

MEMORANDUM

DATE	June 2, 2021
TO	City of Mississauga Fire Services
CC	David Breveglieri, Development Planner, City of Mississauga Lakeview Community Partners Ltd. Glen Schnarr & Associates Inc.
SUBJECT	Lakeview Community – Review of Fire Truck Circulation with 12.0m Curb Radius
FROM	The Municipal Infrastructure Group (TMIG)
PROJECT NUMBER	17201

As requested by the City of Mississauga Fire Services, TMIG created an alternative road network scenario in which the Lakeview Community internal intersections curb radii were increased to 12.0m with pavement widths (measured from curb to curb) of 6.7m for internal roadways included in the transit route and 6.6m for the remaining roadways.

The alternative Lakeview Village Composite Plan has been included in **Appendix A** and shows the new intersection dimensions. Note that the recently submitted Transportation Considerations Report (TCR) Addendum, dated April 2021, traffic analysis did not identify the need for left-turn lanes on Street A and have subsequently been removed from the Composite Plan. Additionally, due to the skewed orientation of select roadways (intersection angles less than 90 degrees), the 12.0m curb radius was not implemented at the following locations:

- Northwest quadrant of the Street A at Street F intersection – designed with a 9.0m curb radius.
- Northwest quadrant of the Street C at Street F intersection – designed with an 8.0m curb radius.
- Northwest quadrant of the Street C at Street H intersection – designed with an 8.0m curb radius.
- Northwest quadrant of the Street D at Street H intersection – designed with an 8.0m curb radius.

Per the City of Mississauga Fire Services comments, TMIG completed an updated review of the Fire Truck circulation along the study intersections to assess if the above changes would accommodate the turning movements. The detailed dimensions of the vehicle, as well as the turning template, were included in **Appendix B**. Note that the vehicle circulation was simulated using AutoTURN assuming a 10km/h traveling speed.

The updated fire truck circulation through the study intersections has been illustrated in **Appendix C**. As shown in the figures, a City of Mississauga platform fire truck can circulate through the intersections with no projected conflict. Accordingly, TMIG does not project any design constraints should the Lakeview Community intersections be modified to accommodate a 12.0m curb radius (where applicable) and pavement width of 6.7m for internal roadways included in the transit route and 6.6m for the remaining roadways.

We hope that the contents of this memorandum provide a satisfactory response to your inquiries. Should you have any questions, please do not hesitate to contact the undersigned.

Thank you,

THE MUNICIPAL INFRASTRUCTURE GROUP LTD. A T.Y. LIN INTERNATIONAL COMPANY



Michael Dowdall, C.E.T., MITE, Director, Development Traffic | mdowdall@tmig.ca

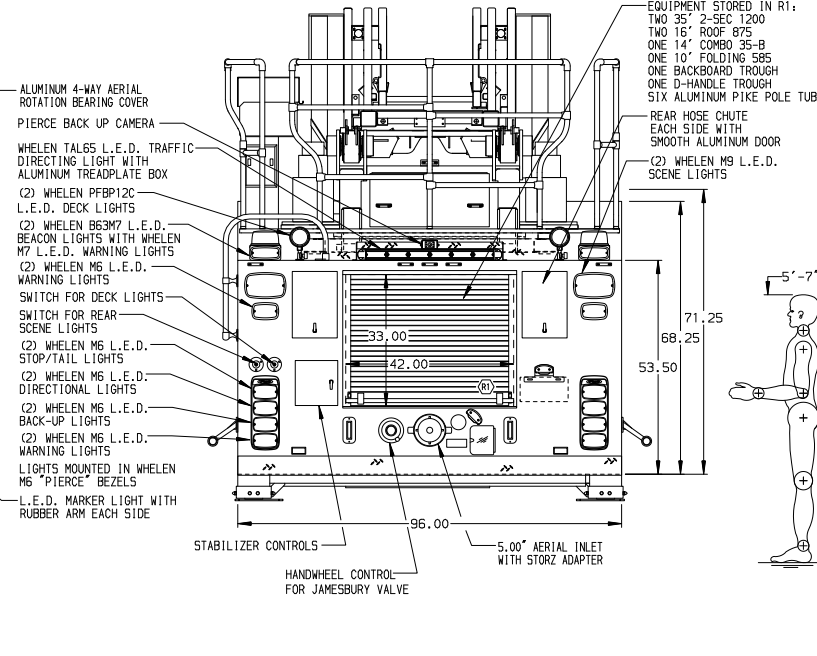
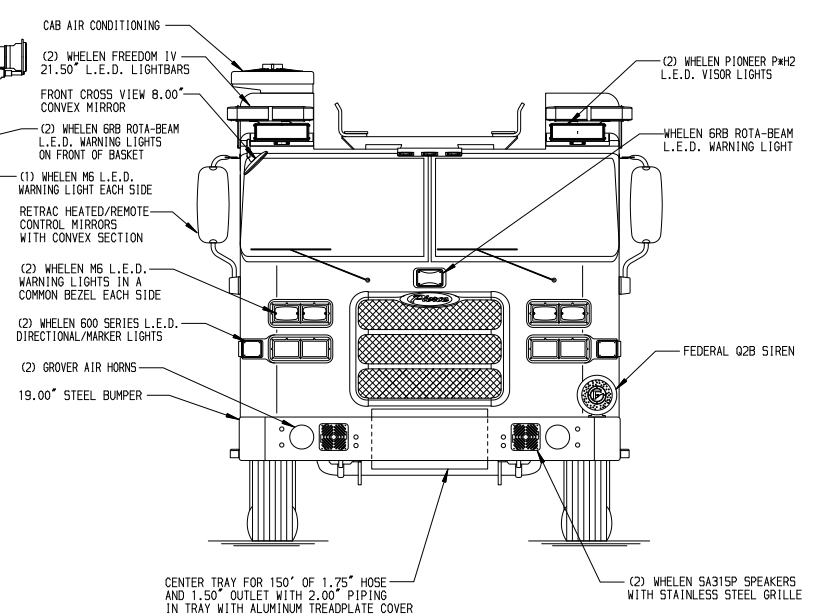
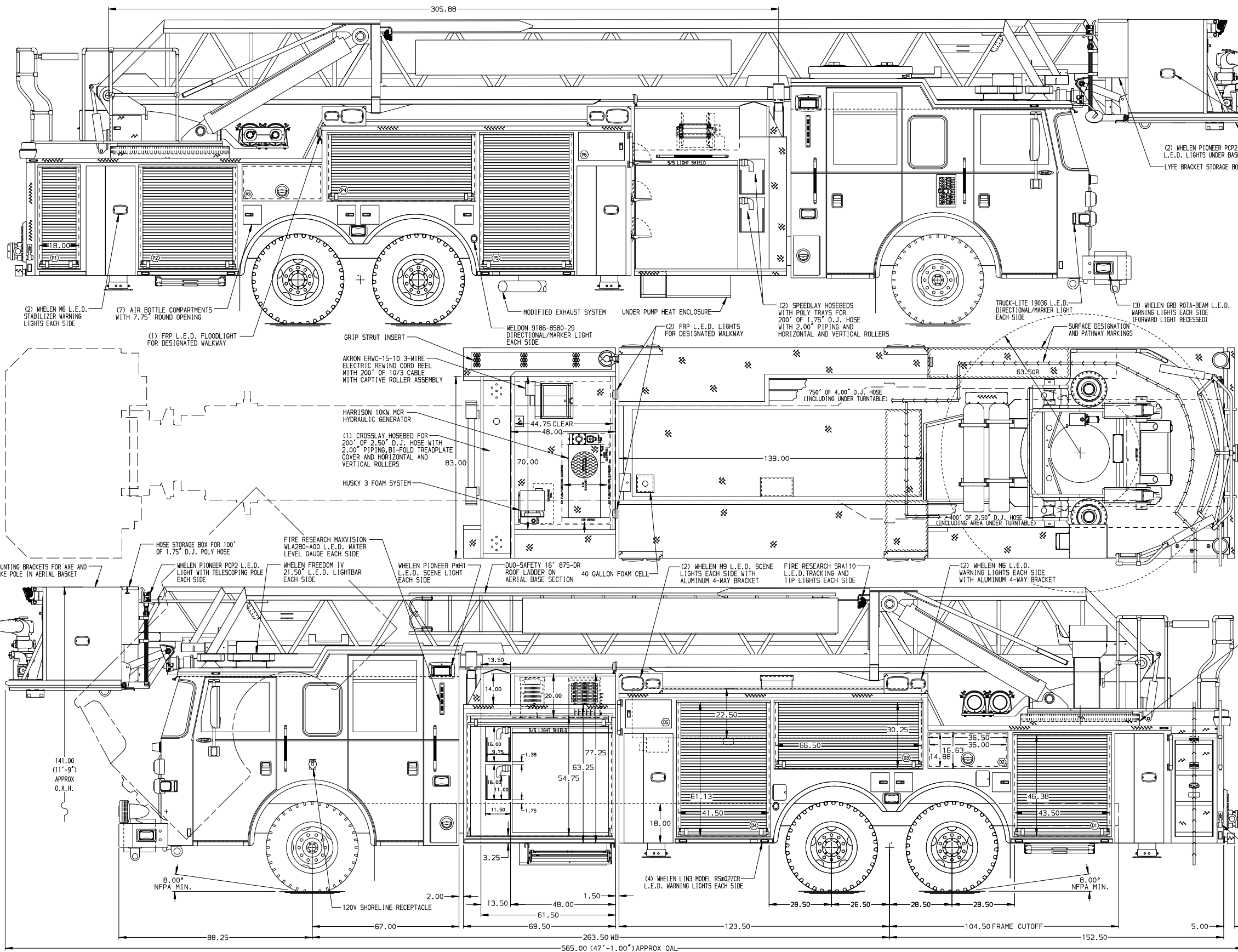
Appendix A – 12-metre Curb Radius Alternative Composite Plan
Appendix B – City of Mississauga Platform Fire Truck Specification
Appendix C – Platform Fire Truck Vehicle Movement Diagrams

APPENDIX A

12-metre Radius Alternative Composite Plan

APPENDIX B

City of Mississauga Platform Fire Truck Specifications



ALUMINUM BODY MAXIMUM O.A.H. 142.00" SIDE ROLL AND FRONTAL IMPACT PROTECTION

NOTE
 DIMENSIONS SHOWN ARE APPROXIMATE AND ARE SUBJECT TO MINOR DEVIATIONS AS MAY OCCUR OR BE NECESSARY IN CONSTRUCTION. MINOR DETAILS NOT SHOWN.

- VOGEL LUBE SYSTEM PUMP LOCATED PER SHOP ORDER
- BATTERY CHARGER MOUNTED BEHIND PASSENGER'S SIDE SEAT
- ONE FLOOR MOUNTED SLIDE-OUT TRAY/STORAGE MODULE IN COMPARTMENT D4
- S/STL DRIP PAN/GUARD FOR ROLL-UP DOORS D1, D3, D4, P1, P2, P4, P5
- ONE SLIDE-OUT TOOL BOARD WITH PEGBOARD PATTERN IN COMPARTMENT D1
- ONE ADJUSTABLE FULL WIDTH/FULL DEPTH SHELF IN COMPARTMENTS D3, P2, P4, P2, TWO IN D1, P1, THREE IN P5
- ONE FLOOR MOUNTED SLIDE-OUT TRAY IN COMPARTMENTS D1, P2
- ALUMINUM PEGBOARD WITH TRACKS ON THE BACK WALL OF COMPARTMENTS D1, D2, D3, P1, P2, P3, P4, P5
- ONE CERAMIC ELECTRIC HEATER IN COMPARTMENT P5
- CIRCUIT BREAKER PANEL IN COMPARTMENT D5

- L.E.D. LIGHTING ON AERIAL LADDER SECTIONS
- 120V POWER TO AERIAL BASKET
- 9-WAY INTERCOM SYSTEM BETWEEN PLATFORM, PUMP PANEL & TURNTABLE
- BREATHING AIR TO AERIAL BASKET
- 3-in-1 LIFECOMBO BRACKETS AT AERIAL BASKET
- WORDEN HUG-SB SUPER GRIPPER WHEEL CHOCKS WITH CTF MOUNTING BRACKETS
- JUMPER STUDS AT DRIVER SIDE CAB STEP
- TWO SEMI-CIRCULAR HANGERS MOUNTED TO PEGBOARD IN COMPARTMENT D4
- ONE ZICO AIR BOTTLE HOLDER IN COMPARTMENT D4
- NO LIMITED RETRACTION

21. BATTERY CHARGE INDICATOR LOCATED NEAR DRIVER'S SEAT RISER WITH BRACKET

REV	DATE	BY	CH	ARROW-XT
16AUG18	SHU	JJR		CHASSIS DATA
10AUG18	SHU	JJR		MAKE
04JUN18	SHU	JJR		PIERCE
05APR18	SHU	JBL		MODEL

		JOB NO.	32514
		SCALE	1:24
MANUFACTURING INC.		TITLE	100 AERIAL PLATFORM & BODY ASSEMBLY (PAP100A)
		FOR	440 GALLON TANK, 400 GALLONS WATER/40 GALLONS FOAM
		CHECKED BY	GRM
		DATE	28MAR18
		DWG NO.	32514AD
		SHEET NO.	1 OF 1

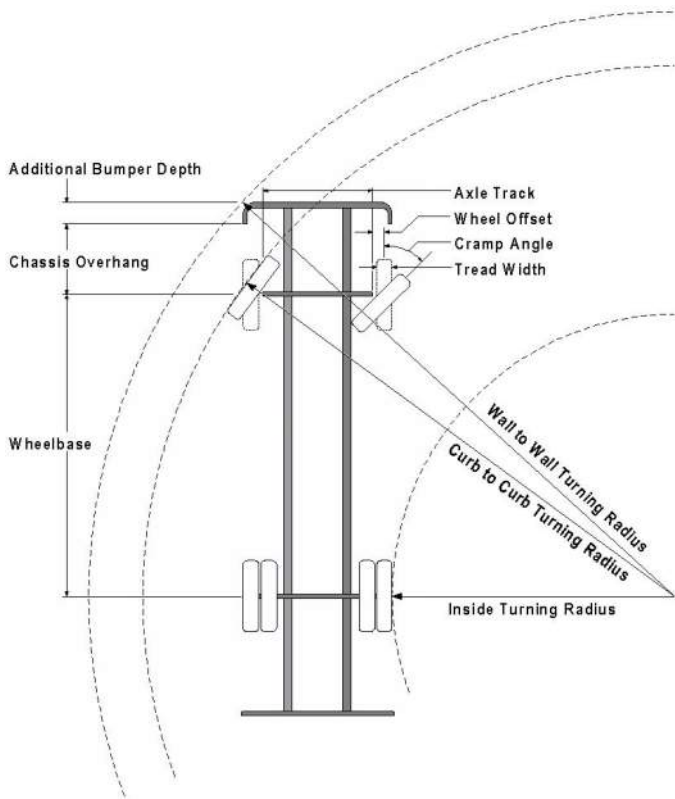


Turning Performance Analysis

03/26/2021

Bid Number: 690
Department: Mississauga Fire and Emergency Services

Chassis: Arrow XT Chassis, PAP
Body: Aerial, Platform 100', Alum Body



Parameters:

*Inside Cramp Angle:	42°
Axle Track:	81.92 in.
Wheel Offset:	5.3 in.
Tread Width:	17.7 in.
Chassis Overhang:	68.99 in.
Additional Bumper Depth:	19 in.
Front Overhang:	140.1 in.
Wheelbase:	263.5 in.

Calculated Turning Radii:

Inside Turn:	23 ft. 2 in.
Curb to curb:	39 ft. 4 in.
Wall to wall:	46 ft. 8 in.

Comments:

100' PAP

Category	Option	Description
Axle, Front, Custom	0642639	Axle, Front, Dana, D2200, 23,000 lb (425 Tires)
Wheels, Front	0765767	Wheels, Front, Alcoa, 22.50" x 13.00", Aluminum, Hub Pilot, Black Powder Coat
Tires, Front	0677684	Tires, Front, Michelin, XFE (wb), 425/65R22.50, 20 ply, Fire Service Load Rating
Bumpers	0606443	Bumper, 19" Extended, Steel Painted, Arrow XT
Aerial Devices	0784643	Aerial, 100' Pierce Platform, 35 MPH Wind Rating, 400lb Tip Load Allowance

Notes:

*Actual Inside cramp angle may be less than shown.

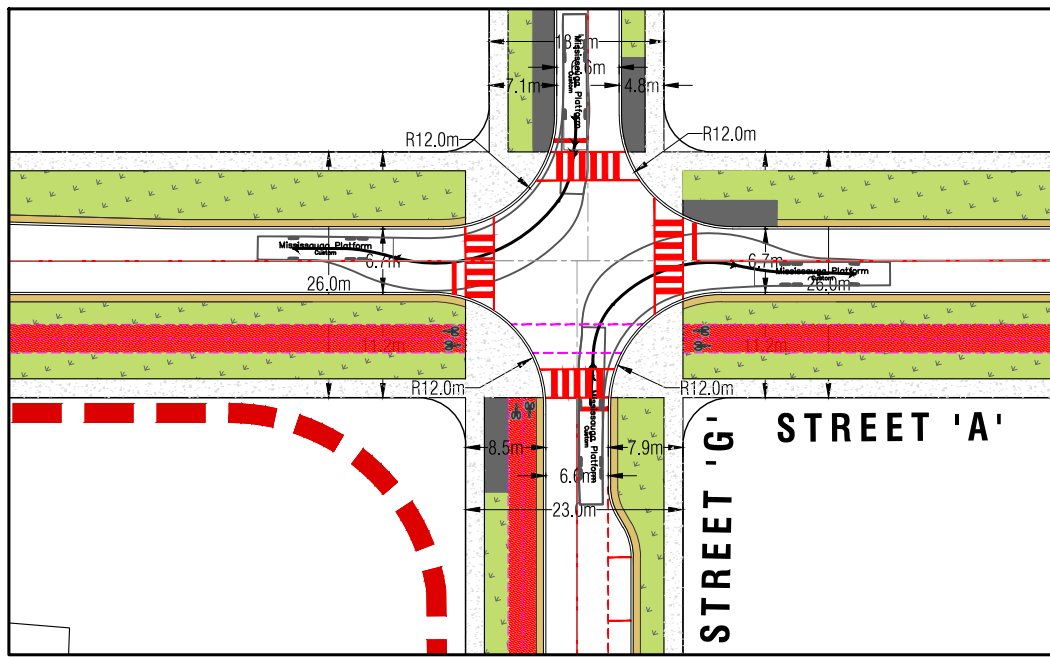
Curb to Curb turning radius calculated for 9.00 inch curb.

Definitions:

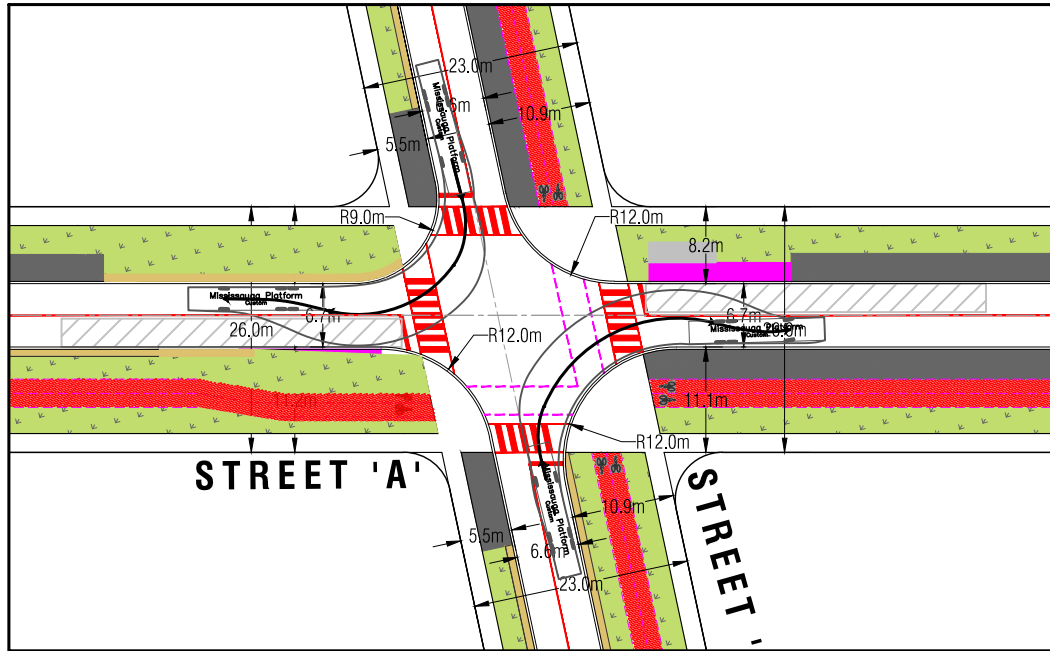
Inside CrampAngle	Maximum turning angle of the front inside fire.
Axle Track	King-pin to King-pin distance of front axle.
Wheel Offset	Offset from the center line of the wheel to the King-pin.
Tread Width	Width of the tire tread.
Chassis Overhang	Distance of the center line of the front axle to the front edge of the cab. This does not include the bumper depth.
Additional Bumper Wheel	Depth that the bumper assembly adds to the front overhang.
Wheelbase	Distance between the center lines of the vehicles front and rear axles.
Inside Turning Radius	Radius of the smallest circle around which the vehicle can turn.
Curb to Curb Turning Radius	Radius of the smallest circle around which the vehicle's tires can turn. This measures assumes a curb height of 9 inches.
Wall to Wall Turning Radius	Radius of the smallest circle around which the vehicle's tires can turn. This measures takes into account any front overhang due to chassis , bumper extensions and or aerial devices.

APPENDIX C

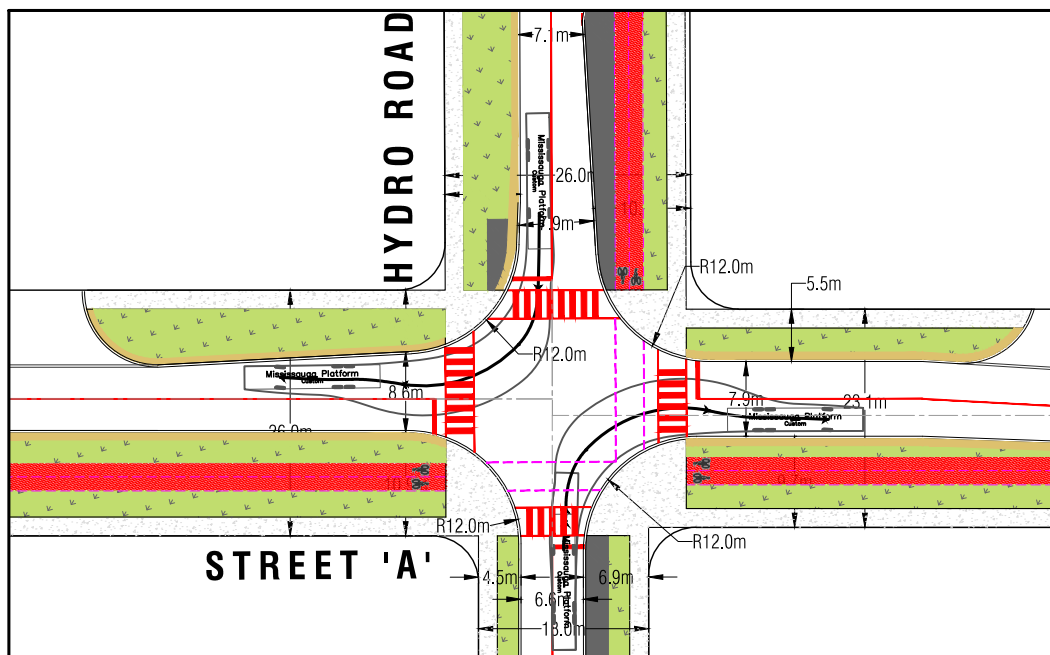
Platform Fire Truck Vehicle Movement Diagrams



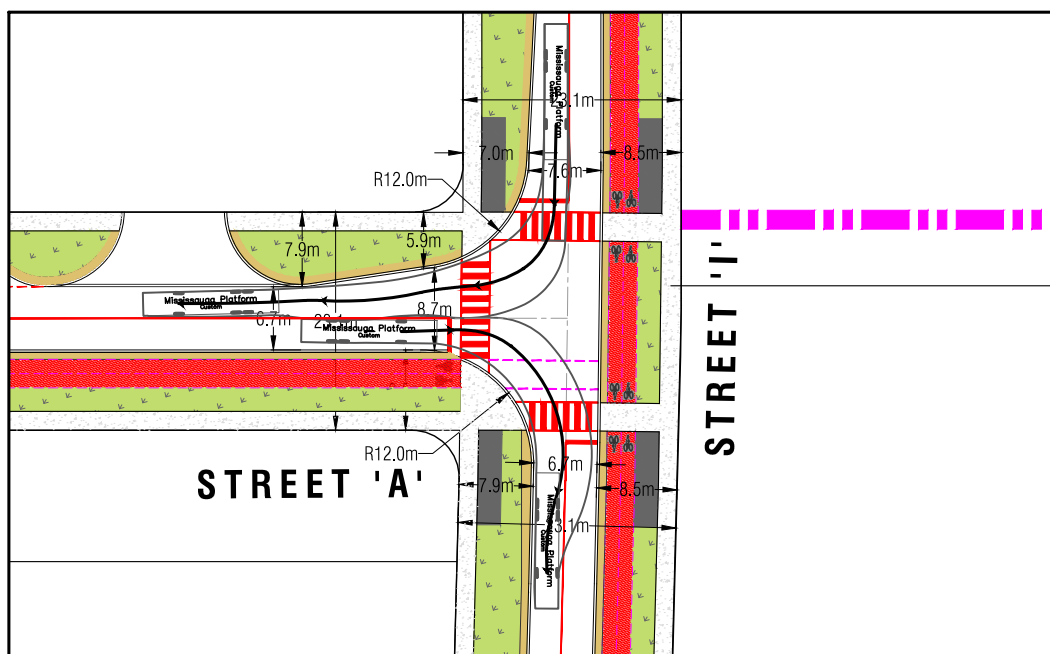
STREET 'A' & STREET 'G' INTERSECTION



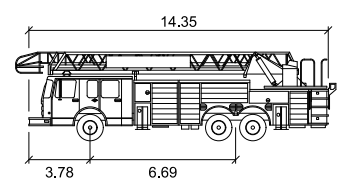
STREET 'A' & STREET 'F' INTERSECTION



STREET 'A' & HYDRO ROAD INTERSECTION



STREET 'A' & STREET 'I' INTERSECTION



Mississauga Platform	
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 37.4

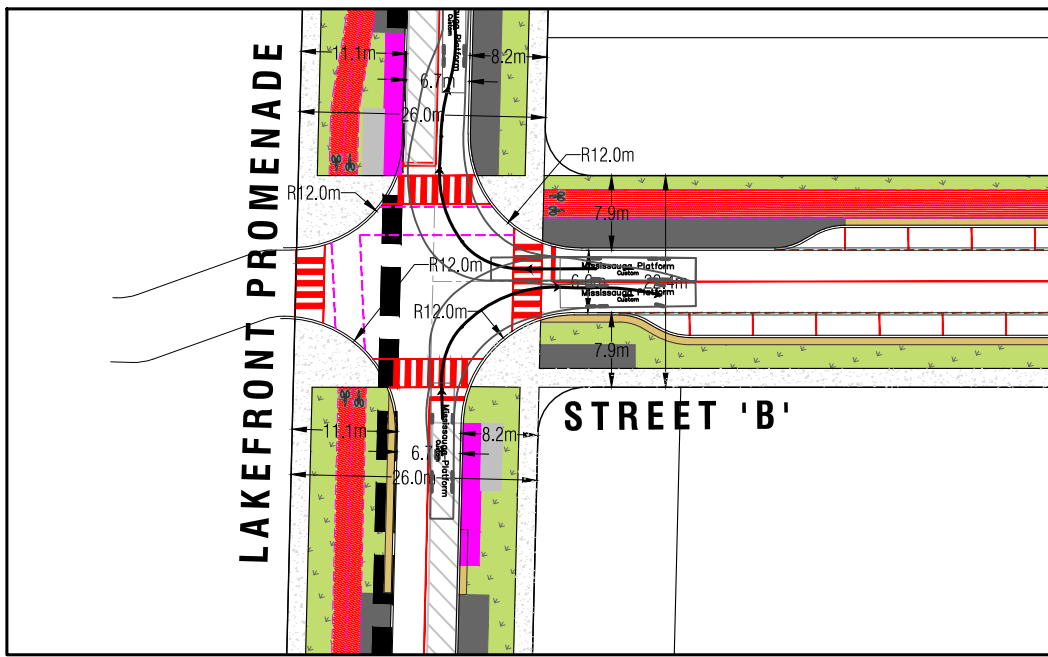


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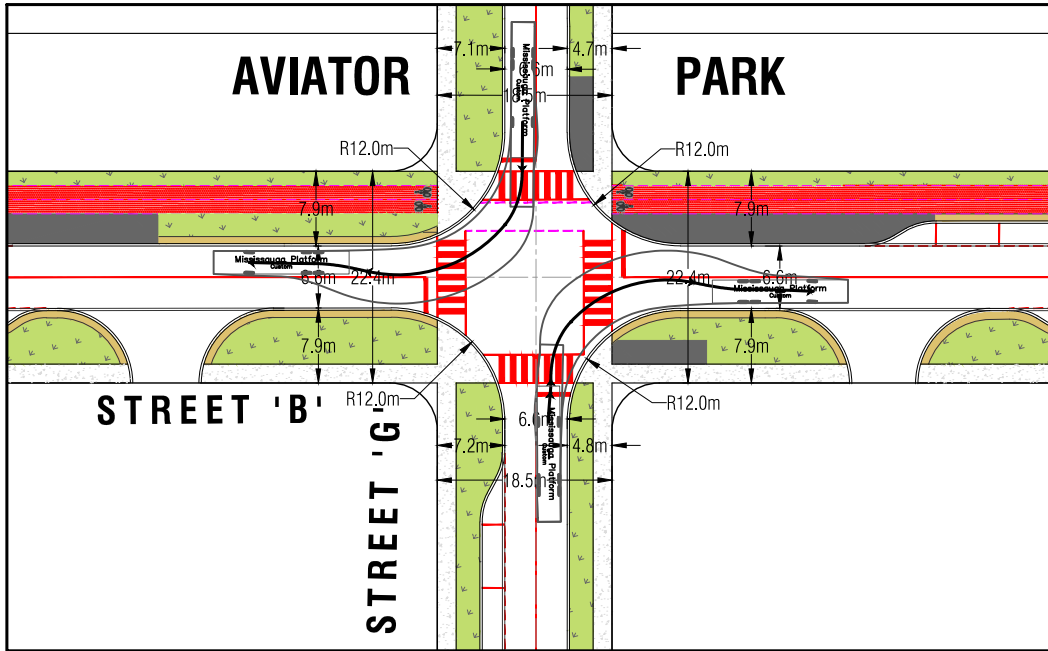
LAKEVIEW VILLAGE VEHICLE MOVEMENT DIAGRAMS
MISSISSAUGA FIRE PLATFORM TRUCK

SCALE: 1 : 800	PROJECT No. 17201
DATE: APRIL 2021	FIGURE No. VMD-1
DESIGNED BY: S.V.	DRAWN BY: S.V.
CHECKED BY: M.D.	CHECKED BY: M.D.

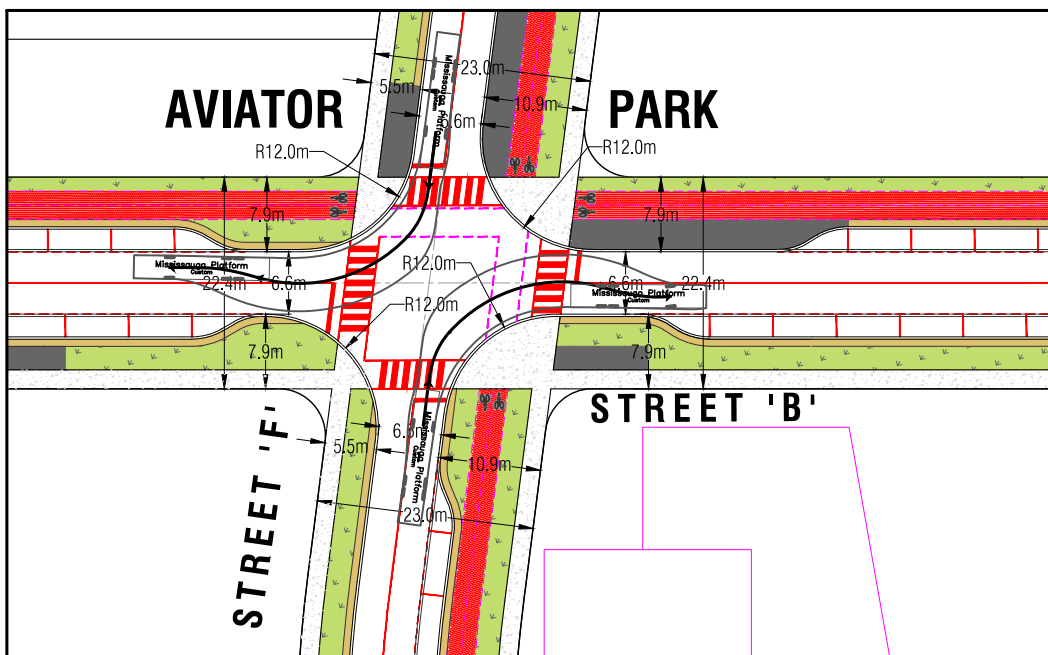
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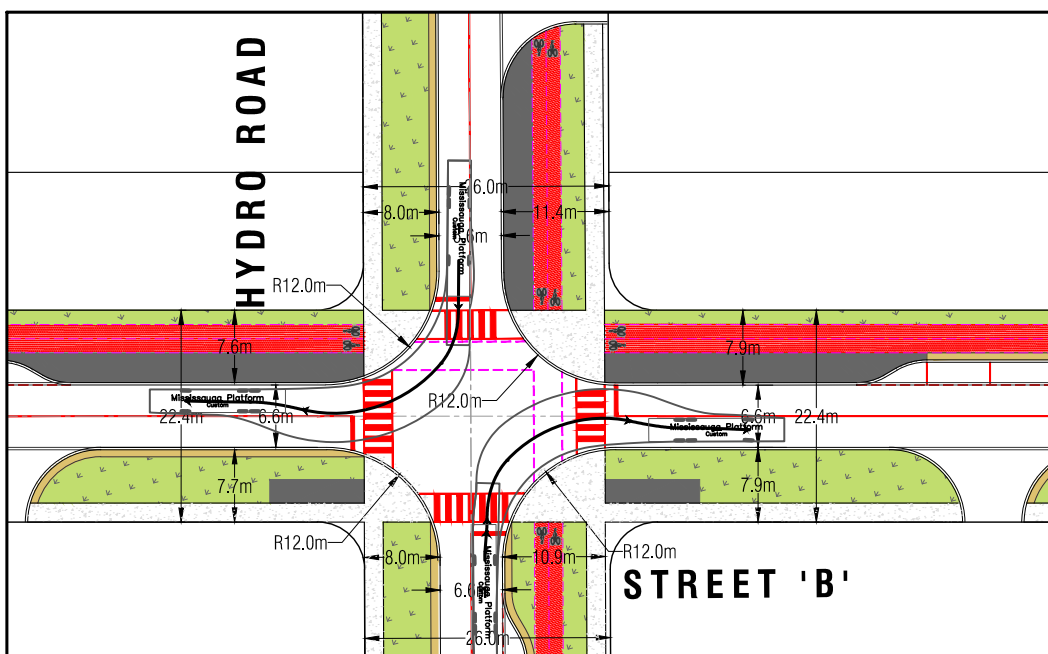
STREET 'B' & LAKEFRONT PROMENADE INTERSECTION



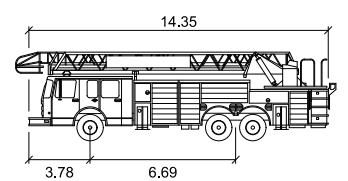
STREET 'B' & STREET 'G' INTERSECTION



STREET 'B' & STREET 'F' INTERSECTION



STREET 'B' & HYDRO ROAD INTERSECTION



Mississauga Platform	
Width	: 2.44 meters
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 37.4

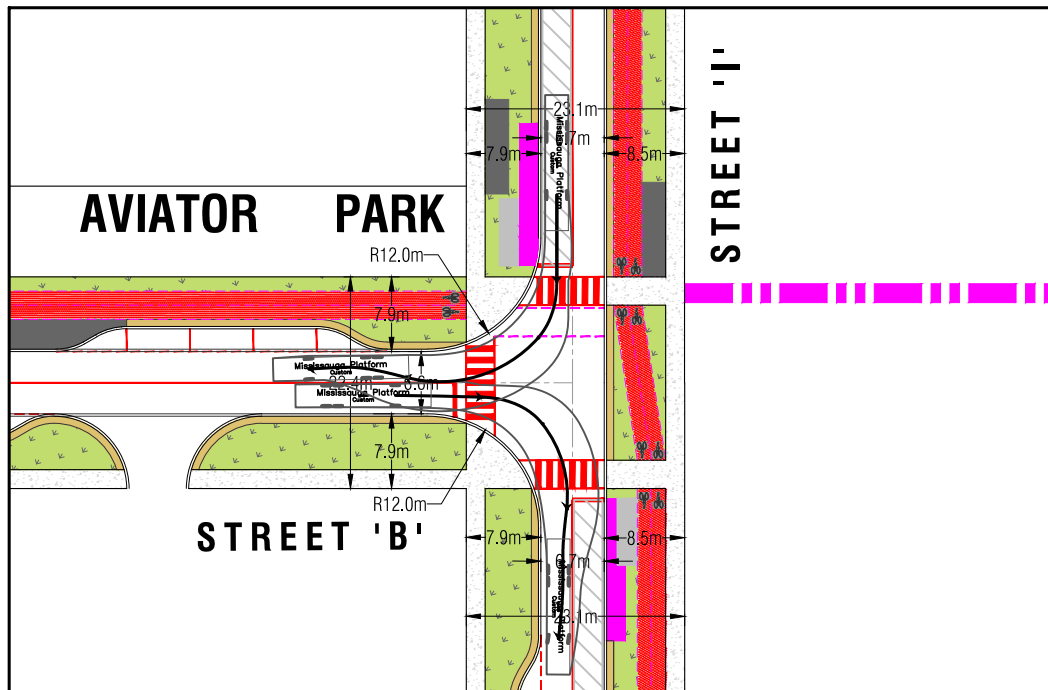


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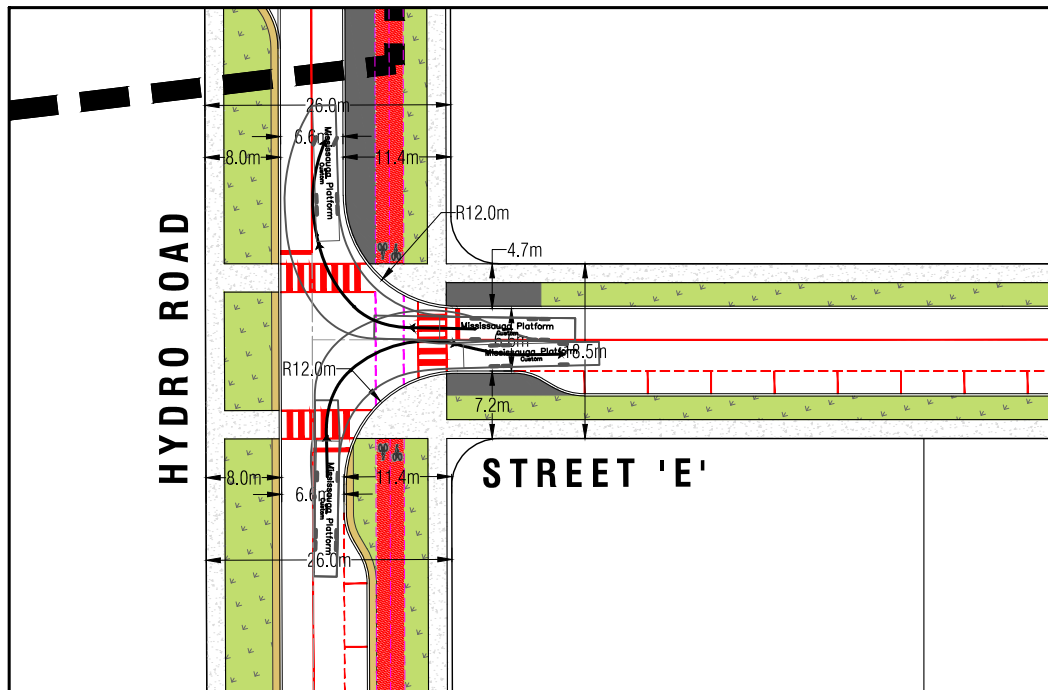
LAKEVIEW VILLAGE VEHICLE MOVEMENT DIAGRAMS
MISSISSAUGA FIRE PLATFORM TRUCK

SCALE: 1 : 800	PROJECT No. 17201
DATE: APRIL 2021	FIGURE No. VMD-2
DESIGNED BY: S.V.	DRAWN BY: S.V.
CHECKED BY: M.D.	CHECKED BY: M.D.

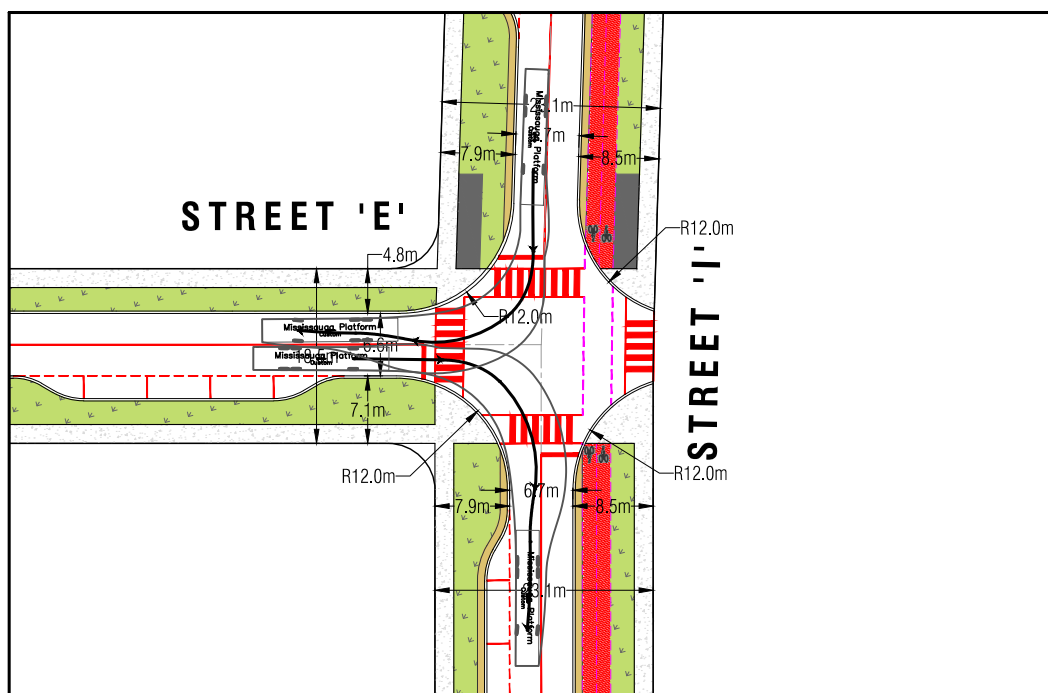
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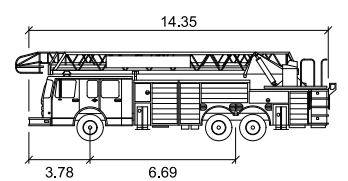
STREET 'B' & STREET 'I' INTERSECTION



STREET 'E' & HYDRO ROAD INTERSECTION



STREET 'E' & STREET 'I' INTERSECTION



Mississauga Platform	
	meters
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 37.4

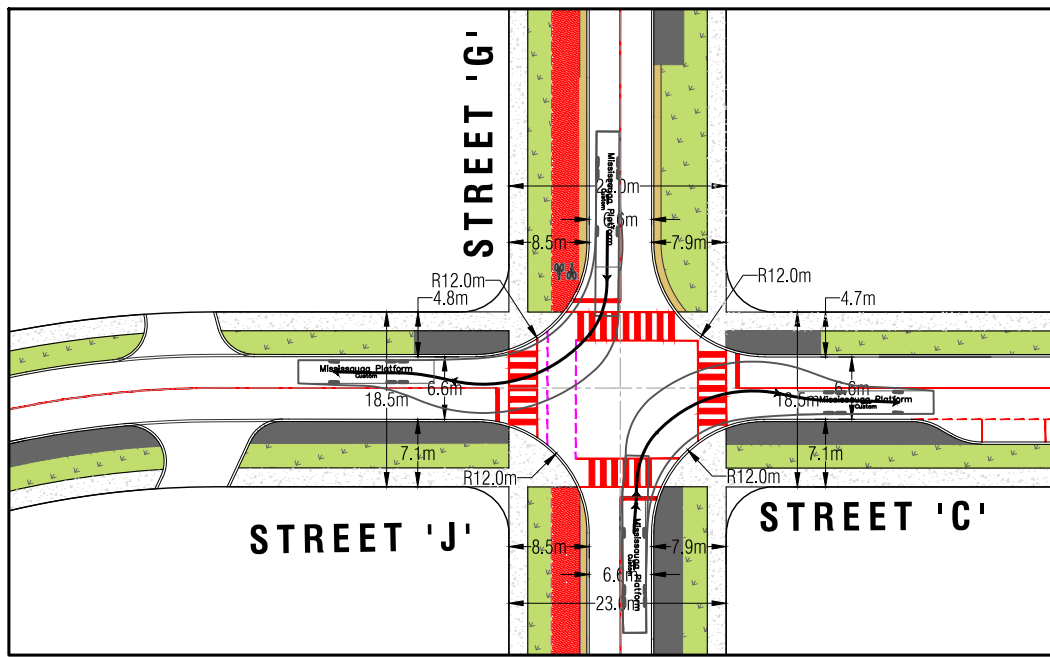


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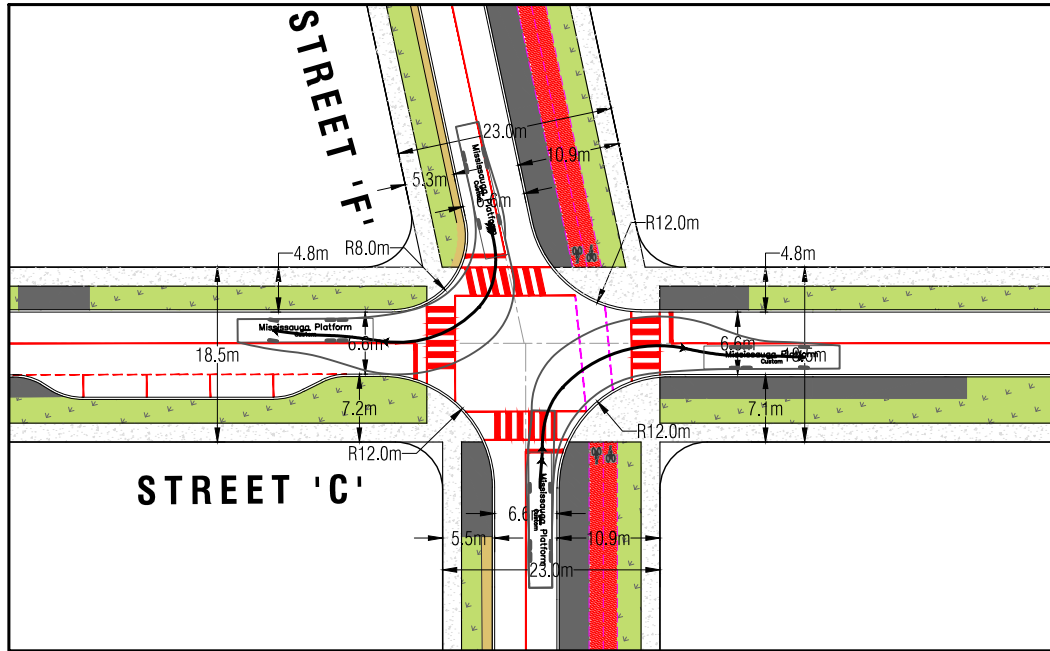
LAKEVIEW VILLAGE VEHICLE MOVEMENT DIAGRAMS
MISSISSAUGA FIRE PLATFORM TRUCK

SCALE: 1 : 800	PROJECT No. 17201
DATE: APRIL 2021	FIGURE No. VMD-3
DESIGNED BY: S.V.	DRAWN BY: S.V.
CHECKED BY: M.D.	CHECKED BY: M.D.

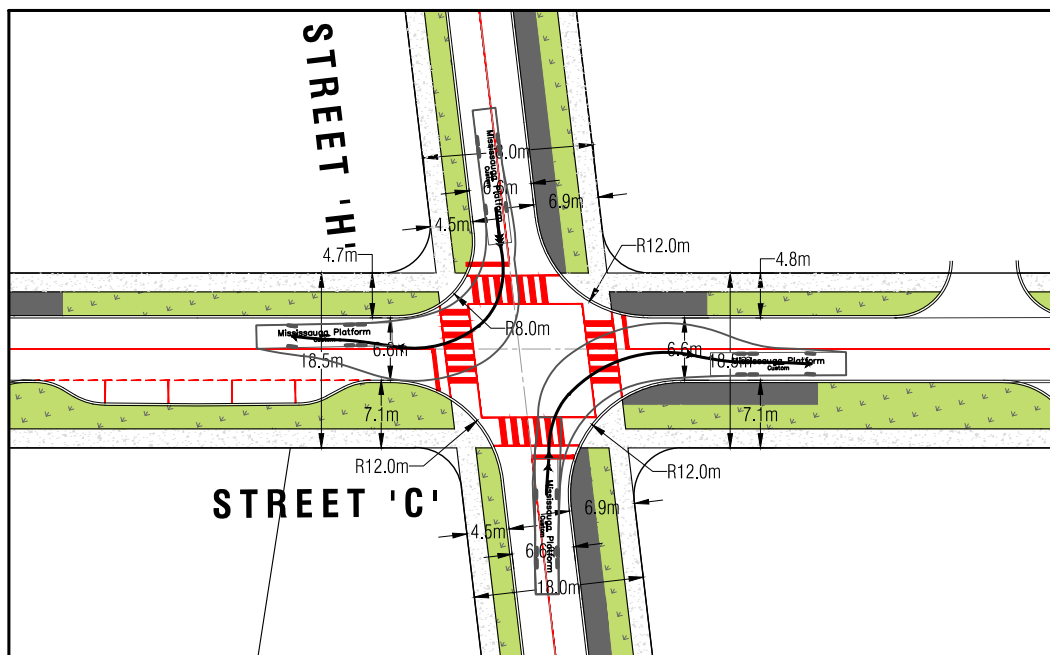
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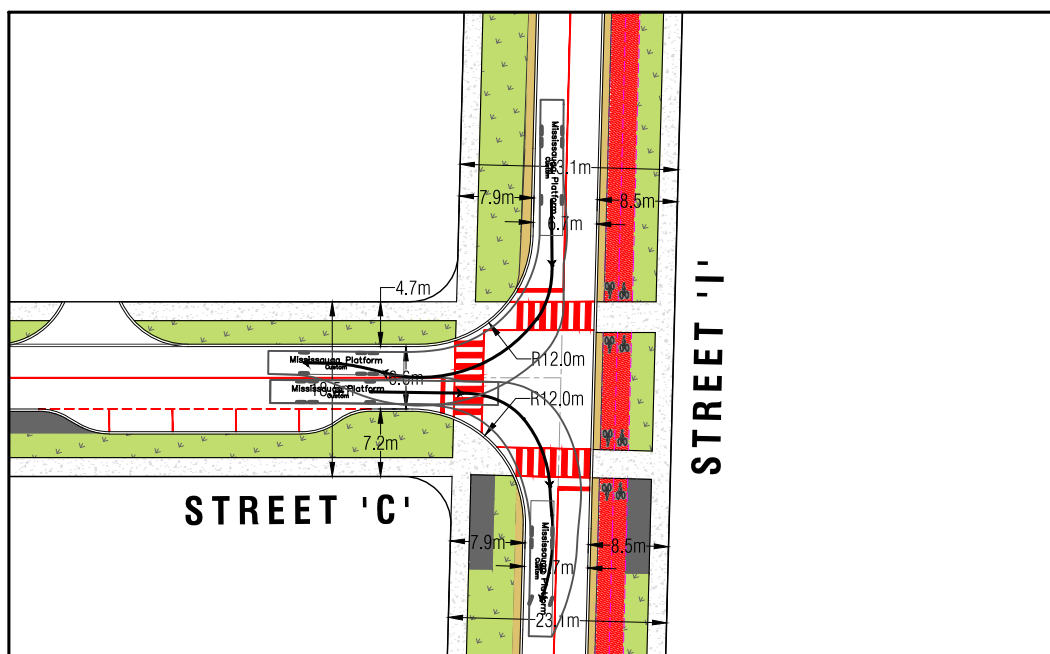
STREET 'J', STREET 'C' & STREET 'G' INTERSECTION



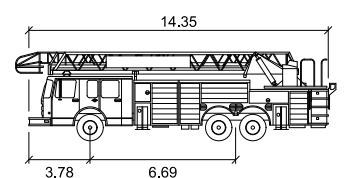
STREET 'C' & STREET 'F' INTERSECTION



STREET 'C' & STREET 'H' INTERSECTION



STREET 'C' & STREET 'I' INTERSECTION



Mississauga Platform

	meters
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 37.4



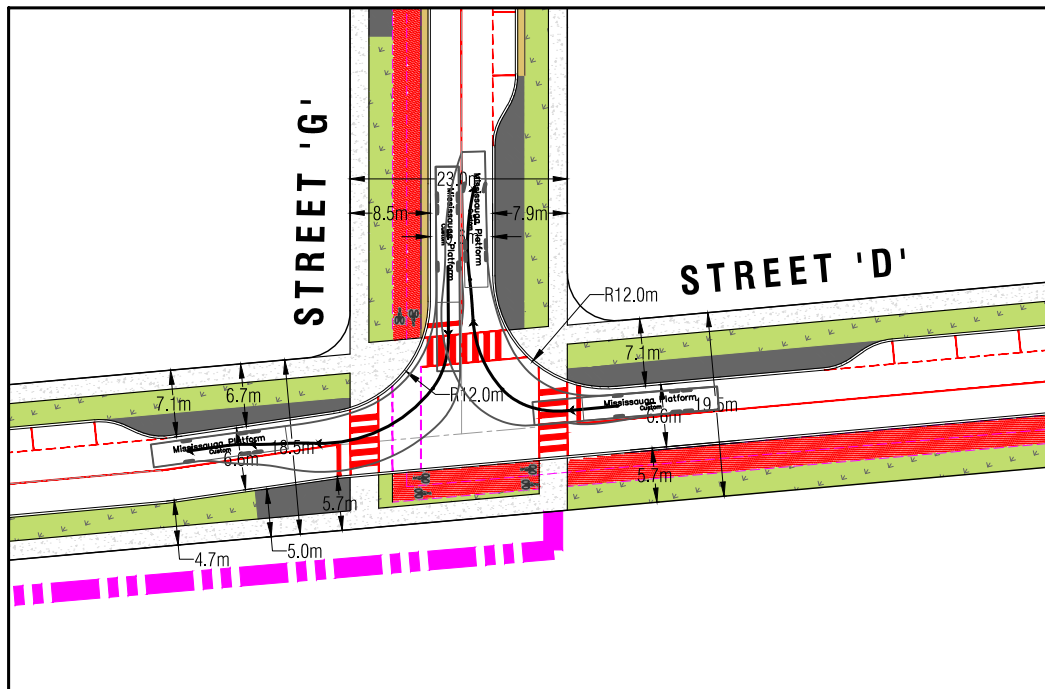
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LAKEVIEW VILLAGE VEHICLE MOVEMENT DIAGRAMS
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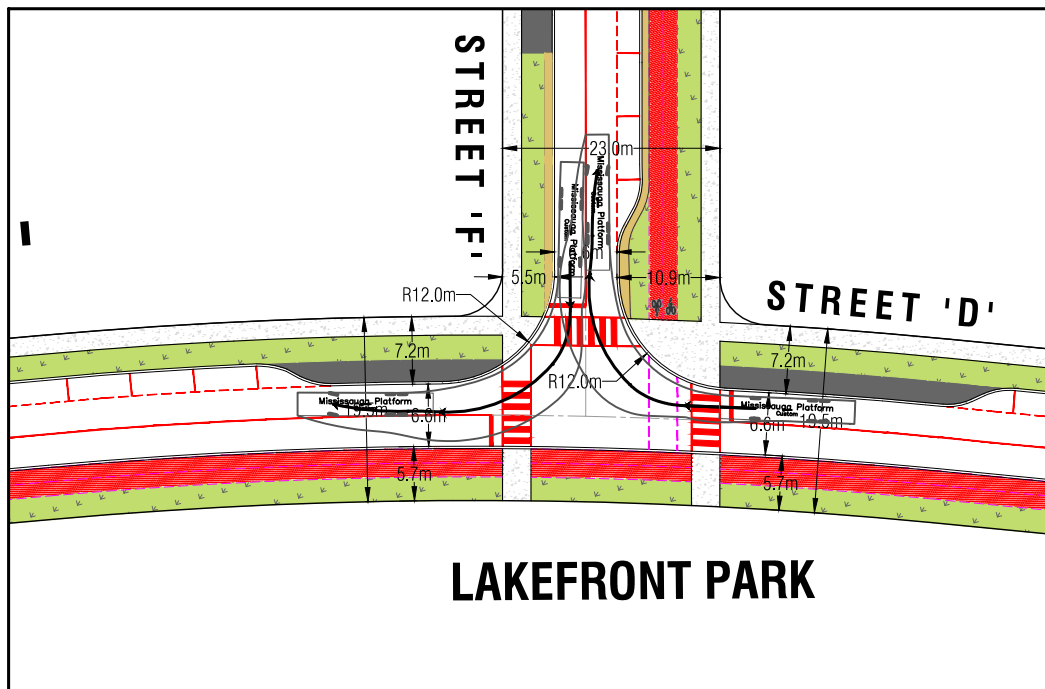
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DATE: APRIL 2021	
DESIGNED BY: S.V.	DRAWN BY: S.V.
CHECKED BY: M.D.	CHECKED BY: M.D.

PROJECT No.	17201
FIGURE No.	VMD-4

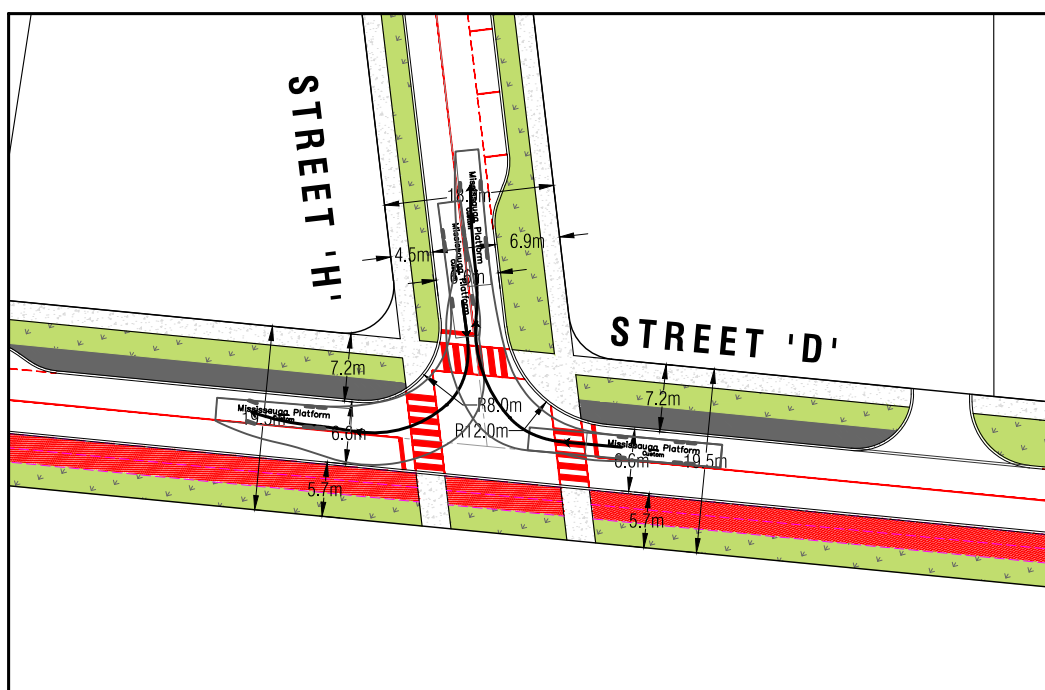
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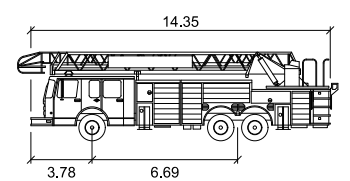
STREET 'D' & STREET 'G' INTERSECTION



STREET 'D' & STREET 'F' INTERSECTION



STREET 'D' & STREET 'H' INTERSECTION



Mississauga Platform	
	meters
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 37.4



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LAKEVIEW VILLAGE VEHICLE MOVEMENT DIAGRAMS
MISSISSAUGA FIRE PLATFORM TRUCK

SCALE: 1 : 800	
DATE: APRIL 2021	
DESIGNED BY: S.V.	DRAWN BY: S.V.
CHECKED BY: M.D.	CHECKED BY: M.D.

PROJECT No.	17201
FIGURE No.	VMD-5