

Bristol City Council
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STANDARD DETAILS

01-ROAD CONSTRUCTION

ROAD CONSTRUCTION Major Roads Flexible

DRAWING NUMBER

Drawing

SD 01-001

Revision

F

Drawn by

HJ

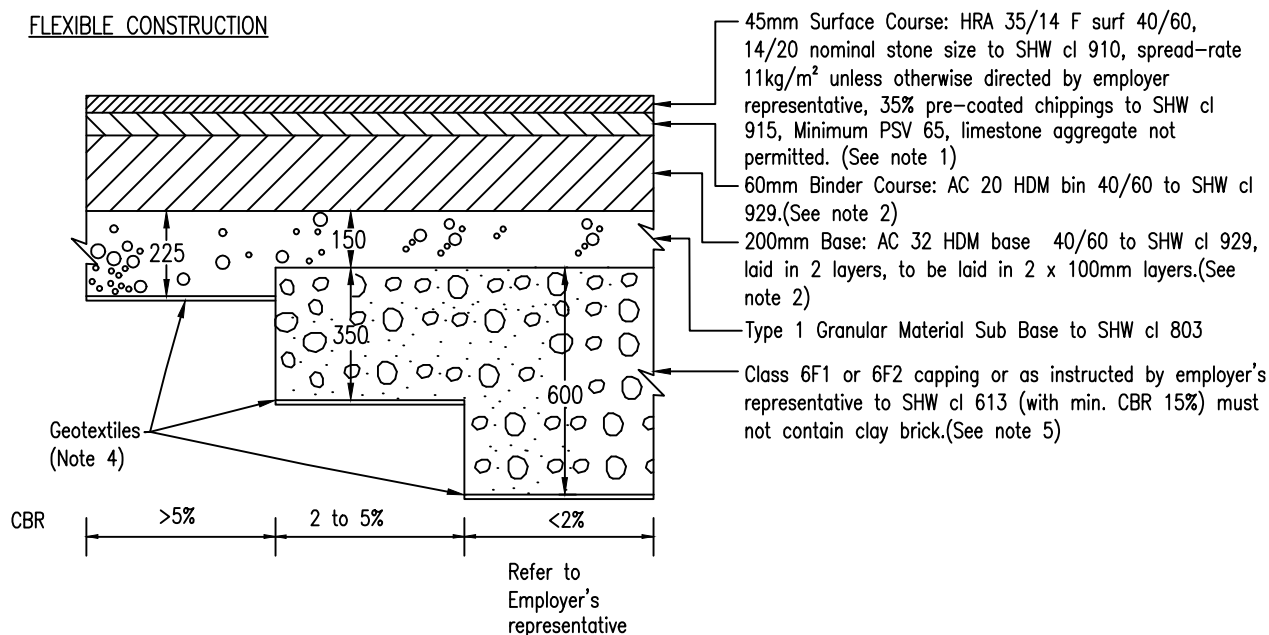
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Date Drawn

OCT 2020

FLEXIBLE CONSTRUCTION



Notes

1. In high stress areas, use industrial grade SMA with 65 or 68 PSV stone. For PSV, see SD 01-011.
2. In locations of heavy HGV traffic or high tracking risk, Binder Course and Base should comprise:
70mm Binder Course: AC 14 EME2 bin 15/25 to SHW cl 930
Base: AC 32 HDM base 40/60 to SHW cl 929, thickness to be designed.
3. All bituminous materials must be machine laid in accordance with BS 594987 unless otherwise agreed by Employer's representative.
4. Geotextile membrane as instructed by Employer's representative.
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 & notes 1 & 2.
6. Laying drawing, detailing joint locations, is required to be submitted to Employees Representative.



STANDARD DETAILS

01-ROAD CONSTRUCTION

ROAD CONSTRUCTION Major Roads Rigid

DRAWING NUMBER

Drawing

Revision

SD 01-002

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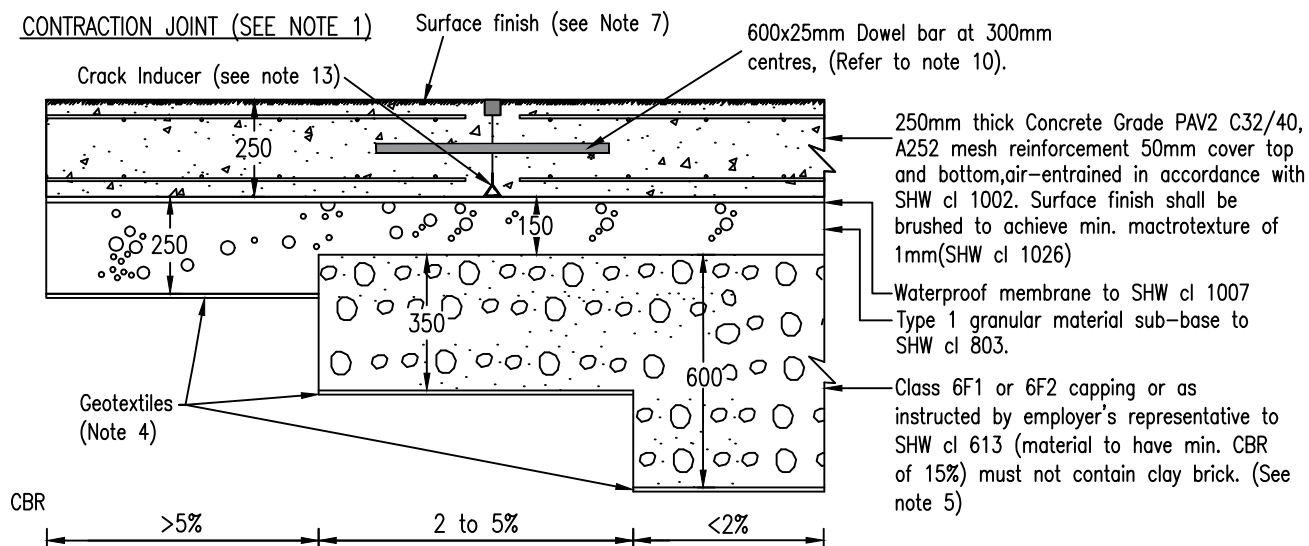
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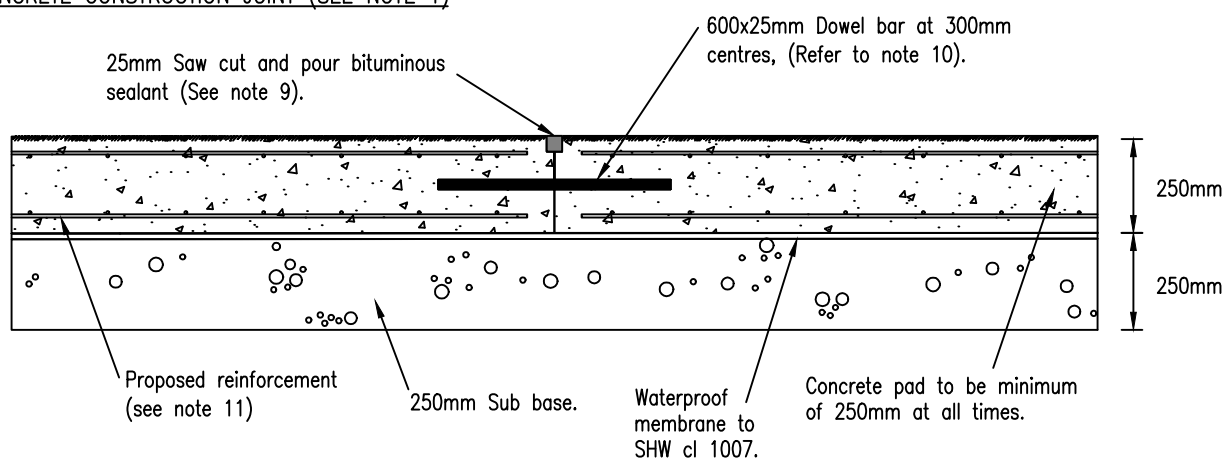
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CONCRETE CONSTRUCTION JOINT (SEE NOTE 1)

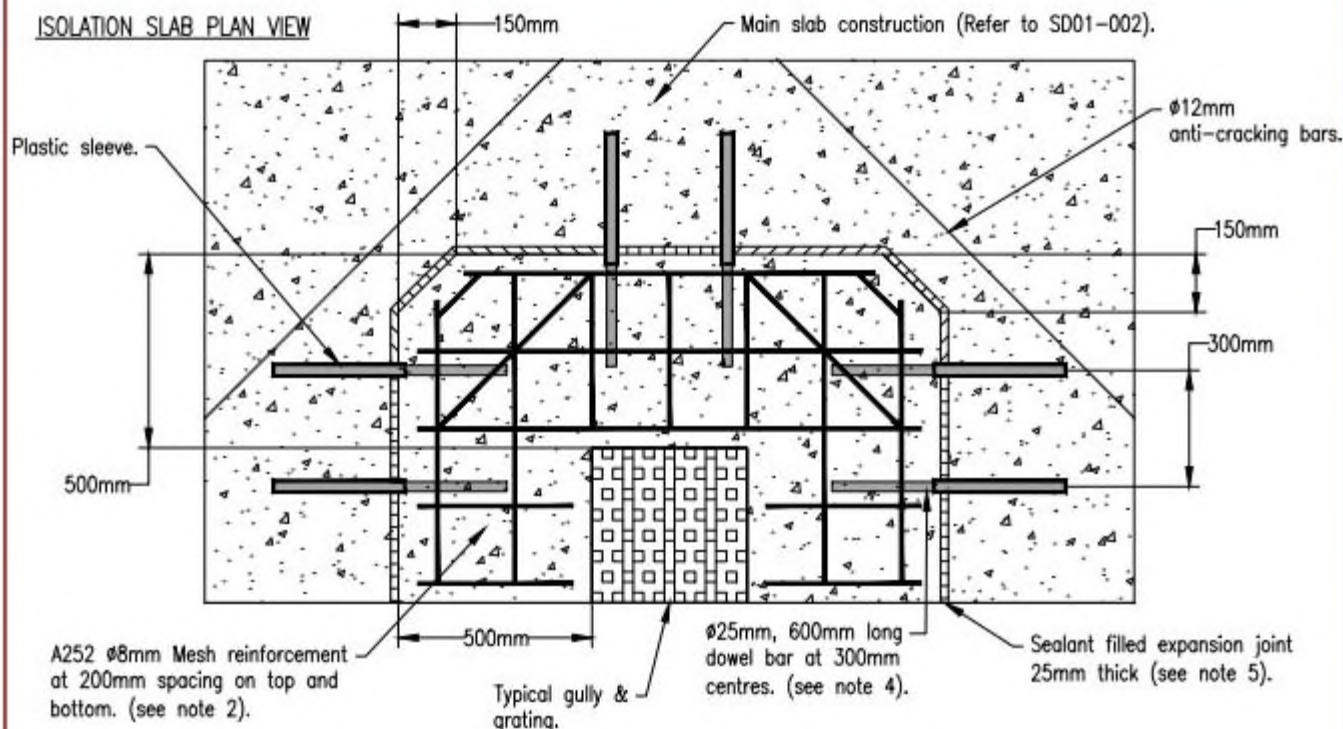


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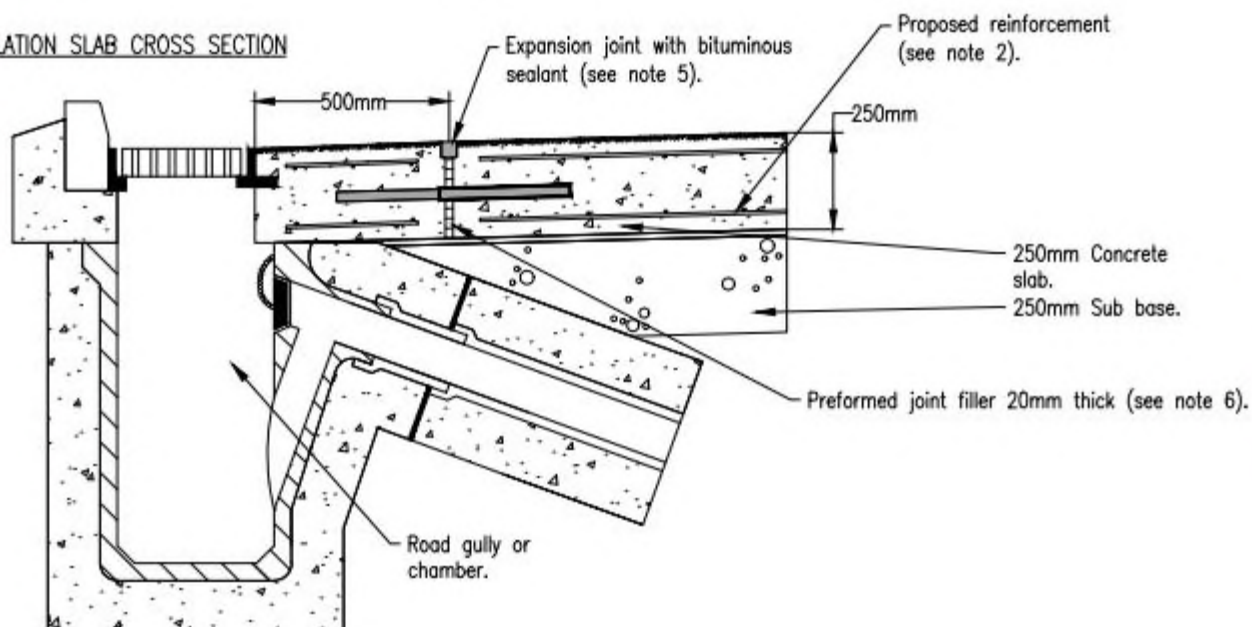
1. Contraction joints required at n.e. 8m c/c and at edges. Joint to be formed with crack inducer at bottom, top slot saw cut 25x25 and sealed. Expansion joints not usually required. Construction joints to be formed between slabs.
2. Concrete must cure for minimum 14 days, with protection as per Clause 1027, Volume 1 Series 1000 SHW, before being trafficked.
3. Normal gradient range 0.833% to 7% (1:120 to 1:14)
4. Geotextile membrane as instructed by Employer's representative.
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.
6. Concrete to be mixed in accordance with SHW cl 1001.
7. Surface to be given a brushed finish and to have trowelled edges in accordance with SHW clause 1026.
8. Isolation slabs to be formed at gullies and chambers (Refer to SD01-003).
9. Bituminous sealant to be as per Clause 1016, Volume 1 Series 1000 SHW.
10. Dowel bars shall be covered by flexible polymeric corrosion resistant coating as per Clause 1011, Volume 1 Series 1000 SHW.
11. Laps in longitudinal bars shall be in accordance with SHW clause 1008 not less than 35 bar diameters or 450 mm whichever is greater.
12. Sub-base SHW clause 803 Type 1 to be of a consistent nature to avoid rocking of rigid construction concrete paving.
13. Crack inducer as instructed by employer's representative, Installed as per manufacturers instructions.

**ROAD CONSTRUCTION
Major Roads
Concrete Isolation Slab**

ISOLATION SLAB PLAN VIEW



ISOLATION SLAB CROSS SECTION



NOTES:

1. All dimensions are in mm unless otherwise stated.
2. Concrete slab reinforcement as per SD01-002.
3. For expansion joint construction please refer to MCHW Volume 1 Section 3 Drawing C2 - Expansion Joints Reinforced and Un-reinforced Concrete Slabs.
4. Dowel bars shall be covered by flexible polymeric corrosion resistant coating as per Clause 1011, Volume 1 Series 1000 SHW.
5. Bituminous sealant to be as per Clause 1016, Volume 1 Series 1000 SHW.
6. The gully shall be isolated from the pavement at all joints by joint filler board for the full depth of the slab and joints shall be sealed as per Clause 1015, Volume 1 Series 1000 SHW.
7. Isolation slabs should be formed at main slab joints or in middle third of main slab.
8. Also to be used as surround for utility covers in main slab.



STANDARD DETAILS

01-ROAD CONSTRUCTION

ROAD CONSTRUCTION Minor Roads

DRAWING NUMBER

Drawing

SD 01-004

Revision

G

Drawn by

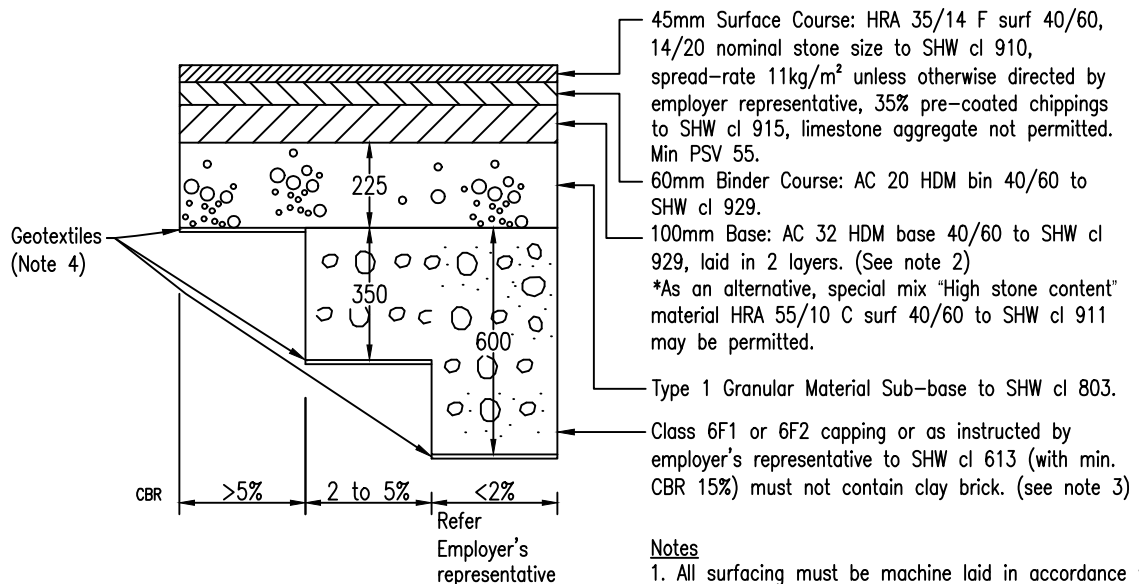
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Date Drawn

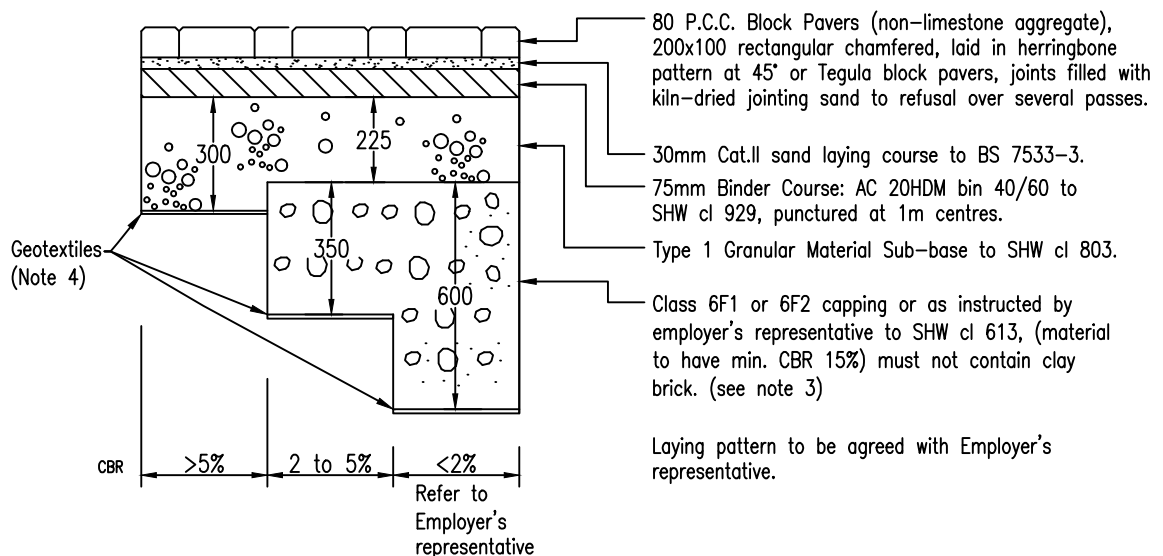
OCT 2020



FLEXIBLE CONSTRUCTION

Notes

1. All surfacing must be machine laid in accordance with BS 594987 unless otherwise agreed by Employer's representative.
2. Geotextile membrane as instructed by Employer's representative.
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.



Laying pattern to be agreed with Employer's representative.

BLOCK PAVER CONSTRUCTION

NOTES

1. Cut pieces less than 1/4 Block and thin pieces shall not be used. Pieces greater than 1/2 block are strongly preferred.
2. Where blocks cannot be cut to fit, full depth Concrete C30P infill coloured to match may be used.
Infill Covers: Permission to use infill covers must be obtained from the appropriate undertaker.
Frames: 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 round. Insitu concrete infill to gaps is not acceptable.
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.
4. Geotextile membrane as instructed by employers representative.



STANDARD DETAILS

01-ROAD CONSTRUCTION

ROAD CONSTRUCTION Stone Paved Roads

DRAWING NUMBER

Drawing

SD 01-005

Revision

H

Drawn by

HJ

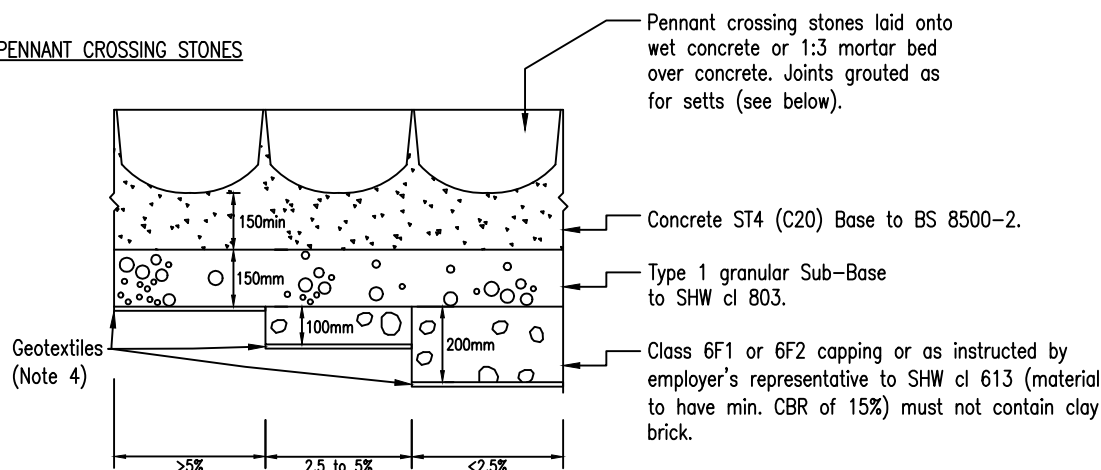
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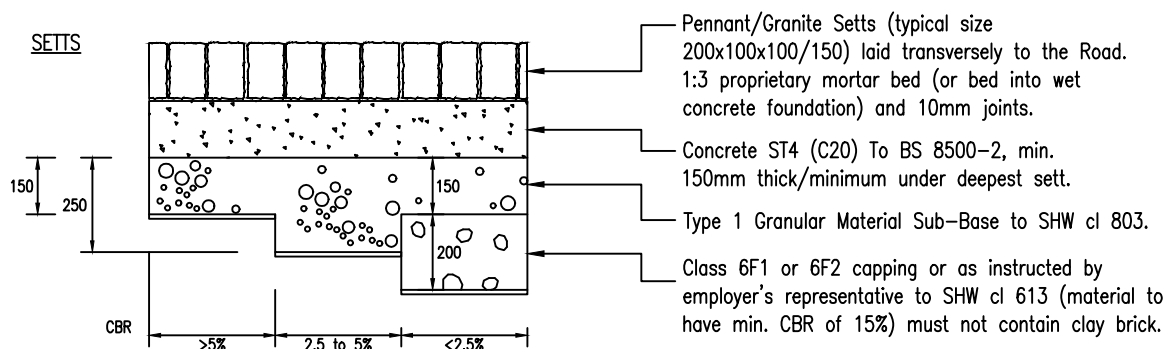
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AUG 2020

PENNANT CROSSING STONES



SETTS

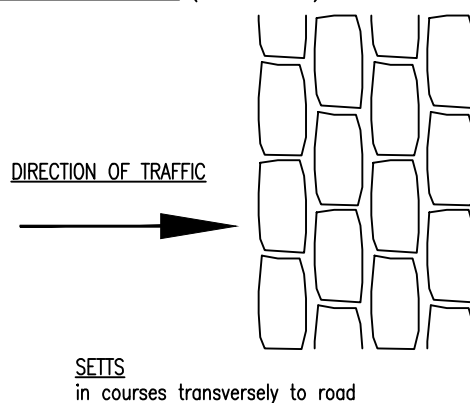


70/90 Sett cubes may be used in fan shaped pattern

Notes

1. Joints to be grouted with gritty sand/cement or proprietary grouting material as approved by BCC representative. After initial set, clean off with Bideford Zone 2 sand or sawdust. Allow minimum 72 hours curing before the setts are trafficked.
2. Pointing using Ultracrete Flowpoint or proprietary grouting material as approved by BCC representative.
3. Where cycling is permitted the top of granite/pennant setts may be cut for a smooth surface as directed by the Employer's representative, and have a minimum depth of 80mm.
4. Geotextile as instructed by employers representative.
5. Where in-situ subgrade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPa) it must be described in SHW CD225 clause 2.7.

SETT LAYING PATTERNS (COBBLE SETT)





STANDARD DETAILS

01-ROAD CONSTRUCTION

ROAD CONSTRUCTION Paved Footways and Paths

DRAWING NUMBER

Drawing

SD 01-006

Revision

I

Drawn by

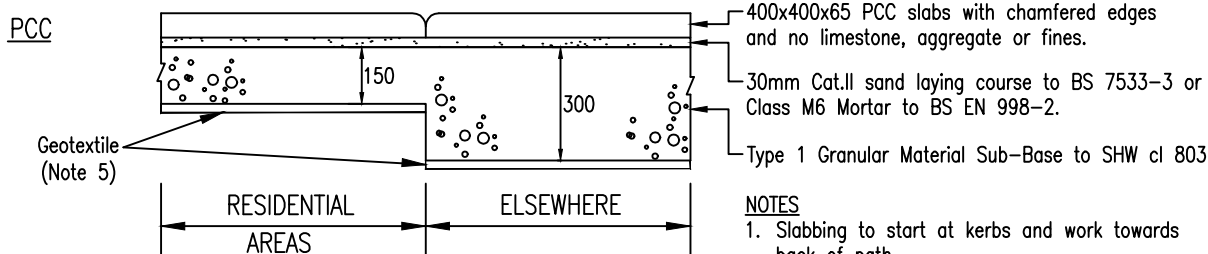
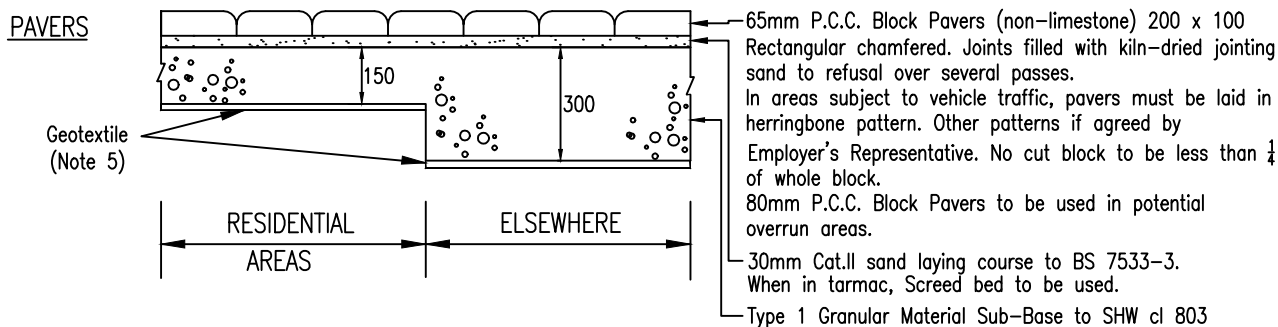
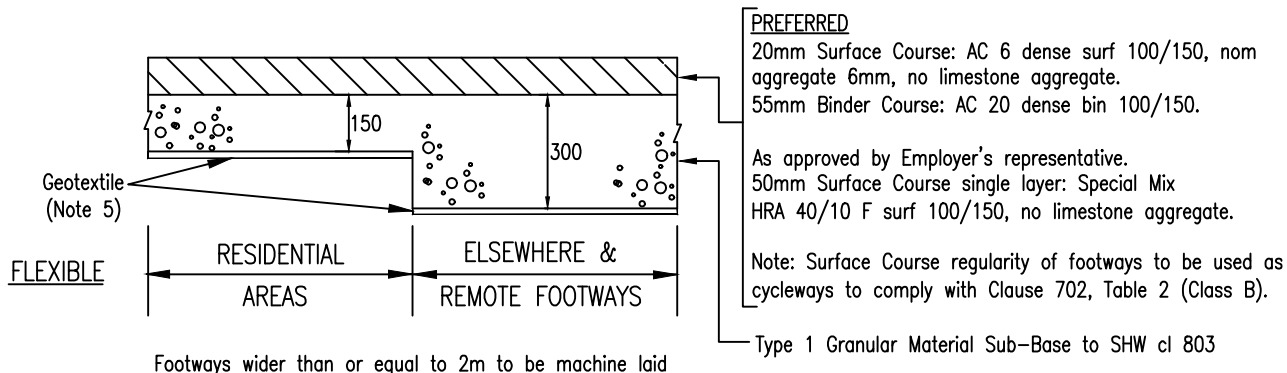
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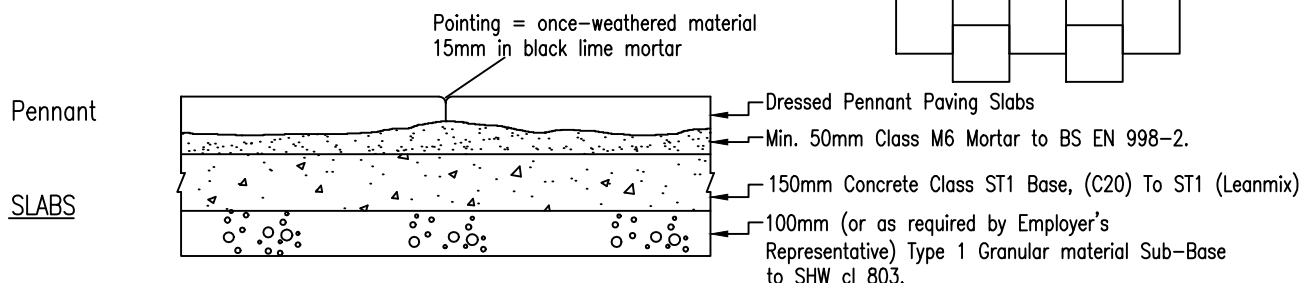
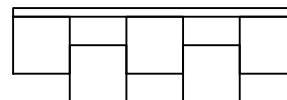
Date Drawn

SEP 2020



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 SD01-013
2. Where necessary to match in with existing footway, concrete footway may be laid using the same construction as shown on SD 01-009 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

01-ROAD CONSTRUCTION

ROAD CONSTRUCTION Paths in Grass Areas

DRAWING NUMBER

Drawing

SD 01-007

Revision

H

Drawn by

HJ

Scale

NTS

Date Drawn

AUG 2020

Preferred

20mm Surface Course: AC 6 dense surf 100/150, nom aggregate 6mm, no limestone aggregate.

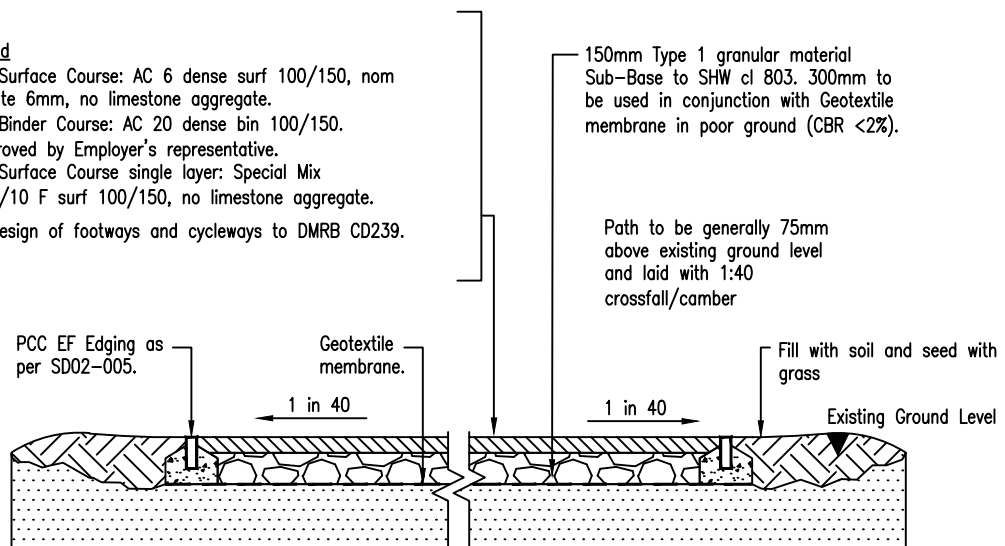
55mm Binder Course: AC 20 dense bin 100/150.

As approved by Employer's representative.

50mm Surface Course single layer: Special Mix

HRA 40/10 F surf 100/150, no limestone aggregate.

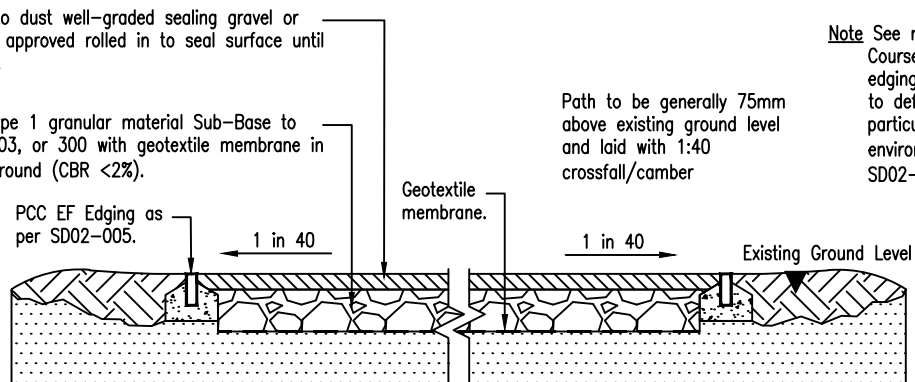
Note: Design of footways and cycleways to DMRB CD239.



FLEXIBLE CONSTRUCTION DETAIL

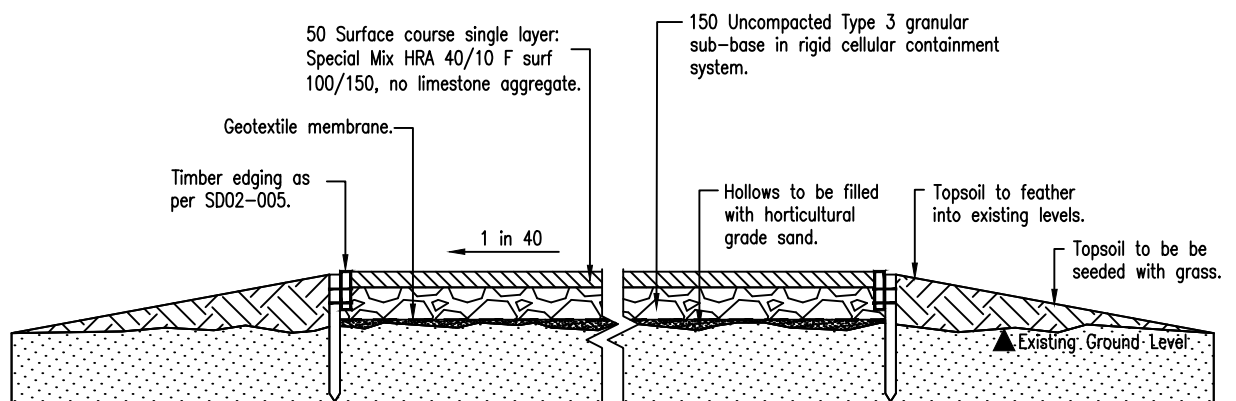
3mm to dust well-graded sealing gravel or similar approved rolled in to seal surface until refusal.

200 Type 1 granular material Sub-Base to SHW 803, or 300 with geotextile membrane in poor ground (CBR <2%).



GRAVEL CONSTRUCTION DETAIL

Note See note above on Surface Course regularity. Timber edging is sometimes used to define the path edge particularly in urban environments (see drawing SD02-005)



'NO DIG' CONSTRUCTION DETAIL



STANDARD DETAILS

01-ROAD CONSTRUCTION

ROAD CONSTRUCTION Car Parks Drives and Cylce Tracks

DRAWING NUMBER

Drawing

SD 01-008

Revision

G

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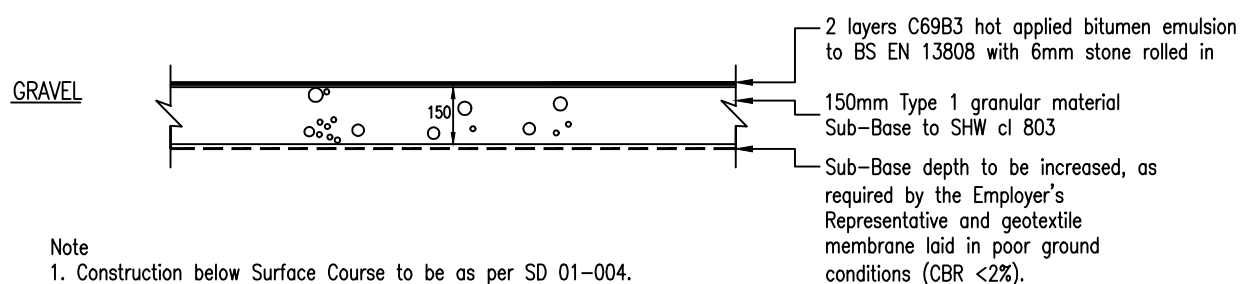
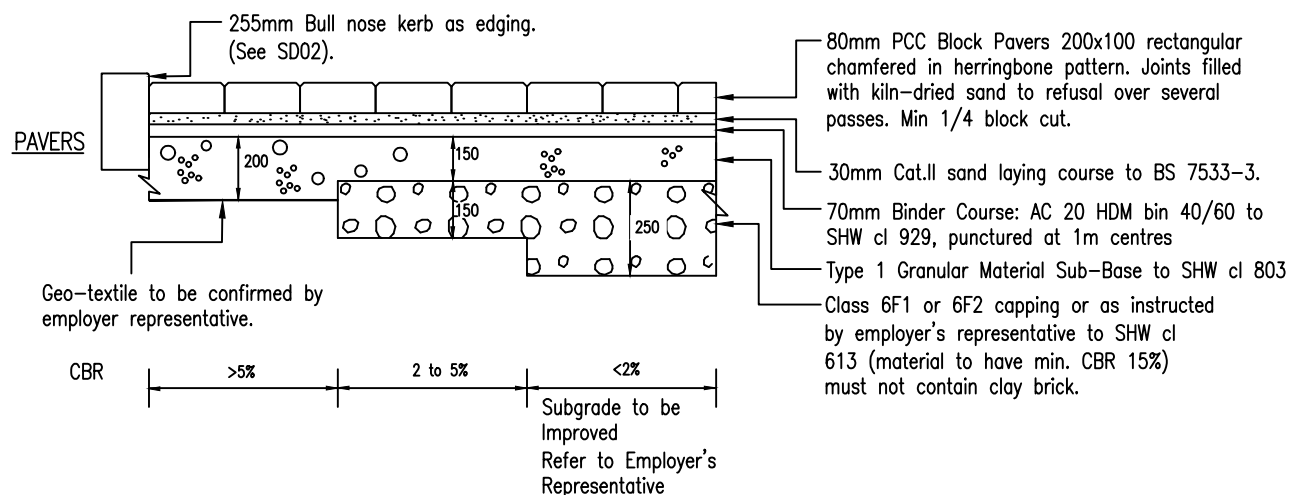
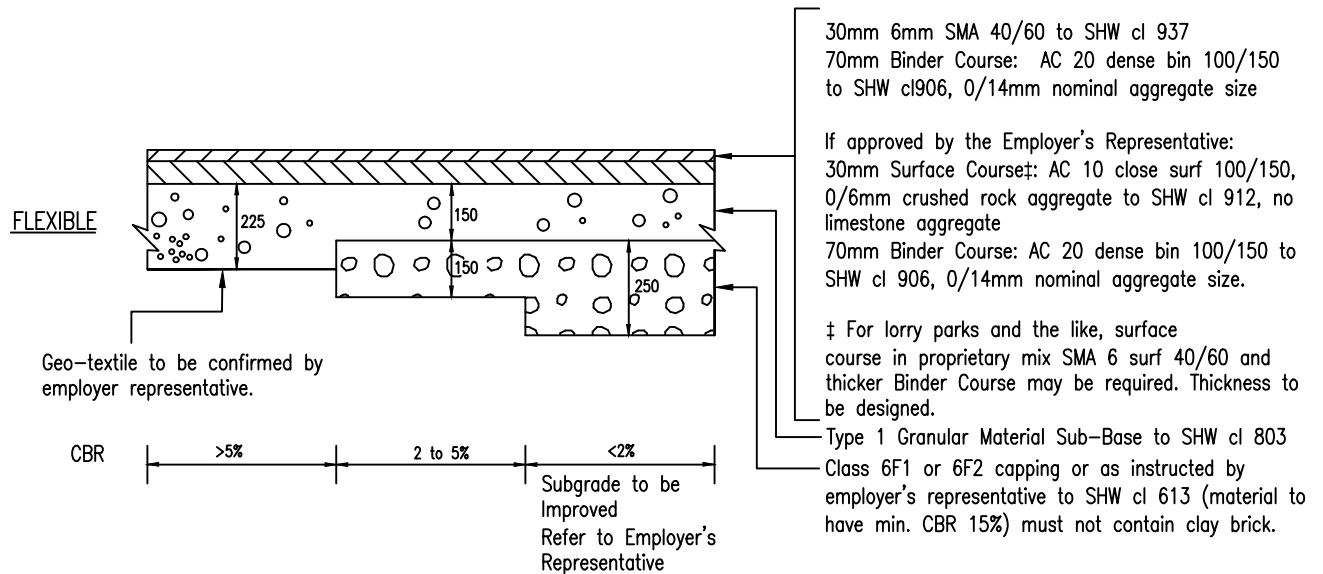
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Scale

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Date Drawn

OCT 2020



Note

1. Construction below Surface Course to be as per SD 01-004.
2. Where in-situ subgrade has an estimated CBR value less than 2.5% (subgrade surface modulus lower than 30MPa) it must be described in DMRB CD225 clause 2.7.



STANDARD DETAILS

01-ROAD CONSTRUCTION

ROAD CONSTRUCTION Footway Crossovers

DRAWING NUMBER

Drawing

SD 01-009

Revision

F

Drawn by

HJ

Scale

1:20

Date Drawn

OCT 2020

TO PRIVATE DRIVES – FLEXIBLE CONSTRUCTION

PREFERRED

20mm Surface Course: AC 6 close surf 100/150, 0/6mm crushed rock aggregate, Min PSV 55.

80mm Binder Course: AC 20 dense bin 100/150 to SHW cl906.

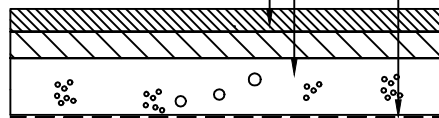
Or With Approval of Employer's Representative

40mm Surface Course: Special mix HRA 40/10 F surf 100/150, PSV 55.

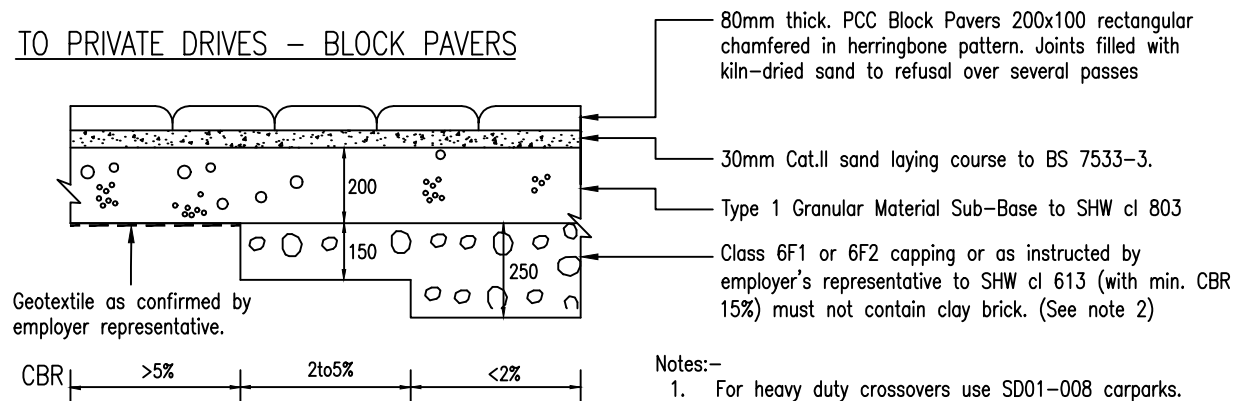
60mm Binder Course: AC 20 dense bin 100/150 to SHW cl906.

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

Geotextile membrane as instructed by
Employer's Representative.



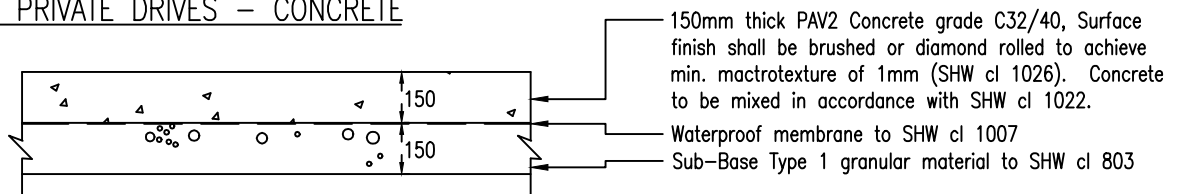
TO PRIVATE DRIVES – BLOCK PAVERS



Notes:-

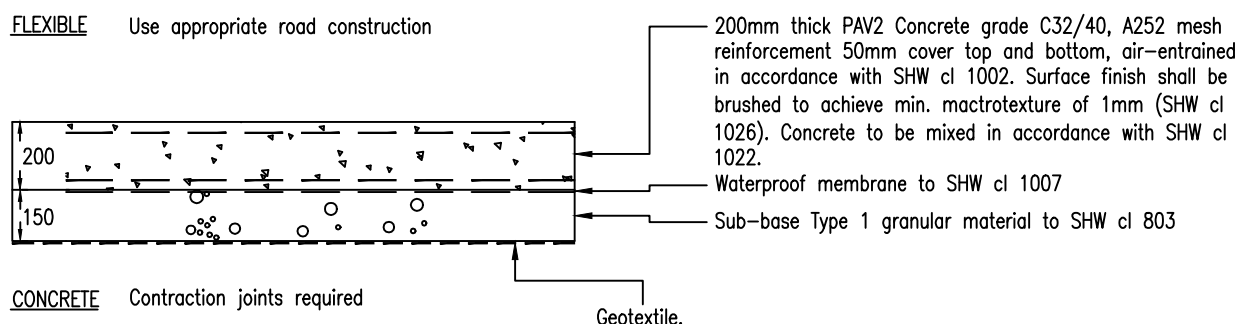
1. For heavy duty crossovers use SD01-008 carparks.
2. Where in-situ subgrade has an estimated CBR value less than 2.5% (sungrade surface modulus lower than 30MPa) it must be described in DMRB CD225 clause 2.7.

TO PRIVATE DRIVES – CONCRETE



ALL OTHER CROSSOVERS (INDUSTRIAL USE)

FLEXIBLE Use appropriate road construction



CONCRETE Contraction joints required

Geotextile.



STANDARD DETAILS

01-ROAD CONSTRUCTION

ROAD CONSTRUCTION CARRIAGEWAY JOINTS AND EDGING DETAIL

DRAWING NUMBER

Drawing

SD 01-010

Revision

F

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HJ

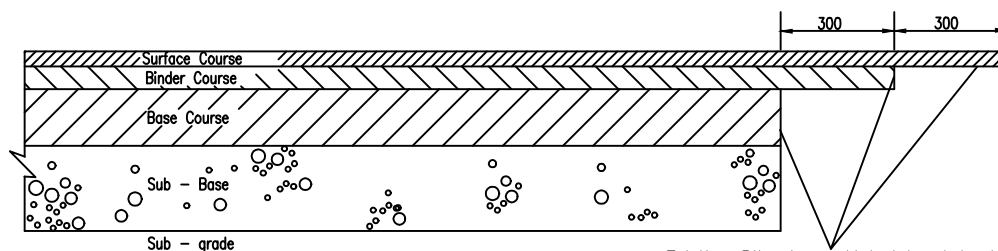
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AUG 2020

FLEXIBLE CONSTRUCTION



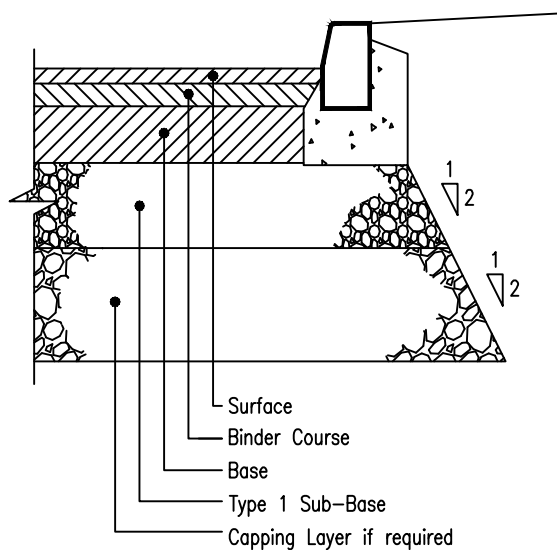
STAGGERED JOINTS IN FLEXIBLE CARRIAGEWAYS

Existing Bituminous Material cut back to a Vertical Face and Painted with a Polymer Modified Bond Coat or Tack Coat to SHW cl 920.

Notes:

1. This detail may not be suitable in some locations. Discuss with the Employer's Representative.
2. For construction types and detail refer to SD01 & SD02.
3. Joint positions should avoid high stress areas.
4. 150mm step for longitudinal joints.
5. Bond coat to be used where binder course has been trafficked or otherwise instructed by Employers Representative.

TYPICAL EDGE DETAIL FOR CARRIAGEWAY





STANDARD DETAILS

01-ROAD CONSTRUCTION

ROAD CONSTRUCTION REINSTATEMENTS 1

DRAWING NUMBER

Drawing

SD 01-011

Revision

F

Drawn by

HJ

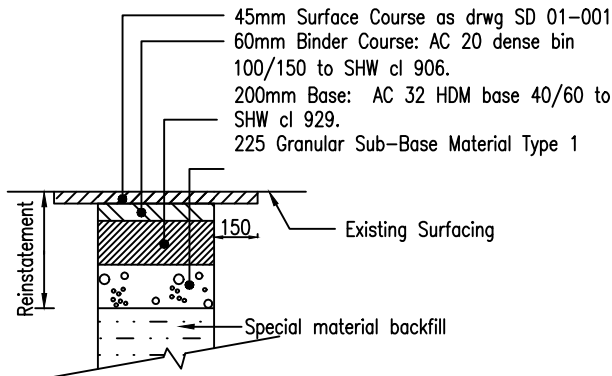
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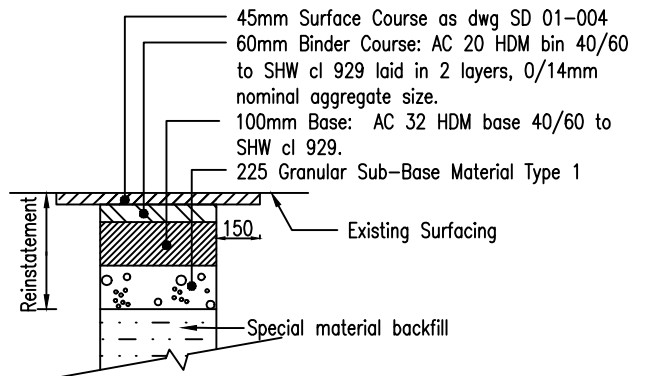
Date Drawn

AUG 2020

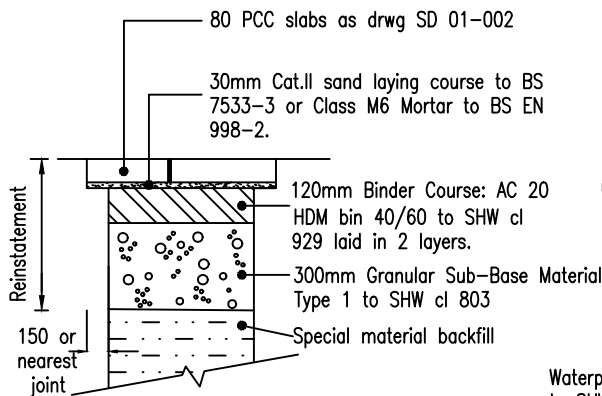
MAJOR/INDUSTRIAL ROADS



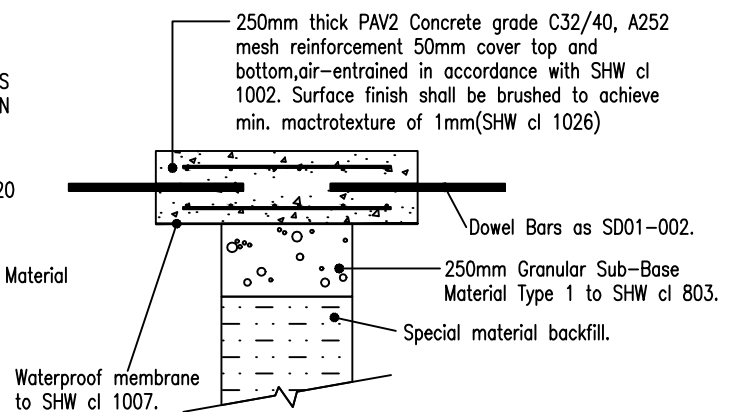
MINOR ROADS



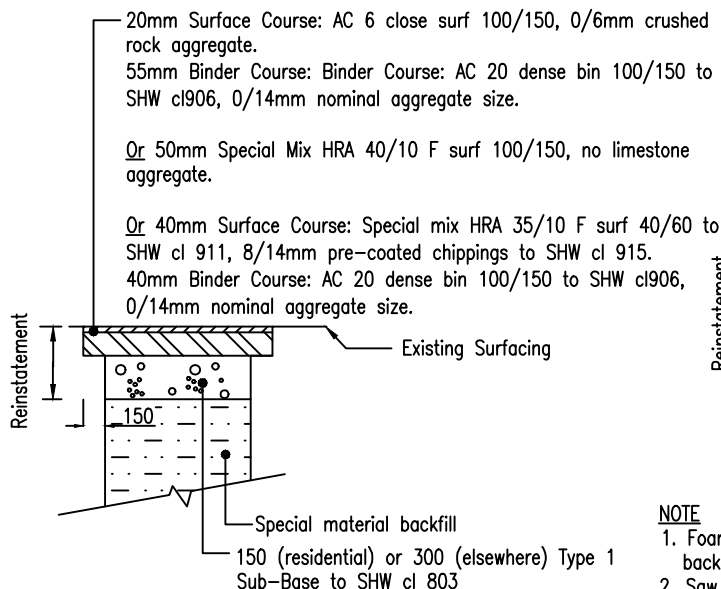
INDUSTRIAL/MAJOR ROADS - PAVED



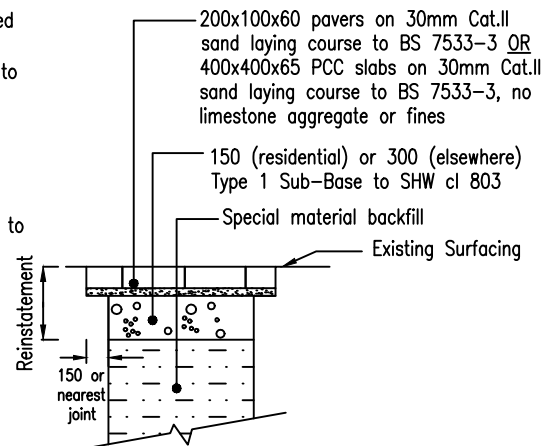
INDUSTRIAL/MAJOR ROADS - IN-SITU CONCRETE



FLEXIBLE FOOTWAY CONSTRUCTION



BLOCK/SLAB FOOTWAY CONSTRUCTION



NOTE

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 of joints to be sealed.
4. Limestone aggregate not permitted in surface course.



STANDARD DETAILS

01-ROAD CONSTRUCTION

ROAD CONSTRUCTION REINSTATEMENTS 2

DRAWING NUMBER

Drawing

SD 01-012

Revision

F

Drawn by

HJ

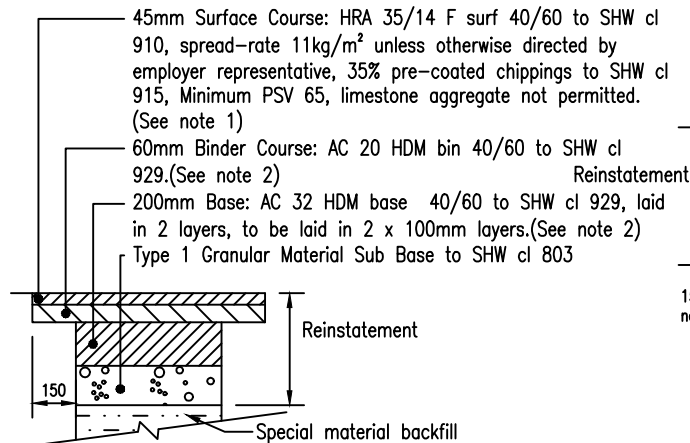
Scale

NTS

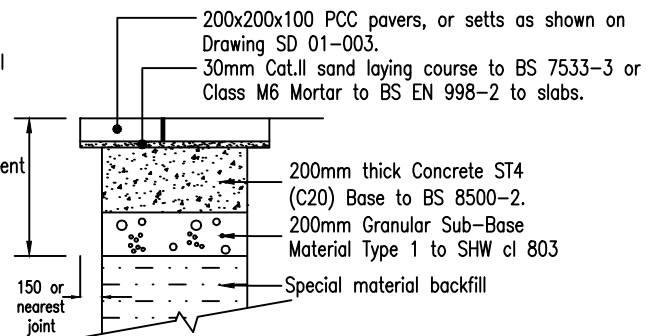
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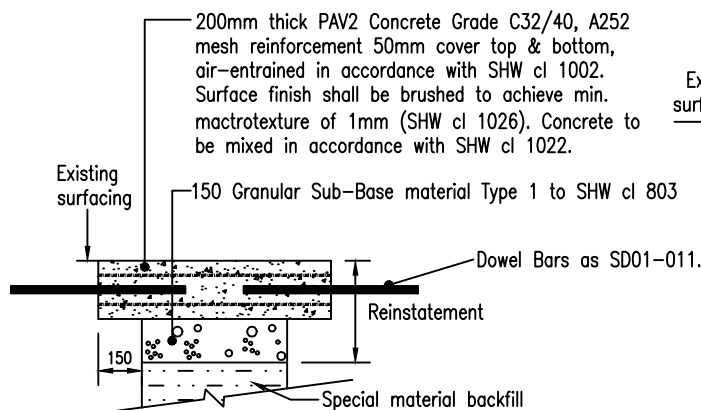
HEAVY DUTY VEHICLE CROSSOVERS – FLEXIBLE



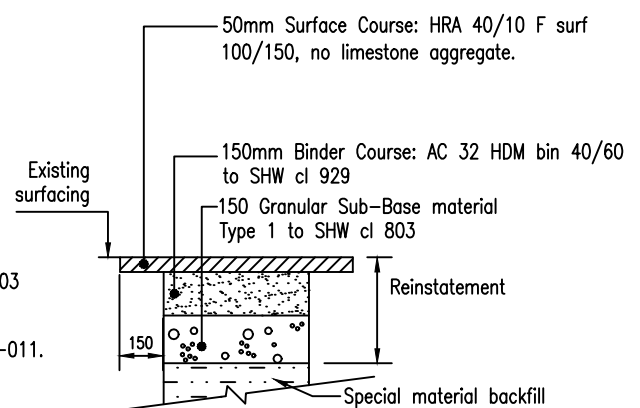
HEAVY DUTY VEHICLE CROSSOVERS – PAVED



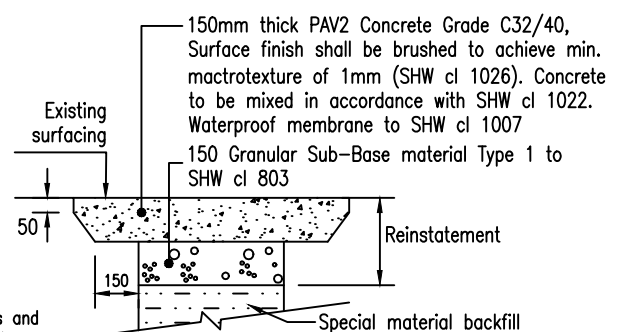
HEAVY DUTY VEHICLE CROSSOVERS – IN-SITU CONCRETE



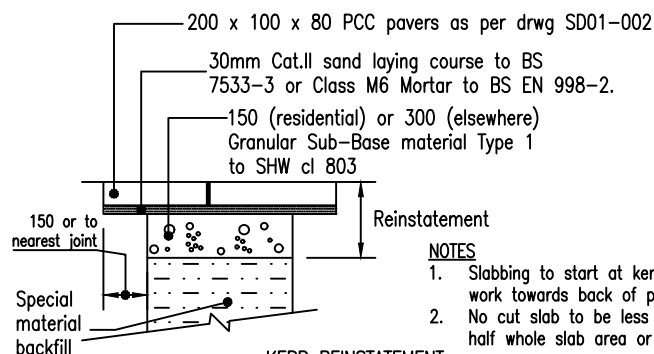
LIGHT VEHICLE CROSSOVERS – FLEXIBLE



LIGHT VEHICLE CROSSOVERS – IN-SITU CONCRETE



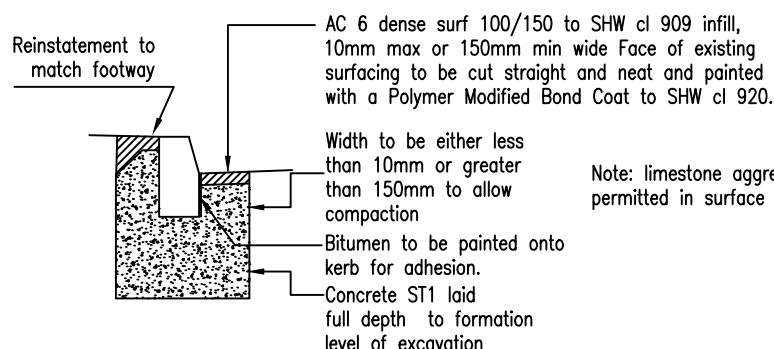
LIGHT VEHICLE CROSSOVERS – PAVED



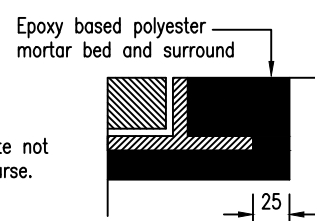
NOTES

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

KERB REINSTATEMENT



REINSTATEMENT AROUND COVERS



Note: limestone aggregate not permitted in surface course.



STANDARD DETAILS

01-ROAD CONSTRUCTION

ROAD CONSTRUCTION STANDARD ROAD PROFILES

DRAWING NUMBER

Drawing

SD01-013

Revision

E

Drawn by

HJ

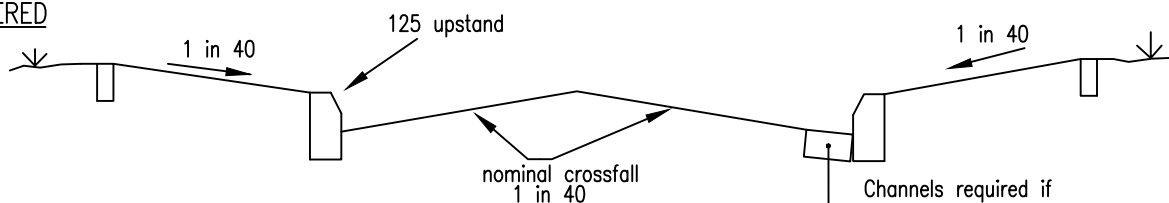
Scale

NTS

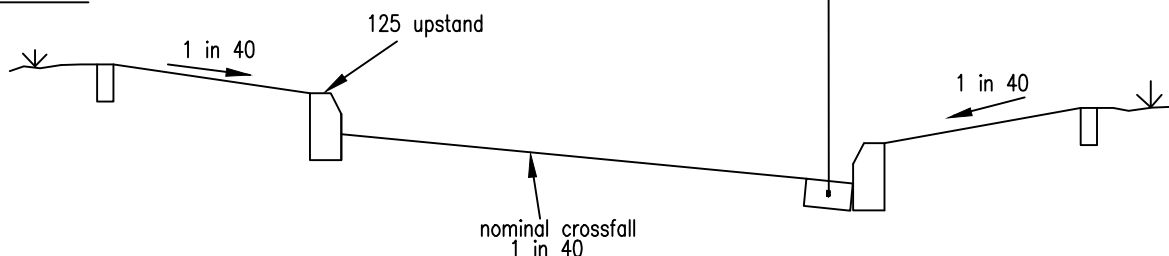
Date Drawn

FEB 2020

CAMBERED ROAD

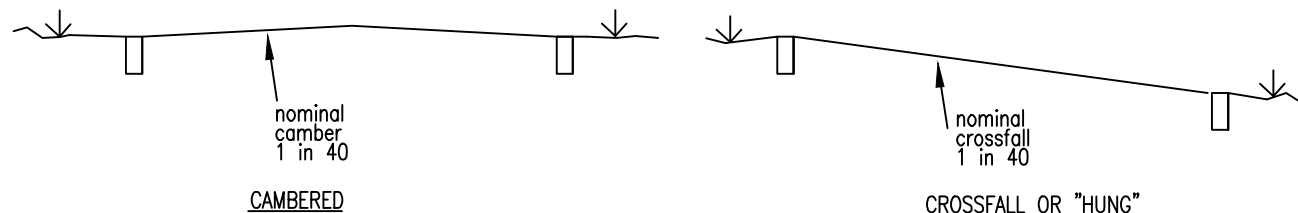


CROSSFALL OR "HUNG" ROAD



1. Shared Surface Accessways similar but without Footways.
2. Footways can drain away from kerb provided land beyond is public space and it will not cause drainage problems

FOOTPATHS



NOTE

1. A Bitumen Emulsion Tack Coat to SHW cl 920 shall be applied between all bituminous layers. Where instructed by Employer's Representative, a coated sealing grit on binder course may be applied if binder is to be trafficked.
2. Tack coat shall be 40% bitumen emulsion C40B4 (BS EN 13808) except below Surface Dressing & Heavy Duty SMA for which a proprietary product may be specified by the Employer's Representative.
3. All bituminous materials must be machine laid in accordance with BS 594987 unless otherwise agreed by the Employer's Representative.

4.

LOCATION		PSV
Footways & paths	For gradients greater than 8%	60
	Elsewhere	55
Carriageways	Major roads in high stress areas	68
	All other major roads, and all roads with a gradient greater than 5%	65
	Other minor roads	55
All approaches to pedestrian crossings and the like	Cold applied epoxy High Friction Surfacing to Clause 924	70

Note: HFS to be omitted within 300mm of kerb edge to assist drainage.



STANDARD DETAILS

02-KERBS

KERB NOTES

DRAWING NUMBER

Drawing

SD 02-001

Revision

G

Drawn by

HJ

Scale

NTS

Date Drawn

FEB 2020

The typical details shown are for precast concrete kerbing with bituminous pavements. Some variations 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)

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. Purpose made TRANSITION KERBS shall be used to change from one kerb type to another. Proprietary double-length transitions are required.
4. Purpose made RADIUS KERBS & CHANNELS shall be used for radii of 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 (20dia. 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 permitted. All damaged kerbs to be replaced.
12. Type 1 under haunching.



STANDARD DETAILS

02-KERBS

KERBS 1

DRAWING NUMBER

Drawing

SD 02-002

Revision

H

Drawn by

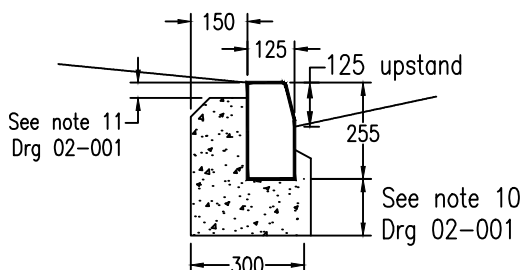
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Scale

1:20

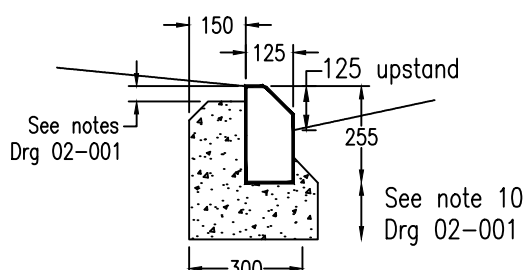
Date Drawn

SEP 2020



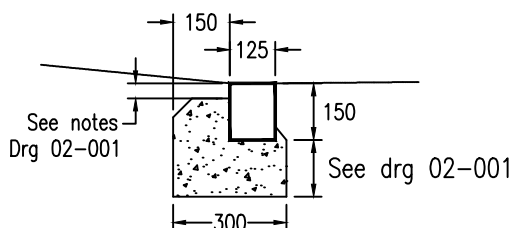
HALF BATTER KERB

Kerb BS EN 1340: Type HB2/HB1



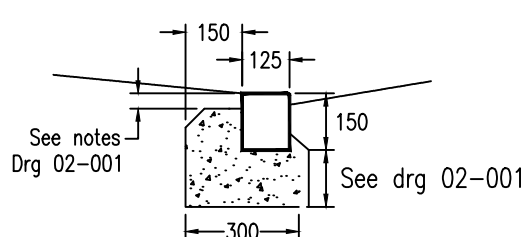
FULL BATTER KERB

Kerb BS EN 1340: Type SP



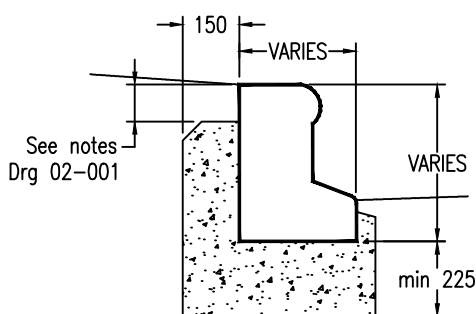
FLUSH KERB (0-6mm upstand)

Channel used as kerb BS EN 1340: Type CS2



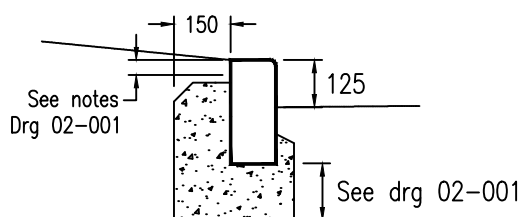
BULL NOSED KERB (25mm upstand)

Kerb BS EN 1340: Type BN



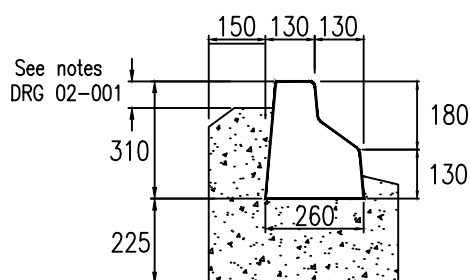
SAFETY KERB

Trief Cadet or Charcon HGV kerbs or similar approved.



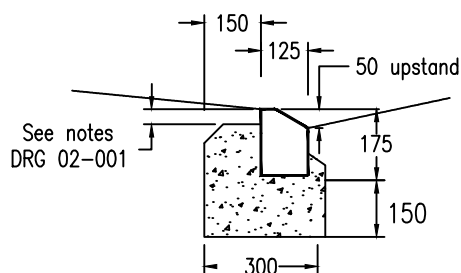
NATURAL STONE (as approved by Employer's Representative)

Dressed pennant or granite kerb; sizes vary
BS EN 1343



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

02-KERBS

KERBS 2

DRAWING NUMBER

Drawing

SD 02-003

Revision

F

Drawn by

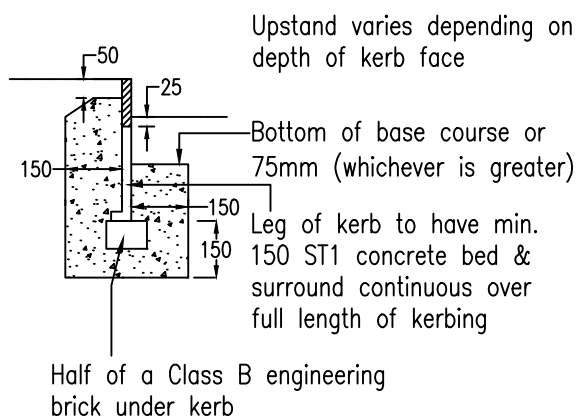
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Scale

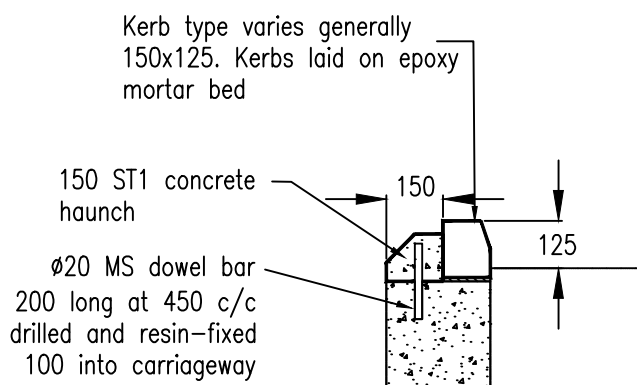
1:20

Date Drawn

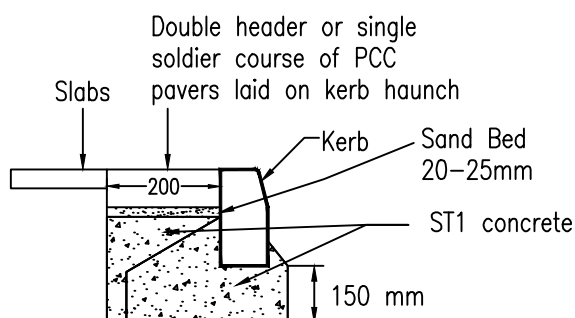
FEB 2020



CAST IRON KERB



KERBS LAID ON EXISTING
CONCRETE RACE OR CARRIAGEWAY



ALTERNATIVE HAUNCHING IN
SLABBED/PAVER AREAS



STANDARD DETAILS

02-KERBS

CHANNELS

DRAWING NUMBER

Drawing

SD 02-004

Revision

H

Drawn by

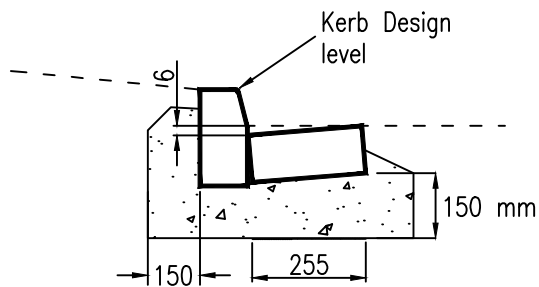
HJ

Scale

1:20

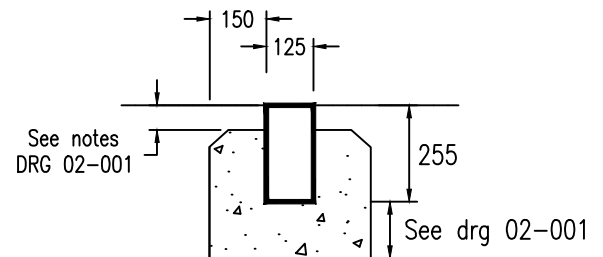
Date Drawn

SEP 2020



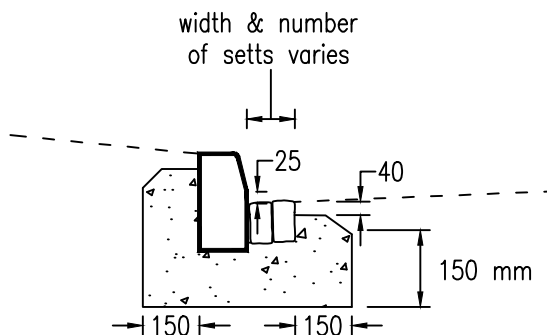
KERB WITH CHANNEL

Channel BS EN 1340: Type CS1
255x125mm Kerb as shown on Drawing
SD 02-002



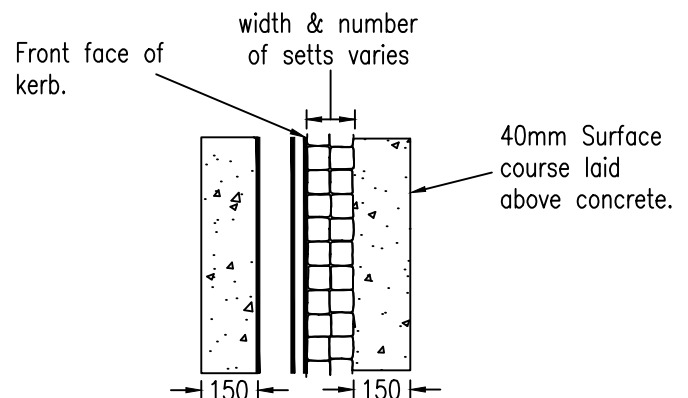
VERTICAL CS1 CHANNEL (Flush)

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 01-003



KERB WITH SETT CHANNEL PLAN VIEW

NOTES

1. Channels must be grouted in with Class 1 mortar.
2. Refer to SD02-001G for kerb notes.



STANDARD DETAILS

02-KERBS

EDGINGS

DRAWING NUMBER

Drawing

SD 02-005

Revision

G

Drawn by

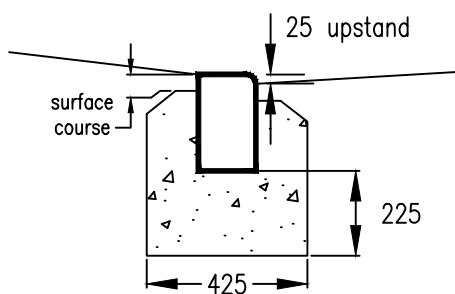
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Scale

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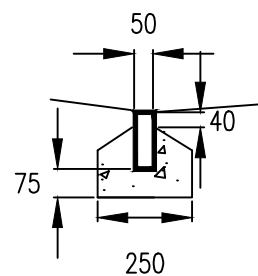
Date Drawn

SEP 2020



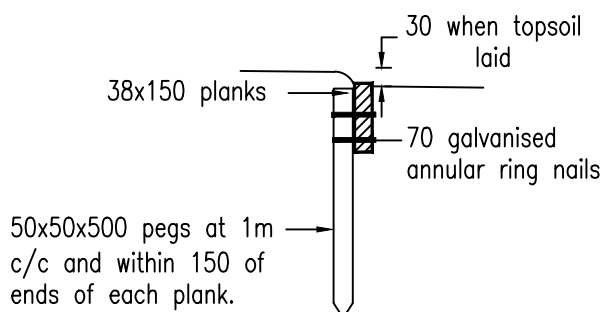
DEMARICATION KERBS

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



EDGINGS

Edgings BS EN 1340:
Type EF 50x150mm
square top



TIMBER EDGING

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

NOTES:

1. Refer to SD02-001-G kerb notes for general kerb installation.
2. Demarcation studs not to be used.



STANDARD DETAILS

02-KERBS

BLOCK PAVER EDGE DETAILS

DRAWING NUMBER

Drawing

SD 02-006

Revision

F

Drawn by

HJ

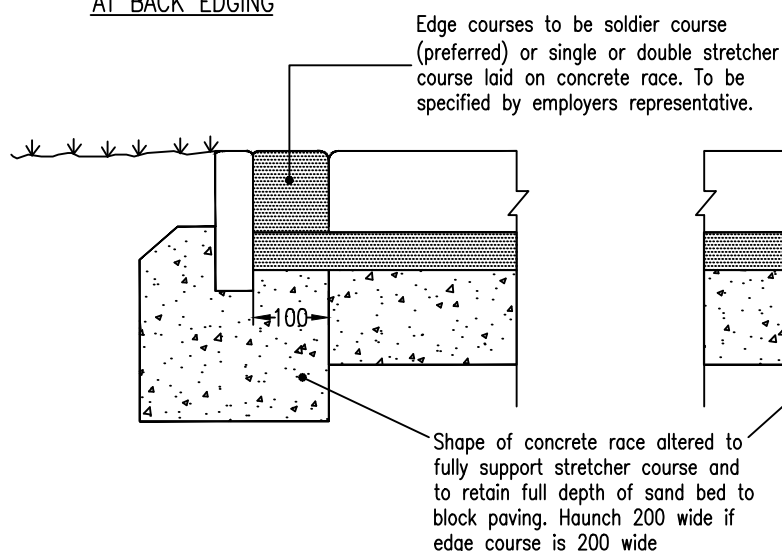
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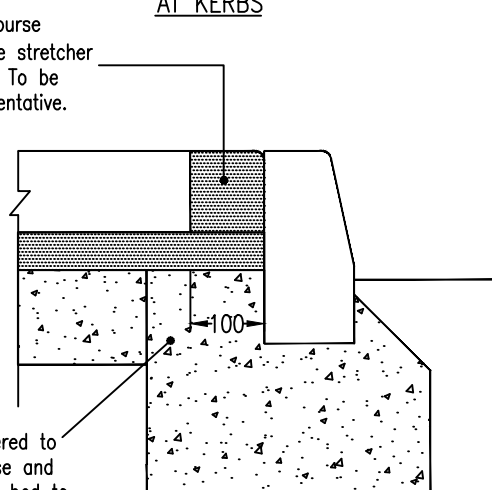
Date Drawn

AUG 2020

AT BACK EDGING

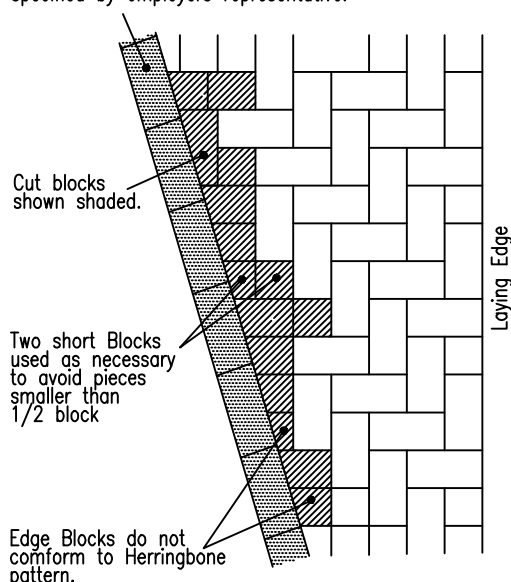


AT KERBS

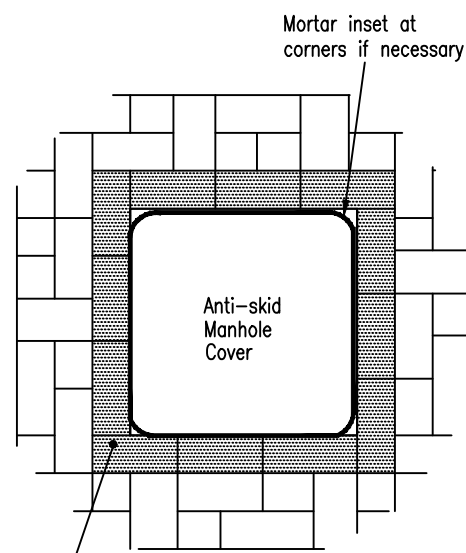


AT ANGLED OR CURVED EDGES

Edge courses to be soldier course (preferred) or single or double stretcher course laid on concrete race. To be specified by employers representative.



AROUND MANHOLE COVERS



Edge courses to be soldier course (preferred) or single or double stretcher course laid on concrete race. To be specified by employers representative.

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. Insitu concrete infill to gaps is not acceptable.

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



STANDARD DETAILS

03-CROSSOVERS AND PEDESTRIAN CROSSINGS VEHICLE CROSSOVERS

DRAWING NUMBER

Drawing

SD 03-001

Revision

F

Drawn by

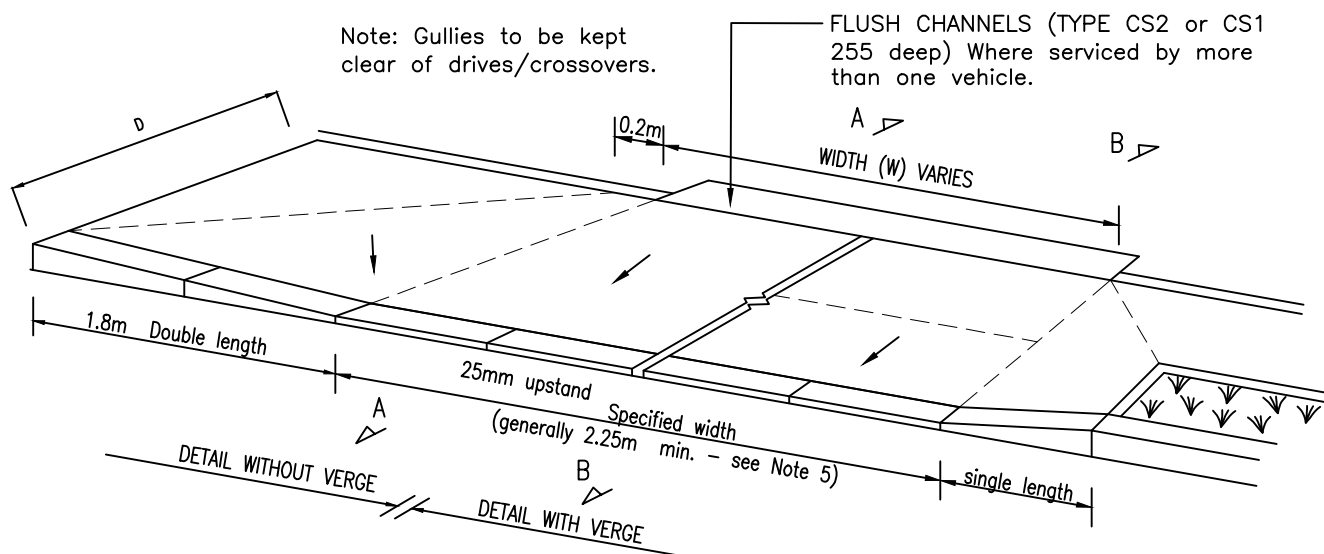
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Scale

NTS

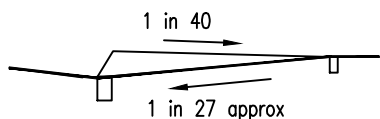
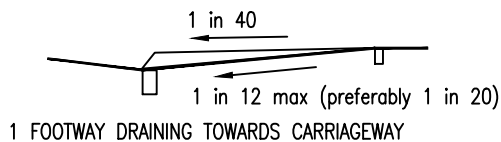
Date Drawn

SEP 2020

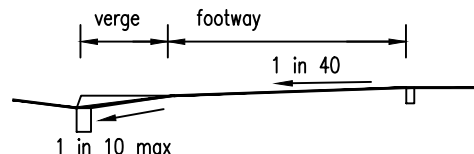


TYPICAL GRADIENTS

SECTION AA – NO VERGE



SECTION BB – WITH VERGE



Footways with verges always drain towards the verge.

Notes:-

- Construction is shown on Drawing SD 01-005, or as instructed by Employer's representative.
- Drop kerb upstand shall be 25mm unless crossover is also designated for pedestrian use, in which case the kerbs shall be 0-6mm upstand.
- Back of path shall not be dropped unless agreed by Employer's representative.
- Back edging is not acceptable at the back of crossovers used by vehicles – use 150 channels instead (CS2 or CS1).
- On crossovers used by large vehicles, "specified width" of drop kerb is generally $W+0.5 \times D$, but should not exceed 12m.
- 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. blacktop in blacktop 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 SD01-005
 - 5 dwellings or more to be to SD01-004
- Single dropper allowed where appropriate and with agreement of BCC.



STANDARD DETAILS

03-CROSSOVERS AND PEDESTRIAN CROSSINGS PEDESTRIAN DROP KERB & CYCLEWAY CROSSOVERS

DRAWING NUMBER

Drawing

SD 03-002

Revision

F

Drawn by

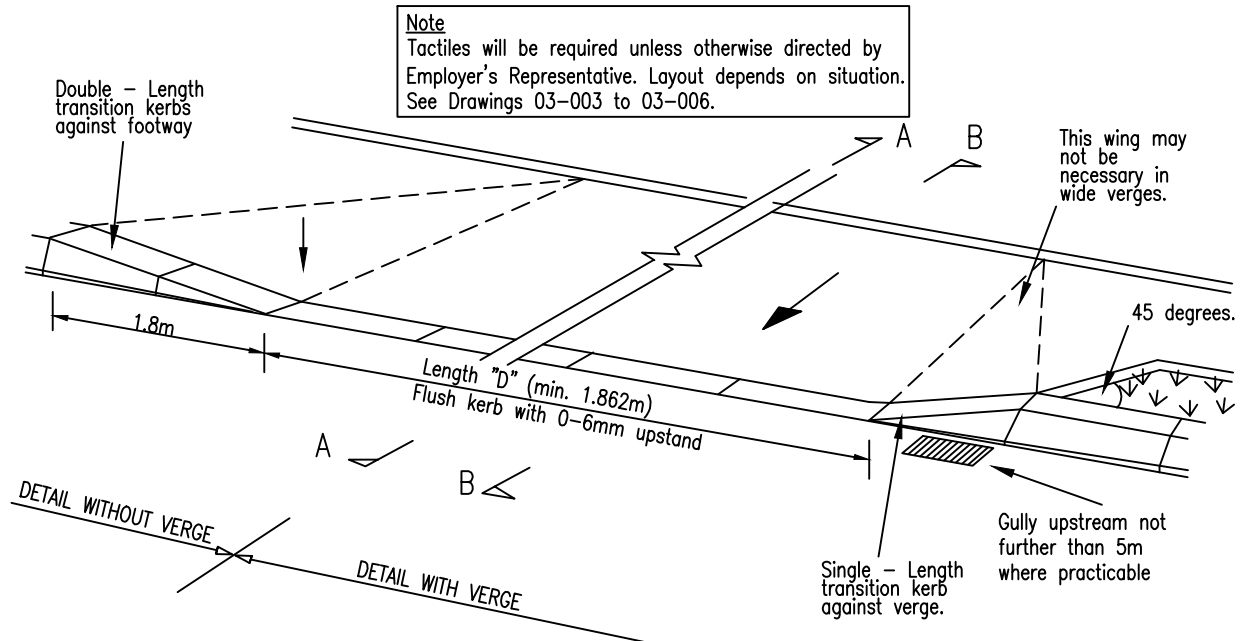
HJ

Scale

NTS

Date Drawn

AUG 2020



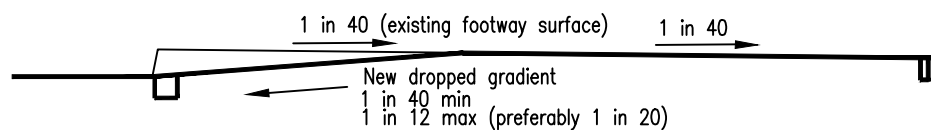
SECTION AA

TYPICAL GRADIENTS

1 in 40

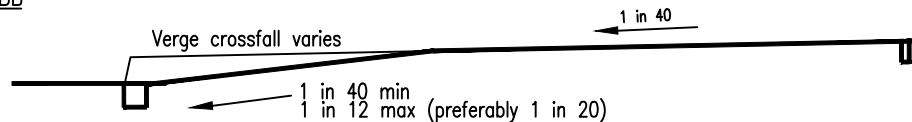
1 in 12 max (preferably 1 in 20)

1. FOOTWAY DRAINING TOWARDS CARRIAGEWAY



2. FOOTWAY DRAINING AWAY FROM CARRIAGEWAY

SECTION BB



FOOTWAY WITH VERGE

Notes:-

- Construction shall be the same as the adjacent footway unless required otherwise by the Employer's representative.
- 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.
- The back of path shall not be dropped unless agreed by Employer's representative.
- Flush kerbs shall be 0-6mm upstand and formed from CS2 channel blocks.
- No kerbs, channels or other demarcations shall interrupt the line of the footway unless required by the Employer's representative.
- Ponding in the channel by the transition kerb must be avoided. Gully should be installed on the uphill end of transition kerbs.



STANDARD DETAILS

03-CROSSOVERS AND PEDESTRIAN CROSSINGS PEDESTRIAN CROSSING NOTES

DRAWING NUMBER

Drawing

SD 03-003

Revision

H

Drawn by

HJ

Scale

NTS

Date Drawn

AUG 2020

ALL CROSSINGS

DMRB applies with additions and amendments and any BCC additional or substitute clauses.

Road markings at signal controlled junctions to be in accordance with Chapter 5 of the Traffic Signs Manual – Road Markings.

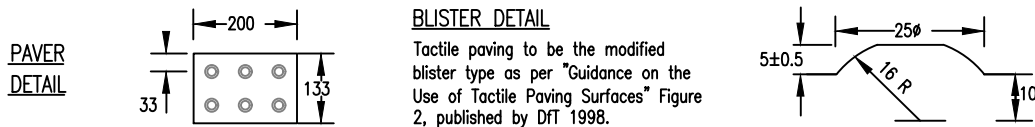
All dimensions are in millimetres. No part of any street furniture shall be closer than 450mm from the kerb face.

KERBS

1. Kerbs in front of tactile paving shall have an upstand of 0 to 6mm.
2. Long fall in front of kerbs shallower than 1 in 100 channels are required.

TACTILE PAVING

3. Tactile paving shall comprise 200*133*65 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.



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 tactiles. 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.
9. For clarification of tactile requirements refer to the Employer's Representative or the Traffic Signals Team.
10. Paver blocks shall generally be buff colour at uncontrolled crossings to give colour contrast. Charcoal colour may be used if instructed.
11. Tactile paving slabs may be used instead of blocks if directed by Employer's representative.
12. Alignment of tactiles to be in accordance with Guidance on the use of Tactile Surfaces DETR.
13. Header courses to be laid on mortar.
14. Blocks to be laid as per SD01-006H.
15. Tactile paving slabs may be used where directed by Employer's representative.
16. Tactile paving width to be minimum 2 kerb lengths.

NON SIGNALISED CONTROLLED CROSSINGS

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

TRAFFIC SIGNAL CONTROLLED PEDESTRIAN CROSSINGS

18. 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 19 below). Pedestrian Push Buttons are indicated on the drawings thus:
19. The footway shall be dished across the distance of the taper kerbs without abrupt changes of slope. Refer to the scheme drawings for pole locations.
20. There shall be at least 1350 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

03-CROSSOVERS AND PEDESTRIAN CROSSINGS

TACTILE PAVING CONTROLLED CROSSINGS

(ZEBRAS, PELICANS, PUFFINS)

DRAWING NUMBER

Drawing

SD 03-004

Revision

E

Drawn by

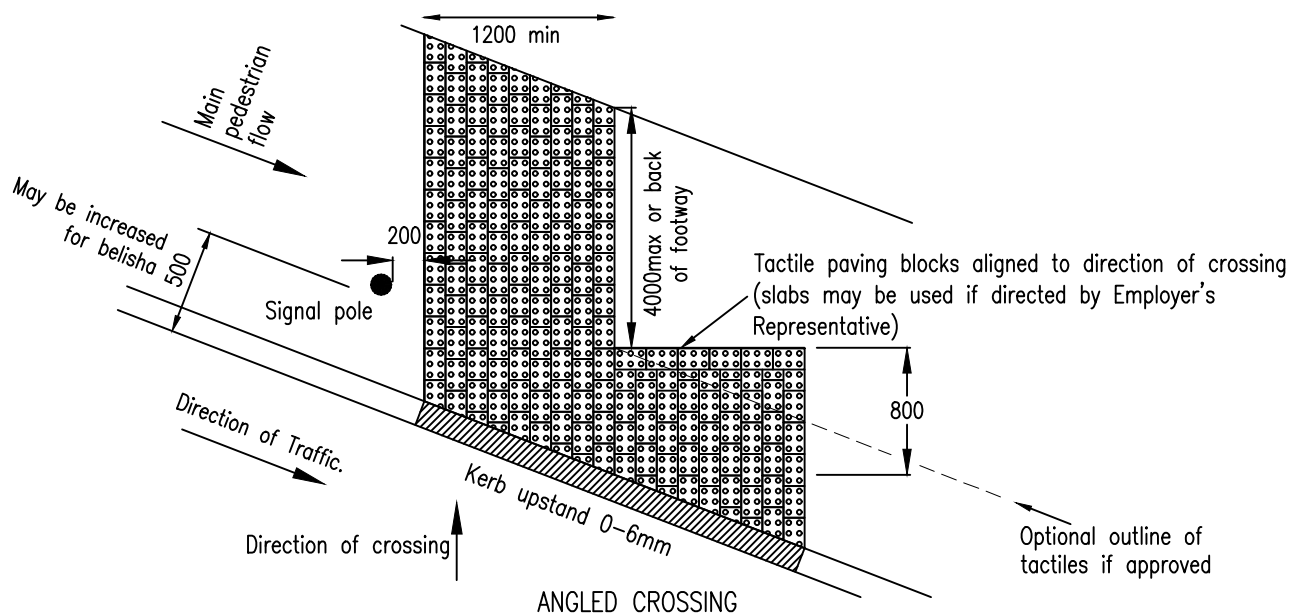
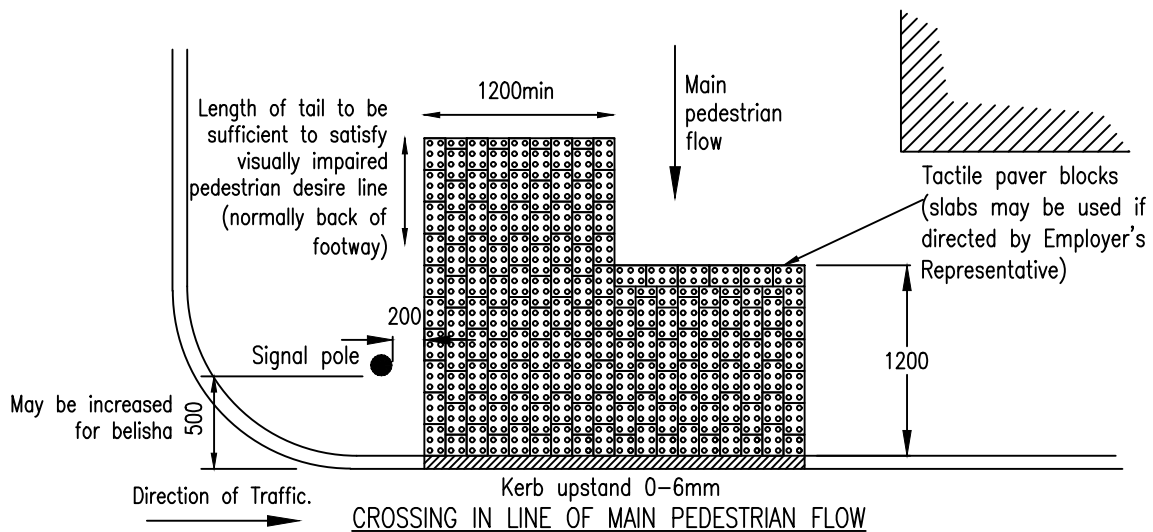
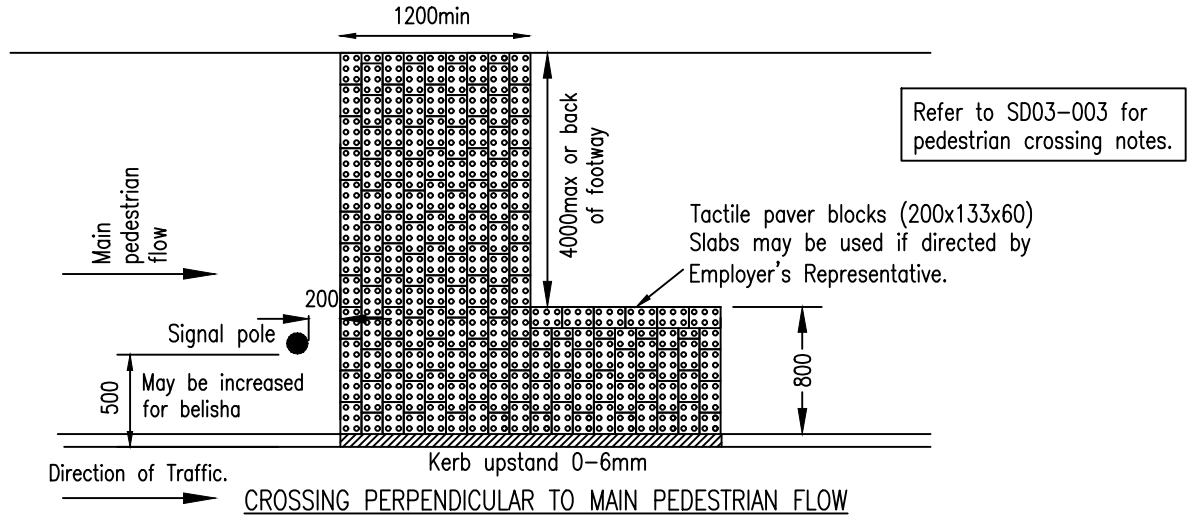
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Scale

NTS

Date Drawn

FEB 2020





STANDARD DETAILS

03-CROSSOVERS AND PEDESTRIAN CROSSINGS TACTILE CROSSINGS UNCONTROLLED

DRAWING NUMBER

Drawing

SD 03-005

Revision

F

Drawn by

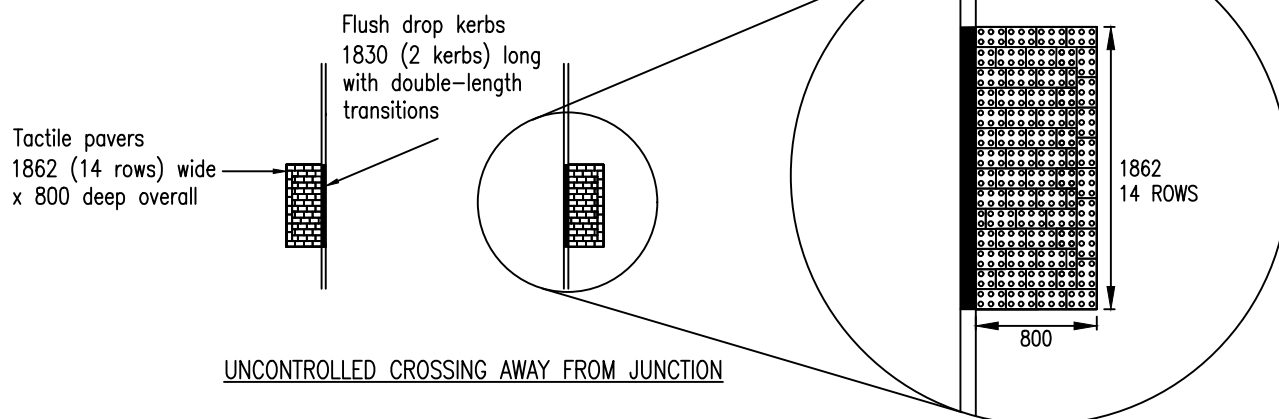
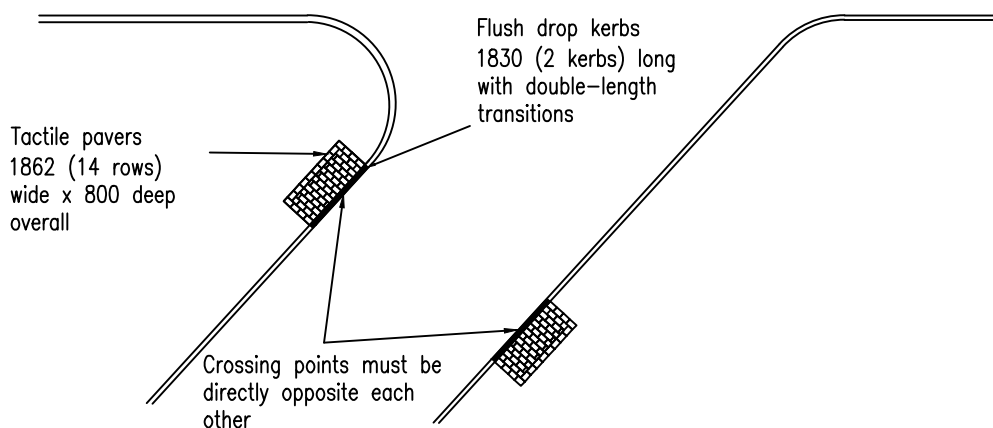
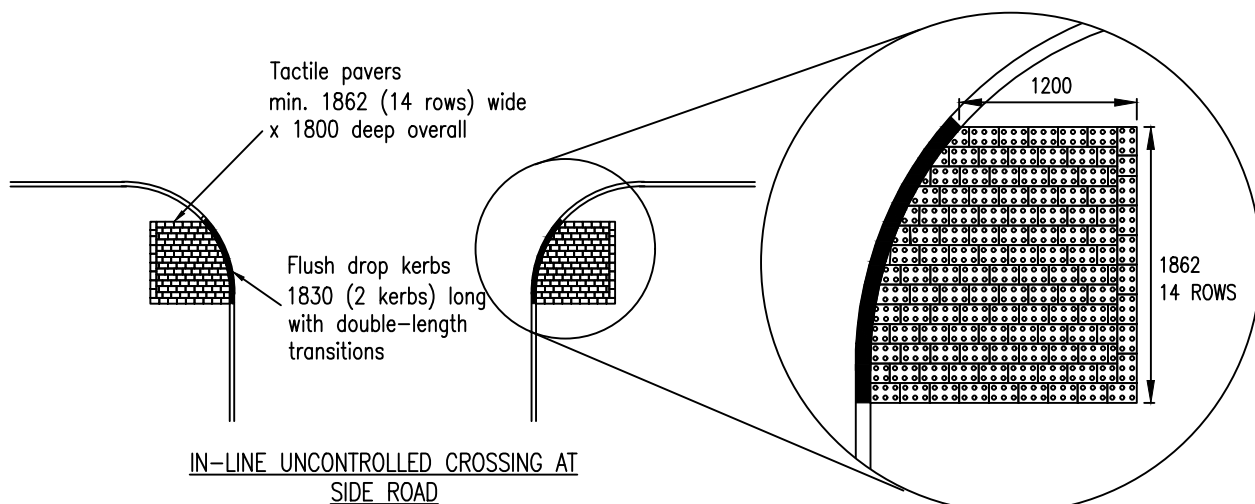
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Scale

NTS

Date Drawn

FEB 2020



Refer to SD03-003 for
pedestrian crossing notes.



STANDARD DETAILS

03-CROSSOVERS AND
PEDESTRIAN CROSSINGS

TACTILE PAVING CYCLE ACCESS

DRAWING NUMBER

Drawing

SD 03-006

Revision

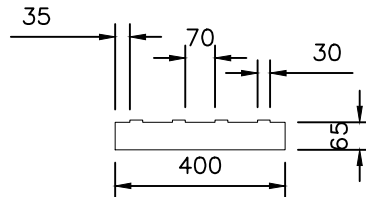
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Drawn by
HJ

Scale
NTS

Date Drawn
FEB 2020

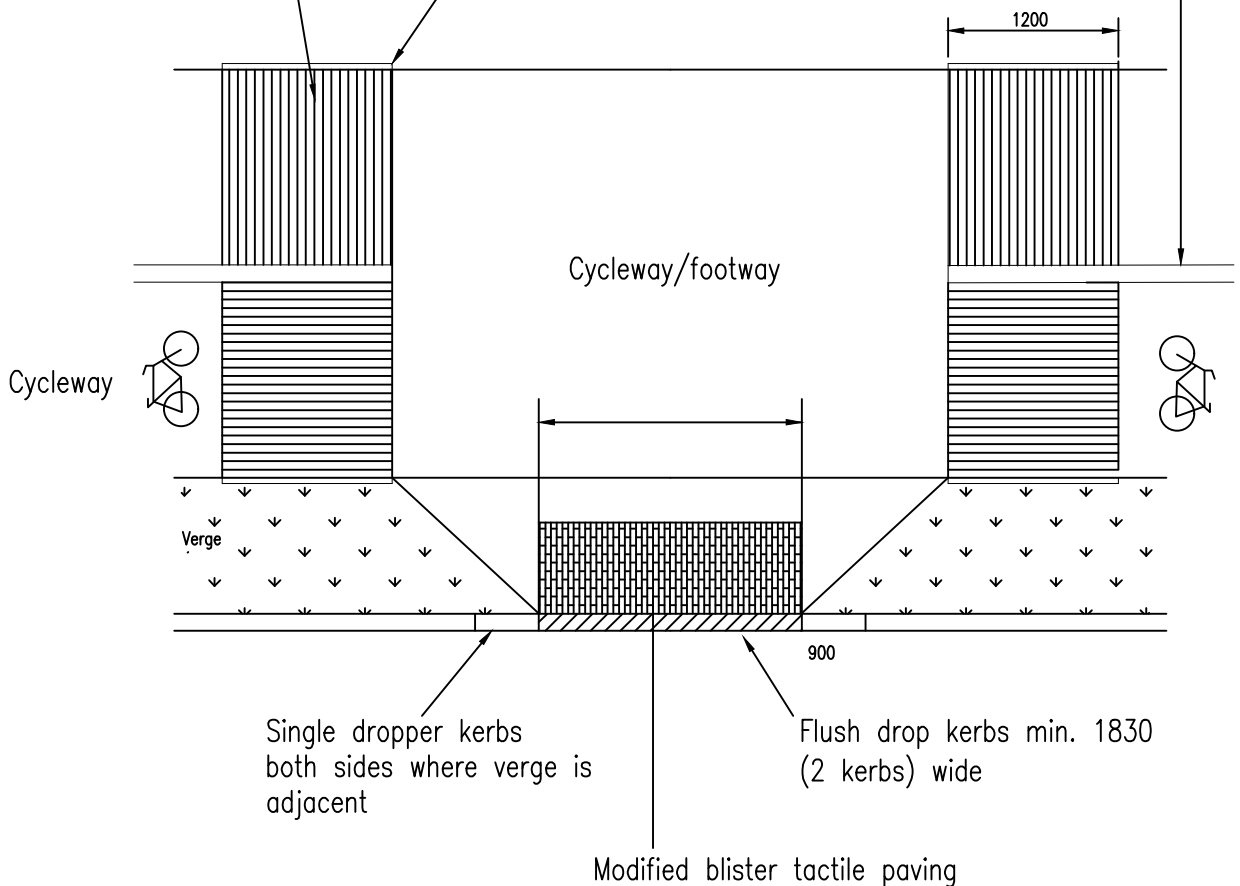
Section : 400 x 400 x 65 cycleway slab



"Start" and "end" cycleway
paving (see DfT publication
"Guidance on the Use of
Tactile Surfaces 1998")

Back edging on either side
and laid on sand to
prevent tactiles coming
loose.

30° Bristol cycle kerb to be
used to separate cycleway.
Refer to SD02-001 for
more detail.



Note

Length of cycleway tactile paving can be reduced to 800 (6 rows min.) on some intermediate locations with approval of Employer's representative.



STANDARD DETAILS

03-CROSSOVERS AND PEDESTRIAN CROSSINGS

TRAFFIC SIGNALS CONTROLLED PEDESTRIAN CROSSINGS

DRAWING NUMBER

Drawing

SD 03-007

Revision

H

Drawn by

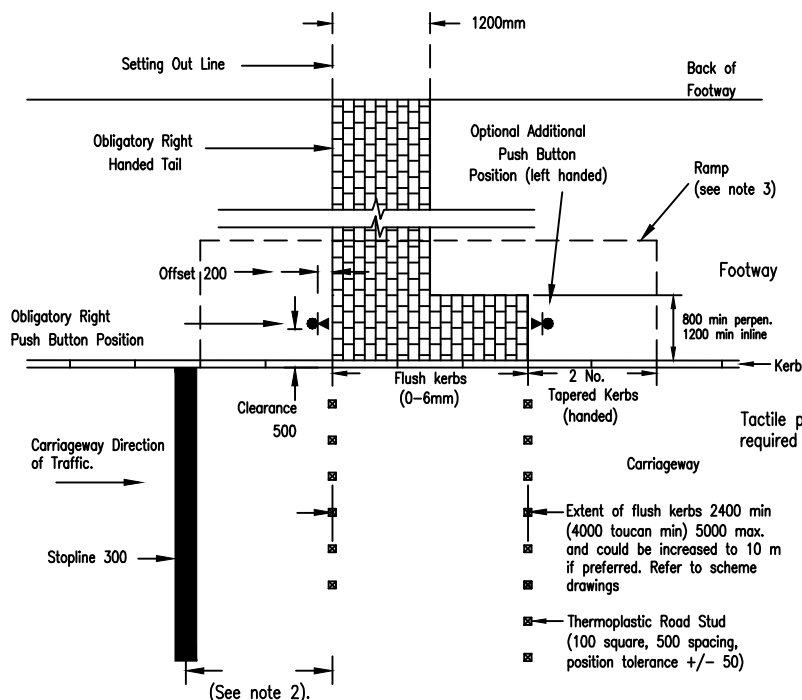
HJ

Scale

NTS

Date Drawn

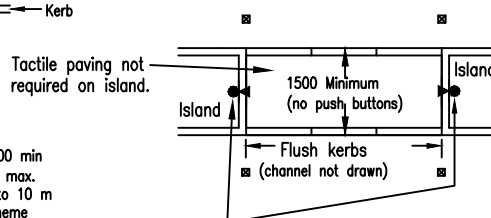
FEB 2020



NOTES

1. DMRB Refer to SD03-003 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.

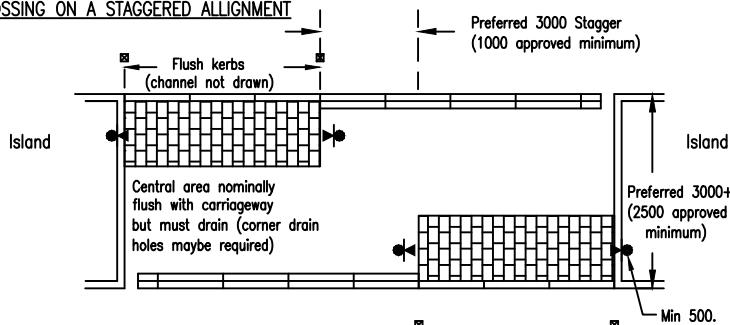
CENTRAL REFUGE DETAIL ON SINGLE STAGE CROSSINGS



Push buttons on both sides central against back of kerb (unless directed by Employer's Representative)
Note: 1800 mm is minimum width where push buttons are provided.
See SD04-005 for refuge island detail.

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

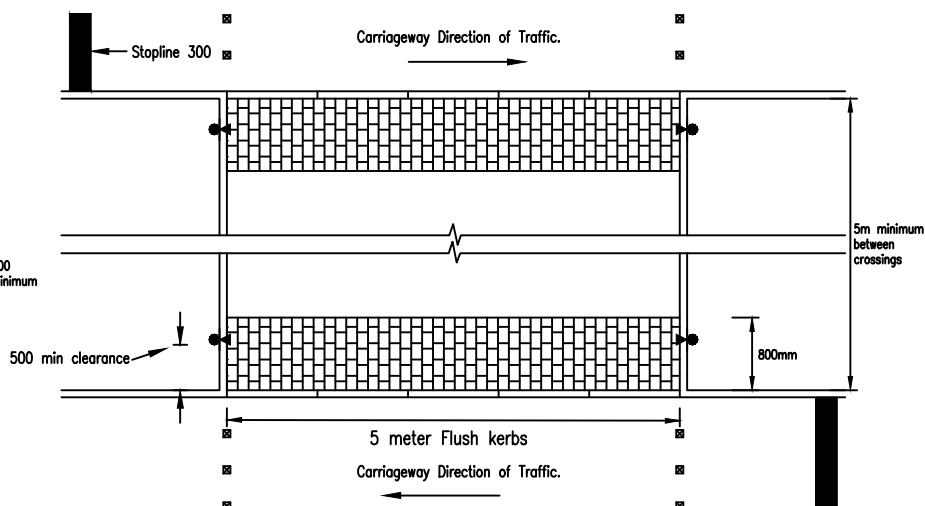
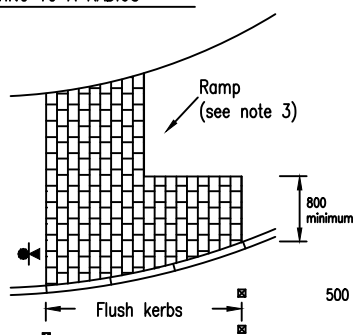
See SD04-007 for Refuge island details.



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

DETAIL OF REFUGE ISLAND AT A TWO STAGE CROSSING ON A STRAIGHT ALIGNMENT.

DETAIL OF TACTILE PAVING TO A RADIUS





STANDARD DETAILS

04-TRAFFIC MANAGEMENT

PLATEAU/CHICANE TYPICAL LAYOUT

DRAWING NUMBER

Drawing

SD 04-001

Revision

F

Drawn by

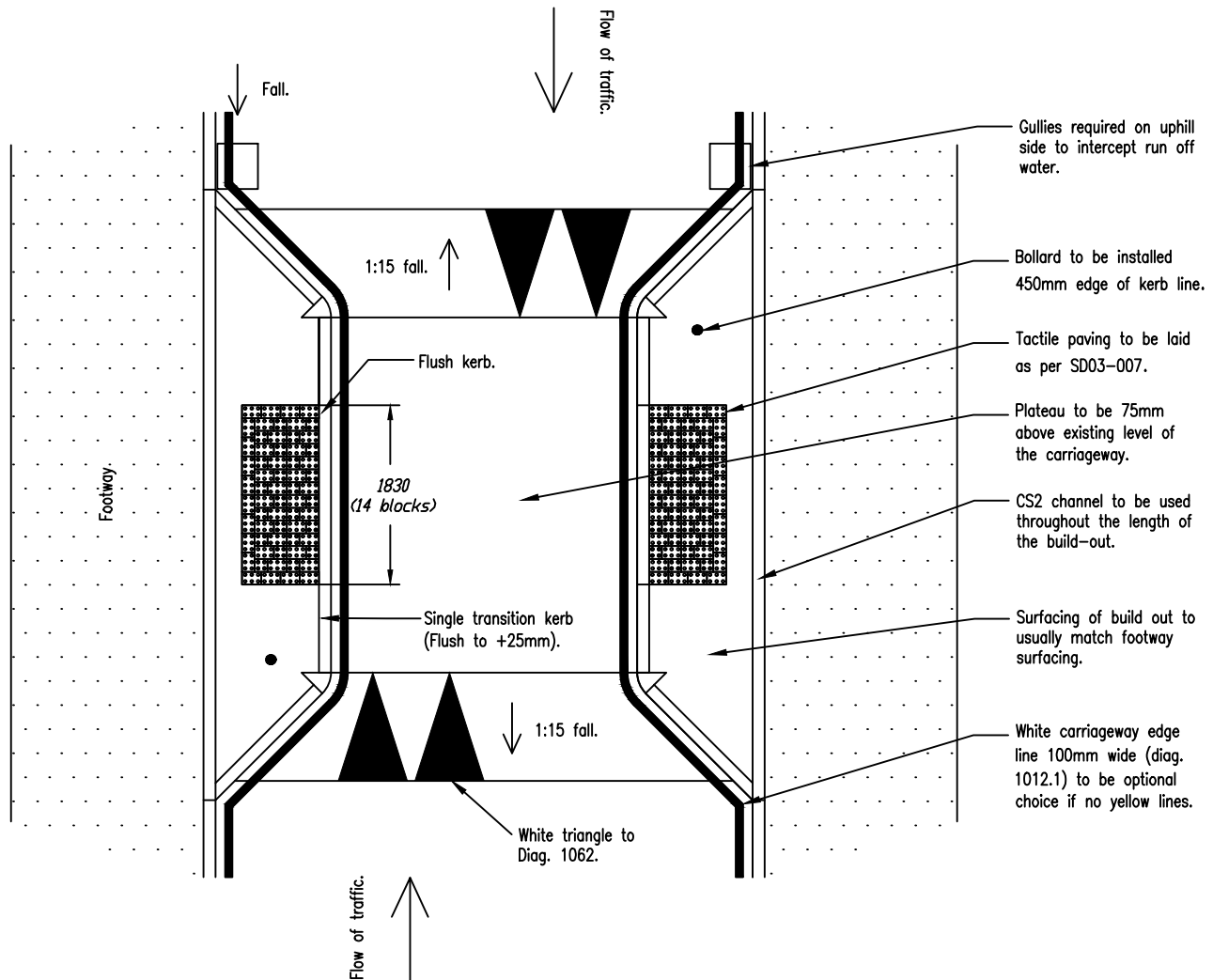
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Scale

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Date Drawn

AUG 2020



Notes

1. This drawing shows the layout of a typical chicane/road narrowing with a plateau. The same layout of kerbing, paving, bollards etc can be used to build a chicane without a plateau. Section AA – different construction methods are illustrated in SD04-002.
2. Refer to SD 03-004 to 03-005 for details of tactile paving.
3. Width of 'd' shall be 3.0m or between 4.0m and 5.0m to suit road width. If 'd' = 3.0m, full depth construction is required if not already in situation.
4. Bollard type as per design drawing or as approved by Employer's representative on site
5. All road markings to be in accordance with latest TSRGD.



STANDARD DETAILS

04-TRAFFIC MANAGEMENT

PLATEAU/CHICANE CONSTRUCTION DETAILS

DRAWING NUMBER

Drawing

SD 04-002

Revision

F

Drawn by

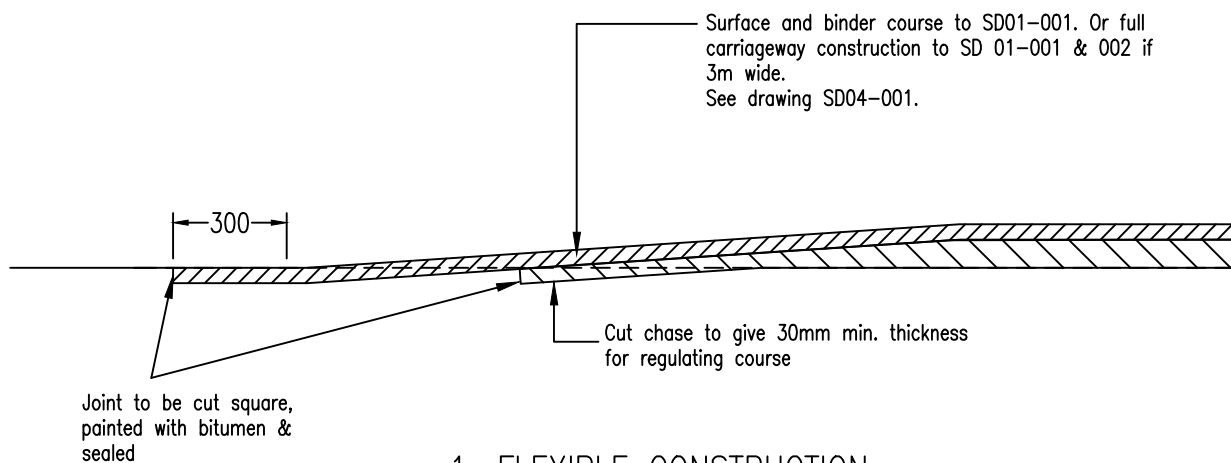
HHJ

Scale

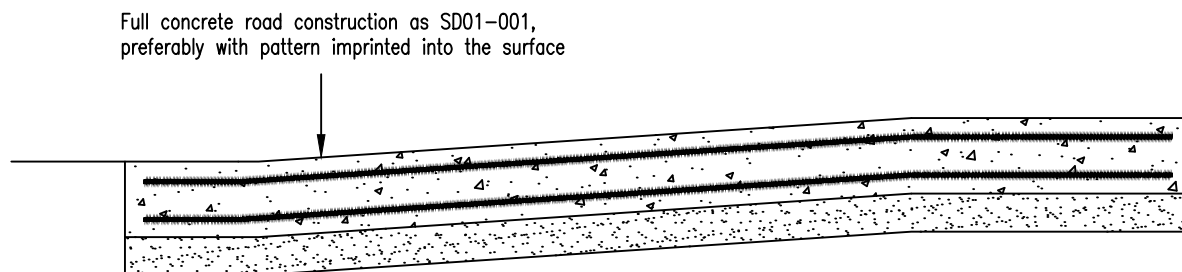
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Date Drawn

AUG 2020



1. FLEXIBLE CONSTRUCTION



2. CONCRETE CONSTRUCTION

Notes

1. Ramp slope to be a maximum of 1 in 10 to 1 in 15.
2. Maximum height of plateau is 75mm (100 mm with agreement of Employer's Representative)
3. Ramp blocks are not acceptable
4. Ramp construction to be in accordance with CI 915 or 929 (as applicable)



STANDARD DETAILS

04-TRAFFIC MANAGEMENT

ROAD HUMPS

DRAWING NUMBER

Drawing

SD 04-003

Revision

E

Drawn by

HJ

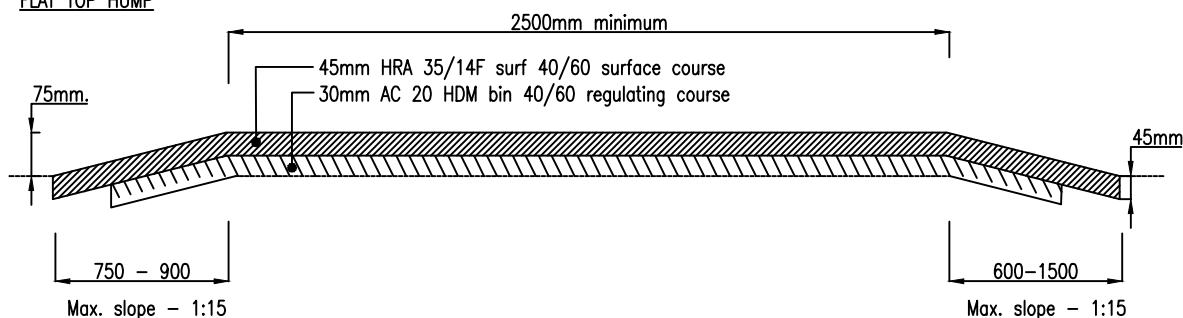
Scale

NTS

Date Drawn

FEB 2020

FLAT TOP HUMP



ROUND TOP HUMP

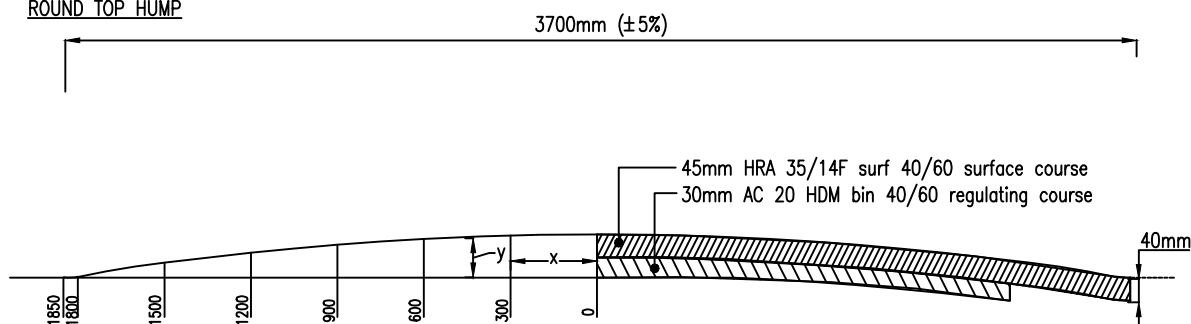
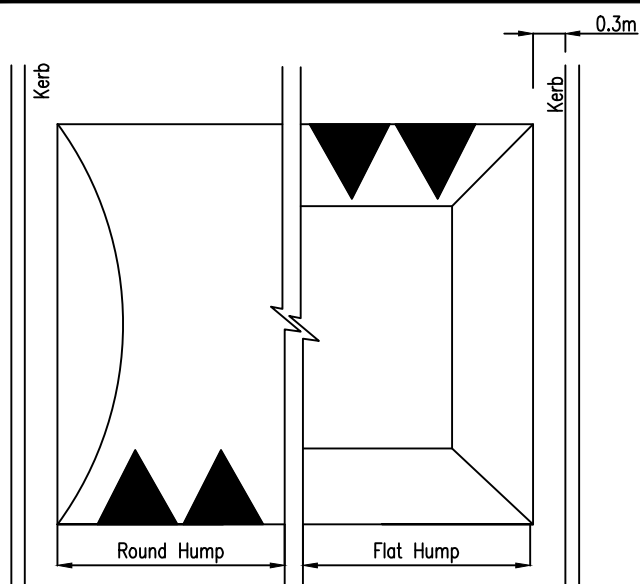


Table of Heights

x (±10%)	y
0	75
300	73
600	67
900	57
1200	43
1500	26
1800	1
1850	0



PLAN

NOTES

- Humps may also be constructed in in-situ concrete. Discuss with Employer's representative.
- Road humps shall comply with Highways (Road Humps) Regulations 1999 as amended.
- Scarify existing carriageway as necessary, tack coat, cut joints neat and vertical and paint with bitumen sealer.
- Pavement tie ins shall extend into existing depending on existing chambers and gradients.
- All road markings to be in accordance with TSRGD 2016.



STANDARD DETAILS

04-TRAFFIC MANAGEMENT

SPEED CUSHIONS

DRAWING NUMBER

Drawing

SD 04-004

Revision

F

Drawn by

HJ

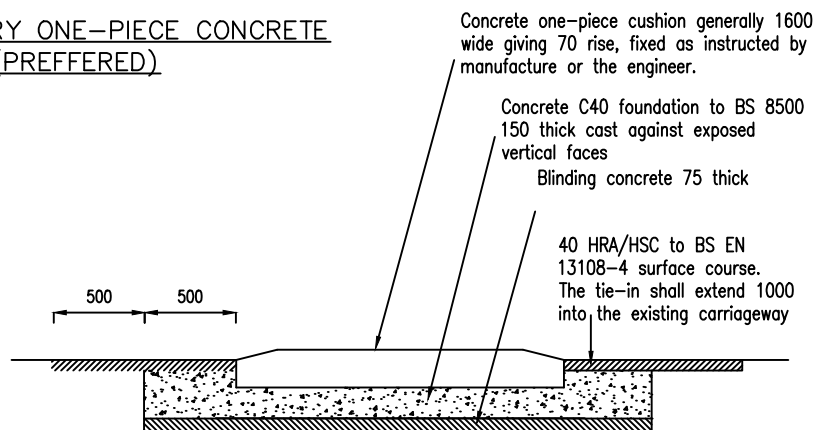
Scale

NTS

Date Drawn

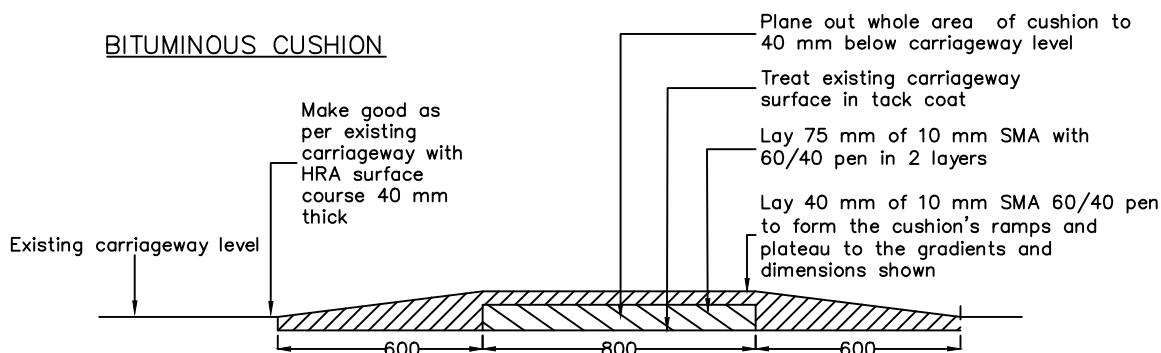
FEB 2020

PROPRIETARY ONE-PIECE CONCRETE CUSHION (PREFERRED)



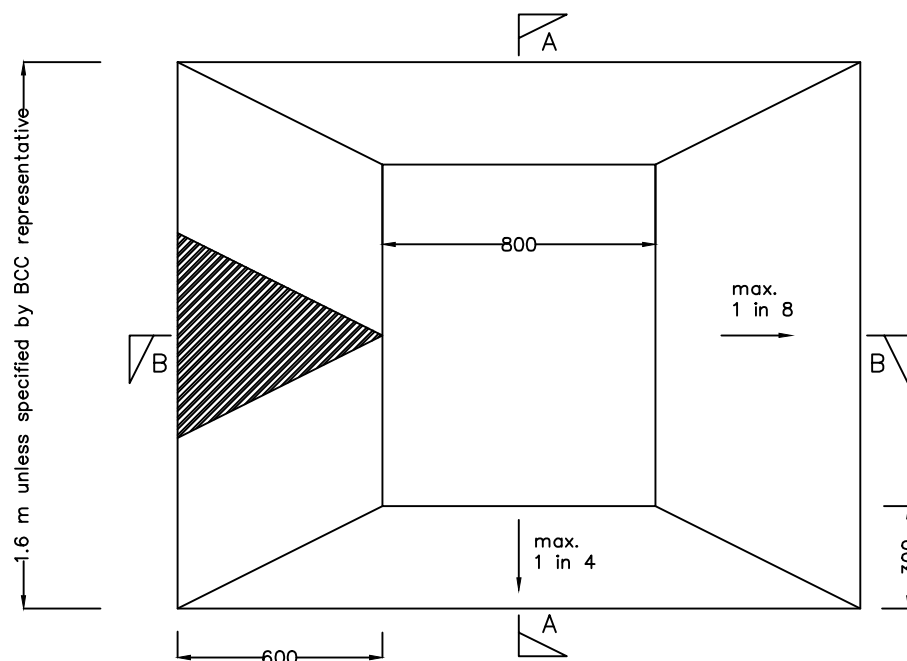
SECTION THROUGH PROPRIETARY ONE-PIECE CONCRETE CUSHIONS

BITUMINOUS CUSHION



SIDE ELEVATION (Section B-B)

END ELEVATION (Section A-A)



PLAN VIEW

LAYOUT

Extents of cushions and their location will be marked out by a BCC representative prior to works commencing on site

LAYOUT

1. Clearance from each kerb to the first cushion shall be preferably 1000.
2. Cushions shall be placed side by side across the full width of the carriageway.
3. Clearance between cushions shall be: -
750 if there are 3 cushions across the road;
4. Cushions shall be spaced 70m c/c along the road.
5. Cushion height shall be 75 max.
6. Direction arrow to be in accordance with TSRGD 2016.



STANDARD DETAILS

04-TRAFFIC MANAGEMENT

ISLANDS TYPES 1, 2 & 3

DRAWING NUMBER

Drawing

SD 04-005

Revision

F

Drawn by

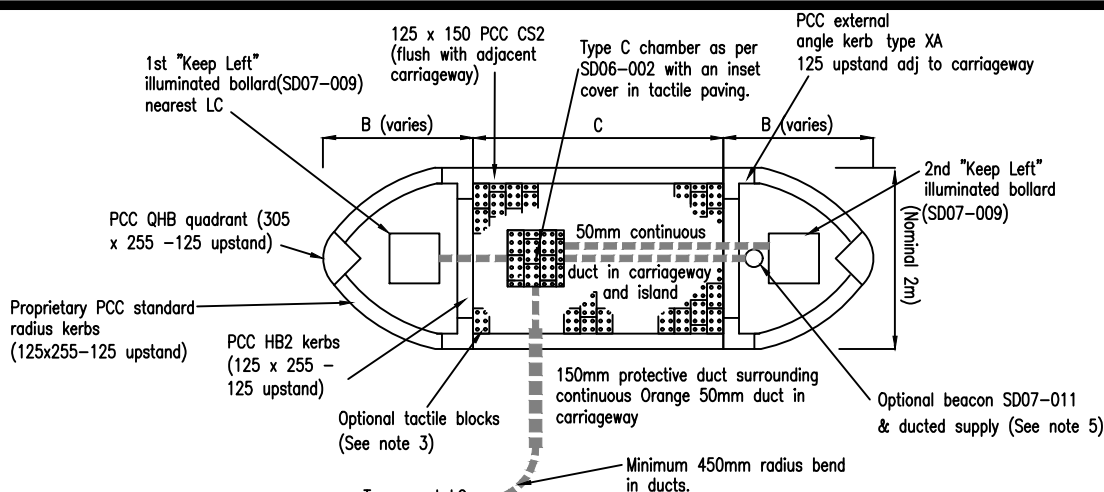
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Scale

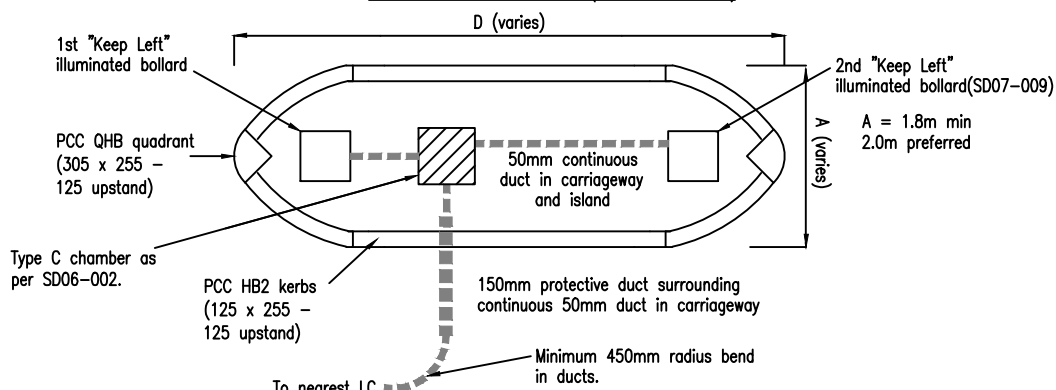
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Date Drawn

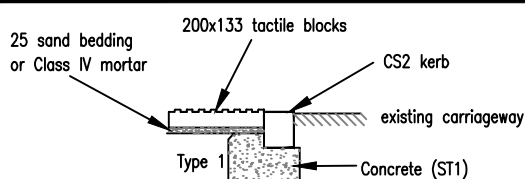
AUG 2020



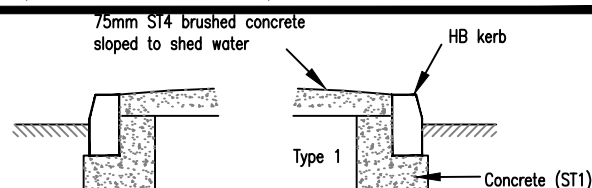
TRAFFIC ISLAND TYPE 1 & 2 (STANDARD KERBED)



TRAFFIC ISLAND TYPE 3 (STANDARD KERBED SOLID ISLAND)



SECTION THROUGH TACTILE AREA



SECTION THROUGH ISLAND END

Notes:-

- Islands shall be formed from proprietary straight, curved, quadrant and external angle kerbs to suit. Mitred kerbs will not be accepted. Standard radius kerbs:
2m, 3m, 6m, 8m, 10m.
- Raised areas of islands shall be weathered to drain towards the carriageway. The flush area on pedestrian islands shall similarly be weathered.
- Uncontrolled pedestrian area shall be surfaced as follows:-
Island up to 2000 wide: full width in tactile paving
Islands over 2000 wide: tactiles 800mm deep each side, remainder in footway surfacing.
Tactile paving not required on signalized pedestrian crossing less than 5m wide.
- Raised areas shall be surfaced in concrete ST4 brush finish or standard blacktop or PCC paver footway construction.
- Optional beacon where instructed by BCC, Beacon specification to be fitted in island in 140mm duckfoot retention socket as per SD06-007.
- The two ends of the islands can be different lengths.
- C=2000 is the minimum length for ped refuges / C=2800 is the minimum for controlled crossings.
- Orange ducted supply cable to run from bollard to beacon.
- 'Keep left' bollard face to be to diag. 610 and in accordance with standard detail. Minimum 450mm offset from edge of kerb.
- All kerbs to be to BS EN 1340.



STANDARD DETAILS

04-TRAFFIC MANAGEMENT

ISLAND TYPES 4 & 5

DRAWING NUMBER

Drawing

SD 04-006

Revision

E

Drawn by

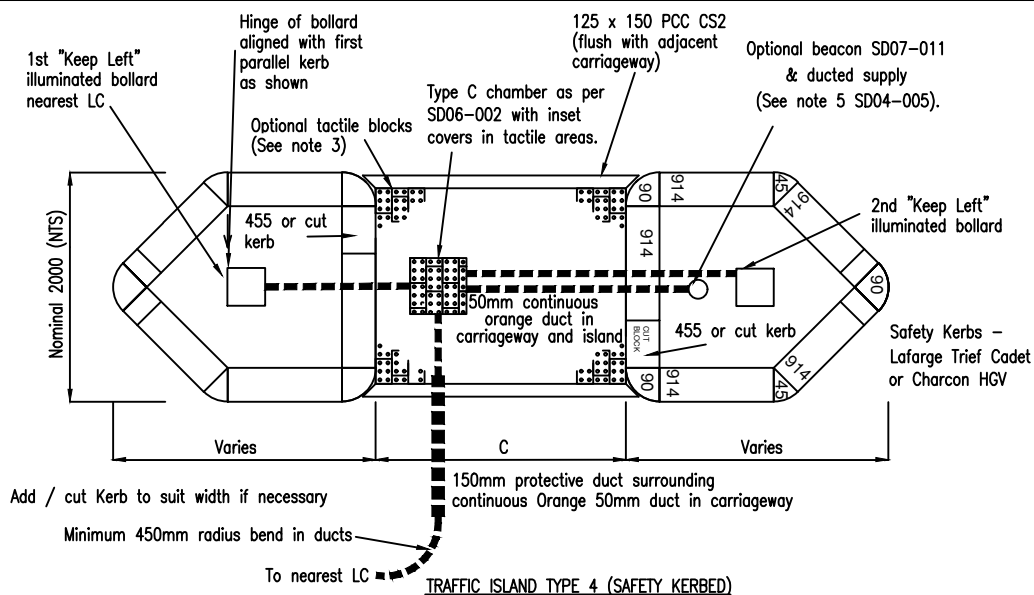
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Scale

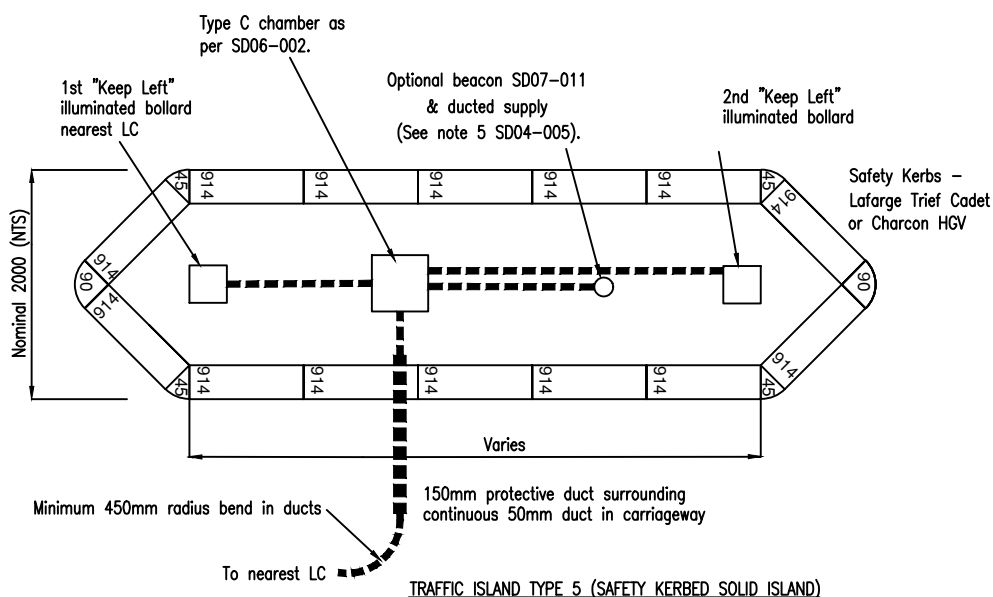
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Date Drawn

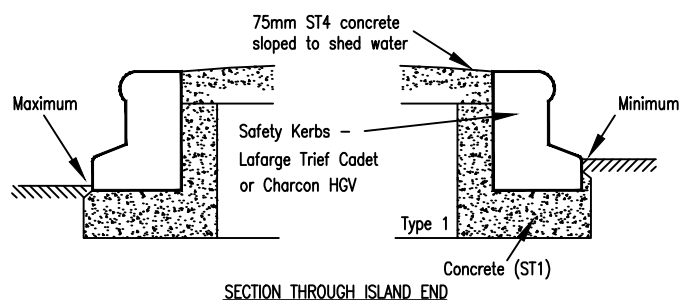
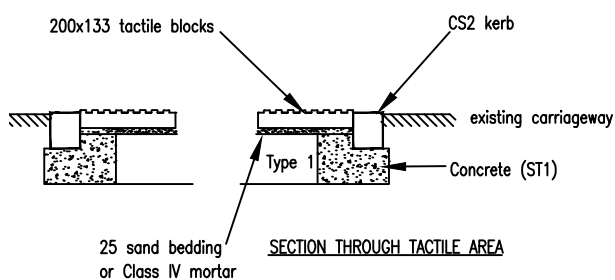
FEB 2020



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



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



NOTES ON DRAWING SD 04-005 APPLY TO THESE ISLANDS



STANDARD DETAILS

04-TRAFFIC MANAGEMENT

ISLANDS TYPE 6

DRAWING NUMBER

Drawing

SD 04-007

Revision

F

Drawn by

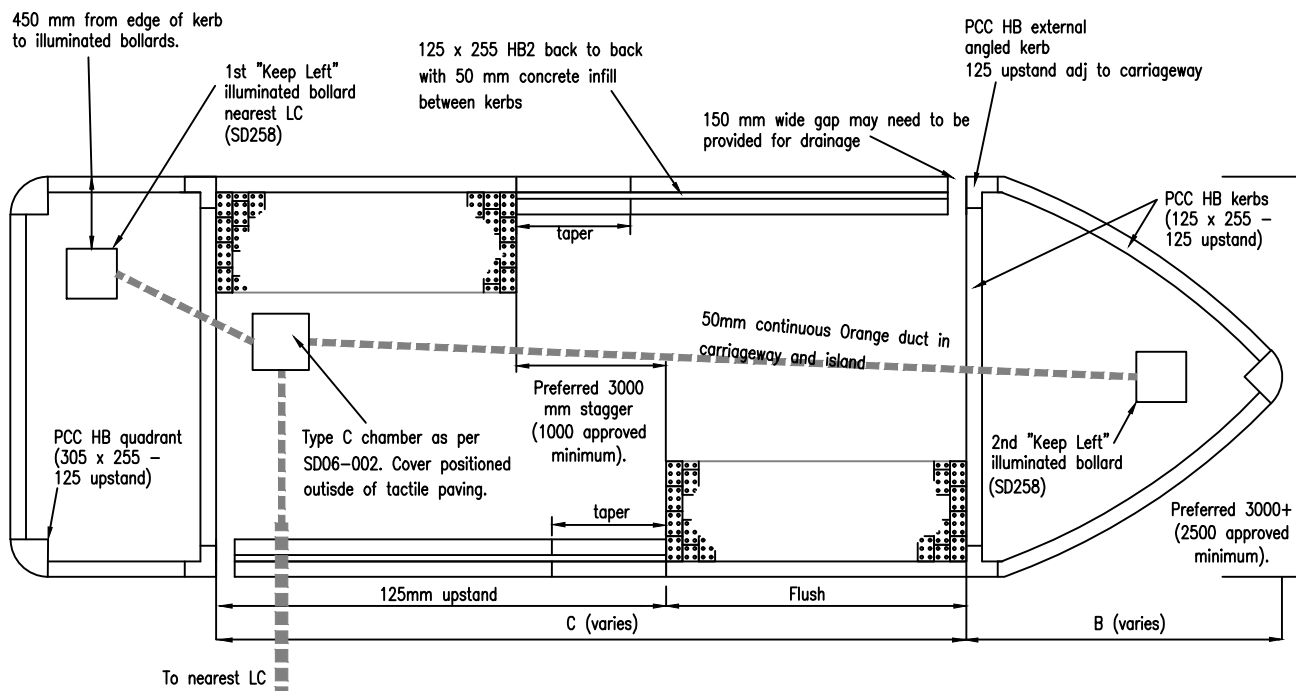
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Scale

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Date Drawn

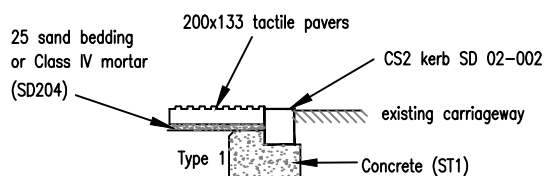
AUG 2020



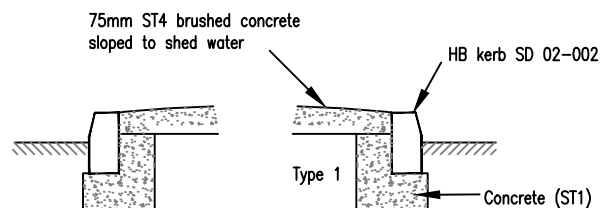
TRAFFIC ISLAND TYPE 6 (STANDARD KERBED PEDESTRIAN PEN)

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.

NOTES ON DRAWING SD 04-005 APPLY TO THIS ISLAND



SECTION THROUGH TACTILE AREA



SECTION THROUGH ISLAND END



STANDARD DETAILS

04-TRAFFIC MANAGEMENT

PARKING BAYS

DRAWING NUMBER

Drawing

SD 04-008

Revision

D

Drawn by

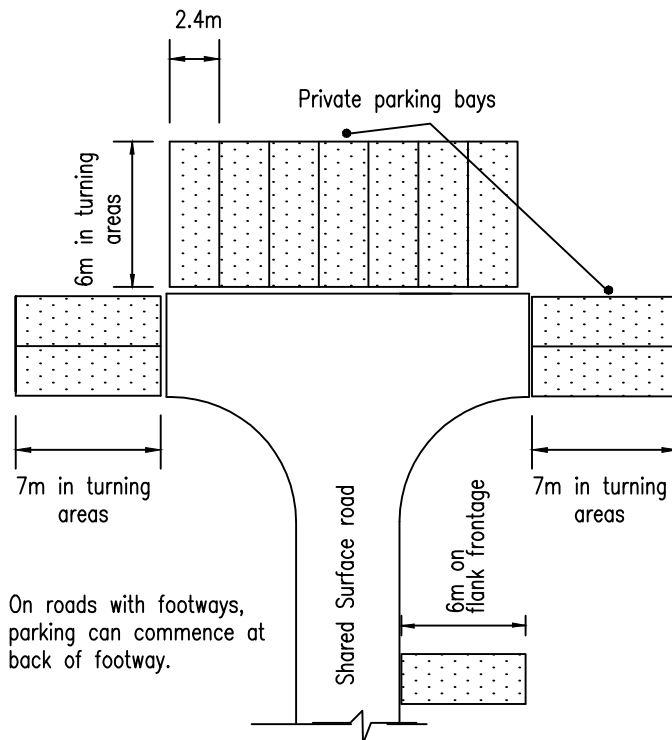
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Scale

NTS

Date Drawn

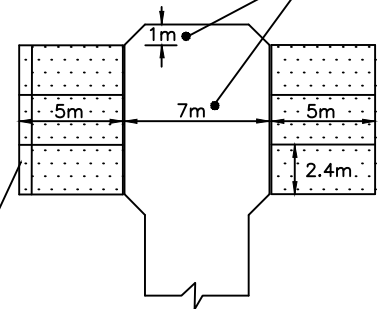
FEB 2020



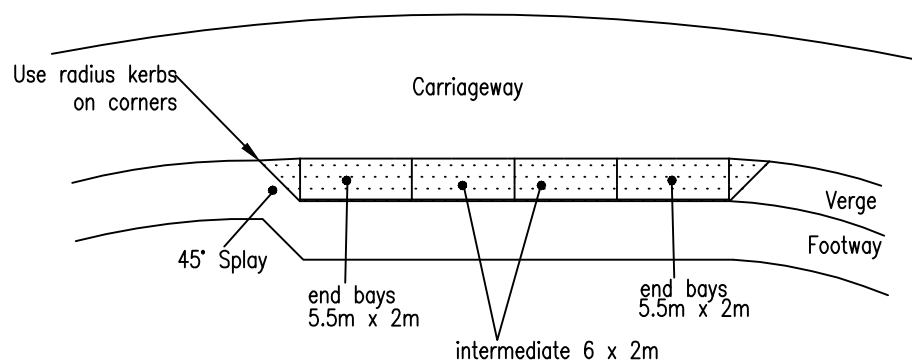
PRIVATE BAYS ON
SHARED SURFACE ROADS
(CONSTRUCTION AS PER SD)

Note:
Private parking
bays are not to
drain to public
highway.

Minimum manoeuvring
space required in
Car parks



CAR PARKS



LONGITUDINAL BAYS ALONG ROADS

NOTE:

1. Refer to Disabled Parking (SD04-009)



STANDARD DETAILS

04-TRAFFIC MANAGEMENT DISABLED PARKING

DRAWING NUMBER

Drawing

SD 04-009

Revision

E

Drawn by

HJ

Scale

NTS

Date Drawn

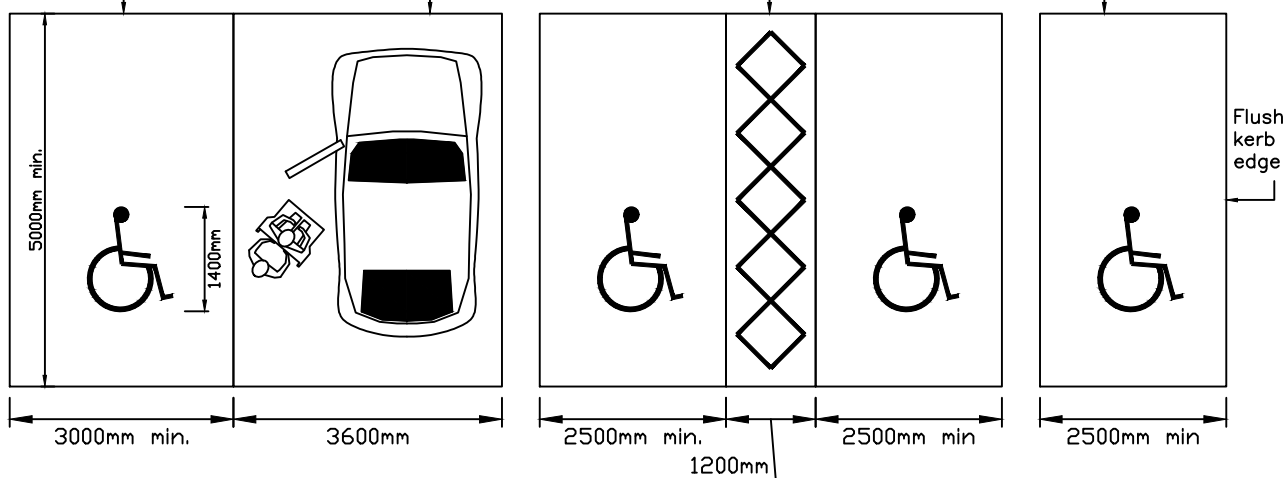
FEB 2020

Ambulant disabled user only, where space is limited. Full width for wheelchair user is preferred particularly in public parks

Full width to suit wheelchair user is preferred

Marked out shared space between two standard bays

Standard bay but with outer side safeguarded for access



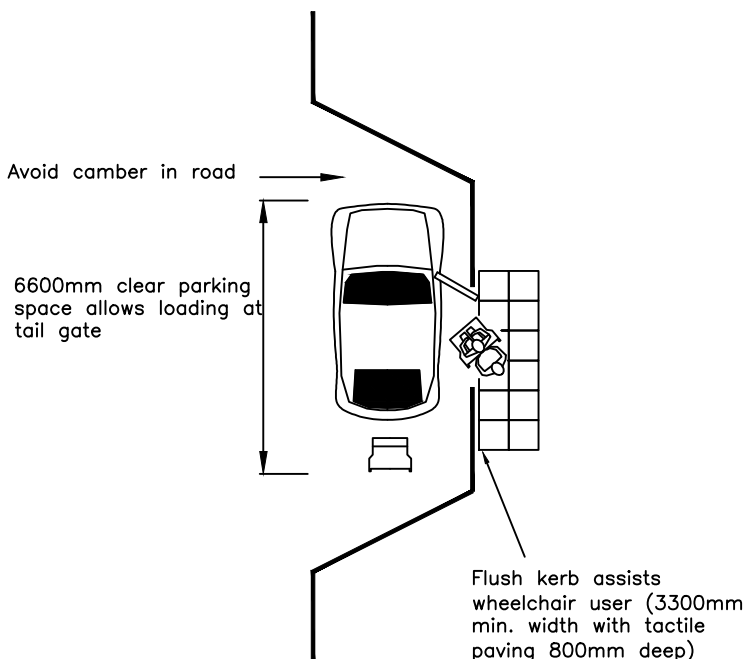
Highways and Transport

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.

Parking Bays

4. Should be provided to buildings where dedicated spaces cannot be provided.
5. 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.
6. Should be located in areas where they can be viewed from the building they are designed to serve.
7. Minimum of 3 bays in any car park and one orange/blue badge bay for every 15 bays provided up to 200 bays.
8. Car parks should be well lit to BS 5489 and BS EN 13201, 100 lux minimum in external areas.
9. Facilities management should include ensuring that designated parking spaces are kept free for Disabled people





STANDARD DETAILS

04-TRAFFIC MANAGEMENT

PEDESTRIAN GUARD RAILS

DRAWING NUMBER

Drawing

SD 04-010

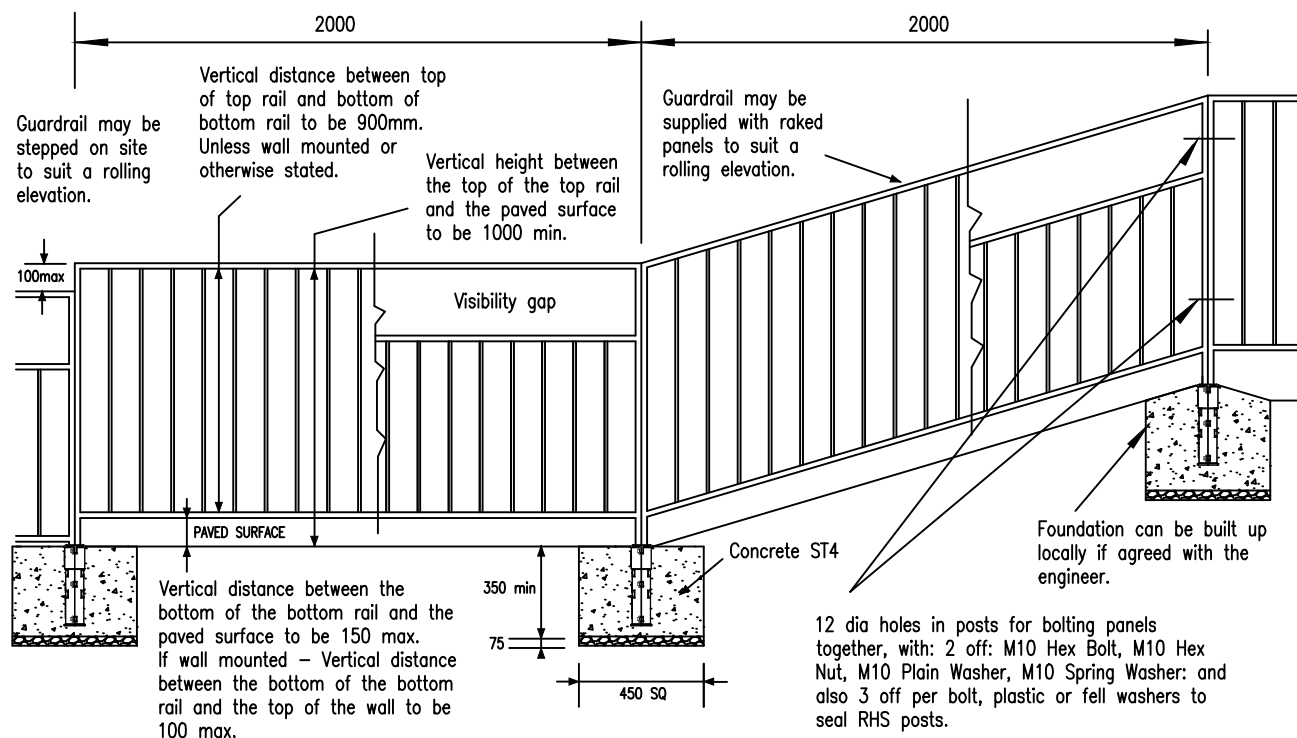
Revision

E

Drawn by
CJW

Scale
NTS

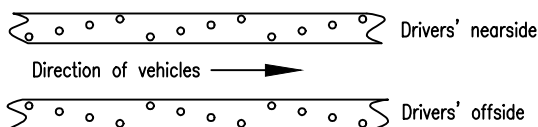
Date Drawn
FEB 2020



12 dia holes in posts for bolting panels together, with: 2 off: M10 Hex Bolt, M10 Hex Nut, M10 Plain Washer, M10 Spring Washer: and also 3 off per bolt, plastic or fell washers to seal RHS posts.

Note: All holes drilled in situ to receive anti-rust treatment. Any unused holes to be adequately sealed by approved method.

PLAN OF
STAGGERED
INFILL
See Note
1f.



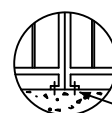
LAYOUT

Unless otherwise directed, guardrails to follow the kerb lines with a minimum 450mm clearance from kerb face.

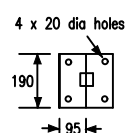
For a curved kerbline - the following guardrails may be used :

- for a radius >35m use 2000mm straight panel sections.
- for a radius >20m & <35m use 1000mm straight panel sections.
- for a radius <20m use panel sections supplied with radii to suit.

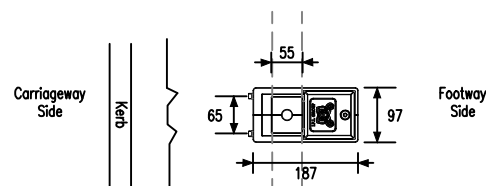
Any resulting angular gap between adjacent posts (3mm max.) to be filled with an approved sealant before final treatment.



TYPICAL MOUNTING FOR
A REINFORCED WALL



PLAN OF BASEPLATE



PLAN OF SOCKET (orientation to the kerb)

NOTES

- The following information is supplied in accordance with BS 7818:
 - Pedestrian Guardrails are to be Class A unless otherwise specified. Class B may be required for additional vandal resistance.
 - Material to be in accordance with BS EN 10210-1:2006 the Grade as noted.
 - Hollow sections to be in accordance with BS EN 10210-2: 2019.
 - In special circumstances, subject to approval, shorter sections of Guardrail may be used.
 - Where specified, panels to be of a 'see through' type i.e. with a visibility gap.
 - Where specified, panels with staggered infill e.g. VisiFlex[®] to be used, as directed, to improve visibility near Pedestrian Crossings.
 - Top, bottom, intermediate rails and posts to be 50 x 30 x 3.0(min) R.H.S. Grade 43C.
 - Infll to be 12 dia Bar Grade 43A unless otherwise specified or approved.
 - Guardrails to be of all welded construction welding to be in accordance with BS EN 1011-1&2.
 - Guardrails to be descaled and hot dip galvanized in accordance with BS EN ISO 1461 Additional treatment to be as specified in Appendix 4/1.
- All guardrail dimensions to comply with BS 7818: 1995. Dimensions given are for information only.
- All guardrails to be earthed.



STANDARD DETAILS

04-TRAFFIC MANAGEMENT

FENCING

DRAWING NUMBER

Drawing

SD 04-011

Revision

E

Drawn by

HJ

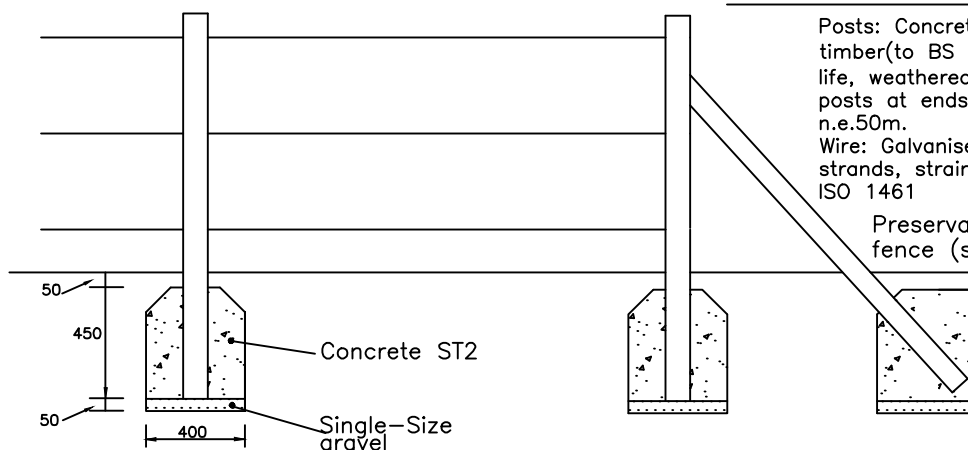
Scale

NTS

Date Drawn

AUG 2020

POST AND WIRE FENCING

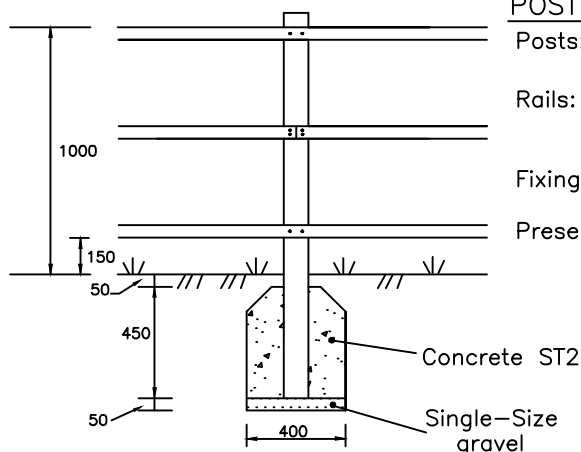


Posts: Concrete or 100x100x1600 timber(to BS 1722) treated for 40 year life, weathered top, 2000c/c. Straining posts at ends, changes of direction and n.e.50m.

Wire: Galvanised straining wire, 3 or 7 strands, strainers at n.e.50m. to BS EN ISO 1461

Preservation: as for post-&-rail fence (see below)

POST AND RAIL FENCING



Posts: 75x150widex1600, weathered top, max. 2000 C/C

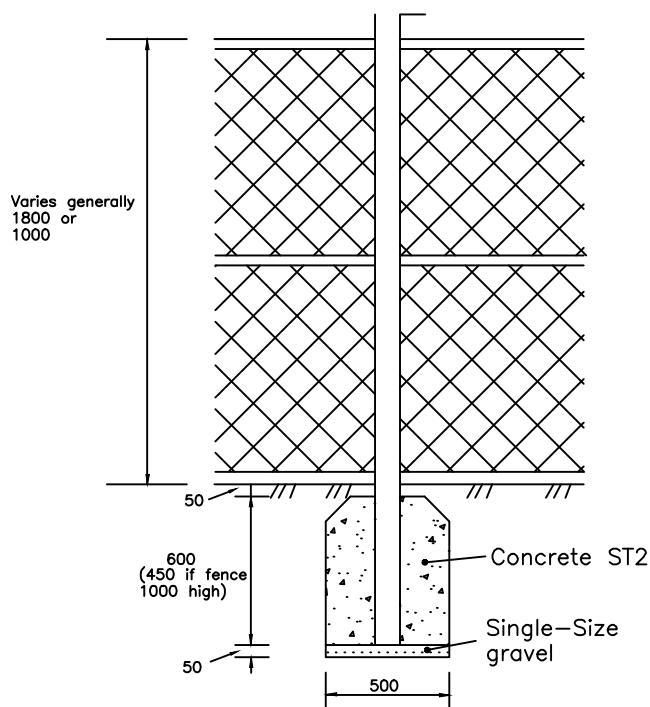
Rails: 38x87, min 4000 long, butt-jointed at posts, staggered joints. 4 rails may be required if rabbit mesh is used.

Fixing: 100mm galvanised nails, 2 per rail per post.

Preservation: All Timber(to BS 1722) shall to be treated to give a 40 year life. Faces cut on site to be painted with preservative.

Rail on fence to be on the side of the livestock so that livestock cannot push the rails off the post.

CHAIN LINK FENCING



Posts= Concrete posts, cranked if barbed wire is required, max. 2500 C/C, or steel angle

Straining Wires: 3 No. to manufactures recommendations.

Chain link: galvanised or plastic – coated.

Barbed wire if required: 3 strands, cranked away from public access side.

NOTE

1. All chain-link fencing to comply with BS 1722-1:2019.
2. All timber to comply with MCHW Volume 1 Clause 304.
3. All fencing should be set minimum 450mm from edge of carriageway.



STANDARD DETAILS

04-TRAFFIC MANAGEMENT

BOLLARDS

DRAWING NUMBER

Drawing

SD 04-013

Revision

E

Drawn by

HJ

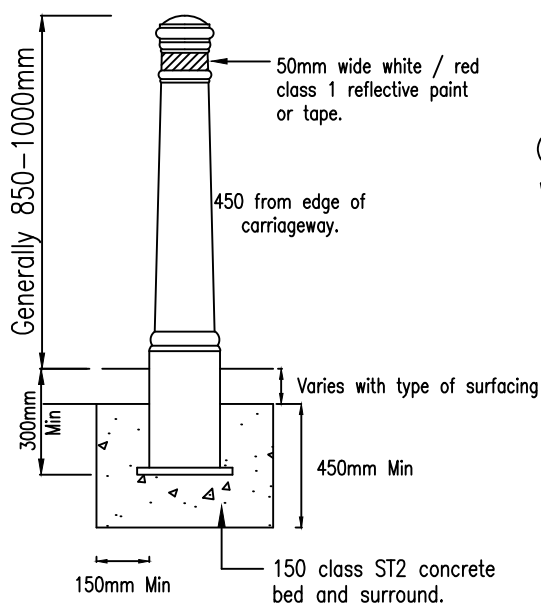
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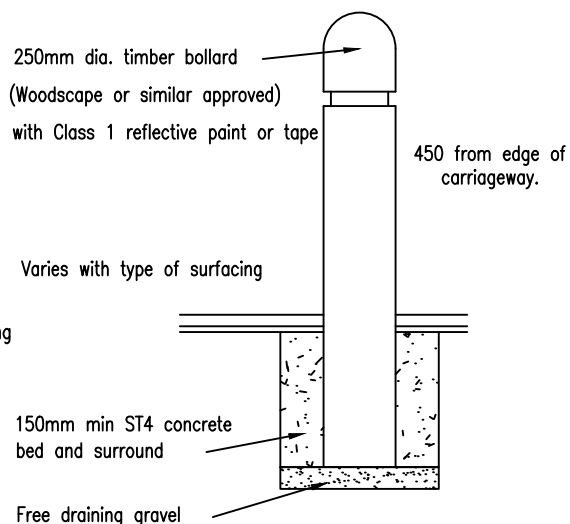
Date Drawn

FEB 2020

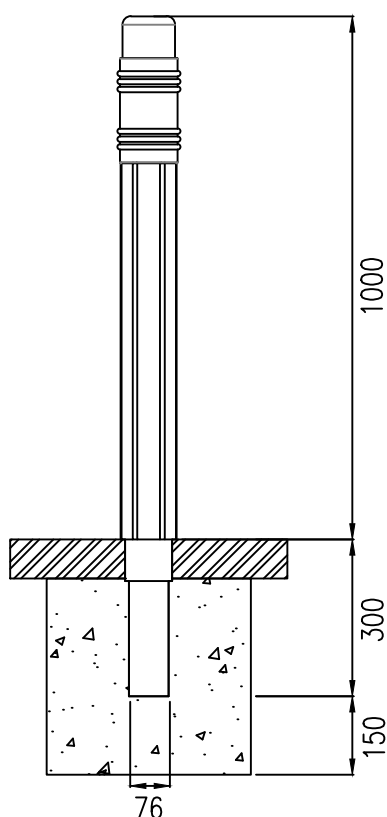
TYPICAL BOLLARD DETAIL



TYPICAL WOODEN BOLLARD DETAIL



TYPICAL PENCIL BOLLARD DETAIL



Notes: -

1. The reflective paint or tape strip shall be min 50 wide, Class 1 reflective white.
2. Bollards can be a variety of sizes and shapes, but concrete are not acceptable. Steel-core fire resistant polyurethane through-coloured bollards are strongly preferred although other metal types may be specified in conservation areas. Preferred bollard Manchester type.
3. Special colours : "Queen Square Black"
- Raven Black, BS 18B29
"Stainless Steel City Centre"
- RAL9006
"Bristol Blue"
- Pantone PMS 5395 and
Trimite Blue-Black R23240
4. Bollard type to be agreed with Employer's representative.
5. Removable bollards with ground socket are required for vehicular access to be specified by Employer's representative. Additional sockets will be required to store bollard when access in use by vehicles.
6. Padlocks on removable bollards to be 5 digit combination locks using standard code as specified by employers representative.
7. All bollards to be set minimum 450mm from edge of carriageway.
8. Colour and placement of pencil bollards by agreement with BCC Employer's Representative only.



STANDARD DETAILS

04-TRAFFIC MANAGEMENT

TREES AND ROOTS 1 IN FOOTWAYS

DRAWING NUMBER

Drawing

SD 04-014

Revision

E

Drawn by

ACB

Scale

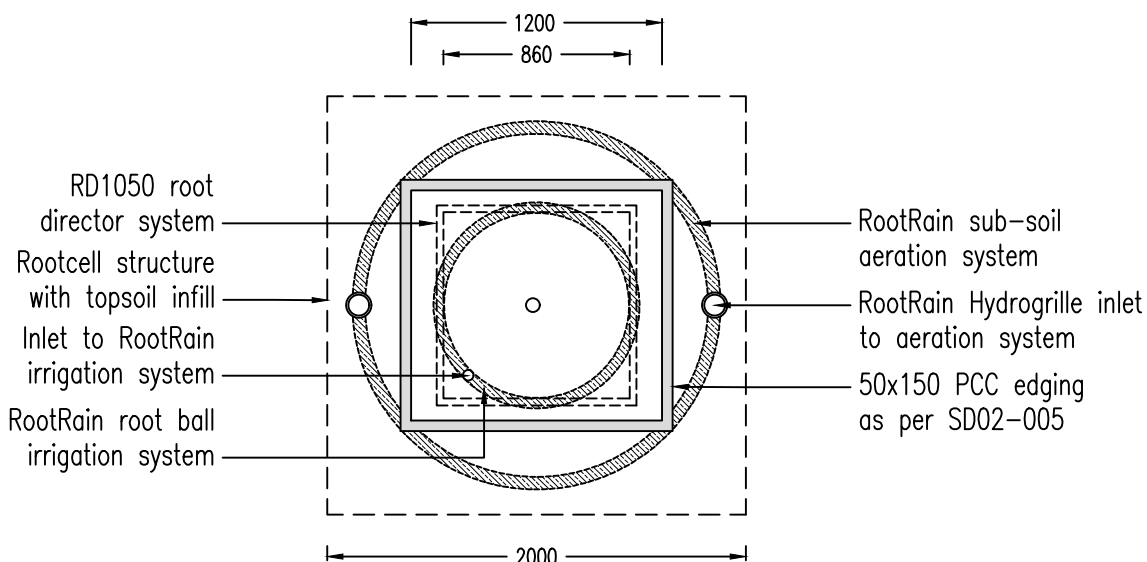
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Date Drawn

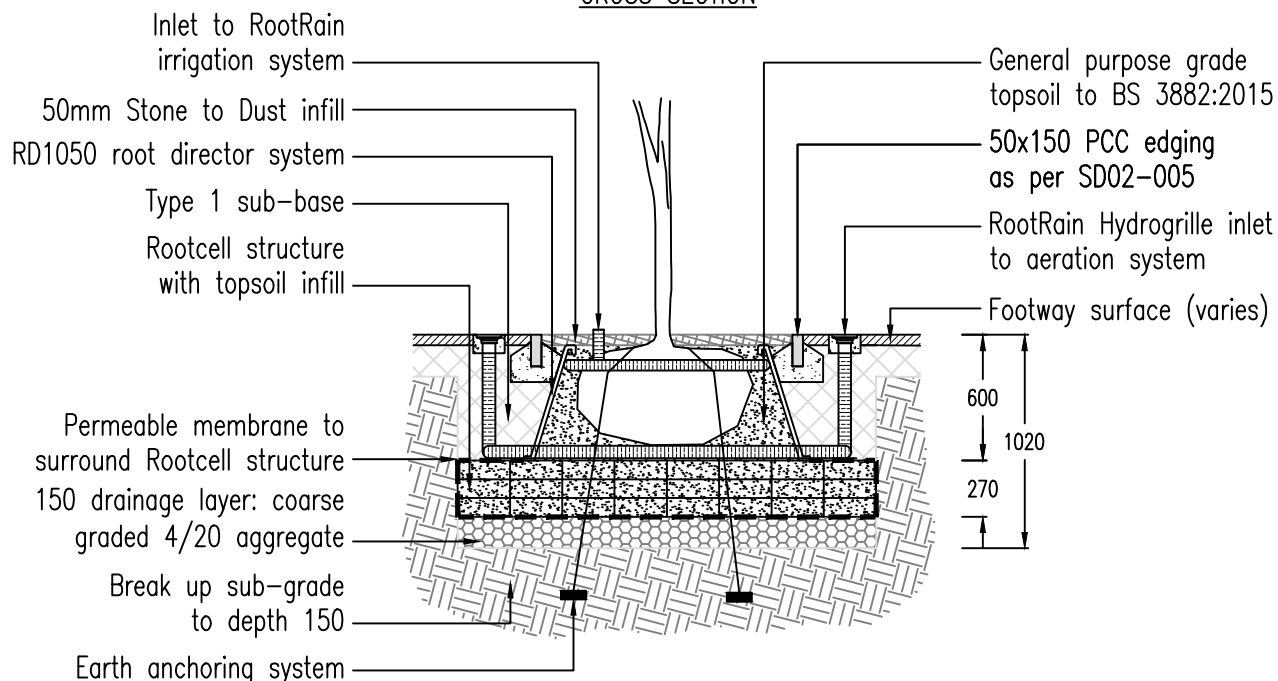
FEB 2020

STREET TREE PIT

PLAN



CROSS SECTION



Notes:

1. Products specified are from Green Blue Urban and Greenleaf 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 Rootcell 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. A tree will subsequently be planted by another contractor.



STANDARD DETAILS

04-TRAFFIC MANAGEMENT

TREES AND ROOTS 2

DRAWING NUMBER

Drawing

SD 04-015

Revision

C

Drawn by

RLJW

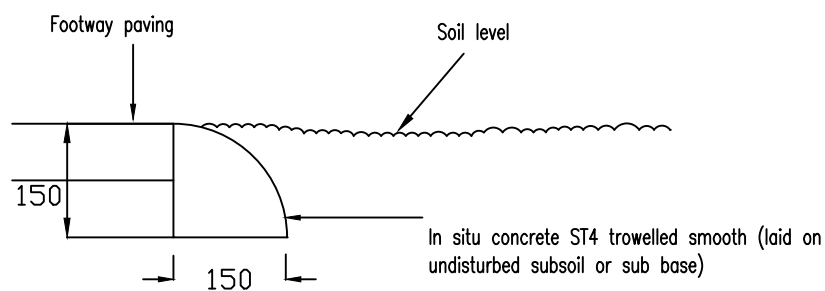
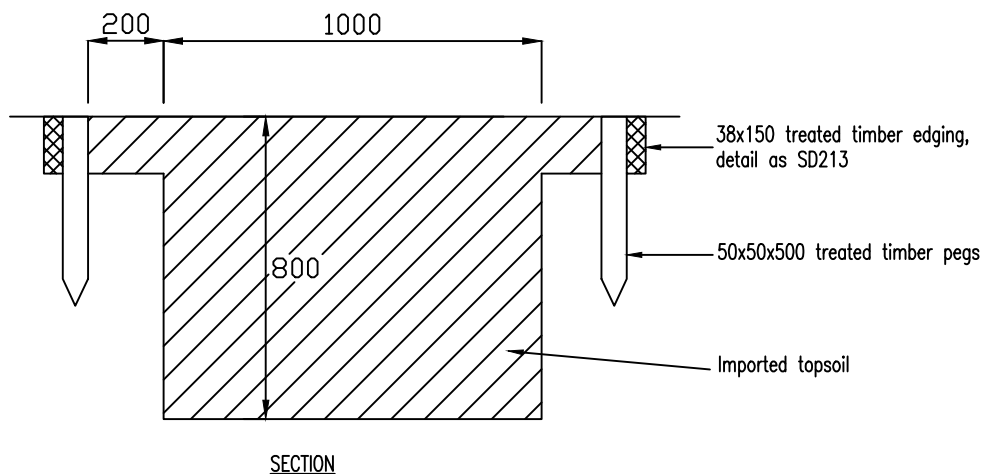
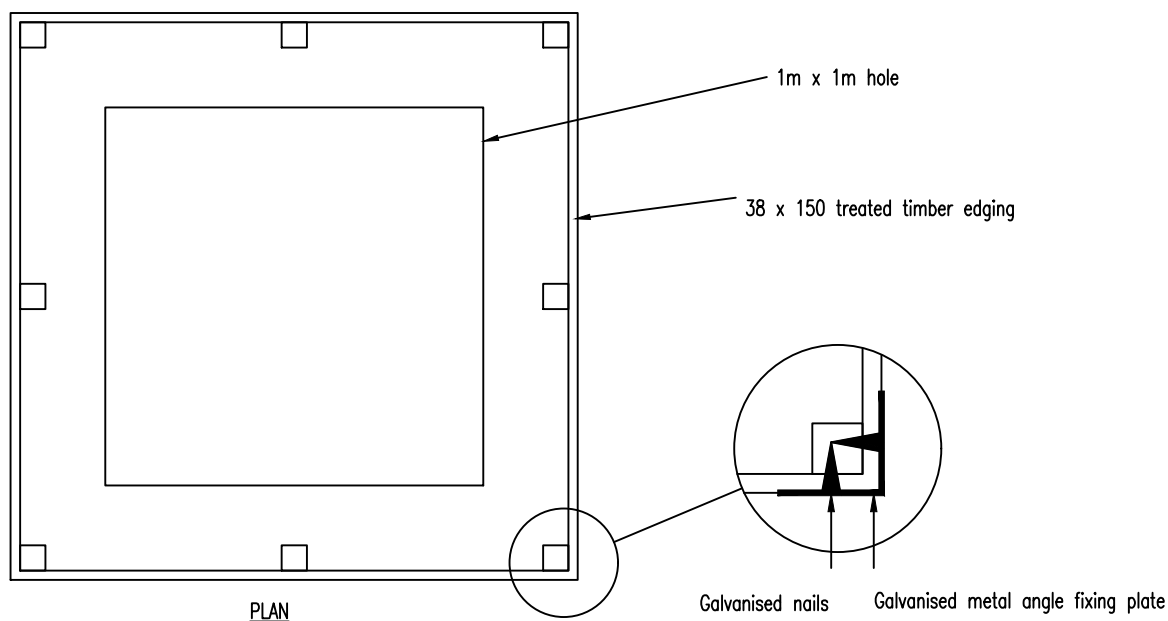
Scale

NTS

Date Drawn

NOV 2015

TREE PIT IN SUITABLE SOIL



ALTERNATIVE CONCRETE HAUNCH EDGING (as SD 02-005) For use in footway areas



STANDARD DETAILS

04-TRAFFIC MANAGEMENT

BUS STOPS SAFE HAVENS

DRAWING NUMBER

Drawing

SD 04-016

Revision

E

Drawn by

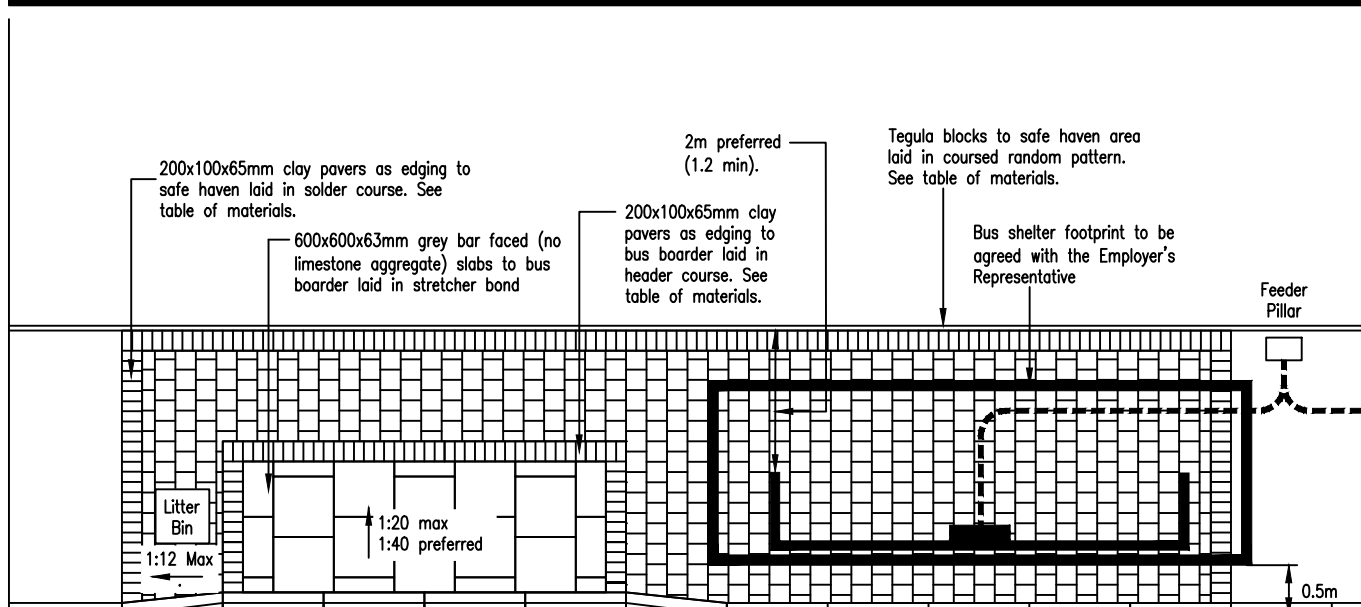
HJ

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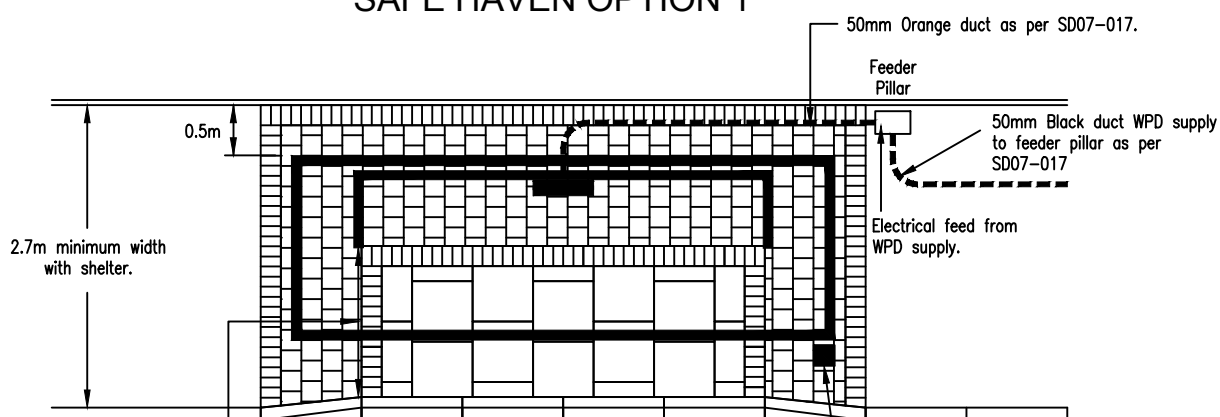
NTS

Date Drawn

AUG 2020



SAFE HAVEN OPTION 1



SAFE HAVEN OPTION 2



1. 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 into carriageway. Length of 180 height kerbs = 3m minimum, 4m preferred.
2. The RAL colour of the tegula paving will be as specified by the Employer's representative.
3. Clay pavers to be to BS EN 1344 and concrete flags to BS EN 1339.
4. Shelter configuration to be agreed with BCC Public transport.
5. Shelter foundation at 300mm below finished surface level. Utilities depths to be identified and adjusted by agreement.
6. Feeder pillar type to be specified by street lighting engineer.
7. Avoid gullies on lead in tapers.
8. iPoint to be located 3m from shelter.
9. Minimum 2 cycle stands to be provided at Metro Bus stops.
10. See SD04-017 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	Red+Charcoal	Penant Grey



STANDARD DETAILS

04-TRAFFIC MANAGEMENT

BUS STOP CARRIAGEWAY CONSTRUCTION

DRAWING NUMBER

Drawing

Revision

SD 04-017

Drawn by

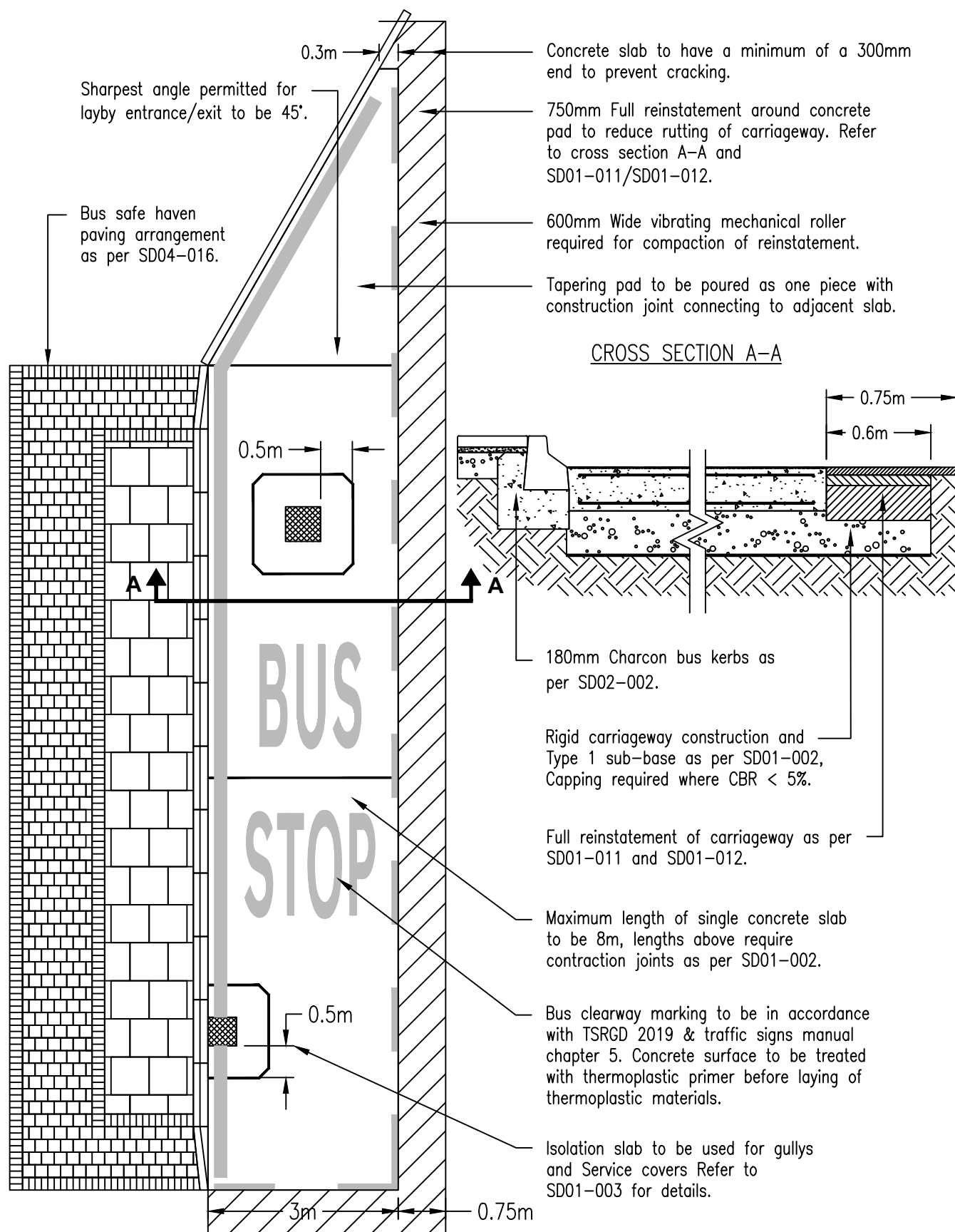
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Scale

NTS

Date Drawn

FEB 2020





STANDARD DETAILS

04-TRAFFIC MANAGEMENT

K BARRIERS

DRAWING NUMBER

Drawing

Revision

SD 04-018

Drawn by

HJ

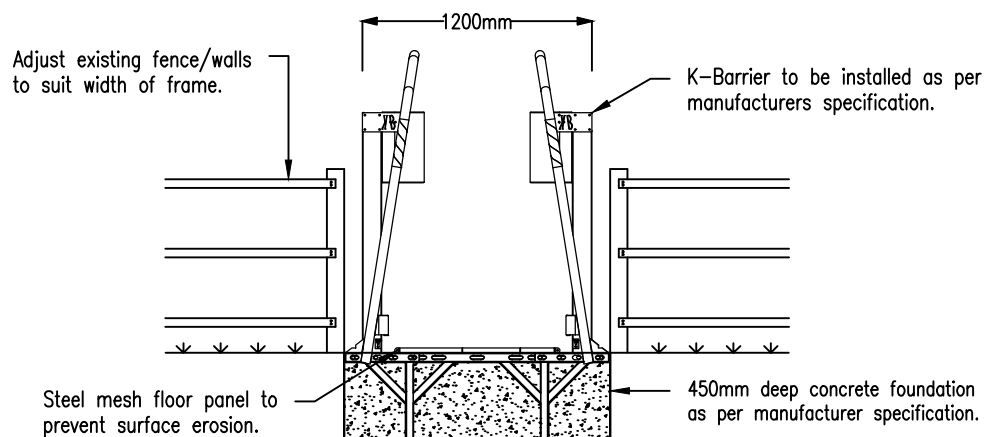
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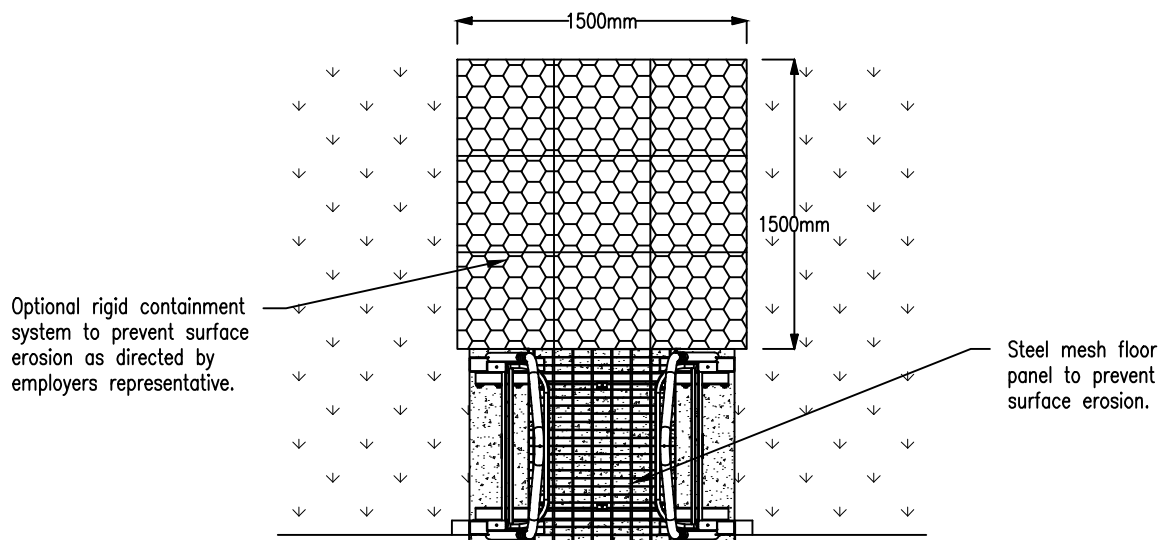
Date Drawn

SEP 2020

Front Elevation



Plan View



NOTES:-

1. Dual adjustment k barrier or similar approved.
2. K barriers squeeze plates width to be specified by employers representative.
3. Finish to be powder coated black.
4. High visibility labels to be fixed to frame.
5. Plate width to be set at maximum width unless specified by Employers Representative.



STANDARD DETAILS

05-DRAINAGE

MANHOLE TYPE A Cover to pipe soffit 3.0m to 6.0m

DRAWING NUMBER

Drawing

SD 05-001

Revision

F

Drawn by

HJ

Scale

NTS

Date Drawn

FEB 2020

Cover and frame to be Double Triangular non-rocking, 150 deep in highways & 675 clear opening to BS EN 124, D400 BS.7903 & HA104/09

Class B Engineering brickwork 225 thick. Min 2 courses, max 4 courses. Bonded with polyester resin mortar.

675mm max to first ladder rung from cover level

GRP ladder to BS EN13706-2 and BS EN13706-3. Lifting eyes in concrete rings to be pointed.

ST4 concrete surround 150 thick Designed to BRE special Digest 1 concrete in Aggressive ground

High strength (min 20 thick) benching to be brought up to a dense smooth face, neatly shaped and finished to all branch connections. Benching slope 1:10 to 1:30

ST4 concrete

75mm GEN1 blinding

Bedding and haunch to frame: polyester resin in vehicular areas, Class 1 mortar elsewhere

Heavy duty reinforced concrete slab & chamber sections to BS EN1917 & BS5911-3 bedded with mastic sealant (plastomeric/elastomeric) or mortar.

Bottom precast section to be built into base concrete min 75mm

Soffit of branch pipes level with soffit of outgoing main pipeline

Channels formed in Precast, in-situ or V.C half pipe

In channels greater than 600Ø self-cleansing toe holes must be provided in benching set out at 300 centers vertically and horizontally.

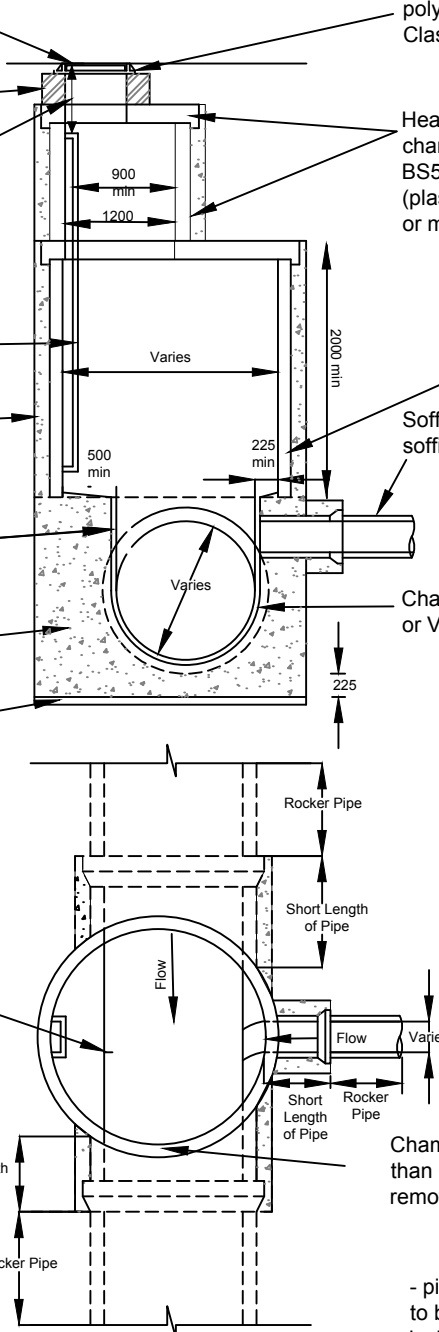
- openings to be located centrally over 900mm shaft and offset circa 200mm for 1200mm diameter shaft with ladder.

Chambers with outgoing pipes greater than 600Ø shall be fitted with a removable safety chain.

- pipe joint with channel to be located min 100mm inside face of manhole

Notes

1. All dimensions are in millimetres.
2. All cement used in Precast or in-situ concrete to be Sulphate resisting.
3. Insitu concrete to BS8500 - 1:2015, and to BRE Special Digest 1:2005 - DC3 to table D1 & D2.
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 ST4 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, 150mm deep with 675mm clear opening or similar approved.
8. Refer to SD05-008 for trench backfill and pipe details.





STANDARD DETAILS

05-DRAINAGE

MANHOLE TYPE B Cover to pipe soffit 1.5m to 3.0m

DRAWING NUMBER

Drawing

SD 05-002

Revision

F

Drawn by

HJ

Scale

NTS

Date Drawn

FEB 2020

Cover and frame to be double triangular non-rocking, 150 deep in highways & 675 clear opening to BS EN 124, D400 & BS.7903 & HA104/09

Class B Engineering brickwork 225 thick. Min 2 courses, max 4 courses. Bonded with polyester resin mortar.

675mm max to first rung from cover level

Stop Irons to be BS EN 13101: 2002 Type D Class 1 at 300 centers. Double width (250mm) encapsulated in plastic

ST4 concrete 150 thick

High strength concrete benching to be brought up to a dense smooth face, neatly shaped and finished to all branch connections, crossfall 1 in 12 to 1:30

ST4 concrete

Bedding and haunch to frame: polyester resin in vehicular areas, Class 1 mortar elsewhere

Heavy duty reinforced concrete slab & chamber sections to BS EN 1917 & BS5911-3 .bedded with mastic sealant(plastomeric/elastomeric)

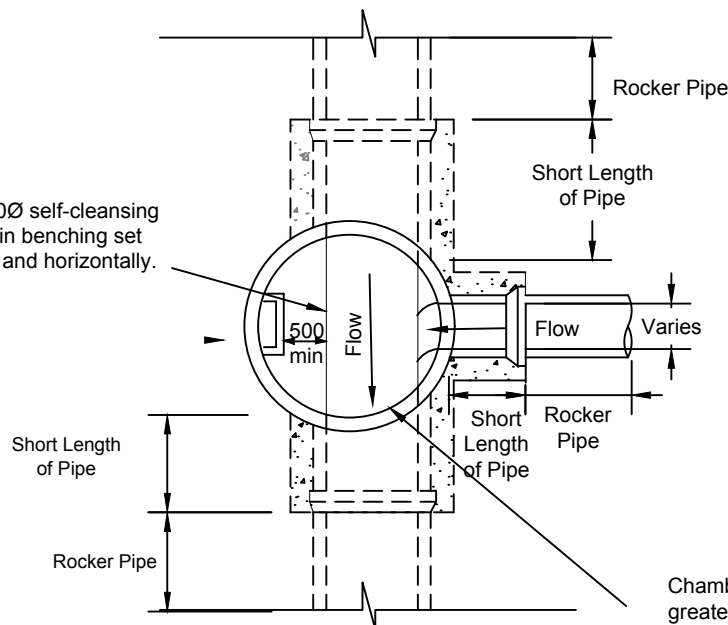
Bottom precast section to be built into base concrete min. 75mm

Soffit of branch pipes level with soffit of outgoing main pipeline

Channels formed precast, in situ concrete or V.C half pipe

75mm GEN 1 blinding

In channels greater than 600Ø self-cleansing toe holes must be provided in benching set out at 300 centers vertically and horizontally.



Chambers with outgoing pipes greater than 600Ø shall be fitted with a removable safety chain

Notes

1. All dimensions are in millimeters.
2. All cement used in Precast or in-situ concrete to be Sulphate resisting .
3. Insitu concrete to BS8500 - 1:2015 and to BRE Special Digest 1:2005 - DC3 to table D1 & D2.
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 ST4 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, 150mm deep with 675mm clear opening or similar approved.
8. Refer to SD05-008 for trench backfill and pipe details.



STANDARD DETAILS

05-DRAINAGE

MANHOLE TYPE C Cover to pipe soffit Less than 1.5m Brick Construction

DRAWING NUMBER

Drawing

SD 05-003

Revision

F

Drawn by

HJ

Scale

NTS

Date Drawn

FEB 2020

1220 x 685 multiple clear opening 150
deep in highways to BS EN 124 D400
BS.7903 & HA 104/09

Max 675 from cover
level to first rung

ST4 Concrete
Rocker Pipe

225 thick in-situ concrete
manhole base, Grade ST4

Bedding and haunch to frame:
polyester resin in vehicular areas,
Class 1 mortar elsewhere

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

Brick Arch/lintel for pipes greater
than 225Ø

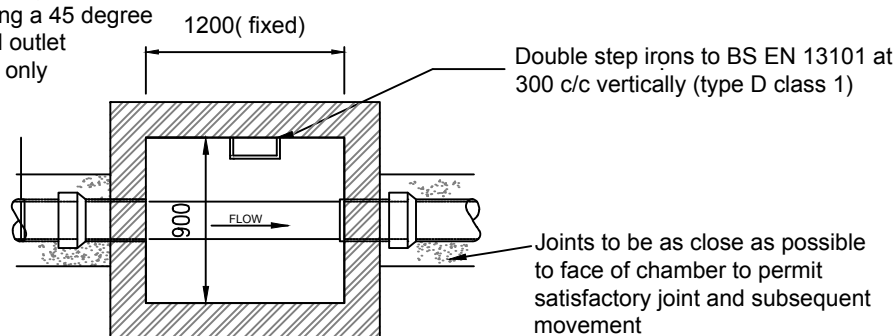
Rocker pipe with flexible joints through
concrete surround at each end

Half VC pipe to be used to form
channel invert where possible.

SECTION

- Where chambers are positioned on
90 degree corners, always use the
main channel tby fitting a 45 degree
bend on the inlet and outlet
- For vehicular areas only

PLAN



Notes:

1. All cement used in precast or in-situ concrete to be sulphate resisting.
2. Insitu concrete to be GEN3 (designed to be BRE Special Digest 1 Concrete in Aggressive Ground).
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 ST4 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
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 PAM Saint-Gobain Opt-Emax Griptop
cover, 150mm deep with 675mm clear opening or similar approved.
10. Refer to SD05-008 for trench backfill and pipe details.
11. 625 x 685 W x W Chambers permitted in footways up to 600 deep by instruction of Employer representative.



STANDARD DETAILS

05-DRAINAGE

MANHOLE TYPE E Cover to pipe soffit Less than 1.5m PCC Chamber

DRAWING NUMBER

Drawing

Revision

SD 05-004

D

Drawn by

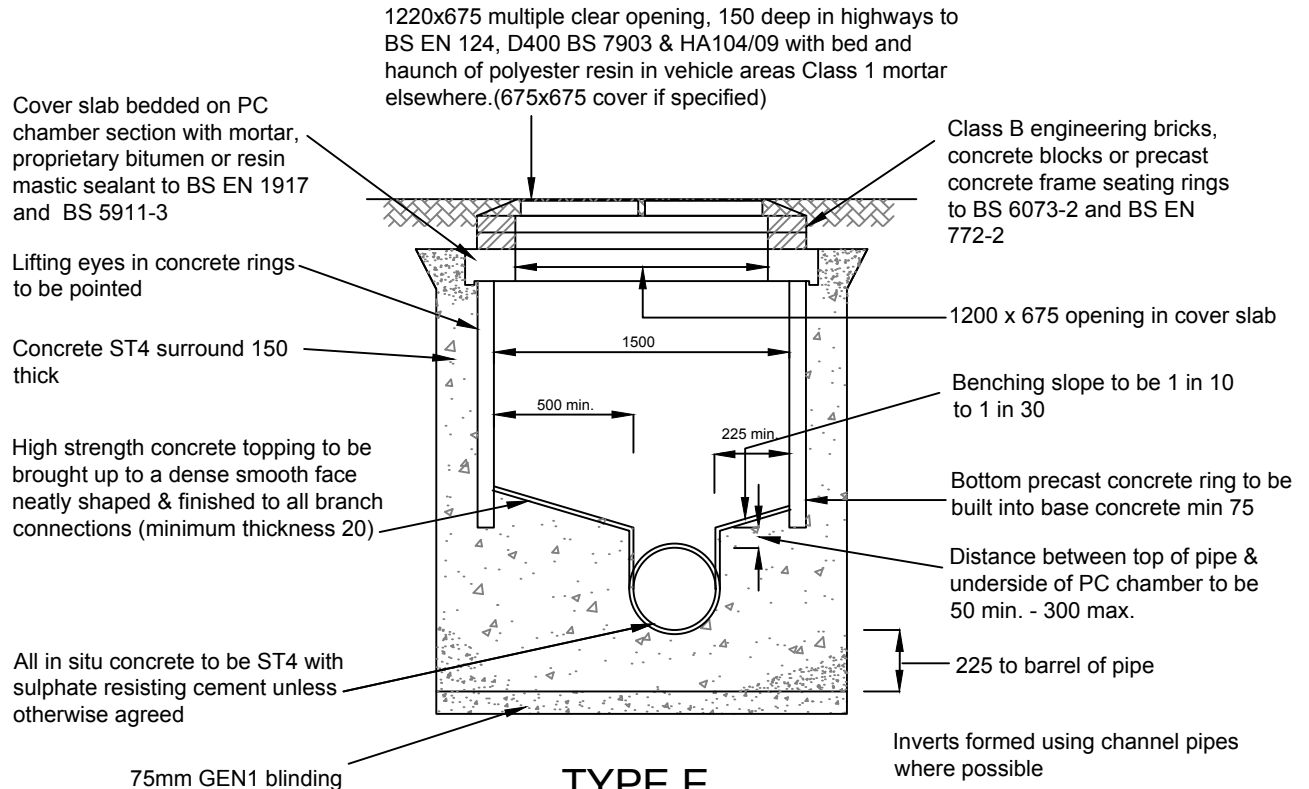
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NTS

Date Drawn

FEB 2020



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 in-situ concrete to be Sulphate resisting.
3. Insitu concrete to BS8500 - 1:2015, and to BRE Special Digest 1:2005 - DC3 to table D1 & D2.
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 ST4 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, 150mm deep with 675mm clear opening or similar approved.
8. Refer to SD05-008 for trench backfill and pipe details.



STANDARD DETAILS

05-DRAINAGE CATCHPITS

DRAWING NUMBER

Drawing

SD 05-005

Revision

E

Drawn by

HJ

Scale

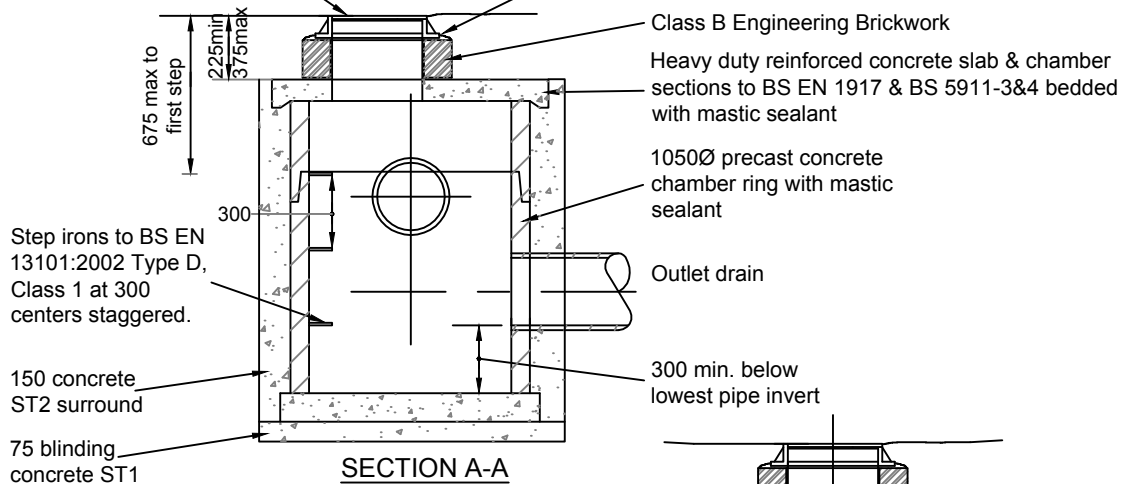
NTS

Date Drawn

FEB 2020

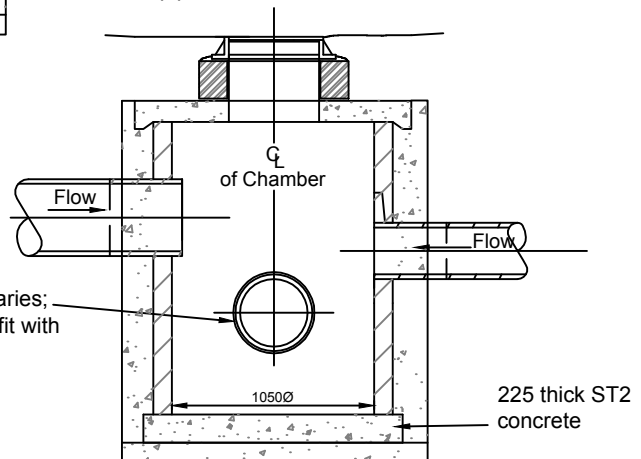
Cover and Frame to be 675x675 clear opening 150 deep in highways to EN 124 D400 + BS7903

Bed and haunching to frame:
In vehicular areas: polyester resin
Elsewhere: Class 1 mortar

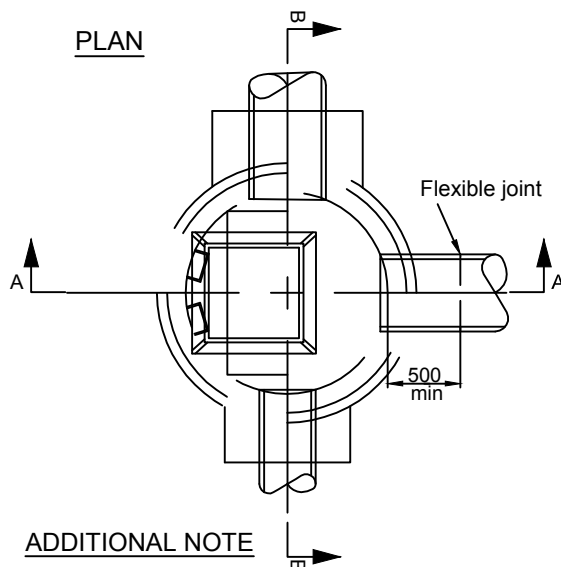


SECTION B-B

level of outfall pipe varies; generally soffit to soffit with lowest incoming pipe



PLAN



ADDITIONAL NOTE

1. 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.

NOTES

1. All dimensions are in millimeters.
2. Catchpit to be constructed in precast concrete to BS 5911-3&4 + EN1917.
2. All cement used in Precast or in-situ concrete to be Sulphate resisting.
3. Insitu concrete to BS8500 - 1:2015, and to BRE Special Digest 1:2005 - DC3 to table D1 & D2.
3. Maximum pipe diameter permitted-450.
4. Rocker pipe lengths: 150 - 600Ø - 0.6m long:
601 - 750Ø - 1.0m long:
over 750Ø - 1.25m long
5. To be installed upstream of soakaways.
6. Maximum depth of catchpits to be 3 metres unless otherwise agreed.
7. Covers to be marked with BCC or similar clear markings to note that these are catch pits.
8. Add grip top detail from previous.



STANDARD DETAILS

05-DRAINAGE

SOAKAWAYS OFF HIGHWAY ONLY

DRAWING NUMBER

Drawing

Revision

SD 05-006

E

Drawn by

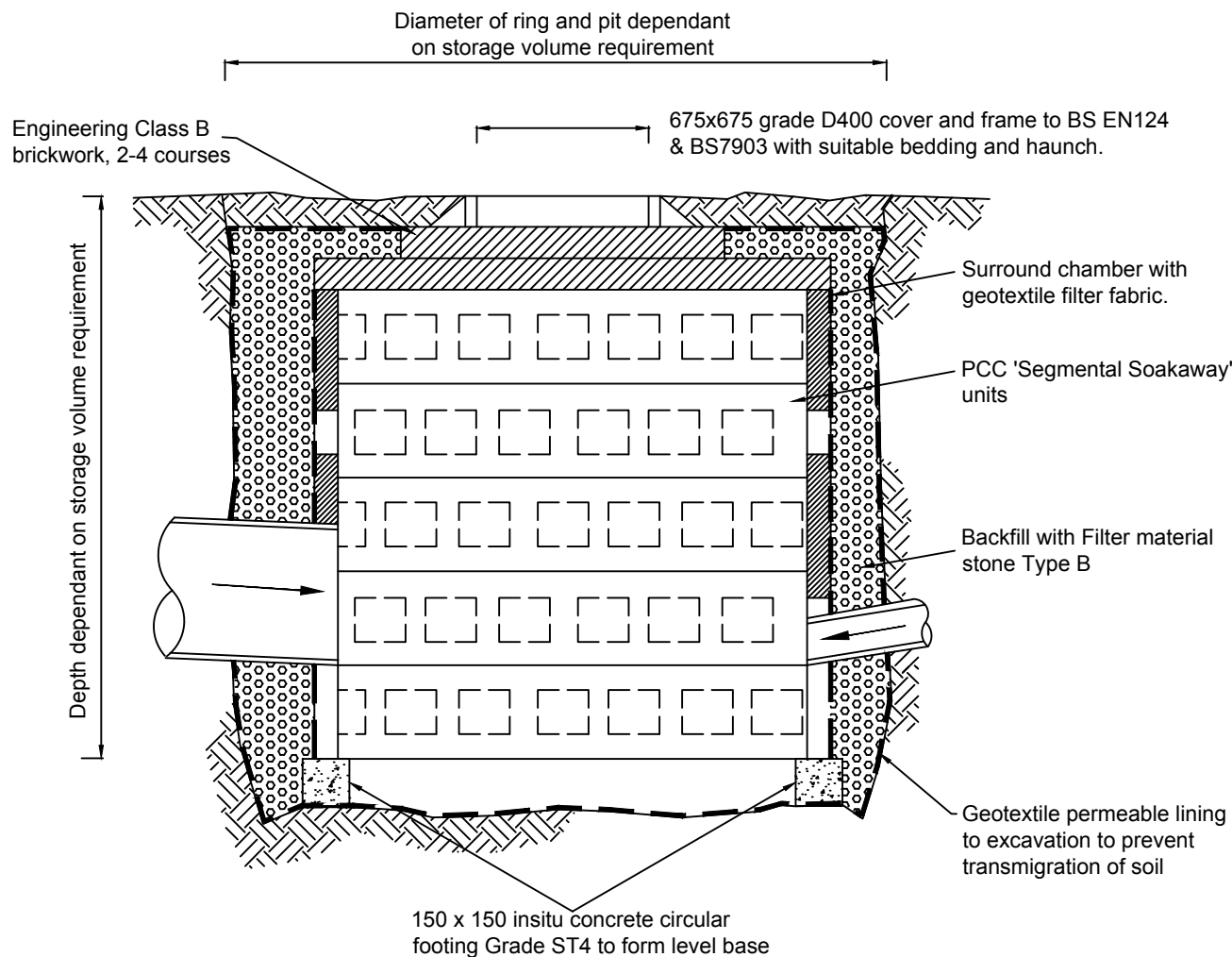
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Scale

NTS

Date Drawn

FEB 2020



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 in-situ concrete to be Sulphate resisting.
5. Insitu concrete to BS8500 - 1:2015, and to BRE Special Digest 1:2005 - DC3 table D1 & D2.
6. Avoid sitting soaks close to buildings and structures 5m minimum recommended distance.



STANDARD DETAILS

05-DRAINAGE

Road (Highways) GULLIES

DRAWING NUMBER

Drawing

Revision

SD 05-007

E

Drawn by

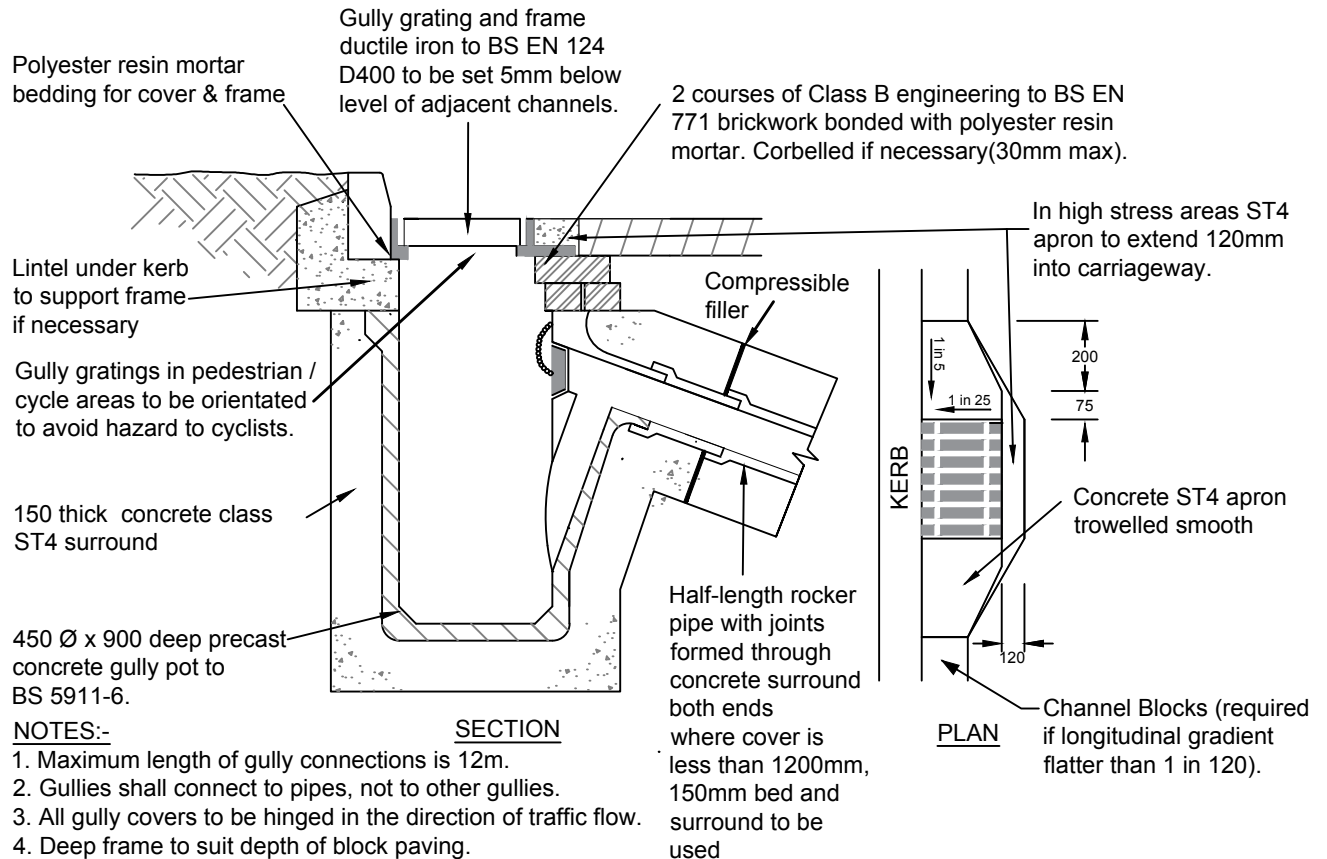
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Date Drawn

OCT 2020

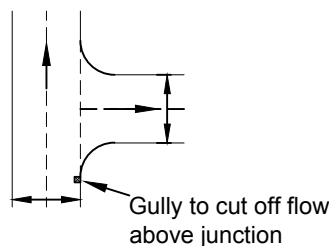


NOTES:-

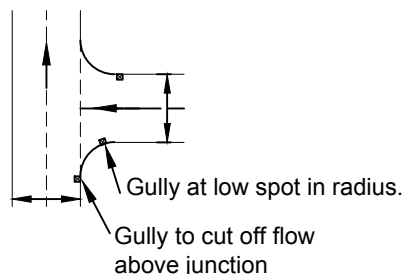
1. Maximum length of gully connections is 12m.
2. Gullies shall connect to pipes, not to other gullies.
3. All gully covers to be hinged in the direction of traffic flow.
4. Deep frame to suit depth of block paving.
5. All cement used in Precast or in-situ concrete to be Sulphate resisting.
6. Insitu concrete to BS8500 - 1:2015, and to BRE Special Digest 1:2005 - DC3 to table D1 & D2.

POSITIONING OF GULLIES AT JUNCTIONS AND IN TURNING HEADS

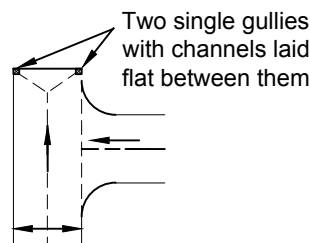
- Direction of down gradient
- Direction of crossfall
- Channel or crown of road



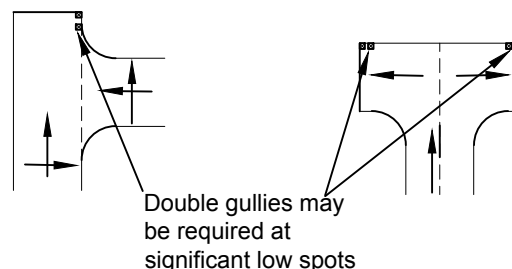
Junctions



(N.T.S)



Turning Heads



Three gullies necessary to drain low spots

05-DRAINAGE

DRAWING NUMBER

Drawing

Revision

SD 05-008

Drawn by

HJ

Date Drawn

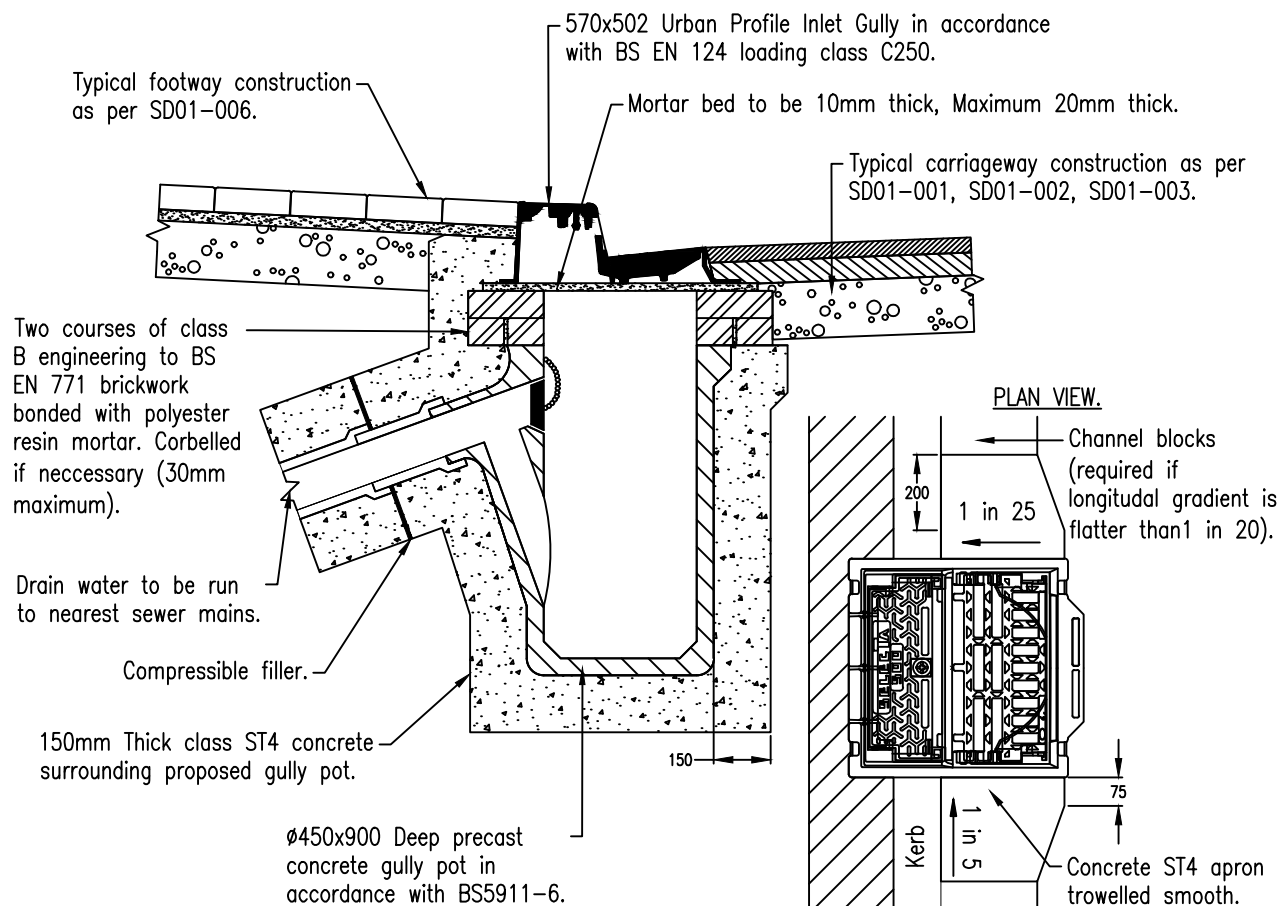
FEB 2020

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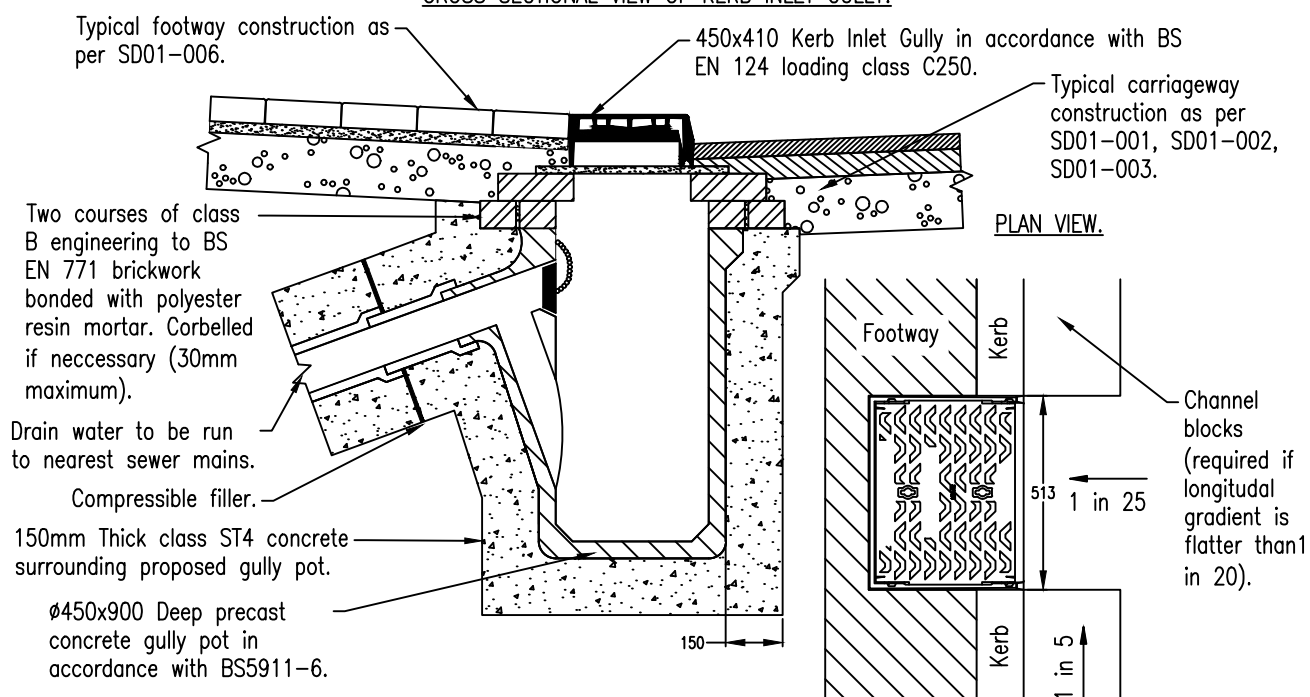
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ROAD/HIGHWAYS INLET GULLIES

CROSS SECTIONAL VIEW OF COMBINED GULLY AND KERB INLET GULLY.



CROSS SECTIONAL VIEW OF KERB INLET GULLY.





STANDARD DETAILS

05-DRAINAGE

TRENCH BACKFILL AND PIPE DETAILS

DRAWING NUMBER

Drawing

SD 05-009

Revision

D

Drawn by

HJ

Scale

NTS

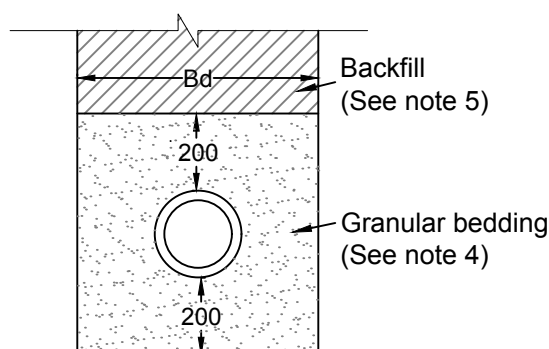
Date Drawn

FEB 2020

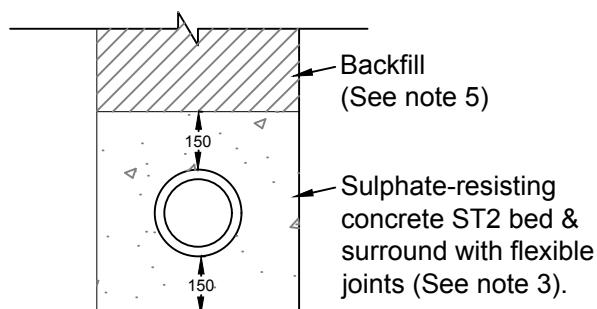
Notes

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

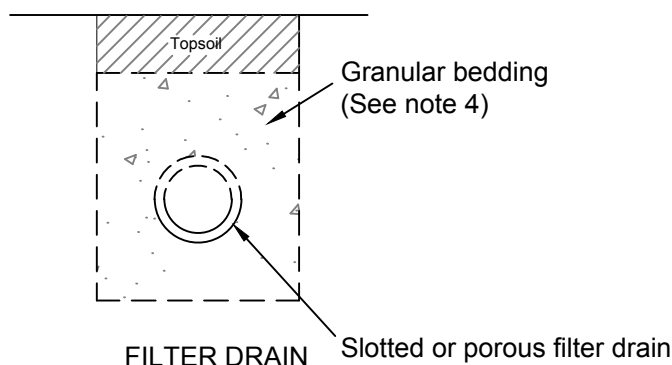
- Permitted Materials are:-
 - precast concrete
 - vitreous clay (plain ended with flexible polypropylene coupling in incorporating elastomeric seals to BS.EN.295-1)
 - Rigidrain or similar approved.
- Full concrete surround is required
 - (a) to all gully connections
 - (b) if cover is less than 1.2m
 - (c) if cover is more than 6m
 - (d) if trench is wider than the maximum trench width as given above.
- 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.
- Granular bedding material shall be as defined in BS EN1610:2015.
- 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.
- Clay puddle waterstops shall be 300 thick extending fully through the bed and surround and backfill if pervious ground immediately downstream of sumps.
- In poor ground it may be necessary to wrap the bed and surround in geotextile filter fabric to prevent migration of material into the granular bedding.



**TYPE S
GRANULAR SURROUND**
Bedding factor 2.2



**TYPE Z
CONCRETE SURROUND**
Bedding factor 2.6



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.



STANDARD DETAILS

05-DRAINAGE

Storm Water Outfalls For pipes up to max 500mm diameter

DRAWING NUMBER

Drawing

SD 05-010

Revision

F

Drawn by

HJ

Scale

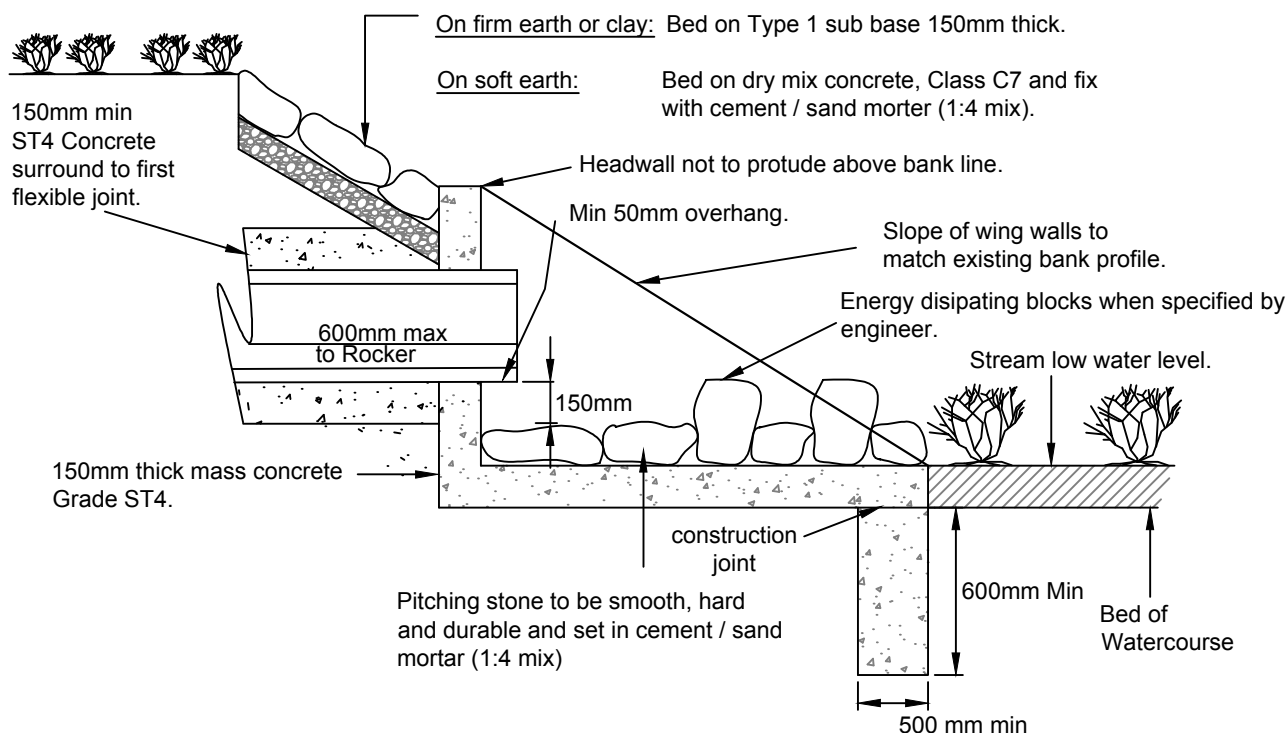
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Date Drawn

FEB 2020

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 in-situ concrete to be Sulphate resisting.
3. Insitu concrete to BS8500 - 1:2015, and to BRE Special Digest 1:2005 - DC3 to table D1 & D2.
4. Work on or close to a main river will require a Flood Risk Activity Permit from the Environment Agency.



STANDARD DETAILS

05-DRAINAGE

Storm Water Outfalls For Pipes up to 150mm

DRAWING NUMBER

Drawing

SD 05-011

Revision

E

Drawn by

HJ

Scale

NTS

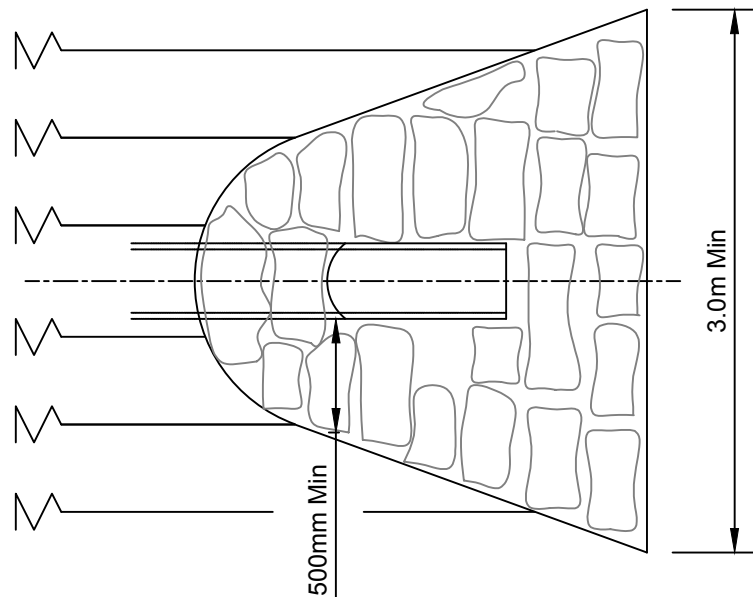
Date Drawn

FEB 2020

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

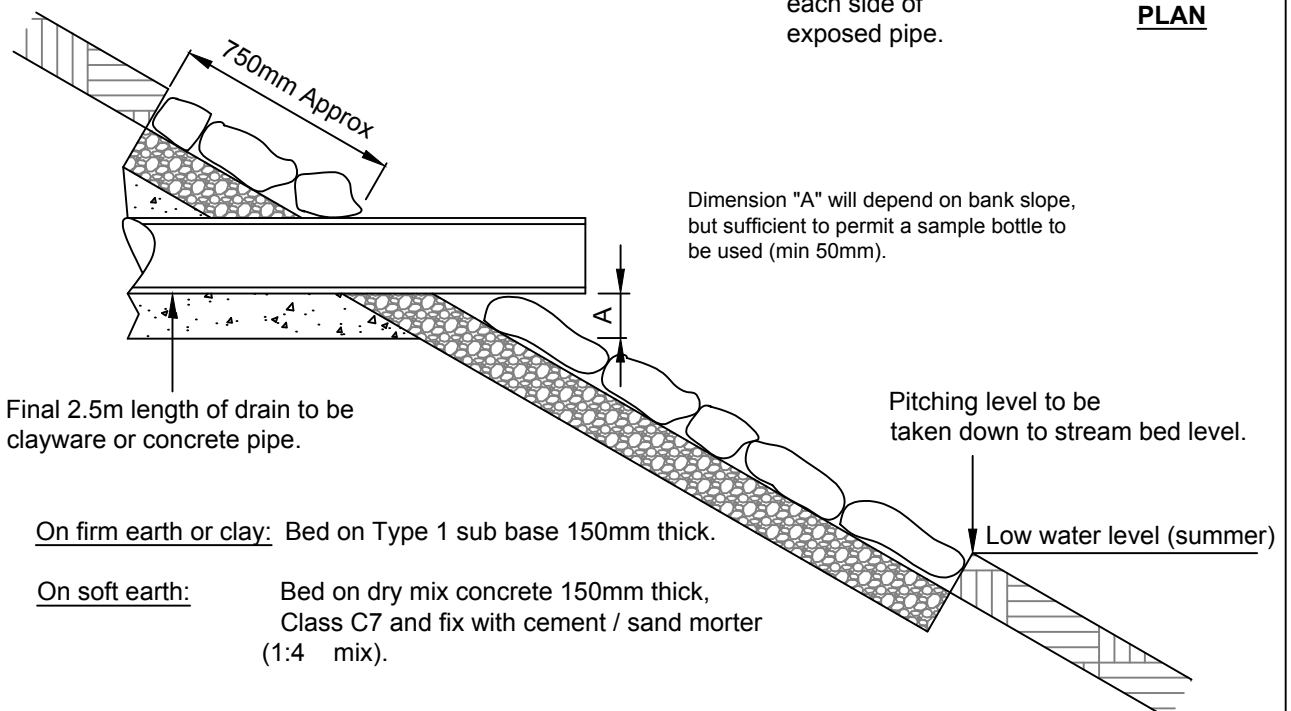
Notes

1. Pitching stone, 250-300mm nominal diameter. Where appropriate, 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 in-situ concrete to be Sulphate resisting
4. Insitu concrete to BS8500 - 1:2015, and to BRE Special Digest 1:2005 - DC3 to table D1 & D2.
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





STANDARD DETAILS

05-DRAINAGE

Storm Water Outfalls For Pipes 200mm to 1750mm diam

DRAWING NUMBER

Drawing

SD 05-012

Revision

C

Drawn by

HJ

Scale

NTS

Date Drawn

FEB 2020

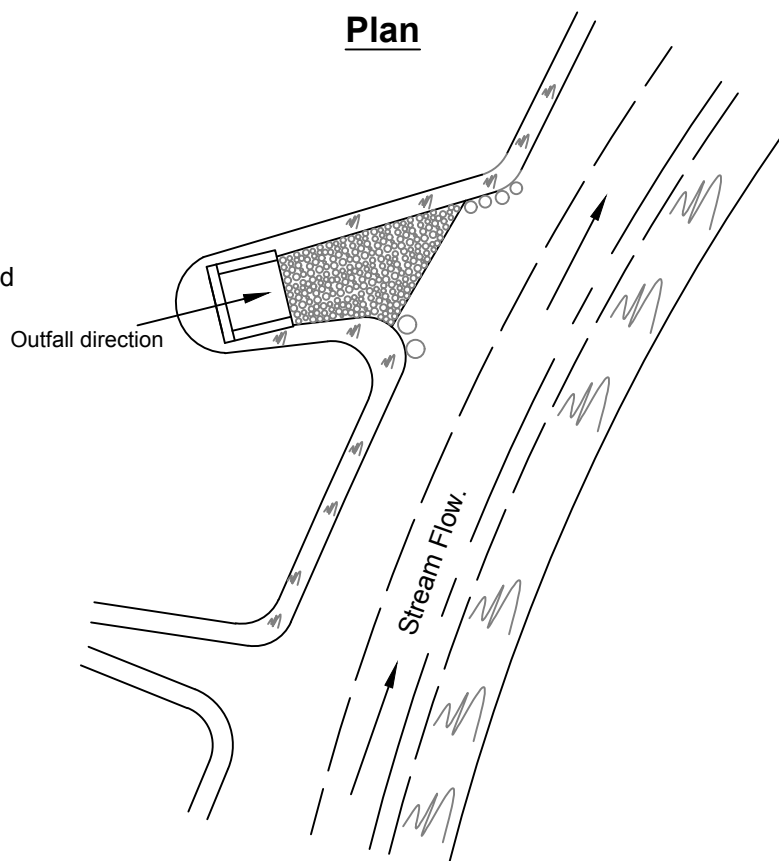
Type 3. General requirements for outfalls through a bank, for pipes of 150mm to 1750mm diam. Outfall positioned to discharge at 45° to direction of flow and set back from channel in a small bay.

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).



Note:

1. Details to be submitted by applicant for approval prior to construction.
2. See Standard Detail Drawing 05-009 for outfall construction detail.
3. Work on or close to a main river will require a Flood Risk Activity Permit from the Environment Agency.



STANDARD DETAILS

02-KERBS

TYPICAL TRASH SCREEN

DRAWING NUMBER

Drawing

Revision

SD05-013

Drawn by

HJ

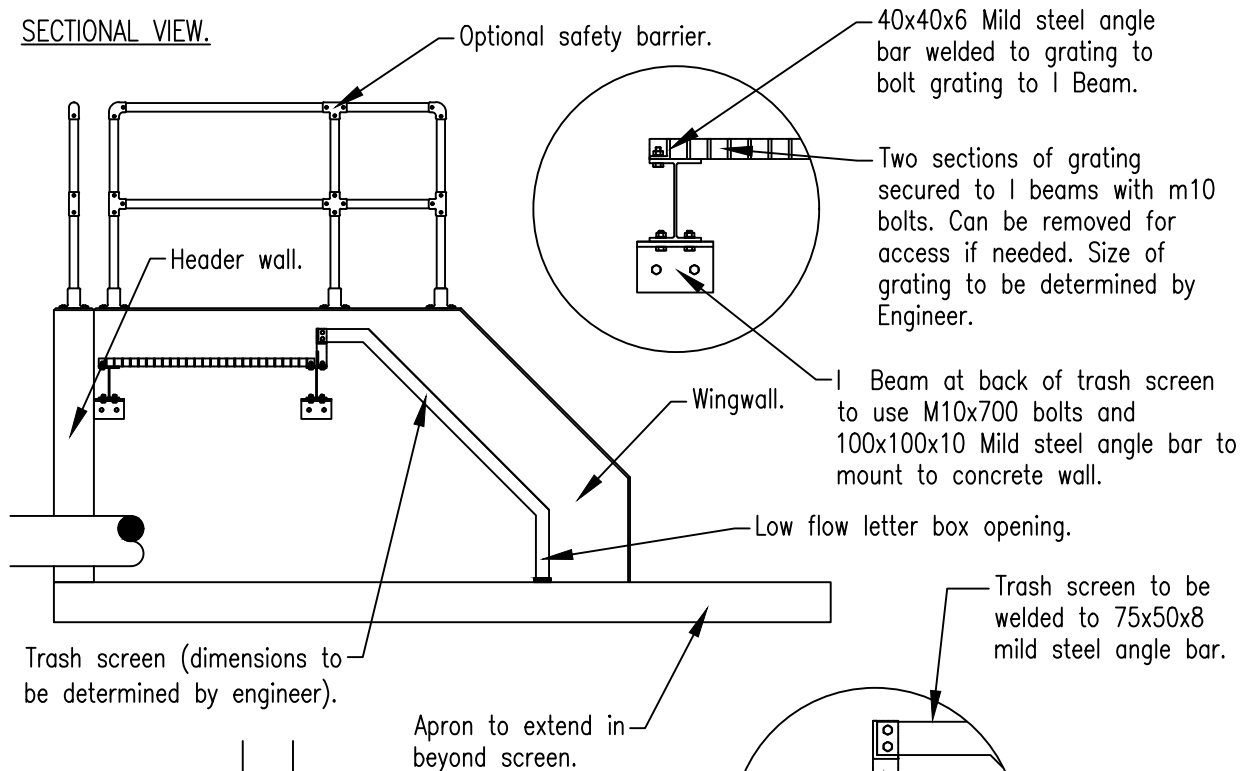
Scale

NTS

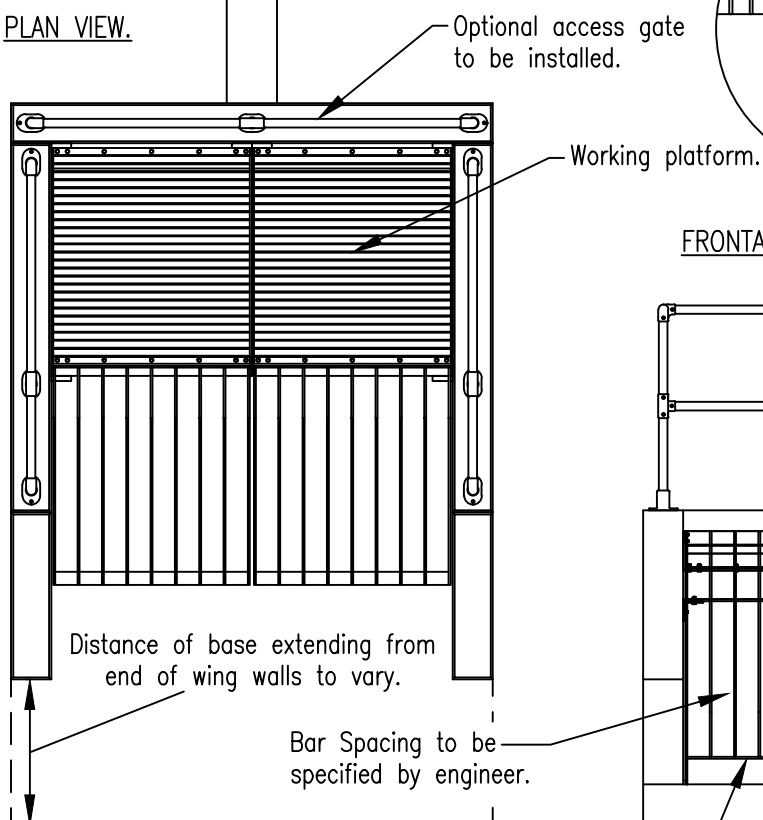
Date Drawn

FEB 2020

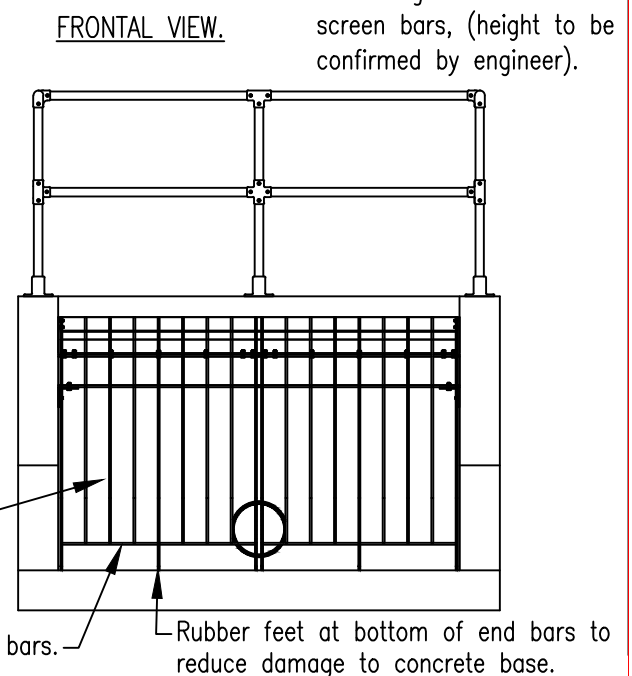
SECTIONAL VIEW.



PLAN VIEW.



FRONTAL VIEW.





STANDARD DETAILS

05-DRAINAGE

DRAINAGE

Swales

DRAWING NUMBER

Drawing

Revision

SD 05 - 14

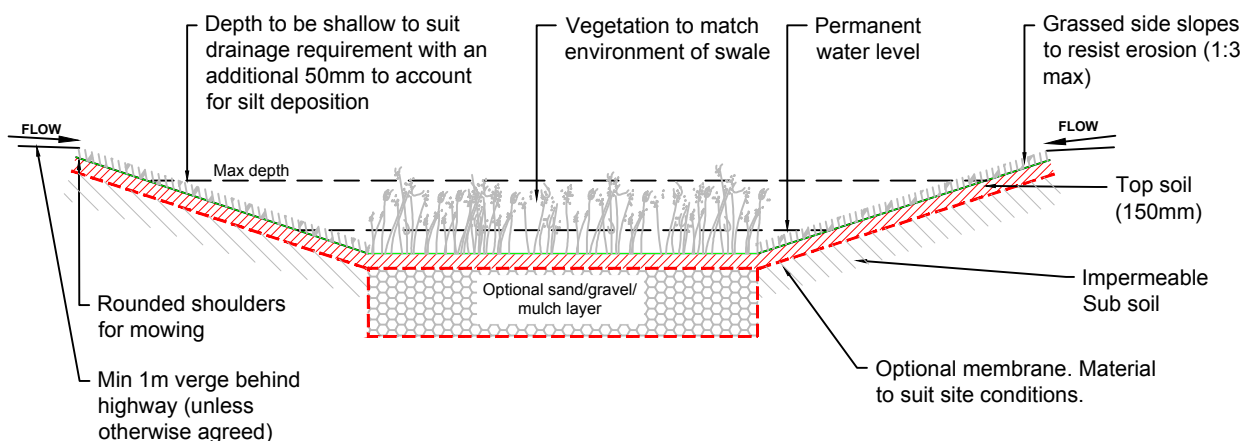
B

Drawn by
ACB

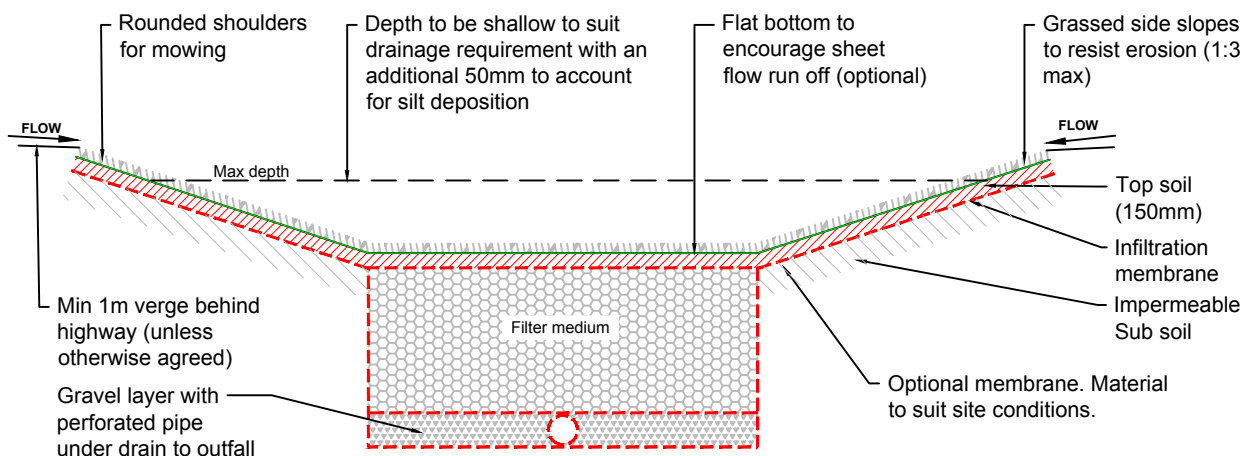
Scale
NTS

Date Drawn
JAN 2020

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-05-010)
3. For discharge from highway to swale/pond, keep depths minimized. refer to detail SD 05-15.
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 maximizes 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

05-DRAINAGE

DRAINAGE

Filter Drains

DRAWING NUMBER

Drawing

SD 05 - 15

Revision

A

Drawn by

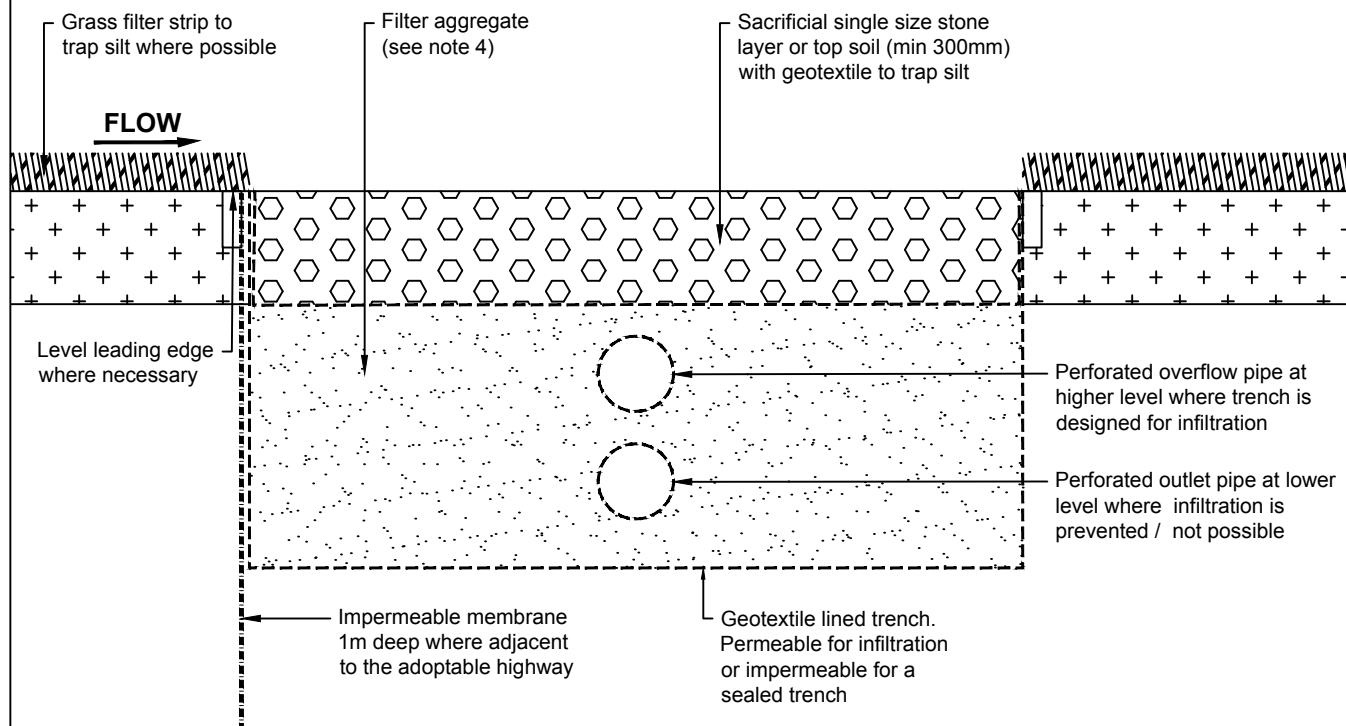
ACB

Scale

NTS

Date Drawn

JAN 2020



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

05-DRAINAGE

DRAINAGE Permeable Paving

DRAWING NUMBER

Drawing

SD 05 - 16

Revision

A

Drawn by

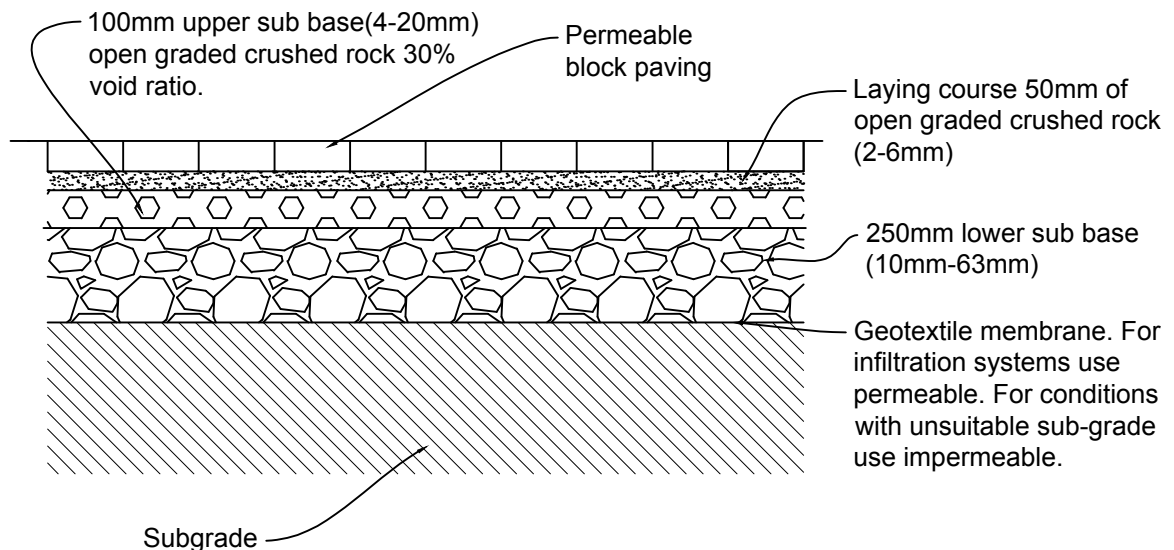
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Scale

NTS

Date Drawn

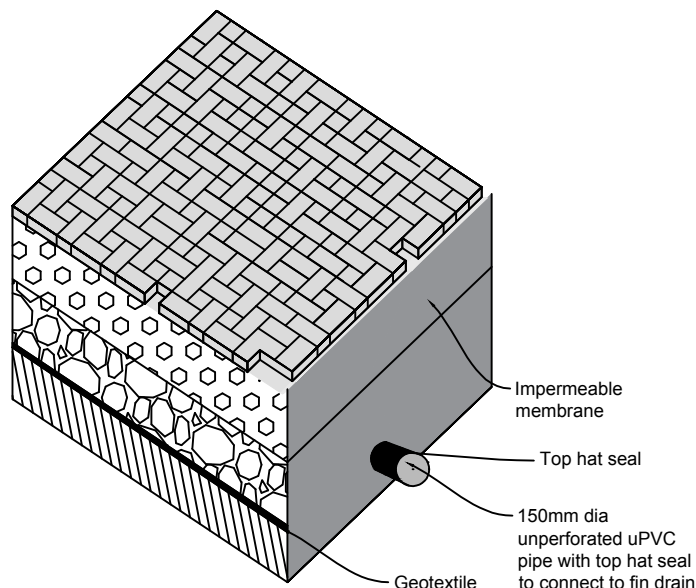
SEP 2020



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 rock as per BSEN 13242:2002.



STANDARD DETAILS

05-DRAINAGE

DRAINAGE KERB OUTLETS TO SWALES

DRAWING NUMBER

Drawing

SD 05 - 17

Revision

B

Drawn by

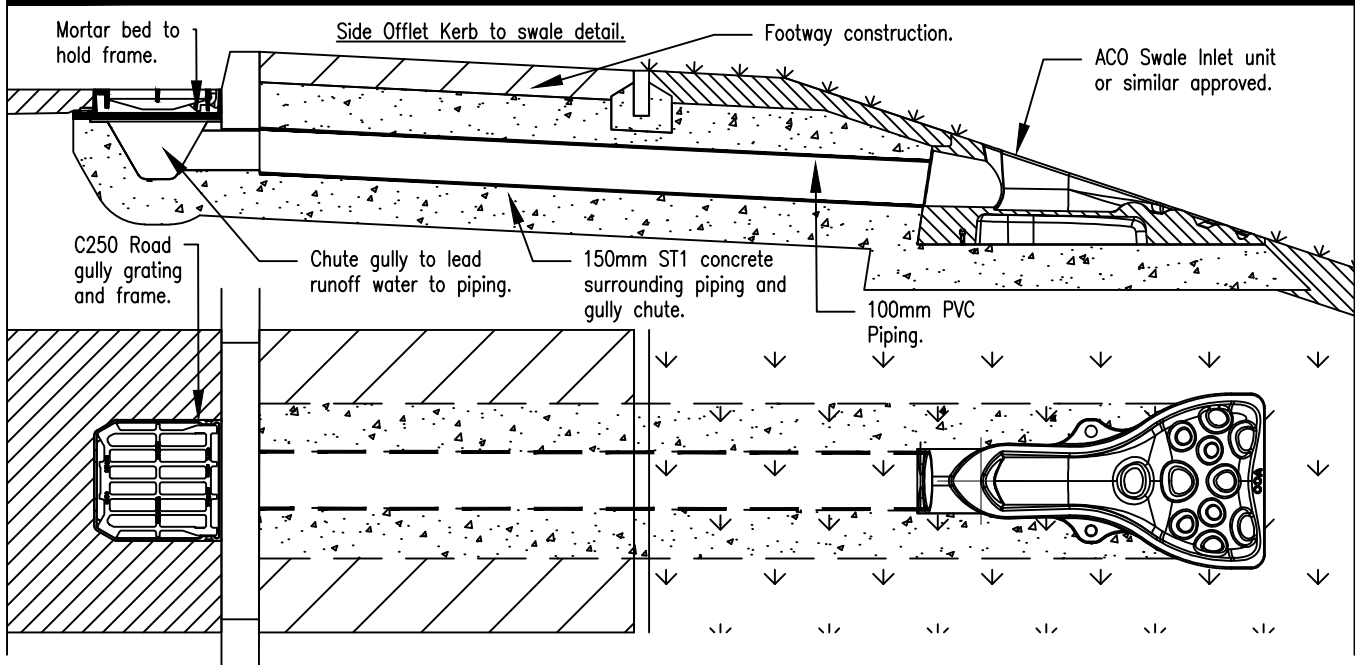
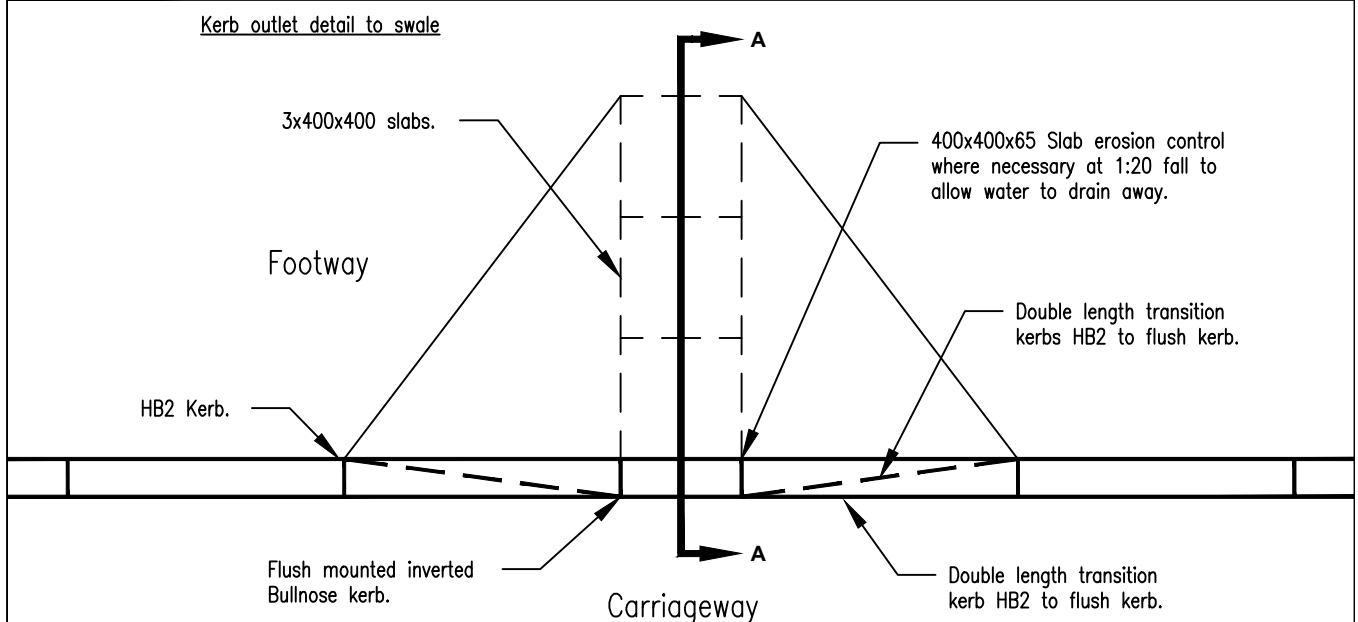
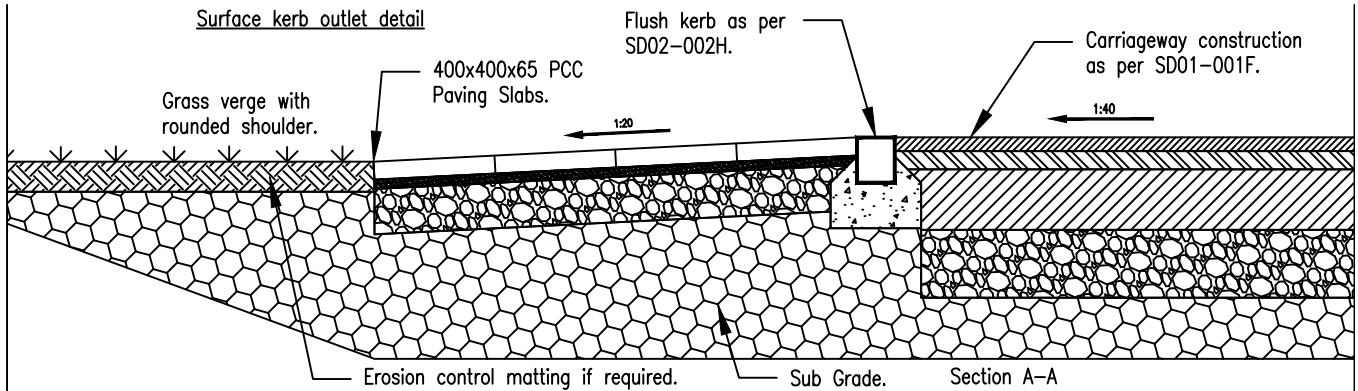
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1:25

Date Drawn

FEB 2020





STANDARD DETAILS

06-TRAFFIC SIGNALS

TRAFFIC SIGNALS - BRICK ACCESS CHAMBER

(CARRIAGEWAYS)

DRAWING NUMBER

Drawing

SD 06-001

Revision

E

Drawn by

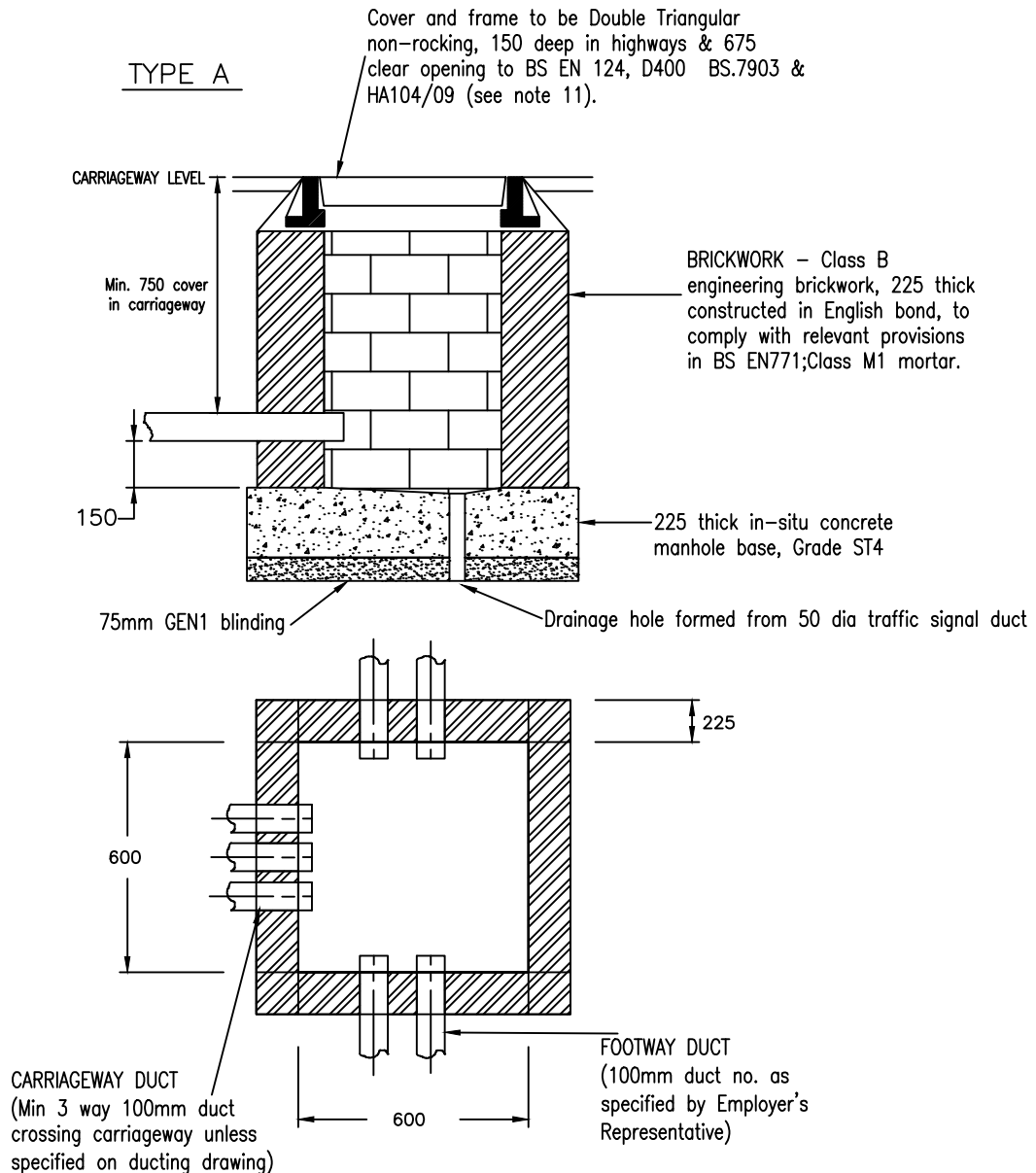
HJ

Scale

N.T.S.

Date Drawn

FEB 2020



NOTES

- DMHRB Specification for Roads and Bridges applies with additions and amendments and any Bristol City Council additional or substitute.
- ALL DIMENSIONS ARE IN MILLIMETRES.
- Entry of all ducts into chambers should not protrude into the chamber more than 25mm. Ducts should be installed flush with sidewalls.
- Voids around ducts and in redundant holes to be blocked & finished flush with inside face of chamber
- 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.
- Base to be U2 finish.
- Plastic access chambers see Standard Detail SD06-002.
- Orientation and duct entry positions to be agreed with the Employer's Representative.
- Ducts to be fitted with continuous unknotted 6mm dia blue polypropylene draw rope – ends to be fixed.
- Backfill to be agreed with the Employer's Representative. Reinstatement to match existing pavement or verge.
- 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.
- 'English Bond' method of construction, 'Class B Engineering brickwork'.
- Only to be used in carriageways, when approved by BCC/employer's representative.



STANDARD DETAILS

06-TRAFFIC SIGNALS

TRAFFIC SIGNALS - TWIN WALL MODULAR ACCESS CHAMBERS

(FOOTWAYS)

DRAWING NUMBER

Drawing

SD 06-002

Revision

E

Drawn by

HJ

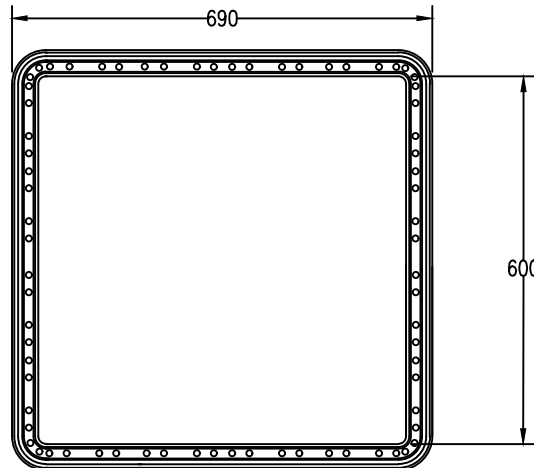
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Date Drawn

FEB 2020

TYPES B, C & D



CHAMBER DIMENSIONS (nominal)

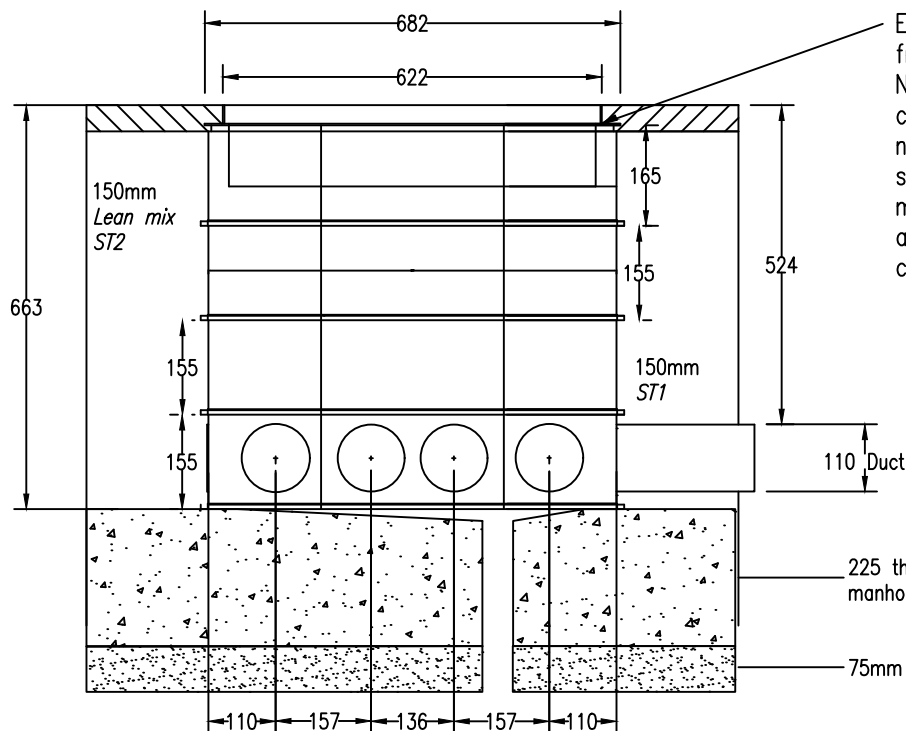
Type B1 : 600 x 600

Type B2 : As B1 plus extension
for 750 cover

Type C1 : 450 x 450

Type D : 300x450

NAL twin STAKKA box or
similar approved.



Extra deep cover and
frame in verge or footway.
NAL Hi Top C250
composite cover with
non-slip tread pattern or
similar approved. No
mortar surround in paved
areas internally bolted to
chambers in verges.

NOTES

- DMRB Specification for Roads and Bridges applies with additions and amendments and any Bristol City Council additional or substitute.
- ALL DIMENSIONS ARE IN MILLIMETRES.
- Entry of all ducts into chambers should not protrude into the chamber more than 25mm. Ducts should be flush with sidewalls.
- Voids around ducts and in redundant holes to be blocked & finished flush with inside face of chamber.
- 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.
- Base to be U2 finish with falls to drain hole.
- Ducts to be fitted with continuous unknotted 6mm dia blue polypropylene draw rope – ends to be fixed.
- Backfill to be agreed with the Employer's Representative. Reinstatement to match existing pavement or verge
- 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.



STANDARD DETAILS

06-TRAFFIC SIGNALS

TRAFFIC SIGNALS DETECTOR LOOP BOX

DRAWING NUMBER

Drawing

SD 06-003

Revision

E

Drawn by

HJ

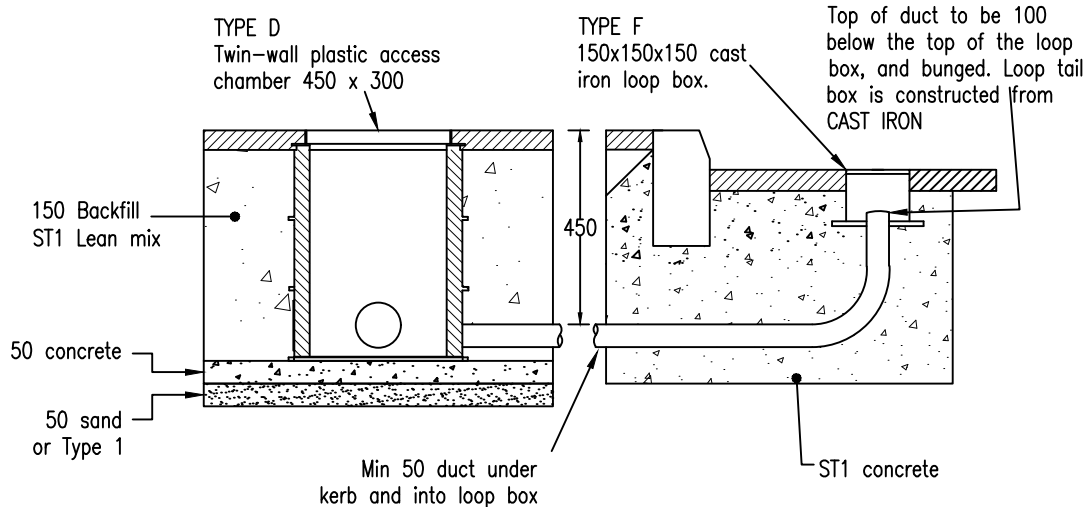
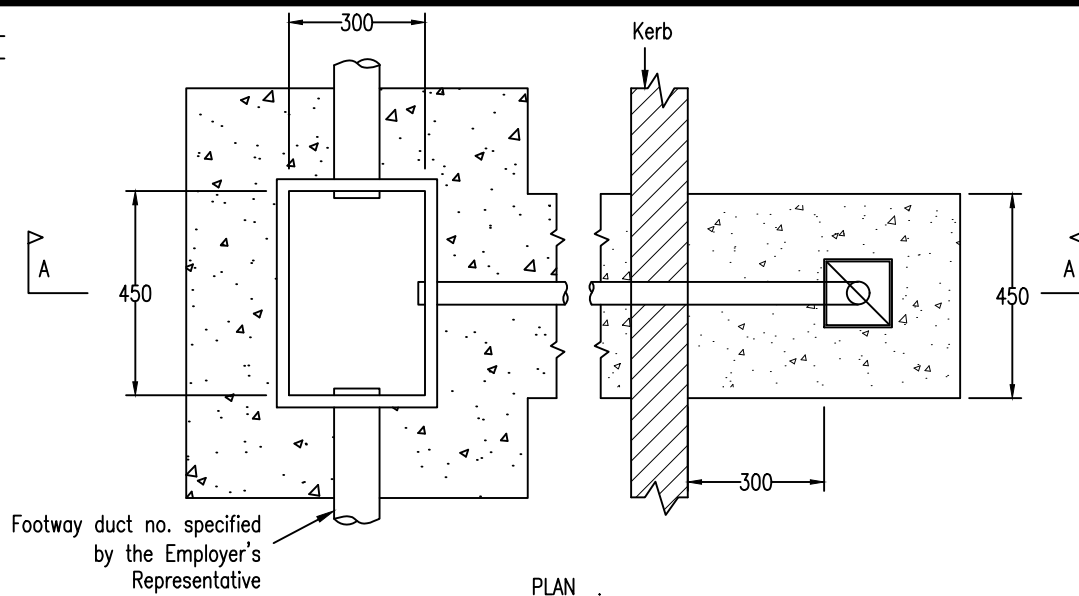
Scale

NTS

Date Drawn

MAR 2020

TYPES E & F



SECTION A-A

NOTES

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



STANDARD DETAILS

06-TRAFFIC SIGNALS

BNET JOINT BOX FOOTWAYS

DRAWING NUMBER

Drawing

SD 06-004

Revision

E

Drawn by

HJ

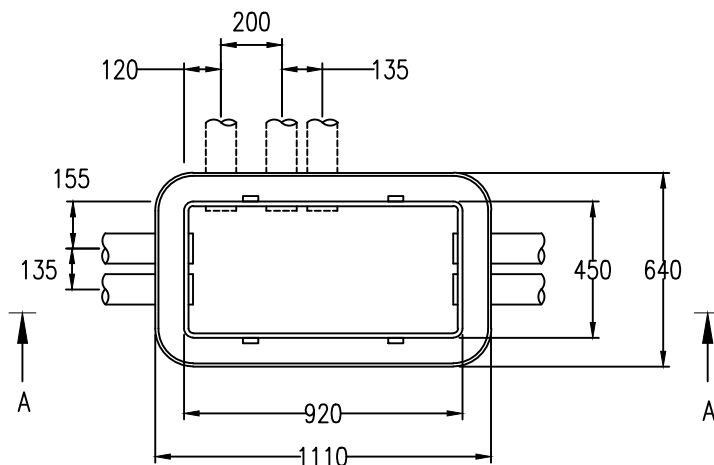
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Date Drawn

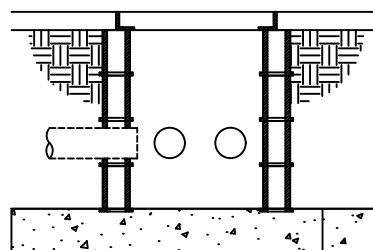
JAN 2020

TYPE L

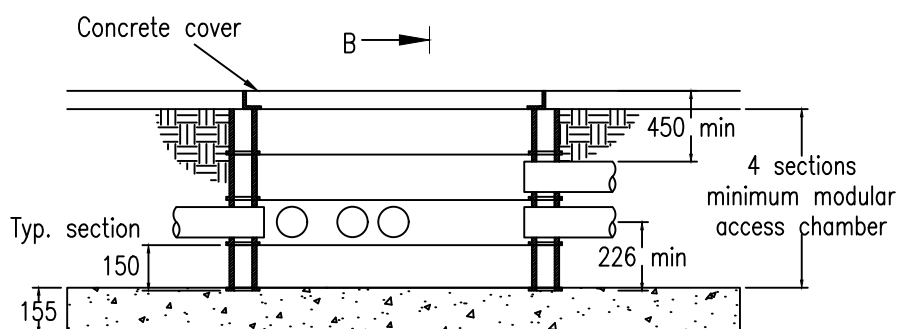


PLAN

(frame & cover omitted for clarity)



SECTION B-B



SECTION A-A

NOTES

- DMRB Specification for Roads and Bridges applies with additions and amendments and any Bristol City Council additional or substitute clauses.
- Installation of box and concrete covers to manufacturers instructions.
- Entry of all ducts into chambers should not protrude into the chamber more than 25mm. Ducts should be flush with sidewalls.
- Voids around ducts and in redundant holes to be finished flush with inside face of chamber.
- 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.
- All dimensions are in millimetres.
- Orientation and duct entry positions to be agreed with the Employer's Representative.
- Ducts to be fitted with continuous unknotted 6mm dia blue polypropylene draw rope – ends to be fixed.
- Backfill to be agreed with the Employer's Representative. Reinstatement to match existing pavement or verge.
- STAKKABOX modular by NAL Ltd, or similar approved.
- Cover should be fitted with plate stating apparatus present if BNET or traffic signals.



STANDARD DETAILS

06-TRAFFIC SIGNALS

TRAFFIC SIGNALS - SIGNAL POLE BASE ENTRY SOCKET

DRAWING NUMBER

Drawing

SD 06-005

Revision

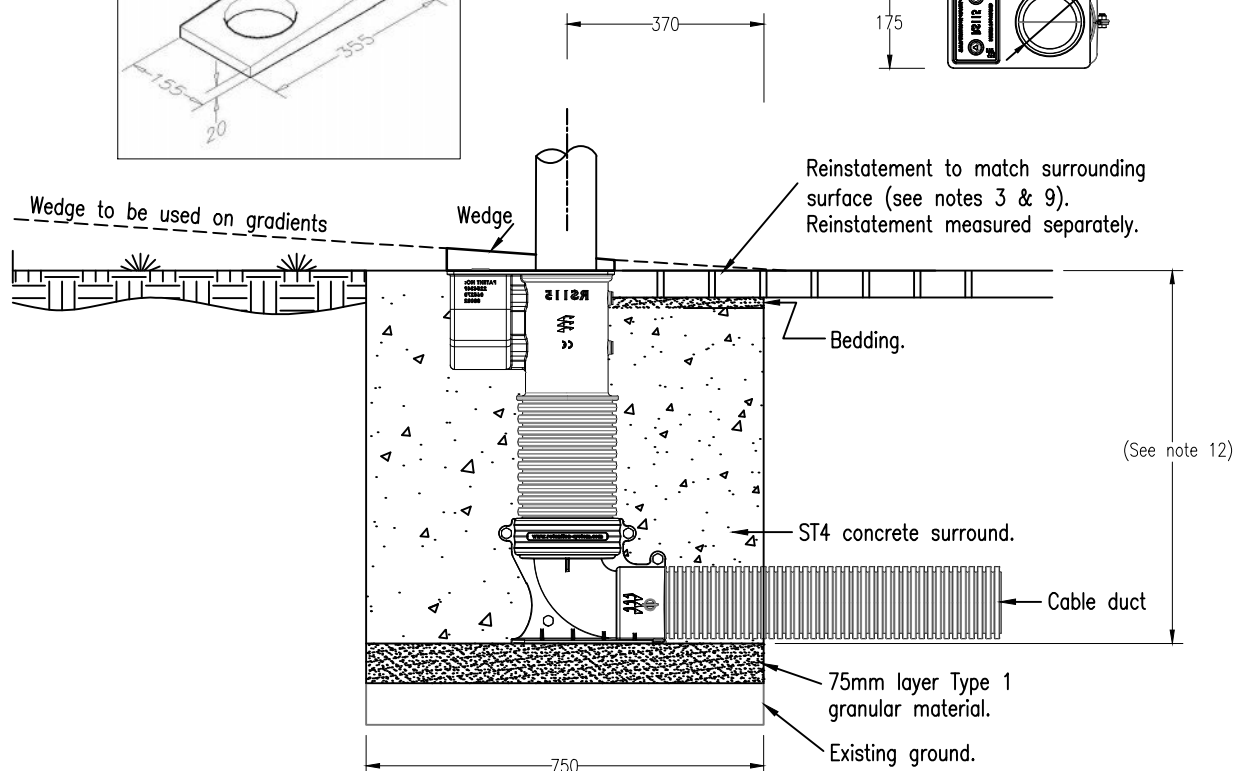
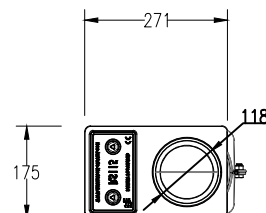
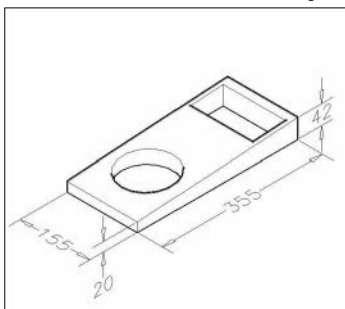
F

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HJ

Scale
N.T.S.

Date Drawn
JAN 2020

See Notes 3 & 4 for Wedge.



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 localised 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

06-TRAFFIC SIGNALS

TRAFFIC SIGNALS - TRAFFIC SIGNAL CONTROLLER

DRAWING NUMBER

Drawing

SD 06-006

Revision

E

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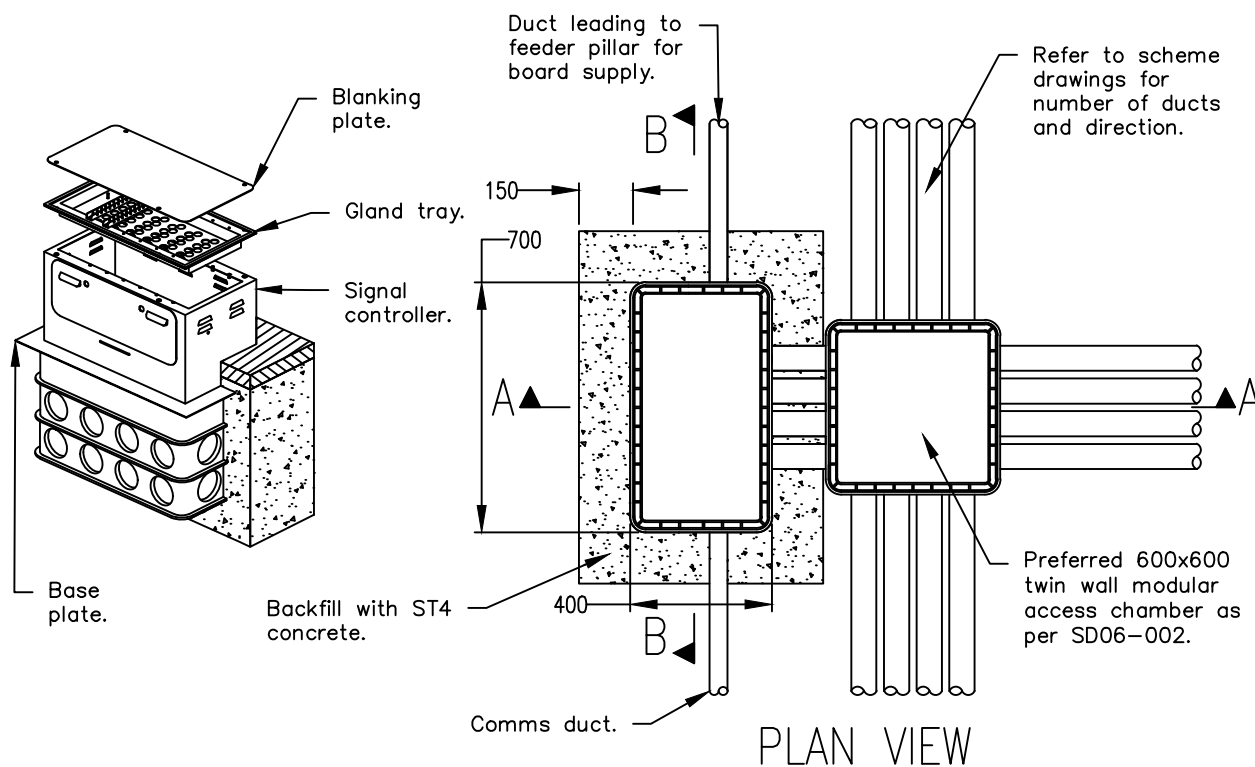
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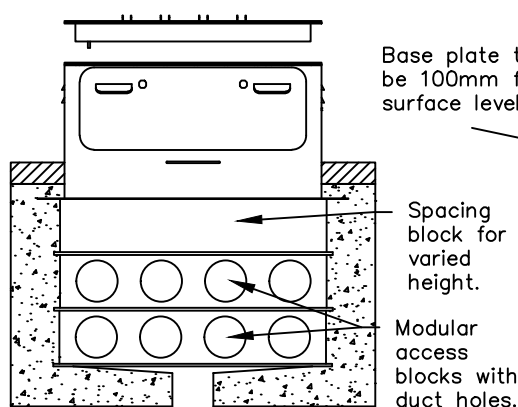
NTS

Date Drawn

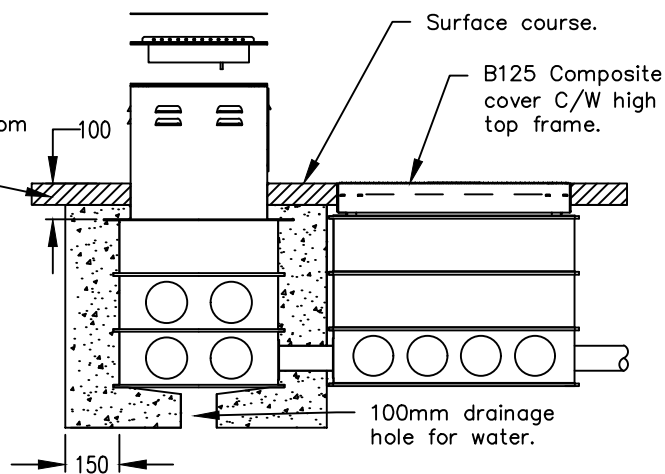
FEB 2020



3-D VIEW OF CONTROLLER



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 unless otherwise stated.
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 100mm \varnothing for Traffic Signals, Purple 100mm \varnothing for BNET.
8. Traffic signal controller base and associated stakka box supplied by BCC Traffic Signals Contractor and installed by Civils Contractor.



STANDARD DETAILS

06-TRAFFIC SIGNALS

TRAFFIC SIGNALS - TEMPORARY SIGNAL POLE ARRANGEMENT

DRAWING NUMBER

Drawing

Revision

SD06 - 007

E

Drawn by

HJ

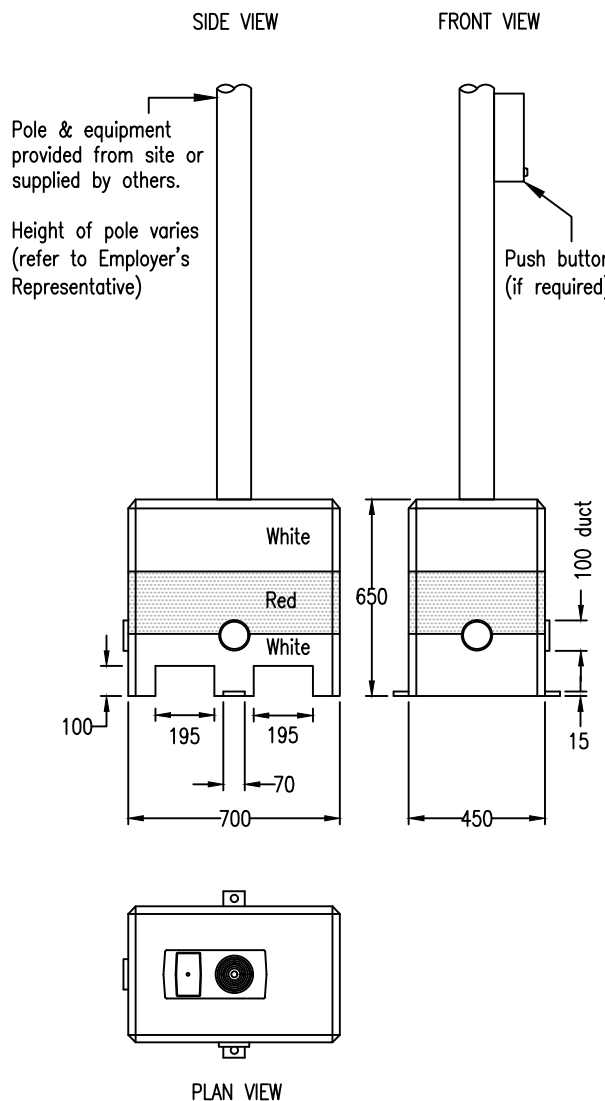
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Date Drawn

JAN 2020

CONCRETE BASE
Propriety System



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

07-STREET LIGHTING

ILLUMINATED BOLLARDS

DRAWING NUMBER

Drawing

SD 07-001

Revision

D

Drawn by

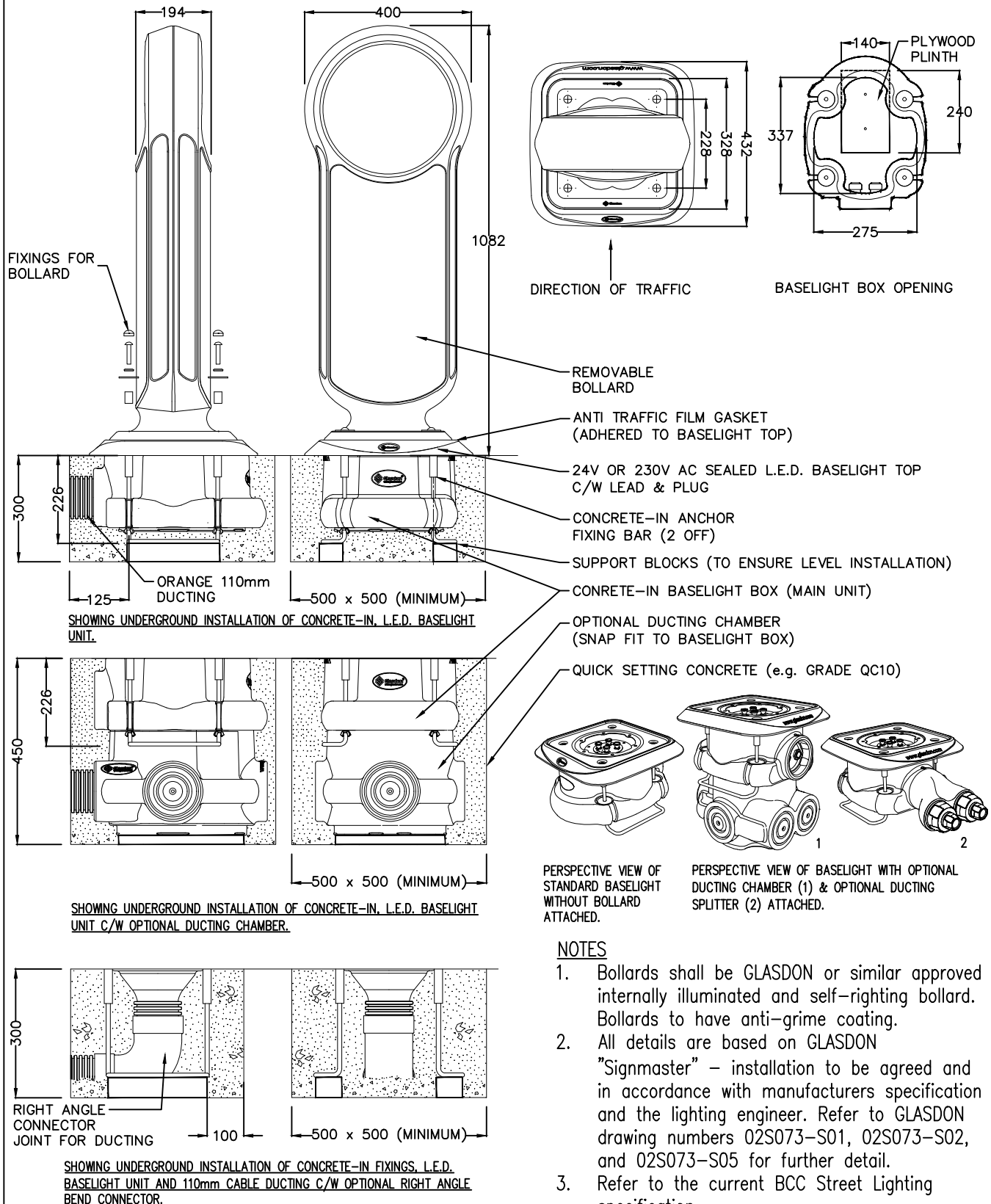
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Scale

NTS

Date Drawn

MAR 2020





STANDARD DETAILS

07-STREET LIGHTING

NON-ILLUMINATED BOLLARDS

DRAWING NUMBER

Drawing

SD 07-002

Revision

Drawn by

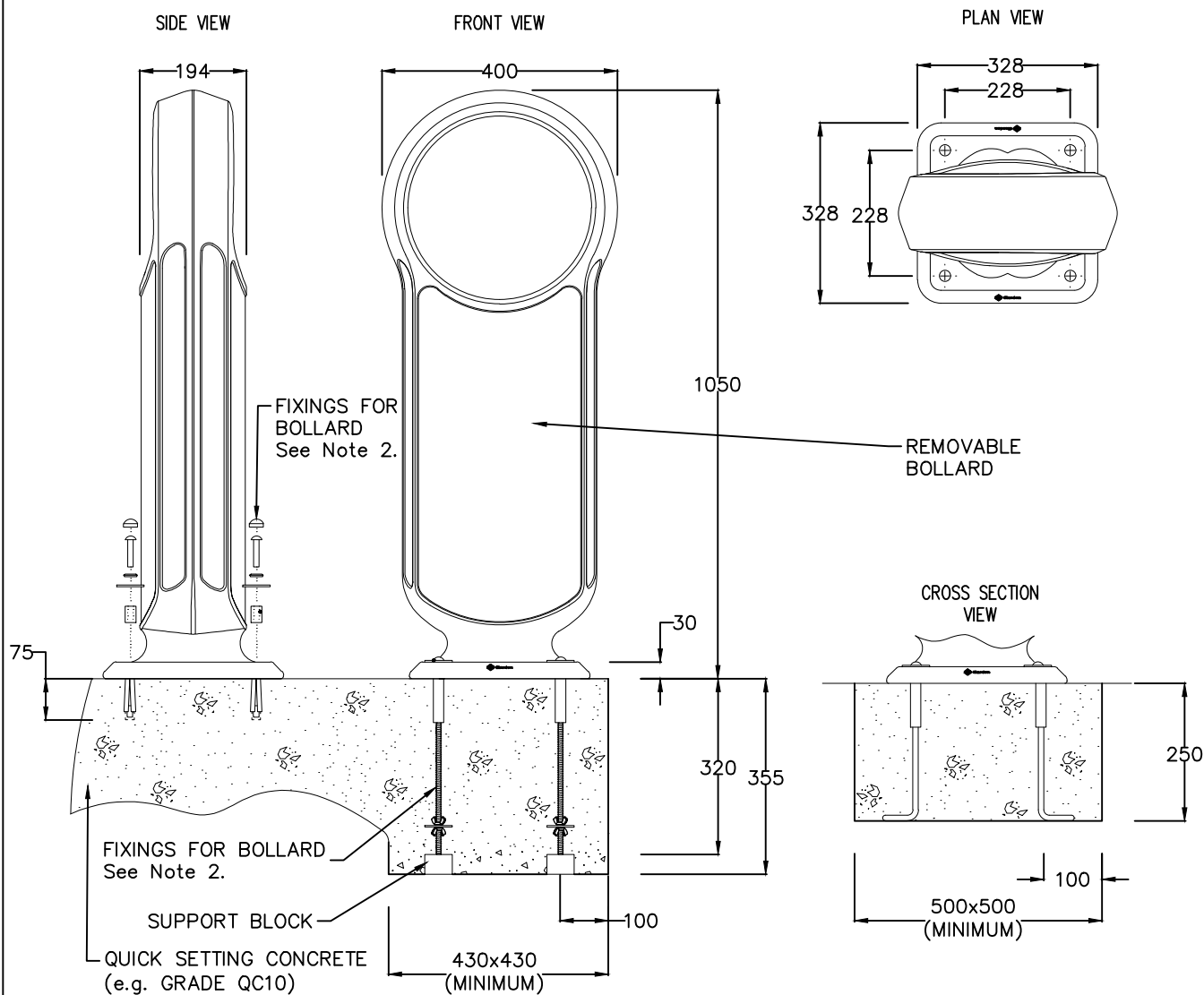
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Scale

NTS

Date Drawn

MAR 2020



NOTES

1. Bollards shall be GLASDON or similar approved non-illuminated and self-righting bollard. Bollards to have anti-grime coating.
2. All details are based on GLASDON "Signmaster" – installation to be agreed and in accordance with manufacturers specification and the lighting engineer. Refer to GLASDON drawing numbers 02S073-S01, 02S073-S02, and 02S073-S05 for further detail.
3. Refer to the current BCC Street Lighting specification.



STANDARD DETAILS

07-STREET LIGHTING

IN GRASS VERGES AND SHARED SURFACE ROADS

DRAWING NUMBER

Drawing

SD 07-003

Revision

D

Drawn by

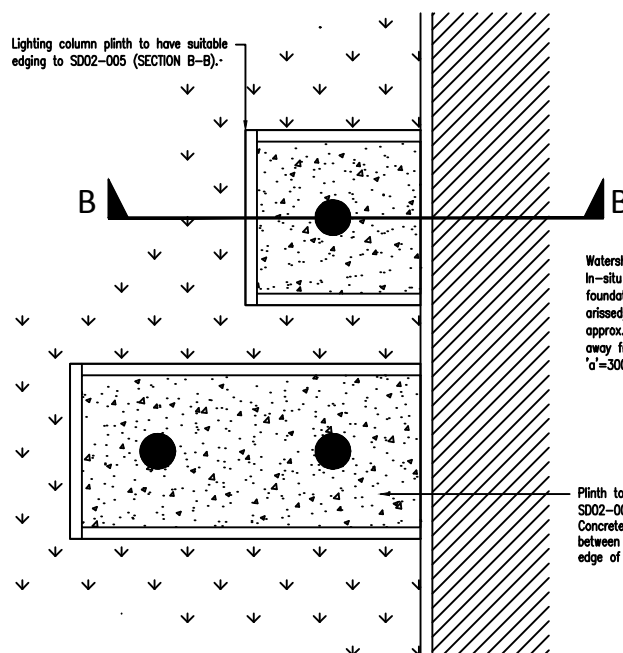
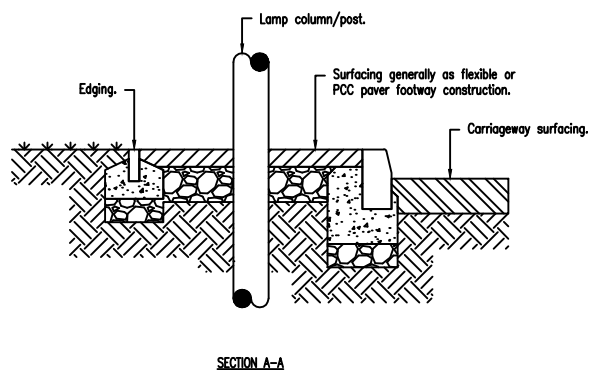
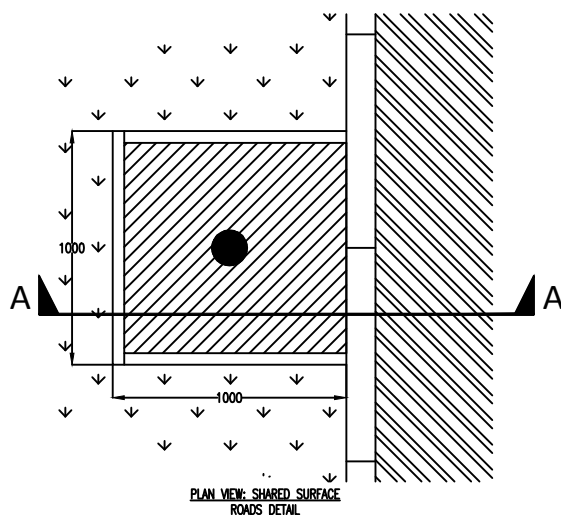
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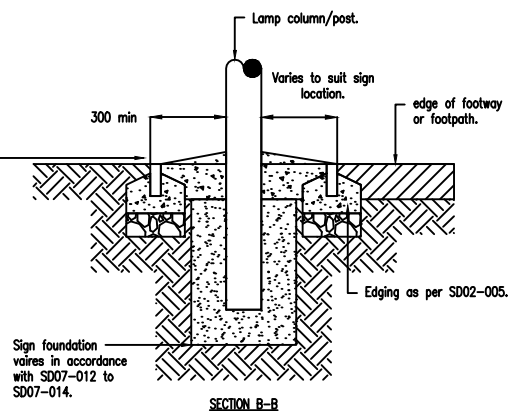
MAR 2020



Lighting column plinth to have suitable edging to SD02-005 (SECTION B-B).

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

Plinth to have edging as per SD02-005 (SECTION B-B). Concrete area continuous between posts and tied to edge of footpath.



NOTES:-

1. Refer to street lighting specification 2012.
2. See SD07-005 for foundation details.



STANDARD DETAILS

07-STREET LIGHTING

STREET NAMEPLATES

DRAWING NUMBER

Drawing

SD 07-004

Revision

D

Drawn by

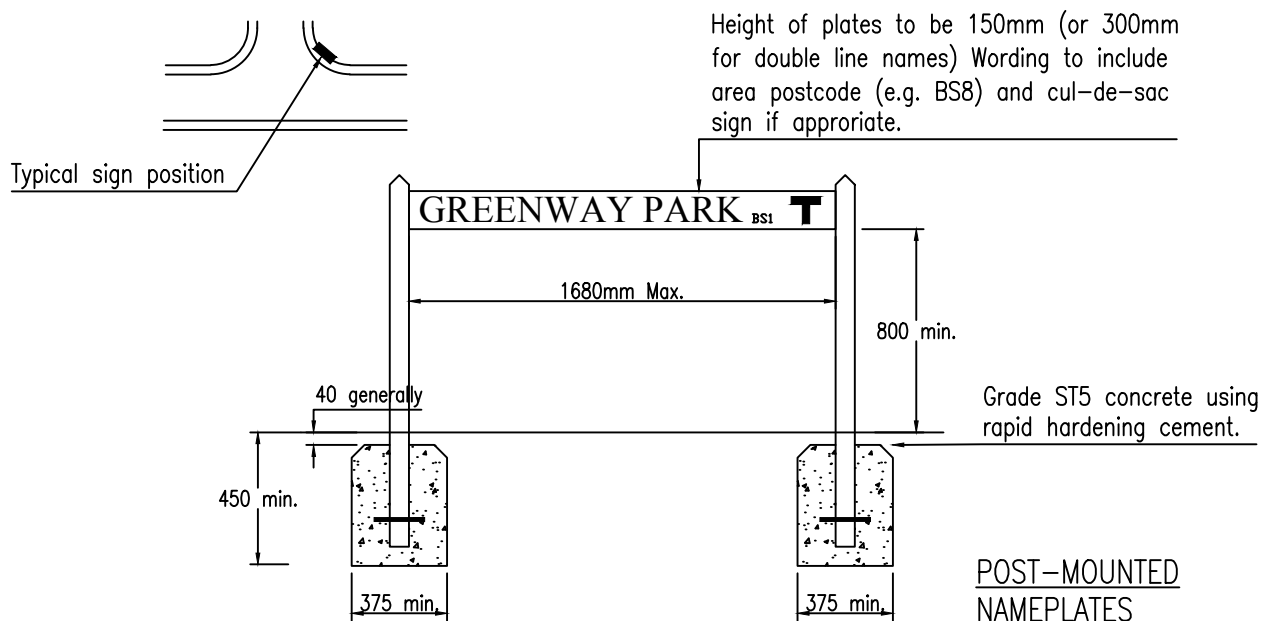
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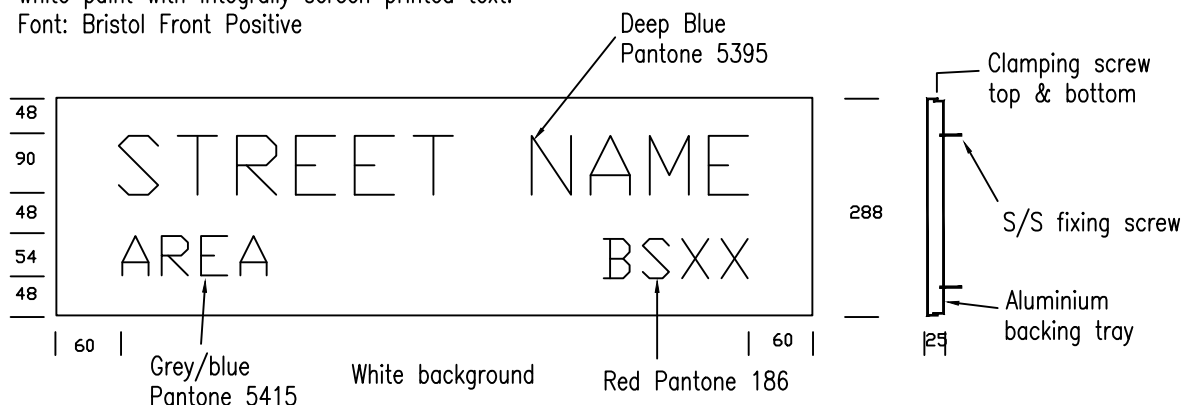
N.T.S

Date Drawn

MAR 2020



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



WALL MOUNTED NAMEPLATES

NOTES

- 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.
- 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.
- Nameplates shall be recycled block 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.
- Plate to be recess mounted into 75 x 75 recycled block plastic posts using 4 No. vandal resistant stainless steel screws. Posts shall have a 15mm diameter x 200mm long MS rod at right angles through the posts located 100mm above bottom of post, set into the concrete foundation.
- Wall mounted posts shall be as shown above.



STANDARD DETAILS

07-STREET LIGHTING

PUBLIC UTILITIES RECOMMENDED POSITIONS IN FOOTWAYS

DRAWING NUMBER

Drawing

SD 07-005

Revision

C

Drawn by

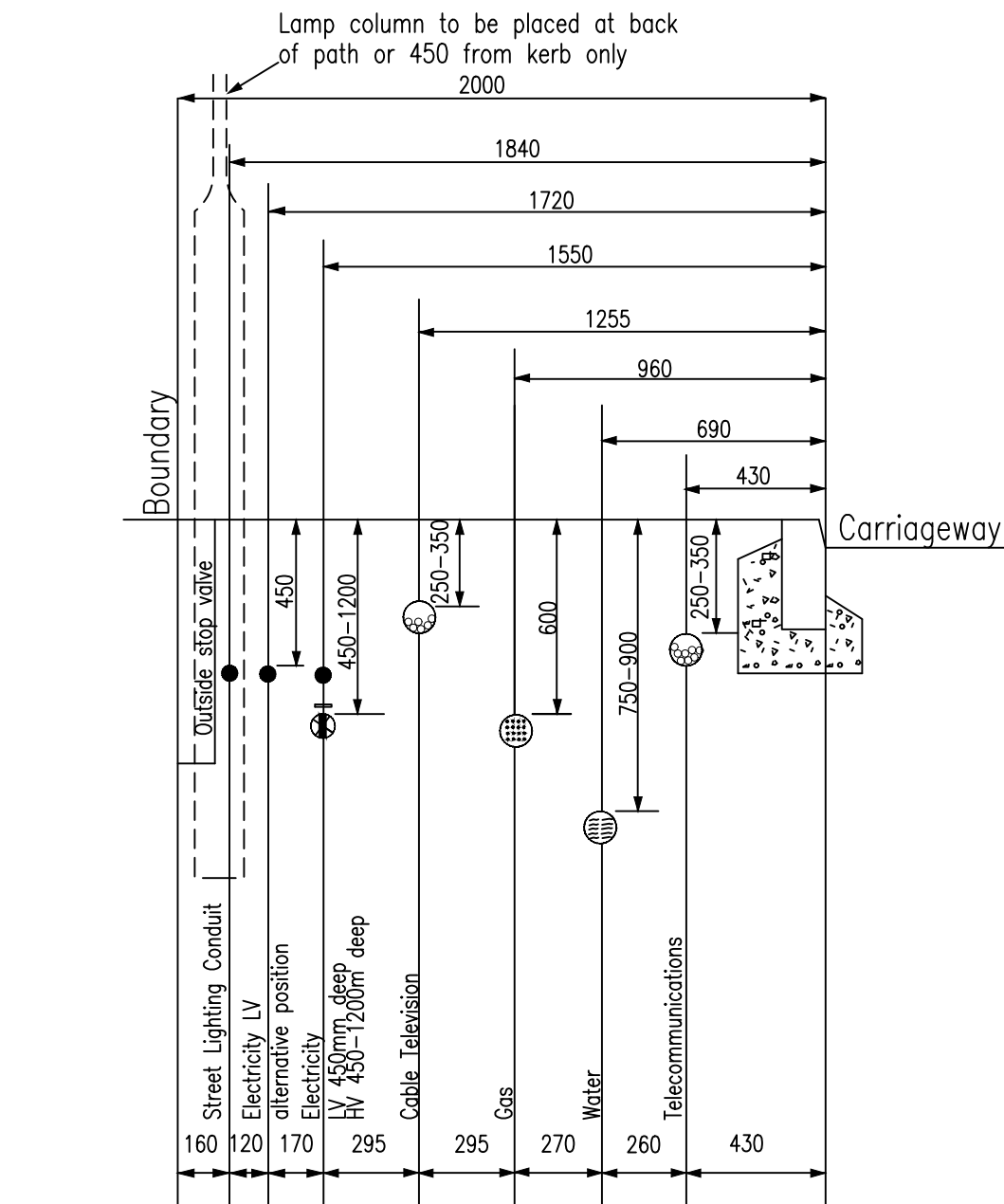
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Scale

NTS

Date Drawn

MAR 2020



The layout of mains is generally in accordance with the 'Streetwork UK Guidelines 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

07-STREET LIGHTING

LIGHTING COLUMN INSTALLATION

DRAWING NUMBER

Drawing

SD 07-006

Revision

D

Drawn by
HJ

Scale
NTS

Date Drawn
MAR 2020

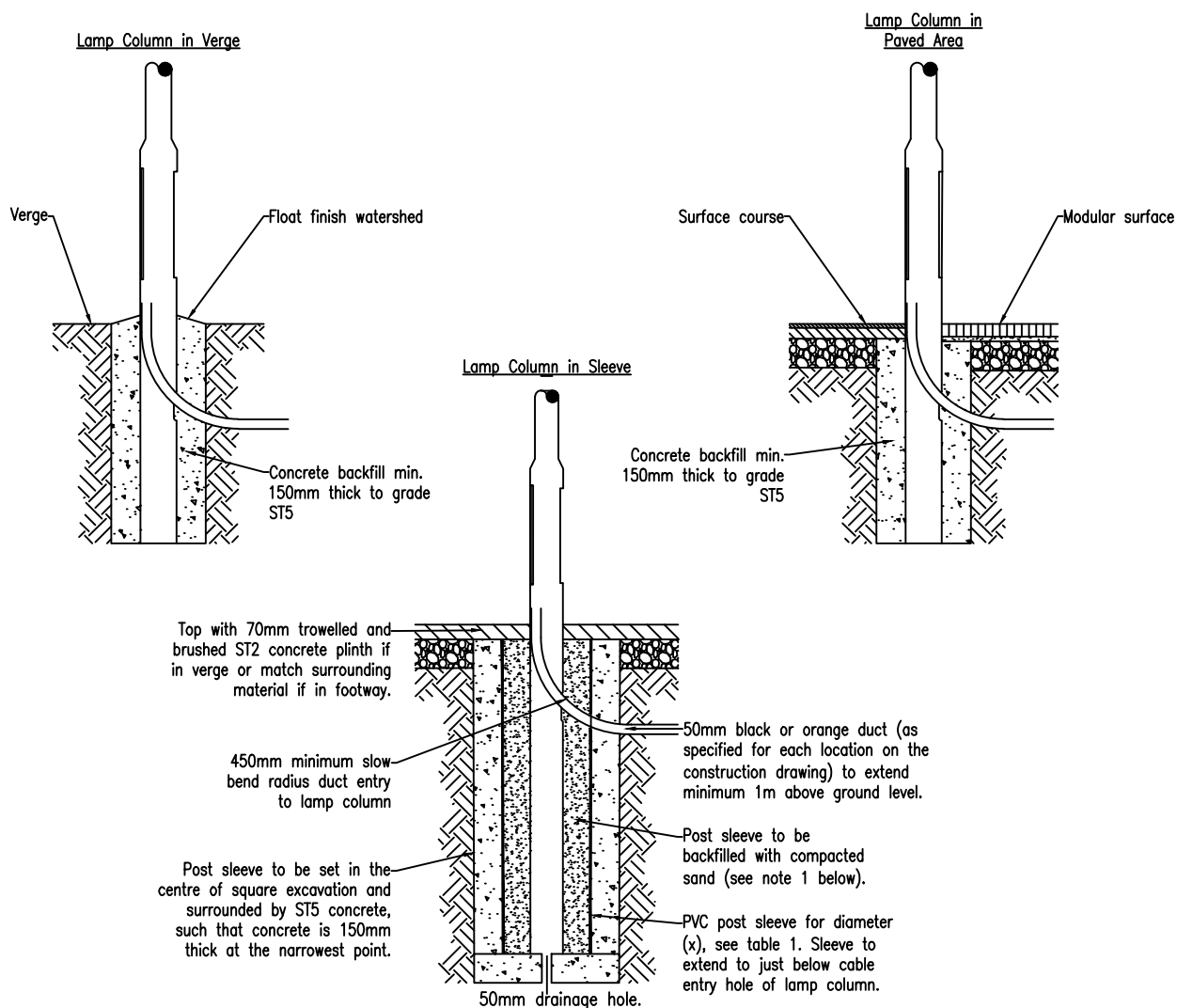


Table 1: Standard lamp column sleeve sizes

Column height	Planting depth (d)	Column base diameter	Sleeve diameter (x)	Concrete surround outer dimensions (excavation area)
5m	1m	139.7mm	300mm	600x600mm
6m	1.0m	139.7mm	300mm	600x600mm
8m	1.2m	168.3mm	450mm	750x750mm
10m	1.5m	192mm	450mm	750x750mm
12m	1.7m	192mm	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 450mm minimum bend radius.
5. Multiple bends in duct runs are not permitted. Type C pull chambers preferred at changes of direction (See SD06-002).
6. For posts of base diameters other than that shown use calculation.



STANDARD DETAILS

07-STREET LIGHTING

LIGHTING COLUMN PLANTING DEPTHS & SHAFT CONNECTION

DRAWING NUMBER

Drawing

SD 07-007

Revision

D

Drawn by

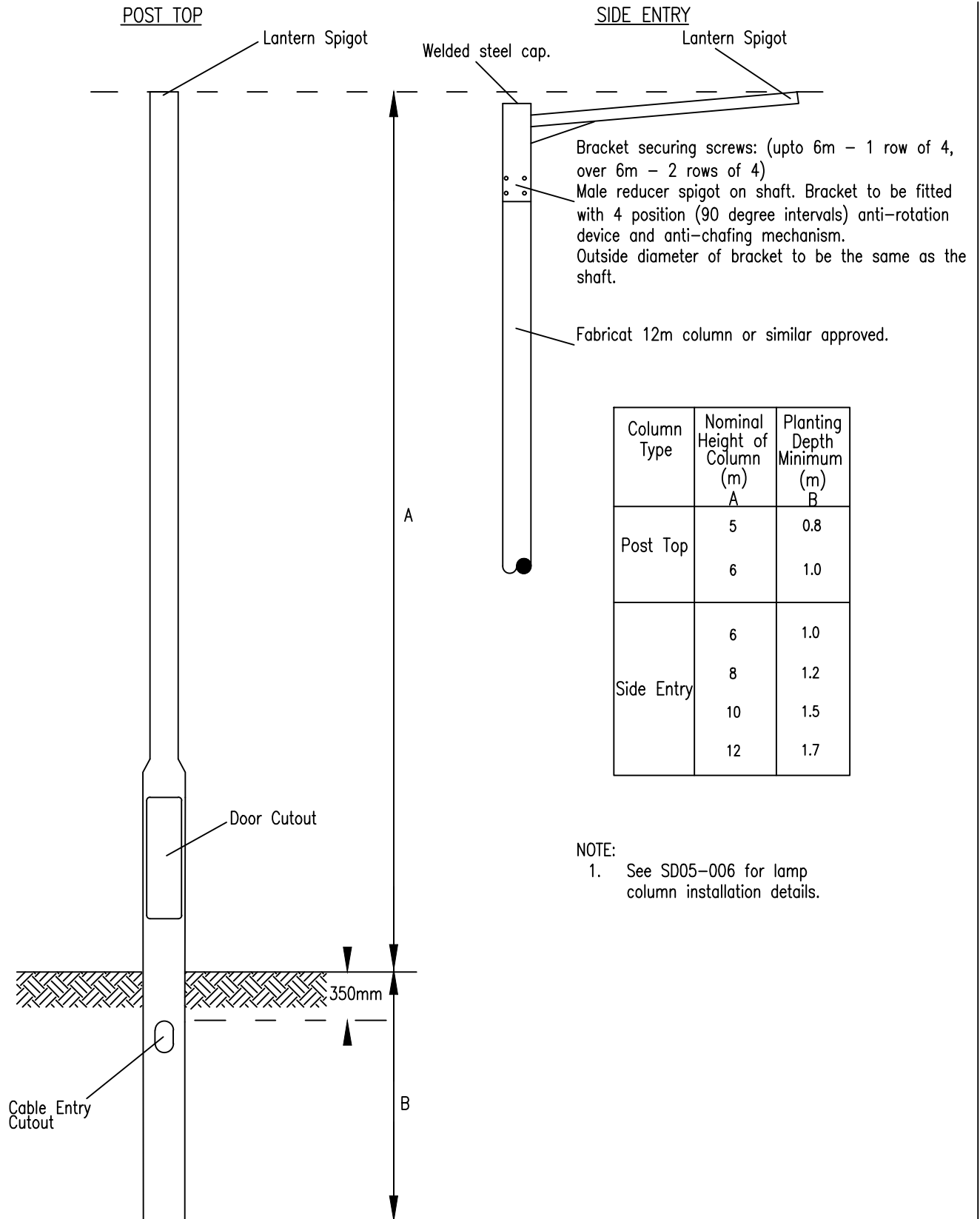
HJ

Scale

NTS

Date Drawn

MAR 2020





STANDARD DETAILS

07-STREET LIGHTING

LIGHTING COLUMN SIGN ATTACHMENTS CENTRAL AND OFFSET

DRAWING NUMBER

Drawing

SD 07-008

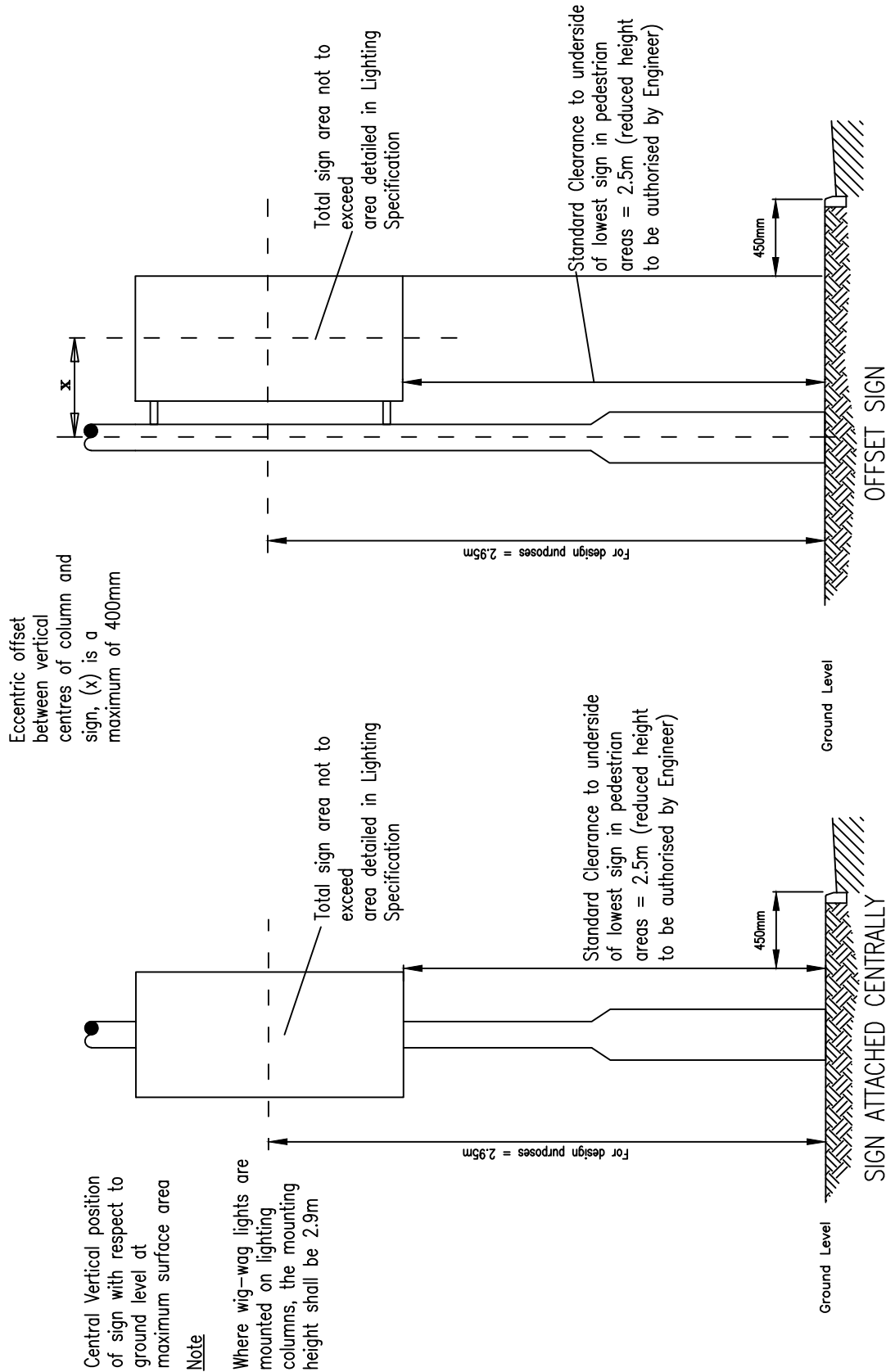
Revision

D

Drawn by
HJ

Date Drawn
MAR 2020

Scale
N.T.S.



Notes:

1. Refer to SD07-006 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

07-STREET LIGHTING

LIGHTING COLUMN SIGN ATTACHMENTS ON TWO COLUMNS

DRAWING NUMBER

Drawing

SD 07-009

Revision

D

Drawn by

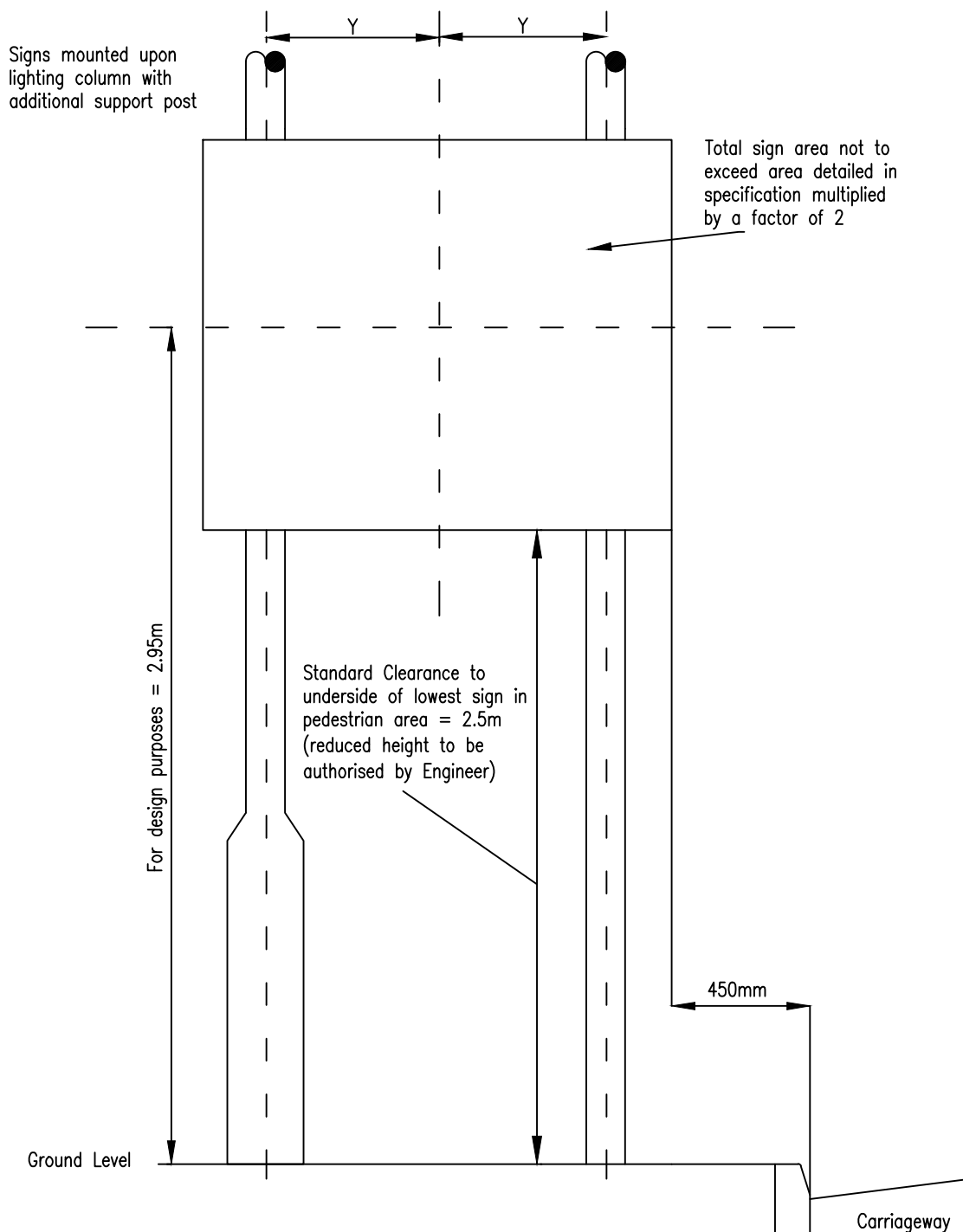
HJ

Scale

N.T.S.

Date Drawn

MAR 2020



Notes:

1. Refer to SD07-006 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

07-STREET LIGHTING

LIGHTING/SIGNAGE IDENTIFICATION NUMBERS

DRAWING NUMBER

Drawing

SD 07-010

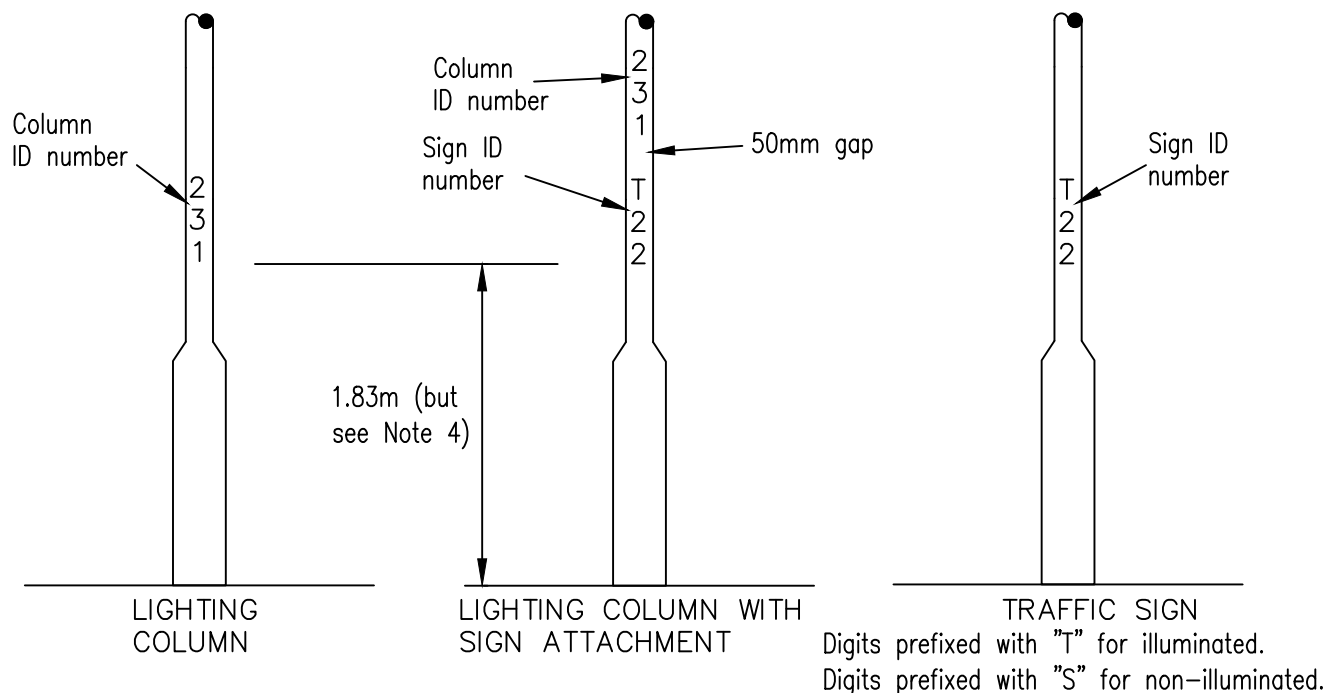
Revision

D

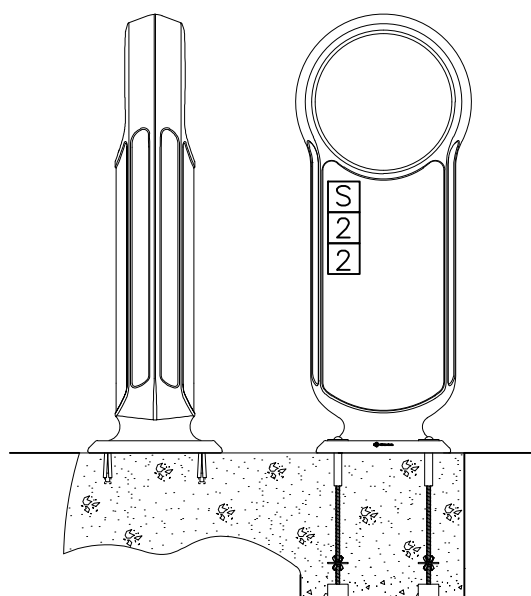
Drawn by
HJ

Scale
N.T.S.

Date Drawn
MAR 2020



TRAFFIC BOLLARD



1. Digits 50mm height, prefixed with "T", applied vertically on both sides facing carriageways.
2. "T" to be placed at the top left corner of the amber panel and on the top left corner on the back of the bollard.
3. Number also to be marked inside base unit with indelible ink, not paint.

1. Digit height 50mm for columns up to 5m in height, 75mm for taller columns.
2. ID numbers to be applied in self adhesivesign patches.
3. Concrete columns shall also have a matt black background giving min. 15mm border to all applied characters.
4. Digits on columns to end 1.83m above ground level, or immediately below sign if one is attached at this position.
5. ID numbers shall face the carriageway on roads (both sides if there is carriageway both sides) or face towards the centreline on footpaths.
6. Digits shall be arranged vertically as shown.
7. Prefix letters:— If a pole has an injection service and is utilised as a distribution pillar, the prefix shall be "C".
8. Sign numbers:— Where a lighting column has a sign plate, the number of the sign shall be prefixed with "T" and shall be positioned below the column number leaving a 50mm gap between the two ID numbers.
9. Street lighting columns have no prefix letter unless owned by others e.g. Housing Dept. cols shall be prefixed by "H".
10. Distributor (feeder) pillars shall have prefix "DP".



STANDARD DETAILS

07-STREET LIGHTING

CABLE TERMINATIONS TYPES 1 - 4

DRAWING NUMBER

Drawing

Revision

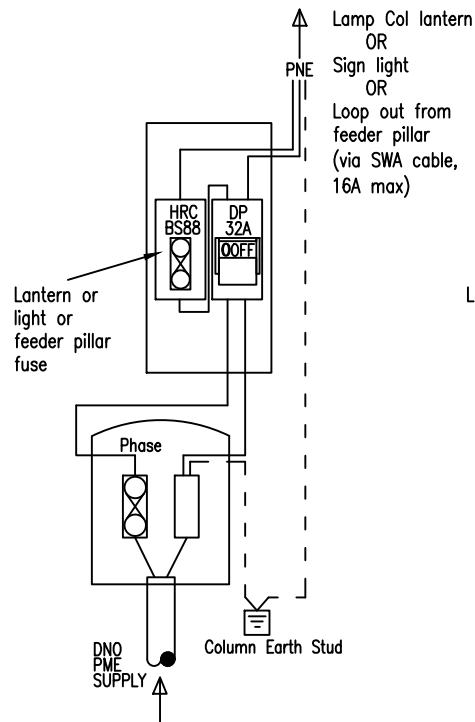
SD 07-011

D

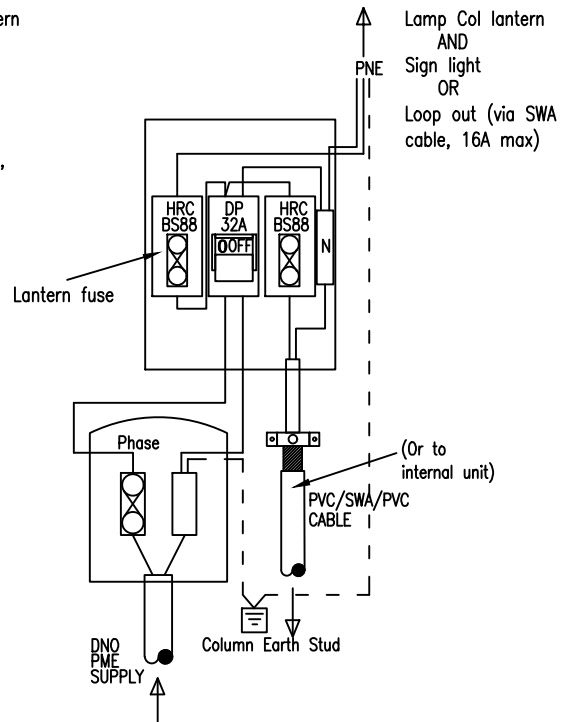
Drawn by
HJ

Scale
NTS

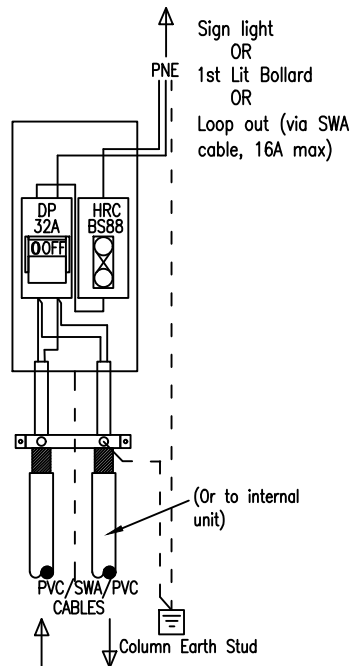
Date Drawn
MAR 2020



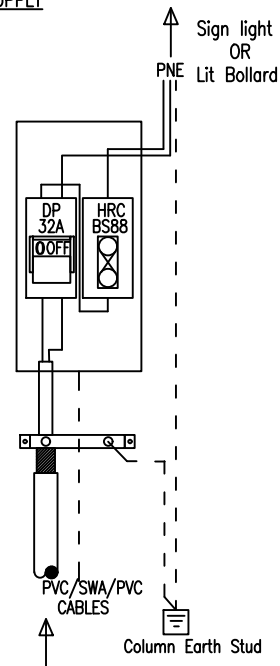
**TYPE 1 - WESTERN POWER
INJECTION SERVICE**



**TYPE 2 - INJECTION SERVICE
WITH SUB-FUSED ISOLATABLE
SUPPLY**



**TYPE 3 - LOOPING SERVICE (LOCAL
AUTHORITY SUPPLY LOOP IN AND OUT)**



**TYPE 4 - LOOPING SERVICE (LOCAL
AUTHORITY SUPPLY LOOP IN ONLY)**

NOTES:-

1. Designs must be approved by BCC Lighting Engineer
2. For each additional lantern/sign light unit - a second/third fuse is required



STANDARD DETAILS

07-STREET LIGHTING

BEACONS

DRAWING NUMBER

Drawing

SD 07-012

Revision

D

Drawn by

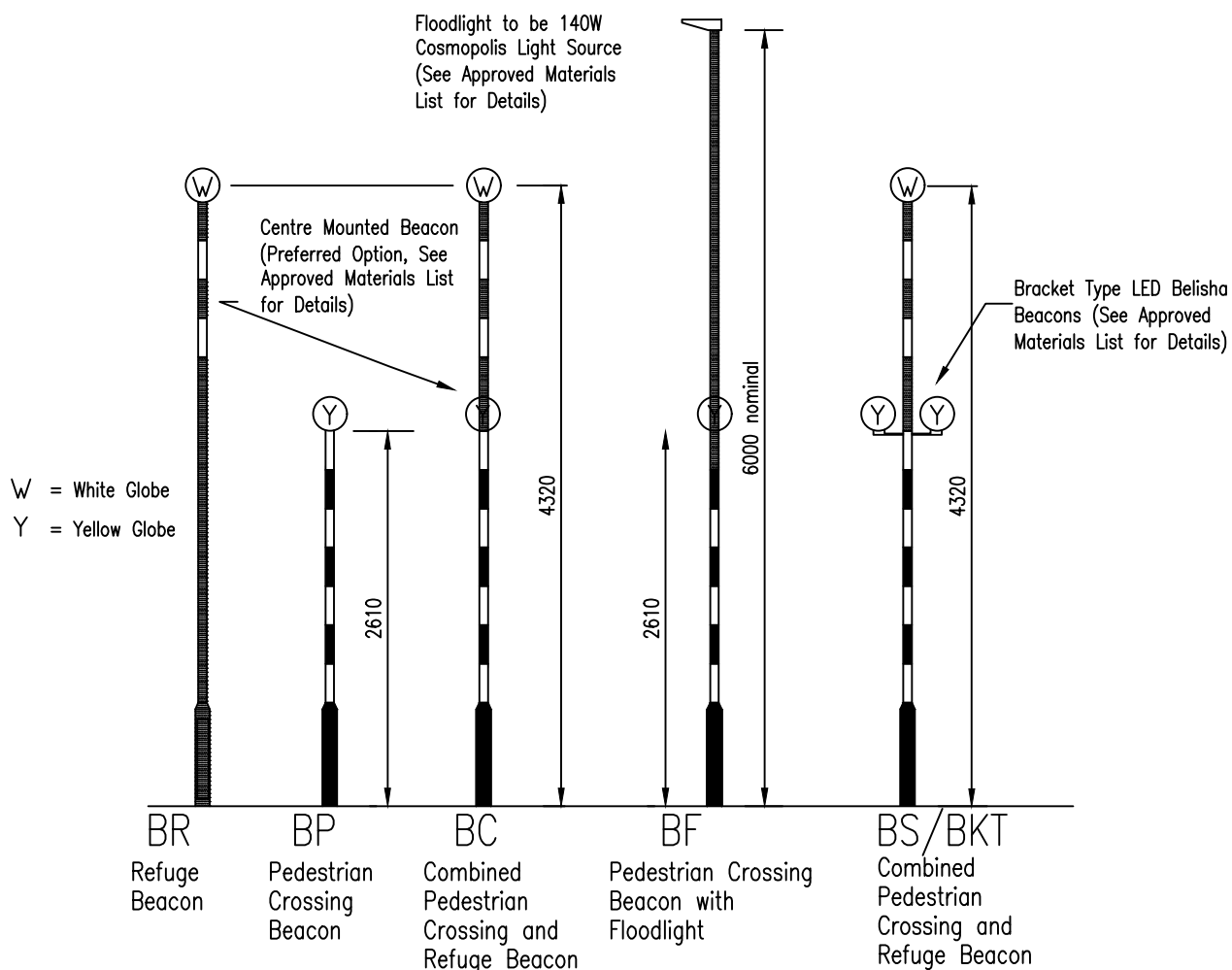
HJ

Scale

NTS

Date Drawn

MAR 2020



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

- All dimensions in millimetres.
- Beacons shall comply with:
 - the "Zebra" Pedestrian Crossing Regulations 4 of the Traffic Signs Manual.
 - Paragraphs 4.114 to 4.119 inclusive of Chapter 8 of the traffic signs manual.
 - BS873 Part 2 Clause 10.
- Beacon Posts will be manufactured as per the lighting column specification and will be pre painted before installation on site.
- 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.
- Beacons vulnerable to road traffic accidents shall have a Local Authority supply only, otherwise beacons will be fed via a DNO/WPD Supply.
- See SD07-006 for foundation sleeve details.



STANDARD DETAILS

07-STREET LIGHTING

SIGN CONFIGURATION NOTES

DRAWING NUMBER

Drawing

Revision

SD07-013

Drawn by

HJ

Scale

NTS

Date Drawn

MAR 2020

NOTES

1. DMRB Specification for Highways Works applies with any additions and amendments and any Bristol City Council additional or substitute clauses.
2. All dimensions in millimeters, except concrete volume in Table 1 which are cubic meters.
3. Although a triangular sign is shown, sign and foundation details apply for circular, octagonal and inverted triangular signs.
4. Concrete for post foundations shall be ST2. Posts can be fitted in foundation sleeves. See SD07-006 for details.
5. No sign or part of a sign shall be less than 450mm from the carriageway.
6. Post diameter for signs 45mm diameter or less which are to be illuminated should be increased to 76mm diameter. Square posts can also be used – consult with engineer.
7. All signs shall be fixed to proposed provided posts or structures. However, signs conforming to configurations A(N) and B(N) may be fitted to unstrengthened lighting columns. No illumination signs shall be fitted to concrete lighting columns or unstrengthened lighting metal columns.
8. See appendix 12/1 for details of signs, illumination posts, foundation etc. Dimensions for foundations traffic for signs shall be individually calculated except for configuration Type D. Posts shall be installed at the mid-point of the foundations.
9. Minimum mounting height shall be 2500mm in pedestrian/cycle areas in 1500mm elsewhere.
10. Signs shall normally be mounted on purpose provided posts or structures. LED light source only & illuminated signs on a single post shall not be fitted to lighting columns or unstrengthened metal columns.
11. Signs mounted back-to-back shall be deemed to have an effective area of the largest sign.
12. top lit signs shall LED light source only & be illuminated by one or more luminaires arranged symmetrically.
13. Stub posts to be fixed to at least two stiffeners.
14. Overheads luminaires shall not mask the sign face.
15. Posts to extend a minimum of 100 above sign if it has a luminaire (P).
16. Separation between posts (S) to be approved by then engineer.
17. Offset brackets shall be galvanized.
18. Three posts may be required. Post separation shall be equal unless otherwise specified in Appendix 12/1.
19. Posts shall be fitted with caps and base plates.
20. Posts shall be galvanized and painted "Medium Grey" RAL Design RAL 000-55-00 or "Jet Black" RAL Classic RAL 9005 in conservation areas.
21. Refer to current BCC street lighting specification.



STANDARD DETAILS

07-STREET LIGHTING

SIGN CONFIGURATION TYPES A,B & C

DRAWING NUMBER

Drawing

SD 07-014

Revision

D

Drawn by

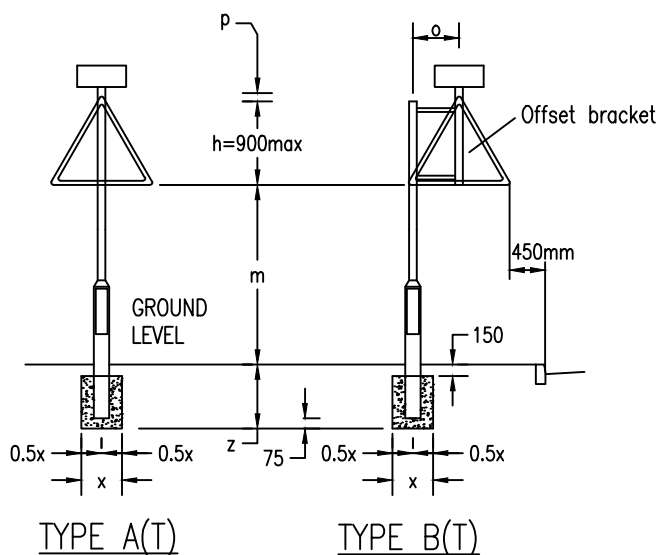
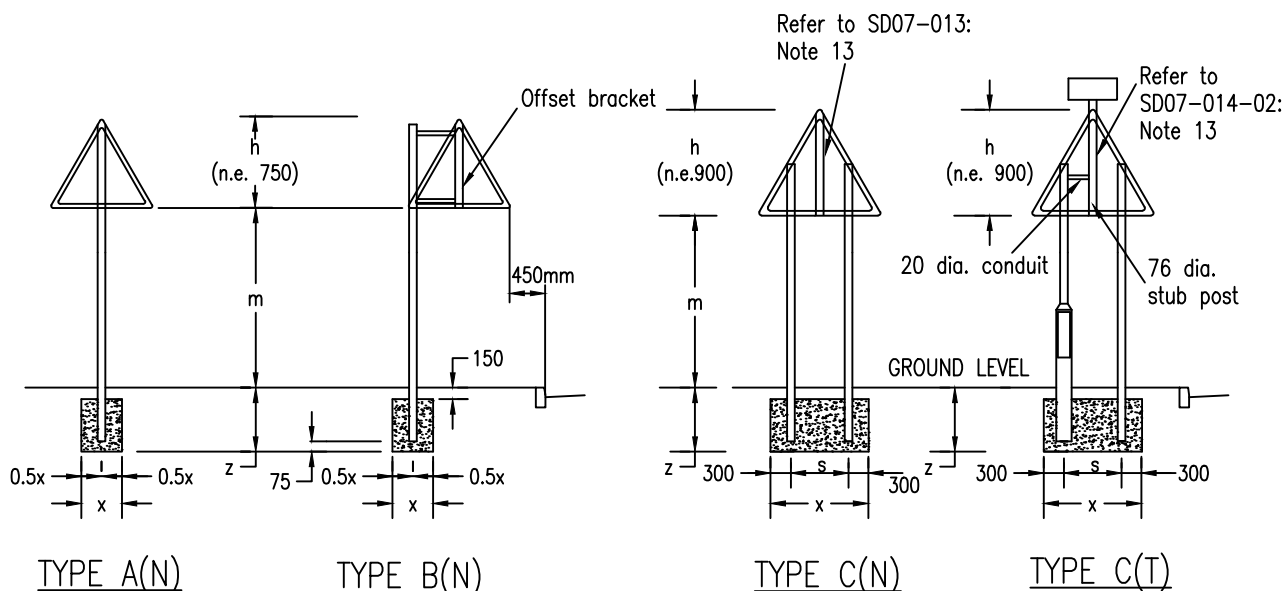
HJ

Scale

NTS

Date Drawn

MAR 2020



ILLUM. REQUIREMENTS	SUFFIX
Non-illumination	N
Top mounted luminaire	T

Lighting to be DTp
Type A for signs less
than 900mm width
and Type B for signs
greater than and
equal to 900mm
width.

TABLE 1: POST AND FOUNDATION DETAILS

Sign Height	h	<400	450	600	750	900	1200
Post Diameter	d	60*	76	76	76	89	2x89
Offset	o	—	—	300	375	450	—
Foundation Depth	z	450	600	600	750	750	900
Found. Width/Length	x/y	300	600	600	600	600	600
Conc. Vol. (cu.m)	v	0.027	0.162	0.162	0.216	0.216	0.27

Refer to SD07-013 for notes.



STANDARD DETAILS

07-STREET LIGHTING

SIGN CONFIGURATION TYPES D E F G & H

DRAWING NUMBER

Drawing

SD 07-015

Revision

D

Drawn by

HJ

Scale

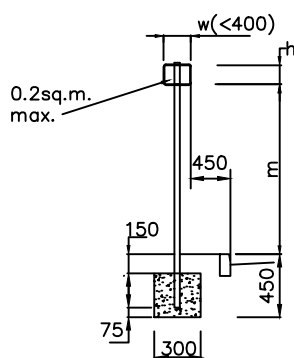
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Date Drawn

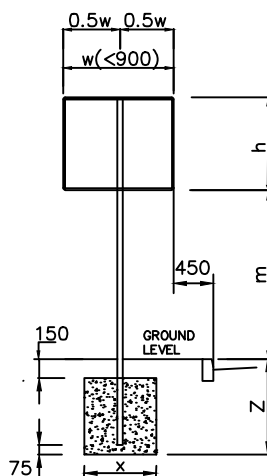
MAR 2020

TABLE 1

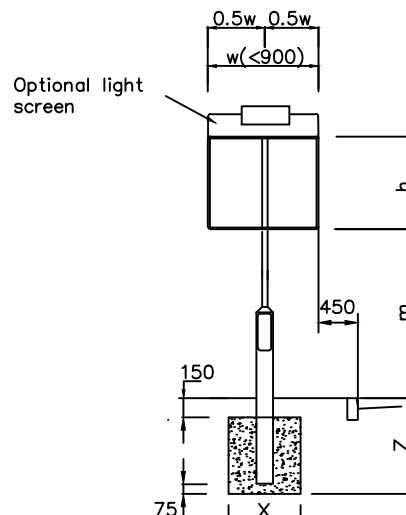
ILLUM. REQUIREMENTS	
Non-illuminated	N
Top mounted luminaire	T



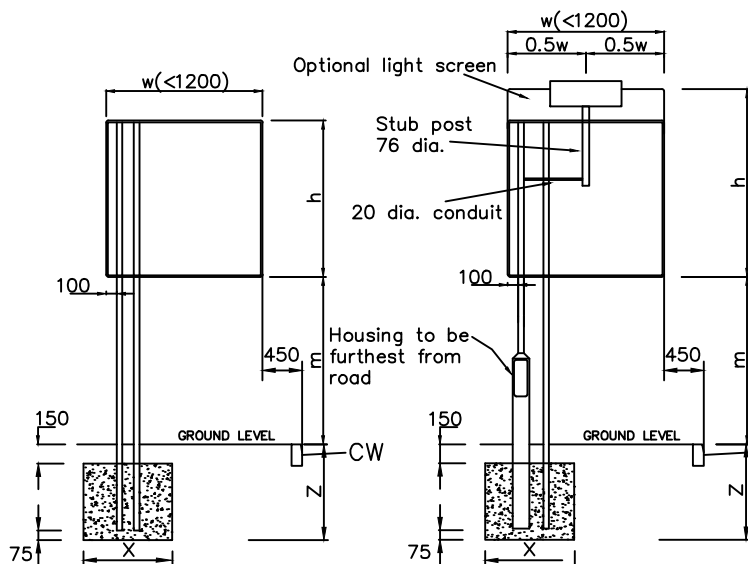
TYPE D(N)



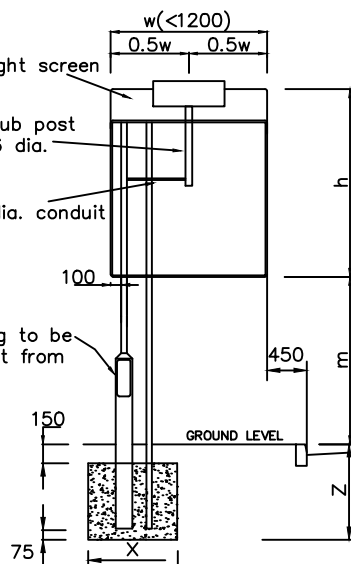
TYPE E(N)



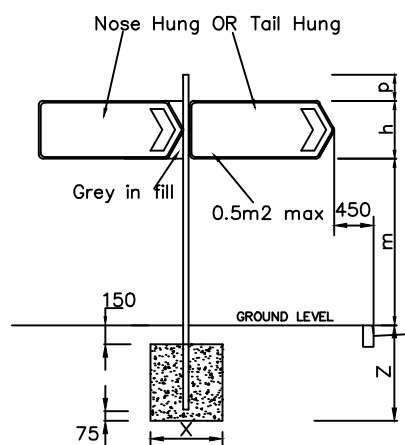
TYPE E(T)



TYPE F(N), G(N)



TYPE F(T), G(T)



TYPE H(N)

TABLE 2

SIGN CONSTRUCTION	
F	<1 sq. m
G	1 - 3 sq. m

Refer to SD07-013 for notes.



STANDARD DETAILS

07-STREET LIGHTING

SIGN CONFIGURATION TYPES J K L M & N

DRAWING NUMBER

Drawing

SD07-016

Revision

D

Drawn by

HJ

Scale

NTS

Date Drawn

MAR 2020

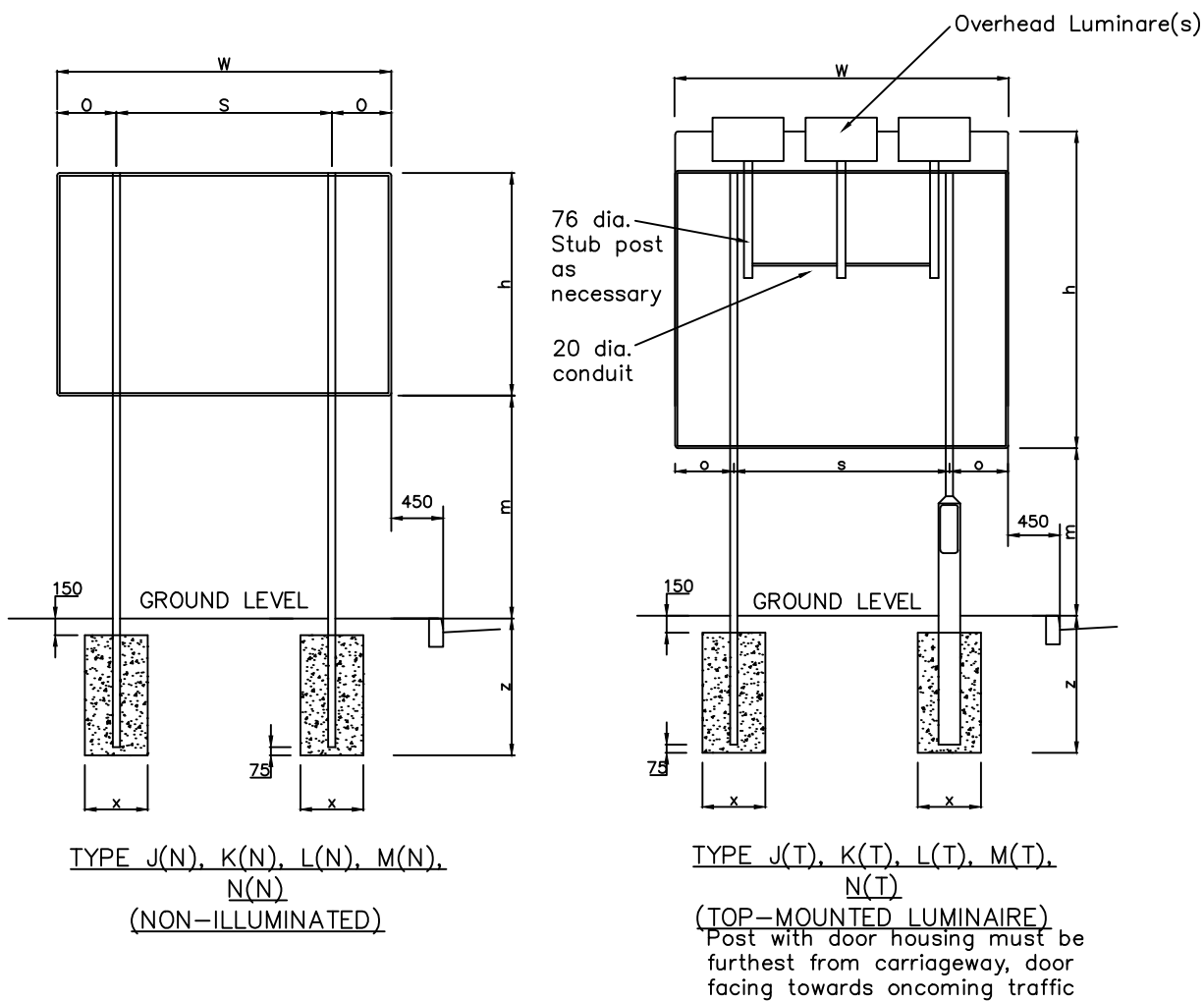


TABLE 1

ILLUM. REQUIREMENTS	
Non-illuminated	N
Top mounted luminaire	T

TABLE 2

SIGN CONSTRUCTION		
J	Sheet	< 3 sq. m
K	Sheet or plank	3 – 5 sq. m
L	Sheet or plank	5 – 8 sq. m
M	Plank	8 – 12 sq. m
N	Plank	12 – 15 sq. m

Refer to SD07-013 for notes.



STANDARD DETAILS

07-STREET LIGHTING LIGHTING DUCTS

DRAWING NUMBER

Drawing

SD 07-017

Revision

D

Drawn by

HJ

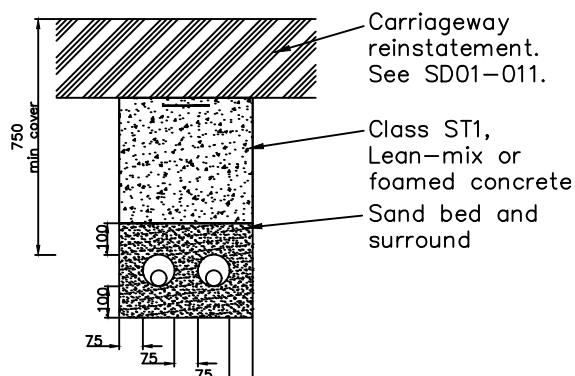
Scale

NTS

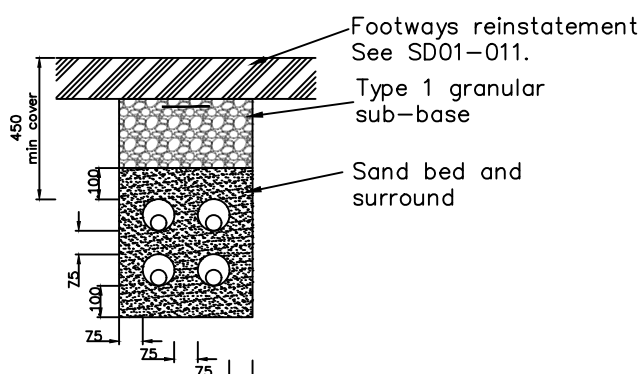
Date Drawn

MAR 2020

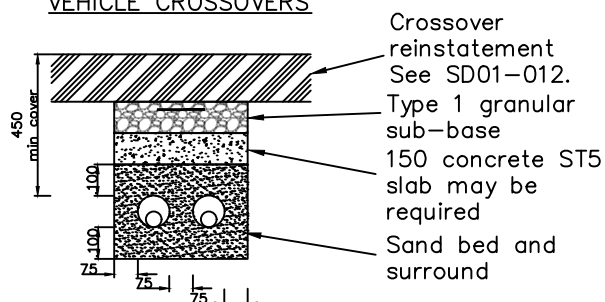
UNDER CARRIAGEWAYS AND HEAVY-DUTY CROSSOVERS



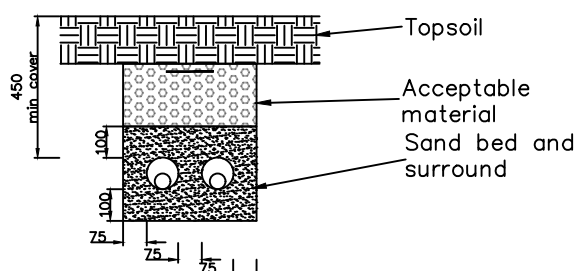
UNDER FOOTWAYS



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

- Continuous ducting is required for all cables.
- Under vehicular areas, the continuous duct shall be laid inside a larger protective duct.
- 150mm wide continuous warning tape shall be laid over the ducts at a depth of 300mm or formation level.
- 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.
- Duct are to be flexible HDPE/LDPE as specified in the BCC Traffic Signals Design Guide and BCC Street Lighting Specification.
- Ducts shall extend into the column to 100 above the entry slot.
- 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.
- 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 SD07-005 for recommended duct position.
- Cable service type must be marked on duct at approx. 500mm intervals.



STANDARD DETAILS

08-Public Rights of Way

PEDESTRIAN STILE (TWO STEP)

DRAWING NUMBER

Drawing

SD 08 -001

Revision

D

Drawn by

HJ

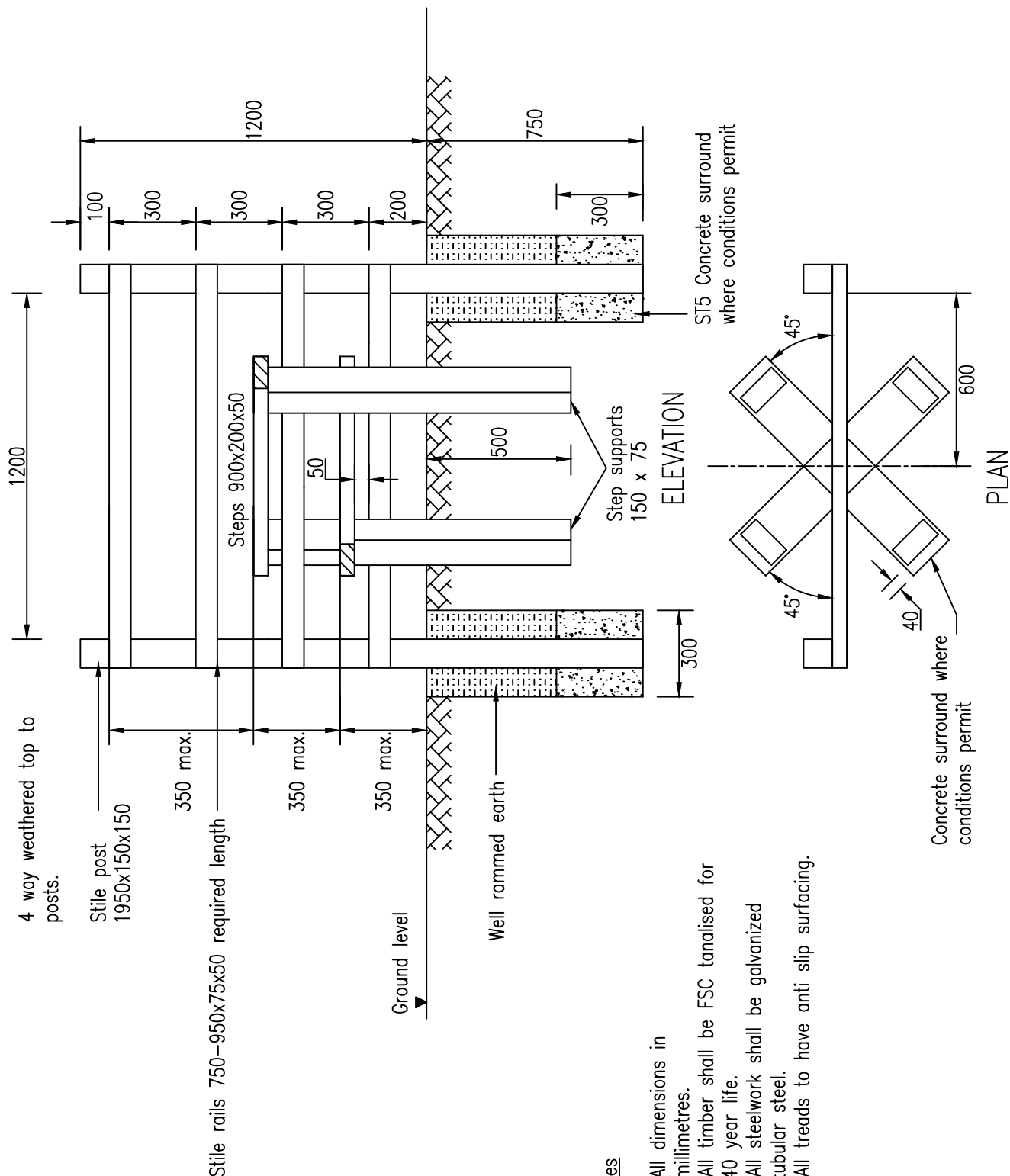
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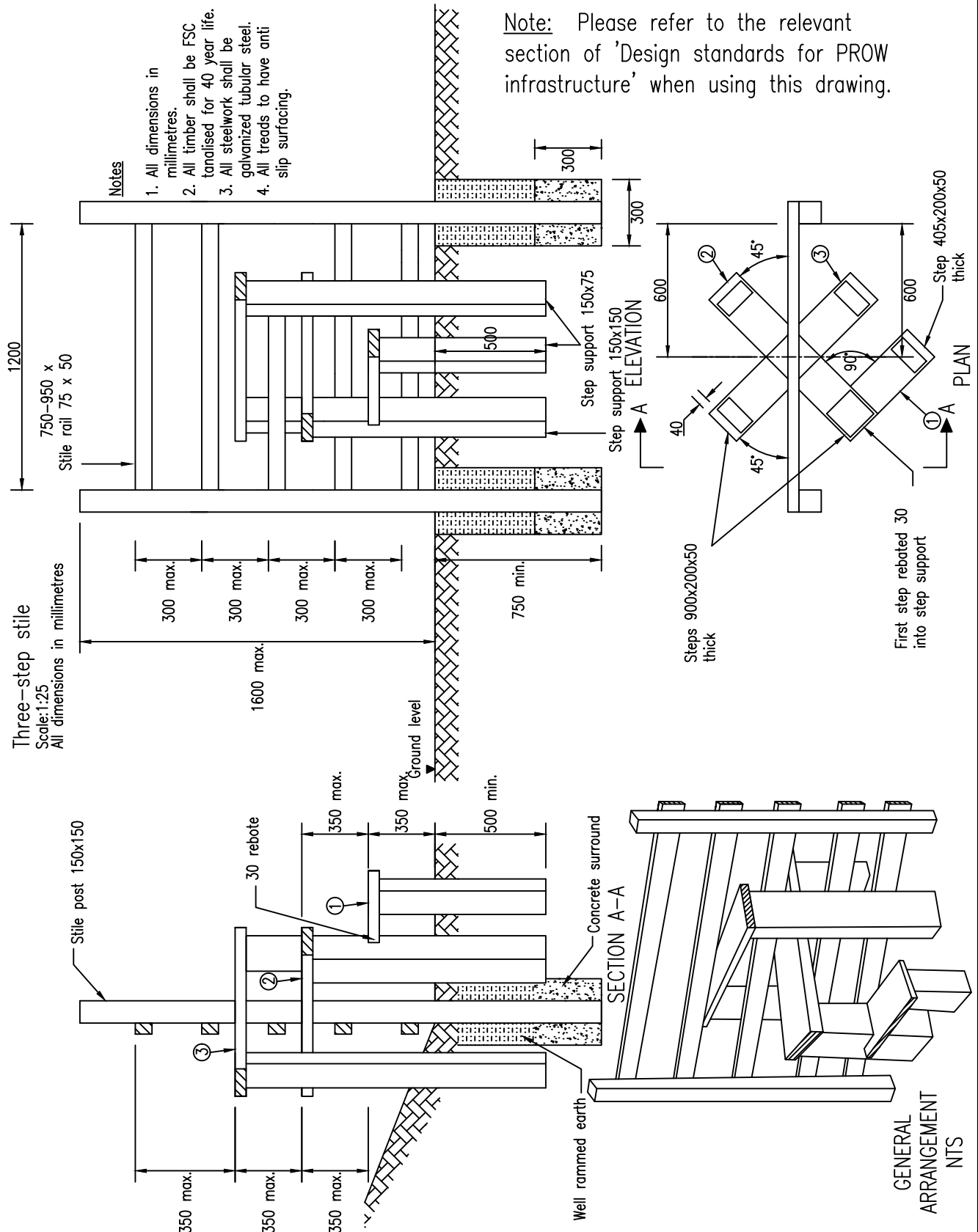
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Date Drawn

FEB 2020

Note: Please refer to the relevant section of 'Design Standards for PROW infrastructure' when using this drawing.







STANDARD DETAILS

08-Public Rights of Way

PEDESTRIAN STILE AND DOG GATE 1 (See also SD08-004)

DRAWING NUMBER

Drawing

SD 08-003

Revision

D

Drawn by

HJ

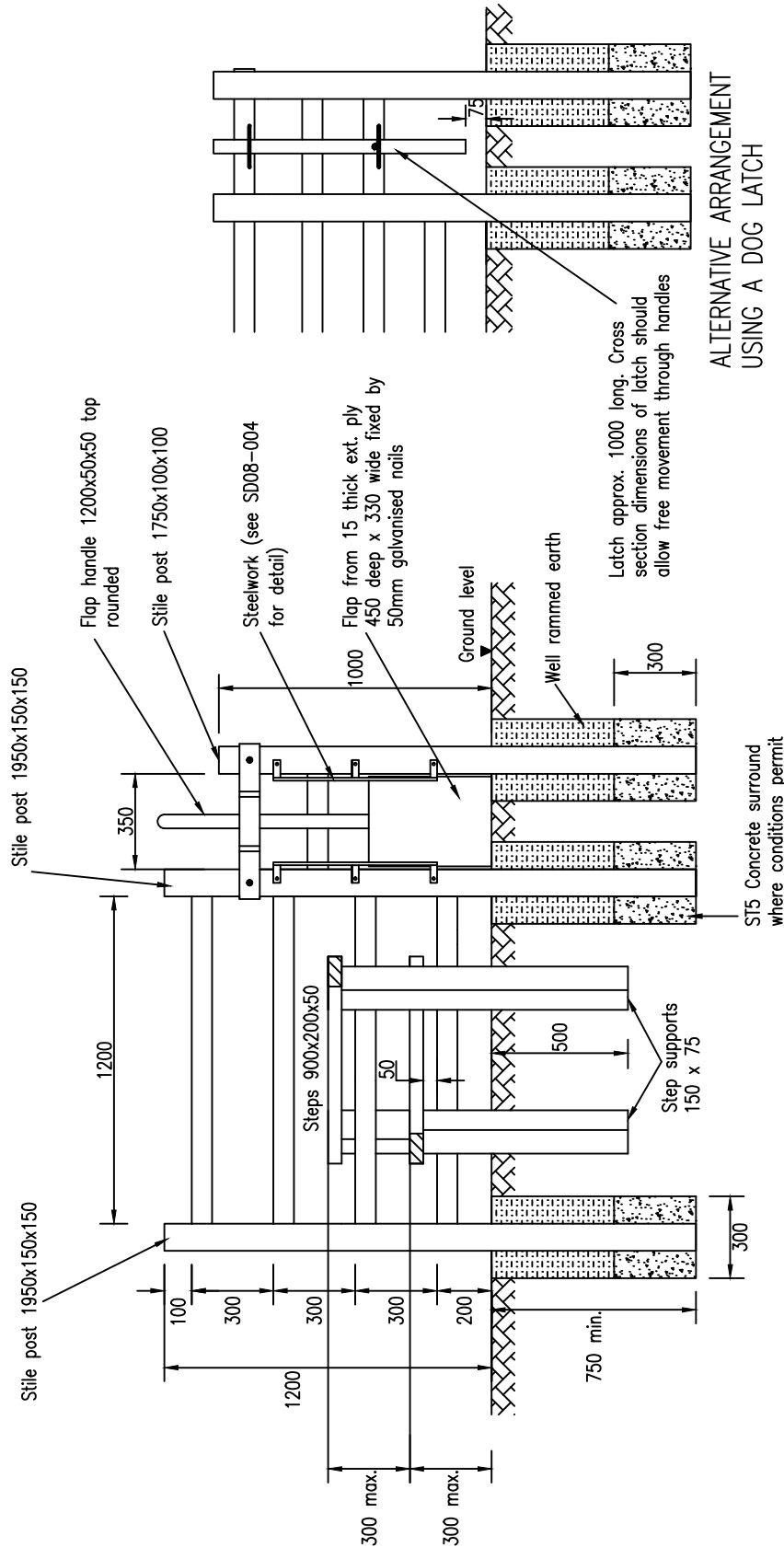
Scale

1:25

Date Drawn

FEB 2020

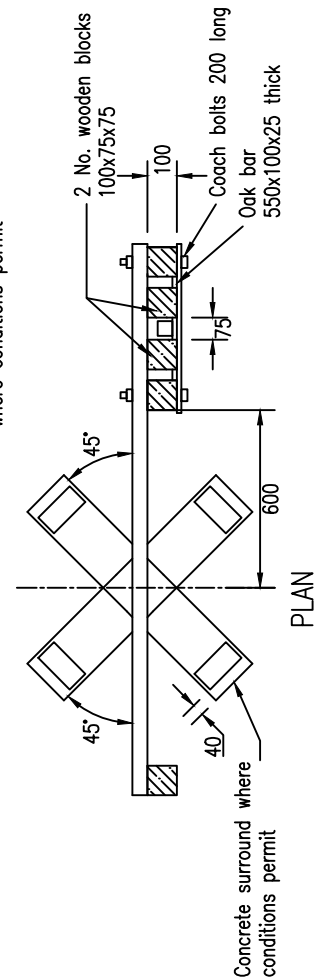
Note: Please refer to the relevant section of the 'Design Standards for PROW infrastructure' when using this drawing.



ALTERNATIVE ARRANGEMENT USING A DOG LATCH

Notes

1. All dimensions in millimetres.
2. All timber shall be FSC tanalised for 40 year life.
3. All steelwork shall be galvanized tubular steel.
4. All treads to have anti slip surfacing





STANDARD DETAILS

08-Public Rights of Way

PEDESTRIAN STILE AND DOG GATE 2 (See also SD08-003)

DRAWING NUMBER

Drawing

SD 08-004

Revision

D

Drawn by

HJ

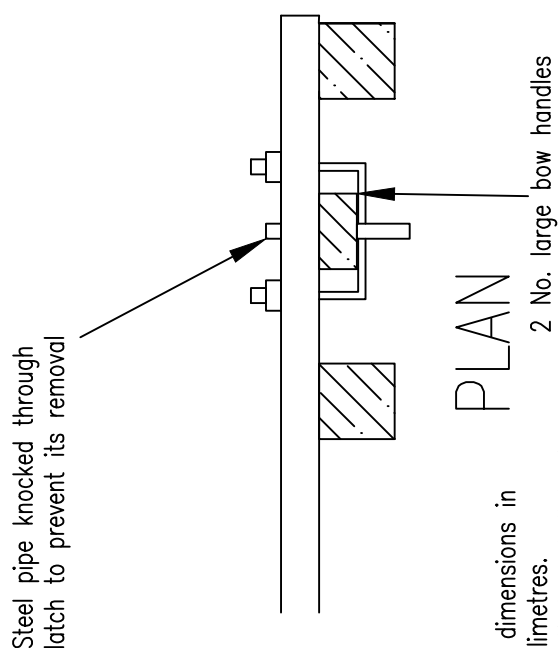
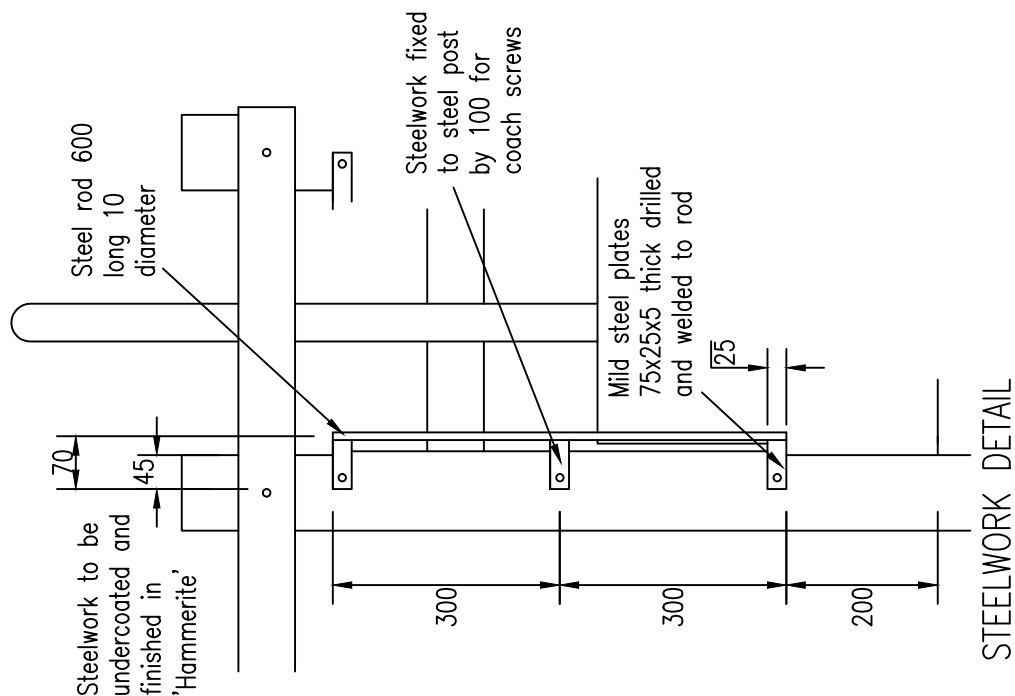
Scale

1:10

Date Drawn

FEB 2020

Note: Please refer to the relevant section of 'Design Standards for PROW infrastructure' when using this drawing.



Notes

1. All dimensions in millimetres.
2. All timber shall be in accordance with the appropriate clauses of 300 series.
3. All steelwork to be galvanised to BS EN ISO 1461 unless stainless steel.
4. All treads to have anti slip surfacing.



STANDARD DETAILS

08-Public Rights of Way

METAL KISSING GATE

DRAWING NUMBER

Drawing

SD 08-005

Revision

D

Drawn by

HJ

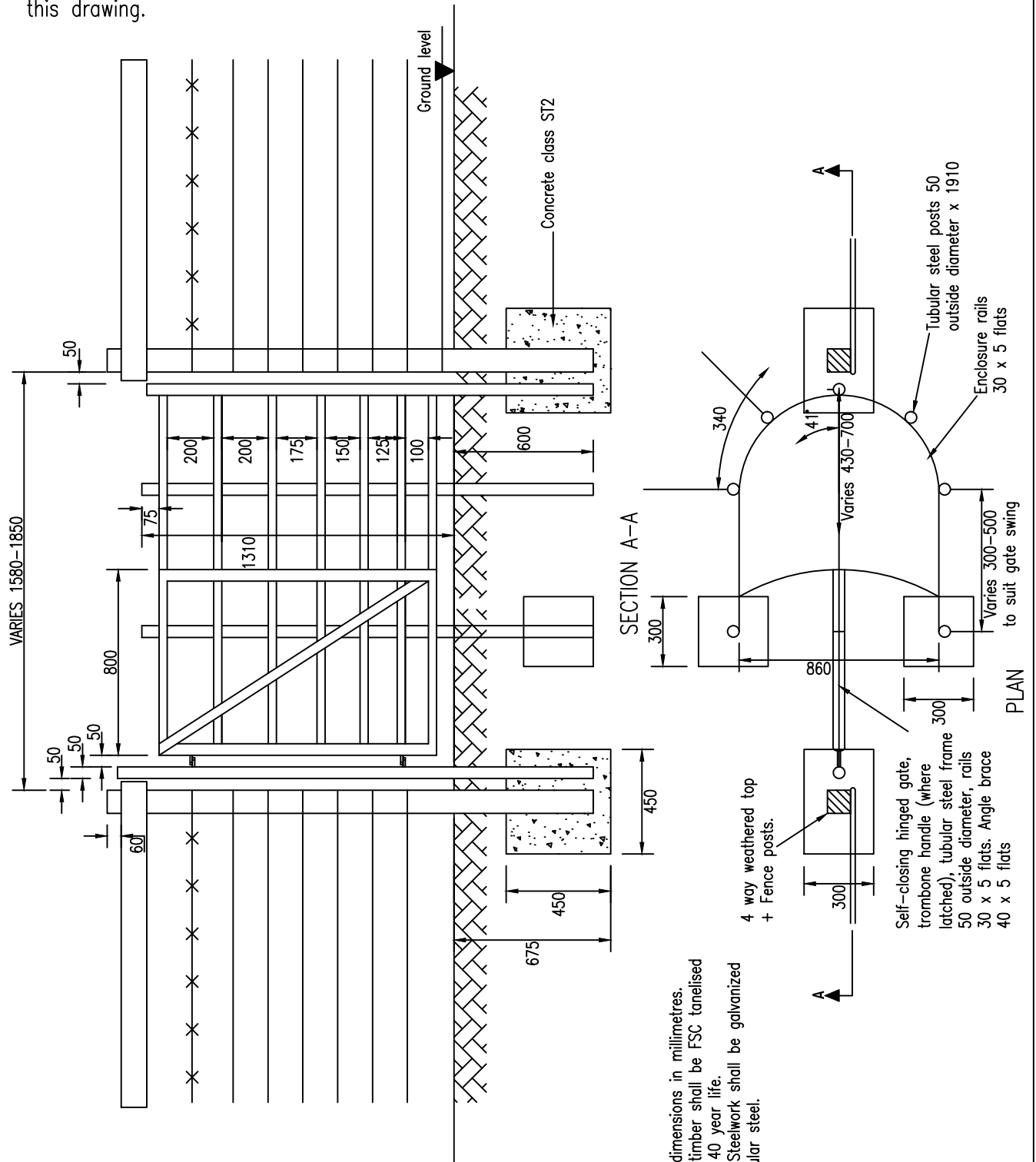
Scale

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Date Drawn

FEB 2020

Note: Please refer to the relevant section of 'Design Standards for PROW infrastructure' when using this drawing.



NOTES

1. All dimensions in millimetres.
2. All timber shall be FSC tanelised for 40 year life.
3. All Steelwork shall be galvanized tubular steel.



STANDARD DETAILS

08-Public Rights of Way

TIMBER PEDESTRIAN TWO-WAY GATE

DRAWING NUMBER

Drawing

SD 08-007

Revision

Drawn by

HJ

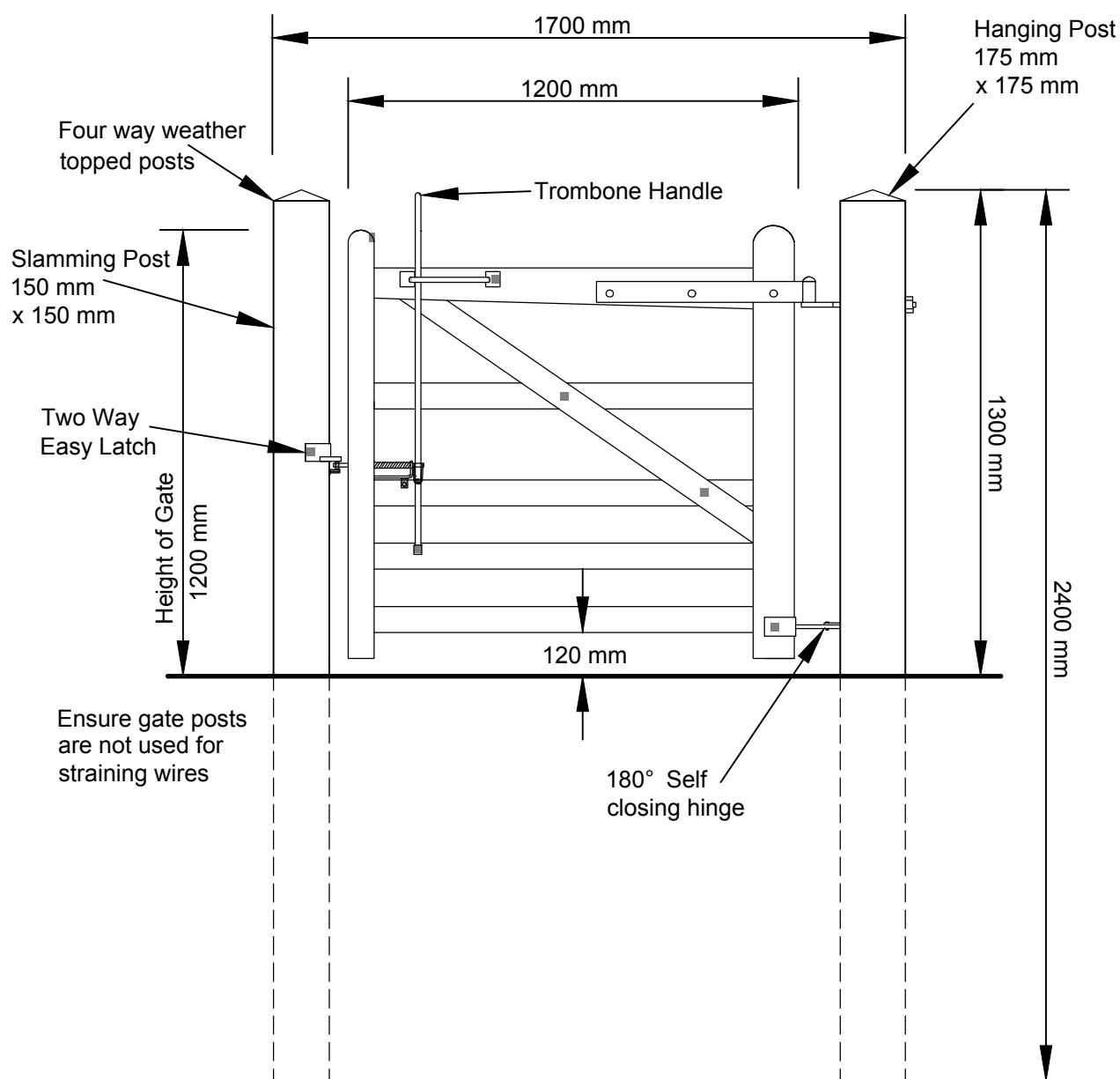
Scale

NTS

Date Drawn

FEB 2020

Note: Please refer to the relevant section of 'Design Standards for PROW infrastructure' when using this drawing.



Notes:

1. All dimensions in millimeters.
2. All timber shall be FSC tanalised for 40 year life.
3. All steelwork shall galvanized tubular steel.



STANDARD DETAILS

08-Public Rights of Way

TIMBER BRIDLE WAY ONE-WAY GATE

DRAWING NUMBER

Drawing

SD 08-009

Revision

D

Drawn by

HJ

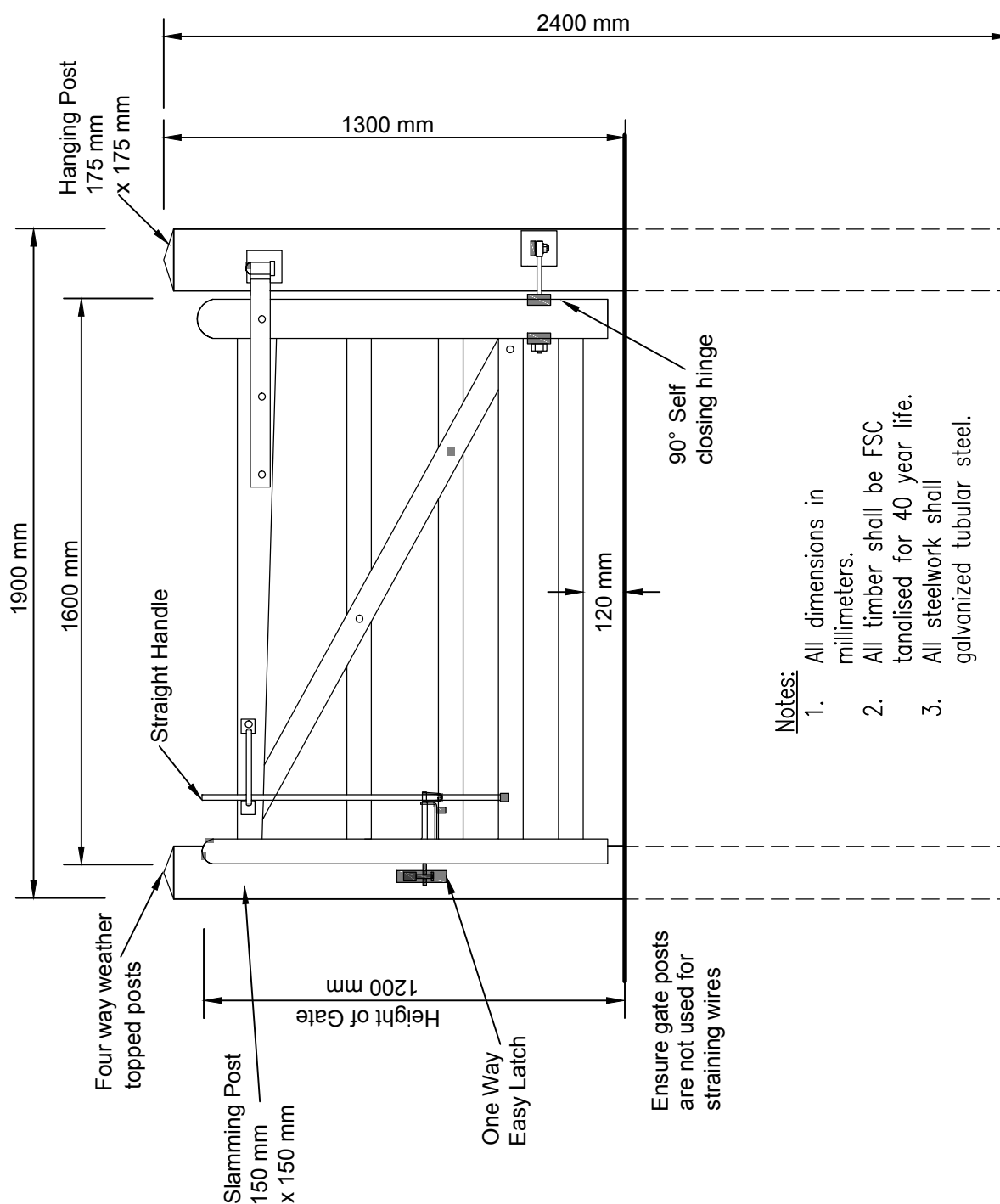
Scale

1:20

Date Drawn

FEB 2020

Note: Please refer to the relevant section of 'Design Standards for PROW infrastructure' when using this drawing.





STANDARD DETAILS

08-Public Rights of Way

TIMBER BRIDLEWAY TWO-WAY GATE

DRAWING NUMBER

Drawing

SD 08-010

Revision

Drawn by

HJ

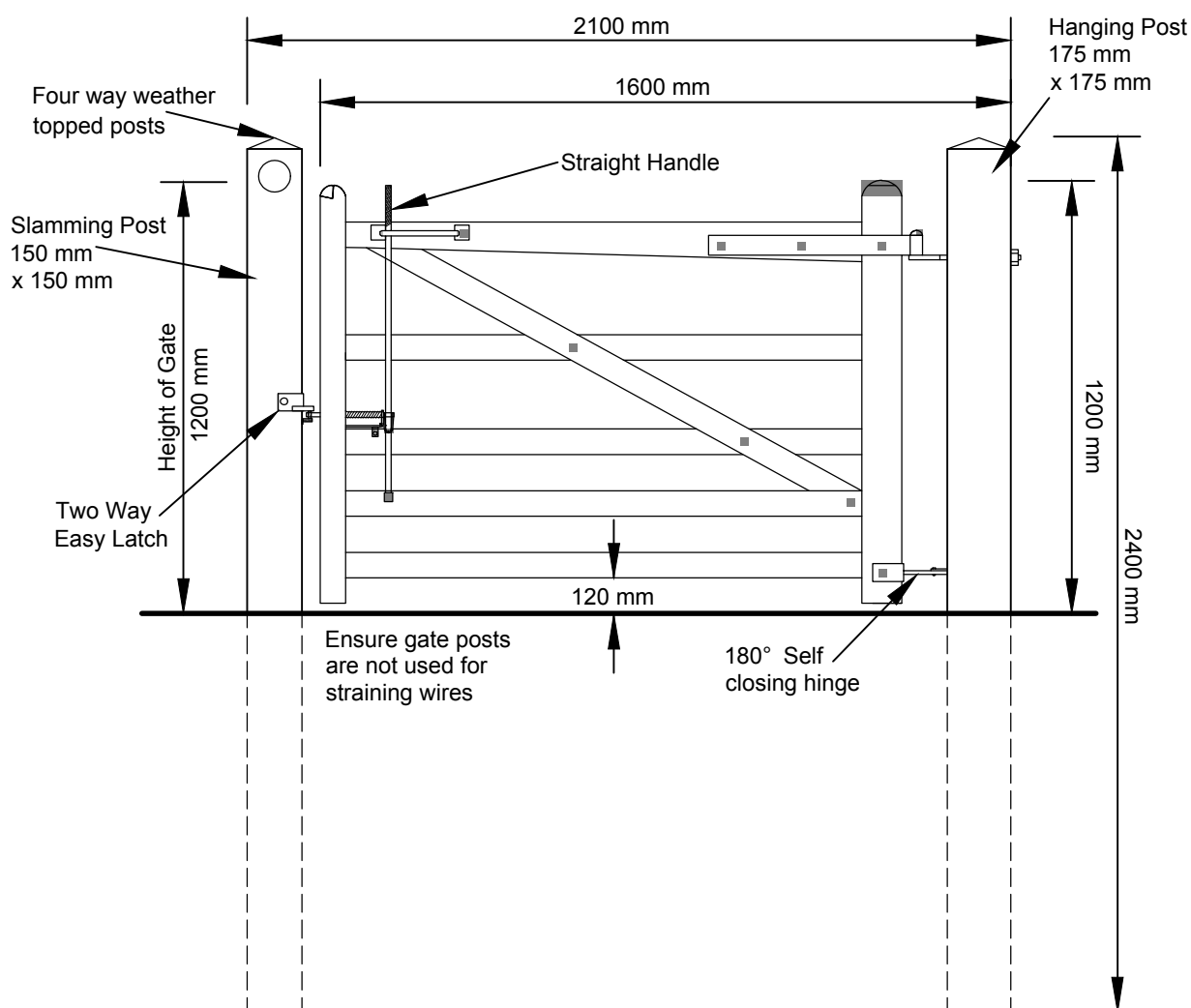
Scale

NTS

Date Drawn

FEB 2020

Note: Please refer to the relevant section of 'Design Standards for PROW infrastructure' when using this drawing.



Notes:

1. All dimensions in millimeters.
2. All timber shall be FSC tanalised for 40 year life.
3. All steelwork shall galvanized tubular steel.

1. All dimensions in millimeters.
2. All timber shall be FSC tanalised for 40 year life.
3. All steelwork shall galvanized tubular steel.



STANDARD DETAILS

08-Public Rights of Way

METAL BRIDLEWAY AND PEDESTRIAN TWO-WAY AND METAL FIELD GATE

DRAWING NUMBER

Drawing

SD 08-012

Revision

Drawn by

HJ

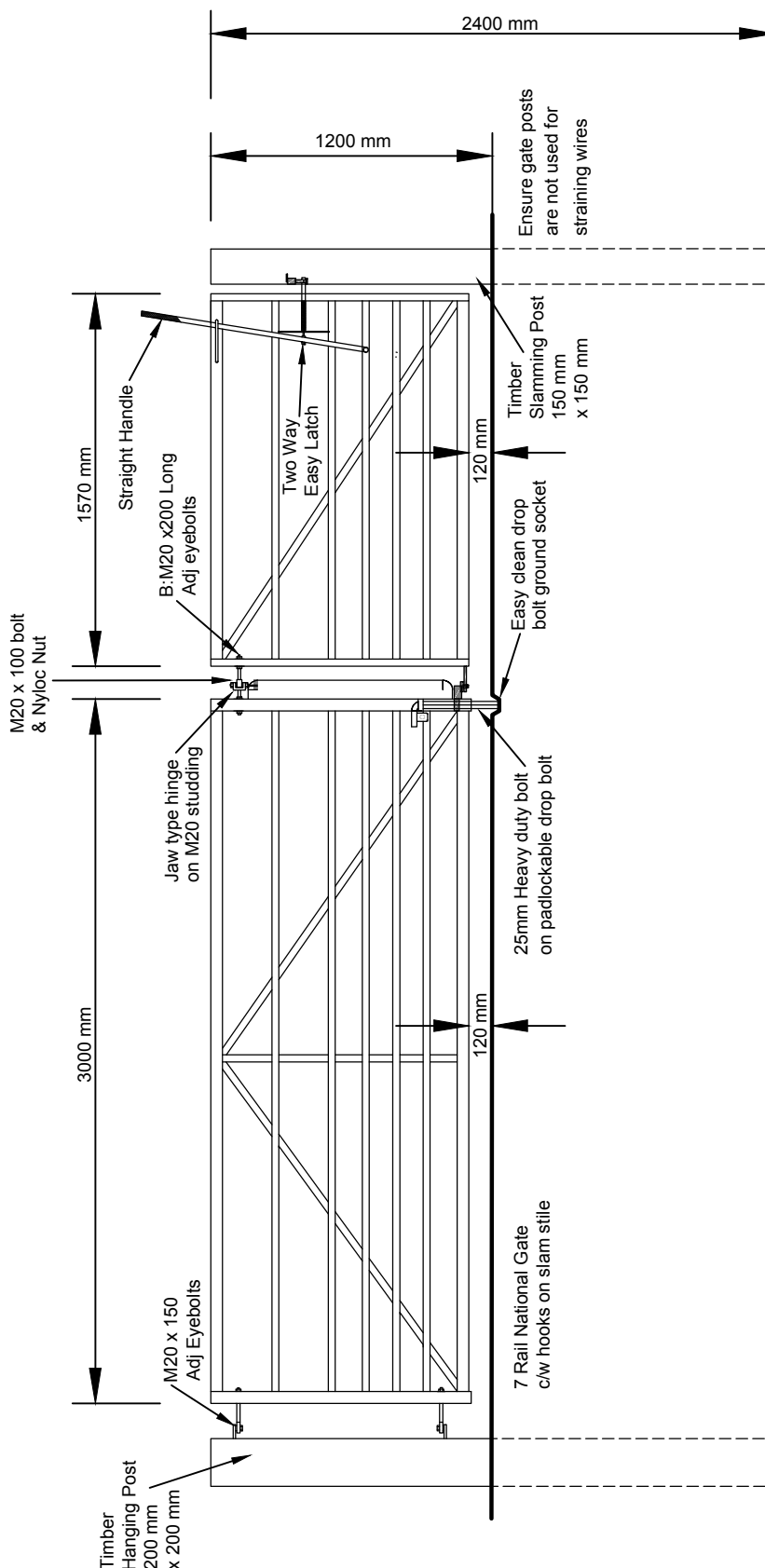
Date Drawn

FEB 2020

Scale

NTS

Note: Please refer to the relevant section of 'Design Standards for PROW infrastructure' when using this drawing.



Notes:

1. All dimensions in millimeters.
2. All timber shall be FSC tanalised for 40 year life.
3. All steelwork shall galvanized tubular steel.



STANDARD DETAILS

08-Public Rights of Way

METAL FIELD GATE

DRAWING NUMBER

Drawing

Revision

SD 08-013

Drawn by

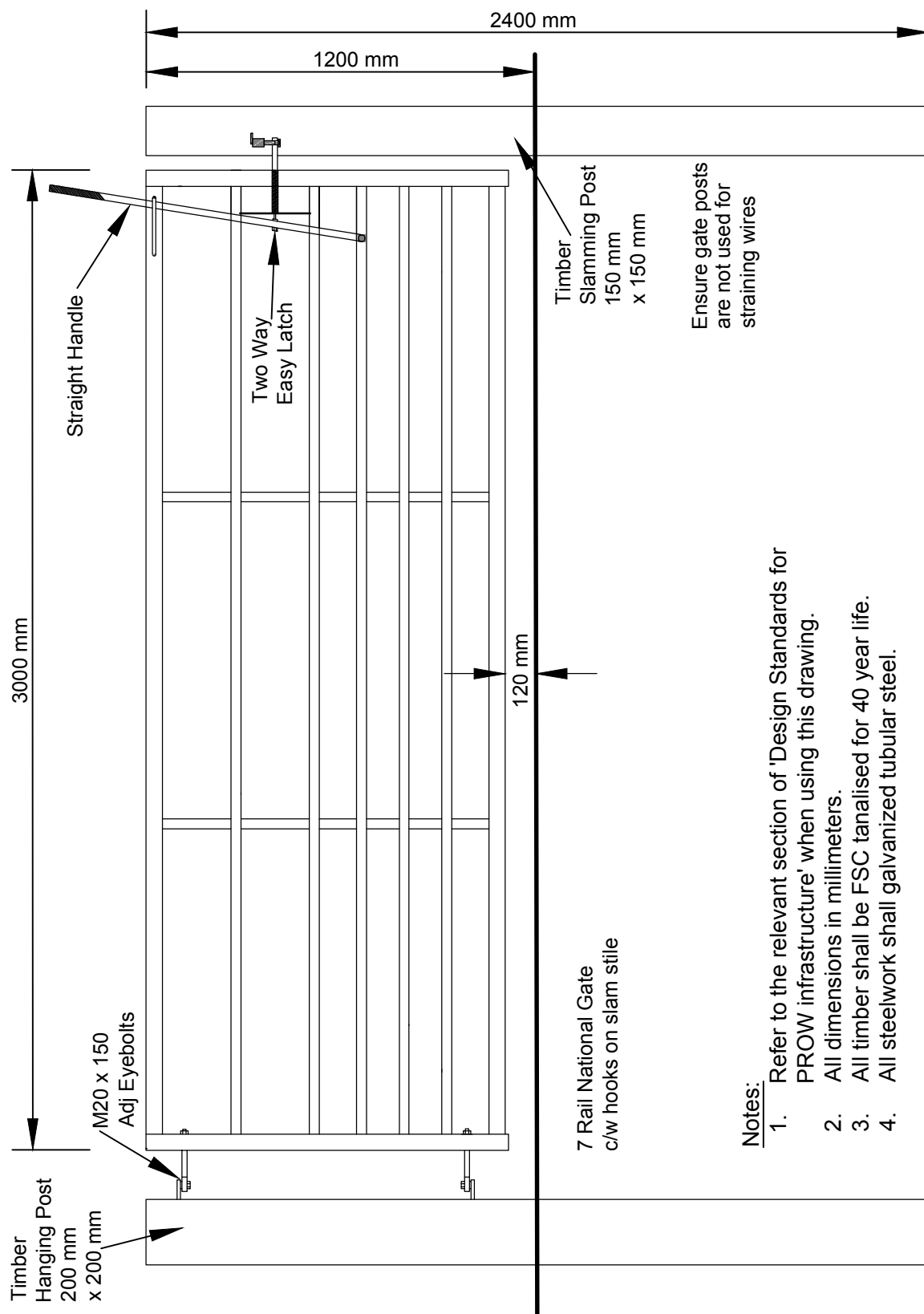
HJ

Date Drawn

FEB 2020

Scale

NTS



Notes:

1. Refer to the relevant section of 'Design Standards for PROW infrastructure' when using this drawing.
2. All dimensions in millimeters.
3. All timber shall be FSC tanalised for 40 year life.
4. All steelwork shall galvanised tubular steel.



STANDARD DETAILS

08-Public Rights of Way

TIMBER OR CONCRETE STEPS

DRAWING NUMBER

Drawing

SD 08-014

Revision

D

Drawn by

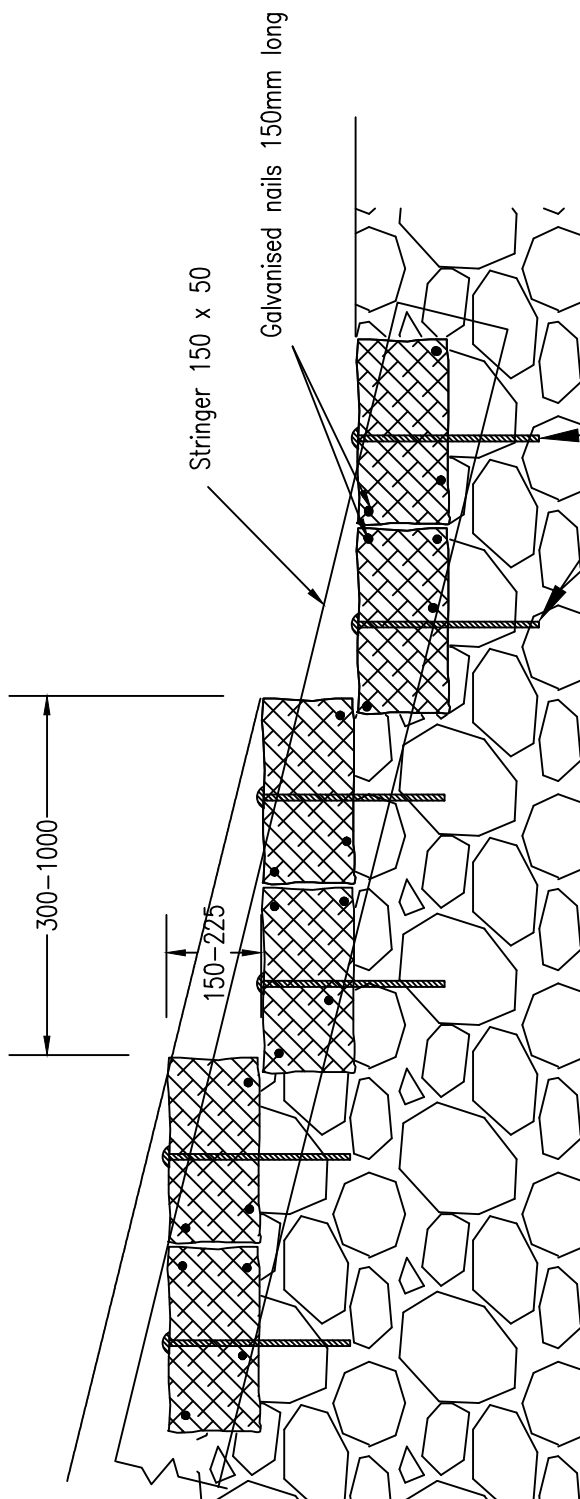
HJ

Scale

1:10

Date Drawn

FEB 2020



NOTES:

1. Please refer to the relevant section of 'Design Standards for PROW infrastructure' when using this drawing.
2. If galvanized wire mesh is required to provide grip, it shall be fixed with galvanized staples, sufficient to keep it flat against the timber.
3. All timber shall be FSC tantalized for 40 year life.
4. Concrete steps with timber edging may be used as an alternative where harder wearing steps are required.



STANDARD DETAILS

08-Public Rights of Way

FINGER SIGN POST

DRAWING NUMBER

Drawing

SD 08-015

Revision

D

Drawn by

HJ

Scale

NTS

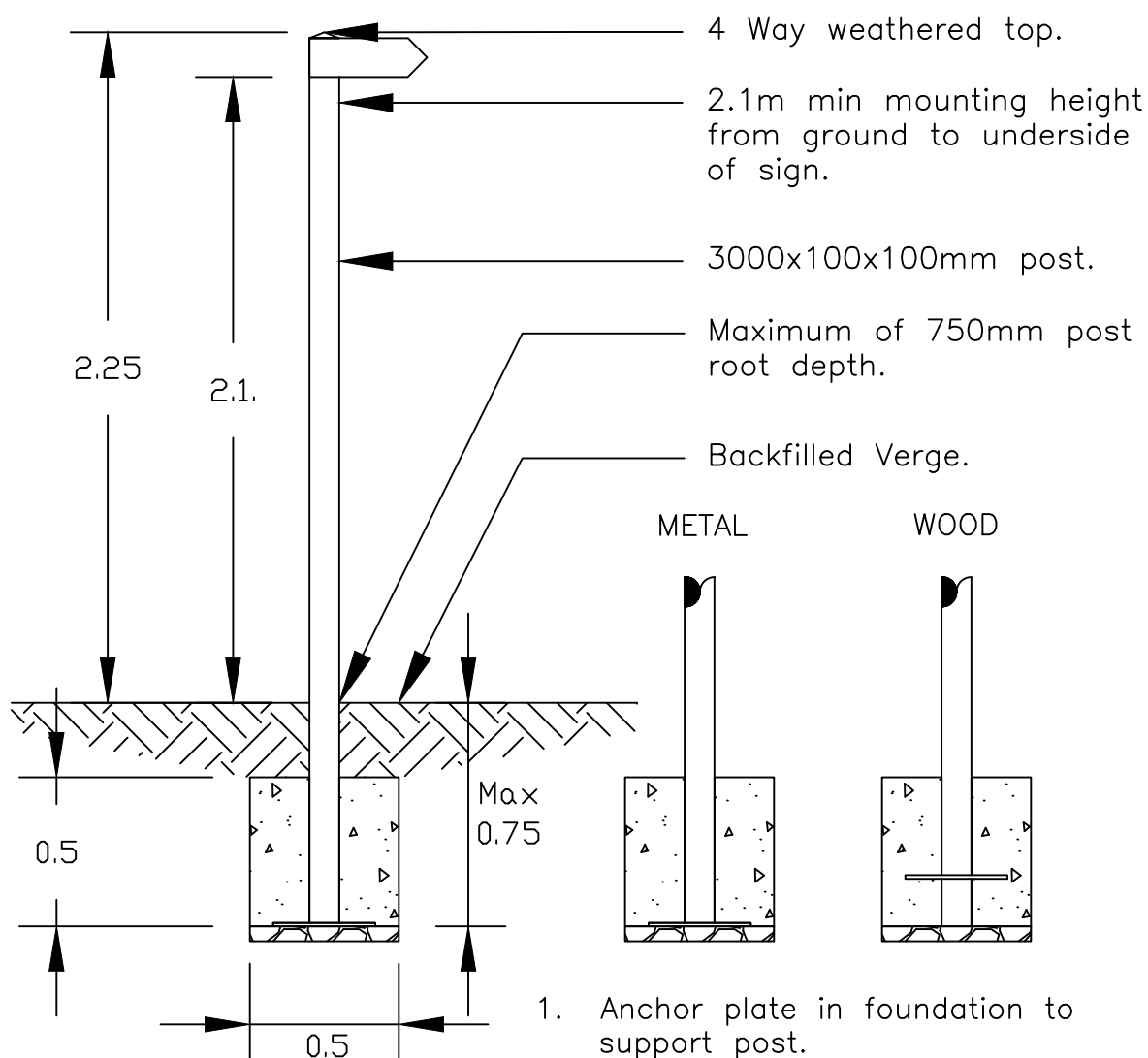
Date Drawn

FEB 2020

Notes:

1. Please refer to the relevant section of 'Design Standards for PROW infrastructure' when using this drawing.
2. All dimensions in meters.
3. Metal post: Steel with PVC coating, metal cap and secured with a base plate concreted into the ground.
4. Timber post: Fsc timber tanalised for 40 year life, 4 way weathered top, ground-anchored and concreted into the ground.
5. Details of the finger sign and fixings in the relevant section of 'Design standards for PROW infrastructure'.

Finger Signposts



1. Anchor plate in foundation to support post.
2. 50mm of single size stone underneath concrete foundation.



STANDARD DETAILS

08-Public Rights of Way

SLEEPER FOOTBRIDGE

DRAWING NUMBER

Drawing

SD 08-016

Revision

Drawn by

HJ

Scale

NTS

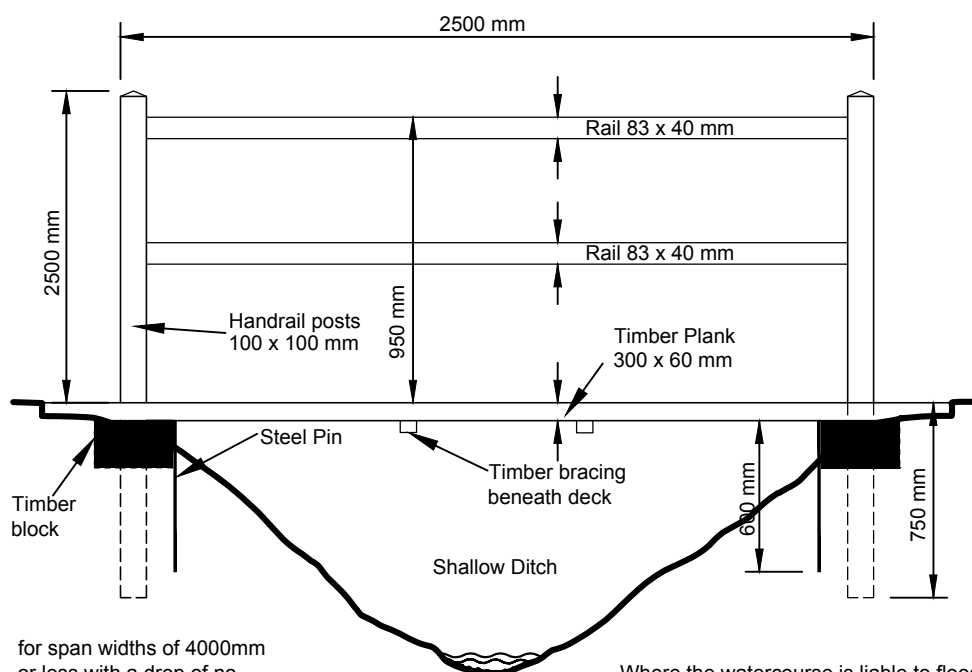
Date Drawn

FEB 2020

Note: Please refer to the relevant section of 'Design Standards for PROW infrastructure' when using this drawing.

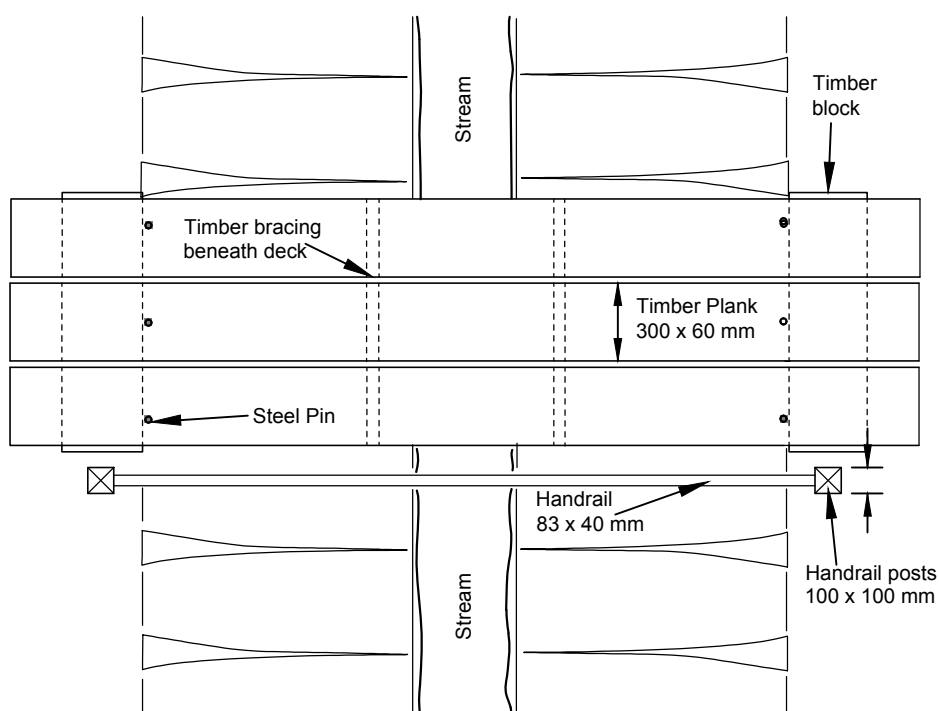
The bridge surface should be level.

At least one handrail should be provided for a bridge of 3000mm in length.



for span widths of 4000mm or less with a drop of no more than 1000mm.

Where the watercourse is liable to flood, the bridge must be properly anchored.



Minimum bridge width of three decking boards laid side by side and securely held, no more than 10mm apart and may require galvanised wire mesh to provide grip.



STANDARD DETAILS

08-Public Rights of Way

STANDARD FOOTBRIDGE

DRAWING NUMBER

Drawing

SD 08-017

Revision

Drawn by

HJ

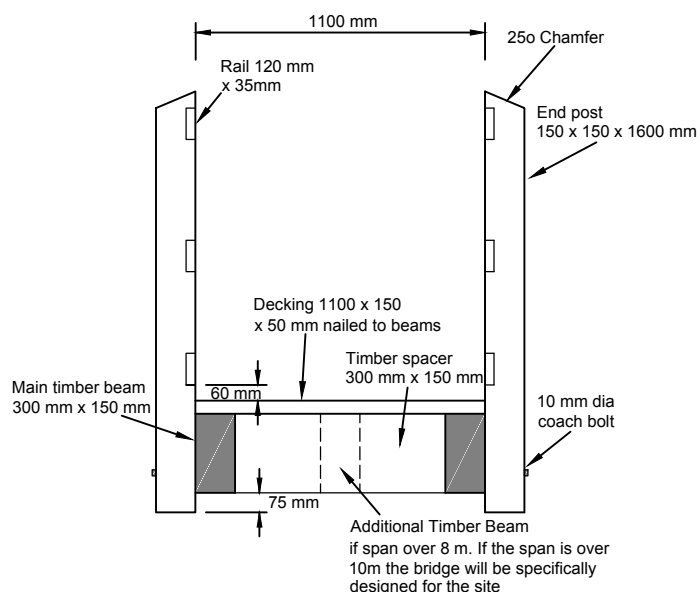
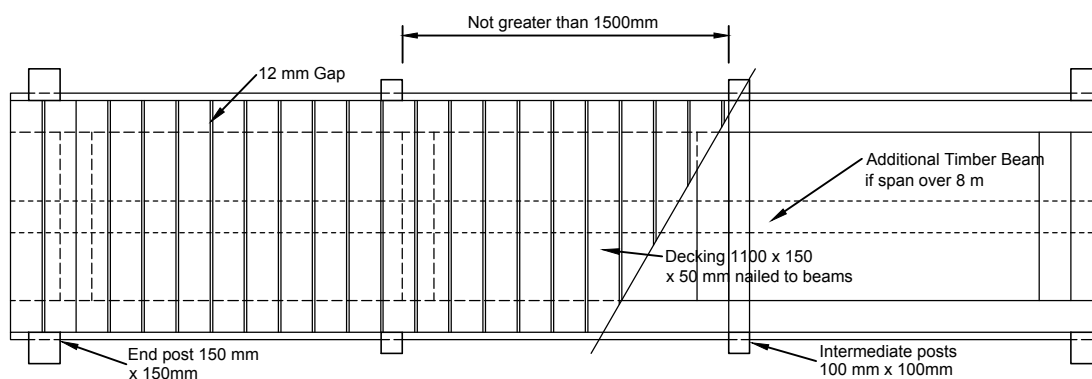
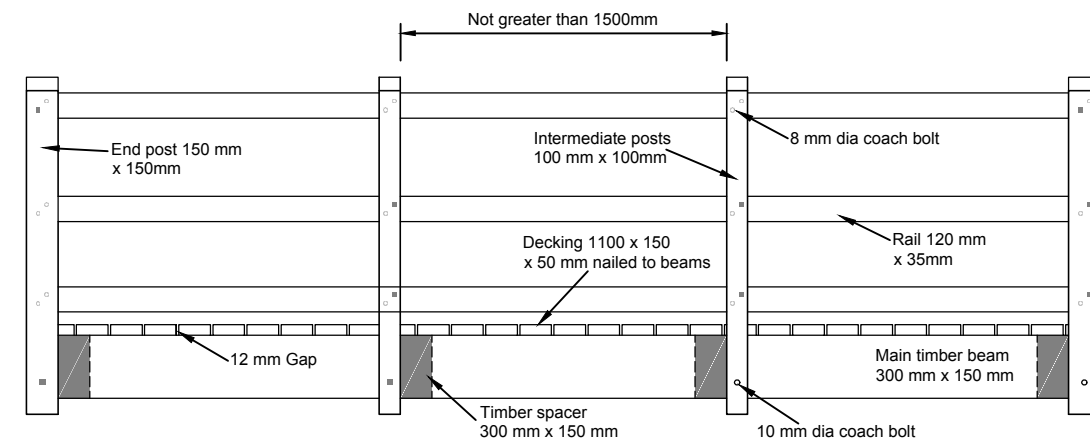
Scale

NTS

Date Drawn

FEB 2020

Note: Please refer to the relevant section of 'Design Standards for PROW infrastructure' when using this drawing.



Notes:

1. For span widths of between 3000mm to 12000mm with a drop of no more than 3000mm.
2. Two handrails should be provided for a bridge of 3000mm or over in length, with gaps no greater than 1500mm between each post.
3. Where livestock or unauthorized vehicles need to be restricted, a self-closing gate complying with the specification to be used.
4. Decking boards forming the bridge surface should be no more than 10mm apart and may require galvanised wire mesh to provide grip.
5. Kickboard for a bridlway bridge should be composed of rails rather than a single board.
6. FSC timber tantalisised for 40 year life should be used for bridges constructed of wood.
7. The bridge surface should be level and its approaches either level with the bridge surface or ramped to a maximum gradient of 1 in 10.
8. If steps are used, the maximum step height is 300mm.
9. Minimum bridge width of 900mm.



STANDARD DETAILS

08-Public Rights of Way

WAYMARK POST

DRAWING NUMBER

Drawing

SD 08-018

Revision

Drawn by

HJ

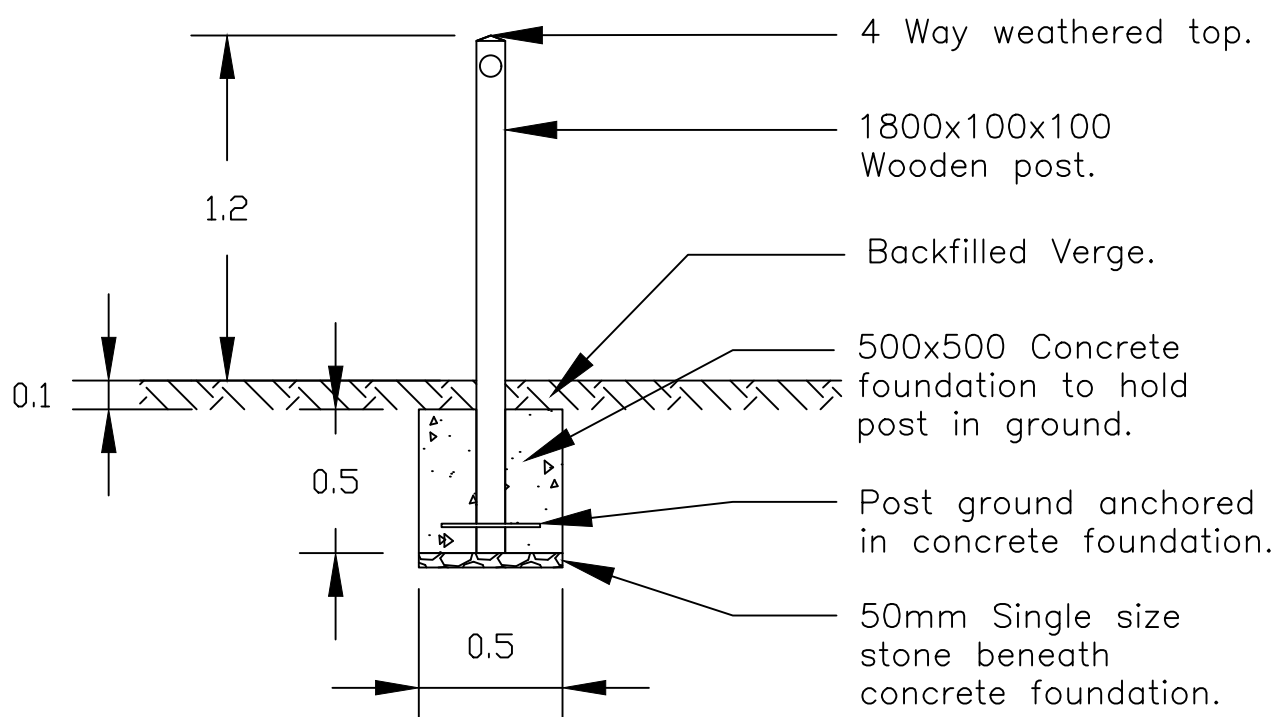
Scale

NTS

Date Drawn

JUN 2020

Waymark Post



Notes:

1. Please refer to the relevant section of 'Design standards for PROW infrastructure' when using this drawing.
2. All timber shall be FSC tantalized for 40 year life.
3. Waymark posts should be located away from any encroaching vegetation.
4. Waymarks attached to posts should be placed centrally at around 50mm from the top of the post.

Comments and Suggestions for Changes/Additions

1,
2,
3,
4,
5,