Bus Shelter Specification

Where utility (WPD) electrical disconnections and/or connections are required this will generally be arranged separately by South Gloucester Council (SGC). If requested within the quotation however, the Contractor will be required to arrange the electricity disconnection (non-emergency) and/or supply connection as a priced option (the company being reimbursed the electricity company's net invoiced costs). New electricity supplies shall be metered and the meter shall be mounted in an appropriate enclosure (min. width 350mm) and be independent of the shelter.

The contractor is responsible for following the requirements within the electricity supply regulations 1988 and shall provide the necessary documentation and certification to allow the local authority to arrange for the electricity supplier (WPD) to install and energise an installation.

Section A

Shelter Design Specification

Shelters shall be of modular design, size 1.3 – 1.5m, width 1.3 – 1.8m and conform to the guidelines of the Disability Discrimination Act.

Construction shall be of stainless steel posts (60x60 SHS) with a mid-rail and welded roof supports with an extruded aluminium glazing system with hidden fixings. Any coloured panels, rails, seat, timetable casings are to be blue (RAL 5002) however more than one option colour may be required.

Side glazing shall be 6mm polycarbonate with options for toughened safety glass and solid back panels.

The roof shall be curved, 4mm tinted polycarbonate, with an option for flag mountings where specified. Shelters shall come with an integral full length perch seat without handles.

Full, half, and quarter side panels may be specified for cantilever shelters when requesting a quotation.

Enclosed shelters must provide a minimum 1000mm exit and entry to accommodate wheelchair users & double-buggies.

The shelter shall be installed RTI compatible with bracketry and wiring included (certification will be required at installation, see section B) and be ready to receive a 3 line x 32 character LED shelter display (*Vix Shannon* 12kg, installed at a later date under separate contract).

The shelter shall have an integral connection housing with a planted root for cable duct access, providing entry on all facets. The connection housing shall be 500mm high above ground level, consisting of a 50mm above ground plinth and minimum dimensions 450mm high door access, 400mm wide and approximately 160mm deep, giving a minimum internal clearance of 140mm from the face of the backboard. The backboard shall be varnished marine plywood, or similar, of at least 20mm thickness. The connection housing shall also provide an 8mm brass earthing bolt fixed to the structure for a main earth provision, with a similar earthing point on the door. The connection housing shall consider BS EN 60529 and be sealed to a minimum of IP54.

The door access shall open into the shelter and preferably be hinged

Back to contents

Supply and Erection

When providing a quotation the Contractor shall include for the supply & erection of shelters, undertaking all excavation, foundation and reinstatement works, the provision of appropriate traffic

management and for the removal to tip of existing shelters where required. Installers are to be qualified to *Operative Level* of the *New Roads and Street Works Act 1991.*

NRSWA 1991 Utilities Enquiries and Works Opening Notice (N notice)

The Contractor will be required to arrange utility enquiries and appropriate notices prior to any installation works.

Options

- Double A4 portrait (590mm x 210mm) display case, shelter or post mounted
- A1 poster-size display case (650x1000mm min) shelter mounted
- Cases to be secured with tamper-proof screws (hex socket & pin) or lock and key (see section B)
- Roof mounted post (see section B)
- Stainless steel stop pole (see section B)
- Flag (see section B)
- Illumination (see section C)
- Solar powered Illumination (see section C)

The following information is required:-

- Full details, drawings and specification of the proposed shelter(s) and all its options to meet the requirements of the specification; highlighting any items that do not comply
- Full details and specification of any alternative bus stop components proposed by the Contractor
- Full transportation & installation details of pre-assembled units if not assembled on site
- Specify details of any additional costs for mounting at either front or rear of footways
- Indicate the capacity for and indicative costs of removing existing shelters to tip
- Details of indicative prices & response times for typical maintenance items i.e. replacement glazing, solid panels and roof structure.

Back to contents

Section B

Street Furniture for Bus Stops

Post Type A (see appendix 1)

The post shall be a 90mm diameter, silver anodised, triangular aluminium post (or similar) capable of mounting an RTI unit (12kg) and has an accessible internal smooth bore conduit & top cap.

The post shall be at least 3600mm long, of which 700mm will be below ground.

The post shall have built in channels to accept a flag and one or two display cases.

Post Type B

Steel, CHS posts may be specified without electrical cable conduits.

Roof Mounted Post

Steel, CHS posts capable of securely mounting flag.

Display Cases

The size shall be A4 or A1 as required.

It shall be bottom opening, with tamper-proof screws (hex socket & pin) or lock and key.

The case shall include spacing bolts and fixing bolts for attachment to a post or shelter as specified.

Flag (see appendix 2)

This flag should be constructed of 4.5mm pvc (or similar) and have a 300mm x 600mm visible area. It shall be fade resistant, colour fast and be reflective or have night glow properties.

The flag shall include:-

- The appropriate council logo (supplied)
- A bus silhouette
- The stop name
- The *"Traveline"* logo and text (supplied)
- A blank space for text indicating "*buses towards*……." to be inserted by SGC

The flag shall be able to fit to a supplied post or to a bus shelter bracket.

Back to contents

Section C

Electrical Requirements for Bus Shelters

(a) General

The company shall be an NICEIC Approved Electrical Contractor. Materials, equipment and workmanship required under the Contract shall comply with BS 7671 Regulations for Electrical Installations (IEE Wiring Regulations) and the rules and regulations of the electricity supplier who will provide the supply.

The Contractor shall employ only competent personnel with appropriate qualifications to undertake the work.

(b) Connection Housing and Components

Shelters shall be installed with two 50mm capped ducts (one black and one orange) extending from within 50mm of the connection housing backboard to a point, outside the line of shelter and a minimum of 200mm beyond foundation , below ground with a minimum cover of 450mm.

The backboard of the connection housing shall have the following components fitted:-

Unit 1 – Cut-Out

A combined neutral and earth cut-out unit, with a single fuse, manufactured and tested in accordance with BS7654:1997 Type 2.

Unit 2 – Isolator

A four-module enclosure, complete with extension box and gland plate, housing a mains filter of minimum specification 250V AC, 50Hz, 15Amp. The filter shall supply a double pole switch connector, which feeds a DVS (Dynamic Voltage Suppressor) minimum specification 240V 140 joules surge suppressor. Terminal blocks shall provide the connection points for the outgoing 3 core arctic flex to feed Unit 3.

Unit 3 – Isolator

A four-module enclosure and extension box, housing 2 x 6A, 30mA RCBO units and Earth Terminal to provide 2 no. outgoing circuits for the RTI and bus shelter light.

The Enclosures

The general design and construction of the enclosures shall ensure that in normal use the unit will function in a reliable manner and cause no danger to either persons or adjacent equipment.

The enclosure shall comply with the material requirements of clause 8.2.12 of BS EN 60439-3 (1991).

The enclosure shall be fitted with a hinged, lockable transparent safety lid which requires the use of a tool to gain access to functional equipment. The IP rating of the Enclosure shall comply with the requirements of BS EN 60529 (1992). The enclosure (when assembled with functional parts) shall be labelled to the requirements of BS EN 60439-1 (1999) clause 5.

Cable connections shall ensure the integrity of IP rating is maintained. Outgoing cable points shall be designed so as to ensure moisture will drip away from the unit.

The Switch Disconnector

The switch disconnector shall be manufactured to and comply with the requirements of BS EN 60947-3 (1999 + A1 2001).

The switch disconnector shall be independently tested to the requirements of BS EN 60947-3 (1999 + 2001) clause 8.

Independent third party certification, showing the complete test results shall be produced upon request.

Electrical ratings. The minimum electrical specification for the switch disconnector is:-

Rated Voltage Ue = 400V~ Rated Current Ie = 32A

Rated Insulation Voltage Ui = 400V~ Utilisation Category = AC-22A

Rated Impulse Voltage U_{imp} = 6kv

The product shall be labelled as stated in BS EN 60947-3 (1999 + A1 2001), clause 5.

Back to contents

(c) Wiring

The components shall be supplied pre-wired in accordance with drawing no. EC-01.

The outgoing wiring from the unit 3 isolator shall be as follows:-

1. For the future RTI unit – an internally routed 20mm diameter flexible conduit, glanded into the base termination plate and into an adaptable box (or similar) at the proposed RTI position, complete with a blue 1.5mm2 3 core 'Arctic Grade' flex type 3183AG (as specified below) terminating with a re-wireable IEC plug.
2. For the shelter light (where ordered) – an internally routed 20mm diameter flexible conduit glanded invisibly into the lighting fitting and wired with a blue 1.5mm 2core 'Artic grade' flex type 3183AG (as specified below).

The Arctic grade flex shall be 300/500v, 3 core round profile flex, of the type used in the connection of electrical appliances for outdoor industrial installations that need to remain operational in extreme climatic conditions, with a temperature range of -40C to +70 C. The cable shall be blue (220V applications) with 3 cores, (colours brown, blue and green/yellow).

The insulation of the conductors shall be Arctic grade PVC Type T1 4 to BS7655.

(d) Light fitting

The light fitting (where ordered) shall be of robust construction being round or square and incorporating a 2D compact fluorescent lamp. The fitting shall be designed to orientate the light down, unless upward

light is screened by the construction of the shelter. The light fitting shall include a SELC 101 miniature photocell switching at 70 lux.

(e) Inspection and Testing

Stage 1 – Every bus shelter on completion and before being energised shall be inspected and tested to verify that the requirements of BS7671 and the electricity supply regulations 1988 have been met. The certification shall be given to the local authority to arrange for the electricity supplier (WPD) to install and energise the installation. The method of testing shall be such that no danger to persons or property or damage to equipment can occur even if the circuit is defective.

Stage 2 - Every bus shelter shall, on completion and **after** being energised, be inspected and tested to verify that the requirements of BS7671 have been met. The certification shall be given to the local authority for their information. The method of testing shall be such that no danger to persons or property or damage to equipment can occur even if the circuit is defective.

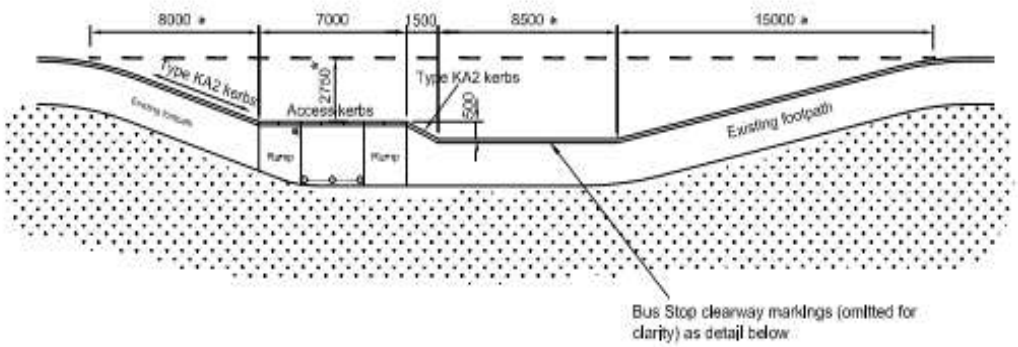
Where items have been tested by the manufacturer prior to installation, the Contractor shall obtain copies of such tests and their results. The Contractor shall then take all the necessary steps to ensure that these conditions still appertain prior to the item being put into service. Copies of such test sheets shall be included with all other test certificates on completion.

The Contractor shall ensure that all test instruments have been calibrated and adjusted in accordance with BS EN ISO 9001 and come complete with calibration certificates to verify that BS EN ISO 9001 has been complied with.

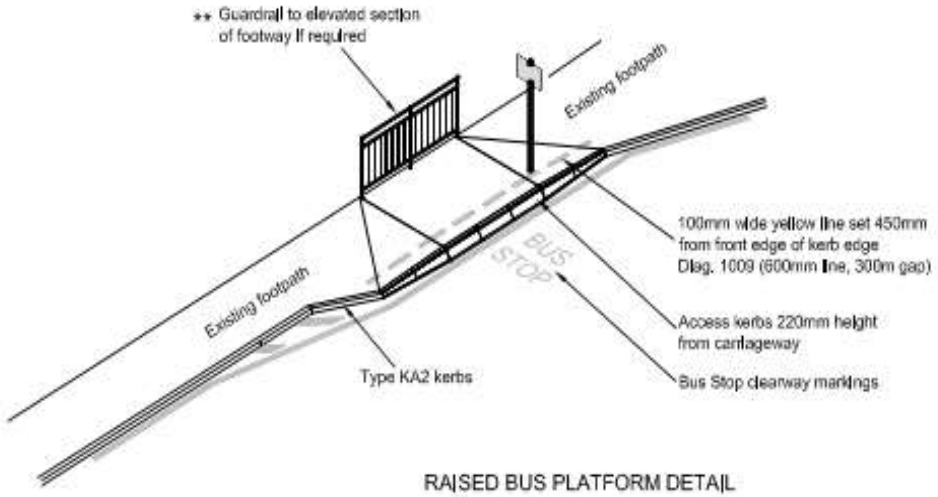
The Contractor shall furnish the Engineer with a test certificate verifying compliance with BS 7671 upon completion of the inspection and tests.

Back to contents

Appendix 1



BUS LAY-BY DETAIL



RAISED BUS PLATFORM DETAIL

NOTES

1. The Specification for Highway Works (current version, or as indicated in the contract) applies, together with any South Gloucestershire Council additional or substitute clauses.
2. ALL DIMENSIONS ARE IN MILLIMETRES.
3. For dimensions of Bus Borders refer to drawing SGSD/1100/31.
4. * Dimensions shown are to be used as a guide only. Actual lay-by will determine size.
5. **Guardrail may be omitted where site conditions permit.
6. Access kerb height from carriageway is 220mm.
7. Maximum gradient of footway to be 1 in 12.

Date	Amendment	Issue

Drg. No. SGSD/1100/30

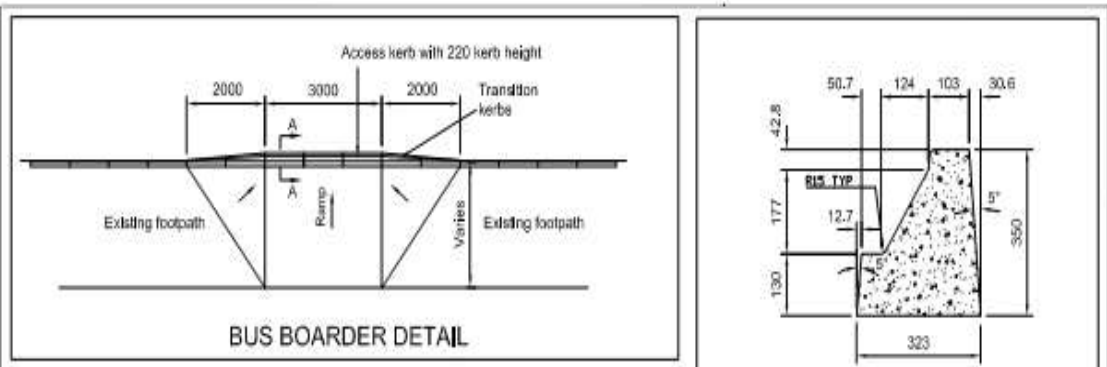
South Gloucestershire Council
PLANNING, TRANSPORTATION AND STRATEGIC ENVIRONMENT

APPROVED STANDARD DETAIL

BUS LAY-BY DETAIL

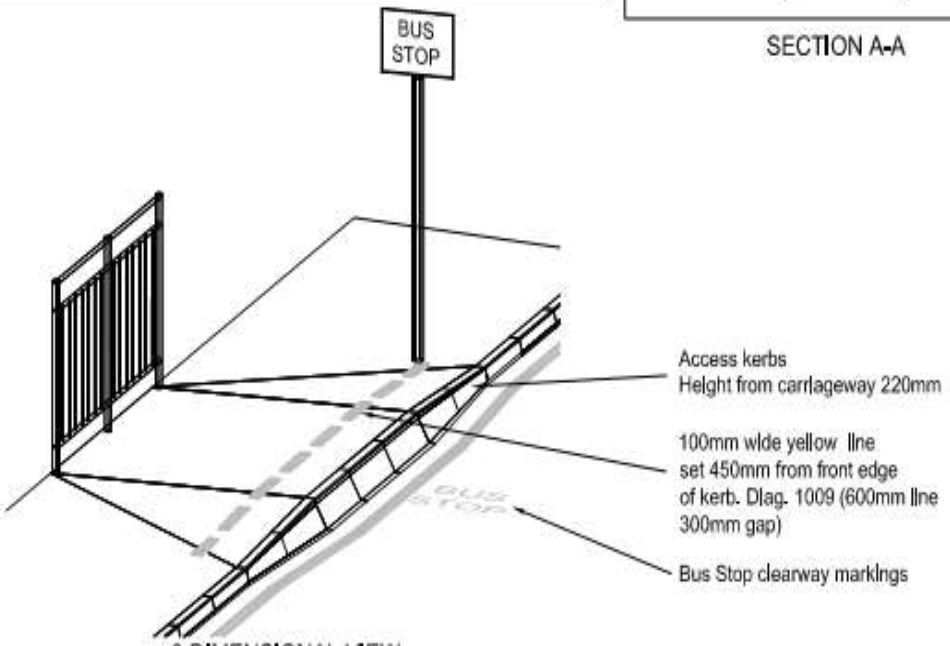
Drawn by	DF	Date	Jan 2004
Scale	NTS	Approved by	
Drg. No.	SGSD/1100/30		

Appendix 2



BUS BOARDER DETAIL

SECTION A-A



3 DIMENSIONAL VIEW

NOTES

1. The Specification for Highway Works (current version, or as indicated in the contract) applies, together with any South Gloucestershire Council additional or substitute clauses.
2. ALL DIMENSIONS ARE IN MILLIMETRES.
3. Kerb height from carriageway 220mm.
4. Footway slope 1:20 (max. 1:12).

Date	Amendment	Issue

Drg. No. SGSD/1100/31

South Gloucestershire Council
PLANNING, TRANSPORTATION AND STRATEGIC ENVIRONMENT

APPROVED STANDARD DETAIL

BUS BOARDER DETAIL FOR SUPER-LOW BUS ACCESS

Drawn by	DF	Date	Jan 2004
Scale	NTS	Approved by	
Drg. No.	SGSD/1100/31		