

# Local Bus Service Provision and Supporting Bus and Highway Infrastructure – Warwickshire County Council

## 1 Introduction

Warwickshire County Council (WCC) acknowledge the role local bus services and supporting bus and highway infrastructure have in delivering connectivity between new development, urban centres, major employment sites and other prominent generators of local trips. The position of the County Council is aligned with national and local policy as stated below:

- The [National Planning Policy Framework](#) (NPPF) steers development towards promoting its connectivity with sustainable transport to facilitate sustainable development and contribute towards wider sustainability.
- The NPPF also promotes the integration of planning and sustainable transport to provide attractive alternatives to travelling by car to access employment, education, health facilities, leisure, amenities and health objectives - aimed at providing people with a real choice about how they travel.
- The County Council requests provision and/or improvements to local bus services in association with new development in alignment with the policies established in the Warwickshire [Local Transport Plan 2011-26](#), in respect to promoting public transport connectivity between new development and local amenities; and
- The Warwickshire Local Transport Plan 2011-26 also specifies that all occupiers within a new development should be no further than 400 metres away from the nearest bus stop, in line with policy stated in the in respect to connectivity between new development and local bus services.

Developer contributions can only be sought if they meet the 3 legal tests for planning obligations which are as follows:

- a) Necessary to make the development acceptable in planning terms.
- b) Directly related to the development.
- c) Fairly and reasonably related in scale and kind to the development.

It will be the Local Planning Authority who decides whether the request is included in the commitments placed on the developer.

## 2 Common Developer Contribution Requirements

### 2.1 Local Bus Service Provision

For larger developments, i.e., those with more than 20 employees and/or significant visitor numbers, or a residential development of 25 or more dwellings, the County Council will consider requesting for the developer to provide a contribution covering any of the following:

- Cost for extending the timetable (i.e., providing additional bus journeys) and/or route of an existing local service to serve the new employment and/or visitor amenity, to cater for such visitors and/or shift change patterns;
- Diversion of one, or a combination of, existing local bus services to penetrate, or be adjacent to, the residential development, this will include enhancing the frequency and providing additional journeys; or
- The cost of a new bespoke bus service specifically serving the new development and providing connectivity with nearby residential areas, town centres and public transport interchanges.

The developer is asked to provide a contribution covering the cost of providing the designated local bus service provision over a period of 5 years.

Example of Developer Contribution Payment Phases in 2018 (costs could change over time):

Year 1 - £130,000  
Year 2 - £110,000  
Year 3 - £90,000  
Year 4 - £70,000  
Year 5 - £50,000  
Total - £450,000

How have the costs figures been derived?

The cost of procuring the operation of one additional bus, with driver, during the period 0700-1900 on Monday to Saturday is approximately £150,000 per annum. It would be expected that revenue would be collected from passengers using the service operated by this bus, which would be expected to grow gradually as the development is completed and travel habits are established. In this typical example, starting revenue growth has been assumed at £20,000 pa., growing by £20,000pa, which would mirror experience. For large, or remote, developments, an evening and Sunday hourly service provision would be required and likely cost about an additional £65,000pa.

#### Additional Information on Rationale and Justification:

It would be expected that a major residential or commercial development would require a bus service running at least every 30 minutes during the main daytime period, in order to comply with the National Planning Policy framework promoting the integration of planning and sustainable transport in order to provide attractive alternatives to travelling by car to access employment, education, health facilities, leisure, amenities and health objectives - aimed at providing people with a real choice about how they travel.

Depending on the location, the provision of such service will be achieved by extending or diverting an existing bus service, or in the more extreme cases, a completely new service. Invariably the extension or diversion of an existing service will require an additional bus to be placed in service to serve the Development and maintain existing frequency of service. If a completely new service is required, or any extension is lengthy, then it is likely that two additional vehicles would be required to reach major shopping, employment and transport interchange areas, with costs, but not necessarily revenue, doubled accordingly.

The County Council places great emphasis on ensuring during the planning stage the local bus service provision has every chance of achieving success. This is in terms of attracting a sufficient level of patronage ensuring the provision will not require subsidy from the County Council to continue operation after expiry of the developer contribution lifespan.

It is possible for the developer to negotiate directly with a local bus operator to operate the bus service compliant with the requirements. However, in this instance, the developer will be responsible for the compliant provision of this service for the length of the agreement, with the bus operator as their sub-contractor. The developer will be responsible for providing WCC with loading and revenue data for the service to facilitate future decisions once the Section 106 Agreement expires.

## **2.2 Supporting Highway Infrastructure within the Proposed New Development**

The County Council and local bus operators agree it is fundamental to ensure the primary spine road penetrating a new development is planned and constructed with the local bus service mind, i.e., its layout enables buses to penetrate the new development site effectively, moving easily on bus friendly roads in both directions including access and egress.

In respect to separate significant developments which are situated adjacent to one another, it is fundamental the main spine road for each development connect with one another, in order to support effective bus penetration and connectivity.

The County Council is minded it is fundamental that internal footways within the new development provide effective connectivity between properties and the bus stops situated on the main spine road.

Where roads are identified as bus routes and bus stops are to be placed by the developer, these should be at locations within the development that will be convenient for passengers (circa 400m walking distance from each house/unit) considering the bus route and the previous and following stops away from the development, or as otherwise agreed with the Highway Authority.

### **2.3 Supporting Bus Infrastructure**

Developer contributions are usually sought in respect of securing improvements to bus infrastructure in association with any development comprising 50 or more dwellings or any employment-based amenity, where a local bus service is in operation within close proximity to the new development.

Bus infrastructure is secured and delivered by means of the following alternative options: The appropriate agreement will be agreed at pre-application meetings.

- Section 38 Agreement – The developer manages the delivery of the works, e.g., provision of bus stops on the main spine road within a new development – commuted sums would need to be collected.
- Section 278 Agreement – The County Council or the developer manages delivery of works, e.g., provision or enhancement of nearest existing bus stops serving the new development, as part of a wider package of highway works aimed at connecting the new development to the local highway network, commuted sums would need to be collected:  
or
- Section 106 Agreement – The County Council manages delivery of necessary bus stop provision or enhancement work on the local highway network in support of the new development after construction – commuted sums would need to be collected.

The improvements to bus infrastructure could comprise any of the following:

a) Provision and/or Enhancement of Bus Stops:

It is usual for bus stops provided or enhanced in association with new development to consist of the following:

- Provision of a bus boarding / alighting area including an area of hard-standing;

- Provision of a bus stop pole – to be a Swan Neck specification if the development is on an existing Quality Bus Corridor (QBC) route;
- Provision of bus stop clearway box markings on the carriageway; and
- Provision of a bus shelter.

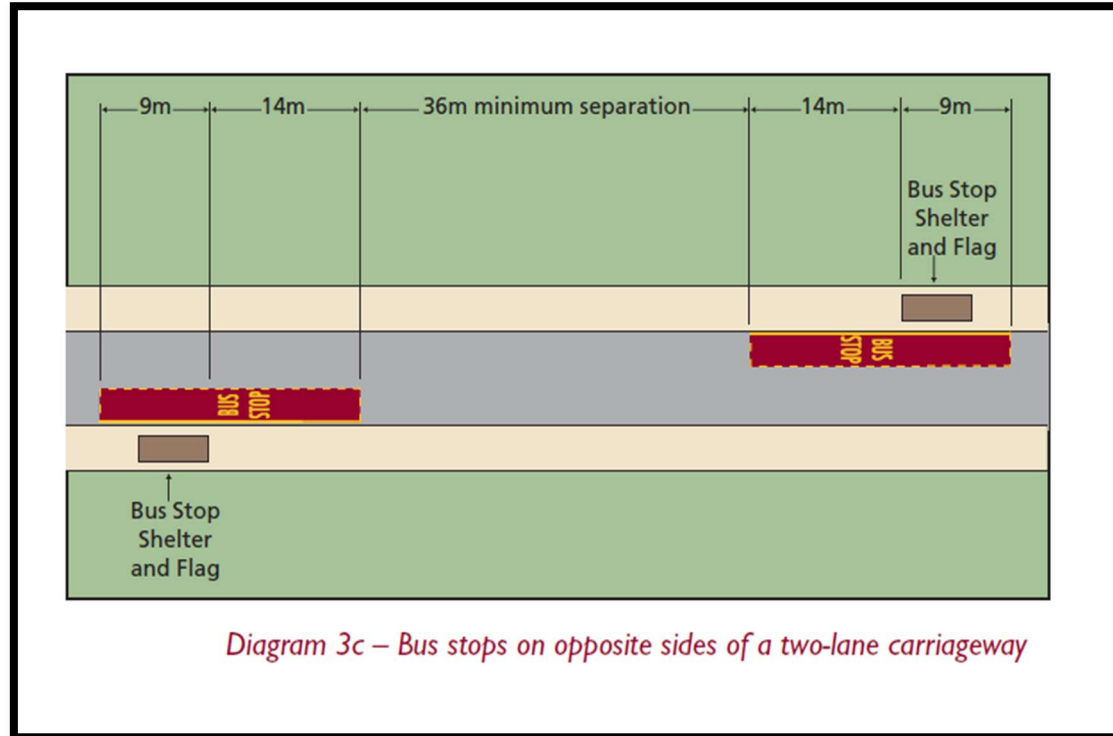
b) Provision of Bus Shelters:

The County Council will seek for bus shelters to be provided in association with new development when aligned to the following circumstances:

- It considers a new development to be of a sufficient size to be classified as a major generator of trips, and as such, encouraging use of local bus service is important to support modal shift, e.g., a residential development of 75 dwellings or more; and/or
- The new development is situated near a mass of existing properties also served by the same local bus service, in which requests for a bus shelter have been received, sometimes on a political basis.

c) Paired Bus Stop Arrangements (Section 38 Arrangements):

It is generally not advisable to position bus stops opposite each other on a main spine road (two-way carriageway) within a new development, as safety and visibility would be compromised. It is suggested that the paired bus stops be positioned with a minimum separation of 36 metres instigated, i.e., buses stop 'tail to tail' and move off away from each other as per the diagram below:



Note: Diagram taken from the Bus Stop Design Guide by the Roads Service, Transportation Unit, Department for Infrastructure (Northern Ireland), October 2005

d) Bus Shelter Maintenance:

When two or more bus shelters are required in association with a new development, the developer is requested to provide a commuted sum to cover the cost of maintaining the bus shelters over a period of 5 years (£1,000 per annum per bus shelter), and therefore, the sum of £5,000 per bus shelter is stipulated by the County Council.

e) Bus Stop Lay-bys:

Where new bus stops associated with new development are to be provided on busy roads, the County Council often requests for a bus stop lay-by to be provided to enable buses to pick up / set down passengers without obstructing traffic flow. The length of a typical standard bus stop lay-by is approximately 28 metres taper to taper.

f) A Super Stop:

In respect to a significant employment-based amenity, if the major development has a primary entrance point to its main building adjacent to a main carriageway access, then the County Council may request for a Super-Stop to be provided in the vicinity of the entrance point, i.e., resembling a bus interchange point with a large, elongated waiting facility (i.e., a 5-bay bus shelter) being its main feature.

g) Bus Priority:

In terms of major residential and/or significant employment-based amenity, the County Council may consider opportunities to deliver bus priority at key junctions in an urban centre on a bus route serving a new development. This would support bus punctuality, schedule adherence and improve customer satisfaction. Bus priority may also be provided at access points for bus and/or rail stations served by the local bus service calling at the new development.

h) Real Time Information:

- The provision of real time information displays may be requested at bus stops within the main spine road of a significant employment-based amenity. Such provision will act as an extension of the existing RTI scheme in Coventry to simplify the organisational and technical arrangements. The developer would be asked to include the RTI provision in Section 38/278 Agreement and lead delivery. The developer would need to work with WCC Traffic Control and Information Systems Team, Travel for West Midlands and VIX (RTI supplier for WCC RTI Scheme) to deliver the initiative.
- A commuted sum would be required to cover the maintenance of the RTI displays and supporting infrastructure at a cost per display of £800 per annum over 5 years, i.e., £4,000 per RTI display (2018 prices and these costs may change over time).
- A further commuted sum will be required to contribute towards replace the RTI displays after the expiry of their 15 years lifespan at a cost of £8,000 per RTI display (2018 prices and these costs may change over time). This is a similar arrangement to the Section 106 Agreement maintenance measures put in place for traffic signals.
- The maintenance sums to be included in Section 106 Agreement and the County Council would not assume responsibility for the maintenance of the RTI infrastructure until the Highway was adopted.

i) Park and Ride:

Some form of either conventional or virtual Park and Ride in the vicinity of a significant employment-based amenity may be considered by the County Council, in response to overall development in the area. Such a facility would also be facilitated with supporting bus priority measures at key junctions on the local highway network. The developer would be

asked to make a significant contribution towards the operation of the Park and Ride bus service and the construction, operation and management of the site.

j) Bespoke Measures (Solar Panels and Green Roofs):

- WCC officers will consider the provision of potential provision of solar panels and green roofs on bus shelters to be provided by developers in liaison with WCC County Highways.
- WCC County Highways has initially indicated that such solar-panelled provision could be acceptable to power only a very small light to run in the shelter overnight. The location would also have to be considered, e.g., how much shade would the roof get etc.
- Further intelligence will be sought regarding the life expectancy of solar batteries/led etc for bus shelters and maintenance costs before WCC officers consider requesting developers to provide provision of solar powered lighting infrastructure in the future.
- WCC officers agree that solar-powered provision would not be appropriate for larger infrastructure items such as real time information displays due to common operational difficulties, particularly during winter months.
- WCC officers will also obtain further intelligence on provision of solar-panelled green roofs in terms of specification and guidance on how to maintain them.
- WCC County Highways would need to review and approve the maintenance contributions requested for such bespoke provision, as such specifications are not currently dealt with by County Highways.
- WCC County Highways maintenance regime is very simple, i.e., monthly clean of glass and floor, and annual electrical test for those with power supplies. Either of the these would possibly require more cyclical maintenance, and thus, further intelligence will be sought on this matter to guide future decision making.

### **3 Monitoring Delivery of New Stops/Services Secured by Section 106 Agreement**

#### **3.1 Local Bus Services**

The WCC Passenger Transport Team monitors the delivery, operation and performance of bus service enhancements or provision secured through a Section 106 Agreement, when operated under contract to the County Council.



The developer is responsible for monitoring the delivery, operation and performance of bus service enhancements or provision, in which the developer has procured the enhancement and discharged the funding directly to the bus operator as their sub-contractor.

### **3.2 Bus Stop Infrastructure**

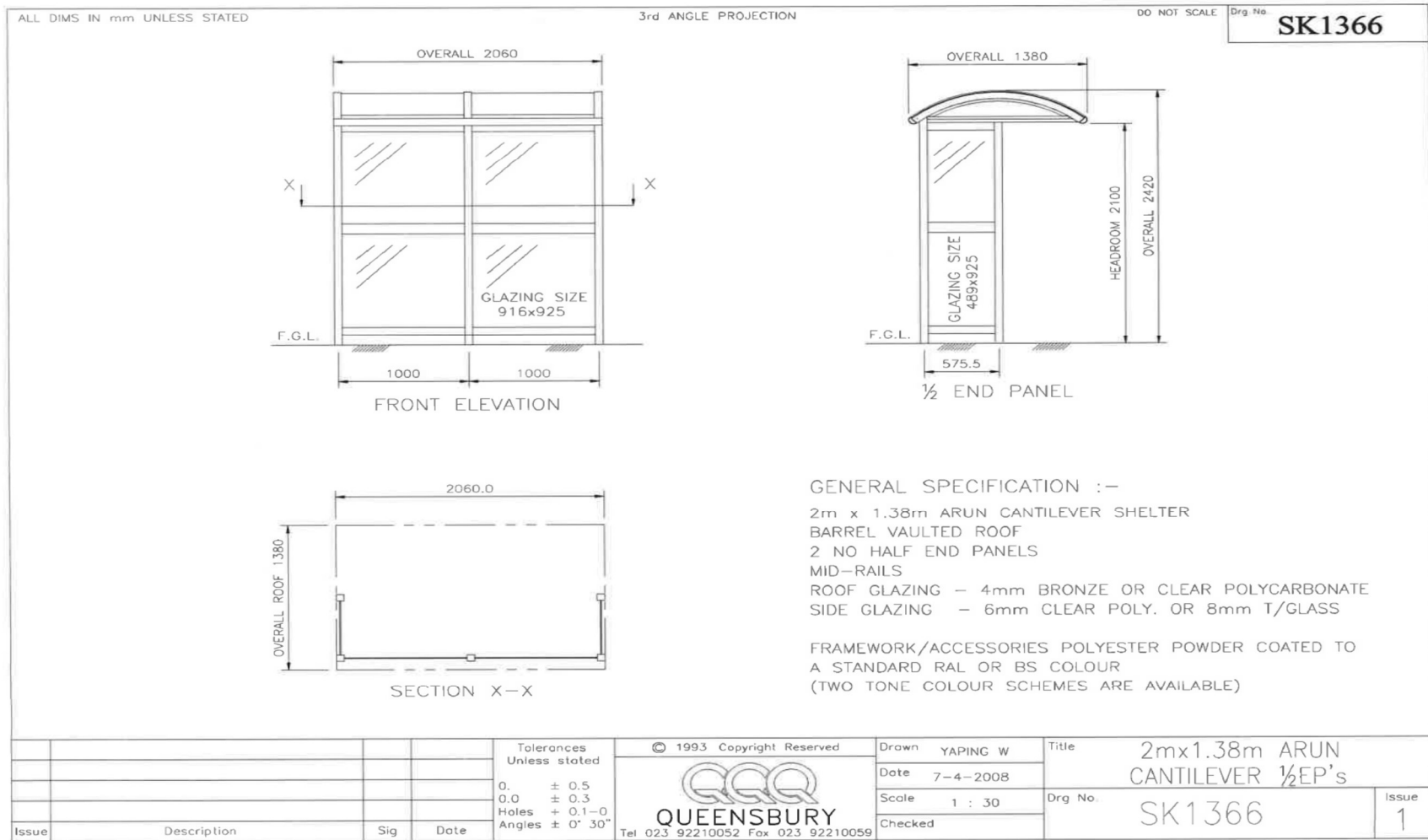
The WCC Transport Planning Team manages the delivery of bus stop provision or improvements secured through a Section 106 Agreement, including overseeing the process of getting the funding added to the WCC Capital Programme and commissioning WCC Design Services to design and deliver the necessary works.

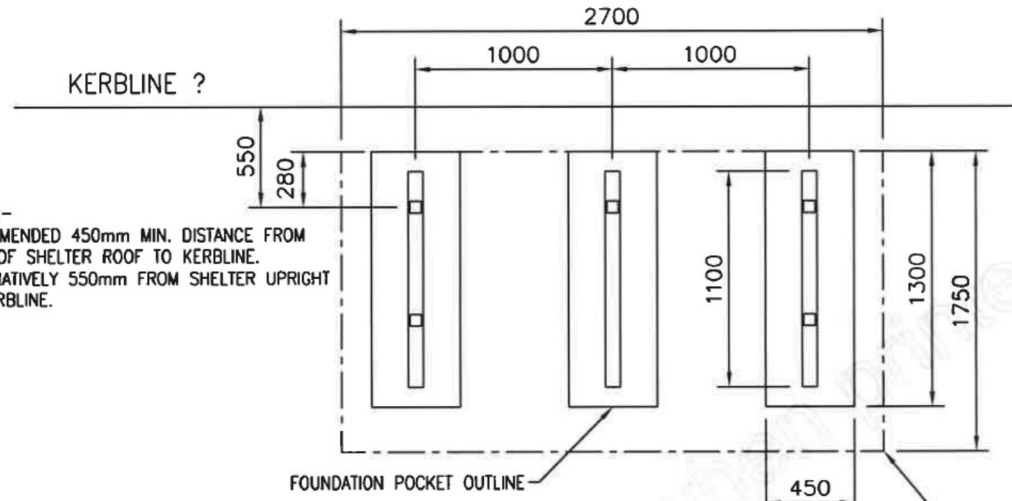
## **Appendix A: Standard Detail for Bus Shelters**

The developer, as part of a Section 38 or Section 278 Agreement highway works, or alternatively bus shelter suppliers when directed by the County Council as part of Section 278 or Section 106 Agreement highway works, are asked to provide the following infrastructure depending on the location:

- A 2 or 3 bay cantilever bus shelter with half end panels on either side and a barrel roof;
- Bus shelter is to be provided with a full-length perch seat;
- A double royal size display case to be attached to interior of the bus shelter (to enable bus information to be placed on display within the bus shelter);
- The colour of the bus shelter, roof, perch seat, display case and the bus stop pole will be black (RAL number Black RAL 9005);
- The bus shelter is to be erected upon an adequately sized concrete base; and
- On occasions, the bus shelter supplier is also asked to provide a standard or black swan neck specification bus stop pole RAL number Black RAL 9005.

## Example Dimensions and Measurements of a 2 bay Cantilever Bus Shelter



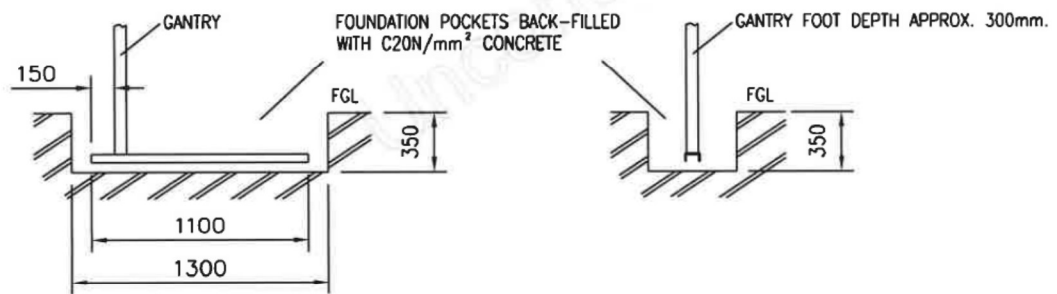


NOTE :-  
RECOMMENDED 450mm MIN. DISTANCE FROM  
EDGE OF SHELTER ROOF TO KERBLINE.  
ALTERNATIVELY 550mm FROM SHELTER UPRIGHT  
TO KERBLINE.

CHECK ORIENTATION OF SHELTER

NOTE :-  
WHERE A HARDSTANDING PAD IS REQUIRED THE  
PAD SHOULD BE APPROX. 2700 x 1750mm.  
FOUNDATION POCKETS CAN BE REDUCED SLIGHTLY  
IN SIZE IF PAD IS TO BE CONCRETE TO ASSIST  
IN SHUTTERING OF HOLES.

SECTION SHOWING FOUNDATION DETAIL

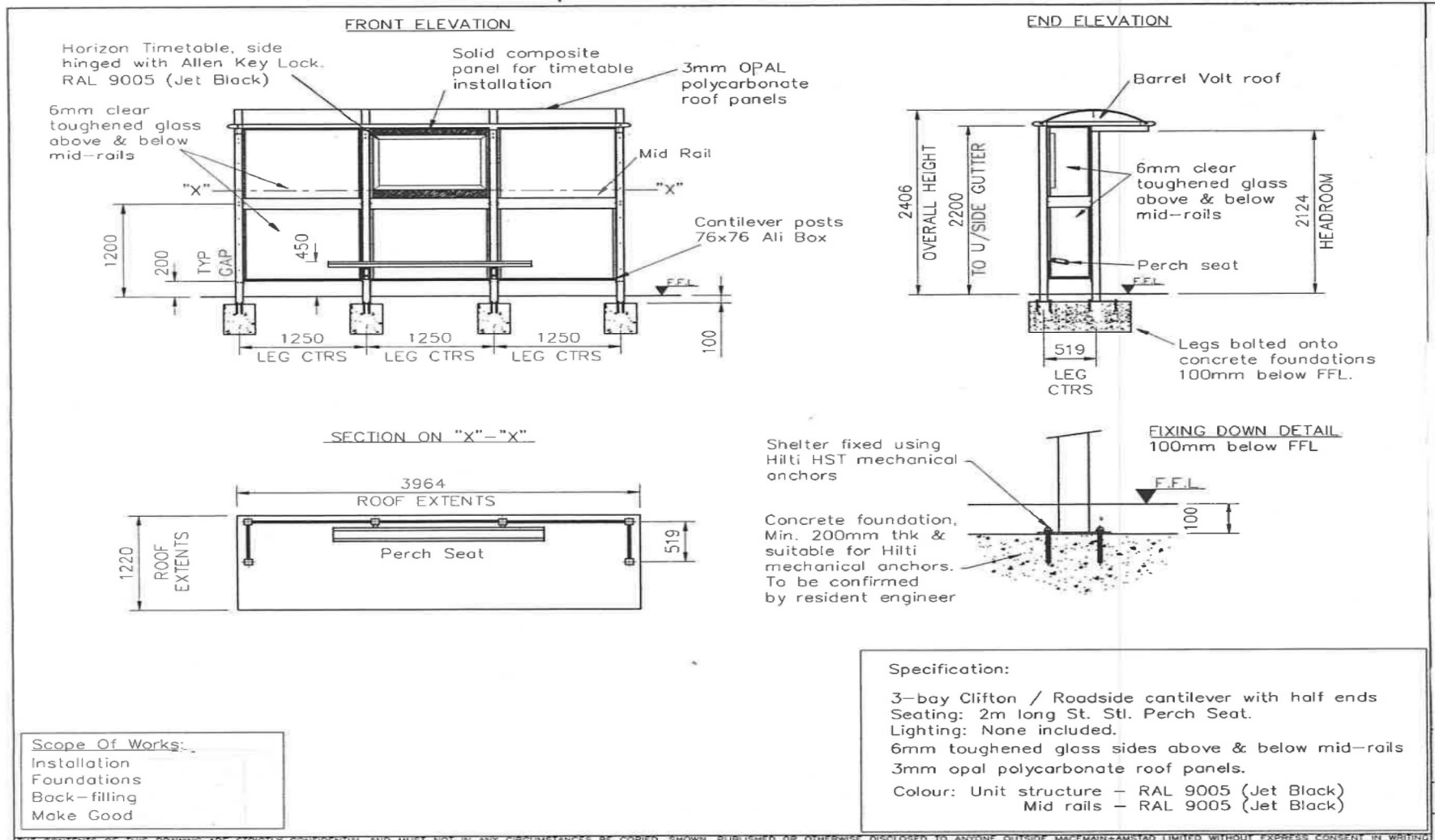


NOTE :-FOUNDATION POCKETS TO DIMENSIONS SHOWN  
BACK-FILLED WITH C20N/mm<sup>2</sup> CONCRETE  
TOP OF FOUNDATIONS TO BE SET LEVEL  
TO FINISHED GROUND LEVEL OR TO ALLOW  
FOR FINAL REINSTATEMENT.

NOTE :- 1.38m REFERS TO APPROX. O/A ROOF WIDTH.

				Tolerances Unless stated	© 1996 Copyright Reserved	Drawn W.H.D.	Title FOUNDATION PLAN	
				Std Tol ± 0.5		Date 21-5-2002	2m x 1.38m ARUN CANTILEVER	
				Holes + 0.1-0		Scale N.T.S.	Org No.	SK 923
				Angles ± 0°30'		Checked		
Issue	Description	Sig	Date		Tel 02392 210052 Fax 02392 210059			Issue 1

## Example Dimensions and Measurements of a 3 bay Cantilever Bus Shelter



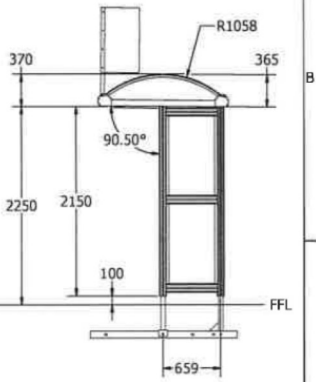
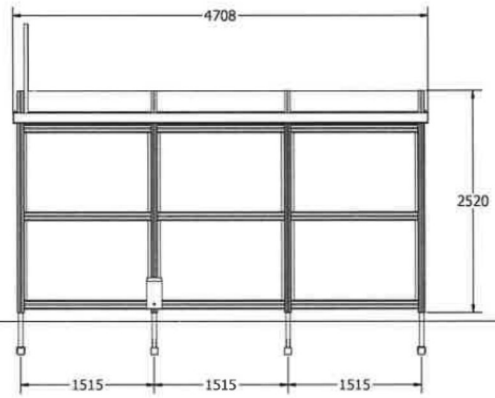
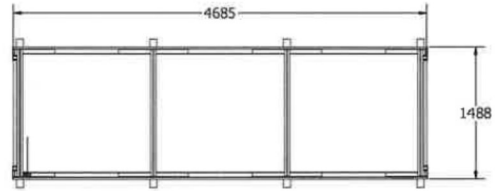
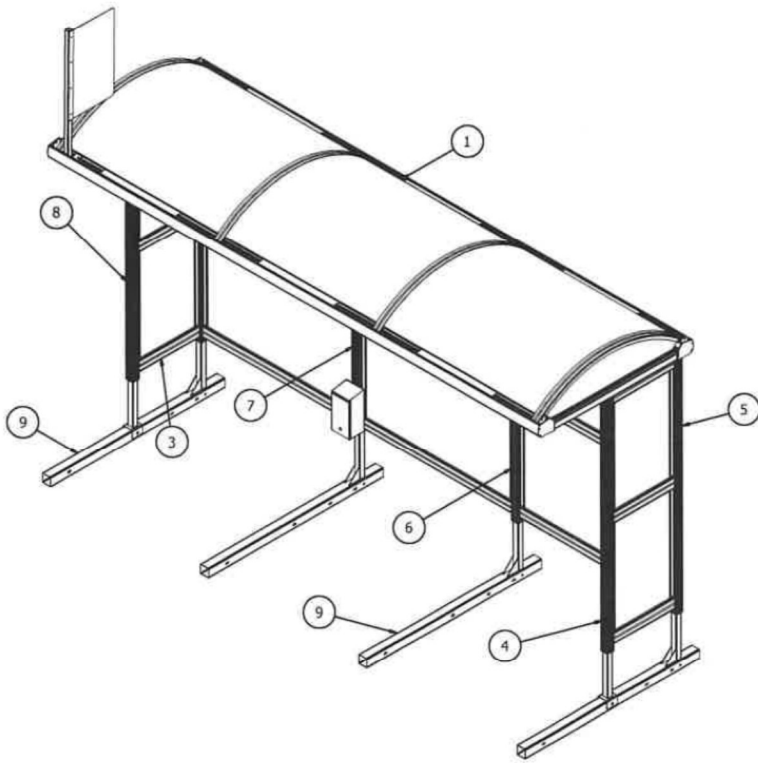


DESIGN BY: Lee Jones  
 DRAWN/DETAILED BY: Lee Jones  
 DRAWING NUMBER: 224808  
 REVISION: P1  
 Dyffryn Business Park, Llandow, Glamorgan, CF71 7PY  
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----- PARTS LIST -----

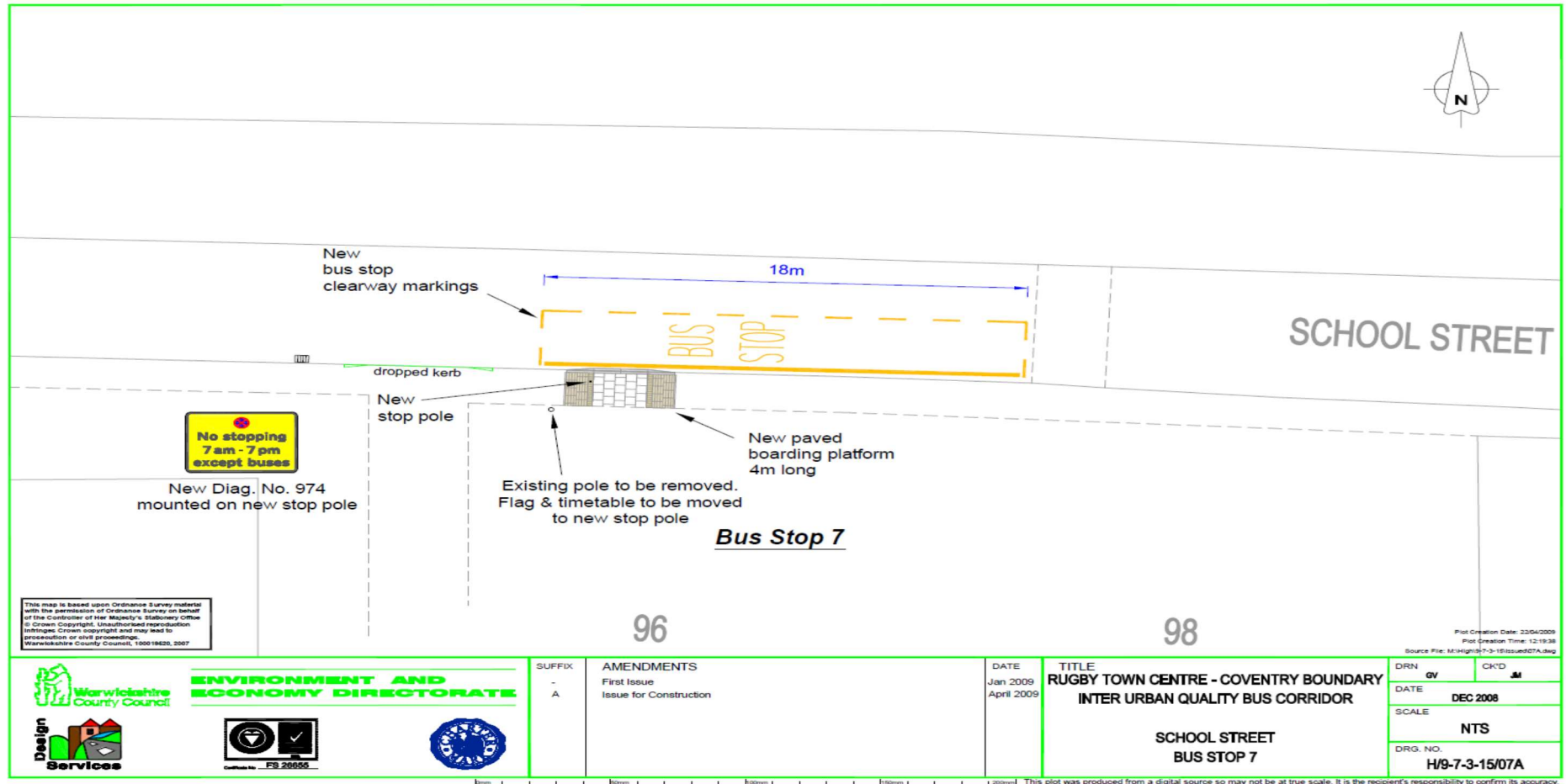
ITEM	DRAWING	REV	QTY	TITLE	DESCRIPTION	MATERIAL	FINISH	MASS
1	224847	P2	1	3 Bay Cantilever Roof	General Assembly of Parts	As Parts	As Parts	152.66 kg
2	224850	P4	3	Glazing Assembly - Full Bay Width	General Assembly of Parts	As Parts	As Parts	38.21 kg
3	224852	P5	2	Glazing Assembly - Cantilever 1/2 Ends	Assembly of APrts	As Parts	As Parts	17.28 kg
4	224854	P1	2	Dead End Column Assembly	General Assembly of Parts	As Parts	As Parts	7.22 kg
5	224855	P1	2	Corner Column Assembly	General Assembly of Parts	As Parts	As Parts	7.54 kg
6	224856	P1	1	Centre Column Assembly	General Assembly of Parts	As Parts	As Parts	7.54 kg
7	224857	P2	1	Electric Centre Column Assembly	General Assembly of Parts	As Parts	As Parts	12.49 kg
8	224906	P3	2	Adjustable Spigot Leg Assembly	Welded Sub Assy	As Parts	Powder Coat	9.21 kg
9	224909	P4	4	Cantilever Adjustable Spigot	Welded sub assy.	As Parts	Powder Coat	20.61 kg

Shelter Configuration



TITLE: 3 Bay Cantilever, 1/2 Ends				PROJECT: TRANSIT 2			
DESCRIPTION: General Assembly of Parts			FINISH: As Parts			MATERIAL: As Parts	
CREATION DATE: 02/11/2007	CHECKED BY:	DESIGN BY: Lee Jones	DRAWN/DETAILED BY: Lee Jones	SHEET: 1/1	MM	A3	DRAWING NUMBER: 224808
						REVISION: P1	

# Appendix B: Standard Detail for Bus Stops

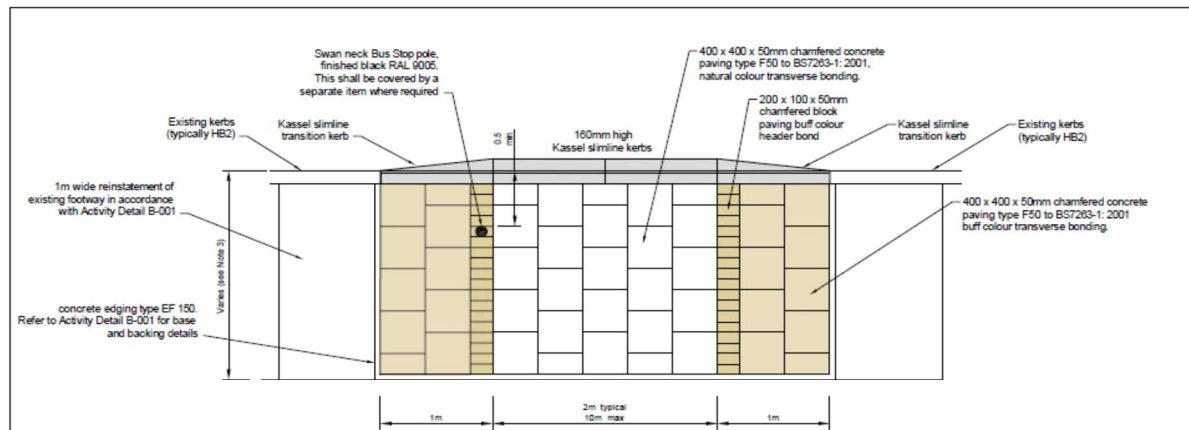


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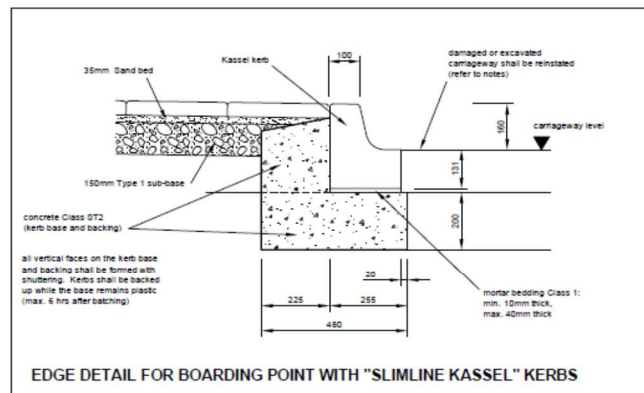
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Plot Creation Time: 12:19:38  
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							DATE DEC 2008			
								SCALE NTS		
								DRG. NO. H/9-7-3-15/07A		

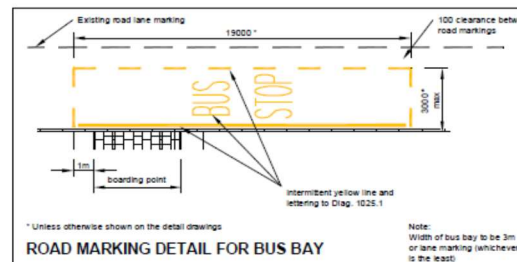
This plot was produced from a digital source so may not be at true scale. It is the recipient's responsibility to confirm its accuracy.



PAVING DETAIL FOR BOARDING POINT WITH "SLIMLINE KASSEL" KERBS



EDGE DETAIL FOR BOARDING POINT WITH "SLIMLINE KASSEL" KERBS



ROAD MARKING DETAIL FOR BUS BAY

**NOTES**

1. All dimensions are in millimetres unless stated otherwise.
2. HB2 kerb details (for relaying purposes) are shown on Activity Detail A-001.
3. Where footway width exceeds 4.0m, maximum width of boarding point shall be 3.0m. In all other cases, boarding point width shall be as existing footway width.
4. The back edge of the boarding point shall tie in with existing footway levels.
5. Edging kerbs shall be laid along the back edge of the paving area unless the footway boundary is formed by a wall or other structure.
6. Paving flags shall be bedded on granular material Type 1 sub-base (SHW Clause 803) 150mm thick (lower layer), and sand 35mm thick (top layer).
7. The maximum length and width of the bus bay shall be 19m and 3m respectively. For the purpose of pricing road markings associated with the bus bay, these dimensions shall be assumed. Road markings shall comprise yellow thermoplastic screed with applied solid glass beads.
8. Carriageway reinstatement shall be in accordance with the longitudinal construction joint detail shown on Activity Detail A-003, Surfacing Type 1.

**ACTIVITY VARIABLE A : EDGING LENGTH**

1. Not exceeding 6m.
2. Exceeding 6m but not exceeding 12m.
3. Exceeding 12m but not exceeding 20m.

**ACTIVITY VARIABLE B : "KASSEL" KERB LENGTH**

1. Not exceeding 6m.
2. Exceeding 6m but not exceeding 9m.
3. Exceeding 9m but not exceeding 12m.

**ACTIVITY VARIABLE C : PAVING AREA (ASSORTED TYPES)**

1. Not exceeding 12m<sup>2</sup>.
2. Exceeding 12m<sup>2</sup> but not exceeding 24m<sup>2</sup>.
3. Exceeding 24m<sup>2</sup> but not exceeding 48m<sup>2</sup>.

**ACTIVITY VARIABLE D : SURFACE TREATMENT AREA**

1. Not exceeding 30m<sup>2</sup>.
2. Exceeding 30m<sup>2</sup> but not exceeding 60m<sup>2</sup>.



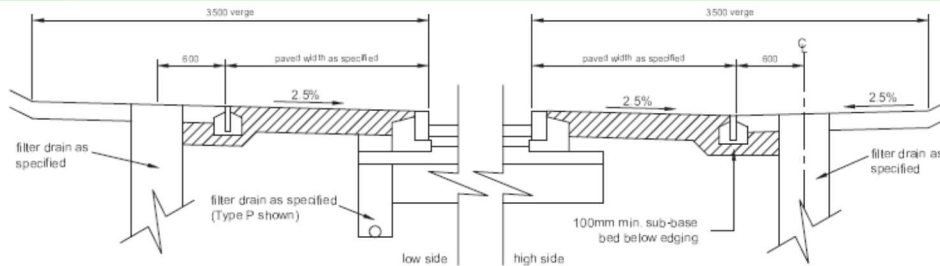
CONSTRUCTION  
ACTIVITY  
DETAILS

TITLE 1  
PUBLIC TRANSPORT SCHEMES

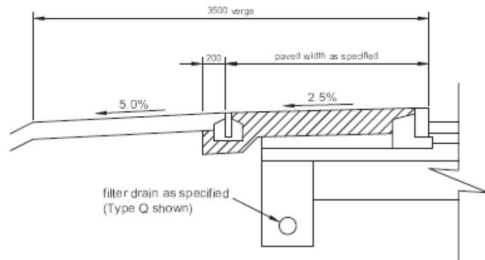
TITLE 2  
GENERAL ARRANGEMENT DETAILS FOR  
BUS BOARDING POINT (QUALITY BUS CORRIDOR)  
WITH KASSEL KERBS

PREVIOUS ISSUES		ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE	ORIGINAL DRAWING SIZE 420mm x 297mm	Plot Creation Date: 22/10/2009 Plot Creation Time: 08:18:10			
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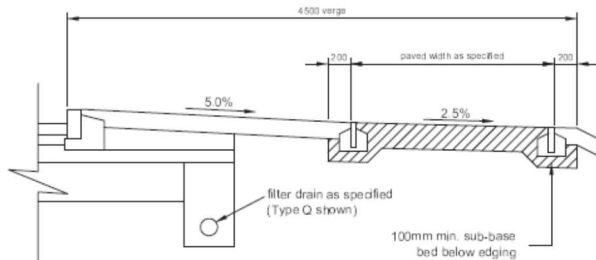




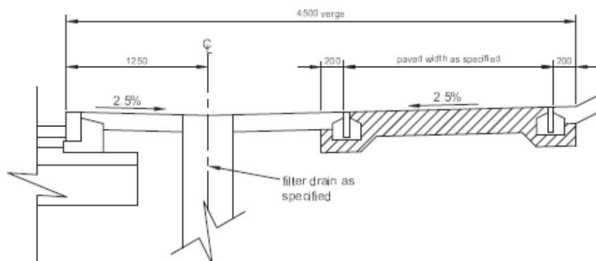
**PAVED AREA ADJACENT TO CARRIAGEWAY IN CUTTING**



**PAVED AREA ADJACENT TO CARRIAGEWAY ON EMBANKMENT**



**PAVED AREA AT BACK OF VERGE ON EMBANKMENT**



**PAVED AREA AT BACK OF VERGE IN CUTTING**

**KEY**



**CONSTRUCTION FOR BITUMINOUS FOOTWAYS, CYCLEWAYS AND COMBINED FOOTWAYS/CYCLEWAYS**

Construction Type	Thickness	Specification	Notes
Type 1: (footways only)	20mm	Surface Course: HRA 55/6F surf 100/150 (HRA 45/6F 160/220 if hand laid)	To be used on untrafficked footways only, where vehicle loading is not possible.
	50mm	Binder Course: AC20 dense bin 100/150 (160/220 binder may be used in winter when hand laying)	
	100mm	Sub-base: Type 1 Unbound Mixtures to S.H.W. Clause 803, Type 2 Unbound Mixtures (if they contain at least 80% bituminous planings) to S.H.W. Clause 804 or Type 3 (open graded) Unbound Mixtures to S.H.W. Clause 805	
Type 2: (footways and cycleways)	20mm	Surface Course: HRA 55/6F surf 100/150 (HRA 45/6F 160/220 if hand laid)	To be used on footways and cycleways trafficked only by light vehicles and where there is no risk of heavy vehicle loading.
	50mm	Binder Course: AC20 dense bin 100/150 (160/220 binder may be used in winter when hand laying)	
	150mm	Sub-base: Type 1 Unbound Mixtures to S.H.W. Clause 803, Type 2 Unbound Mixtures (if they contain at least 80% bituminous planings) to S.H.W. Clause 804 or Type 3 (open graded) Unbound Mixtures to S.H.W. Clause 805	
Type 3: (footways and cycleways)	20mm	Surface Course: HRA 55/6F surf 100/150 (HRA 45/6F 160/220 if hand laid)	To be used on footways and cycleways occasionally trafficked by heavy vehicles.
	50mm	Binder Course: AC20 dense bin 100/150 (160/220 binder may be used in winter when hand laying)	
	225mm	Sub-base: Type 1 Unbound Mixtures to S.H.W. Clause 803, Type 2 Unbound Mixtures (if they contain at least 80% bituminous planings) to S.H.W. Clause 804 or Type 3 (open graded) Unbound Mixtures to S.H.W. Clause 805	
Type 4: (footways and cycleways)	25mm	Surface Course: HRA 55/6F surf 100/150 (HRA 45/6F 160/220 if hand laid)	To be used on footways and cycleways frequently trafficked by heavy vehicles.
	90mm	Base: AC32 dense base 100/150 (160/220 base may be used in winter when hand laying)	
	365mm	Sub-base: Type 1 Unbound Mixtures to S.H.W. Clause 803, Type 2 Unbound Mixtures (if they contain at least 80% bituminous planings) to S.H.W. Clause 804 or Type 3 (open graded) Unbound Mixtures to S.H.W. Clause 805	

**NOTES**

- The material specifications for 55/6F surf., 45/6F surf. and 45/10F surf. are given in W.C.C. County Road Construction Strategy. The material specification for 55/10F surf. is given in PD 6691, Table C2A.
- Footways and cycleways crossing accesses shall be constructed in accordance with the relevant access construction requirements of B 704.2.
- Machine laying of bituminous layers is the default option. Except for circumstances where it is not possible, cycleways and combined footways/cycleways shall be machine laid. Permission to hand lay must be sought from the Overseeing Organisation.

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED. DO NOT SCALE FROM THIS DRAWING.



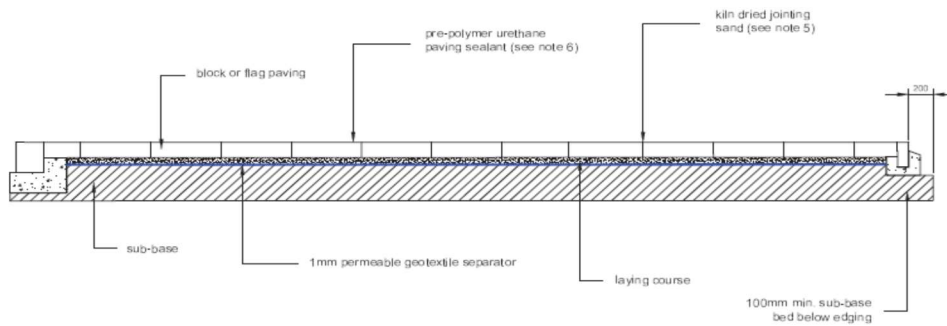
HIGHWAY CONSTRUCTION DETAILS (HCD-700)

SECTION  
EDGE OF PAVEMENT DETAILS

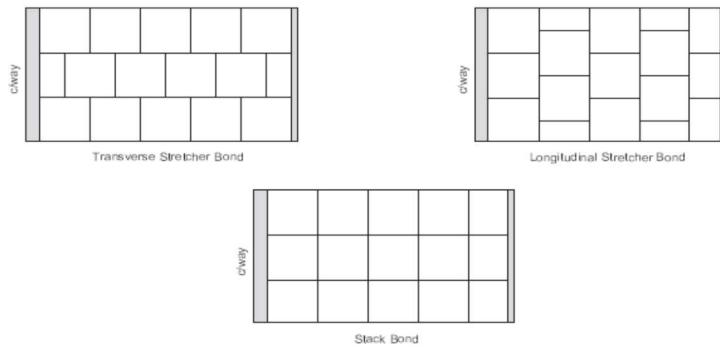
TITLE  
FOOTWAY & CYCLEWAY CONSTRUCTION (BITUMINOUS)

DRAWN	CHECKED	APPROVED	ISSUE
RJP	NH	AC	6
DRAWING NUMBER	SHEET SIZE	ISSUE DATE	
B 704.1	A3	FEB 2017	

PREVIOUS ISSUES		
1	FEB 2005	5
2	MAY 2010	
3	OCT 2010	
4	FEB 2013	



TYPICAL SECTION



FLAG PAVING PATTERNS

CONSTRUCTION FOR PAVED FOOTWAYS, CYCLEWAYS AND COMBINED FOOTWAYS/CYCLEWAYS			
Construction Type	Thickness	Specification	Notes
Type A: (footways only)	Varies	Block or flag pavers as specified on scheme specific drawings	To be used on untrafficked footways only, where vehicle loading is not possible.
	30mm	Laying Course: Sand (kiln dried and compacted)	
	100mm	Sub-base: Type 1 Unbound Mixtures to S.H.W. Clause 803, Type 2 Unbound Mixtures (if they contain at least 80% bituminous planings) to S.H.W. Clause 804 or Type 3 (open graded) Unbound Mixtures to S.H.W. Clause 805	
Type B: (footways and cycleways)	Varies	Block or flag pavers as specified on scheme specific drawings	To be used on footways and cycleways trafficked very occasionally by light vehicles and where there is no risk of heavy vehicle loading.
	30mm	Laying Course: Rigid mortar to BS 7533	
Type C: (footways and cycleways)	Varies	Block or flag pavers as specified on scheme specific drawings	To be used on footways and cycleways trafficked very occasionally by heavy vehicles.
	30mm	Laying Course: Rigid mortar to BS 7533	
	70mm	Binder Course: AC20 dense bin 100/150 (160/220 binder may be used in winter when hand laying)	
	150mm	Sub-base: Type 1 Unbound Mixtures to S.H.W. Clause 803, Type 2 Unbound Mixtures (if they contain at least 80% bituminous planings) to S.H.W. Clause 804 or Type 3 (open graded) Unbound Mixtures to S.H.W. Clause 805	

NOTES

- For kerbs and edgings details, refer to WCC HCD B 702.1.
- For footway/cycleway construction drainage details, refer to WCC HCD B 704.1.
- For block paving laying patterns, refer to WCC HCD B 704.3
- For acceptable flag paving sizes, refer to British Standard sizes detailed in BS 7263-1 and the national annexe of BS EN1339:2003.
- Joints shall be filled in dry conditions and when paving is completely dry to within 2mm of the paving surface.
- The pre-polymer urethane paving sealant shall be a jointing sand stabiliser that is suitable for the installed paving units and be applied as per the manufacturers specification. The proposed sealant must be approved by the Overseeing Organisation prior to its application.

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED. DO NOT SCALE FROM THIS DRAWING.



HIGHWAY CONSTRUCTION DETAILS (HCD-700)

SECTION EDGE OF PAVEMENT DETAILS

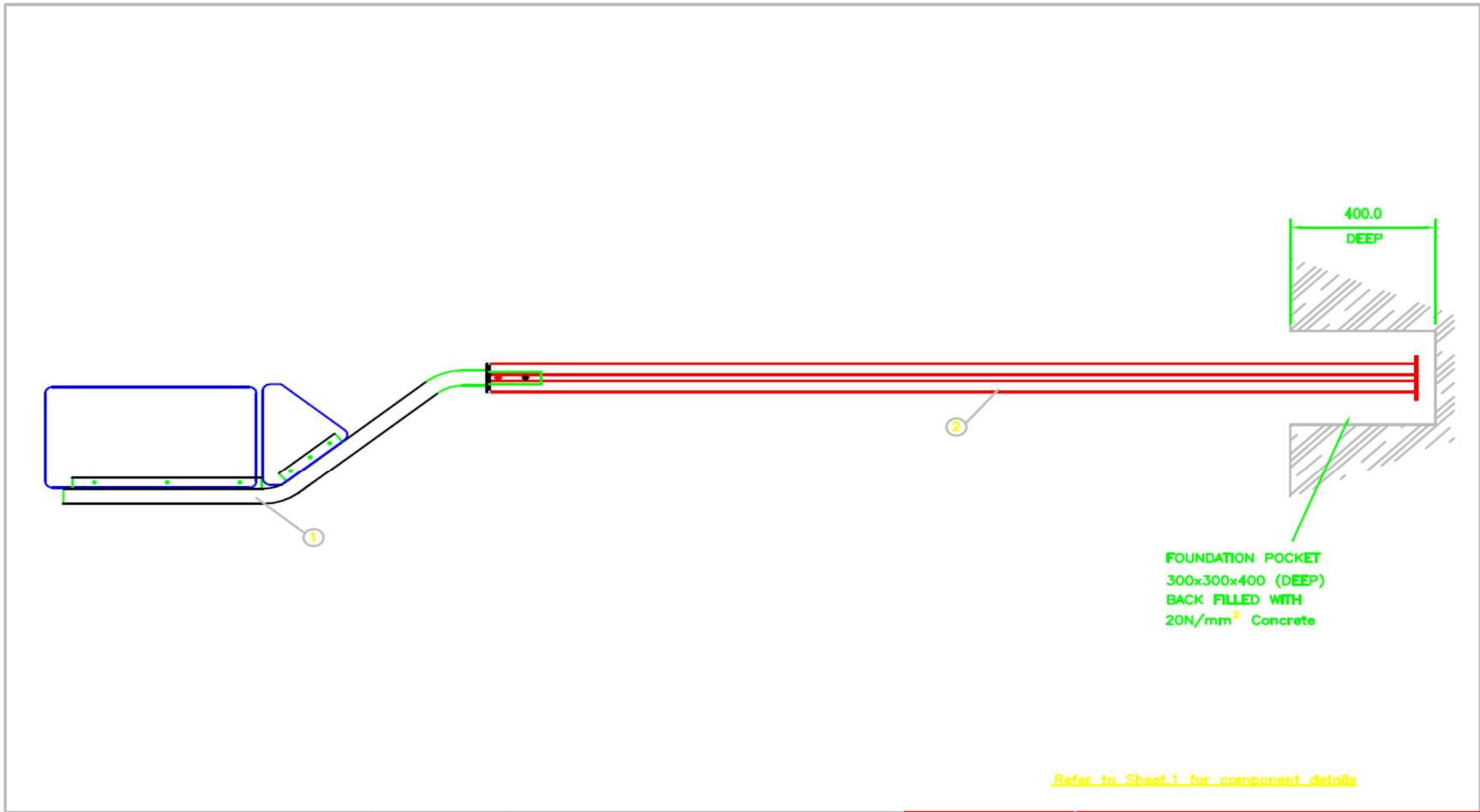
TITLE FOOTWAY & CYCLEWAY CONSTRUCTION (BLOCK & FLAG PAVING)

DRAWN RJP	CHECKED NH	APPROVED AC	ISSUE 2	PREVIOUS ISSUES 1   APR 2016
DRAWING NUMBER B 704.5		SHEET SIZE A3	ISSUE DATE FEB 2017	

0mm 50mm 100mm 150mm 200mm

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				Tolerances Unless stated	© 1996 Copyright Reserved	Drawn YAPING W	Title <b>TIMELINE BUS STOP DIG-IN POST</b>	
				Std Tol ± 0.5	 Tel 0705 210052 Fax 0705 210059	Date 11-7-2000	Sheet.2 of 2	
				Holes + 0.1-0		Scale NTS	Issue	
2	ITEM 3 DELETED	Y.W.	19-7-00	Angles ± 0°30'		Checked W.H.D.	Drg No. <b>01-10888</b>	<b>2</b>
Issue	Description	Sig	Date					

