

ITS specification

Over-height vehicle detection

(ITS-08-02)

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NZ Transport Agency
Private Bag 6995
Wellington 6141

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Document management plan

1) Purpose

The purpose of this document is to specify the general requirements of an over-height vehicle detection system.

2) Document information

Document name	<i>ITS specification: Over-height vehicle detection</i>	
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Document author	Jamie French	(09) 300 9000
	Tom Harris	Tom.Harris@opus.co.nz (09) 355 9542
	Bruce Walton	Bruce.Walton@beca.com (09) 336 9465
	Paul Addy	Paul.Addy@beca.com (09) 308 0833
	James Shi	James.Shi@nzta.govt.nz
Document owner	Russell Pinchen/Kevan Fleckney	

3) Key words

ITS Over-Height Vehicle Detection.

Record of amendments

Amendment number	Section amended	Description of change	Updated by	Effective date
Draft R0	All	ITS Draft Specifications Issue	TLH & JF	20/9/2010
Final R1	All	Provisional	BW & JS	15/2/2012

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1.0 Purpose of the document

The purpose of this document is to outline minimum requirements a contractor would need to meet in the supply, testing, installation and commissioning of an over-height vehicle detection system.

2.0 Over-height vehicle detection system

2.1 General

In general over-height vehicle detections systems are deployed to warn drivers if their vehicle exceeds the maximum height for the upcoming infrastructure, whether that be a tunnel entrance, low bridge or sign gantry.

Typically these systems shall consist of:

- Infrared beam transmitters and receivers.
- Electronic warning sign.
- Uninterruptable power supplies and
- Inductive traffic loop.

2.2 Detector performance

The following outlines the minimum requirements that would be expected from an over-height detector:

- The unit would be expected to exist in an outside environment and have a minimum rating of IP66;
- The ability to be both AC or DC powered;
- Surge protection for both AC and DC supplies;
- During power failure scenario the ability to continually operate with supplemented supply (solar power, battery etc);
- Narrow field of view within the optics to help prevent sunlight contamination;
- A form of Automatic Gain Control (AGC) to compensate for any signal loss that could occur from misalignment, weather effects, dust on the lens etc;
- Minimum 60m (200 feet) range at optimal performance, with a maximum range of 215 meters (700 feet);
- Reaction Speed of 1-120 km/hr for a 5cm diameter object;
- Alarm outputs that have the ability to integrate with external system;
- The over-height detector system must have the capability to connect to the existing traffic management system (DYNAC) to alert control room operators within the Traffic Operations Centre of an over-height vehicle;
- An alarm reaction between a minimum of 2 seconds and maximum 30 seconds;
- Fault reporting mechanisms detailed by not limited to following events:
 - Loss of power

- Loss of optical signal
- Signal blockage that occurs over 10 seconds
- Locally interface to allow configuration at site;
- The ability to integrate with external traffic management systems and electronic signage;
- The ability to operate with a thermostat controlled hood heater in cold temperatures;
- The detector shall have the ability to detect height, speed and direction of travel.

2.3 In road loop detector

For a detailed specification of an inductive traffic loop please refer to the NZ Transport Agency's *ITS specification: Inductive loops and feeder cables* (ITS-03-01), in the context of this specification the inductive traffic loop detector is provide confirmation of vehicle upon activation of the over-height alarm only.

2.4 Warning sign

Any recommended over-height detection system must have the ability to integrate with electronic warning signs that will illuminate upon detection from over-height detectors.

The minimum requirements for a warning sign shall consist of a mandatory message directing over-height vehicles to the next exit or nearest refuge zone supplemented by flashing warning beacons.

2.5 Optional video

As an option, a video component can be added to the system to capture and store video images of vehicles which trigger the over-height detector.

2.6 Optional traffic counter

As an option, would be the ability to install a digital traffic counter that would record every occurrence of an over-height trigger.