October 30, 2024

City of Ottawa
Planning, Development, and Building Services Department
110 Laurier Avenue West, 4th Floor
Ottawa, ON K1P 1J1

Attention: **Mike Giampa**
Senior Engineer, Infrastructure Applications

Reference: **3610 Innes Road**
Transportation Impact Assessment – Addendum Letter
Novatech File No.: 118224
City File No.: PC2024-0252

1.0 PROPOSED DEVELOPMENT

This letter has been prepared in relation to a Site Plan Control application for a proposed back-to-back townhouse development at 3610 Innes Road. The subject site includes lands on both sides of the approved roadway Ventus Way, which connects Innes Road to Glenview's The Commons subdivision, which is approved and under construction (City file number D07-16-19-0027). A Transportation Impact Assessment (TIA) for the entire subdivision was prepared by Novatech in October 2019 and revised in April 2020 and is referred to in this letter as the 'parent study.' The parent study accounted for a development with 168 dwellings within the subject lands at the northern end of the subdivision.

A total of 98 townhouse dwellings and a 0.16-hectare park are proposed within the subject lands, which is 70 dwellings less than what was considered in the parent study. For the purposes of this addendum letter, the 58 proposed townhouses on the west side of Ventus Way have been considered 'Site A,' and the 40 proposed townhouses on the east side of Ventus Way have been considered 'Site B.' Site A is proposed to include six full-movement driveways to Ventus Way, and Site B is proposed to include one full-movement driveway to Ventus Way.

Each residence will include one parking space within the garage and one parking space on the driveway. Additionally, three visitor spaces are proposed within Site A, adjacent to the southernmost access to Ventus Way.

It is anticipated that buildout of the proposed townhouses will be completed in 2027. A copy of the proposed site plan is included in **Attachment 1**.

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2.0 SCREENING

The City's *Revised TIA Guidelines* identify three triggers for completing a TIA report, including trip generation, location, and safety. The criteria for each trigger are outlined in the City's TIA Screening Form, which is included in **Attachment 2**. The trigger results are as follows:

- Trip Generation Trigger – The development includes greater than 90 low-rise multifamily units however the site was previously considered as part of the parent study for the subdivision. Further assessment is not **required**.

- Location Triggers – The development does not meet any location triggers; further assessment is **not required**.

- Safety Triggers – The development is within 150m of an adjacent traffic signal; further assessment is **required**.

Per the pre-consultation feedback form received on July 8, 2024, the requirements for a full TIA have been waived, in favour of a TIA addendum letter that review the on-site design modules, potential queues at Innes Road/Ventus Way, and revisions to the approved Geometric Roadway Design Drawing (GRDD) for The Commons subdivision.

3.0 DEVELOPMENT DESIGN

3.1 Design for Sustainable Modes

Sidewalks on both sides of Ventus Way will provide connections to the townhouses on both Site A and Site B. An east-west walkway is proposed midway along the western property limit of Site A, for future connectivity with the adjacent proposed development at 245-275 Lamarche Avenue. Apart from this connection, no other on-site walkways are proposed. Given the low traffic volumes that are anticipated on each private roadway, this is considered appropriate.

A concept for the adjacent proposed development at 245-275 Lamarche Avenue is included in **Attachment 3**.

No exterior bicycle parking spaces are provided, as each townhouse dwelling will include a garage.

OC Transpo's service design guidelines for peak period service is to provide service within a five-minute (400m) walk of home, work, or school for 95% of urban residents. Some entrances are within this walking distance of bus stops #1219 and #8129 on Innes Road (west of Ventus Way), and all entrances are within 600m walking distance. These stops currently serve OC Routes 25, 612, and 648.

A review of the *Transportation Demand Management (TDM)-Supportive Design and Infrastructure Checklist* has been conducted and is included in **Attachment 4**. All required TDM-supportive design and infrastructure measures in the TDM checklist are met. In addition to the required measures, the proposed development also meets the following 'basic' or 'better' measures as defined in the *TDM-Supportive Development Design and Infrastructure Checklist*:

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- Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort;
- Provide secure bicycle parking spaces equivalent to at least the number of units at multifamily residential developments.

The parent study in support of The Commons subdivision included a review of the TDM Residential Measures Checklist. The study identified that the following TDM measures will be implemented at the sales centre:

- Display local area maps with walking/cycling routes and key destinations;
- Display relevant transit schedules and route maps;
- Provide multimodal travel option information packages to new residents.

The completed TDM measures checklist is also included in **Attachment 4**.

3.2 Circulation and Access

Garbage collection is proposed to occur on-site, along the private roads. Garbage truck turning movements have been conducted using the Medium Single Unit (MSU) design vehicle and are included in **Attachment 5**.

All on-site roadways form the fire route for the proposed development. Fire truck turning movements have been conducted using the Pumper Fire Truck design vehicle and are also included in **Attachment 5**.

The MSU and fire truck turning movements that have been completed show these vehicles traversing the southernmost loop within Site A and the westernmost loop within Site B. These movements are representative of each on-site roadway, and therefore garbage trucks and fire trucks will be able to traverse all on-site roadways. The width of each on-site roadway is generally 6.4m to 8.5m, and all curves have a centreline radius of 12m.

4.0 PARKING

The subject site is located in Area C of Schedules 1 and 1A of the City's *Zoning By-Law* (ZBL). Minimum vehicle parking and bicycle parking requirements are identified in Sections 101, 102, and 111 of the ZBL. The proposed parking supply and requirements are summarized in **Table 1**.

Table 1: Parking Review

Land Use	Rate	Units	Required	Provided
Minimum Vehicle Parking (Section 101/102 of ZBL)				
Planned Unit Development	1.0 spaces per dwelling (townhouse rate)	98 dwellings	98	98
	Visitor parking not required when each dwelling has a driveway accessing a garage or carport		0	3
Minimum Bicycle Parking (Section 111 of ZBL)				
Planned Unit Development	No bicycle parking required when each dwelling has a garage or carport	98 dwellings	0	98

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Each townhouse dwelling will include a garage and a driveway accessing it. Therefore, the minimum vehicle and bicycle parking requirements are met.

5.0 BOUNDARY STREETS

5.1 MMLOS Review

This section provides a review of the boundary street Ventus Way, based on the approved cross-section. The *Multi-Modal Levels of Service (MMLOS) Guidelines*, produced by IBI Group in October 2015, were used to evaluate the levels of service for each alternative mode of transportation on Ventus Way. Using Exhibit 22 of the *MMLOS Guidelines*, the MMLOS targets associated with the 'General Urban Area' have been considered in this review. The targets are summarized as follows:

- **Target pedestrian level of service (PLOS) C**, which is the target for all roadways within the General Urban Area;
- **Target bicycle level of service (BLOS) D**, which is the target for roadways with no cycling route designation;
- **No target transit level of service (TLOS) is identified**, as the roadway is not designated in the City's Rapid Transit and Transit Priority (RTTP) Network;
- **No target truck level of service (TkLOS) is identified**, as Ventus Way has no truck route designation and is not an arterial roadway.

The segment PLOS and BLOS review of Ventus Way is provided in the following tables.

Table 2: PLOS Segment Analysis

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed	PLOS
1.8m	0m	≤ 3,000 vpd	N/A	50 km/h	B

Table 3: BLOS Segment Analysis

Road Class	Bike Route	Type of Bikeway	Travel Lanes	Operating Speed	BLOS
Local	No Class	Mixed Traffic	1 per direction	50 km/h	D

As shown in the previous tables, Ventus Way meets the target PLOS and BLOS, based on the approved GRDD.

5.2 Geometric Roadway Design Drawing Revisions

A pedestrian crossover (PXO) is proposed immediately north of the southernmost access serving Site A and the access serving Site B, which are directly opposite each other. This PXO serves the anticipated desire line between pedestrians on the west side of Ventus Way and the future park on the east side of Ventus Way. A narrowing of Ventus Way from 8.5m to 7.0m is proposed at the PXO, which will act as a traffic calming measure while also reducing the crossing distance for pedestrians.

Per the *Ontario Traffic Manual (OTM) – Book 15*, which includes a Pedestrian Crossover Selection Matrix, the required type of PXO is determined by volume, speed, and crossing distance. For each range of two-way vehicular volumes (four-hour or eight-hour volumes), the selection matrix

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prescribes the appropriate type of PXO based on the posted speed limit (50 km/h or slower versus 60 km/h), and the number of lanes crossed (using a lane width of 3.0m to 3.75m).

On Ventus Way at Innes Road, the parent study identified projected two-way traffic volumes of approximately 348 vehicles during the PM peak hour. Using the City's expansion factor of 6.22 (converting the PM peak hour volume to eight-hour volume), the converted eight-hour two-way volume is approximately 2,165 vehicles. This falls under the lowest range of volumes considered for a PXO, which includes a lower bound of 750 vehicles and upper bound of 2,250 vehicles.

The anticipated speed limit of Ventus Way is 50 km/h or slower, and the crossing distance is approximately 7.0m (equivalent to two lanes). Based on these parameters and the projected eight-hour volumes, a PXO 'Type D' is the appropriate treatment. This is considered the lowest-order PXO, and includes painted crosswalks and pedestrian crossing signs.

The Pedestrian Crossover Selection Matrix and diagram of a Type D PXO are included in **Attachment 6**.

The previously approved GRDD has been revised to include the proposed PXO location, and incorporates the site plan of the proposed townhouse developments on both sides of Ventus Way. The revised GRDD plan is included in **Attachment 7**.

6.0 ACCESS DESIGN

The proposed accesses have been evaluated based on the relevant requirements of the City's ZBL, *Private Approach By-Law* (PABL), and the Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads*.

Section 25(1)(a) of the PABL identifies a maximum number of permissible private approaches to a roadway, based on the amount of frontage on that roadway. There is no minimum frontage to permit a single two-way private approach, which applies to Site B. Site A has approximately 206m of frontage to Ventus Way. Section 25(1)(a) identifies that a maximum of three two-way private approaches are permitted, for sites with 151m to 240m of frontage. Relief of this requirement is requested for Site A, which includes three private roadway loops (and therefore, six two-way private approaches to Ventus Way). Traffic volumes at each private approach are anticipated to be very low, even during the peak hours, as the private roadways will access a maximum of 12 driveways. Based on discussions with City staff it was determined that looped roadways were preferred for Site A rather than a circuitous alignment.

Section 25(1)(c) of the PABL identifies a maximum width requirement of 9m for any two-way private approach, as measured at the street line. This requirement is met for all accesses to Site A as each access is approximately 7m in width at the street line. The access to Site B is more than 9m in width at the street line and can be further refined.

Section 25(1)(g) of the PABL identifies a minimum separation requirement of 9m between a two-way private approach and any other private approach to the same property, as measured at the street line. Each private approach serving Site A is separated by approximately 25m or more, meeting this requirement.

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Section 25(1)(p) of the PABL identifies a minimum separation requirement of 3.0m between the nearest edge of a private approach and the nearest property line, as measured at the street line. The northernmost access serving Site A is approximately 3.0m from the nearest property line. The southernmost access serving Site A and the access serving Site B is approximately 6m from the nearest property line. In all cases, this requirement is met.

In accordance with section 25(1)(t) of the PABL any private approach serving a parking area with more than 50 parking spaces shall not have a grade exceeding 2-6% for the first 9m inside the property line. This requirement is generally met by the private approaches, which have grades of up to 4.9% within the first 9m.

TAC's *Geometric Design Guide* identifies minimum stopping sight distance (SSD) and intersection sight distance (ISD) requirements, based on the roadway grade and design speed. Ventus Way will have a generally level grade and a design speed of 50 km/h has been considered. Therefore, the required SSD is 65m and the desired ISDs are 105m for drivers looking right to turn left and 95m for drivers looking left to turn right.

The required SSD will be provided at each private approach, as the curve of Ventus Way is relatively gentle. The desired ISD can also be provided at each private approach, provided any future vegetation is maintained (i.e. the proposed townhouse locations do not obscure sightlines).

The parent study included Synchro analysis of Innes Road/Ventus Way (then referred to as 473m East of Pagé Road). In the total traffic conditions, the Synchro analysis identified 95th-percentile (i.e. maximum) queues of 28m to 34m for the northbound left turn/through movement. These queue lengths will not extend back to the proposed development, as the northernmost access serving Site A is approximately 135m south of the stop bar at Innes Road/Ventus Way. Excerpts of the Synchro reports submitted with the parent study are included in **Attachment 8**.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations of this letter can be summarized as follows:

- Sidewalks on both sides of Ventus Way will provide connections to the townhouses on both Site A and Site B. An east-west walkway is proposed midway along the western property limit of Site A, for future connectivity with the adjacent proposed development at 245-275 Lamarche Avenue. Apart from this connection, no other on-site walkways are proposed. Given the low traffic volumes that are anticipated on each private roadway, this is considered appropriate. No exterior bicycle parking spaces are provided, as each townhouse dwelling will include a garage.

- Garbage trucks and fire trucks will be able to traverse all on-site roadways. The width of each on-site roadway is generally 6.4m to 8.5m, and all curves have a centreline radius of 12m.

- Each townhouse dwelling will include a garage and a driveway accessing it. Therefore, the minimum vehicle and bicycle parking requirements are met.

- Ventus Way meets the target Pedestrian Level of Service (PLOS) and Bicycle Level of Service (BLOS), based on the approved Geometric Road Design Drawing (GRDD).

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- A pedestrian crossover (PXO) Type D is proposed immediately north of the southernmost access serving Site A and the access serving Site B, which are directly opposite each other. This PXO serves the anticipated desire line between pedestrians on the west side of Ventus Way and the future park on the east side of Ventus Way. A narrowing of Ventus Way from 8.5m to 7.0m is proposed at the PXO, which will act as a traffic calming measure while also reducing the crossing distance for pedestrians.

- Section 25(1)(a) of the Private Approach By-Law (PABL) identifies that a maximum of three two-way private approaches are permitted, for sites with 151m to 240m of frontage. Relief of this requirement is requested for Site A, which includes six private approaches. Traffic volumes at each private approach are anticipated to be very low, even during the peak hours, as the private roadways will access a maximum of 12 driveways. Based on discussions with City staff it was determined that looped roadways were preferred for Site A rather than a circuitous alignment.

- Section 25(1)(c) of the PABL identifies a maximum width requirement of 9m for any two-way private approach, as measured at the street line. This requirement is met for all accesses to Site A as each access is approximately 7m in width at the street line. The access to Site B is more than 9m in width at the street line and can be further refined.

- The 95th-percentile (i.e. maximum) queues of 28m to 34m for the northbound left turn/through movement at Innes Road/Ventus Way do not extend back to the proposed development, as the northernmost access serving Site A is approximately 135m south of the stop bar.

The proposed development is recommended from a transportation perspective.

NOVATECH

Prepared by:

Reviewed by:

Joshua Audia, P.Eng.
Project Engineer | Transportation

Jennifer Luong, P.Eng.
Senior Project Manager | Transportation

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Attachment 1

Proposed Site Plan

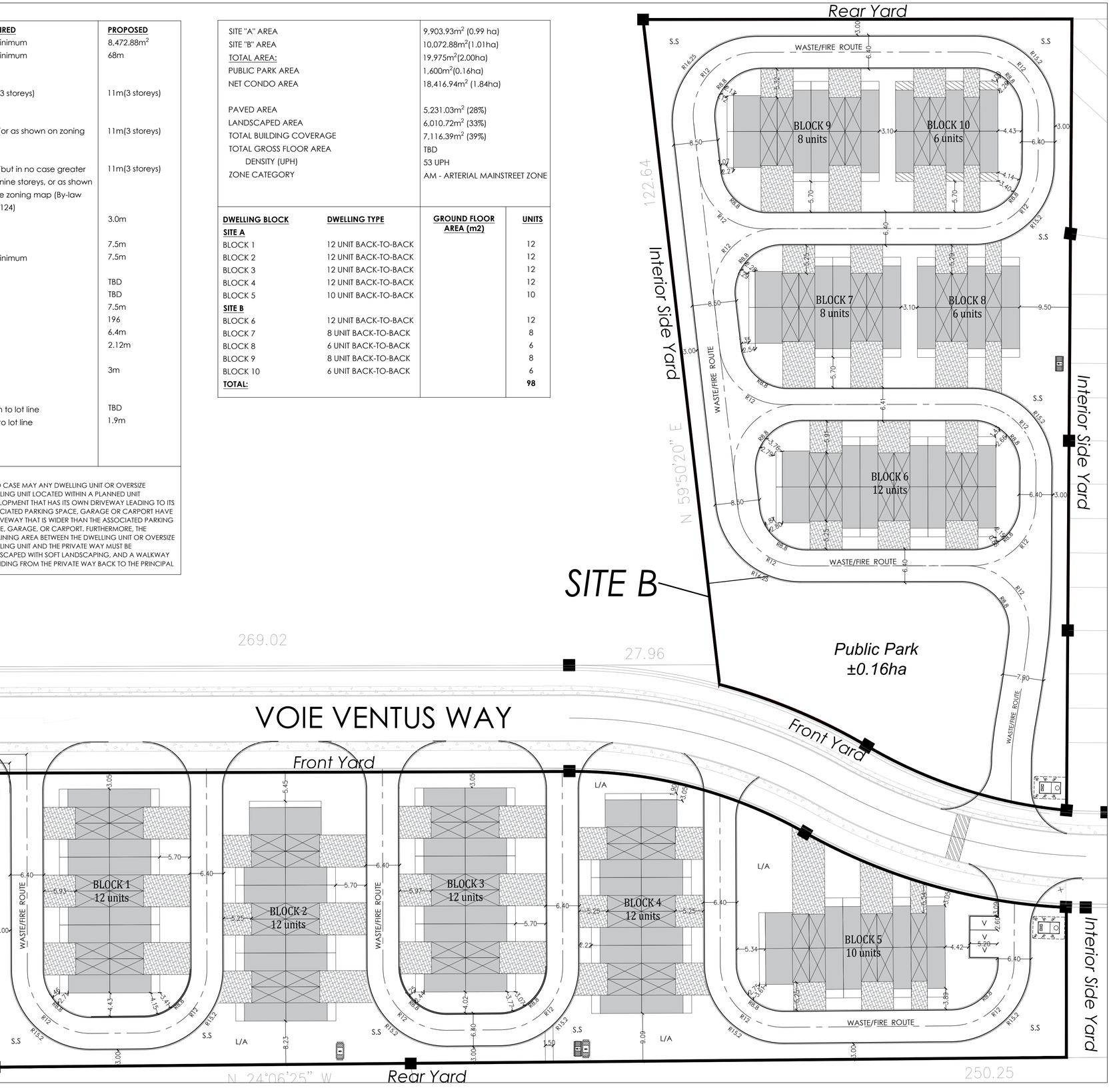
SITE STATISTICS AND DEVELOPMENT DATA

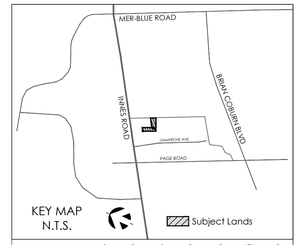
SECTION	ZONE PROVISION - PLANNED UNIT DEVELOPMENT	REQUIRED	PROPOSED
185 (Table)	MIN. LOT AREA (m^2)	No minimum	8,472.88m^2
185 (Table)	MIN. LOT WIDTH (m)	No minimum	68m
185 (Table)	MAX. BUILDING HEIGHT (m)		
(i)	IN ANY AREA UP TO AND INCLUDING 20 METRES FROM A PROPERTY LINE ABUTTING A R1, R2 OR R3 RESIDENTIAL ZONE(BY-LAW 2011-124)	11m (3 storeys)	11m(3 storeys)
(iii)	IN ANY AREA UP AND INCLUDING 20 METRES FROM A PROPERTY LINE ABUTTING A R4 ZONE (BY-LAW 2011-124)	20 m(or as shown on zoning map)	11m(3 storeys)
(iv)	MORE THAN 30 METRES FROM A PROPERTY LINE ABUTTING A R1-R4 ZONE (BY-LAW 2011-124)	30 m(but in no case greater than nine storeys, or as shown on the zoning map (By-law 2011-124)	11m(3 storeys)
185 (Table)	MIN. FRONT YARD SETBACK (m)	3.0m	3.0m
185 (Table)	MIN. INTERIOR SIDE YARD SETBACK: (m)		
185 (Table)	ABUTTING A RESIDENTIAL ZONE	7.5m	7.5m
	ALL OTHER CASES	No minimum	7.5m
185 (Table)	MAX. FLOOR SPACE INDEX		
	IN ALL OTHER CASES	2	TBD
185 (Table)	MIN. CORNER SIDE YARD SETBACK (m)	3.0m	TBD
185 (Table)	MIN. REAR YARD SETBACK (m)	7.5m	7.5m
101 (Table)	RESIDENT PARKING -1.0 spaces/unit	98	196
102 (Table)	MIN. WIDTH OF PRIVATE WAY (m)	6.0m	6.4m
111A (Table)	MIN. SETBACK FOR ANY WALL OF A RESIDENTIAL USE BUILDING TO A PRIVATE WAY	1.8m	2.12m
131(Table)(2)	MIN. SEPARATION DISTANCE BETWEEN BUILDINGS WITHIN A PLANNED UNIT DEVELOPMENT (m)	1.2m	3m
65	PERMITTED PROJECTIONS INTO REQUIRED YARDS:		
65 (5)	FIRE ESCAPES, OPEN STAIRWAYS, STOOP (m)	>0.6m to lot line	TBD
65 (6)	COVERED OR UNCOVERED BALCONY, PORCH, DECK	>1m to lot line	1.9m

131 (Table)	(a) LANDSCAPING AND PARKING IN THE CASE OF A PLANNED UNIT DEVELOPMENT CONSISTING OF DETACHED, LINKED-DETACHED, SEMI-DETACHED, THREE-UNIT OR TOWNHOUSE DWELLINGS, OR ANY COMBINATION THEREOF, ALL LANDS LOCATED BETWEEN THE DWELLING UNIT OR OVERSIZE DWELLING UNIT, THE EXTENSION OF THE MAIN WALL OF THE DWELLING UNIT OR OVERSIZE DWELLING UNIT, AND THE PRIVATE WAY ARE TO BE LANDSCAPED WITH SOFT LANDSCAPING, OTHER THAN THE AREA USED FOR A DRIVEWAY LEADING TO THE DWELLING UNIT'S ASSOCIATED PARKING SPACE, GARAGE OR CARPORT. (Bylaw 2018-206)	(b) IN NO CASE MAY ANY DWELLING UNIT OR OVERSIZE DWELLING UNIT LOCATED WITHIN A PLANNED UNIT DEVELOPMENT THAT HAS ITS OWN DRIVEWAY LEADING TO ITS ASSOCIATED PARKING SPACE, GARAGE OR CARPORT HAVE A DRIVEWAY THAT IS WIDER THAN THE ASSOCIATED PARKING SPACE, GARAGE, OR CARPORT. FURTHERMORE, THE REMAINING AREA BETWEEN THE DWELLING UNIT OR OVERSIZE DWELLING UNIT AND THE PRIVATE WAY MUST BE LANDSCAPED WITH SOFT LANDSCAPING, AND A WALKWAY EXTENDING FROM THE PRIVATE WAY BACK TO THE PRINCIPAL

SITE "A" AREA	9,903.93m^2 (0.99 ha)
SITE "B" AREA	10,072.88m^2(1.01ha)
TOTAL AREA:	19,975m^2(2.00ha)
PUBLIC PARK AREA	1,600m^2(0.16ha)
NET CONDO AREA	18,416.94m^2 (1.84ha)
PAVED AREA	5,231.03m^2 (28%)
LANDSCAPED AREA	6,010.72m^2 (33%)
TOTAL BUILDING COVERAGE	7,116.39m^2 (39%)
TOTAL GROSS FLOOR AREA	TBD
DENSITY (UPH)	53 UPH
ZONE CATEGORY	AM - ARTERIAL MAINSTREET ZONE

DWELLING BLOCK	DWELLING TYPE	GROUND FLOOR AREA (m2)	UNITS
SITE A			
BLOCK 1	12 UNIT BACK-TO-BACK		12
BLOCK 2	12 UNIT BACK-TO-BACK		12
BLOCK 3	12 UNIT BACK-TO-BACK		12
BLOCK 4	12 UNIT BACK-TO-BACK		12
BLOCK 5	10 UNIT BACK-TO-BACK		10
SITE B			
BLOCK 6	12 UNIT BACK-TO-BACK		12
BLOCK 7	8 UNIT BACK-TO-BACK		8
BLOCK 8	6 UNIT BACK-TO-BACK		6
BLOCK 9	8 UNIT BACK-TO-BACK		8
BLOCK 10	6 UNIT BACK-TO-BACK		6
TOTAL:			**98**





SCALE 1:300 (0 3 6 9 12 15 18)

LEGEND

- BACK TO BACK TOWNHOUSE DWELLING
- DRIVEWAY
- PATHWAY
- CROSSWALK
- CURB (0.2m)
- DEPRESSED CURB
- PORCH
- S.S SNOW STORAGE AREA
- L/A LANDSCAPED AREA
- PROPOSED LOT BOUNDARY
- BLOCK BOUNDARY
- VISITOR PARKING
- SWITCHBOARD
- MINI SUB
- SWITCHGEAR

DATE (D.M.Y)	REVISION	BY
12/09/24	Revision 1	JH
12/08/24	Draft for review	WS

GENERAL NOTES

1. DO NOT SCALE DRAWINGS FOR PRINT.
2. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF KORSIAK URBAN PLANNING AND MATTAMY HOMES. COPYRIGHT RESERVED.
3. WALKWAYS AND CURBS TO BE TIED INTO PUBLIC ROW WHERE APPLICABLE.
4. REFERENCES CITY OF OTTAWA T.W.S.I., DETAIL SC7.3

PROJECT TEAM

SITE PLAN DESIGN: KORSIAK Urban Planning
LANDSCAPE ARCHITECTURE: NAK design strategies
MECHANICAL/ ELECTRICAL: LRJ
PLANNING: NOVATECH
TRANSPORTATION: NOVATECH
ARCHITECTURE: Glenview homes
GEOTECHNICAL & STRUCTURAL: paterson group consulting engineers
CIVIL ENGINEER: NOVATECH

Glenview homes

GLENVIEW
THE COMMONS SITE PLAN

PART OF LOT 4
CONCESSION 3 (OTTAWA FRONT)
GEOGRAPHIC TOWNSHIP OF GLOUCESTER
REGISTERED PLAN #
CITY OF OTTAWA

TITLE: SITE PLAN

DATE: OCTOBER 7, 2024 | DRAWN BY: JH | CHECKED BY: CR | DRAWING NO.

FILE NO.:

JOB NO.:

S:\Mattamy & Company\GLENVIEW\Commons\Site Plan\2024.10\Glenview - The Commons - Site Plan Base - Oct-07-24 - w_LNEW TEMPLATE1.dwg

Attachment 2

TIA Screening Form

City of Ottawa 2017 TIA Guidelines TIA Screening

1. Description of Proposed Development

Municipal Address	3610 Innes Road
Description of Location	Located on both sides of Ventus Way, north of Ludis Way
Land Use Classification	Back-to-back townhomes
Development Size (units)	98 units
Development Size square metre (m^2)	-
Number of Accesses and Locations	7 accesses to Ventus Way
Phase of Development	1
Buildout Year	2027

If available, please attach a sketch of the development or site plan to this form.

2. Trip Generation Trigger

Considering the Development's Land Use type and Size (as filled out in the previous section), please refer to the Trip Generation Trigger checks below.

Table notes:

1. Table 2, Table 3 & Table 4 TRANS Trip Generation Manual
2. Institute of Transportation Engineers (ITE) Trip Generation Manual 11.1 Ed.

Land Use Type	Minimum Development Size
Single-family homes	**60 units**
Multi-Use Family (Low-Rise)[1]	**90 units**
Multi-Use Family (High-Rise)[1]	**150 units**
Office[2]	**1,400 m^2**
Industrial[2]	**7,000 m^2**
Fast-food restaurant or coffee shop[2]	**110 m^2**
Destination retail[2]	**1,800 m^2**
Gas station or convenience market[2]	**90 m^2**

If the proposed development size is equal to or greater than the sizes identified above, the Trip Generation Trigger is satisfied.

3. Location Triggers

	Yes	No
Does the development propose a new driveway to a boundary street that is designated as part of the Transit Priority Network, Rapid Transit network or Cross-Town Bikeways?	☐	☑
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?[2]	☐	☑

If any of the above questions were answered with 'Yes,' the Location Trigger is satisfied.

4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 kilometers per hour (km/h) or greater?	☐	☑
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	☐	☑
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 metre [m] of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?	☑	☐
Is the proposed driveway within auxiliary lanes of an intersection?	☐	☑
Does the proposed driveway make use of an existing median break that serves an existing site?	☐	☑

[2] Hubs are identified in Schedules B1 to B8 of the City of Ottawa Official Plan. PMTSAs are identified in Schedule C1 of the Official Plan. DPAs are identified in Schedule C7A and C7B of the Official. See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA.

	Yes	No
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	☐	☑
Does the development include a drive-thru facility?	☐	☑

If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.

5. Summary

Results of Screening	Yes	No
Does the development satisfy the Trip Generation Trigger?	☑	☐
Does the development satisfy the Location Trigger?	☐	☑
Does the development satisfy the Safety Trigger?	☑	☐

If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).

Attachment 3

245-275 Lamarche Avenue Concept

CAIVAN

LEGEND:

REV#	DESCRIPTION	DATE
03		
02		
01		

PROJECT NAME:

OV (Phase 4)

DRAWING NAME:

Community Plan

DATE:	DRAWING NO:
2024-08-20	SK-1
DRAWN BY: CH	OT502

Attachment 4

Transportation Demand Management

TDM-Supportive Development Design and Infrastructure Checklist:
Residential Developments (multi-family or condominium)

Legend

REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☑
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☐
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☐ - N/A
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑

	TDM-supportive design & infrastructure measures: *Residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☑
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☐
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☐
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☐
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☐ - N/A
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	☑- Each unit includes a garage
	2.3	**Bicycle repair station**	
BETTER	2.3.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☑
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	☐

TDM Measures Checklist:
Residential Developments (multi-family, condominium or subdivision)

Legend

BASIC — The measure is generally feasible and effective, and in most cases would benefit the development and its users

BETTER — The measure could maximize support for users of sustainable modes, and optimize development performance

★ — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

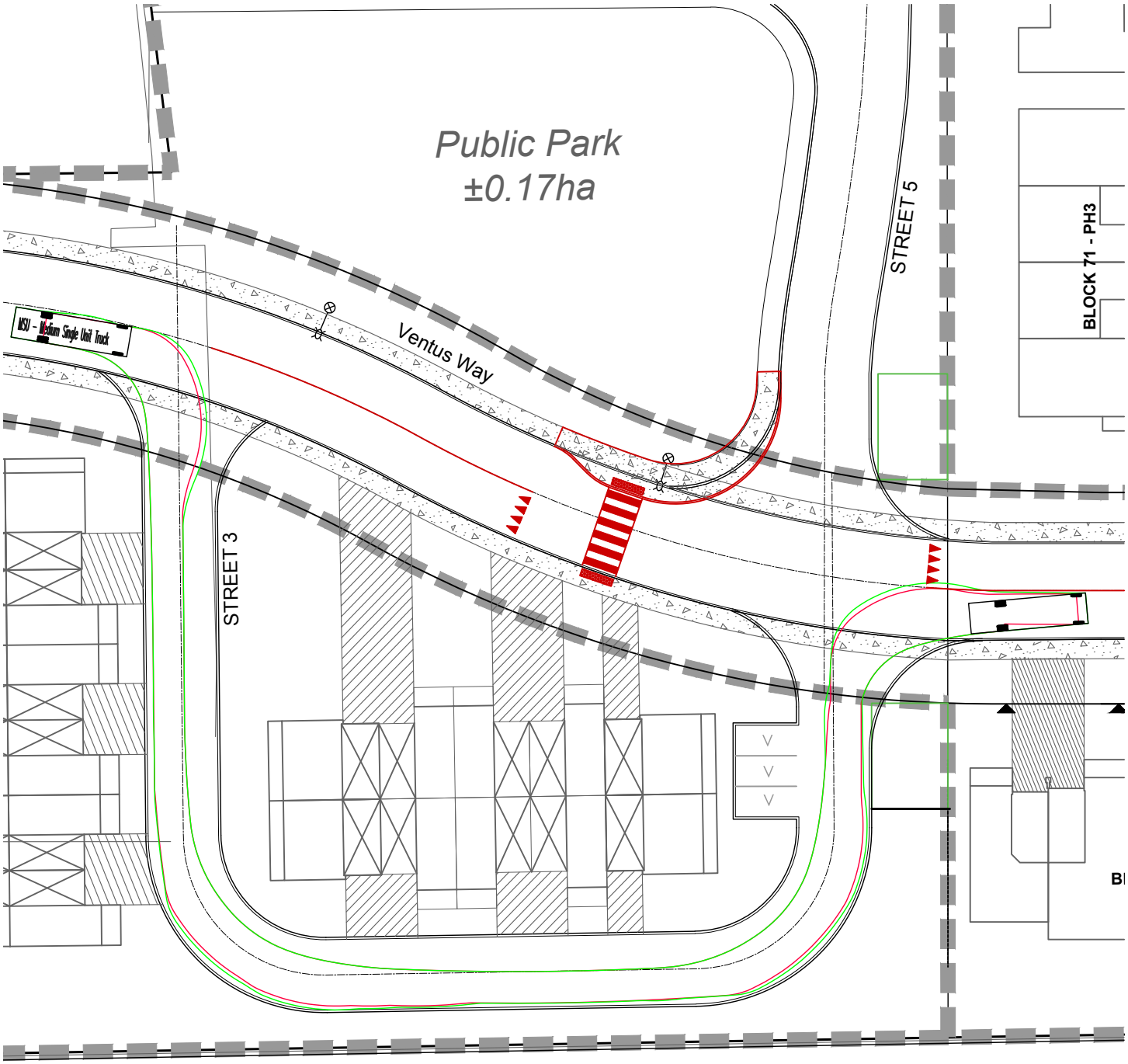
			TDM measures: *Residential developments*	Check if proposed & add descriptions
		1.	**TDM PROGRAM MANAGEMENT**	
		1.1	**Program coordinator**	
BASIC	★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	☐
		1.2	**Travel surveys**	
BETTER		1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
		2.	**WALKING AND CYCLING**	
		2.1	**Information on walking/cycling routes & destinations**	
BASIC		2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances *(multi-family, condominium)*	☑ - at sales centre
		2.2	**Bicycle skills training**	
BETTER		2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	☐

			TDM measures: *Residential developments*	Check if proposed & add descriptions
		3.	**TRANSIT**	
		3.1	**Transit information**	
BASIC		3.1.1	Display relevant transit schedules and route maps at entrances *(multi-family, condominium)*	☑ - at sales centre
BETTER		3.1.2	Provide real-time arrival information display at entrances *(multi-family, condominium)*	☐
		3.2	**Transit fare incentives**	
BASIC	★	3.2.1	Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit	☐
BETTER		3.2.2	Offer at least one year of free monthly transit passes on residence purchase/move-in	☐
		3.3	**Enhanced public transit service**	
BETTER	★	3.3.1	Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels *(subdivision)*	☐
		3.4	**Private transit service**	
BETTER		3.4.1	Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	☐
		4.	**CARSHARING & BIKESHARING**	
		4.1	**Bikeshare stations & memberships**	
BETTER		4.1.1	Contract with provider to install on-site bikeshare station (*multi-family)*	☐
BETTER		4.1.2	Provide residents with bikeshare memberships, either free or subsidized *(multi-family)*	☐
		4.2	**Carshare vehicles & memberships**	
BETTER		4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents	☐
BETTER		4.2.2	Provide residents with carshare memberships, either free or subsidized	☐
		5.	**PARKING**	
		5.1	**Priced parking**	
BASIC	★	5.1.1	Unbundle parking cost from purchase price *(condominium)*	☐
BASIC	★	5.1.2	Unbundle parking cost from monthly rent *(multi-family)*	☐

TDM measures: *Residential developments*				Check if proposed & add descriptions
		6.	**TDM MARKETING & COMMUNICATIONS**	
		6.1	**Multimodal travel information**	
BASIC	★	6.1.1	Provide a multimodal travel option information package to new residents	☑ - at sales centre
		6.2	**Personalized trip planning**	
BETTER	★	6.2.1	Offer personalized trip planning to new residents	☐

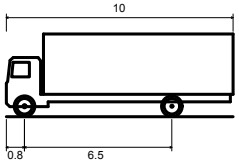
Attachment 5

Turning Movements



NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com



MSU - Medium Single Unit Truck

Overall Length	10.000m
Overall Width	2.600m
Overall Body Height	3.650m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.100m

GLENVIEW

TURNING MOVEMENT (MSU)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE OCT 2024 | JOB 118224 | FIGURE FIGURE 1

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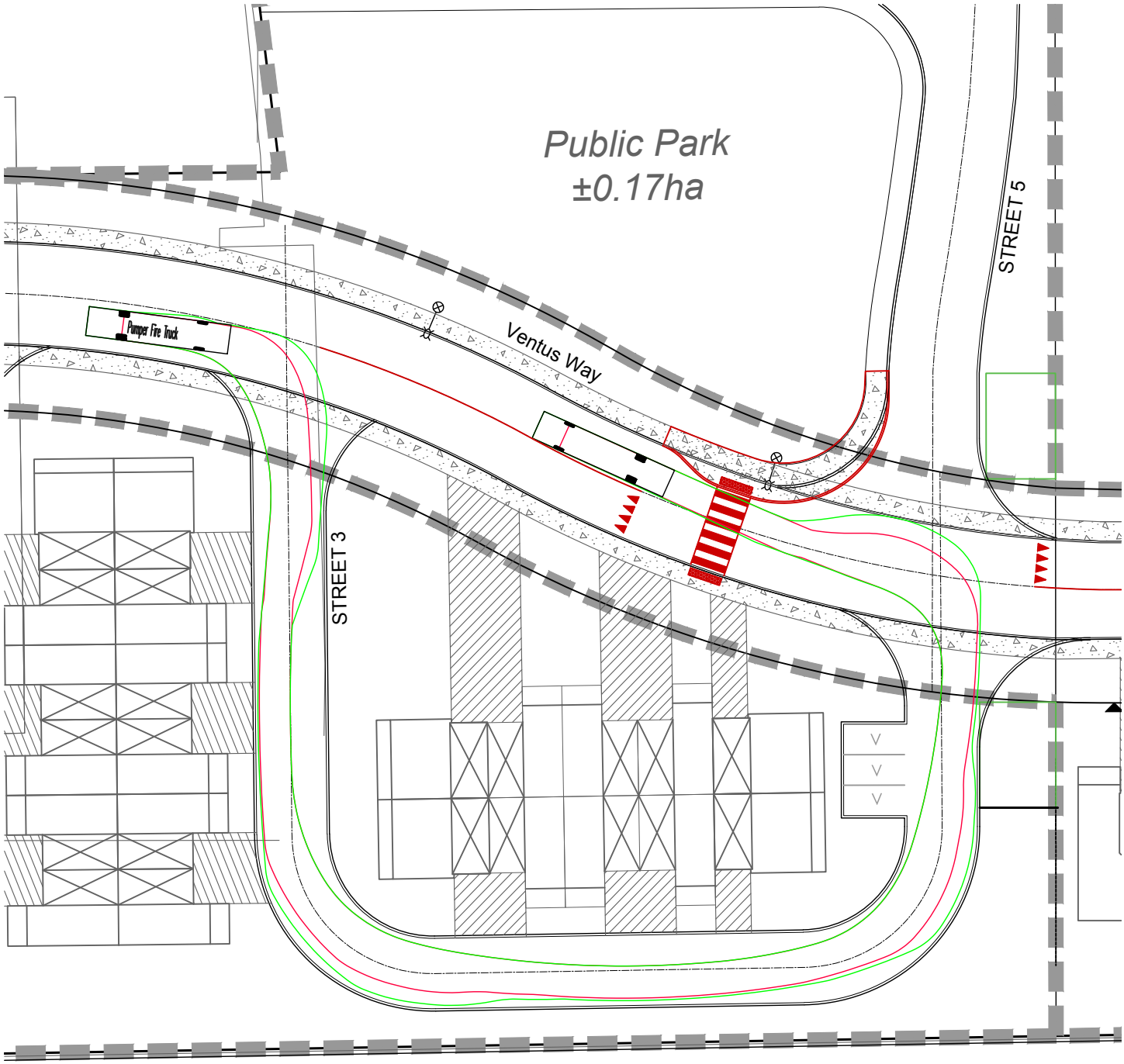

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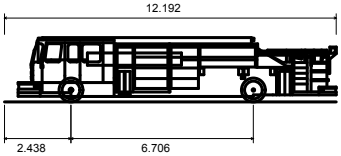

Pumper Fire Truck

Overall Length	12.192m
Overall Width	2.489m
Overall Body Height	2.361m
Min Body Ground Clearance	0.200m
Track Width	2.489m
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

GLENVIEW

TURNING MOVEMENT (FIRE TRUCK)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE OCT 2024 | JOB 118224 | FIGURE FIGURE 2

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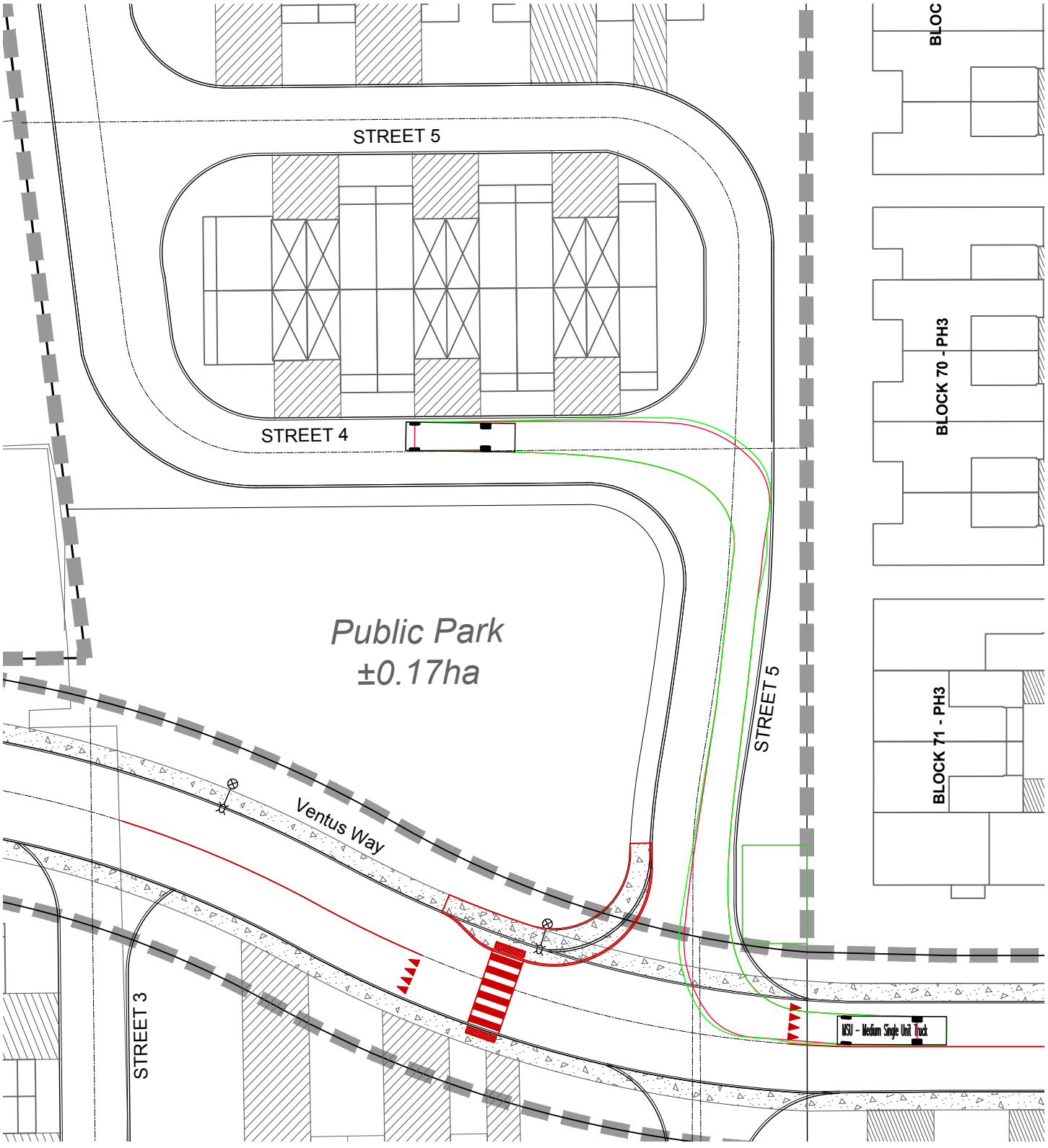

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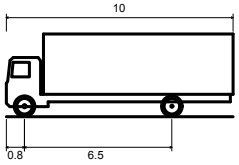

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Track Width	2.600m
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Curb to Curb Turning Radius	11.100m

GLENVIEW

TURNING MOVEMENT (MSU)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE OCT 2024 | JOB 118224 | FIGURE FIGURE 3

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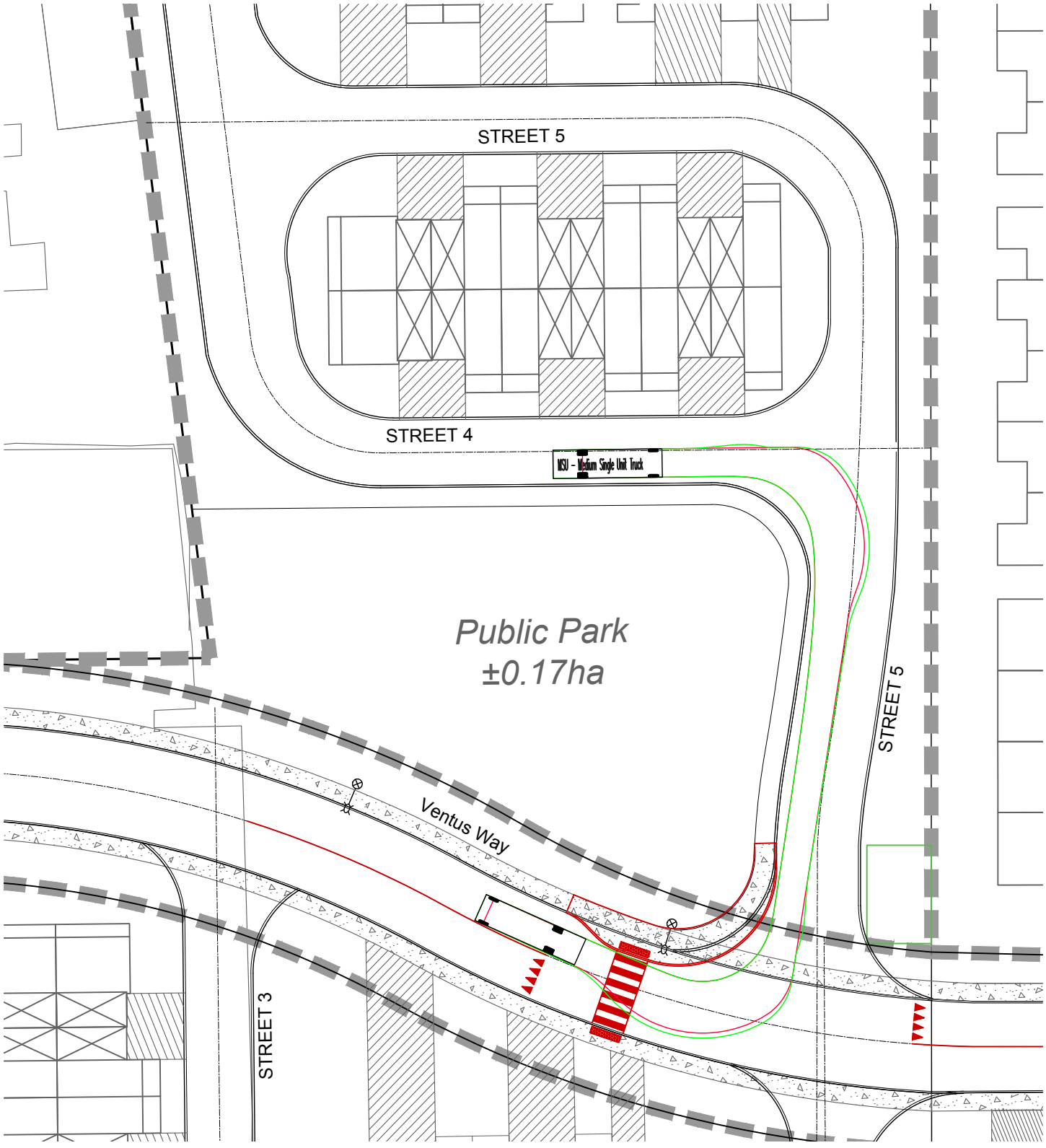

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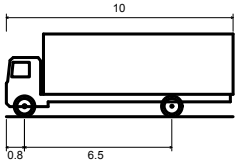

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Curb to Curb Turning Radius	11.100m

GLENVIEW

TURNING MOVEMENT (MSU)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE OCT 2024 | JOB 118224 | FIGURE FIGURE 4

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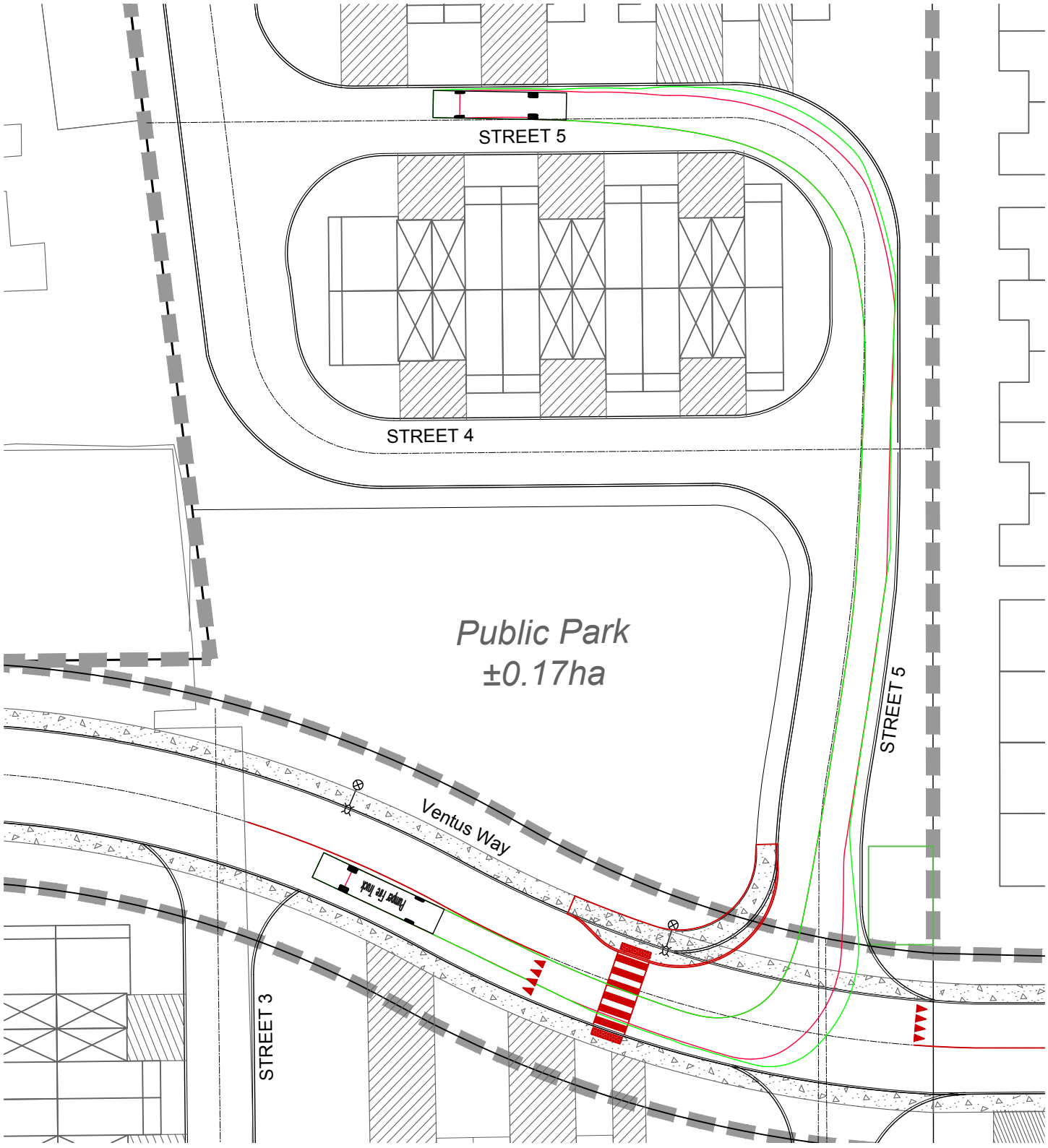

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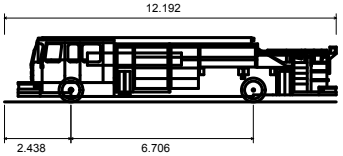

Pumper Fire Truck

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Overall Width	2.489m
Overall Body Height	2.361m
Min Body Ground Clearance	0.200m
Track Width	2.489m
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

GLENVIEW

TURNING MOVEMENT (FIRE TRUCK)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE OCT 2024 | JOB 118224 | FIGURE FIGURE 5

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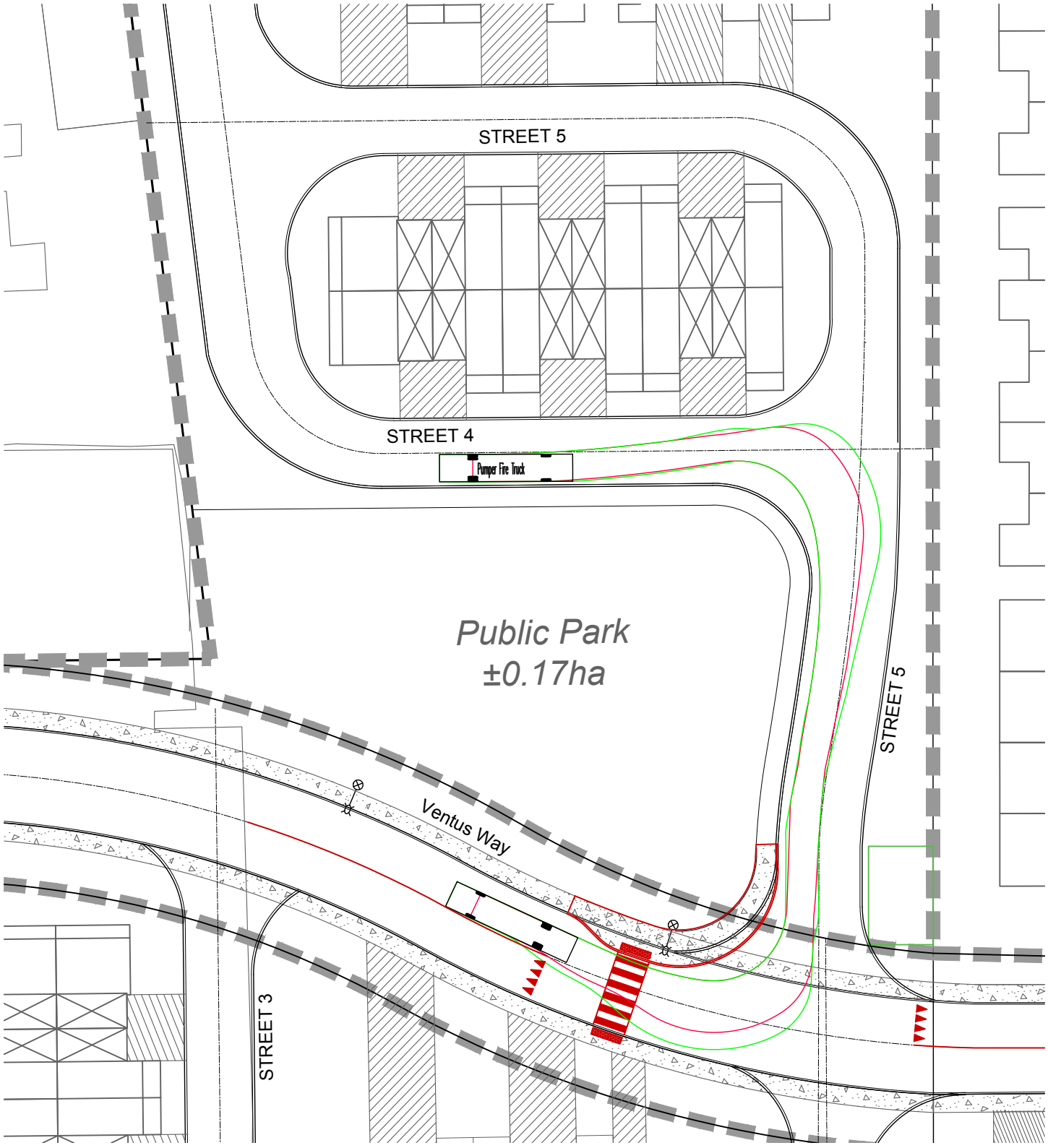

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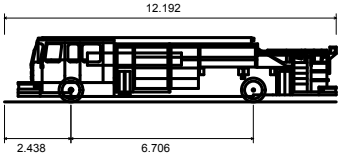

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Track Width	2.489m
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Max Wheel Angle	45.00°

GLENVIEW

TURNING MOVEMENT (FIRE TRUCK)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE OCT 2024 | JOB 118224 | FIGURE FIGURE 6

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Attachment 6

Pedestrian Crossover Materials

Table 7: Pedestrian Crossover Selection Matrix

Two-way Vehicular Volume			Posted Speed Limit (km/h	Total Number of Lanes for the Roadway Cross Section[1]			
Time Period	Lower Bound	Upper Bound		1 or 2 Lanes	3 lanes	4 lanes w/raised refuge	4 lanes w/o raised refuge
8 Hour	750	2,250	≤50	Level 2 Type D	Level 2 Type C[3]	Level 2 Type D[2]	Level 2 Type B
4 Hour	395	1,185					
8 Hour	750	2,250	60	Level 2 Type C	Level 2 Type B	Level 2 Type C[2]	Level 2 Type B
4 Hour	395	1,185					
8 Hour	2,250	4,500	≤50	Level 2 Type D	Level 2 Type B	Level 2 Type D[2]	Level 2 Type B
4 Hour	1,185	2,370					
8 Hour	2,250	4,500	60	Level 2 Type C	Level 2 Type B	Level 2 Type C[2]	Level 2 Type B
4 Hour	1,185	2,370					
8 Hour	4,500	6,000	≤50	Level 2 Type C	Level 2 Type B	Level 2 Type C[2]	Level 2 Type B
4 Hour	2,370	3,155					
8 Hour	4,500	6,000	60	Level 2 Type B	Level 2 Type B	Level 2 Type C[2]	Level 2 Type B
4 Hour	2,370	3,155					
8 Hour	6,000	7,500	≤50	Level 2 Type B	Level 2 Type B	Level 2 Type C[2]	Level 1 Type A
4 Hour	3,155	3,950					
8 Hour	6,000	7,500	60	Level 2 Type B	Level 2 Type B		
4 Hour	3,155	3,950					
8 Hour	7,500	17,500	≤50	Level 2 Type B	Level 2 Type B		
4 Hour	3,950	9,215					
8 Hour	7,500	17,500	60	Level 2 Type B			
4 Hour	3,950	9,215					

Type A Type B Type C Type D

Approaches to roundabouts should be considered a separate roadways.

[1]The total number of lanes is representative of crossing distance. The width of these lanes is assumed to be between 3.0 m and 3.75 m according to MTO Geometric Design Standards for Ontario Highways (Chapter D.2). A cross sectional feature (e.g. bike lane or on-street parking) may extend the average crossing distance beyond this range of lane widths.

[2]Use of two sets of side mounted signs for each direction (one on the right side and one on the median)

[3] Use Level 2 Type B PXO up to 3 lanes total, cross section one-way.

The hatched cells in this table show that a PXO is not recommended for sites with these traffic and geometric conditions. Generally a traffic signal is warranted for such conditions.

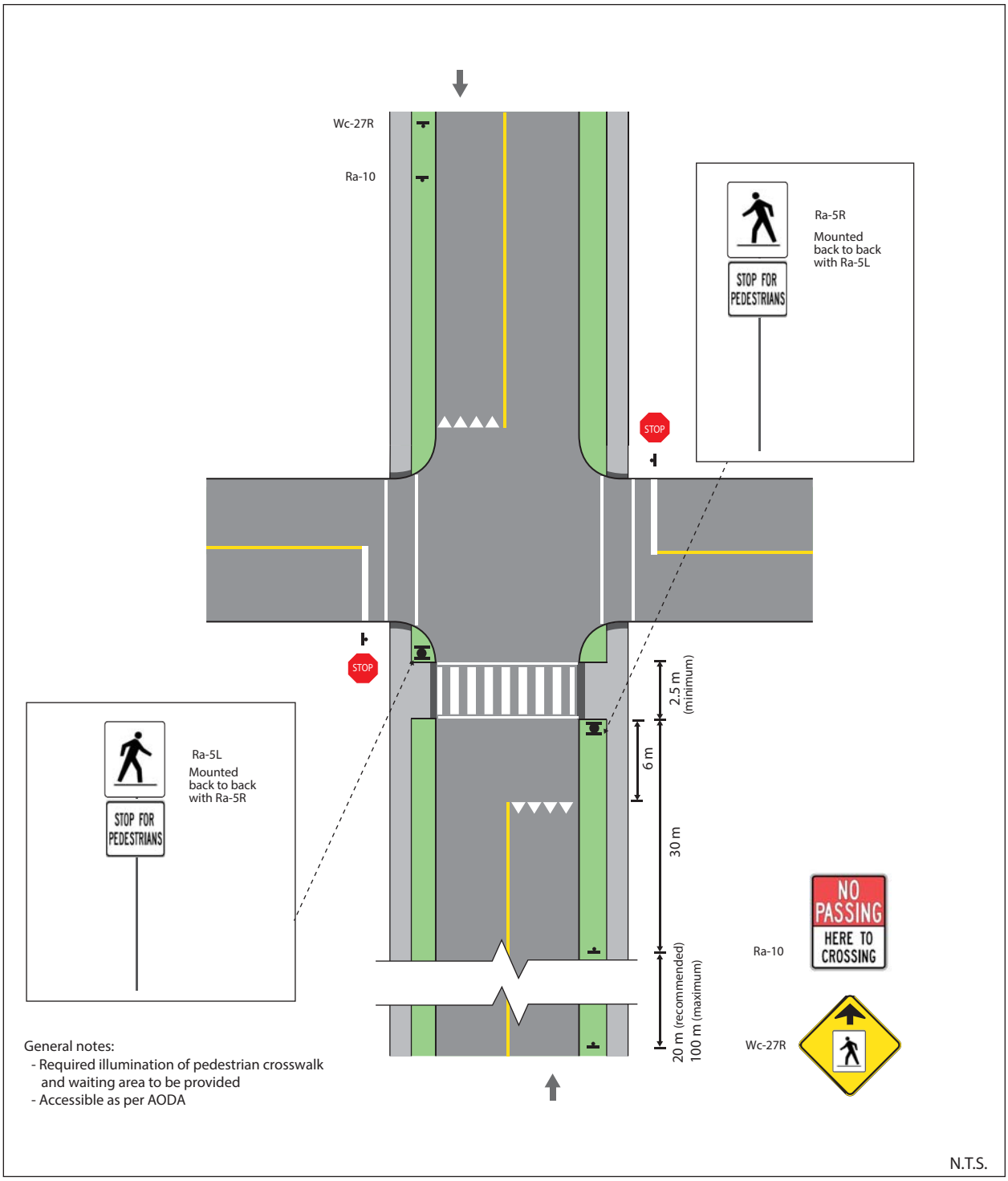


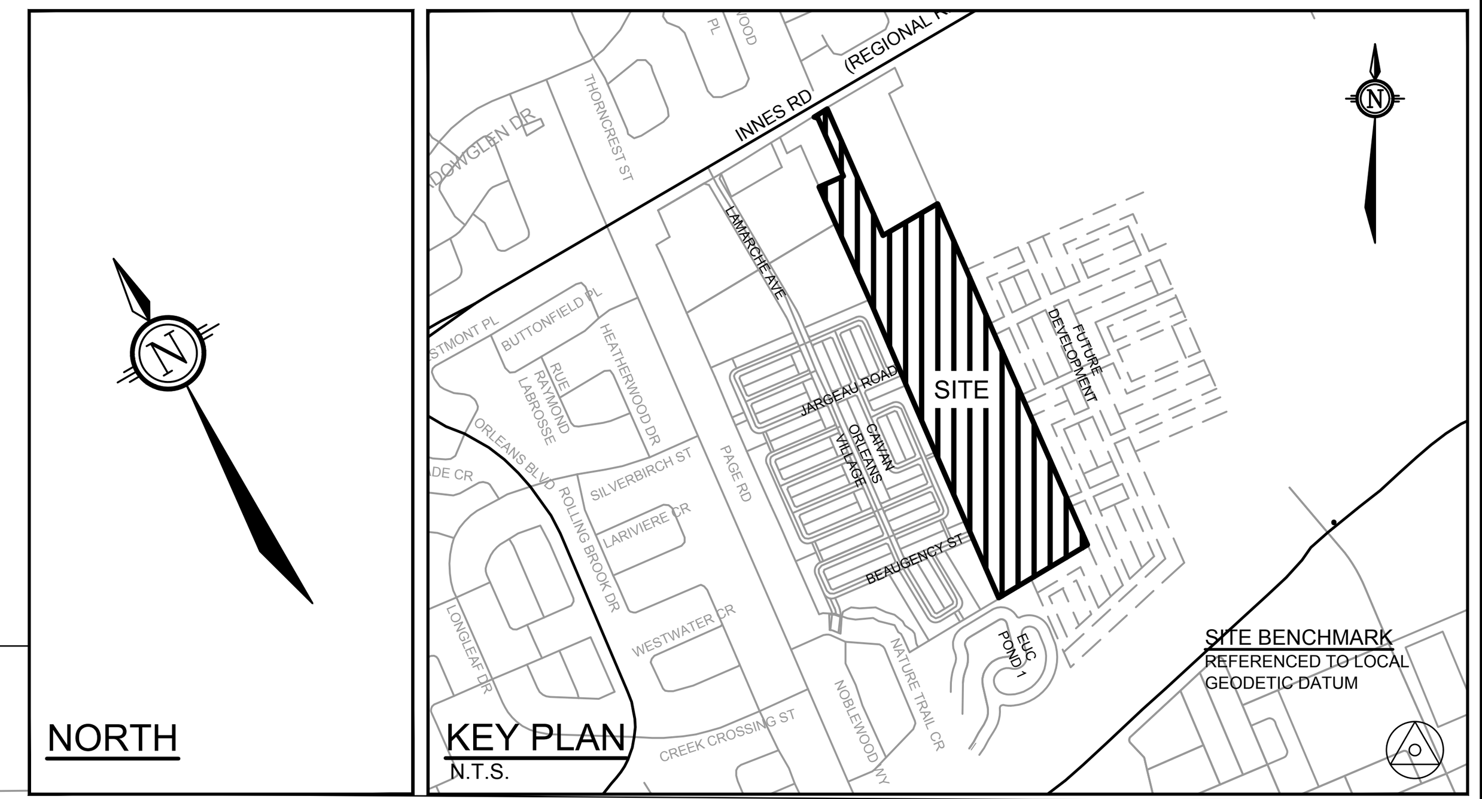
Figure 44: Pedestrian Crossover Level 2 Type D – Intersection (2-way)

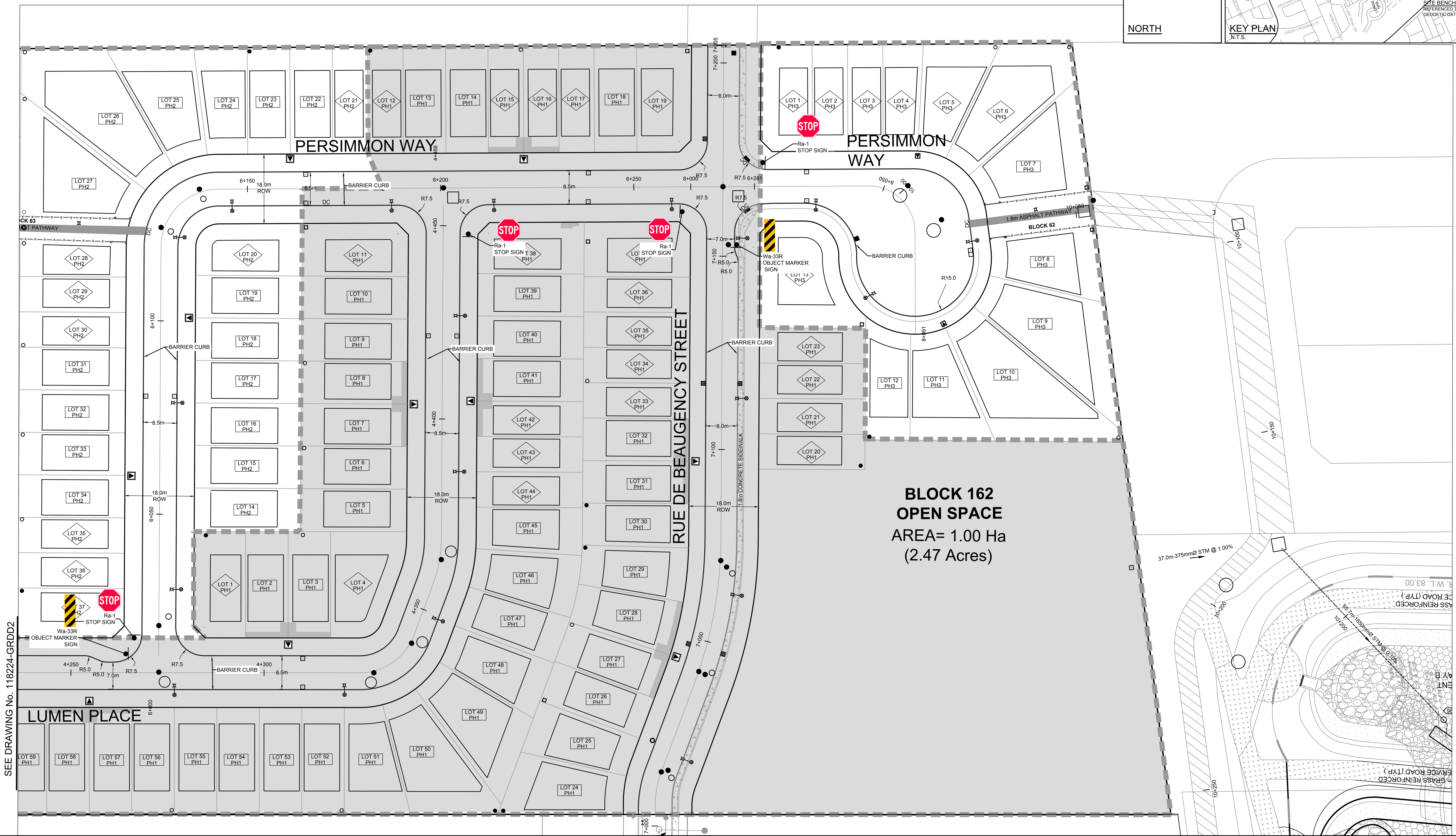
Attachment 7

Revised Geometric Roadway Design Drawing

LEGEND

- STORM MANHOLE
- SANITARY MANHOLE
- CATCH BASIN
- HYDRANT
- WATERMAIN VALVE
- TACTILE WALKING SURFACE INDICATOR (TWSI)
- DC — DEPRESSED CURB
- STREET LIGHT
- HYDRO TRANSFORMER





NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
6.	ISSUED FOR CITY REVIEW	OCT 29/24	BHB
5.	ISSUED FOR PHASE 2 AND 3	MAY 3/24	BHB
4.	ISSUED EARLY SERVICING AGREEMENT	JULY 5/22	BHB
3.	ISSUED FOR ECA AND TENDER	MAR 18/22	BHB
2.	ISSUED FOR REVIEW	JUNE 15/21	BHB
1.	INTERNAL REVIEW	JUNE 3/21	BHB

SCALE 1:500

DESIGN	BR
CHECKED	BCS
DRAWN	BR / RCH
CHECKED	BCS
APPROVED	BHB

FOR REVIEW ONLY

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
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LOCATION
CITY OF OTTAWA
THE COMMONS

DRAWING NAME
GEOMETRIC ROADWAY DESIGN DRAWINGS

PROJECT No. 118224-00
REV REV # 5
DRAWING No. 118224-GRDD1

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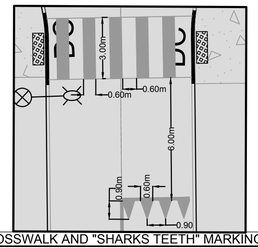
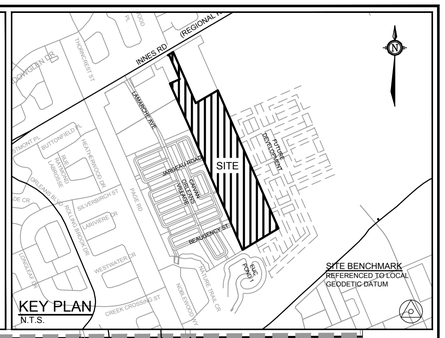
LEGEND

- STORM MANHOLE
- SANITARY MANHOLE
- CATCH BASIN
- HYDRANT
- WATERMAIN VALVE
- TACTILE WALKING SURFACE INDICATOR (TWSI)
- DC — DEPRESSED CURB
- STREET LIGHT
- HYDRO TRANSFORMER



CROSSWALK AND "SHARKS TEETH" MARKINGS
SCALE 1:150

NORTH



KEY PLAN
N.T.S.

LUDIS WAY
CERULEAN WAY
RUE DE JARGEAU ROAD
LUMEN PLACE
REFLECTION STREET
VENTUS WAY
SEE DRAWING No. 118224-GRDD3
SEE DRAWING No. 118224-GRDD1
BLOCK 104
18.0m ROW
24.0m ROW
9.5m
8.5m
8.0m
7.0m
6.0m
15.0m
3.0m PEDESTRIAN CROSSING
1.8m CONCRETE SIDEWALK
3.0m ASPHALT MULTI-USE PATHWAY
3.5m TRAVEL LANE
2.5m PARKING LANE
1.8m ASPHALT PATHWAY
3.0m ASPHALT PATHWAY
MOUNTABLE CURB
BARRIER CURB
R5.0
R7.5
R8.0
DC
STOP
Ra-1 STOP SIGN
Wa-33R OBJECT MARKER SIGN
Ra-5L Ra-5R (OTM) c/w Ra-4T PEDESTRIAN CROSSING BACK TO BACK SIGNS
STOP FOR PEDESTRIANS
PRIORITE AUX PIETONS
Rb-51LR NO PARKING SIGN
Rb-55L - NO STOPPING
Wc-27R PEDESTRIANS AHEAD
Wc-27R (TAC) PEDESTRIAN CROSSING AHEAD SIGN
BLOCK 63 - PH1
BLOCK 64 - PH2
BLOCK 65 - PH3
BLOCK 66 - PH3
BLOCK 67 - PH3
BLOCK 68 - PH3
BLOCK 69 - PH3
BLOCK 70 - PH3
BLOCK 71 - PH3
BLOCK 72 - PH2
BLOCK 73 - PH2
BLOCK 74 - PH2
BLOCK 75 - PH2
BLOCK 76 - PH2
BLOCK 77 - PH2
BLOCK 78 - PH2
BLOCK 79 - PH2
BLOCK 80 - PH2
BLOCK 81 - PH3
BLOCK 82 - PH3
BLOCK 83 - PH3
BLOCK 84 - PH3
BLOCK 85 - PH3
BLOCK 86 - PH3
BLOCK 87 - PH3
BLOCK 88 - PH3
BLOCK 89 - PH3
BLOCK 90 - PH3
BLOCK 91 - PH1
BLOCK 92 - PH1
BLOCK 93 - PH1
BLOCK 94 - PH1
BLOCK 95 - PH1
BLOCK 96 - PH1
BLOCK 97 - PH1
BLOCK 98 - PH1
BLOCK 99 - PH1
BLOCK 100 - PH1
BLOCK 101 - PH1
BLOCK 102 - PH1
BLOCK 103
BLOCK 84 - PH2
LOT 51 PH2
LOT 50 PH2
LOT 49 PH2
LOT 48 PH2
LOT 47 PH2
LOT 46 PH2
LOT 45 PH2
LOT 44 PH2
LOT 43 PH2
LOT 42 PH2
LOT 41 PH2
LOT 40 PH2
LOT 39 PH2
LOT 38 PH2
LOT 90 PH1
LOT 89 PH1
LOT 88 PH1
LOT 87 PH1
LOT 86 PH1
LOT 85 PH1
LOT 84 PH1
LOT 83 PH1
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LOT 64 PH1
LOT 63 PH1
LOT 62 PH1
LOT 61 PH1
LOT 60 PH1
LOT 59 PH2
LOT 58 PH2
LOT 57 PH2
LOT 56 PH2
LOT 55 PH2
LOT 54 PH2
LOT 53 PH2
LOT 52 PH2

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
6.	ISSUED FOR CITY REVIEW	OCT 29/24	BHB
5.	ISSUED FOR PHASE 2 AND 3	MAY 3/24	BHB
4.	ISSUED EARLY SERVICING AGREEMENT	JULY 5/22	BHB
3.	ISSUED FOR ECA AND TENDER	MAR 18/22	BHB
2.	ISSUED FOR REVIEW	JUNE 15/21	BHB
1.	INTERNAL REVIEW	JUNE 3/21	BHB

SCALE
1:500
1:500
0 5 10 15 20

DESIGN BR
CHECKED BCS
DRAWN BR / RCH
CHECKED BCS
APPROVED BHB

FOR REVIEW ONLY

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LOCATION
CITY OF OTTAWA
THE COMMONS

DRAWING NAME
GEOMETRIC ROADWAY DESIGN DRAWINGS

PROJECT No. 118224-00
REV REV # 5
DRAWING No. 118224-GRDD2

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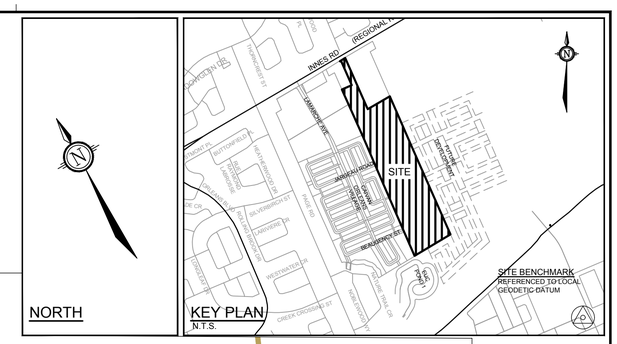
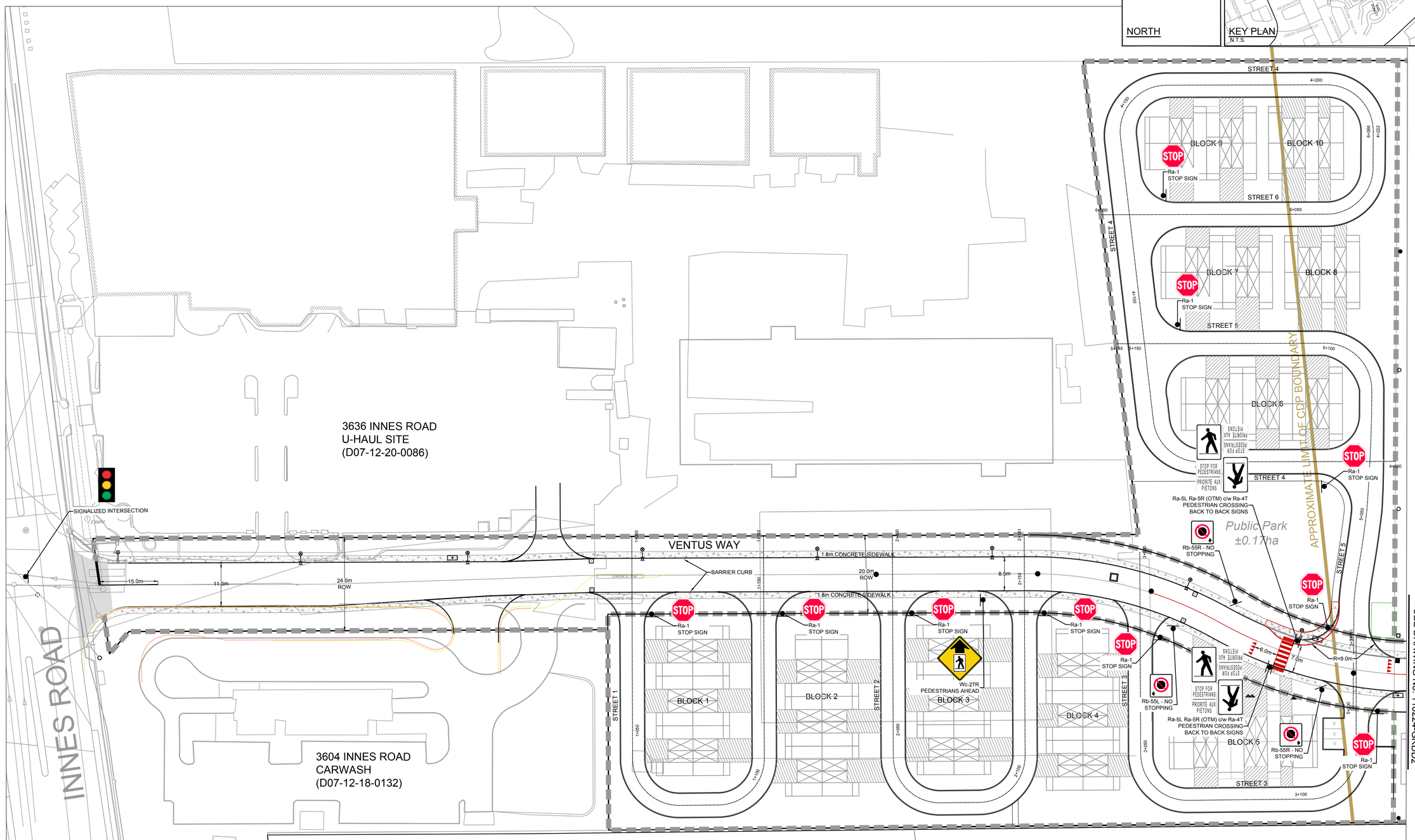
PLANAT.DWG - 341mmx594mm

LEGEND

- STORM MANHOLE
- SANITARY MANHOLE
- CATCH BASIN
- HYDRANT
- WATERMAIN VALVE
- TACTILE WALKING SURFACE INDICATOR (TWSI)
- DC — DEPRESSED CURB
- STREET LIGHT
- HYDRO TRANSFORMER





NOTE:
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No.	REVISION	DATE	BY
5.	ISSUED FOR CITY REVIEW	OCT 29/24	BHB
4.	ISSUED FOR PHASE 2 AND 3	MAY 3/24	BHB
3.	ISSUED EARLY SERVICING AGREEMENT	JULY 5/22	BHB
2.	ISSUED FOR REVIEW	JUNE 15/21	BHB
1.	INTERNAL REVIEW	JUNE 3/21	BHB

SCALE
1:500
1:500
0 5 10 15 20

DESIGN: BR
CHECKED: BCS
DRAWN: BR / RCH
CHECKED: BCS
APPROVED: BHB

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LOCATION
CITY OF OTTAWA
THE COMMONS

DRAWING NAME
GEOMETRIC ROADWAY DESIGN DRAWINGS

PROJECT No. 118224-00
REV REV # 4
DRAWING No. 118224-GRDD3

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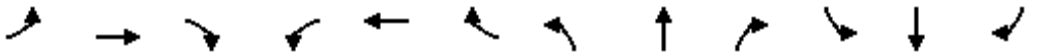
PLAN A1.DWG - 841mmx594mm

Attachment 8

Excerpts of Synchro Reports

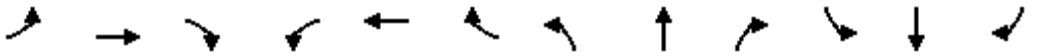


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	551	39	12	1439	3	102	0	38	0	0	5
Future Volume (vph)	3	551	39	12	1439	3	102	0	38	0	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	40.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	20.0			30.0			20.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		0.99	1.00			0.99	0.97		0.97	
Frt		0.990							0.850		0.865	
Flt Protected	0.950			0.950				0.950				
Satd. Flow (prot)	1679	3314	0	1679	3357	0	0	1679	1502	0	1489	0
Flt Permitted	0.155			0.429				0.754				
Satd. Flow (perm)	273	3314	0	751	3357	0	0	1314	1464	0	1489	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13							38		60	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		236.8			585.5			151.9			62.6	
Travel Time (s)		14.2			35.1			13.7			5.6	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)						14						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	3	551	39	12	1439	3	102	0	38	0	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	590	0	12	1442	0	0	102	38	0	5	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		9.0			9.0			9.0			9.0	
Two way Left Turn Lane		Yes										
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	18.6	93.0		18.6	93.0		18.6	93.0	18.6	18.6	93.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	18.6	5.5		18.6	5.5		18.6	5.5	18.6	18.6	5.5	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		87.5			87.5			87.5			87.5	
Detector 2 Size(m)		5.5			5.5			5.5			5.5	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	32.1	32.1		32.1	32.1		32.3	32.3	32.3	32.3	32.3	
Total Split (s)	87.0	87.0		87.0	87.0		33.0	33.0	33.0	33.0	33.0	
Total Split (%)	72.5%	72.5%		72.5%	72.5%		27.5%	27.5%	27.5%	27.5%	27.5%	
Maximum Green (s)	80.9	80.9		80.9	80.9		26.7	26.7	26.7	26.7	26.7	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1			6.3	6.3		6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	12.0	12.0		12.0	12.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		19.0	19.0	19.0	19.0	19.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10	10	10	10	
Act Effct Green (s)	91.6	91.6		91.6	91.6			16.0	16.0		16.0	
Actuated g/C Ratio	0.76	0.76		0.76	0.76			0.13	0.13		0.13	
v/c Ratio	0.01	0.23		0.02	0.56			0.59	0.17		0.02	
Control Delay	4.3	3.6		7.7	10.1			61.1	14.1		0.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	4.3	3.6		7.7	10.1			61.1	14.1		0.2	
LOS	A	A		A	B			E	B		A	
Approach Delay		3.6			10.1			48.3			0.2	
Approach LOS		A			B			D			A	
Queue Length 50th (m)	0.1	11.5		0.5	51.5			21.4	0.0		0.0	
Queue Length 95th (m)	m0.5	14.2		m2.2	145.0			34.3	8.3		0.0	
Internal Link Dist (m)		212.8			561.5			127.9			38.6	
Turn Bay Length (m)	30.0			40.0								
Base Capacity (vph)	208	2533		573	2563			292	355		377	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.01	0.23		0.02	0.56			0.35	0.11		0.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 10.8		Intersection LOS: B	
Intersection Capacity Utilization 67.6%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: 473 E of Page & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1834	134	72	1051	12	91	0	51	12	0	7
Future Volume (vph)	14	1834	134	72	1051	12	91	0	51	12	0	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	40.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	20.0			30.0			20.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00			0.98	0.98		0.98	
Frt		0.990			0.998				0.850		0.950	
Flt Protected	0.950			0.950				0.950			0.969	
Satd. Flow (prot)	1679	3314	0	1679	3349	0	0	1679	1502	0	1605	0
Flt Permitted	0.269			0.050				0.745			0.792	
Satd. Flow (perm)	473	3314	0	88	3349	0	0	1284	1465	0	1302	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			2				90		90	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		236.8			585.5			151.9			62.6	
Travel Time (s)		14.2			35.1			13.7			5.6	
Confl. Peds. (#/hr)	10		10	10		10	20		10	10		20
Confl. Bikes (#/hr)						6						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	14	1834	134	72	1051	12	91	0	51	12	0	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	1968	0	72	1063	0	0	91	51	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		9.0			9.0			9.0			9.0	
Two way Left Turn Lane		Yes										
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	18.6	93.0		18.6	93.0		18.6	93.0	18.6	18.6	93.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	18.6	5.5		18.6	5.5		18.6	5.5	18.6	18.6	5.5	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		87.5			87.5			87.5			87.5	
Detector 2 Size(m)		5.5			5.5			5.5			5.5	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0		5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	32.1	32.1		11.0	32.1		32.3	32.3	32.3	32.3	32.3	
Total Split (s)	66.0	66.0		11.0	77.0		33.0	33.0	33.0	33.0	33.0	
Total Split (%)	60.0%	60.0%		10.0%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	59.9	59.9		5.0	70.9		26.7	26.7	26.7	26.7	26.7	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.4	2.4		2.3	2.4		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.1	6.1		6.0	6.1			6.3	6.3		6.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Walk Time (s)	12.0	12.0			12.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	14.0	14.0			14.0		19.0	19.0	19.0	19.0	19.0	
Pedestrian Calls (#/hr)	10	10			10		10	10	10	10	10	
Act Effct Green (s)	77.1	77.1		85.9	87.0			15.1	15.1		15.1	
Actuated g/C Ratio	0.70	0.70		0.78	0.79			0.14	0.14		0.14	
v/c Ratio	0.04	0.85		0.46	0.40			0.52	0.18		0.07	
Control Delay	1.1	10.0		20.8	5.8			53.0	3.1		0.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	1.1	10.0		20.8	5.8			53.0	3.1		0.6	
LOS	A	A		C	A			D	A		A	
Approach Delay		9.9			6.7			35.1			0.6	
Approach LOS		A			A			D			A	
Queue Length 50th (m)	0.0	2.7		2.9	31.1			17.3	0.0		0.0	
Queue Length 95th (m)	m0.2	#278.4		16.2	64.5			28.3	2.5		0.0	
Internal Link Dist (m)		212.8			561.5			127.9			38.6	
Turn Bay Length (m)	30.0			40.0								
Base Capacity (vph)	331	2325		158	2649			311	423		384	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.04	0.85		0.46	0.40			0.29	0.12		0.05	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 36 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 9.8 Intersection LOS: A
Intersection Capacity Utilization 100.6% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

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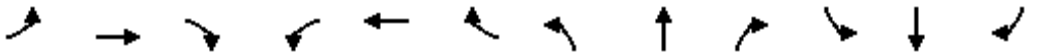

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1834	134	72	1051	12	91	0	51	12	0	7
Future Volume (vph)	14	1834	134	72	1051	12	91	0	51	12	0	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	40.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	20.0			30.0			20.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00			1.00			0.97	0.97		0.98	
Frt		0.990			0.998				0.850		0.950	
Flt Protected	0.950			0.950				0.950			0.969	
Satd. Flow (prot)	1679	3314	0	1679	3349	0	0	1679	1502	0	1602	0
Flt Permitted	0.269			0.047				0.745			0.805	
Satd. Flow (perm)	473	3314	0	83	3349	0	0	1278	1462	0	1320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			2				76		76	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		236.8			585.5			151.9			62.6	
Travel Time (s)		14.2			35.1			13.7			5.6	
Confl. Peds. (#/hr)	10		10	10		10	20		10	10		20
Confl. Bikes (#/hr)						6						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	14	1834	134	72	1051	12	91	0	51	12	0	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	1968	0	72	1063	0	0	91	51	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		9.0			9.0			9.0			9.0	
Two way Left Turn Lane		Yes										
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	18.6	93.0		18.6	93.0		18.6	93.0	18.6	18.6	93.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	18.6	5.5		18.6	5.5		18.6	5.5	18.6	18.6	5.5	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		87.5			87.5			87.5			87.5	
Detector 2 Size(m)		5.5			5.5			5.5			5.5	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0		5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	32.1	32.1		11.0	32.1		32.3	32.3	32.3	32.3	32.3	
Total Split (s)	85.0	85.0		12.0	97.0		33.0	33.0	33.0	33.0	33.0	
Total Split (%)	65.4%	65.4%		9.2%	74.6%		25.4%	25.4%	25.4%	25.4%	25.4%	
Maximum Green (s)	78.9	78.9		6.0	90.9		26.7	26.7	26.7	26.7	26.7	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.4	2.4		2.3	2.4		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.1	6.1		6.0	6.1			6.3	6.3		6.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Walk Time (s)	12.0	12.0			12.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	14.0	14.0			14.0		19.0	19.0	19.0	19.0	19.0	
Pedestrian Calls (#/hr)	10	10			10		10	10	10	10	10	
Act Effct Green (s)	91.3	91.3		101.7	101.6			16.0	16.0		16.0	
Actuated g/C Ratio	0.70	0.70		0.78	0.78			0.12	0.12		0.12	
v/c Ratio	0.04	0.84		0.49	0.41			0.58	0.21		0.08	
Control Delay	1.3	4.7		24.3	5.7			67.3	5.7		0.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	1.3	4.7		24.3	5.7			67.3	5.7		0.7	
LOS	A	A		C	A			E	A		A	
Approach Delay		4.7			6.9			45.2			0.7	
Approach LOS		A			A			D			A	
Queue Length 50th (m)	0.1	6.6		4.6	27.9			20.8	0.0		0.0	
Queue Length 95th (m)	m0.1	#25.7		17.7	68.6			34.1	5.0		0.0	
Internal Link Dist (m)		212.8			561.5			127.9			38.6	
Turn Bay Length (m)	30.0			40.0								
Base Capacity (vph)	332	2330		147	2618			262	360		331	
Starvation Cap Reductn	0	1		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.04	0.84		0.49	0.41			0.35	0.14		0.06	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 14 (11%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 7.2		Intersection LOS: A	
Intersection Capacity Utilization 100.6%		ICU Level of Service G	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

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