Ontario Trucking Association

555 Dixon Road
Toronto, ON M9W 1H8
Tel: 416.249.7401 – Fax: 1.866.713.4188
Follow us on Twitter @ontruck or online at www.ontruck.org

Via email: tina.white@ontario.ca; chium@mmm.ca

March 10, 2015

Ms. Tina White
MTO Senior Project Manager
Ministry of Transportation, Eastern Region
1355 John Counter Boulevard, PO Bag 4000
Kingston, ON K7L 5A3

Mr. Michael Chiu, P.Eng.
Consultant Project Manager
MMM Group Limited
2655 North Sheridan Way
Mississauga, ON L5K 2P8

Dear Ms. White and Mr. Chiu,

Re: Preliminary Design and Environmental Assessment Studies for Operational Improvements to Highway 401/Kingston Road 38, Highway 401 / Highway 15 in the City of Kingston

The Ontario Trucking Association (OTA) has had an opportunity to review the Public Information Centre (PIC) #2 handout which sets out a number of potential designs for the above referenced interchange with Alternative 5 shown as preferred. Please accept the following comments about the suitability of this design for Long Combination Vehicles (LCVs) which routinely use this interchange to access truck stops and terminals immediately south of Hwy 401.

LCVs consist of two full size semi-trailers pulled by a single truck-tractor resulting in an overall length up to 40m (131'). LCVs require significant space when turning due to 'offtracking' which is represented by the different path of the rear wheels of the second trailer compared to the path of the front steering wheels of the tractor. A 90 degree right turn generally creates more offtracking than a 90 degree left turn due to a tighter radius turn. The LCV Program Conditions stipulate that no wheels of the LCV may come within 0.5 m of the pavement edge or any curbs or fixtures.

Inbound from Hwy 401 west (Toronto) to Kingston Rd south

- The current configuration requires the LCV to pass under the overpass, access the exit ramp and make a 90 degree left turn onto Kingston Rd.

- The proposed design moves the exit ramp ahead of the overpass and requires a 90 degree right turn onto Kingston Rd. There is a need to ensure sufficient space for these vehicles to safely make this turn without the tractor encroaching into oncoming live traffic lanes. The addition of a merging lane from the exit ramp to Kingston Rd southbound would help address this issue.

Inbound from Hwy 401 east (Montreal) to Kingston Rd south

- The current configuration requires the LCV to pass under the overpass, access the exit ramp and make a 90 degree right turn onto Kingston Rd.

- The proposed design reconfigures this ramp and provides a merging lane to Kingston Rd. This is a distinct improvement but there is a need to ensure the ramp and merge lane has sufficient width to accommodate LCV offtracking.

Outbound from Kingston Rd south to Hwy 401 west (Toronto)

- The current configuration requires the LCV to travel over the overpass and make a 90 degree left turn onto the westbound entrance ramp.

- The proposed design moves the ramp terminus further north and still requires a 90 degree left turn onto the entrance ramp. As above, there is need to ensure sufficient space to accommodate offtracking of the LCVs rear wheels. As the ramp terminus is now located at a curve in Kingston Rd, there is also a need to ensure there are sufficient sight lines for the LCV driver to see oncoming traffic and for oncoming traffic to see a turning LCV. Due to their length, LCVs take somewhat longer to clear an intersection than standard tractor-trailers.

Outbound from Kingston Rd south to Hwy 401 east (Montreal)

- The current configuration provides a gradual entry onto the eastbound ramp which is ideal for LCV operations.

- The proposed design appears to provide a similar alignment.

U-Turn from Hwy 401 west (Toronto) back toward Hwy 401 west (Toronto)

- The current interchange is not approved for LCV u-turns but the safety and flexibility of the LCV program would be enhanced if the new design could accommodate such manoeuvres.

- The proposed interchange design would require the LCV to take the exit ramp, make a 90 degree left turn onto Kingston Rd northbound, then make another 90 degree left turn onto the westbound entrance ramp. Again, there is need to ensure sufficient space and sightlines for the LCV to safely make these turns.

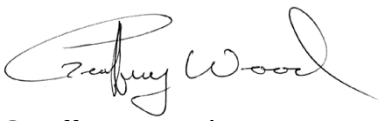
U-turn from Hwy 401 east (Montreal) back toward Hwy 401 east (Montreal)

- The current interchange is not approved for LCV u-turns but the safety and flexibility of the LCV program would be enhanced if the new design could accommodate such manoeuvres.

- The proposed interchange design would require the LCV to pass under the overpass, take the exit ramp to southbound Kingston Rd and then make a 90 degree right turn onto the eastbound entrance ramp. Again, there is need to ensure there is sufficient space for the LCV to safely make the right turn onto the ramp.

Section 3 and Appendix D of the LCV Program Conditions (attached) stipulate LCV route requirements and provide approved software inputs to simulate the offtracking and space requirements of a turning LCV. The OTA requests that LCV space requirements and sightlines be taken into full consideration when developing the detailed design drawings.

Thank you for your attention to this matter. Please do not hesitate to contact me if you wish to discuss.



Geoffrey Wood
Vice President, Operations and Safety

C: Joe Lynch, Ministry of Transportation (joe.lynch@ontario.ca)

Ontario

Ontario LCV Program Conditions

Contents

Revisions since August 13, 2009

March 1, 2015

- 1(b) – Updated to reflect increase in number of permits available.
- 2(b) – Updated to reflect reciprocity with training in Quebec, Nova Scotia and New Brunswick.
- 2(e) – Updated to clarify that renewal workshops will be one day, not a half day.
- 3(b) – Condition added to permit conditions.
- 4(a) – Updated to include requirement that both tractor rear axles must be drive axles.
- Appendix C – Updated to reflect driver eligibility changes to 2(b).

November 19, 2014

- 6(d) – Updated to include holiday restrictions in December, January and February.
- 6(f) – Time of Year Restriction removed.

February 12, 2014

- 1(b) – Updated to reflect increase in number of permits available.
- 1(c) – Updated to include turn-around ramps as area of operations.
- 3(a) – Updated to include turn-around ramps in Approved LCV Network.
- 6(a) – Updated to include turn-around ramps as specified routes.
- 6(e) – Ottawa Peak travel restrictions added.
- 6(j) – Dolly repositioning adjusted to include Ottawa travel restrictions.
- 7(a) – Updated to include turn-around ramps in list of MTO approved routes.

February 5, 2013

- 1(a) – Updated to reflect 2 types of permitted LCV configurations.
- 1(b) – Updated to reflect increase in number of permits available.
- 1(e) – Removed requirement to report probable alternate mode of transport.
- 2(e) – Added restricted instructor conditions.
- 3(d) – Updated engineering assessment requirements for including additional configurations to an assessment.
- 4(a) – Included B-train length not allowed in the program.
- 5(b) – Updated to require electronic on-board monitoring at regular intervals and holding of records for 60 days. .
- 5(c) – Updated to clarify anti-sail mud-flap definition.
- 5(e) – Updated to remove brake requirement for converter dollies without a second trailer.
- 6(e) – Remove GTA travel restrictions for trailers pulling dollies without a second trailer.
- 6(j) – Added details on dolly repositioning conditions.
- 7(a) – Clarified transfer of permits between equipment held under the same CVOR/NSC.
- Throughout – Removed reference to OTA/QTA shared training and certificates.

February 23, 2012

- 1(b) – Timing and scope reflects allocation of permits.
- 2(b) – Note added regarding driver disqualification from LCV program.
- 2(e) – Instructor eligibility requirements updated.
- 2(f) – Certificate section updated to include MTO ability to require Driver or Driving-in-Training certificates are denied.
- 3(d) – Engineering assessment requirements updated to include ability to introduce other combinations onto the route without a new assessment.
- 5(b) – Speed recording device requirements updated to require GPS or a similar electronic tracking system.
- Appendix A – Dimensions updated for A-Train to allow for wide tandem spread.
- Appendix B – Dimensions updated in B-Train input sample

February 3, 2011

- 1(b) – Timing and scope reflects the increase in available permits.
- 1(e) – Updated trip reporting requirements (time of dispatch required).
- 5(f) – Restriction on additional rear lighting is removed.
- Appendix A, B – Track width modified to accommodate wide based single tires.

Ontario LCV Program Conditions

No.	Item	P	Description
1. Program Overview and Principles			
1(a)	Overview		- LCVs provide economic benefits to Ontario industry and consumers, reduce congestion, reduce consumption of fuel and related greenhouse gas emissions and improve highway safety. - The LCV program consists of 'turnpike doubles' generally operating on a primary LCV network of 'freeway- style' highways and to and from approved origin/destination locations in close proximity to the primary network. - The program has been developed cooperatively with Quebec to ensure free movement of LCVs between the two jurisdictions. - Participating carriers, drivers and vehicles are held to higher standards than other trucking operations to enhance highway safety. LCVs operate under carefully developed controls and are closely monitored. - The program is a private sector initiative led by the Ontario Trucking Association (OTA) and Private Motor Truck Council of Canada (PMTC). These associations are responsible for identifying highways for inclusion in the primary network, appropriate rest/emergency stop locations and undertaking all necessary engineering assessments or route modifications. Road authority consent must be obtained for any non-provincial routes. - The OTA are responsible for the LCV driver training program for Ontario operations and overseeing issuance of LCV Driver and Instructor certificates required for LCV operations in Ontario. - Participating carriers are responsible for issuance of LCV Driver Certificates after ascertaining the driver meets specified qualifications, training and experience. - Participating carriers must enter into a Memorandum of Understanding (MoU) with MTO signifying that the carrier accepts responsibilities as outlined in this document. - MTO will issue permits to qualifying carriers for operation on the primary LCV network and specified off- network routes to approved origin/destination locations. - The Program currently allows 2 types of LCV configurations; an A-train comprised of two 14.65 - 16.2 metre long trailers and a B-train comprised of a single 11.5 - 14.65 metre lead trailer and a single 11.5 - 16.2 metre second trailer. The allowable A- and B-train configurations are designed to generally fit within the same turning space. At the present time, there is no allowance for the use of a B-train comprised of two 16.2 metre long trailers.
1(b)	Timing and Scope		- The program is limited to 1,600 permits for 100 carriers (maximum of 16 permits per carrier). - Carriers are limited to 2 permits for their first calendar year in the program. After a year, they may apply for up to an additional 14 permits. MTO reserves the right to deny additional permits.

			- Related carriers may each qualify for permits provided operations are distinct.

1(c)	Areas of Operation		- Attachments to permits indicate:
			  - Approved LCV network of highways (generally controlled access, multi-lane, divided highways), turn-around ramps and approved rest/emergency stop locations along the primary highway routes. These routes and stops are generally available to all LCV permit holders.
			  - Origin/Destination (O/D) Certificates which indicate locations in close proximity to primary highways the named carrier is authorized to access.
			- Due to greater turning space requirements and lack of rest/emergency stop locations, full-size B-train LCVs are not currently authorized to operate in Ontario. Shorter B-trains, modified to turn within the same space as an A-train LCV, are authorized to operate in Ontario.
			- An internal MTO LCV Route Committee, made up of representatives from MTO's three primary divisions, review all route requests. Routes involving non-provincial highways are also reviewed by the appropriate road authority(ies).

1 (d)	Notification of Collisions / Incidents / Infractions		- Carrier must provide email notification to MTO and trucking association recipients immediately following any reportable collision. Email addresses are provided to participants. - Within 10 business days of any reportable collision (as specified in s199 of the Highway Traffic Act), carrier must provide a copy of the accident report as well as carrier's written explanation of the collision circumstances. Email, fax and mail addresses are provided to participants. - Within 10 business days, carrier must provide notification and description of any non-reportable incident that disrupts traffic or damages property. Email and fax addresses are provided to participants. - Carrier agrees that any information provided may be shared with police. - Police and enforcement personnel are requested to notify MTO of any LCV infractions at: LCV.Monitoring@ontario.ca.
1 (e)	Ongoing Evaluation Process		- Participants agree to maintain a record of each LCV trip on an MTO-supplied Excel spreadsheet. Each month's data is to be submitted to MTO electronically within 10 business days of the month's end to LCV.Monitoring@ontario.ca. MTO will treat all data from individual carriers as confidential, although aggregate results may be reported. - Recorded trip information will include time and date of dispatch, origin, destination, commodity carried and distance. - MTO will also track and evaluate any comments, issues and concerns raised by the public, media, other modes, shippers, etc.

No.	Item	P	Description
2. Operator Qualifications			
2 (a)	Carrier Qualification		- Carriers with 'Conditional' or 'Unsatisfactory' Carrier Safety Ratings may not operate LCVs in Ontario. Carriers with such ratings must immediately

			cease LCV operations. - Carrier will maintain a minimum $5 million public liability insurance coverage. - Carrier has at least 5 years of prior trucking experience. - Carrier must identify one or more personnel as a primary LCV contact and notify MTO of any changes. Contact information and updates will include name, title, address, telephone, cell and e-mail address. - Carriers may be required to provide documentation with the permit application to support these qualifications.

2 (b)	Driver Eligibility Criteria		- Driver has valid Class A driver's licence with Z (air brake) endorsement, or equivalent from another jurisdiction.
			- Driver has minimum of 5 years provable tractor-trailer driving experience.
			- Driver has:
			  - successfully taken the OTA LCV Driver Training Program (which includes classroom, yard, on-road training and proficiency testing and at least 1,000 km of practical LCV experience); or completed training within other regimes recognized by Ontario:
			  ○ successfully passed a western or eastern Canadian CTA LCV Driver Training Program;
			  ○ successfully earned a Quebec "T" licence endorsement; or
			  ○ successfully taken the Atlantic Provinces Trucking Association (APTA) Driver Training Program. (See Appendix C)
			  ▪ Note: All drivers must submit a driver's abstract and be registered in the Ontario LCV Driver Database.
			- Driver has a minimum of 1,000 km of previous LCV driving experience.
			- Driver has no driving-related Criminal Code (Canada) convictions in previous 36 months, no more than 2 moving violation convictions of any kind in previous 12 months and no more than 3 moving violation convictions of any kind in previous 36 months based on a driver's abstract dated no more than 30 days prior to application for the annual OTA LCV Driver Certificate. Note: Certain offences may immediately disqualify a driver from the Program.

2 (c)	LCV Driver Certificate		- Carrier may issue an OTA LCV Driver Certificate valid for one year to employee or contracted drivers, providing the driver meets all LCV driver eligibility criteria. Documentation to support eligibility must be retained for at least two years and provided to MTO upon request. - The LCV Driver Certificate (in combination with the driver's licence) allows the driver to operate an LCV for the issuing carrier in Ontario.
2 (d)	LCV Driver-in-Training Certificate		- Carrier may issue an OTA LCV Driver-in-Training Certificate valid for 30 days to employee or contracted drivers who meet all driver eligibility criteria other than the OTA Driver Training Program. Documentation to support eligibility must be retained for at least two years and be provided to MTO upon request. - The LCV Driver-in-Training certificate (in combination with the driver's licence) allows the driver to operate an LCV for the issuing carrier when

			accompanied by an OTA certified LCV instructor.
2 (e)	LCV Instructor		- Must have prior experience or certification training adults. - Must have at least 10,000 km of provable LCV driving experience. - Must hold a valid OTA LCV Driver Certificate issued by the carrier of the drivers being trained. - First-time LCV instructors must successfully complete a one-day OTA LCV Instructor Course. - Existing western Canadian LCV instructors must attend an Ontario LCV instructor orientation course. - Instructors must be re-certified every three years by successfully completing a one day OTA LCV instructor refresher course, and must provide proof of 1,000 kilometres of LCV driving in the previous year. - The OTA LCV Instructor Certificate allows the instructor to deliver classroom, yard and driving instruction and evaluation of LCV Drivers-in-Training. (see Appendix C) - A Restricted LCV Instructor Certificate allows the instructor to deliver classroom training only. Restricted Instructors are not required to hold an LCV Driver Certificate.
2 (f)	Certificates	P P P	- Drivers must possess valid Ontario Trucking Association (OTA) issued LCV Drivers or LCV Drivers-in-Training Certificates when in charge of an LCV. Instructors must possess a valid OTA LCV Instructors Certificate accompanying Drivers-in-Training Certificates are valid only for the carrier appearing on the certificate and must be presented upon request to a police officer or officer appointed to carry out the provisions of the Highway Traffic Act. - OTA LCV Driver and Driver-in-Training Certificates will include a OTA issued certificate number, issue and expiry dates, driver's name, licence number and issuing province, driver's signature, carrier's name and registration number and name and signature of designated carrier representative. - OTA LCV Instructor Certificates will include a OTA issued certificate number, issue and expiry dates, instructor's name, license number and issuing province, instructor's signature and name and signature of designated association representative. - Upon request, carrier must provide MTO a list of drivers and drivers-in-training holding valid LCV certificates. MTO may share this information with police. - Upon request, carrier must provide MTO copies of documentation to support driver eligibility criteria, including copies of driver abstracts dated no more than one month prior to certificate issue date. MTO may share this information with police. - MTO reserves the right to require carriers or any other organizations to suspend, revoke, or deny LCV Driver or Driver-in-Training Certificates.

No.	Item	P	Description
3. LCV Routes			
3 (a)	Primary LCV Network		- The primary LCV network is the list of highways individually authorized for general LCV travel. The network will generally consist of controlled access, multi-lane, divided highways (often referred to as freeways, expressways and parkways) including ramps connecting one highway with another. - Access or egress from the primary network may only be made at authorized rest/emergency stop locations, Truck Inspection Stations or authorized origin/destination locations. - The primary LCV network also includes select turn-around ramps where LCVs can safely egress and access the highway to change direction, as needed. - Highways will be considered for addition to the primary network upon application from an interested proponent. Such applications must include evidence of acceptable rest/emergency along each route. - Unless a specific concern is identified - controlled access, multi-lane, divided highways (or specified portions of such highways) and their connecting ramps may be added to the primary network without engineering assessment. - Other highways may be considered for the primary network on an exception basis. An engineering assessment is required in all such cases. - In cases where the proposed addition to the primary network includes a municipal roadway, bridge authority or privately operated highway, written consent is required from a transportation official of the road authority acknowledging they do not object to LCV travel over the proposed route.
		P	- A copy of MTO's most recent list of authorized highways forming the Primary LCV Network must be attached to each LCV permit.
3 (b)	Rest / Emergency Stops		- Rest/emergency stop locations are service centres, truck stops or other suitable locations in close proximity to the primary network at which an LCV may safely stop and/or park in case of inclement weather, road closure, time restrictions, driver breaks, etc.
		P	- Other than in emergency situations, rest/emergency stop locations are not intended for assembly or disassembly of LCVs, although a rest/emergency stop location may also be designated as an origin/destination location for this purpose upon separate authorization. - Rest/emergency stops should generally be within 500 m of the primary network (exceptions will be considered). - Rest/emergency stops will be considered for additions to the primary network upon application from an interested proponent. An engineering assessment must accompany the application for the entire route from the primary network (including highway ramps, turning roadways, intersections and entranceways to the rest/emergency stop location). - In cases where access to the stop involves travel on a municipal roadway or Highway 407 ramp, written consent is required from a transportation official of the municipality and/or Hwy 407/ETR acknowledging they are

			aware of the engineering assessment and do not object to LCV travel over the proposed route. - Written consent is also required from the facility operator or property owner (i.e. service centre, truck stop, etc.) that they will allow LCV access to their facility.
		P	- A copy of MTO's most recent list of authorized rest/emergency stop locations must be attached to each LCV permit.
3 (c)	Origin / Destination Locations		- LCV origin/destination (O/D) locations are taken to mean truck terminals, shipper locations or LCV assembly/disassembly yards in close proximity to the primary route - generally within a 2 km radius of the interchange ramp terminus. - O/D locations will be considered upon application from an interested proponent. An engineering assessment must accompany the application for each O/D location for the entire route from the primary network (including highway ramps, all turning roadways, intersections, and entranceways to the O/D location). - If a portion of the route was previously approved or will be shared with another proponent, applicants may work together through the engineering consultant to defray costs. - If the O/D is already approved for another carrier, additional carriers require a release from the party who undertook the previous engineering assessment. - If access to the O/D location involves travel on a municipal roadway or Highway 407 ramp, written consent is required from a transportation official of the municipality and/or Hwy 407/ETR acknowledging they are aware of the engineering assessment and do not object to LCV travel over the proposed route.
		P	- A copy of MTO's most recent list of authorized Origin/Destination (O/D) locations must be attached to each LCV permit.
3 (d)	Engineering Assessment		- To be conducted by an engineering consultant qualified to assess highway design and traffic. (Consultant's qualifications to be reviewed by MTO's Provincial Highways Management Division prior to undertaking the assessment. It is expected the consultant will have access to AutoTurn® or equivalent turn simulation software and will use pre-approved input variables.) - Consultant to acquire recent and relevant (i.e. "as constructed") images of the route. These may include design drawings (plans) or orthophotos of ramps, turns and intersections. A site visit is required to verify existing conditions. The consultant should also obtain posted speeds and relevant traffic information. - The appropriate road authority (i.e. municipal, regional or provincial) or private owner should be contacted to determine whether there is proposed construction and/or maintenance work along the proposed LCV route. Proposed changes to existing roads within the planned LCV route shall be documented and evaluated to determine the implications to LCV operations. - Consultant will overlay turning templates of LCVs on the route images

			using turn simulation software to determine if ramp, roadway, intersection and entranceway geometry can safely accommodate LCV travel without damage to roadway infrastructure or fixtures and without causing negative impact to traffic operation. Hard copy plots of the simulations shall be provided in the assessment documentation for review. - Consultant will provide an operational and traffic safety impact analysis based on turning and weaving movements, storage and lane change space, and traffic signal timing. - The consultant's report should also include a straightforward, standard form map of O/D location access and egress routes that can be printed and attached to the in-vehicle permit to guide drivers and help avoid off-route travel. - Design vehicles and turning templates will be based on maximum allowable LCV axle spacings (ie. worst case scenario) in combination with standard fifth-wheel and king-pin placements, steering lock angle and front and rear overhangs as specified in Appendix D. The assessment must indicate whether it applies to A- train or to B-train LCVs. - In the event an assessment specifies that it applies only to an A-train or B-train, the assessment may be expanded to apply to both combinations by submitting a letter from the original Engineering Consultant expressing that both combinations would be feasible and accepted. At the present time, there is no allowance for the use of a B-train comprised of two 16.2 metre long trailers. - It is expected that all wheels of the LCV will remain on the paved surface of any provincial highways or ramps. Any necessary LCV manoeuvre that does not comply with the Highway Traffic Act and/or CTA LCV Driver Training Program Manual must be documented and evaluated from an operational and safety perspective. - For O/D locations only, consideration will be given to recommendations for time of day restrictions. - Any modifications to the primary network or other route infrastructure to accommodate LCVs are the responsibility of the proponent working in conjunction with the appropriate road authority or property owner. - All documents will be scanned or converted to .pdf (portable document format) files and submitted to MTO via e-mail.
3 (e)	Acceptance Process		- Applications for additions to the primary network, rest/emergency stop locations and origin/destination locations shall be submitted to MTO on an approved form. - An MTO committee with representation from P&P Transportation Policy Branch, PHM Highway Standards Branch, Contract Management and Operations Branch (as required) and RUS Carrier Safety Enforcement Branch will review all requests. (Other areas may be consulted as required.) - Applications for new or additional routes or locations must be accompanied by any necessary engineering assessments as well as written consent from appropriate road authorities. Road Authorities are

			taken to mean any party other than MTO having control over the roadway (municipality, Hwy 407ETR, bridge authority, facility owner or operator, etc). - The committee may accept or reject a request, or may work with the applicant and/or road authority to address issues or to request further information or assessment. - Upon accepting a route or location, the committee will authorize the MTO Permit Section to add the route/location to permit attachments. See Appendix D for process schematic.
3 (f)	Truck Inspection Stations (TIS)		- TIS do not qualify as rest/emergency stop locations for purposes of qualifying a highway for primary network status.

No.	Item	P	Description
4. LCV Weights and Dimensions			
4 (a)	Allowable LCV Types	P P	- A-Train Double consists of a 3-axle tractor, a tandem or tridem-axle lead semi-trailer, a tandem-axle converter dolly and a tandem or tridem-axle second semi-trailer. Both rear axles of tractor must be drive axles. - B-Train Double consists of a 3-axle tractor, a tridem-axle lead semi-trailer and a tandem or tridem-axle second semi-trailer. Both rear axles of tractor must be drive axles. - B-trains comprised of two 16.2 metre long trailers are not currently allowed in the Program.
4 (b)	Allowable Dimensions	P P	- Allowable dimensions for the A and B-Train Doubles are as specified in Appendices A and B respectively. - Aerodynamic devices at rear of trailers are excluded from length measurements provided they are authorized by and meet all conditions of a separate vehicle or fleet permit or meet requirements specified in the Highway Traffic Act.
4 (c)	Allowable Weights	P	- Maximum tire, axle and gross weights for the A and B-Train Doubles are as specified in Appendices A and B respectively. - The allowable gross weight of any LCV combination must not exceed 63,500 kg.

No.	Item	P	Description
5. Special Equipment Requirements			
5 (a)	Horsepower / steering	P P	- Tractor engine must have a rating of at least 425 horsepower. - Steering axle must be capable of turning at least 40 degrees in either direction from straight ahead position.
5 (b)	Speed Recording Device	P	- Tractor must be equipped with a functioning and accurate electronic on-board device that records speed, time and date at regular intervals not exceeding 5 minutes in length. - The speed recording device must be a GPS or similar tracking system and must display in a legible table, including rows and columns. Tachograph

			and tachograph charts are not acceptable speed recording devices within the Program. - Data from this device must be retained for at least 30 60 days and capable of producing a report indicating the vehicle's speed at specified dates and times. - Upon request, such reports must be provided to MTO who, in turn may share them with police. (Reports are not expected to be produced at roadside.)
5 (c)	Splash / spray controls	P	- Each tandem or tridem axle unit must be equipped with anti-sail mud-flaps which are at least as wide as the tire treads, within 350mm of the ground when the vehicle is standing empty, and are either equipped with anti-sail brackets or plates, or are rigidly designed to prevent rearward floatation at highway speeds.
5 (d)	Hitch requirements	P	- The lead trailer of an A-train must be equipped with a no-slack, snubber-type pintle hook equipped with a secondary locking device.
5 (e)	Brake system requirements	P P P P P	- Tractors, trailers and dollies must be equipped with a functioning anti-lock braking system (ABS) compliant with CMVSS 121. - Dollies, lead trailers and second trailers set up for towing must be equipped with a control line pilot (speed- up) valve. - Dollies must be equipped with a supply line pressure protection valve. - Any trailer retrofitted for towing must have brake timing tested and certified as complying with CMVSS 121, with the exception of convertor dollies when there is no second trailer. - Tractors must be equipped with a functioning 465 litre per minute (16.5 cfm) or larger air compressor and air dryer(s) of sufficient capacity to prevent moisture accumulation in trailers.
5 (f)	Lighting Requirements	P P	- The converter dolly must be equipped with functioning tail lights, brake lights, turn signals and two red reflectors in accordance with FMSCA – title 49cfr 393.11. - Each trailer in the combination must have functioning side marker lights in accordance with CMVSS 108.
5 (g)	Rear signage requirements	P P P	- A yellow-orange sign must be displayed on the rear of the second semi-trailer bearing a black illustration of an LCV and the word "LONG". (see Appendix E). - The sign must be at least 230 cm wide by 30 cm high and made of high-intensity retro-reflective material. - The sign must be positioned so as to be clearly visible by following traffic, but does not obstruct license plates, lights or other safety devices and removed or covered when not in use.
5 (h)	Electronic Stability Control	P P	- The tractor must be equipped with a functioning electronic stability control (ESC) system that, as a minimum, monitors steering angle, yaw and lateral acceleration and selectively applies the tractor and trailer brakes when necessary to maintain vehicle control. - The lead trailer must <u>not</u> be equipped with a functioning independent roll stability system (RSS) unless it is also capable of automatically applying the downstream (dolly and second trailer) brakes.

5 (i)	Documentation		- Carrier must be prepared to provide documented proof of special equipment to MTO upon request.

No.	Item	P	Description
6. Operational Rules and Restrictions			

6 (a)	Specified routes	P	- LCVs are restricted to approved routes as specified in permit attachments, including:
			  - Approved highways and turn-around ramps on the primary network;
			  - Approved rest/emergency stop locations;
			  - Approved origin/destination locations.
			- Some routes and locations may not allow B-train type LCVs.

6 (b)	Detours	P	- Off-route detours due to road closures or other reasons are not permitted, with the exception of a trailer pulling a converter dolly with no second trailer.
6 (c)	Speed restrictions	P	- The LCV must not exceed 90 kph.
6 (d)	Holiday Restrictions	P P	- LCVs must not operate on any routes from 4 pm to midnight on the evening preceding and the last evening of a long weekend. - "Long weekend" means one or more of the following days falls adjacent to a weekend to form a three-day weekend: Family Day, Good Friday, Victoria Day, Canada Day, August Civic Holiday, Labour Day, Thanksgiving. - LCVs must not operate on any routes on Christmas Day, Boxing Day and New Year's Day. - LCVs must not operate on any routes from 4 pm to midnight on the evening preceding Christmas Day and New Year's Day.
6 (e)	Peak travel restrictions	P P	- Greater Toronto Area travel restrictions apply Monday through Friday from 7:00 am to 9:30 am and from 3:30 pm to 6:30 pm as per existing overweight/over dimensional (O/O) permit restrictions as specified in Appendix F, with the exception of a trailer pulling a converter dolly with no second trailer. - Ottawa travel restrictions apply Monday through Friday from 7:00 am to 9:30 am and from 3:30 pm to 6:00 pm as per Appendix F, with the exception of a trailer pulling a converter dolly with no second trailer.
6 (f)	Removed		
6 (g)	Inclement weather / visibility / road conditions	P P	- With the exception of convertor dollies when there is no second trailer, LCVs must not operate if the roadway is: Partly Snow Covered, Fully Snow Covered, Snow Packed, Icy, or there is a Road Closure or Reduced Visibility (ie. visibility is 500m or less). These conditions align with the Winter Road Conditions posted and defined on the MTO website. Click on the "Travel" tab at: www.mto.gov.on.ca or call MTO's automated service at 1-800-268-4686. - If any of these conditions are encountered en route, the LCV must proceed to the nearest rest/emergency stop or point off the travelled portion of the highway considered to be sufficiently removed from traffic

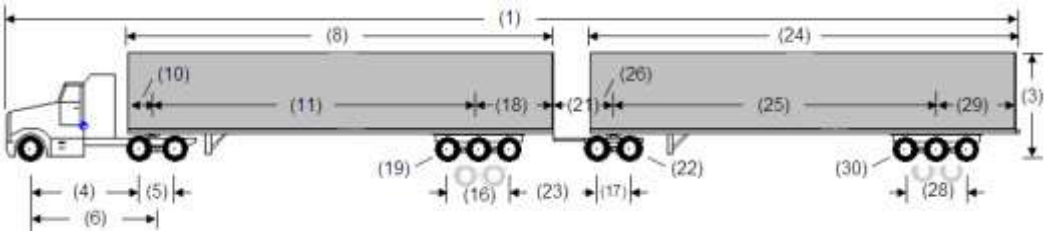
			so as not to constitute a hazard, or as directed by a police officer or other officer designated under the Highway Traffic Act, with the exception of convertor dollies when there is no second trailer.
6 (h)	Cargo restrictions	P	- LCV must not carry any regulated dangerous goods requiring placards on the vehicle exterior.
		P	- LCV must not carry livestock.
6 (i)	Safe operation	P	- Where practical, driver is expected to travel in the right-most lane of the highway.
		P	- Where practical, a space of at least 150m (500 feet) is to be maintained between LCVs travelling on a highway.
		P	- Driver must operate the LCV on approved routes in a fashion that does not cause damage to highway infrastructure, including interference with curbs, lights or other highway fixtures.
		P	- Carrier is responsible for any damage to highway infrastructure.
		P	- LCVs must report to any Truck Inspection Station on the same basis as other commercial vehicles.
6 (j)	Dolly repositioning	P	- For dolly repositioning purposes, the LCV may consist of a tractor, semi-trailer, and dolly with no second trailer.
		P	- All LCV rules apply to this combination with the following exceptions: - 5(e) – dolly does not require functioning brakes: - 5(g) – no requirement for rear sign; - 6(b) – may travel on designated detour routes; - 6(e) – Peak travel restrictions do not apply; - 6(g) - inclement weather restrictions do not apply; - Appendix A (Alternate Configurations) – gross weight allowances are restricted.
7 (a)	Original Permit	P	- Permits may be transferred between qualifying vehicles operated by the same permit holder, providing that the tractors are registered to the same CVOR/NSC registration number specified on the permit.
		P	- Permits are only valid when copies of MTO provided lists of approved highway routes, turn-around ramps, rest/emergency stops and origin/destination locations are attached to permit.
		P	- Original permit (not a copy) must accompany the LCV and be produced on demand to a police officer or officer appointed to carry out the provisions of the Highway Traffic Act.
		P	- Permit cannot be transferred to another carrier or combined with any other permit for width, height, length, or weight – other than permits allowing aerodynamic devices at the rear of vehicles.
7 (b)	Permit may be revoked	P	- MTO reserves the right to suspend one or more of a carrier's permits or revoke a carrier's LCV permit privileges or to cancel the LCV program at any time.
		P	- Permit may be revoked or suspended for any breach of any condition, for non-compliance with the MoU or for non-compliance with the Highway Traffic Act.
		P	- Permits automatically become null and void if a permit holder's Carrier Safety Record falls to 'Conditional' or 'Unsatisfactory'.
		P	- MTO reserves the right to withdraw approval or modify conditions

No.	Item	P	Description
7. General Permit Conditions			

			related to any highway route, rest/emergency stop, or origin/destination location.

"P"- indicates that item is also a "Permit Condition" on the LCV Permit. Also included as permit conditions are Appendices A and F.

Appendix A – LCV A-Train Double – Description, Dimensions and Weights



Combination Description

The LCV A-Train Double consists of a tractor and two semi-trailers connected by a converter dolly. The front axle of the tractor is a single axle with single tires and the drive axle is a tandem axle. The lead semi- trailer has a tandem or tridem axle. The converter dolly has a tandem axle. The second semi-trailer has a tandem or tridem axle.

Alternative Configurations

a) This combination may be split with the tractor pulling one semi-trailer plus the dolly for purposes of repositioning the dolly. The combination must comply with all requirements of Designated (SPIF) Combination #1 in HTA Reg 413/05 except for dimension (1) 'overall length'. The Allowable Gross Vehicle Weight is that of the tractor-trailer without the dolly, plus 2,000 kg.

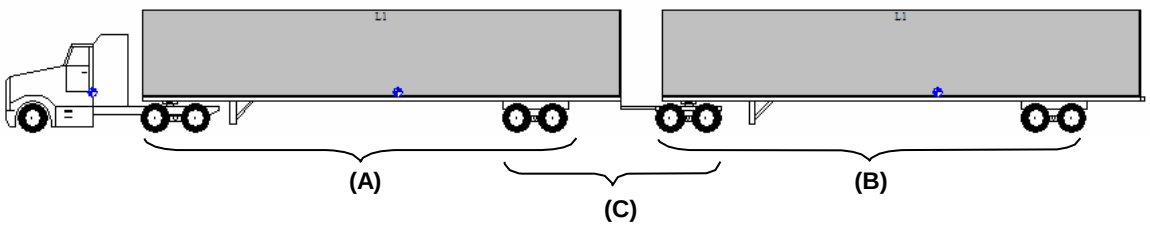
b) Trailers may be equipped with additional 'invisible' lift axles provided axles are not deployed.

DIMENSIONAL LIMIT CHART (LCV A-TRAIN DOUBLE)

	Ref	Feature	Dimensional Limit *
Overall	(1)	Length of Combination and Load	Max. 40m
	(2)	Width of Vehicle and Load	Max. 2.6m
	(3)	Height of Vehicle and Load	Max. 4.15m
Tractor	(4)	Interaxle Spacing	Min. 3.5m
	(5)	Tandem Axle Spread	1.2 to 1.85m
	(6)	Wheelbase	Max. 6.2m
Lead Semi-Trailer	(8)	Length	14.5 to 16.2m
	(10)	Swing Radius	Max. 2.0m
	(11)	Wheelbase – tandem trailer Wheelbase – tridem trailer	11.45 to 12.5m 10.9 to 12.5m
	(16)	Tandem Spread Tridem Spread	1.2 to 3.1m 2.4 to 3.7m
	(18)	Hitch Offset - with tridem spread 3.6 to 3.7m - all other trailers	 Max. 3.4m Max. 2.8m
	(19)	Track Width - trailer with single tires built before 2010 - trailer with single tires built after 2009 - all other trailers	 2.3 to 2.6m 2.45 to 2.6m 2.5 to 2.6m
Converter Dolly	(17)	Tandem Spread	1.2 to 1.85m
	(21)	Drawbar Length	Max. 3.0m
	(22)	Track Width - dolly with single tires built before 2010 - dolly with single tires built after 2009 - all other dollies	 2.3 to 2.6m 2.45 to 2.6m 2.5 to 2.6m
	(23)	Inter-Vehicle Unit Distance	Min. 2.7m
Second Semi- Trailer	(24)	Length	14.5 to 16.2m
	(25)	Wheelbase	10.2 to 12.5m
	(26)	Swing Radius	Max. 2.0m
	(28)	Tandem Spread Tridem Spread	1.2 to 3.1m 2.4 to 3.7m
	(29)	Effective Rear Overhang	Max. 35% of Wheelbase
	(30)	Track Width - trailer with single tires built before 2010 - trailer with single tires built after 2009 - all other trailers	 2.3 to 2.6m 2.45 to 2.6m 2.5 to 2.6m

* Exclusions to width and length measurements are as specified in HTA s109. Measurements also exclude authorized aerodynamic devices at rear of trailers.

Appendix A – LCV A-Train Double – Description, Dimensions and Weights



Feature	Weight Limit
Manufacturer's Weight Ratings	Vehicle and its components shall not exceed rated capacity

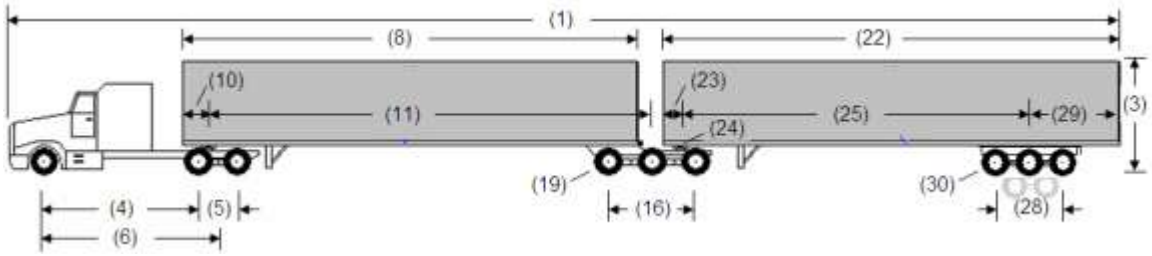
Tire Width - as marked by manufacturer on sidewall	
Front (steering) Axle	Max. 11 kg per mm (279 kg per inch)
Any other tire	Max. 10 kg per mm (254 kg per inch)

Axle Weights	
Front (steering) Axle	Max. 7,700 kg (5,000 kg if no written GAWR verification)
Tandem Axle (Drive, Dolly or Trailer): - 1.2 < 1.8m - 1.8m or more	 Max. 18,000 kg Max. 19,100 kg (18,000 kg if single tires)
Tridem Axle spread: - 2.4 < 3.0m - 3.0 < 3.6m - 3.6 to 3.7m	 Max. 21,300 kg Max. 24,000 kg Max. 26,000 kg

Weight Restriction #1 (A) > (B)	Sum of weights of drive axles plus lead trailer axles (A) must be greater than sum of weights of dolly axles plus second trailer axles (B).
Weight Restriction #2	
Inter-Vehicle Unit Distance - 2.7 < 3.0m - 3.0 < 3.6m - 3.6m or more	Sum of weights of rear axles of lead trailer plus dolly axles (C): Max. 25,000 kg (32,000 kg if tridem/tandem group) Max. 28,000 kg (34,000 kg if tridem/tandem group) Max. 32,000 kg (37,000 kg if tridem/tandem group)

Allowable Gross Vehicle Weight (AGVW)	AGVW = sum of the actual weight on the front axle plus the allowable weights of all other axles (none of which exceed any limits in this chart). AGVW shall not exceed 63,500 kg.

Appendix B – LCV B-Train Double – Description, Dimensions and Weights



Combination Description

The LCV B-Train Double consists of a tractor and two semi-trailers connected by a fifth wheel assembly whose lower half is mounted on the rear of the foremost semi-trailer. The front axle of the tractor is a single axle with single tires and the drive axle is a tandem axle. The lead semi- trailer has a tridem axle and the second trailer has a tandem or tridem axle.

Alternative Configurations

a) When the trailers are separated, the resulting tractor-trailer must comply with all requirements for SPIF #1 (ie. the lead trailer may not be operated with bogie extended).

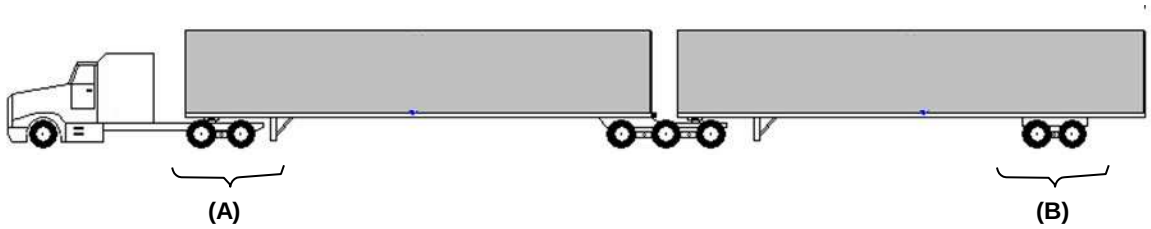
b) Either trailer may be equipped with additional 'invisible' lift axles provided axles are not deployed.

DIMENSIONAL LIMIT CHART (LCV B-TRAIN DOUBLE)

	Ref	Feature	Dimensional Limit *
Overall	(1)	Length of Combination and Load	Max. 40m
	(2)	Width of Vehicle and Load	Max. 2.6m
	(3)	Height of Vehicle and Load	Max. 4.15m
Tractor	(4)	Interaxle Spacing	Min. 3.5m
	(5)	Tandem Axle Spread	1.2 to 1.85m
	(6)	Wheelbase	Max. 6.2m
Lead Semi- Trailer	(8)	Length (excluding extended bogie)	11.5 to 14.65m
	(10)	Swing Radius	Max. 2.0m
	(11)	Wheelbase	Max. 13.5m
	(16)	Tridem Spread	2.4 to 3.7m
	(19)	Track Width - trailer with single tires built before 2010 - trailer with single tires built after 2009 - all other trailers	 2.3 to 2.6m 2.45 to 2.6m 2.5 to 2.6m
Second Semi- Trailer	(22)	Length	11.5 to 16.2m
	(23)	Swing Radius	Max. 2.0m
	(24)	Kingpin behind rearmost axle of tridem	Max. 0.3m
	(25)	Wheelbase	Max. 11.5m
	(28)	Tandem Spread Tridem Spread	1.2 to 1.85m 2.4 to 3.7m
	(29)	Effective Rear Overhang	Max. 35% of Wheelbase
	(30)	Track Width - trailer with single tires built before 2010 - trailer with single tires built after 2009 - all other trailers	 2.3 to 2.6m 2.45 to 2.6m 2.5 to 2.6m

* Exclusions to width and length measurements are as specified in HTA s109. Measurements also exclude authorized aerodynamic devices at rear of trailers.

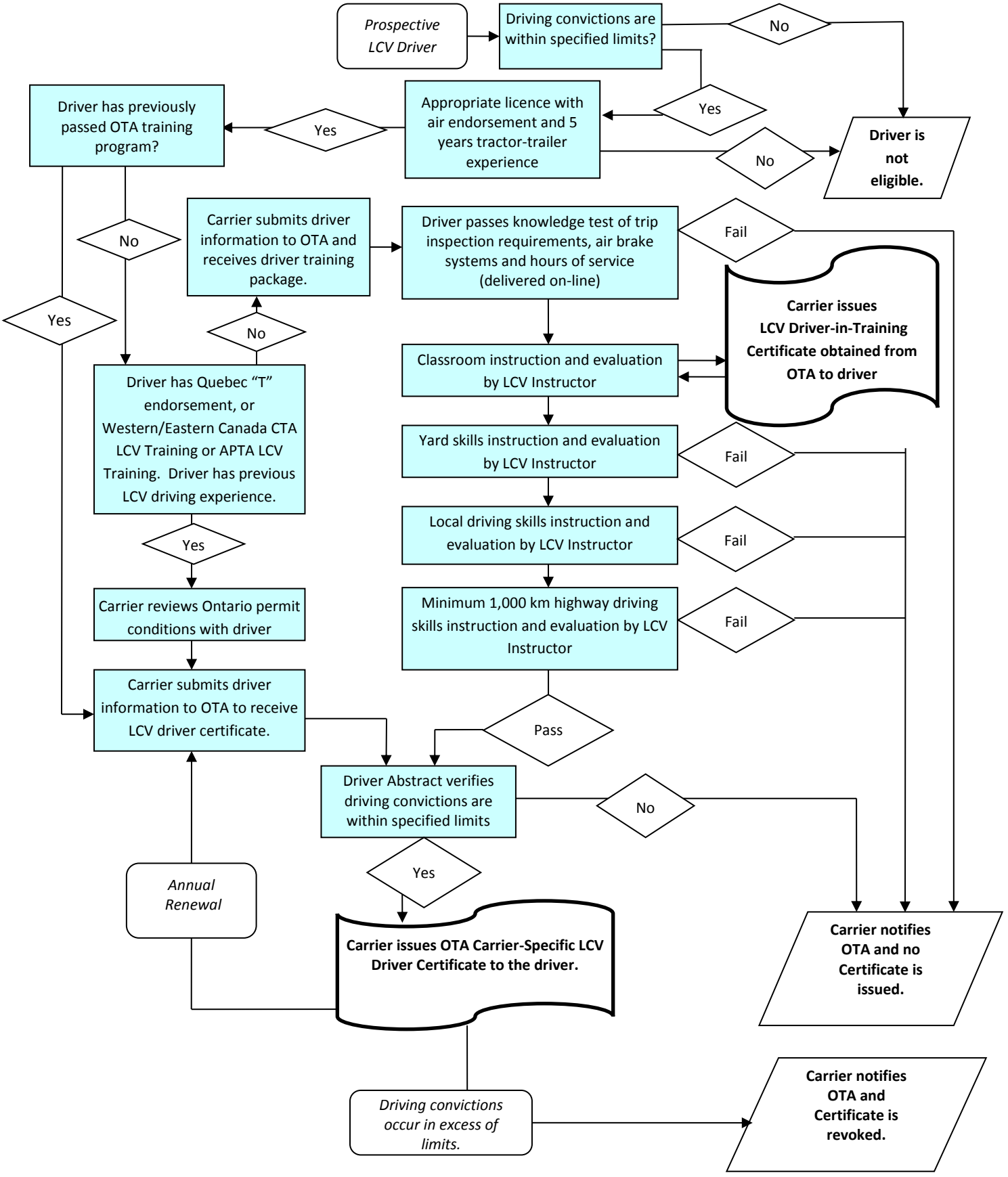
Appendix B – LCV B-Train Double – Description, Dimensions and Weights



WEIGHT LIMIT CHART (LCV TURNPIKE B-TRAIN DOUBLE)

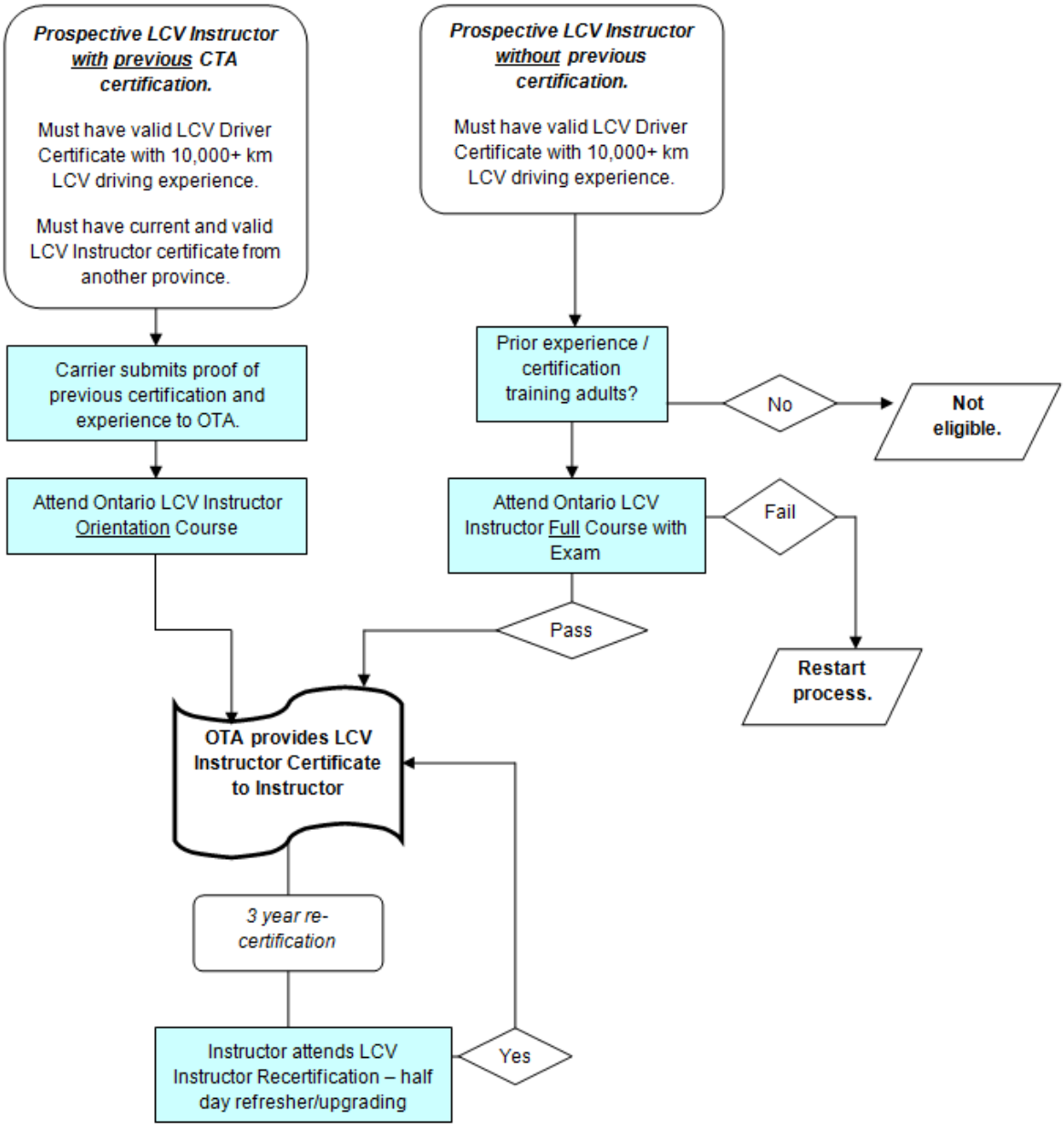
Feature	Weight Limit
Manufacturer's Weight Ratings	Vehicle and its components shall not exceed rated capacity
Tire Width - as marked by manufacturer on sidewall	
Front (steering) Axle	Max. 11 kg per mm (279 kg per inch)
Any other tire	Max. 10 kg per mm (254 kg per inch)
Axle Weights	
Front (steering) Axle	Max. 7,700 kg (5,000 kg if no written GAWR verification)
Tandem Axle (Drive, Dolly or Trailer): - 1.2 < 1.8m - 1.8m or more	 Max. 18,000 kg Max. 19,100 kg (18,000 kg if single tires)
Tridem Axle spread: - 2.4 < 3.0m - 3.0 < 3.6m - 3.6 to 3.7m	 Max. 21,300 kg Max. 24,000 kg Max. 26,000 kg
Weight Restriction #1 (A) > (B)	Weight on drive axles (A) must exceed weight on second trailer axles (B).
Allowable Gross Vehicle Weight (AGVW)	AGVW = sum of the actual weight on the front axle plus the allowable weights of all other axles (none of which exceed any limits in this chart). AGVW shall not exceed 63,500 kg.

Appendix C – LCV Driver Certification Process



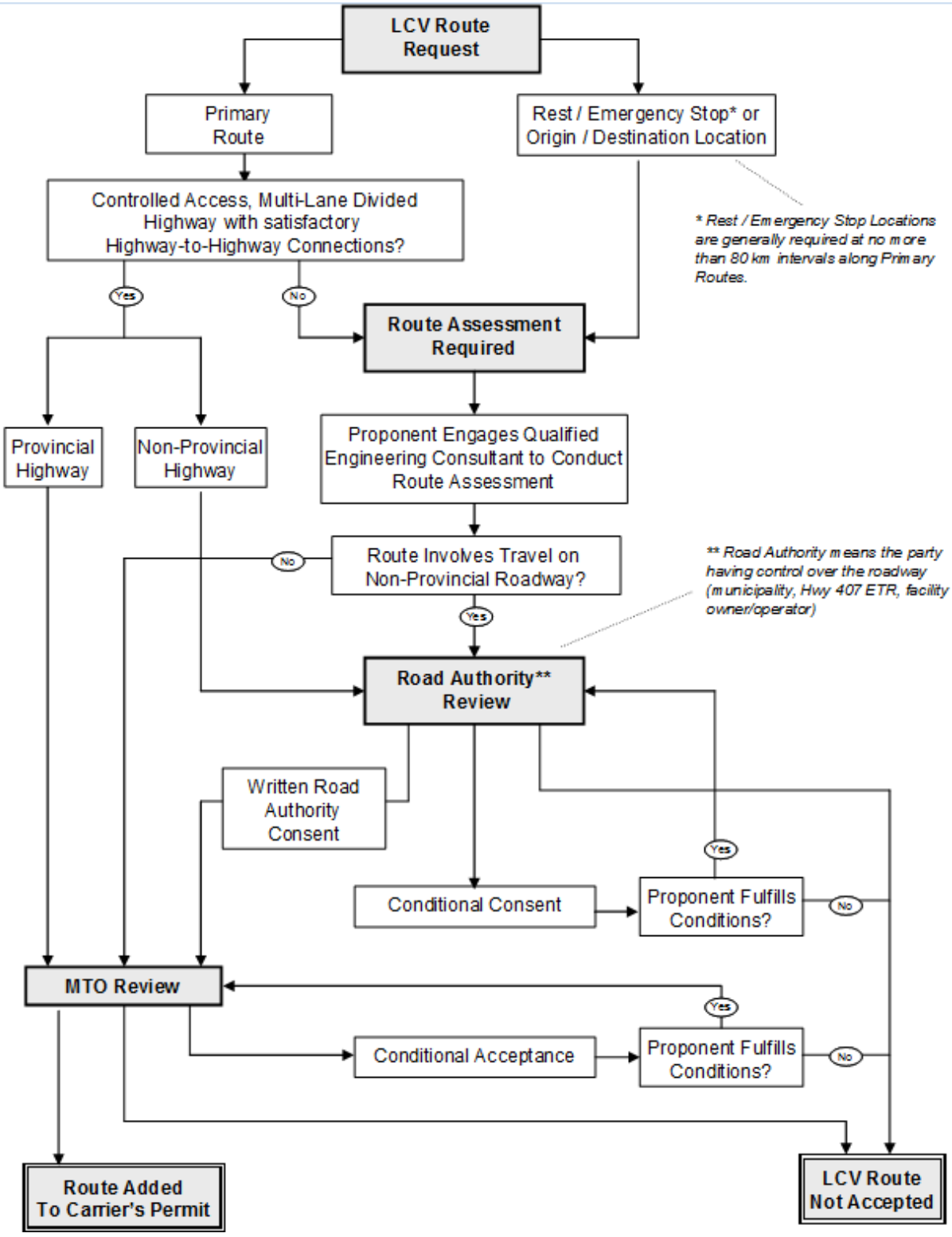
Note: Carrier must maintain verifying documentation for each shaded box and provide copies to MTO or police on request.

Appendix C – LCV Instructor Certification Process



Note: Carrier must maintain verifying documentation for each shaded box and provide copies to MTO or police on request.

Appendix D – Route Acceptance Process

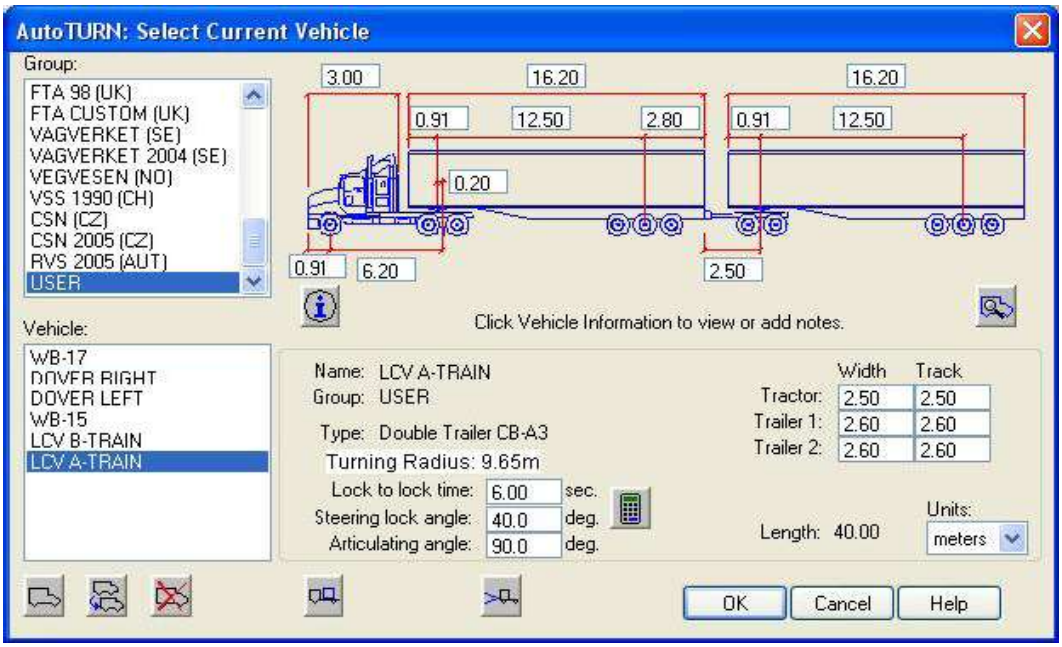


Note: Carrier must maintain verifying documentation for each shaded box and provide copies to MTO or police on request.

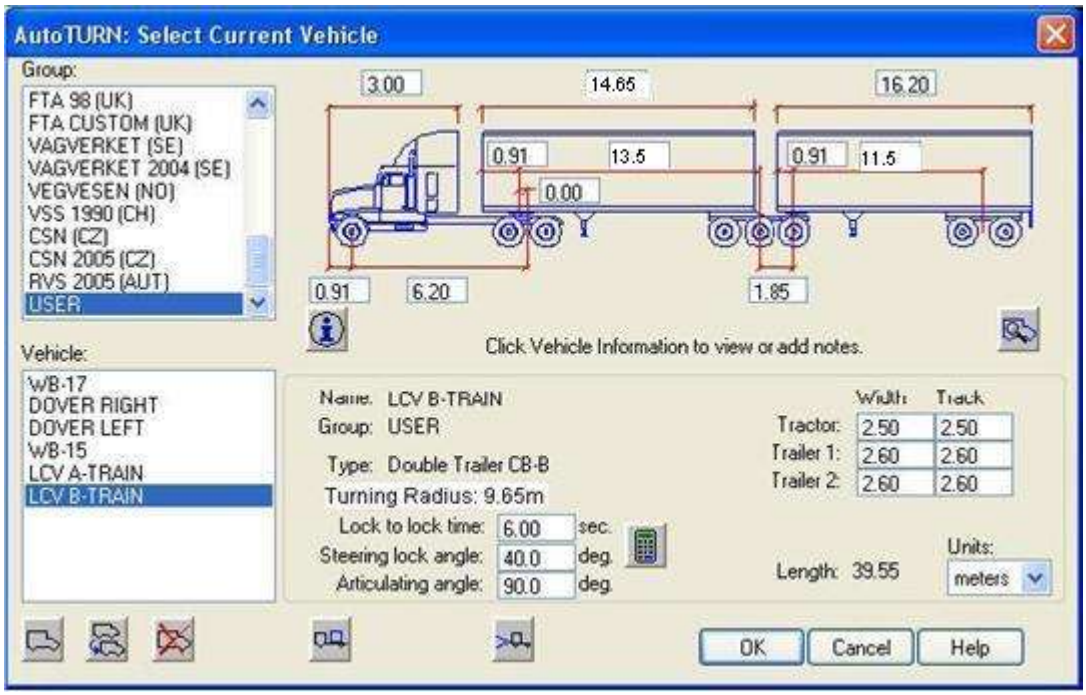
Appendix D – Route Acceptance Process

For purposes of any engineering assessment required in section 3, following is acceptable input data for the computer simulated turning templates. For purposes of overlaying the design drawings with turning templates, a buffer of 0.5m is required between the vehicle wheels and any curbs, fixtures, edge of the pavement, etc.

A-Train



B-Train



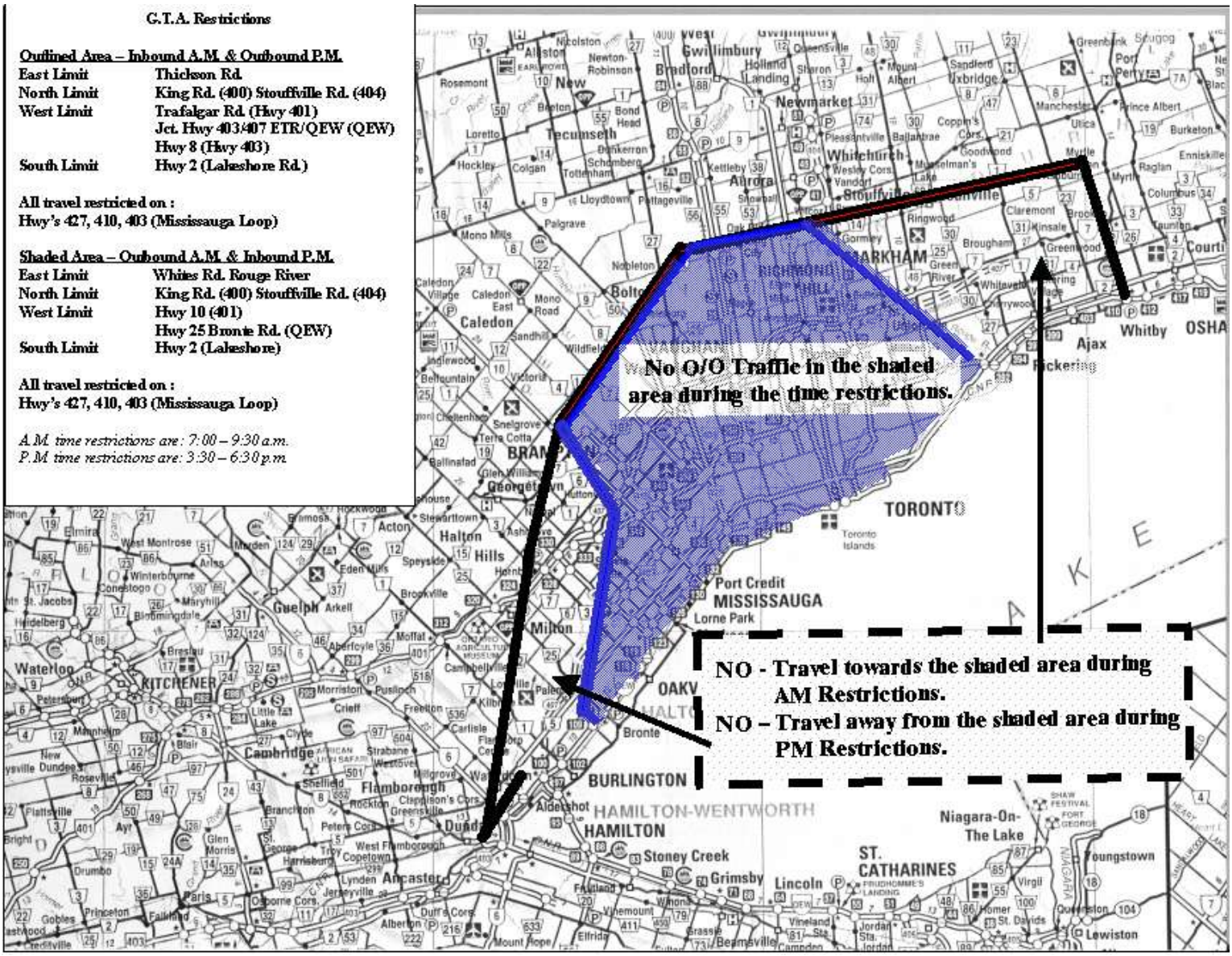
Note: Carrier must maintain verifying documentation for each shaded box and provide copies to MTO or police on request.

Appendix E – LCV Rear Sign

At least 230 cm wide by 30 cm high.

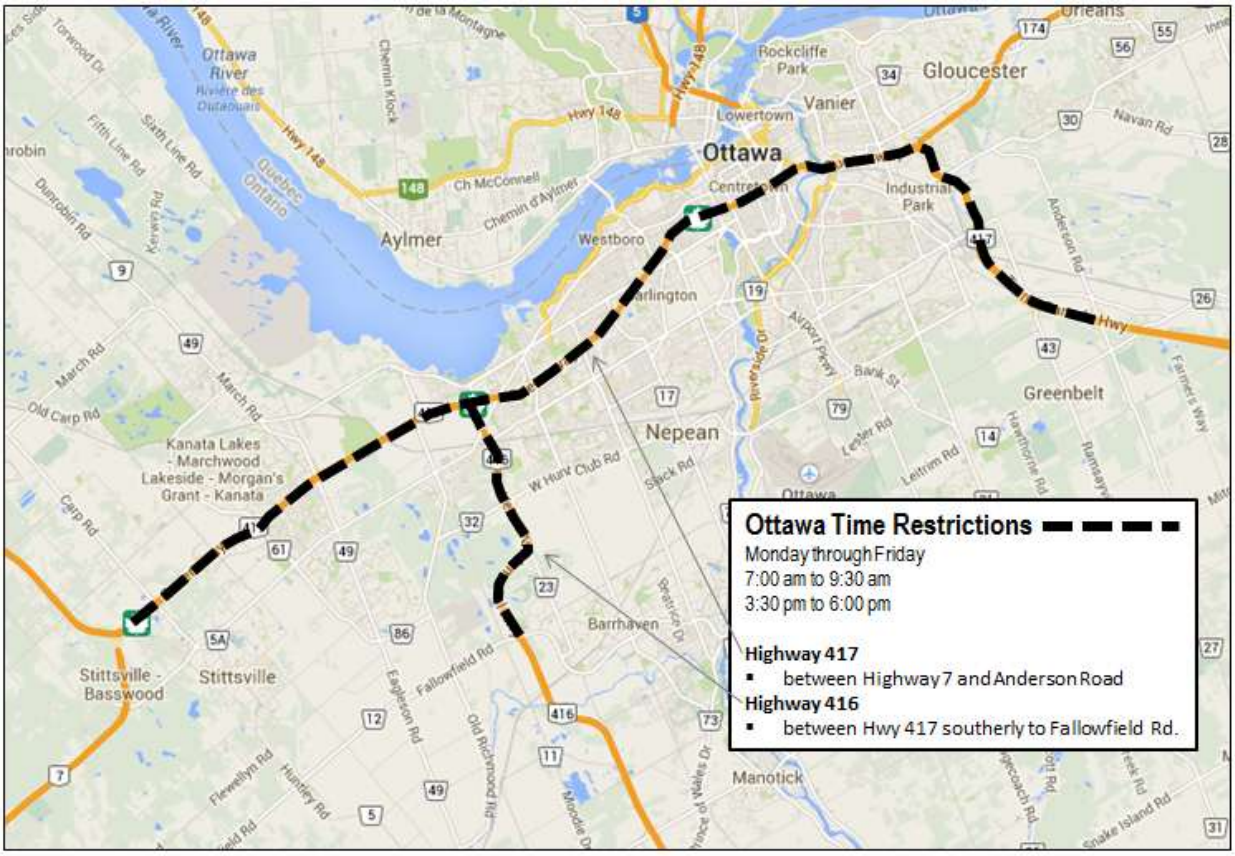
Note: Carrier must maintain verifying documentation for each shaded box and provide copies to MTO or police on request.

Appendix F – GTA Monday to Friday Time of Day Restrictions



Note: Carrier must maintain verifying documentation for each shaded box and provide copies to MTO or police on request.

Appendix F – Ottawa Monday to Friday Time of Day Restrictions



Note: Carrier must maintain verifying documentation for each shaded box and provide copies to MTO or police on request.