



## **The Location and Layout of Service Areas**

**February 2008**

**Summary:**

This Advice Note provides guidance on the location and layout of service areas on all-purpose and motorway standard roads.

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**VOLUME 6 ROAD GEOMETRY**

**SECTION 3 HIGHWAY  
FEATURES**

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**PART 3**

**NRA TA 70/08**

**THE LOCATION AND LAYOUT  
OF SERVICE AREAS**

**Contents**

Chapter

1. Introduction
2. Siting of Service Areas
3. Type 1 Service Areas
4. Type 2 Service Areas
5. References
6. Enquiries

Appendix A Typical Details

# 1. INTRODUCTION

## General

1.1 This Advice Note gives the general principles to be followed for the siting and layout of service areas on National Roads.

1.2 Service areas provide convenient places for drivers to stop for short periods of time. This is particularly important on motorways. An essential feature of a motorway is that it is intended for moving traffic only, with freedom, as far as possible, from stationary vehicles and pedestrians. Motorway regulations prohibit vehicles from stopping anywhere within the motorway fencelines, except in special circumstances such as an emergency or when instructed by the Gardaí. Pedestrians are also prohibited. Service areas provide safe rest stops isolated from the motorway carriageway where drivers and passengers can freely move about.

1.3 On long inter-urban journeys, there is a need for drivers to make short duration stops for purposes such as refreshment, a brief rest, use of washroom facilities, to use a mobile phone, to change drivers, etc. Thus, the positioning of service areas at frequent intervals and at a reasonably regular spacing will assist in lowering driver fatigue. Driver fatigue is a factor in up to 20% of fatal collisions.

1.6 Particular terms used in this Advice Note are defined as follows:

For definition of the various road types see NRA TD 27.

**Type 1 Service Area:-** A small scale service area providing parking, picnic and toilet facilities, but without a main amenity building or fuel facilities, only intended for use where particular need is identified and agreed with the National Road Authority.

**Type 2 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.

## Scope

1.4 This Advice Note provides guidance on the siting and layout of service areas on Motorways and Type 1 Dual Carriageways.

## Implementation

1.5 This Advice Note should be used as the basis for the design of all service areas on national roads. The provision of service areas should be considered when designing new or improved Motorways and Type 1 Dual Carriageways.

## Definitions

## 2. SITING OF SERVICE AREAS

### General

2.1 For general guidance on the siting of both Type 1 and Type 2 Service Areas, reference should be made to the siting of lay-bys in NRA TA 69, The Location and Layout of Lay-bys.

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

### Level of Provision

2.3 In general, Type 2 Service Areas should be provided at nominal 50-60 kilometre intervals on Motorways and Type 1 Dual Carriageways.

2.4 Type 1 Service Areas may be appropriate on all road types where particular need is identified. They may be used to supplement the provision of Type 2 service areas on Motorways and Type 1 Dual Carriageways where the recommendations of paragraph 2.3 cannot be met, or where there is a need to make provision at a specific location that does not suit the provision of a Type 2 service area.

2.5 The provision and specific locations of all service areas must be agreed with the National Roads Authority.

### Criteria for Site Selection

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

- (a) Road Category Type;
- (b) Projected Annual Average Daily Traffic (AADT) 15 years after year of opening of the service area;
- (c) Projected % of Heavy Commercial Vehicles;
- (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: e.g. access on straight or outside of a bend, longitudinal gradient not greater than plus or minus 2%, adequate stopping sight distance in both directions;
- (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.

### 3. TYPE 1 SERVICE AREAS

#### General Layout

3.1 Type 1 Service Areas should provide parking, picnic and toilet facilities, but not include a main amenity building or fuel facilities.

3.2 A typical layout for a Type 1 Service Area is given in Figure 3/1.

3.3 Access from the national road to and from the service area should be in accordance with requirements of Volume 6 of the NRA DMRB for road junctions of the types generally in use on the adjacent section of road.

3.4 In general Type 1 Service Areas will be considered as independent single sided facilities catering for, and accessible from, only one direction of travel.

3.5 Carriageway cross sections on accesses and circulation routes should be in accordance with NRA TD 27, ensuring that provision is made to allow traffic to pass a broken down vehicle on one-way single carriageways.

3.6 The service area internal road geometry should provide for the separation of passenger cars from Heavy Commercial Vehicles (HCVs) and coaches upon entering the service area. The geometry should minimise the amount of conflict points between vehicles and pedestrians.

3.7 A minimum footway provision of 2 metres width should 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 drop kerbs.

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

3.9 Road geometry within the service area should be subject to the road safety audit requirements detailed in NRA HD 19.

3.10 Depending on the proposed location, the inclusion of a Garda enforcement area within the

design, as highlighted in Figure 3/1, may be required. The provision and layout details of the Garda enforcement area shall be agreed with the National Roads Authority. The location of an enforcement area must be such that Gardaí can direct HCVs to an HCV parking area, after inspection, without leaving the service area. For layout details of the Garda enforcement area, reference should be made to NRA TA 69.

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

3.12 The boundary of the service area should be enclosed by a minimum 2 metre high secure fence to prevent trespass to adjacent land. This fence should be in keeping with the local environment.

#### Facilities for Users

3.13 The following minimum facilities should be provided at Type 1 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) Telephone kiosk (subject to service availability);
- (c) Picnic area;
- (d) Refuse points.

3.14 To inform visitors of local services, local tourist attractions, and to provide essential travel information, each Type 1 service area should include an information point, consisting as a minimum of an information board.

## Parking Layout

3.15 Adequate parking should 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.

3.16 Provision for car, coach, HCV, motorcycle, pedal cycle (non motorway only), and maintenance crew parking facilities should be considered at an early stage in the design process, to ensure a balanced distribution of space can be sited conveniently according to use.

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

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

3.19 The layout of the coach parking bays should 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.

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

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

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

3.23 Consideration should be given to the installation of cycle parking facilities where sufficient cycle usage is anticipated. A suitable method of creating secure parking is the “Sheffield” stand design as shown in Figure A/6 (Appendix A).

## Parking Capacity

3.24 The parking provision of the service area should 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.

3.25 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.

3.26 The parking demand should be assessed separately for Heavy Commercial Vehicles (HCV), Light Vehicles (LV), coaches and motorcycles.

3.27 LV, coach and motorcycle parking should be based on a percentage of the total one way LV Annual Average Daily Traffic flow 15 years after opening of the service area in accordance with Table 3/1.

**Table 3/1: Demand Assessment Guidelines for LV, Coach and Motorcycle Parking Provision**

Vehicle Type	% of LV AADT One Way
Car	0.25%
Coach	0.02%
Motorcycle	0.03%

3.28 HCV parking should be based on a percentage of the total one way HCV Annual Average Daily Traffic flow 15 years after opening of the service area in accordance with Table 3/2.

**Table 3/2: Demand Assessment Guidelines for HCV Parking Provision**

Vehicle Type	% of HCV AADT One Way
HCV	0.50%

3.29 When assessing the provision of parking within the service area, consideration should 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 3/1 and 3/2.

3.30 It may not be necessary to provide the full 15-year design parking levels at opening, provided that the design allows for phased construction as demand develops over the operational life. Consideration should be given to the potential need for further expansion of the parking provision beyond the 15-year projection, particularly where the demand projection is recognised to be uncertain.

3.31 Notwithstanding the demand assessment for parking provision, the minimum number of parking bays to be provided at opening should be in accordance with Table 3/3.

**Table 3/3: Car/Coach/Motorcycle/HCV Minimum Parking Provision**

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

### Signs and Markings

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

3.33 With service areas located at regular intervals, drivers have to choose which service area they wish to use. Good advance signing assists in this decision and helps to avoid sudden

deceleration on the approach to the service area and attempts to enter the service area at too high a speed. Advance signage indicating parking and the other facilities that are available within the service area should be provided in accordance with the Traffic Signs Manual.

3.34 A well defined and clearly laid out signage strategy should be provided for the internal circulation routes and shall be subject to the prior approval of the National Roads Authority.

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

### Footways and Kerbing

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

3.37 Footways and kerbing should be provided in accordance with the NRA Road Construction Details and current guidance on provision for disabled users. Consideration should be given to incorporating local features and materials in this design.

### Lighting

3.38 Lighting of the national road mainline should be provided at service area accesses on the same basis as at grade separated junctions on the existing section of road in question. Lighting should extend a minimum of 150m in advance of and 150m beyond the entry and exit tapers. Lighting on the national road should be in accordance with Volume 8 of the NRA DMRB.

3.39 The service area, including car, HCV and coach parking areas and internal roadways should be lit adequately in times of darkness. The lighting should be designed to provide visual security and physical safety to those who use the area and to assist drivers and pedestrians in navigating their way into, within and out of the area by clearly revealing vehicles, pedestrians, parking bays, obstacles and entry and exit routes.

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

3.41 The light source should have good colour rendering properties and should be high pressure sodium or metal halide in suitable luminaries complying with National Standards.

3.42 Luminaries should 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.

3.43 The service area should be treated as an environmentally sensitive area, in accordance with TD 30, to minimise night-time visual intrusion. Different lighting intensities should 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 should be provided on the slip roads in and out of the service area and major routes through the service area. The remaining parking areas should have lighting levels of at least 10 lux average at ground level with a minimum uniformity of 0.4.

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

## **Landscaping**

3.45 The design of the service area should be complementary to the surrounding area.

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

3.47 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.

3.48 The landscaping needs of the service area require careful consideration. Factors to be considered include the types and location of vegetation, location, layout and number of picnic tables, and location and number of waste bins. Vegetation is an important feature in the overall design of the service area. Extensive planting will be beneficial to the overall appearance and atmosphere of the facility. However dense planting should not be provided in the immediate proximity of car parking areas and pathways as it

constitutes a security hazard for patrons of the facility.

## **Safety and Security**

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

## **Typical Details**

3.50 A range of typical details is included in Appendix A.

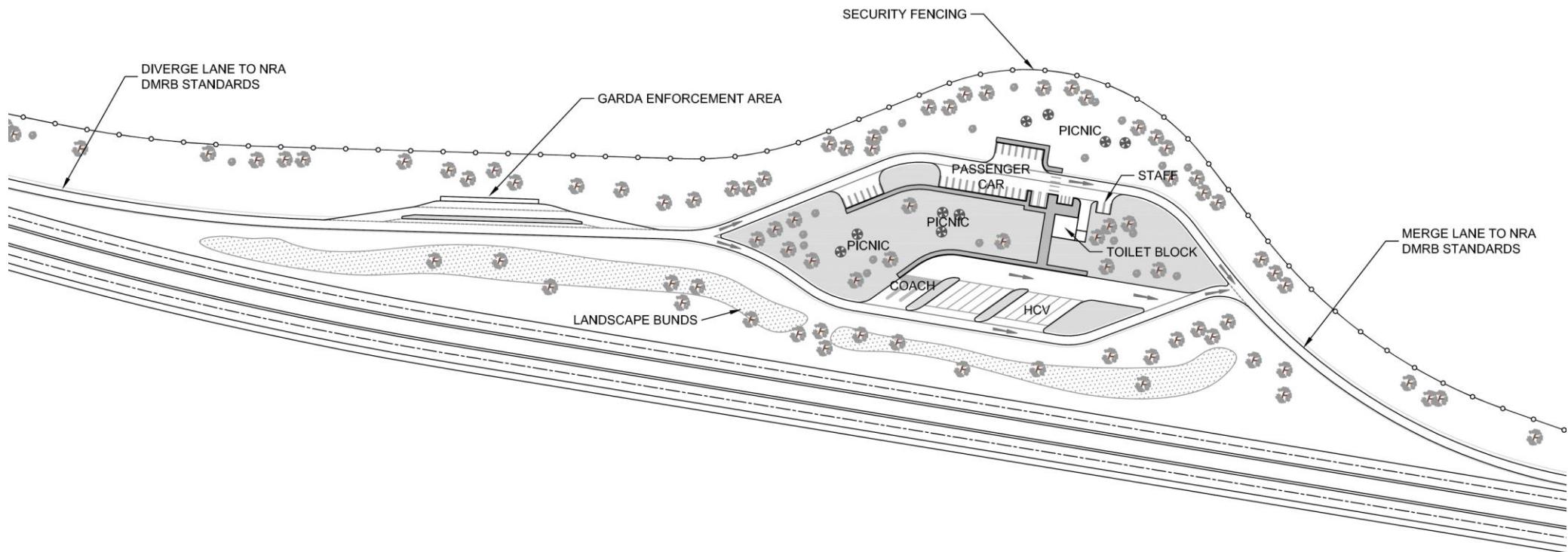


Figure 3/1: Type 1 Service Area Typical Layout

## 4. TYPE 2 SERVICE AREAS

### General Layout

4.1 In addition to parking, picnic and toilet facilities, Type 2 Service Areas will include a main amenity building or complex offering a range of services together with fuel facilities.

4.2 A typical layout for a Type 2 Service Area is given in Figure 4/1.

4.3 Access from the national road to and from the service area should be in accordance with requirements of Volume 6 of the NRA DMRB for road junctions of the types generally in use on the adjacent section of road.

4.4 In general, Type 2 Service Areas will be single sided and accessible from both directions of travel where the total design year AADT is less than 40,000. Where the AADT is over 40,000, subject to site-specific conditions, they should be double sided, i.e. a separate facility should be provided for each carriageway. Any decision as to whether a Type 2 Service Area is single or double sided shall be subject to the approval of the NRA.

4.5 Carriageway cross sections on accesses and circulation routes should be in accordance with NRA TD 27, ensuring that provision is made to allow traffic to pass a broken down vehicle on one-way single carriageways.

4.6 The service area internal road geometry should provide for the separation of passenger cars from HCVs and coaches upon entering the service area. The geometry should minimise the amount of conflict points between vehicles and pedestrians.

4.7 A minimum footway provision of 2 metres width should 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 drop kerbs.

4.8 The service area should have a combined amenity/fuel facilities building. The fuel facilities should 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.

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

4.10 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.

4.11 Road geometry of accesses and within the service area shall be subject to the road safety audit requirements detailed in NRA HD 19.

4.12 Depending on the proposed location, a Garda enforcement area, as highlighted in Figure 4/1, may require to be incorporated into the design of the service area. The provision and layout details of the Garda enforcement area should be agreed with the National Roads Authority. The location of an enforcement area must be such that Gardaí can direct HCVs to an HCV parking area, after inspection, without leaving the service area. For layout details of the Garda enforcement area, reference should be made to NRA TA 69.

4.13 An all weather picnic area should be designated within the service area close to the main amenity building and remote from HGV parking. Pedestrians should be able to reach a picnic area without crossing the circulation carriageway. A minimum area of 400m<sup>2</sup> should typically be provided. The picnic area should be surrounded by suitably landscaped grassed areas of at least 1000 m<sup>2</sup>.

4.14 The boundary of the service area should be enclosed by a minimum 2 metre high secure fence to prevent trespass to adjacent land. This fence should also be in keeping with the local environment.

## **Facilities for Users**

4.15 The following minimum facilities should be provided at Type 2 Service Areas:

- (a) Service area amenity building providing:
  - i. General entrance and circulation area with travel and tourist information centre;
  - ii. Convenience shop;
  - iii. Restaurant facilities;
  - iv. Toilet areas, including facilities for disabled users (a minimum of 5 cubicles for males, 5 cubicles for females, 2 cubicles for disabled users) and wash and shower facilities (a minimum of 2 self contained washing cubicles to include lockable doors, wash hand basin, mirror, shaving point, bench and shower);
  - v. Baby changing room;
  - vi. Telephone kiosk;
  - vii. Back of house facilities.
- (b) Other facilities:
  - viii. Fuel station;
  - ix. Air and water;
  - x. Recreation/picnic areas;
  - xi. Indoor and outdoor children's play areas;
  - xii. Refuse points.

## **Parking Layout**

4.16 Adequate parking should 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.

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

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

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

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

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

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

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

4.24 Consideration should be given to the installation of cycle parking facilities where sufficient cycle usage is anticipated. A suitable method of creating secure parking is the "Sheffield" stand design as shown in Figure A/6 (Appendix A).

## **Parking Capacity**

4.25 The parking provision of the service area should 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.

4.26 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 tapers, internal circulation roads and verges.

4.27 The parking demand should be assessed separately for Heavy Commercial Vehicles (HCV), Light Vehicles (LV), coaches and motorcycles.

4.28 LV, coach and motorcycle parking should be based on a percentage of the total two way LV Annual Average Daily Traffic flow, 15 years after opening of the service area in accordance with Table 4/1. If a double sided service area is to be provided, one way AADTs should be used to calculate the parking to be provided for each direction.

**Table 4/1: Demand Assessment Guidelines for LV, Coach and Motorcycle Parking Provision**

Vehicle Type	% of (LV AADT)
Car	0.50%
Coach	0.03%
Motorcycle	0.04%

4.29 HCV parking should be based on a percentage of the total two way HCV Annual Average Daily Traffic flow, 15 years after opening of the service area in accordance with Table 4/2. If a double sided service area is to be provided, one way AADTs should be used to calculate the parking to be provided for each direction.

**Table 4/2: Demand Assessment Guidelines for HCV Parking Provision**

Vehicle Type	% of (HV AADT)
HCV	1.00%

4.30 When assessing the provision of parking within the service area, consideration should 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.

4.31 It may not be necessary to provide the full 15-year design parking levels upon opening, provided that the design allows for phased construction as demand develops over the operational life. Consideration should be given to the potential need for further expansion of the parking provision beyond the 15-year projection, particularly where the demand projection is recognised to be uncertain.

4.32 Notwithstanding the demand assessment for parking provision, the minimum number of parking bays to be provided at opening should be in accordance with Table 4/3.

**Table 4/3: Car/Coach/Motorcycle/HCV Minimum Parking Provision**

Vehicle Type	Minimum Number of Parking Bays to be Provided	
	Single Sided	Double Sided (each side)
Car	80	50
Coach	10	6
Motorcycle	10	6
HCV	32	20

#### Amenity Building:

4.33 The area of the convenience shop should typically be between 200m<sup>2</sup> and 250m<sup>2</sup>. The number of seats to be provided in the restaurant area should be broadly related to the total parking provision as follows:

**Table 4/4: Recommended Restaurant Seating Provision**

Total No of Parking Spaces Provided	Recommended No of Seats in Restaurant
50-100	75-150
101-150	100-175
151-200	125-200
>200	>200

4.34 Drive-through food facilities are not considered appropriate in a service area. One of the primary purposes of the service area is to provide opportunity for drivers to rest, thereby avoiding fatigue and potential collisions. The nature of a drive through facility runs contrary to this purpose.

4.35 To inform visitors of local services and tourist attractions and to provide essential travel information, each Type 2 Service Area should include as a minimum, within the circulation area, an information point, with interactive internet tourist information. A minimum of three internet points and a printer should be provided

### **Fuel Station**

4.36 The layout of the fuel station should be designed in accordance with current industry best practice, and in consultation with the local authority's fire officer. Separate fuel facilities should be provided for light vehicles and HCVs. A minimum of four separate fuel pump islands should be provided for each.

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

### **Signs and Markings**

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

4.39 With service areas located at regular intervals, drivers have to choose which service area they wish to use. Good advance signing assists in this decision and helps to avoid sudden deceleration on the approach to the service area and attempts to enter the service area at too high a speed. 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.

4.40 A well defined and clearly laid out signage strategy should be provided for the internal circulation routes and shall be subject to the prior approval of the National Roads Authority.

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

### **Footways and Kerbing**

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

4.43 Footways and kerbing should be provided in accordance with the NRA Road Construction Details and current guidance on provision for disabled users. Consideration should be given to incorporating local features and materials in this design.

### **Lighting**

4.44 Lighting of the national road mainline should be provided at service area accesses on the same basis as at grade separated junctions on the existing section of road in question. Lighting should extend a minimum of 150m in advance of and 150m beyond the entry and exit tapers. Lighting on the national road should be in accordance with Volume 8 of the NRA DMRB.

4.45 The service area, including car, HCV and coach parking areas and internal roadways should be lit adequately in times of darkness. The lighting should be designed to provide visual security and physical safety to those who use the area and to assist drivers and pedestrians in navigating their way into, within and out of the area by clearly revealing vehicles, pedestrians, parking bays, obstacles and entry and exit routes.

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

4.47 The light source should have good colour rendering properties and should be high pressure sodium or metal halide in suitable luminaries complying with National Standards.

4.48 Luminaries should 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.

4.49 The service area should be treated as an environmentally sensitive area, in accordance with TD 30, to minimise night-time visual intrusion. Different lighting intensities should 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 should be provided on the slip roads in and out of the service area and major routes through the service area. The remaining parking areas should have lighting levels of at least 10 lux average at ground level with a minimum uniformity of 0.4.

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

### **Landscaping**

4.51 The design of the service area should be complementary to the surrounding area.

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

4.53 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.

4.54 The landscaping needs of the service area require careful consideration. Factors to be considered include the types and location of vegetation, location, layout and number of picnic tables, and location and number of waste bins. Vegetation is an important feature in the overall design of the service area. Extensive planting will be beneficial to the overall appearance and atmosphere of the facility. However dense planting should not be provided in the immediate proximity of car parking areas and pathways as it constitutes a security hazard for patrons of the facility.

### **Safety and Security**

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

### **Typical Details**

4.56 A range of typical details are included in Appendix A.

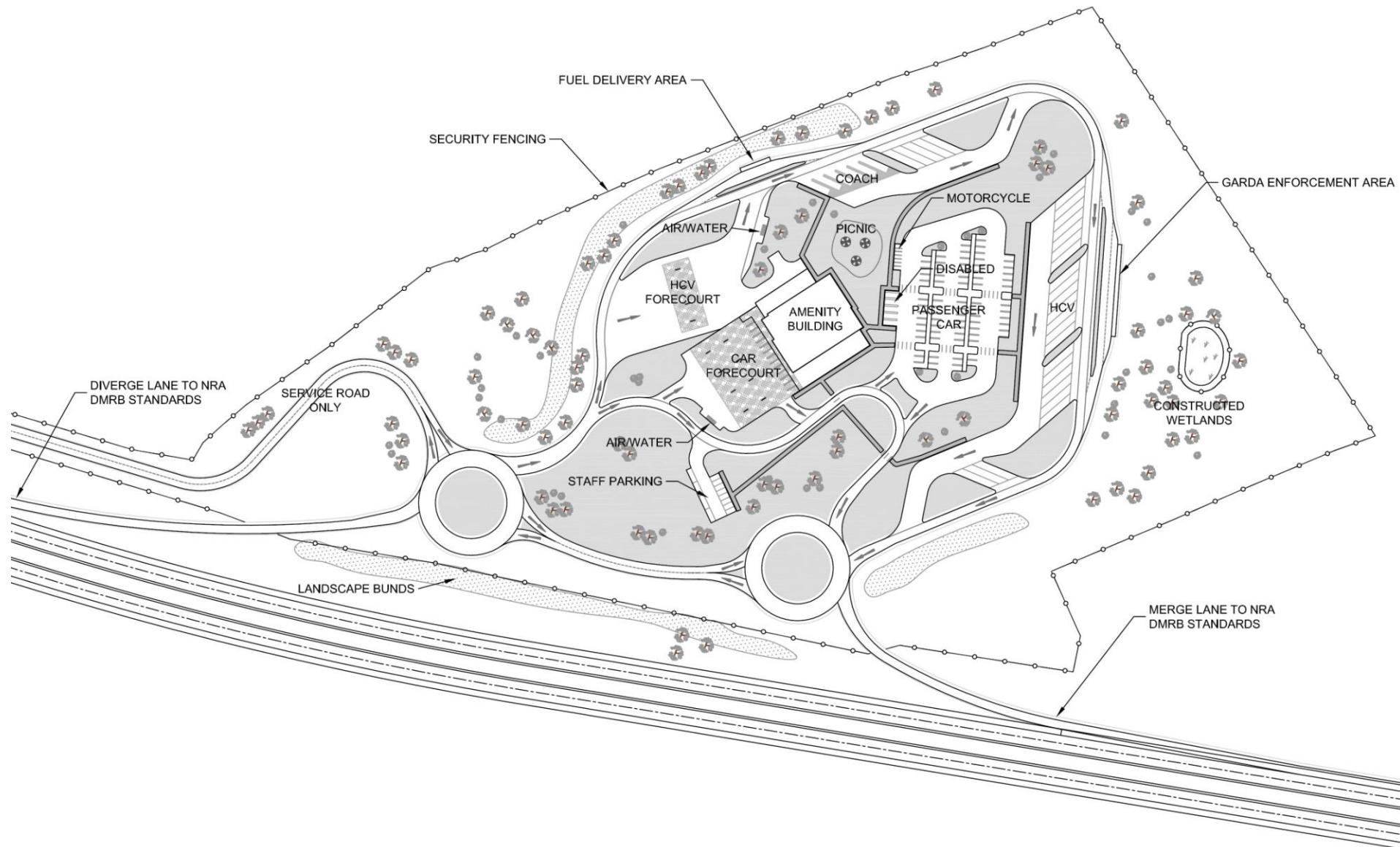


Figure 4/1: Type 2 Service Area Typical Layout

## 5. REFERENCES

Department of Transport. *Traffic Signs Manual*. DoT, Dublin, 2008. [Note: the Traffic Signs Manual published by the Department of the Environment in 1996 is currently being revised. The revised manual is due for publication in 2008.]

Highways Agency (UK). Design Manual for Roads and Bridges (DMRB), read in conjunction with the NRA Addenda contained in the NRA DMRB:

Volume 6: Road Geometry.

Volume 8: Traffic Signs and Lighting.

TD 30 (DMRB 8.3) – *Design of Road Lighting for All Purpose Trunk Roads*.

National Roads Authority. NRA Design Manual for Roads and Bridges (NRA DMRB):

NRA HD 19 (NRA DMRB 5.2.2) – *Road Safety Audits*.

NRA TD 27 (NRA DMRB 6.1.2) – *Cross-Sections and Headroom*.

NRA TA 69 (NRA DMRB 6.3.3) – *The Location and Layout of Lay-bys*.

NRA Manual of Contract Documents for Road Works, Volume 4: Road Construction Details.

## 6. ENQUIRIES

- 6.1 All technical enquiries or comments on these guidelines should be sent in writing to:

Head of Engineering Operations  
National Roads Authority  
St Martin's House  
Waterloo Road  
Dublin 4



E O'CONNOR  
Head of Engineering Operations

## APPENDIX A: TYPICAL DETAILS

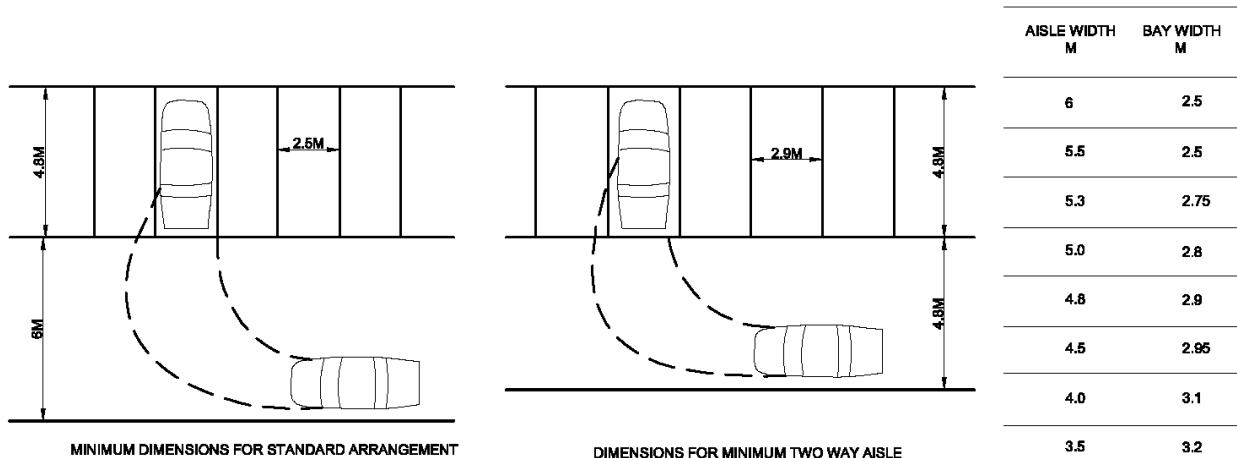


Figure A/1: Layout and Aisle Width of a Standard Right Angle Parking Bay

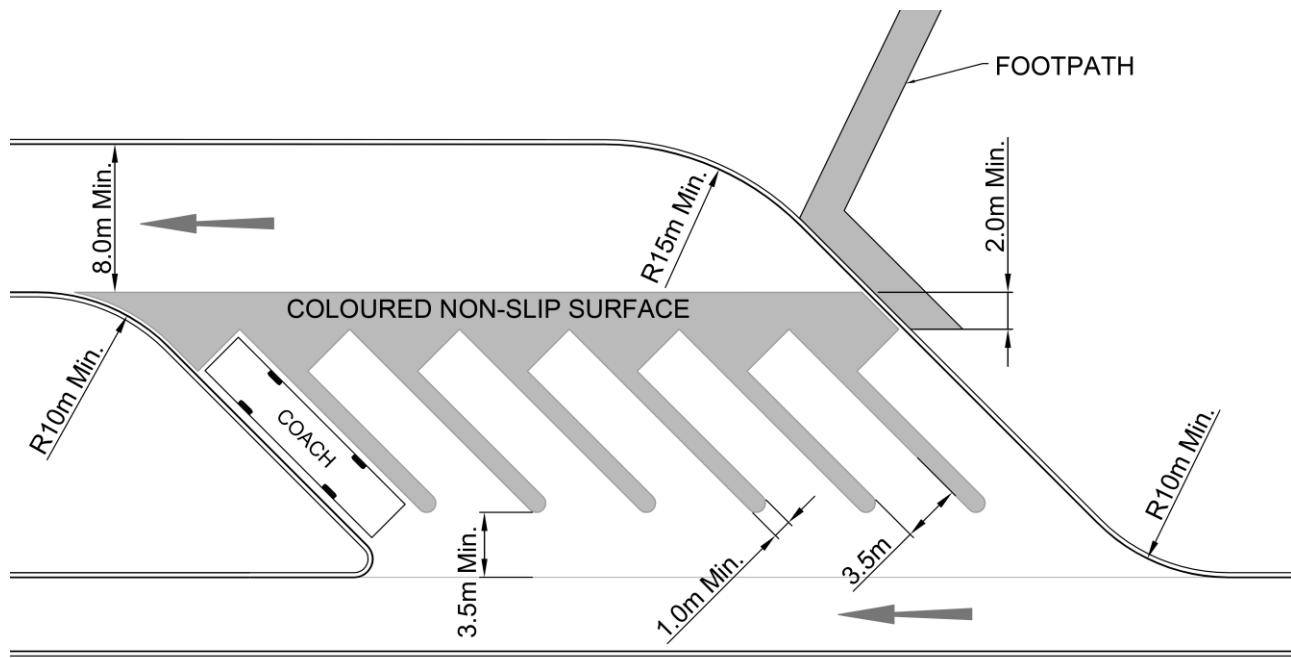


Figure A/2: One-way Coach Parking System with Parking Bays at 45 Degrees

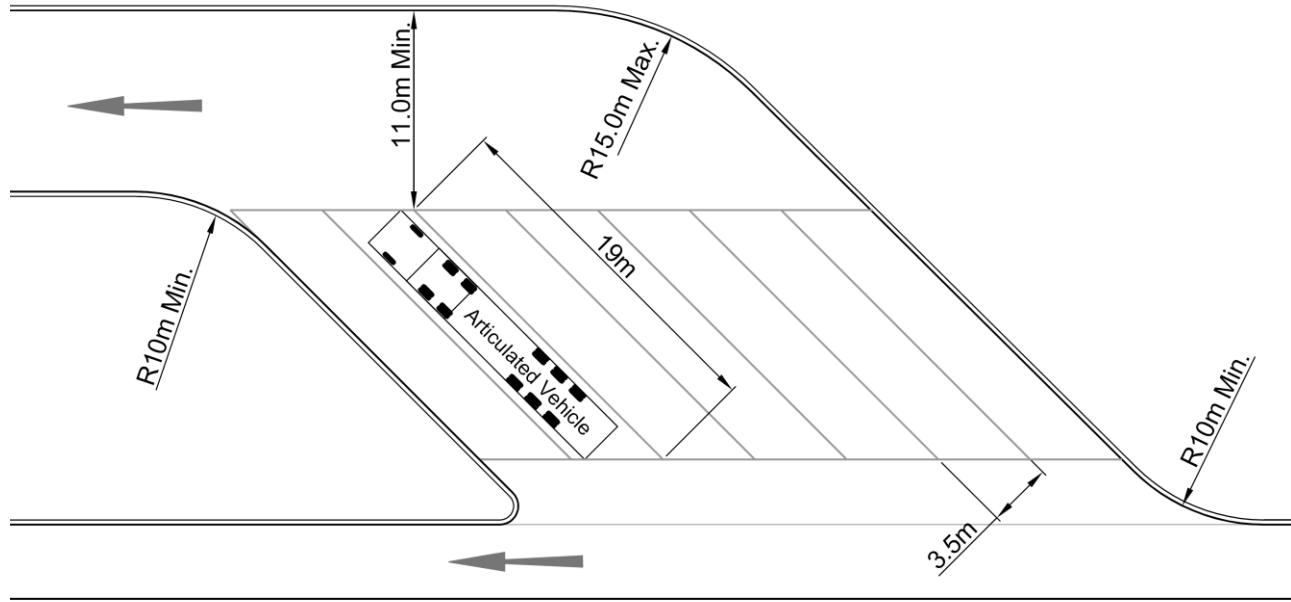


Figure A/3: One-way HCV Parking System with Parking Bays at 45 Degrees

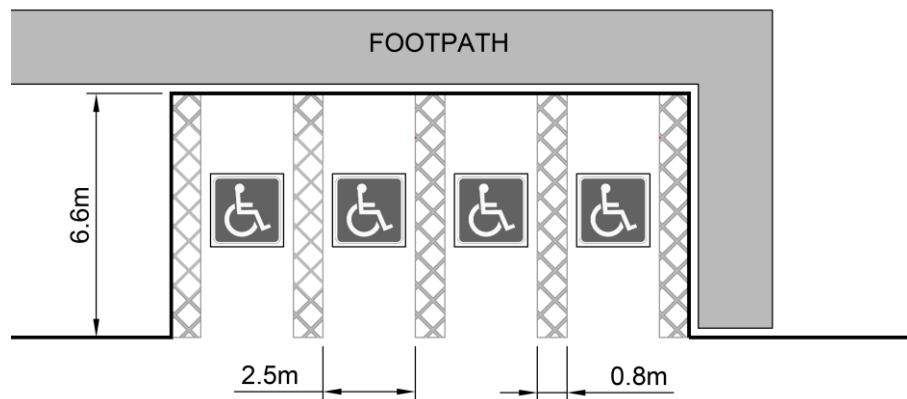


Figure A/4: Dimensions for Special Needs Parking Bays

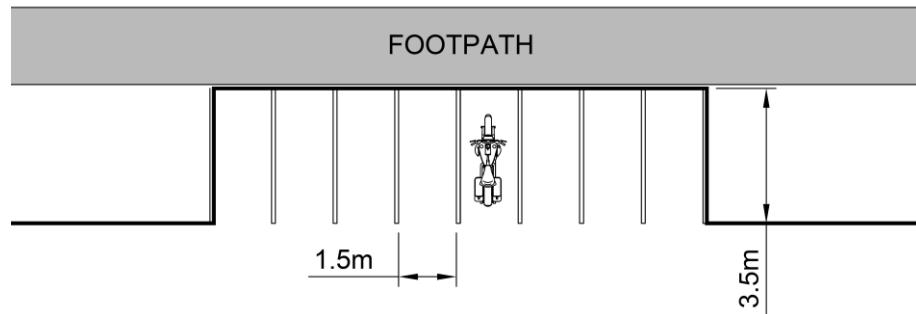


Figure A/5: Dimensions for Motorcycle Parking Bays

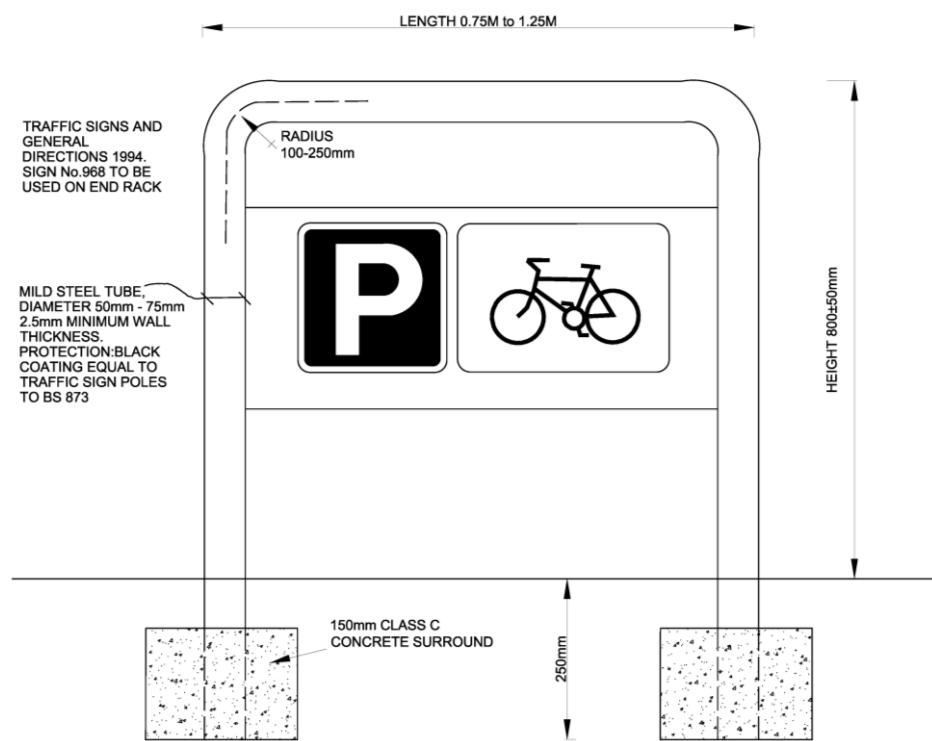


Figure A/6: Sheffield Stand