUNICIPALITY OF HALTON,  
ITS EMPLOYEES, OFFICERS AND AGENTS  
ARE NOT RESPONSIBLE FOR ANY ERRORS,  
OMISSIONS OR INACCURACIES, WHETHER  
DUE TO THEIR NEGLIGENCE OR OTHERWISE.  
ALL INFORMATION SHOULD BE VERIFIED.

NOTE:-  
EXISTING SANITARY MH.'s ON OLD MILL ROAD TO  
HAVE PIPES PLUGGED WITH GROUT, TOP BROKEN  
DOWN BELOW ROAD SUB BASE AND FILLED WITH  
COMPACTED GRANULAR C MATERIAL (95% SPD.)



O-9372

Design	Ch'kd	Date	MAY/93
Drawn	AWG.	Ch'kd	
Scale	Horiz. 1" = 10'	Vert. 1" = 5'	References
APPROVALS		Field Notes	
Municipal	Stamp		
Regional	Stamp		
Commissioner of Public Works		K. R. POULSEN	
Director of Design & Construction		22 02 28	

**TRAFALGAR ENGINEERING LTD.**  
481. MORDEN ROAD OAKVILLE, ONTARIO L6K 3W6  
TEL: (416) 338-3356 FAX: (416) 338-7734



TITLE  
**CORNWALL ROAD CONSTRUCTION**  
SANITARY SEWER &  
WATER MAIN RELOCATION  
CORNWALL RD. STA. 10+240 TO 10+400  
OLD MILL RD. STA. 0+000 TO 0+100

Consultant File No 657 Regional Drawing No **O-9372**  
CONTRACT NO REG. PR -1266 Drawing No  
OAKVILLE 251-89 SHEET 3 OF 5



# APPENDIX

# E

FSR LETTER

REPORT DATED

MARCH 10, 2016



MMM Group Limited  
100 Commerce Valley Drive West  
Thornhill, ON Canada L3T 0A1  
t: 905.882.1100 | f: 905.882.0055

[www.mmm.ca](http://www.mmm.ca)

March 10, 2016  
10-15049-000-D01  
Mr. Malvinder Singh  
2317511 Ontario Ltd.  
70 Old Mill Road  
Oakville, Ontario L6J 7W3

Dear Mr. Singh,

**Subject:** Servicing Rationale  
Proposed Development – 70 Old Mill Road  
Oakville, Ontario

MMM Group Limited has been retained to prepare the Site Grading and Servicing Plans in support of the Site Plan Application for the proposed development of a 9 storey residential condominium located at 70 Old Mill Road, Oakville. This letter report provides the servicing rationale for water distribution, sanitary sewage and storm drainage for this development. A Stormwater Management Report outlining the proposed quality and quantity controls for stormwater on this site has been prepared under a separate cover.

The site will be serviced by existing local municipal sewers and watermains within adjoining municipal rights-of-way. Service connections will be extended into the proposed site and coordinated with the building design team.

In preparing this report MMM staff reviewed and secured available Town of Oakville and Region of Halton record drawings of the existing municipal services.

## **SITE DESCRIPTION**

The site is a 0.1590 ha parcel of vacant, undeveloped land located at the northwest corner of Old Mill Road and Cornwall Road in Oakville, Ontario. The surrounding properties include high-rise residential buildings to the south, a rail line to the west, a parking lot to service the Oakville Go Station to the north, and Cornwall Road and Sixteen Mile Creek to the east. The project involves a 9-storey, 30 suite building with 2 additional levels of underground parking. The proposed gross floor area (GFA) for the building is 6981 m<sup>2</sup>.

## 1.0 EXISTING CONDITIONS

A topographic survey was prepared by KRCMAR Surveyors Ltd. Dated December 13, 2012. The survey indicates that the site falls approximately 2.0m from southwest to northeast, with a retaining wall ranging from 1-3 m in height along the north and east boundaries.

Based on information provided by the Owner, Town of Oakville and Region of Halton, within the streets adjacent to the proposed development are the following existing municipal services:

### 1.1 Water

#### Cornwall Road

- ▶ A 300mm diameter water main located at approximately the centreline of the road;
- ▶ Existing 300mm fire and 150mm domestic service from Cornwall Road to the parking structure of the adjacent building, through a service easement.

#### Old Mill Road

- ▶ A 150mm diameter watermain located within the north side of the road;

As the existing water service connection is utilized to serve the adjacent site, a new connection to the existing 300mm diameter watermain on Cornwall Avenue will be installed to service the proposed development.

### 1.2 Sanitary Sewer

#### Old Mill Road

- ▶ a 200mm diameter PVC municipal sanitary sewer located within the north side of the road with a 200mm diameter sanitary service running diagonally into the site and terminating at a stub approximately 3.0m into the site;

The 200mm diameter sanitary service for the adjacent residential complex runs immediately west of the west property line into the existing underground parking garage. This sanitary service will be protected during construction.

### 1.3 Storm Sewer

#### Cornwall Road

- ▶ a 1200mm diameter municipal storm sewer located within the south portion of the road with a 375mm diameter service connection used to service the residential site to the south;

#### Old Mill Road

- ▶ a 375mm storm sewer on the south side of the road

The site currently drains to the southeast and ultimately overland to Cornwall Road. Refer to the Stormwater Management Report for existing and proposed drainage patterns.

## **2.0 Proposed Conditions**

New water, sanitary and storm services will be required for the proposed development to the adjacent municipal services as outlined below.

### **2.1 Proposed Water Servicing**

A 200mm diameter PVC water service is proposed to connect to the 300mm municipal watermain, with tapping sleeve and valve, located within Cornwall Road. The portion within the right-of-way is proposed to be installed by directional drill to minimize disturbance to the existing retaining wall and Cornwall Road. The service will be installed per Halton Region Standard RH409.01 with a 100mm domestic line branching from the 200mm fire line. A meter in chamber will be installed just inside the property line along the domestic line, with external readout mounted to the building. A valve box will be provided at the property line for the 200mm fire line. The services will extend to the mechanical room at the southwest corner of the building. Connection to the existing 300mm watermain per Halton Region Standard RH409.01.

The design of the new watermain within the site area will be completed in accordance with the Region of Halton Standards and Specifications, Town of Oakville Standards and Ontario Building Code.

The design of the new watermain within the building will be undertaken by the mechanical consultant.

The domestic water demand for the site has been calculated as 0.58 L/s maximum day and 1.03 L/s peak hour. The water demand calculations are shown in Appendix A. The required fire flow calculation has been calculated as 40 L/s, included in Appendix A. A water meter and chamber per Halton Region Standard RH410.06 and RH410.10 will be installed inside the property line, southeast of the building.

A hydrant flow test may be required on a nearby municipal hydrant to verify that the total of the maximum day and fire flow is available at 20 psi.

The building is proposed to be sprinklered for fire protection. This will be detailed in the Mechanical Drawings for Building Permit.

Building code requirements stipulate that every sprinklered building be serviced by a fire hydrant which is located no more than 45 m away from the building's Fire Department Connection. The proposed office's Fire Department Connection will be located near the main entry, within 45m of a hydrant.

The proposed watermain system is illustrated on drawing SS1.

### **2.2 Proposed Sanitary Servicing**

The existing 200mm municipal sanitary service on the north portion of the site will be maintained and reused to service the proposed building. A manhole will be located at the property line over the existing sanitary service, with a leader running from the manhole perpendicular to the building. The

peak sanitary flow from the proposed development has been calculated as 1.15 L/s using the Region of Halton design criteria. This equates to 2% of the capacity of the existing 200mm diameter service at a slope of 3%. Refer to Appendix B for the sanitary calculation sheet and Site Servicing Plan SS1 for the sanitary service design.

The design of the new sanitary sewer system within the site area will be completed in accordance with the Region of Halton standards and specifications, Town of Oakville standards and Ontario Building Code.

### **2.3 Proposed Storm Sewer System**

As the building footprint covers the majority of the site, the on-site storm drainage system will consist of flow-control roof drains connecting to a new control manhole on the east side of the building and out to the existing 1200mm storm sewer on Cornwall Road. Runoff from the east and south side of the site will be captured in a swale and directed to a ditch inlet catchbasin, and to the control manhole. Stormwater from the rooftop and site is controlled to allowable release rates through rooftop controls and an underground storage pipe, controlled with an orifice plate. Refer to the Stormwater Management Report by MMM Group under separate cover for detailed stormwater quantity and quality calculations. Also refer to Site Servicing Plan SS1 for the storm sewer design.

The design of the new storm sewer system will be completed in accordance with the Town of Oakville and Ontario Building Code Standards.

### **3.0 Conclusions**

The site will be serviced by new water, sanitary and storm connections to the adjacent municipal infrastructure, designed per Town of Oakville, Halton Region and Conservation Halton requirements. Based on the above analysis, we have determined that the site can be fully serviced with available existing infrastructure.

We trust the above information will assist the Town with their Site Plan Application review. If you have any questions, please contact the undersigned at extension 6616.

Yours very truly,

**MMM GROUP LIMITED**



Tara Chisholm, P. Eng.  
Project Manager  
Municipal Engineering

**APPENDIX A**  
**70 Old Mill Road**  
**OAKVILLE**  
**Residential Development**

**Water Demand**

**Proposed Site Conditions**

a) **Population**

Site Area =	<b>0.159 ha</b>	
Units =	<b>30</b>	
Density =	<b>2.70 person/unit</b>	*
Population =	<b>81 persons</b>	

\*Density from Halton Region Design Criteria for Residential

Max day factor =	2.25
Peak Hour factor =	4

**Demand**

Average Daily Demand =  $0.275\text{m}^3/\text{cap}/\text{day} = 275 \text{ L}/\text{cap}/\text{day}$

Average day flow	275 x	81.0	=	22,275 L/day	=	0.26 L/sec
Maximum day flow	275 x	81.0 x	2.25 =	50,119 L/day	=	0.58 L/sec
Peak hour flow	275 x	81.0 x	4.00 =	89,100 L/day	=	1.03 L/sec

## APPENDIX B

### Calculation of FUS Fire Flow for 70 Old Mill Road, Oakville

Step 1 FUS Fire Flow calculation will consider gross floor area for preliminary design purposes  
Area = largest GFA plus 25% of GFA for two immediately adjoining floors)1

$$\text{Area} = 1,194 \text{ m}^2$$

$$C = 0.60 \quad \text{For fire-resistive construction}$$

$$\begin{aligned} F &= 220 \times C \times A^{0.5} \\ &= 220 \times 0.60 \times 1590^{0.5} \\ &= 5000 \text{ litres/min} \quad (\text{Required fire flow to nearest 1000 L/min}) \end{aligned}$$

Step 2 Decrease of 25% due to Low Fire Hazard

$$\begin{aligned} F &= 5000 \text{ litres/min (from Step 1)} \\ &- \frac{1250 \text{ litres/min (25\% increase)}}{3750 \text{ litres/min}} \end{aligned}$$

Step 3 Decrease due to Sprinkler System

The sprinkler system will be installed in every unit, 50% discount is applied.

$$\begin{aligned} F &= 3750 \text{ litres/min (from Step 2)} \\ &- \frac{1875 \text{ litres/min (50\% decrease)}}{1875 \text{ litres/min}} \end{aligned}$$

Step 4 Separations

North - >45m - 0%  
East - > 45m - 0%  
South - 15m - 15%  
West - >45m - 0%  
Total Exposures 15%

$$\begin{aligned} F &= 3750 \text{ litres/min (from Step 2)} \\ &+ \frac{563 \text{ litres/min (20\% increase)}}{4213 \text{ litres/min}} \end{aligned}$$

FUS Fire Flow

$$\begin{aligned} F &= \text{Step 2-Step 3 + Step 4} \\ &= 3750 - 1875 + 563 = 2438 \text{ L/min} \\ &\quad \text{Rounded off} \quad 2400 \text{ L/min} \\ &\quad \quad \quad 40 \text{ L/s} \\ &\quad \quad \quad 634 \text{ USGPM} \end{aligned}$$

**APPENDIX B**

**70 Old Mill Road**  
**OAKVILLE**  
**Residential Development**

**Sanitary Flows**

**Proposed Site Conditions**

a) **Population**

Site Area =	<b>0.159</b>	<b>ha</b>
Units =	<b>30</b>	
Density =	<b>2.70</b>	<b>person/unit</b>
Population =	<b>81</b>	<b>persons</b>

Criteria: 275 L/cap/day average daily sewage flow

Design average daily flow 0.26 L/sec

Peaking Factor = Harmon Formula (P = population in thousands)

$$m = 1 + 14/(4 + (P)^{-5})$$

$$m = 1 + 14/(4 + (81/1000)^{-5})$$

$$m = 4.27$$

Peak Design Flow 1.10 L/sec

b) Infiltration 0.159ha x 0.286 L/sec/ha = 0.05 L/sec

**Total Peak Design Flow for Proposed Development**

= 1.15 L/sec