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STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

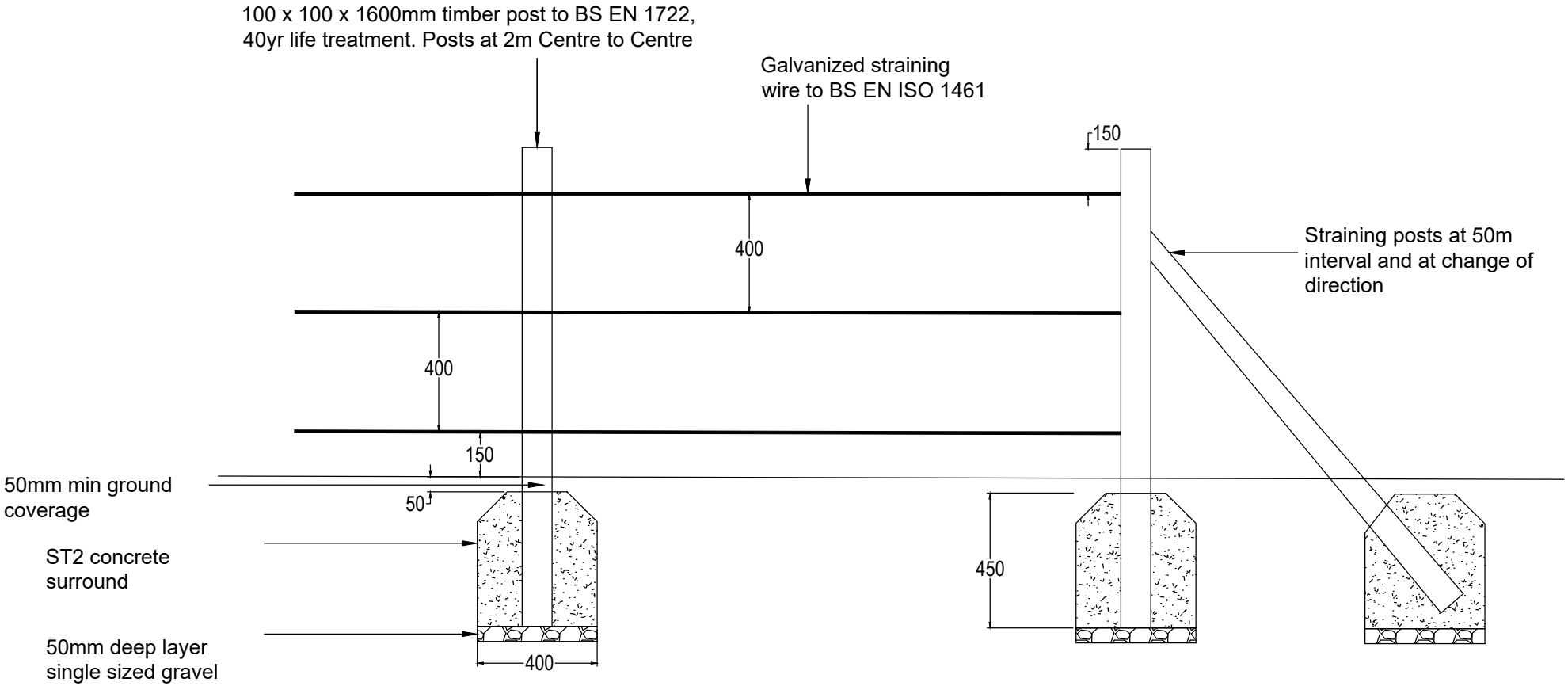
Series 0300: Fencing

Typical Post & Wire Fencing

Drawing	Revision
SD-0300-001	Ø

Drawn by	Scale
AR	1:20 @ A4

Date Drawn
06 Sept 2024



TYPICAL POST AND WIRE FENCE DETAIL

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

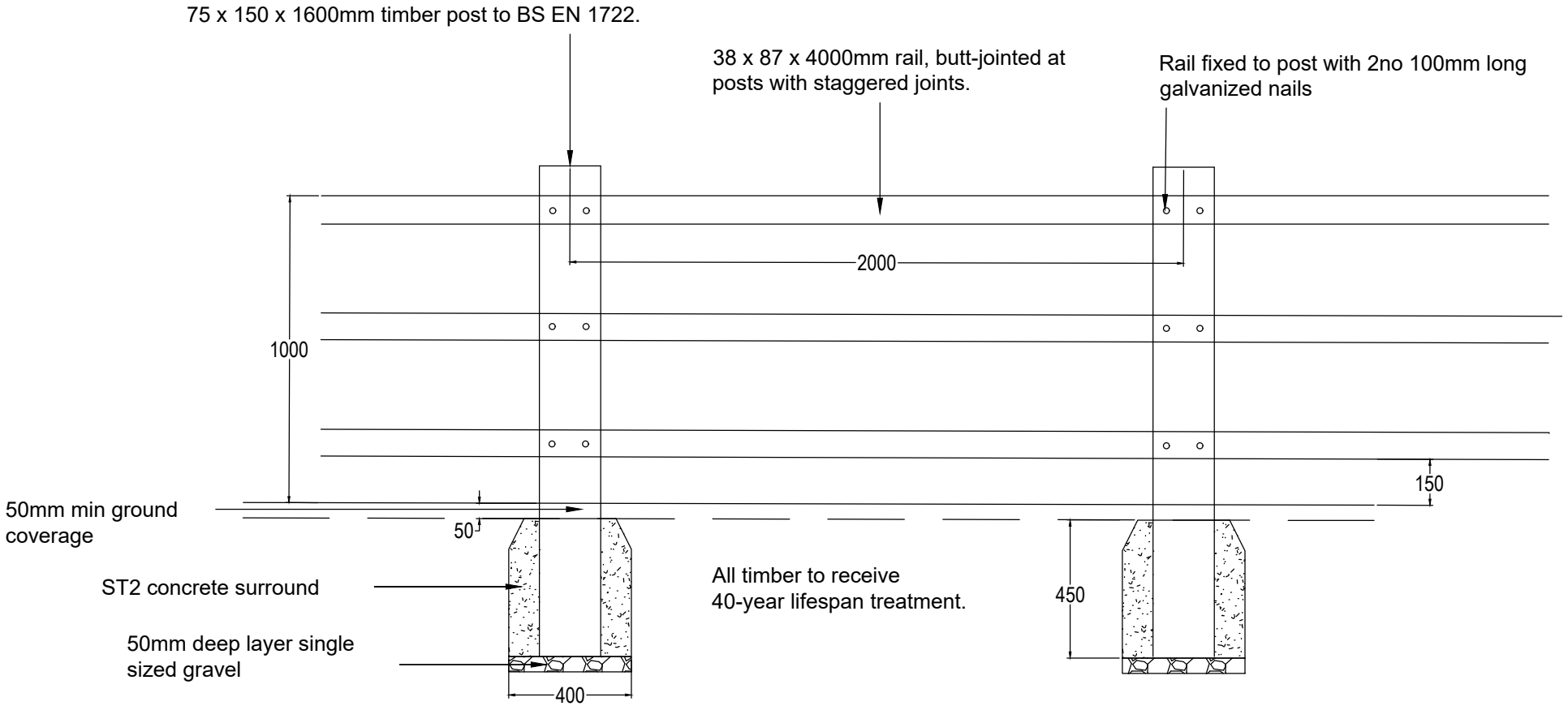
Series 0300: Fencing

Typical Post & Rail Fencing

Drawing	Revision
SD-0300-002	Ø

Drawn by	Scale
AR	1:20 @ A4

Date Drawn
06 Sept 2024



TYPICAL POST AND RAIL FENCE DETAIL

STANDARD DETAILS

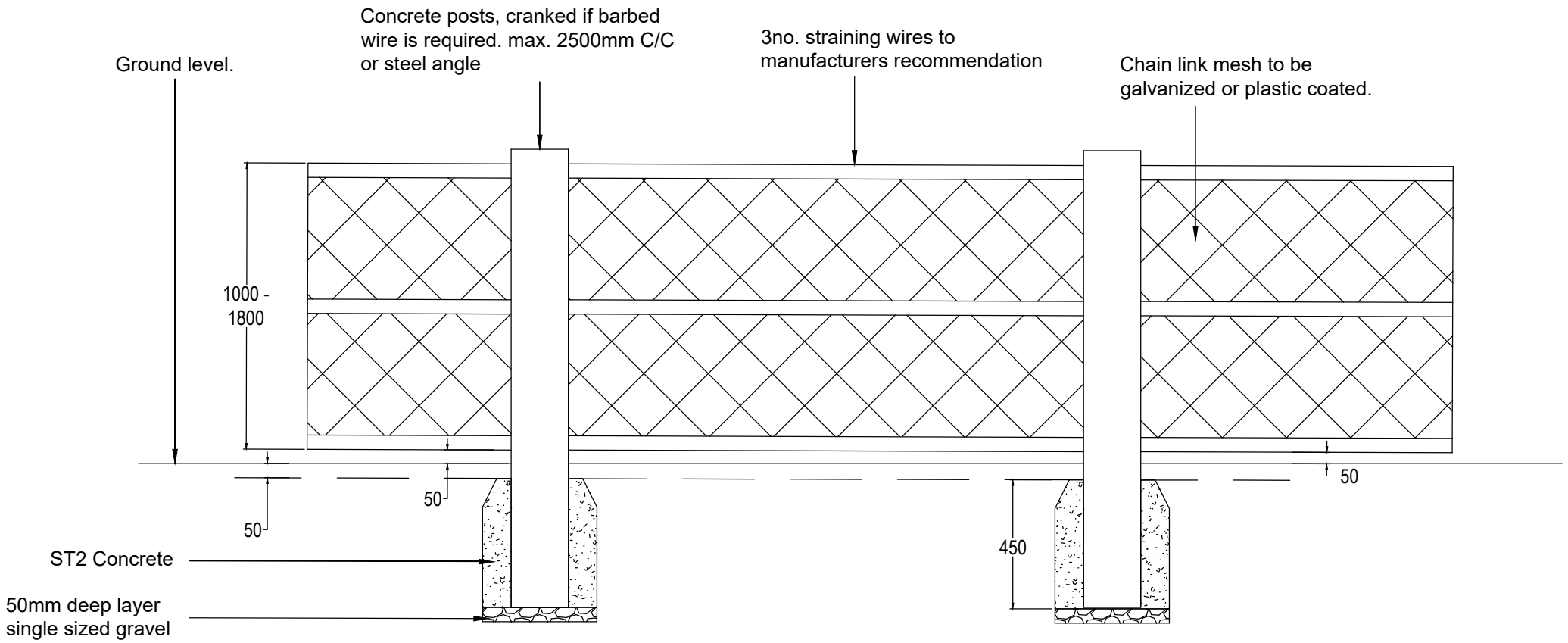
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Typical
Chain-link Fencing

Drawing	Revision
SD-0300-003	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

TYPICAL CHAIN LINK FENCE DETAIL



All Chain Link Fencing to Comply with BS1722-1:2019. All Timber to comply with MCHW Volume 1, Clause 304 and recieve treatment to provide 40-year operational lifetime. All fencing to be set min. 450mm from edge of carriageway.

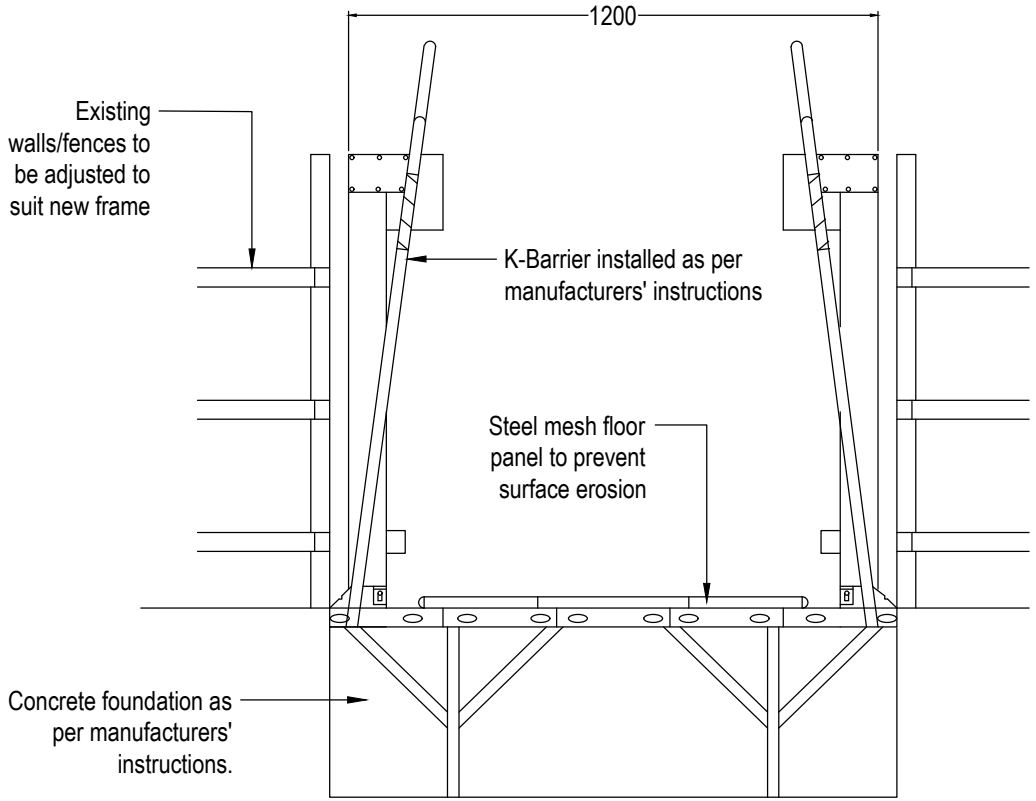
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

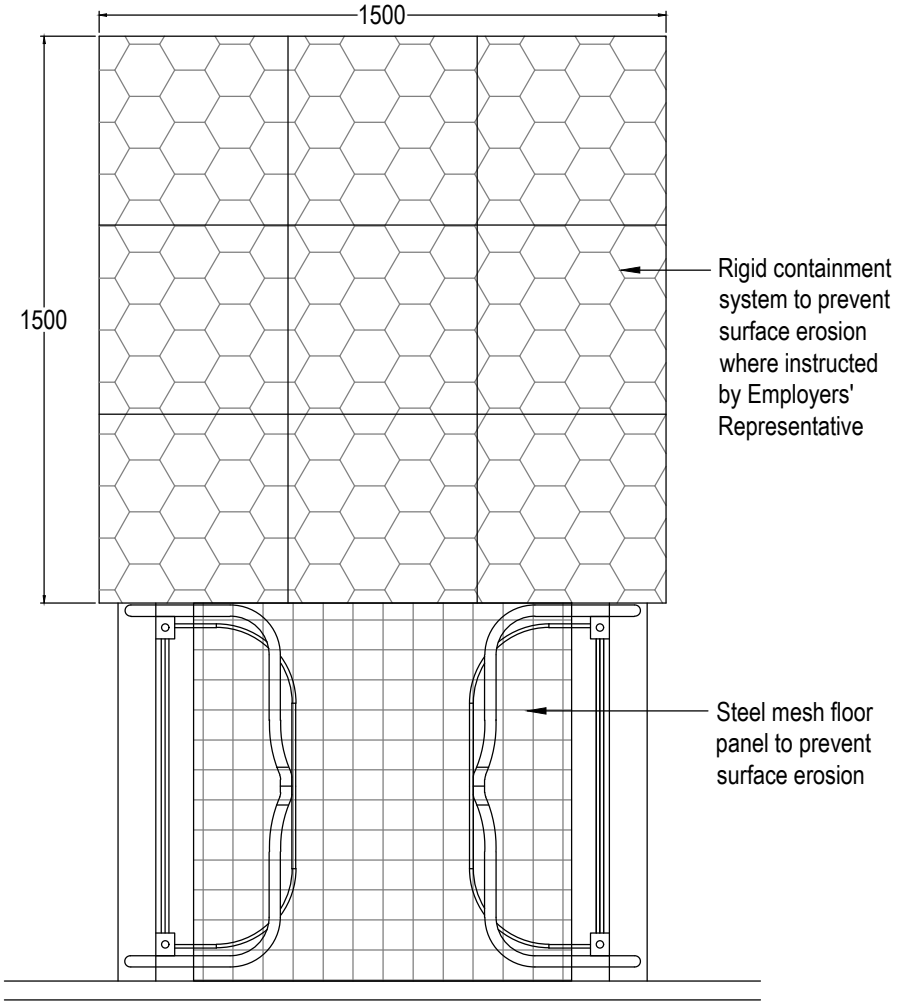
Series 0300: Fencing

Typical K-Barriers

Drawing	Revision
SD-0300-004	Ø
Drawn by: AR	Scale: 1:20
Date Drawn: 06 Sept 2024	



Front elevation



Plan

STANDARD DETAILS

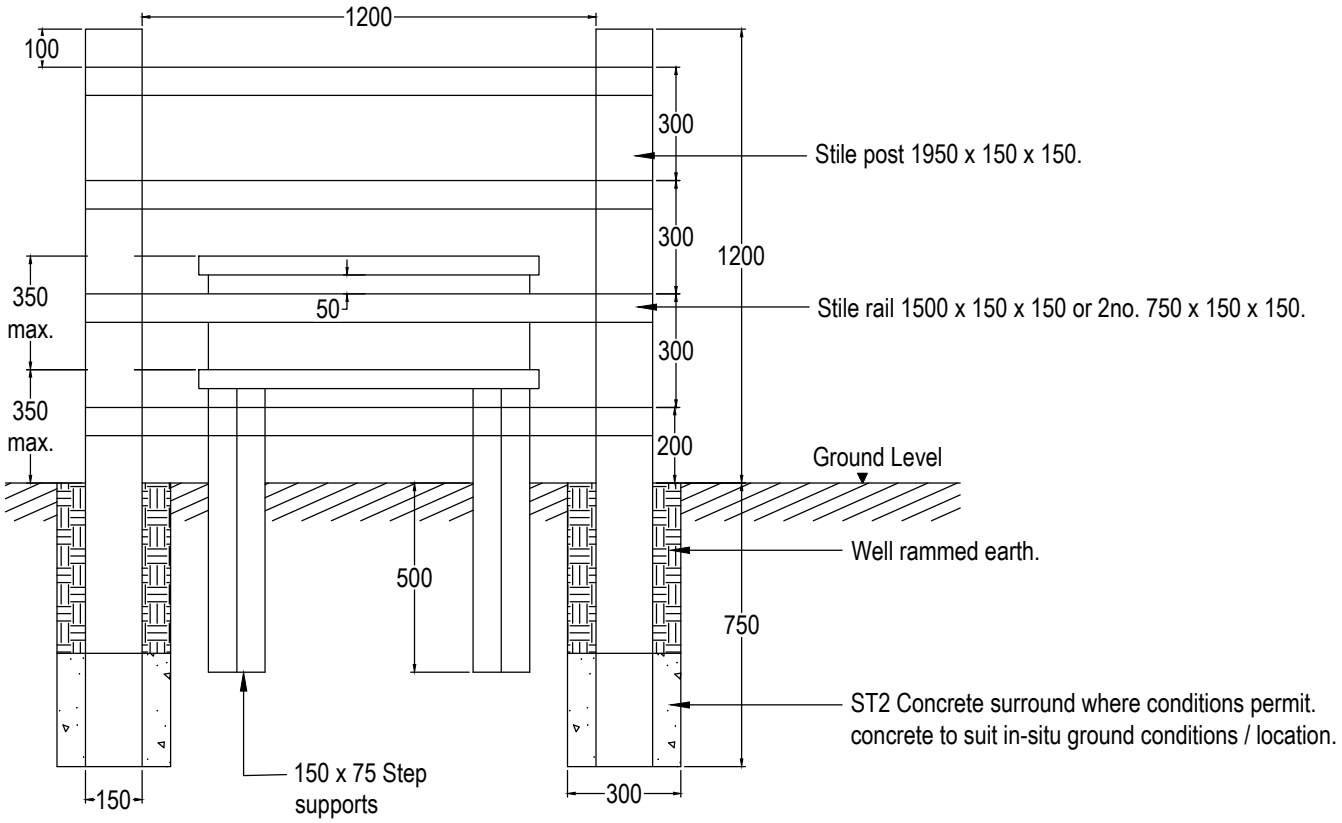
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

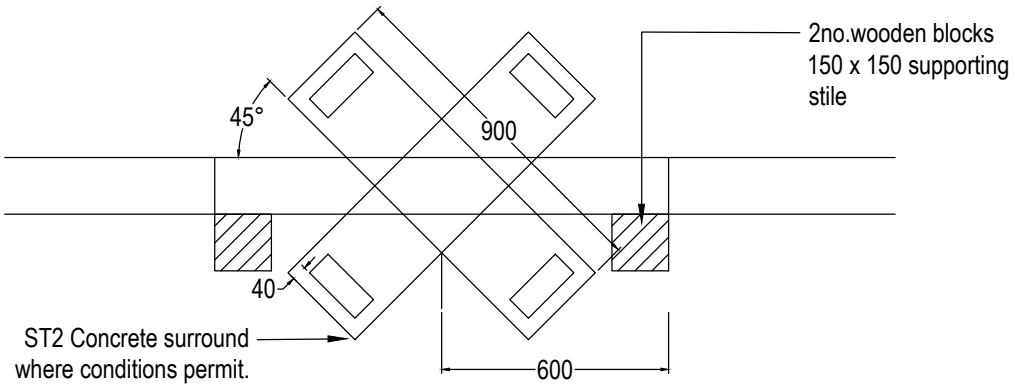
Pedestrian Stiles
Two Step

Drawing	Revision
SD-0300-005	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

Stile Gate Section



Stile Gate Plan



Notes:

1. All dimensions in millimeters.
2. FSC tanalised timber to be used for 40-year operational lifetime.
3. Galvanized steelwork to be used.
4. All step treads to have anti-slip surfacing.
5. 4-way weathered top to posts required.
6. Steps to be 900 x 200 x 50 deep.

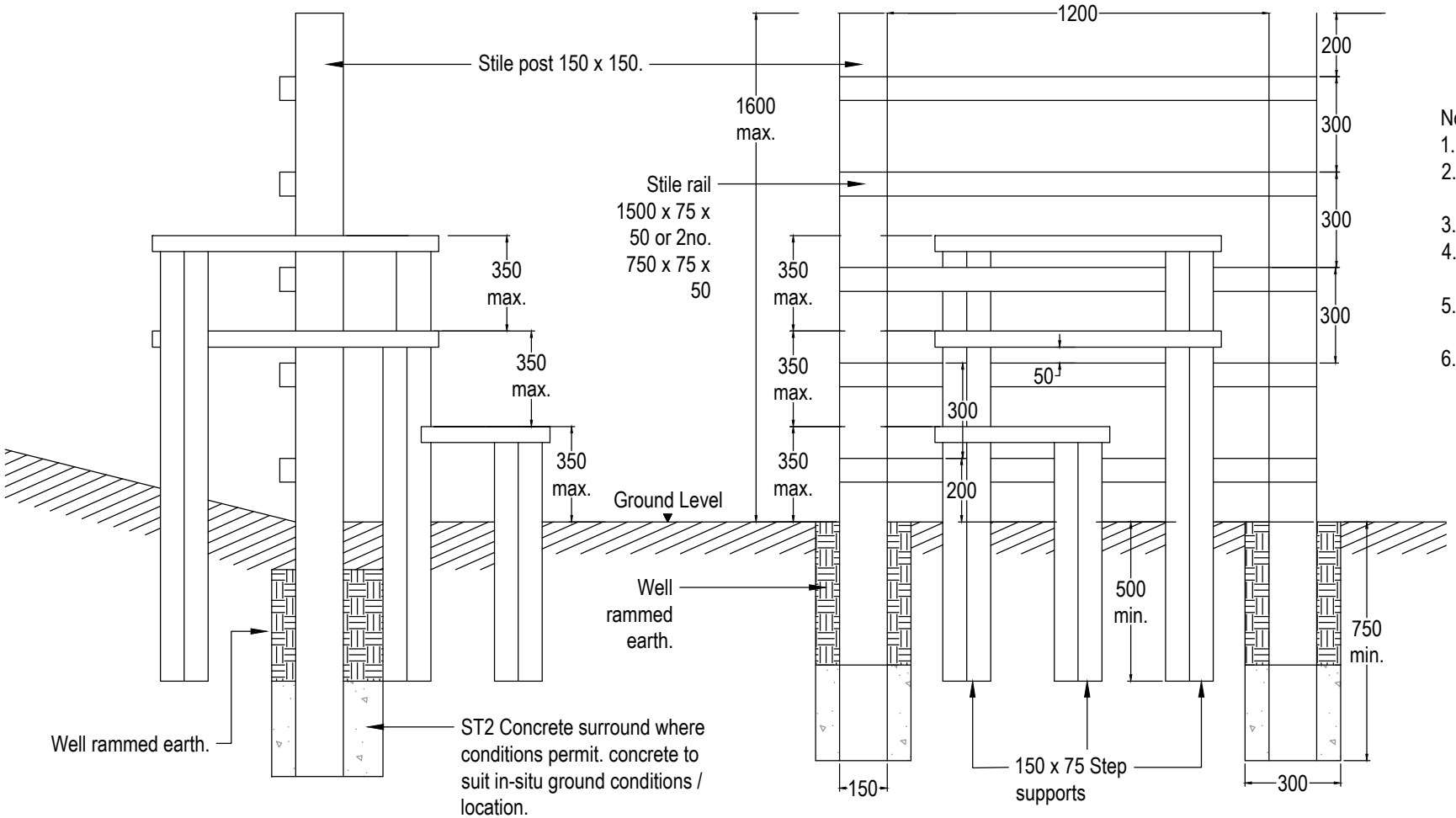
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Pedestrian Stiles
Three Step

Drawing	Revision
SD-0300-006	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	



Notes:

1. All dimensions in millimeters.
2. FSC tanalised timber to be used for 40-year operational lifetime.
3. Galvanized steelwork to be used.
4. All step treads to have anti-slip surfacing.
5. 4-way weathered top to posts required.
6. Steps to be 900 x 200 x 50 deep.

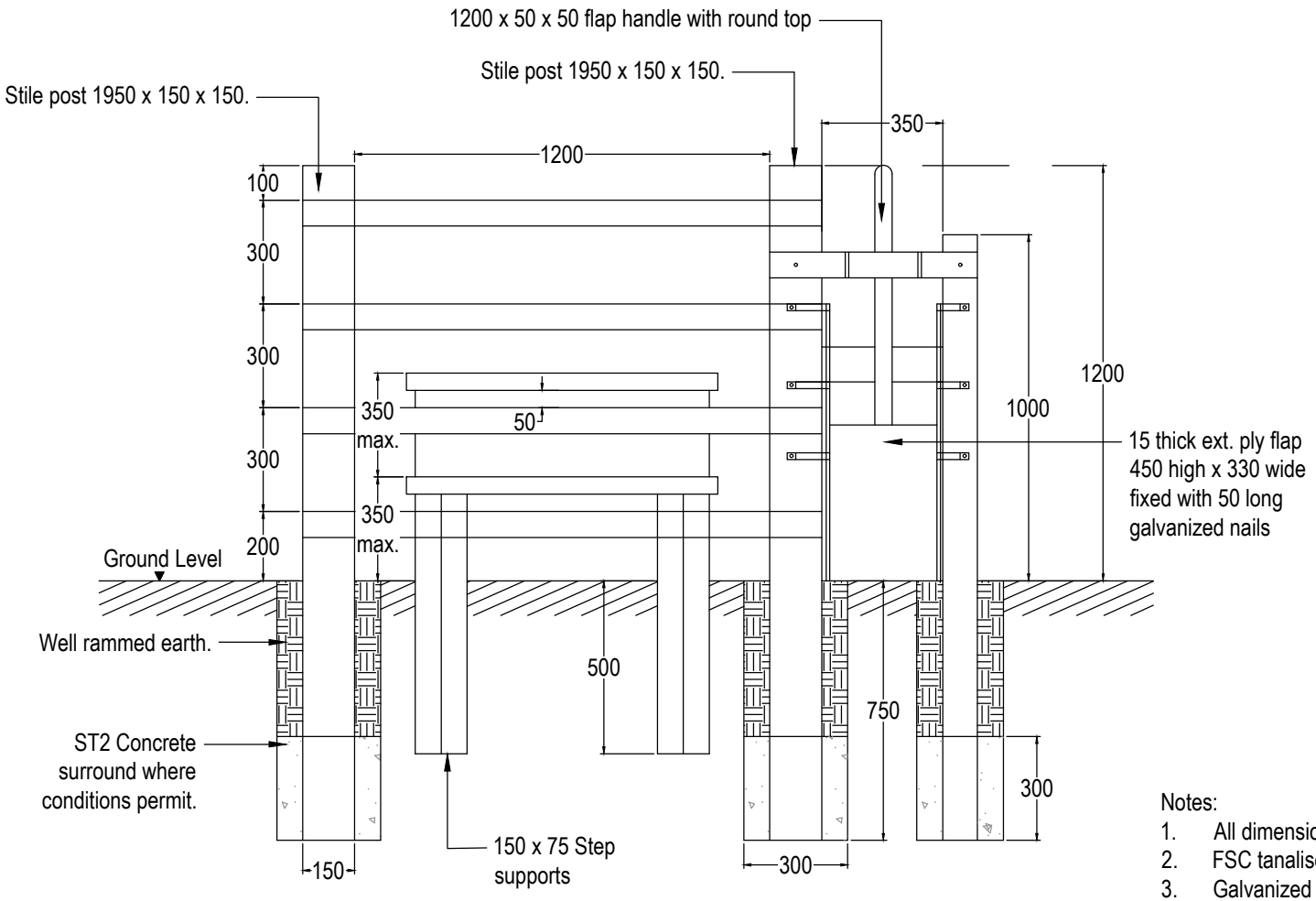
STANDARD DETAILS

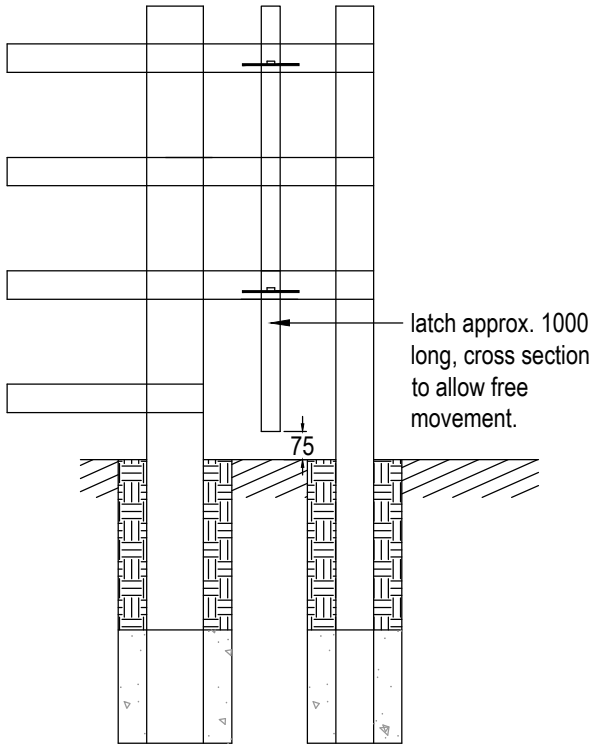
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Pedestrian Stile & Dog Gate (Sheet 1 of 2)

Drawing	Revision
SD-0300-007	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	





Alternative dog-latched arrangement

Notes:

1. All dimensions in millimeters.
2. FSC tanalised timber to be used for 40-year operational lifetime.
3. Galvanized tubular steelwork to be used.
4. All step treads to have anti-slip surfacing.
5. 4-way weathered top to posts required unless otherwise stated / noted.
6. Steps to be 900 x 200 x 50 deep.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Metal Kissing Gate
Elevation

Drawing
SD-0300-009

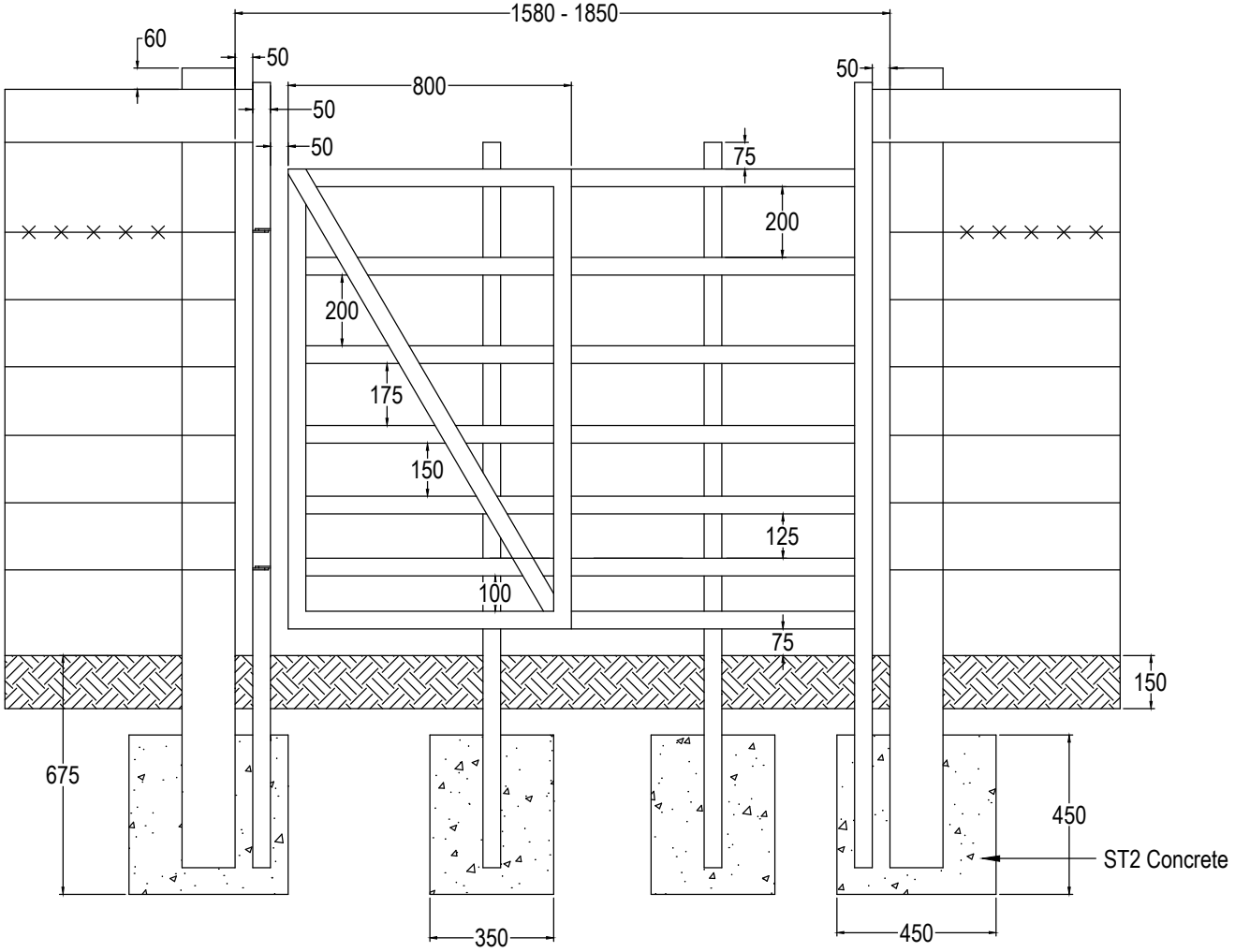
Revision
Ø

Drawn by
AR

Scale
1:20

Date Drawn
06 Sept 2024

Side Elevation



Notes:

1. All dimensions in millimeters
2. FSC tanalised timber for 40 year operational lifetime to be used strictly.
3. All steelwork shall be galvanized to BS EN ISO 1461:2022 and tubular.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

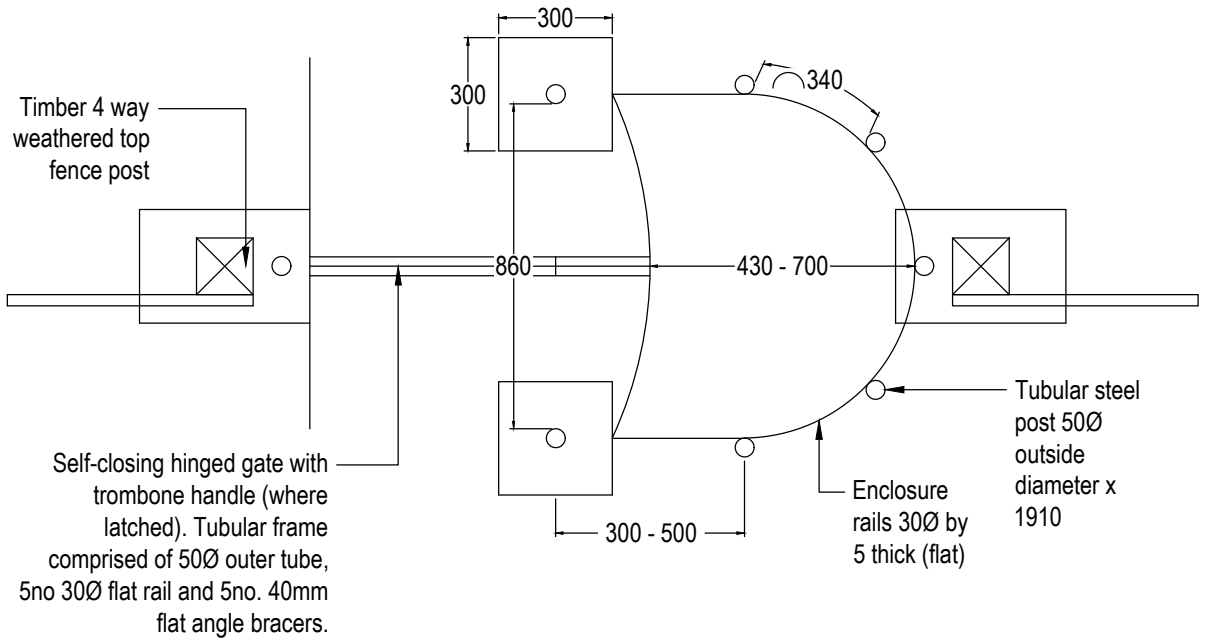
Series 0300: Fencing

Metal Kissing Gate Plan

Drawing	Revision
SD-0300-010	Ø

Drawn by	Scale
AR	1:20 @ A4

Date Drawn
06 Sept 2024



Notes:

1. All dimensions in millimeters
2. FSC tantalized timber for 40 year operational lifetime to be used strictly.
3. All steelwork shall be galvanized and tubular.

STANDARD DETAILS

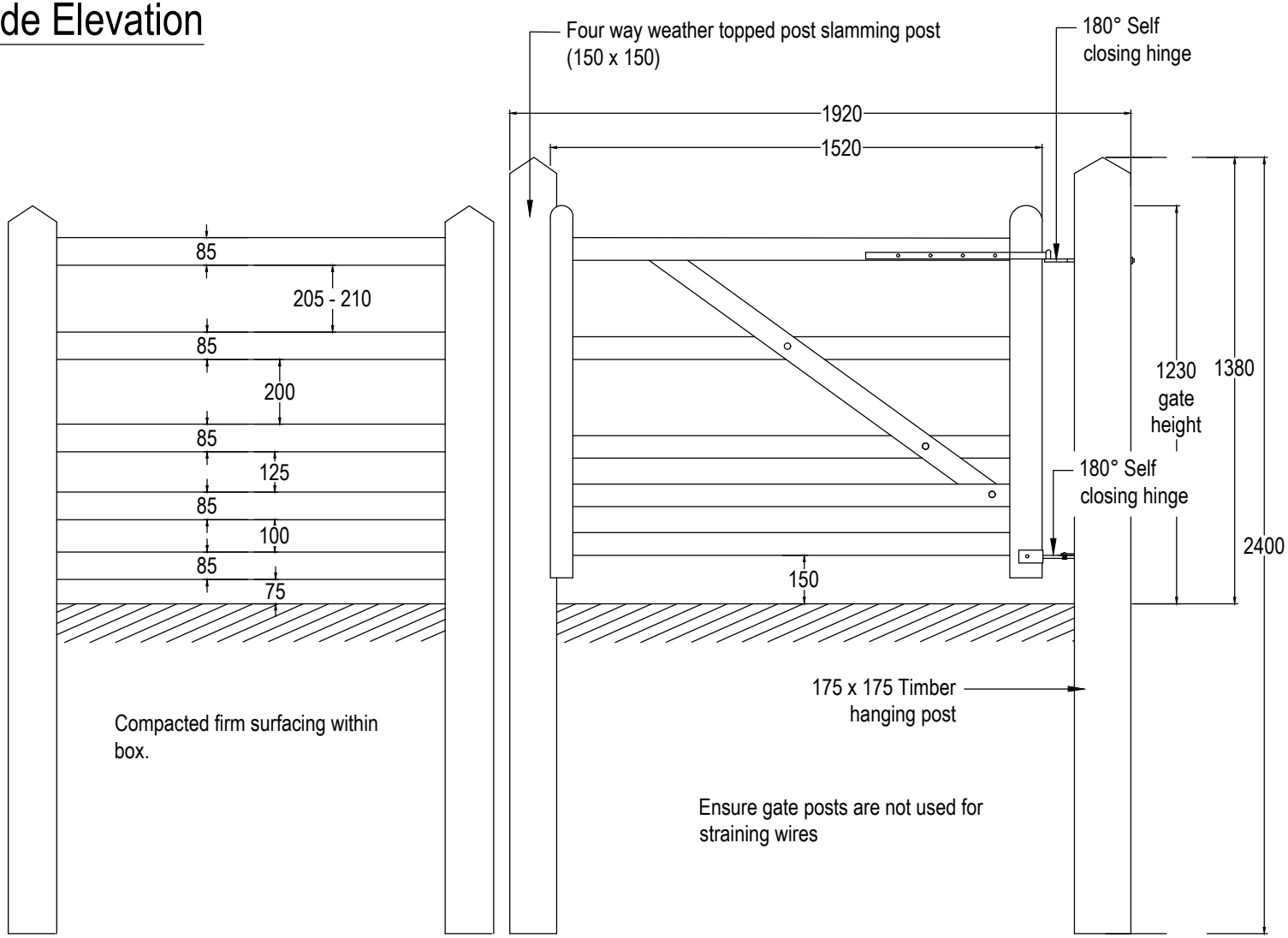
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Timber Kissing Gate Elevation

Drawing	Revision
SD-0300-011	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

Side Elevation



Notes:

1. All dimensions in millimeters
2. FSC tanalised timber for 40 year operational lifetime to be used strictly.
3. All steelwork shall be galvanized and tubular.

STANDARD DETAILS

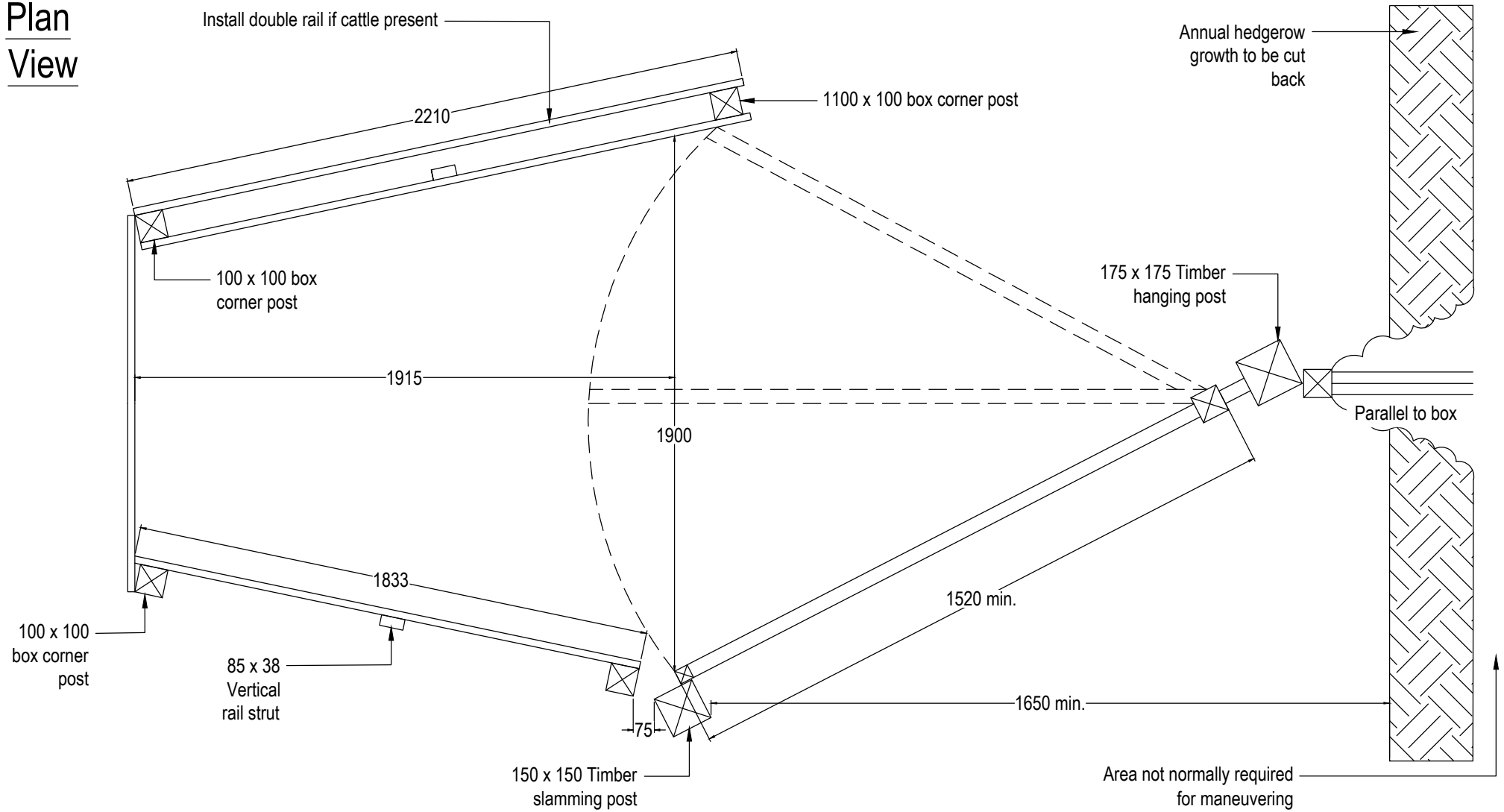
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Timber Kissing Gate Plan

Drawing	Revision
SD-0300-012	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

Plan View



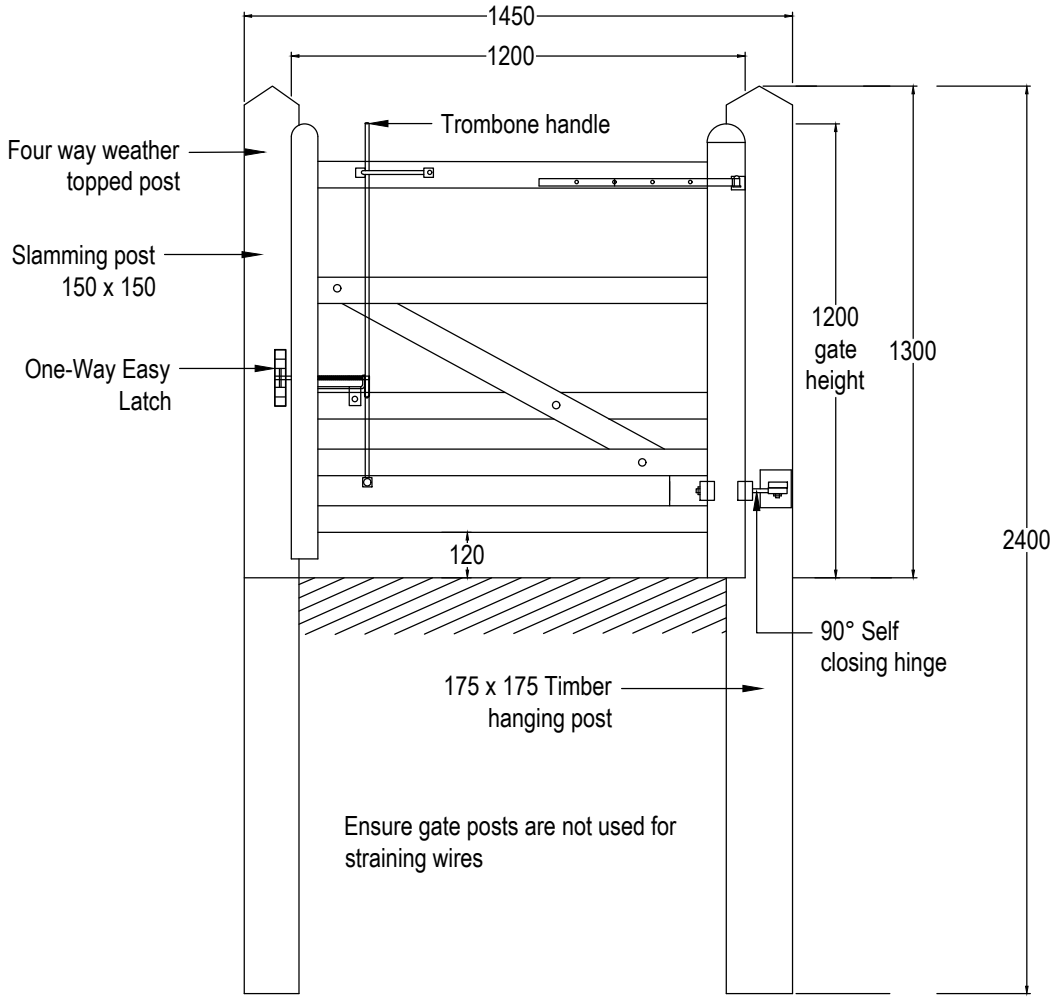
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Timber Pedestrian One-Way Gate

Drawing	Revision
SD-0300-013	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	



Notes:

1. All dimensions in millimeters
2. FSC tanalised timber for 40 year operational lifetime to be used strictly.
3. All steelwork shall be galvanized and tubular.

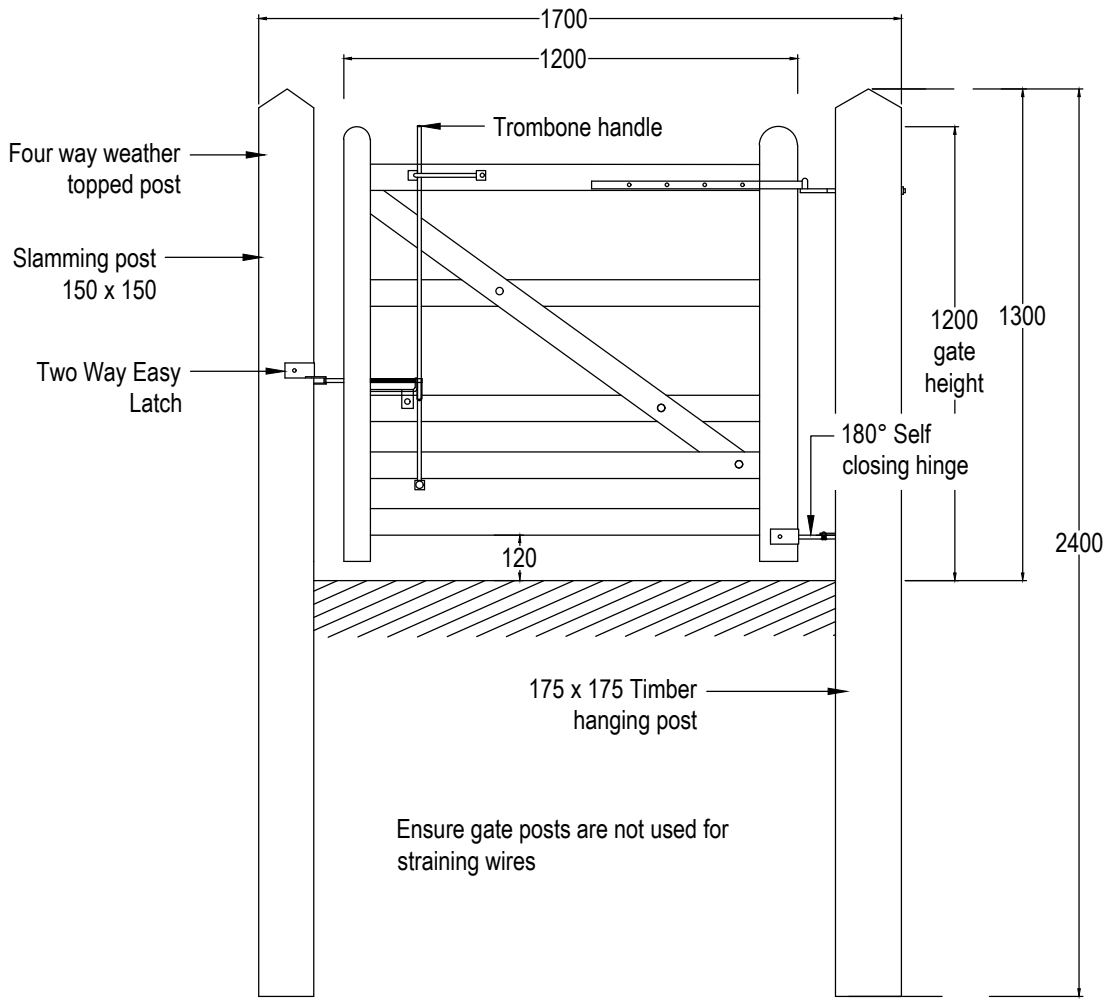
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Timber Pedestrian Two-Way Gate

Drawing	Revision
SD-0300-014	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	



Notes:

1. All dimensions in millimeters
2. FSC tanalised timber for 40 year operational lifetime to be used strictly.
3. All steelwork shall be galvanized and tubular.

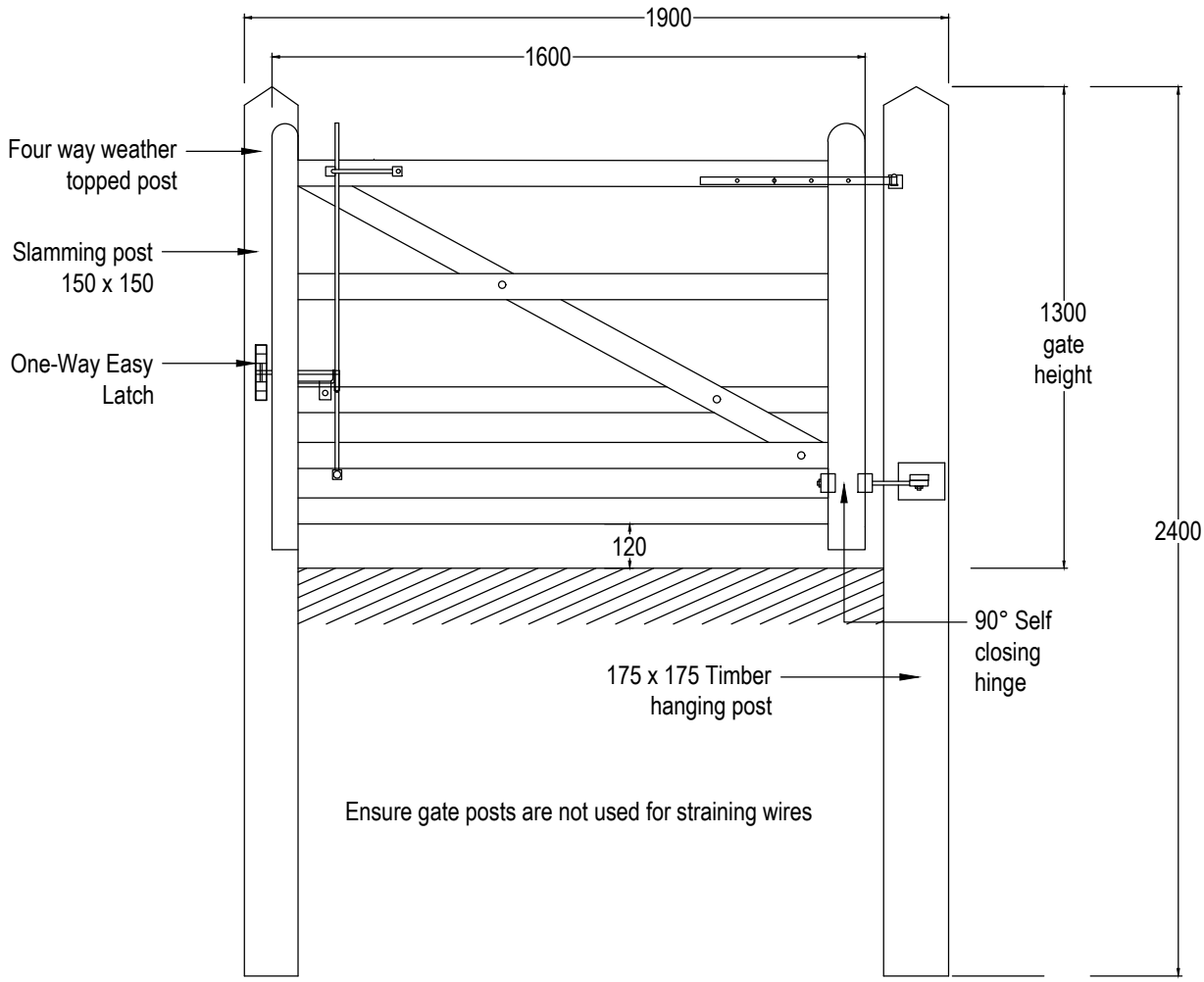
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Timber Bridleway One-way Gate

Drawing	Revision
SD-0300-015	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	



Notes:

1. All dimensions in millimeters
2. FSC tanalised timber for 40 year operational lifetime to be used strictly.
3. All steelwork shall be galvanized and tubular.

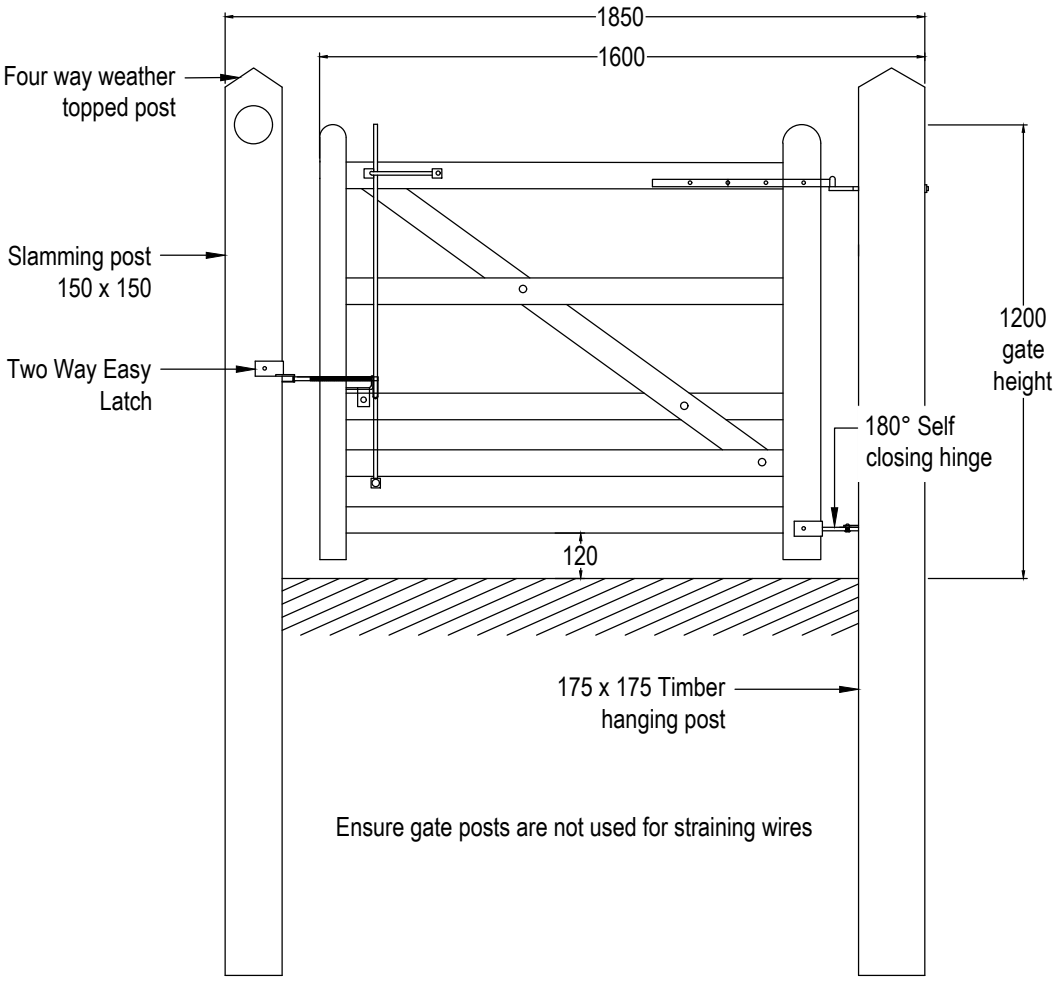
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Timber Bridleway Two-way Gate

Drawing	Revision
SD-0300-016	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	



Notes:

1. All dimensions in millimeters
2. FSC tanalised timber for 40 year operational lifetime to be used strictly.
3. All steelwork shall be galvanized and tubular.

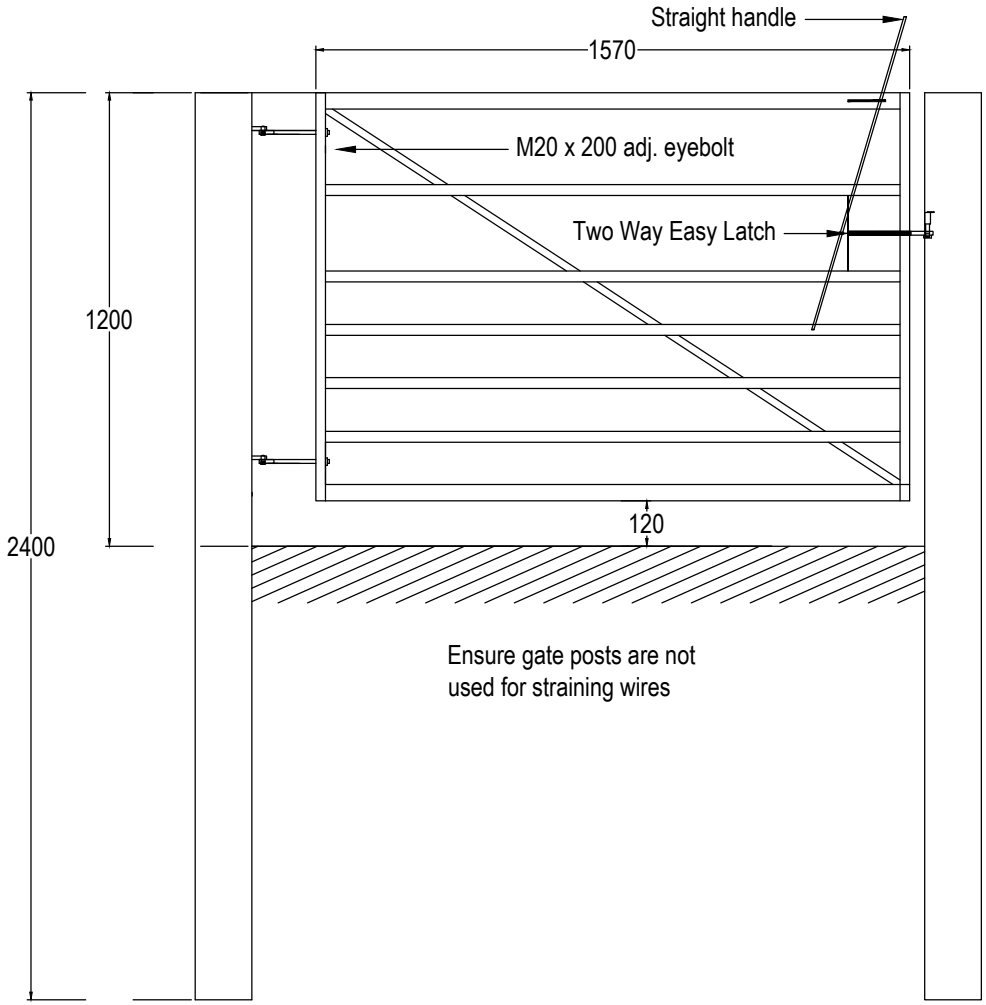
STANDARD DETAILS

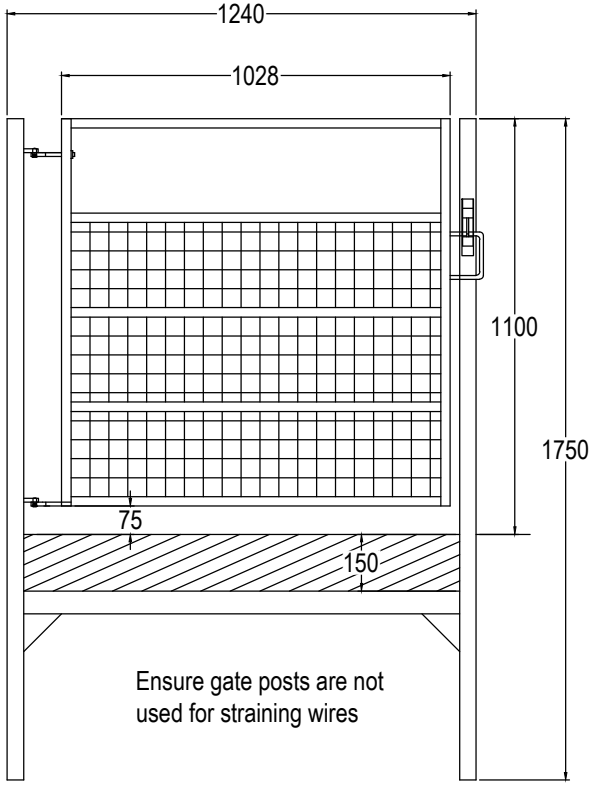
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Metal Bridleway & Pedestrian One-way Gate

Drawing	Revision
SD-0300-017	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	





Notes:

1. All dimensions in millimeters
2. FSC tanalised timber posts for 40 year operational lifetime to be used strictly.
3. All steelwork shall be galvanized to BS EN ISO 1461:2022 and tubular.

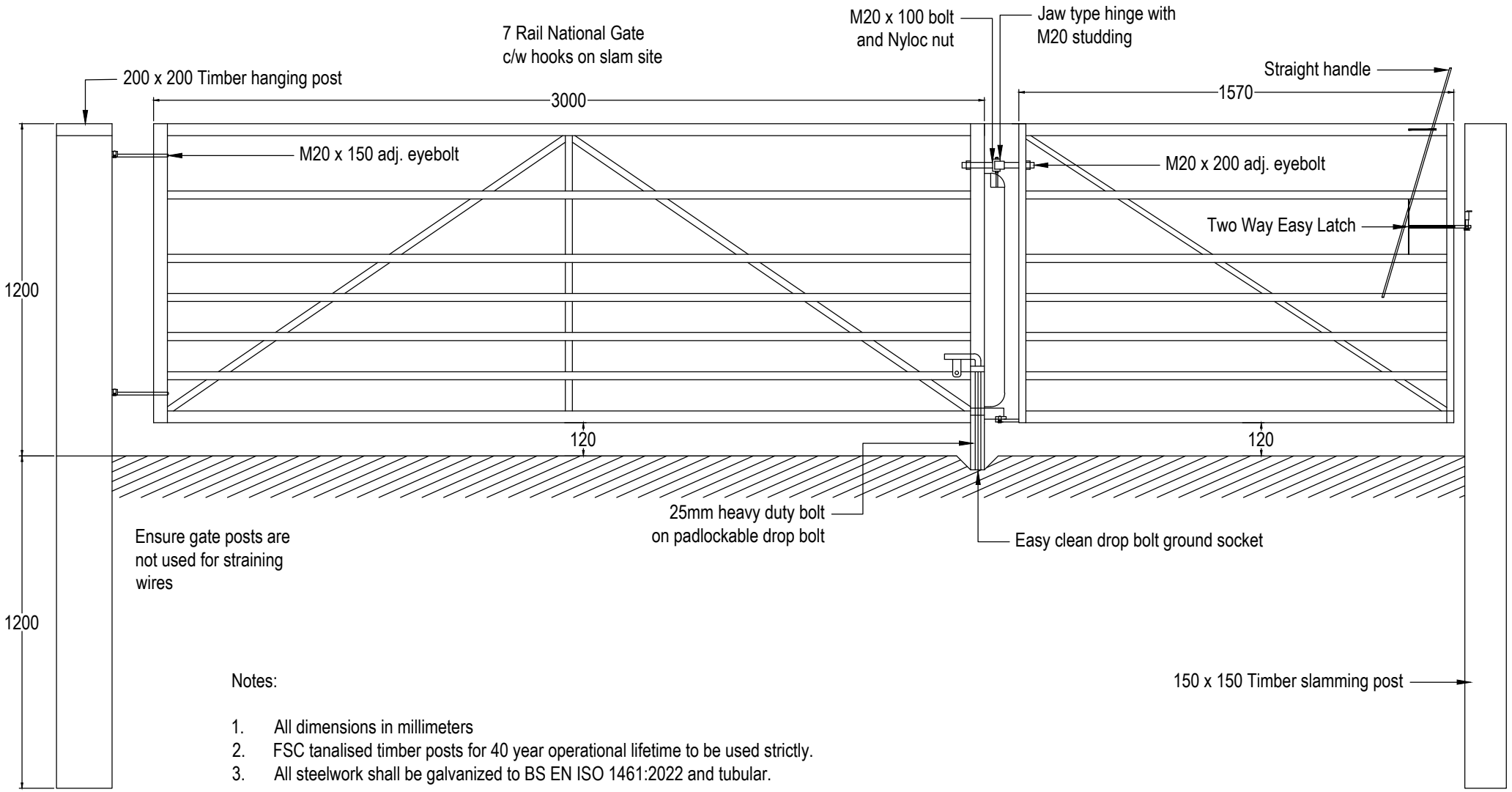
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Metal Bridleway & Field Two-way Gate

Drawing	Revision
SD-0300-018	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	



Notes:

1. All dimensions in millimeters
2. FSC tanalised timber posts for 40 year operational lifetime to be used strictly.
3. All steelwork shall be galvanized to BS EN ISO 1461:2022 and tubular.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

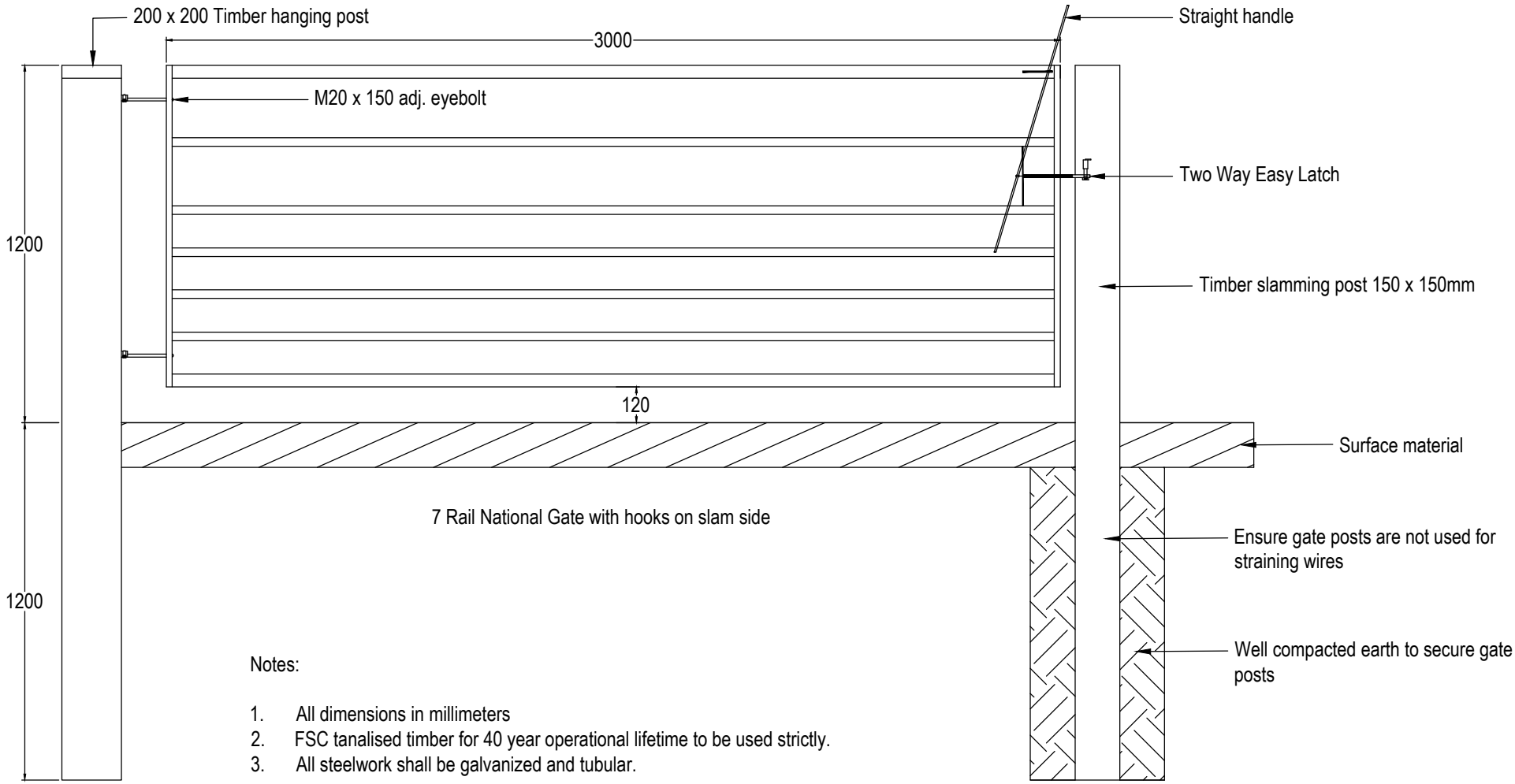
Series 0300: Fencing

Metal Field Gate

Drawing	Revision
SD-0300-019	Ø

Drawn by	Scale
AR	1:20 @ A4

Date Drawn
06 Sept 2024



Notes:

1. All dimensions in millimeters
2. FSC tanalised timber for 40 year operational lifetime to be used strictly.
3. All steelwork shall be galvanized and tubular.

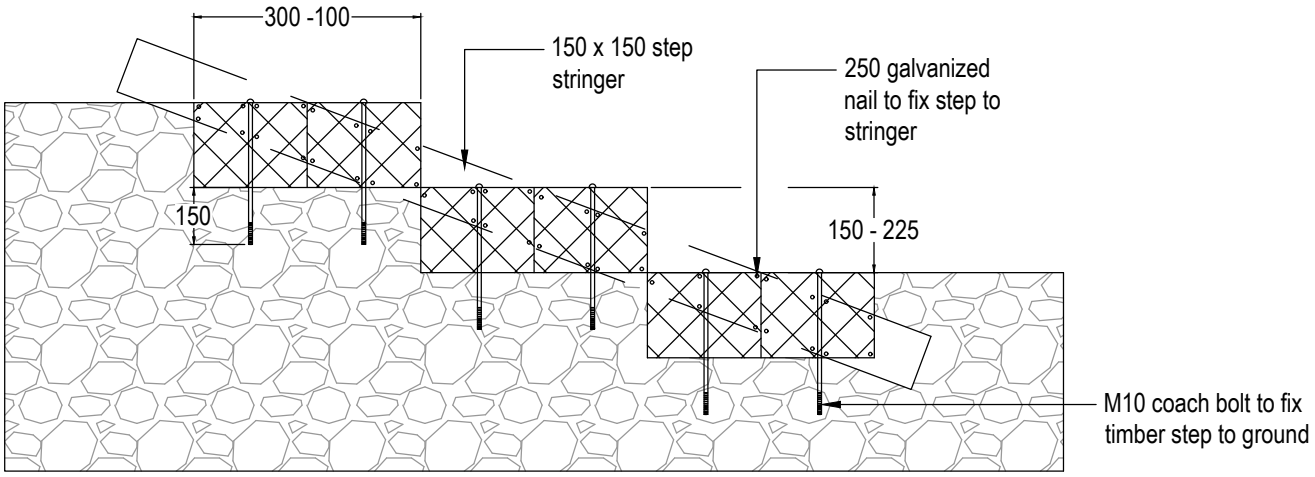
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Timber or Concrete Steps

Drawing	Revision
SD-0300-020	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	



Notes:

1. Where galvanized wire mesh is required to provide grip, fixture type shall be galvanized staples such that mesh is kept flat against timber face and should be free from buckling or warping.
2. FSC tanlised timber for 40 year operational lifetime shall be strictly used.
3. Concrete steps with timber edging may be used as an alternative where the design envisages a requirement for harder wearing steps or increased footfall / utilization.

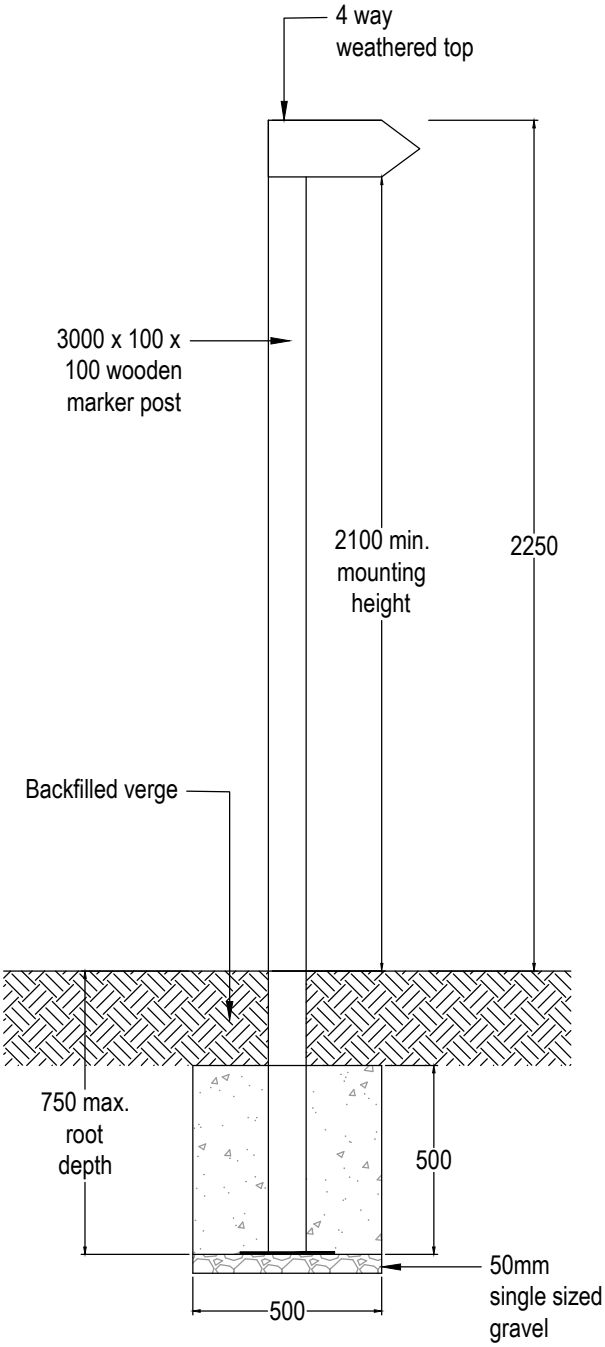
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

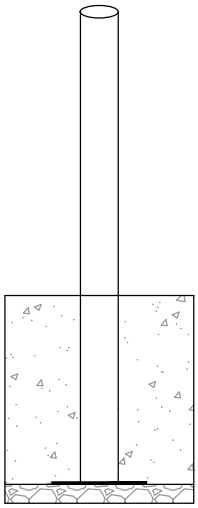
Finger Signpost

Drawing	Revision
SD-0300-021	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

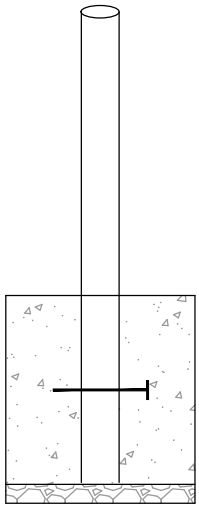


Notes:

1. All dimensions in milimeters unless otherwise stated / noted.
2. Metal post shall be steel with PVC coating including metal cap, secured with base plate concrete fixed into ground.
3. FSC tanalised timber for all timber posts specified for 40-year operational lifetime. Timber posts to include 4 way weathered top, ground anchored and concreted into ground.
4. Details of finger sign and fixings can be found in the relevant section of "Design standards for PRoW infrastructure."



Metal post



Wooden post

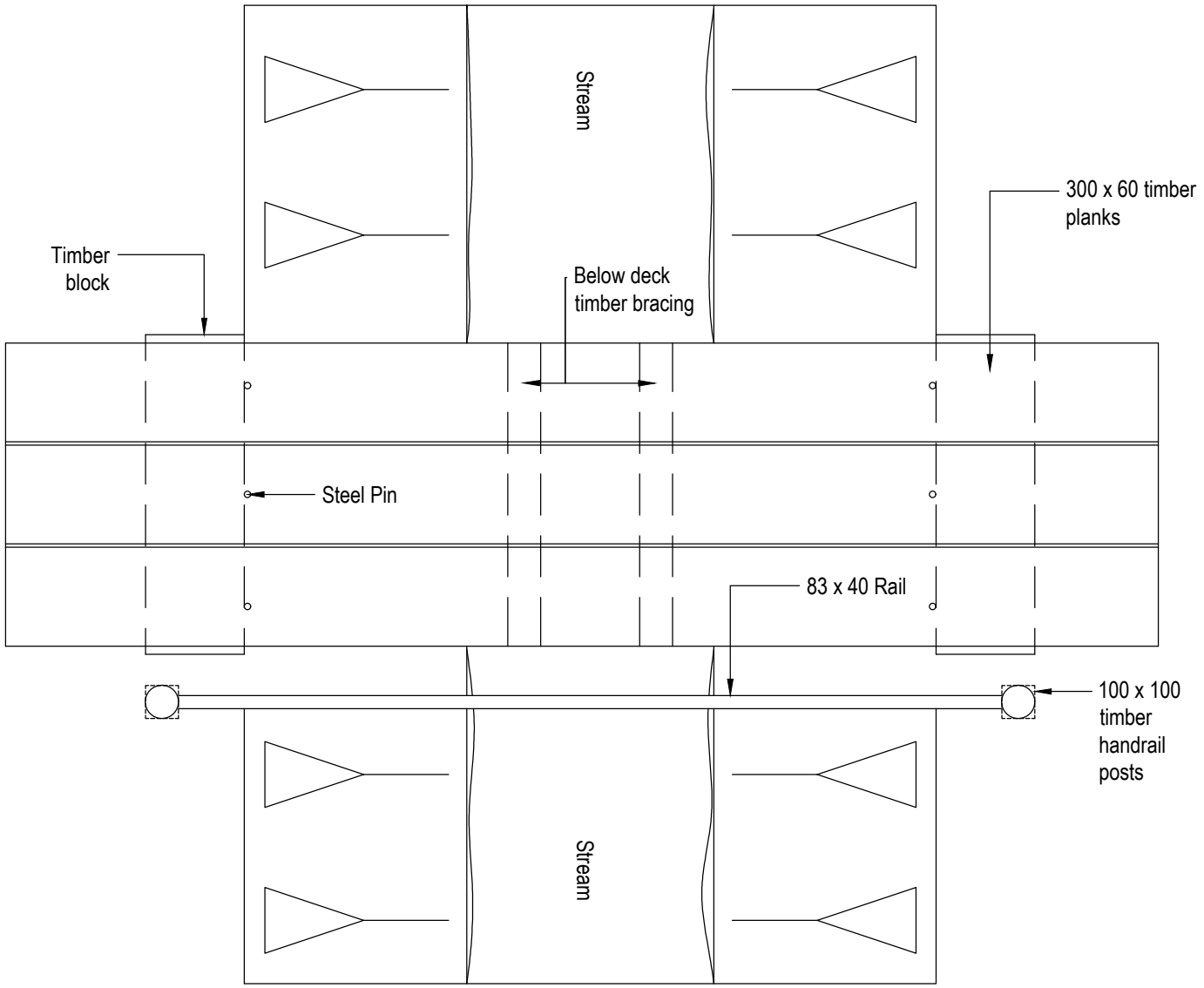
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Standard Sleeper Footbridge

Drawing	Revision
SD-0300-022	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	



Notes:

1. All bridge surfaces should be level.
2. For span lengths of 4000mm or less and a maximum change in height of 1000mm only.
3. At least one handrail should be provided for a bridge of 3000mm in length.
4. Minimum bridge width of 3 deck boards.
5. Expansion joints maximum 100mm spacing.
6. Bridge deck surface may require galvanized wire mesh for additional grip.

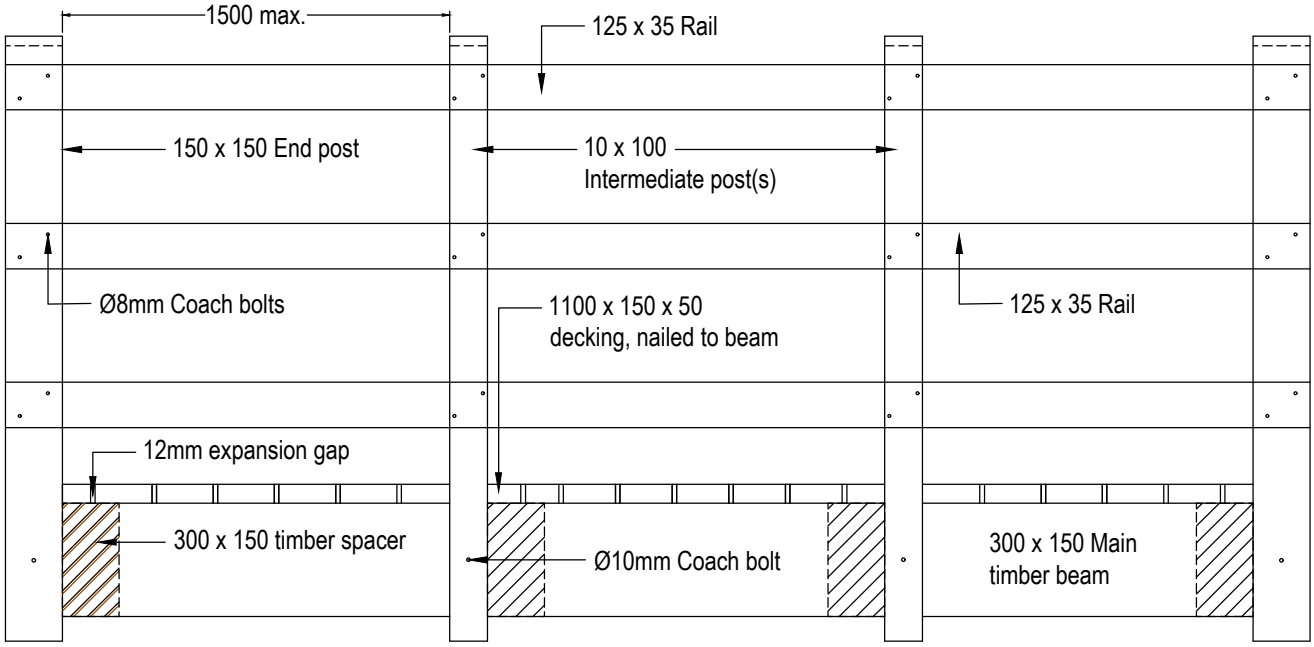
STANDARD DETAILS

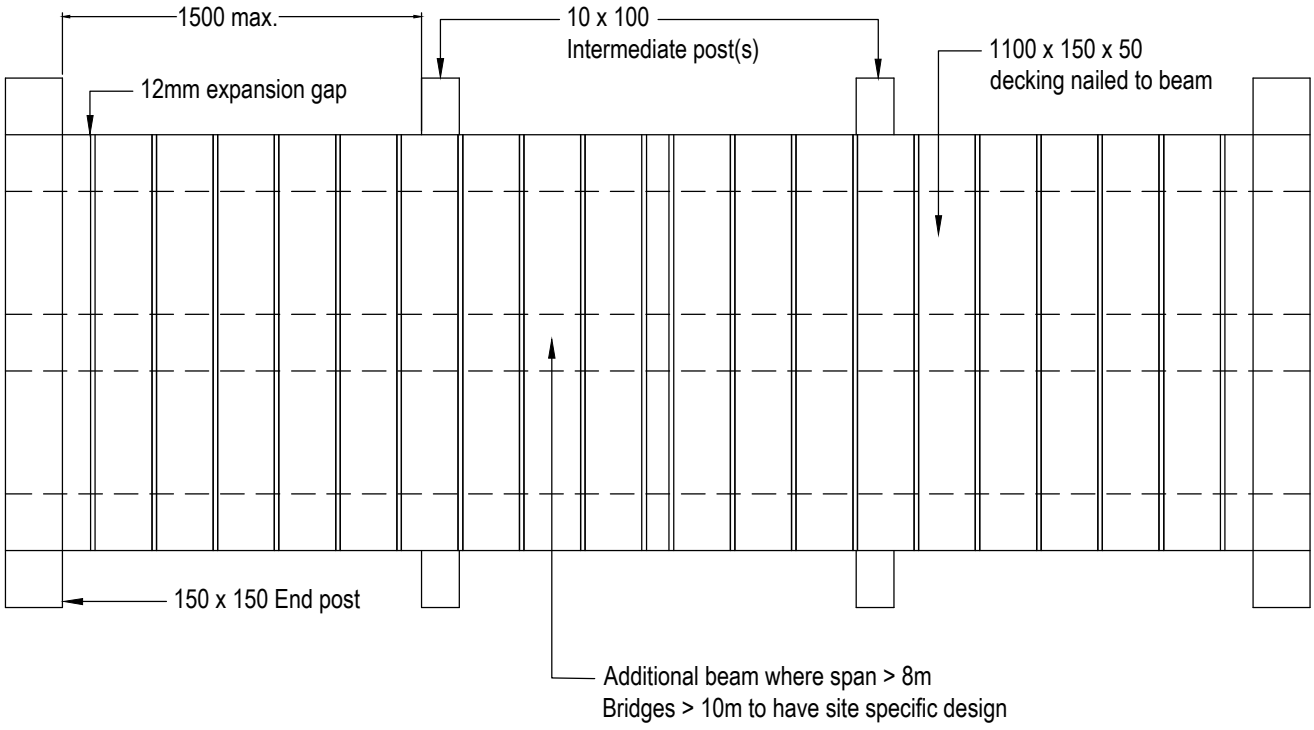
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Standard Timber Footbridge (Elevation & Plan)

Drawing	Revision
SD-0300-023	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	





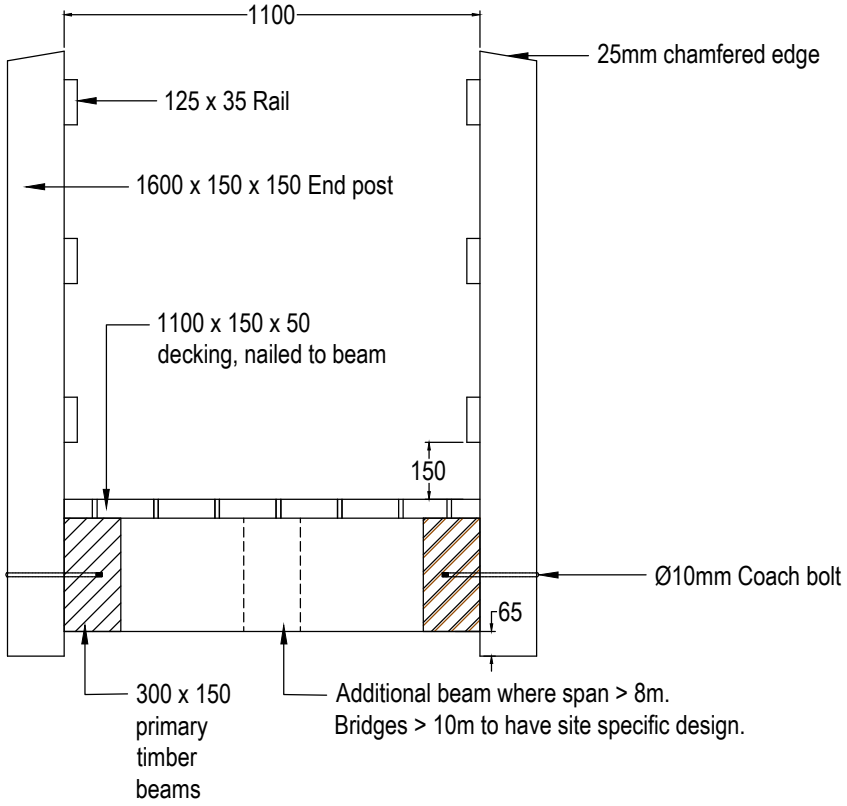
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Standard Timber Footbridge (Section)

Drawing	Revision
SD-0300-024	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	



Notes:

1. All dimensions in millimeters unless otherwise stated.
2. For span widths between 3000 - 12000mm with maximum change in level of 3000mm.
3. Two handrails should be provided for bridges ofer 3000mm in length. Gaps no greater than 1500mm between posts.
4. Where livestock or unauthorized vehicles require restriction from access, a self-closing gate complying with specification shall be provided.
5. Decking boards forming bridge surfacing should be no more than 12mm apart and may require galvanized wire mesh to provide additional grip.
6. Kickboards for bridleway bridges should be composed of rails rather than single board(s).
7. FSC timber tanalised for 40 year operational lifetime shall be used.
8. Bridge surface should be level, with level approaches to existing ground or a maximum slope of 1:10.
9. Maximum step height of 300mm where steps required.
10. Minimum bridge width of 900mm

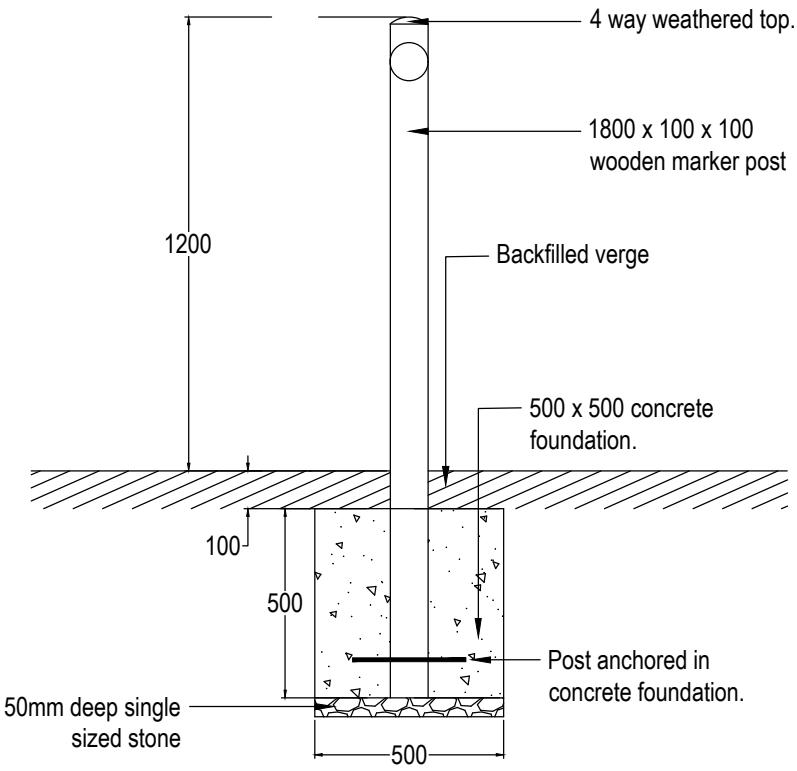
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0300: Fencing

Waymark Posts

Drawing	Revision
SD-0300-025	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	



Notes:

1. Please refer to the relevant section of "Design Standards for PROW Infrastructure" when using this drawing.
2. FSC tanalised timber required for 40 year operational lifetime.
3. Waymark posts should be located away from any encroaching vegetation.
4. Waymarks attached to posts should be placed centrally such that the top of the sign is 50mm from post top.

STANDARD DETAILS

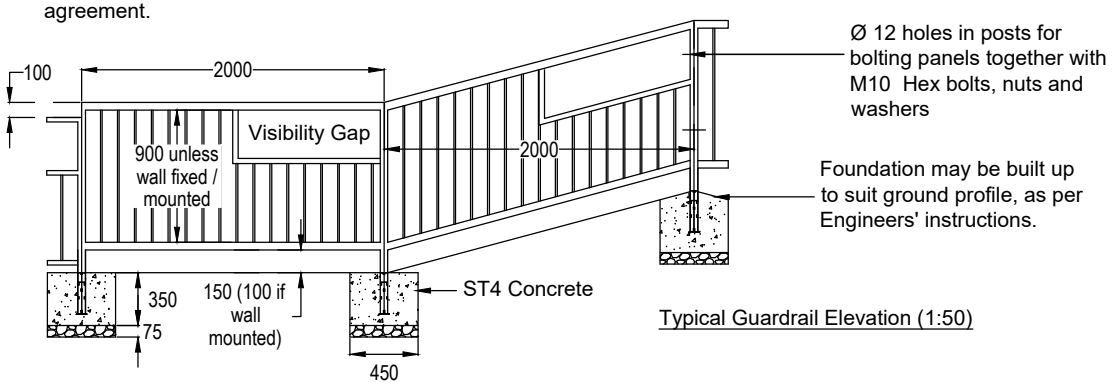
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0400: Vehicle Restraint Systems

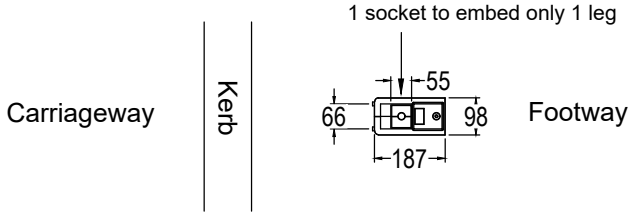
Typical Pedestrian Guardrails

Drawing: SD-0400-001
Revision: Ø
Drawn by: AR
Scale: As noted @ A4
Date Drawn: 06 Sept 2024

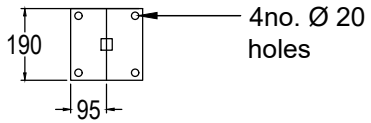
Guardrails may be stepped on site and /or supplied with raked panels to suit rolling ground elevation, on agreement.



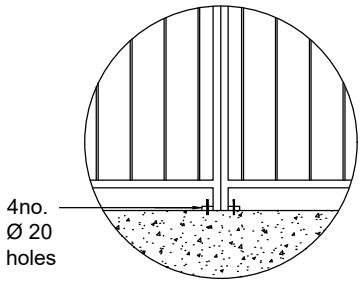
Typical Guardrail Elevation (1:50)



Typical Socket Plan (1:20)



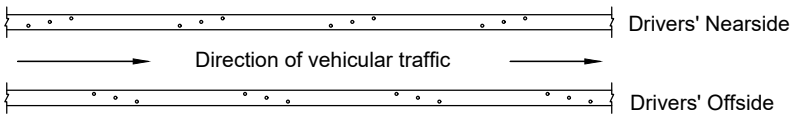
Typical Baseplate Plan (1:20)



Typical Reinforced Wall Mounting

Notes:

1. The following information is supplied in accordance with BS7818:
   a. Pedestrian Guardrails to be Class A unless otherwise specified. Class B may be required for additional vandalism resistance where stipulated by Employers' representative.
   b. Material in accordance with BS 10210-1:2006, Grade as noted.
   c. Hollow sections in accordance with BS EN 10210-2: 2019
   d. In special circumstances shorter sections of guardrails may be used, subject to approval.
   e. Panels to be "see through" type (with visibility gap, where specified or required.
   f. Panels to be staggered infill to improve visibility near pedestrian crossings where specified / directed only.
   g. Top, bottom, intermediate rails and post size to be 50 x 30 x 3000 R.H.S Grade 43C.
   h. Infill bars to be Ø 12, bar grade 43A unless otherwise approved / agreed.
   i. Guardrails to be of "all welded" construction, welding in accordance with BS EN 1011-1&2.
   j. Guardrails to be de-scaled an hot -dip galvanized in accordance with BS EN ISO 1461. Additional treatment to be as specified in Appendix 4/1 where required.
2. All guardrails dimensions to comply with BS7818:1995. dimensions given are indicative for information only.
3. All guardrails to be earthed.
4. Unless otherwise directed, guardrails to follow kerbline with a minimum 450mm clearance from the kerb face.
5. For curved kerblines - the following guardrails may be used where instructed or agreed:
   a. Radius > 35m = 2000mm straight panels
   b. Radius < 35m but > 20m = 1000mm straight panels
   c. Radius < 20m = Use panel sections recommended by manufacturer
6. Any resulting angular gap between adjacent posts (3mm max gap) to be filed with approved sealant prior to final treatment.
7. All holes drilled in-situ to receive anti rust treatment. Any unused holes to be adequately sealed by approved method.
8. Socket to be cast into concrete foundation, guardrail leg to be installed into socket.



Plan of staggered infill

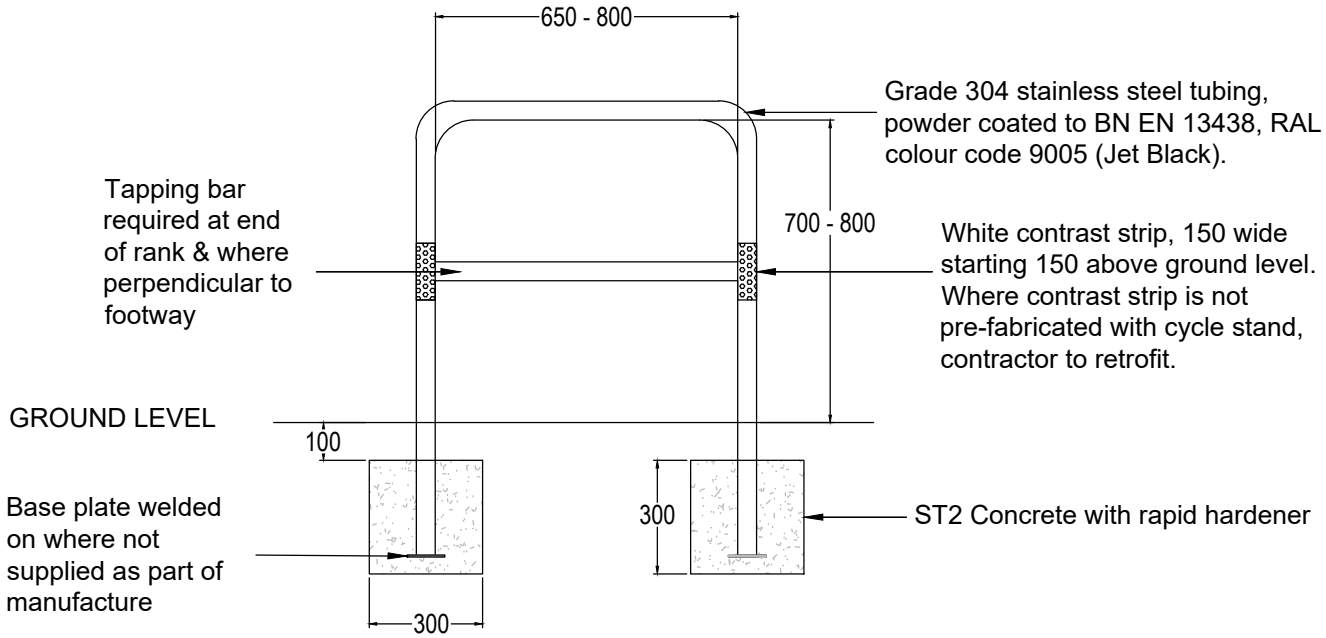
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

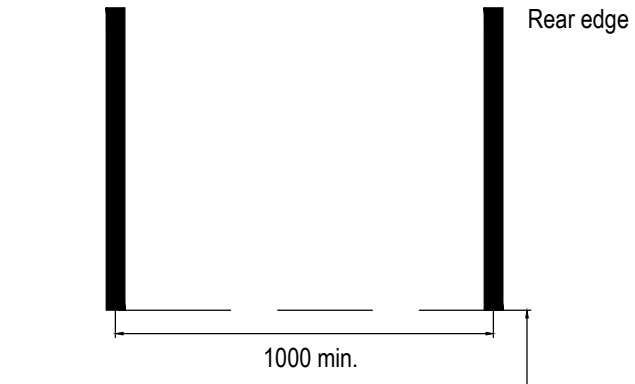
Series 0400: Road Restraint Systems

Cycle Stands
Sheffield or Bilton Type

Drawing	Revision
SD-0400-002	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

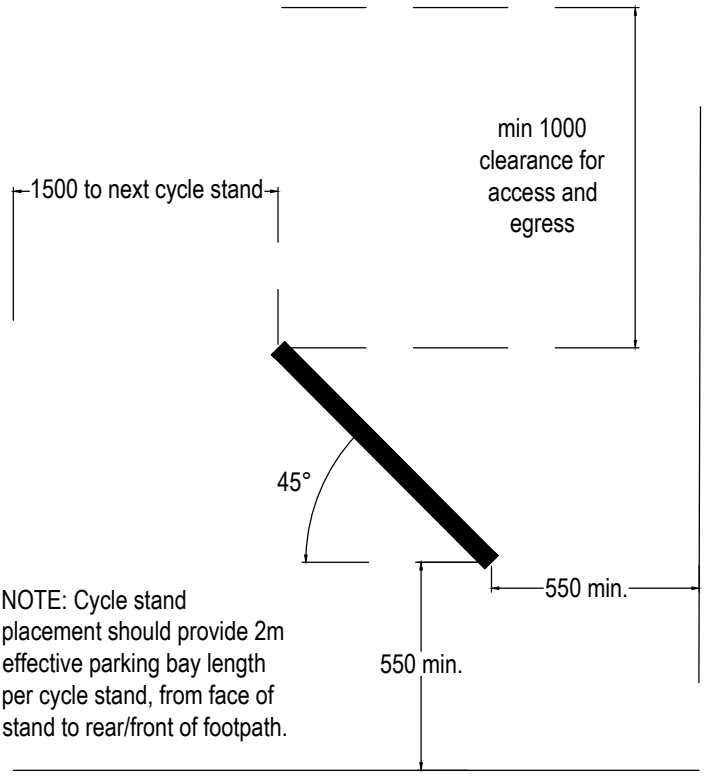


CYCLE STAND ARRANGEMENTS (see also SD-0400-003):



NOTE: Cycle stand placement should provide 2m effective parking bay length per cycle stand, from face of stand to rear of footpath.

Perpendicular to Kerbline



NOTE: Cycle stand placement should provide 2m effective parking bay length per cycle stand, from face of stand to rear/front of footpath.

Angled at 45° to wall

STANDARD DETAILS

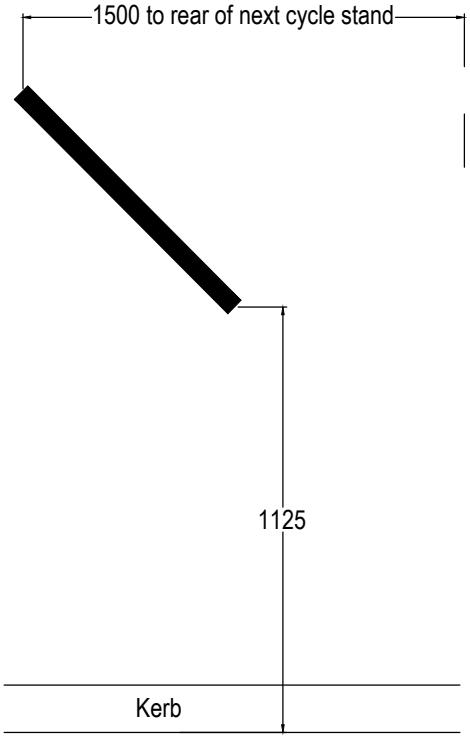
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0400: Road Restraint Systems

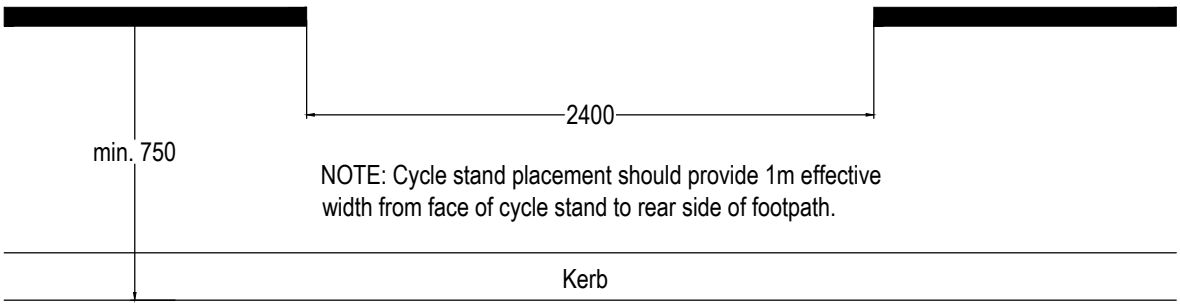
Cycle Stands Arrangements

Drawing	Revision
SD-0400-003	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

NOTE: Cycle stand placement should provide 2m effective parking bay length per cycle stand, from face of stand to rear/front of footpath.



Angled at 45° to kerbline



NOTE: Cycle stand placement should provide 1m effective width from face of cycle stand to rear side of footpath.

Parallel to kerbline

STANDARD DETAILS

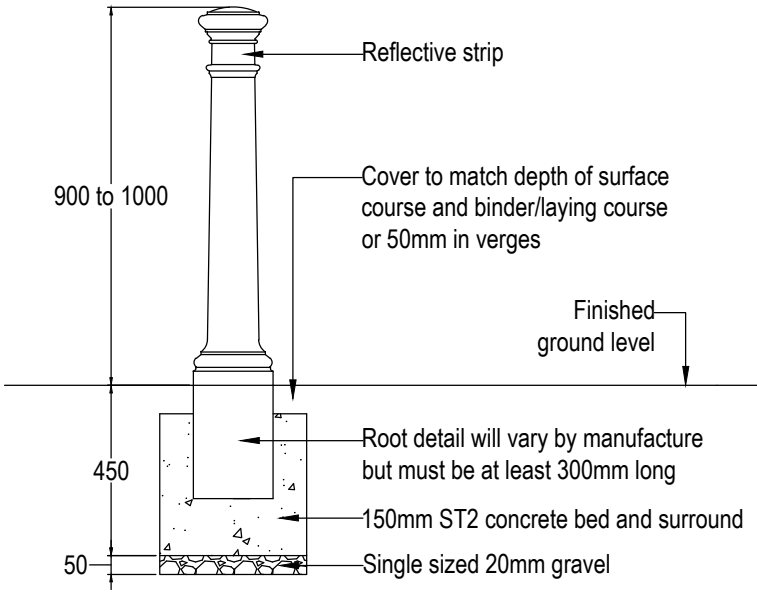
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0400: Road Restraint Systems

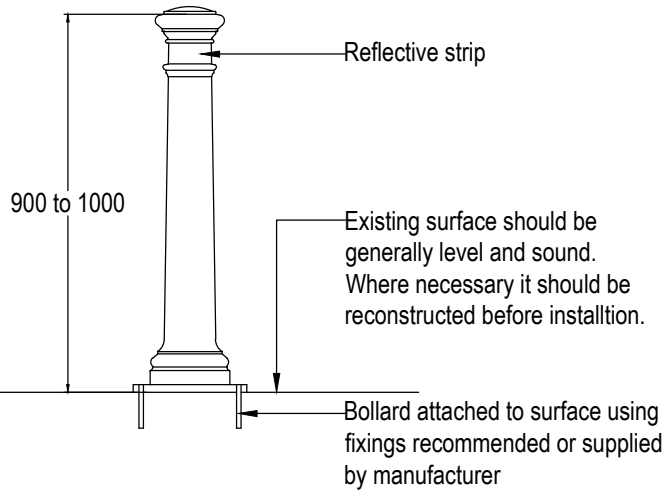
Typical Pedestrian Bollard

Drawing	Revision
SD-0400-004	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

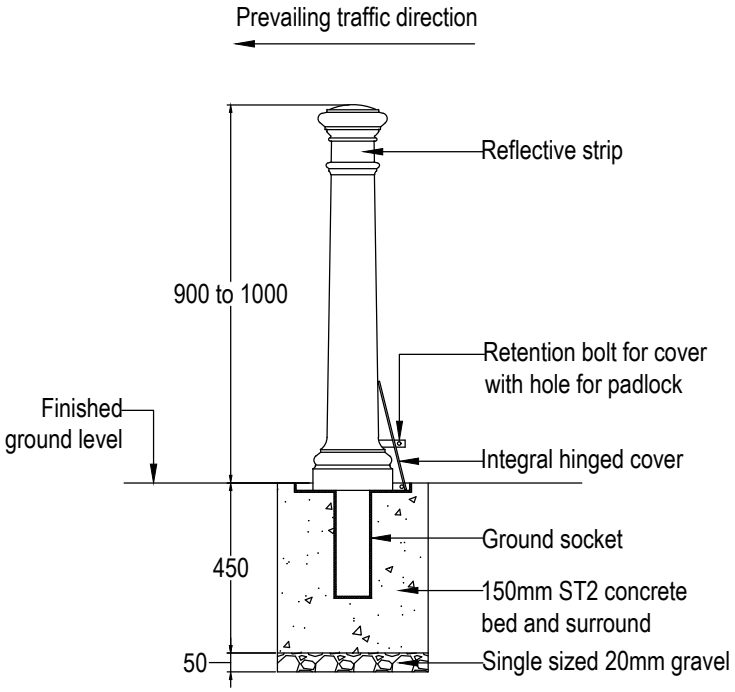
ROOT FIXED BOLLARD



SURFACE MOUNTED BOLLARD



REMOVABLE BOLLARD



NOTES

1. Standard bollard to be 'Manchester' profile in polyurethane or polyurethane cast around steel core (Ferrocast) in colour black.
2. Where alternative bollard materials, profiles or colours are required, these will be specified in the package-specific documents.
3. Reflective strip to be Class R1 reflective material, red when on nearside facing oncoming traffic and white on offside. Where the bollard is to be sited away from motor traffic, an all white banding may be used.
4. Unless deliberately positioned to restrict access, no part of bollard to be closer than 450mm from kerb face; clearance to be increased to 750mm for speed limits of 50mph and above.
5. The adjacent surface shall be be reinstated to match the existing or as otherwise instructed. For paved areas an infill around the bollard may be required to clause 8.5 of BS 7533-101 .

ADDITIONAL NOTES FOR REMOVABLE BOLLARDS

6. A second ground socket, complete with cover, shall be constructed for storage of the bollard when removed from its primary position.
7. Hinged covers shall be orientated so that they fall flat in the direction of traffic.
8. Removable bollards shall be supplied and fitted with a combination lock padlock and the code and padlock instructions provided to Bristol City Council.

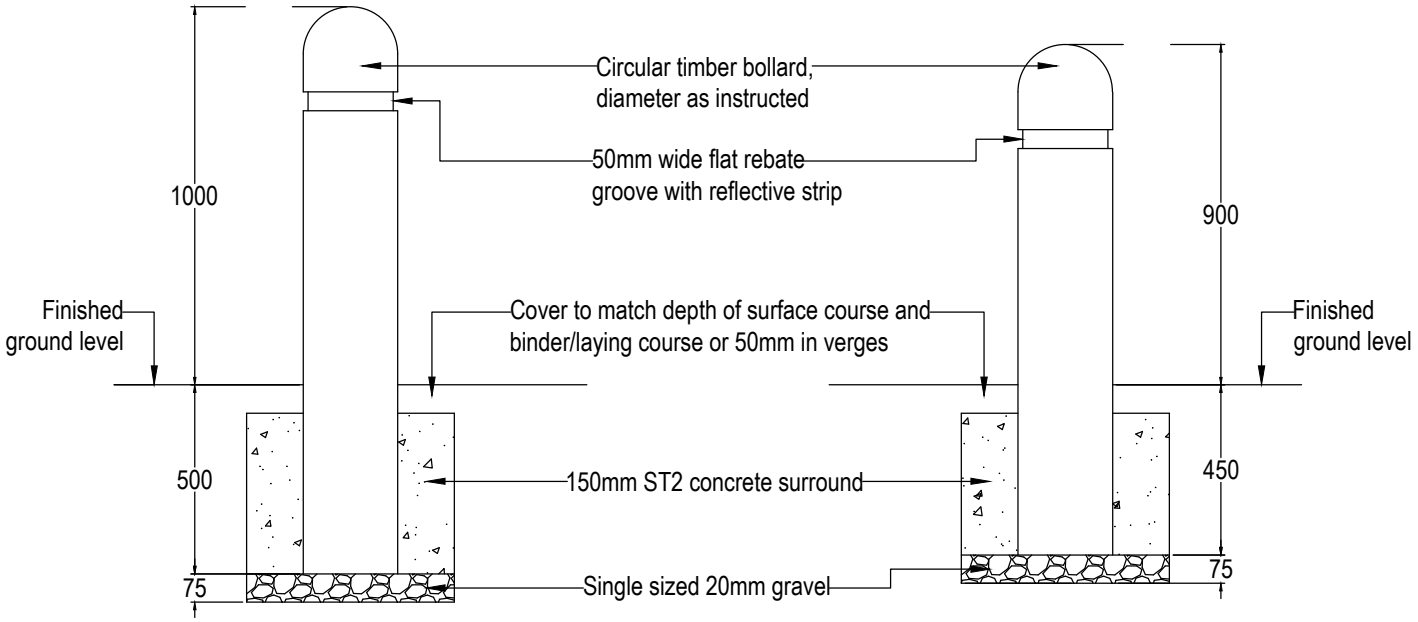
STANDARD DETAILS

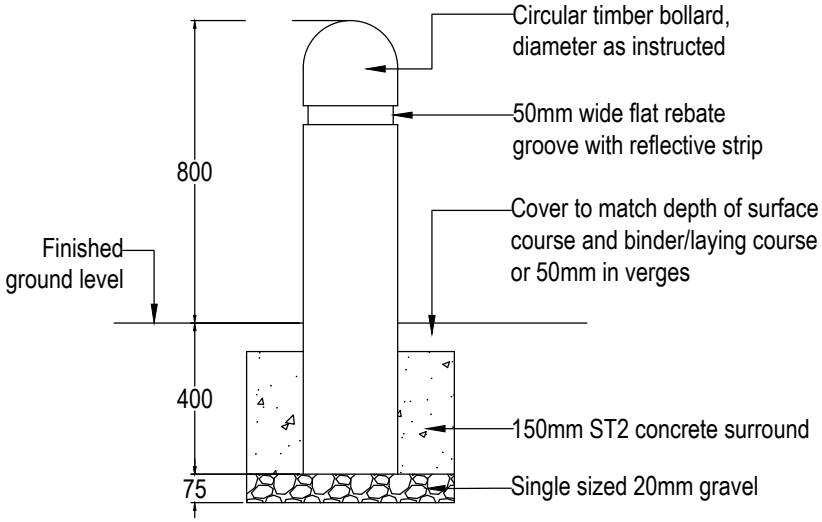
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0400: Road Restraint Systems

Timber Bollards

Drawing	Revision
SD-0400-005	Ø
Drawn by: DJB	Scale: 1:20
Date Drawn: 06 Sept 2024	





NOTES

1. Timber bollard profile to be circular domed top with a 50mm wide flat rebate groove. Diameter to be as instructed from range of 150, 200 or 250mm.
2. Bollard length to be chosen according to finished height. Longer lengths might be used as a permitted alternative with agreement prior to installation but incurring no additional payment. Shorter lengths shall not be used.
3. Timber to be hardwood with BS EN 350 Durability Class 1 untreated, or hardwood or softwood with Durability Class 2 with a Class 4 treatment for a 30 year service life to BS 8417.
4. Timber to have FSC or PEFC certification.
5. Reflective strip to be Class R1 reflective material, red when on nearside facing oncoming traffic and white on offside. Where the bollard is to be sited away from motor traffic, an all white banding may be used.
6. No part of bollard to be closer than 450mm from edge of carriageway; clearance to be increased to 750mm for speed limits of 50mph and above.
7. The adjacent surface shall be be reinstated to match the existing or as otherwise instructed. For paved areas an infill around the bollard may be required to clause 8.5 of BS 7533-101 .

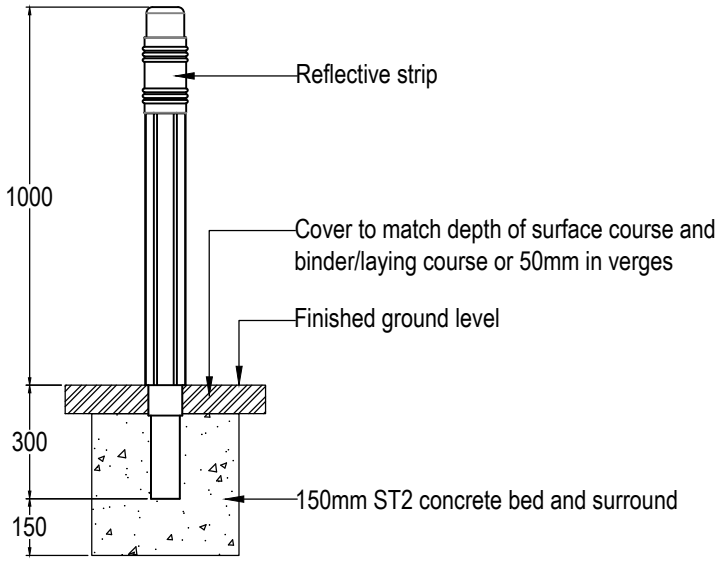
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0400: Road Restraint Systems

Pencil Bollards

Drawing	Revision
SD-0400-006	Ø
Drawn by: DJB	Scale: 1:20
Date Drawn: 06 Sept 2024	



NOTES

1. Bollard to be Ferrocast PiPencil bollard from Marshalls or similar approved.
2. Colour to be blue at main pedestrian accesses, red at other locations.
3. Reflective strip to be Class R1 reflective material, red when on nearside facing oncoming traffic and white on offside. Where the bollard is to be sited away from motor traffic, an all white banding may be used.
4. No part of bollard to be closer than 450mm from edge of carriageway; clearance to be increased to 750mm for speed limits of 50mph and above.
5. The adjacent surface shall be be reinstated to match the existing or as otherwise instructed. For paved areas an infill around the bollard may be required to clause 8.5 of BS 7533-101 .

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

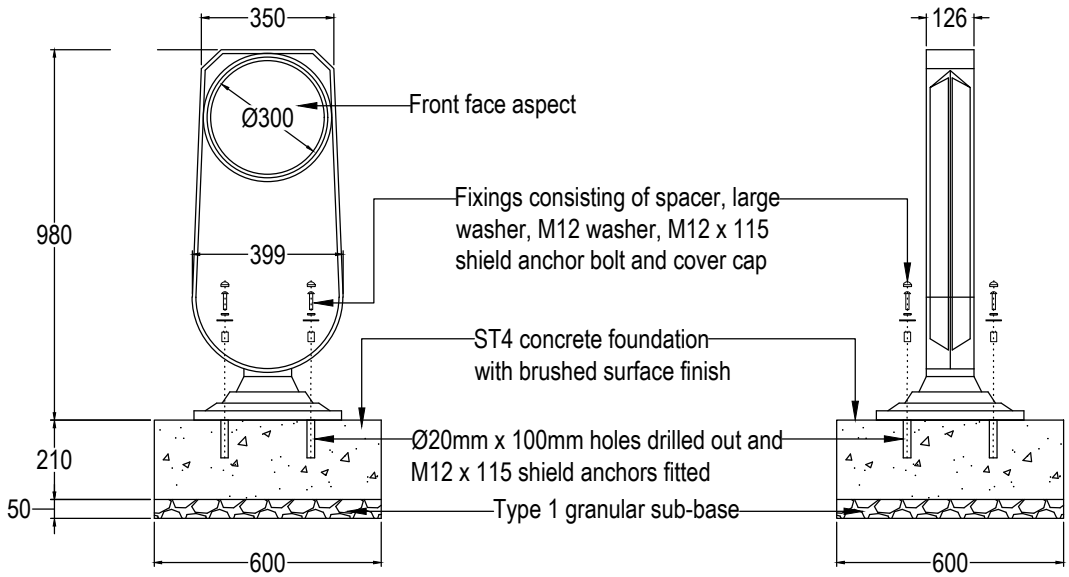
Series 0400: Road Restraint Systems

Non-Illuminated Traffic Bollard

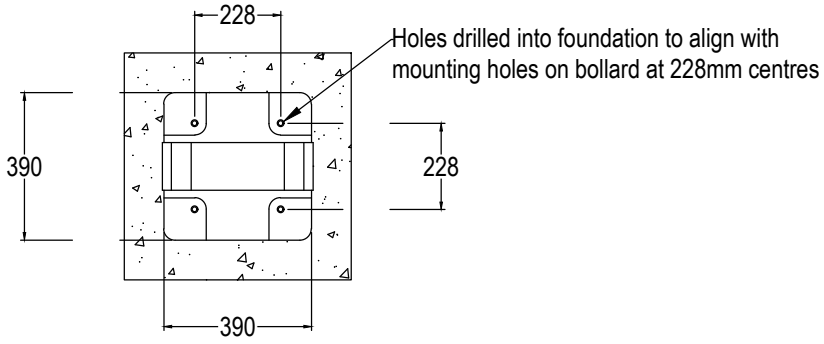
Drawing	Revision
SD-0400-007	Ø
Drawn by: DJB	Scale: 1:20
Date Drawn: 06 Sept 2024	

FRONT VIEW

SIDE VIEW



PLAN VIEW



NOTES

1. Reboundable bollard to be surface mounted Simmonsigns Weebol Flex or similar approved.
2. Aspect to be as instructed.
3. Reference should be made to the manufacturer's instructions for detailed fixing method.
4. A minimum of 450mm clearance from the edges of the bollard to the carriageway must be maintained and traffic islands on which bollards are to be placed should be designed to ensure this clearance is acheivable.

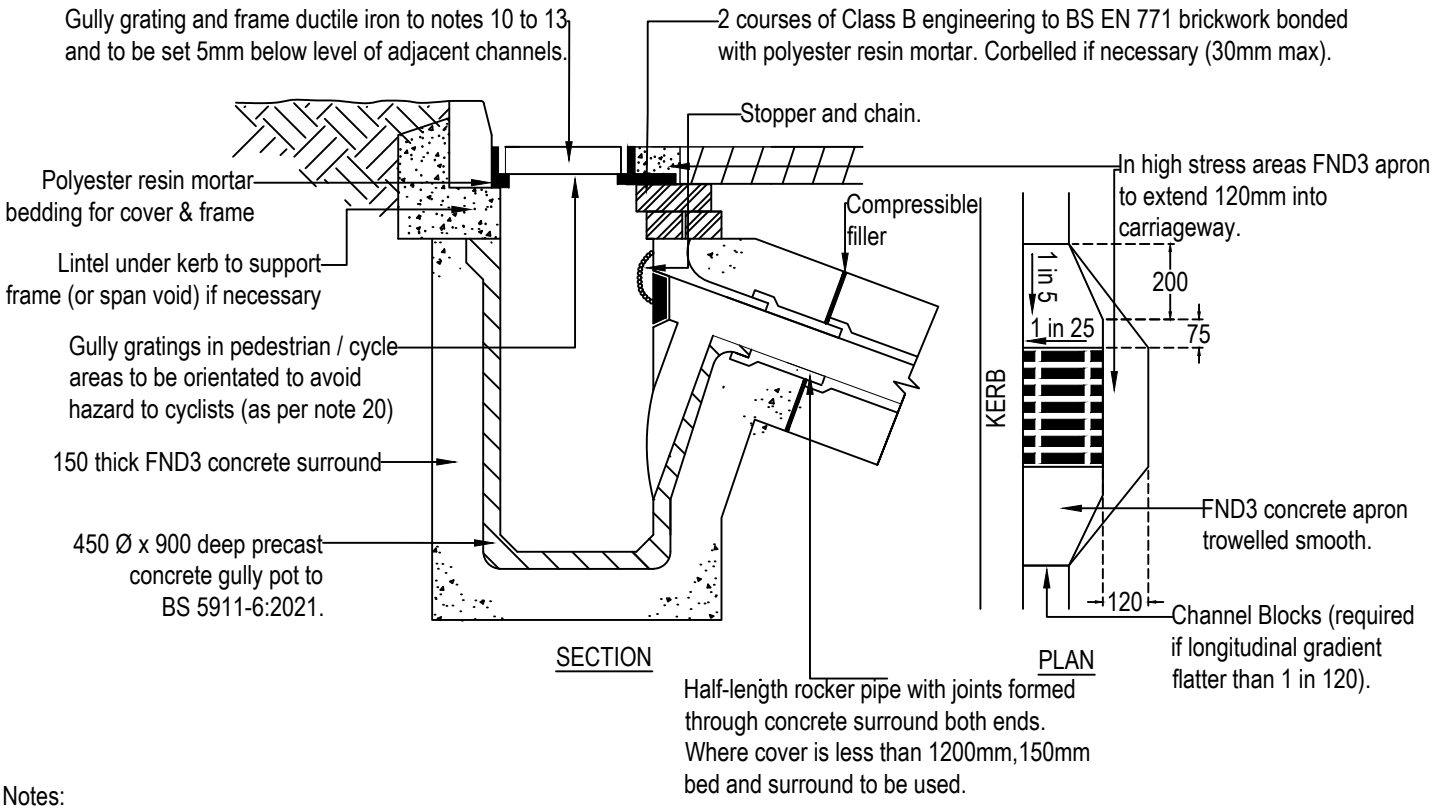
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0500: Drainage

Road (Highways) Gullies

Drawing	Revision
SD-0500-001	Ø
Drawn by: PPJ	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	



Notes:

1. All dimensions are in millimeters except where stated otherwise.
2. Maximum length of gully connections is 12m.
3. Gullies shall connect to pipes, not to other gullies.
4. Each gully shall have a separate connection to the carrier drain or chamber unless agreed otherwise.
5. Connections to carrier drains to use 'Y' junctions unless otherwise agreed. Connections to Wessex Water pipes subject to application and approval by the drainage authority.
6. All cement used in Precast or insitu concrete to be Sulphate resisting unless otherwise directed by the overseeing organisation.
7. Insitu concrete to be minimum FND3 concrete, see Appendix 5/1 paragraph 17. Concrete foundation and surround to gully pot shall comply with SHW clause 2602.
8. Gully and installation to clause 508 SHW shall apply except where modified on this drawing.
9. 450 dia x 900 deep in carriageways (departures subject to approval of the overseeing organisation PVCU in-situ gully, brick gully (type 3) and in-situ (type 4) shall not be used without approval of the overseeing organisation.
10. Grating and frames shall be to BS EN 124:2015 and below:
    class D400, 100 deep in normal trafficked areas.
    class D400, 150 deep for vulnerable HGV overrun or for block paving areas.
    class C250, 100 deep in normal footway.
11. All gully covers to be hinged in the direction of traffic flow i.e. with hinge towards approaching traffic.
12. Hinged captive gratings minimum waterway area 950cm2 shall be used for all other roads or where specified by the overseeing organisation.
13. Slots in gratings shall not be parallel with the direction of the traffic.
14. Brickwork class B shall comply with clause 507 SHW (including cl. 507.3 , cl.507.18 & cl. 2406.3).
15. The maximum overhang on each course of brick corbelling shall be 30mm.
16. Reinforced concrete gully cover slabs to BS5911 part 230 or reinforced concrete lintels shall be used where brick corbelling gives insufficient support to frame.
17. Finish to internal concrete shall be F1 on formed surfaces and U2 on unformed surfaces.
18. Rapid hardening cementicious mortar systems shall be used in making up and bedding ironwork in carriageways to be opened to traffic within 2 days.
19. Kerb offlets and weir gullies shall only be used with agreement by the overseeing organisation.
20. Approved "Heel guard" pedestrian / cycle friendly mesh grating must be used in all pedestrian / cycle areas where specified.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

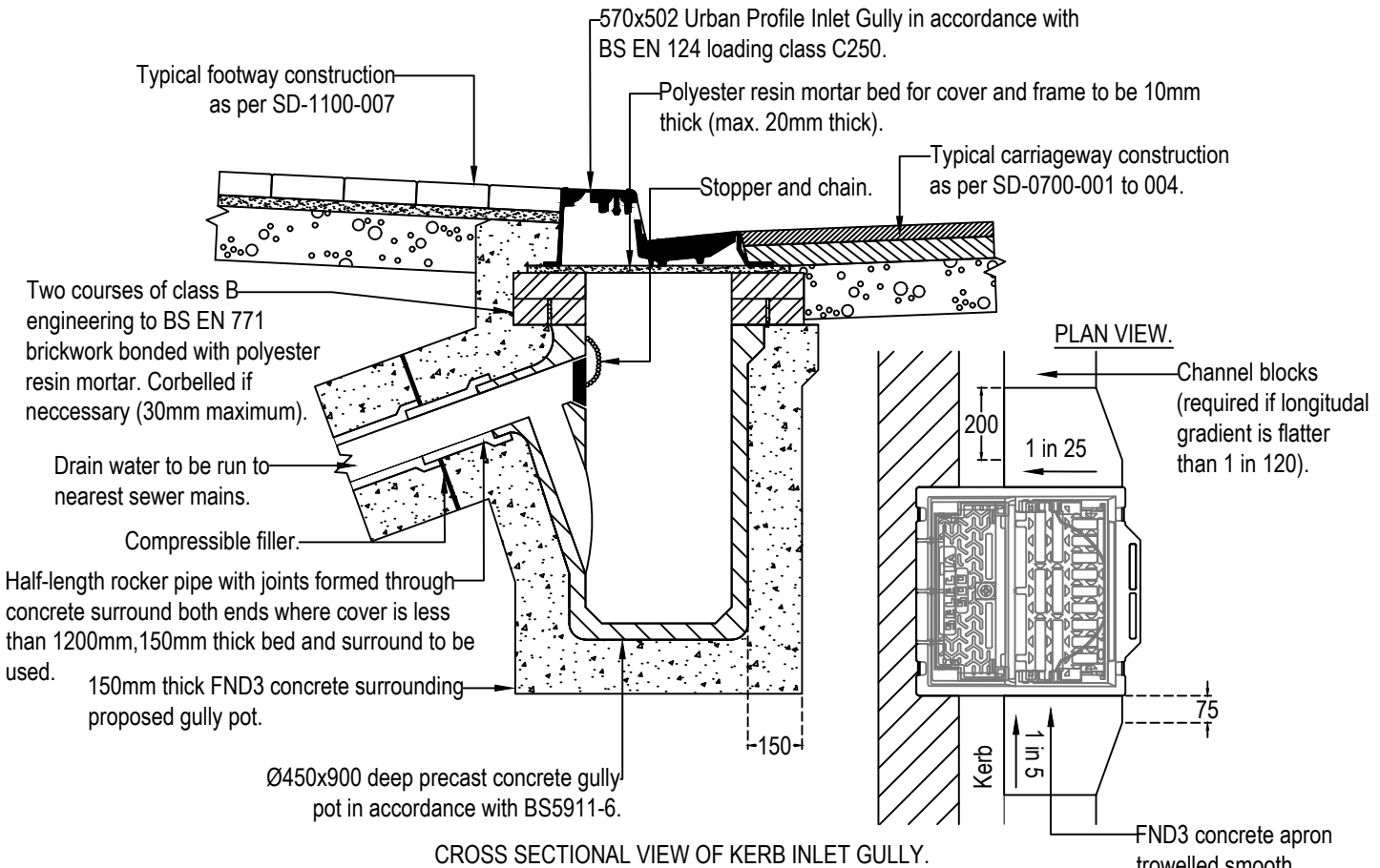
Series 0500: Drainage

Road/Highways
Inlet Gullies

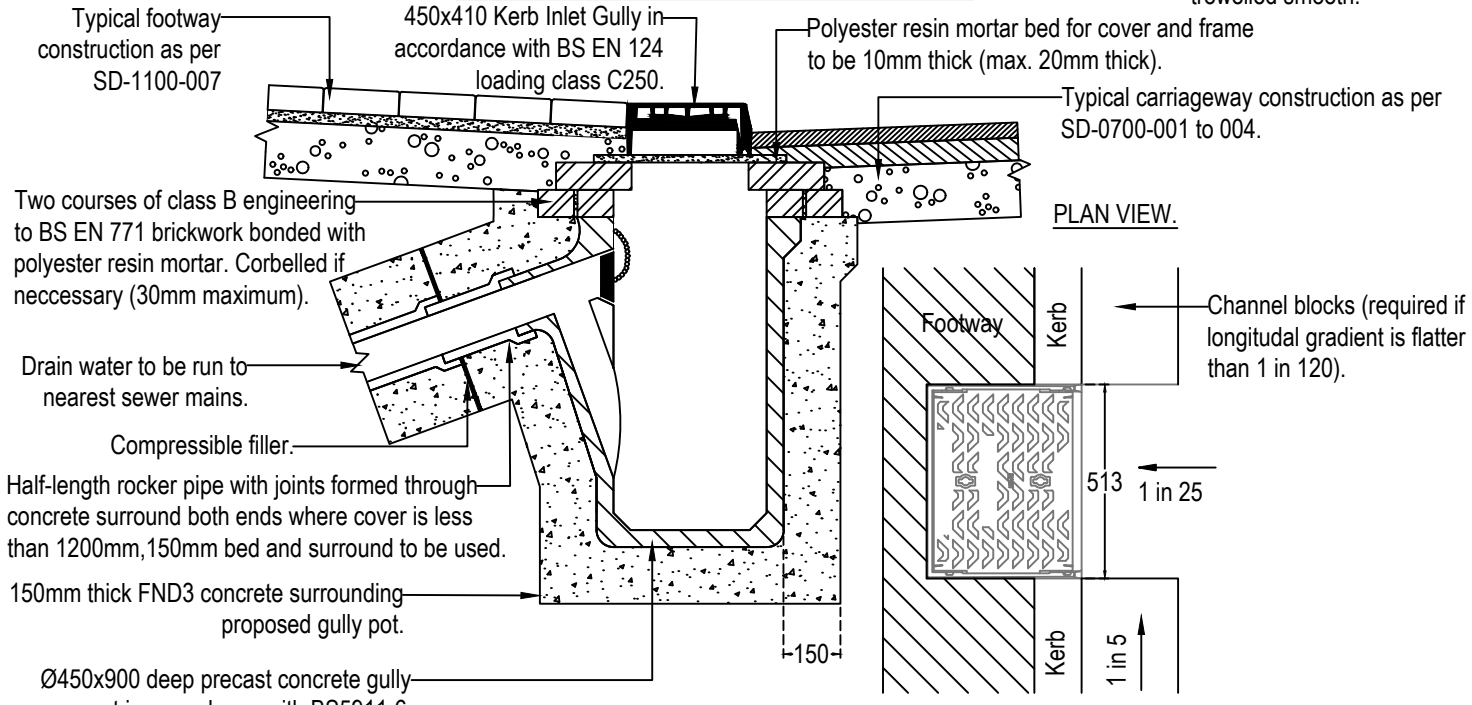
Drawing	Revision
SD-0500-002	Ø
Drawn by: PPJ	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

NOTE: ALL Gullies, gratings and frames MUST be compliant with the details below AND notes on drawing SD-0500-001

CROSS SECTIONAL VIEW OF COMBINED GULLY AND KERB INLET GULLY.



CROSS SECTIONAL VIEW OF KERB INLET GULLY.



STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0500: Drainage

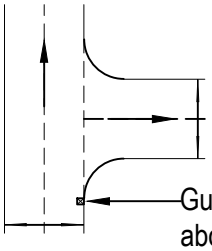
Position of Gullies
at junctions and in turning heads

Drawing	Revision
SD-0500-003	Ø
Drawn by: PPJ	Scale: NTS @ A4
Date Drawn: 06/09/2024	

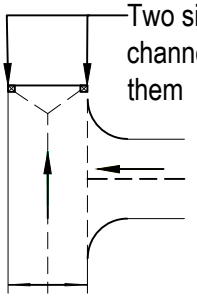
POSITIONING OF GULLIES AT JUNCTIONS AND IN TURNING HEADS

(Not to scale)

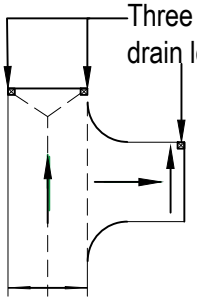
Direction of down gradient
Direction of crossfall
Channel or crown of road



Gully to cut off flow above junction

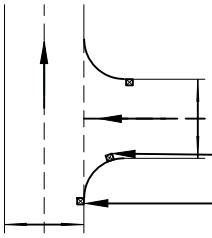


Two single gullies with channels laid flat between them



Three gullies necessary to drain low spots

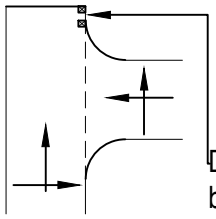
Junctions

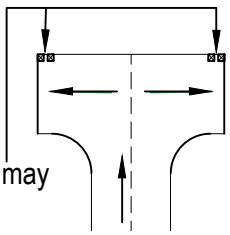


Gully at low spot in radius.

Gully to cut off flow above junction

Turning Heads





Double gullies may be required at significant low spots

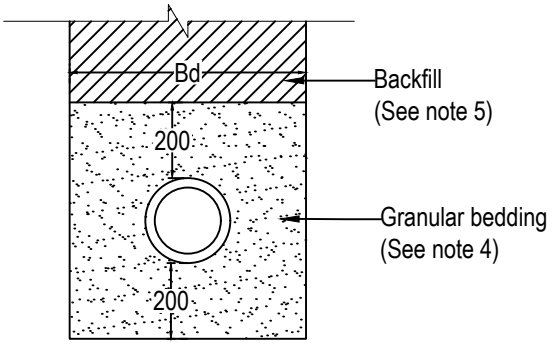
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

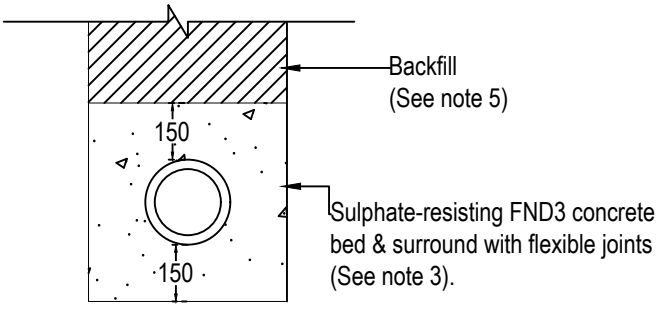
Series 0500: Drainage

Trench Backfill And Pipe Details

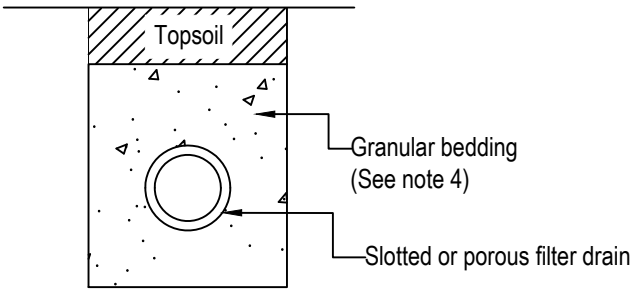
Drawing	Revision
SD-0500-004	Ø
Drawn by: PPJ	Scale: NTS @ A4
Date Drawn: 06/09/2024	



TYPE S
GRANULAR SURROUND
Bedding factor 2.2



TYPE Z
CONCRETE SURROUND
Bedding factor 2.6



FILTER DRAIN

PIPELESS FILTER DRAIN
Filter drains can also be constructed in a similar fashion but without the pipe, using a granular bedding cross-section of 690x750.

Notes

Nom. pipe Dia.	Max trench width (Bd)	Joint filler board thickness
150	690	18
225	690	18
300	760	18
375	1070	18
450	1140	36

1. Permitted Materials are:-
   Precast concrete
   Vitreous clay (plain ended with flexible polypropylene coupling in corporating elastomeric seals to BS.EN.295-1)
   Rigidrain or similar approved.
2. Full concrete surround is required
   (a) to all gully connections
   (b) if cover is less than 1.2m
   (c) if cover is more than 6m
   (d) if trench is wider than the maximum trench width as given above.
3. Flexible joints shall be formed fully through the concrete bed and surround at 8m centers or less and coinciding with pipe joints using compressible board as given above.
4. Granular bedding material shall be as defined in BS EN1610:2015.
5. In carriageways, backfill shall be ST1 or foamed concrete. In footways and footpaths, Type 1 granular material may be used. Selected excavated material may be used elsewhere.
6. Reinstatement as per SD-0700-015 and SD-0700-016; SD-1100-030 and SD-1100-031.
7. Clay puddle waterstops shall be 300 thick extending fully through the bed and surround and backfill if pervious ground immediately downstream of sumps.
8. Where filter drains are specified in poor ground conditions, it may be necessary to wrap the bed and surround in geotextile filter fabric to prevent migration of material into the granular bedding.
9. In areas where drainage is close to existing tree root zones, additional control barriers (such as ReRoot or similar approved) are to be used to full trench depth in order to reduce the risk of root invasion into pipework.

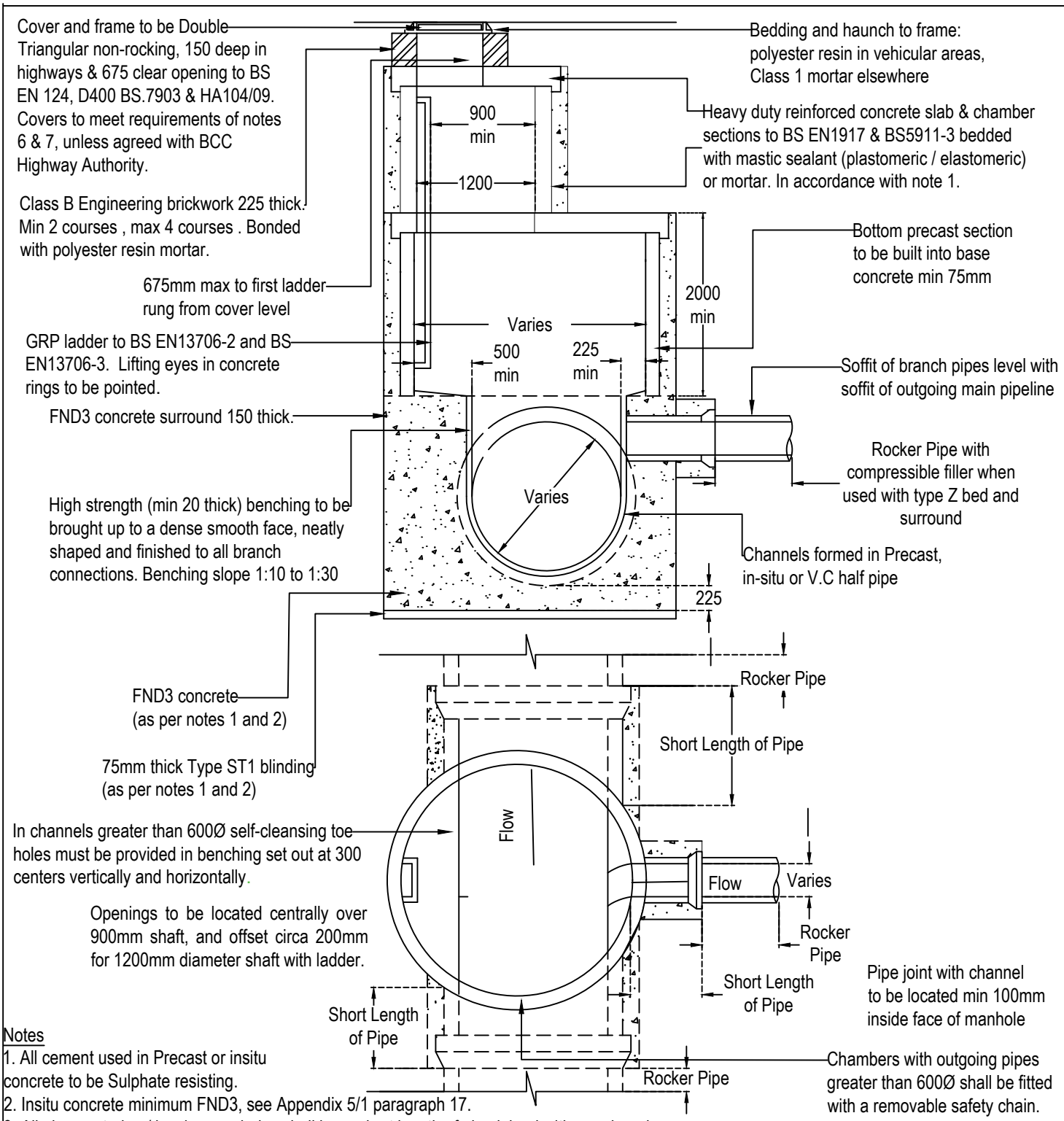
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0500: Drainage

Manhole Type A
Cover to Pipe Soffit
3.0m to 6.0m

Drawing	Revision
SD-0500-005	Ø
Drawn by: PPJ	Scale: 1:50 @ A4
Date Drawn: 06/09/2024	



Notes

1. All cement used in Precast or insitu concrete to be Sulphate resisting.
2. Insitu concrete minimum FND3, see Appendix 5/1 paragraph 17.
3. All pipes entering / leaving manholes shall have short length of pipe joined with a rocker pipe.
4. Lengths of rocker pipes to be: 150 - 600Ø - 0.6m long; 601 - 750Ø - 1.0m long; Over 750Ø - 1.25m long.
5. Pipes entering / leaving manholes to have 150 thick FND3 concrete bed & surrounding up to junction with rocker pipe.
6. Where manhole is sited within running lane or other vulnerable location, use PAM Saint-Gobain GripTop Inter-Ax2 675x675mm, 150mm deep (Class D400); or similar approved.
7. All chamber covers in vulnerable locations to be anti-slip (PAM Saint-Gobain GripTop or similar approved). Where suitable anti-slip Class E600 cover size is not available, approval is required from the Highway Authority regarding the acceptable alternative.
8. Refer to SD-0500-004 for trench backfill and pipe details.

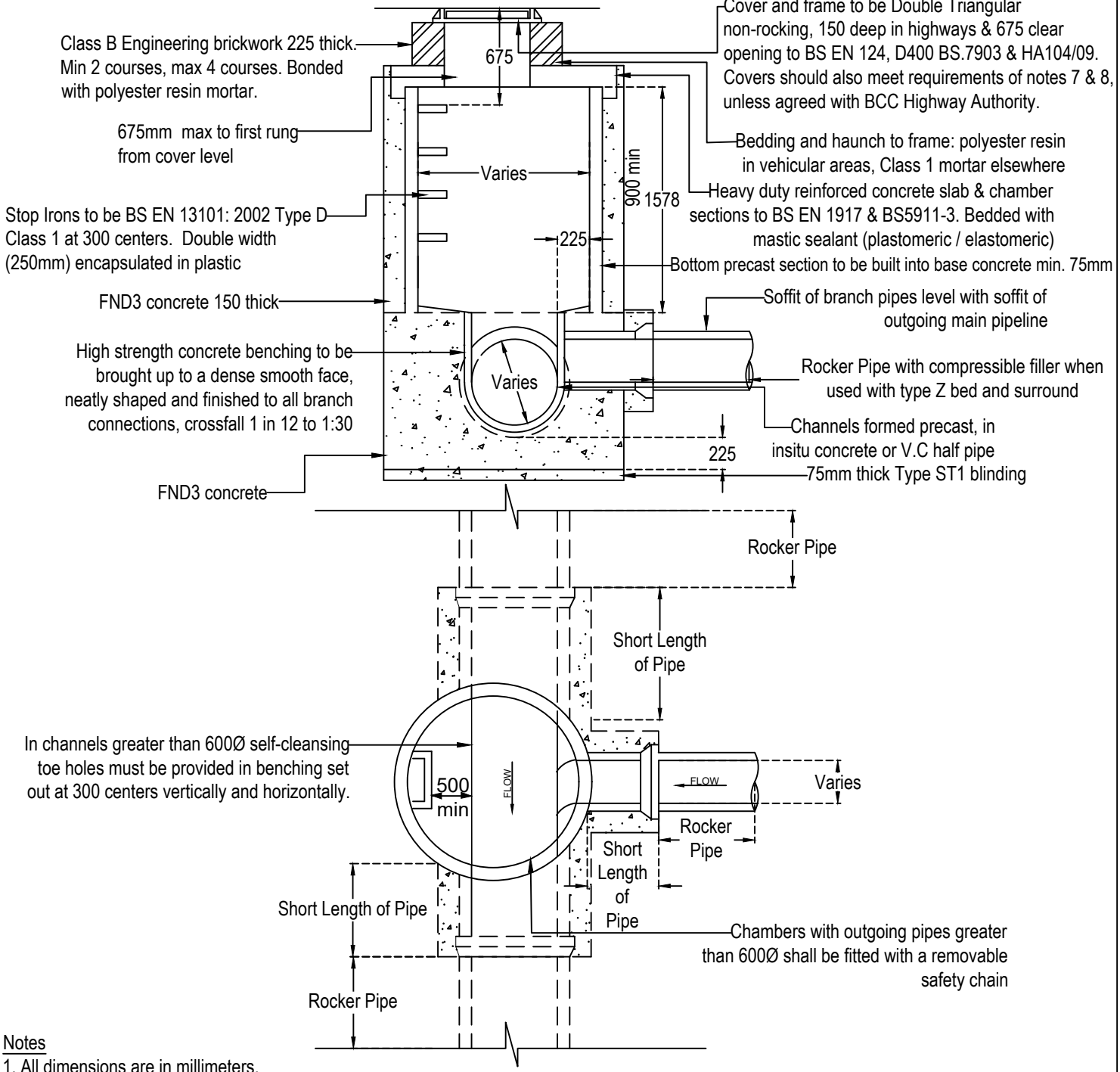
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0500: Drainage

Manhole Type B
Cover to Pipe Soffit
1.5m to 3.0m

Drawing	Revision
SD-0500-006	Ø
Drawn by: PPJ	Scale: 1:40 @ A4
Date Drawn: 06/09/2024	



Notes

1. All dimensions are in millimeters.
2. All cement used in Precast or insitu concrete to be Sulphate resisting.
3. Insitu concrete to be minimum FND3 concrete, see Appendix 5/1 paragraph 17.
4. All pipes entering / leaving manholes shall have short length of pipe joined with a rocker pipe.
5. Lengths of rocker pipes to be: 150 - 600Ø - 0.6m long; 601 - 750Ø - 1.0m long; over 750Ø - 1.25m long.
6. Pipes entering / leaving manholes to have 150 thick FND3 concrete bed & surrounding up to junction with rocker pipe.
7. Where manhole is sited within running lane or other vulnerable location, use PAM Saint-Gobain Opt-Emax Griptop cover Class E600,150mm deep with 675mm clear opening (or similar approved). Where manhole is located in segregated cycleway, use Griptop cover Class D400.
8. All chamber covers in vulnerable locations to be anti-slip (PAM Saint-Gobain GripTop or similar approved). Where suitable anti-slip Class E600 cover size is not available, approval is required from the Highway Authority regarding the acceptable alternative.
9. Refer to SD-0500-004 for trench backfill and pipe details.

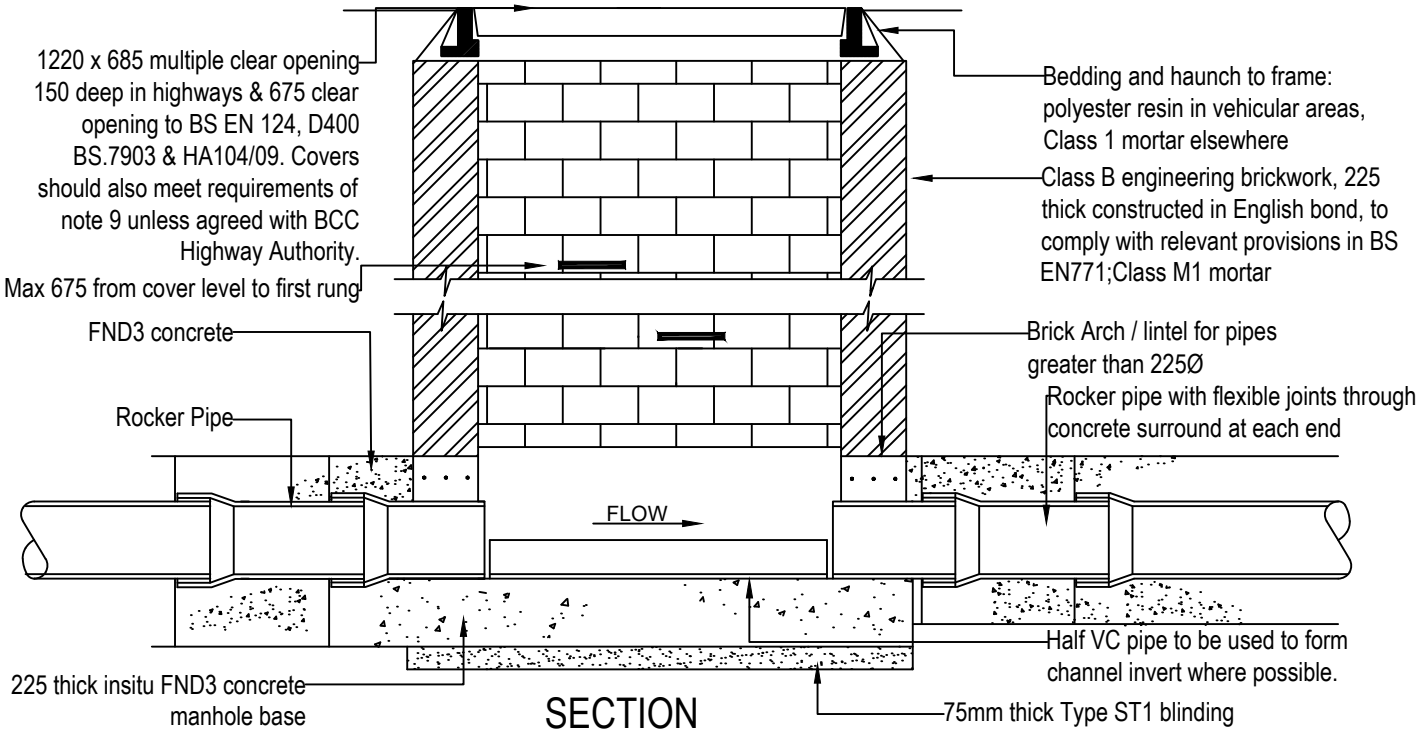
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0500: Drainage

Manhole Type C
Cover to Pipe Soffit
Less than 1.5m
Brick Construction

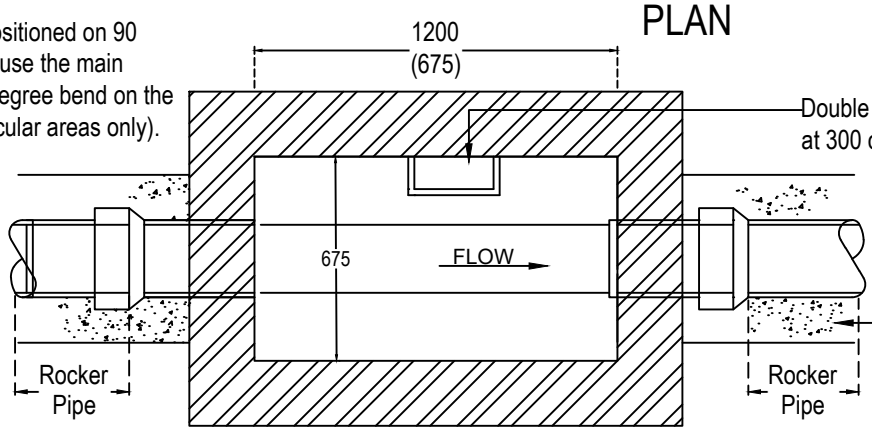
Drawing	Revision
SD-0500-007	Ø
Drawn by: PPJ	Scale: 1:25 @ A4
Date Drawn: 06/09/2024	



SECTION

PLAN

Where chambers are positioned on 90 degree corners, always use the main channel by fitting a 45 degree bend on the inlet and outlet (for vehicular areas only).



Notes:

1. All cement used in precast or insitu concrete to be sulphate resisting.
2. Insitu concrete to be minimum FND3 concrete, see Appendix 5/1 paragraph 17.
3. All pipes entering / leaving manholes shall have flexible short length pipe joined with a rocker pipe.
4. Lengths of rocker pipes to be: 150 - 600Ø - 0.6m long; 601 - 750Ø - 1.0m long; over 750Ø - 1.25m long.
5. Pipes entering / leaving manholes to have 150 thick FND3 concrete bed and surround up to junction with rocker pipe.
6. All dimensions in millimeter unless otherwise stated.
7. The internal dimensions of chamber width to be increased for pipes larger than 225Ø to give a min of 225 thick benching each side, with the brickwork corbelled down on each side to 675 max. Corbel per course to be 30 max.
8. High strength concrete benching min 20 thick brought up to a dense smooth face neatly shaped and finished to all branch connections (Benching slope to be 1:10 to 1:30).
9. Where manhole is sited within running lane or other vulnerable location, use GripTop Briton 1220 x 685 cover, 150 deep (Class E600), or similar approved. Where located in segregated cycleway, use GripTop Opt-Emax 1220 x 685 cover, 150 deep (Class D400).
10. Refer to SD-0500-004 for trench backfill and pipe details.
11. 625 x 685 W x W Chambers permitted in footways (Type C variant) up to 600 deep - GripTop Opt-Emax 675 x 675, 100 deep (Class D400); by instruction from the Highway Authority.

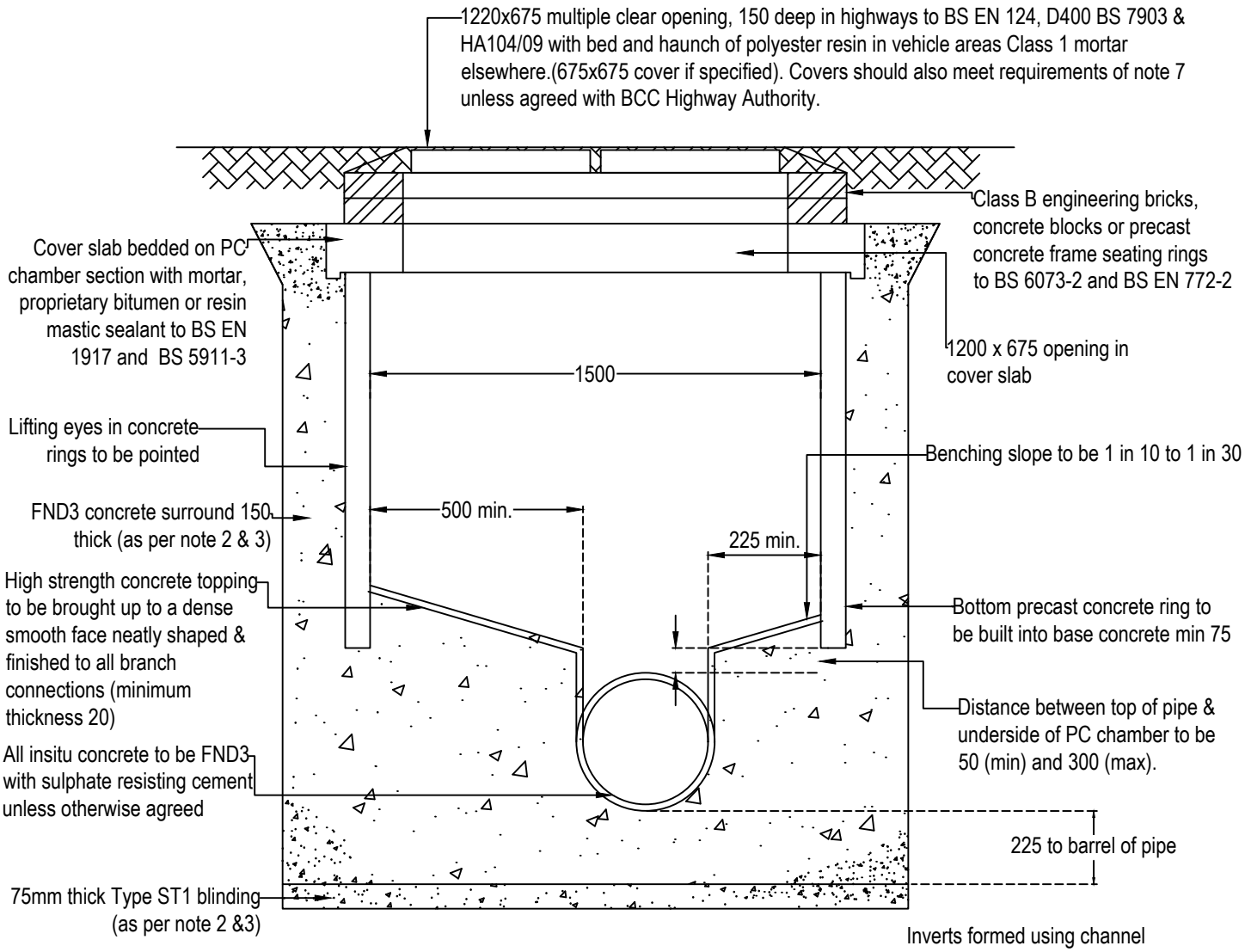
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0500: Drainage

Manhole Type E
Cover to Pipe Soffit
Less than 1.5m
PCC Chamber

Drawing	Revision
SD-0500-008	Ø
Drawn by: PPJ	Scale: 1:20 @A4
Date Drawn: 06/09/2024	



TYPE E

For use only in residential estate roads and non-vehicular areas

Notes

1. All dimensions are in millimetres.
2. All cement used in Precast or insitu concrete to be Sulphate resisting.
3. Insitu concrete to be minimum FND3 concrete, see Appendix 5/1 paragraph 17.
4. All pipes entering / leaving manholes shall have short length of pipe joined with a rocker pipe.
5. Lengths of rocker pipes to be: 150 - 600Ø - 0.6m long;
   601 - 750Ø - 1.0m long;
   Over 750Ø - 1.25m long.
6. Pipes entering / leaving manholes to have 150 thick FND3 concrete bed & surrounding up to junction with rocker pipe.
7. Where manhole is sited within running lane or other vulnerable location, use PAM Saint-Gobain Opt-Emax Griptop cover Class E600,150mm deep with 675mm clear opening (or similar approved). Where manhole is located in segregated cycleway, use Griptop cover Class D400.
8. Refer to SD-0500-004 for trench backfill and pipe details.

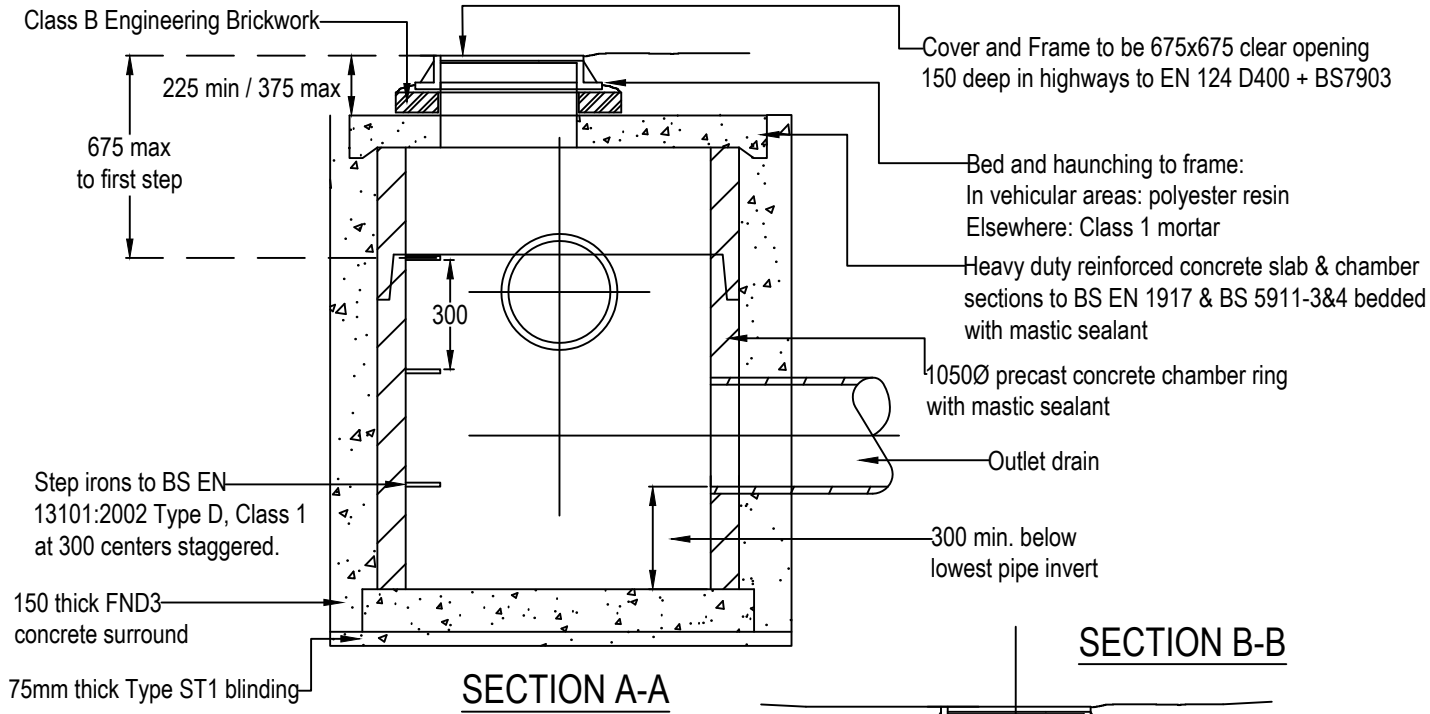
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Seres 0500: Drainage

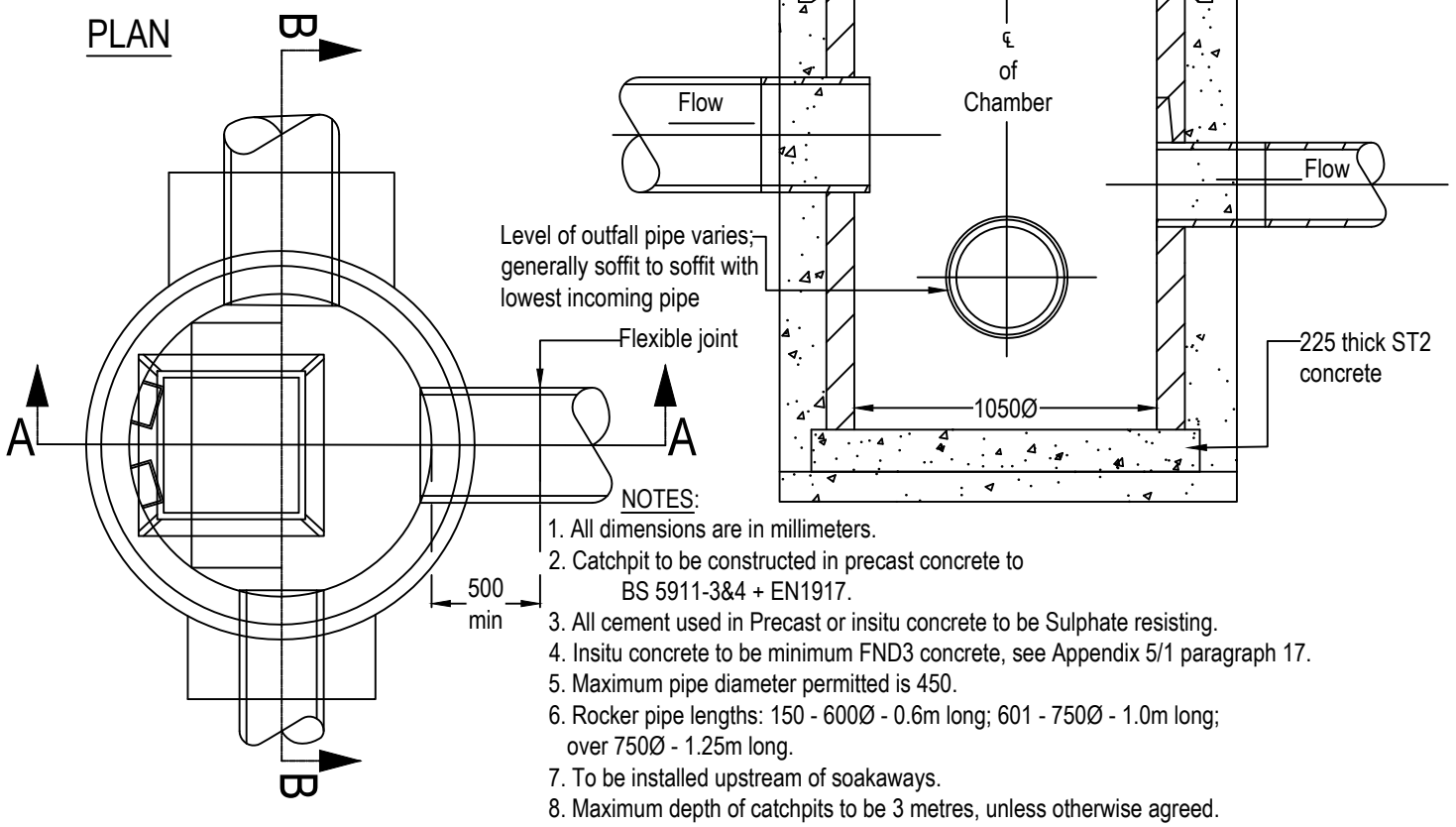
Catchpits

Drawing	Revision
SD-0500-009	Ø
Drawn by: PPJ	Scale: 1:40 @ A4
Date Drawn: 06/09/2024	



SECTION A-A

SECTION B-B



NOTES:

1. All dimensions are in millimeters.
2. Catchpit to be constructed in precast concrete to BS 5911-3&4 + EN1917.
3. All cement used in Precast or insitu concrete to be Sulphate resisting.
4. Insitu concrete to be minimum FND3 concrete, see Appendix 5/1 paragraph 17.
5. Maximum pipe diameter permitted is 450.
6. Rocker pipe lengths: 150 - 600Ø - 0.6m long; 601 - 750Ø - 1.0m long; over 750Ø - 1.25m long.
7. To be installed upstream of soakaways.
8. Maximum depth of catchpits to be 3 metres, unless otherwise agreed.
9. Covers to be marked with BCC or similar clear markings to note that these are catch pits.
10. Where manhole is sited within running lane or other vulnerable location, use PAM Saint-Gobain Opt-Emax Griptop cover (150mm deep), with 675mm clear opening or similar approved.

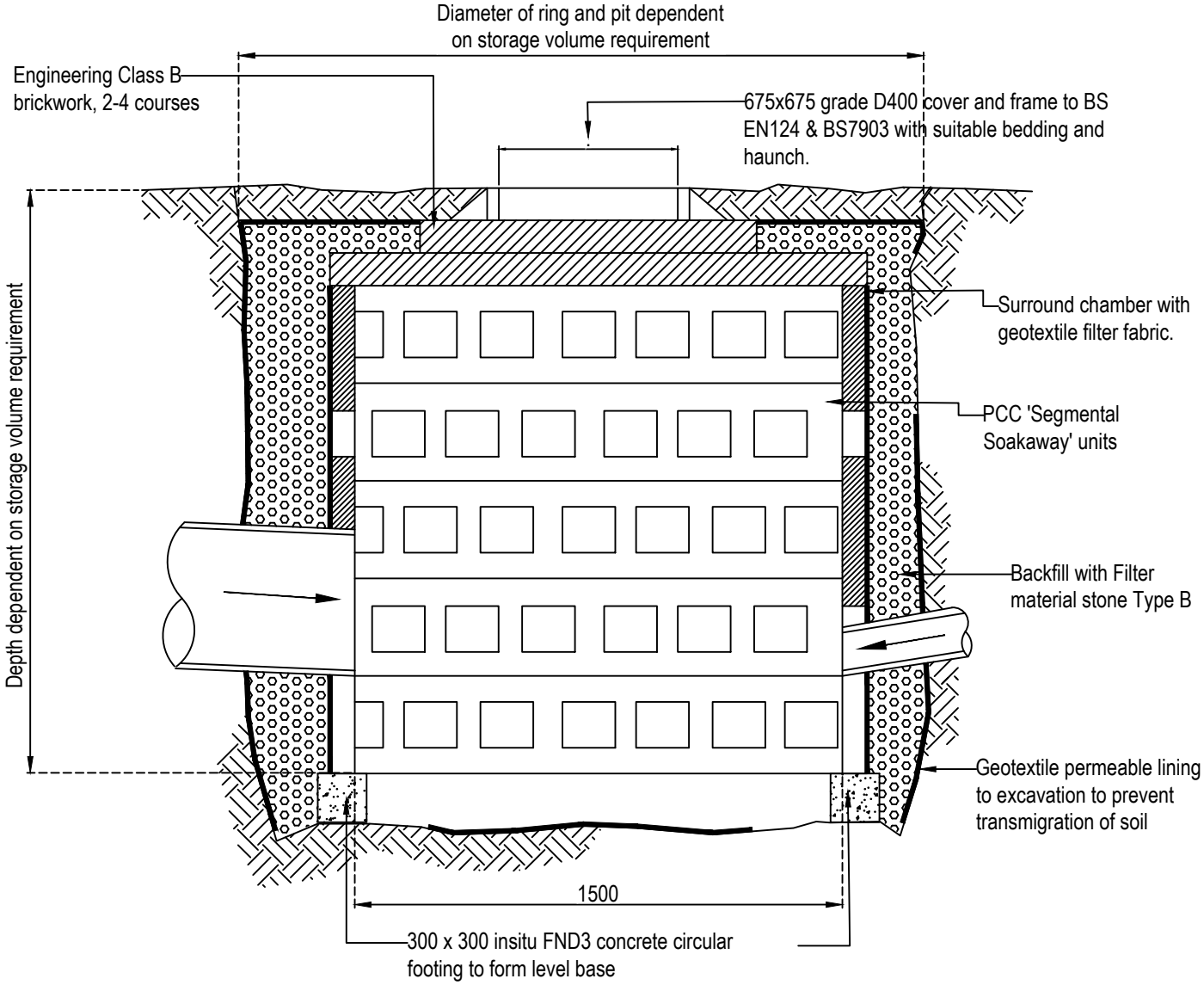
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0500: Drainage

Soakways
OFF Highway Only

Drawing	Revision
SD-0500-010	Ø
Drawn by: PPJ	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	



Notes

1. Catchpit sited immediately up stream of soak away.
2. Soakaways may need oil/petrol interceptors upstream to prevent contamination of the ground.
3. Soil permeability test results & soakaway design for capacity to be submitted for approval prior to construction. In accordance with BRE Digest 365 (revised 2016).
4. All cement used in Precast or insitu concrete to be Sulphate resisting.
5. Insitu concrete to be minimum FND3 concrete, see Appendix 5/1 paragraph 17.
6. Avoid sitting soaks close to buildings and structures. 5 metres recommended minimum distance.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0500: Drainage

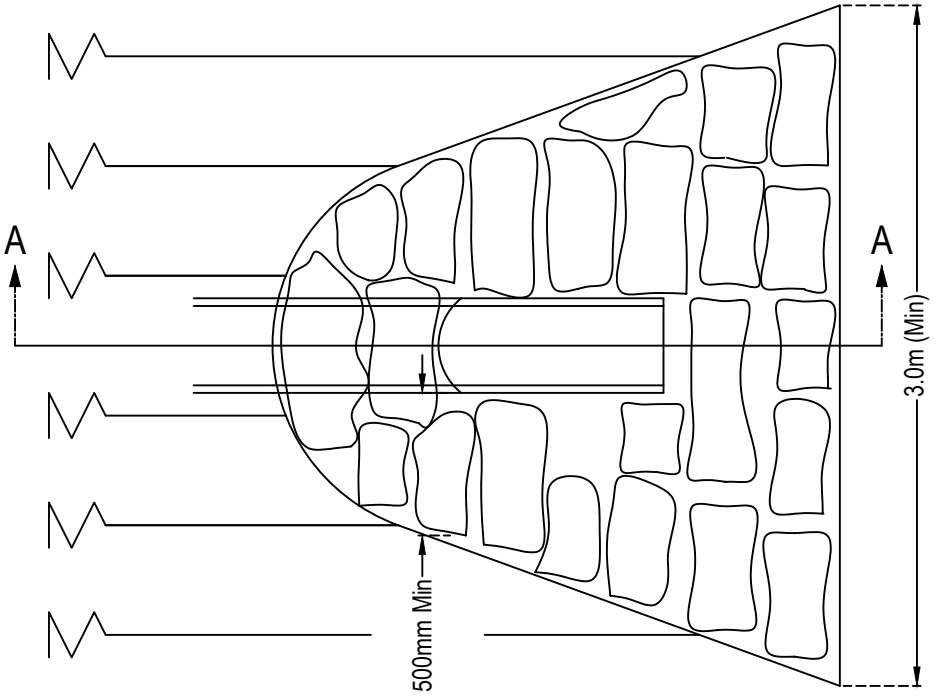
Storm Water Outfall - Type 1 For Pipes up to 150mm

Drawing	Revision
SD-0500-011	Ø
Drawn by: PPJ	Scale: 1:20 @A4
Date Drawn: 06/09/2024	

Type 1. General requirements for outfalls through a bank - for pipes up to 150mm in diameter.

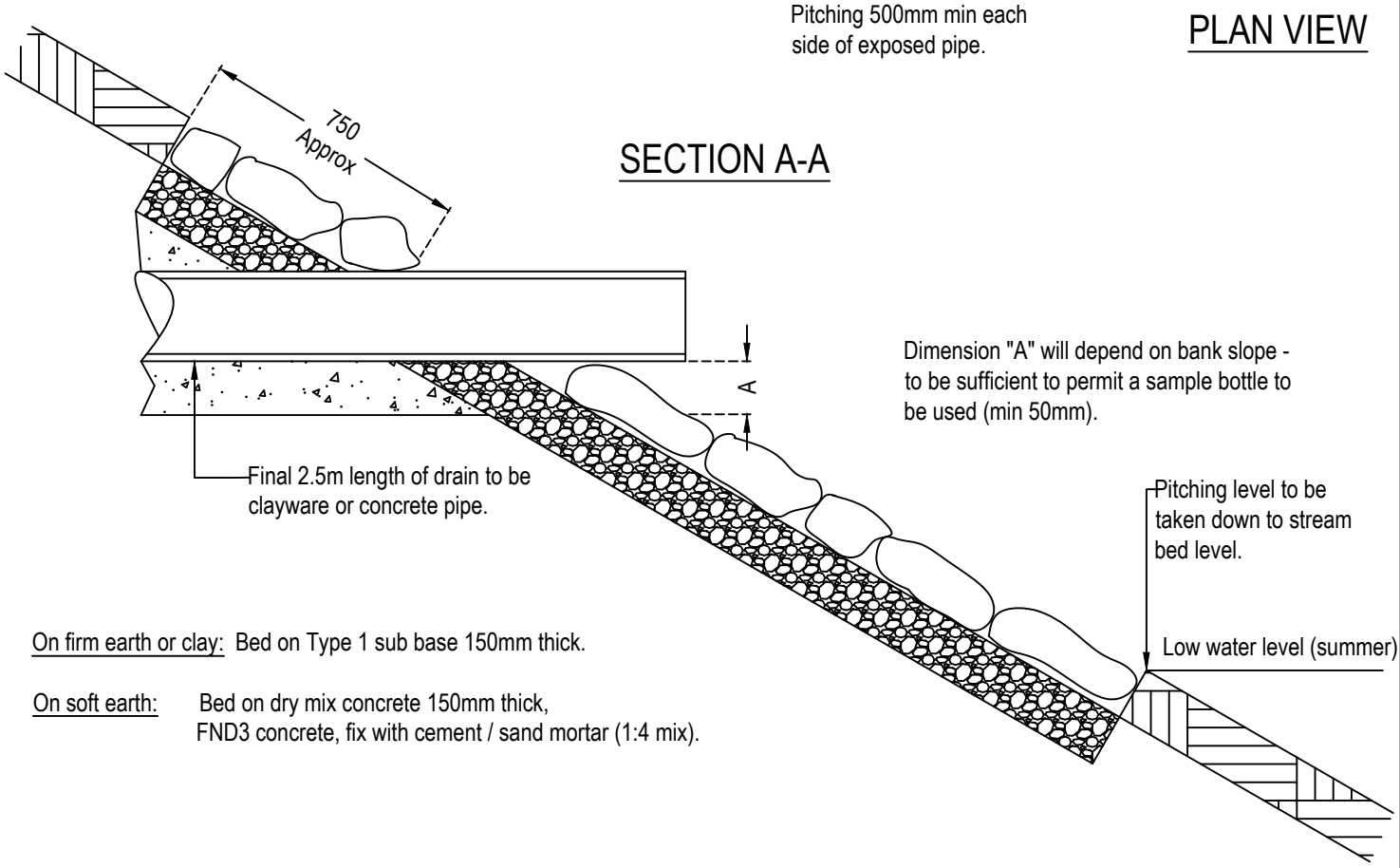
Notes

1. Pitching stone, 250-300mm nominal diameter. Where appropiate, re-use should be made of local materials. (Grouting may be required for velocities in excess of 1.5m/s).
2. Pitching stone to be smooth, hard and durable.
3. All cement used in Precast or insitu concrete to be Sulphate resisting.
4. Insitu concrete to be minimum FND3 concrete, see Appendix 5/1 paragraph 17.
5. Work on or close to a main river will require a Flood Risk Activity Permit from the Environment Agency.



Pitching 500mm min each side of exposed pipe.

PLAN VIEW



SECTION A-A

Dimension "A" will depend on bank slope - to be sufficient to permit a sample bottle to be used (min 50mm).

On firm earth or clay: Bed on Type 1 sub base 150mm thick.

On soft earth: Bed on dry mix concrete 150mm thick, FND3 concrete, fix with cement / sand mortar (1:4 mix).

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

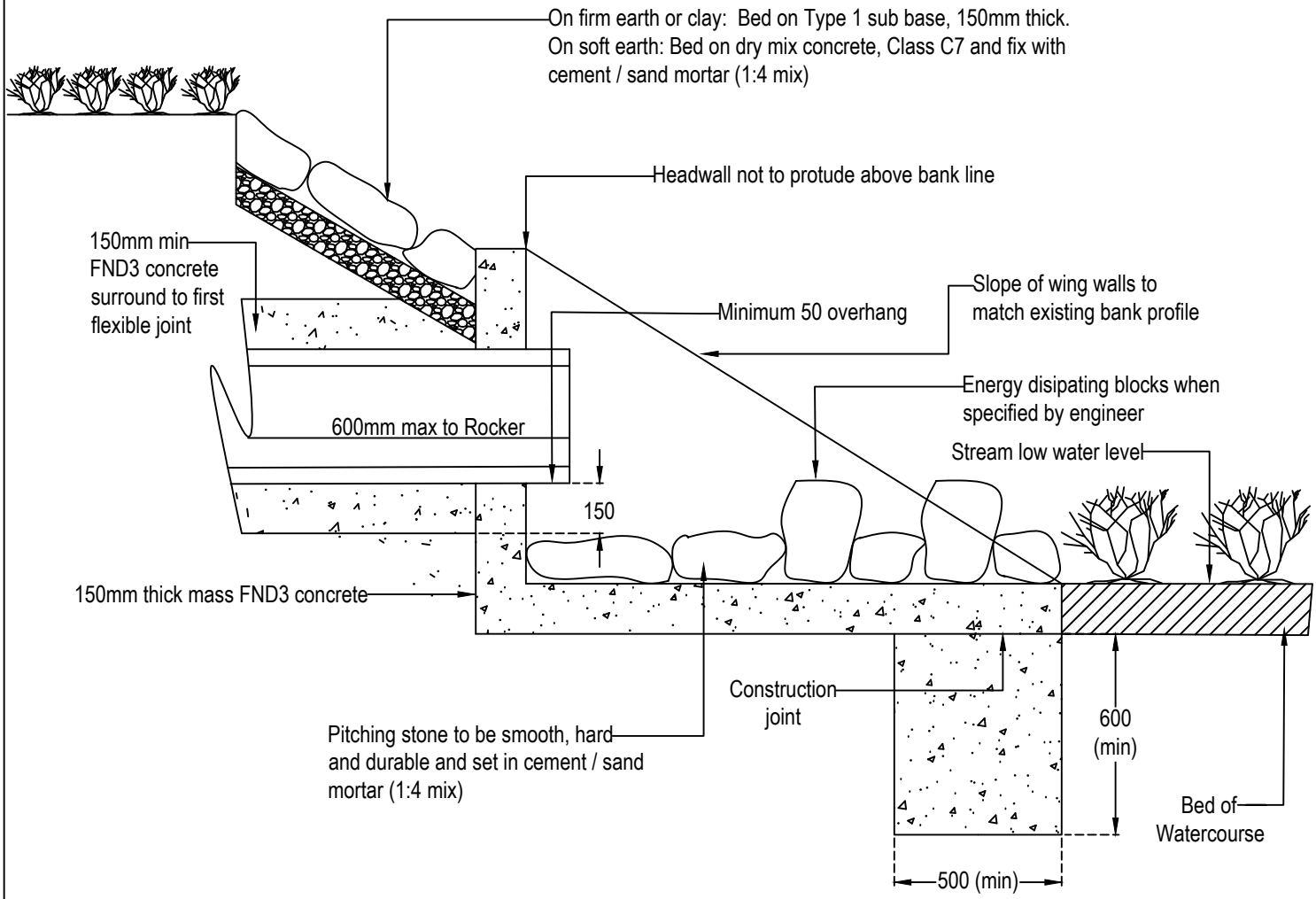
Series 0500: Drainage

Storm Water Outfall - Type 2 For pipes up to max 500mm diameter

Drawing	Revision
SD-0500-012	Ø
Drawn by: PPJ	Scale: 1:20 @A4
Date Drawn: 06/09/2024	

Type 2: - General requirements for outfalls through a bank, for pipes up to max 500mm diameter.

Pitching stone- 150mm nominal diameter.
Where appropriate, re-use should be made of local materials.



NOTES:

1. For pipes of diameter 350 or greater, a lockable, hinged, steel safety grill must be fitted - see SFA 7th Edition for details, figure C.6.
2. All cement used in Precast or insitu concrete to be Sulphate resisting.
3. Insitu concrete to be minimum FND3 concrete, see Appendix 5/1 paragraph 17.
4. Work on or close to a main river will require a Flood Risk Activity Permit from the Environment Agency.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0500: Drainage

Storm Water Outfall - Type 3 For Pipes 200mm to 1750mm diam

Drawing: SD-0500-013
Revision: Ø
Drawn by: PPJ
Scale: 1:20 @A4
Date Drawn: 06/09/2024

Type 3. General requirements for outfalls through a bank, for pipes of 150mm to 1750mm diam. Outfall positioned to discharge at 45° to direction of flow and set back from channel in a small bay.

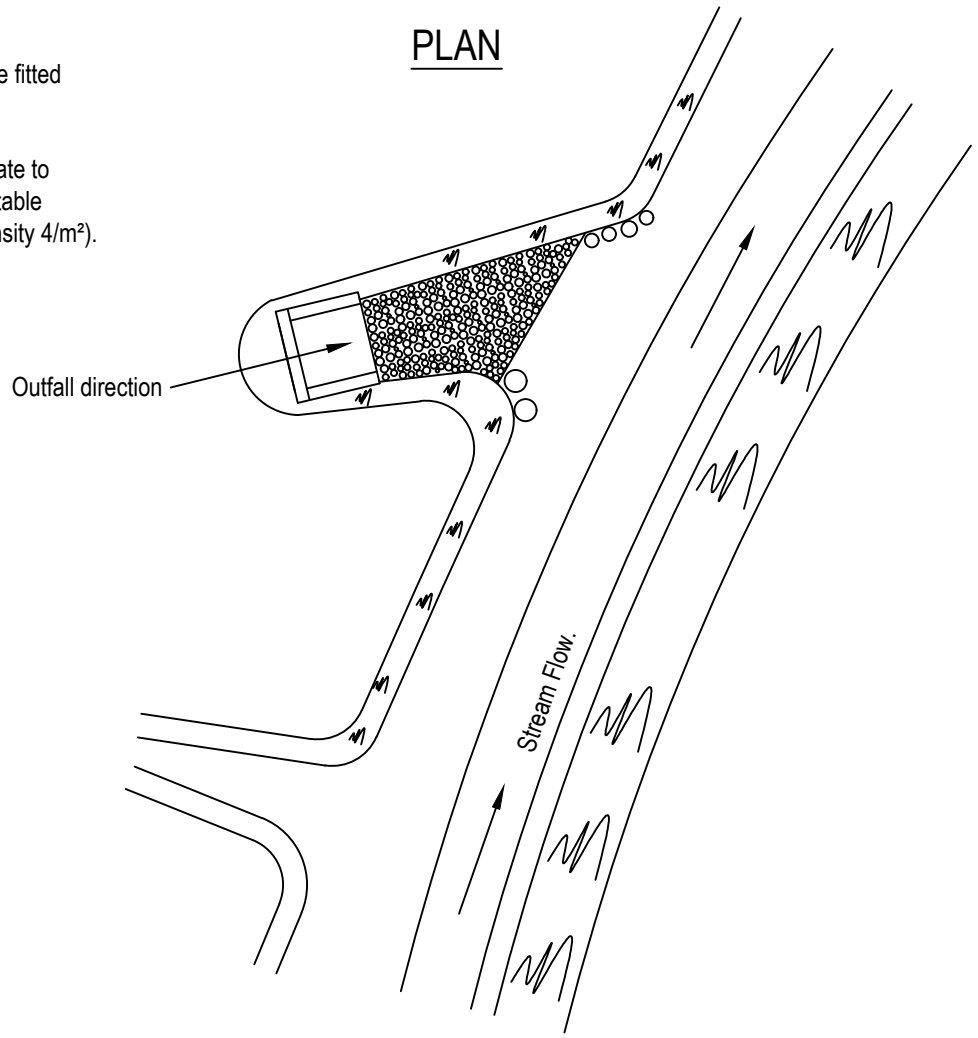
Regrade banks of bay to 1 in 3 or 1 in 4 where possible.

Head and wingwalls to conform with and be flush with bank.

Vertical headwall required if flap valve fitted and for pipes >450mm dia.

At some locations it may be appropriate to plant up in front of the outfall with suitable native species eg reeds (planting density 4/m²).

PLAN



Note:
1. Details to be submitted by applicant for approval prior to construction.
2. Refer to Standard Detail SD-0500-004 for outfall construction detail, for pipe diameter up to 450mm.
3. Work on or close to a main river will require a Flood Risk Activity Permit from the Environment Agency.

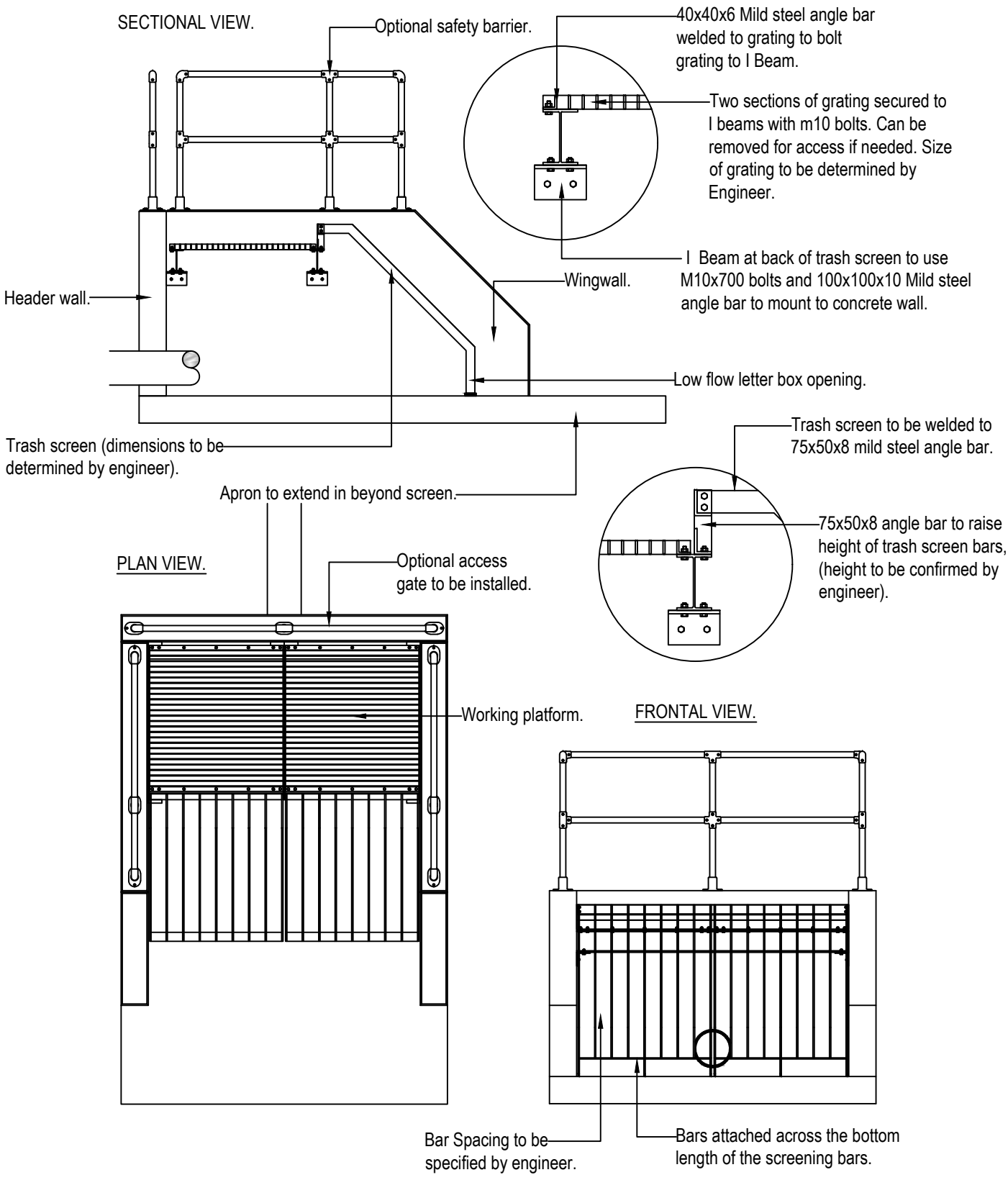
STANDARD DETAILS

Series 0500: Drainage

Typical Trash Screen

Drawing	Revision
SD-0500-014	Ø
Drawn by: PPJ	Scale: 1:40 @A4
Date Drawn: 06/09/2024	

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.



STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0500: Drainage

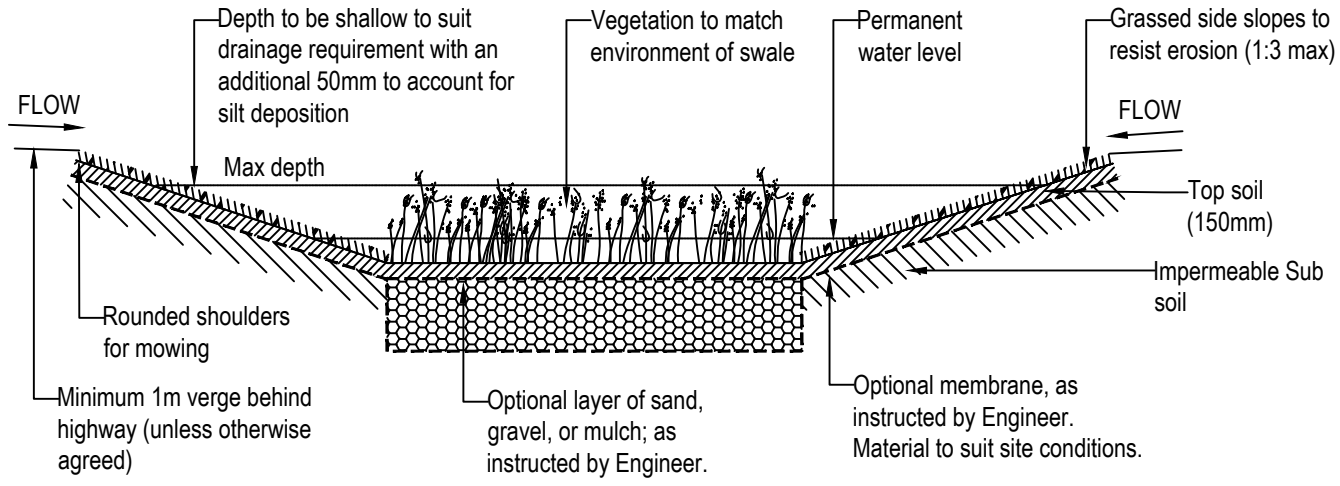
Drainage
Swales

Drawing: SD-0500-015
Revision: Ø

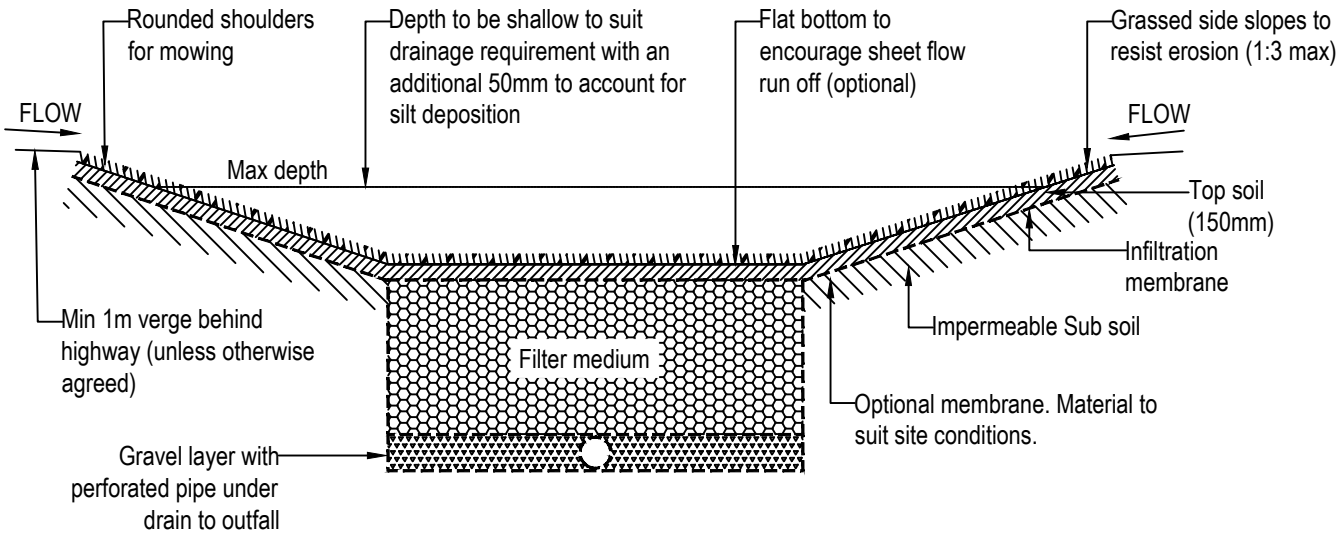
Drawn by: PPJ
Scale: 1:20 @A4

Date Drawn: 06/09/2024

Cross section through a wet swale



Cross section through a dry swale



Note:

1. Pre-treatment is recommended to remove sediment and fine silts prior to infiltration (e.g. filter strips)
2. Small piped outlets to swales shall have a minimum 150mm wide concrete surround laid flush to the ground profile. Refer to BCC standard detail SD-0500-011.
3. For discharge from highway to swale/pond, keep depths minimised. Refer to BCC standard detail SD-0500-016.
4. All existing vegetation to be established quickly by reusing the topsoil without application of weed killer. Alternatively, biodegradable erosion control mats or turfs to be used
5. Correct design and construction levels to manage flow velocity to prevent erosion at edges. They should be set 20-25mm lower than the adjacent drained hard surface. This also maximises inflow into the swale.
6. Maintain a minimum of 2m between vegetation or planting and the outlets (from the swales), provide a lower area immediately prior to the headwall outlet that can be accessed for silt removal.
7. Drawing to be read in conjunction with West of England Sustainable Drainage Developer Guide March 2015 Version1 and Section 2 Bristol Local Sustainable Drainage Design Guide and CIRIA report C753 'The SuDS Manual' Part D Chapter 17.

STANDARD DETAILS

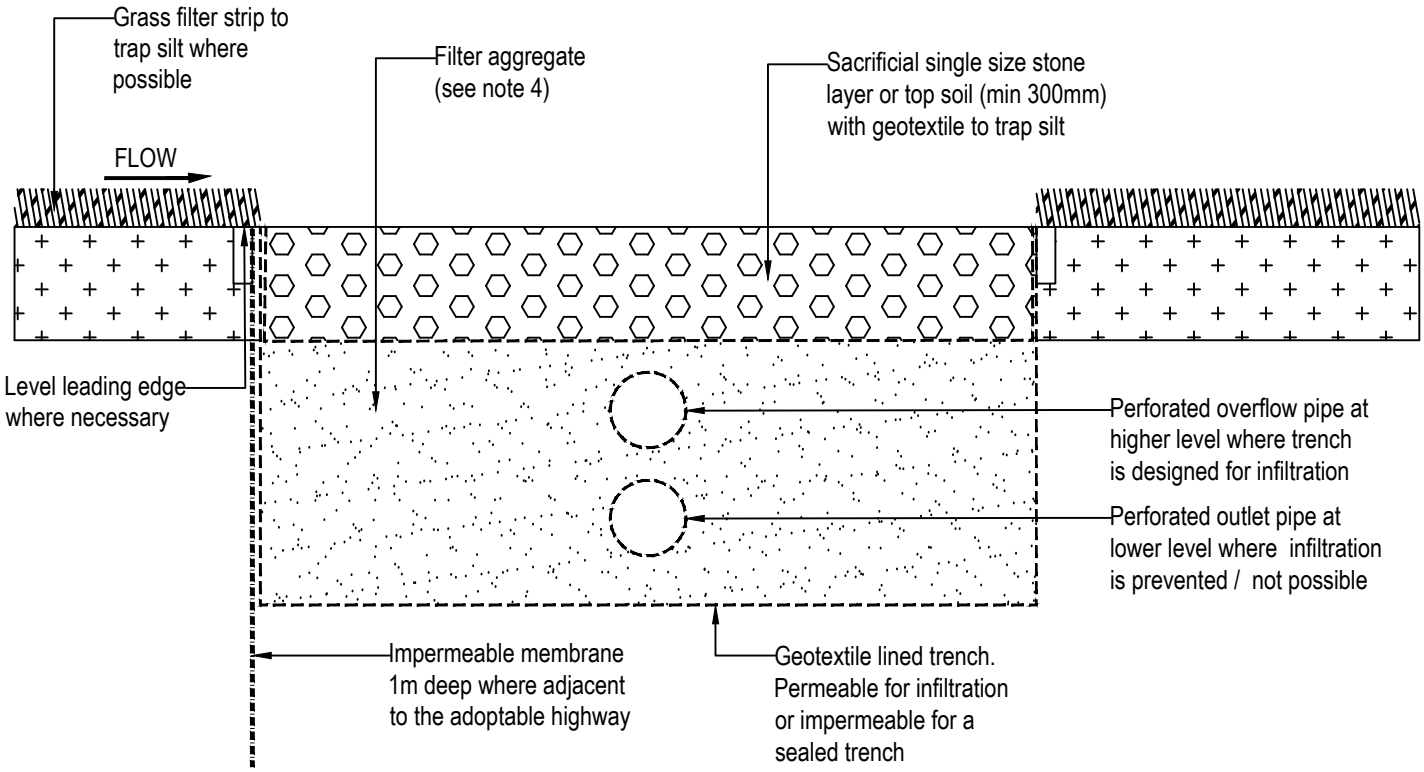
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0500:Drainage

Drainage

Filter Drains

Drawing: SD-0500-016
Revision: Ø
Drawn by: PPJ
Scale: 1:20 @A4
Date Drawn: 06/09/2024



Note:

1. Drawing to be read in conjunction with West of England Sustainable Drainage Developer Guide March 2015 Version 1 and Section 2 Bristol Local Sustainable Drainage Design Guide and CIRIA report C753 'The SuDS Manual' Part D Chapter 16.

2. Gently sloping grass verges (filter strips) a minimum of 1m in width to be incorporated in the design as means of pre-treatment. This is essential to remove silt and pollutants.

3. For industrial areas, upstream treatment must be used before discharge to the filter drains. Refer to the Pollution Prevention Guidelines PPG3.

4. Coarse graded 4/20 aggregate as per BS EN 13242:2002 with a 30% porosity.

5. Filter drains to be used an adequate distance away from any building or septic tank. Refer to Building Regulations Approved Document H.

6. Perforated pipe to be lined with permeable geo-textile material to prevent soil and other matter from entering pipe. Pipe lining should be permeable and trench membrane can be either permeable or impermeable.

7. 1.3m Minimum distance from carriageway if permeable membrane used.

STANDARD DETAILS

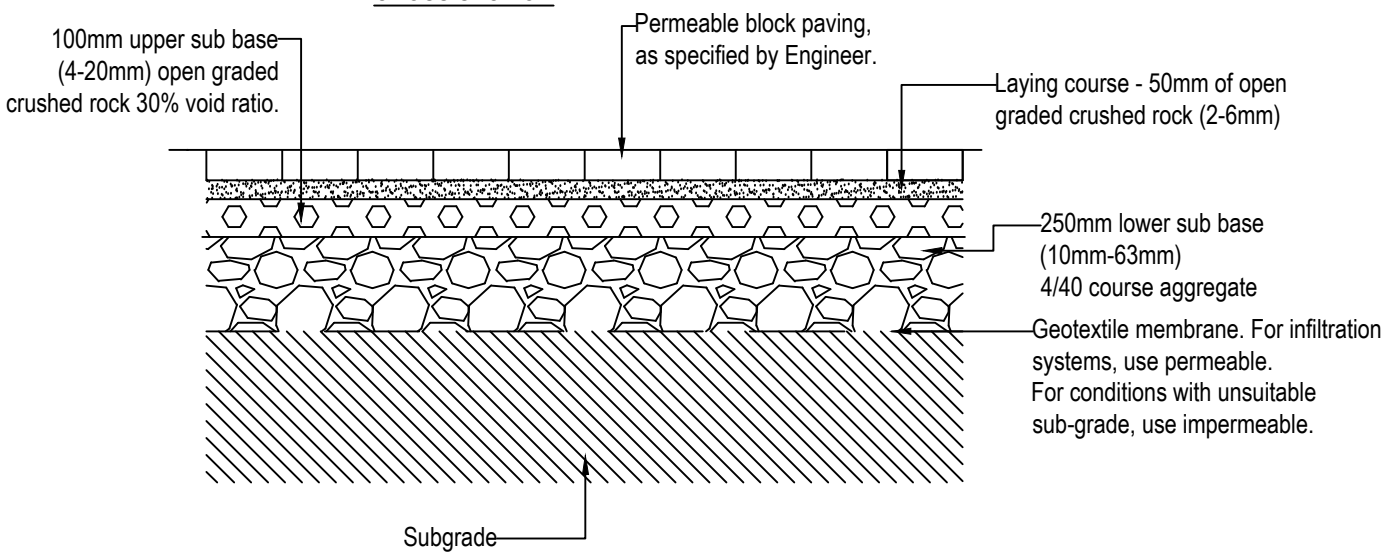
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0500: Drainage

Drainage
Permeable Paving

Drawing	Revision
SD-0500-017	Ø
Drawn by: PPJ	Scale: 1:20 @A4
Date Drawn: 06/09/2024	

CROSS SECTION

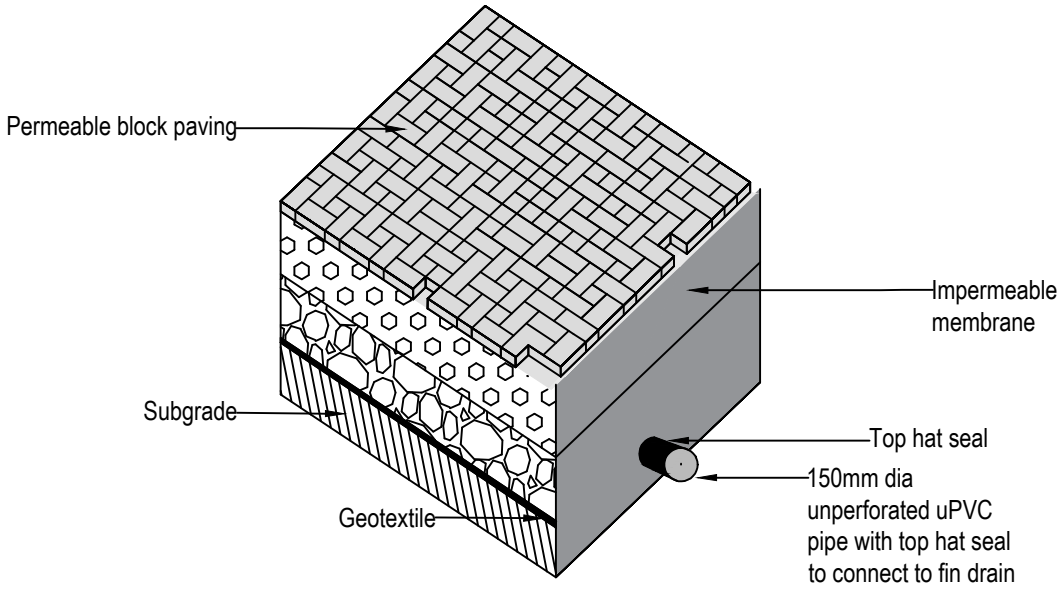


Notes:

1. Infiltration (if ground allows). Non infiltration to piped outlet.

2. Not to be used in adopted highway (only in unadopted parking areas).

OUTLET DETAIL



Open graded crushed roack as per BSEN 13242:2002.

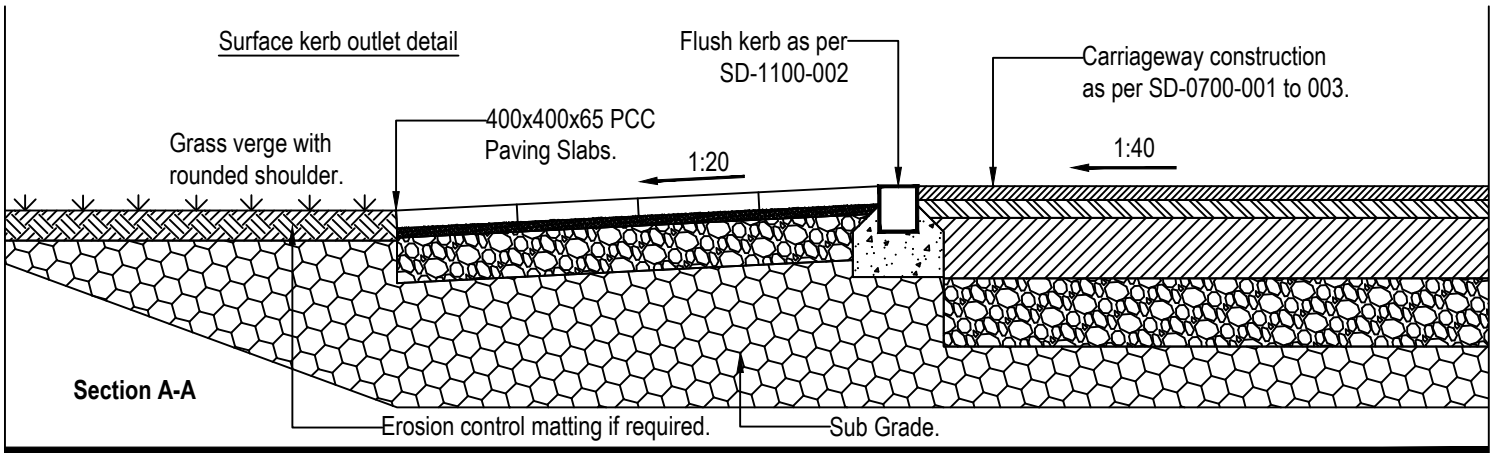
STANDARD DETAILS

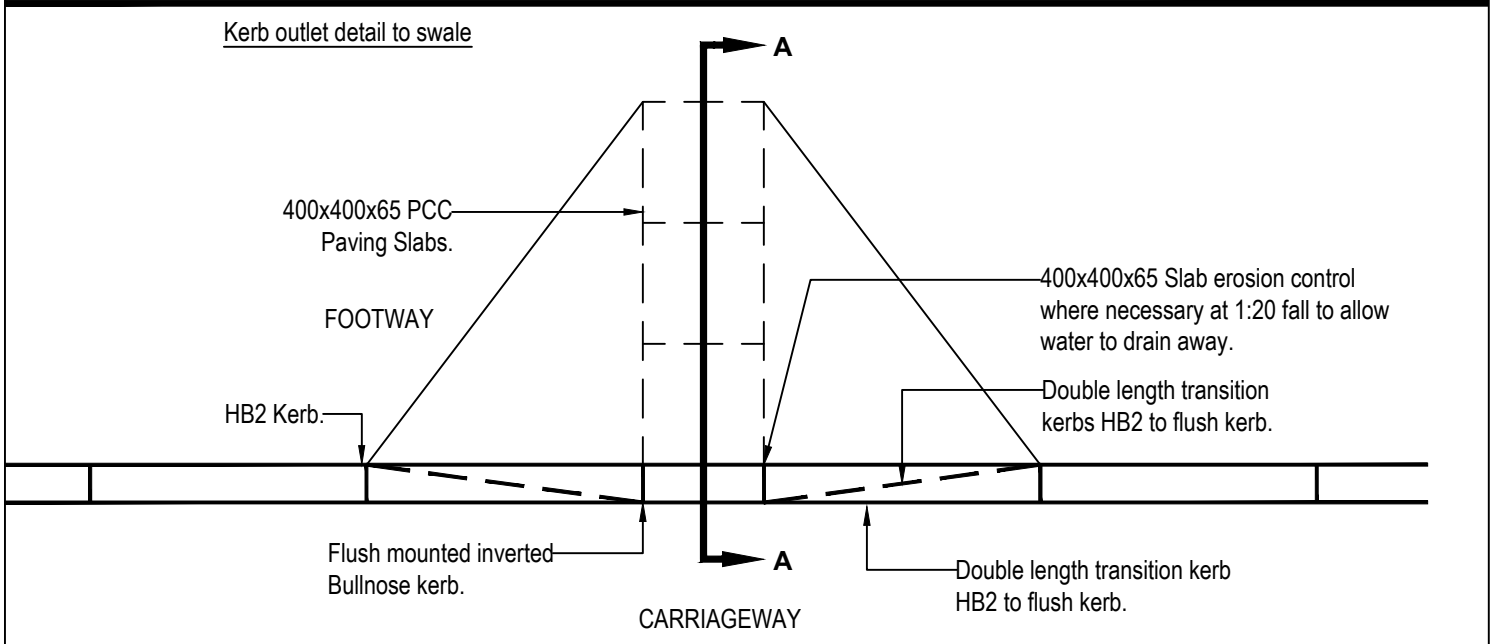
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

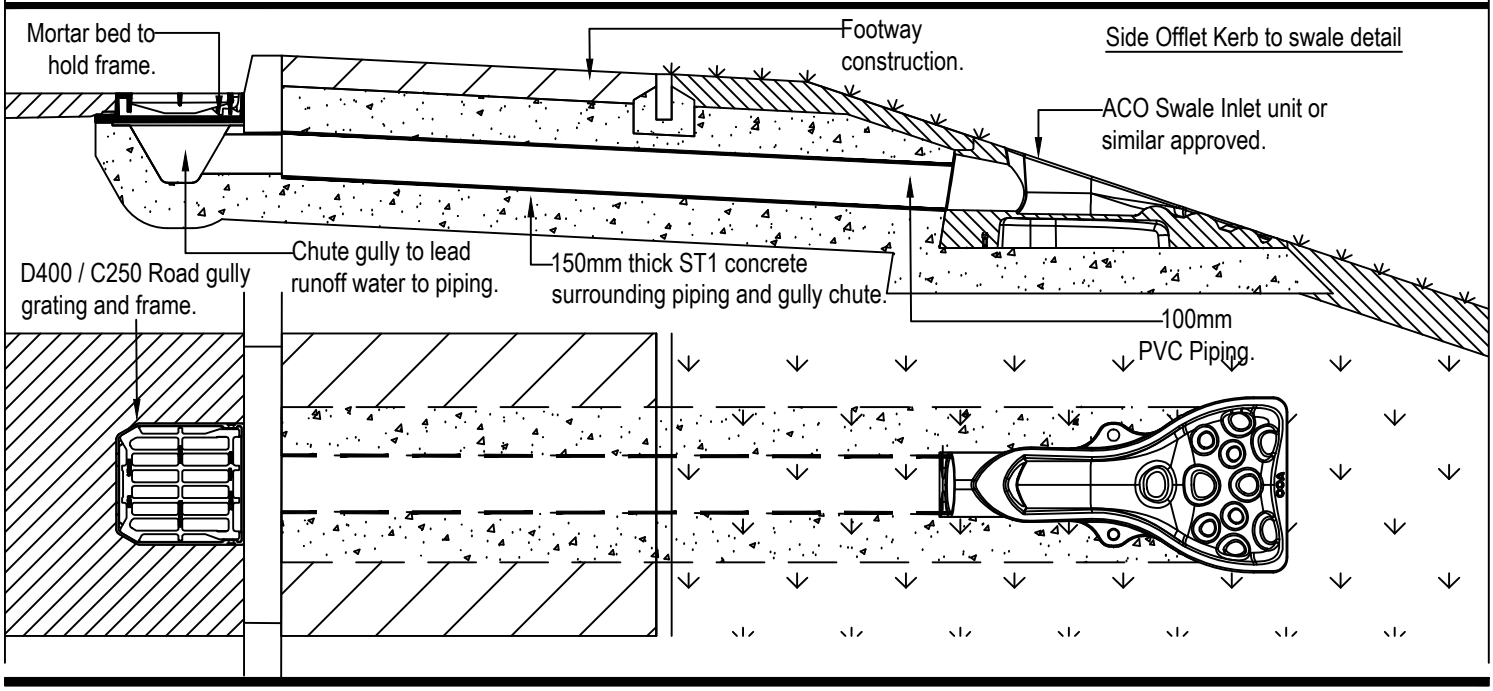
Series 0500: Drainage

Drainage Kerb Outlets To Swales

Drawing	Revision
SD-0500-018	Ø
Drawn by: PPJ	Scale: 1:25 @A4
Date Drawn: 06/09/2024	







STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

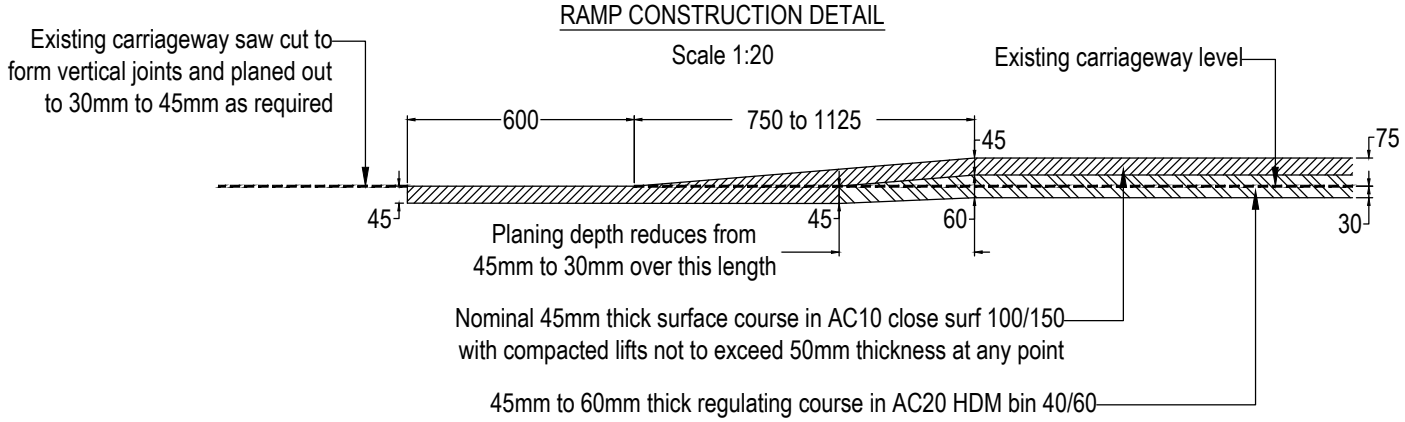
Series 0700: Pavements

Speed Tables & Raised Junctions
Straight Ramps

Drawing	Revision
SD-0700-019	Ø
Drawn by: DJB	Scale: As shown
Date Drawn: 06 Sept 2024	

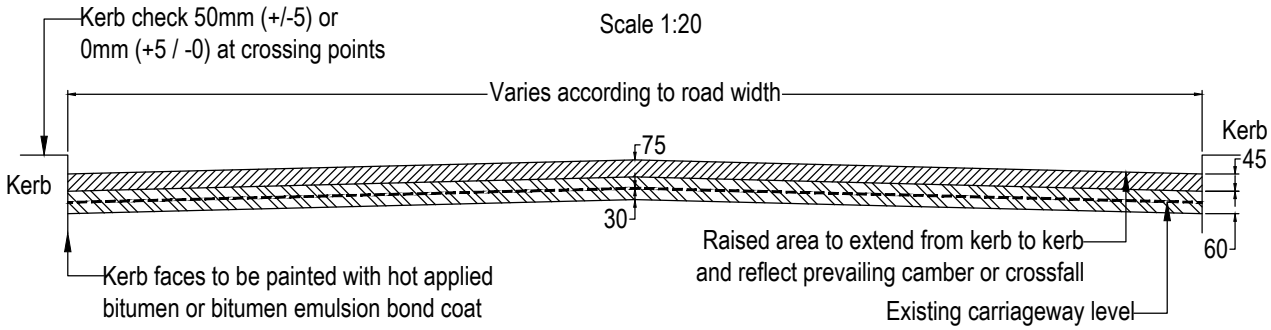
RAMP CONSTRUCTION DETAIL

Scale 1:20



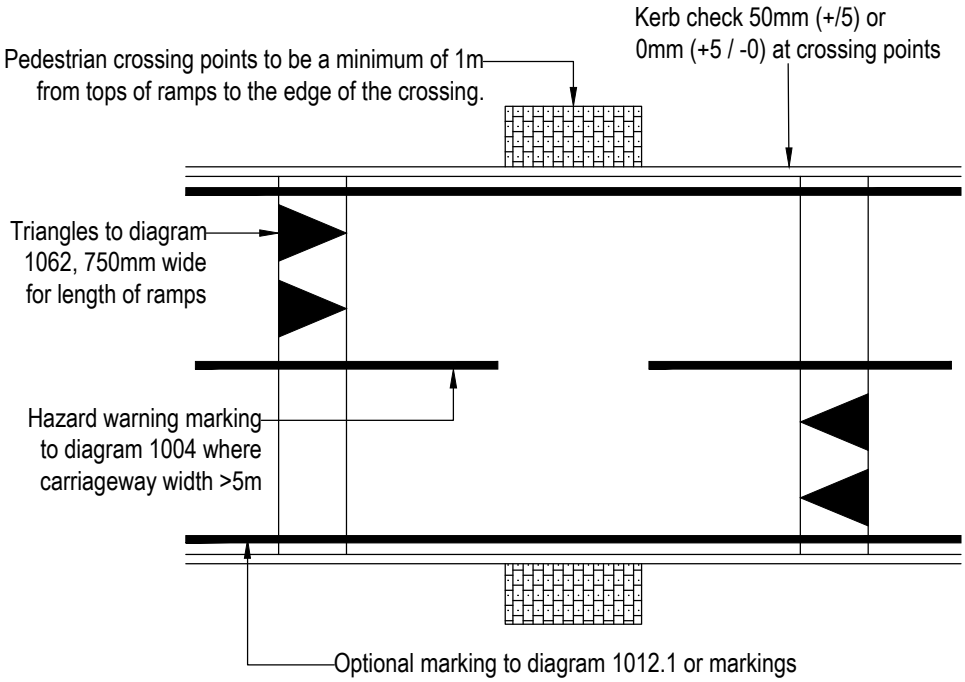
TRANSVERSE SECTION

Scale 1:20



TYPICAL SPEED TABLE PLAN

Scale 1:100



NOTES

1. All joints are to be vertical and painted with hot applied bitumen or bond coat before surfacing. Planed out surfaces to have bond coat applied before surfacing.
2. Where the existing pavement is in poor condition, it should be reconstructed for the length of the raised area plus an additional 2 metres on either side (measured separately).
3. Speed tables shall typically have a plateau of 6 metres. Speed tables on bus routes should have a plateau of 12 metres where possible.
4. Ramps shall have a gradient of between 1:10 and 1:15. For a 75mm high raised area, the ramp lengths and gradients are:
   - 1125mm ramp for 1:15 gradient
   - 900mm ramp for 1:12 gradient
   - 750mm ramp for 1:10 gradient
5. Where present, ironwork to be lifted to suit new levels (measured separately) and have vertical sides painted with hot applied bitumen or bond coat before surfacing.
6. Where re-grading of the footway and relaying of kerblines is required, this is to be completed before construction of the speed table/raised junction.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Speed Tables & Raised Junctions
Sinusoidal Ramps

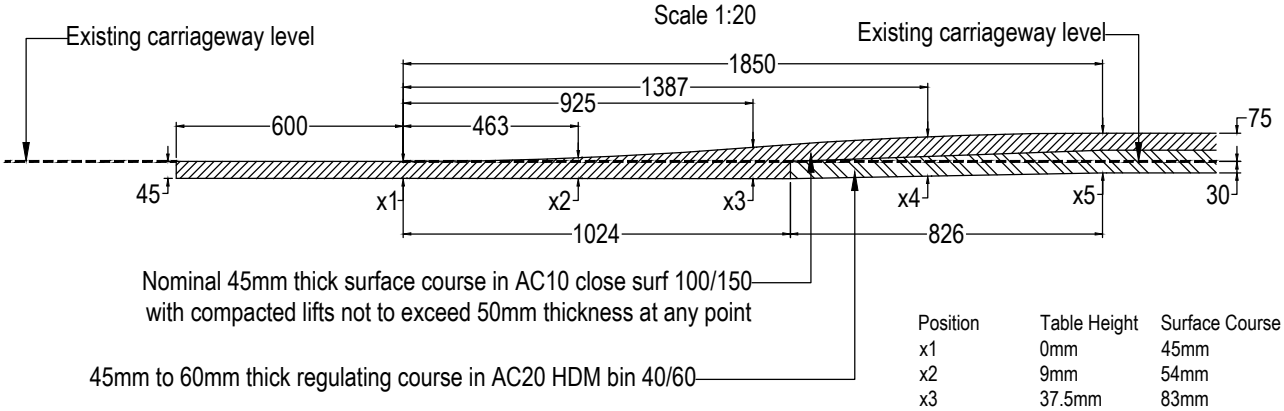
Drawing	Revision
SD-0700-020	Ø

Drawn by	Scale
DJB	As shown

Date Drawn
06 Sept 2024

RAMP CONSTRUCTION DETAIL

Scale 1:20

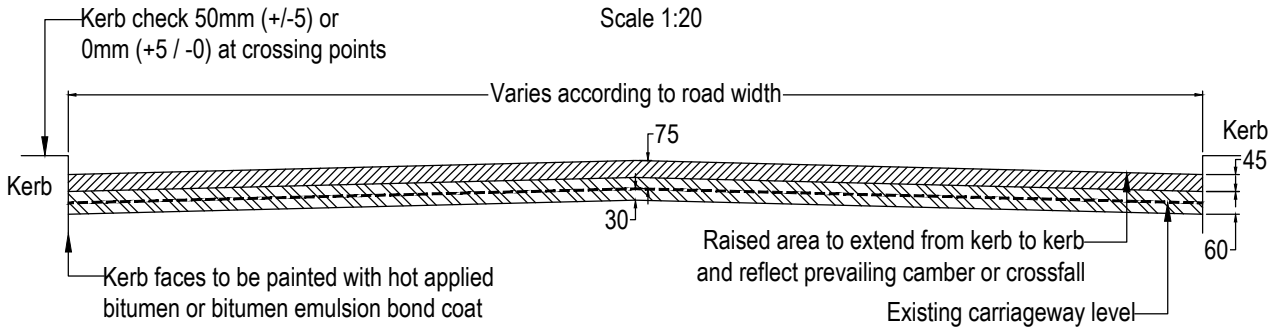


Position	Table Height	Surface Course	Binder Course
x1	0mm	45mm	0mm
x2	9mm	54mm	0mm
x3	37.5mm	83mm	0mm
x4	60mm	52mm	52mm
x5	75mm	45mm	60mm

Ramp radii: 11.438m

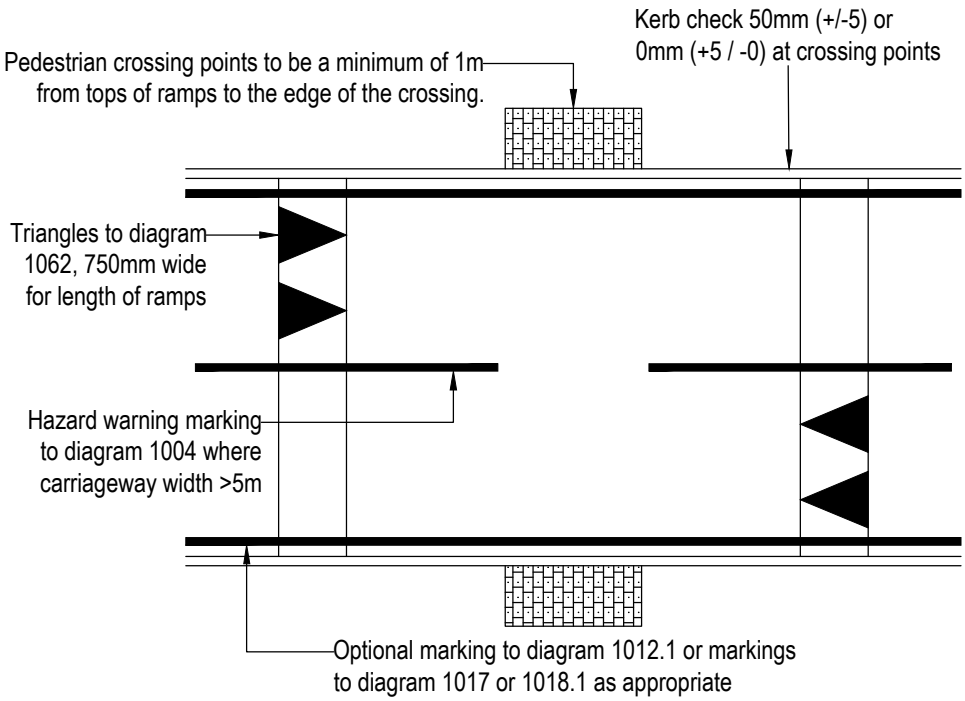
TRANSVERSE SECTION

Scale 1:20



TYPICAL SPEED TABLE PLAN

Scale 1:100



NOTES

1. All joints are to be vertical and painted with hot applied bitumen or bond coat before surfacing. Planed out surfaces to have bond coat applied before surfacing.
2. Where the existing pavement is in poor condition, it should be reconstructed for the length of the raised area plus an additional 2 metres on either side (measured separately).
3. Speed tables shall typically have a plateau of 6 metres. Speed tables on bus routes should have a plateau of 12 metres where possible.
4. Where present, ironwork to be lifted to suit new levels (measured separately) and have vertical sides painted with hot applied bitumen or bond coat before surfacing.
5. Where re-grading of the footway and relaying of kerblines is required, this is to be completed before construction of the speed table/raised junction.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

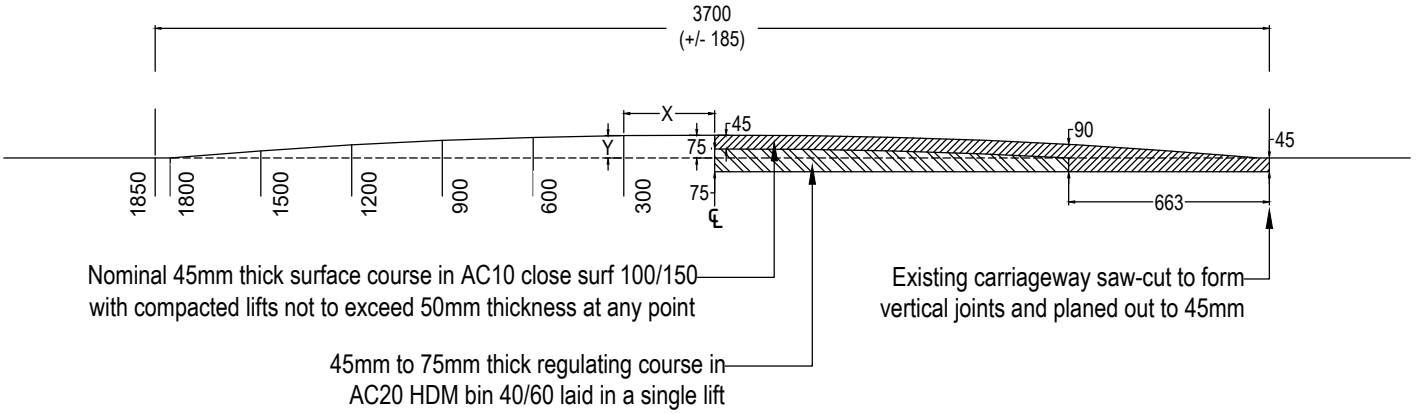
Series 0700: Pavements

Road Humps
Typical Plan
& Construction Details

Drawing	Revision
SD-0700-021	Ø
Drawn by: DJB	Scale: As shown
Date Drawn: 06 Sept 2024	

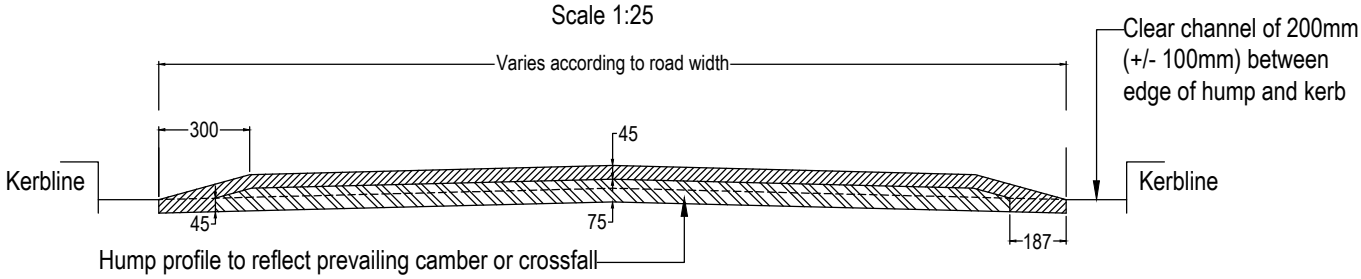
LONG SECTION

Scale 1:25



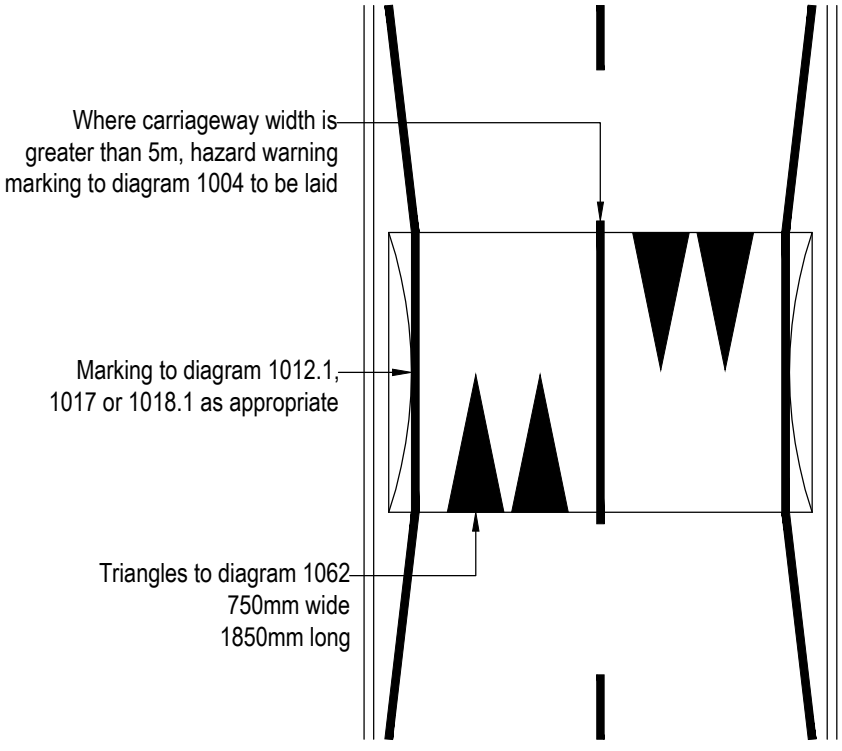
TRANSVERSE SECTION

Scale 1:25



TYPICAL PLAN

Scale 1:100



NOTES

1. Humps may be constructed with in-situ concrete where instructed or agreed with Bristol City Council.
2. All joints are to be vertical and painted with hot-applied bitumen or bond coat. Planed out surfaces to be spray coated with bond coat before surfacing.
3. Where the existing pavement is in poor condition, it should be reconstructed for the length of the hump plus an additional 2 metres on either side (measured separately).

Speed Hump
Target Heights

X (+/- 10%)	Y
0	75
300	73
600	67
900	57
1200	43
1500	26
1800	1
1850	0

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

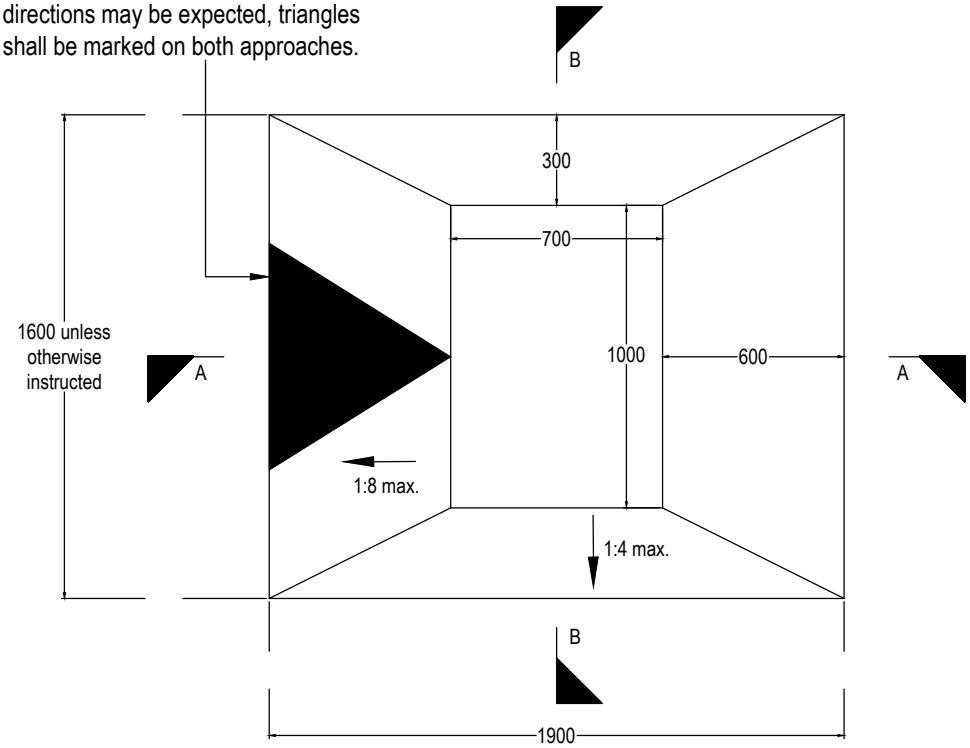
Series 0700: Pavements

Speed Cushions
Reinforced Pre-Cast Concrete

Drawing	Revision
SD-0700-022	Ø
Drawn by: DJB	Scale: 1:25 @ A4
Date Drawn: 06 Sept 2024	

PLAN

Triangle to diagram 1062, 750mm wide on approach ramp. Where vehicles from both directions may be expected, triangles shall be marked on both approaches.



NOTES

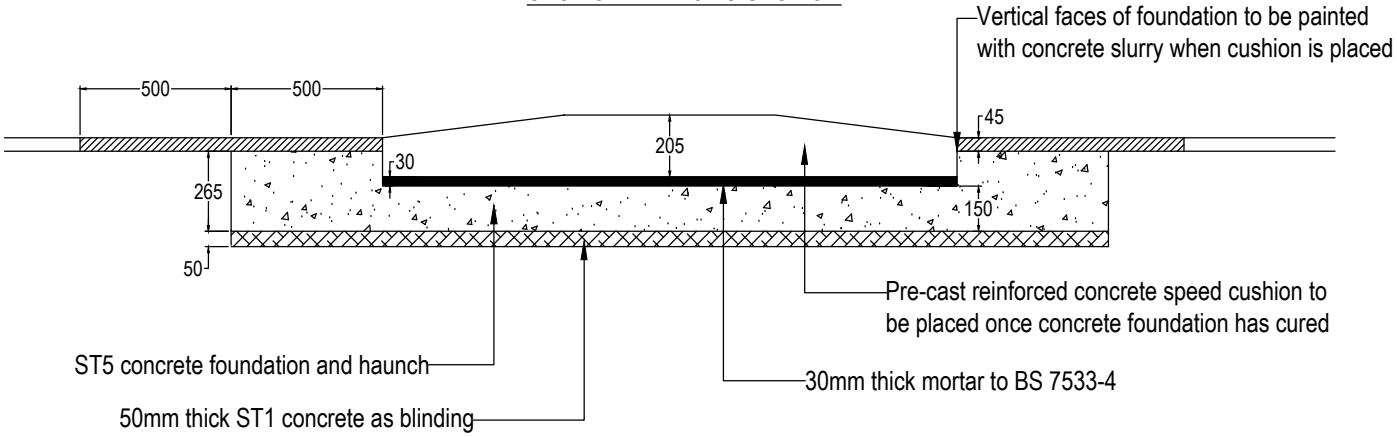
1. Reference should be made to the project-specific drawings for setting out information, but speed cushions shall typically have 1000mm clearance between kerbs and the cushion edge. Where three cushions are used, clearance between cushions shall typically be 750mm.

2. For carriageway reinstatement, all horizontal and vertical surfaces shall have bond coat applied before laying.

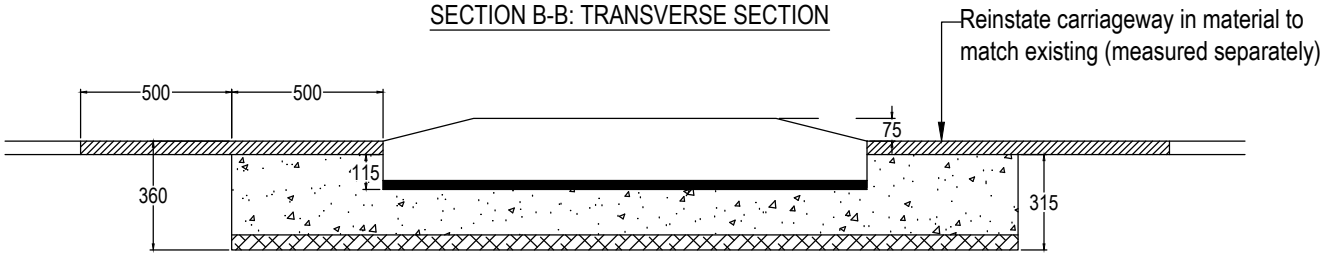
3. Where the existing pavement is in poor condition, it should be reconstructed across the full carriageway width for the length of the speed cushions plus 2 metres on either side (measured separately).

4. For the duration of the curing of the foundation, signs to Diagram 7004 shall be erected at each location with the legend: "Concrete setting" with an x-height of 100mm.

SECTION A-A: LONG SECTION



SECTION B-B: TRANSVERSE SECTION



STANDARD DETAILS

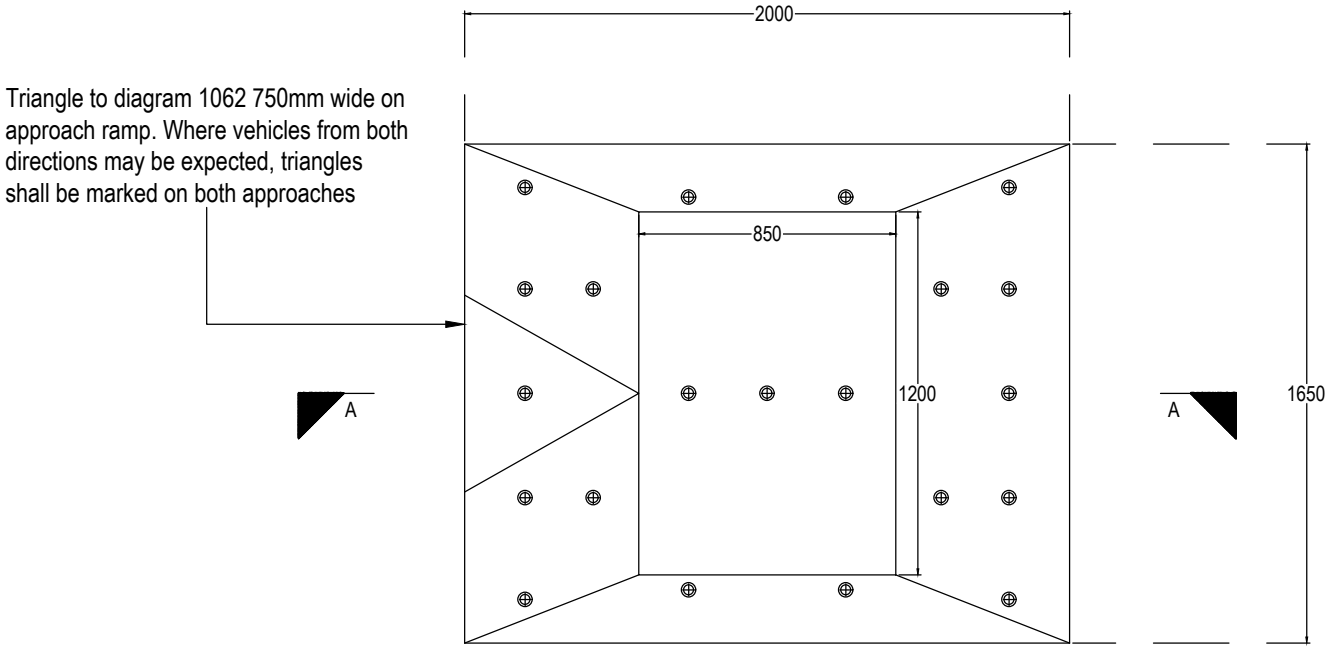
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Speed Cushions
One-Piece Rubber

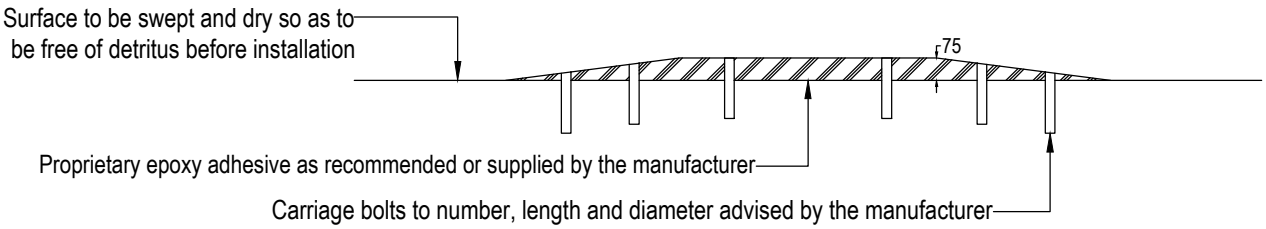
Drawing	Revision
SD-0700-023	Ø
Drawn by: DJB	Scale: 1:25 @ A4
Date Drawn: 06 Sept 2024	

PLAN



Bolt holes shown indicatively only, exact arrangement may vary according to manufacturer

SECTION A-A: LONG SECTION



NOTES

1. Speed cushion to be made of recycled rubber and formed of a single piece, multi-part systems shall not be used. Units must be installed according to manufacturer's instructions and using the recommended fixing kits, bolts and adhesives.

2. Reference should be made to the project-specific drawings for setting out information, but speed cushions shall typically have 1000mm clearance between kerbs and the cushion edge. Where three cushions are used, clearance between cushions shall typically be 750mm.

3. Installation shall be undertaken in dry weather where the ambient air temperature is above 2°C.

4. Where the existing pavement is in poor condition, it should be reconstructed across the full carriageway width for the length of the speed cushions plus 2 metres on either side (measured separately). A minimum of one week between laying of the surface course and installation of the cushions is required to allow for full curing and consolidation of bituminous materials.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

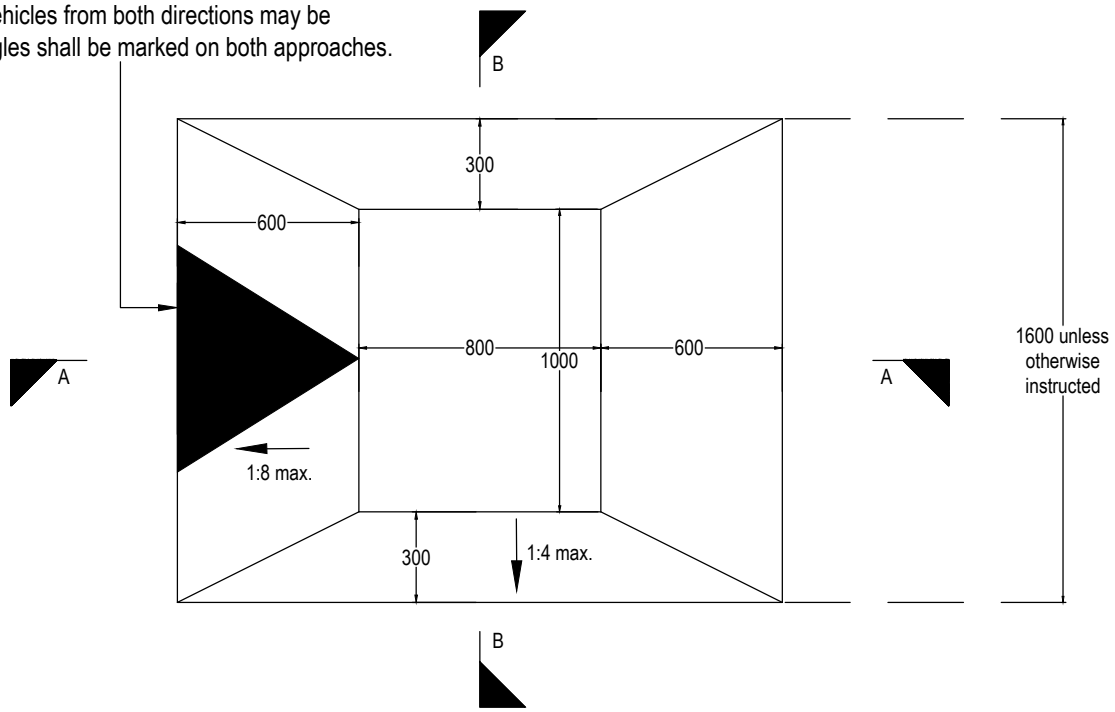
Series 0700: Pavements

Speed Cushions Flexible

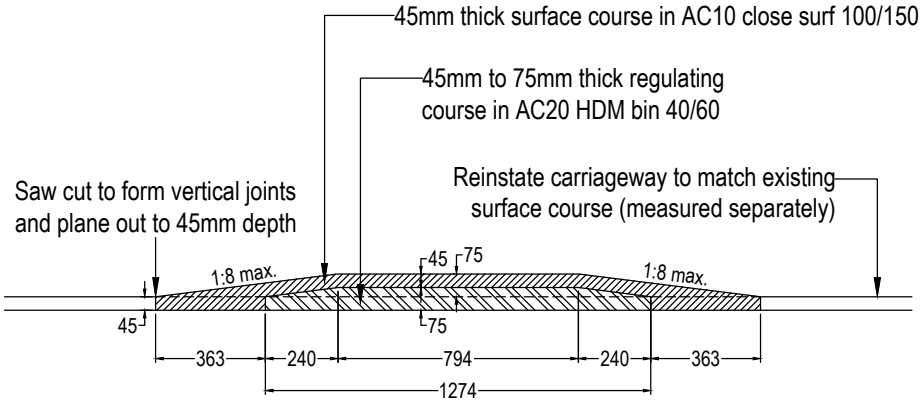
Drawing: SD-0700-024
Revision: Ø
Drawn by: DJB
Scale: 1:25 @ A4
Date Drawn: 06 Sept 2024

PLAN

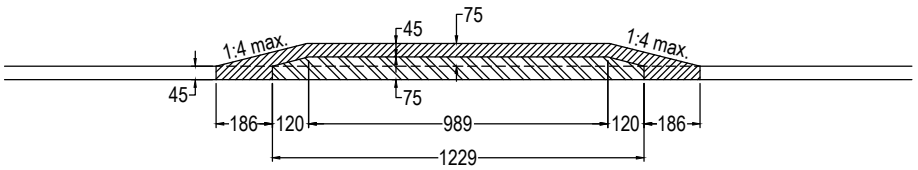
Triangle to diagram 1062, 750mm wide on approach ramp. Where vehicles from both directions may be expected, triangles shall be marked on both approaches.



SECTION A-A: LONG SECTION



SECTION B-B: TRANSVERSE SECTION



NOTES

1. Reference should be made to the project-specific drawings for setting out information, but speed cushions shall typically have 1000mm clearance between kerbs and the cushion edge. Where three cushions are used, clearance between cushions shall typically be 750mm.

2. All joints shall be vertical and painted with hot-applied bitumen or bond coat before laying of asphalt concrete.

3. All planed out surfaces are to be spray coated with bond coat before laying of asphalt concrete.

4. Where the existing pavement is in poor condition, it should be reconstructed across the full carriageway width for the length of the speed cushions plus 2 metres on either side (measured separately).

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

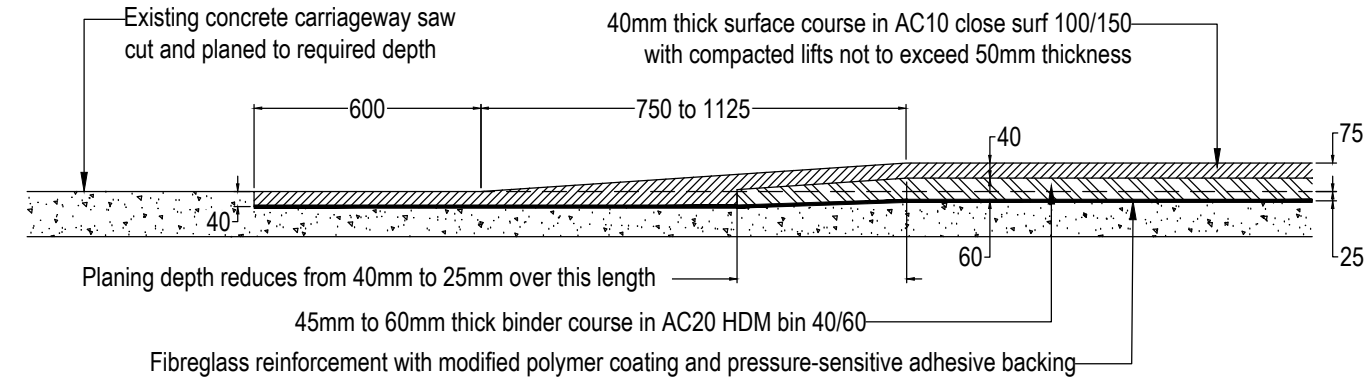
Series 0700: Pavements

Speed Tables & Raised Junctions
Concrete Roads
Overlay Method

Drawing	Revision
SD-0700-025	Ø
Drawn by: DJB	Scale: As shown
Date Drawn: 06 Sept 2024	

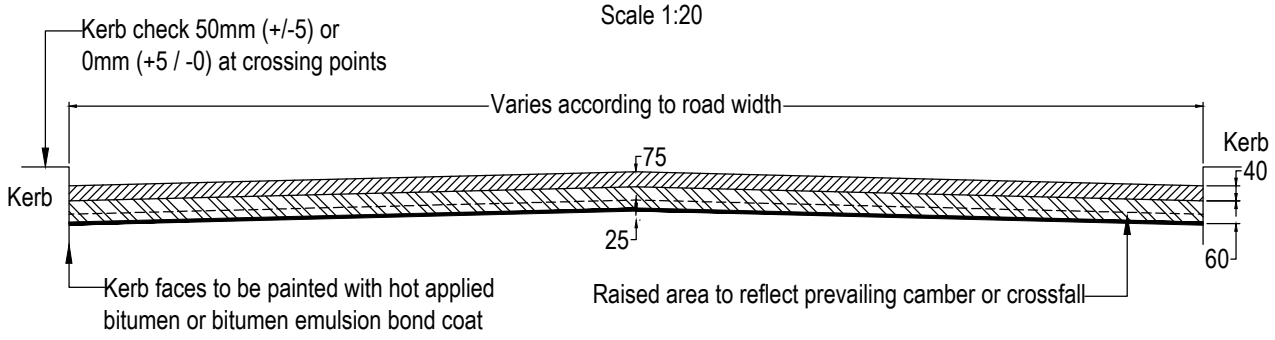
RAMP CONSTRUCTION DETAIL

Scale 1:20



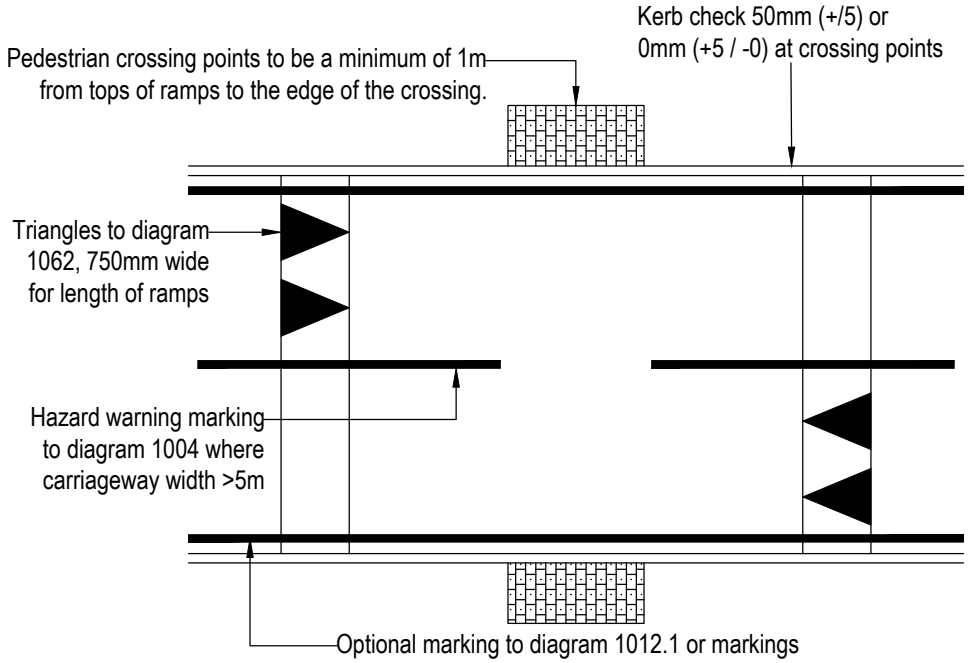
TRANSVERSE SECTION

Scale 1:20



TYPICAL SPEED TABLE PLAN

Scale 1:100



NOTES

1. All joints are to be vertical and painted with hot applied bitumen or bond coat before surfacing. Planed out surfaces to have bond coat applied before surfacing.
2. Speed tables shall typically have a plateau of 6 metres. Speed tables on bus routes should have a plateau of 12 metres where possible.
3. Ramps shall have a gradient of between 1:10 and 1:15. For a 75mm high raised area, the ramp lengths and gradients are:
   - 1125mm ramp for 1:15 gradient
   - 900mm ramp for 1:12 gradient
   - 750mm ramp for 1:10 gradient
4. Where present, ironwork to be lifted to suit new levels (measured separately) and have vertical sides painted with hot applied bitumen or bond coat before surfacing.
5. Where re-grading of the footway and relaying of kerblines is required, this is to be completed before construction of the speed table/raised junction.

STANDARD DETAILS

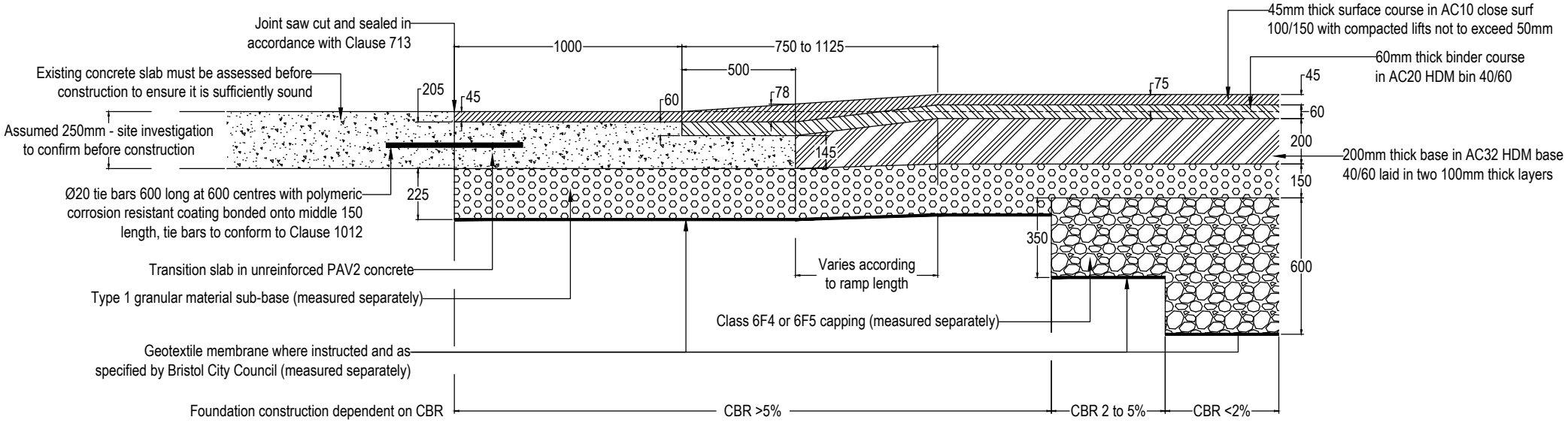
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

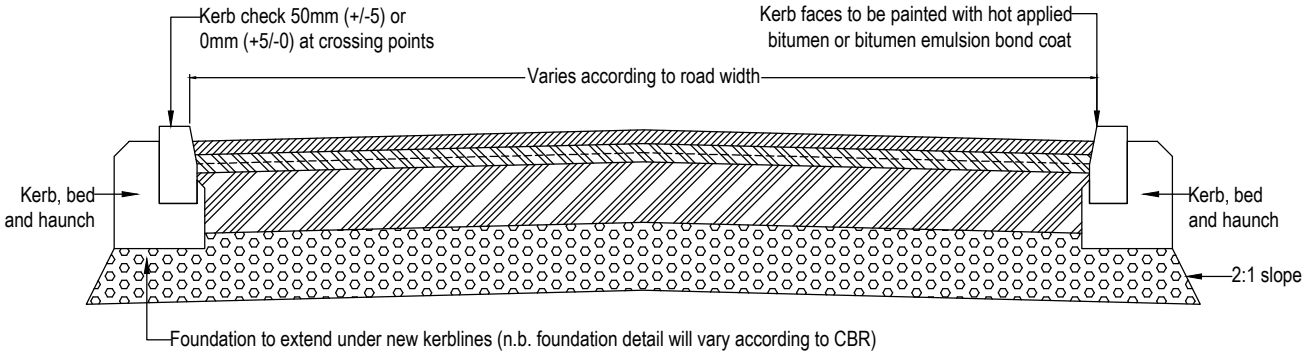
Speed Tables & Raised Junctions
Concrete Roads
Reconstruction Method

Drawing: SD-0700-026
Revision: Ø
Drawn by: DJB
Scale: 1:25 @ A4
Date Drawn: 06 Sept 2024

RAMP CONSTRUCTION DETAIL



TRANSVERSE SECTION



NOTES

1. For typical layout plan and notes, refer to standard detail drawing SD-0700-019.
2. Existing concrete bays shall not be removed in part but only in complete sections. Where alterations to bay dimensions are required to accommodate the new road layout, these must be designed and constructed as new bays.
3. All joints are to be vertical and painted with hot applied bitumen or bond coat before surfacing. Horizontal surfaces to have bond coat applied before surfacing.
4. Ramps shall have a gradient of between 1:10 and 1:15. For a 75mm high raised area, the ramp lengths and gradients are:
   - 1125mm ramp for 1:15 gradient
   - 900mm ramp for 1:12 gradient
   - 750mm ramp for 1:10 gradient
5. Where present, ironwork to be lifted to suit new levels (measured separately) and have vertical sides painted with hot applied bitumen or bond coat before surfacing.

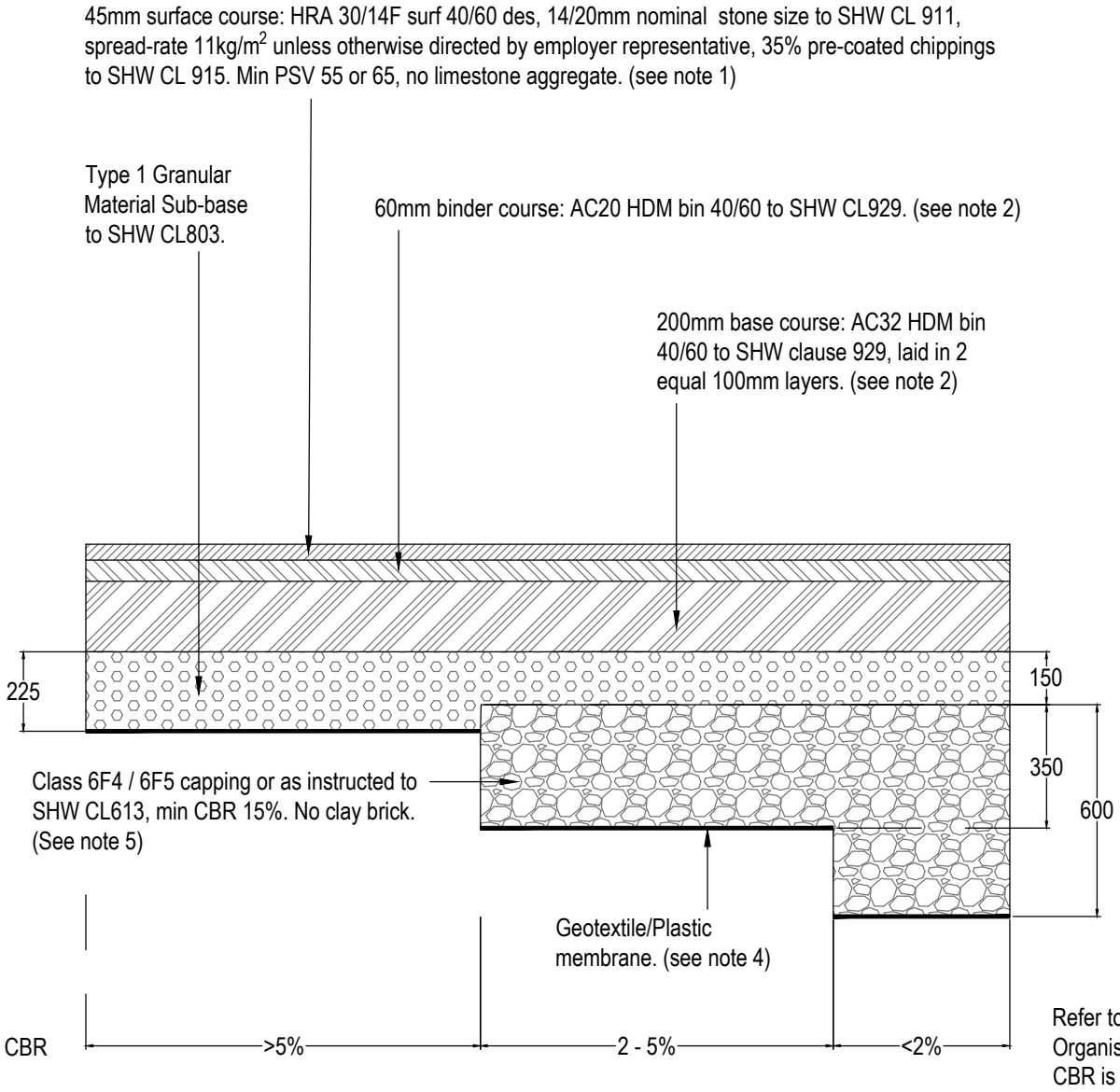
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Major Road Construction (Flexible)

Drawing	Revision
SD-0700-001	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	



Notes:

1. Minimum PSV 55 for non-event carriageways and minimum PSV 65 in higher risk areas; refer to Schedule 2C of Appendix 7/1. Thin surface course systems to Clause 942 and Appendix 7/1 may be specified by the Overseeing Organisation.
2. In locations of heavy vehicle loading or at high risk of tracking, binder shall upon instruction be 70mm thick AC 10 EME2 bin 15/25 des. The binder may be varied to either HRA 60/32 bin 40/60 or HRA 50/14 bin 40/60 at the instruction of the Overseeing Organisation, typically on bridge decks. Where appropriate, the base layer should have a thickness designed in accordance with the DMRB in place of the standard thickness.
3. All bituminous materials must be machine laid in accordance with BS594987 unless otherwise agreed by Employers' Representative / Overseeing Organisation .
4. Geotextile/Plastic membrane as per site conditions and requirements, as instructed Employers' Representative/Overseeing Organisation.
5. Where in-situ subgrade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPa) it must be improved as described in DMRB CD225 clause 2.7 and notes 1 & 2.
6. Laying drawing detailing joint locations is required to be submitted to the Employers' Representative/Overseeing Organisation

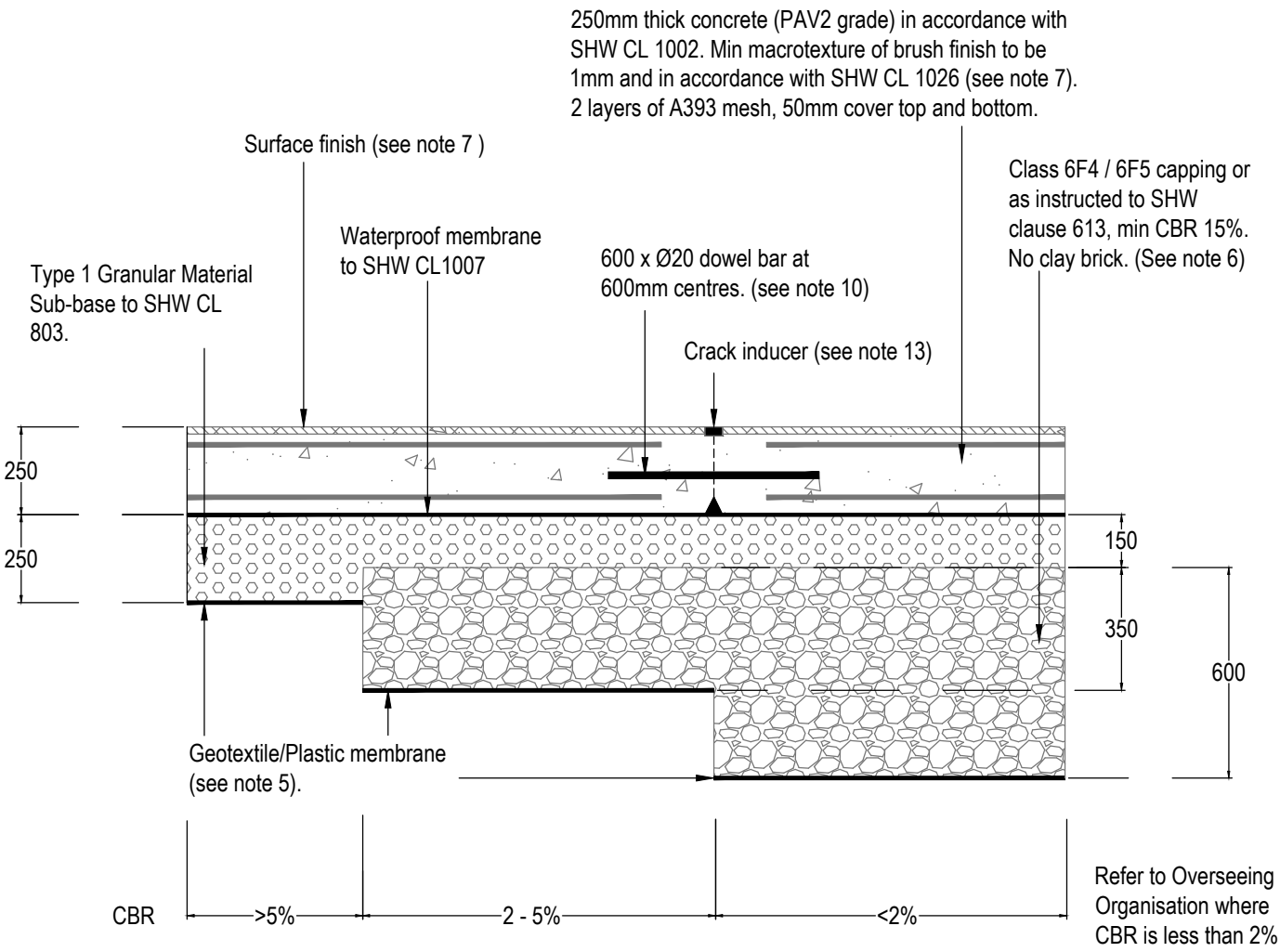
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Major Road Construction (Rigid)

Drawing	Revision
SD-0700-002	Ø
Drawn by: AR	Scale: 1:20 @A4
Date Drawn: 06 Sept 2024	



Notes:

1. Concrete testing and control in accordance with SHW CL 1059. General Requirements for laying conditions in accordance with SHW CL 1054.
2. Contraction joint required at 8m c/c and at edges. Joints to be formed with crack inducer at bottom. Top slot saw cut 25 x 25mm and sealed. Expansion joints not usually required, check with Employees Representative / Overseeing Organisation. Construction joints to be formed between slabs.
3. Concrete must cure for minimum of 7 days with protection as per CL 1027 Volume 1 Series 1000 SHW and strength result to be submitted prior to any trafficking.
4. Normal gradient range 1:120 to 1:14 (0.833% to 7%). Refer to Package specific documents.
5. Geotextile/Plastic membrane as per site conditions and requirements, as instructed Employers' Representative/Overseeing Organisation.
6. Where in-situ sub-grade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPA) it must be improved s described in accordance with SHW CL 1001.
7. Surface to be given brushed finish; with trowelled edges to channel lines, in accordance with SHW CL 1026.
8. Isolation slabs to be formed as per CL 1016 Volume 1 Series 1000 SHW.
9. Bituminous sealant to be as per CL 1016, Volume 1 Series 1000 SHW.
10. Dowel bars to CL 1011, Volume 1 Series 1000 SHW. Dowel Bars shall be in covered by flexible polymeric corrosion resistant coating as per CL 1011, Volume 1 Series 1000 SHW.
11. Laps in longitudinal bars shall be in accordance with SHW CL1008, not less than 35 bar diameters or 450mm in length; whichever is greater.
12. Sub-base SHW clause 803 Type 1 to be of consistent nature to avoid racking of rigid construction paving.
13. Crack inducer as instructed by Employers' Representative / Overseeing Organisation. Installed as per manufacturers' instructions.

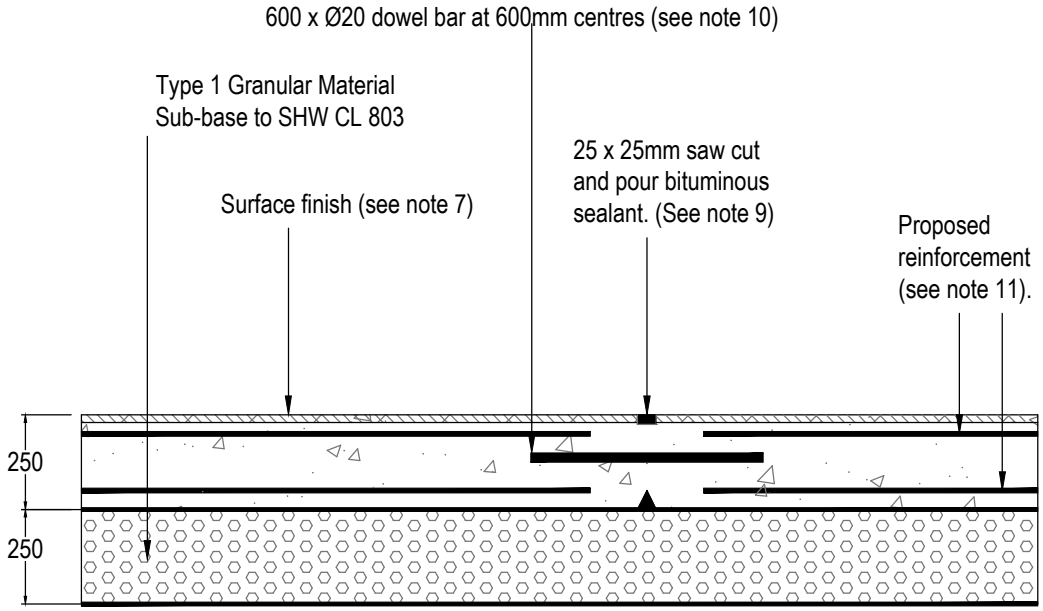
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Major Road Construction (Rigid Joint Detail)

Drawing	Revision
SD-0700-003	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	



Notes:

1. Concrete testing and control in accordance with SHW CL 1059. General Requirements for laying conditions in accordance with SHW CL 1054.
2. Contraction joint required at 8m c/c and at edges. Joints to be formed with crack inducer at bottom. Top slot saw cut 25 x 25mm and sealed. Expansion joints not usually required, check with Employees Representative / Overseeing Organisation. Construction joints to be formed between slabs.
3. Concrete must cure for minimum of 7 days with protection as per CL 1027 Volume 1 Series 1000 SHW and strength result to be submitted prior to any trafficking.
4. Normal gradient range 1:120 to 1:14 (0.833% to 7%). Refer to Package specific documents.
5. Geotextile membrane used as instructed / designed by Employees Representative / Overseeing Organisation
6. Where in-situ sub-grade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPA) it must be improved as described in accordance with SHW CL 1001.
7. Surface to be given brushed finish; with trowelled edges to channel lines, in accordance with SHW CL 1026.
8. Isolation slabs to be formed as per CL 1016 Volume 1 Series 1000 SHW.
9. Bituminous sealant to be as per CL 1016, Volume 1 Series 1000 SHW.
10. Dowel bars to CL 1011, Volume 1 Series 1000 SHW. Dowel Bars shall be in covered by flexible polymeric corrosion resistant coating as per CL 1011, Volume 1 Series 1000 SHW.
11. Laps in longitudinal bars shall be in accordance with SHW CL1008, not less than 35 bar diameters or 450mm in length; whichever is greater.
12. Sub-base SHW clause 803 Type 1 to be of consistent nature to avoid racking of rigid construction paving.
13. Crack inducer as instructed by Employees Representative / Overseeing Organisation. Installed as per manufacturers' instructions.

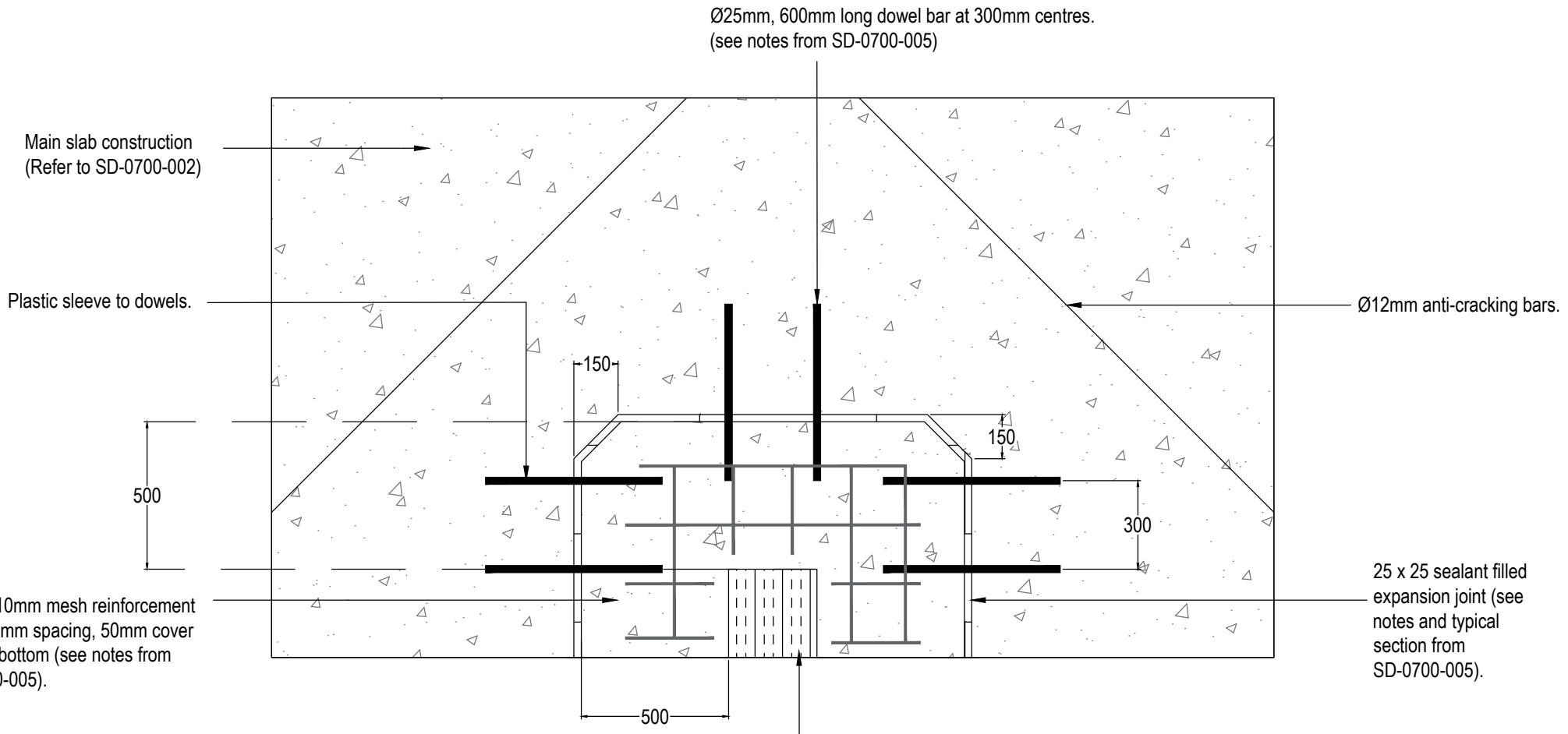
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Major Road Construction Isolation Slab Plan

Drawing	Revision
SD-0700-004	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	



Notes:

1. Edge of concrete slab to be laid flush with existing surface(s).
2. Drawing to be read / used in conjunction with SD-0700-005

STANDARD DETAILS

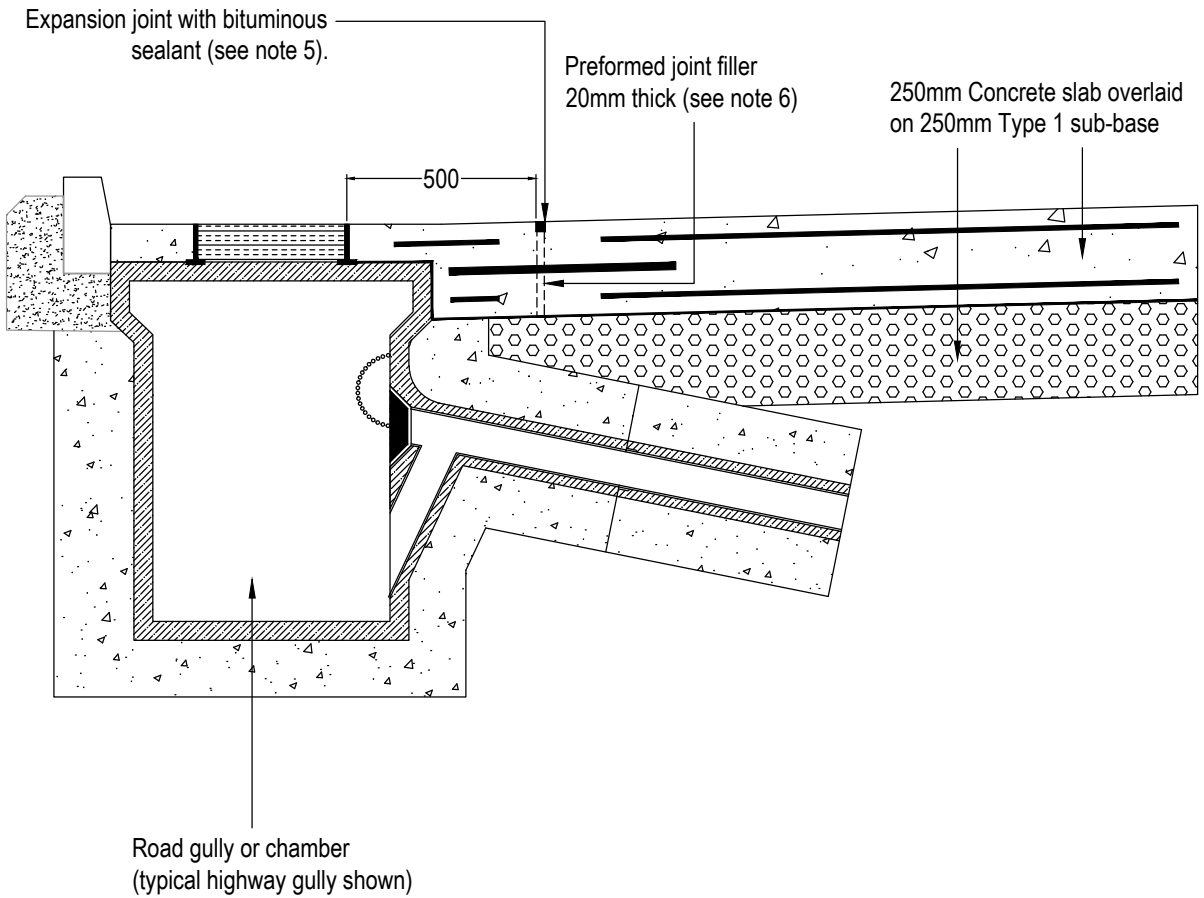
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Major Road Construction
Isolation Slab
Section

Drawing: SD-0700-005
Revision: Ø
Drawn by: AR
Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024

Isolation Slab - Cross Section



Notes:

1. All dimensions are in mm unless otherwise stated.
2. Edge of concrete slab to be laid flush with existing surface(s).
3. Drawing to be read / used in conjunction with SD-0700-005
4. Concrete slab reinforcement as per SD-0700-002
5. For expansion joint construction details refer to MCHW Volume 1, Section 3, Drawing C2:Expansion Joints, reinforced and un-reinforced concrete slabs.
6. Dowel bars to CL 1011, Volume 1 Series 1000 SHW. Dowel Bars shall be in covered by flexible polymeric corrosion resistant coating as per CL 1011, Volume 1 Series 1000 SHW.
7. Bituminous sealant to be as per CL1016, Volume 1, Series 1000 SHW.
8. The gully slab shall be isolated from the pavement at all joints by joint filler board for the full depth of the slab/joint and shall be sealed as per CL 015, Volume 1, Series 100 SHW.
9. Isolation slabs should be formed at main slab joints or in the middle third of main slab.
10. Isolation slabs should also be used for any utility covers located within the area of the main slab.
11. Crack inducer as instructed by Employers' Representative / Overseeing Organisation. Installed as per manufacturers' instructions.
12. Concrete testing and control in accordance with SHW CL 1059. General Requirements for laying conditions in accordance with SHW CL 1054.
13. Concrete must cure for minimum of 7 days with protection as per CL 1027 Volume 1 Series 1000 SHW and strength result to be submitted prior to any trafficking.

STANDARD DETAILS

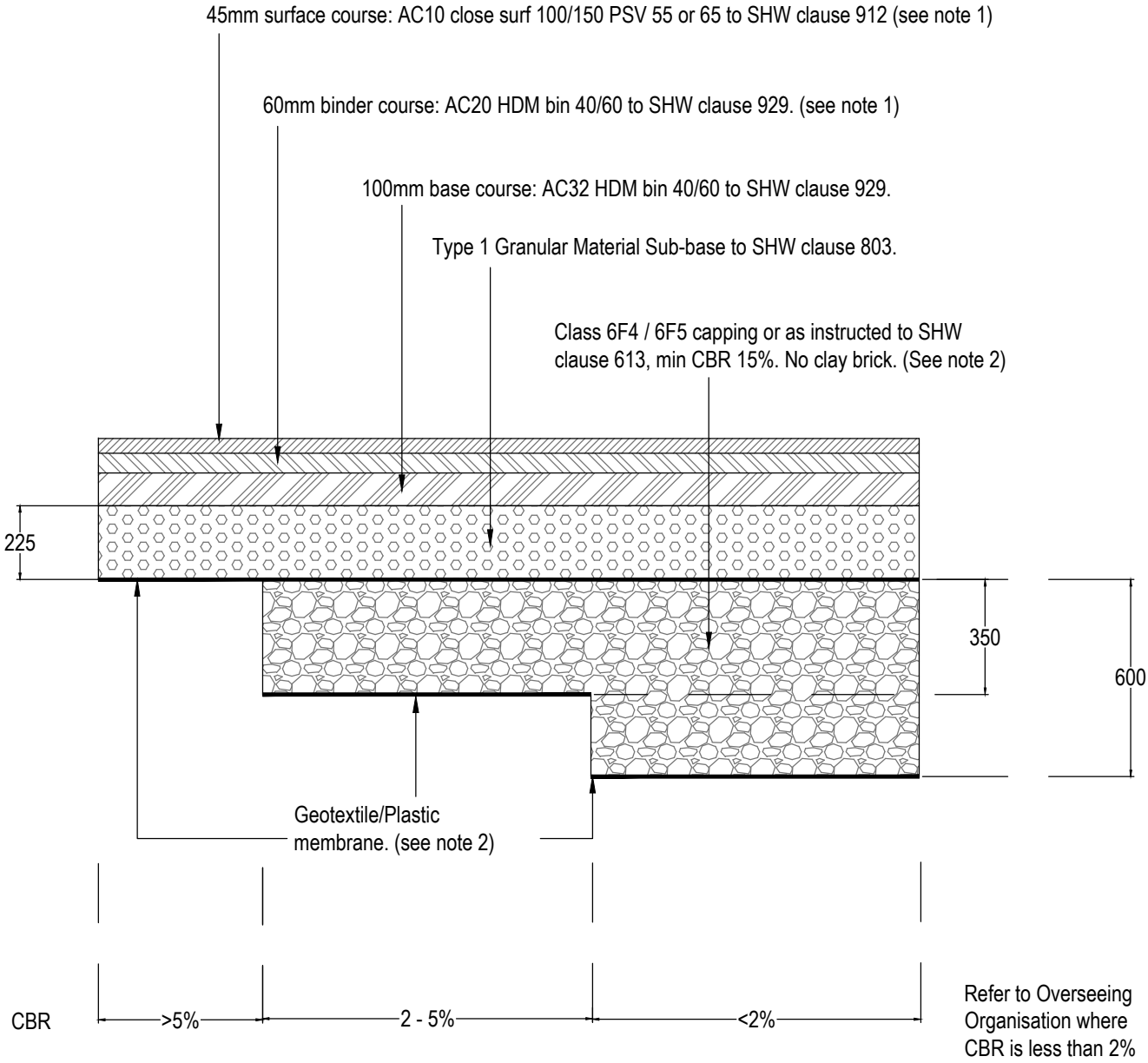
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Road Construction
Minor Roads
(Flexible)

Drawing	Revision
SD-0700-006	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

Flexible Construction



Notes:

1. All surfacing must be machine laid in accordance with BS 594987 unless otherwise agreed by BCC Representative/Project Manager/Project Engineer. Surface course may be varied by agreement with the Overseeing Organisation to HRA 55/14 F surf 40/60 des to Clause 911.

2. Geotextile/Plastic membrane as per site conditions and requirements, as instructed Employers' Representative/Overseeing Organisation.

3. Where in-situ subgrade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPa) it must be improved as described in DMRB CD225 clause 2.7.

STANDARD DETAILS

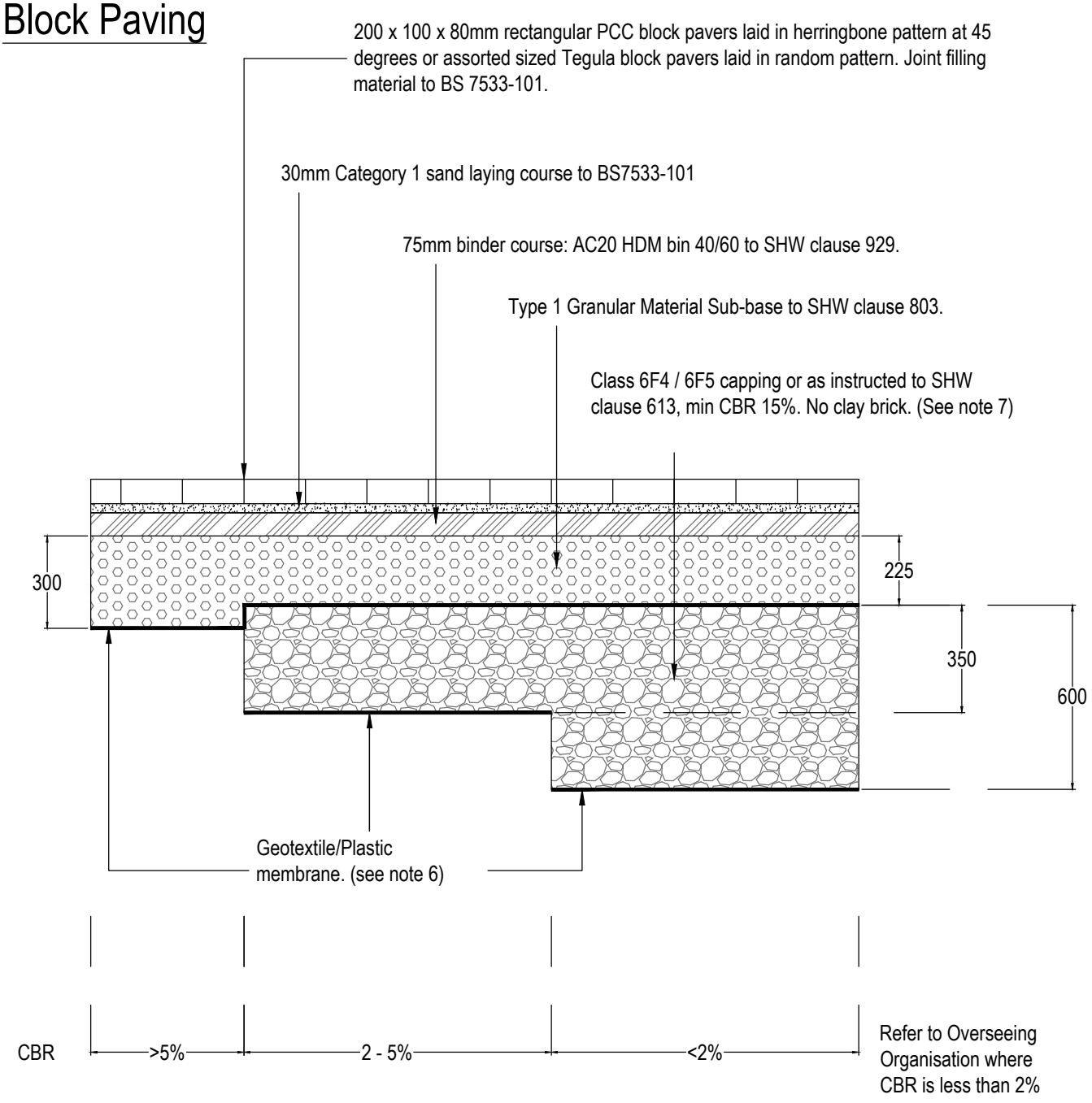
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Road Construction
Minor Roads
Block Paving

Drawing	Revision
SD-0700-007	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

Block Paving



Notes:

1. Block paving laying pattern to be agreed by Employers' Representative/Overseeing Organisation prior to sand laying course.
2. Cut pieces less than $\frac{1}{4}$ block as well as thin pieces shall not be used. Pieces greater than $\frac{1}{2}$ block are strongly preferred.
3. Where blocks cannot be cut to fit, full depth concrete C30P infill coloured to match may be used.
4. Permission to use infill covers must be obtained from the appropriate statutory undertaker.
5. Manhole frames in block paving areas must be a suitable type so that the pavers can be laid to butt directly up against the frame edge all around. In-situ concrete infill gaps is not acceptable.
6. Geotextile/Plastic membrane as per site conditions and requirements, as instructed Employers' Representative/Overseeing Organisation.
7. Where in-situ subgrade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPa) it must be improved as described in DMRB CD225 clause 2.7.

STANDARD DETAILS

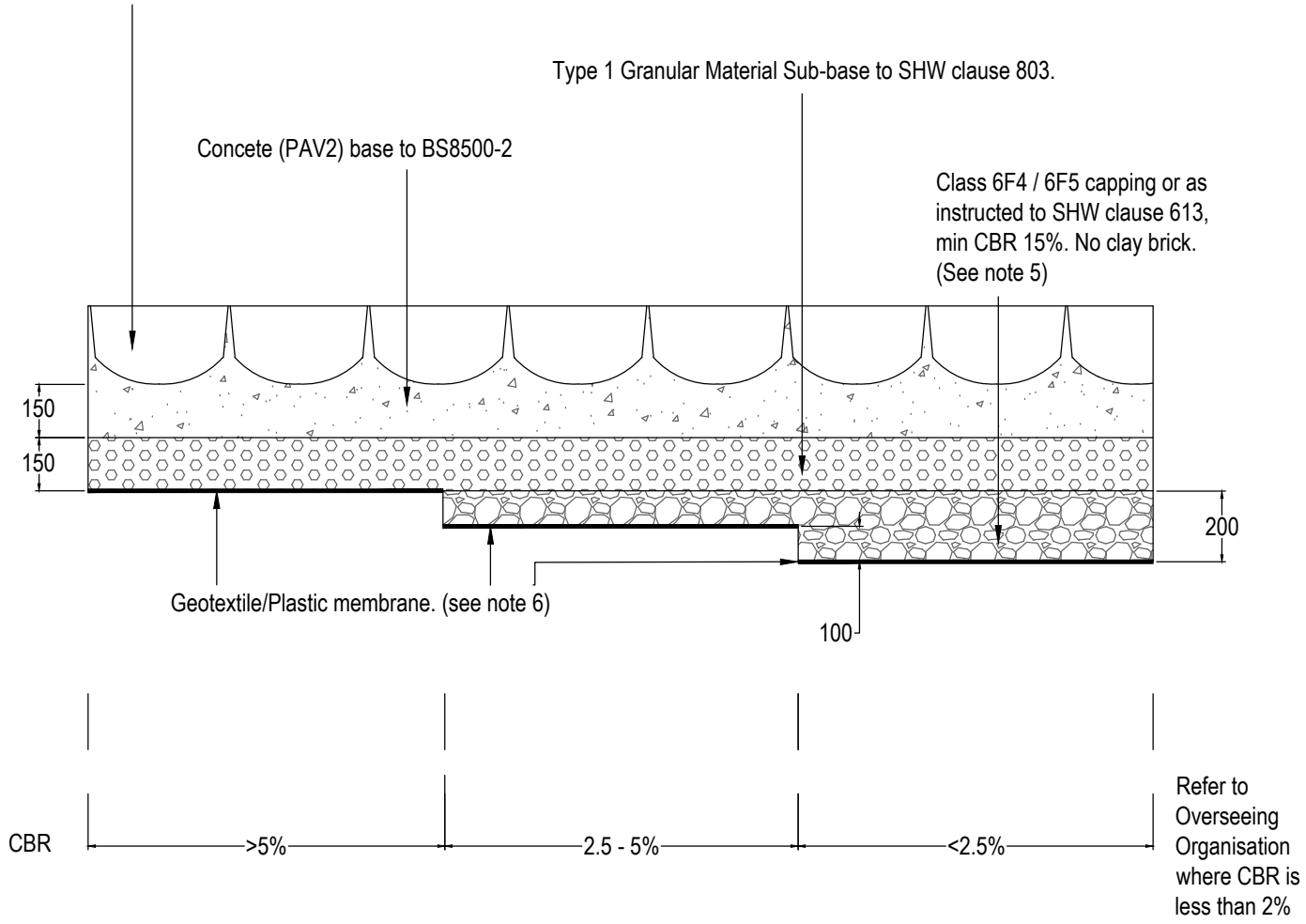
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Road Construction Minor Roads (Pennant Stone)

Drawing	Revision
SD-0700-008	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

Pennant crossing stones laid on 30mm thick mortar to BS 7533-101 laying course over concrete. Joints grouted as per note 1. Stones typically laid in stretcher course pattern but layout must to be agreed prior to construction.



Notes:

1. Joints to be grouted in accordance with BS 7533-101 as approved by Employers' Representative/Overseeing Organisation.
2. After initial set, surface to be cleaned off with Bideford Zone 2 sand or sawdust.
3. Minimum 72 hour cure duration prior to setts being trafficked.
4. Pointing to be in accordance with BS 7533-101 as approved by Employers' Representative/Overseeing Organisation.
5. Where cycling is permitted the surface / top face may be cut for a smooth surface (min. depth 80mm.) as directed by Employers' Representative/Overseeing Organisation.
6. Geotextile/Plastic membrane as per site conditions and requirements, as instructed Employers' Representative/Overseeing Organisation.
7. Where in-situ subgrade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPa) it must be improved as described in DMRB CD225 clause 2.7.
8. Concrete testing and control in accordance with SHW CL 1059. General Requirements for laying conditions in accordance with SHW CL 1054.

STANDARD DETAILS

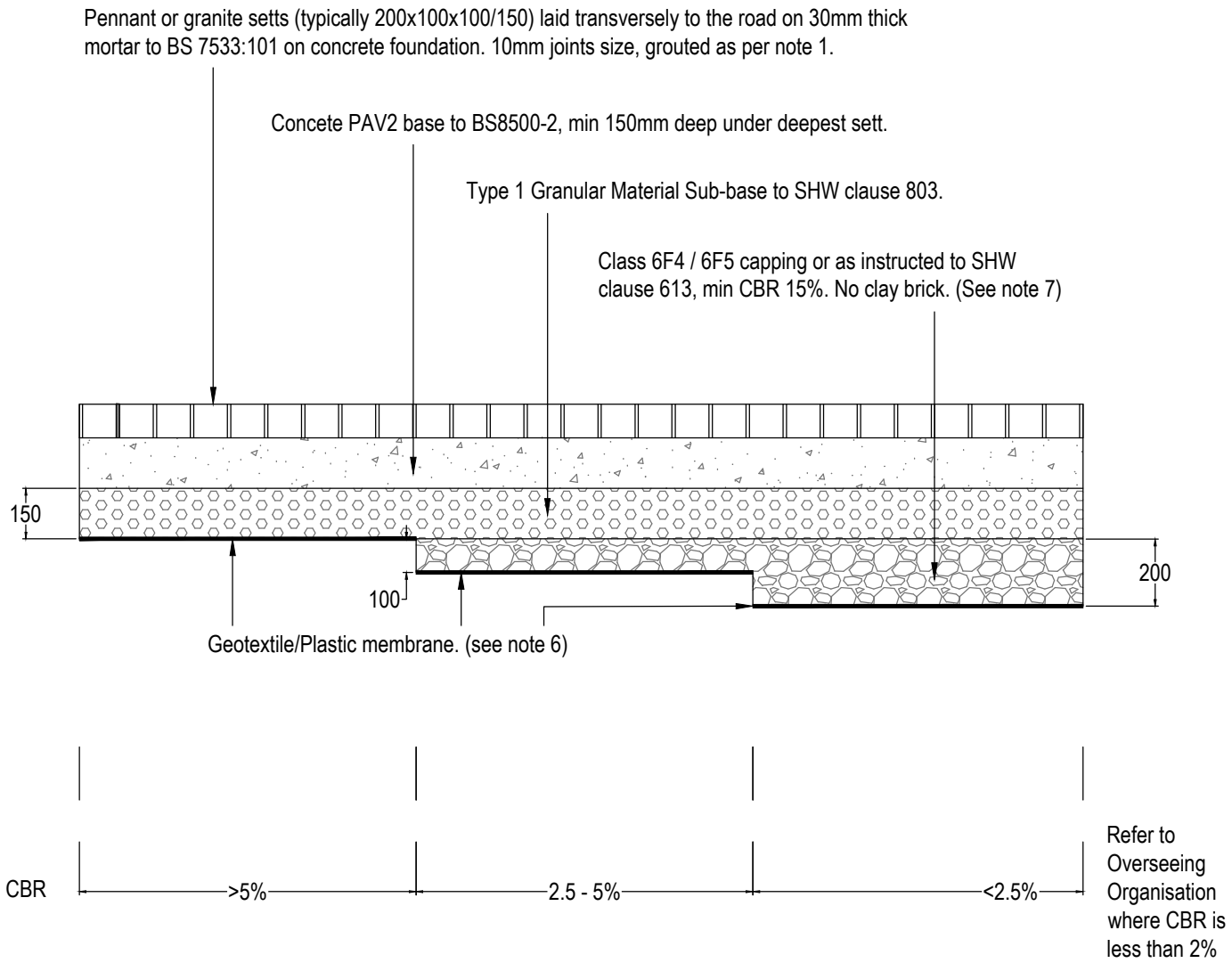
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Road Construction
Minor Roads
Setts

Drawing: SD-0700-009
Revision: Ø
Drawn by: AR
Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024

Setts



Notes:

1. Joints to be grouted in accordance with BS 7533:101 as approved by Employers' Representative/Overseeing Organisation. After initial set, clean off with Bideford Zone 2 sand or sawdust. Allow minimum 72 hours curing before setts are trafficked.
2. Pointing using in accordance with BS 7533:101 as approved by Employers' Representative/Overseeing Organisation. Where cycling is permitted the surface face may be cut for a smooth surface (min. depth 80mm.) as directed by Employers' Representative/Overseeing Organisation.
3. Geotextile/Plastic membrane as per site conditions and requirements, as instructed Employers' Representative/Overseeing Organisation.
4. Where in-situ subgrade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPa) it must be improved as described in DMRB CD225 clause 2.7.
5. Concrete testing and control in accordance with SHW CL 1059. General Requirements for laying conditions in accordance with SHW CL 1054.

STANDARD DETAILS

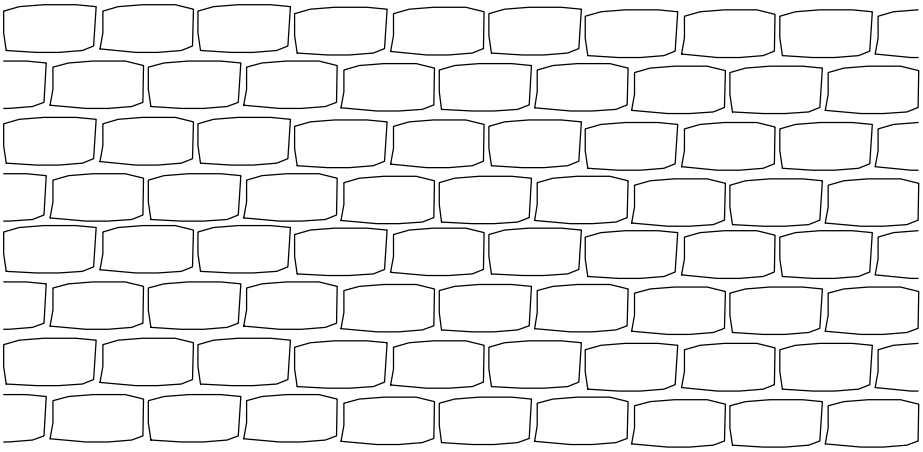
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

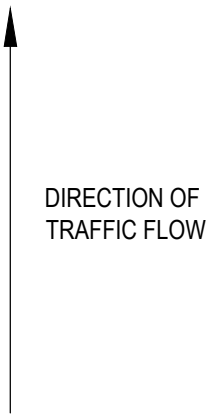
Series 0700: Pavements

Road Construction
Minor Roads (Setts)
Laying pattern

Drawing	Revision
SD-0700-010	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

Sett laying pattern (Transverse to road)





Notes:

1. Joints to be grouted with gritty sand/cement or proprietary grouting material as approved by Employers' Representative/Overseeing Organisation. After initial set, clean off with Bideford Zone 2 sand or sawdust. Allow minimum 72 hours curing before setts are trafficked.
2. Pointing using Ultracrete flowpoint or proprietary grouting material as approved by Employers' Representative/Overseeing Organisation.
3. Where cycling is permitted the surface face / op face may be cut for a smooth surface (min. depth 80mm.) as directed by Employers' Representative/Overseeing Organisation.
4. Where in-situ subgrade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPa) it must be improved as described in DMRB CD225 clause 2.7.
5. Concrete testing and control in accordance with SHW CL 1059. General Requirements for laying conditions in accordance with SHW CL 1054.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

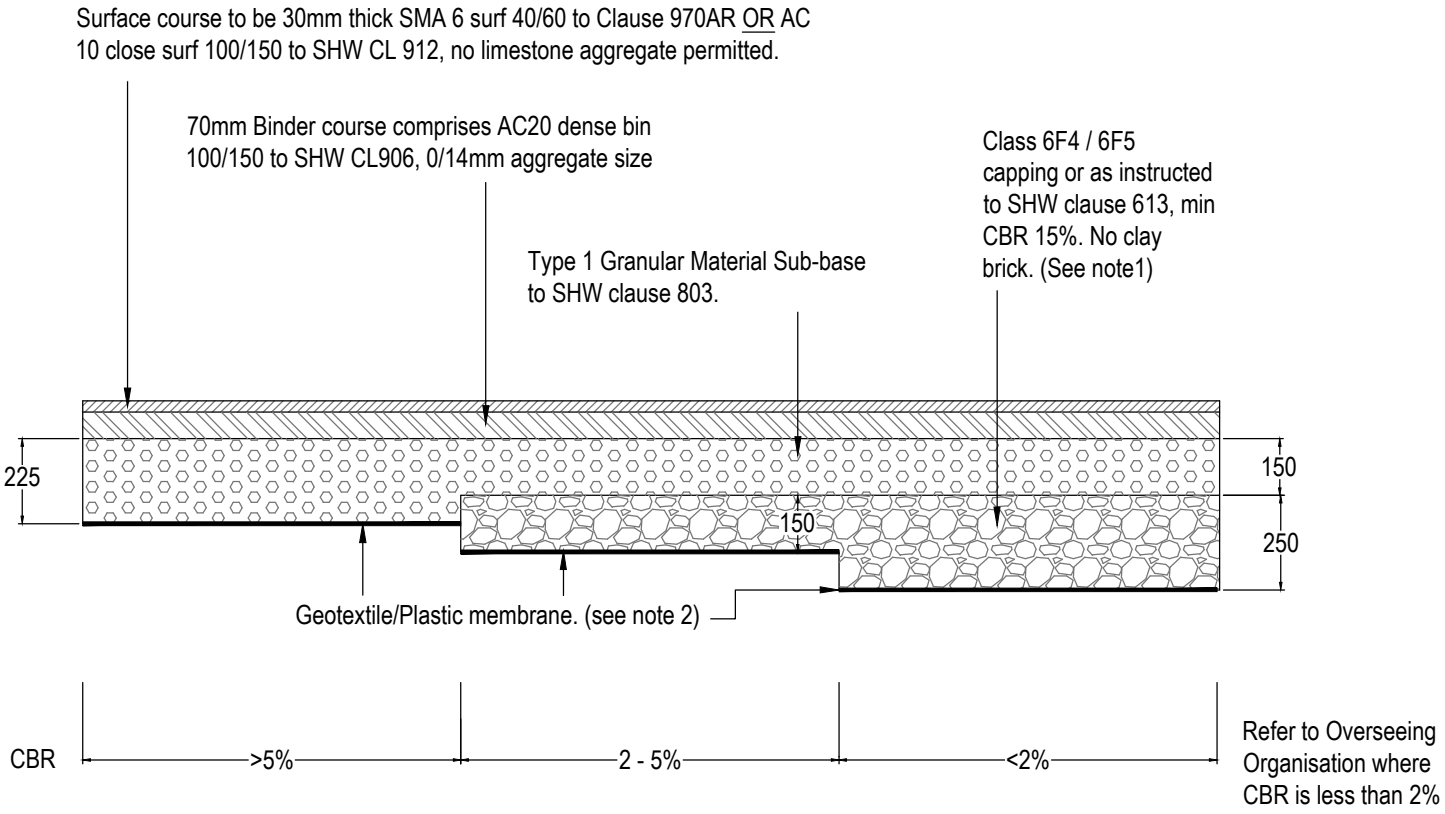
Flexible
Car Parks, Drives
Cycle Tracks

Drawing	Revision
SD-0700-011	A

Drawn by	Scale
AR	1:20

Date Drawn
06 Sept 2024

Flexible Construction



Notes:

1. Where in-situ subgrade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPa) it must be improved as described in DMRB CD225 clause 2.7.

2. Geotextile/Plastic membrane as per site conditions and requirements, as instructed Employers' Representative/Overseeing Organisation.

3. For lorry parks and other areas of high load, pavement construction shall be designed and specified to suit loading requirements.

STANDARD DETAILS

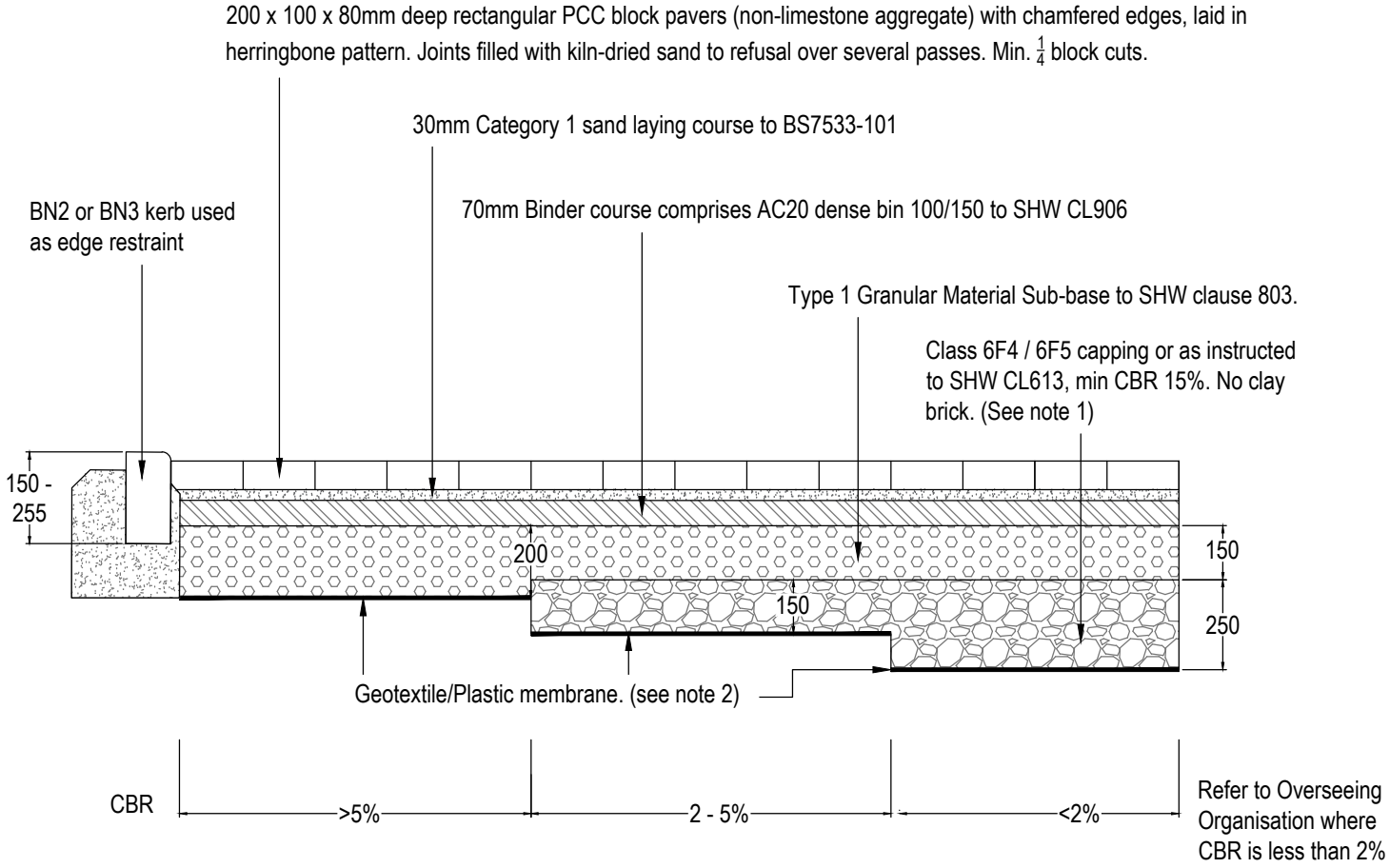
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Paved
Car Parks, Drives
& Cycle Tracks

Drawing: SD-0700-012
Revision: Ø
Drawn by: AR
Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024

Paving Construction



Notes:

1. Where in-situ subgrade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPa) it must be improved as described in DMRB CD225 clause 2.7.

2. Geotextile/Plastic membrane as per site conditions and requirements, as instructed Employers' Representative/Overseeing Organisation.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

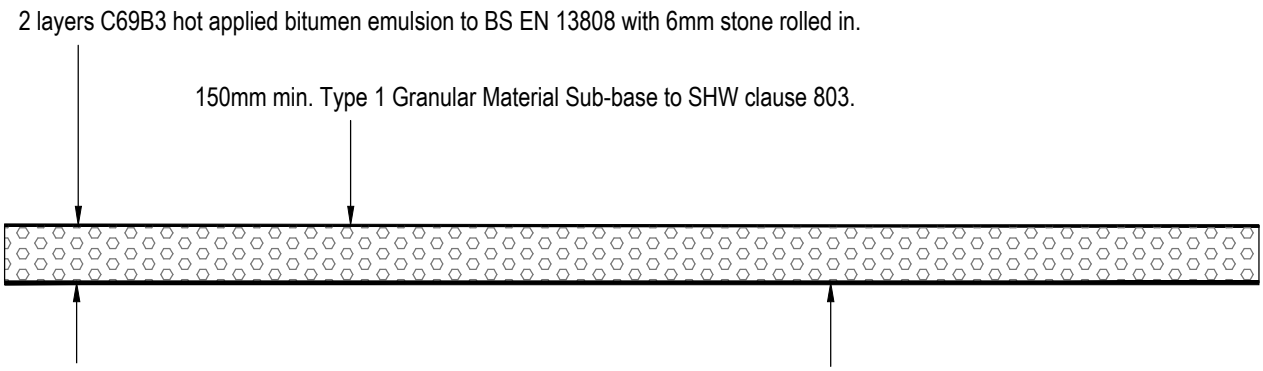
Series 0700: Pavements

Gravel
Car Parks, Drives
& Cycle Tracks

Drawing: SD-0700-013
Revision: Ø
Drawn by: AR
Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024

Gravel Construction

(construction below surface course to be as per SD-0700-006)



Notes:

1. Where in-situ subgrade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPa) it must be improved as described in DMRB CD225 clause 2.7.

2. Geotextile/Plastic membrane as per site conditions and requirements, as instructed Employers' Representative/Overseeing Organisation.

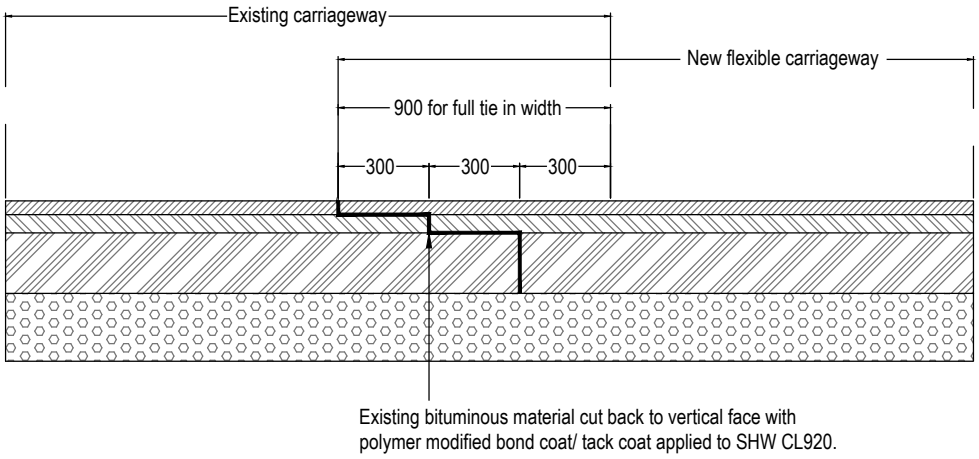
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

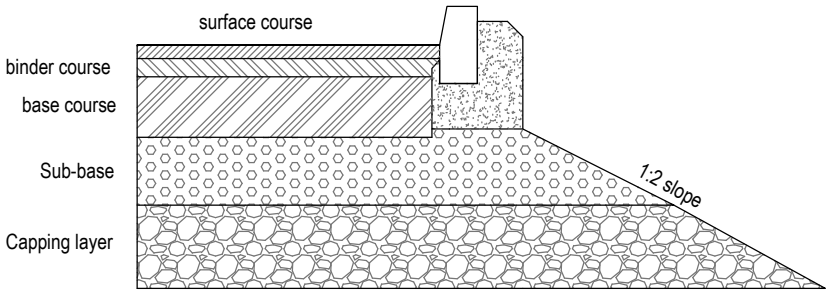
Carriageway
Joint & Edge Details

Drawing	Revision
SD-0700-014	Ø
Drawn by: AR	Scale: 1:25 @ A4
Date Drawn: 06 Sept 2024	



Refer to SD-0700-001 to SD-0700-013 for construction depths and material specification(s).

Typical Longitudinal Joint Section



Typical edge detail for Carriageway

Notes:

1. This detail may not be suitable in all locations, discuss with the Employer's representative/ Overseeing Organisation.
2. For construction types and details refer to SD-0700s and SD-1100s.
3. Joint positions should avoid high stress areas / locations.
4. Bond coat to be used where binder course has been trafficked, surface course is not laid within 2 hours, or otherwise instructed by Employer's representative/ Overseeing Organisation.

STANDARD DETAILS

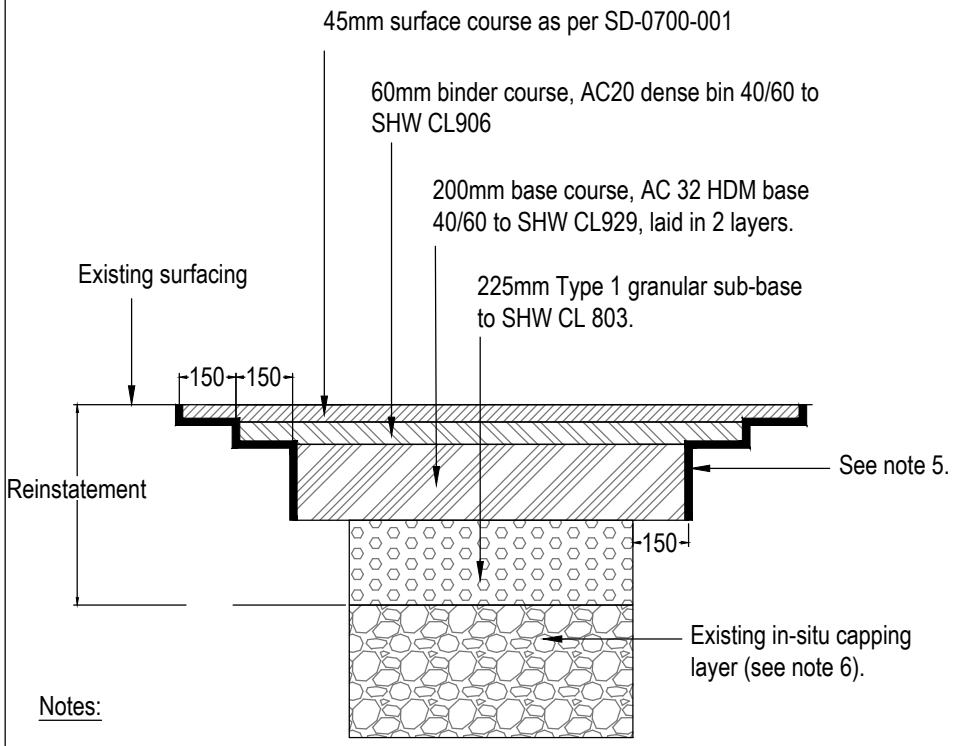
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 700: Pavements

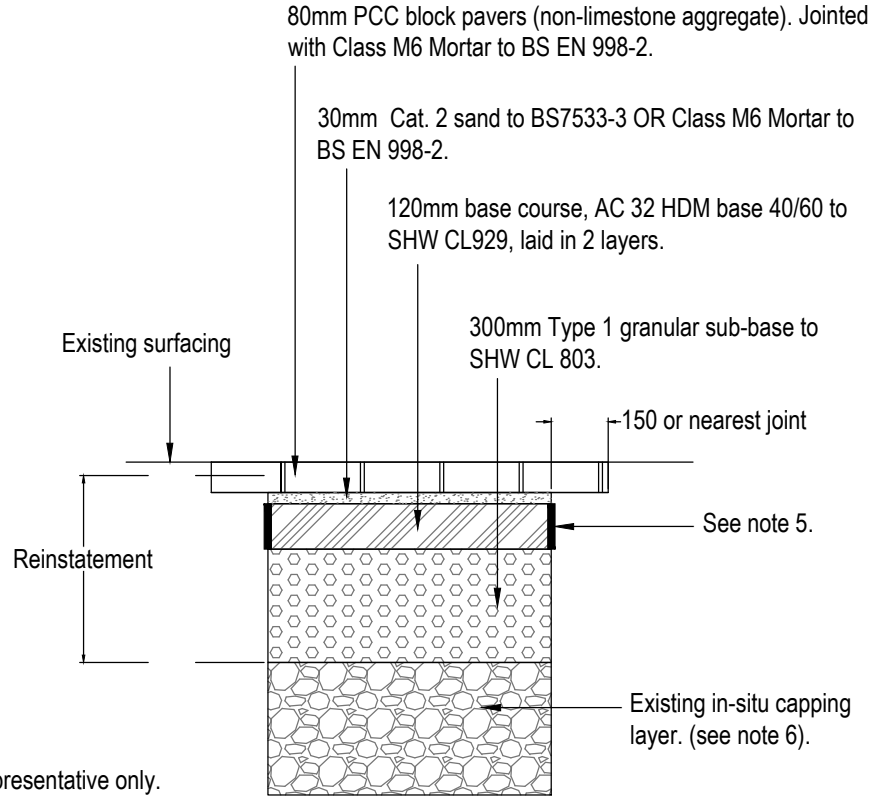
Typical Reinstatements
Sheet 1

Drawing	Revision
SD-0700-015	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

Major / Industrial Roads (Flexible)



Major / Industrial Roads (Paved)



Notes:

1. Foamed concrete to SHW CL1043 can be used in lieu of type 1 backfill on agreement with Employers' Representative only.
2. Saw cuts to provide clean, neat edges.
3. Edges of joints to be sealed.
4. Limestone aggregate not permitted in surface course.
5. Existing bituminous material cut back to vertical face with polymer modified bond coat/ tack coat applied to SHW CL920.
6. Where in-situ subgrade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPa) it must be improved as described in DMRB CD225 clause 2.7 and notes 1 & 2.
7. Maximum width for Reinstatements to be 1200mm (not including lap / tie in lengths). For all other carriageway reinstatements > 1200mm, construction to be treated as new carriageway with reference to SD-0700-001 through SD-0700-014.

STANDARD DETAILS

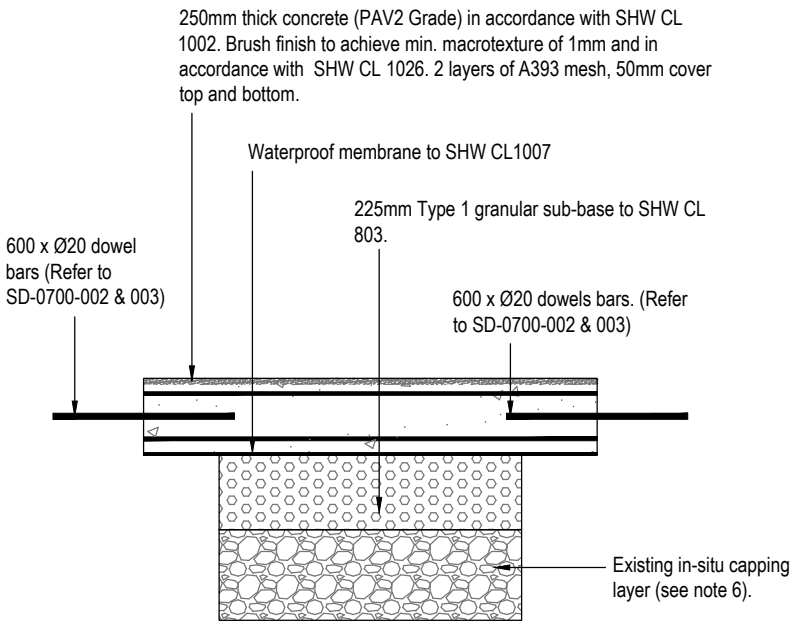
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

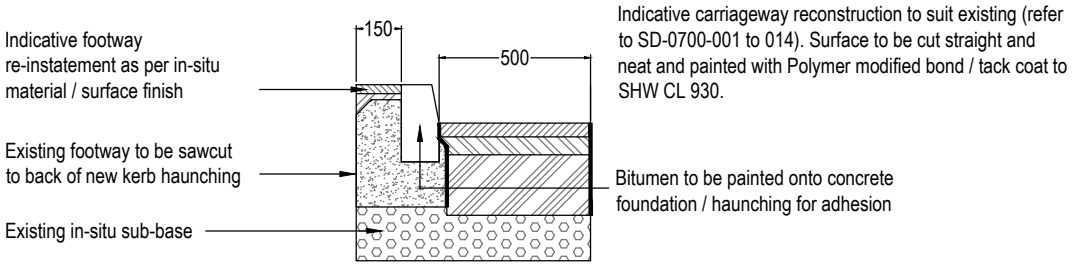
Typical Reinstatements
Sheet 2

Drawing: SD-0700-016
Revision: Ø
Drawn by: AR
Scale: 1:25 @ A4
Date Drawn: 06 Sept 2024

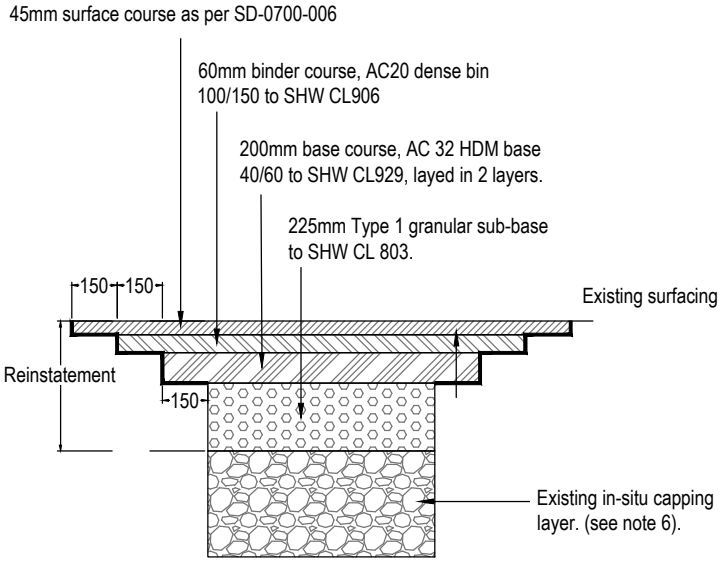
Major / Industrial Roads (Concrete)



Kerb Reinstatement



Minor Roads



Notes:

1. Foamed concrete to SHW CL1043 can be used in lieu of type 1 backfill, on agreement with Employers' Representative/ Overseeing Organisation only.
2. Saw cuts to provide clean, neat edges.
3. Edges of joints to be sealed.
4. Limestone aggregate not permitted in surface course.
5. Existing bituminous material cut back to vertical face with polymer modified bond coat/ tack coat applied to SHW CL920.
6. Where in-situ subgrade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPa) it must be improved as described in DMRB CD225 clause 2.7 and notes 1 & 2.
7. Maximum width for Reinstatements to be 1200mm (not including lap / tie in lengths). For all other carriageway reinstatements > 1200mm, construction to be treated as new carriageway with reference to SD-0700-001 through SD-0700-014.

STANDARD DETAILS

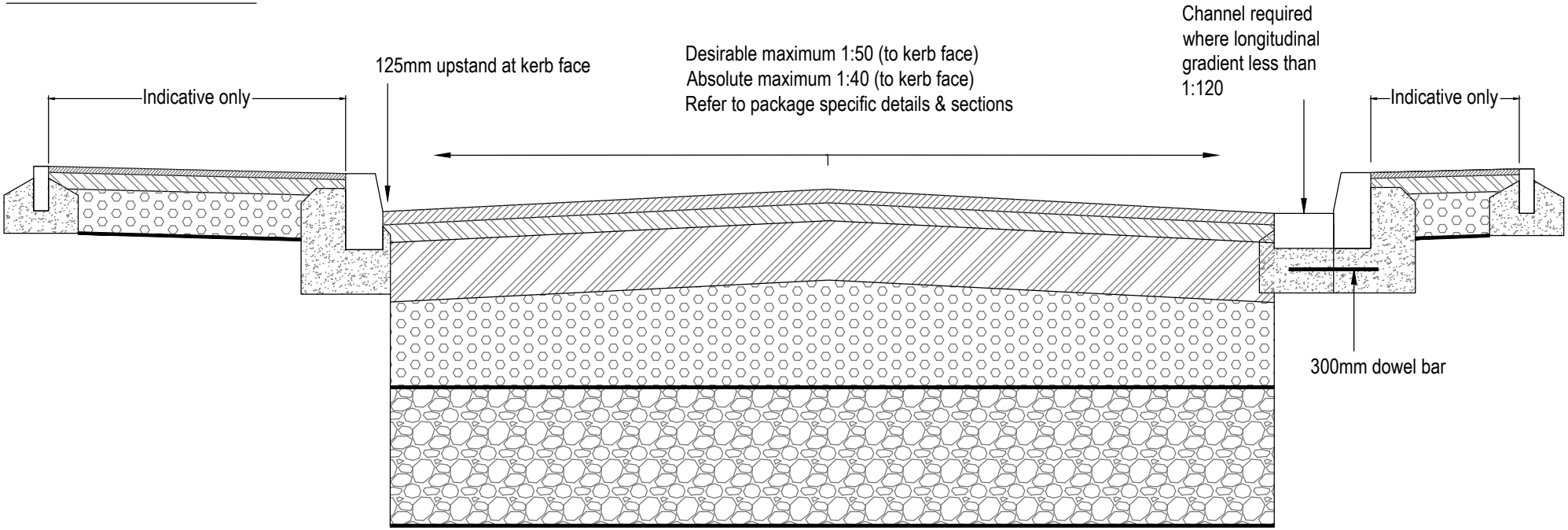
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Typical Road Profiles
(Cambered)

Drawing	Revision
SD-0700-017	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

Cambered Road



Notes:

1. Bitumen Emulsion bond coat to SHW CL920 shall be applied between bituminous layers. Where instructed by BCC Representative, coated sealing grit may be applied to binder course where trafficking is required.
2. Bond coat shall be cationic polymer modified bituminous emulsion C65BP4 unless instructed otherwise.
3. All bituminous materials must be machine laid in accordance with BS594987 unless otherwise specified or agreed in advance.
4. HFS to be omitted within 300mm of kerb edge to assist drainage.

STANDARD DETAILS

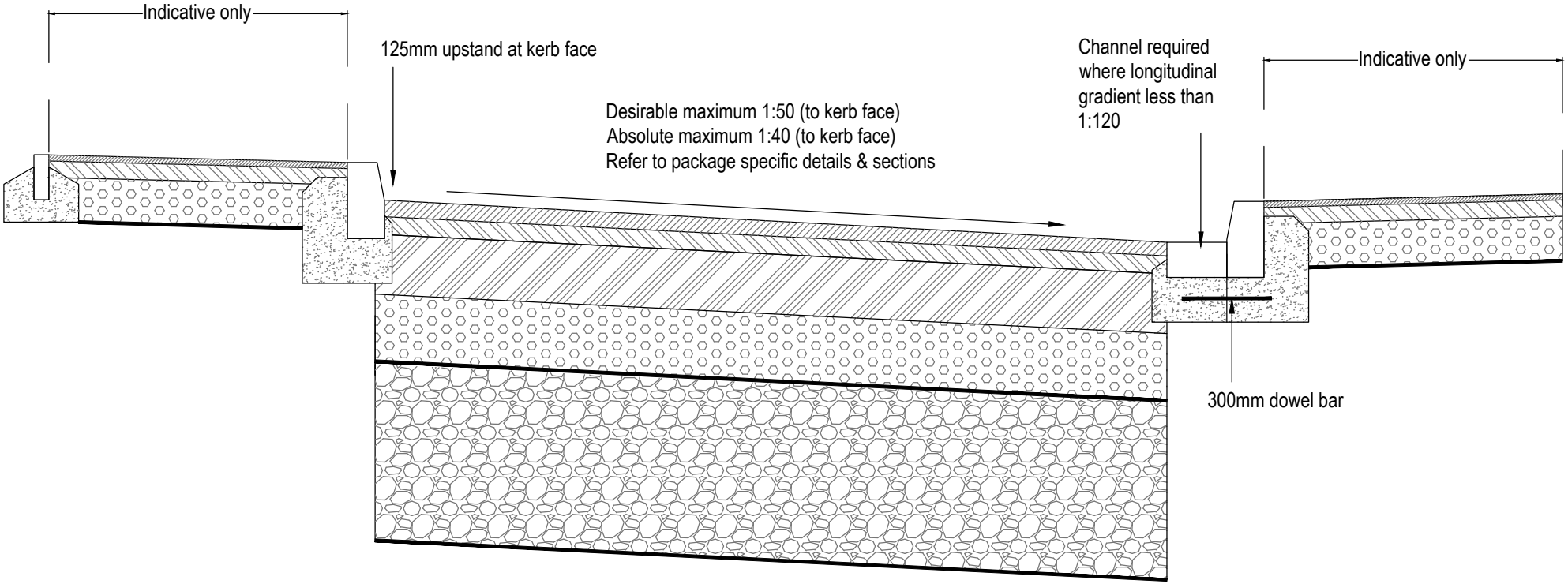
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Typical Road Profiles
(Crossfalling)

Drawing	Revision
SD-0700-018	Ø
Drawn by: AR	Scale: 1:20 @ A4
Date Drawn: 06 Sept 2024	

Crossfalled / "Hung Road"



STANDARD DETAILS

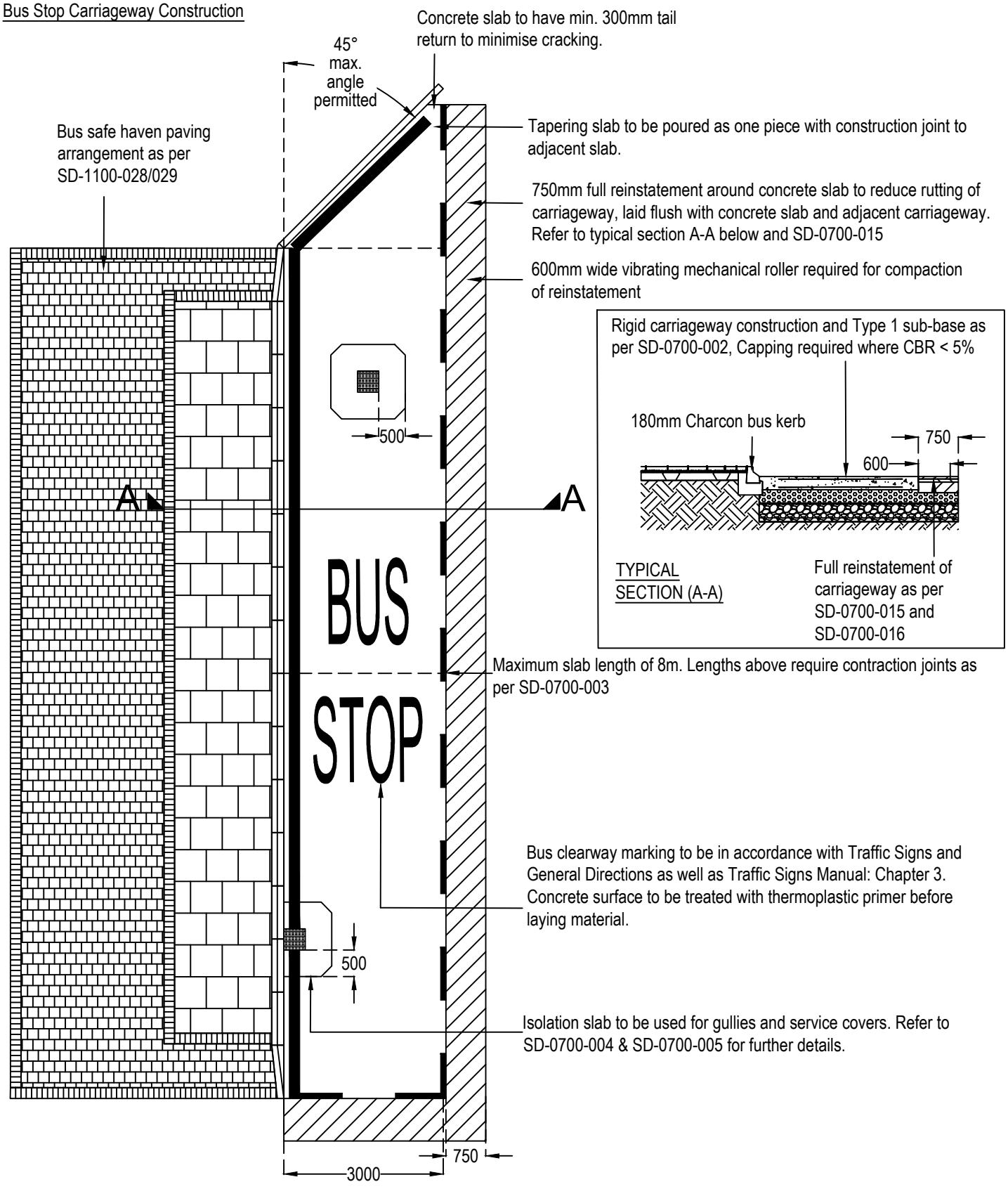
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 0700: Pavements

Bus Stop Carriageway Construction

Drawing	Revision
SD-0700-027	Ø
Drawn by: AR	Scale: 1:100 @ A4
Date Drawn: 06 Sept 2024	

SD-0700-027
Bus Stop Carriageway Construction



STANDARD DETAILS

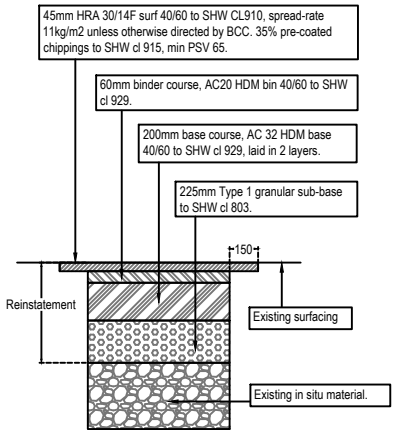
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

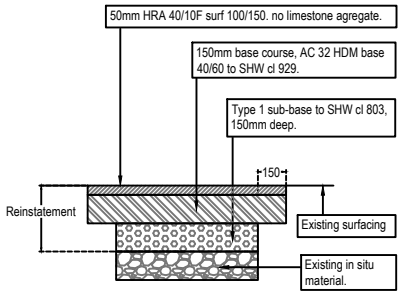
Footway Reinstatements 1 (Vehicle Crossovers)

Drawing: SD-1100-030
Revision: Ø
Drawn by: RR
Scale: 1:40
Date Drawn: 06/09/2024

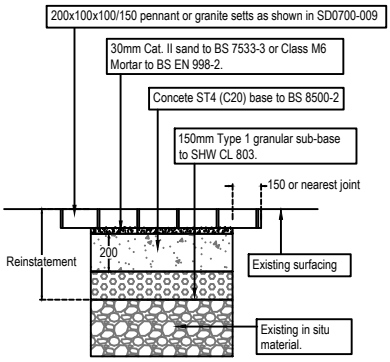
Vehicle Crossovers - Flexible (Heavy Duty)



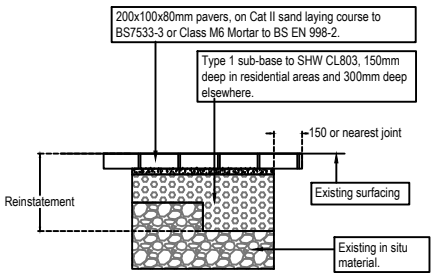
Vehicle Crossovers - Flexible (Light Duty)



Vehicle Crossovers - Paved (Heavy Duty)

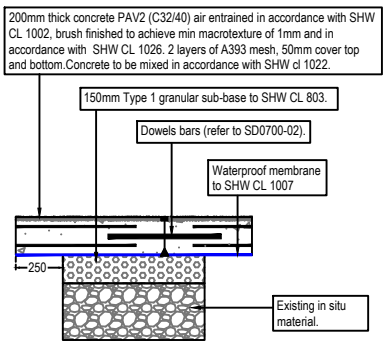


Vehicle Crossovers - Paved (Light Duty)



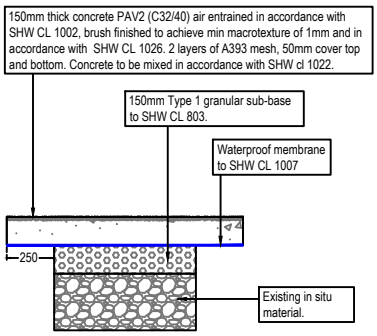
Notes:
1. Slabbing to start at kerbs and work towards back of path.
2. No cut slab to be less than half a whole slab area / width.

Vehicle Crossovers - Concrete (Heavy Duty)

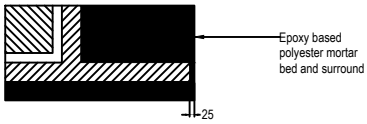


Notes:
1. Foamed concrete to SHW cl 1043 can be used in lieu of Type 1 backfill provided care is taken to avoid flooding service pipes.
2. Saw cut to provide clean edges.
3. Edges or joints to be sealed.
4. Limestone aggregate not permitted in surface course.

Vehicle Crossovers - Concrete (Light Duty)



REINSTATEMENT AROUND COVERS



STANDARD DETAILS

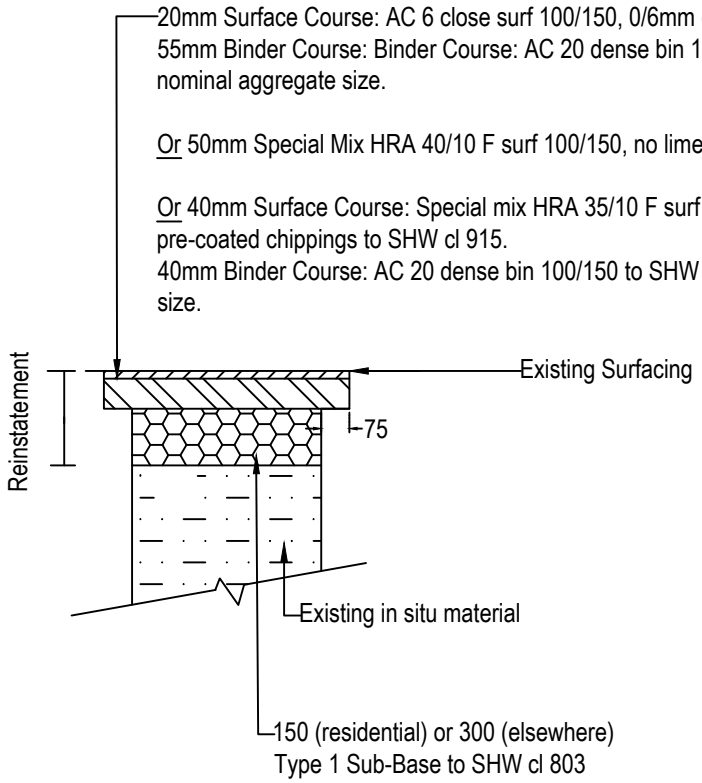
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

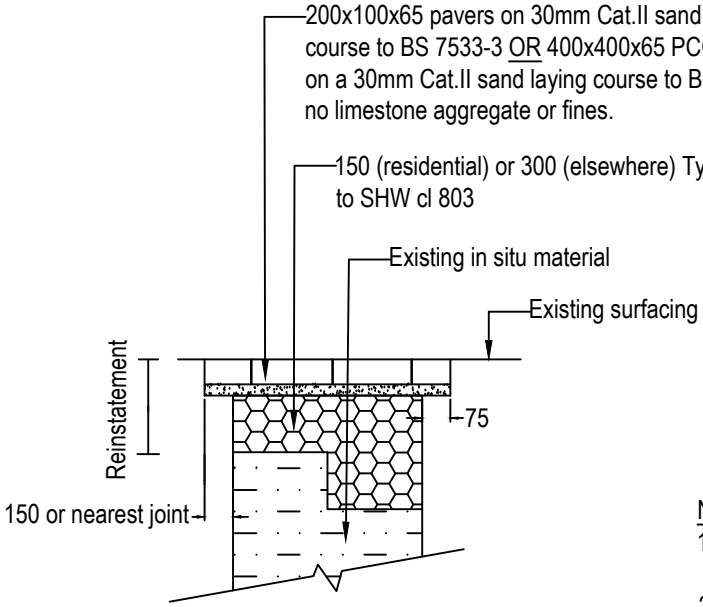
Footway Reinstatements 2 (Non Vehicle Crossovers)

Drawing	Revision
SD-1100-031	Ø
Drawn by: RR	Scale: 1:20
Date Drawn: 06/09/2024	

FLEXIBLE FOOTWAY CONSTRUCTION



BLOCK/SLAB FOOTWAY CONSTRUCTION



Notes:

1. Foamed concrete to SHW cl 1043 can be used in lieu of Type 1 backfill provided care is taken to avoid flooding service pipes.
2. Saw cut to provide clean edges.
3. Edges or joints to be sealed.
4. Limestone aggregate not permitted in surface course.

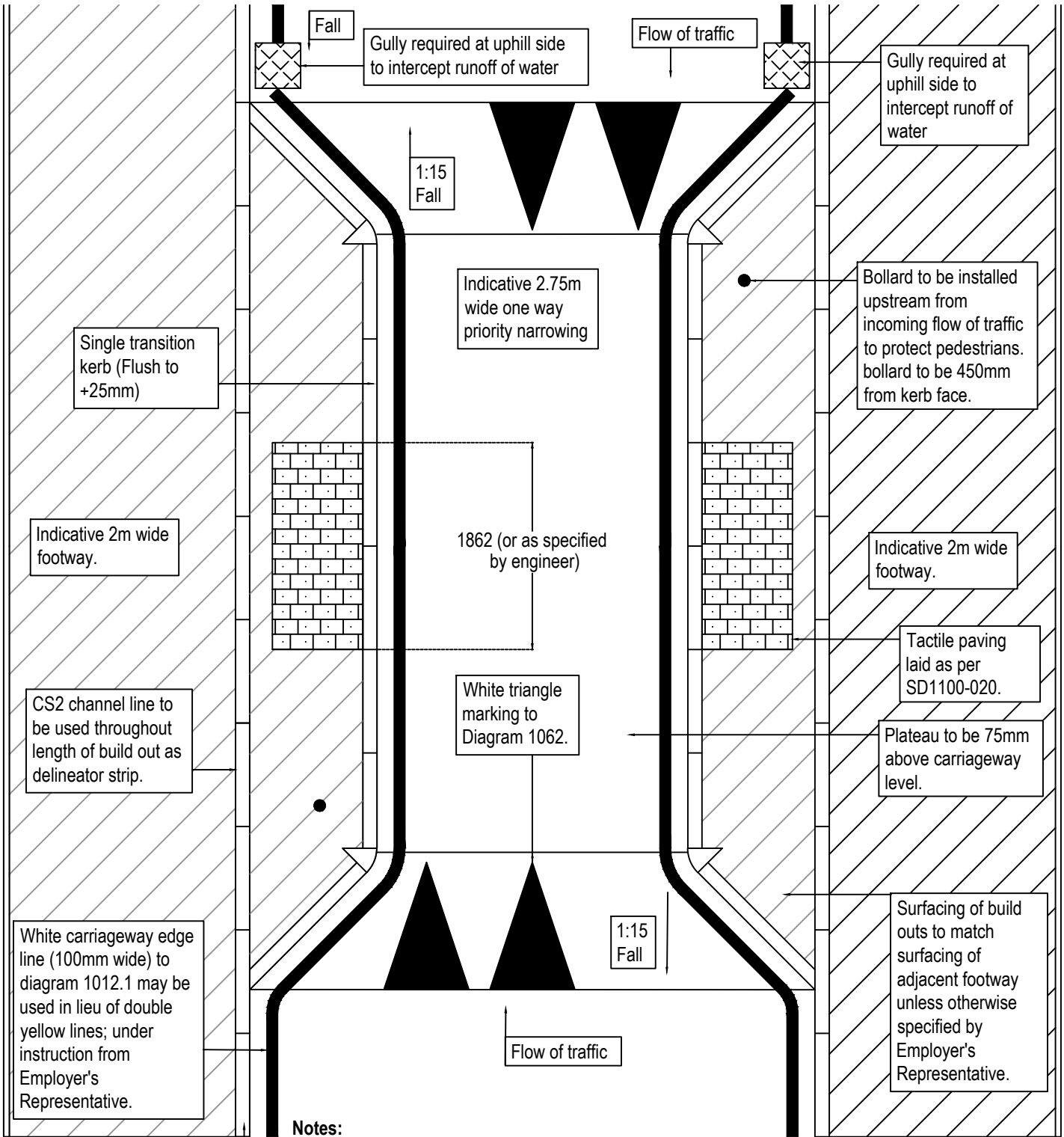
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

Plateau & Chicane Typical Layout

Drawing	Revision
SD-1100-022	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	



Notes:

1. This drawing shows the layout of a typical chicane / road narrowing with plateau. The same layout of kerbing, surfacing, street furniture and road markings can be used to build a chicane without a plateau, refer to SD0700-019 for construction methods.
2. Refer to SD1100-016 & SD1100-017 for details on tactile paving
3. Width of carriageway shall be between 2.75 - 5m to suit road width. Where width of carriageway does not exceed 3m full depth construction is required if not already in-situ.
4. Bollard type and specification as per design drawing and construction information.
5. All road markings to be in accordance with TSRGD 2016.

STANDARD DETAILS

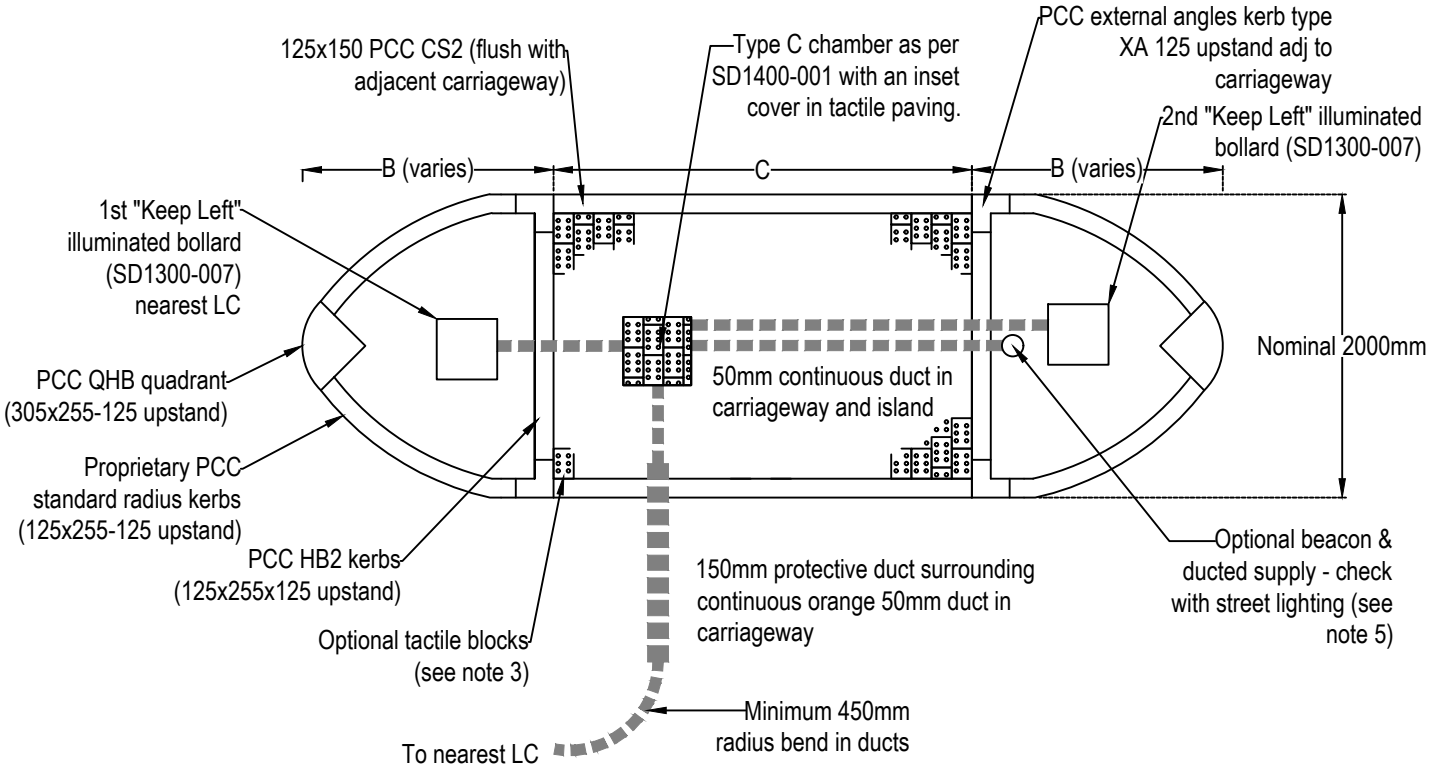
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

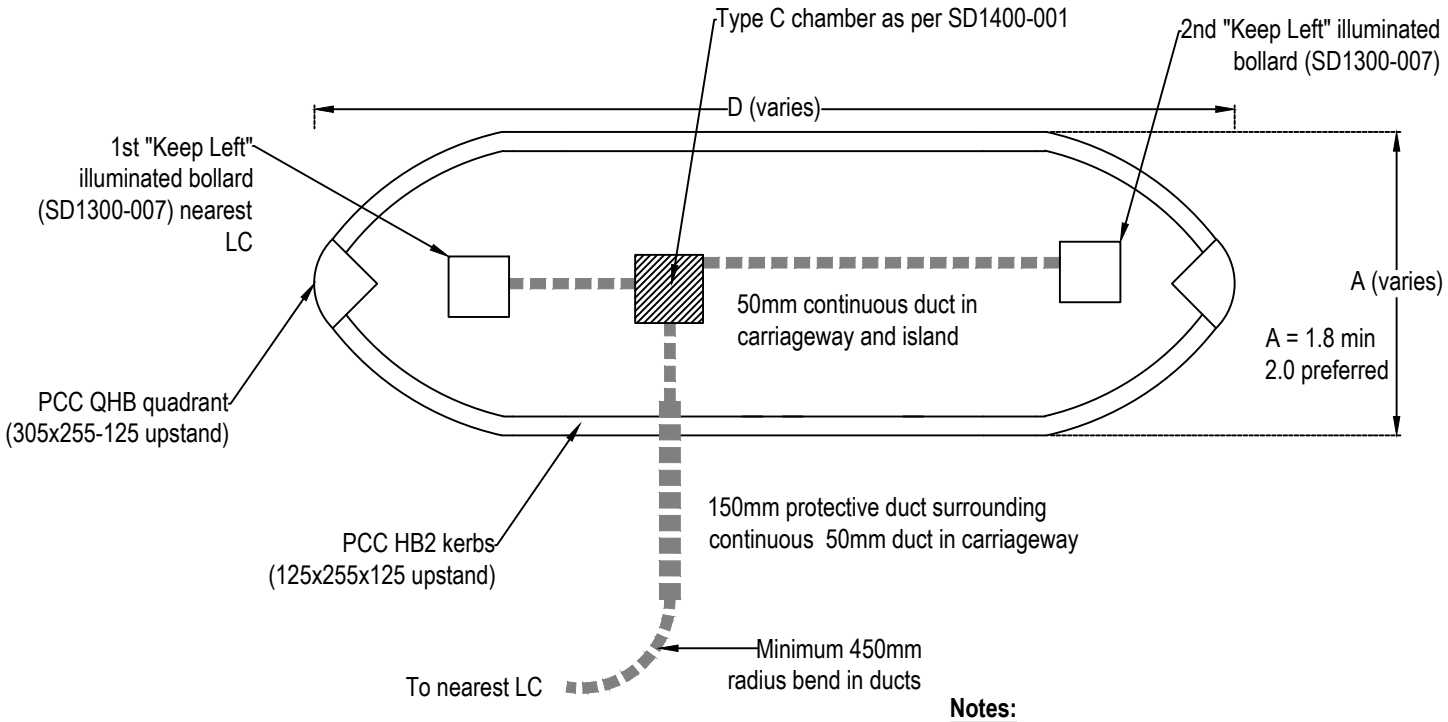
Island Types 1 & 2 & 3 (Part 1)

Drawing	Revision
SD-1100-023	Ø
Drawn by: RR	Scale: 1:50 @ A4
Date Drawn: 06/09/2024	

TRAFFIC ISLAND TYPE 1 & 2 (STANDARD KERBED)



TRAFFIC ISLAND TYPE 3 (STANDARD KERBED SOLID ISLAND)



Notes:
For notes see SD1100-024.

STANDARD DETAILS

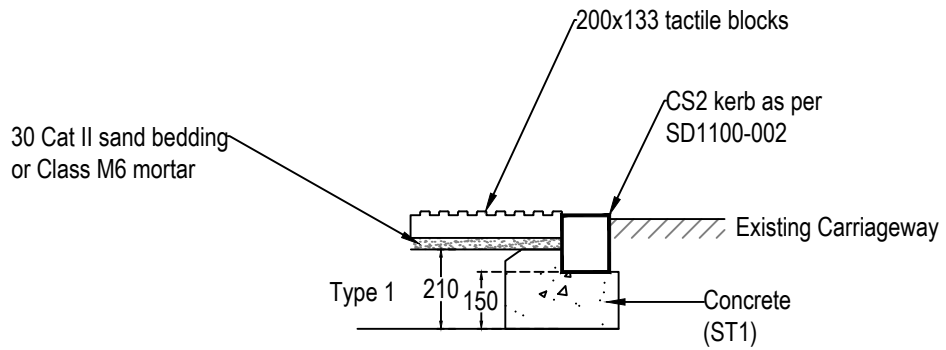
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

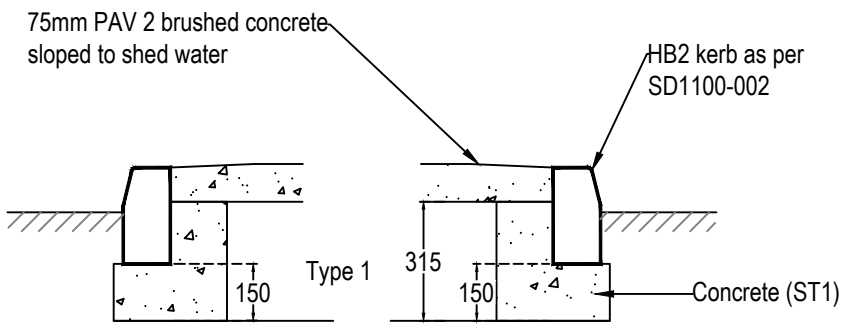
Island Types 1 & 2 & 3 (Part 2)

Drawing	Revision
SD-1100-024	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

SECTION THROUGH TACTILE AREA



SECTION THOUGH ISLAND END



Notes:

1. Islands shall be formed from proprietary straight, curved, quadrant and external angle kerbs to suit. Mitred kerbs will not be accepted. Standard radius kerbs:
   - 1m, 2m, 3m, 6m, 8m, 10m.
2. Raised areas of islands shall be weathered to drain towards the carriageway. The flush area on pedestrian islands shall similarly be weathered.
3. Uncontrolled pedestrian area shall be surfaced as follows:
   - Island up to 2000 wide: full width in tactile paving
   - Islands over 2000 wide: tactile 800mm deep each side, remainder in footway surfacing.
   - Tactile paving not required on signalised pedestrian crossing less than 5m wide.
4. Raised areas shall be surfaced in concrete PAV2 brush finish, or standard flexible construction, or PCC paver footway construction.
5. Optional beacon where instructed by BCC, beacon specification to be fitted in island in 140mm duckfoot retention socket as per SD1400-06.
6. The two ends of the islands can be different lengths.
7. C=2000 is the minimum length for ped refuges / C=2800 is the minimum for controlled crossings.
8. Orange ducted supply cable to run from bollard to beacon.
9. 'Keep left' bollard face to be to diag. 610 and in accordance with standard detail. Minimum 450mm offset from edge of kerb.
10. All kerbs to be to BS EN 1340.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

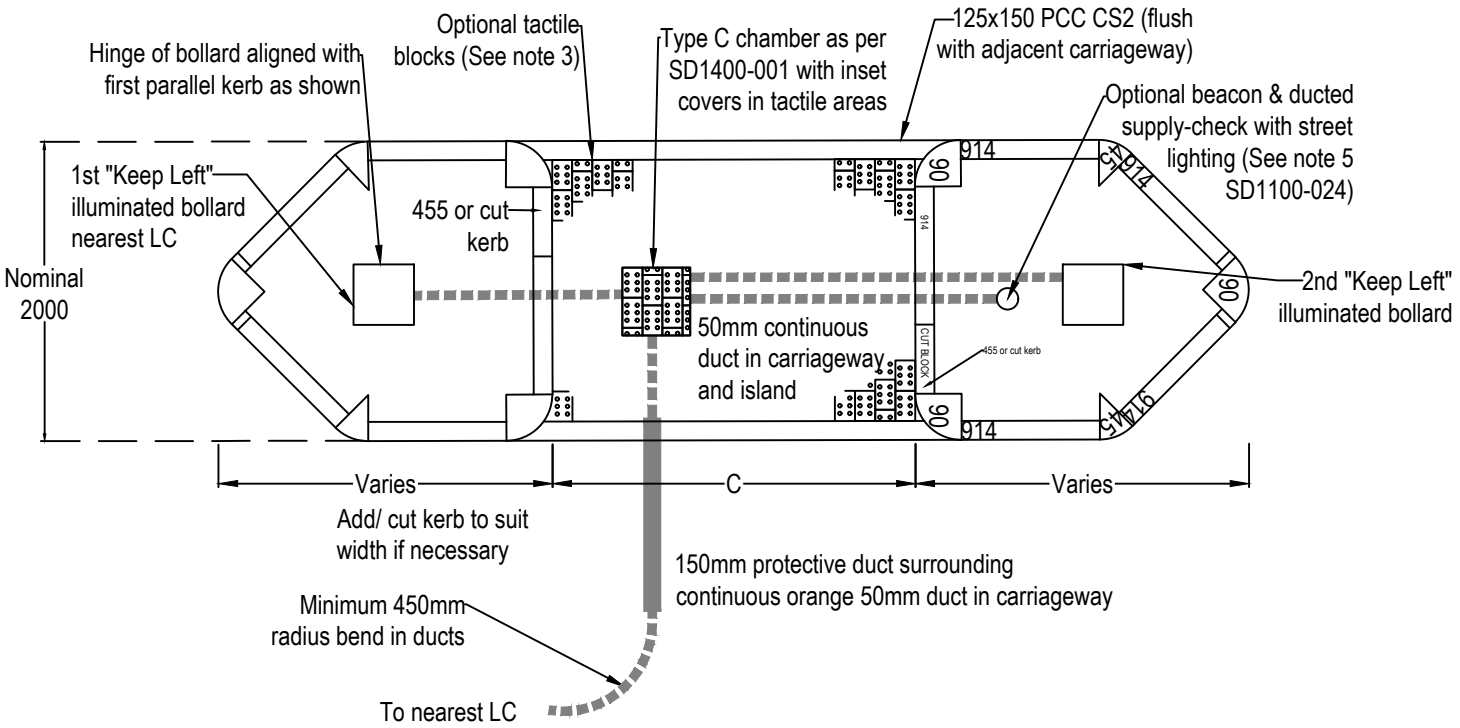
Series 1100: Kerbs, Footways, Cycleways and Paved Areas

Island Types 4 & 5 (Part 1)

Drawing	Revision
SD-1100-025	Ø
Drawn by: RR	Scale: 1:50 @ A4
Date Drawn: 06/09/2024	

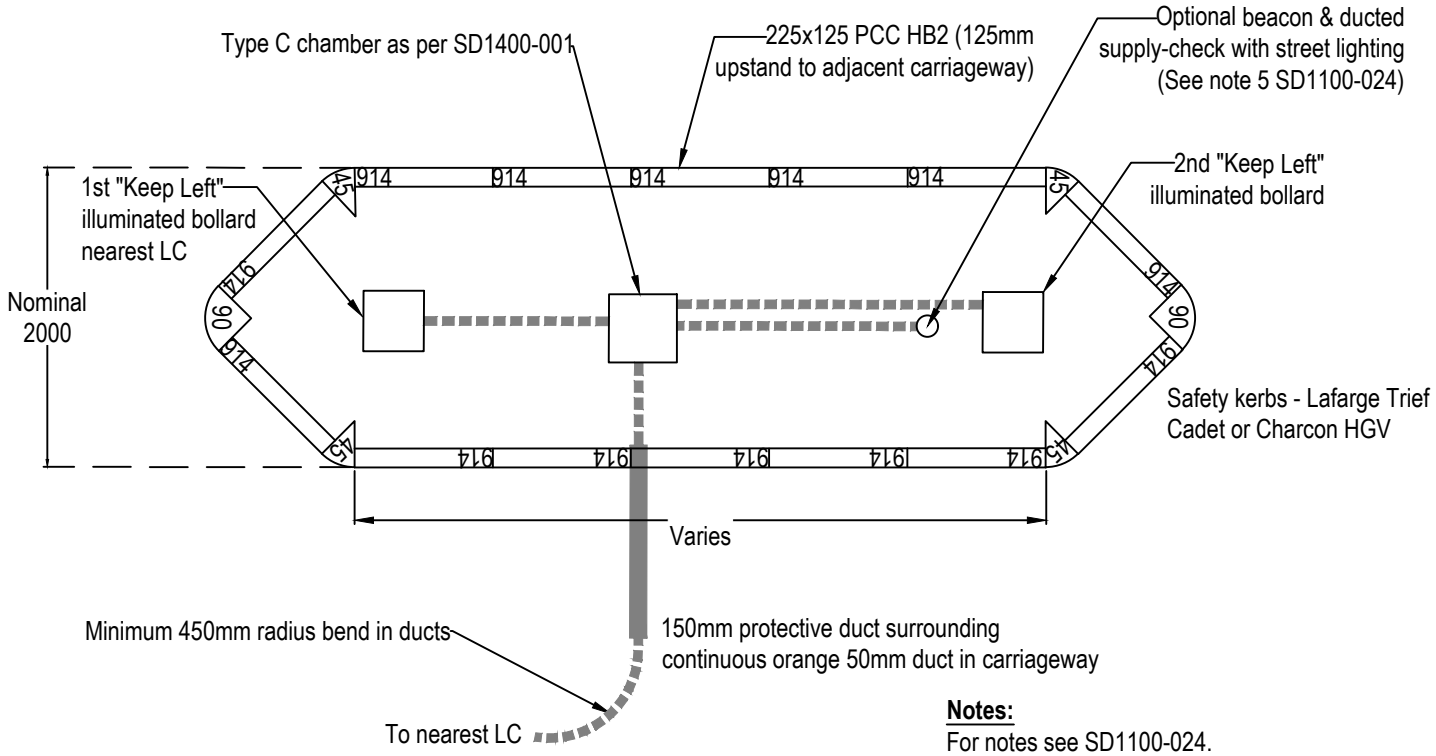
TRAFFIC ISLAND TYPE 4 (SAFETY KERBED)

Varying island sizes can be constructed by using different combinations of straight and angled kerbs



TRAFFIC ISLAND TYPE 5 (SAFETY KERBED SOLID ISLAND)

Varying island sizes can be constructed by using different combinations of straight and angled kerbs



Notes:
For notes see SD1100-024.

STANDARD DETAILS

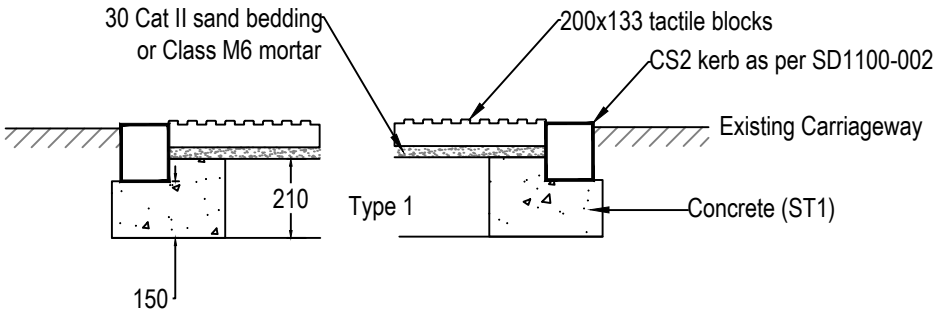
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

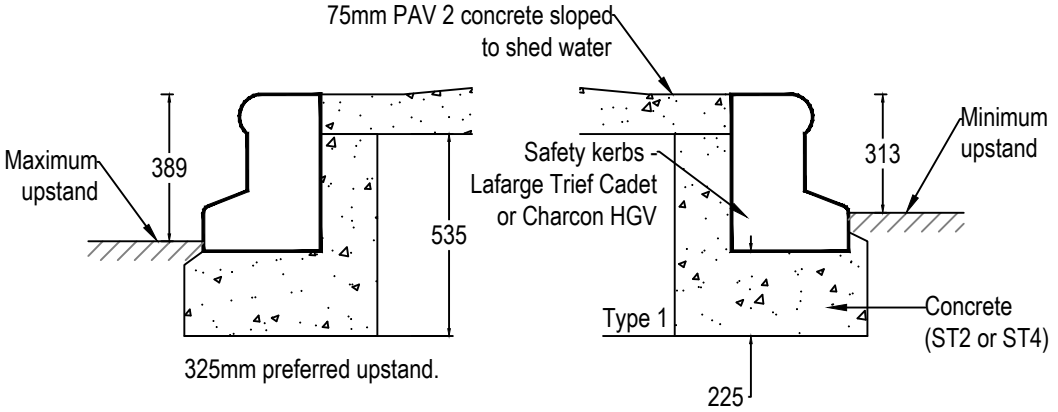
Islands Type 4 & 5 (Part 2)

Drawing: SD-1100-026
Revision: Ø
Drawn by: RR
Scale: 1:20 @ A4
Date Drawn: 06/09/2024

SECTION THROUGH TACTILE AREA



SECTION THROUGH ISLAND END



Notes:
For notes see SD1100-024.

STANDARD DETAILS

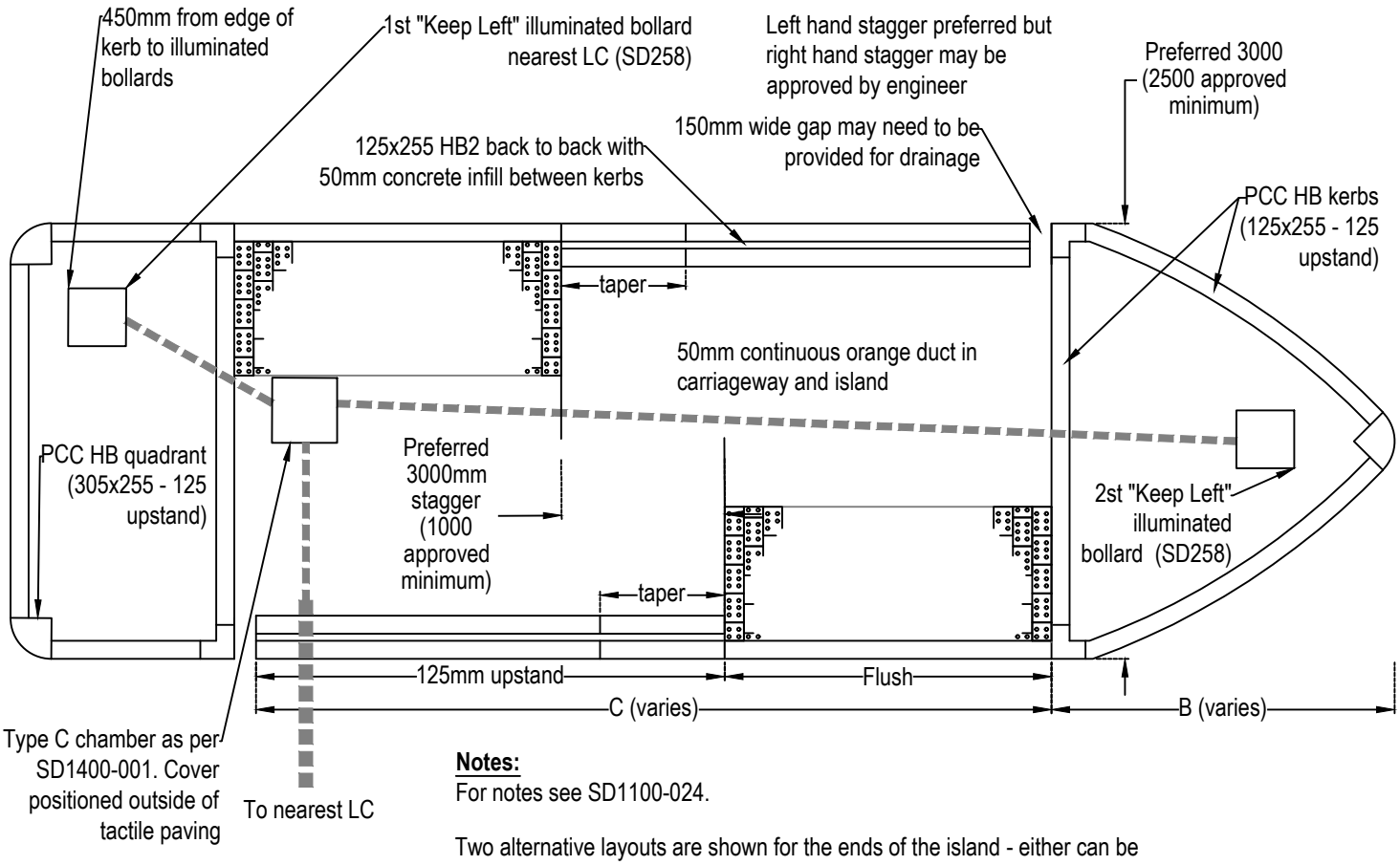
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

Island Type 6

Drawing	Revision
SD-1100-027	Ø
Drawn by: RR	Scale: 1:50 @ A4
Date Drawn: 06/09/2024	

TRAFFIC ISLAND TYPE 6 (STANDARD KERBED PEDESTRIAN PEN)

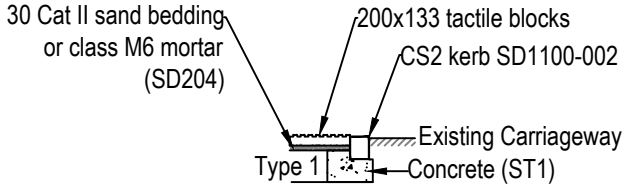


Notes:

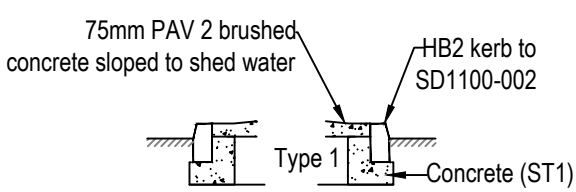
For notes see SD1100-024.

Two alternative layouts are shown for the ends of the island - either can be used at either end although square ended islands are rarely used.
Guardrails should not be used unless instructed by employers representative.
All associated poles, beacons etc to have 450 clearance from kerb face.
Island can be constructed of standard or safety kerbs.

SECTION THROUGH TACTILE AREA



SECTION THROUGH ISLAND END



STANDARD DETAILS

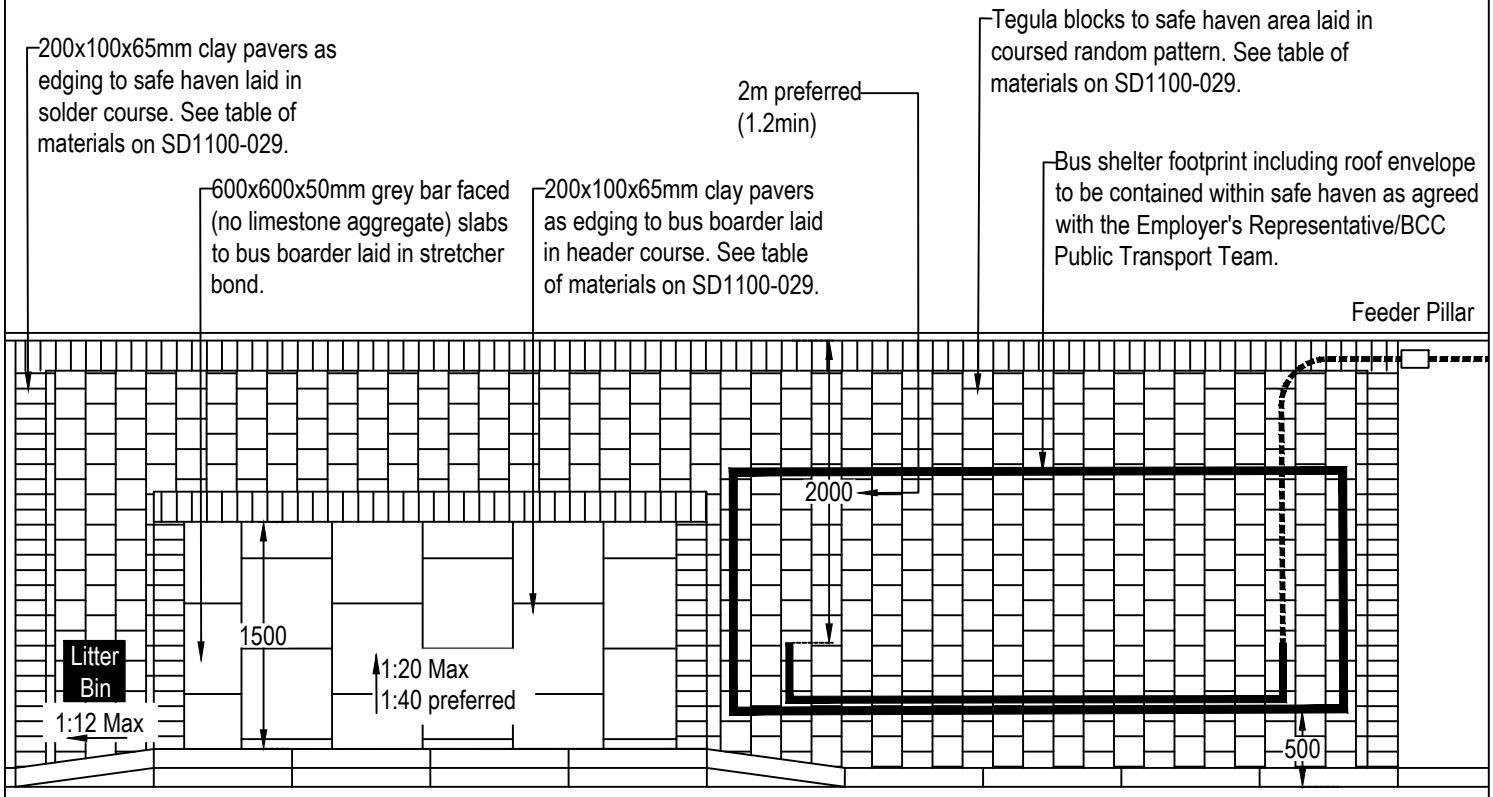
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

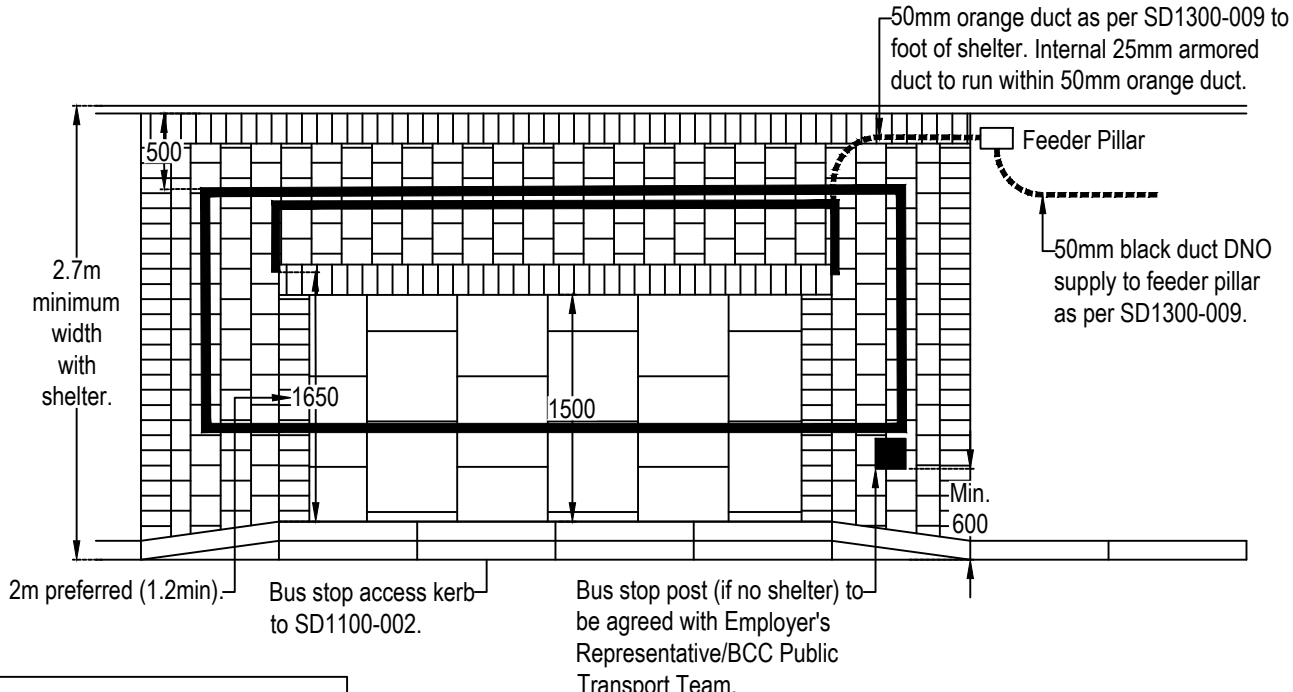
Bus Stop Safe Havens

Drawing	Revision
SD-1100-028	Ø
Drawn by: RR	Scale: 1:50 @ A4
Date Drawn: 06/09/2024	

SAFE HAVEN EXAMPLE 1



SAFE HAVEN EXAMPLE 2



NOTE:
Bus stops will be specified either 'Standard' or 'MetroBus' and must conform to details set out in SD1100-029.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

Bus Stop Safe Haven Notes

Drawing: SD-1100-029
Revision: Ø
Drawn by: RR
Scale: 1:50 @ A4
Date Drawn: 06/09/2024

Notes:-

1. Safe haven and raised kerb length to be agreed with BCC Public Transport.
2. Care must be taken in the layout design to ensure that buses can swing in tight against the kerb. This will often require long approaches. Layouts must be checked using an AutoTrack or similar programme, or bus stop may be built out into carriageway. Length of 180 height kerbs = 3m minimum, 8m preferred.
3. The RAL colour of the tegula paving will be as specified by the Employer's representative.
4. Clay pavers to be to BS EN 1344 and concrete flags to BS EN 1339.
5. Shelter configuration to be agreed with BCC Public Transport.
6. Shelter foundation to approx. 400mm below finished surface level. Utilities depths to be identified and adjusted by agreement.
7. Feeder pillar type to be specified by BCC street lighting engineer.
8. Avoid gullies on lead in tapers.
9. iPoint for Metrobus stops to be located 3-5m from shelter as agreed with BCC Public Transport.
10. Minimum 2 cycle stands to be provided at Metro Bus stops.
11. See SD0700-027 for bus stop carriageway construction.

Paving Materials Table

	Materials Standard	Metrobus
Bus Border Edge	Red Brindle	Staffordshire Blue
Safe Haven Edge	Staffordshire Blue	Staffordshire Blue
Tegular	Traditional	Pennant Grey

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways Cycleways and Paved Areas

Kerb Notes

Drawing	Revision
SD-1100-001	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

NOTES

The typical details shown are for precast concrete kerbing with bituninous pavements. Some variants in the details may be necessary for other types of kerbing and in particular for other types of pavements:

1. Kerb faces shall be:

Full kerbs	125mm
Vehicular drop kerbs	25mm
Pedestrian drop kerbs	flush (0-6mm)
Bristol Cycle kerbs	50mm

2. Full-length kerbs shall be used wherever possible. Cut kerbs where unavoidable shall be at least 300mm long and cut with a saw or disc-cutter.

3. Purposed made transition kerbs shall be used to change from one kerb type to another. Proprietary double-length transitions are required at pedestrian crossings.

4. Purposed made radius kerbs and channels shall be used for radii or less than 12m. Proprietary internal or external angle kerbs shall be used to form right-angles in areas of PCC kerbing. Mitring of PCC kerbs is not acceptable on external angles. Small radius kerbs and quadrants, cut if necessary, may be used to form corners.

5. Kerbing shall be laid close-butted with 2mm gaps. Mortared joints are not acceptable.

6. Foundation:- Kerbs shall be laid directly on a concrete Class ST1 race or alternatively on a 12mm thick Class 1 mortar bed on the concrete Class ST1 race. The kerb race shall be laid on rolled sub-base at least 100mm thick.

7. Delays:- If there is more than 24 hours delay between laying the foundation and placing haunching, the joint shall be painted with a cement slurry before haunching. Dowel bars may be required (20 dia. MS 200 long at 450 c/c, 300 long for safety kerbs and bus kerbs).

8. Channels are required if longitudinal gradient of road is less than 1 in 120 (0.833%)

9. Depth of kerb race concrete class ST1 can go up to 225mm.

10. Cover to haunching to suit surface course.

11. No epoxy repairs permited. All damaged kerbs to be replaced.

12. Type 1 under haunching.

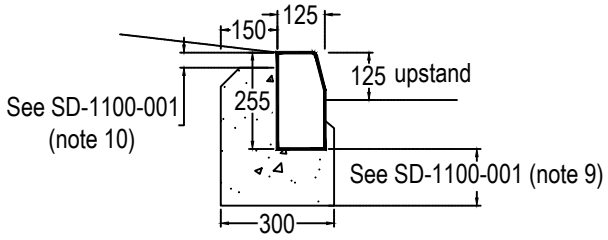
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

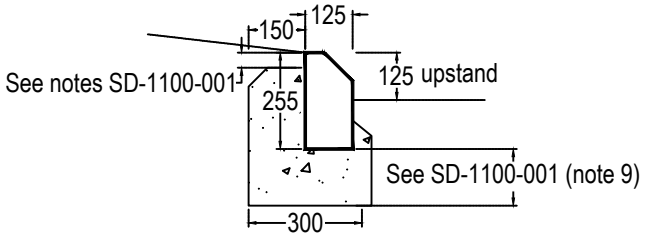
Series 1100: Kerbs, Footways Cycleways and Paved Areas

Kerbs 1

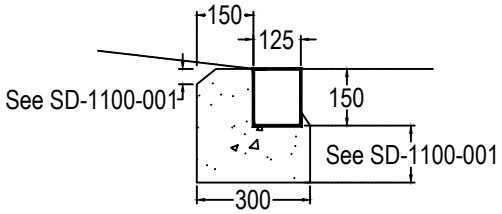
Drawing	Revision
SD-1100-002	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	



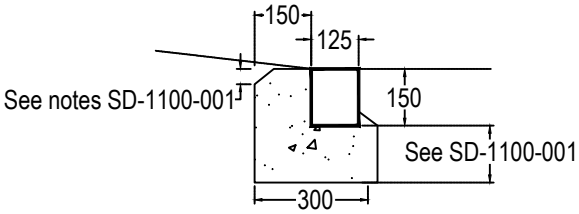
HALF BATTER KERB
Kerb BS EN 1340: Type HB2/HB1



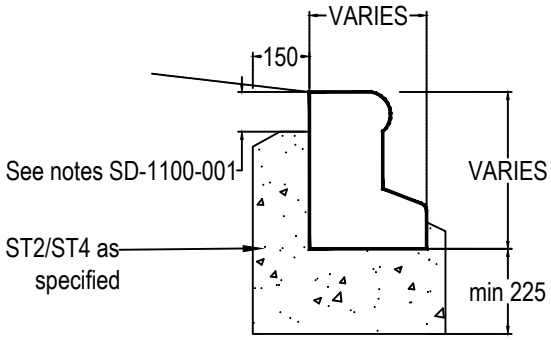
FULL BATTER KERB
Kerb BS EN 1340: Type SP



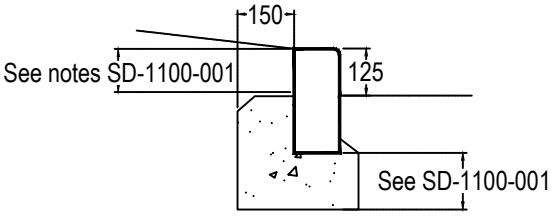
FLUSH KERB(0-6mm upstand)
Channel used as kerb BS EN 1340: Type CS2



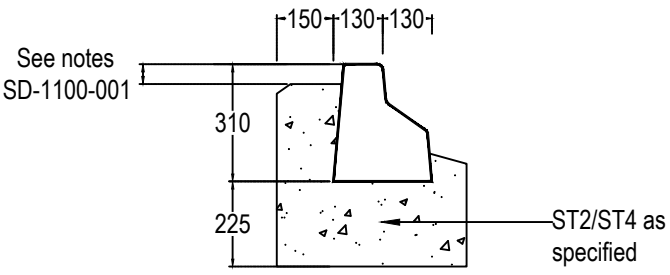
BULL NOSED KERB(25mm upstand)
Kerb BS EN 1340: Type BN



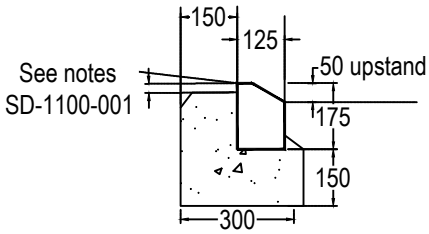
SAFETY KERB
Trief Cadet or Charcon HGV kerbs or similar approved



NATURAL STONE
(As approved by Employer's representative)



GUIDED BUS ACCESS KERB
180mm Charcon Access kerb. Bus stop kerb in conservation areas to be the same.



BCC CYCLE KERB
50mm upstand Charcon cycle demarcation kerb or natural stone (see above)

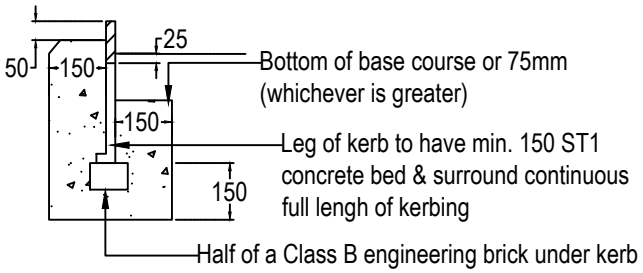
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

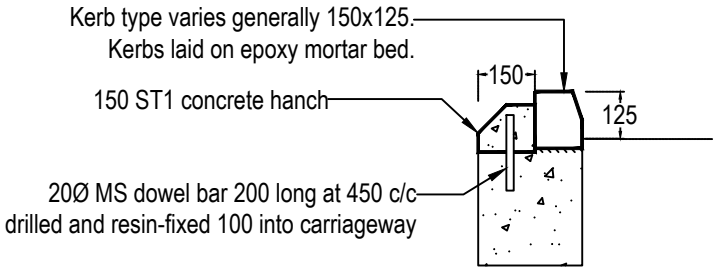
Series 1100: Kerbs, Footways Cycleways and Paved Areas

Kerbs 2

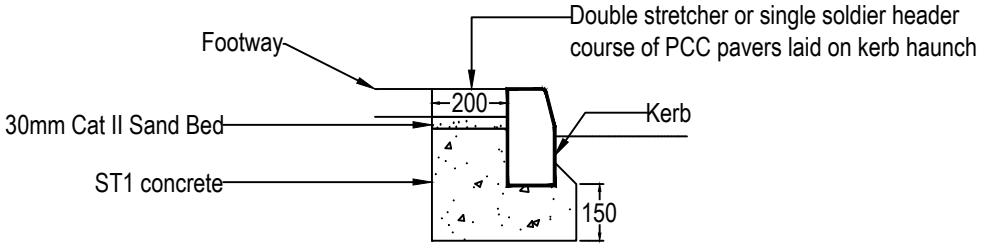
Drawing	Revision
SD-1100-003	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	



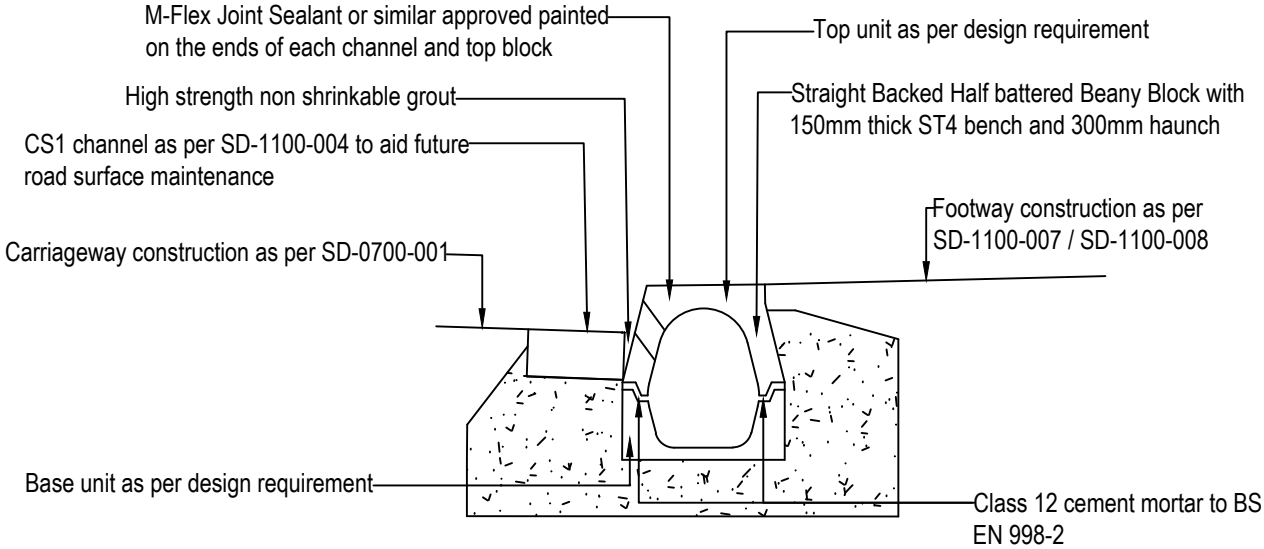
CAST IRON KERB



KERBS LAID ON EXISTING CONCRETE RACE OR CARRIAGEWAY



ALTERNATIVE HAUCHING IN SLABBED/PAVER AREAS



BEANY KERB

NOTES

1. Refer to SD-1100-001-Ø for kerb notes.
2. Size and type of Beany units to be specified by engineer
3. At pedestrian and vehicle crossovers beany top unit to be replaced with CS2 kerb to SD-1100-002 laid on Beany base unit
4. 16mm dowel bar may be specified within concrete haunching by engineer

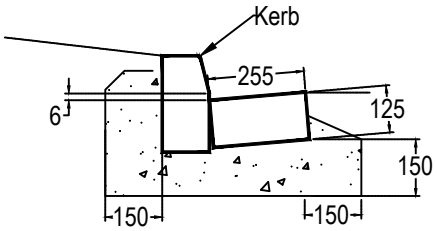
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

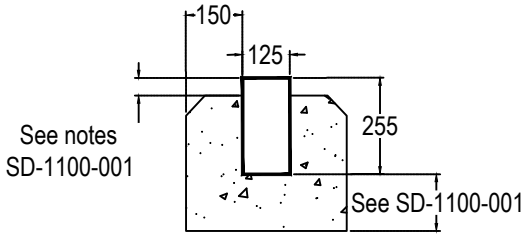
Series 1100: Kerbs, Footways Cycleways and Paved Areas

Channels

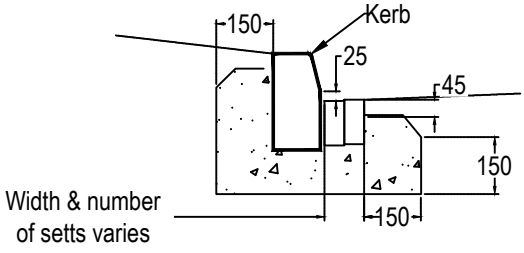
Drawing	Revision
SD-1100-004	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	



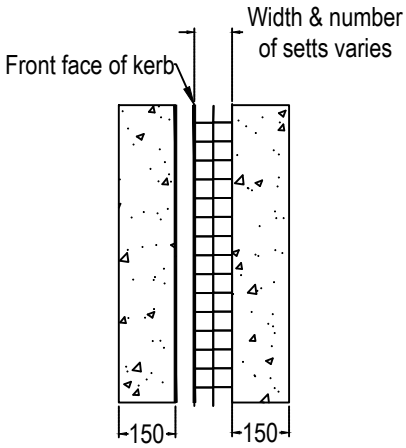
KERB WITH CHANNEL
Channel BS EN 1340: Type CS1
255x125mm kerb as shown on drawing SD-1100-002



VERTICAL CS1 CHANNEL (Flush)
Channel BS EN 1340: Type CS1 255x125mm (To be used where stone setts are adjacent to flush kerb)



KERB WITH SETT CHANNEL
BS EN 1340 Sett construction shown on drawing SD-0700-009



KERB WITH SETT CHANNEL PLAN VIEW

NOTES

1. Channels must be grouted with Class 1 mortar.
2. Refer to SD-1100-001 for kerb notes.

STANDARD DETAILS

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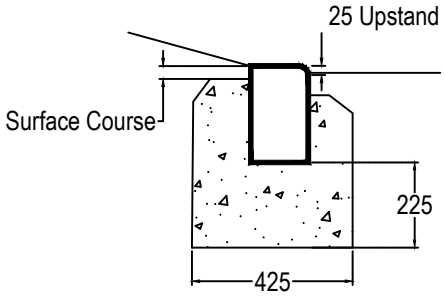
Series 1100: Kerbs, Footways, Cycleways and Paved Areas

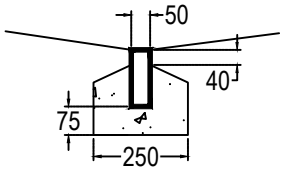
Edgings

Drawing	Revision
SD-1100-005	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	



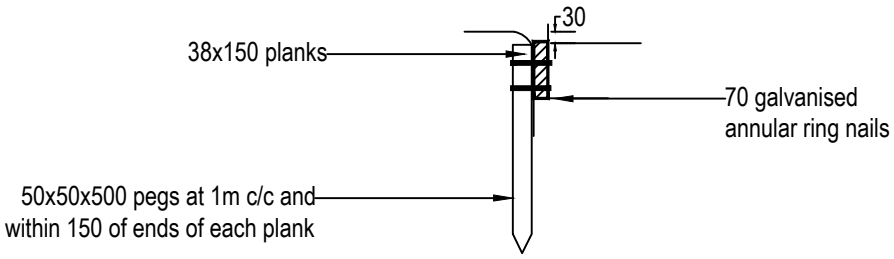
Kerb BS EN 1340: Type BN 125x255mm (BACK OF VEHICULAR CROSSING OR SIMILAR)
(See note 2)

DEMARCATION KERBS



Edgings BS EN 1340: Type EF
50x150mm square top

EDGINGS



All timber treated for 40 year design life
(Only to be used with BCC approval)

TIMBER EDGING

NOTES:

1. Refer to SD-1100-001 kerb notes for general kerb installation.
2. Demarcation studs not to be used.
3. Option for 250mm timber edging.

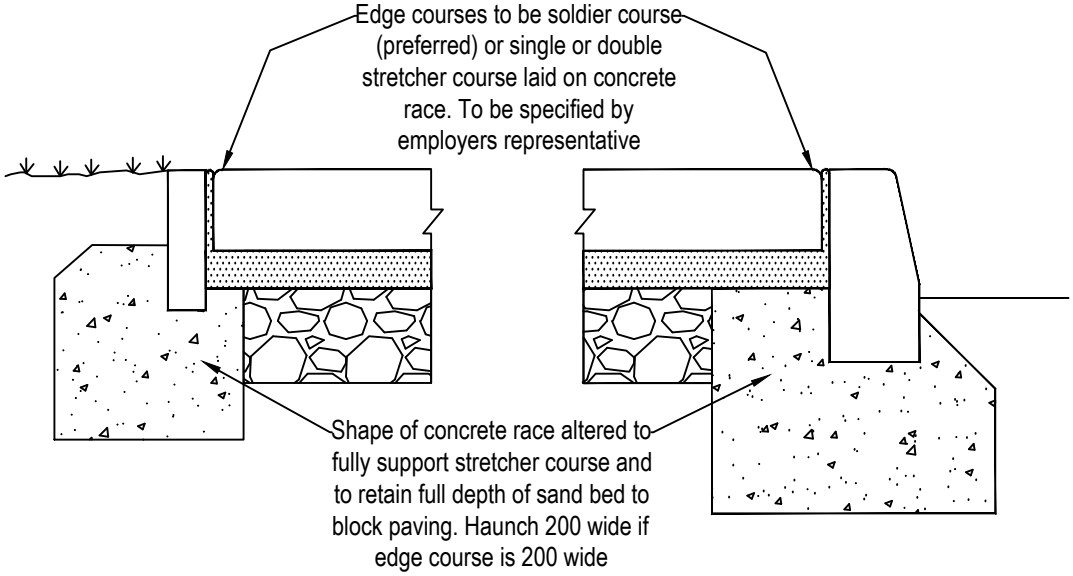
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

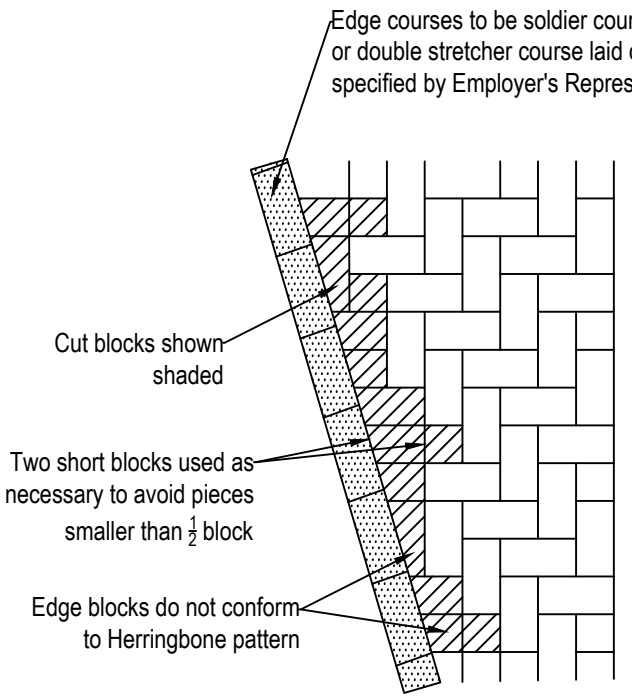
Paver Edge

Drawing	Revision
SD-1100-006	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

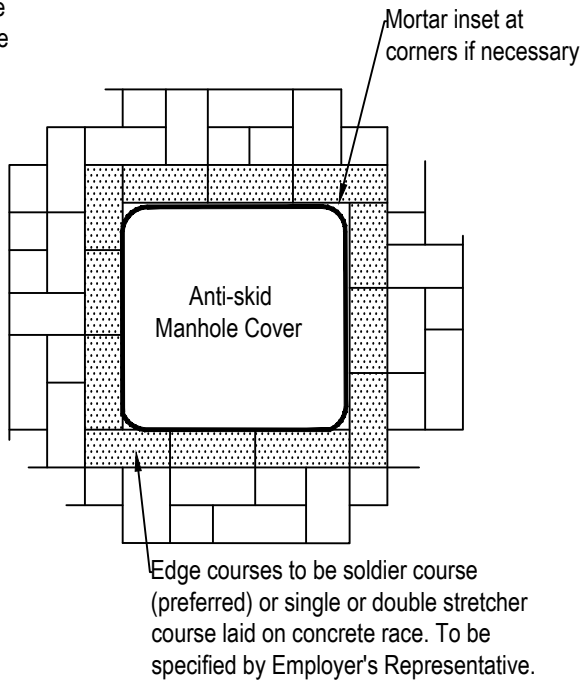


AT BACK EDGING (NTS)

AT KERBS (NTS)



AT ANGLED OR CURVED EDGES



AROUND MANHOLE COVERS

NOTES:

1. Blocks shall be cut using a power or Masons saw or Block Splitter.
2. Cut pieces less than 1/4 block and thin pieces shall not be used. Pieces greater than 1/2 block are strongly preferred.
3. Where blocks cannot be cut to fit, full depth Concrete ST3 infill coloured to match may be used.

Infill Covers: Permission to use inset covers must be obtained from the appropriate undertaker.

Gully & manhole frames: Manhole frames in block paving areas must be a suitable type & depth so that the pavers can be laid to butt directly up against the frame edge all round. In-situ concrete infill to gaps is not acceptable.

Where permission is given, a minimum 150mm deep inset manhole cover/frame to be used.

STANDARD DETAILS

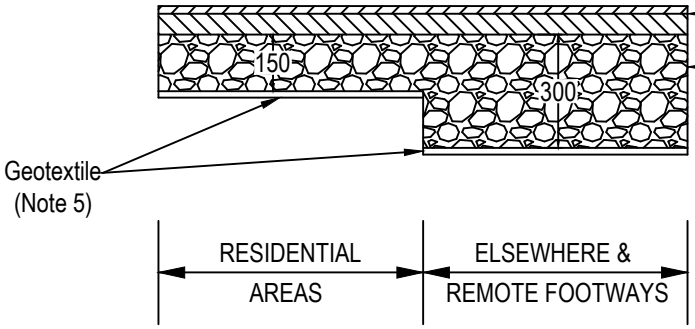
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

Paved Footways and Paths

Drawing: SD-1100-007
Revision: Ø
Drawn by: RR
Scale: 1:20 @ A4
Date Drawn: 06/09/2024

FLEXIBLE

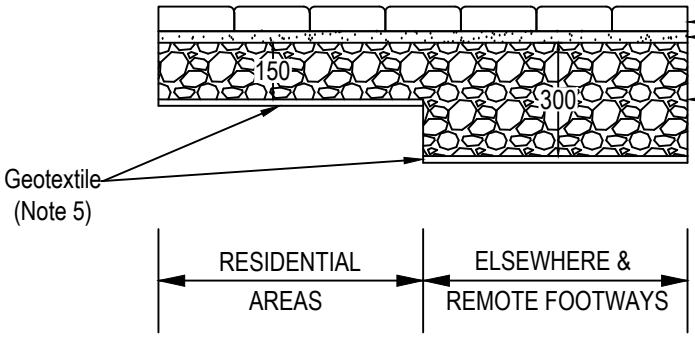


Footways wider than or equal to 2m to be machine laid

PREFERRED
20mm Surface Course: AC 6 dense surf 100/150, nom aggregate 6mm, no limestone aggregate.
55mm Binder Course: AC 20 dense bin 100/150.
If specified by Employer's Representative:
50mm Surface Course single layer: Special Mix HRA 40/10 F surf 100/150, no limestone aggregate.
Note: Surface course regularity of footways to be used as cycleways on carriageway comply with SHW cl. 702, Table 2 (Class B).

Type 1 Granular Material Sub-Base to SHW cl 803

PAVERS

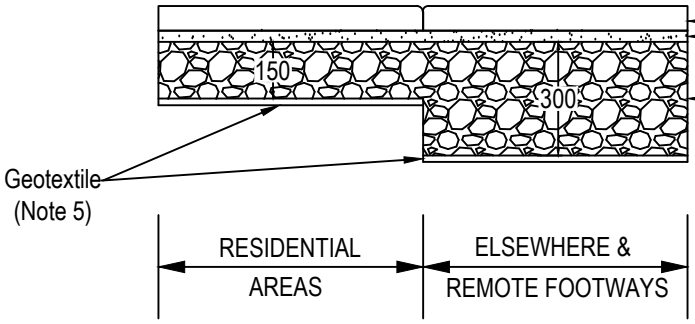


65mm P.C.C. Block Pavers (non-limestone) 200 x 100 rectangular chamfered. Joints filled with kiln-dried jointing sand to refusal over several passes.
In areas subject to vehicle traffic, pavers must be laid in herringbone pattern. Other patterns if agreed by Employer's Representative. No cut block to be less than $\frac{1}{4}$ of whole block.
80mm P.C.C. block pavers to be used in potential vehicle overrun areas.

30mm Cat.II sand laying course to BS 7533-3.
When in tarmac, Screed bed to be used.

Type 1 granular material sub-base to SHW cl. 803.

PCC

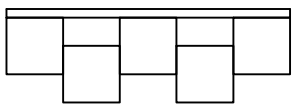


400x400x65 PCC slabs with chamfered edges and no limestone, aggregate or fines.

30mm Cat.II sand laying course to BS 7533-3 or Class M6 mortar to BS EN 998-2.

Type 1 granular material sub-base to SHW cl. 803.

NOTES
1. Slabbing to start at kerbs and work towards back of path.
2. No cut slab to be less than half whole slab area or width.
3. Slabs laid in staggered joints parallel to kerb:



NOTES:
1. For PSV, See SD-1100-012.
2. Where necessary to match in with existing footway, concrete footway may be laid using the same construction as shown on SD-1100-011 for 'All other crossovers'. Infill corners to be wed in block paved areas.
3. Manhole's to have grip top applied to match or similar.
4. Bedding and pointing may be substituted for proprietary specialist products as directed by Employers Representative.
5. Sub-Base depth to be increased, as required by the Employer's Representative, and geotextile membrane laid in poor ground conditions (CBR <2%).
6. Design of footways and cycleways to DMRB CD239.

STANDARD DETAILS

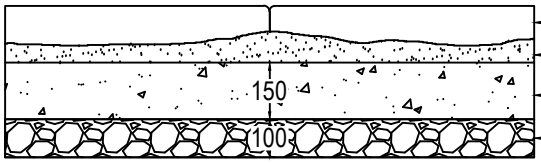
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

Stone Paved Footways and Paths

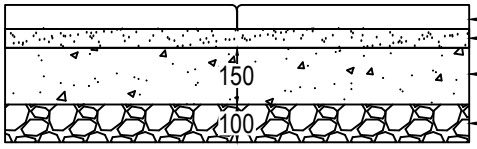
Drawing	Revision
SD-1100-008	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

Reclaimed Pennant Slabs



- Dressed Pennant Paving Slabs.
- Min. 50mm Class M6 Mortar to BS EN 998-2.
- 150mm Concrete Class ST1 Base, (C20) To ST1 (Leanmix)
- 100mm (or as specified by Employer's Representative) Type 1 Granular material sub-base to SHW cl 803.

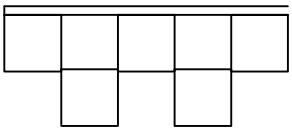
Natural Pennant Stone Slabs



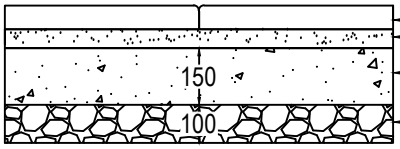
- Surface course: 600 x 63 natural stone slabs. Random lenghts between 600mm and 900mm.
- Bedding: 50mm fine bedding concrete with appropriate proprietary priming slurry applied to stone and proprietary flowable grout in joints. To be approved before use by the Employer's Representative.
- Foundation: 150mm ST1 lean mix.
- Sub-base: 100mm Granular Material Type 1. If subgrade CBR <5%, consult Employer's Representative.

NOTES

1. Joints shall be flush.
2. Avoid bridging between concrete and flexible subgrade.
3. Laid in courses with half bond staggered joints, minimizing slabs of with less than half
4. In areas of vehicle overrun slabs to be 80mm thick



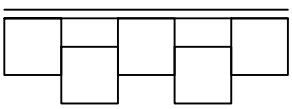
Natural York Stone Paving



- Surface Course: 500 x 63 York Stone Scoutmoor diamond sawn slabs, Marshalls or similar approved. Random lengths between 500mm and 700mm.
- Bedding: 50mm fine bedding concrete with appropriate propietary priming slurry applied to stone and proprietary flowable grout in joints. To be approved before use by the Employer's Representative.
- Foundation: 150mm ST1 Lean Mix.
- Sub-Base: 100mm Granular Material Type 1. If subgrade CBR <5%, consult Employer's Representative.

NOTES

1. Priming slurry applied to stone, and Larsen flowable grout for joints.Joints are to be 10mm wide. The colour of the grout shall be Natural Grey.
2. Avoid bridging between concrete and flexible subgrade.
3. Laid in courses with half bond staggered joints
4. In areas of vehicle overrun slabs to be 75mm thick



STANDARD DETAILS

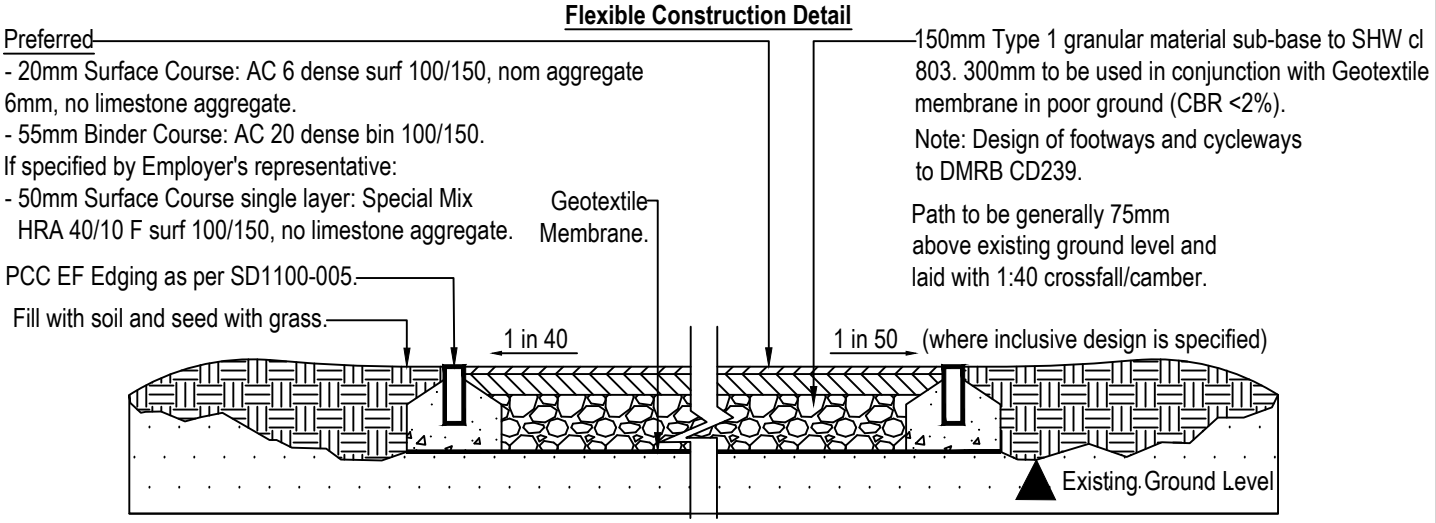
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

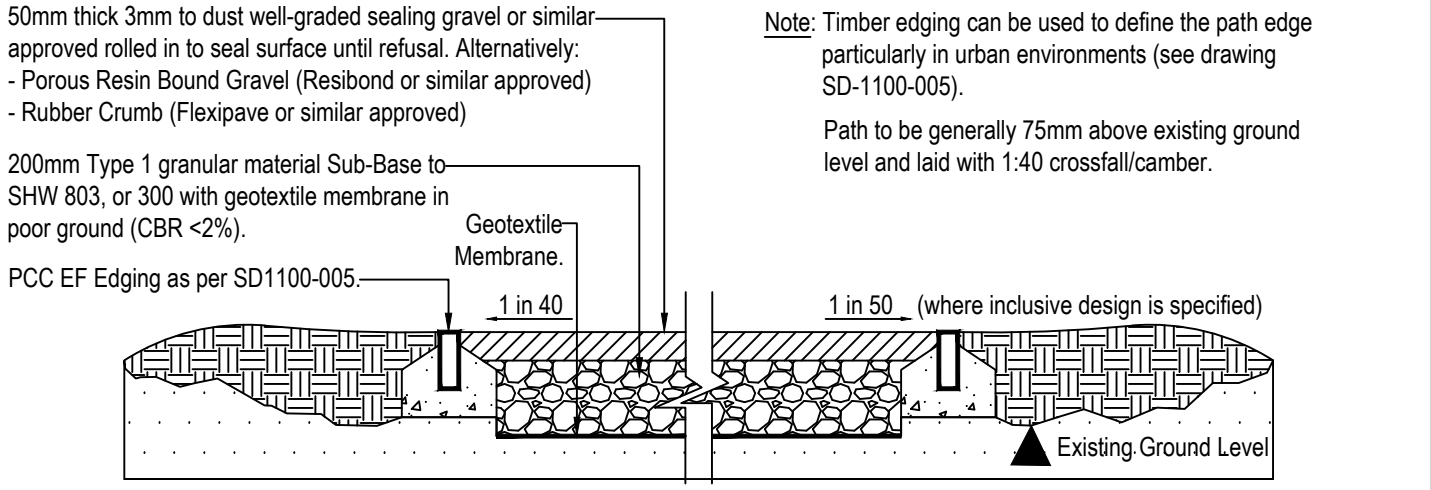
Paths in Grass Areas

Drawing	Revision
SD-1100-009	Ø
Drawn by	**Scale**
RR	1:20 @ A4
Date Drawn	
06/09/2024	

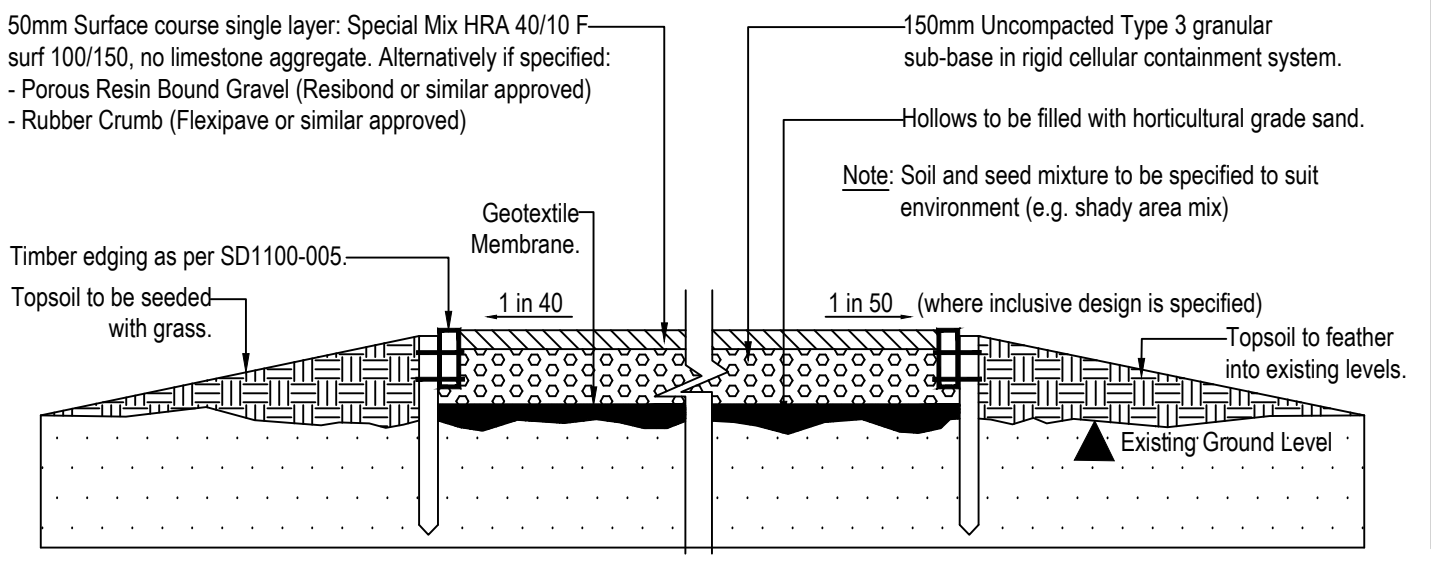
Flexible Construction Detail



Gravel Construction Detail



'NO DIG' Construction Detail



STANDARD DETAILS

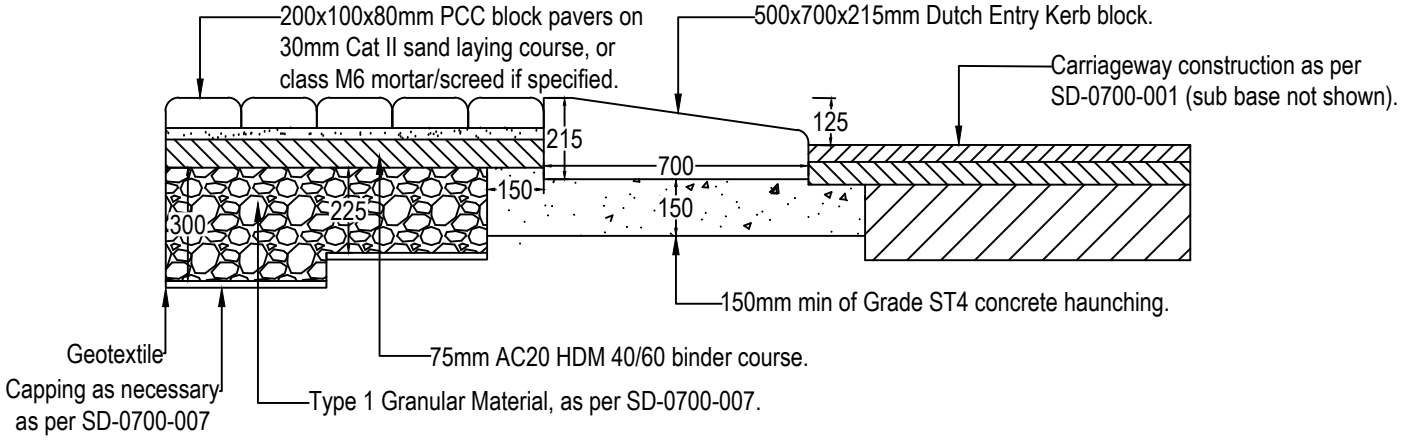
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

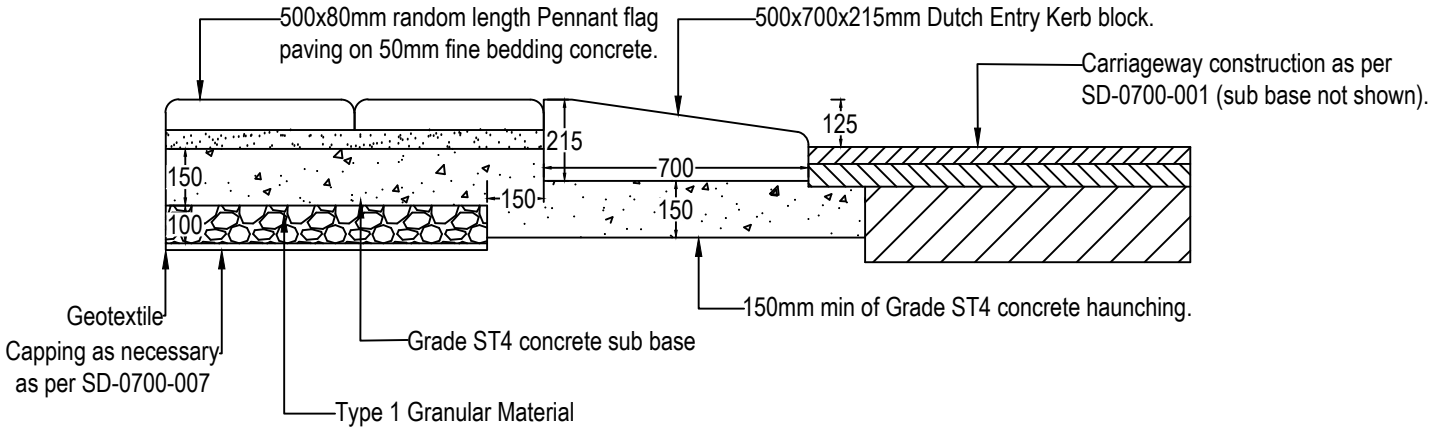
Continuous Footways

Drawing	Revision
SD-1100-010	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

PCC Continuous Footway



Pennant Stone Continuous Footway



STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

Footway Crossovers

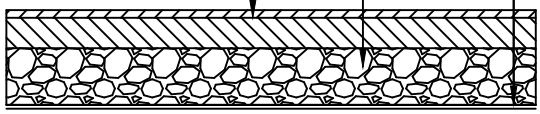
Drawing	Revision
SD-1100-011	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

TO PRIVATE DRIVES - Flexible Construction

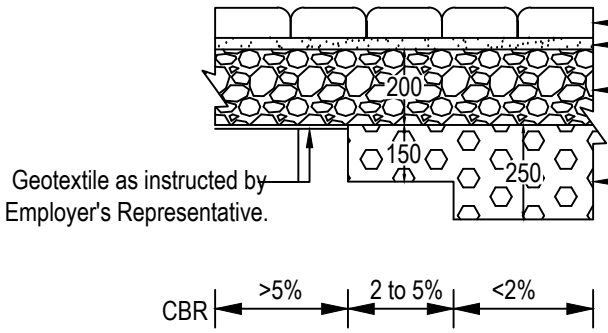
PREFERRED
20mm Surface Course: AC 6 dense surf 100/150, 0/6mm crushed rock aggregate, Min PSV 55.
80mm Binder Course: AC 20 dense bin 100/150 to SHW cl906.
Or With Approval of Employer's Representative
40mm Surface Course: Special mix HRA 40/10 F surf 100/150, PSV 55.
60mm Binder Course: AC 20 dense bin 100/150 to SHW cl906.

150mm Type 1 granular material Sub-Base to SHW cl 803.

Geotextile membrane as instructed by Employer's Representative.



TO PRIVATE DRIVES - Block Pavers



80mm thick. PCC Block Pavers 200x100 rectangular chamfered in herringbone pattern. Joints filled with kiln-dried sand to refusal over several passes.

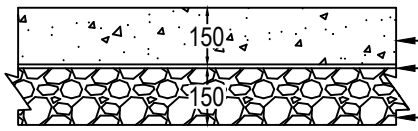
30mm Cat.II sand laying course to BS 7533-3.

Type 1 Granular Material Sub-Base to SHW cl 803.

Class 6F4 or 6F5 capping or as instructed by employer's representative to SHW cl 613 (with min. CBR 15%) must not contain clay brick (see note 2).

NOTES
1. For heavy duty crossovers use SD-0700-030 car parks.
2. Sub-grade improvements are required where in-situ subgrade has an estimated CBR value less than 2.5% (or sungrade surface modulus lower than 30MPa as described in DMRB CD225 clause 2.7).

TO PRIVATE DRIVES - Concrete



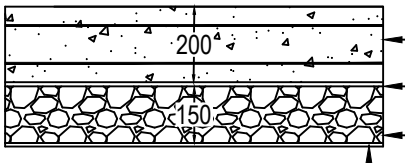
150mm thick PAV2 Concrete grade C32/40, Surface finish shall be brushed or diamond rolled to achieve min. mactrotexture of 1mm (SHW cl 1026). Concrete to be mixed in accordance with SHW cl 1022.

Waterproof membrane as instructed by Employer's Representative.

Type 1 Granular Material Sub-Base to SHW cl 803.

ALL OTHER CROSSOVERS (INDUSTRIAL USE)

FLEXIBLE Use appropriate road construction.



200mm thick PAV2 Concrete grade C32/40, A393 mesh reinforcement 50mm cover top and bottom, air-entrained in accordance with SHW cl 1002. Surface finish shall be brushed to achieve min. mactrotexture of 1mm (SHW cl 1026). Concrete to be mixed in accordance with SHW cl 1022.

Waterproof membrane as instructed by Employer's Representative.

Type 1 Granular Material Sub-Base to SHW cl 803.

Geotextile as instructed by Employer's Representative

CONCRETE Contraction joints required.

STANDARD DETAILS

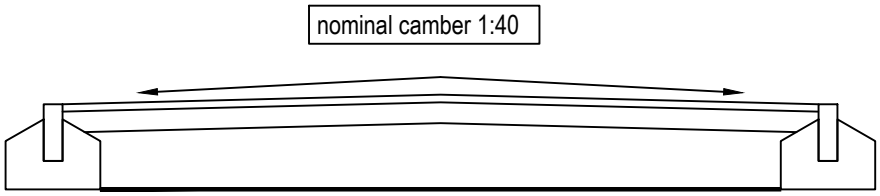
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

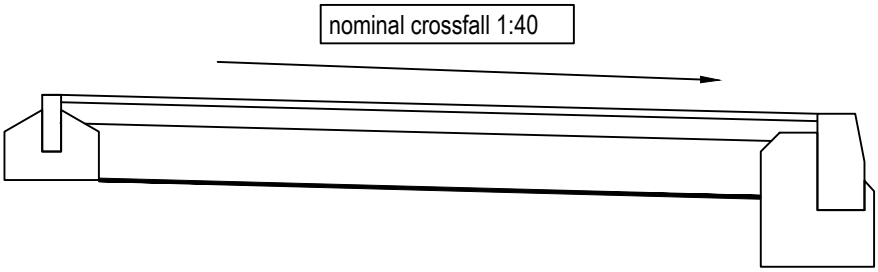
Series 1100: Kerbs, Footways Cycleways and Paved Areas

Typical Footway Profiles

Drawing: SD-1100-012
Revision: Ø
Drawn by: RR
Scale: 1:20 @ A4
Date Drawn: 06/09/2024

Typical Footpath Profiles





Location		PSV
Footways and Paths	gradient > 1:12	60
	Elsewhere	55
All approaches to pedestrian crossings and the like	Cold applied epoxy High Friction Surfacing to SHW cl. 924	70

NOTES:

1. When buildings or private properties at back of footway, then fall into carriageway (not cambered).
2. 1:40 preferred, 1:20 or 1:80 permitted where required due to existing levels or specified by engineer.
3. 1:50 may be specified as preferred in locations requiring inclusive design priority.

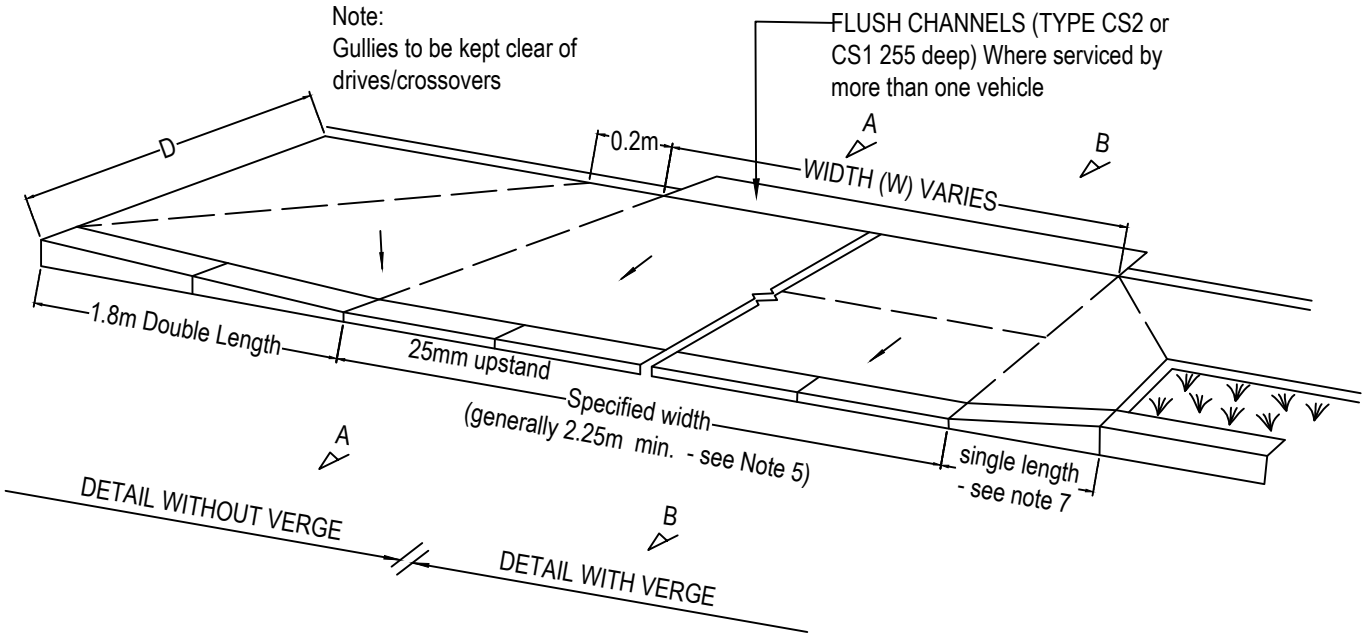
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

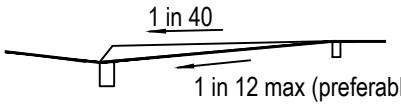
Vehicle Crossovers

Drawing	Revision
SD-1100-013	Ø
Drawn by: RR	Scale: NTS @ A4
Date Drawn: 06/09/2024	

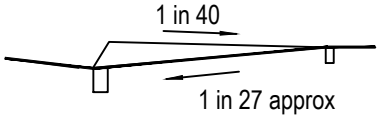


TYPICAL GRADIENTS

SECTION AA - NO VERGE

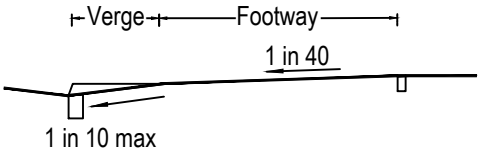


1 FOOTWAY DRAINING TOWARDS CARRIAGEWAY



2 FOOTWAY DRAINING AWAY FROM CARRIAGEWAY

SECTION BB - WITH VERGE



Footways with verges always drain towards the verge

Notes:

1. Construction is shown on drawing SD-1100-011, or as instructed by Employer's representative.
2. Drop kerb upstand shall be 25mm unless crossover is also designated for pedestrian use, in which case the kerbs shall be 0-6mm upstand.
3. Back of path shall not be dropped unless agreed by Employer's Representative.
4. Back edging is not acceptable at the back of crossovers used by vehicles - use 150 channels instead (CS2 or CS1).
5. On crossovers used by large vehicles, "specified width" of drop kerb is generally W+0.5xD, but should not exceed 12m.
6. In most cases, there must be no kerbs, channels or other demarcations interrupting the line of the footway and the surfacing should visually match the footway (e.g. asphalt in asphalt footway, concrete or pavers in slab footways). In cases where vehicle use is high, consult the Employer's Representative for alternative design:

- 5 dwellings or less to be to SD-1100-011
- 5 dwellings or more to be to SD-0700-011, SD-0700-012, SD-0700-013

7. Single dropper allowed where appropriate and with agreement from Employer's Representative.
8. Where draining away from carriageway must enter suitable drainage system.

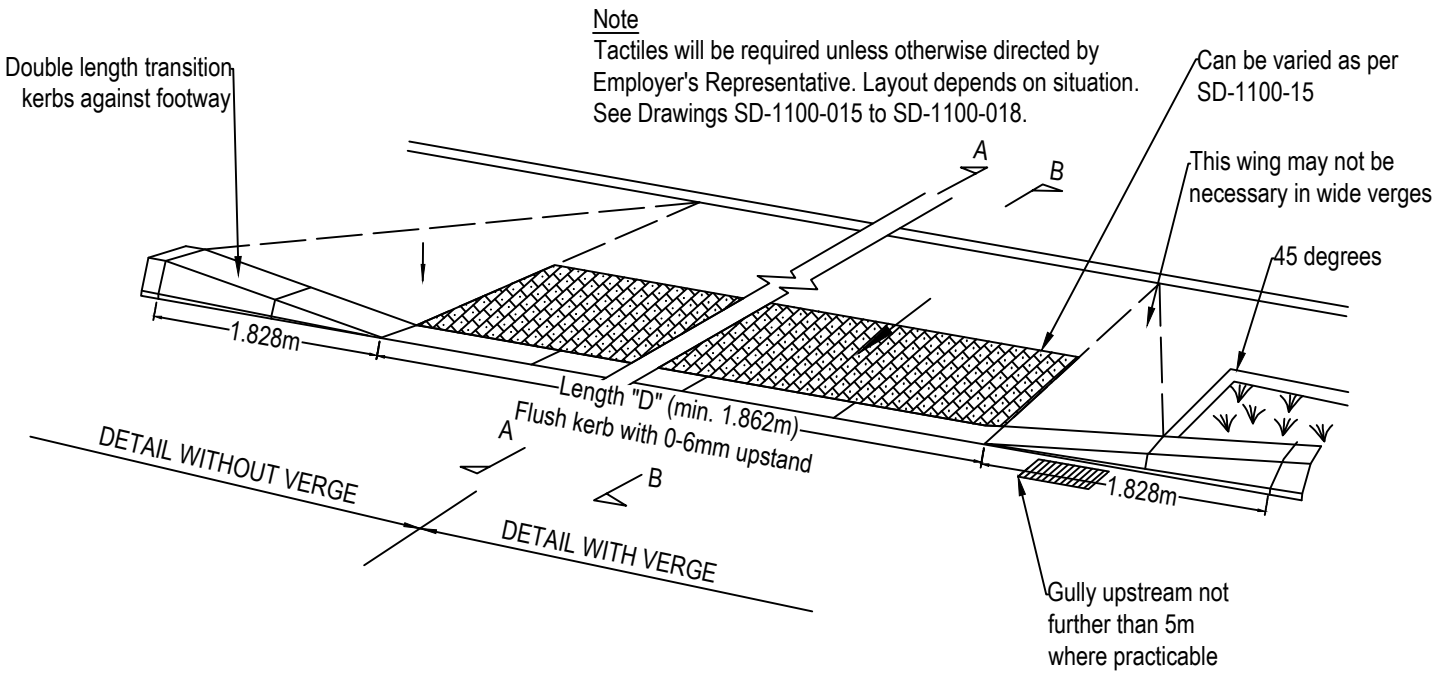
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

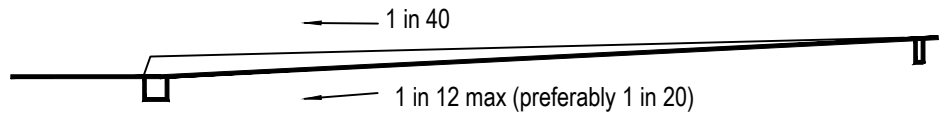
Pedestrian Drop Kerb and Cycleway Crossovers

Drawing	Revision
SD-1100-014	Ø
Drawn by: RR	Scale: NTS @ A4
Date Drawn: 09/05/2024	

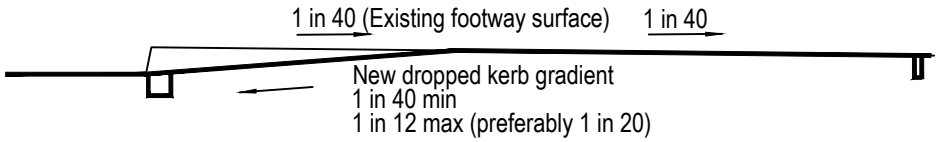


TYPICAL GRADIENTS

SECTION AA

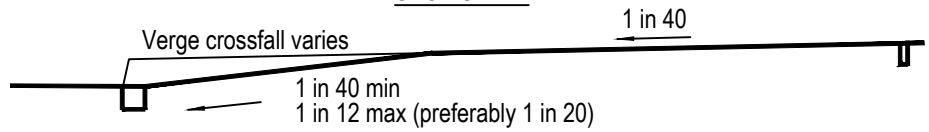


1 FOOTWAY DRAINING TOWARDS CARRIAGEWAY



2 FOOTWAY DRAINING AWAY FROM CARRIAGEWAY

SECTION BB



FOOTWAY WITH VERGE

NOTES:

1. Construction shall be the same as the adjacent footway unless required otherwise by the Employer's representative.
2. Footways may only drain towards the back of path if it is soft landscaped and run-off will not cause practical difficulties and permission is granted in perpetuity by the land owner.
3. The back of path shall not be dropped unless agreed by Employer's representative.
4. Flush kerbs shall be 0-6mm upstand and formed from CS2 channel blocks.
5. No kerbs, channels or other demarcations shall interrupt the line of the footway unless required by the Employer's representative.
6. Ponding in the channel by the transition kerb must be avoided. Gully should be installed on the uphill end of transition kerbs.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

Pedestrian Crossing Notes

Drawing	Revision
SD-1100-015	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

ALL CROSSINGS

DMRB applies with additions, amendments, and any BCC additional or substitute clauses.
Road markings at signal controlled junctions to be in accordance with Chapters 5 & 6 of the Traffic Signs Manual - Road Markings.
All dimensions are in millimetres unless specified. No part of any street furniture shall be closer than 450mm from the kerb face.

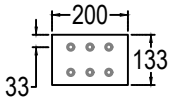
KERBS

1. Kerbs in front of tactile paving shall have an upstand of 0 to 6mm.
2. If longfall in front of kerbs is slacker than 1 in 100 then channels are required.

TACTILE PAVING

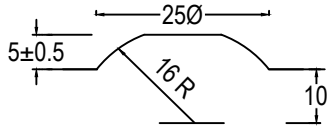
3. Tactile paving shall comprise 200x133x65 PCC laid in stretcher bond (one third and two thirds). It shall be of the modified blister type as per "Guidance on the Use of Tactile Paving Surfaces" Figure 2, published by DfT 1998.

PAVER DETAIL



BLISTER DETAIL

Tactile paving to be the modified blister type as per "Guidance on the Use of Tactile Paving Surfaces" Figure 2, published by DfT 1998.



4. Tactiles shall be RED at all controlled crossings. At uncontrolled crossings they shall be BUFF, unless CHARCOAL is required to give a contrast in colour.
5. Tactiles shall be 800 deep behind off-line drop kerb and 1200 deep in-line or main pedestrian flow.
6. Blister pattern must be aligned in the direction of the crossing.
7. Any gaps less than 10mm at the edge of the tactiles shall be filled with Class 2 mortar coloured red, buff or charcoal to match the tactile paving. The pattern of the tactile paving and the kerb, should be aligned with the "direction of the crossing".
8. The location of chambers within tactile areas shall be avoided if possible. Any which are unavoidable shall have inset covers to maintain tactile surface. Inset cover should be 'laid flush' with the surrounding tactile paving. Permission to use inset covers must be obtained from appropriate undertaker. Avoid material changes and gradient changes within cover. Those larger than 450mm² shall be made of 2 or more individual covers.
9. Paving blocks shall generally be buff colour at uncontrolled crossings to give colour contrast. Charcoal colour may be used if instructed.
10. Tactile paving slabs may be used instead of blocks if instructed by Employer's Representative.
11. Tactile paving shall be in accordance with DfT Guidance on the use of Tactile Paving Surfaces.
12. Single stretcher course is to be laid around the perimeter and bedded on mortar.
13. PCC blocks to be laid as per SD1100-007.
14. Tactile crossing width to be minimum of 1.8m.
15. For clarification of tactile paving requirements refer to the Employer's Representative or the Traffic Signals Team.

NON SIGNALISED CONTROLLED CROSSINGS

16. The belisha beacon should be 800mm edge to edge from the kerb face and 200mm from the edge of tactile paving, but refer to note above regarding clearance.

TRAFFIC SIGNAL CONTROLLED PEDESTRIAN CROSSINGS

17. All poles including short poles and others with Pedestrian Push Button Units shall be located 500mm edge to edge from the kerb face and 200mm from the edge of tactiles (also refer to Note 18 below). Poles and Pedestrian Push Button locations are indicated on SD1100-016.
18. Pedestrian push button should always be on the right hand side, can have additional one on the left hand side on one way roads where traffic is approaching from the left.
19. The footway shall be dished across the distance of the taper kerbs without abrupt changes of slope.
20. There shall be at least 1350mm clearance between the back of the path and obstructions such as poles, cabinets etc. If the location prevents this being provided, the Employer's Representative should be consulted on alternative layouts.
21. Ramp to be 1:40min, 1:12 max (1:20 preferred). Back of footway to be dished if needed over this area with no abrupt changes of slope.

STANDARD DETAILS

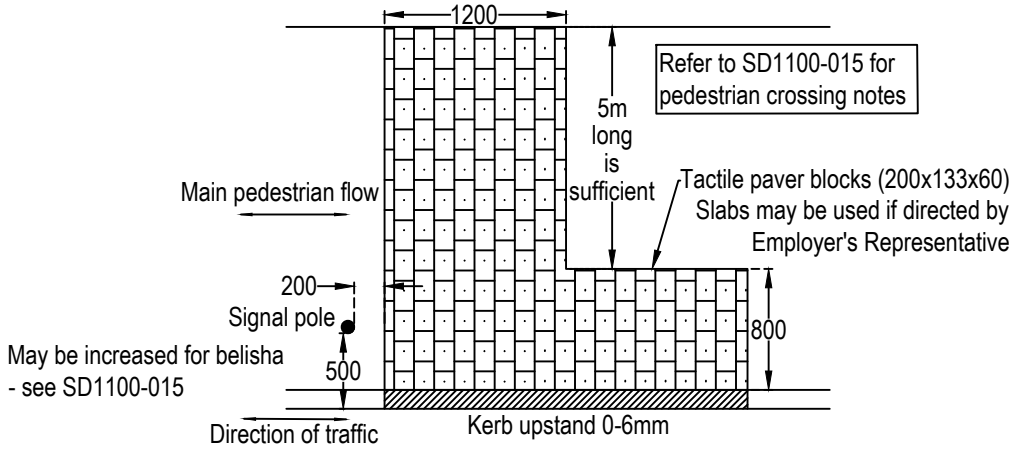
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

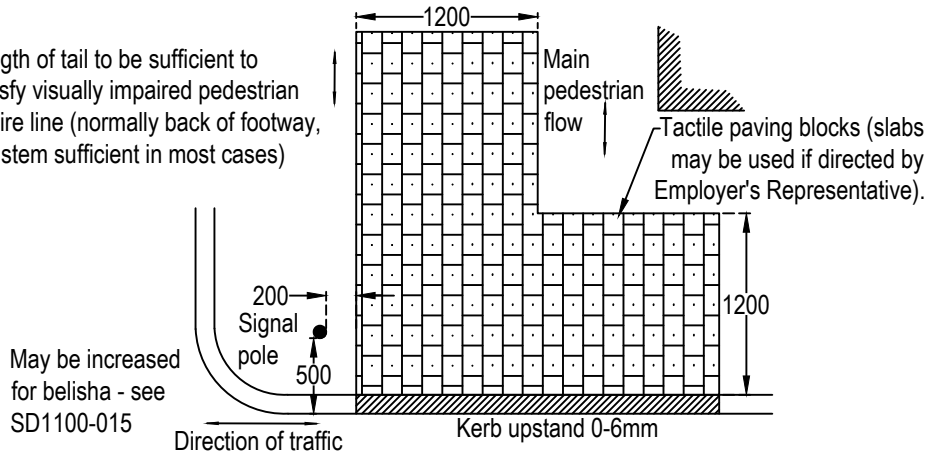
Tactile Paving
Controlled Crossing

Drawing	Revision
SD-1100-016	Ø
Drawn by: RR	Scale: 1:50 @ A4
Date Drawn: 06/09/2024	

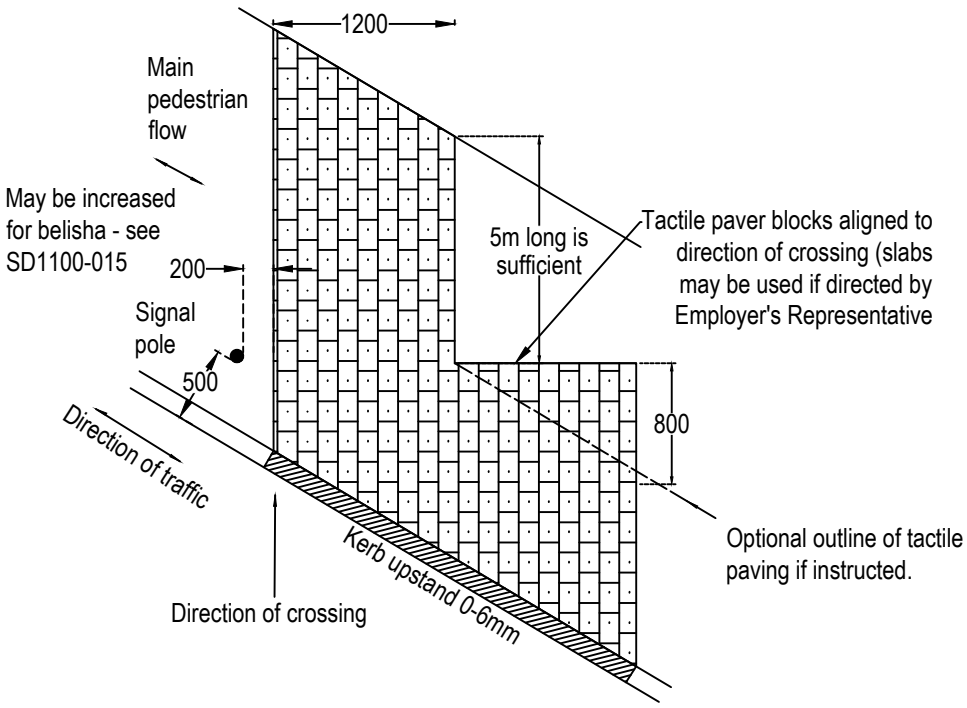
CROSSING PERPENDICULAR TO MAIN PEDESTRIAN FLOW



CROSSING IN LINE OF MAIN PEDESTRIAN FLOW



ANGLED CROSSING



STANDARD DETAILS

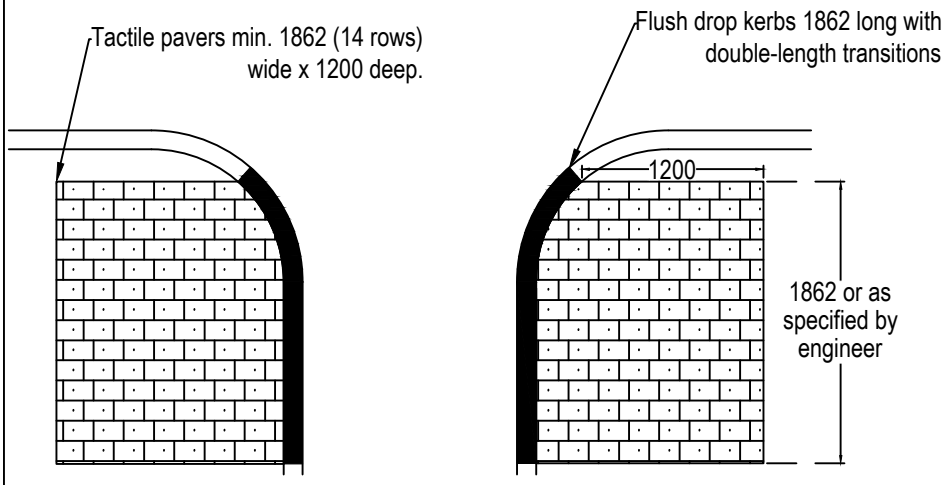
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

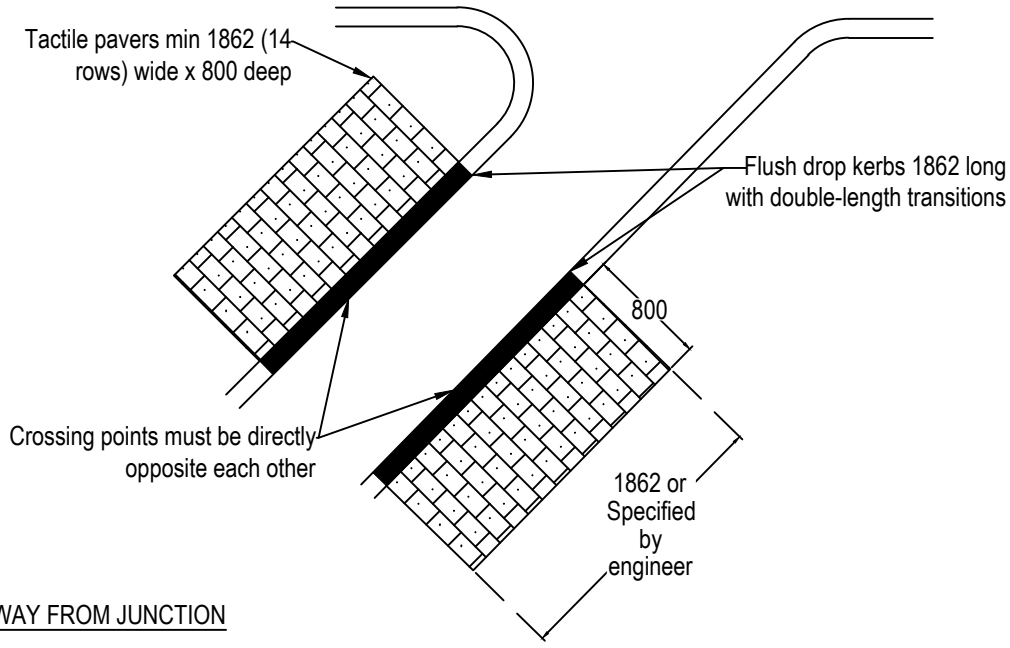
Tactile Paving
Uncontrolled Crossings

Drawing	Revision
SD-1100-017	Ø
Drawn by: RR	Scale: 1:50 @ A4
Date Drawn: 06/09/2024	

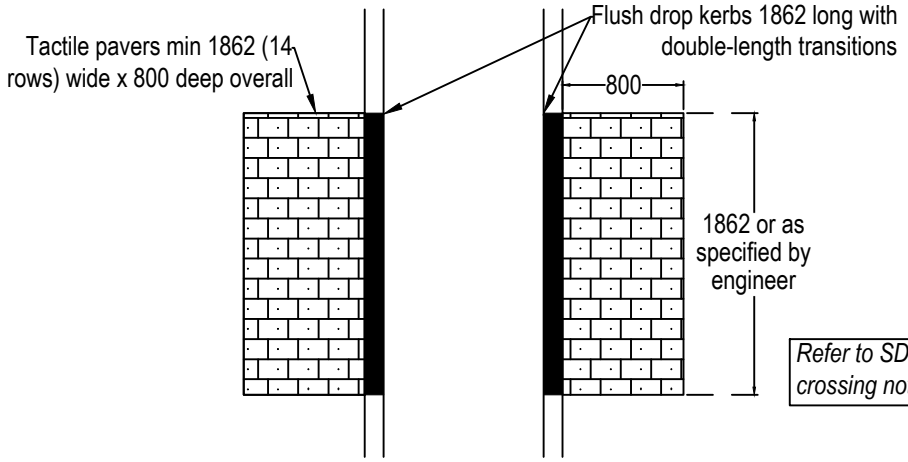
IN-LINE UNCONTROLLED CROSSING AT SIDE ROAD



UNCONTROLLED CROSSING AT ACUTE-ANGLED SIDE ROAD



UNCONTROLLED CROSSING AWAY FROM JUNCTION



Refer to SD1100-015 for pedestrian crossing notes.

STANDARD DETAILS

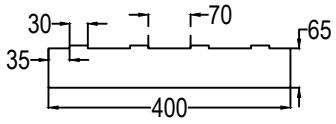
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

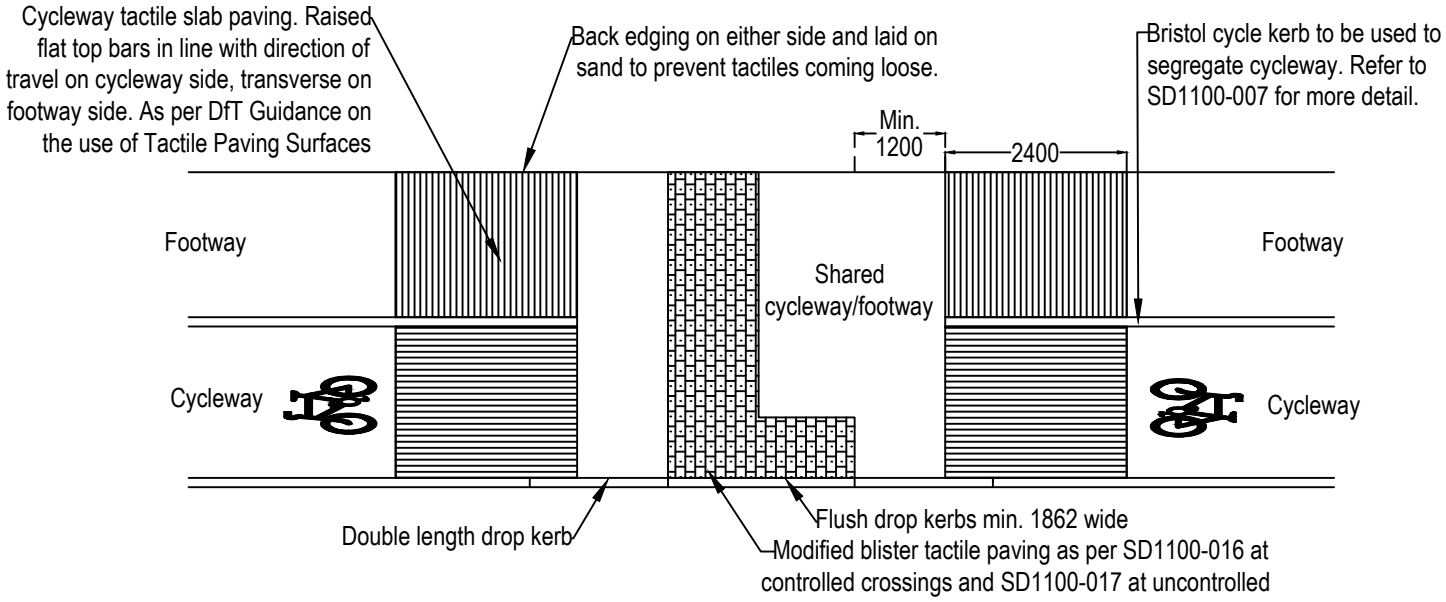
Tactile Paving Cycle Access

Drawing	Revision
SD-1100-018	Ø
Drawn by	**Scale**
RR	1:100 @ A4
Date Drawn	
06/09/2024	

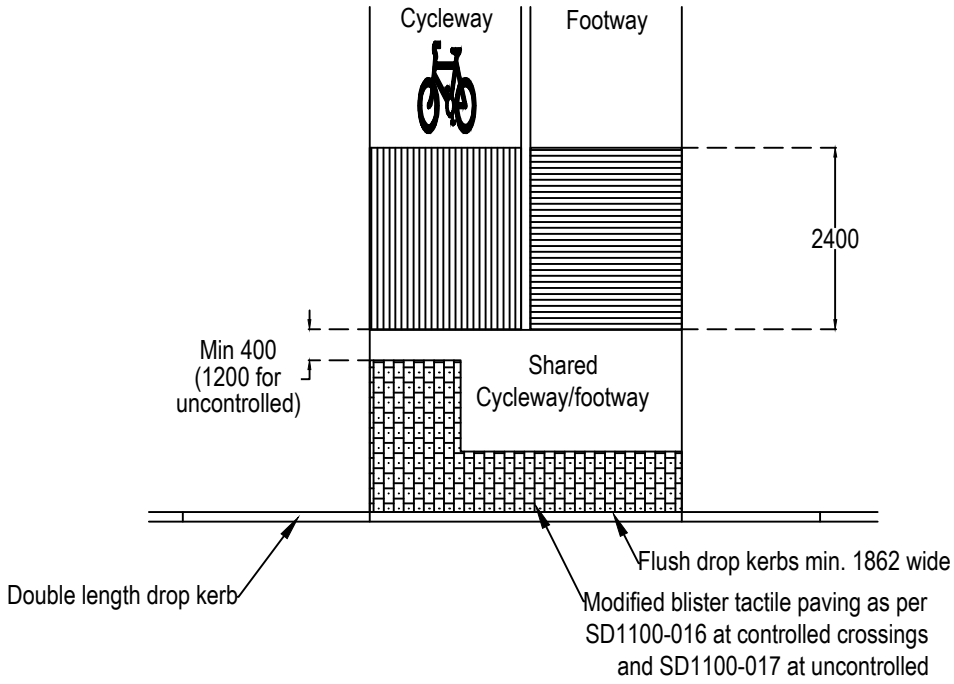
SECTION : 400X400X65 CYCLEWAY SLAB TACTILE (NTS)



CONTROLLED CROSSING PERPENDICULAR TO SEGREAGTED CYCLEWAY / FOOTWAY



CONTROLLED CROSSING PARALLEL TO SEGREAGTED CYCLEWAY / FOOTWAY



Note
Length of cycleway tactile paving can be reduced to 800 (2 rows min.) at some intermediate locations if instructed by the Employer's Representative.

STANDARD DETAILS

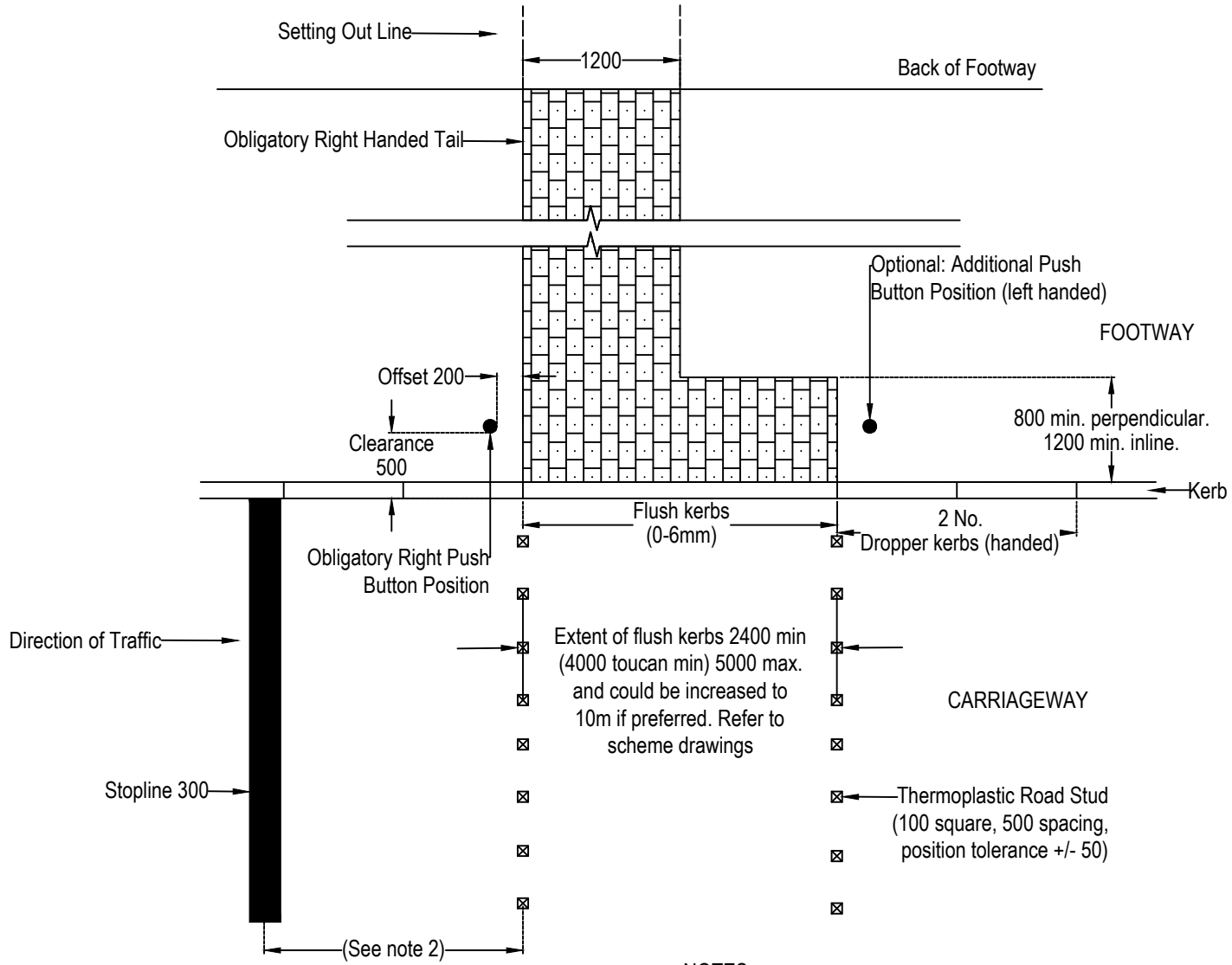
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

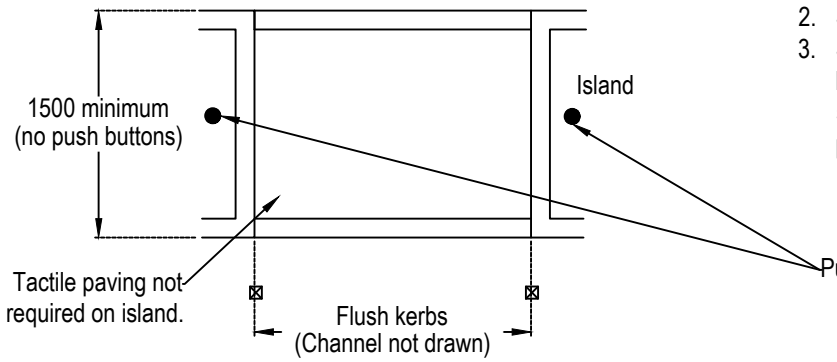
Traffic Signals Controlled Pedestrian Crossings (Part 1)

Drawing	Revision
SD-1100-019	Ø
Drawn by: RR	Scale: 1:50 @ A4
Date Drawn: 06/09/2024	

CENTRAL REFUGE DETAIL ON SINGLE STAGE CROSSINGS



CENTRAL REFUGE DETAIL ON SINGLE STAGE CROSSINGS



NOTES

1. Refer to SD1100-015 for detailed pedestrian crossing notes.
2. Stopline to be a minimum of 1500 from signal pole.
3. Signal poles as indicated serve only to show the relationship between the pole and the tactile paving. Forward mounted signal heads require 800 clearance. For actual signal pole positions refer to scheme drawings.

STANDARD DETAILS

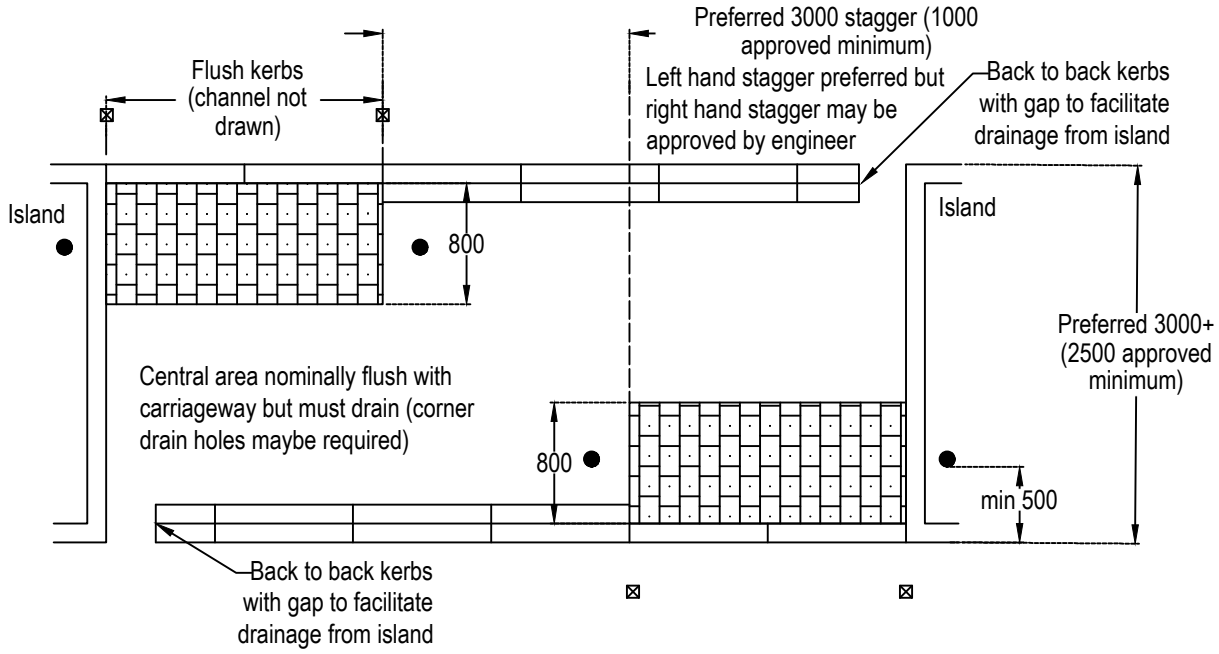
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

Traffic Signals Controlled Pedestrian Crossings (Part 2)

Drawing	Revision
SD-1100-020	Ø
Drawn by: RR	Scale: 1:50 @ A4
Date Drawn: 06/09/2024	

DETAIL OF REFUGE ISLAND AT TWO STAGE CROSSING ON A STAGGERED ALLIGNMENT



The staggered crossing diagram has 1m stated as the minimum requirement. Chapter 6 of the Traffic Signs Manual states 'a minimum of 3 meters between crossing limits is recommended.

STANDARD DETAILS

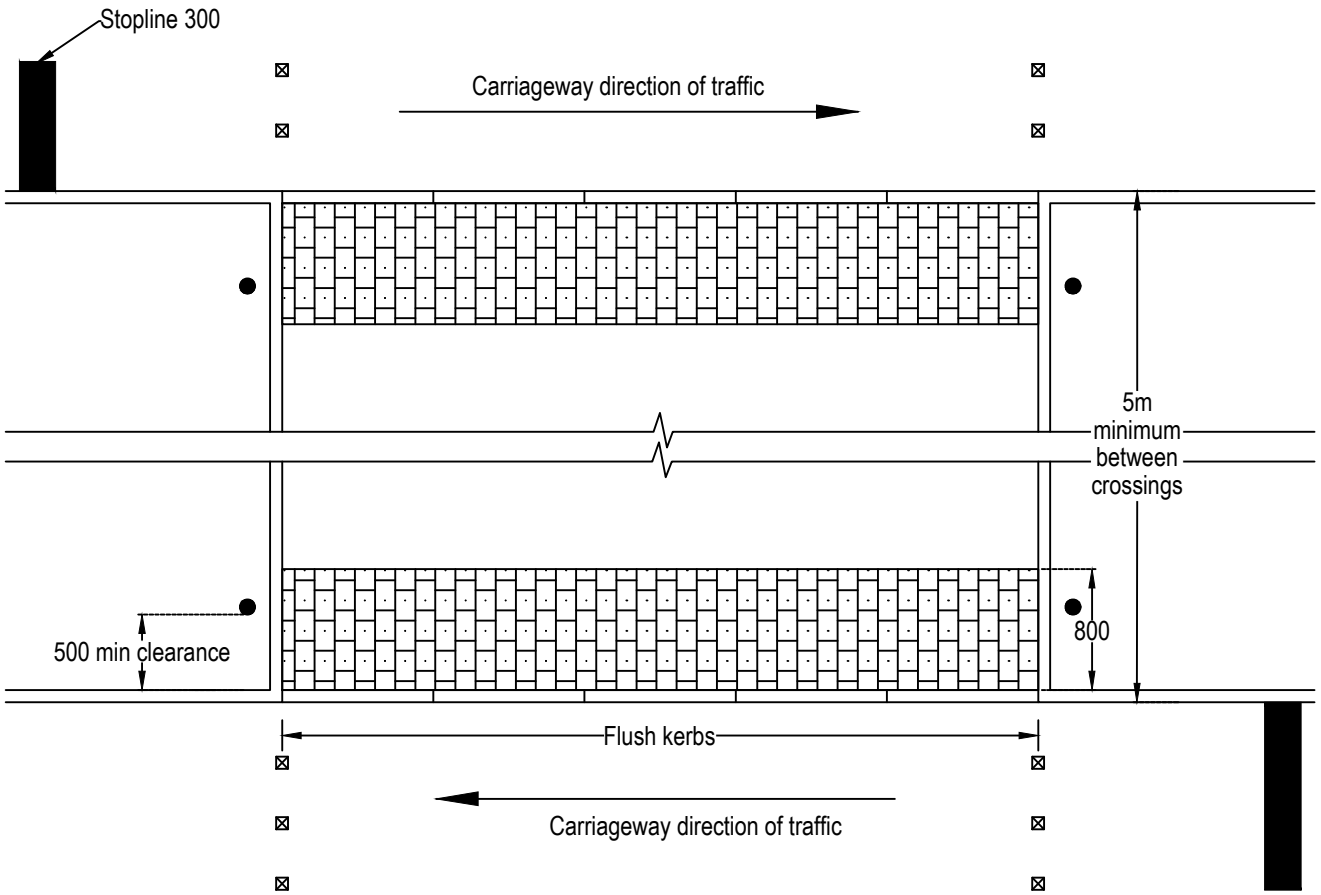
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1100: Kerbs, Footways, Cycleways and Paved Areas

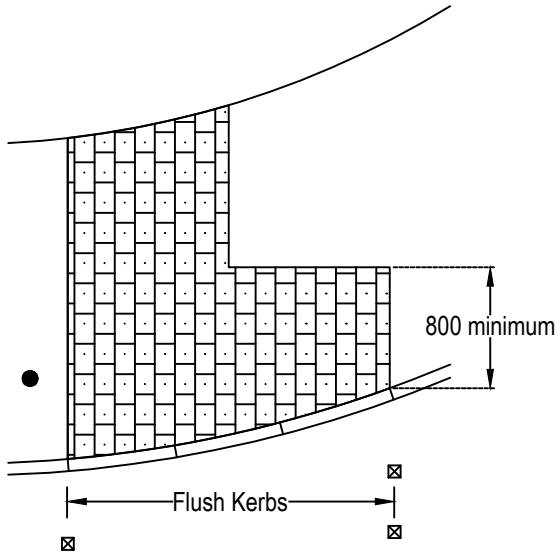
Traffic Signals Controlled Pedestrian Crossings (Part 3)

Drawing	Revision
SD-1100-021	Ø
Drawn by: RR	Scale: 1:50 @ A4
Date Drawn: 06/09/2024	

DETAIL OF REFUSE ISLAND AT A TWO STAGE CROSSING ON A STRAIGHT ALIGNMENT



DETAIL OF TACTILE PAVING TO A RADIUS



STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1200: Traffic Signs and Road Markings

Sign Configuration General Notes

Drawing: SD-1200-001
Revision: Ø
Drawn by: SDK
Scale: N/A
Date Drawn: 06/09/2024

1. GENERAL
   - 1.1. DMRB Specification for Highways Works (as amended) applies together with any additional or substitute clauses made by Bristol City Council.
   - 1.2. Refer to current BCC Street Lighting Specification for both illuminated and unlit signs.
   - 1.3. See Appendix 12/1 for details of signs, posts, foundations etc.
   - 1.4. Signs shall normally be mounted on purpose-provided posts or structures.
   - 1.5. Sign assemblies taller than 7m will require certification by a structural engineer.
   - 1.6. New posts are to have ID numbers stenciled upon them in accordance with BCC Street Lighting Specification.
   - 1.7. As-built details of new and altered signage must be forwarded to BCC Asset Management Team.
2. SIGN FACES
   - 2.1. Where required by the Traffic Signs Regulations & General Directions (TSRGD), signs are to be retroreflective to Class RA2 or R3B. See drawing SD-1200-002 for situations where R3B is appropriate.
   - 2.2. No illuminated signs shall be fitted to concrete lighting columns or unstrengthened metal lighting columns.
   - 2.3. Reference must be made to BCC Street Lighting Specification and Code of Practice for attachments to lighting columns.
   - 2.4. Signs mounted back-to-back shall be deemed to have an effective area of the largest sign.
3. POSTS
   - 3.1. Use metal grade S275.
   - 3.2. See Table 1 for typical post dimensions.
   - 3.3. Generally, specify the thinnest wall thickness available for a given post section. Increase diameter or section if stronger post is needed.
   - 3.4. Post for any illuminated sign is to be at least 76mm diameter.
   - 3.5. Square or rectangular posts may be used for non-illuminated signs mounted on single posts to prevent twisting.
   - 3.6. Round posts are to be used for signs requiring 2 or more posts.
   - 3.7. Where more than 2 posts are required, post separation shall be equal unless otherwise specified in Appendix 12/1.
   - 3.8. Posts shall be fitted with caps and base plates.
   - 3.9. If sign has a luminaire, the post is to extend a minimum of 100mm (p) above sign.
   - 3.10. Passively safe posts:
     - Passively safe posts must be utilised for roads with a speed limit of over 40mph.
     - A single 76mm or 89mm diameter post with a wall thickness of 3.2mm is considered passively safe (BS EN12767; NA 4.1 & Annx A & K).
   - 3.1. Posts and offset brackets shall be galvanized and painted "Medium Grey" RAL Design RAL 000-55-00 or "Jet Black" RAL Classic RAL 9005 in conservation areas. Refer to BCC Street Lighting Specification for further details regarding protective coating and application.
4. FOUNDATIONS
   - 4.1. Where foundations are to be individually calculated using software applications, refer to Table 2 for some typical parameters for use within the Bristol area.
   - 4.2. Posts shall be installed at the mid-point of the foundations.
   - 4.3. A plastic sleeve or metal socket may be cast into post foundations prior to the installation of post. Foundation width & length will need to be adjusted accordingly for the sleeve diameter or as per manufacturer's instructions for a socket.
   - 4.4. Post foundations in verge shall not have earth cover. Instead a concrete plinth shall be formed. See drawing SD-1300-002.
5. ILLUMINATION
   - 5.1. Top lit signs shall be LED light source only & shall be illuminated by one or more luminaires arranged symmetrically.
   - 5.2. Overhead luminaries shall not mask the sign face.

TABLE 1
Typical Post Sizes (mm)

Diameter x wall thickness	Square & rectangular x wall thickness
60.3 x 3.2	50x50 x 3.0
76.1 x 3.2	60x60 x 3.0
88.9 x 3.2	80x40 x 3.2
114.3 x 3.6	80x80 x 3.6
139.7 x 5.0	80x120 x 4.0
168.3 x 5.0	
193.7 x 5.4	
219.1 x 6.3	

TABLE 2
Typical parameters for use in post & foundation design within the BCC area

Altitude	100m
Wind Speed	22m/s (derived from wind map in BS EN 1991-1-4; NA.1)
Wind Return Period	25 years
Environs : General Location	England
Environs : Terrain	Cat III (Town)
Environs : From shoreline	<5km
Environs : From edge of town	>4km
Wind method	BS EN 1991-1-4; NA (Eurocode 1)
Ground	Soft clays & silts (unless known otherwise)
Soil quality	Unknown (unless known otherwise)
BD 94/17 (now DMRB CD 354)	Recommend that this is NOT applied. It will otherwise produce unnecessarily deep planted foundations.

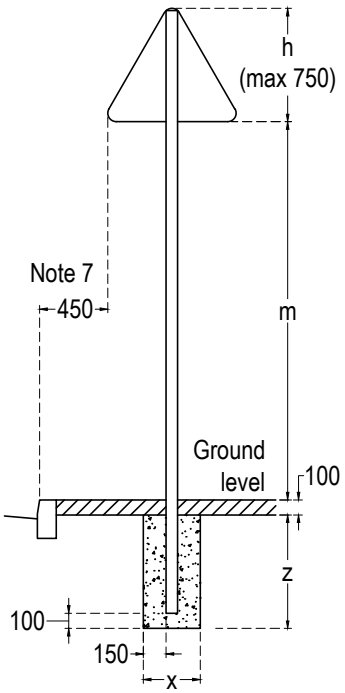
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

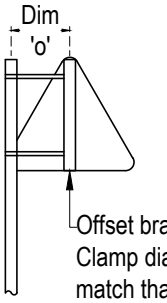
Series 1200: Traffic Signs and Road Markings

Sign Configuration Types A, B & C

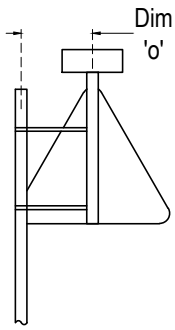
Drawing	Revision
SD-1200-002	Ø
Drawn by: SDK	Scale: 1:50 @A4
Date Drawn: 06/09/2024	



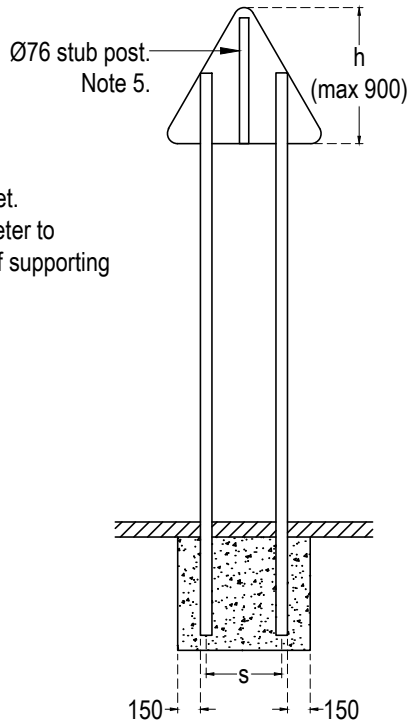
Type A(N)



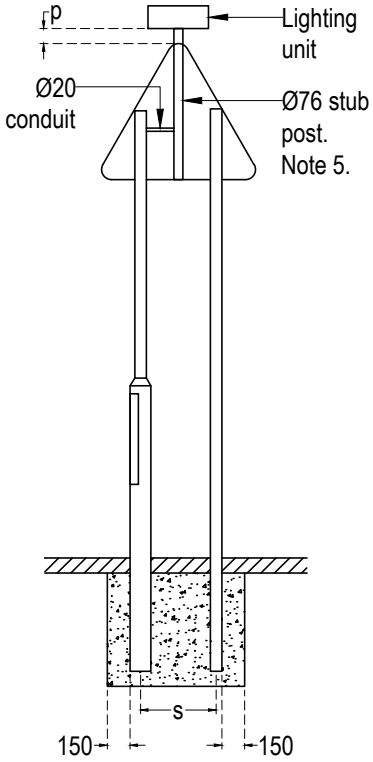
Type B(N)



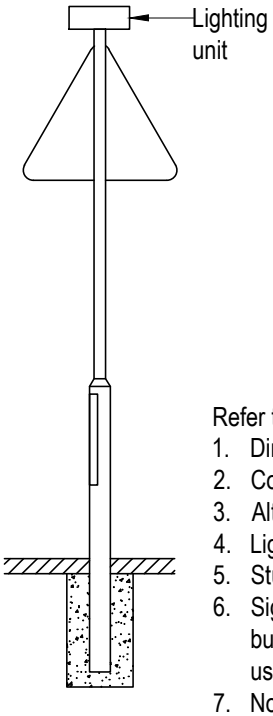
Type B(T)



Type C(N)



Type C(T)



Type A(T)

TABLE 1: Post (with Ø139 base-housing) & foundations					
Sign Height	h	450	600	750	900
Mounting height	m	2500	2500	2500	2500
Post Diameter	d	76 (60*)	76	76	2x76
Foundation Height	z	600	800	800	600
Foundation Width	x	500	450	450	950
Foundation Length	y	500	450	450	550
Concrete Vol. (m^3)	v	0.15	0.16	0.16	0.31

Alternative foundations for straight posts (no base housing)					
Foundation Height	z	700	700	700	600
Foundation Width	x	400	400	400	850
Foundation Length	y	400	400	400	600
Concrete Vol. (m^3)	v	0.11	0.11	0.11	0.31

TABLE 2	
Illumination requirements	Suffix
Non-illumination	N
Top-mounted luminaire	T

*Diameter for straight post (no illumination). See Notes 9 and 10.

See Notes 9 and 10.

Refer to drawing SD-1200-001 for general notes on signs and posts. Notes:

1. Dimensions in millimetres unless noted otherwise.
2. Concrete for post foundations shall be ST2. Posts may be fitted in foundation sleeves. See SD-1300-004 for details.
3. Although triangular signs are shown, the details equally apply to circular, octagonal and inverted triangular signs.
4. Lighting to be DTp Type A for signs less than 900mm width and Type B for signs 900mm or greater width.
5. Stub posts to be fixed to at least two stiffeners.
6. Sign face material : Class RA2. However, for warning and regulatory signs that will NOT be provided with lighting units but will be located within street-lit roads high performance retro-reflective material that meets class R3B(UK) should be used (as recommended by BS EN 12899-1, Table NA.1 and the Traffic Signs Manual, Chapter 3).
7. No part of a sign assembly shall be less than 450mm from the carriageway. This should be increased where the carriageway is steeply cambered and/or high sided vehicles are expected to pass.
8. Minimum mounting height shall be 2500mm in pedestrian/cycle areas and 1500mm elsewhere. Lower heights to be authorised by the Employer's Representative.
9. Square section posts of similar dimensions may be used instead non-illuminated signs e.g. 80x80 instead of Ø76.
10. Foundations in Table 1 are also valid for offset mounted signs.

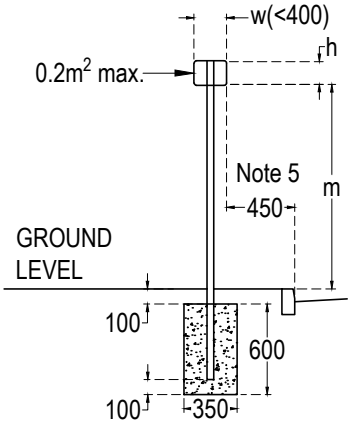
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1200: Traffic Signs and Road Markings

Sign Configuration Types D and E

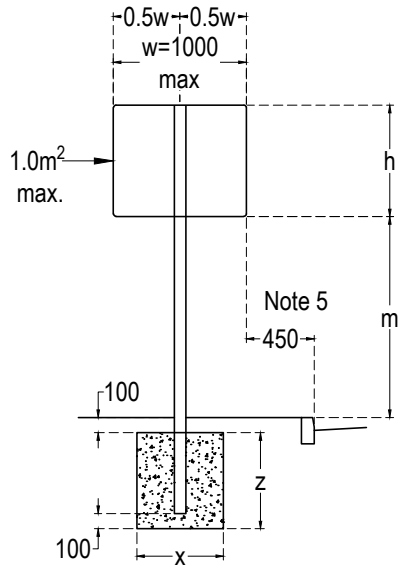
Drawing	Revision
SD-1200-003	Ø
Drawn by: PPJ	Scale: 1:50 @A4
Date Drawn: 06/09/2024	



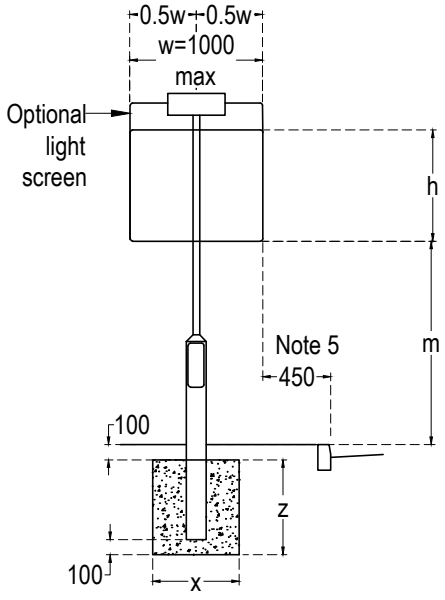
TYPE D(N)

TABLE 1: Post and Foundation Examples						
Sign Width	w	<400	600	600	900	600
Sign Height	h	<500	600	900	1100	1650
Sign Area (m^2)	A	0.2	0.36	0.54	0.99	0.99
Mounting Height	m	2500	2500	2500	2500	2500
Post Diameter*	d	60	76	76	76	89
Foundation Height	z	600	700	700	800	850
Foundation Width/Length	x/y	350	400	400	400	400
Concrete Vol. (m^3)	v	0.07	0.11	0.11	0.13	0.14

*Square section posts of similar dimensions may be used for non-illuminated signs e.g. 80x80 instead of Ø76.



TYPE E(N)



TYPE E(T)

Refer to drawing SD-1200-001 for general notes on signs and posts.

TABLE 2 Illumination Requirements	
Non-illuminated	N
Top mounted luminaire	T

Notes:

1. Dimensions in millimetres unless noted otherwise.
2. Concrete for post foundations shall be ST2. Posts may be fitted into foundation sleeves. See SD-1300-004 for details.
3. Lighting to be DTp Type A for signs less than 900mm width and Type B for signs greater than and equal to 900mm width.
4. Stub posts to be fixed to at least two stiffeners.
5. No part of a sign assembly shall be less than 450mm from the carriageway. This should be increased where the carriageway is steeply cambered and/or high sided vehicles are expected to pass.
6. Minimum mounting height shall be 2500mm in pedestrian/cycle areas and 1500mm elsewhere. Lower heights to be authorised by the Employer's Representative.

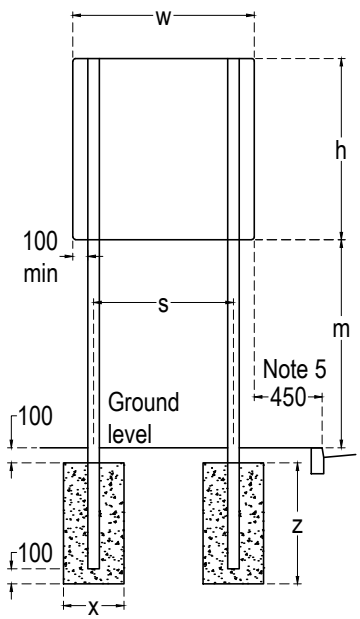
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

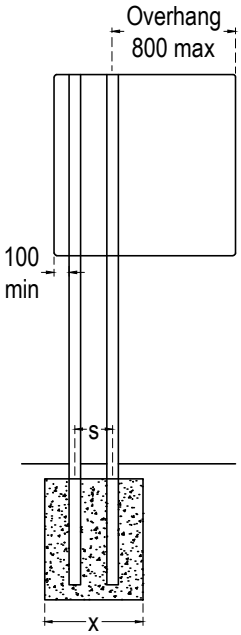
Series 1200: Traffic Signs and Road Markings

Sign Configuration Types G and H

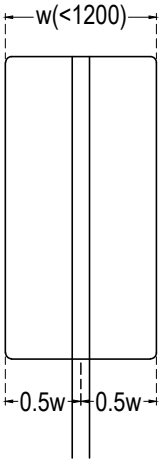
Drawing	Revision
SD-1200-004	Ø
Drawn by: PPJ	Scale: 1:50 @A4
Date Drawn: 06/09/2024	



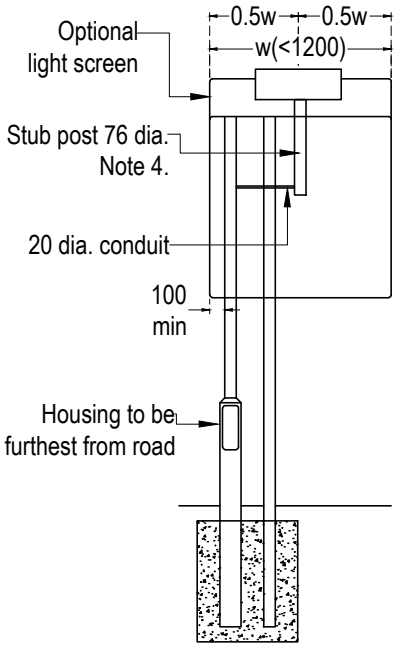
TYPE G(N)



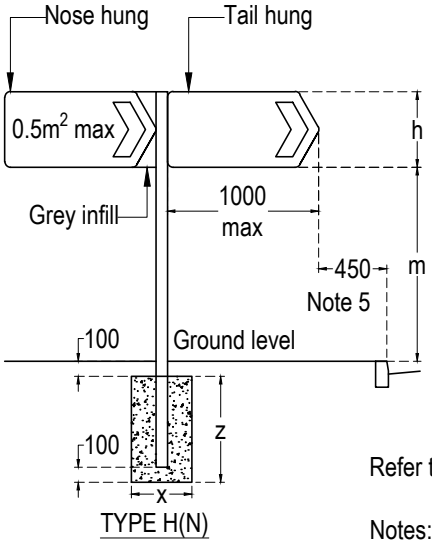
TYPE G(N)
offset



Single post mounting is possible where the height of the sign is greater than the width and the sign is to be centrally mounted. Otherwise, 2 posts is recommended.



TYPE G(T)



TYPE H(N)

TABLE 1: Post and Foundation Examples. See Note 7.

										Offset			H(N)
		1 post	1 post	1 post	1 post		2 posts	2 posts	2 posts		2 posts	2 posts	Finger post
Sign Width	w	825	1000	900	1200		1500	1600	2000		1000	1500	1000
Sign Height	h	1370	1600	2000	2500		650	1250	1500		1000	1200	500
Sign Area (m^2)	A	1.13	1.60	1.80	3.00		0.98	2.00	3.00		1.00	1.80	0.50
Mounting Height	m	2500	2500	2500	2500		2500	2500	2500		2500	2500	2500
Post Diameter	d	89	114	114	139		2 x 76	2 x 76	2 x 89		2 x 76	2 x 89	60
Post Spacing (centres)	s	n/a	n/a	n/a	n/a		700	800	1000		250	400	n/a
Foundation Height	z	850	950	1050	1250		700	800	900		800	950	700
Foundation Width	x	400	450	450	450		400	400	400		650	800	400
Foundation Length	y	400	450	450	450		400	400	400		400	450	400
Concrete Vol. (m^3)	v	0.14	0.19	0.21	0.25		0.11	0.13	0.14		0.21	0.34	0.11
Cover		100	100	100	100		100	100	100		100	100	100

Refer to drawing SD-1200-001 for general notes on signs and posts.

TABLE 2 Illumination Requirements	
Non-illuminated	N
Top mounted luminaire	T

TABLE 3 Sign sizes	
G	>1 and <= 3 sq.m
H	<= 0.5 sq.m

Notes:

1. Dimensions in millimetres unless noted otherwise.
2. Concrete for post foundations shall be ST2. Posts may be fitted into foundation sleeves. See SD-1300-004 for details.
3. Lighting to be DTp Type A for signs less than 900mm width and Type B for signs greater than and equal to 900mm width.
4. Stub posts to be fixed to at least two stiffeners.
5. No part of a sign assembly shall be less than 450mm from the carriageway. This should be increased where the carriageway is steeply cambered and/or high sided vehicles are expected to pass.
6. Minimum mounting height shall be 2500mm in pedestrian/cycle areas and 1500mm elsewhere. Lower heights may be authorised by the Employer's Representative.
7. Table 1 gives some post and foundation examples. Otherwise, they are to be individually calculated. Refer to drawing SD-1200-001 for some typical parameters for use in calculations.

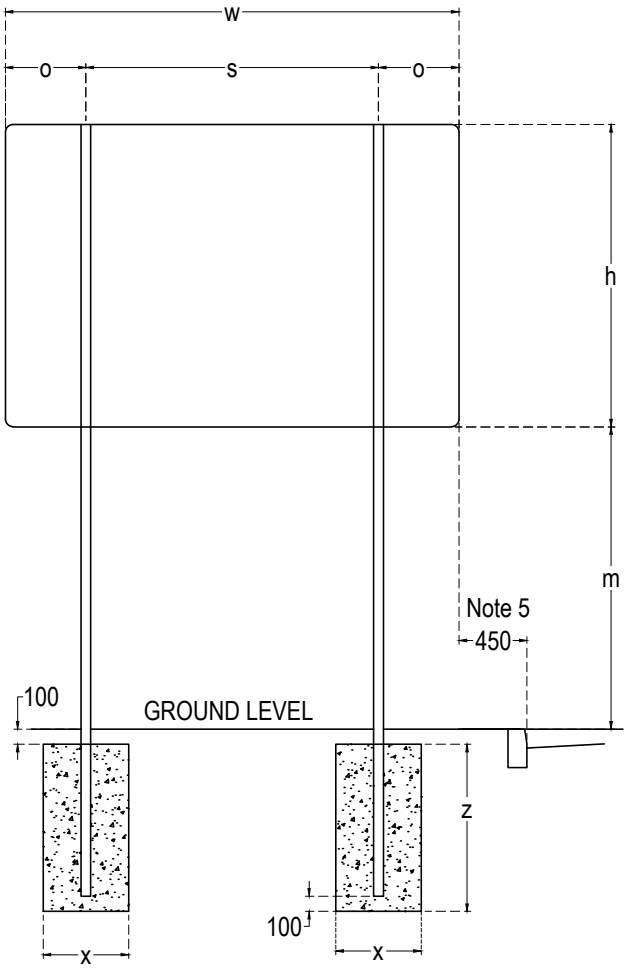
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

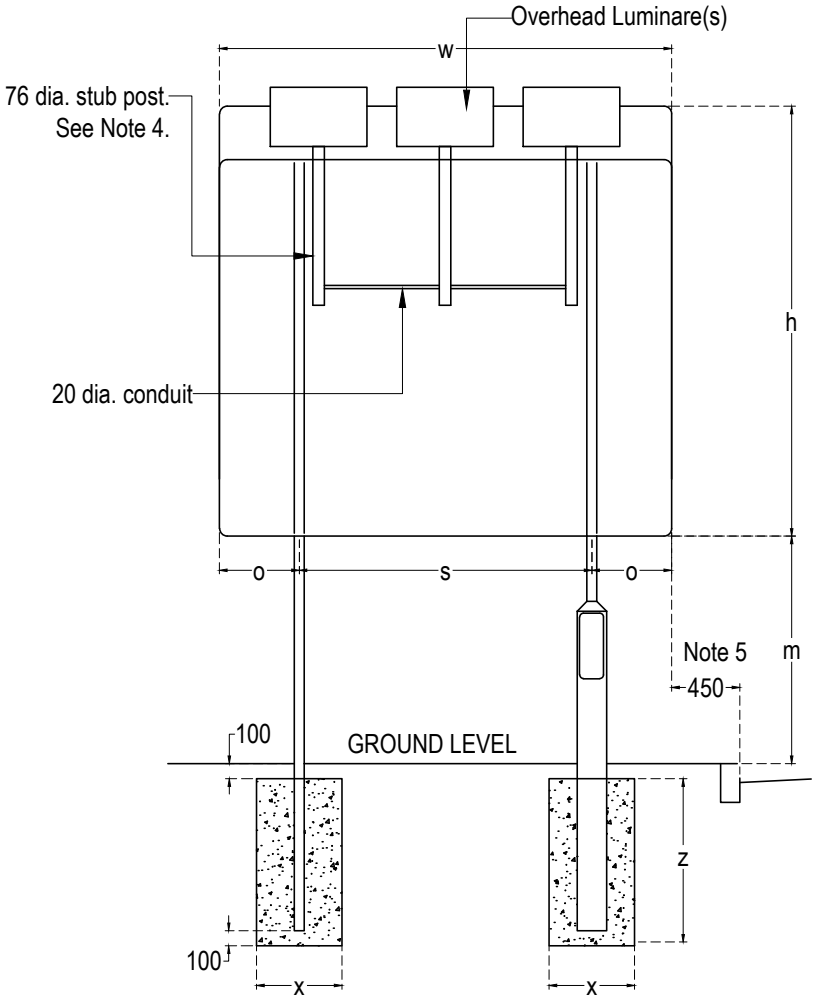
Series 1200: Traffic Signs and Road Markings

Sign Configuration Types K, L, M & N

Drawing	Revision
SD-1200-005	Ø
Drawn by: PPJ	Scale: 1:50 @A4
Date Drawn: 06/09/2024	



TYPE K(N), L(N), M(N), N(N)
(NON-ILLUMINATED)



TYPE K(T), L(T), M(T), N(T)
(TOP-MOUNTED LUMINAIRE)

Post with door housing must be furthest from carriageway, door facing towards oncoming traffic.

TABLE 1 - Illumination Requirements	
Non-illuminated	N
Top mounted luminaire	T

TABLE 2 - Sign Sizes	
K	3 - 5 sq. m
L	5 - 8 sq. m
M	9 - 12 sq. m
N	12 - 15 sq. m

Refer to drawing SD-1200-001 for general notes on signs and posts.

Notes:

1. Dimensions in millimetres unless noted otherwise.
2. Concrete for post foundations shall be ST2. Posts may be fitted into foundation sleeves. See SD-1300-004 for details.
3. Lighting to be DTp Type A for signs less than 900mm width and Type B for signs greater than and equal to 900mm width.
4. Stub posts to be fixed to at least two stiffeners.
5. No part of a sign assembly shall be less than 450mm from the carriageway. This should be increased where the carriageway is steeply cambered and/or high sided vehicles are expected to pass.
6. Minimum mounting height shall be 2500mm in pedestrian/cycle areas and 1500mm elsewhere. Lower heights may be authorised by the Employer's Representative.
7. Post sizes and foundations are to be calculated. Refer to drawing SD-1200-001 for some typical parameters for use in calculations.

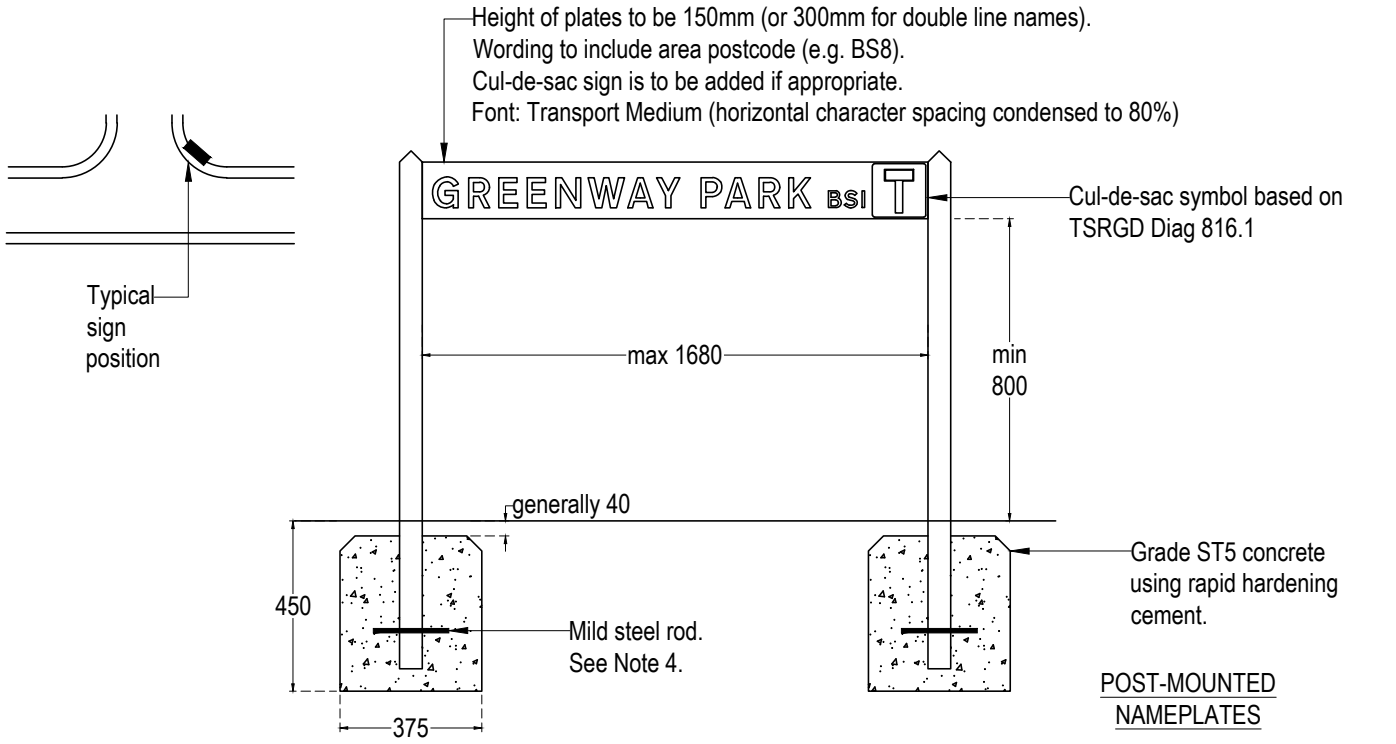
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

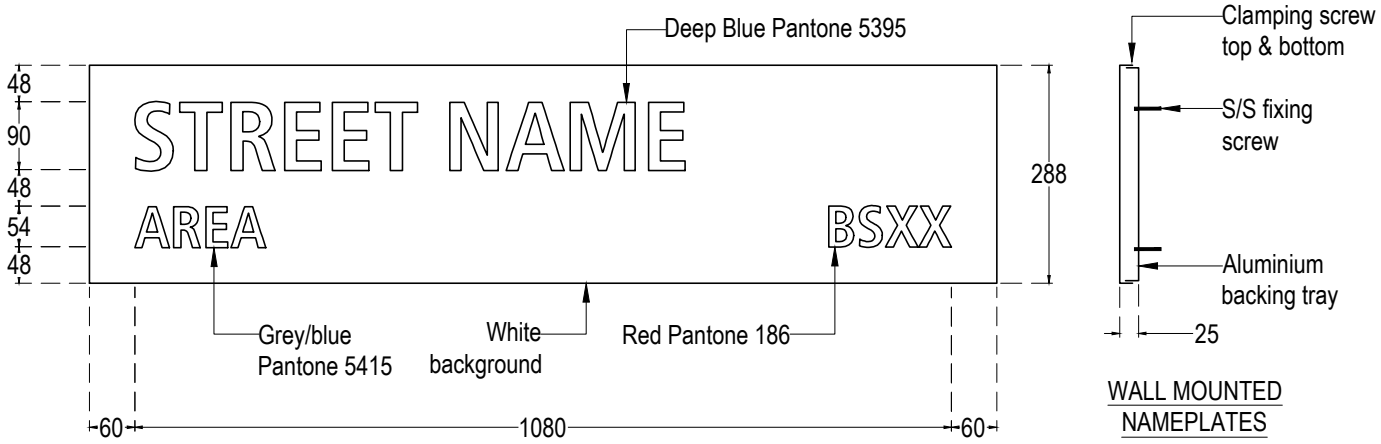
Series 1200: Traffic Signs and Road Markings

Street Nameplates

Drawing	Revision
SD-1200-006	Ø
Drawn by: PPJ	Scale: 1:20 and 1:10
Date Drawn: 06/09/2024	



Fabricated Aluminium tray panel min 1000mm long complete with backing tray panel finished in stove enamel white paint with integrally screen printed text. Font: Bristol Front Positive



NOTES

1. Dimensions in millimetres unless noted.
2. Plates shall be positioned at the most appropriate place as near as possible to street corners on one side of the junction only and visible from the major road, and avoiding drives and obstructions.
3. The lower edge of the plates shall not be less than 0.8m above ground for post-mounted plates and 2.5m above ground for wall mounted plates.
4. Nameplates shall be recycled black plastic (or cast iron in conservation areas only). Plate to be 3mm UV stabilised impact-resistant clear polycarbonate with letters applied to rear face, bonded to 25mm thick recycled block plastic backboard capped top and bottom with aluminium channel coated with black polyester powder and screwed with 6 No. vandal resistant screws. For further information on installation of street name plates see DoT Roads Circular no. 3/93 Appendix A.
5. Plate to be recess mounted into 75 x 75 recycled black plastic posts using 4 No. vandal resistant stainless steel screws. Posts shall have a 15mm diameter x 200mm long mild steel rod at right angles through the posts located 100mm above bottom of post, set into the concrete foundation.
6. Wall mounted posts shall be as shown above.

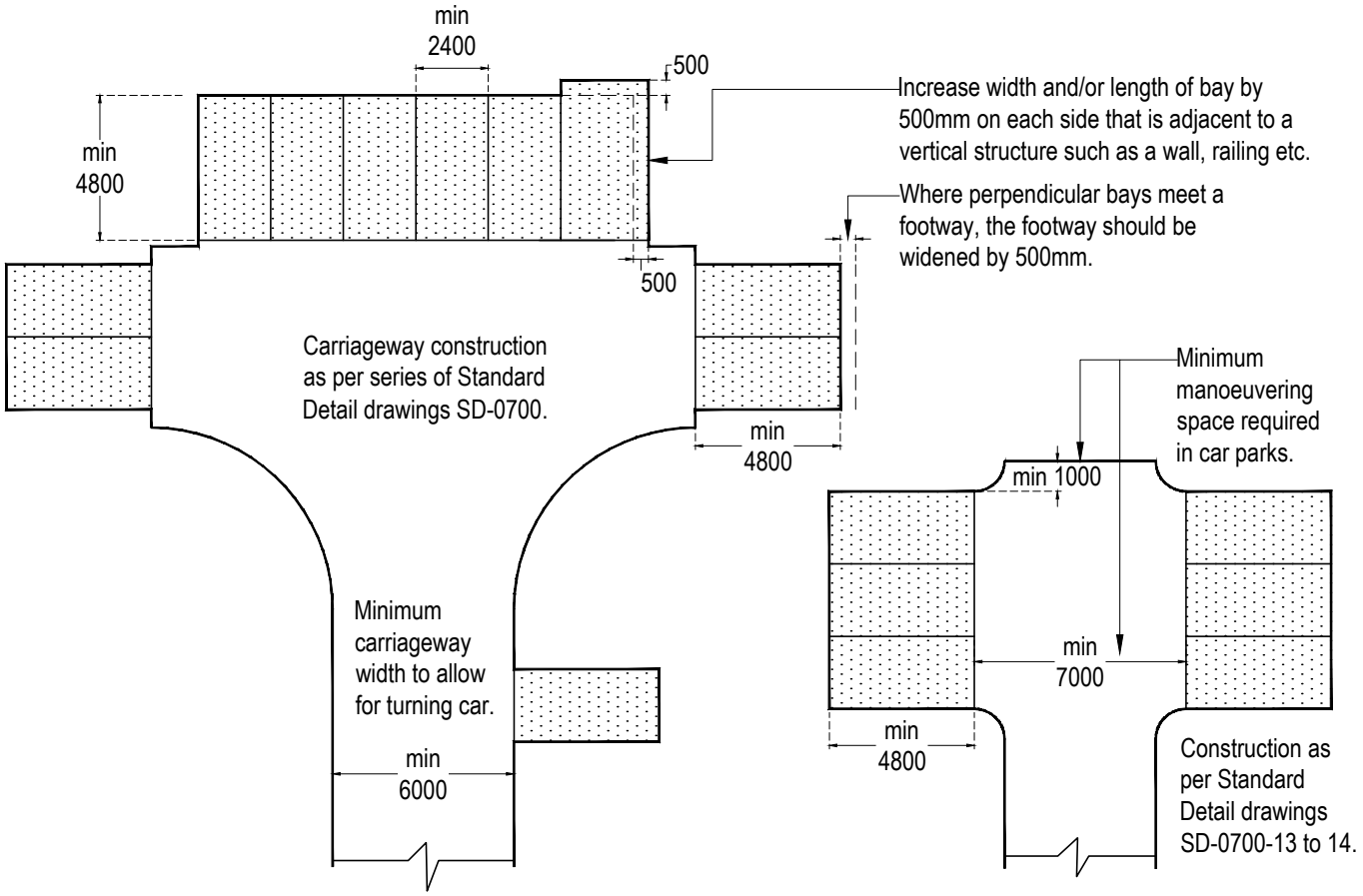
STANDARD DETAILS

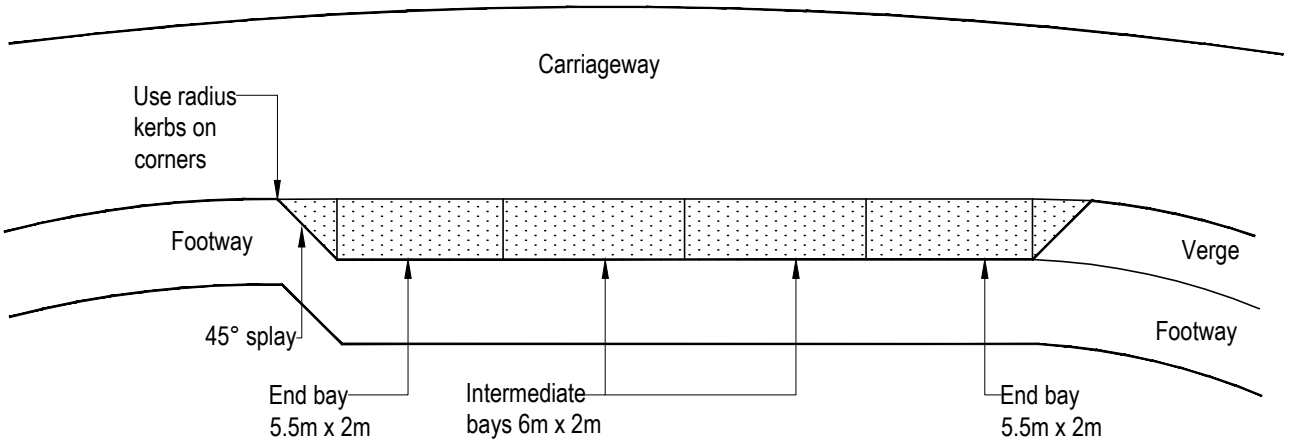
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1200: Traffic Signs and Road Markings

Parking Bays

Drawing	Revision
SD-1200-007	Ø
Drawn by: PPJ	Scale: 1:250 @A4
Date Drawn: 06/09/2024	





ON-STREET PARKING PARALLEL PARKING BAYS

NOTES:

1. Private parking bays are not to drain to public highway.
2. For disabled parking bays, refer to Standard Detail drawing SD-1200-008.
3. For further information on parking requirements, refer to BCC's Transport Development Guidance.

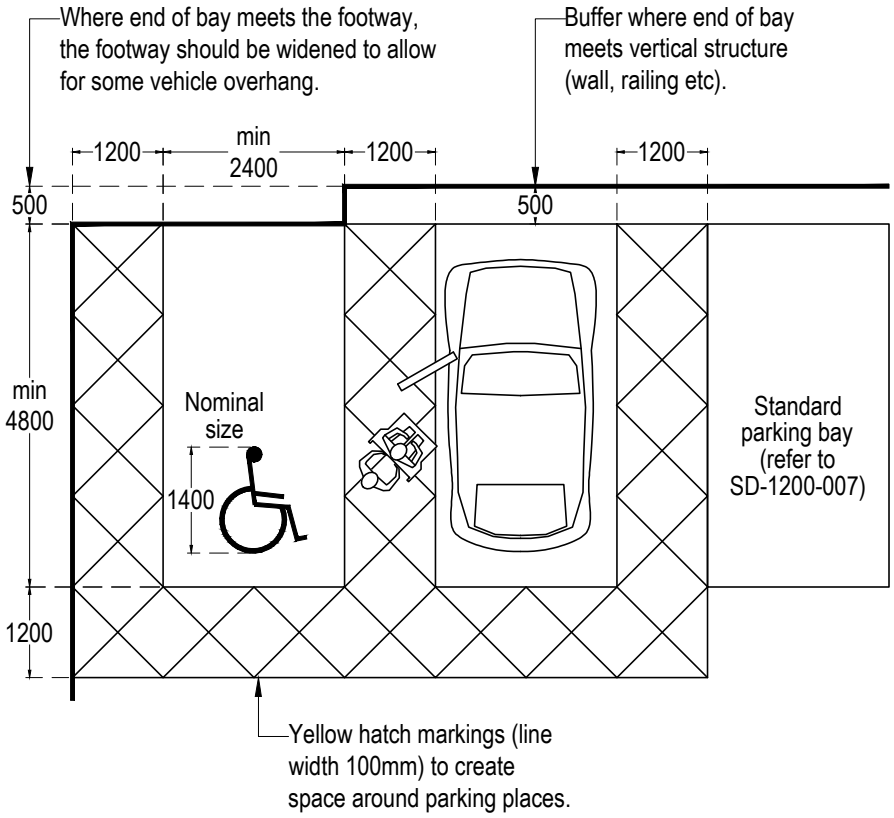
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

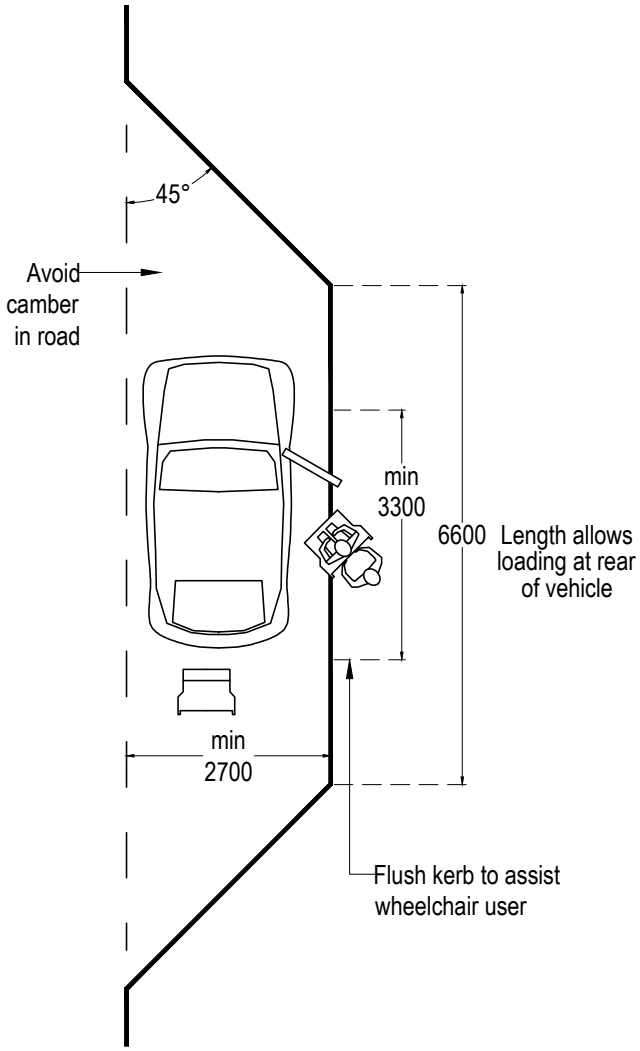
Series 1200: Traffic Signs and Road Markings

Disabled Parking

Drawing	Revision
SD-1200-008	Ø
Drawn by: PPJ	Scale: 1:100 @A4
Date Drawn: 06/09/2024	



OFF-STREET PARKING
DISABLED PARKING BAYS



Car Parking

1. Locate car parking as close as possible to the accessible entrance. Maximum distance 50m with gradient not steeper than 1:20. The ground surface of the car park should be solid, smooth and as level as possible.
2. Crossfall should be not steeper than 1:40 (in one direction only).
3. Provide dropped kerbs between parking space and entrance.
4. For further information on parking requirements, refer to BCC's Transport Development Guidance.

Parking Bays

1. Should be provided to buildings where dedicated spaces cannot be provided.
2. Should be designed for use by disabled people, be wide enough for wheelchair transfer to and from the car by passenger or driver and be clearly signed.
3. Should be located in areas where they can be viewed from the building they are designed to serve.
4. Minimum of 3 bays in any car park and one blue badge bay for every 15 bays provided up to 200 bays.
5. Car parks should be well lit to BS 5489 and BS EN 13201, 100 lux minimum in external areas.
6. Facilities management should ensure that designated parking spaces are kept free for Disabled people.
7. For other parking bays, refer to Standard Detail drawing SD-1200-007.

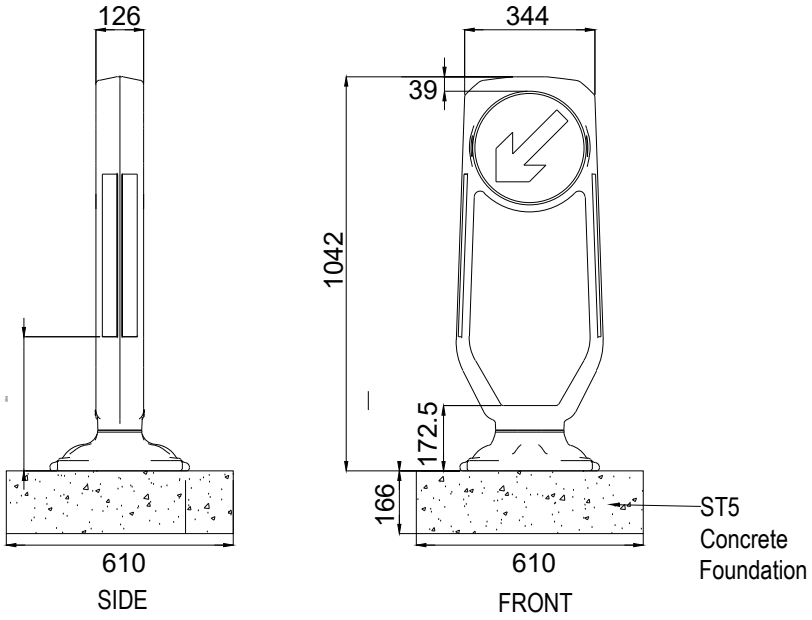
STANDARD DETAILS

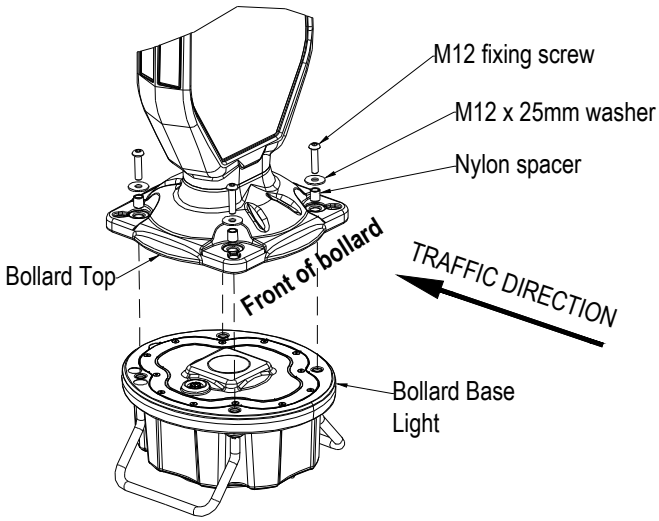
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

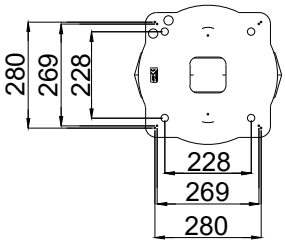
Series 1300: Road Lighting Columns and Brackets, CCTV Masts and Cantilever Masts

Illuminated Bollard

Drawing	Revision
SD-1300-001	Ø
Drawn by: TM	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	







Notes

1. All dimensions are in millimetres.
2. Bollards shall be Simmonsigns Lumiflex or similar approved internally illuminated and self-lighting bollard.Bollards to have anti-grime coating.
3. Refer to Simmonsigns Lumiflex Installation guide and the current HEAT Street Lighting Equipment Specification.
4. The finished ground level should be 5mm below the top face of the base housing.
5. It is essential the Bollard Base is installed in sufficient mass of concrete to prevent uplift from its foundation and to prevent subsequent damage.
6. The Bollard Base should be installed into an excavated hole measuring 600mm x 600mm x 166 ±5mm deep, in order that sufficient ballast of concrete is encased around the base light to hold it firmly in its foundation to withstand bollard top impact. In narrow kerb sided island sites this may not be achievable, however, it is critical to ensure the BollardBase is fully surrounded with sufficient concrete backfill to ensure a stable, secure foundation.
7. Illuminated bollards should be no less than 450mm from kerb face.

STANDARD DETAILS

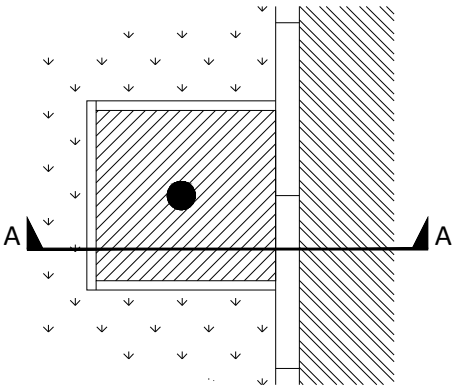
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1300: Road Lighting Columns and Brackets, CCTV Masts and Cantilever Masts

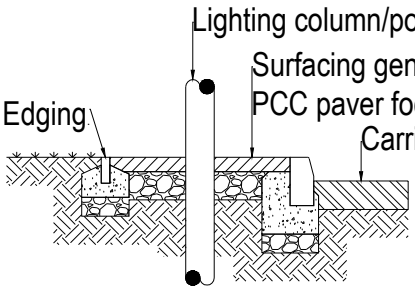
Lighting Columns and signs

Drawing	Revision
SD-1300-002	Ø
Drawn by: RR	Scale: 1:40 @ A4
Date Drawn: 06/09/2024	

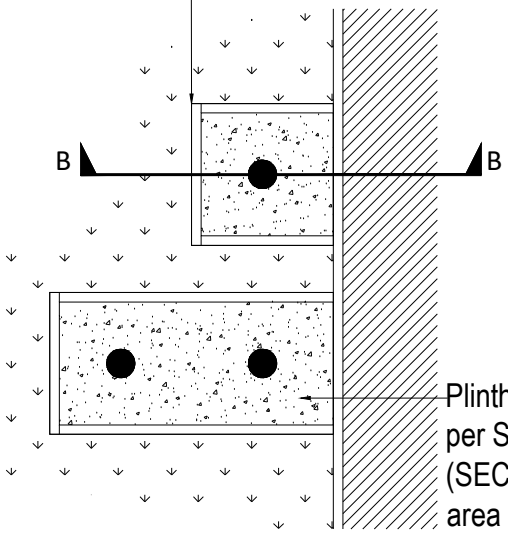
PLAN VIEW: SHARED SURFACE ROADS DETAIL



SECTION A-A

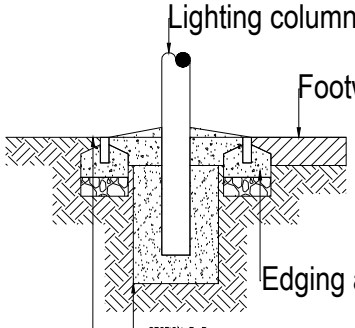


Lighting column plinth to have suitable edging to SD1100-011 (SECTION B-B).



Plinth to have edging as per SD-1100-005-Ø (SECTION B-B). Concrete area continuous between posts and tied to edge of footpath.

SECTION B-B



Lighting Column foundation varies in accordance with SD-1300-004-Ø.

Watershed Finish:
In-situ ST2 150mm thick (over foundation) with bushed finish and arissed/chamfered edge (20mm approx.), sloped tp drain water away from post (1 in 40min.)(Dim 'a'=300mm Dim 'b' to suit sign).

NOTES:

1. Refer to street lighting specification 2012.
2. See SD-1300-004-Ø for foundation details.

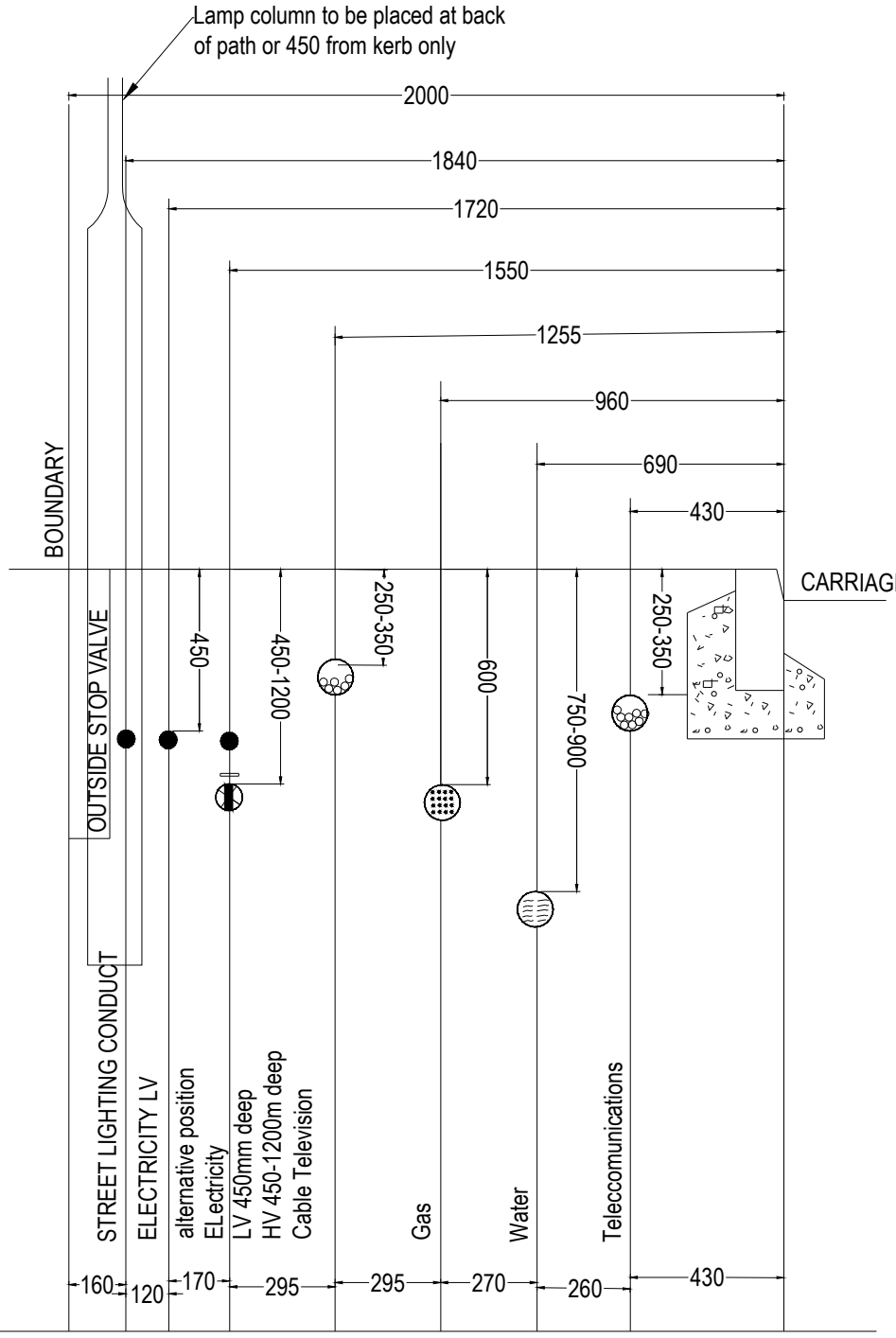
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1300: Road Lighting Columns and Brackets, CCTV Masts and Cantilever Masts

Utilities Recommended Positions in Footways

Drawing	Revision
SD-1300-003	Ø
Drawn by: RR	Scale: 1:40 @ A4
Date Drawn: 06/09/2024	



NOTES:

The layout of mains is generally in accordance with the 'Streetwork UK Guidlines on the Positioning and Colour Coding of Underground Utilities'Apparatus' (Volume 1, Issue 9:2018) published by NJUG Ltd.

The Dimensions shown represent the preferred arrangement in straight routes on estates. Variations may be necessary at curves and at changes of gradient.

In the event of congestion of apparatus in the footway / verge (e.g. where less than 2 metres wide) normal distribution mains, pipes, cables and ducts may have to be sited within the carriageway. Transmission and trunk main pipes and cable ducts are invariably of larger dimensions and as a consequence may also need to be located in the carriageway. See the above named publication for more details.

Where services are to be connected to gas mains a minimum distance of 2.0m is required between the building line and the centre of the main.

The space allocated is considered to be the The space allocated is considered to be the eg. when both HV and LV cables are laid the LV cable shall be laid in the alternative position and additional width may be required.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1300: Road Lighting Columns and Brackets, CCTV Masts and Cantilever Masts

Lighting Columns Installation

Drawing	Revision
SD-1300-004	Ø
Drawn by: RR	Scale: 1:40 @ A4
Date Drawn: 06/09/2024	

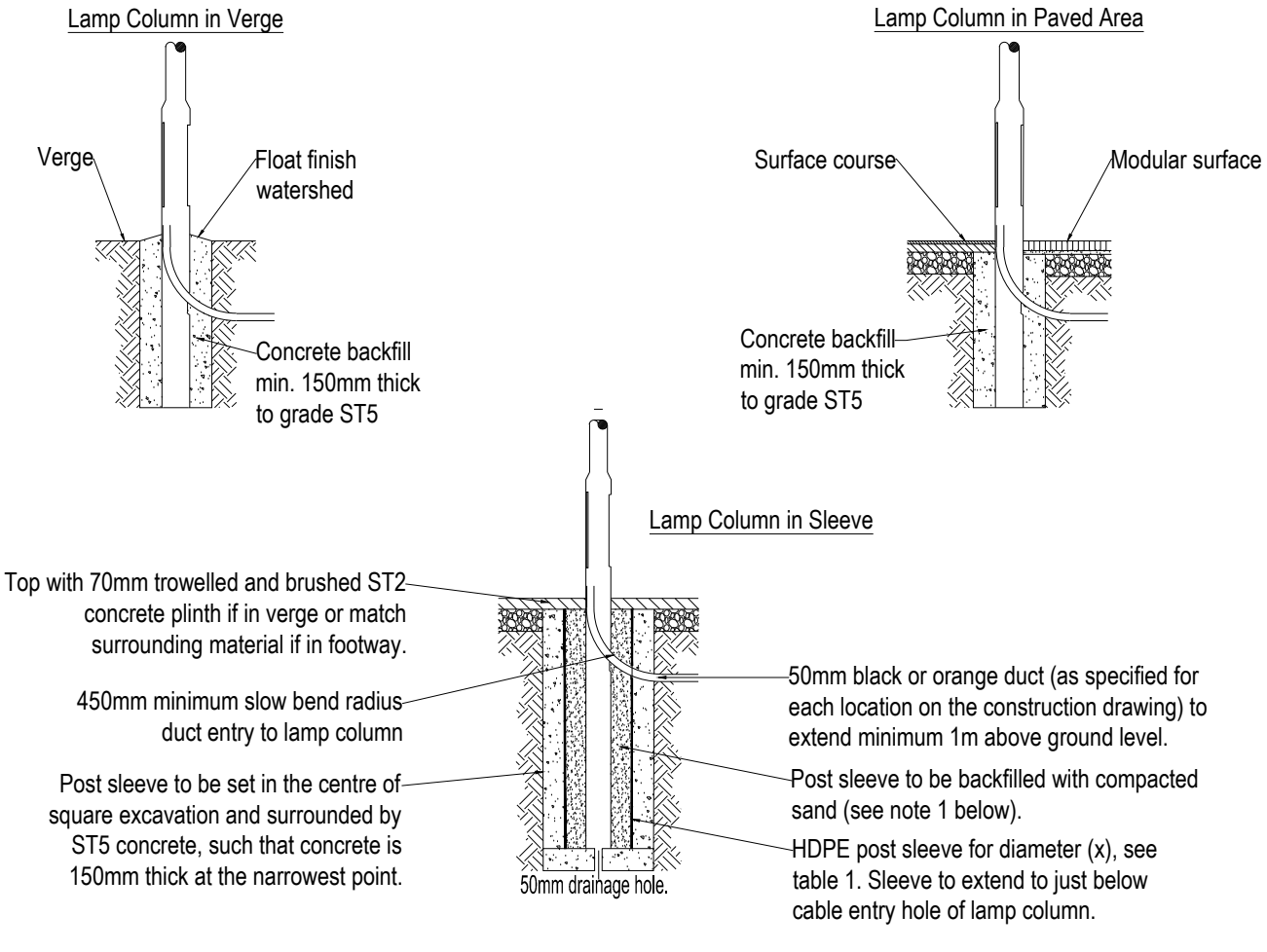


Table 1: Standard lamp column sleeve sizes

Column height	Planting depth (d)	Column base diameter	Sleeve diameter (x)	Concrete surround outer dimensions (excavation area)
5m	1.0m	139.7mm	300mm	600x600mm
6m	1.0m	139.7mm	300mm	600x600mm
8m	1.2m	168.3mm	450mm	750x750mm
10m	1.5m	192.0mm	450mm	750x750mm
12m	1.7m	192.0mm	450mm	750x750mm

Notes:

1. HDPE post sleeve is to be backfilled with well compacted sand over the full planting depth of the lamp column. During compaction, care shall be taken to ensure that the corrosion protection system for the column is not damaged. The backfill material shall be placed in 150mm thick layers and shall be well rammed and compacted in order to provide full lateral support to the planting depth of the column/mast post.
2. Lamp column access door and entry hole for duct is to be on the opposite side of the post to the side from which traffic approaches.
3. All ducting to be HDPE/LDPE twin wall flexible duct and identified with appropriate service type at approx. 500mm intervals.
4. All bends in ducts to be minimum radius of 450mm. Depending on the depth of cable entry slot in lamp column, cover for ducts in footways and verge may need to be greater than 450mm to achieve 450minmum bend radius.
5. Multiple bends in duct runs are not permitted. Type C pull chambers preferred at changes of direction (See SD1400-001).
6. For posts of base diameters other than that shown use calculation.

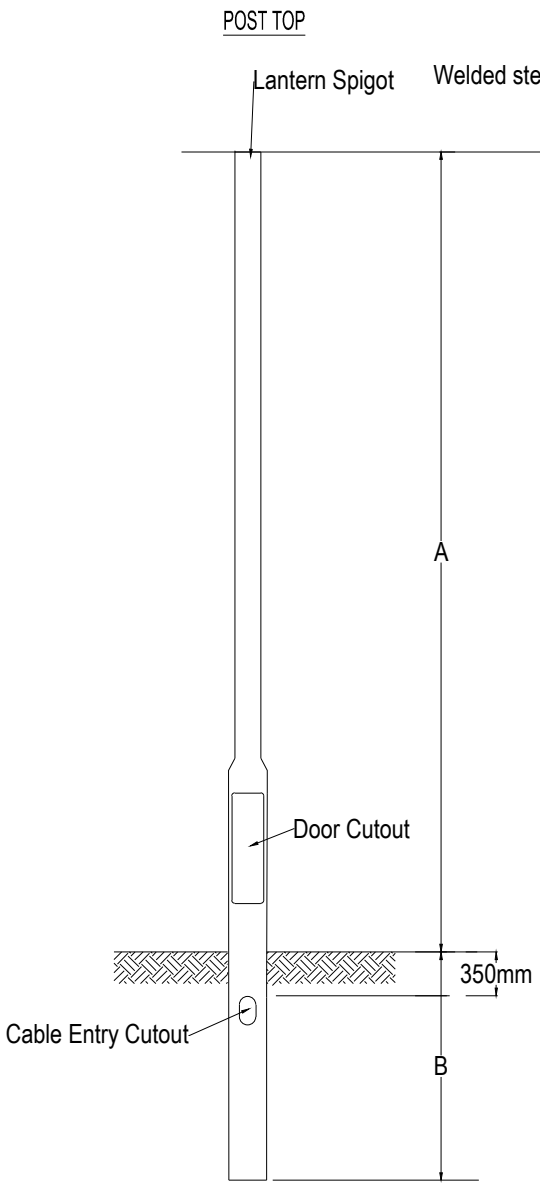
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1300: Road Lighting Columns and Brackets, CCTV Masts and Cantilever Masts

Lighting Columns Planting Depths

Drawing: SD-1300-005
Revision: Ø
Drawn by: RR
Scale: 1:40 @ A4
Date Drawn: 06/09/2024



Bracket securing screws: (upto 6m - 1 row of 4, over 6m - 2 rows of 4) Male reducer spigot on shaft. Bracket to be fitted with 4 position (90 degree intervals) anti-rotation device and anti-chafing mechanism. Outside diameter of bracket to be the same as the shaft.

Fabricat 12m column or similar approved.

Column Type	Nominal Height of Columns (m) A	Planting Depth Minimum (m) B
Post Top	5	0.8
	6	1.0
Side Entry	6	1.0
	8	1.2
	10	1.5
	12	1.7

Notes:

1. See SD0500-009 for lamp column installation details.

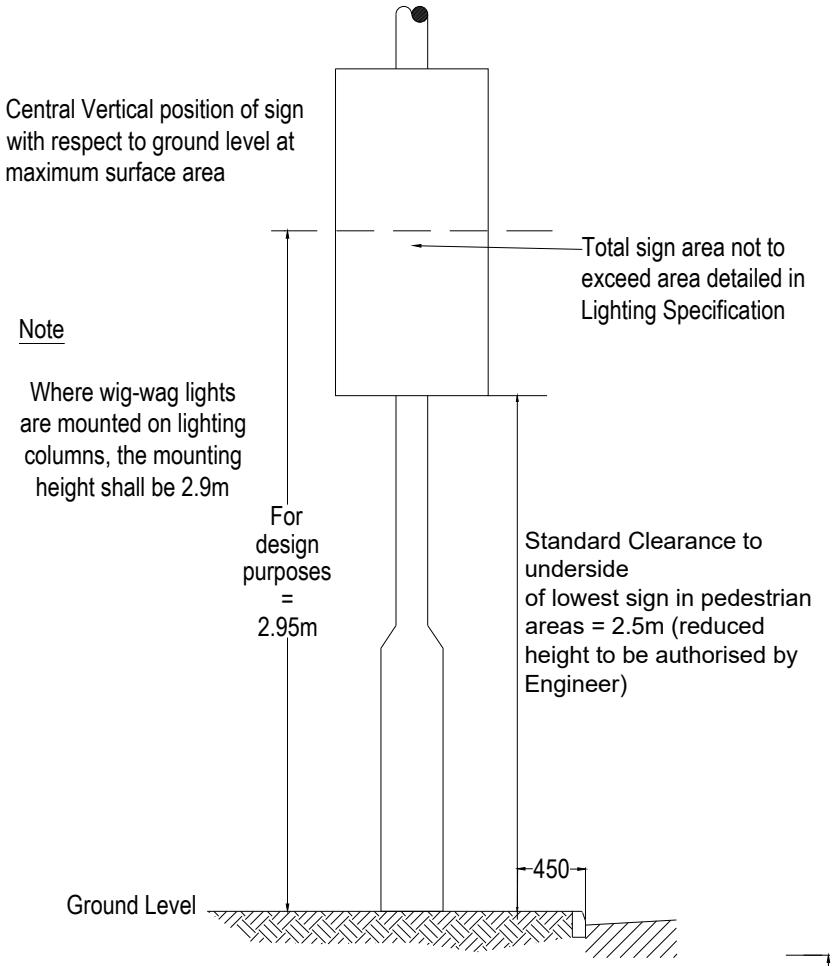
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

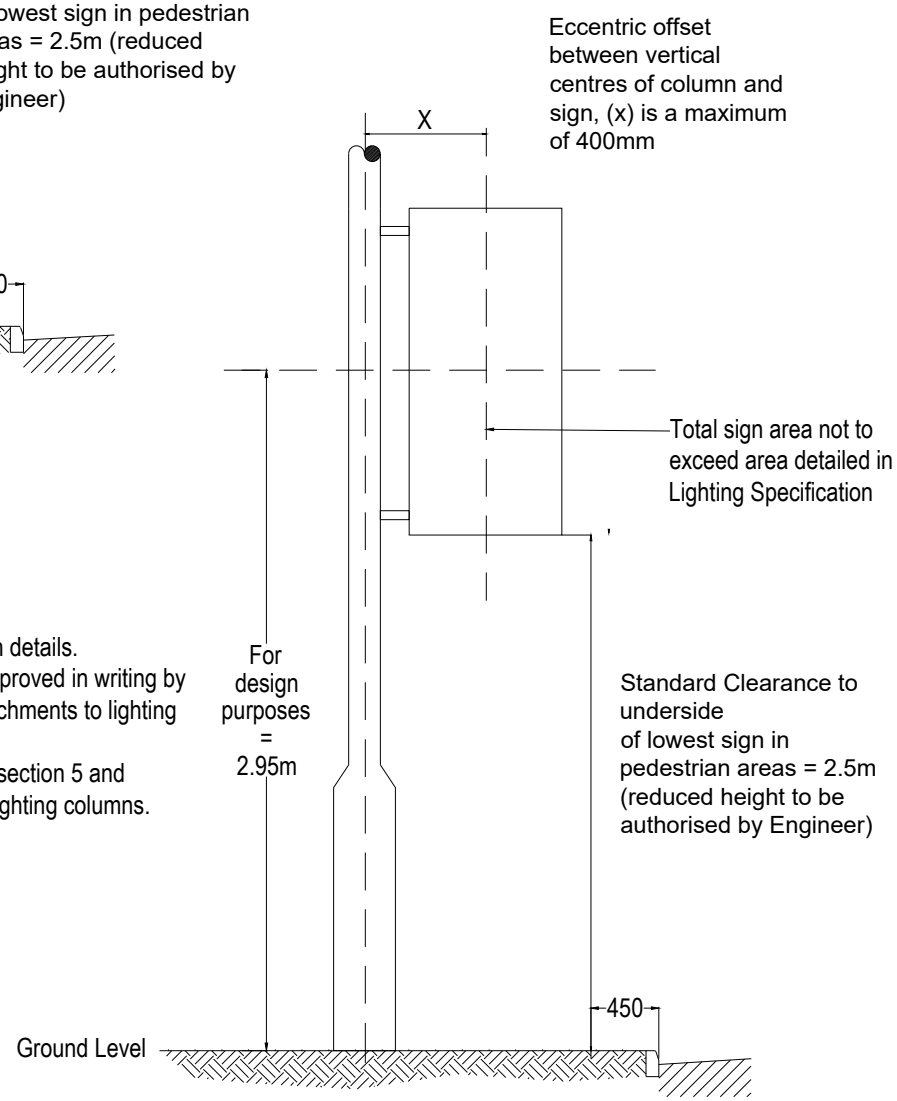
Series 1300: Road Lighting Columns and Brackets, CCTV Masts and Cantilever Masts

Lighting Columns Sign Attachments

Drawing	Revision
SD-1300-006	Ø
Drawn by: RR	Scale: 1:40 @ A4
Date Drawn: 10/07/2024	



SIGN ATTACHED CENTRALLY



OFFSET SIGN

Notes:

1. Refer to SD1300-004 for lighting column installation details.
2. Attachment of signs to lighting columns must be approved in writing by street lighting team. See BCC code of practice attachments to lighting columns.
3. Maximum sign size/design loading are specified in section 5 and appendix 1 of the code of practice attachments to lighting columns.

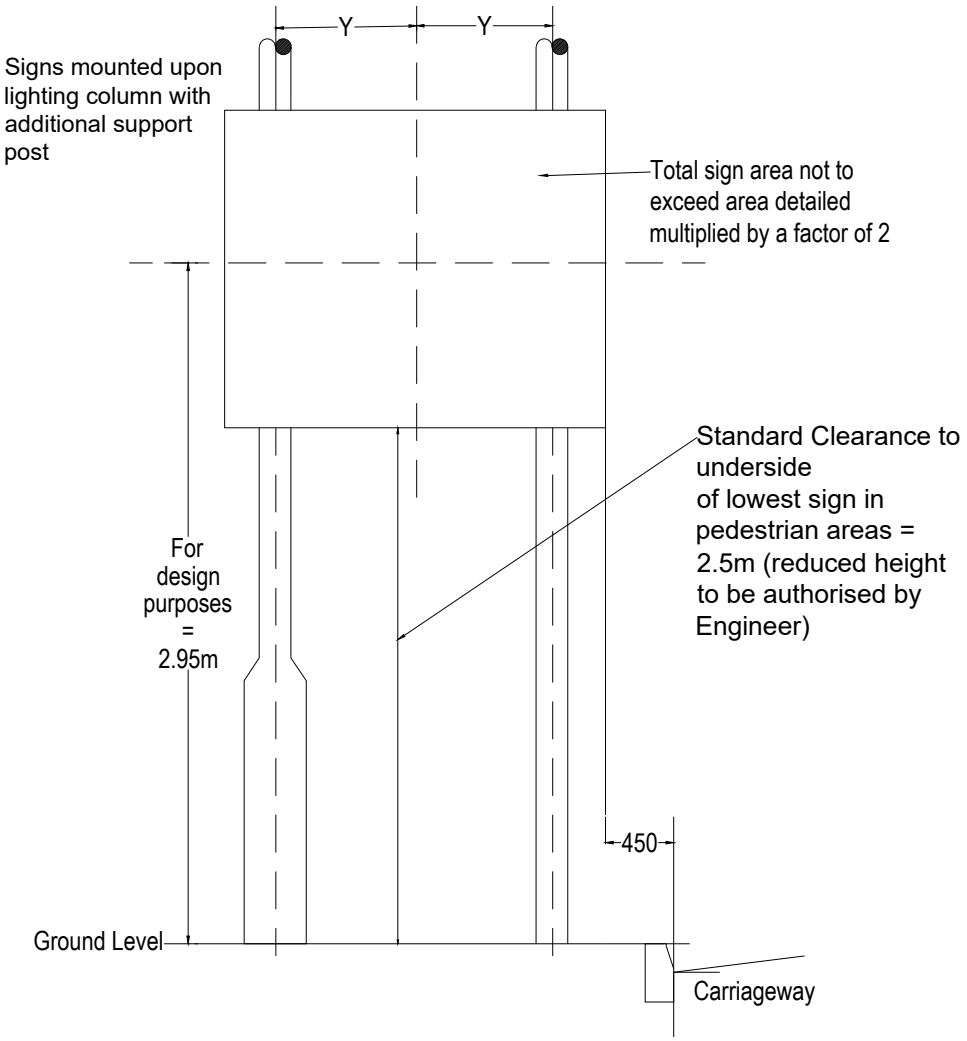
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1300: Road Lighting Columns and Brackets, CCTV Masts and Cantilever Masts

Lighting Columns Sign Attachments Two Columns

Drawing	Revision
SD-1300-007	Ø
Drawn by: RR	Scale: 1:40 @ A4
Date Drawn: 10/07/2024	



Notes:

1. Refer to SD1300-004 for lighting column installation details.
2. Attachment of signs to lighting columns must be approved in writing by street lighting team. See BCC code of practice attachments to lighting columns.
3. Maximum sign size/design loading are specified in section 5 and appendix 1 of the code of practice attachments to lighting columns.

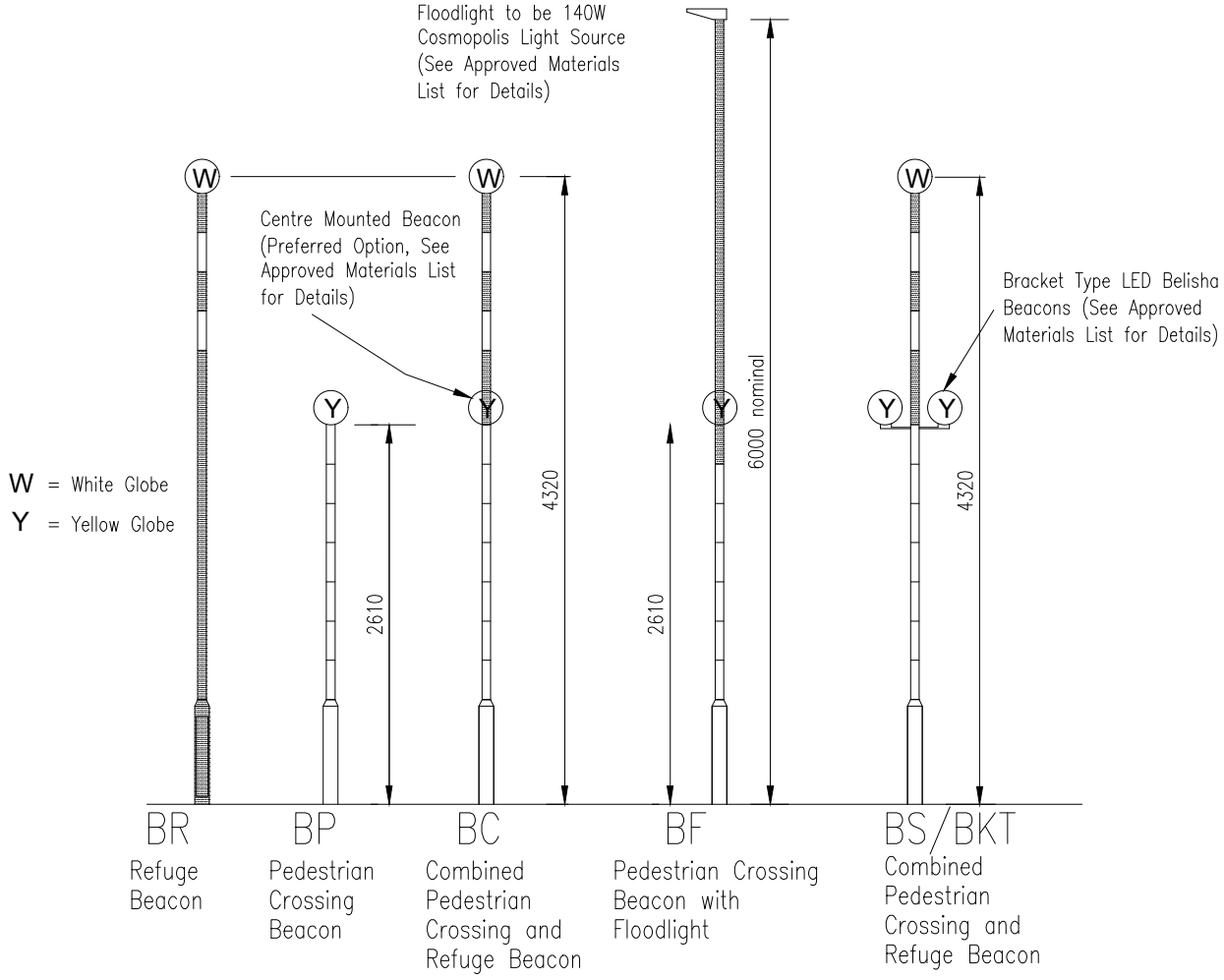
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1300: Road Lighting Columns and Brackets, CCTV Masts and Cantilever Masts

Beacons

Drawing	Revision
SD-1300-008	Ø
Drawn by: TM	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	



Where ever possible all belisha beacons, with the exception of the BR and BP Posts will incorporate a mid post mounted LED Beacon. However, where specific onsite conditions dictate a bracket system may be required. Any alterations will be confirmed by the Lighting Engineer and incorporated on the Section 28 document.
When requested by the Lighting Engineer a shrouding system will be required and installed as per the manufacturers specification.
No crossing will be allowed to be operational unless fully illuminated and inspected by the Lighting Engineer.
All lighting levels on the crossing must comply with TR12 for Pedestrian Crossings.

Notes:

1. All dimensions in millimetres.
2. Beacons shall comply with:
   a. the "Zebra" Pedestrian Crossing Regulations 4 of the Traffic Signs Manual.
   b. Paragraphs 4.114 to 4.119 inclusive of Chapter 8 of the traffic signs manual.
   c. BS873 Part 2 Clause 10.
3. Beacon Posts will be manufactured as per the lighting column specification and will be pre painted before installation on site.
4. No beacon or part of a beacon shall be less than 450 from the edge of the kerb. This may affect the clearance between kerb and post. the beacon can be swivelled round 180degrees if necessary to preserve clearance.
5. Beacons vulnerable to road traffic accidents shall have a Local Authority supply only, otherwise beacons will be fed via a DNO/WPD Supply.
6. A RS115 Retention socket by Preferred supplier NAL Ltd, or similar approved is to be used See SD1400-005 Signal Pole Base Entry Socket for foundation details.
7. A twin walled chamber is some times required next to the NAL socket for access. Check with BCC street lighting team.

STANDARD DETAILS

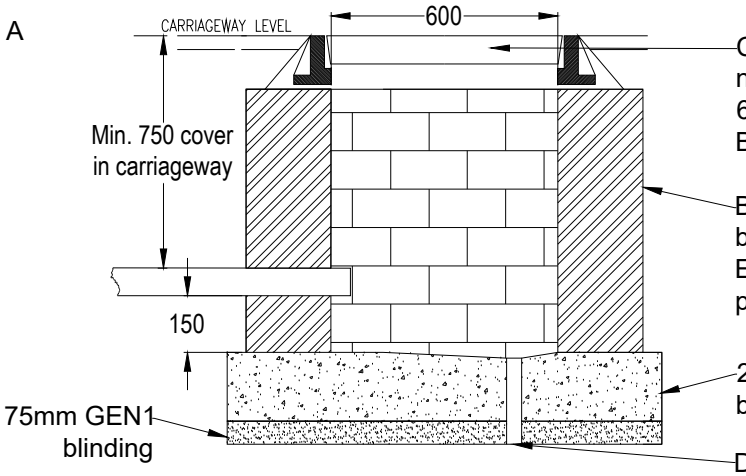
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1400: Electrical Work for Road Lighting and Traffic Signs

Brick Access Chamber

Drawing	Revision
SD-1400-001	Ø
Drawn by: SW	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

Type A

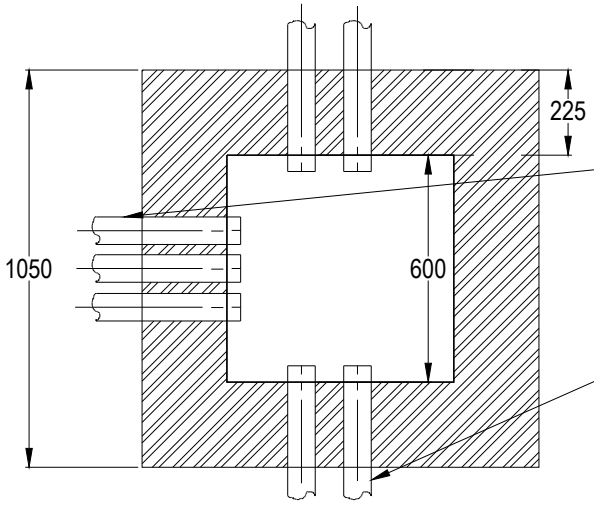


Cover and frame to be Double Triangular non-rocking, 150mm deep in highways & 675 clear opening to BS EN124, D400 BS.7903 & HA104/09 (see note 11)

BRICKWORK - Class B engineering brickwork, 225mm thick constructed in English bond, to comply with relevant provisions in BS EN771;Class M1 mortar

225mm thick in-situ concrete manhole base, Grade ST4 concrete

Drainage hole formed from a 50mm dia duct



Carriageway duct (Min 3 way 100mm duct crossing carriageway see SD-1400-010
Unless specified on project ducting drawing)

Footway duct (100mm duct no. as specified by Employers Representative)

NOTES

1. DMHRB Specification for Roads and Bridges applies with additions and amendments and any Bristol City Council additional or substitute.
2. ALL DIMENSIONS ARE IN MILLIMETRES.
3. Entry of all ducts into chambers should not protrude into the chamber more than 25mm. Ducts should be installed flush with sidewalls.
4. Voids around ducts and in redundant holes to be blocked & finished flush with inside face of chamber
5. All ducting to be HDPE/LDPE twin wall flexible duct and identified with appropriate service type at approx. 500mm intervals. Orange 100mmØ for Traffic Signals, Purple 100mmØ for BNET.
6. Base to be U2 finish.
7. Plastic access chambers see Standard Detail SD06-002.
8. Orientation and duct entry positions to be agreed with the Employer's Representative.
9. Ducts to be fitted with continuous unknotted 6mm dia blue polypropylene draw rope - ends to be fixed.
10. Backfill to be agreed with the Employer's Representative. Reinstatement to match existing pavement or verge.
11. Where chamber is sited within running lane or other vulnerable location use PAM Saint-Gobain Opt-Emax Griptop cover, 150mm deep with 675mm clear opening or similar approved.
12. 'English Bond' method of construction, 'Class B Engineering brickwork'.
13. Only to be used in carriageways, when approved by BCC/employer's representative.

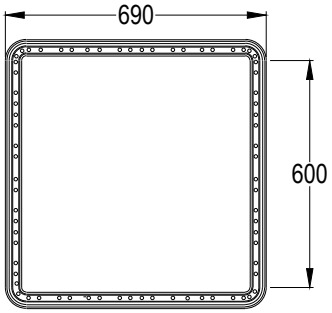
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1400: Electrical Work for Road Lighting and Traffic Signs

Twin Wall Modular Access Chamber

Drawing	Revision
SD 1400-002	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 08/07/2024	



CHAMBER DIMENSIONS (nominal)

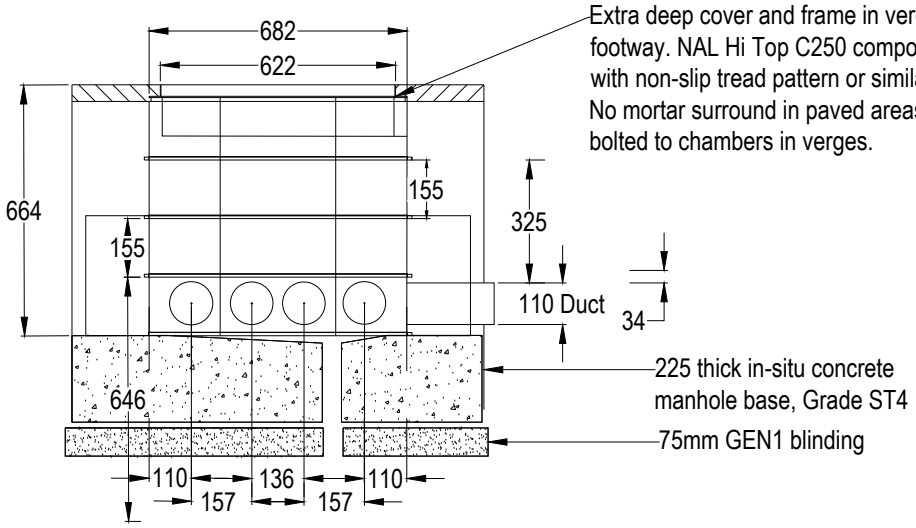
Type B1 : 600 x 600

Type B2 : As B1 plus extension for 750 cover

Type C1 : 450 x 450

Type D : 300x450

NAL twin STAKKA box or similar approved.



NOTES

1. *DMRB Specification for Roads and Bridges applies with additions and amendments and any Bristol City Council additional or substitute.*
2. *ALL DIMENSIONS ARE IN MILLIMETRES.*
3. *Entry of all ducts into chambers should not protrude into the chamber more than 25mm. Ducts should be flush with sidewalls.*
4. *Voids around ducts and in redundant holes to be blocked & finished flush with inside face of chamber.*
5. *All ducting to be HDPE/LDPE twin wall flexible duct and identified with appropriate service type at approx. 500mm intervals. Orange 100mmØ for Traffic Signals, Purple 100mmØ for BNET.*
6. *Base to be U2 finish with falls to drain hole.*
7. *Ducts to be fitted with continuous unknotted 6mm dia blue polypropylene draw rope - ends to be fixed.*
8. *Backfill to be agreed with the Employer's Representative. Reinstatement to match existing pavement or verge*
9. *In area subject to vehicle overrun, covers to be PAM Saint-Gobain Opt-Emax Griptop cover, 150mm deep with 675mm clear opening or similar approved.*
10. *NAL High top C250 non slip covers are to be used in all footway chamber covers.*

STANDARD DETAILS

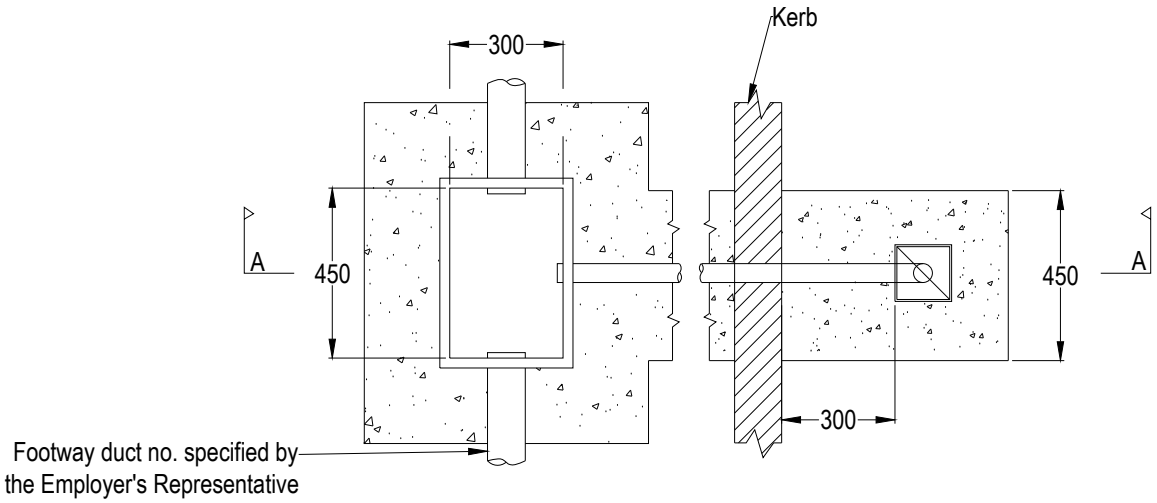
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1400: Electrical Work for Road Lighting and Traffic Signs

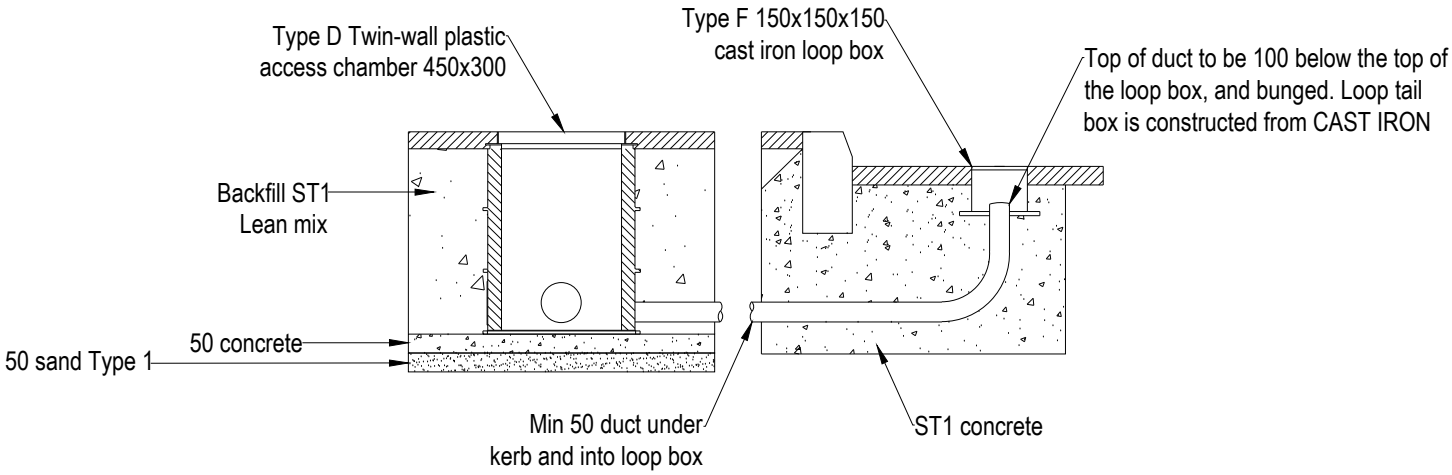
Detector Loop Box

Drawing	Revision
SD-1400-003	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

PLAN



SECTION A-A



NOTES:

1. DMRB Specification for Roads and Bridges applies with additions and amendments and any Bristol City Council additional or substitute clauses.
2. All dimensions are in millimetres. .
3. Entry of all ducts into chambers should not protrude into the chamber more than 25mm. Ducts should be flush with sidewalls.
4. Voids around ducts and in redundant holes to be blocked & finished flush with inside face of chamber.
5. Type D footway box may be used on a duct run as a pulling box spaced at intervals not more than 50m intervals.
6. All ducting to be HDPE/LDPE twin wall flexible duct and identified with appropriate service type at apx. 500mm intervals. Orange 100mmØ for Traffic Signals, Purple 100mmØ for BNET. Duct in base of Type F box to be sealed against blockage or ingress of debris until loop cable tails are installed.
7. Reinstatement to match existing carriageway material.
8. Backfill to be agreed with the Employer's Representative.
9. 'Carriageway Loop Box' by NAL ltd, or similar approved.
10. Type F not to be placed within concrete bus pad.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

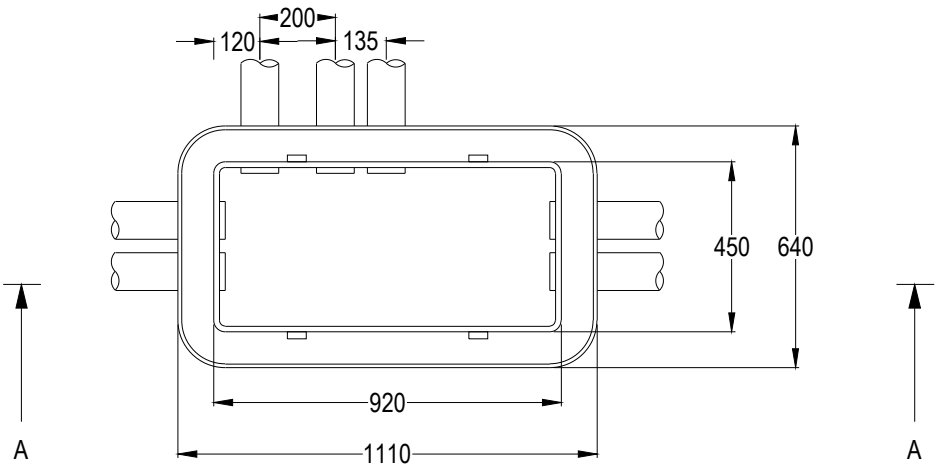
Series 1400: Electrical Work for Road Lighting and Traffic Signs

HDPE (BNET) Access Chamber

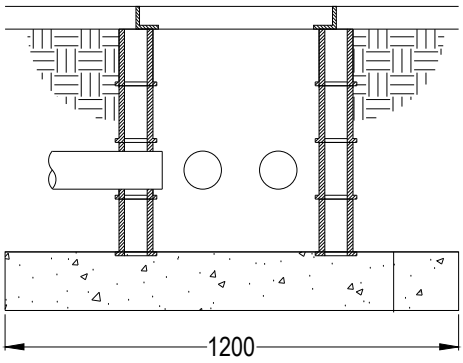
Drawing	Revision
SD-1400-004	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

TYPE L

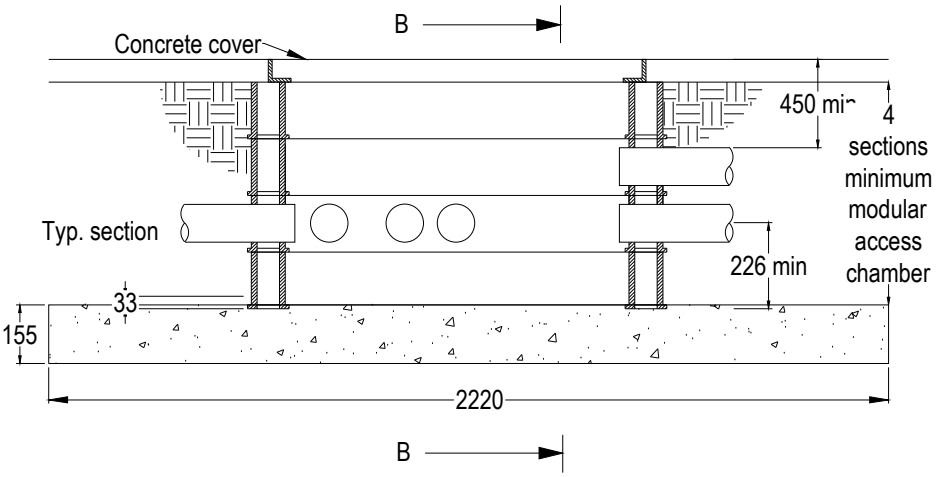
PLAN
(frame and cover omited for clarity)



SECTION B-B



SECTION A-A



NOTES:

1. DMRB Specification for Roads and Bridges applies with additions and amendments and any Bristol City Council additional or substitute clauses.
2. Installation of box and concrete covers to manufacturers instructions.
3. Entry of all ducts into chambers should not protrude into the chamber more than 25mm. Ducts should be flush with sidewalls.
4. Voids around ducts and in redundant holes to be finished flush with inside face of chamber.
5. All ducting to be HDPE/LDPE twin wall flexible duct and identified with appropriate service type at approx. 500mm intervals. Orange 100mmØ for Traffic Signals, Purple 100mmØ for BNET.
6. All dimensions are in millimetres.
7. Orientation and duct entry positions to be agreed with the Employer's Representative.
8. All chambers for the use of BNET are to have 'BNET' on the top of the cover.
9. Ducts to be fitted with continuous unknotted 6mm dia blue polypropylene draw rope - ends to be fixed.
10. Backfill to be agreed with the Employer's Representative. Reinstatement to match existing pavement or verge.
11. STAKKABOX modular by NAL Ltd, or similar approved.
12. Cover should be fitted with plate stating apparatus present if BNET or traffic signals.

STANDARD DETAILS

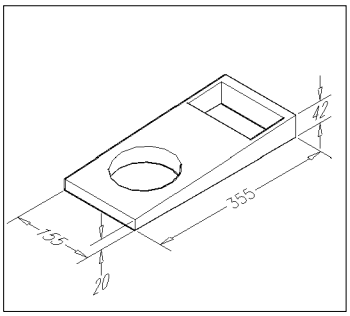
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1400: Electrical Work for Road Lighting and Traffic Signs

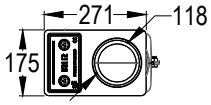
Signal Pole Base Entry Socket

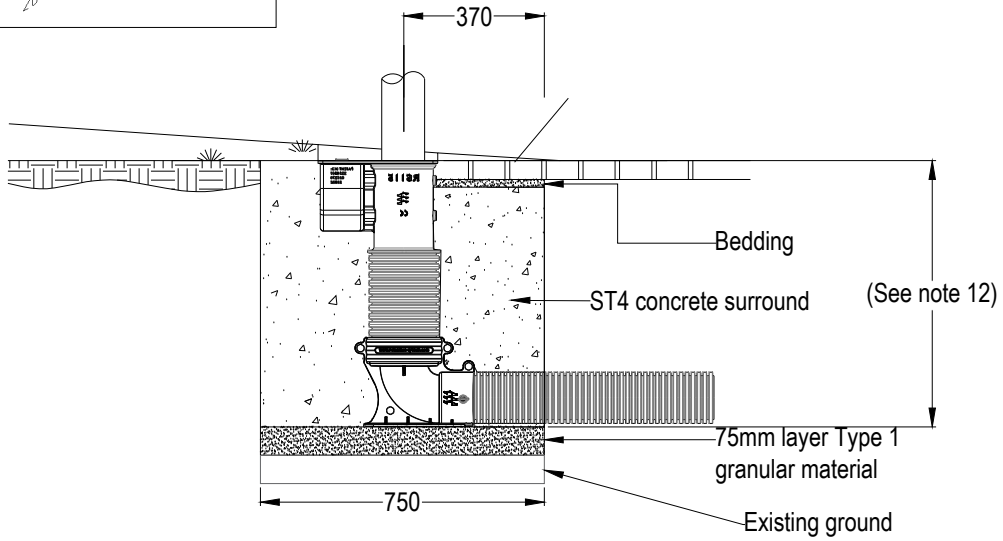
Drawing	Revision
SD-1400-005	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

See Notes 3 & 4 for Wedge.



PLAN
(frame and cover omited for clarity)





NOTES:

1. Installation to follow manufacturers instructions.
2. All dimensions are in millimetres.
3. Care should be exercised in setting the socket base to the correct level so the top of the socket matches the proposed finished pavement (especially if a wedge top is required).
4. Proprietary wedge must be used in location of sloping pavement surfaces in order to avoid a localized dip in the finished surface around the pole.
5. Socket verticality must be set using a pole (at least 2m long) after tightening both bolts onto the lubricated stainless steel sleeve prior to casting the concrete surround.
6. RS115 Retention socket by Preferred supplier NAL Ltd, or similar approved.
7. The plug and sleeve should be secured when casting concrete to avoid snots entering voids.
8. The socket should be left for the signal installers with the pedestrian plug and stainless steel sleeve in position.
9. The finished surface will match surrounding hard surface material. Where installation is in-verge then the finished surface will be concrete sloped to aid run-off.
10. Backfill to be agreed with the Employer's Representative. Reinstatement to match existing pavement or verge.
11. All ducting to be HDPE/LDPE twin wall flexible duct and identified with appropriate service type at approx. 500mm intervals. Orange 100mmØ for Traffic Signals, Purple 100mmØ for BNET.
12. If 750mm depth is not possible, minimum depth can be reduced to 450mm subject to BCC approval.

STANDARD DETAILS

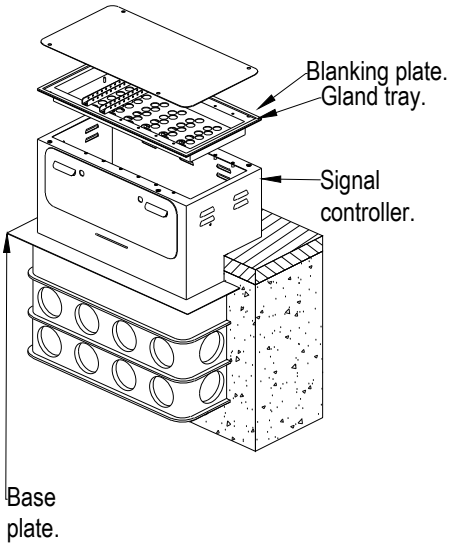
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1400: Electrical Work for Road Lighting and Traffic Signs

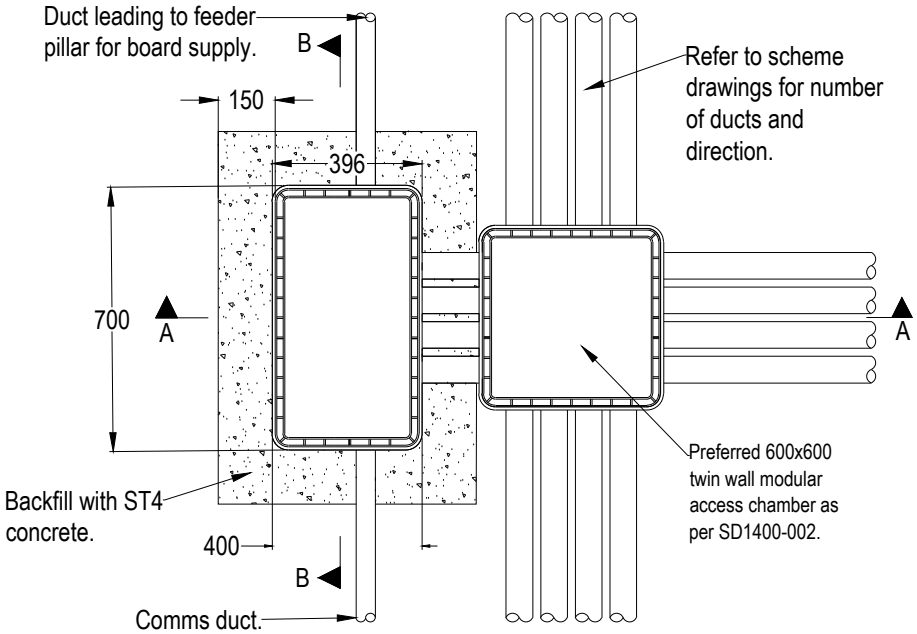
Traffic Signal Controller

Drawing	Revision
SD-1400-006	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

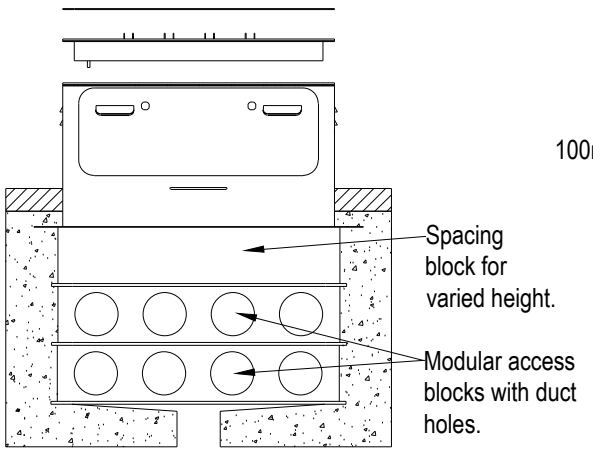
3-D VIEW OF CONTROLLER



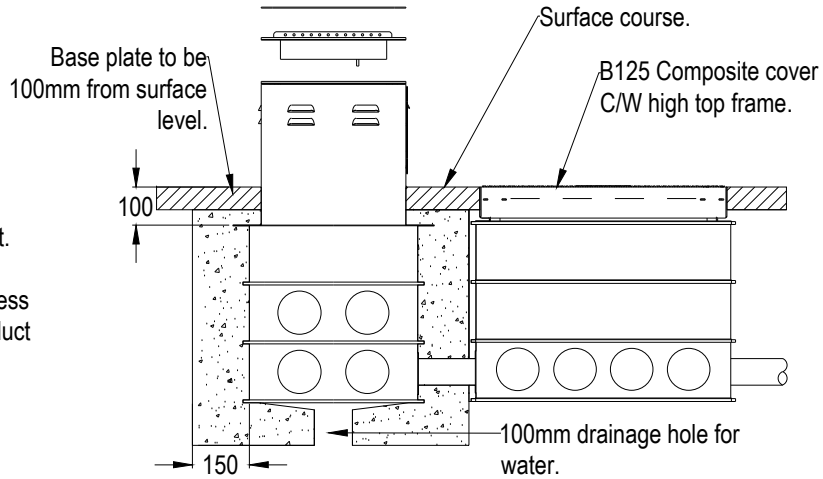
PLAN VIEW



SECTION B-B



SECTION A-A



NOTES:

1. DMRB Specification for Roads & Bridges applies with additions and amendments and any Bristol City Council additional or substitute clauses.
2. All dimensions are in millimetres.
3. Location and orientation of controller and access chamber to be marked by the Employer's representative.
4. Electricity supply into controller base from adjacent feeder pillar. Feeder pillar to be Electricity Board injected. 50mm orange duct inter connection.
5. Telecomms duct into controller base from nearest telecomms chamber or comms cabinet - Employer's representative to advise.
6. STAKKA box modular access box by NAL ltd or similar approved.
7. All ducting to be HDPE/LDPE twin wall flexible duct and identified with appropriate service type at approx. 500mm intervals. Orange 100mmØ for Traffic Signals, Purple 100mmØ for BNET.
8. Traffic signal controller base and associated stakka box supplied by BCC Traffic Signals Contractor and installed by Civils Contractor.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

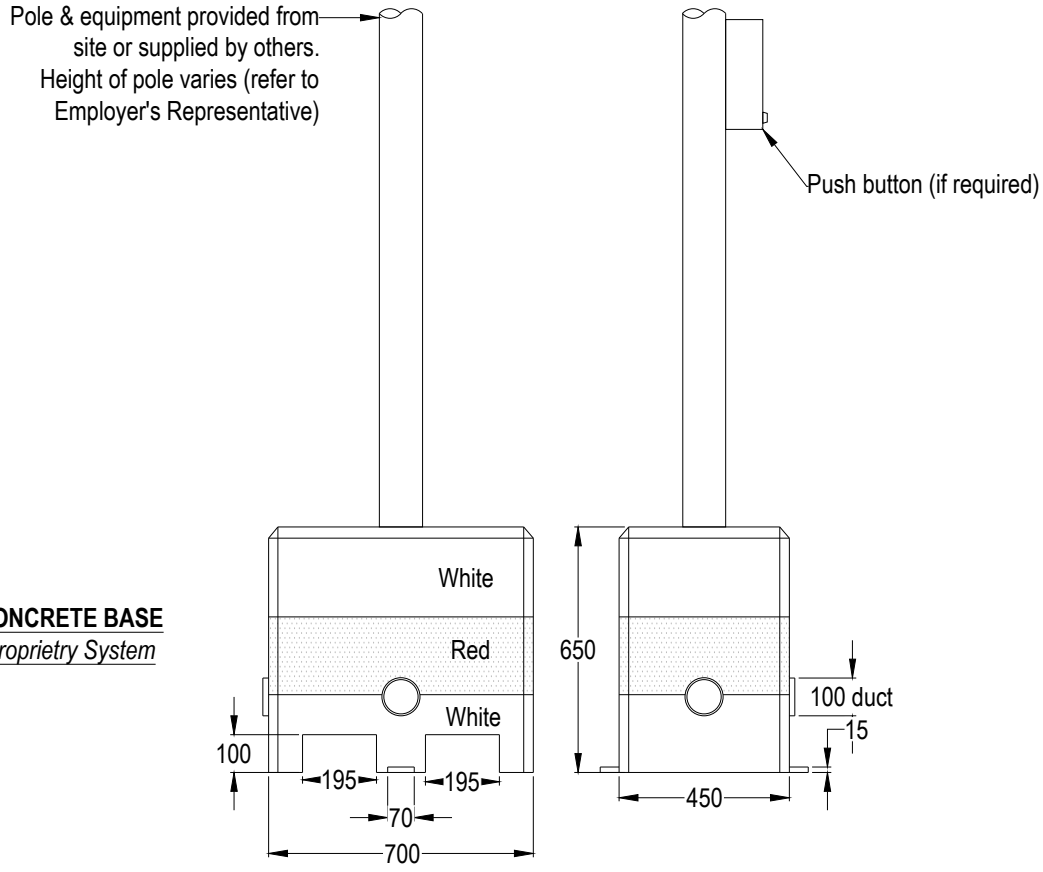
Series 1400: Electrical Work for Road Lighting and Traffic Signs

Temp Signal Pole Foundation

Drawing	Revision
SD-1400-007	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

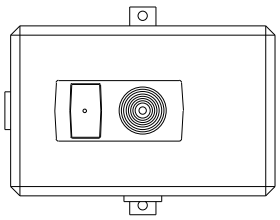
SIDE VIEW

FRONT VIEW



CONCRETE BASE
Proprietry System

PLAN VIEW



NOTES:

1. WORK MAY ONLY BE CARRIED OUT ON ELECTRICALLY ISOLATED EQUIPMENT.
2. Location and orientation of temporary signal to be agreed with Employer's Representative.
3. Electrical connections to be carried out by contractor approved by Employer's Representative.
4. Orientation of push-button (if any) to be agreed by Employer's Representative.
5. Foundation bearing to be firm to prevent tip-over of equipment.
6. Pole must not be able to swivel.
7. Pole must be as vertical as possible by agreement with Employer's Representative.
8. Signal pole and existing on street equipment is cut, by civils contractor, at ground level once electrically isolated for insertion into temporary foundation unless new equipment is provided by others.
9. Units that are damaged are to be removed from site.
10. Proprietary concrete base system only. Drum system no longer acceptable.
11. Also to be used with pole & flag for temporary bus stops, location to be agreed with public transport.

STANDARD DETAILS

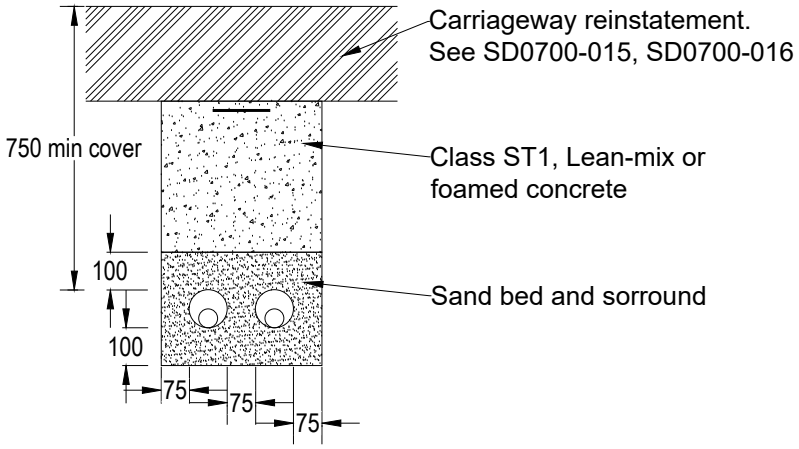
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1400: Electrical Work for Road Lighting and Traffic Signs

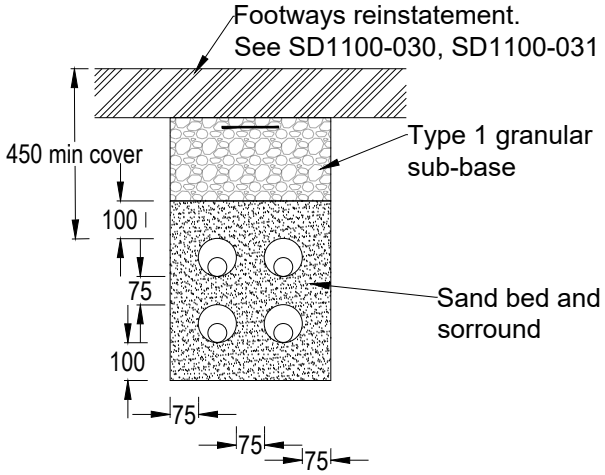
Ducts

Drawing	Revision
SD-1400-009	Ø
Drawn by: RR	Scale: 1:20 @ A4
Date Drawn: 06/09/2024	

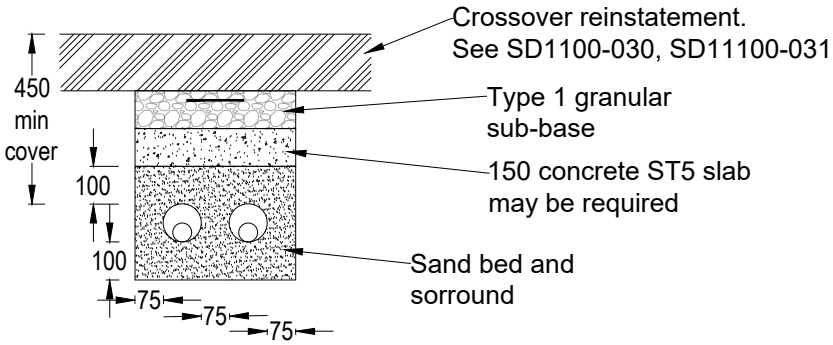
UNDER CARRIAGEWAYS AND HEAVY-DUTY CROSSOVERS



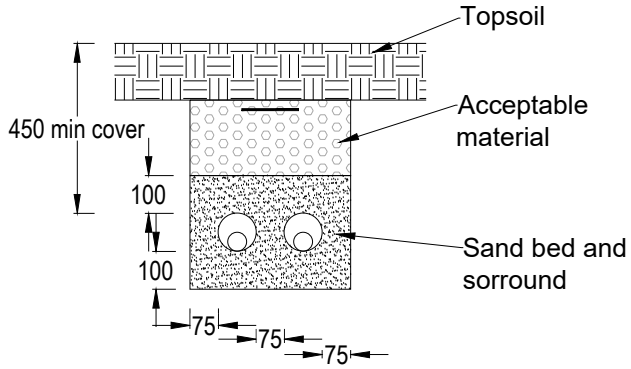
UNDER FOOTWAYS



UNDER LIGHT-DUTY VEHICLE CROSSOVERS



UNDER VERGES



DUCT SIZE AND COLOUR		
Street lighting under carriageways	150Ø	Orange
Street lighting elsewhere	50Ø	Orange
Traffic signals	100Ø	Orange
Electricity companies	150Ø	Black
BNET	100Ø	Purple

KEY

Continuous ducts in protective duct

150 wide warning tape

NOTES

1. Continuous ducting is required for all cables.
2. Under vehicular areas, the continuous duct shall be laid inside a larger protective duct.
3. 150mm wide continuous warning tape shall be laid over the ducts at a depth of 300mm or formation level.
4. The details above show twin-duct trenches, but single and multiple duct trenches are similar with 75 clearance between adjacent ducts and 75 clearance from the trench wall to the nearest duct.
5. Duct are to be flexible HDPE/LDPE as specified in the BCC Traffic Signals Design Guide and BCC Street Lighting Specification.
6. Ducts shall extend into the column to 100 above the entry slot.
7. All Ducting is required to be fitted with a pigmented, stranded polypropylene or equivalent rot-proof material draw cord of 5kN breaking load and having a design life of not less than 20 years, the ends of which shall be made fast within the chambers to which the duct is terminated. Draw cords shall be secured to the duct plugs. Draw cords shall not be knotted within ducts; where a joint is required it shall be a spliced joint.
8. Separate duct systems to be provided for different cable services e.g. HV/LV/Comms/Signals cables of different types of services must not share ducts. See SD1300-003 for recommended duct position.
9. Cable service type must be marked on duct at approx. 500mm intervals.

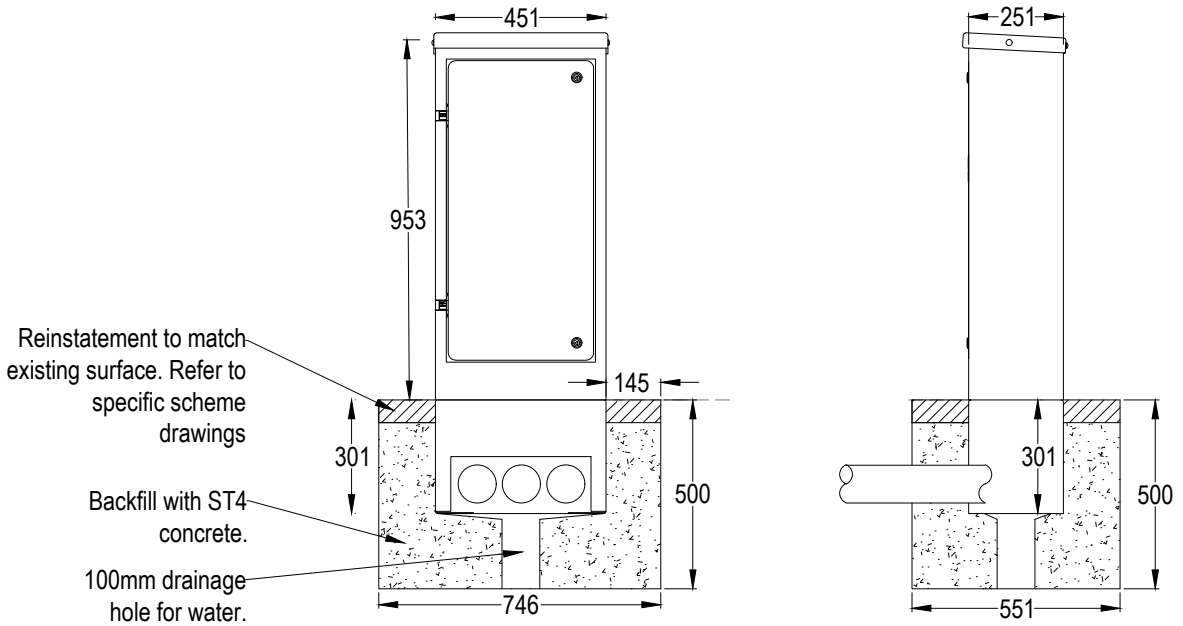
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 1400: Electrical Work for Road Lighting and Traffic Signs

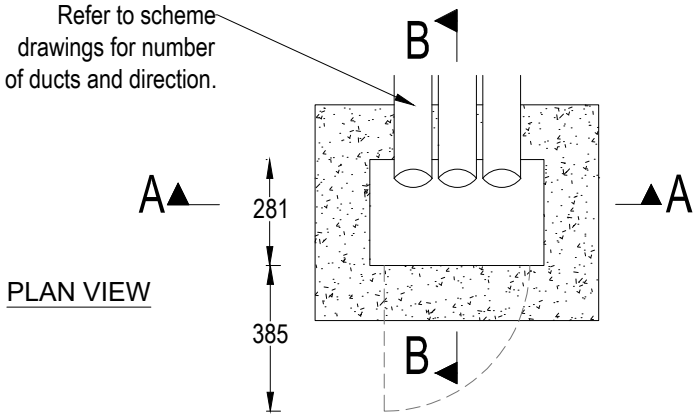
Feeder Pillar

Drawing	Revision
SD-1400-010	Ø
Drawn by: SW	Scale: 1:20
Date Drawn: 06/09/2024	



SECTION A-A

SECTION B-B



PLAN VIEW

Location of feeder pillar

- Door must open away from on coming traffic so the engineer has a clear view of oncoming traffic
- The location of the feeder pillar should be placed behind street furniture such as a bus shelter, pedestrian guard rail, bollards or at the back of footway.

1. All dimensions are given in millimetres.
2. Feeder pillar to be a Charles Endirect or similar approved.
3. For planted root Feeder pillars the depth of the concrete foundation shall be 150 greater than the depth of the feeder pillar root. (Subject to a minimum of 500).
4. All cable entries shall be sealed with duct sealant
5. Duct entry layout may be altered to suit cabling arrangements
6. One spare duct with draw rope shall be installed for future use.
7. Unless shown otherwise all ducts shall be 100 diameter thick walled high density smooth bore polyethylene.
8. Duct for incoming Electricity Company cable shall be manufactured in black polyethylene.
9. Duct for BNET communications shall be purple.
10. For ducting standard detail see SD-1400-009-Ø
11. Door to have ventilation louvre slots (Door only), anti vandal locks, hasp and staple and to be powder coated black.
12. Feeder pillar and instalation to be as per Bristol City Council's HEAT Street Lighting Equipment Specification or as required by a specific package

Prefered Use	Feeder Pillar	Size	Foundation Depth
Traffic Signals & BNET	BDP70	W451mm x H953mm X W251mm	500mm
Bus Shelters	BDP80	W550mm x H1050mm X W275mm	500mm
Traffic Signals and BNET	BDP80	W550mm x H1050mm X W275mm	500mm

Feeder pillar type to be confirmed by BCC electrical / signals engineer or BNET Team.

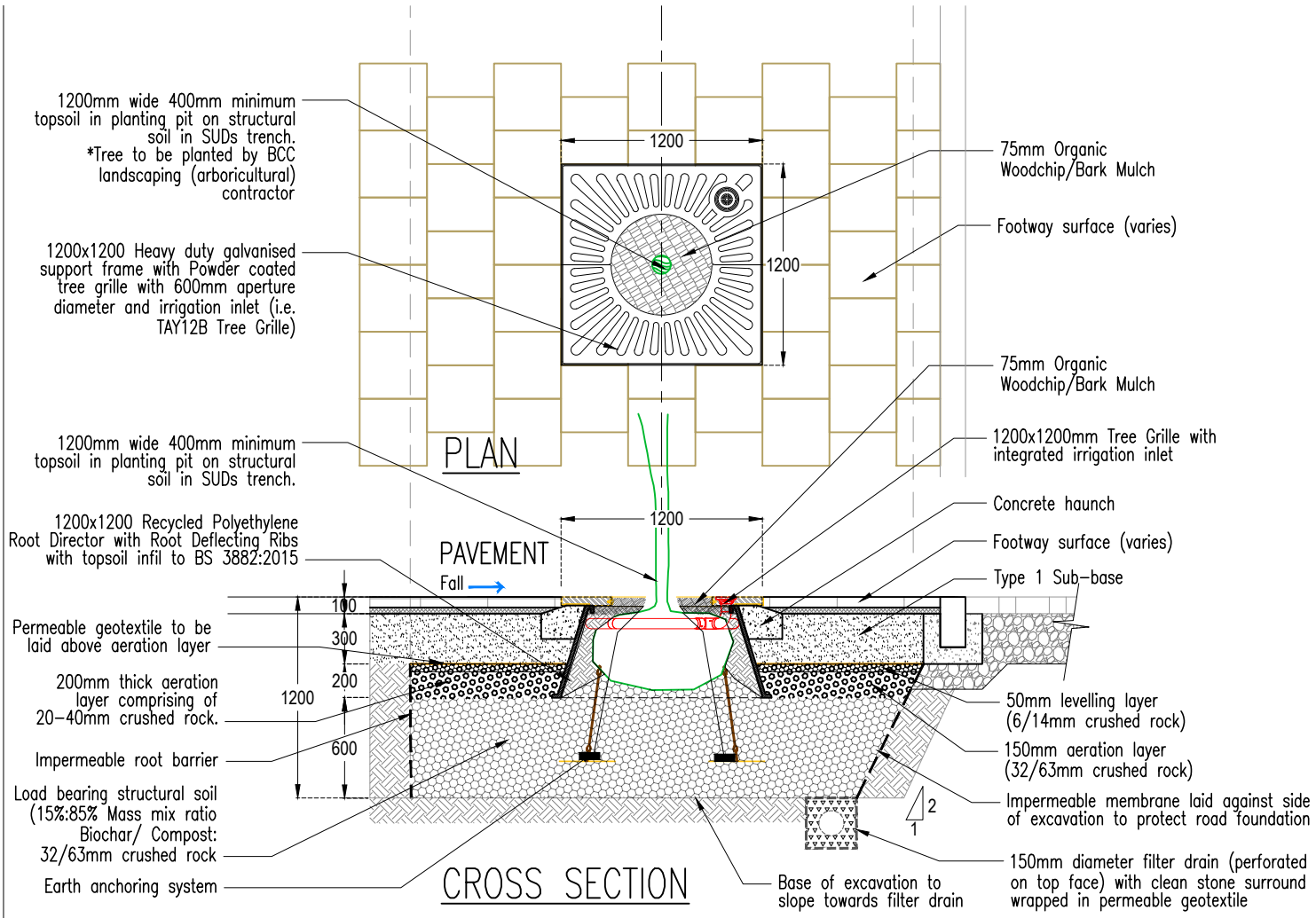
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

04-TRAFFIC MANAGEMENT

TREES AND ROOTS x
TREE TRENCH - STOCKHOLM
TP0x

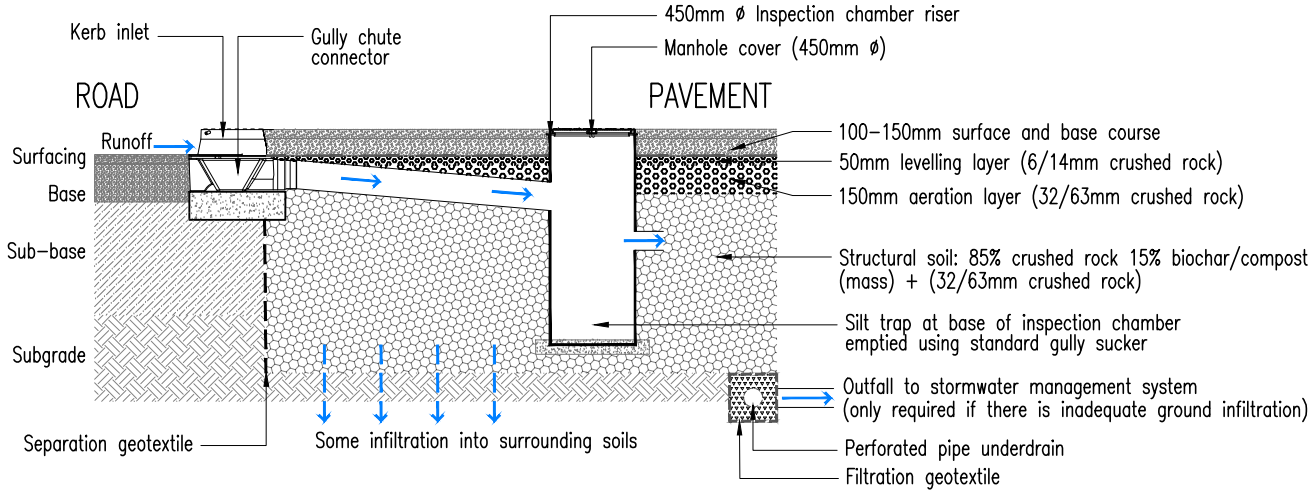
Drawing	Revision
SD-3000-00x	Ø
Drawn by	**Scale**
AN	1:40
Date Drawn	
JUL 2024	



CROSS SECTION (TREE PIT KERB INLET)

All of the materials required should be available from a local builder's merchant. Standard construction equipment can be used for handling and compacting the structural soil.

The kerb inlet should be installed in conjunction with a surface inlet that has pathways for air to reach the aeration layer.



STANDARD DETAILS

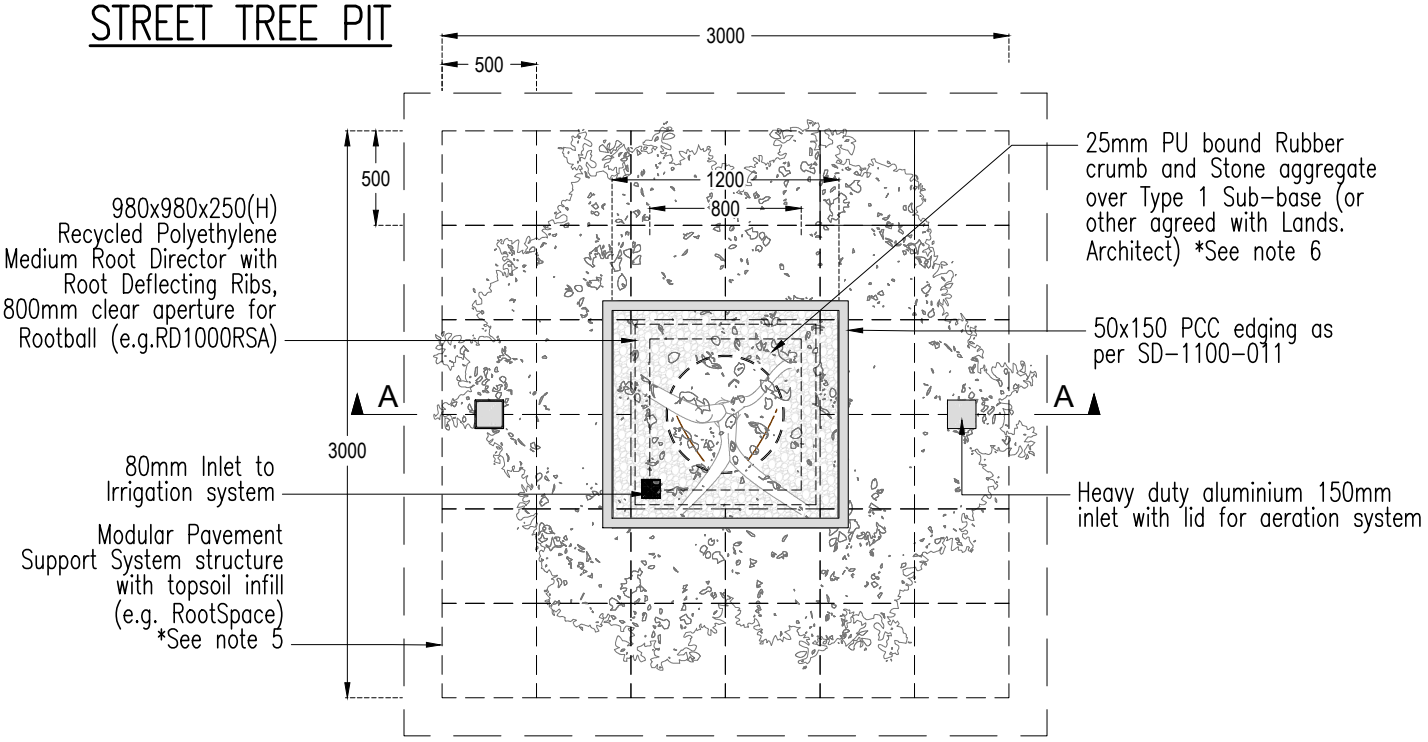
All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 3000: Landscape and Ecology

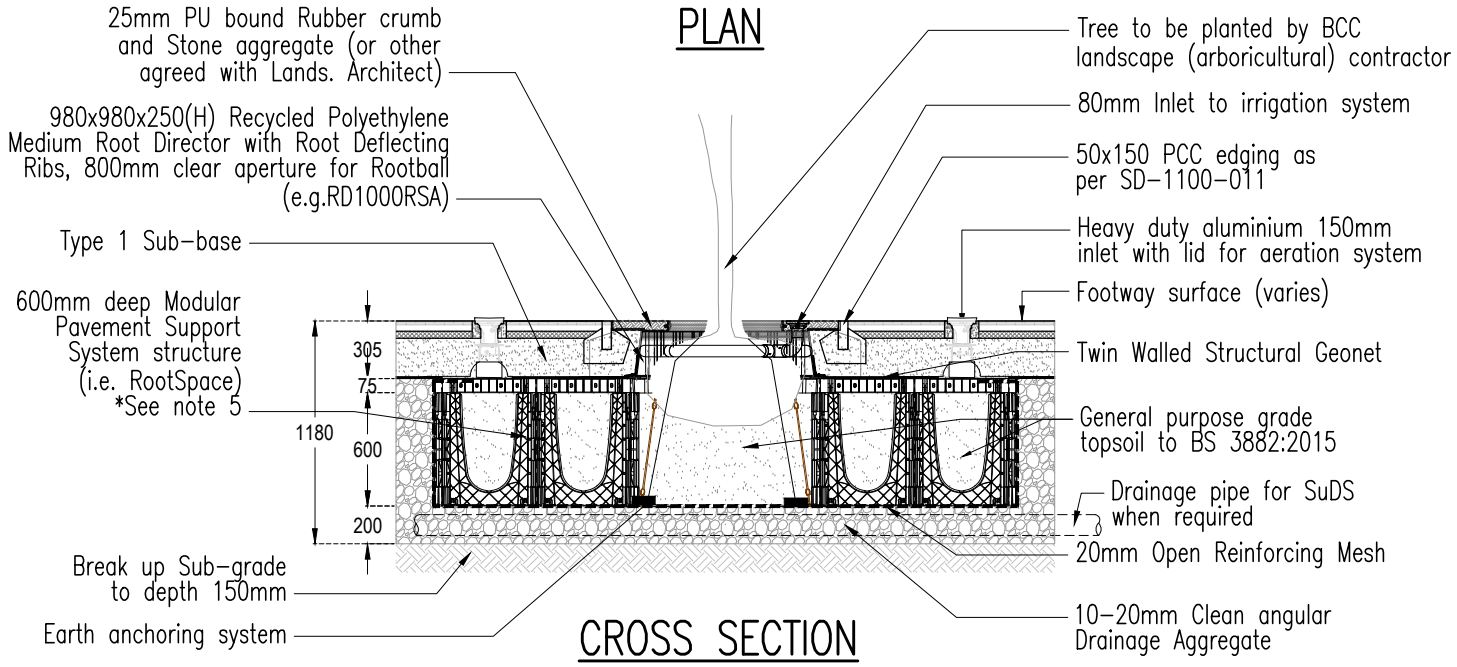
TREES AND ROOTS 1
IN FOOTWAYS
TP01

Drawing	Revision
SD-3000-001	Ø
Drawn by: AN	Scale: 1:40
Date Drawn: 06 Sept 2024	

STREET TREE PIT



PLAN



CROSS SECTION

Notes:

1. Products specified are from Green Blue Urban or similar approved.
2. Edging and footway surfacing details may vary.
3. Tree pit surface infill may vary only by agreement with BCC Highways.
4. Design only suitable for trees with root ball not exceeding 860mm.
5. Shape of Pavement Support System (e.g.RootSpace) structure may vary to suit conditions to maintain minimum soil volume.
6. Tree pit constructed outside planting season to be capped with 20mm temporary sealed surface (i.e. Tarmac) by Highways contractor. A tree will subsequently be planted by Arboricultural contractor.

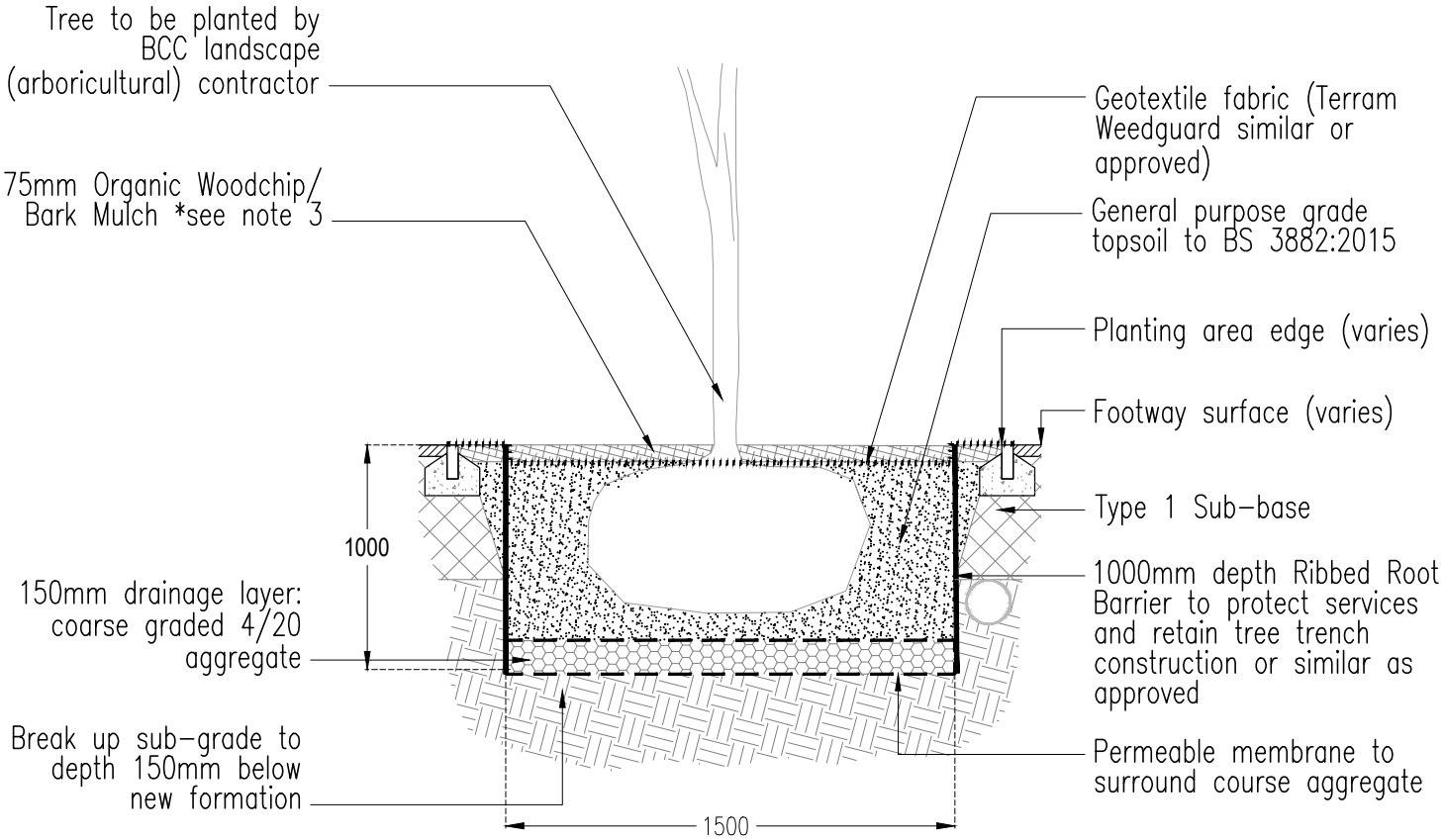
STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

Series 3000: Landscape and Ecology

TREES AND ROOTS 2
TREE TRENCH
WITHIN GRASS VERGE/
PLANTING BED - TP02

Drawing	Revision
SD-3000-002	Ø
Drawn by: AN	Scale: NTS
Date Drawn: 06 Sept 2024	



TREE TRENCH CROSS SECTION WITHIN VERGE/GREEN BED

NOTES:

1. Products specified are from GreenBlue Urban or similar approved.
2. Edging and footway surfacing details may vary.
3. Tree pit constructed outside planting season to be capped with Geotextile fabric and 75mm organic woodchip mulch infill by Highways contractor.
4. Tree pit surface infill may vary only by agreement with BCC Highways.
5. Design only suitable for trees with root ball not exceeding 860mm.
6. Shape of trench construction may vary to suit conditions to maintain minimum soil volume.
7. Tree pit location to be marked with wooden stakes to the corners of the trench extents.

STANDARD DETAILS

All dimensions are in mm unless otherwise stated.
Do not scale from drawings.

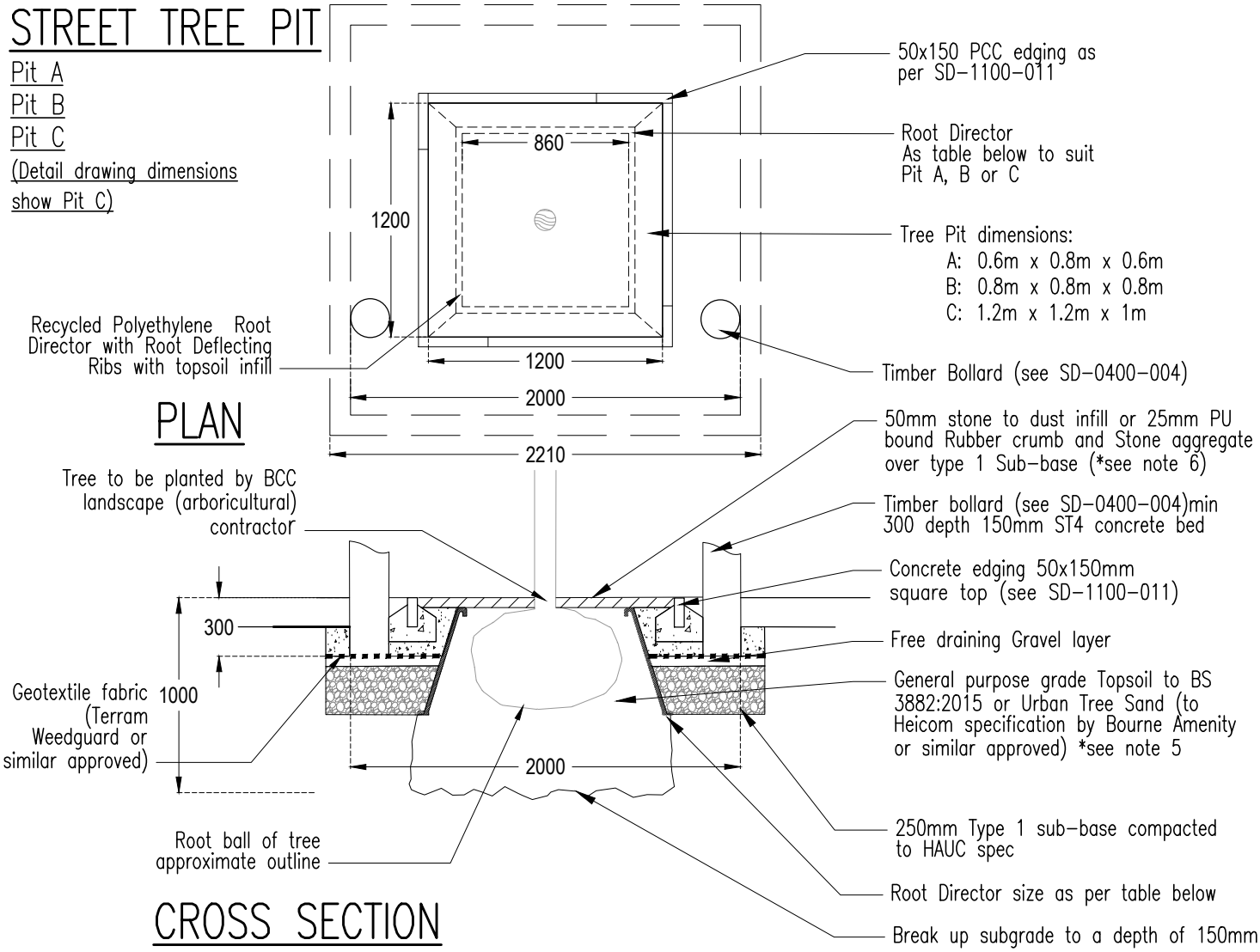
Series 3000: Landscape and Ecology

TREES AND ROOTS 3
IN STREET
TP03

Drawing: SD-3000-03
Revision: Ø
Drawn by: AN
Scale: NTS
Date Drawn: 06 Sept 2024

STREET TREE PIT

Pit A
Pit B
Pit C
(Detail drawing dimensions show Pit C)



Tree Pit Dimension & Root Directors (by Greenleaf or similar accepted)					
Tree Pit	Rootdirector Code	Width (Max) mm	Width (Min) mm	Depth mm	Tree Pit volume
A	RD510A	600	800	600	0.3m^3
B	RD640A	800	800	800	0.5m^3
C*	RD1050A	1200	1200	1000	1.4m^3

Notes:
1. Products specified are from GreenBlue Urban or similar approved.
2. Edging and footway surfacing details may vary.
3. Tree pit surface infill may vary only by agreement with BCC Highways.
4. Design only suitable for trees with root ball not exceeding 860mm.
5. At footways, it is recommended to use 100% topsoil. At carriageway, 50:50 mix of topsoil and Urban tree sand as per Heicom/Bourne (replacing 10% of topsoil with biochar where suitable).
6. Tree pit constructed outside planting season to be capped with 20mm temporary sealed surface (i.e. tarmac) by Highways contractor. A tree will subsequently be planted by Arboricultural contractor. Then Highways contractor shall return and reinstate the agreed finish on top of the tree pit.
7. All excavation hard surface arisings must be removed from site and not used as infill.