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Transport Infrastructure Ireland

TII Publications

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The Location and Layout of Service Areas

DN-GEO-03028
April 2017

DN Design

Standards

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TII Publications

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Contents

Updates to TII Publications resulting in changes to

The Location and Layout of Service Areas DN-GEO-03028

Date: April 2017

Amendment Details:

This standard supersedes DN-GEO-03028 published in June 2014. This principle changes from the previous standard are as follows:

a) Title has been changed to “The location and Layout of Service Areas”.

b) The principles to be followed for the layout of Type 1 (Terminal) Service Areas which may or may not be on-line, but which are provided to serve port related traffic have been included in this update.

c) The standard has been updated to incorporate TII’s policy on service areas.

d) Reference has been made to EU Directive 2014/94/EU on the deployment of alternative fuels infrastructure.

e) The minimum length of slip roads providing access to service areas has been included as per the requirements of DN-GEO-03060 Geometric Design of Junctions.

f) Details for cycle parking facilities have been removed.

Contents Table

1. Introduction

1.1 General

This Standard outlines the principles to be followed for the siting and layout of on-line service areas on national roads and also for the layout of Terminal service areas. Terminal service areas may or may not be on-line and are provided to serve port related traffic.

This Standard shall be read in conjunction with TII's policy on service areas.

1.2 Scope

This Standard outlines the requirements for the siting and layout of on-line service areas and terminal service areas which may or may not be on-line on Motorways, Type 1 Dual Carriageways and roads categorised as Express Roads.

Guidance relating to service areas at other locations on national roads, including at Motorway, Type 1 Dual Carriageway and Express Road junctions is provided in the document "Spatial Planning and National Roads – Guidelines for Planning Authorities", published by the Department of Environment, Community and Local Government.

1.3 Implementation

This Standard shall be used as the basis for the design of all on-line and terminal service areas on national roads. The provision of on-line and/or terminal service areas shall be considered when designing new or improved Motorways, Type 1 Dual Carriageways and roads categorised as Express Roads as defined in DN-GEO-03031 Rural Road Link Design.

1.4 Definitions

Particular terms used in this Standard are defined as follows:

On-line Service Area: A service area with direct access to the mainline of a Motorway or Type 1 Dual Carriageway, and located other than at or adjacent to a junction.

Type 1 Service Area (Full Service Area): A large scale service area providing an amenity building (including a convenience shop, restaurant, washrooms and tourist information), fuel facilities, parking and picnic area, intended to be the normal provision on Motorways and Type 1 Dual Carriageways.

Type 2 Service Area (Rest Area): A small scale service area providing parking, picnic and toilet facilities, but without a main amenity building or fuel facilities.

Type 1 (Terminal) Service Area: A service area located in the vicinity of the terminal of a route, within or adjacent to a port or similar facility, designed to provide appropriate safe and secure parking for commercial vehicles. Terminal service areas will contain amenities and facilities to cater primarily for the needs of commercial traffic appropriate to the level of demand expected at the particular location subject to the approval of TII.

ADR Vehicles: The classification of vehicles carrying fuel or other dangerous substances under the European **A**greement concerning the International Carriage of **D**angerous Goods by **R**oad (ADR) treaty.

For definition of the various road types see DN-GEO-03036 Cross Sections and Headroom.

2. Siting of Service Areas

2.1 General

For general guidance on the siting of service areas, reference should be made to the siting of lay-bys in DN-GEO-03046, The Location and Layout of Lay-bys.

The siting of a service area should benefit commercial, business, and private drivers, while, where possible, blending with and complementing the existing environment.

2.2 Level of Provision

The level of provision for Type 1 and Type 2 on-line Service Areas and Type 1 (Terminal) Service Areas shall be in line with Transport Infrastructure Ireland's (TII) policy on service areas.

2.3 Criteria for Site Selection

When considering a site for suitability as a service area, the following criteria shall be considered:

a) Road Category Type;

b) Projected Annual Average Daily Traffic (AADT) at year of opening of the service area;

c) Projected % of Heavy Goods Vehicles (HGVs);

d) Distance to adjacent on-line service area or locally available amenities;

e) Availability of services including potable water supply, wastewater disposal, telephone and electricity supplies;

f) Potential environmental impacts on human environment such as air, noise, visual and land issues;

g) Potential impacts on the environment such as endangered species, aquatic habitat, wetlands or archaeological sites;

h) Road geometry – horizontal and vertical alignment should be such that easy access for all types of vehicles is facilitated i.e. accesses should be provided on a straight or the outside of a bend, the longitudinal gradient should be not greater than plus or minus 2%, adequate Stopping Sight Distance (SSD) should be provided in both directions, the minimum length of slip roads providing access to service areas shall be the desirable minimum SSD for the mainline as per DN-GEO-03060 Geometric Design of Junctions;

i) Land requirements – where appropriate, existing areas of land in public ownership should be utilised. Should additional land acquisition be necessary, locations should be selected that minimise the effect on local land use;

j) Physical characteristics of site – factors to be considered should include the following: soil characteristics, ground water regime, topography, existing vegetation, water features, historic features, setting (urban/rural), views or vistas, prevailing winds, proximity to existing or planned residential development and proximity to environmentally sensitive areas.

k) Minimum distance from existing junctions – the minimum weaving length between a Service Area junction and an existing grade separated junction shall be in accordance with DN-GEO-03060.

3. Type 1 Service Area

3.1 General Layout

Type 1 Service Areas shall include a main amenity building or complex offering a range of services together with fuel facilities, parking, and picnic and toilet facilities.

A typical layout for a Type 1 Service Area is given in Figure 3.1.

Access between the national road and the service area should be in accordance with requirements of DN-GEO-03060 for road junctions of the types generally in use on the adjacent section of road.

Where the total AADT is less than 40,000 at the year of opening, Type 1 Service Areas shall generally be single-sided and accessible from both directions of travel. Where the AADT is over 40,000, subject to site-specific conditions, they shall be double-sided, i.e. a separate facility shall be provided for each carriageway. Any decision as to whether a Type 1 Service Area is single or double-sided shall be subject to the approval of TII.

Internal road geometry and carriageway cross sections of accesses and circulation routes shall be in accordance with Tables 3.1 and 3.2, ensuring that consideration is given to the management of broken-down vehicles on one-way single carriageways. Road widening shall be provided where necessary to accommodate vehicle swept paths.

Table 3.1: Service Area Internal Road Geometry

	HGV Circulatory Road	Light Vehicle Circulatory Roads
Minimum Sight Distance	35m	20m
Minimum Horizontal Radius	25m	15m
Maximum Gradient	5.5%	6.0%
Minimum Vertical Curve (K value)	6	2

Table 3.2: Service Area Internal Road Cross Sections

Road Name	Carriageway Width* (m)	Hard Strip (m)	Verge (m)
HGV Circulatory Road (two-way)	7.0	0.5	1.5
HGV Circulatory Road (one-way)	4.0	0.5	1.5
Light Vehicle Circulatory Roads (two-way)	6.0	0.5	1.5
Light Vehicle Circulatory Roads (one-way)	3.5	0.5	1.5

*Note: * Carriageway width indicated is exclusive of hardstrips.*

The service area internal road geometry shall provide for the separation of passenger cars from HGVs and coaches upon entering the service area. The geometry shall minimise the number of conflict points between vehicles and pedestrians.

A minimum footway provision of 2m width, replacing the standard verge, shall be provided on all anticipated pedestrian desire lines. Where these desire lines cross over the internal service area link roads, a pedestrian crossing facility shall be provided with drop kerbs, lighting and signage.

The service area shall have a combined amenity/fuel facilities building. The fuel facilities shall be the first amenity accessible on entering the service area in order to allow users to refuel their vehicles prior to availing of parking and other facilities. However, it must also be possible for all vehicles to re-circulate from the parking areas back to the relevant fuel facility.

Segregated parking areas shall be provided for cars and HGV/coaches. The layout shall prioritise passenger car traffic flows by minimising the distance passenger cars travel through the service area and ensuring HGV/coach vehicles give way at internal junctions.

Where possible, restricted access to the service area from the local road network should be provided for staff and light delivery vehicles. The degree to which it will be possible to provide this restricted access will be determined by the suitability of the local road network.

The road geometry of the accesses and the roads within the service area shall be subject to the road safety audit requirements of GE-STY-01024 Road Safety Audit.

Depending on the proposed location, a Garda enforcement area, as highlighted in Figure 3.1, may be incorporated into the design of the service area. The provision and layout details of the Garda enforcement area shall be agreed with TII. The location of an enforcement area shall be such that Gardaí can direct HGVs to a HGV parking area, after inspection, without leaving the service area. For layout details of the Garda enforcement area, reference should be made to DN-GEO-03046.

An all-weather picnic area shall be designated within the service area close to the main amenity building and remote from HGV parking. Pedestrians shall be able to reach a picnic area without crossing the circulation carriageway. A minimum area of 200m^2 should typically be provided. The picnic area shall be surrounded by a suitably landscaped strip of minimum width 5m.

The boundary of the service area shall be enclosed by a minimum 2m high secure fence to prevent the trespassing of any persons onto adjacent land. This fence shall also be in-keeping with the local environment.

3.2 Facilities for Users

The following minimum facilities shall be provided at Type 1 Service Areas:

- Service area amenity building providing:
  - General entrance and circulation area with travel and tourist information centre;
  - Convenience shop;
  - Restaurant facilities;
  - Toilet areas, including facilities for disabled users (a minimum of 3 cubicles for males, 5 cubicles for females, 1 cubicle for disabled users) and wash and shower facilities (a minimum of 1 self-contained washing cubicle to include lockable doors, wash hand basin, mirror, shaving point, bench and shower);
  - Baby changing room;
  - Additional toilet facilities, accessible from the exterior of the building and to be available at all times when the amenity building is closed (a minimum of 1 cubicle for males, 1 cubicle for females, 1 cubicle for disabled users and a baby changing facility).
  - Back of house facilities;
  - Wi-Fi availability in restaurant areas.
- Other facilities:
  - Fuel station (including alternative fuels infrastructure in line with National policy);
  - Electric car charging points;

- Air and water;
- Recreation/picnic areas;
- Indoor and outdoor children's play areas;
- Refuse points.

3.3 Parking Layout

Adequate parking shall be provided adjacent to the user facilities to ensure that vehicles are not parked on the carriageway of a road where they may impede traffic and create a safety hazard.

Provision for car, coach, HGV, motorcycle, pedal cycle, staff, and delivery parking shall be considered at an early stage in the design process to ensure a balanced distribution of space can be provided according to use.

Parking for staff and delivery vehicles shall be clearly marked to ensure that it is only available to designated vehicles. Staff parking shall be segregated from other parking.

The layout of the car parking bays shall be designed in accordance with Figure A.1 (Appendix A).

The layout of the coach parking bays shall be designed in accordance with Figure A.2 (Appendix A). The coach parking bay shall be segregated from the HGV parking, located close to the amenity building, and shall be designed as a drive through arrangement to avoid any potentially dangerous reversing manoeuvres.

The layout of the HGV parking bays shall be designed in accordance with Figure A.3a or A.3b (Appendix A). The HGV parking bay shall be designed to avoid any potentially dangerous reversing manoeuvres.

Parking bays for disabled users shall be provided at the rate of 5% of the total car parking provision, located adjacent to the main amenity building. The layout shall be as detailed in Figure A.4 (Appendix A)

The layout of the motorcycle parking bays shall be designed in accordance with Figure A.5 (Appendix A).

3.4 Parking Capacity

The parking provision of the service area shall reflect the anticipated demand. Demand will be affected by factors such as traffic flow, proximity to other service areas, proximity to junctions, proximity to centres of population and the presence of other local facilities.

Operational problems and increased accident risk may arise if the number of vehicles using the service area frequently exceeds the parking capacity, leading to parking on merge and diverge slip roads, internal circulation roads and verges.

The parking demand shall be assessed separately for HGVs, light vehicles, coaches and motorcycles.

Light vehicle, coach and motorcycle parking shall be based on a percentage of the total two-way light vehicle AADT flow, at year of opening of the service area, in accordance with Table 3.3. If a double-sided service area is to be provided, one-way AADTs shall be used to calculate the parking to be provided for each direction.

Table 3.3: Demand Assessment Guidelines for Light Vehicle, Coach and Motorcycle Parking Provision

Vehicle Type	% of (Light Vehicle AADT)
Car	0.40%
Coach	0.02%
Motorcycle	0.03%

HGV parking shall be based on a percentage of the total two-way HGV AADT flow, at year of opening of the service area in accordance with Table 3.4. If a double-sided service area is to be provided, one-way AADTs shall be used to calculate the parking to be provided for each direction.

Table 3.4: Demand Assessment Guidelines for HGV Parking Provision

Vehicle Type	% of (HGV AADT)
HGV	0.80%

At least one HGV parking bay shall be allocated for ADR vehicles (vehicles carrying fuel or dangerous substances). Such parking spaces shall be clearly marked and shall be isolated from adjacent bays by an approved physical barrier sufficient to provide adequate protection to the vehicles.

When assessing the provision of parking within the service area, consideration shall be given to site-specific conditions including, but not limited to, the composition of traffic (e.g. the percentage of commuters, tourist travel, etc.) and the proximity of the service area to large centres of population. As a result, it may be appropriate to adjust up or down the number of parking spaces by no more than 20% from the percentages given in Tables 3.3 and 3.4.

Consideration shall be given to the potential need for further expansion of the parking provision beyond the opening year requirement, particularly where the demand projection is recognised to be uncertain. The design shall allow for phased construction as demand increases over the operational life of the facility.

Notwithstanding the demand assessment for parking provision, the minimum number of parking bays to be provided at opening shall be in accordance with Table 3.5.

Table 3.5: Car/Coach/Motorcycle/HGV Minimum Parking Provision

Vehicle Type	Minimum Number of Parking Bays to be Provided	
	Single-Sided	Double-Sided (each side)
Car	70	40
Coach	3	3
Motorcycle	5	5
HGV	12	10

3.5 Amenity Building

The area of the convenience shop should typically be between 150m^2 and 250m^2.

The number of seats to be provided in the restaurant area should be broadly related to the total parking provision as set out in Table 3.6.

Table 3.6: Recommended Restaurant Seating Provision

Total No of Parking Spaces Provided	Recommended No of Seats in Restaurant
<100	45-90
101-150	60-120
151-200	90-150
>200	>120

The seating area to be provided in the restaurant at opening shall be a minimum of 1.5m^2 per seat.

To inform visitors of local services and tourist attractions and to provide essential travel information, each Type 1 Service Area shall include as a minimum, within the circulation area, an information point, with interactive internet tourist information. Wi-Fi access and a minimum of three internet points and a printer shall be provided.

3.6 Fuel Station

The layout of the fuel station shall be designed in accordance with current industry best practice and in consultation with the Local Authority's fire officer. Separate fuel facilities shall be provided for light vehicles and HGVs. A minimum of four separate fuel pump islands shall be provided for light vehicles and a minimum of two separate fuel pump islands shall be provided for HGVs.

A separate fuel delivery area shall be provided to minimise operational interference with the public facilities and enhance safety.

Electric car charging equipment shall be provided in the car parking area as follows:

- One DC electric vehicle fast charge point, capable of delivering 50kW; and
- One AC electric vehicle charge point, capable of delivering 44kW; and
- Three dedicated electric vehicle parking bays with the appropriate signage and markings.
- Alternative fuels infrastructure shall be provided in line with current National Policy following an assessment of market demand. Reference shall be made to EU Directive 2014/94/EU of the European Parliament of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure.

3.7 Signs and Road Markings

Entry and exit signage and markings shall be provided in accordance with the Traffic Signs Manual and TII's policy on service areas for the appropriate entry and exit junction design.

Advance signage indicating parking and the other facilities that are available within the service area shall be provided in accordance with the Traffic Signs Manual and TII's policy on service areas.

A sign displaying the retail price of both petrol and diesel shall be provided in each direction in advance of the diverge slip roads. The sign shall be in accordance with S.I. No. 178/1997 – Retail Price (Diesel and Petrol) Display Order, 1997 and to the approval of TII. The sign shall be in a format that can be amended remotely from the service area amenity building.

Where alternative fuels are provided, simple and easy-to-compare information on the prices of different fuels shall be provided in line with the EU Directive on the deployment of alternative fuels infrastructure.

A well-defined and clearly laid out signage strategy shall be provided for the internal circulation routes and shall be subject to the prior approval of TII.

Where necessary, traffic calming measures shall be implemented to control the speed of traffic within the service area.

3.8 Footways and Kerbing

All paved areas shall be kerbed to protect the integrity of the grassed areas. Non-mountable kerbs shall be provided on tight radii curves where HGVs are likely to pass. Where kerbs are required appropriate drainage infrastructure shall be provided to avoid water ponding.

Footways and kerbing shall be provided in accordance with TII's Publications Standard Construction Details CC-SCD-01101 to CC-SCD-01109 and current guidance on the provision for disabled users.

Consideration should be given to blending footways and kerbing into the existing environment by incorporating local features and materials in this design.

3.9 Lighting

Lighting of the national road mainline shall be provided at service area accesses on the same basis as at grade separated junctions on the existing section of road in question. Lighting on the national road itself shall be in accordance with DN-LHT-03038.

The lighting installation shall be designed to provide a high standard of illumination utilising high efficiency light sources with low maintenance costs.

The light source shall have good colour rendering properties and shall be high pressure sodium or metal halide in suitable luminaries complying with national standards.

Luminaries shall be mounted on columns of appropriate height taking account of the area in which they are installed. Columns should be placed to avoid damage by vehicles.

The service area shall be treated as an environmentally sensitive area, in accordance with DN-LHT-03038, to minimise night-time visual intrusion. Different lighting intensities shall be used within different zones in the service areas. A lighting level of at least 20 lux average at ground level with a minimum uniformity of 0.4 shall be provided on the slip roads in and out of the service area and major routes through the service area. The remaining parking areas shall have lighting levels of at least 10 lux average at ground level with a minimum uniformity of 0.4.

The lighting installation shall be designed to avoid glare to drivers and pedestrians using the service area and care shall be taken to avoid inappropriate light pollution beyond the service area.

3.10 Landscaping

The design of the service area shall be complementary to the surrounding area.

The service area shall be screened from the main carriageway by shaped and landscaped earthwork bunds with a maximum height of 2m.

Earthworks design is an important factor in the overall design of the service area and can be utilised to provide screening from the main carriageway and other neighbouring properties.

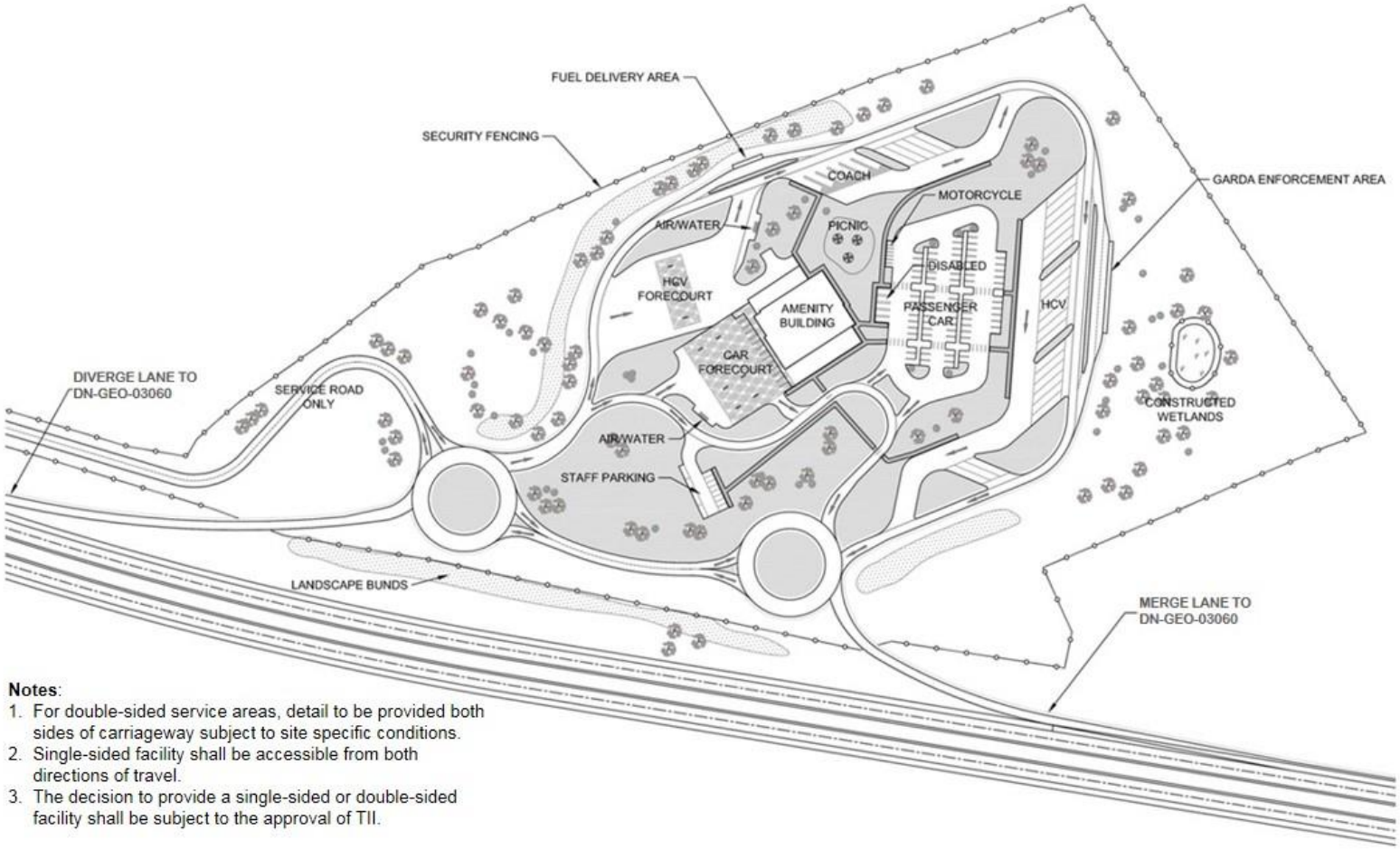
3.11 Safety and Security

Outside security cameras shall be provided covering the main parking areas, fuel forecourt area and any unfrequented areas around the services building.

3.12 Typical Details

A range of typical details are included in Appendix A.

Figure 3.1: Type 1 Service Area Typical Layout



Notes:
1. For double-sided service areas, detail to be provided both sides of carriageway subject to site specific conditions.
2. Single-sided facility shall be accessible from both directions of travel.
3. The decision to provide a single-sided or double-sided facility shall be subject to the approval of TII.

4. Type 1 (Terminal) Service Area

4.1 General Layout

Type 1 (Terminal) Service Areas shall provide parking, rest facilities and toilet/shower facilities as an absolute minimum and may include a main amenity building and/or fuel facilities based on an assessment of the demand for such services.

The minimum requirements for a Type 1 (Terminal) Service Area are provided in the following paragraphs.

The exact layout and services to be included in a Type 1 (Terminal) Service Area shall be subject to detailed assessment by the designer and subsequent approval by TII. Items to be assessed include:

a) The location of the service area (for service areas located within the confines of an operational port facility, it may not be appropriate to provide facilities which will encourage its use by private vehicles).

b) The facilities already available in the vicinity of the proposed service area.

c) The anticipated demand for the service area. In this regard, the designer shall take account not only of the existing demand but also any future plans in the area which would give rise to growth in commercial traffic and, in particular, long distance commercial traffic.

d) The level of safe and secure parking required for commercial vehicles.

Access between the national road and the service area shall be in accordance with the requirements of DN-GEO-03060 for road junctions of the type generally in use on the adjacent section of road.

In general, Type 1 (Terminal) Service Areas shall be single-sided and accessible from both directions of travel.

Carriageway cross sections on accesses and circulation routes shall be in accordance with DN-GEO-03036, ensuring that provision is made to allow traffic to pass a broken down vehicle on one-way single carriageways.

The service area internal road geometry shall provide for the separation of passenger cars from HGVs and coaches (if necessary) upon entering the service area. The geometry shall minimise the number of conflict points between vehicles and pedestrians.

A minimum footway provision of 2m width shall be provided on all anticipated pedestrian desire lines. Where these desire lines cross over the internal service area link roads, a pedestrian crossing facility should be provided with dropped kerbs, tactile paving, appropriate lighting and signage.

Segregated parking areas shall be provided for car parking and HGV/coach parking (if necessary). The layout should prioritise commercial traffic flows by ensuring non-HGV vehicles give way at internal junctions.

Road geometry within the service area shall be subject to the Road Safety Audit requirements detailed in GE-STY-01024.

The boundary of the service area shall be enclosed by a minimum 2m high secure fence to prevent any persons trespassing onto adjacent land. This fence shall be in keeping with the local environment.

4.2 Facilities for Users

The following minimum facilities should be provided at Type 1 (Terminal) service areas:

a) Toilet facilities, including facilities for disabled users (a minimum of 2 cubicles for males, 2 cubicles for females, 1 cubicle for disabled users and a maintenance storage/technical room);

b) Shower facilities;

c) Rest area for drivers consisting of tables, chairs and vending machines selling drinks, cold food and snacks;

d) Refuse points.

Where there is a need to inform visitors of local services, local tourist attractions, and to provide essential travel information, Type 1 (Terminal) service areas shall include an information point, consisting as a minimum of an information board.

4.3 Parking Layout

Adequate safe and secure HGV parking shall be provided adjacent to the user facilities to ensure that vehicles are not parked on the carriageway of a road where they may impede traffic and create a safety hazard.

Provision for car, coach, HGV, motorcycle, pedal cycle (non-motorway only), and staff/maintenance crew parking facilities, where these facilities are to be provided, should be considered at an early stage in the design process to ensure that a balanced distribution of space can be accommodated according to use.

Parking for staff (if necessary) and facilities maintenance crew shall be clearly marked to ensure that it is only available to staff or maintenance crew vehicles. Separate access routes for staff or maintenance crew vehicles shall not normally be necessary.

Where car parking is provided, the layout of car parking bays shall be designed in accordance with Figure A.1 (Appendix A).

The layout of the coach parking bays, where they are provided, shall be designed in accordance with Figure A.2 (Appendix A). The coach parking bay should be designed as a drive through arrangement to avoid any potentially dangerous reversing manoeuvres.

The layout of the HGV parking shall be designed in accordance with Figure A.3a (Appendix A). The HGV parking bay shall be designed as a drive through arrangement to avoid any potentially dangerous reversing manoeuvres.

Where car parking is provided, parking bays for disabled users shall be provided at the rate of 5% of the total car parking provision, located adjacent to the user facilities. The layout shall be as detailed in Figure A.4 (Appendix A).

Where motorcycle parking bays are provided, the layout of the motorcycle parking bays, shall be designed in accordance with Figure A.5 (Appendix A).

4.4 Parking Capacity

The parking provision of the service area shall reflect the anticipated demand. Demand will be affected by factors such as service area location, traffic flow, proximity to other service areas, proximity to junctions, proximity to centres of population and the presence of other local facilities.

Operational problems and increased accident risk arise if the number of vehicles using the service area frequently exceeds the parking capacity, leading to parking on merge and diverge tapers, internal circulation roads and verges.

The parking demand shall be assessed separately for HGVs, light vehicles, coaches and motorcycles.

The parking demand will be assessed by the designer based on the factors identified above. A detailed assessment report and justification for the numbers and mix of parking spaces proposed shall be prepared by the designer and shall be subject to the approval of TII.

Consideration should be given (where available land facilitates) to the potential need for further expansion of the parking provision beyond the opening year requirement, particularly where the demand projection is recognised to be uncertain. The design should allow for phased construction as demand increases over the operational life of the facility.

4.5 Fuel Station

The provision of fuel facilities at Type 1 (Terminal) Service areas shall be assessed based on the following:

a) The current demand at the port location and an assessment of the expected future demand for HGVs and light vehicles; and

b) The proximity of existing suitable service area facilities as detailed for Type 1 Service Areas and in line with TII's policy on service areas.

4.6 Signs and Road Markings

Entry and exit signage and marking shall be provided in accordance with the Traffic Signs Manual for the appropriate entry and exit junction design.

Advance signage indicating parking and the other facilities that are available within the service area shall be provided, in accordance with the Traffic Signs Manual.

A well-defined and clearly laid out signage strategy shall be provided for the internal circulation routes and shall be subject to the prior approval of TII.

Where necessary, traffic calming measures should be implemented to control the speed of traffic within the service area.

4.7 Footways and Kerbing

All paved areas should be kerbed to protect the integrity of the grassed areas. Non-mountable kerbs shall be provided on tight radii curves where HGVs are likely to pass.

Footways and kerbing shall be provided in accordance with TII's Publications Standard Construction Details CC-SCD-01101 to CC-SCD-01109 and current guidance on provision for disabled users.

Consideration should be given to blending footways and kerbing into the existing environment by incorporating local features and materials in this design.

4.8 Lighting

Where access to a terminal service area is provided using a grade separated junction, lighting of the national road mainline shall be provided at such accesses on the same basis as at grade separated junctions on the existing section of road in question. Lighting on the national road shall be in accordance with DN-LHT-03038.

The lighting installation shall be designed to provide a high standard of illumination utilising high efficiency light sources with low maintenance costs.

The light source shall have good colour rendering properties and shall be high pressure sodium or metal halide in suitable luminaries complying with national standards.

Luminaries shall be mounted on columns of appropriate height taking account of the area in which they are installed. Columns shall be placed to avoid damage by vehicles.

The service area shall be treated as an environmentally sensitive area, in accordance with DN-LHT-03038, to minimise night-time visual intrusion. Different lighting intensities shall be used within different zones in the service areas. A lighting level of at least 20 lux average at ground level with a minimum uniformity of 0.4 shall be provided on the slip roads in and out of the service area and major routes through the service area. The remaining parking areas shall have lighting levels of at least 10 lux average at ground level with a minimum uniformity of 0.4.

The lighting installation shall be designed to avoid glare to drivers and pedestrians using the service area and care shall be taken to avoid inappropriate light pollution beyond the service area.

4.9 Landscaping

The design of the service area shall be complementary to the surrounding area.

Where a terminal Service area is located adjacent to the main carriageway, the service area shall be screened from the main carriageway by shaped and landscaped earthwork bunds with a maximum height of 2m.

Earthworks design is an important factor in the overall design of the service area and can be utilised to provide screening from the main carriageway and other neighbouring properties.

4.10 Safety and Security

Monitored security cameras shall be provided appropriate to the level of facilities provided subject to the approval of TII.

4.11 Typical Details

A range of typical details is included in Appendix A.

5. Type 2 Service Areas (Rest Areas)

5.1 General Layout

Type 2 Service Areas shall provide parking, picnic and toilet facilities, but not include a main amenity building or fuel facilities.

A typical layout for a Type 2 Service Area is given in Figure 4.1.

Access between the national road and the service area shall be in accordance with requirements of DN-GEO-03060 for road junctions of the types generally in use on the adjacent section of road.

In general Type 2 Service Areas will be considered as independent single-sided facilities catering for, and accessible from, only one direction of travel.

Carriageway cross sections on accesses and circulation routes shall be in accordance with DN-GEO-03036, ensuring that provision is made to allow traffic to pass a broken down vehicle on one-way single carriageways.

The service area internal road geometry shall provide for the separation of passenger cars from HGVs and coaches upon entering the service area. The geometry shall minimise the number of conflict points between vehicles and pedestrians.

A minimum footway provision of 2m width shall be provided on all anticipated pedestrian desire lines. Where these desire lines cross over the internal service area link roads, a pedestrian crossing facility shall be provided with dropped kerbs.

Segregated parking areas shall be provided for car parking and HGV/coach parking. The layout shall prioritise passenger car traffic flows by ensuring HGV/coach vehicles give way at internal junctions.

Road geometry within the service area should be subject to the Road Safety Audit requirements detailed in GE-STY-01024.

Depending on the proposed location, the inclusion of a Garda enforcement area within the design, as highlighted in Figure 4.1, may be required. The provision and layout details of the Garda enforcement area shall be agreed with TII. The location of an enforcement area shall be such that Gardaí can direct HGVs to a HGV parking area, after inspection, without leaving the service area. For layout details of the Garda enforcement area, reference should be made to DN-GEO-03046.

An all-weather picnic area shall be designated to the rear of the site away from the main carriageway. Pedestrians shall be able to reach a picnic area without crossing the circulation carriageway. A minimum all-weather area of 150m^2 shall be provided. The picnic area shall be surrounded by a suitably landscaped grassed area of at least 400m^2.

The boundary of the service area shall be enclosed by a minimum 2m high secure fence to prevent the trespassing of persons onto adjacent land. This fence shall be in keeping with the local environment.

5.2 Facilities for Users

The following minimum facilities shall be provided at Type 2 service areas:

a) Toilet block, including facilities for disabled users (a minimum of 2 cubicles for males, 2 cubicles for females, 1 cubicle for disabled users and maintenance storage/technical room);

b) Emergency roadside telephone;

c) Picnic area;

d) Refuse points.

To inform visitors of local services, local tourist attractions, and to provide essential travel information, each Type 2 service area shall include an information point, consisting as a minimum of an information board.

5.3 Parking Layout

Adequate parking shall be provided adjacent to the user facilities to ensure that vehicles are not parked on the carriageway of a road where they may impede traffic and create a safety hazard.

Provision for car, coach, HGV, motorcycle, and maintenance crew parking facilities shall be considered at an early stage in the design process, to ensure a balanced distribution of space can be sited conveniently according to use.

Parking for facilities maintenance crew shall be clearly marked to ensure that it is only available to maintenance crew vehicles. Separate access routes for maintenance crew vehicles shall not normally be necessary.

The layout of the car parking bays shall be designed in accordance with Figure A.1 (Appendix A).

The layout of the coach parking bays shall be designed in accordance with Figure A.2 (Appendix A). The coach parking bay shall be designed as a drive through arrangement to avoid any potentially dangerous reversing manoeuvres.

The layout of the HGV parking shall be designed in accordance with Figure A.3a (Appendix A). The HGV parking bay shall be designed as a drive through arrangement to avoid any potentially dangerous reversing manoeuvres.

Parking bays for disabled users shall be provided at the rate of 5% of the total car parking provision, located adjacent to the user facilities. The layout shall be as detailed in Figure A.4 (Appendix A).

The layout of the motorcycle parking bays shall be designed in accordance with Figure A.5 (Appendix A).

5.4 Parking Capacity

The parking provision of the service area shall reflect the anticipated demand. Demand will be affected by factors such as traffic flow, proximity to other service areas, proximity to junctions, proximity to centres of population and the presence of other local facilities.

Operational problems and increased accident risk arise if the number of vehicles using the service area frequently exceeds the parking capacity, leading to parking on merge and diverge tapers, internal circulation roads and verges.

The parking demand shall be assessed separately for HGVs, light vehicles, coaches and motorcycles.

Light vehicles, coach and motorcycle parking shall be based on a percentage of the total one-way light vehicle AADT flow at year of opening of the service area in accordance with Table 4.1.

Table 4.1: Demand Assessment Guidelines for Light Vehicles, Coach and Motorcycle Parking Provision

Vehicle Type	% of Light Vehicle AADT One-way
Car	0.25%
Coach	0.02%
Motorcycle	0.03%

HGV parking shall be based on a percentage of the total one-way HGV AADT flow at year of opening of the service area in accordance with Table 4.2.

Table 4.2: Demand Assessment Guidelines for HGV Parking Provision

Vehicle Type	% of HGV AADT One-way
HGV	0.50%

When assessing the provision of parking within the service area, consideration shall be given to site-specific conditions including, but not limited to, the composition of traffic (e.g. the percentage of commuters, tourist travel, etc.) and the proximity of the service area to large centres of population. As a result, it may be appropriate to adjust up or down the number of parking spaces by no more than 20% from the percentages given in Tables 4.1 and 4.2.

Consideration shall be given to the potential need for further expansion of the parking provision beyond the opening year requirement (where available land facilitates), particularly where the demand projection is recognised to be uncertain. The design shall allow for phased construction as demand increases over the operational life of the facility.

Notwithstanding the demand assessment for parking provision, the minimum number of parking bays to be provided at opening shall be in accordance with Table 4.3.

Table 4.3: Car/Coach/Motorcycle/HGV Minimum Parking Provision

Vehicle Type	Minimum Number of Parking Bays to be Provided
Car	12
Coach	2
Motorcycle	2
HGV	5

5.5 Signs and Road Markings

Entry and exit signage and marking shall be provided in accordance with the Traffic Signs Manual for the appropriate entry and exit junction design.

Advance signage indicating parking and the other facilities that are available within the service area shall be provided in accordance with the Traffic Signs Manual.

A well-defined and clearly laid out signage strategy shall be provided for the internal circulation routes and shall be subject to the prior approval of TII.

Where necessary traffic calming measures shall be implemented to control the speed of traffic within the service area.

5.6 Footways and Kerbing

All paved areas shall be kerbed to protect the integrity of the grassed areas. Non-mountable kerbs shall be provided on tight radii curves where HGVs are likely to pass.

Footways and kerbing shall be provided in accordance with the TII Publications Standard Construction Details for Kerbs, Footways and Paved Areas and current guidance on provision for disabled users. Consideration shall be given to incorporating local features and materials in this design.

5.7 Lighting

Lighting of the national road mainline shall be provided at service area accesses on the same basis as at grade separated junctions on the existing section of road in question. Lighting on the national road shall be in accordance with DN-LHT-03038.

The lighting installation shall be designed to provide a high standard of illumination utilising high efficiency light sources with low maintenance costs.

The light source shall have good colour rendering properties and shall be high pressure sodium or metal halide in suitable luminaries complying with national standards.

Luminaries shall be mounted on columns of appropriate height taking account of the area in which they are installed. Columns shall be placed to avoid damage by vehicles.

The service area shall be treated as an environmentally sensitive area, in accordance with DN-LHT-03038, to minimise night-time visual intrusion. Different lighting intensities shall be used within different zones in the service areas. A lighting level of at least 20 lux average at ground level with a minimum uniformity of 0.4 shall be provided on the slip roads in and out of the service area and major routes through the service area. The remaining parking areas shall have lighting levels of at least 10 lux average at ground level with a minimum uniformity of 0.4.

The lighting installation shall be designed to avoid glare to drivers and pedestrians using the service area and care shall be taken to avoid inappropriate light pollution beyond the service area.

5.8 Landscaping

The design of the service area shall be complementary to the surrounding area.

The service area shall be screened from the main carriageway by shaped and landscaped earthwork bunds with a maximum height of 2m.

Earthworks design is an important factor in the overall design of the service area and can be utilised to provide screening from the main carriageway and other neighbouring properties.

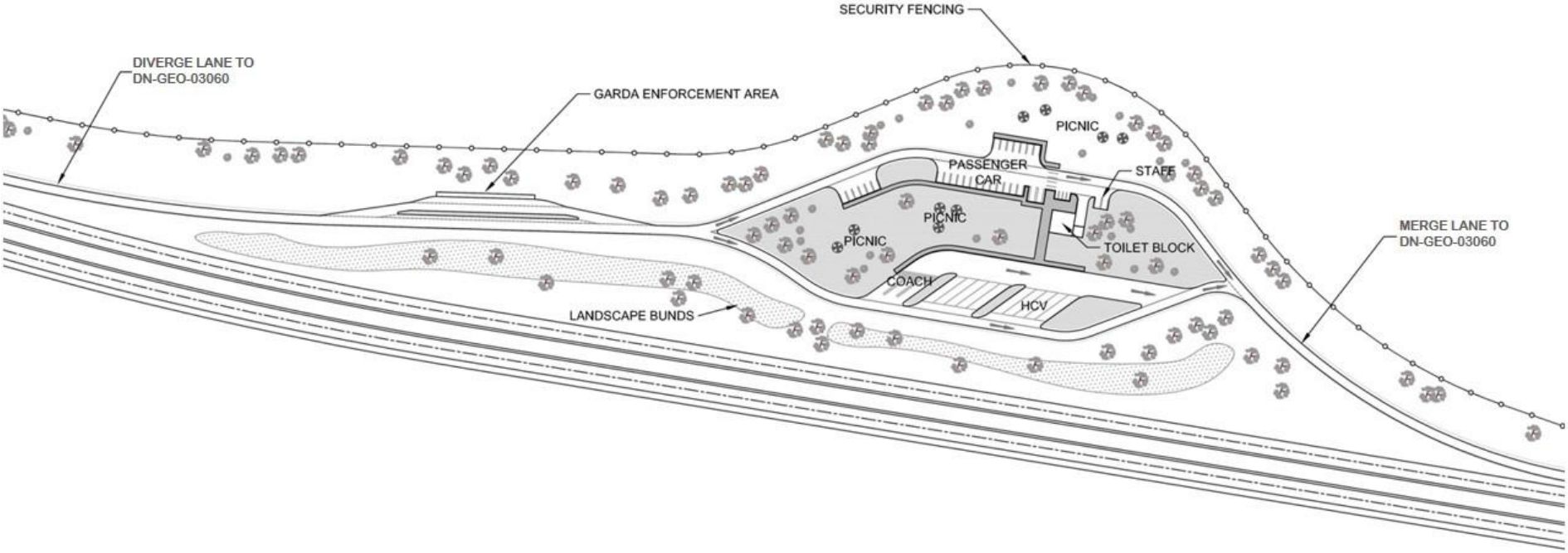
5.9 Safety and Security

Consideration shall be given to the provision of security cameras, provided there is a practicable means of monitoring the cameras.

5.10 Typical Details

A range of typical details is included in Appendix A.

Figure 5.1: Type 2 Service Area Typical Layout



6. References

6.1 TII Publications (Standards):

a) GE-STY-01024 – Road Safety Audits.

b) DN-GEO-03031 – Rural Road Link Design.

c) DN-GEO-03036 – Cross-Sections and Headroom.

d) DN-GEO-03046 – The Location and Layout of Lay-bys.

e) DN-GEO-03060 – Geometric Design of Junctions.

f) DN-LHT-03038 – Design of Road Lighting for All Purpose Trunk Roads

g) Standard Construction Details for Kerbs, Footways and Paved Areas.

6.2 Other References:

a) Department of Transport. Traffic Signs Manual. DoT, Dublin, 2010.

b) Spatial Planning and National Roads – Guidelines for Planning Authorities", published by the Department of Environment, Community and Local Government

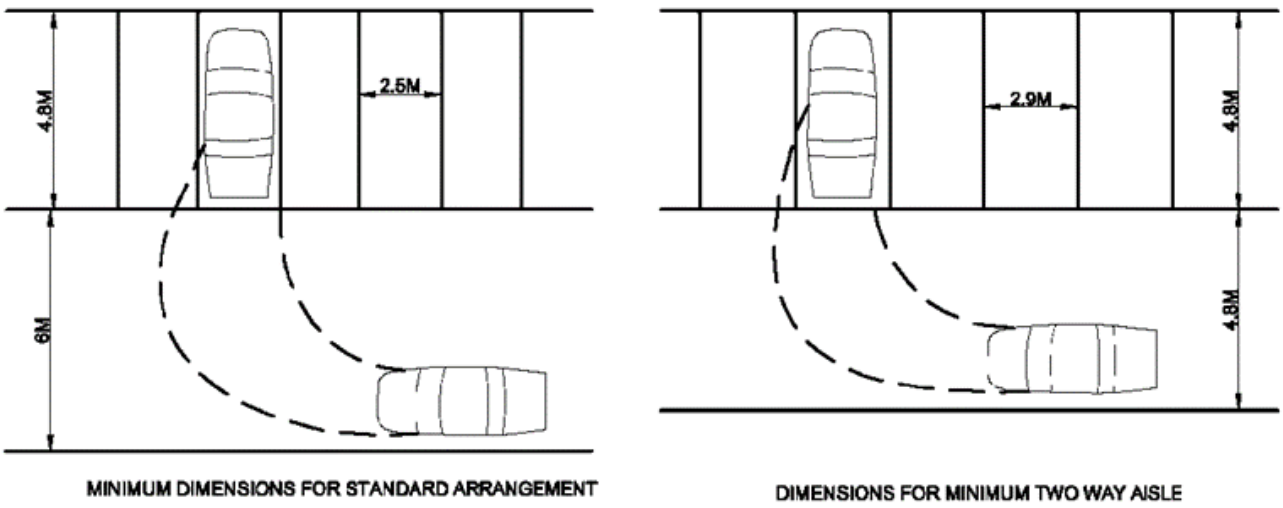
c) EU Directive 2014/94/EU of the European Parliament of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure.

d) S.I. No. 178/1997 - Retail Prices (Diesel and Petrol) Display Order, 1997.

Appendix A:

Typical Details

Figure A.1: Layout and Aisle Width of a Standard Right Angle Parking Bay



Aisle Width (M)	Bay Width (M)
6.0	2.5
5.5	2.5
5.3	2.75
5.0	2.8
4.8	2.9
4.5	2.95
4.0	3.1
3.5	3.2

Figure A.2: One-way Coach Parking System with Parking Bays at 45 Degrees

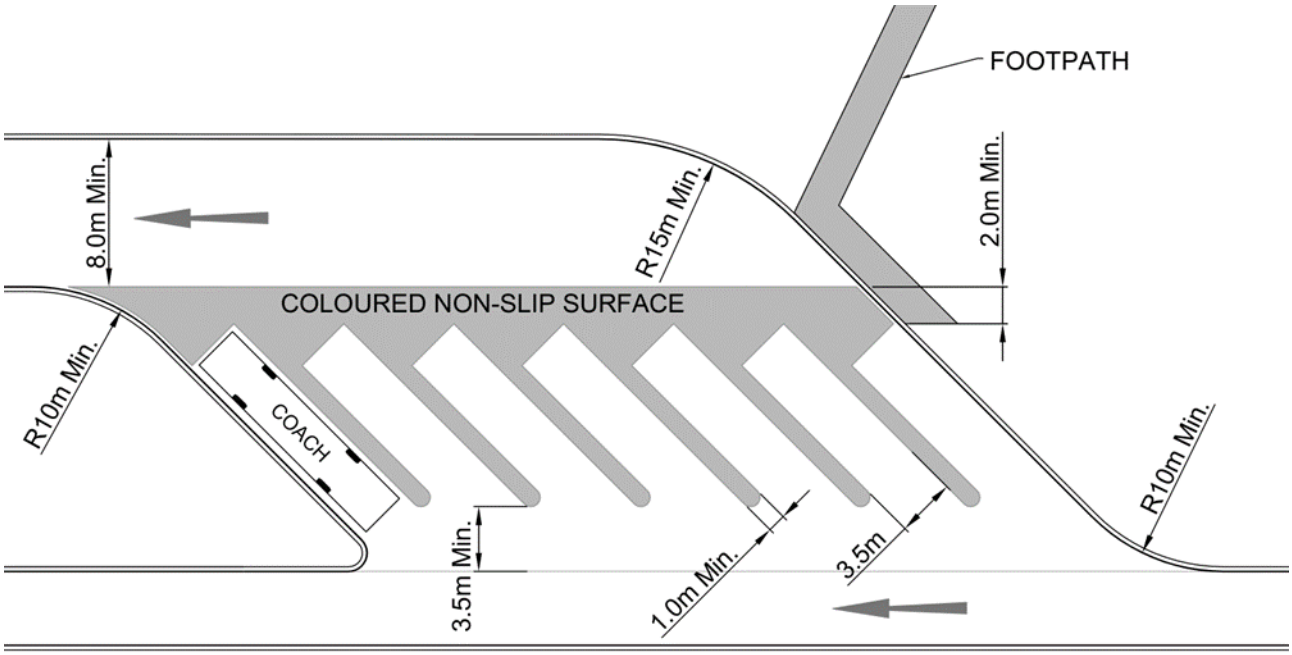


Figure A.3a: One-way HGV Parking System with Parking Bays at 45 Degrees

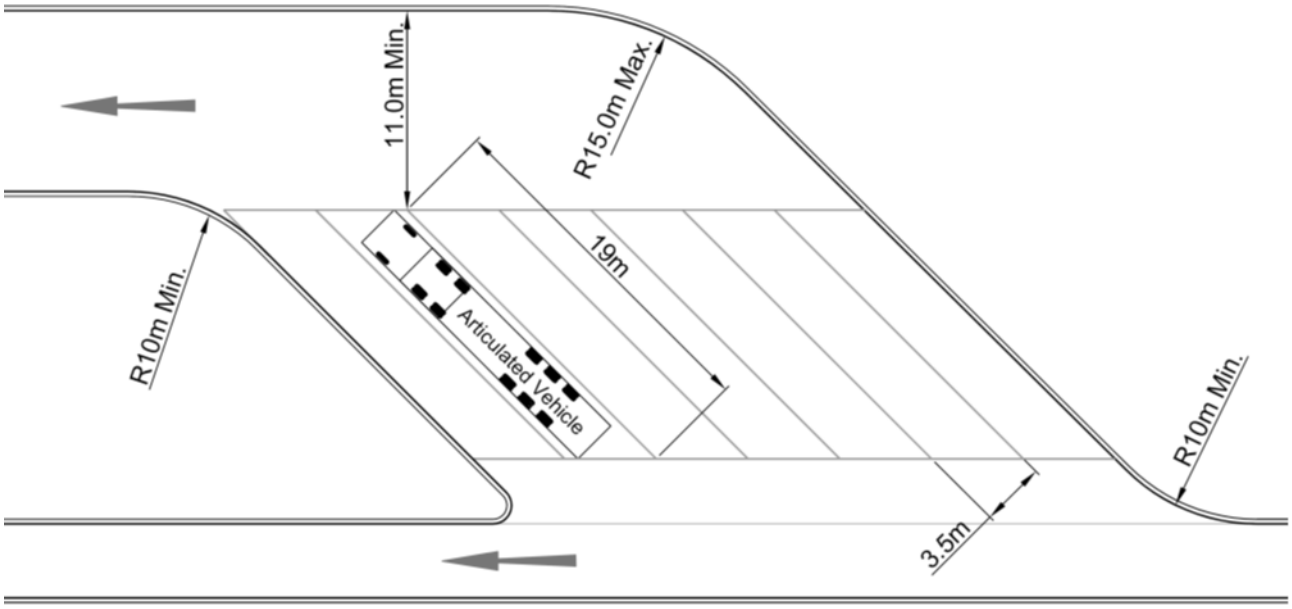


Figure A.3b: One-way HGV Parking System with Parallel Parking Bays

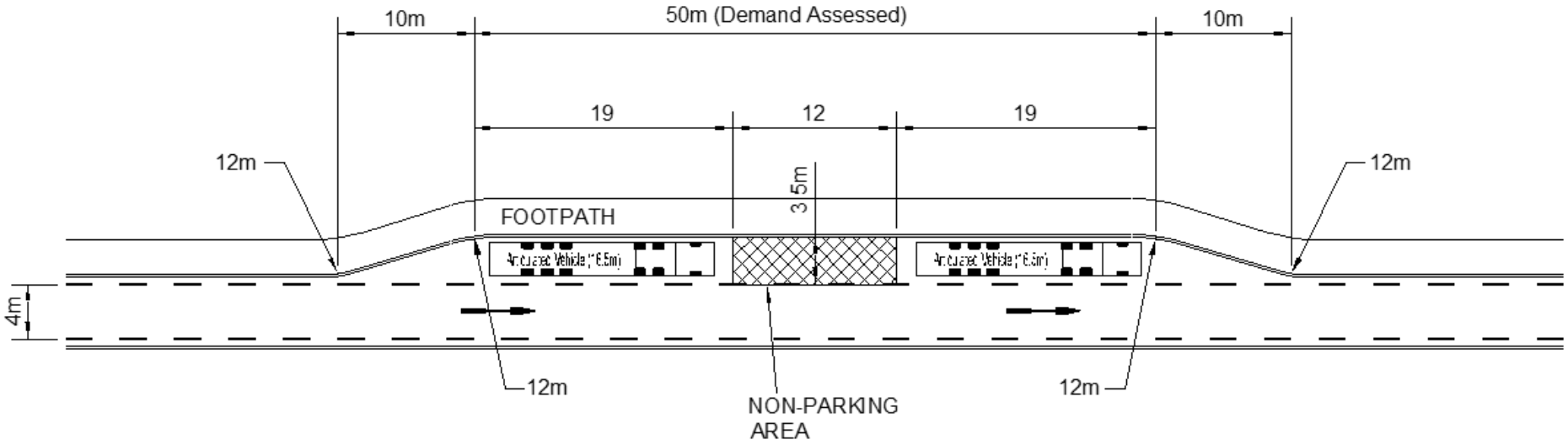


Figure A.4: Dimensions for Disabled User Parking Bays

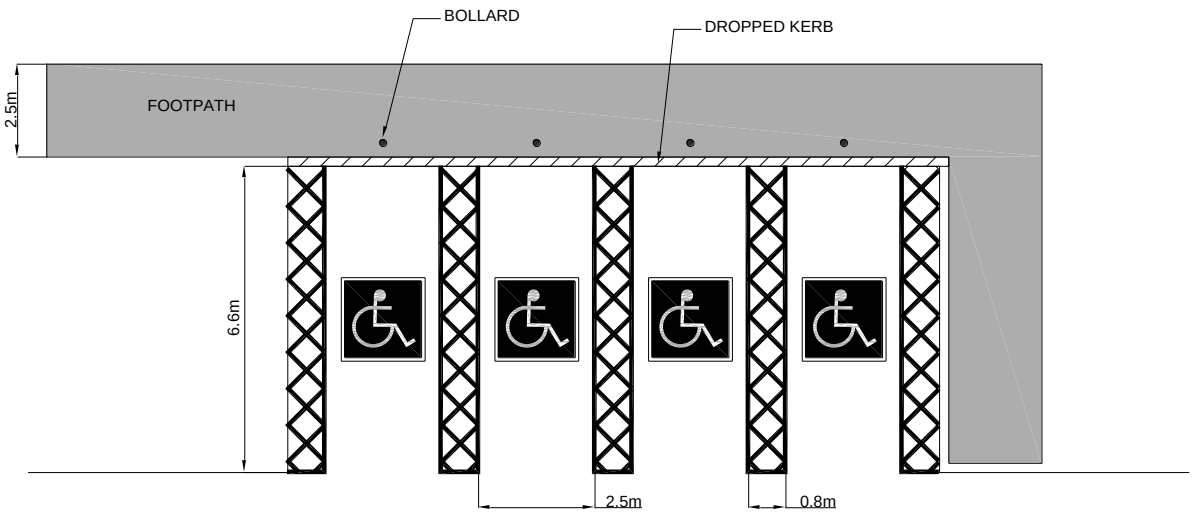
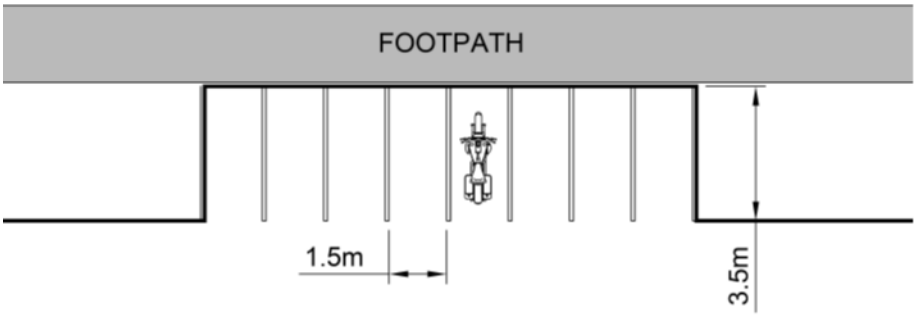


Figure A.5: Dimensions for Motorcycle Parking Bays



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