Subject: Concerns from 20 Hawman Ave re Z.18.013 and OP.18.008 for First Avenue Properties
Attachments: Traffic Concern - 20 Hawman Ave.jpg; SUB1_April-9-2018_A201_Parking Levels_8.5x14_5225 Highway 7.pdf; SUB1_April-9-2018_Report_Arborist_5225 Highway 7.pdf; SUB1_April-9-2018_Report_FSR & SWM_5225 Highway 7.pdf

PUBLIC HEARING C3
COMMUNICATION
Date: June 4/19 ITEM NO.

From: Fera, Eugene
Sent: Monday, May 13, 2019 6:32 PM
To: kregg@kfarchitecture.com
Cc: 'Rebekah Jean' <rebekah@firstavenue.ca>
Subject: FW: Concerns from 20 Hawman Ave re Z.18.013 and OP.18.008 for First Avenue Properties

Comments from neighbouring property respecting Highway#7 and Kipling applications OP.18.008. Thanks Eugene Fera

From: Joseph Tusa [redacted]
Sent: Thursday, May 9, 2019 2:52 PM
To: Fera, Eugene <EUGENE.FERA@vaughan.ca>
Cc: Carella, Tony <Tony.Carella@vaughan.ca>; [redacted]
Subject: Concerns from 20 Hawman Ave re Z.18.013 and OP.18.008 for First Avenue Properties

Hello Eugene and City of Vaughan

I am writing to document and express some concerns that I have regarding the submitted development proposal along Highway 7 / Kipling Ave / Hawman Ave by First Avenue Properties, KFA Architects & Planners and HUMPHRIES Planning Group Inc. (Z.18.013 and OP.18.008)

I am the owner/resident of [redacted] Hawman Ave, the property that the proposed development will be surrounding on the entire north and east side of my property.

The following are currently my concerns with this development;

In the official drawings of the proposal, there indicates the desire to have underground parking all along the entirety of the east side of my property. (Please reference PDF SUB1_April-9-2018_A201_Parking Levels_8.5x14_5225 Highway 7 submitted in proposal) During excavation for this work, what precautions will take place to ensure my 18 month old son does not walk into a giant pit in the ground? Will there be a fence put up? Also will this cause damage to the structural integrity of my land that my house is sitting on? What are the actions that will take place to ensure my house does not sink into the ground?

Another big concern is the proposed road/access point that this development wants to create that will stretch from Hwy 7, southbound to Hawman Ave. Currently Hawman Ave is a residential street with no exit, utilized by the local residents only. The only purpose this access road will serve is to allow traffic to flow in/out of the proposed site to travel west on Hawman Ave, then North on Kipling (no southbound exit on Kipling) and then West on Hwy 7. My main concern is that my house and driveway is the only house on Hawman Ave between the proposed road access point and Kipling Ave. I will quite literally be boxed in every morning and evening during rush hour when vehicles will be travelling on Hawman Ave. Not to mention the impact that this additional traffic will have on the residents of Hawman Ave. There is no other exit on Hawman Ave and this proposal concerns me, especially considering that my house in particular is the only one uniquely affected by vehicles that will be lined up in front of my driveway trying to make a right hand turn on to Kipling. Please see the attached jpg file titled "Traffic Concern - [redacted] Hawman Ave" that I have prepared which illustrates this concern. Also how will this increase of traffic from this proposed road affect school buses? Currently busses come

along Hawman Ave for pick up and drop off locations. Will this affect mail delivery? Mail trucks use Hawman Ave when delivering mail. Will this affect garbage trucks, recycling trucks and fire truck / ambulance access should they be needed?

Also another big concern is the fact that the proposed zoning for the building shows it to be engulfing the entire north and east sides of my property. I understand that the actual structure will not take up that entire surface area, however the construction that will take place most definitely will. This is a big concern as well. My wife and I have our own home business and the noise that this construction will cause I fear will interfere with our ability to properly conduct this business. Also, our 18 month old son is at home with us in our care all day. I am concerned for the safety of him as well as ourselves when we are outside in the backyard. What type of machines will be there? What noise decibels will they create? What kind of pollution will they emit? What kind of dust will be created? Will there be any cranes or other machinery that will be swinging over my house or property space? The close proximity of this construction that engulfs 2 whole sides of our property line is of great concern to the safety, well being and quality of life for my 18 month old son, my wife and myself.

Another item submitted for proposal (PDF SUB1_April-9-2018_Report_FSR & SWM_5225 Highway 7) mentions the need to connect sanitary sewers and storm water drainage to existing sewers on Hawman Ave. What type of construction will this cause on Hawman Ave? What will the impact of this construction be on the accessibility to Hawman Ave for the existing residents, city vehicles (garbage/recycling/mail) as well as fire trucks and ambulance?

Submitted PDF SUB1_April-9-2018_Report_Arborist_5225 Highway 7 shows that an arborist has indicated that written concurrence will be needed from both owners to remove trees which are currently along the property line shared between myself and the proposed development site. I have currently not been contacted regarding this. What will be put along our property in place of trees? Other trees? A fence? What if I do not want to give my consent for these trees to be removed? What happens next?

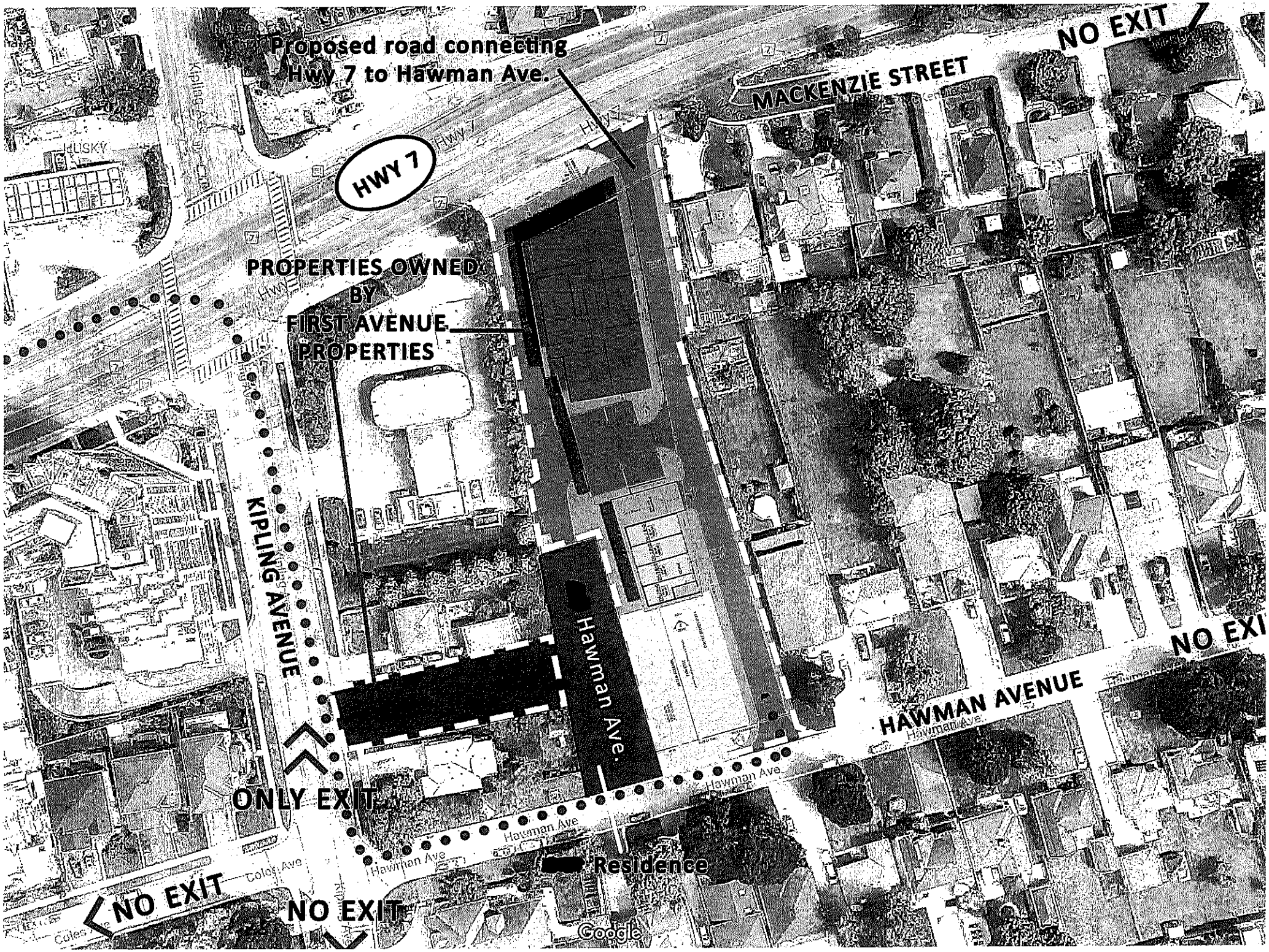
If this development is approved what steps will take place to ensure my safety during its construction?

I would like the city to keep my concerns in mind while making any approval decisions and if current plans are approved I would like to be involved with what actions are going to be taken to ensure my safety concerns mentioned above are adequately addressed. That said I still feel the appropriate solution would be to send the proposal back to the developer and require them to make modifications to their plan.

For convenience, attached to this note are 3 PDFs which were submitted to the city by the developers which I reference in my note above. Also attached is a jpg I prepared for consideration that I also have mentioned above.

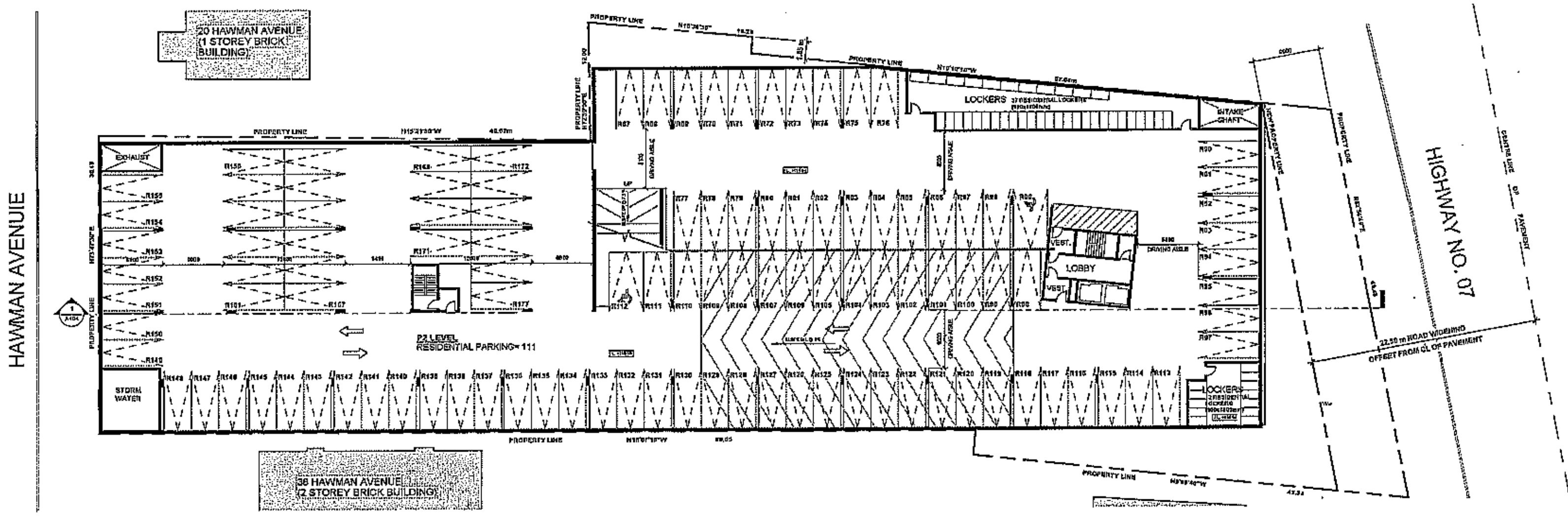
Thank you

Joseph & Cynthia Tusa - [redacted] Hawman Ave

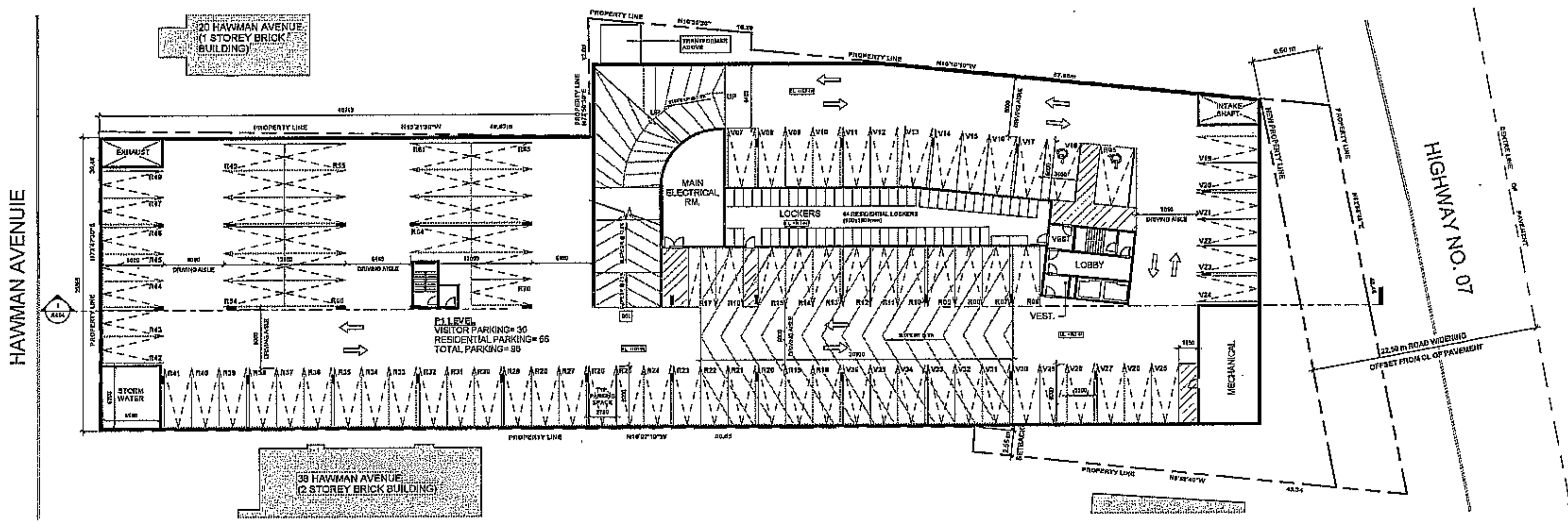

Proposed road connecting
Hwy 7 to Hawman Ave.
NO EXIT
MACKENZIE STREET
HWY 7
PROPERTIES OWNED
BY
FIRST AVENUE
PROPERTIES
KIPLING AVENUE
Hawman Ave.
HAWMAN AVENUE
NO EXI
ONLY EXIT
Residence
NO EXIT
NO EXIT
Google

5225
HIGHWAY NO. 07

WOODBRIDGE, ON



② Parking Level 02
1 : 300



① Parking Level 01
1 : 200

CLIENT

FIRST AVENUE

Project North | True North

KFA architects + planners inc.

Project No: 17036

Scale: 1 : 300

Date: Issue Date

Drawn by: Author

Drawing Title

P2 & P1 Parking Level

Drawing Number

A201

ARBORIST REPORT
FOR DEVELOPMENT APPLICATION

Prepared For:

Mr. Jack Morelli
First Avenue Properties
5451 Hwy. #7, Suite 200,
Woodbridge, Ontario
Tel. 905 856-3031

RE: 5225 Hwy. #7, Woodbridge
L6B 1A8

Prepared By: Peter Wynnyczuk
P & A Urban Forestry Consulting Ltd.
40 Brillinger Street, Richmond Hill, Ontario, L4C 8Y4 Cell 416 399-4490
Email: peter@paurbanforestryconsulting.com Web: paurbanforestryconsulting.com

Report #0596

March 23, 2018

Table of Contents

Introduction
The Owner proposes to construct a new multi-use housing complex to replace the existing homes at 5225 Hwy. #7, 26 and 32 Hawman Avenue and 5217 Hwy #7 infill, in Woodbridge.

P & A Urban Forestry Consulting Ltd. were retained to address the Development and Planning requirements of the City of Vaughan Tree Preservation requirements of the City as noted in the Private Tree Bylaw 2008-96 and Street Tree/Parks Bylaws 118-1999 and 2002-115. The information is based on a client provided site plan.

This report is based on the information provided up to March 22, 2018, in the form of;

1) Topographical Survey, by Askan Pillar Corp. Ltd., Project 17-24-9223-02, dated Apr. 21, 2017
2) Elevation Drawings and Parking Plans – KFA Architects/Planners, Project 17036, A 201 -401, Aug 8, Dec. 4,2017
3) Site Plan by KFA Architects/Planners Project 17036, Plan A 101, Rev. 2 dated Dec. 4, 2017

If other relevant information/plans become available or there are revisions, it may be necessary to review and update the Arborist Report.

Tree Information Collection Process and Review
A site inspection was carried out on November 6, 2017, by ground visual means to assess the trees within and adjacent to the above noted Site Plan. Tree details are on the Tree Inventory Action Table Appendix A, separate Excel table. Details on protection and removals are provided in the attached Tree Protection + Removal Plan, Appendix "A", Mar. 23, 2018, which is to be read in conjunction with this Arborist Report. Trees were assessed for condition, as it relates to the development process with information to date, other condition/species factors, as well as their proximity to potential construction impacts. The Tree Protections Zones are proposed based on the information and site limitations available.

Street Tree Bylaw
There are no city trees fronting this site.

Front/Side Yard trees
The proximity of the front/side yard trees in relation to zero lot line excavation for a significant portion of the site for the 2 level underground parking and appropriate shoring limits opportunity to retain the trees on site or along the property line. Tree replacements are noted in the Tree Inventory Action Table Appendix A.

Rear Yard Trees
The proximity of the rear yard trees in relation to zero lot line excavation for the underground parking and appropriate shoring limit opportunity to retain the trees. Tree replacements are noted in the Tree Inventory Action Table Appendix A.

Offsite Trees

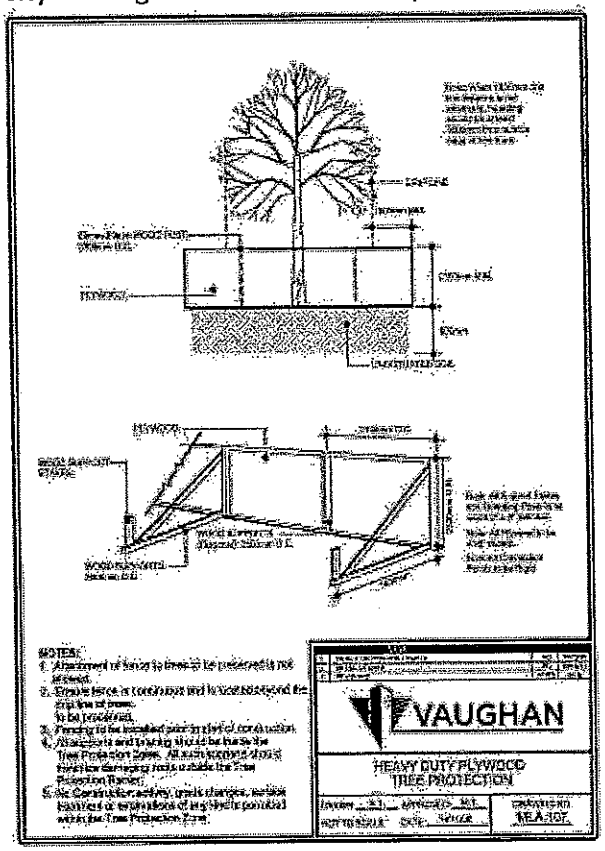
There is some existing landscaping on the property to the west at the Petro Canada Station at #5241 Hwy. #7. The planted Honey locust and Colorado Blue Spruce trees to varying degrees will be potentially impacted in circumstances of overhanging branches to be trimmed back or potential root damage at edge of shoring installation. It is suggested that exploratory root excavation be carried out within the Tree protection zone for the trees noted in the Tree Inventory Action Table Appendix 1.

#20 Hawman Avenue in the rear, along the East property line there are several trees and shrubs that form a multispecies hedge with some larger trees. It is important for the owner to seek cooperation and written consent to remove the trees along or just inside the property that are well within the tree protection zone needed as noted on the Tree Inventory Action Table Appendix "A' and shown on the 5225 Hwy #7 Tree Protection and removal plan Appendix "B", dated March 23, 2018.

#38 Hawman Avenue, rear yard has a White Cedar Hedge that appears to be near the east side of underground parking excavation and shoring work. At this time it is unclear how much of the cedar branching overhang is within the construction zone. It is suggested that the line of underground excavation be laid out in the field to help determine if there are impacts to this White Cedar Hedge. After site layout, further comments can be provided respecting any potential impacts and direction needed to address any issues.

Tree Protection Zone, TPZ, fencing. This is to be provided and installed as noted in the City of Vaughan Tree Protection Specifications as shown below. Details as to the placement of the TPZ, is noted on the Tree Protection + Removal Plan, Appendix "A, March 23, 2018.

City of Vaughan Tree Protection Specifications



City of Vaughan Tree Protection Zone Table

Table 1 - Tree Protection Distances

Trunk Diameter (DBH)[i]	Minimum Protection Distances Required	
	City Owned and Private Trees[ii]	Trees in Naturalized Areas *Whichever of the two is greater*
<10 cm	1.2 m	The drip line or 1.2 m
10 - 20[iv] cm	1.2 m	The drip line[iii] or 1.2 m
21 - 30 cm	1.8 m	The drip line or 3.6 m
31 - 40 cm	2.4 m	The drip line or 4.8 m
41 - 50 cm	3.0 m	The drip line or 6.0 m
51 - 60 cm	3.6 m	The drip line or 7.2 m
61 - 70 cm	4.2 m	The drip line or 8.4 m
71 - 80 cm	4.8 m	The drip line or 9.6 m
81 - 90 cm	5.4 m	The drip line or 10.8 m
91 - 100 cm	6.0 m	The drip line or 12.0 m
> 101 cm	6 cm protection for each 1 cm diameter	12 cm protection for each 1 cm diameter or the drip line[v]

[i] *Diameter at breast height (DBH) is the measurement of the tree trunk taken at 1.4 metres above ground level.*

[ii] *Tree Protection Zone distances are to be measured from the outside edge of the tree base.*

Replacement Plantings and Compensation

The City of Vaughan Replacement ratios based on DBH are as follows:
Greater than 51cm 4 to 1, , 41 to 50cm 3 to 1, 31 to 40cm 2 to 1, 20 to 30cm, 1 to 1, lower limit 20cm
Trees 21 to 40cm DBH, #5, 6, 10, 14, 18, 25, 28, 34, 36, 10 x 1 = 10 trees
Trees 31 to 40cm DBH, Tree #12, 27, 35, 39, 4 x 2 = 8 trees
Trees 41cm to 50cm DBH, Tree #11, 26, 37, 3 x 3 = 9 trees
Trees >51cm DBH, Tree #41, 1 x 4 = 4 trees
Total trees to replant/replace = **31 trees** to be either cash in lieu @ $550.00 each or 50mm Caliper trees planted.
All trees to be planted are to be reflected on the landscape plan provided by others, or as cash in lieu as determined by the Owner and City.

Pre, During, and Post Construction Arboriculture Supervision

It is recommended there be meetings and inspections scheduled to help address the Arborist Report recommendations as noted below;

Preconstruction

1) Pre-construction meeting with the Owner and General Contractor to mark out the TPZ areas and set the parameters for the various contractors who will be on site. Pre-construction exploratory digging on west side trees as noted in Tree Inventory and Action Table Appendix "A".
2) After to TPZ installation, pruning of overhanging branches by certified arborist.
3) Verification by the Arborist of TPZ installation with notification to the City and Client by email.

During Construction

1) Monthly onsite inspection, if required, to verify integrity of TPZ and identification of any issues related to the trees during the construction to final grading. Document findings and send report and recommendations, if any to the City and Client of any action needed as required to retain trees noted.
2) Site inspection as required by the City or the Client to address tree issues and make recommendations as issues arise.
3) Inspection prior to final site cleanup to verify trees condition and authorize removal of TPZ structures. Report any issues if needed for Client follow-up.

Post construction

1) Proposed inspection, upon completion of addition and after sod has been laid. This is to inspect retained trees to note any additional work, verify compliance to the City of Vaughan Tree Permit. This may include actions such as pruning, aeration, deep root fertilizing or other recommended work.

The information and recommendations noted in this report are based on the information provided at the time the report was written. Any updates or changes in design, require the review of the Arborist report in relation to the changes presented. There may be revisions to this Arborist report to address the site changes, as it relates to the tree protection/planting noted.

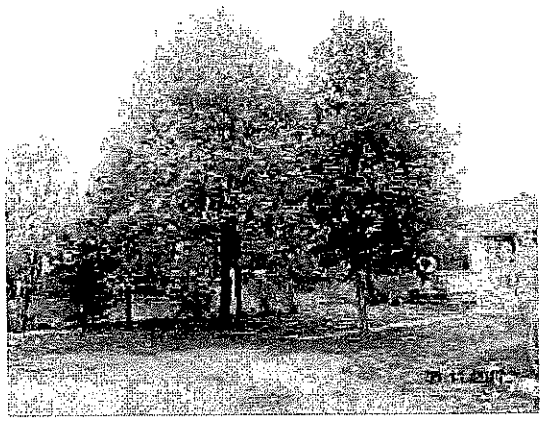
All tree work is to be carried out by a certified/apprentice Arborist by the Ontario College of Trades, Ministry of Labour, or the ISA program. Further by education and experience, to competently carry out the work to Arboricultural specifications.

It is the Owners responsibility to abide by and follow any conditions set out by the City of Vaughan related to Tree Removal/Protection/Planting activities for the duration of the development activity.
Prepared by:

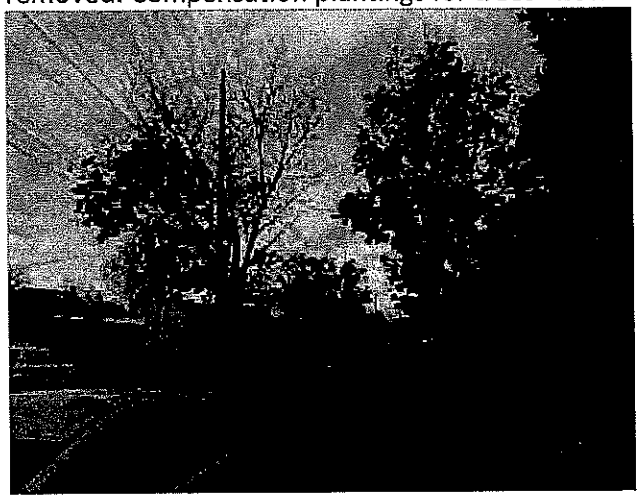
Peter Wynnyczuk
Hazard Risk Assessor Certified, ISA Utility Arborist #400113535 under MTCU
Butternut Health Assessor #691 ISA Certified Arborist ON-2067A

Picture 1. From West showing tree #1 in proximity to road and sidewalk. Tree #2 on right, both to be retained and exploratory activities to determine if roots affected.

Picture 2. From North, close up of tree #1, and #2 in rear. All to be retained with root exploration at edge of excavation under Arborist supervision.



Picture 3. From North West, from right to left, Tree # 5, 6, in foreground, behind #6 is #10. On left is Spruce #7, and #8 to left. All to be removed. Compensation plantings for trees >20cm DBH removed.



Picture 4. From West trees, 7, 8, 9, to be removed.

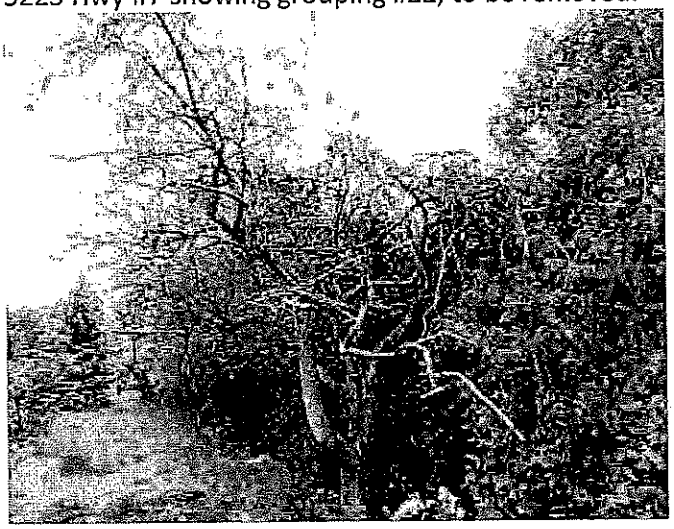
Picture 5. From West tree# 11 to be removed. Replacement plantings.

Picture #6. From East in rear yard, from right to left, trees #4 at gas station,#12 to #19 . Trees inside fence to be removed, compensation planting as applicable for trees over 20cm DBH. Root exploration under Arborist Supervision for offsite trees.

Picture #7. From East, Left side spruces, #30, + 31 outside of parking garage excavation install tree protection. Trees inside fence and on left is part of hedgerow #21, to be removed.

Picture #8. From South East from #5217 Hwy #7, Flowering Crabapple, #24 right of centre, at left is the north end of Norway Maple row #22, all to be removed.

Picture # 9. From West, inside rear yard of 5225 Hwy #7 showing grouping #22, to be removed.



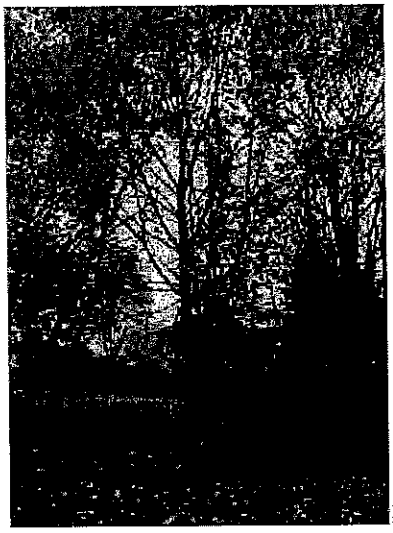
Picture #10. From North #24 showing condition, to be removed, compensation planting.

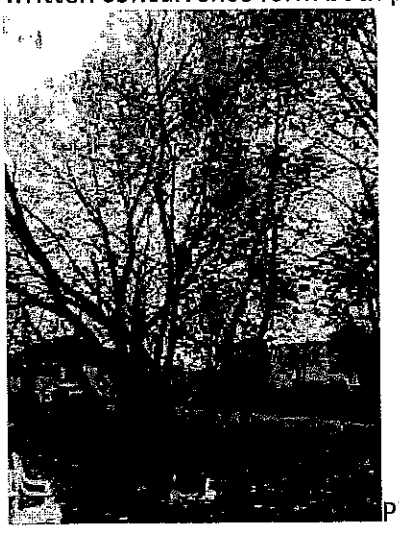
Picture 11. From South East, tree #25, to be removed.

Picture 12. From North East showing tree #26, to be removed, compensation planting and #38 Hawman Ave. Cedar hedge to be retained pending shoring/excavation layout.

Picture 13. From East showing tree #33 offsite to be protected. On left is grouping around #27 to be removed pending concurrence from both property owners.


Picture 14. From East on left tree #29, Pear to be retained. Trees on right to be removed pending written concurrence of both property owners.

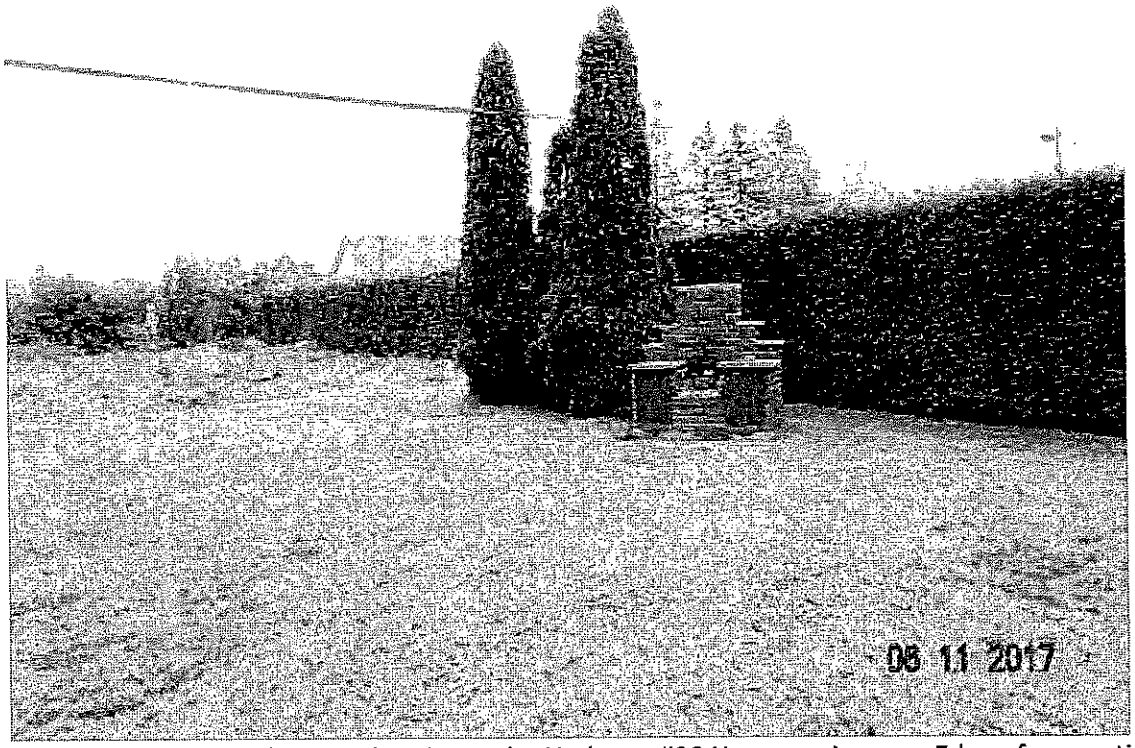

Picture 15. From North East Tree #28 to be removed pending written concurrence form both property owners.


Picture 16. From North East showing cluster of trees #34 to #37, need written concurrence from both owners to remove, replacement plantings.


Picture 17. Tree grouping #38, need written concurrence from both owners to remove.


Picture 18. Ash trees #39 and #40 both along P/L, need written concurrence from both owners to remove. #40 is dead.


Picture 19. Tree #41, to be removed, compensation planting.



Picture 20.From South West showing cedar Hedge at #38 Hawman Avenue. Edge of excavation should be laid out to determine impacts on hedge.

Page 15 to 18. 5225 Highway #7 Tree Inventory/Action Table, March 23, 2018, Appendix "A"' Separate PDF Table

Page 19. 5225 Highway #7 Tree Protection, Removal Plan, March 23, 2018, Appendix "B" Separate PDF Plan

5225 Highway #7	Appendix "A"	23-Mar-18 TPZ - Minimum Tree Protection Zone

X reference with Arborist Report March 22, 2017, and Tree Protection Removal Plan Appendix "B" by P & A Urban Forestry Consulting Ltd.

Date compiled March 23, 2018 — Tree Inventory Action Table —

#	Species	DBH (cm)	Basal cm	TPZ m	Ownership/ Location	Site Observations/Condition. Good- G , Fair-F, Poor-P	Suggestion in relation to Development /TPZ
1	Skyline Honey Locust Gleditsia triacanthos, 'Skyline'	Est. 40	Est. 45	2.4	#5241 Hwy 7, 1m W. Fence, at S/L	F/P, stubs, ddwd, low branches	Retain, offsite, Existing fencing is barrier
2	Skyline Honey Locust Gleditsia triacanthos, 'Skyline'	Est. 30	Est. 35	1.8	#5241 Hwy 7, .075m W. Fence, at S/L	F, stubs, low branches	Retain, offsite, Existing fencing is barrier, root exploration under Arborist supervision pre-construction
3	Skyline Honey Locust Gleditsia triacanthos, 'Skyline'	Est. 20	Est. 25	1.8	#5241 Hwy 7, 0.5m W. Fence, at S/L	F, stubs, low branches	Retain, offsite, Existing fencing is barrier, root exploration under Arborist supervision pre-construction
4	Skyline Honey Locust Gleditsia triacanthos, 'Skyline'	Est. 20	Est. 25	1.8	#5241 Hwy 7, 0.2m W. Fence, at S/L	F, stubs, ddwd, low branches	Retain, offsite, Existing fencing is barrier, root exploration under Arborist supervision pre-construction
5	Norway Maple, Acer platanoides	22	28	N/A	12m S. Sdwk, 1m W. Frt. Door	F, stubs, ddwd, low branches, interfering growth	Remove, construction conflict, 1 to 1 replacement
6	Norway Maple, Acer platanoides	27, 30	44	N/A	11m S. Sdwk, 3m E. Frt. Door	F, Low branches, weak crotch, bark damage N. side	Remove, construction conflict, 1 to 1 replacement
7	White Spruce, Picea glauca	15.5	25	N/A	8m S. Sdwk, 1m E. of NEC of house	F, stubs, low branches, crowded	Remove, DBH undersized for Bylaw, no compensation
8	Norway Maple, Acer platanoides	18.5	25	N/A	5m S. Sdwk, 1.5m E. of NEC of house	F, Low branches, included bark	Remove, DBH undersized for Bylaw, no compensation
9	Norway Maple, Acer platanoides	16, 17	33	N/A	1m S. Sdwk, 2m E. of NEC of house	F, Low branches, included bark, interfering growth	Remove, DBH undersized for Bylaw, no compensation
10	Norway Maple, Acer platanoides	23.5	27	N/A	E. Side, 12m S. Sdwk., 0.5m E. P/L	F, low branches	Remove, construction conflict, 1 to 1 replacement
11	Manitoba Maple, Acer negundo	43	Est.55	N/A	Front yard, 2m N. of NEC house	F/P, Low branches, weak crotch, ddwd, decay at base, suckers	Remove, construction conflict, 3 to 1 replacement
12	Manitoba Maple, Acer negundo	39	47	N/A	Rear, 0.1m E. Fence, 1m from SWC house	P, Low branches, weak crotch, hollow trunk, SE side, ddwd,	Remove, construction conflict, 2 to 1 replacement
13	Norway Maple, Acer platanoides	17	23	N/A	Rear, 0.1m E. Fence, 5m S. house	F, Low branches, crowded	Remove, DBH undersized for Bylaw, no compensation

5225 Highway #7	Appendix "A"	23-Mar-18 TPZ - Minimum Tree Protection Zone

X reference with Arborist Report March 22, 2017, and Tree Protection Removal Plan Appendix "B" by P & A Urban Forestry Consulting Ltd.

Date compiled March 23, 2018 — Tree Inventory Action Table —

#	Species	DBH (cm)	Basal cm	TPZ m	Ownership/ Location	Site Observations/Condition. Good- G , Fair-F, Poor-P	Suggestion in relation to Development /TPZ
14	Manitoba Maple, Acer negundo	25	31	N/A	5225, Rear, 0.1m E. Fence, 6m S. house	F/P, Limb decay, leaning, included bark	Remove, construction conflict, 1 to 1 replacement
15	Skyline Honey Locust Gleditsia triacanthos, 'Skyline'	Est. 30	Est. 35	3	5241 Hwy 7, 3m S. House, 1m W. Fence	F, Low branches, crowded, 1 sided canopy	Retain, offsite, Existing fencing is barrier, root exploration under Arborist supervision pre-construction, prune
16	Colorado Blue Spruce, Picea pungens	Est. 25	Est. 30	1.8	5241 Hwy 7, 8m S. house, 0.5m W. fence	F, Low branches, crowded, 1 sided canopy	Retain, offsite, Existing fencing is barrier, root exploration under Arborist supervision pre-construction
17	Colorado Blue Spruce, Picea pungens	Est. 25	Est. 30	1.8	5241 Hwy 7, 11m S. House, 1m W. Fence	F/P, low branches, dieback, crowded	Retain, offsite, Existing fencing is barrier, root exploration under Arborist supervision pre-construction
18	Manitoba Maple, Acer negundo	21	29	N/A	5225, Rear, 0.3m E. Fence, 13m S. house	F/P, Low branches, hangars, crowded	Remove, construction conflict, 1 to 1 replacement
19	Colorado Blue Spruce, Picea pungens	Est. 25	Est. 30	1.8	5241 Hwy 7, 14m S. House, 0.5m W. Fence	F, Low branches, crowded, 1 sided canopy	Retain, offsite, Existing fencing is barrier, root exploration under Arborist supervision
20	Manitoba Maple Hedge, Acer negundo (5)	Avg. 15	Avg. 20	N/A	Rear, along W. Side P/L	F/P, low branches, crowded	Remove, DBH undersized for Bylaw, no compensation
21	Norway Maple, Acer platanoides, other species hedge	Avg. 15	Avg. 20	N/A	Rear, along S. Side P/L	F/P, low branches, crowded	Remove, DBH undersized for Bylaw, no compensation
22	Norway Maple, Acer platanoides (8)	Avg. 15	Avg. 20	N/A	Rear, along E. Side P/L	F/P, low branches, crowded	Remove, DBH undersized for Bylaw, no compensation
23	White Cedar, Thuja occidentalis	Avg. 8	Avg.11	N/A	5217 Hwy #7, E. P/L, 3m from SEC house	P/Dying, wild grape in canopy, low branches	Remove, DBH undersized for Bylaw, no compensation
24	Flowering Crabapple, Malus spp.	18	35	N/A	5217 Hwy #7, 2m E. P/L, 3m from SEC house	P/Dying, wild grape in canopy, stubs, major ddwd	Remove, DBH undersized for Bylaw, no compensation
25	Colorado Blue Spruce, Picea pungens	Est. 25	Est. 33	N/A	32 Hawman, Rear, In proximity to Bell cable 3m E. P/L	G, low branches	Remove, construction conflict, 1 to 1 replacement

#	Species	DBH (cm)	Basal cm	TPZ m	Ownership/ Location	Site Observations/Condition. Good- G , Fair-F, Poor-P	Suggestion in relation to Development /TPZ
26	White Spruce, Picea glauca	47	63	N/A	32 Hawman, Rear, 2m N. Shed, 3m E. P/L	F/P, Low branches, dieback, ddwd	Remove, construction conflict, 3 to 1 replacement
27	Norway Maple, Acer platanoides	38	51	N/A	#26 Hawman,3m E. Pole, 4m S. Pole, at corner	F/P, Low branches, major deadwood, interfering growth	Remove, construction conflict, 2 to 1 replacement
28	Norway Maple, Acer platanoides	24	30	N/A	#26 Hawman, 7m E. Pole, 8m S. Pole, at corner	F, stubs, low branches	Remove, construction conflict, 1 to 1 replacement
29	Pear, Pyrus spp.	19.5	24	N/A	#20 Hawman, 2m E. Pole, 7.5m S. Pole	F, crowded, ddwd	Retain, offsite, install tree protection barrier
30	Colorado Blue Spruce, Picea pungens	Est. 28	Est. 34	1.8	5241 Hwy 7, 3m N. Dog leg P/L, 1m W. Fence	F, Low branches, crowded	Retain, offsite, Existing fencing is barrier, install Tree Protection 1m E. P/L
31	Colorado Blue Spruce, Picea pungens	Est. 30	Est. 34	1.8	5241 Hwy 7, 3m S. Dog leg P/L, 1m W. Fence	F, Low branches, crowded	Retain, offsite, install Tree Protection 1m E. P/L
32	Colorado Blue Spruce, Picea pungens	Est. 30	Est. 34	1.8	5241 Hwy 7, 1m S. Pole, 1m W. Fence	F, Wild Grape, Low branches	Retain, offsite, install Tree Protection 1m E. P/L
33	Colorado Blue Spruce, Picea pungens	Est. 28	Est. 34	1.8	5241 Hwy 7, 1m N. SEC, 3m W. Fence	F, Low branches	Retain, offsite, Existing fencing is barrier
34	Manitoba Maple, Acer negundo	18, 22	22, 33	N/A	26 Hawman, Rear, 4.0m N. Garage, P/L	F/P,trunk decay at base, deadwood	Remove, written concurrence of adjacent owner required, construction conflict, 1 to 1 replacement
35	Manitoba Maple, Acer negundo	34	40	N/A	26 Hawman, Rear, 3.5m N. Garage, P/L	F, wk crotch, lean to east	Remove, construction conflict, 2 to 1 replacement
36	Norway Maple, Acer platanoides	29	34	N/A	26 Hawman, Rear, 3.0m N. Garage, P/L	F, crowded	Remove, written concurrence of adjacent owner required, construction conflict, 1 to 1 replacement
37	Manitoba Maple, Acer negundo	50.5, 38, 37	60	N/A	26 Hawman, Rear, 2.5m N. Garage, P/L	F, Basal rot, stubs, weak crotch, leaning	Remove, written concurrence of adjacent owner required, construction conflict, 1 to 1 replacement

5225 Highway #7	Appendix "A"	23-Mar-18 TPZ - Minimum Tree Protection Zone

X reference with Arborist Report March 22, 2017, and Tree Protection Removal Plan Appendix "B" by P & A Urban Forestry Consulting Ltd.

Date compiled March 23, 2018 — Tree Inventory Action Table —

#	Species	DBH (cm)	Basal cm	TPZ m	Ownership/ Location	Site Observations/Condition. Good- G , Fair-F, Poor-P	Suggestion in relation to Development /TPZ
38	Manitoba Maple Hedge , Acer negundo	Avg. 19	Avg. 25	N/A	26 Hawman, Rear, West Side, P/L	F/P, Low branches	Remove, written concurrence of adjacent owner required, construction conflict, 1 to 1 replacement
39	Manitoba Maple, Acer negundo	34	40	N/A	26 Hawman, 4.5m S. House, P/L	F/P, Basal injury	Remove, written concurrence of adjacent owner required, construction conflict, 1 to 1 replacement
40	White Ash, Fraxinus americana	41	46	N/A	26 Hawman, 1.5m S. House, P/L	Dead	Remove, written concurrence of adjacent owner required, construction conflict, 1 to 1 replacement
41	Schwedler Norway Maple, Acer platanoides 'Schwedleri	53	58	N/A	32 Hawman, Lawn, Centred	F, Low branches, interfering growth	Remove, construction conflict, 4 to 1 replacement
A	Lilac cluster,	Avg 5	Avg 10	N/A	P/L 32 Hawman and 5217 Hwy #7	Fair, low branches, interfering growth	Remove, DBH undersized for Bylaw, no compensation
B	Buckthorn, Manitoba Maple cluster	Avg 15	Avg. 18	N/A	5217 Hwy #7, east side rear SEC area	F, Low branches, interfering growth	Remove, construction conflict, 4 to 1 replacement
C	White Cedar Hedge, Thuja occidentalis	Avg. 8	Avg.1 1	1.2	38 Hawman Ave., Rear, along West P/L area	P/Dying, wild grape in canopy, low branches	Site layout of excavation extent to help determine potential impacts to off site hedge.

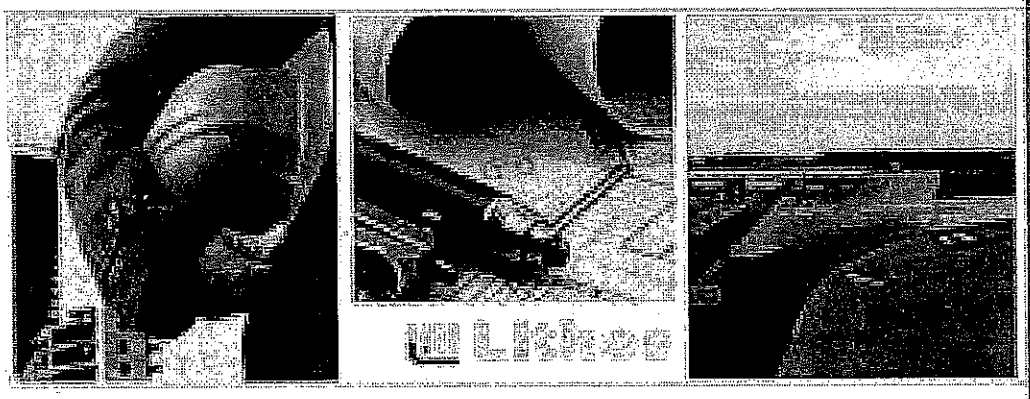
Replacement trees on Landscape Plan by others — Proposed total trees to replace = **31 trees** — If any trees Cash in Lieu = $550.00/tree

Lithos

April 2018

UD17-078

Functional Servicing and Stormwater Management Report (Phase I)



Project: 5217-5225 Highway 7

First Avenue

Lithos Group Inc.
150 Bermondsey Avenue
Toronto, ON M4A 1Y1
Tel: (416) 750-7769
Email: info@LithosGroup.ca

PREPARED BY:

John Pasalidis, P.E., M.A.Sc.
Project Designer

REVIEWED BY:

Nick Moutzouris, P.Eng., M.A.Sc.

Principal

LITHOS GROUP INC.

Issues and Revisions Registry

Identification	Date	Description of issued and/or revision
Functional Servicing and Stormwater Management Report (Phase I)	4-6-2018	Issued for Zoning Application

Statement of Conditions

This Report / Study (the "Work") has been prepared at the request of, and for the exclusive use of, the Owner / Client, the City of Vaughan and its affiliates (the "Intended User"). No one other than the Intended User has the right to use and rely on the Work without first obtaining the written authorization of Lithos Group Inc. and its Owner. Lithos Group Inc. expressly excludes liability to any party except the intended User for any use of, and/or reliance upon, the work.

Executive Summary

Lithos Group Inc. (Lithos) was retained by First Avenue (the "Owner") to prepare a Functional Servicing and Stormwater Management Report (Phase I) in support of Zoning Application for a proposed residential use development at 5217 -5225 Highway 7 in the City of Vaughan, Region of York. The following summarizes our conclusions:

Storm Drainage

A more detailed Stormwater Management report (Phase II) will be prepared during the site plan application stage. The site stormwater discharge will be controlled to the 5-year pre-development flow and will be connected to the existing 600mm storm sewer on Hawman Avenue. In order to attain the target flows and meet the City's SWM, quantity controls will be utilized and up to 85.4 m^3 of total storage will be required. The (SWM) system will be designed to provide enhanced level (Level 3) protection as specified by the Ministry of Environment (MOE). During Site Plan Application, a detailed analysis will be provided to assess the water quality on site and determine additional measures in order to achieve a minimum total suspended solids (TSS) removal of 80%.

Sanitary Sewers

The development will connect to the existing 350 mm sanitary sewer located on Hawman Avenue flowing west, via a 150mm diameter lateral pipe. The additional net discharge flow from the proposed development, is anticipated at approximately 7.30 L/s.

Water Supply

Water supply for the site will be from the existing 450 mm diameter watermain on south side of Highway 7. It is anticipated that a total design flow of 126.53 L/s will be required to support the proposed development. Upon receipt of the fire hydrant test results in spring of 2018, an addendum to this report will be prepared and submitted to the City on the "Client's" behalf.

Site Grading

The proposed grades will improve the existing drainage conditions to meet the City's/Regional requirements. Grades will be maintained along the property line wherever feasible and emergency overland flow will be directed to adjacent right of ways.

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LIST OF FIGURES

LIST OF TABLES

APPENDICES

1.0 Introduction

Lithos Group Inc. (Lithos) was retained by First Avenue (the "Owner") to prepare a Functional Servicing and Stormwater Management Report (Phase I) in support of zoning application for a proposed residential use development at 5217 -5225 Highway 7, in the City of Vaughan, Region of York.

The purpose of this report is to provide site-specific information for the City's review with respect to infrastructure required to support the proposed development regarding storm drainage, sanitary sewers, and water supply.

We contacted the City's engineering department to obtain existing information in preparation of this report. The following documents were available for our review:

- Plan and profile drawing of Highway 7, drawing No. P-016-7, June 1981;
- Plan and profile drawing of Hawman Avenue, drawing 85-5016-1, dated March 1986;
- Phase One Environmental Site Assessment prepared by Rubidium Environmental, dated December 8, 2017;
- Phase Two Environmental Site Assessment prepared by Rubidium Environmental, dated December 28, 2017;
- Hydrogeological Assessment prepared by Harden Environmental Services Ltd, dated February 27, 2018;
- Topographic Survey prepared by Aksan Piller Corporation Ltd, dated April 21, 2017;
- Site Plan and Statistics prepared by KFA Architects and Planners Inc., dated April 3, 2018.

2.0 Site Description

The existing site is approximately 0.447 hectares of residential use land. It is currently occupied by three (3) one-storey residential dwellings and one (1) single-storey wooden framed garage, as indicated by the topographic survey in **Appendix B**. The site is bound by Highway 7 to the north, commercial development to the west, Hawman Avenue to the south and residential dwellings to the east. Refer to **Figures 1** and **2** following this report and site photographs in **Appendix A.**

3.0 Site Proposal

The proposed residential use development will be a 16-storey building, with an additional mechanical penthouse level, which will be comprised of 178 residential units and will be serviced by two (2) underground parking levels. The proposed building will include a total of 15,952.0 m^2 of Gross Floor Area (GFA). Please refer to **Appendix B** for the proposed site plan and site statistics.

Note that there is approximately 0.027 ha portion of an area on the north side of the property, which will be dedicated to the City (future extension of Highway 7). Therefore, the future private property area, will be 0.420 ha. Please refer to **Appendix B** for the proposed site plan and site statistics.

4.0 Terms of Reference and Methodology

4.1. Terms of Reference

The Terms of Reference used for the scope of this report was based on:

- City of Vaughan Engineering Design Criteria & Standard Drawings, June 2013;
- Ministry of Environment: Guidelines for the Design of Sanitary Sewage Works – 2008;
- Ministry of Environment: Design Guidelines for Drinking Water Systems – 2008;
- Ministry of Environment: Stormwater Management Planning and Design Manual – 2003;
- Ontario Building Code 2012 (O.B.C.)

4.2. Methodology: Stormwater Drainage and Management

This report provides an overview of the pre and post-development conditions and comments on opportunities to reduce peak flows. A more detailed Stormwater Management (Phase II) report will be prepared at the site plan application stage.

The proposed development will be designed to meet the City's Design Criteria and Standard Drawings, the TRCA's Stormwater Management Criteria and the standards of the Province of Ontario as set out in the Ministry of Environment (MOE) 2003 Stormwater Management Planning and Design Manual (SWMPD). The following design criteria will be reviewed:

- Post-development peak flow for the 100-year from the site should be controlled to the five (5)-year target flow;
- A specified rainfall depth of 5 mm is to be retained on-site as required by the TRCA; and
- A safe overland flow will be provided for all flows in excess of the 100-year storm event.

4.3. Methodology: Sanitary Discharge

The sanitary sewage discharge from the site will be determined using sanitary sewer design sheets that incorporate the land use and building statistics as supplied by the design team. The calculated values provide peak sanitary flow discharge that considers infiltration.

The estimated sanitary discharge flows from the proposed site will be calculated based on the criteria shown in **Table 4.1.**

Table 4.1 – Sanitary Flows

Usage	Design Flow	Units	Persons
Residential	364	Litres / capita / day	Single Family Residential = 4.0 persons/unit Apartments = 2.5 persons/unit

Based on the calculated peak flows, the adequacy of the existing infrastructure to support the proposed development will be discussed.

4.4. Methodology: Water Usage

The domestic water usage was calculated based on the City's design criteria outlined in **Table 4.2**.

Table 4.2 – Water Usage

Usage	Water Demand	Units
Multi-Unit Dwellings	300	Litres / capita / day

Pressure and flow testing will be conducted on hydrants, in the vicinity of the proposed development to obtain existing flows, residual and static pressure on the existing infrastructure along Highway 7. The results will be compared to the anticipated domestic and fire protection usage to determine if there is adequate capacity to support the development. Upon receipt of the test results, an addendum to this report will be prepared and submitted to the City on the "Client's" behalf.

5.0 Stormwater Management and Drainage

5.1. Existing Conditions

The existing site is currently occupied by three (3) one-storey residential dwelling and one (1) single-storey wooden framed garage. The northern part of the property drains towards Highway 7, while the southern part drains towards Hawman Avenue. According to available records, there is an existing 600mm storm sewer on Hawman Avenue running west towards Kipling Avenue.

The existing site run-off coefficient is calculated to be 0.36 according to the City's stormwater management guidelines. **Table 5.1** shows the input parameters which are illustrated on the pre-development drainage area plan in **Figure DAP-1 in Appendix C**.

Table 5.1 – Target Input Parameters

Catchment	Drainage Area (ha)	C	Tc (min.)
A1 Pre	0.420	0.36	7

Peak flows calculated for the existing conditions are shown in **Table 5.2**. Detailed calculations are in **Appendix C**.

Table 5.2 – Target Peak Flows

Catchment	Peak Flow Rational Method (L/s)		
	2-year	5-year	100-year
A1 Pre	41.1	57.1	103.1

As shown in **Table 5.2**, the post-development flows will need to be controlled to the target flow of 57.1 L/s.

5.2. Stormwater Management

In order to meet the City's SWM criteria, the development flow rate is to be controlled to the five (5)-year target flow established in **Section 5.2**. Any excess flow will be retained on-site and will ultimately outlet into the existing storm infrastructure on Hawman Avenue. The post-development drainage area and runoff coefficient are indicated on **Figure DAP-2**, located in **Appendix C** and summarized in **Table 5.3** below.

Table 5.3 – Post-development Input Parameters

Drainage Area	Drainage Area (ha)	Runoff Coefficient for 5-Year Return Period "c"	Runoff Coefficient for 100-Year Return Period "c"	Tc (min.)
A1 Post	0.420	0.65	0.83	7

5.2.1. Water Balance

As required by TRCA's current strategy of the water balance, a rainfall depth of 5 mm must be retained over the entire parcel area. A 5 mm rainfall over the entire site equates to a required water balance volume of 20.99 m^3. In order to achieve this, the following low impact development (LID) techniques may be implemented.

- Additional capture due to landscape areas;
- Retained to an underground area;
- Green roof and planters;
- Reused for irrigation purposes.

5.2.2. Quantity Controls

Using the City's intensity-duration-frequency (IDF) data, modified rational method calculations were undertaken to determine the maximum storage required during each storm event. Results for the 2, 5 and 100-year storm events are provided in **Table 5.4**. The detailed post-development quantity control calculations are provided in **Appendix C.**

Table 5.4 – Post-development Quantity Control as per City Requirements

Storm Event	Storm Event	Target Flow (L/s)	Required Storage Tank Volume (m^3)
A1 Post (Controlled)	2-year	57.1	7.6
	5-year		19.9
	100-year		85.4

As shown in **Table 5.5**, in order to control post-development flows to 5-year pre-development conditions, a target flow of 57.1 L/s is to be satisfied. This can be achieved through the design and installation of stormwater holding tanks, flow control devices and/or roof storage, details of which will be provided through the detailed design stage during site plan application.

5.3. Groundwater Flow

As per the Hydrogeological Assessment prepared by Harden Environmental Services Ltd, dated February 27, 2018, the elevation of the water table have been recorded at depths of approximately 6.62 to 1.33m below grade elevation. Given that the proposed lowest basement's elevation is at 8.06m below grade, the building's basement elevation is within the water table. The estimated long-term inflow of groundwater through the perimeter walls is 2.41 L/m (0.64 USGM, 0.04 L/s), thus permanent groundwater drainage will be required through the installation of a Private Water Discharge System. The anticipated temporary total dewatering discharge was calculated at 312,470 L/day. Therefore, a Permit to Take Water (PTTW) will not be required by the Ministry of Environment and Climate Change (MOECC), however an Environmental Activity and Sector Registry (EASR) will be needed.

According to Phase two Environmental Site Assessment prepared by Rubidium Environmental, dated December 28, 2017, groundwater samples from our site complied with the applicable Table 3 Site Condition Standards (SCS) thus, there is no significant source of contamination and no movement of contaminants through groundwater regarding our site area. Following that fact, we do not foresee any issues discharging the groundwater directly to the City's Storm network, without a filtration system.

5.4. Proposed Storm Connection

The proposed development will connect to the existing 600mm storm sewer along Hawman Avenue, via a 200 mm storm sewer service connection, with a minimum grade of 2.00% (or equivalent pipe design). The post-development 100-year storm will be designed to match the five (5)-year pre-development storm. Therefore, this development will not adversely affect flow conditions downstream and the existing infrastructure on Hawman Avenue will be adequate to service this development. Flows above the 100-year event will be conveyed within pipes and overland to the adjacent municipal right-of-way (ROW). The **"Proposed Servicing" Figure 3** in **Appendix F** indicates the stormwater service connection.

6.0 Sanitary Drainage System

6.1. Existing Sanitary Drainage System

The existing site is currently occupied by three (3) one-storey residential dwelling and one (1) single-storey wooden framed garage. According to available records, there is one (1) 350 mm sanitary sewer on Hawman Avenue flowing east and two (2) 250 mm sanitary sewers on Highway 7, located on the north and south side, flowing west.

6.2. Existing and Proposed Sanitary Flows

The sanitary flow generated by the proposed development at 5217-5225 Highway 7 was compared to the existing flow in order to quantify the net increase in the sanitary sewer.

Using the design criteria outlined in **Section 4.3** and existing site information, the sanitary discharge flow from the existing residential buildings is estimated at 0.32 L/s, including infiltration. Detailed calculations can be found in **Appendix D.**

Similarly, using the design criteria and the proposed development statistics, the new building will discharge 7.62 L/s into the City's infrastructure.

6.3. Proposed Sanitary Connection

The proposed development will connect to the existing 350 mm diameter sanitary sewer on Hawman Avenue through a 150 mm sanitary sewer lateral connection at a minimum grade of 2.00% (or equivalent pipe design). The **"Proposed Servicing" Figure 3** in **Appendix F** indicates the sanitary service connection.

7.0 Water Supply System

7.1. Existing System

The existing watermain system consists of a 450 mm diameter watermain on the south side of Highway 7 and a 150 mm diameter watermain on the south side of Hawman Avenue. Upon receipt of the fire hydrant test results in spring of 2018, an addendum to this report will be prepared and submitted to the City on the Clients behalf.

7.2. Proposed Water Supply Requirements

The estimated water consumption was calculated based on the occupancy rates shown on **Table 4.2**, based on the City's watermain design criteria. It is anticipated that an average consumption of approximately 1.55 L/s (133,920 L/day), a maximum daily consumption of 2.78 L/s (240,192 L/day) and a peak hourly demand of 4.64 L/s (16,704 L/hr) will be required to service this development with domestic water. Detailed calculations are found in **Appendix E.**

The fire flow requirements we estimated using the method prescribed by the Fire Underwriters Survey (FUS) be undertaken to assess the minimum requirement for fire suppression. The fire flow calculations is normally conducted for the largest storey, by area, and for the two immediately adjacent storeys.

As a result we have selected the equally greatest Levels 02, 03 and 04, which result to the greatest fire flow required for this development. **Table 7.1** illustrates the input parameters used for the FUS calculations. According to our calculations, a minimum fire suppression flow of approximately 123.75 L/s (1961.48 USGPM) will be required. Refer to detailed calculations found in **Appendix E.**

Table 7.1 – Fire Flow Input Parameters

Parameter	Frame used for Building	Combustibility of Contents	Presence of Sprinklers	Separation Distance			
				North	East	South	West
Value according to FUS options	Ordinary Construction	Non-Combustible	Yes	Road	3.1m - 10m	Road	3.1m - 10m
Surcharge/reduction from base flow	0.8	25%	30%	0%	20%	0%	20%

In summary, the required design flow is the sum of 'the minimum fire suppression flow' and 'maximum daily demand' (123.75 + 2.78 = 126.53 L/s, 2006 USGPM).

Following the fire hydrant test, an addendum to this report will be prepared and submitted to the City on the Clients' behalf, to confirm that the existing network can support the proposed development.

7.3. Proposed Watermain Connection

The proposed development will be serviced by a 200 mm diameter fire and a 100 mm domestic water service. According to City's standard drawing I-3, the water service will be split one (1) m from the property line, and valve and chamber will be installed at the property line. The proposed water service will be connected to the existing 450 mm diameter watermain on the south side of Kipling Avenue. The **"Proposed Servicing" Figure 3** in **Appendix F** indicates the watermain service connection.

8.0 Site Grading

8.1. Existing Grades

The existing site is currently occupied by three (3) one-storey residential dwelling and one (1) single-storey wooden framed garage. The northern part of the property drains towards Highway 7, while the southern part drains towards Hawman Avenue.

8.2. Proposed Grades

The proposed grades will improve the existing drainage conditions to meet the City's/Regional requirements. Grades will be maintained along the property line wherever feasible and emergency overland flow will be directed to adjacent tight of ways.

9.0 Conclusions and Recommendations

Based on our investigations, we conclude the following:

Storm Drainage

A more detailed Stormwater Management report (Phase II) will be prepared during the site plan application stage. The site stormwater discharge will be controlled to the 5-year pre-development flow and will be connected to the existing 600mm storm sewer on Hawman Avenue. In order to attain the target flows and meet the City's SWM, quantity controls will be utilized and up to 85.4 m^3 of total storage will be required. The (SWM) system will be designed to provide enhanced level (Level 3) protection as specified by the Ministry of Environment (MOE). During Site Plan Application, a detailed analysis will be provided to assess the water quality on site and determine additional measures in order to achieve a minimum total suspended solids (TSS) removal of 80%.

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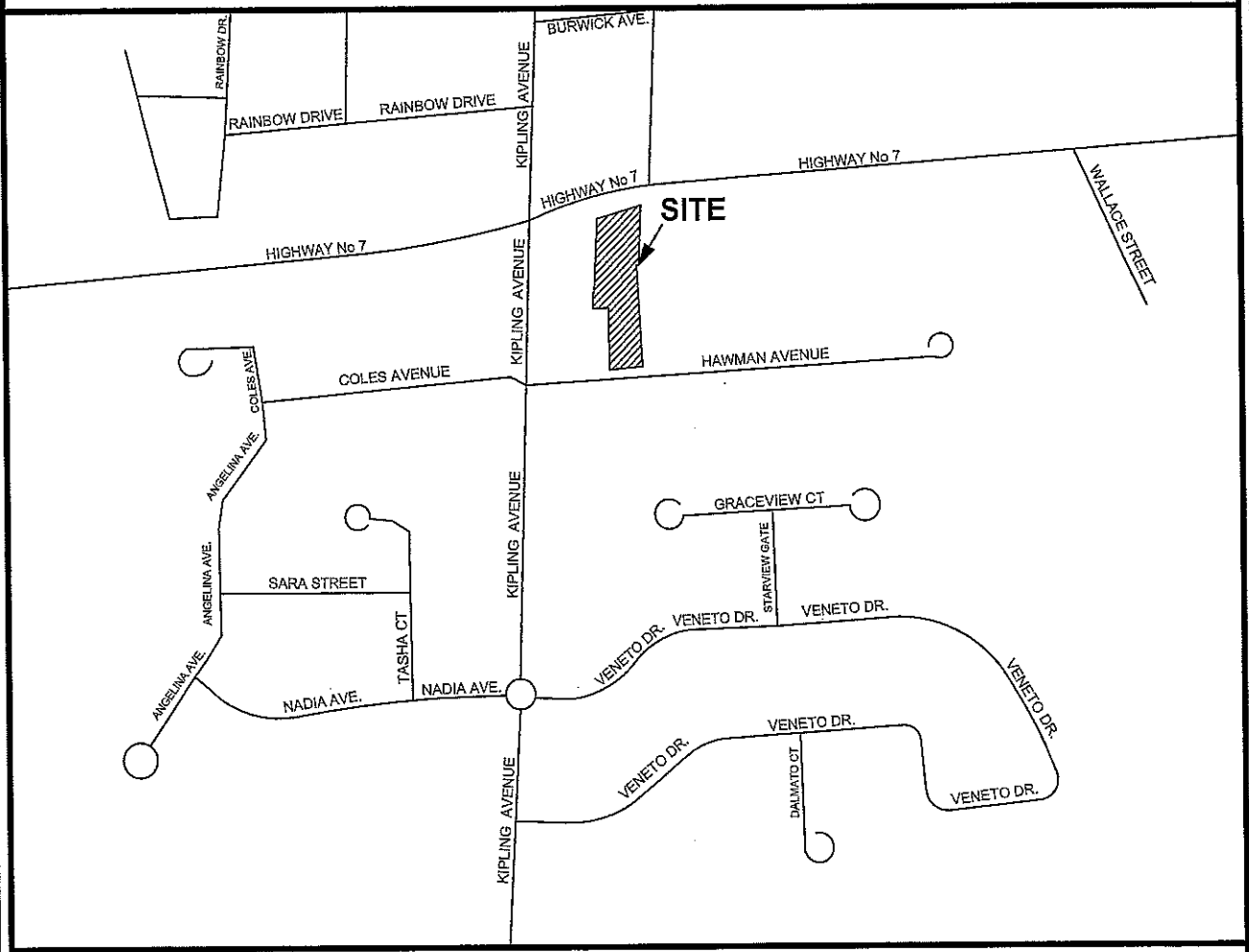
The development will connect to the existing 350 mm sanitary sewer located on Hawman Avenue flowing west, via a 150mm diameter lateral pipe. The additional net discharge flow from the proposed development, is anticipated at approximately 7.30 L/s.

Water Supply

Water supply for the site will be from the existing 450 mm diameter watermain on south side of Highway 7. It is anticipated that a total design flow of 126.53 L/s will be required to support the proposed development. Upon receipt of the fire hydrant test results in spring of 2018, an addendum to this report will be prepared and submitted to the City on the "Client's" behalf.



Lithos

150 Bermondsey Road, Toronto, Ontario M4A 1Y1

LOCATION PLAN
RESIDENTIAL USE DEVELOPMENT
5217-5225 HIGHWAY 7
VAUGHAN, ONTARIO

DATE:	APRIL 2018	PROJECT No:	UD17-078
SCALE:	N.T.S.	FIGURE No:	FIG 1

Lithos

150 Bermondsey Road, Toronto, Ontario M4A 1Y1

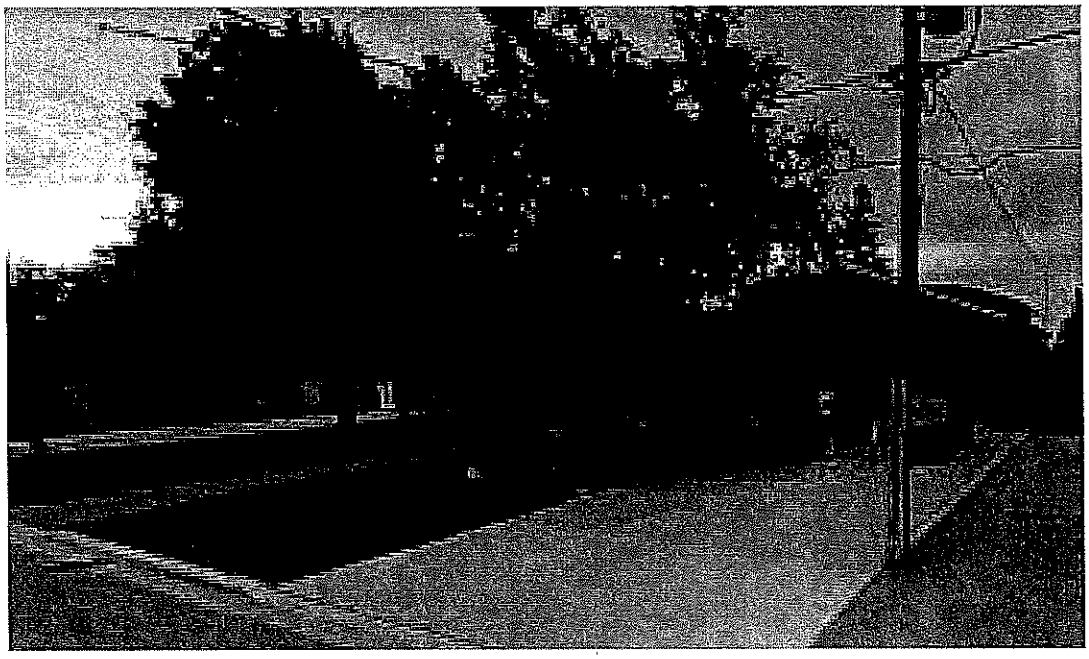
AERIAL PLAN

RESIDENTIAL USE DEVELOPMENT
5217-5225 HIGHWAY 7
VAUGHAN, ONTARIO

DATE:	APRIL 2018	PROJECT No:	UD17-078
SCALE:	N.T.S.	FIGURE No:	FIG 2

APPENDIX A
Site Photographs

South-West Corner of Property – Facing East towards North-East



South-East Corner of Property – Facing North-West

North-East Corner of Property – Facing South- West

North-West Corner of Property – Facing South-East

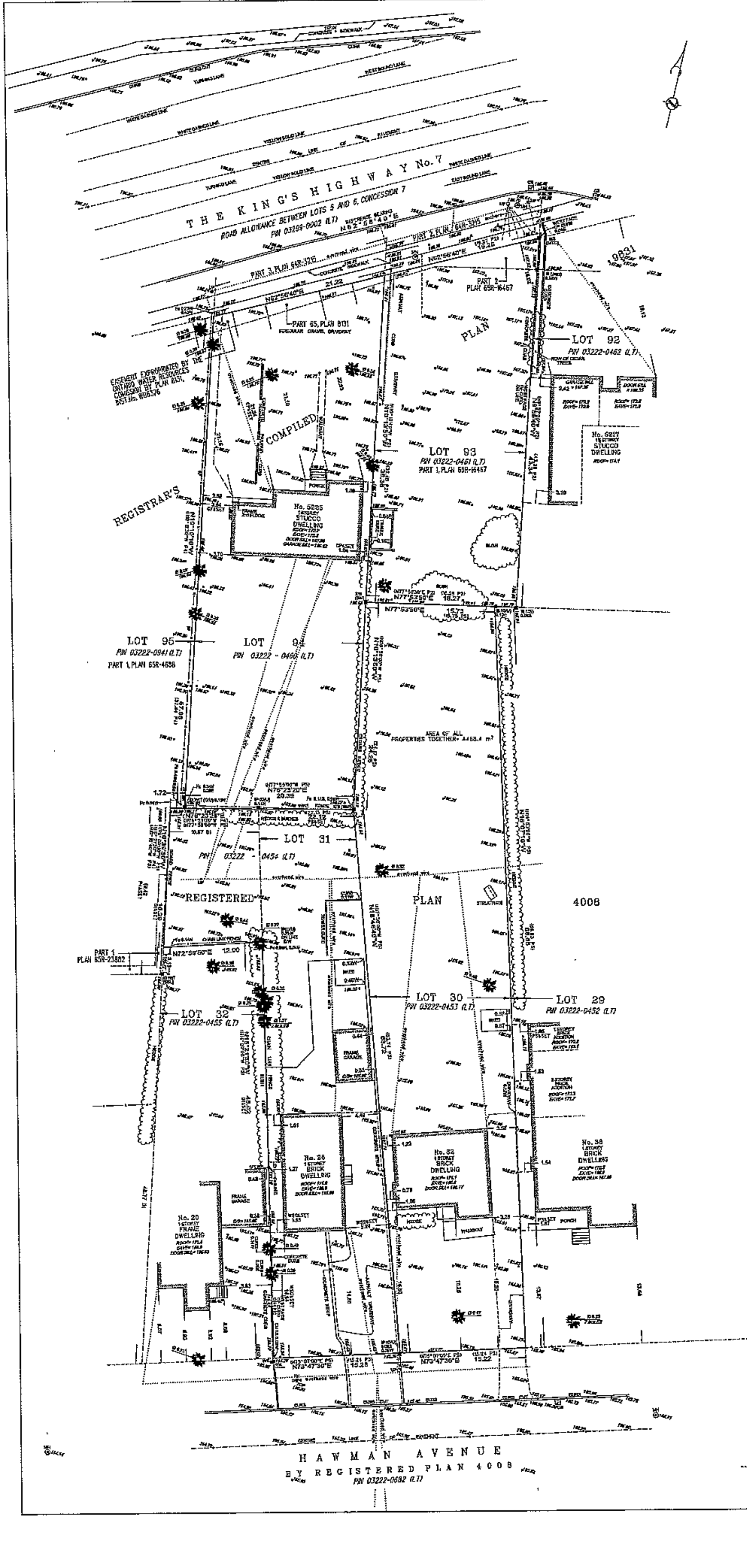
APPENDIX B
Background Information

HIGHWAY No. 7

TOWN OF VAUGHAN

HIGHWAY NO. 7

HAWMAN AVENUE
TOWN OF VAUGHAN
HAWMAN AVENUE



SURVEYOR'S REAL PROPERTY REPORT

PART 1:

PLAN OF LOTS 94,93
REGISTRAR'S COMPILED PLAN 9831
AND LOTS 30,31 AND PART OF LOT 32
REGISTERED PLAN 4008
CITY OF VAUGHAN

REGIONAL MUNICIPALITY OF YORK

SCALE 1 : 200

H. PILLER CORPORATION LTD.

PART 2:

PREPARED FOR	FIRST AVENUE PROPERTIES
LOCATION OF THE BUILDING:	WHOLLY ON THE PROPERTY.
EAVES:	CLEAR.
UTILITY BUILDINGS:	AS SHOWN ON PART 1.
DECKS:	NONE.
SWIMMING POOLS:	NONE.
EXISTING FENCES:	GENERALLY ALONG THE PROPERTY LINES, WITH DEVIATIONS AS SHOWN ON PART 1.
EASEMENTS:	AS SHOWN ON PART 1.
DRIVEWAY:	AS SHOWN ON PART 1.

LEGEND:

■	DENOTES	SURVEY MONUMENT FOUND
□	DENOTES	SURVEY MONUMENT PLANTED
IB	DENOTES	IRON BAR
SIB	DENOTES	STANDARD IRON BAR
SSIB	DENOTES	SHORT STANDARD IRON BAR
CC	DENOTES	CUT CROSS
CP	DENOTES	CONCRETE PIN
WIT	DENOTES	WITNESS MONUMENT
O/U	DENOTES	ORIGIN UNKNOWN
N	DENOTES	NORTH
S	DENOTES	SOUTH
E	DENOTES	EAST
W	DENOTES	WEST
Fc.	DENOTES	FENCE
CLF	DENOTES	CHAIN LINK FENCE
BF	DENOTES	BOARD FENCE
P & W	DENOTES	POST AND WIRE FENCE
D1	DENOTES	INST. No. R514457
P1	DENOTES	PLAN 64R-3215
P2	DENOTES	PLAN 65R-16467
P3	DENOTES	EXPROPRIATION PLAN 8131
P4	DENOTES	PLAN 65R-4688
P5	DENOTES	REGISTERED PLAN 4008
GP	DENOTES	GUIDO PAPA O.L.S., MAY 12th, 2010
WSG	DENOTES	W.S.GIBSON O.L.S., DECEMBER 12th, 1952
BM	DENOTES	BAIRD AND MUCKLESTONE O.L.S.
RBL	DENOTES	ROBERT B. LEE O.L.S.
JS	DENOTES	J.STEIL O.L.S.
MTC	DENOTES	MINISTRY OF TRANSPORTATION & COMMUNICATIONS
JRD	DENOTES	J.R.DUNNING, O.L.S.
PS	DENOTES	P.SALNA, O.L.S (MAY 22, 1981)
UP	DENOTES	UTILITY POLE
FH	DENOTES	FIRE HYDRANT
G/S	DENOTES	GARAGE SILL
MH	DENOTES	MANHOLE
CB	DENOTES	CATCH BASIN
WK	DENOTES	WATER KEY

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
2012359

METRIC:
DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

BEARING NOTE:
BEARINGS ARE REFERRED TO THE SOUTHERLY LIMIT OF KINGS HIGHWAY No.7 AS SHOWN ON PLAN 65R-16467 HAVING AN ASTRONOMIC BEARING OF N62°55'40"E.

SURVEYOR'S CERTIFICATE:
I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 13th DAY OF APRIL, 2017.

APRIL 21, 2017
DATE

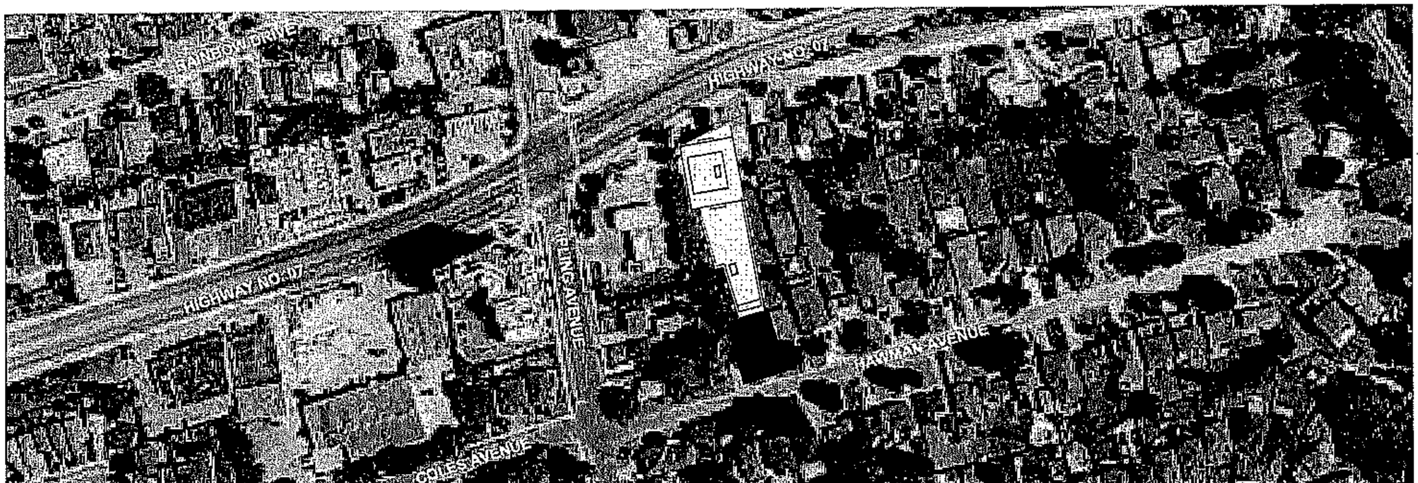
HELMUT PILLER
Ontario Land Surveyor

AKSAN PILLER CORPORATION LTD
ONTARIO LAND SURVEYORS
843 MT PLEASANT ROAD, TORONTO, ONTARIO, M4P 2L7

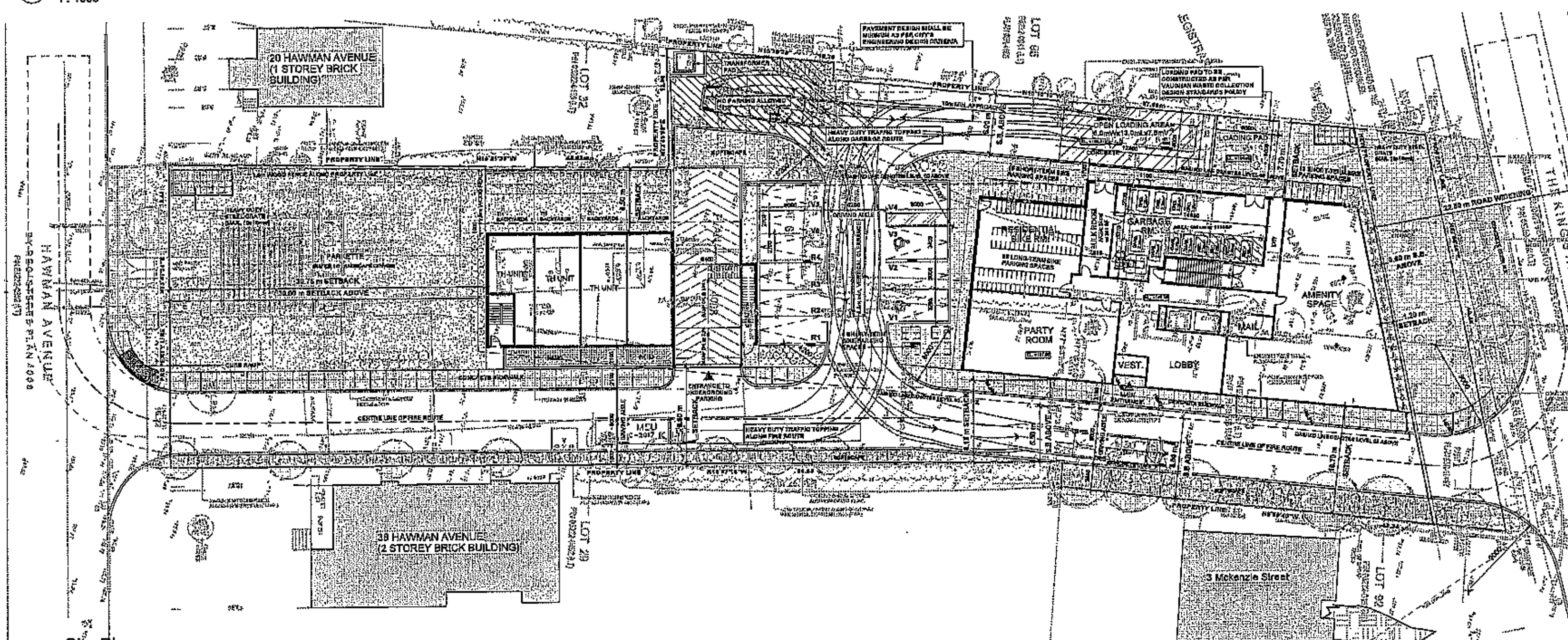
CALC: MU DRAWN: MU/KZ CHECKED: HP
Reference number 17-24-9223-01

5225
HIGHWAY NO. 07

WOODBRIDGE, ON



2 Aerial Orthographic
1 : 1000



1 Site Plan
1 : 200

SITE LEGEND

	PROPERTY LINE
	SIAMESE CONNECTION
	FIRE HYDRANT
	DENOTES LOADING AREA
	PROPOSED TREE
	PROPOSED SHRUB
	EXISTING TREE
	SOFTSCAPE
	RAMP
	ENTRANCE / EXIT
	STREET SIGNAGE

No.	Description	Date
1	Issued for ZBA & OPA	[illegible]

SITE PLAN NOTES:

1. SITEPLAN HAS BEEN PREPARED IN ACCORDANCE TO CITY OF VAUGHAN BY-LAW 1-88 STANDARDS.
2. FOR LANDSCAPE INFORMATION, REFER TO DRAWINGS PREPARED BY: JOHN A. RUSSO
3. SURVEY CREDIT INFORMATION TAKEN FROM PLAN OF PART OF THE NORTH HALF OF LOT 7, CONCESSION 8 (ALSO KNOWN AS LOT 8, DEPOSITED PLAN 640 WOODBRIDGE)
4. THE BUILDING AND THE SITE HAS BEEN DESIGNED TO BE BARRIER FREE IN ACCORDANCE WITH THE REQUIREMENTS OF SB-3, 118 & 120, ACCESSIBILITY FOR ONTARIANS WITH DISABILITY ACT, 2005 & IN THE GENERAL CONTENTS OF THE MUNICIPALITY ACCESSIBILITY GUIDELINES OF THE CITY OF VAUGHAN
5. GUARDRAILS IN ACCORDANCE TO OBC 2012 SHALL BE PROVIDED WHERE THE GRADE DIFFERENCES EXCEEDS 600mm. DETAILS TO BE SUBMITTED AT BUILDING PERMIT STAGE
6. ALL CURBING & DRIVEWAY ENTRANCES TO BE DESIGNED IN ACCORDANCE TO THE CITY'S MANUAL STANDARD & SPECIFICATION MANUAL
7. ALL EXISTING ACCESSES, CURB CUTS, TRAFFIC CONTROL SIGNS THAT ARE NO LONGER REQUIRED SHALL BE REMOVED, CURBS, GUTTERS & BOULEVARDS WITHIN THE CITY'S RIGHT OF WAY SHALL BE REINSTATED IN ACCORDANCE WITH CITY STANDARDS & TO THE SATISFACTION OF THE EXECUTIVE DIRECTOR, ENGINEERING & CONSTRUCTION SERVICES
8. LOADING PAD SHALL HAVE A MINIMUM BASE 300mm OF COMPACTED 20mm CRUSHER RUN LIMESTONE AND SHALL BE FINISHED TO A MINIMUM OF 200mm DEPTH OF CONCRETE
9. PAVEMENT DESIGN SHALL BE A MINIMUM AS PER CITY'S ENGINEERING DESIGN CRITERIA AND STANDARDS FOR INDUSTRIAL & HEAVY DUTY DRIVEWAYS

CLIENT

FIRST AVENUE

Project North | True North

KFA architects + planners inc.

Project No: 17035

Scale: As indicated

Date: Sept. 15, 2017

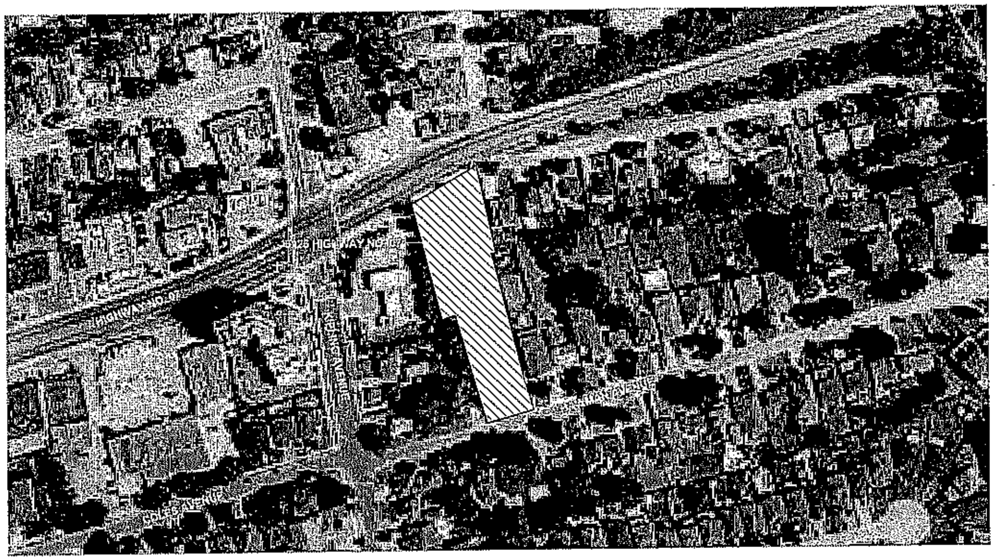
Drawn by: Author

Drawing Title

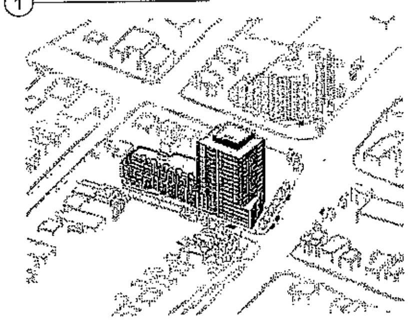
Aerial Orthographic & Site Plan

Drawing Number

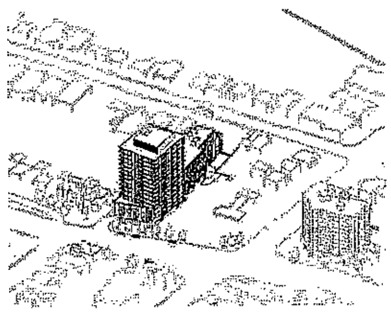
A101



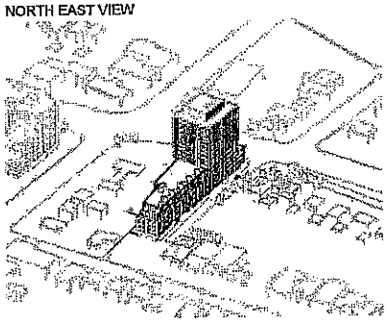
① Context Plan



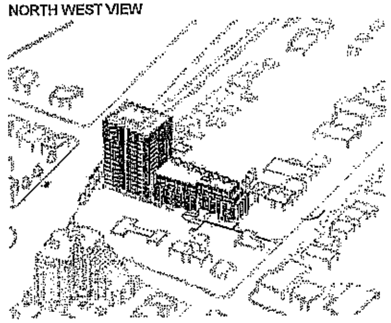
NORTH EAST VIEW



NORTH WEST VIEW



SOUTH EAST VIEW



SOUTH WEST VIEW

Project Statistics

5225 Highway No. 07, Woodbridge Ontario

Project Owner: [illegible]
Project Address: [illegible]
Legal Description: [illegible]

Existing Lot Area [illegible] | Lot Frontage [illegible] | Lot Depth [illegible] | Lot Coverage [illegible]

Gross Floor Area (GFA) [illegible]

Residential Unit Count [illegible]

Car Parking Requirements [illegible]

Bicycle Parking Requirements [illegible]

Car Parking provided [illegible]

Bicycle Parking Provided [illegible]

Amenity Area [illegible]

Landscaped Area [illegible]

Building Height [illegible]

Podium Setbacks [illegible]

Tower Setback [illegible]

5225
HIGHWAY NO. 07

WOODBRIDGE, ON

No.	Description	Date
1	Issued for RZ & OPA	2018-04-03

DRAWING LIST

Sheet No.	Sheet Name
A000	Cover Sheet
A001	Context Plan, Project Statistics & Drawing List
A100	Aerial Photographs & Site Plan
A201	P2 & P1 Parking Level
A202	Ground Floor & Levels 02-04 (TYP.)
A203	Levels 05 & 06
A204	Levels 07 & 08-16 (TYP.)
A205	Main & Mechanical Penthouse
A401	East Elevation
A402	North & South Elevations
A403	West Elevation
A404	North-South Section
A500	Shadow Study March 21
A501	Shadow Study September 21
A600	Perspective Views
A700	Material Board

CLIENT

FIRST MEMBER [illegible]

Project North | True North N

KFA Architects + Planners Inc.

Project No: 17038

Scale: As indicated

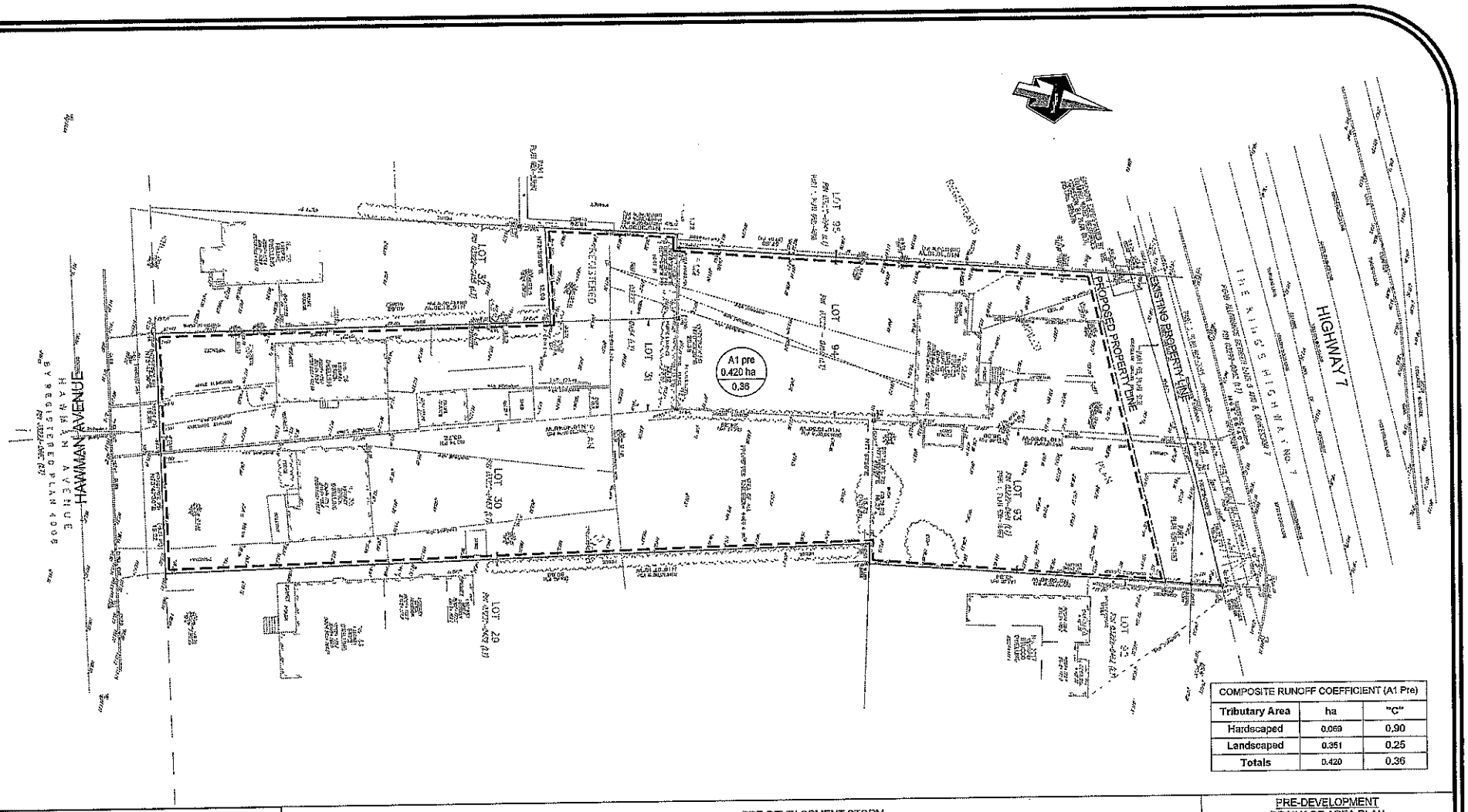
Date: Sept. 15, 2017

Drawn by: Author

Drawing Title
Context Plan, Project Statistics & Drawing List

Drawing Number
A001

APPENDIX C
Storm Analysis



COMPOSITE RUNOFF COEFFICIENT (A1 Pre)		
Tributary Area	**ha**	**"C"**
Hardscaped	0.069	0.90
Landscaped	0.351	0.25
Totals	0.420	0.36

Lithos

150 Bermondsey Road, North York, Ontario M4A 1Y1

LEGEND

- A1 pre / 0.04 ha / 0.50 — STORM DRAINAGE AREA NUMBER; DRAINAGE AREA (ha); COMPOSITE RUNOFF COEFFICIENT
- PRE-DEVELOPMENT STORM DRAINAGE AREA
- PROPERTY LINE

PRE-DEVELOPMENT DRAINAGE AREA PLAN
RESIDENTIAL USE DEVELOPMENT
5217-5225 HIGHWAY 7
VAUGHAN, ONTARIO

DATE: APRIL 2018	PROJECT No: UD17-078
SCALE: N.T.S.	FIGURE No: DAP 1

Lithos

Prepared by: John Pasalidis, P.E., M.A.Sc.
Reviewed by: Nick Moutzouris, P.Eng., M.A.Sc.

Rational Method
Pre-Development Flow Calculation

5217-5225 Highway 7
File No. UD17-078
City of Vaughan
Date: April 2018

Input Parameters

Area Number	Area (ha)	C	Tc (min.)
A1 pre	0.420	0.36	7

COMPOSITE RUNOFF COEFFICIENT (A1 Pre)	Area (ha)	"C"
Landscaped	**0.351**	0.25
Hardscaped	**0.069**	0.90
Composite (R5)	**0.420**	**0.36**

Rational Method Calculation

Event 2 yr
IDF Data Set City of Vaughan
a = 647.70
b = 4.00
c = -0.784

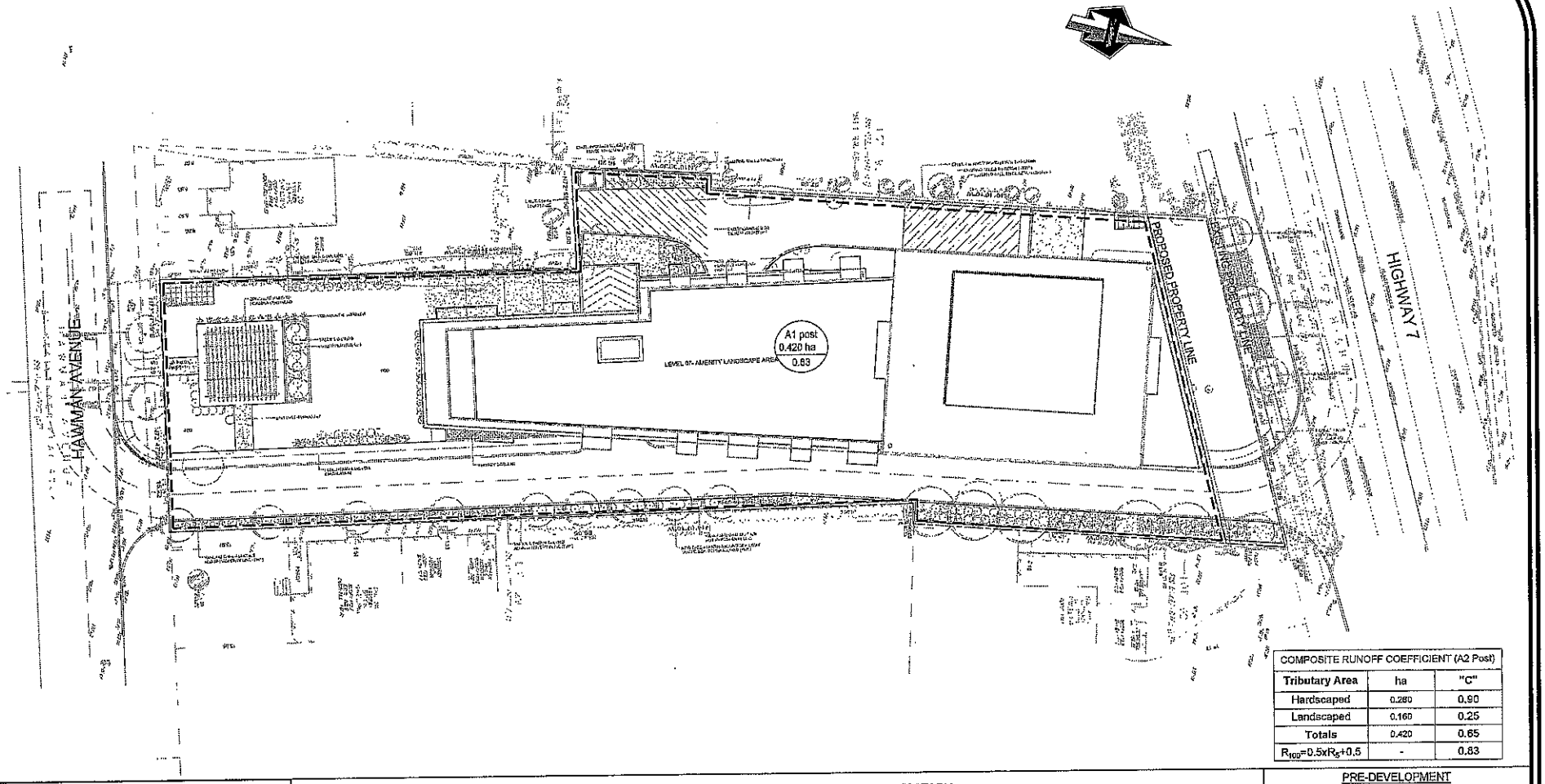
Area Number	A (ha)	C	AC	Tc (min.)	I (mm/h)	Q (m^3/s)	Q (L/s)
A1 pre	0.420	0.36	0.15	7	98.8	0.041	41.1

Event 5 yr
IDF Data Set City of Vaughan
a = 929.6
b = 4.0
c = -0.798

Area Number	A (ha)	C	AC	Tc (min.)	I (mm/h)	Q (m^3/s)	Q (L/s)
A1 pre	0.420	0.36	0.15	7	137.2	0.057	57.1

Event 100 yr
IDF Data Set City of Vaughan
a = 1770.0
b = 4.0
c = -0.820

Area Number	A (ha)	C	AC	Tc (min.)	I (mm/h)	Q (m^3/s)	Q (L/s)
A1 pre	0.420	0.36	0.15	7	247.8	0.103	103.1



COMPOSITE RUNOFF COEFFICIENT (A2 Post)		
Tributary Area	**ha**	**"C"**
Hardscaped	0.260	0.90
Landscaped	0.160	0.25
Totals	0.420	0.65
$R_{100}=0.5xR_5+0.5$	-	0.83

Lithos

150 Bermondsey Road, North York, Ontario M4A 1Y1

LEGEND

A1 post / 2.30 ha / 0.61

- STORM DRAINAGE AREA NUMBER
- DRAINAGE AREA (ha)
- COMPOSITE RUNOFF COEFFICIENT
- POST-DEVELOPMENT STORM DRAINAGE AREA
- PROPERTY LINE

PRE-DEVELOPMENT DRAINAGE AREA PLAN

RESIDENTIAL USE DEVELOPMENT
5217-5225 HIGHWAY 7
VAUGHAN, ONTARIO

DATE: APRIL 2018	PROJECT No: UD17-078
SCALE: N.T.S.	FIGURE No: DAP 2

Lithos

Modified Rational Method - 2 Year Storm

Site Flow and Storage Summary

5217-5225 Highway 7

File No: UD17-078

Date: April 2018

Prepared by: John Pasalidis, P.E., M.A.Sc.

Reviewed by: Nick Moutzouris, P.Eng., M.A.Sc.

Drainage Area A1 Post

Controlled

Minimum Residential Development Runoff Coefficient (Block townhousing, Stack townhousing, apartments) = 0.65

Area (A1) =	0.420	ha
"C" =	0.65	
AC2=	0.274	
Tc =	7.0	min
Time Increment =	5.0	min
Max. Release Rate =	75.2	L/s
Site Release rate =	57.06	L/s
Groundwater =	0.04	L/s
5-yr Pre-Development Site Release Rate =	57.1	L/s
Minimum Storage Required =	7.6	m^3

2-Year Design Storm

a=	647.70
b=	4.00
c=	-0.784
I =	$a\ (b + t)^c$

	Area (ha)	"C"
Landscaped	0.160	0.25
Hardscaped	0.260	0.90
Composite (R5)	0.420	0.65

(1)	(2)	(3)	(4)	(4)	(5)
Time	Rainfall Intensity	Storm Runoff (A1 post)	Runoff Volume	Target Released Volume	Total Required Storage
(min)	(mm/hr)	(m^3/s)	(m^3)	(m^3)	(m^3)
7.0	98.8	0.075	31.60	23.97	7.63
12.0	73.7	0.056	40.38	41.08	0.00
17.0	59.5	0.045	46.22	58.20	0.00
22.0	50.4	0.038	50.59	75.32	0.00
27.0	43.9	0.033	54.09	92.44	0.00
32.0	39.0	0.030	57.01	109.56	0.00
37.0	35.2	0.027	59.53	126.67	0.00
42.0	32.2	0.025	61.75	143.79	0.00
47.0	29.7	0.023	63.73	160.91	0.00
52.0	27.6	0.021	65.52	178.03	0.00
57.0	25.8	0.020	67.17	195.15	0.00
62.0	24.3	0.018	68.68	212.26	0.00
67.0	22.9	0.017	70.09	229.38	0.00
72.0	21.7	0.017	71.41	246.50	0.00
77.0	20.7	0.016	72.65	263.62	0.00
82.0	19.7	0.015	73.81	280.74	0.00
87.0	18.9	0.014	74.92	297.85	0.00
92.0	18.1	0.014	75.97	314.97	0.00
97.0	17.4	0.013	76.98	332.09	0.00
102.0	16.7	0.013	77.94	349.21	0.00
107.0	16.1	0.012	78.85	366.33	0.00
112.0	15.6	0.012	79.74	383.44	0.00
117.0	15.1	0.011	80.59	400.56	0.00
122.0	14.6	0.011	81.40	417.68	0.00
127.0	14.2	0.011	82.19	434.80	0.00
132.0	13.8	0.010	82.96	451.92	0.00
137.0	13.4	0.010	83.70	469.03	0.00
142.0	13.0	0.010	84.41	486.15	0.00
147.0	12.7	0.010	85.11	503.27	0.00
152.0	12.4	0.009	85.78	520.39	0.00
157.0	12.1	0.009	86.44	537.51	0.00
162.0	11.8	0.009	87.08	554.62	0.00
167.0	11.5	0.009	87.70	571.74	0.00
172.0	11.2	0.009	88.31	588.86	0.00
177.0	11.0	0.008	88.91	605.98	0.00
182.0	10.8	0.008	89.48	623.10	0.00
187.0	10.5	0.008	90.05	640.21	0.00
192.0	10.3	0.008	90.60	657.33	0.00
197.0	10.1	0.008	91.15	674.45	0.00
202.0	9.9	0.008	91.68	691.57	0.00
207.0	9.8	0.007	92.19	708.69	0.00
212.0	9.6	0.007	92.70	725.80	0.00
217.0	9.4	0.007	93.20	742.92	0.00
222.0	9.2	0.007	93.69	760.04	0.00
227.0	9.1	0.007	94.17	777.16	0.00
232.0	8.9	0.007	94.65	794.28	0.00
237.0	8.8	0.007	95.11	811.39	0.00
242.0	8.6	0.007	95.56	828.51	0.00
247.0	8.5	0.006	96.01	845.63	0.00
252.0	8.4	0.006	96.45	862.75	0.00
257.0	8.3	0.006	96.89	879.87	0.00

Lithos

Modified Rational Method - 5 Year Storm

Site Flow and Storage Summary

5217-5225 Highway 7

File No: UD17-078

Date: April 2018

Prepared by: John Pasalidis, P.E., M.A.Sc.

Reviewed by: Nick Moutzouris, P.Eng., M.A.Sc.

Drainage Area A1 Post

Controlled

Minimum Residential Development Runoff Coefficient (Block townhousing, Stack townhousing, apartments) = 0.65

Area (A1) =	**0.420**	ha
"C" =	**0.65**	
AC2=	**0.274**	
Tc =	**7.0**	min
Time Increment =	**5.0**	min
Max. Release Rate =	**104.4**	L/s
Site Release rate =	**57.06**	L/s
Groundwater =	**0.04**	L/s
5-yr Pre-Development Site Release Rate =	**57.1**	L/s
Minimum Storage Required =	**19.9**	m^3

5-Year Design Storm

a=	929.60
b=	4.00
c=	-0.798
I =	a (b + t)^c

	Area (ha)	"C"
Landscaped	**0.160**	0.25
Hardscaped	**0.260**	0.90
Composite (R5)	**0.420**	**0.65**

(1) Time (min)	(2) Rainfall Intensity (mm/hr)	(3) Storm Runoff (A1 post) (m^3/s)	(4) Runoff Volume (m^3)	(4) Target Released Volume (m^3)	(5) Total Required Storage (m^3)
7.0	137.2	0.104	43.85	23.97	19.88
12.0	101.7	0.077	55.74	41.08	14.66
17.0	81.9	0.062	63.56	58.20	5.36
22.0	69.0	0.053	69.37	75.32	0.00
27.0	60.0	0.046	73.99	92.44	0.00
32.0	53.3	0.041	77.82	109.58	0.00
37.0	48.0	0.037	81.11	126.67	0.00
42.0	43.8	0.033	84.00	143.79	0.00
47.0	40.3	0.031	86.57	160.91	0.00
52.0	37.4	0.028	88.89	178.03	0.00
57.0	35.0	0.027	91.01	195.15	0.00
62.0	32.8	0.025	92.96	212.26	0.00
67.0	31.0	0.024	94.77	229.38	0.00
72.0	29.3	0.022	96.46	246.50	0.00
77.0	27.9	0.021	98.04	263.62	0.00
82.0	26.6	0.020	99.54	280.74	0.00
87.0	25.4	0.019	100.95	297.85	0.00
92.0	24.3	0.019	102.29	314.97	0.00
97.0	23.4	0.018	103.57	332.09	0.00
102.0	22.5	0.017	104.79	349.21	0.00
107.0	21.7	0.017	105.95	366.33	0.00
112.0	20.9	0.016	107.07	383.44	0.00
117.0	20.2	0.015	108.15	400.56	0.00
122.0	19.6	0.015	109.18	417.68	0.00
127.0	19.0	0.014	110.18	434.80	0.00
132.0	18.4	0.014	111.15	451.92	0.00
137.0	17.9	0.014	112.08	469.03	0.00
142.0	17.4	0.013	112.99	486.15	0.00
147.0	17.0	0.013	113.86	503.27	0.00
152.0	16.5	0.013	114.72	520.39	0.00
157.0	16.1	0.012	115.54	537.51	0.00
162.0	15.7	0.012	116.35	554.62	0.00
167.0	15.4	0.012	117.13	571.74	0.00
172.0	15.0	0.011	117.90	588.86	0.00
177.0	14.7	0.011	118.64	605.98	0.00
182.0	14.4	0.011	119.37	623.10	0.00
187.0	14.1	0.011	120.08	640.21	0.00
192.0	13.8	0.010	120.77	657.33	0.00
197.0	13.5	0.010	121.45	674.45	0.00
202.0	13.2	0.010	122.12	691.57	0.00
207.0	13.0	0.010	122.77	708.69	0.00
212.0	12.7	0.010	123.41	725.80	0.00
217.0	12.5	0.010	124.03	742.92	0.00
222.0	12.3	0.009	124.64	760.04	0.00
227.0	12.1	0.009	125.24	777.16	0.00
232.0	11.9	0.009	125.83	794.28	0.00
237.0	11.7	0.009	126.41	811.39	0.00
242.0	11.5	0.009	126.98	828.51	0.00
247.0	11.3	0.009	127.54	845.63	0.00
252.0	11.1	0.008	128.09	862.75	0.00
257.0	11.0	0.008	128.63	879.87	0.00

Lithos

Modified Rational Method - 100 Year Storm

Site Flow and Storage Summary

5217-5225 Highway 7

File No: UD17-078

Date: April 2018

Prepared by: John Pasalidis, P.E., M.A.Sc.

Reviewed by: Nick Moutzouris, P.Eng., M.A.Sc.

Drainage Area A1 Post

Controlled

Area (A1) =	0.420	ha
"C" =	0.83	
AC2=	0.347	
Tc =	7.0	min
Time Increment =	5.0	min
Max. Release Rate =	238.8	L/s
Site Release rate =	57.06	L/s
Groundwater =	0.04	L/s
5-yr Pre-Development Site Release Rate =	57.1	L/s
Minimum Storage Required =	85.4	m^3

$"C"=R_{100}=0.5xR_5+0.5$

Minimun Residential Development Runoff Coefficient (Block townhousing, Stack townhousing, apartments) = 0.65

100-Year Design Storm

a=	1770.00
b=	4.00
c=	-0.82
I =	a (b + t)^c

	Area (ha)	"C"
Landscaped	0.160	0.25
Hardscaped	0.260	0.90
Composite (R5)	0.420	0.65

(1) Time (min)	(2) Rainfall Intensity (mm/hr)	(3) Storm Runoff (A1 post) (m^3/s)	(4) Runoff Volume (m^3)	(4) Target Released Volume (m^3)	(5) Total Required Storage (m^3)
7.0	247.8	0.239	100.30	23.97	76.34
12.0	182.2	0.176	126.46	41.08	85.38
17.0	145.8	0.141	143.34	58.20	85.14
22.0	122.4	0.118	155.70	75.32	80.38
27.0	105.9	0.102	165.42	92.44	72.99
32.0	93.7	0.090	173.43	109.56	63.88
37.0	84.2	0.081	180.25	126.67	53.57
42.0	76.6	0.074	186.18	143.79	42.39
47.0	70.4	0.068	191.44	160.91	30.53
52.0	65.2	0.063	196.17	178.03	18.15
57.0	60.8	0.059	200.47	195.15	5.33
62.0	57.0	0.055	204.42	212.26	0.00
67.0	53.7	0.052	208.06	229.38	0.00
72.0	50.8	0.049	211.45	246.50	0.00
77.0	48.2	0.046	214.63	263.62	0.00
82.0	45.9	0.044	217.61	280.74	0.00
87.0	43.8	0.042	220.42	297.85	0.00
92.0	41.9	0.040	223.09	314.97	0.00
97.0	40.2	0.039	225.62	332.09	0.00
102.0	38.7	0.037	228.03	349.21	0.00
107.0	37.2	0.036	230.34	366.33	0.00
112.0	35.9	0.035	232.55	383.44	0.00
117.0	34.7	0.033	234.67	400.56	0.00
122.0	33.5	0.032	236.71	417.68	0.00
127.0	32.5	0.031	238.67	434.80	0.00
132.0	31.5	0.030	240.56	451.92	0.00
137.0	30.6	0.029	242.39	469.03	0.00
142.0	29.7	0.029	244.16	486.15	0.00
147.0	28.9	0.028	245.87	503.27	0.00
152.0	28.2	0.027	247.53	520.39	0.00
157.0	27.4	0.026	249.15	537.51	0.00
162.0	26.8	0.026	250.71	554.62	0.00
167.0	26.1	0.025	252.24	571.74	0.00
172.0	25.5	0.025	253.72	588.86	0.00
177.0	24.9	0.024	255.17	605.98	0.00
182.0	24.4	0.023	256.58	623.10	0.00
187.0	23.9	0.023	257.96	640.21	0.00
192.0	23.4	0.023	259.30	657.33	0.00
197.0	22.9	0.022	260.61	674.45	0.00
202.0	22.4	0.022	261.90	691.57	0.00
207.0	22.0	0.021	263.15	708.69	0.00
212.0	21.6	0.021	264.38	725.80	0.00
217.0	21.2	0.020	265.59	742.92	0.00
222.0	20.8	0.020	266.77	760.04	0.00
227.0	20.4	0.020	267.93	777.16	0.00
232.0	20.1	0.019	269.06	794.28	0.00
237.0	19.7	0.019	270.18	811.39	0.00
242.0	19.4	0.019	271.27	828.51	0.00
247.0	19.1	0.018	272.34	845.63	0.00
252.0	18.8	0.018	273.40	862.75	0.00
257.0	18.5	0.018	274.43	879.87	0.00

APPENDIX D
Sanitary Data Analysis

SANITARY SEWER DESIGN SHEET

5217-5225 Highway 7

CITY OF VAUGHAN

LOCATION	RESIDENTIAL					INDUSTRIAL		INSTITUTIONAL		FLOW					INFILTRATION		TOTAL	SEWER DESIGN				
	SECTION AREA	NUMBER OF UNITS			SECTION POP.	SECTION AREA	SECTION POP. @ 95ppha	SECTION AREA	SECTION POP. @ 75ppha	AVERAGE RESIDENTIAL FLOW '@' 364 L/c/d	HARMON PEAKING FACTOR	RES. PEAK FLOW	AVERAGE INDUSTRIAL FLOW '@' 369 L/c/d	AVERAGE INSTITUTIONAL FLOW '@' 369 L/c/d	TOTAL ACCUM. AREA	INFILT. @ 0.25 L/s/ha.	DESIGN FLOW	PIPE LENGTH	PIPE DIA.	SLOPE	FULL FLOW CAPACITY n = 0.013	% of DESIG CAPACITY
		Single Fam. Dwell. @ 4.0 ppu	Townhouse @ 3.5 ppu	Apartments @ 2.5 ppu																		
	[ha.]				(persons)	(ha.)	(persons)	(ha.)	(persons)	(L/s)		(L/s)	(L/s)	(L/s)	(ha.)	(L/s)	(L/s)	(m)	(mm)	(%)	(L/sec)	(%)
column number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Existing Condition																						
Residential Use	0.469	3	0	0	12	0.000	0	0.000	0	0.05	4.00	0.20	0.00	0.00	0.469	0.122	0.32					
Proposed Condition																						
Residential Use	0.469	0	1	176	445	0.000	0	0.000	0	1.87	4.00	7.50	0.00	0.00	0.469	0.122	7.62		150	2.0%	21.64	35%
															Total Net Flow		7.30					

Residential Flow Rate - 364 litres/capita/day
Employment Flow Rate - 369 litres/capita/day
Infiltration - 0.25 L/ha
Peaking Factor = $1 + [14 / (4 + P^{0.5})]$, P=Population in thousands
Site Area: 0.469 Ha

Lithos

Prepared by: John Pasalidis, P.E., M.A.Sc.
Reviewed by: Nick Moutzouris, P.Eng., M.A.Sc.
Date: April 2018

Project: 5217-5225 Highway 7
Project: UD17-078
City of Vaughan

Sheet 1 OF 1

APPENDIX E
Water Data Analysis

Lithos

WATER DEMAND

5217-5225 Highway 7
File No: UD17-078
Date:April 2018
Prepared by: John Pasalidis, P.E., M.A.Sc.
Reviewed By: Nick Moutzouris, P.Eng., M.A.Sc.

Fire Flow Calculation

1 $F = 220\ C\ (A)^{1/2}$

Where F= Fire flow in Lpm
C= construction type coefficient
= 0.8 ordinary construction
A = total floor area in sq.m. including basement (main use)

		Area Applied
Level 02=	1745.0 m^2	100%
Level 03=	1745.0 m^2	25%
Level 04=	1745.0 m^2	25%
=	2,618 sq.m.	

F = 9,004.43 L/min

F = 9,000 L/min Round to nearest 100 l/min

Note 1: The levels indicated, reference the floors with the largest areas

2 Occupancy Reduction
25% reduction for non-combustible occupancy
F = 6750 L/min

3 Sprinkler Reduction
30% Reduction for NFPA Sprinkler System
F = 4725 l/min

4 Separation Charge

0%	North	Road
20%	East	3.1m to 10m
0%	South	Road
20%	West	3.1m to 10m
40%	Total Separation Charge	2700 L/min

F = 7,425.00 L/min
123.75 L/s
F = 1962 US GPM

Domestic Flow Calculations

Population = 445 from Sanitary Design Sheet
Retail Population= 0 from Site Statistics - Retail
Average Day Demand = 300 L/cap/day 1 US Gallon=3.785 L

= 1.55 L/s
= 24 US GPM 1 US GPM=15.852L/s

Max. Daily Demand Peaking Factor = 1.80
Max. Daily Demand = 2.78 L/s = 44 US GPM

or

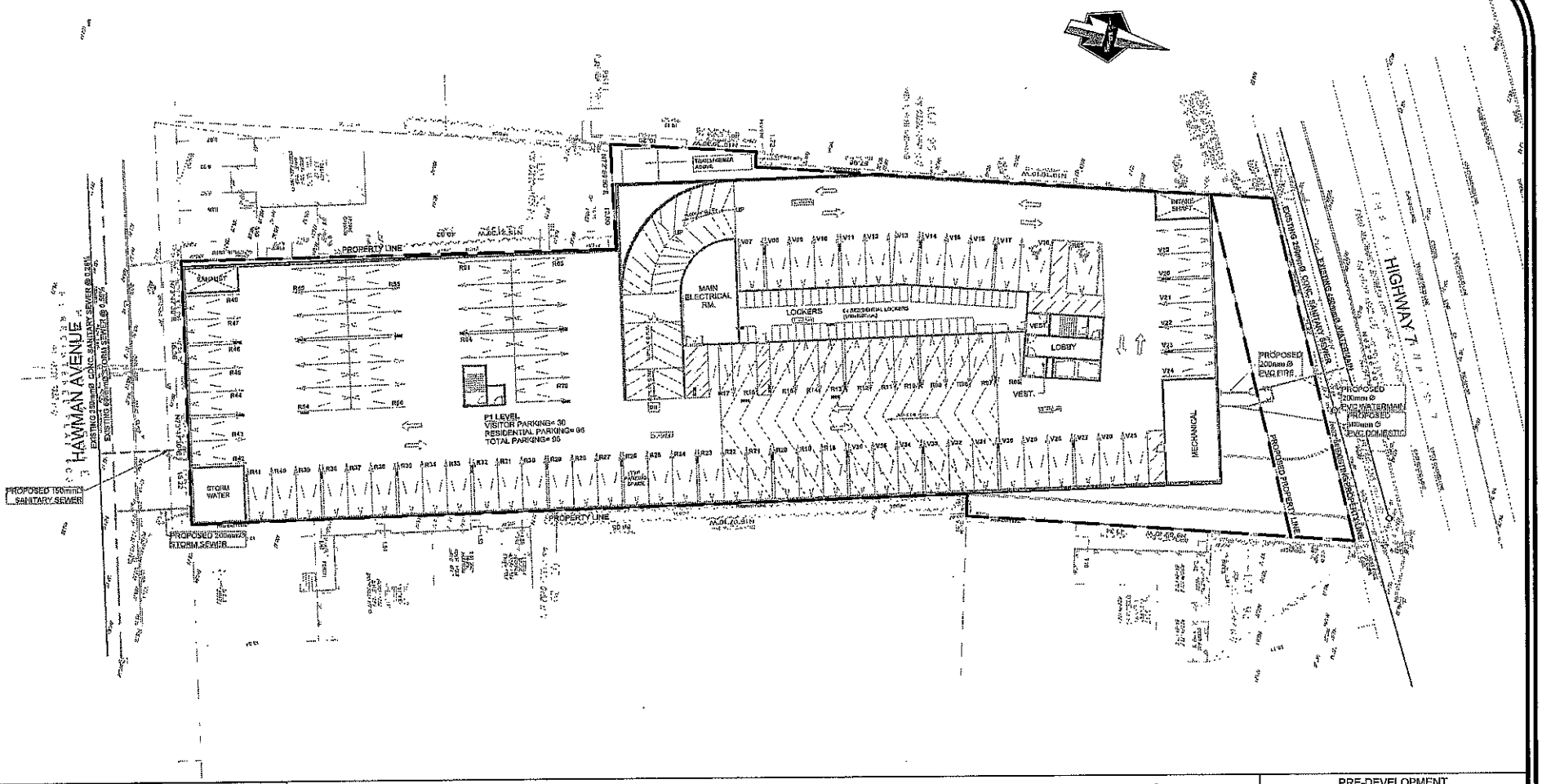
Max. Hourly Demand Peaking Factor = 3.00
Max. Hourly Demand = 4.64 L/s = 73 US GPM

Max Daily Demand = 2.78 L/s
Fire Flow = 123.75 L/s

Required 'Design' Flow = 126.53 L/s
2006 US GPM

Note: Required 'Design' Flow is the maximum of either:
1) Fire Flow + Maximum Daily Demand
2) Maximum Hourly Demand

APPENDIX F
Engineering Figures



Lithos

150 Bermondsey Road, North York, Ontario M4A 1Y1

LEGEND

- PROPERTY LINE
- EX.COMBINED SEWER
- EX.STORMWATER SEWER
- EX.WATERMAIN
- PROP.SANITARY SEWER
- PROP.STORMWATER SEWER
- PROP.WATERMAIN

PRE-DEVELOPMENT DRAINAGE AREA PLAN

RESIDENTIAL USE DEVELOPMENT
5217-5225 HIGHWAY 7
VAUGHAN, ONTARIO

DATE: APRIL 2018	PROJECT No: UD17-078
SCALE: N.T.S.	FIGURE No: FIG 3