

# MEMORANDUM

**DATE:** JUNE 17, 2021 **PROJECT:** 117034

**TO:** JOSIANE GERVAIS

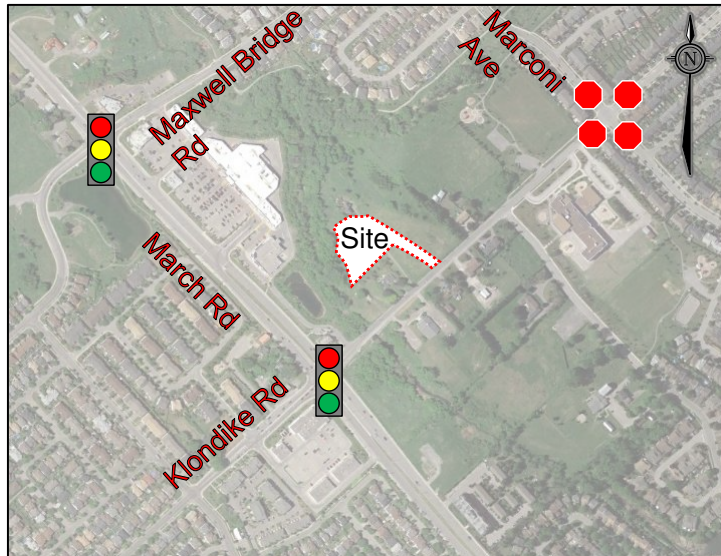
**FROM:** PATRICK HATTON

**RE:** TRANSPORTATION REVIEW – BLOCK 10, 1055 KLONDIKE ROAD

**CC:** MARK BISSETT, JENNIFER LUONG

The following transportation review has been prepared in support of the site plan application for the proposed residential development at Block 10, 1055 Klondike Road in Kanata North (See site location in **Figure 1** and Context Plan in **Figure 2**). A TIA (April 2021, Novatech) was prepared for the Draft Plan of Subdivision and Zoning By-Law Amendment applications for the property and included consideration of 56 low-rise apartment units for this site. The TIA analyzed the Network Impacts and this Memorandum reviews the Design Review Module of the TIA Guidelines only.

**Figure 1: Site Location within the Transportation Network**

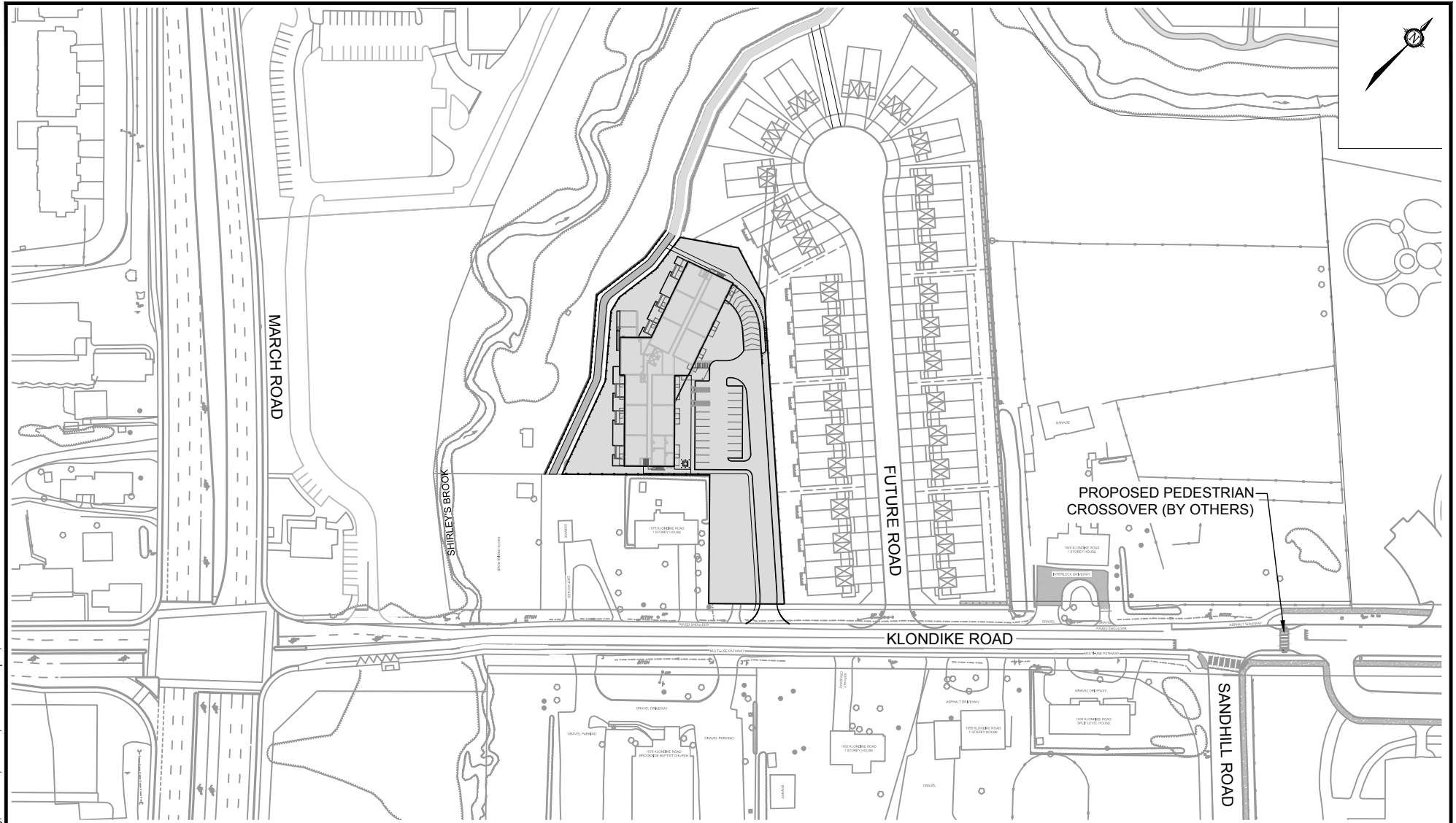


## Proposed Development

The proposed development is 53 apartment units (See Site Plan, **Figure 3**). The proposed development is designated as 'General Urban Area' in Schedule B of the City of Ottawa's Official Plan. The site is zoned 'Development Reserve Zone' (DR). The DR Zone acts as a placeholder to limit permitted uses to those which will not preclude future development options before studies have been completed or approved. The April 2021 zoning application seeks to amend the zoning to 'Residential Fourth Density' (R4), which will accommodate the proposed residential use.

## Existing Roadways

March Road is an arterial roadway that generally runs on a north-south alignment within the study area, running between Dunrobin Road and Highway 417. West of Dunrobin Road, the roadway runs on an east-west alignment until Appleton Sideroad in Almonte, where it continues as Ottawa Street. South of Highway 417, the roadway continues a north-south alignment as Eagleson Road. March Road has a four-lane divided urban cross-section north of Klondike Road and a six-lane divided urban cross-section south of Klondike Road. The posted speed limit is 80 km/h within the study area. Sidewalks are provided on both sides of the roadway. March Road is classified as a truck route, allowing full loads. Street parking is not permitted.

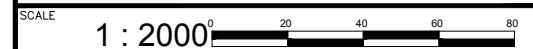


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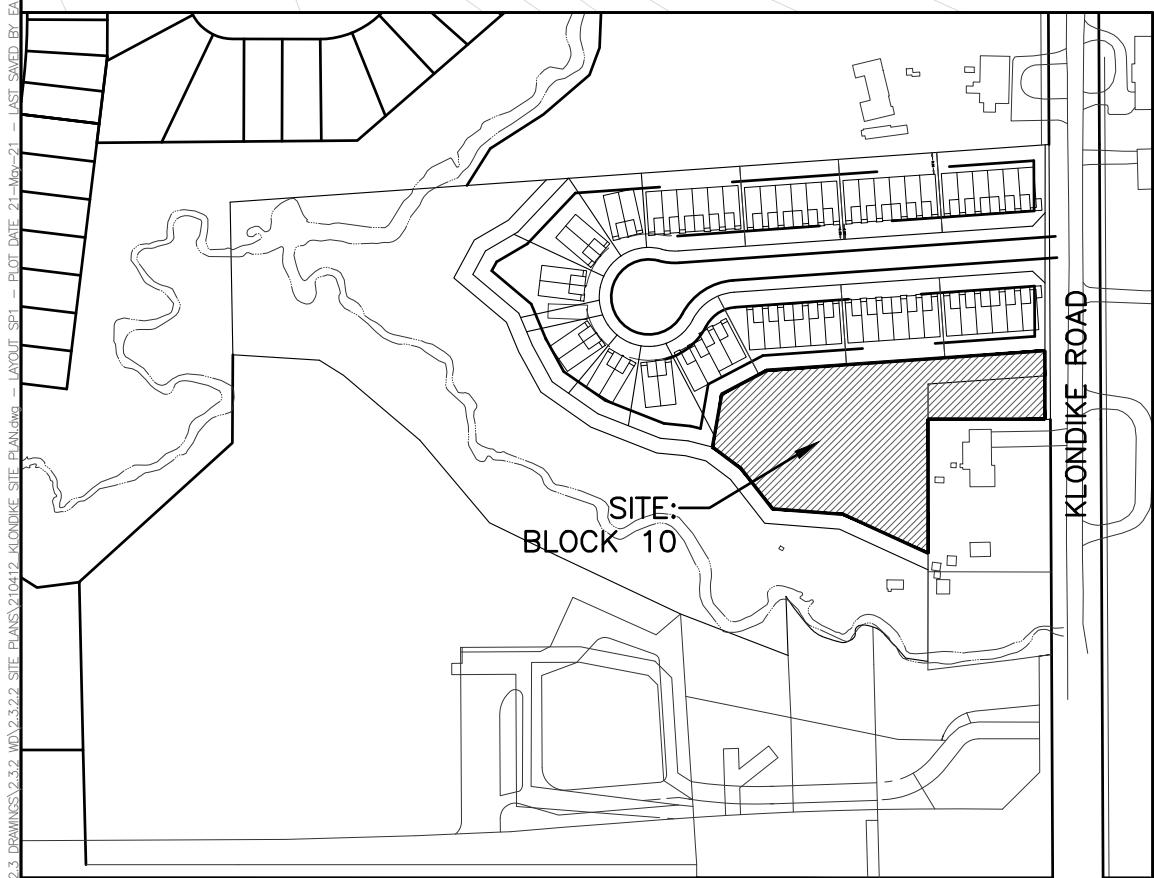
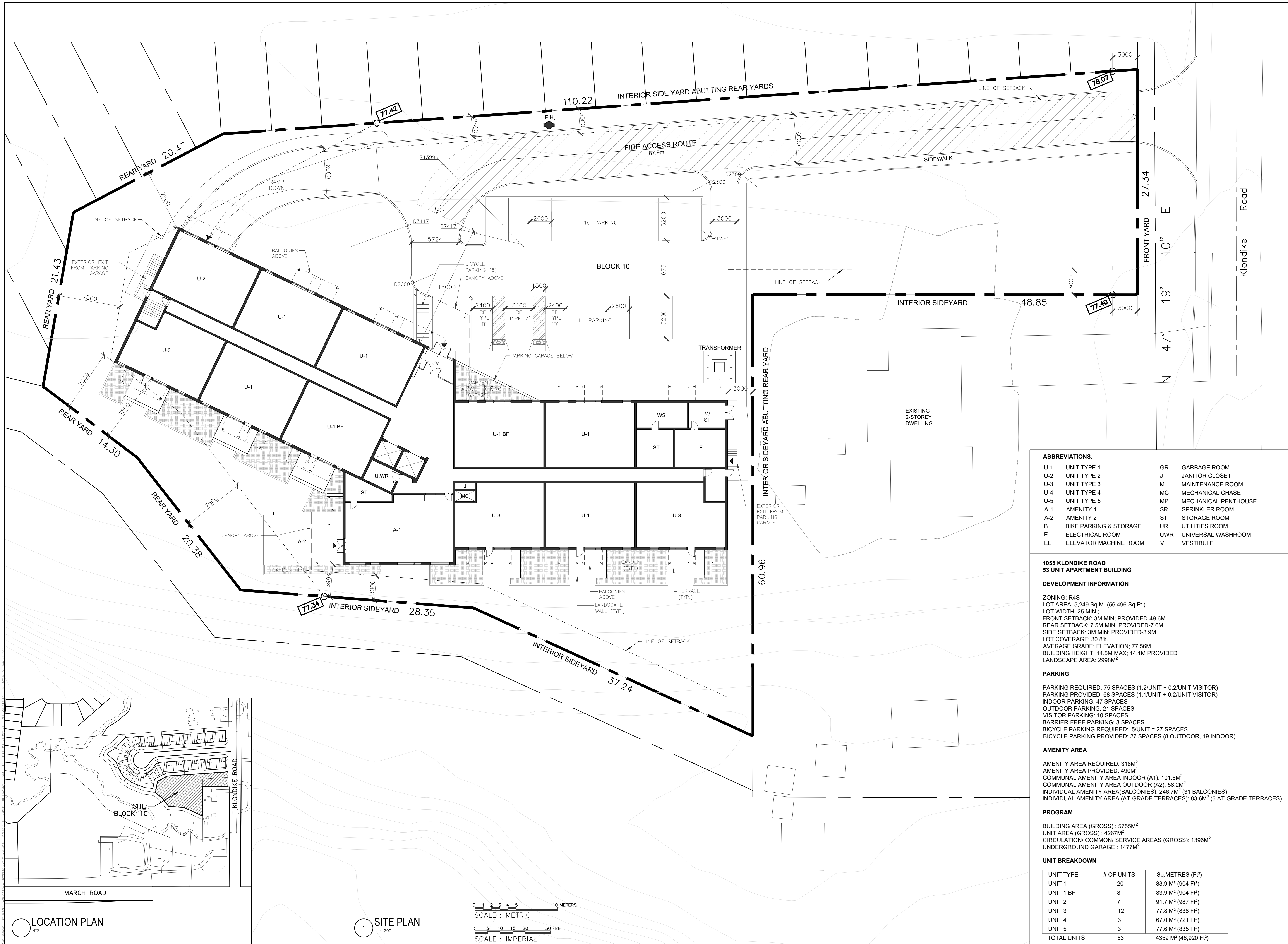
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 Website www.novatech-eng.com

1055 KLONDIKE ROAD  
 BLOCK 10

CONTEXT PLAN

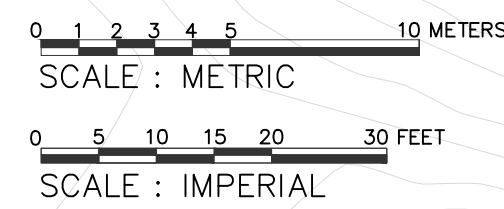


DATE JUNE 2021	JOB 117034	FIGURE FIGURE-2
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LOCATION PLAN  
NTS

1 SITE PLAN  
1 : 200



**GENERAL NOTES**  
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY ERRORS AND OMISSIONS TO THE ARCHITECT. ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS. DO NOT SCALE DRAWINGS. THESE DRAWINGS MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF COLIZZA BRUNI ARCHITECTURE INCORPORATED. COPYRIGHT RESERVED.

NO.	REV DATE	REV DESCRIPTION
1	MAY 21, 2021	ISSUED FOR SITE PLAN CONTROL

**DEVELOPER/OWNER:**  
MAPLE LEAF CUSTOM HOMES  
144 CONSTANCE CREEK DR  
DUNROBIN, ON  
K0A 1T0

**ARCHITECT:**  
COLIZZA BRUNI ARCHITECTURE INC.  
76 CHAMBERLAIN AVE.  
OTTAWA, ON.  
K1S 1V9

**SURVEYOR:**  
ANNIS O'SULLIVAN VOLLEBEKK LTD  
14 CONCOURSE GATE, SUITE 500  
OTTAWA, ON  
K2E 7S6

**CIVIL ENGINEER:**  
NOVATECH ENGINEERING CONSULTANTS  
240 MICHAEL COWPLAND DR.  
KANATA, ON.  
K2M 1P6

**LANDSCAPE ARCHITECT:**  
NOVATECH ENGINEERING CONSULTANTS  
240 MICHAEL COWPLAND DR.  
KANATA, ON.  
K2M 1P6

**PLANNER:**  
Q9 PLANNING + DESIGN  
24 KIRKSTALL AVE,  
NEPEAN, ON.  
K2G3M5

**COLIZZA BRUNI**  
architecture

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PROJECT NAME  
**1055 KLONDIKE ROAD  
53 UNIT APARTMENT  
BUILDING**  
OTTAWA, ON

DRAWING TITLE  
**SITE PLAN**

SCALE  
AS NOTED  
DRAWN BY  
EA  
DATE  
5/21/21  
PROJECT NO.  
02920

DRAWING NO.  
**SP1**

**ABBREVIATIONS:**

U-1	UNIT TYPE 1	GR	GARBAGE ROOM
U-2	UNIT TYPE 2	J	JANITOR CLOSET
U-3	UNIT TYPE 3	M	MAINTENANCE ROOM
U-4	UNIT TYPE 4	MC	MECHANICAL CHASE
U-5	UNIT TYPE 5	MP	MECHANICAL PENTHOUSE
A-1	AMENITY 1	SR	SPRINKLER ROOM
A-2	AMENITY 2	ST	STORAGE ROOM
B	BIKE PARKING & STORAGE	UR	UTILITIES ROOM
E	ELECTRICAL ROOM	UWR	UNIVERSAL WASHROOM
EL	ELEVATOR MACHINE ROOM	V	VESTIBULE

**1055 KLONDIKE ROAD  
53 UNIT APARTMENT BUILDING**

**DEVELOPMENT INFORMATION**  
ZONING: R4S  
LOT AREA: 5,249 Sq.M. (56,496 Sq.Ft.)  
LOT WIDTH: 25 MIN.;  
FRONT SETBACK: 3M MIN; PROVIDED-49.6M  
REAR SETBACK: 7.5M MIN; PROVIDED-7.6M  
SIDE SETBACK: 3M MIN; PROVIDED-3.9M  
LOT COVERAGE: 30.8%  
AVERAGE GRADE: ELEVATION: 77.56M  
BUILDING HEIGHT: 14.5M MAX; 14.1M PROVIDED  
LANDSCAPE AREA: 2998M<sup>2</sup>

**PARKING**  
PARKING REQUIRED: 75 SPACES (1.2/UNIT + 0.2/UNIT VISITOR)  
PARKING PROVIDED: 68 SPACES (1.1/UNIT + 0.2/UNIT VISITOR)  
INDOOR PARKING: 47 SPACES  
OUTDOOR PARKING: 21 SPACES  
VISITOR PARKING: 10 SPACES  
BARRIER-FREE PARKING: 3 SPACES  
BICYCLE PARKING REQUIRED: 5/UNIT = 27 SPACES  
BICYCLE PARKING PROVIDED: 27 SPACES (8 OUTDOOR, 19 INDOOR)

**AMENITY AREA**  
AMENITY AREA REQUIRED: 318M<sup>2</sup>  
AMENITY AREA PROVIDED: 490M<sup>2</sup>  
COMMUNAL AMENITY AREA INDOOR (A1): 101.5M<sup>2</sup>  
COMMUNAL AMENITY AREA OUTDOOR (A2): 58.2M<sup>2</sup>  
INDIVIDUAL AMENITY AREA (BALCONIES): 246.7M<sup>2</sup> (31 BALCONIES)  
INDIVIDUAL AMENITY AREA (AT-GRADE TERRACES): 83.6M<sup>2</sup> (6 AT-GRADE TERRACES)

**PROGRAM**  
BUILDING AREA (GROSS) : 5755M<sup>2</sup>  
UNIT AREA (GROSS) : 4267M<sup>2</sup>  
CIRCULATION/ COMMON/ SERVICE AREAS (GROSS): 1396M<sup>2</sup>  
UNDERGROUND GARAGE : 1477M<sup>2</sup>

**UNIT BREAKDOWN**

UNIT TYPE	# OF UNITS	Sq.METRES (Ft <sup>2</sup> )
UNIT 1	20	83.9 M <sup>2</sup> (904 F <sup>2</sup> )
UNIT 1 BF	8	83.9 M <sup>2</sup> (904 F <sup>2</sup> )
UNIT 2	7	91.7 M <sup>2</sup> (987 F <sup>2</sup> )
UNIT 3	12	77.8 M <sup>2</sup> (838 F <sup>2</sup> )
UNIT 4	3	67.0 M <sup>2</sup> (721 F <sup>2</sup> )
UNIT 5	3	77.6 M <sup>2</sup> (835 F <sup>2</sup> )
TOTAL UNITS	53	4359 M <sup>2</sup> (46,920 F <sup>2</sup> )

Klondike Road is a collector roadway that runs on an east-west alignment between Old Second Line Road and March Valley Road. Klondike Road has a two-lane rural cross-section between March Road and Sandhill Road (fronting the site) and a two-lane urban cross-section west of March Road as well as between Sandhill Road and the former rail line. The posted speed limit is 50 km/h within the study area, and the roadway is not classified as a truck route. Street parking is not permitted. The right-of-way (ROW) at the subject site is approximately 21m. A ROW protection of 24m is identified in the City's Official Plan for Klondike Road and a widening is required.

### **Pedestrian and Cycling Facilities**

Concrete sidewalks are provided on both sides of March Road, Klondike Road west of March Road and Klondike Road between Sandhill Road and the former rail line.

A bidirectional multi-use pathway (MUP) is provided on the south side of Klondike Road between March Road and Sandhill Road, while a paved shoulder is provided on the north side. On-street bike lanes are provided in both directions on March Road.

In the City of Ottawa's primary cycling network, March Road is classified as a Spine Route. Klondike Road is classified as a Local Route. A north-south future pathway is planned along the Shirley's Brook corridor with a crossing at Klondike Road east of March Road.

### **Existing Transit**

The nearest bus stops to the subject site are as follows:

#### Klondike/March

- Stop #1492 – for routes 165, 660, and 674 (located at the southeast corner)
- Stop #6953 – for route 660 (located at the northeast corner)

#### Klondike/Sandhill

- Stop #1490 – for routes 165, 660, and 674 (located at the southeast corner)
- Stop #6589 – for routes 660 and 674 (located at the northeast corner)

#### Klondike/Marconi

- Stop #9050 – for routes 266, 660, and 674 (located at the southeast corner)
- Stop #9051 – for route 63, 165, 266, 660, and 674 (located at the southwest corner)

Route #63 travels between Tunney's Pasture Station and Innovation Station on 15-minute headways during peak periods, seven days per week with all-day service.

Route #165 travels between Innovation Station and Terry Fox Station on 60-minute headways, Monday to Friday during selected time periods.

Route #266 travels between Tunney's Pasture Station and Maxwell Bridge on 15-minute headways, Monday to Friday during peak periods and in the peak direction only.

Route #660 is a school route and travels between Bell High School and Innovation Station. Route #674 is a school route and travels between All Saints High School and Innovation Station.

## Development Design

The design overview is summarized below.

- Pedestrian facilities will be provided between the building and the parking lot. A sidewalk will be provided along the west side of the driveway, providing pedestrian connectivity between the site and Klondike Road.
- Cyclist access to the site will be accommodated through shared use lanes at the vehicular accesses. The bicycle parking spaces will be within the parking structure (19 bicycle parking spaces) and outdoor (8 spaces).
- The fire route is indicated on the site plan. A turnaround is not required since the dead end is less than 90m.
- The site will have private garbage collection with storage in the underground parking level.
- Figures showing heavy vehicle turning paths for a fire truck and a garbage truck are shown in **Appendix A**.
- Walking distances from the building's main entrance to transit stops at Klondike / March and Klondike / Sandhill are less than 400m, providing access to routes #165, #660, and #674.
- The connection from the driveway to the parking lot is about 5.7m, less than the minimum 6m for two-way traffic. This will be refined in a subsequent submission.
- A review of the Transportation Demand Management (TDM) – *Supportive Development Design and Infrastructure Checklist* has been conducted. A copy of the TDM checklist is included in **Appendix B**. All required TDM-supportive design and infrastructure measures in the TDM checklist are met.

## Parking

The subject site is within Area C on Schedule 1 and 1A of the City of Ottawa's ZBL. Minimum vehicular and bicycle parking are identified in the ZBL and summarized in **Table 1**.

**Table 1: Vehicular and Bicycle Parking Requirements and Provisions**

Land Use	Rate	Units	Requirement	Provided
<b>Vehicle Parking</b>				
Low-rise apartment	1.2 / dwelling unit (resident); and, 0.2 / dwelling unit (visitor)	53 dwelling units	75	68
<b>Bicycle Parking</b>				
Low-rise apartment	0.5 / dwelling unit	53 dwelling units	27	27

The bicycle parking provided for the proposed development meets the minimum requirements of the ZBL. The provided vehicle parking is about 90% of the ZBL requirement. A minor variance is required for the vehicular parking.

## Boundary Streets

A review of the MMLOS along Klondike Road was completed for the April 2021 TIA and found:

- The pedestrian level of service (PLOS) of Klondike Road does not meet the target PLOS A;
- The bicycle level of service (BLOS) and vehicular level of service (Auto LOS) of Klondike Road surpass the target BLOS B and Auto LOS E.

Klondike Road achieves a PLOS C on the south side and a PLOS F on the north side. A paved shoulder is provided on the north side of Klondike Road. Per Exhibit 4 of the MMLOS guidelines, a PLOS A can be achieved by providing either:

- a. A minimum sidewalk width of 1.8m and a minimum sidewalk boulevard width of 2.0m, or;
- b. A minimum sidewalk width of 2.0m and a minimum sidewalk boulevard width of 0.5m.

Along Klondike Road between March Road and Sandhill Road, the paved shoulder (north side) and bidirectional MUP (south side) were recently implemented by the City and City staff has confirmed that these features comprise the urbanization of Klondike Road as described in the 2013 Affordable Road Network, and no further modifications are planned.

A 2.0m-wide concrete sidewalk with a boulevard width of approximately 2.9m is proposed along the frontage of the subject site. This sidewalk will connect to the existing asphalt shoulder east and west of the site and would achieve the PLOS target A along the north side.

A Type D pedestrian crossover is planned at the east approach of Klondike Road/Sandhill Road, as there is a clear pedestrian desire line between Brookshire Park and South March Public School, and there are no opportunities for pedestrians to legally cross Klondike Road between March Road and Marconi Avenue (a 550m spacing).

### **Access Intersections Design**

The site will be accessed via a driveway to Klondike Road west of the future Street No. 1/Klondike Road intersection for the subdivision. The location of the access has been reviewed against the requirements from the City's *Private Approach By-Law* and the corner clearance, clear throat, and sightline requirements from the TAC *Geometric Design Guide for Canadian Roads*. The review of these requirements is included in this section.

- Section 25 (a) of the *Private Approach By-Law* identifies that a maximum of one 2-way driveway may be permitted for the site's 27m of frontage. The one driveway will meet this requirement.
- Section 25 (o) of the *Private Approach By-Law* identifies a minimum separation requirement of 6m between a private approach and the nearest intersecting street line. Figure 8.8.2 of the TAC *Geometric Design Guide* suggests a minimum corner clearance of 20m between the driveway and future Street No. 1. The distance between the nearest edge of the driveway and the nearest edge of Street No. 1 (about 39m) will meet the requirements.
- Section 25 (p) of the *Private Approach By-Law* identifies a minimum separation requirement of 3m between a private approach and the adjacent property line, as measured at the street line. The driveway is 2.7m from the east property line and 18.6m from the west property line. A waiver is required.
- The site connection is 6m wide measured at the property line. This meets the minimum requirement under Section 107 of the *Zoning By-Law*.
- Tables 9.9.4 and 9.9.6 of the TAC *Geometric Design Guide* identify minimum stopping sight distance (SSD) and intersection sight distance (ISD) requirements, based on the roadway grade and design speed (60km/h, taken as the speed limit plus 10km/h). The sight distance requirements and the available sight distances are included in **Table 2**.
- The Transportation Association of Canada (TAC) outlines minimum clear throat lengths for driveways based on the land use, development size, and type of roadway. For this site, the clear throat requirement for a two-way driveway to a collector is 8m. About 48m of clear throat is provided, exceeding the requirement.

**Table 2: Sight Distance Review**

Sight Distance	Requirement	Available
SSD, Eastbound	80m	> 200m
SSD, Westbound	85m	130m
ISD, Looking Left	110m	160m
ISD, Looking Right	130m	> 200m

**Transportation Demand Management**

A review of the Transportation Demand Management (TDM) Measures Checklist was conducted, and can be found in **Appendix B**.

The following measures will be implemented for the development:

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

**Conclusions**

Development Design and Parking

- Pedestrian facilities will be provided between the building and the parking lot. A sidewalk will be constructed along the west side of the driveway, providing pedestrian connectivity between the site and Klondike Road.
- Cyclist access to the site will be accommodated through shared use lanes at the vehicular accesses.
- The provided bicycle parking meets the minimum requirements of the ZBL. The vehicular parking does not meet the minimum requirements of the ZBL and a minor variance is required.
- Heavy vehicle turning paths for a fire truck and a garbage truck are accommodated.
- The connection from the driveway to the parking lot is about 5.7m, less than the minimum 6m for two-way traffic. This will be refined in a subsequent submission.
- Walking distances from the building’s main entrance to existing transit stops at Klondike / March and Klondike / Sandhill are less than 400m.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.

Boundary Streets

A review of the MMLOS along Klondike Road indicated:

- The pedestrian level of service (PLOS) of Klondike Road does not meet the target PLOS A;
- The bicycle level of service (BLOS) and vehicular level of service (Auto LOS) of Klondike Road surpass the target BLOS B and Auto LOS E.

A 2.0m-wide concrete sidewalk with a 2.9m boulevard is proposed along the frontage of the site and a Type D pedestrian crossover (PXO) is planned at the east approach of Klondike Road/Sandhill Road.

Access Design

- A maximum of one two-way driveway may be permitted for the site’s 27m of frontage. The one driveway will meet this requirement.

- The distance between the nearest edge of the driveway and the nearest edge of future Street No. 1 (about 39m) will meet the requirements of the City's *Private Approach By-Law* (6m) and the TAC *Geometric Design Guide* (20m).
- The driveway is 2.7m from the east property line and 18.6m from the west property line. A waiver is required since the distance to the east property line is less than the 3m requirement of the *Private Approach By-Law*.
- There is sufficient stopping sight distance and intersection sight distance at the proposed access location.
- The site driveway has about 48m of clear throat, exceeding the 8m requirement.

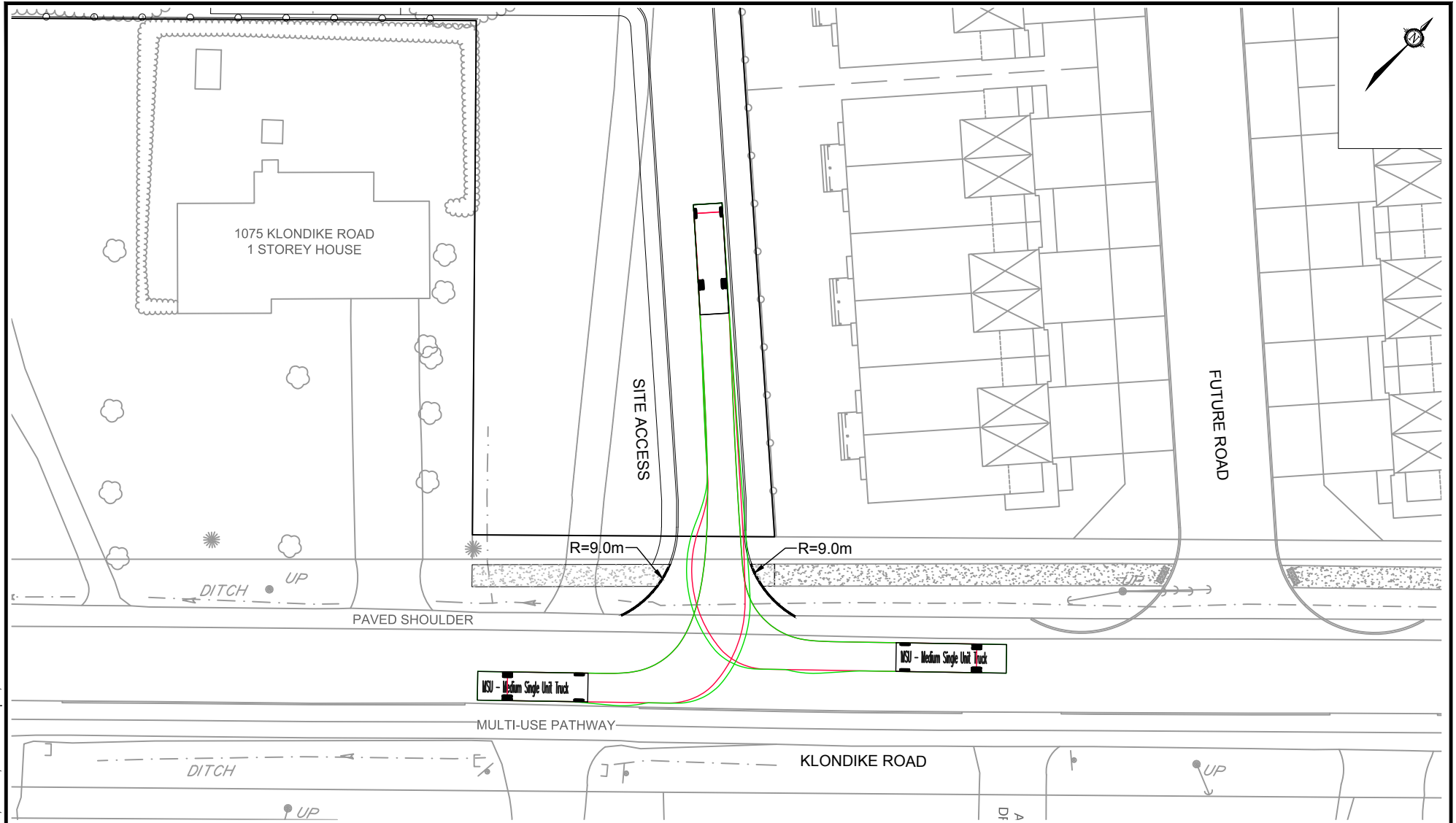
#### Transportation Demand Management

- The following TDM measures will be implemented:
  - Display local area maps with walking/cycling routes and key destinations;
  - Display relevant transit schedules and route maps; and,
  - Provide multimodal travel option information packages to new residents.

## **APPENDIX A**

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### Turning Movement Diagrams

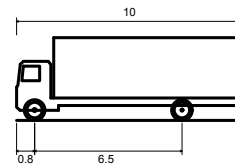


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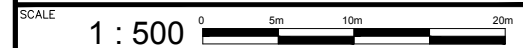


MSU - Medium Single Unit Truck

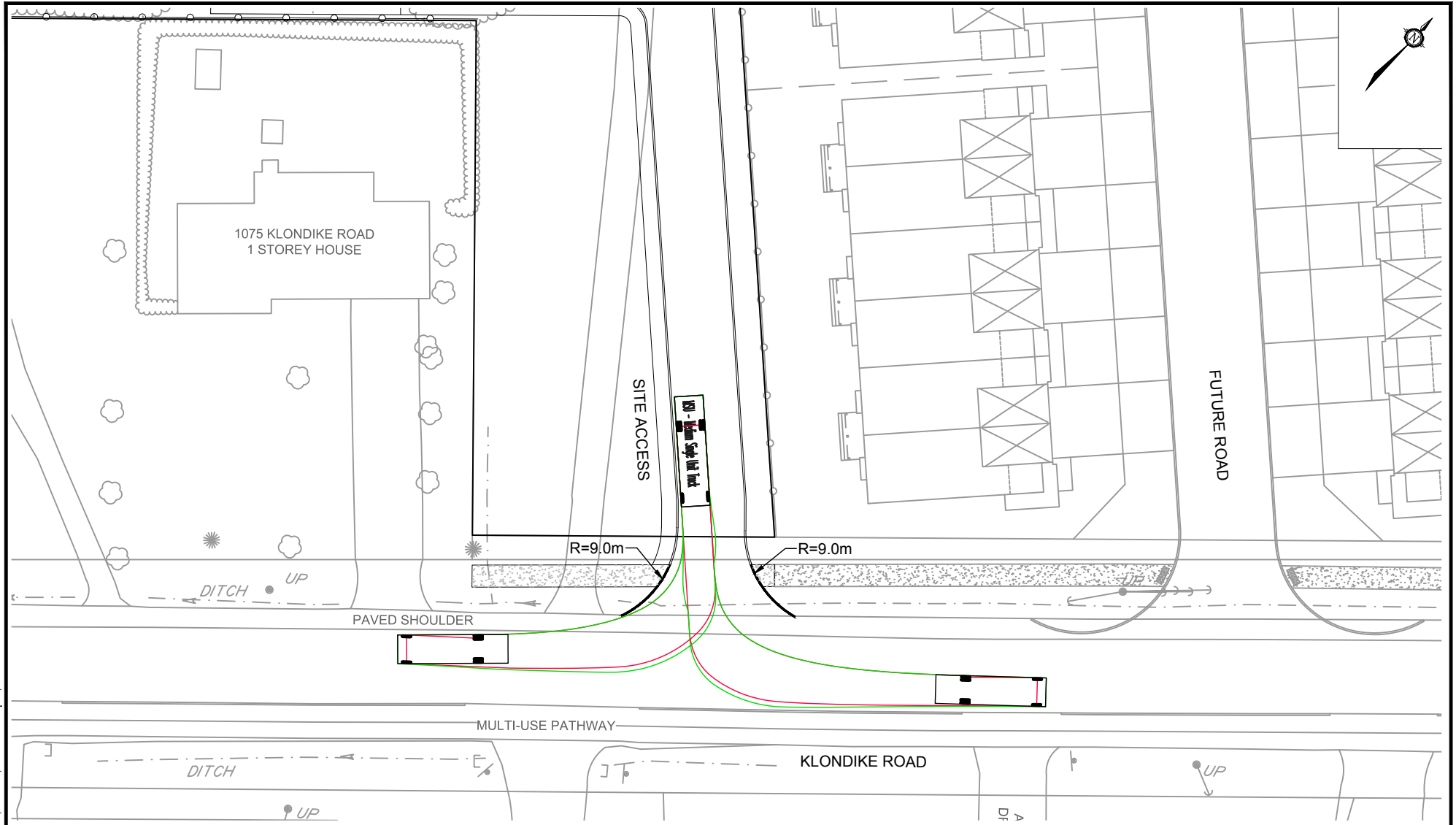
Overall Length	10.000m
Overall Width	2.600m
Overall Body Height	3.650m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.100m

## 1055 KLONDIKE ROAD BLOCK 10

### TURNING MOVEMENT (MSU)



DATE JUNE 2021	JOB 117034	FIGURE TM-1
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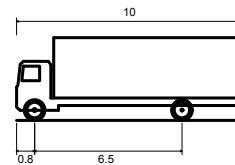


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MSU - Medium Single Unit Truck

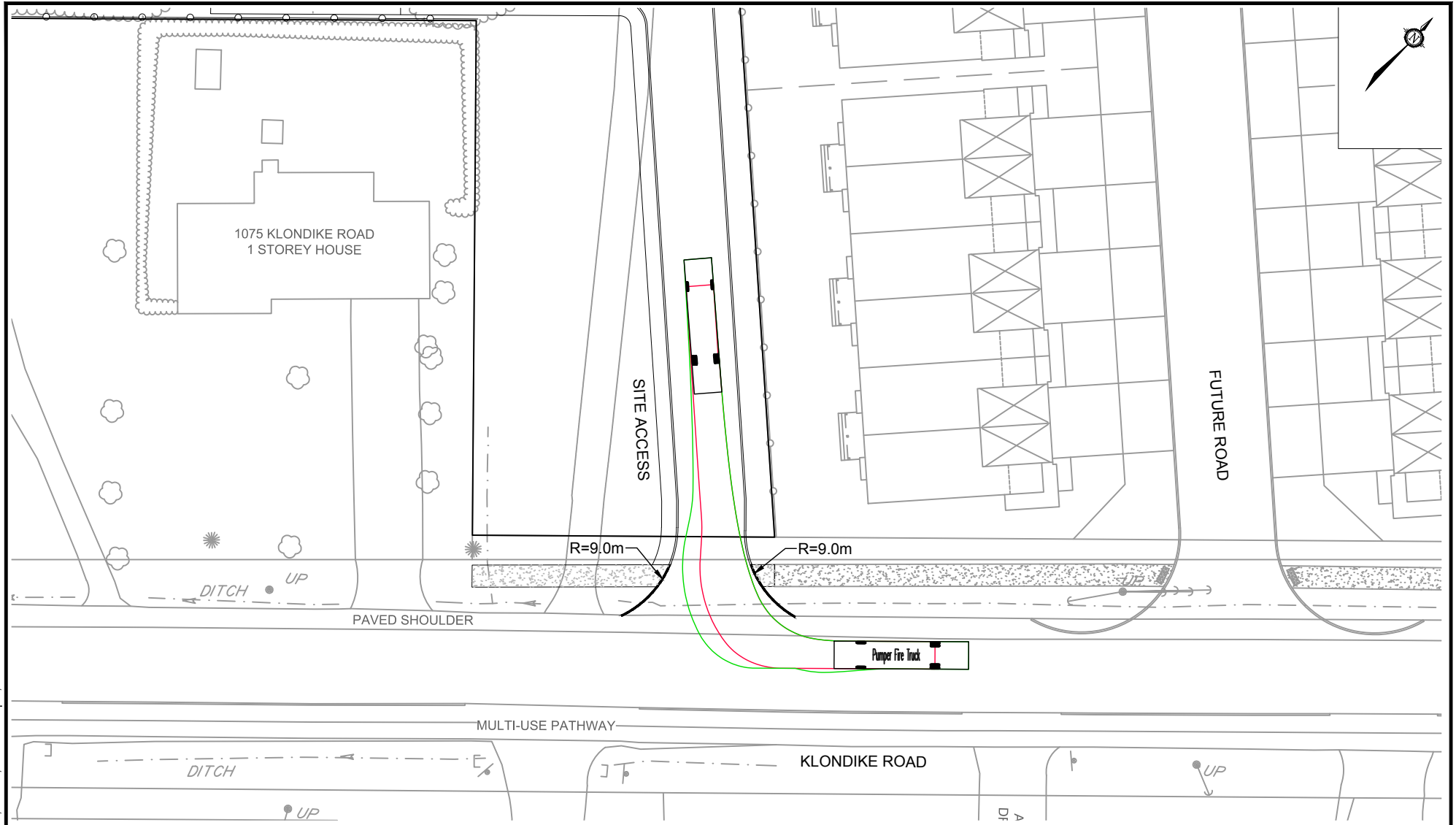
Overall Length	10.000m
Overall Width	2.600m
Overall Body Height	3.650m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.100m

## 1055 KLONDIKE ROAD BLOCK 10

### TURNING MOVEMENT (MSU)

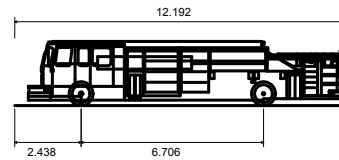


DATE JUNE 2021	JOB 117034	FIGURE TM-2
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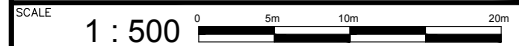


**Pumper Fire Truck**

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°

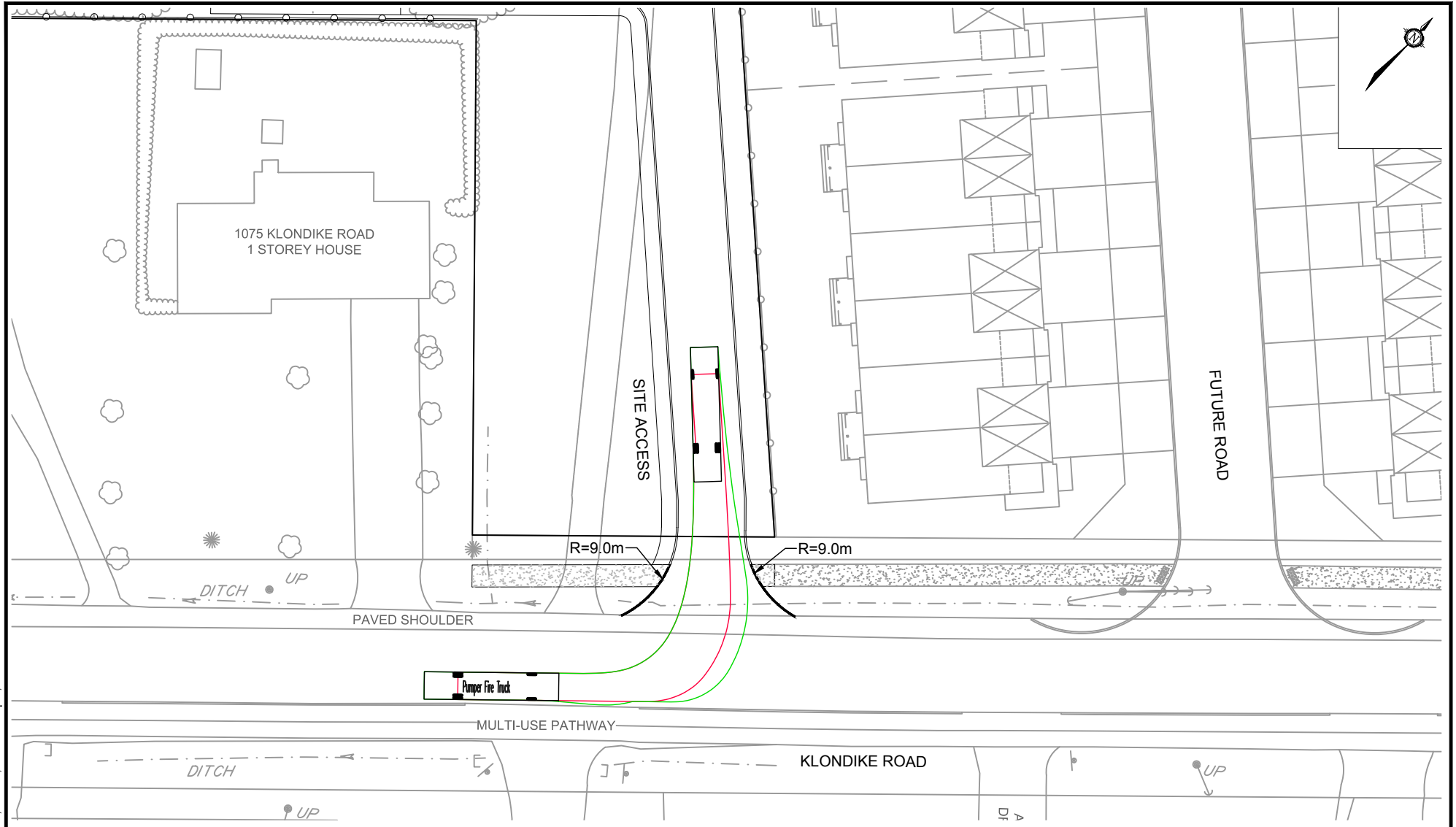
**1055 KLONDIKE ROAD  
 BLOCK 10**

**TURNING MOVEMENT  
 (FIRE TRUCK)**



DATE <b>JUNE 2021</b>	JOB <b>117034</b>	FIGURE <b>TM-3</b>
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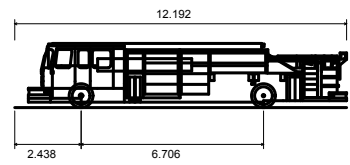


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**Pumper Fire Truck**

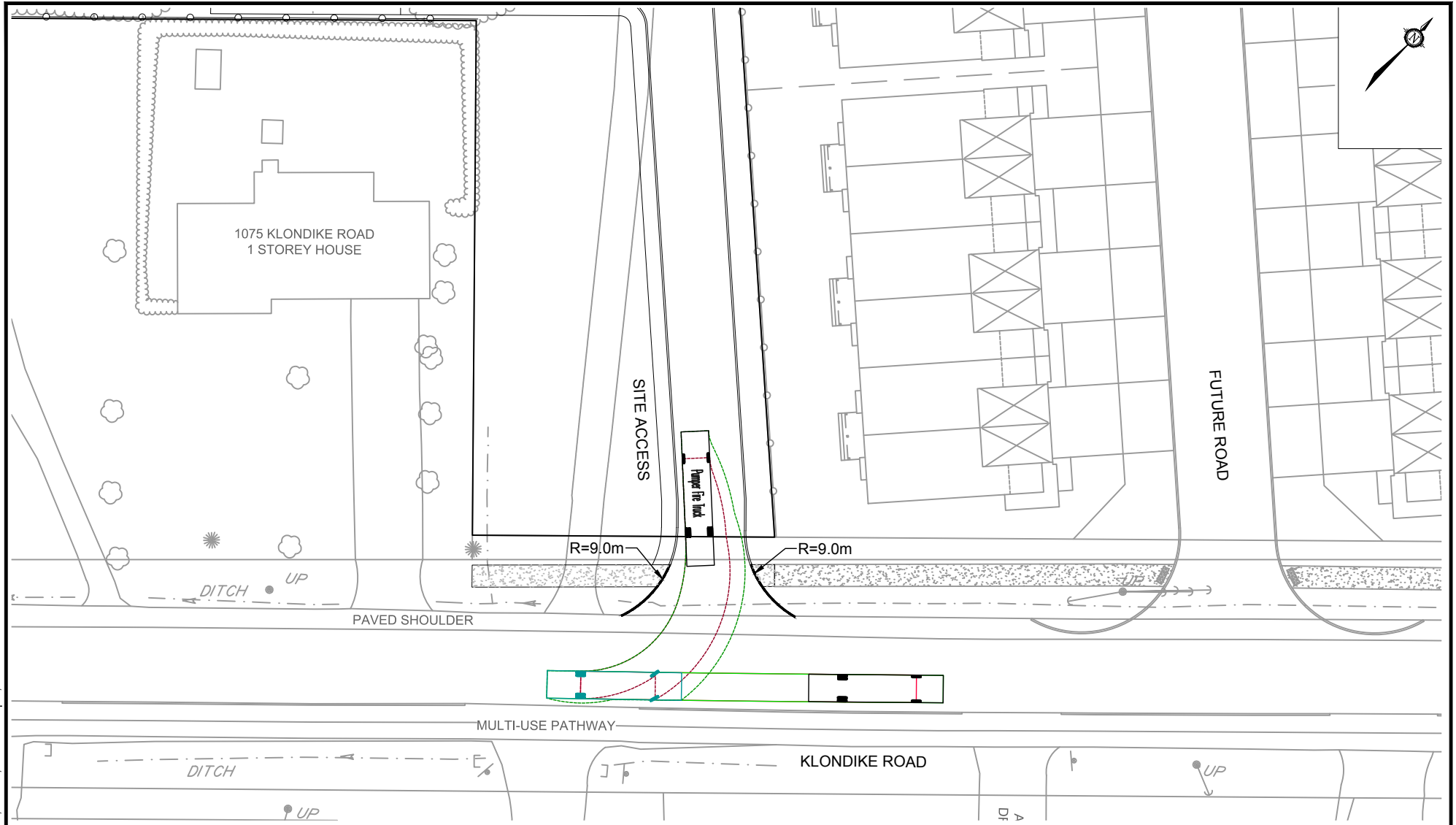
Overall Length	12.192m
Overall Width	2.489m
Overall Body Height	2.361m
Min Body Ground Clearance	0.200m
Track Width	2.489m
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

## 1055 KLONDIKE ROAD BLOCK 10

### TURNING MOVEMENT (FIRE TRUCK)

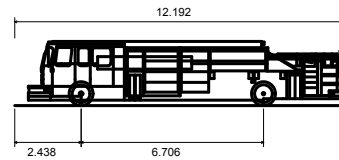


DATE <b>JUNE 2021</b>	JOB <b>117034</b>	FIGURE <b>TM-4</b>
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**Pumper Fire Truck**

Overall Length	12.192m
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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°

**1055 KLONDIKE ROAD  
 BLOCK 10**

**TURNING MOVEMENT  
 (FIRE TRUCK)**

SCALE 1 : 500

DATE <b>JUNE 2021</b>	JOB <b>117034</b>	FIGURE <b>TM-5</b>
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## **APPENDIX B**

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Transportation Demand Management

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

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

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>1. WALKING &amp; CYCLING: ROUTES</b>		
<b>1.1 Building location &amp; access points</b>		
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	✓
<b>1.2 Facilities for walking &amp; cycling</b>		
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 ( <i>see Official Plan policy 4.3.3</i> )	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 ( <i>see Official Plan policy 4.3.12</i> )	✓

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		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 ( <i>see Official Plan policy 4.3.10</i> )	✓
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 ( <i>see Official Plan policy 4.3.10</i> )	✓
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 ( <i>see Official Plan policy 4.3.11</i> )	N/A
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	
<b>1.3 Amenities for walking &amp; cycling</b>		
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: <i>Residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>2. WALKING &amp; CYCLING: END-OF-TRIP FACILITIES</b>		
<b>2.1 Bicycle parking</b>		
REQUIRED	2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see <i>Official Plan policy 4.3.6</i> )	✓
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 <i>Zoning By-law Section 111</i> )	✓
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 <i>Zoning By-law Section 111</i> )	✓
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	
<b>2.2 Secure bicycle parking</b>		
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 <i>Zoning By-law Section 111</i> )	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	
<b>2.3 Bicycle repair station</b>		
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)	
<b>3. TRANSIT</b>		
<b>3.1 Customer amenities</b>		
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: <i>Residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>4. RIDESHARING</b>		
<b>4.1 Pick-up &amp; drop-off facilities</b>		
<b>BASIC</b>	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	
<b>5. CARSHARING &amp; BIKESHARING</b>		
<b>5.1 Carshare parking spaces</b>		
<b>BETTER</b>	5.1.1 Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses ( <i>see Zoning By-law Section 94</i> )	
<b>5.2 Bikeshare station location</b>		
<b>BETTER</b>	5.2.1 Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	
<b>6. PARKING</b>		
<b>6.1 Number of parking spaces</b>		
<b>REQUIRED</b>	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	✓ Variance is being sought
<b>BASIC</b>	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	
<b>BASIC</b>	6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly ( <i>see Zoning By-law Section 104</i> )	
<b>BETTER</b>	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 ( <i>see Zoning By-law Section 111</i> )	
<b>6.2 Separate long-term &amp; short-term parking areas</b>		
<b>BETTER</b>	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)*

<b>Legend</b>	
<b>BASIC</b>	The measure is generally feasible and effective, and in most cases would benefit the development and its users
<b>BETTER</b>	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

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

TDM measures: <i>Residential developments</i>		Check if proposed & add descriptions
<b>3. TRANSIT</b>		
<b>3.1 Transit information</b>		
BASIC	3.1.1 Display relevant transit schedules and route maps at entrances ( <i>multi-family, condominium</i> )	✓
BETTER	3.1.2 Provide real-time arrival information display at entrances ( <i>multi-family, condominium</i> )	
<b>3.2 Transit fare incentives</b>		
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	
<b>3.3 Enhanced public transit service</b>		
BETTER ★	3.3.1 Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels ( <i>subdivision</i> )	
<b>3.4 Private transit service</b>		
BETTER	3.4.1 Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	
<b>4. CARSHARING &amp; BIKESHARING</b>		
<b>4.1 Bikeshare stations &amp; memberships</b>		
BETTER	4.1.1 Contract with provider to install on-site bikeshare station ( <i>multi-family</i> )	
BETTER	4.1.2 Provide residents with bikeshare memberships, either free or subsidized ( <i>multi-family</i> )	
<b>4.2 Carshare vehicles &amp; memberships</b>		
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	
<b>5. PARKING</b>		
<b>5.1 Priced parking</b>		
BASIC ★	5.1.1 Unbundle parking cost from purchase price ( <i>condominium</i> )	
BASIC ★	5.1.2 Unbundle parking cost from monthly rent ( <i>multi-family</i> )	

TDM measures: <i>Residential developments</i>		Check if proposed & add descriptions
<b>6. TDM MARKETING &amp; COMMUNICATIONS</b>		
<b>6.1 Multimodal travel information</b>		
<b>BASIC</b> ★	6.1.1 Provide a multimodal travel option information package to new residents	✓
<b>6.2 Personalized trip planning</b>		
<b>BETTER</b> ★	6.2.1 Offer personalized trip planning to new residents	