PIVOTING OF TRAFFIC SIGNAL STRUCTURES EQUIPPED WITH ROTATABLE BASES

Traffic Operations

General

Alberta's Commercial Vehicle Dimension and Weight Regulation details the maximum size and weight of vehicles and loads allowed on Alberta's provincial highways and includes provisions for the accommodation of oversize and overweight loads. Oversize and overweight loads must have a permit to operate in Alberta, as they exceed the capacity of typical Alberta highways.

Transportation and Economic Corridors has designated portions of highways as a high load corridor to accommodate oversize vehicles generated by economic activity involving the movement of large equipment, structures, and machinery from one location (often the place of fabrication) in the province to another (assembly location/destination). Highways within the high load corridor are typically designed to accommodate loads up to nine metres in height and nine metres in width, although some can only accommodate smaller sized loads. Traffic signals located within or near the high load corridor are generally equipped with rotatable bases which allow the signal mast arm to be pivoted out of the way to allow an oversize load to pass through the intersection.

A listing of routes designated as a high load corridor can be found on the following website:

https://www.alberta.ca/high-load-corridor

This recommended practice presents a standard procedure for pivoting traffic signal structures equipped with rotatable bases to ensure that the following goals will be achieved:

- Protect worker and motorist safety;
- Protect against damage to traffic signal equipment; and
- Minimize the disruption to vehicular and pedestrian traffic.

Significant coordination between escort vehicles, the operator of the oversized load, flagpersons, signals technicians, etc. is needed to meet these goals. This recommended practice provides a procedure that will aid in facilitating this coordination.

While most traffic signals equipped with rotatable bases are located on or near the high load corridor, this procedure can be applied for any provincially owned and operated traffic signal equipped with rotatable bases.

Standard

As there are several companies operating within the province that may need to rotate traffic signals on occasion, traffic signal rotatable bases are left unlocked.

However, any operators wishing to transport an oversize load and/or wishing to rotate a traffic signal must apply for a permit through Alberta Transportation and Economic Corridors' Central Permit Office. More details on the permitting process can be found on the following website:

https://www.alberta.ca/commercial-vehicle-oversize-and-overweight-permits

Listed below are some of the details that relate to the pivoting of traffic signal bases and should be included in an application for a permit:

- An outline of the route and timeline for the transport of the oversize load;
- A list of which signals will need to be pivoted and when this will occur; and
- Temporary traffic control plans at each of the above signal locations.

When issuing a permit, Transportation and Economic Corridors will also include a statement indicating that the applicant shall be responsible for any damages to the traffic signals, poles, road surface or other structures that may occur because of the signal pivoting operation.

Flagperson and Traffic Control Device Requirements

Any intersection where a traffic signal will be pivoted must have all accesses to the intersection controlled by a flagperson. Flagpersons must meet the requirements outlined in Section 5.6 of Alberta Transportation and Economic Corridors' Traffic Accommodation in Work Zones Manual.

Flagperson warning signs (WD-A-21) must be placed at each intersection approach in advance of the flagperson as outlined in the Traffic Accommodation in Work Zones Manual. The placement of flagpersons and flagperson signs for a temporary intersection closure (allowing traffic signal poles to be pivoted for passage of an oversize load) is detailed in Figure 1.

Traffic Signals may remain in operation during the pole pivoting procedure described below or a signal technician may set the signals to flash mode (either flash red in all directions or flash red on the minor road and flash amber on the major road) for greater awareness at the intersection. Signal technicians must have an International Municipal Signals Association (IMSA) Traffic Signals – Level 2 certification or greater with at least one year of experience wiring/programming cabinets to enter a signal cabinet and adjust the signal operation.

If the signals remain in operation, flagpersons should only permit traffic to proceed during the designated green phase to avoid motorist confusion over which traffic control device takes precedence.

Signal Pole Pivoting Procedure

The traffic control procedure for crossing a signalized intersection where the signals must be pivoted to accommodate an oversize load is as follows:

1. Flagperson (WD-A-21) signs must first be placed in advance of intersection on all approaches. Refer to Figure 1.

2. Flagperson stations placed on all approaches to control traffic. Flagperson cannot direct traffic until flagperson signs have been set up in advance of the flagging stations. As an additional safety measure, a traffic signal technician may also set the traffic signals to flash mode, prior to commencing flagperson activities.

3. Once traffic has been stopped in all directions, the necessary signal pole(s) are pivoted to allow the oversize load to pass through the intersection. To minimize the delay experienced by motorists, the pivoting of the traffic signal pole(s) should be coordinated as closely as possible with the arrival of the oversize load.

4. After the oversize load has passed through the intersection, the signal pole(s) should be returned to their original position and the signal returned to its normal mode of operation (if it was placed in flash mode).

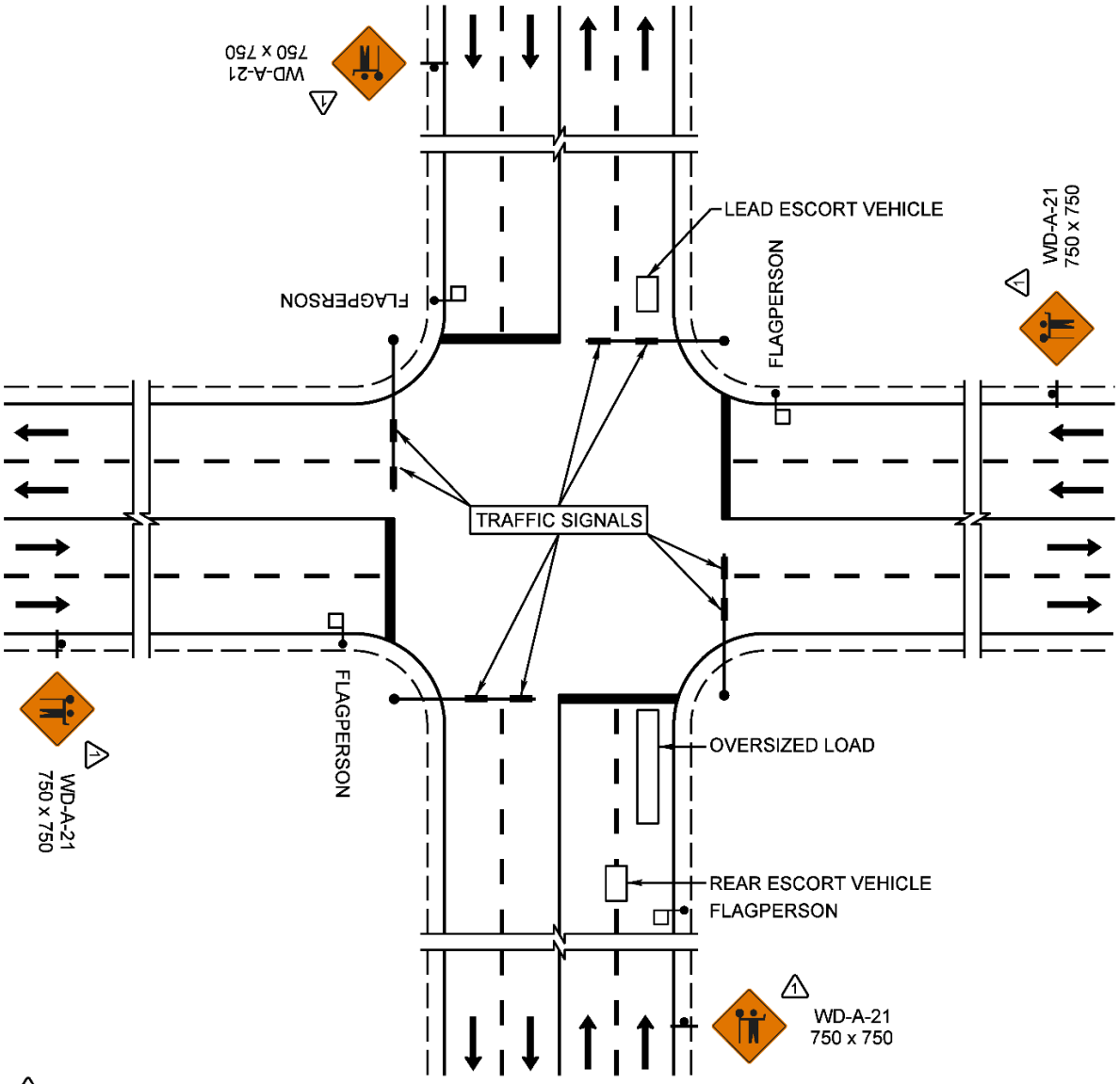
5. Once the signal has been returned to its normal operation, it must be monitored for a minimum of three cycles to ensure that signal indications are functioning, and the signals are cycling properly.

6. After normal signal operation has been confirmed, the flagperson stations can be shut down and the flagperson signs can be removed. The flagperson signs shall not be removed until the flagperson stations have been shut down.

References to Standard

Traffic Accommodations in Work Zones Manual *Section 5.6* *Section 9*	 Flagpersons and Similar Traffic Control Methods Standard Drawings for Urban Highways
Traffic Safety Act *Commercial Vehicle Dimension and Weight Regulation*	 Part 4 – Over dimensional and Overweight Commercial Vehicles

INTERSECTION CLOSURE TO ACCOMMODATE OVERSIZE LOAD



1 NOTE:

1. CONSIDERATION MUST BE GIVEN TO TRAFFIC VOLUME, SIGHT DISTANCE, SIGN SPACING DURATION OF INTERSECTION CLOSURE, NIGHT CONDITIONS AND OTHER FACTORS TO ENSURE TRAFFIC CONTROL SERVICES AND ARE ADEQUATE IN EACH INSTANCE.
2. THE FLAG PERSON ON THE OVERSIZED APPROACH SHOULD BE LOCATED FAR ENOUGH FROM THE INTERSECTION TO ALLOW THE OVERSIZED LOAD AND THE REAR ESCORT VEHICLE(S) TO STOP BEFORE ENTERING THE INTERSECTION.
3. ALL OTHER FLAGPERSONS SHOULD BE LOCATED WHERE THEY CAN SAFELY STOP ALL THE TRAFFIC INCLUDING TURNING MOVEMENTS PRIOR TO THE INTERSECTION.
4. WD-A-21 SHALL BE MOUNTED ON A PORTABLE STAND 0.3 m ABOVE THE ROAD AND 100 m - 150 m IN ADVANCE OF THE FLAGPERSON. THE PORTABLE STAND AND ANY OBJECTS USED TO STABILIZE THE PORTABLE STAND MUST BE AN ACCEPTED INDUSTRY STANDARD AND MIST NOT PRESENT A HAZARD TO TRAFFIC.

FIGURE 1

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